

## Introduction

From the Second World War (1939-45), the British public and historians have enjoyed a romantic relationship with the flyers of the Royal Air Force (RAF). The courtship began in the summer of 1940, when the Battle of Britain was fought in plain view of the villages of southern England. The comforting presence of the 'Brylcreem boys' injected glamour to the austere home front. Their rakishly-angled caps, silken cravats, and winged insignia provided a tangible link to the war in Europe.<sup>1</sup> Like the fighter aces of the Great War (1914-18), aircrew personnel were considered 'superhuman' for they were handpicked to fight a technological war in the uncharted and unpredictable realm of the air. Their 'heroic efforts' and 'immense bravery' inspired awe and appreciation during the conflict; sentiments that are echoed today. The flyers of the RAF were therefore endowed with cult status and this position is rarely challenged. As a result, comparatively little is known of the effects of aerial warfare on the mind and body. With an historiography that prioritises dash, technology, and operations, it is easy to overlook the human element of the air war. While the flying personnel were 'heroes', they were also men who were subjected to significant physical danger and psychological strain in the course of their perilous duties.

The story of Dennis Wiltshire demonstrates that the heroic façade of the flyer could crack under the trials of aerial warfare. Wiltshire had served in ground crew since the outbreak of war but aspired to fly with Bomber Command. In 1944, his application was finally accepted and he was delighted to train as a Flight Engineer. Following a short period of conversion training, Wiltshire 'went operational' and completed his first two missions. On his third sortie, however, he felt inexplicably nauseous over the target area and when his Lancaster came under heavy flak, fear became his primary emotion:

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<sup>1</sup> M. Francis, *The Flyer: British Culture and the Royal Air Force, 1939-1945* (Oxford, 2008), p. 1.

The skipper [pilot] asked me, “Are you alright?” I didn’t say anything; I just put both thumbs up. Then quite suddenly, this is where the story comes to an end. I don’t know what happened. I’ve been told that I took my harness off, got out of my seat and walked aft. Apparently, I fell over the main spar and the navigator came to help me. He spoke to me but I didn’t answer him. I couldn’t talk to him. I have no further recollection of that flight.

Overwhelmed by fear, Wiltshire suffered an ‘emotional blackout.’ He admitted: ‘It just overpowered me, it was too much for me to take in; physically or mentally...I just completely lost my marbles.’<sup>2</sup> Wiltshire was not alone.

According to the annual statistical returns on the health of the RAF, at least 76,190 personnel received treatment for a mental or nervous disorder during the Second World War.<sup>3</sup> Surveys of psychological disorder in flying personnel showed similar findings year by year: approximately 3,000 cases in Bomber, Coastal, Fighter, Flying Training, and Transport Commands.<sup>4</sup> As the RAF employed 1,012,000 personnel at its peak, these figures may appear negligible.<sup>5</sup> But putting statistics aside, the process of understanding the psychological and neurological conditions was complicated and they were no less profound to affected personnel. What is more, it was a concern at the operational level. To win the air war, highly-selected and trained flying personnel had to operate at the peak of their efficiency at all times. This was where medicine could make a vital contribution.

The following chapters will critically assess the role of neuropsychiatry in the management of aerial warfare. Focussing almost exclusively on the Second World War, they will demonstrate how the RAF mobilised specialist medical knowledge to improve wastage and combat efficiency in flying personnel. The expertise of neurologists and psychiatrists was enlisted to reduce the burden of neuropsychiatric disorders, and to

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<sup>2</sup> Imperial War Museum (hereafter IWM), Sound Archive, 28561, Wiltshire, Dennis, RDF Media, July 2004.

<sup>3</sup> This figure represents the whole force e.g. aircrew, ground crew and Women’s Auxiliary Air Force: The National Archives (hereafter TNA), Air Ministry records (hereafter AIR), 10/6657, Report on the Health of the Royal Air Force for the year 1939; AIR 10/5568, Report on the Health of the Royal Air Force, 1940; AIR 10/5569-5573, Statistics on the Health of the Royal Air Force and Women’s Auxiliary Air Force, 1941-1945.

<sup>4</sup> Air Publication (hereafter AP) 3139, *Psychological Disorders in Flying Personnel of the Royal Air Force Investigated During the War 1939-1945* (London, 1947), p. 1.

<sup>5</sup> For figures on the strength of the RAF, please see: CMD. 6832, *Strength and casualties of the Armed Forces and Auxiliary Services of the United Kingdom 1939 to 1945* (London, 1946).

improve service performance. In an age of total war, efficiency was essential in the operation of mass armed forces and it was therefore the duty of specialists to make recommendations that would improve the quality and management of human resources. To meet these key objectives, the neuropsychiatric division undertook important administrative and therapeutic duties in the areas of personnel selection, service discipline, neuropsychiatric research, and the treatment of mental disorders. The thesis will therefore examine how the neurologists and psychiatrists of the RAF neuropsychiatric division responded to these challenges and contributed to the management of aerial warfare.

It will also assess the factors that shaped the practice of neuropsychiatry in the service. Historically, the training and personal interests of specialists and the context of therapeutic practice guided the development of mental health specialties. The ‘concept’ of neuropsychiatry, argued Berrios and Markova, was defined in different periods according to investigative techniques, assumptions, the type of patient that it dealt with, therapeutic value or a combination of these factors.<sup>6</sup> To gain a fuller appreciation of the administrative and therapeutic duties of the division, this work will therefore explore the medical, social, military, and professional factors that shaped neuropsychiatric thought and practice.

This work will also engage with the fundamental human element of aerial combat. Wells and English stated that the quality of aircrew was fundamental to the conduct of the air war and underpinned the administrative decisions of allied air forces.<sup>7</sup> This was certainly the case in the RAF, where the primary objective of the neuropsychiatric division was to preserve and develop these vital human resources. Neuropsychiatric disorders represented a challenge to efficiency, for they could affect the performance and motivation

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<sup>6</sup> G.E. Berrios and I.S. Markova, ‘The concept of neuropsychiatry: a historical overview’, *Journal of Psychosomatic Research*, 53 (2002), p. 630.

<sup>7</sup> M.K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London, 1995), pp. 209-213; A.D. English, *The Cream of the Crop: Canadian Aircrew, 1939-1945* (Kingston, 1996), pp. 145-54.

of a flyer. The thesis will examine how the neuropsychiatric division attempted to sustain aircrew by preventing and treating the disorders that compromised their efficiency.

In exploring the role of RAF neuropsychiatry, the thesis will engage with a number of historiographies, while extending and challenging them. The bodies of scholarship of most relevance are: histories of psychological medicine in the armed forces; of medicine and the management of modern warfare; of the social and cultural history of air power; and studies of war and society in the Second World War.

### **Historiographical Review**

During the twentieth century, the British armed forces mobilised numerous resources in the battle against neuropsychiatric disorders. The most common approach was to apply specialist knowledge to the problem, with psychiatrists, neurologists, and psychologists engaged *en masse*. This practice has received extensive attention and a rich historiography has been produced, detailing the history of psychological medicine in the military context.<sup>8</sup> This interest, argued Shephard, reflected the influence that post-traumatic stress disorder, feminism, Foucault, and Vietnam had on scholarship. There is a consensus that trauma is not uniform across history or culture, and that each conflict requires detailed analysis.<sup>9</sup> Despite potential differences across conflicts, the questions and dilemmas of specialists remained the same. Was it better to treat servicemen and return them to duty for the sake of manpower economy or to recommend their discharge, as they would never return to their former efficiency? Should psychological medicine be held in the same regard as physical wounds and carry the same entitlement to a pension? And most importantly, does

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<sup>8</sup> The term 'psychological medicine' is used to describe the collective practices of neurologists, psychiatrists, and psychologists in the armed forces. 'Military psychiatry' is a term that is biased in favour of the army.

<sup>9</sup> B. Shephard, 'Pitiless Psychology: the role of prevention in British military psychiatry during the Second World War', *History of Psychiatry*, 10 (1999), p. 492.

each war produce its own distinct post-combat disorders or are these the same over time?<sup>10</sup> Scholars of the British Army have studied the ways in which psychologists and psychiatrists framed these questions and the conclusions that they reached, from the Crimean War (1853-56) to the Gulf (1990-1). The interest in the army has not been matched by scholarship on the Royal Navy or RAF. The Royal Naval Medical Services (RNMS), for instance, employed neuropsychiatrists to prevent and treat mental disorders and to assist in the conscription of men, yet only an official history has been written.<sup>11</sup> If Shephard's claims about the incomparability of trauma are to be supported, surely the same can be said for the individual armed forces, who had experiences unique to their service cultures and combat environments?

This work addresses this critical lacuna in historical knowledge. The RAF was a distinctive armed force in terms of the technology that it used, the educated and skilled men that it employed, and the elite, technological culture that it fostered. The circumstances that produced traumatic reactions were unique, for the air force waged war in the sterile environment of the air. The thesis begins to address the imbalanced historiography by providing a detailed study of the RAF, which highlights differences in experience.

### ***Royal Air Force Neuropsychiatry, 1939-45***

RAF neuropsychiatry has been explored as an adjunct to broader works of military history and medicine but has never been the focus. Wells' *Courage and Air Warfare*, for instance, engaged with neuropsychiatry in chapters on the selection and classification of aircrew and the treatment of combat stress, but this was only a small part of the study. His work is

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<sup>10</sup> E. Jones and S. Wessely, *Shell Shock to PTSD: Military Psychiatry from 1900 to the Gulf War* (Hove, 2005), pp. xv-xvii.

<sup>11</sup> J.L.S. Coulter (ed.), *The Royal Naval Medical Services, Administration* (2 Vols, London, 1954), i, pp. 150, 154.

often framed as a study of air force neuropsychiatry but the focus was the impact of war on ‘morale’ and ‘courage.’<sup>12</sup> Likewise, Shephard dedicated a chapter to the ‘helmeted airman’ in his seminal volume, *A War of Nerves*. Confining the entire history of RAF neuropsychiatry to one chapter was a considerable undertaking and his work only skims the surface. Focussing primarily on Bomber Command, Shephard argued that bombing took the greatest psychological toll on the RAF. Disastrous day and night raids killed aircrew and civilians alike, hampered morale, and produced thousands of neuropsychiatric casualties. He also assessed the ways in which individual flyers and the RAF attempted to sustain morale and combat efficiency.<sup>13</sup> Shephard failed to reach any conclusions on the value of neuropsychiatric work in Bomber Command.

Beyond these general overviews, historians and psychiatrists alike have focussed on the problem of ‘lack of moral fibre.’ ‘LMF’, as it was colloquially known, was a harsh administrative classification applied to flying personnel who refused to fly without a medical reason. All accounts have sustained a myth that was prevalent during the war: neuropsychiatry was at the heart of LMF. McCarthy for instance, argued that LMF was a form of psychiatric prophylaxis, for the stigma associated with the measure attacked the masculine qualities that characterised flyers. He contended that later researches into the psychological problems of flying personnel were conducted to prevent future LMF cases.<sup>14</sup> English went a step further in his study of the ‘genesis’ of LMF. From the Great War, he argued, the development of ‘clinical aviation psychology and psychiatry’ helped to shape this measure. This implied that psychological medicine served a predominantly disciplinary function. RAF ‘physicians’, he continued, realised that the term was not an accurate label for ‘cowardice’, and due to the unreliability of psychiatric opinion, its

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<sup>12</sup> This work will be examined further in the section on the social and cultural history of air power: Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War*, chs. 1, 3.

<sup>13</sup> B. Shephard, *A War of Nerves: Soldiers and Psychiatrists, 1914-1994* (London, 2000), pp. 282-3, 289-97.

<sup>14</sup> J. McCarthy, ‘Aircrew and ‘Lack of Moral Fibre’ in the Second World War’, *War and Society*, 2 (1984), pp. 87-101.

application was haphazard.<sup>15</sup> Furthermore, Wells also examined LMF and compared the British deterrence-based approach with the American view. American policies acknowledged that men had their breaking point, whereas the harsh British measure attached the stigma of cowardice to psychological breakdown.<sup>16</sup> These accounts framed LMF and neuropsychiatry as wholly pessimistic ventures.

Medical historians and psychiatrists have also examined LMF and their accounts compare favourably to the earlier works of military history. They were informed by a better understanding of the history of psychiatry but were undoubtedly shaped by the historiography. Brandon sustained the myth that LMF was a neuropsychiatric measure. He examined the investigation of suspected LMF cases by medical officers and neuropsychiatrists, and argued that they struggled to implement the measure due to a lack of training in psychiatry.<sup>17</sup> Jones, on the other hand, framed LMF as a policy of psychiatric stigma, which aimed to deter airmen from developing a psychological disorder through the threat of punitive sanctions. It also allowed the RAF to differentiate between those suffering from a mental disorder and those who were refusing to fly on hazardous operations. Like McCarthy, he linked later neuropsychiatric research to the problem of LMF, which implied that one of the functions of the neuropsychiatric division was to uphold service discipline.<sup>18</sup>

This thesis will challenge and revise the limited historiography of RAF neuropsychiatry. Many of these works, particularly those of Wells, Shephard, McCarthy, English, and Brandon, were written when limited sources were available. Thousands of

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<sup>15</sup> A.D. English, 'A Predisposition to Cowardice? Aviation Psychology and the Genesis of 'Lack of Moral Fibre'', *War and Society*, 13 (1995), pp. 15-34.

<sup>16</sup> Wells, *Courage and Air Warfare*, ch. 8.

<sup>17</sup> Sydney Brandon, 'LMF in Bomber Command: Diagnosis or Denouncement?' in G.E. Berrios and H. Freeman (eds.), *150 Years of British Psychiatry: The Aftermath* (2 Vols., London, 1991), ii, p. 119.

<sup>18</sup> E. Jones, 'LMF: The Use of Psychiatric Stigma in the Royal Air Force during the Second World War', *Journal of Military History*, 2 (2006), pp. 436-58. See also: Jones and Wessely, *Shell Shock to PTSD: Military Psychiatry from 1900 to the Gulf War*, pp. 97-8.

documents have since entered the public domain. Wells and Shephard provided general overviews of neuropsychiatric interventions but failed to engage with the process of diagnosis, research, and contemporary medical thought in any detail. This work will explore these crucial factors in detail. It will show that while LMF was an important administrative category, it was an entirely disciplinary measure rather than a medical construction. Moreover, the historiographical emphasis on LMF has detracted from the original research undertaken into the causes and nature of neuropsychiatric disorders. This work represents the first attempt to engage with this material.

### ***Psychiatry and the British Army, 1939-45***

In contrast to the RAF, the army has received extensively scholarly attention. While a separate study of the air force is essential, the historiography of military psychiatry has highlighted several important themes; many of which will be explored in this work. The first of these is the value of psychiatry in military settings. Psychiatrists have given a frank assessment of how far their work was valued by the military hierarchy. Rees, for instance, believed that army commanders did not appreciate the importance of psychiatry to the war effort. The specialists were criticised in their attempts to improve the mental quality of soldiers and were accused of wasting manpower.<sup>19</sup> Ahrenfeldt reached similar conclusions. He described his fellow psychiatrists as ‘the cinderellas of medicine’ and claimed that they were fighting a war on two fronts: against mental disease on the one hand, and against opposition from military and civil authorities on the other. The work of psychiatrists and the efficacy of treatments were compromised by the prejudices of

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<sup>19</sup> J.R. Rees, *The Shaping of Psychiatry by War* (London, 1945), pp. 27-8.

military and medical administrators, who would not give the freedom required for success.<sup>20</sup>

In recent years, Thalassis has revised the history of army psychiatry. She argued that earlier accounts were coloured by personal experiences and contended that, on the whole, psychiatric opinion was valued within the army. Psychiatrists were given considerable independence and autonomy: they had their own administrative structure, were allowed to undertake research, carry out inspections and treatments, and largely enjoyed a cordial relationship with the military hierarchy.<sup>21</sup> In contrast, Jones and Wessely claimed that psychiatrists faced considerable opposition and resistance from medical colleagues and commanders, and were constantly fighting to establish their credibility. This conclusion was based on anecdotal accounts, such as those produced by Rees and Ahrenfeldt. To some extent, this is also an insiders' story, as Wessely is a psychiatric consultant to the British Army.<sup>22</sup> Thus no consensus has been reached on the value of psychiatry in this context.

This thesis represents another contribution to debates on the value of psychiatry in wartime. It explores the contribution of neuropsychiatry to the management of aerial warfare by critically assessing the administrative and therapeutic duties of neuropsychiatrists and how far they met their objectives of conserving manpower and combat efficiency. Relationships between divisional personnel and air force administrators will be considered and the importance of their duties will be assessed. The thesis will also examine their membership and contributions to RAF medical committees to establish if neuropsychiatric opinion was valued in these settings.

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<sup>20</sup> R.H. Ahrenfeldt, *Psychiatry in the British Army in the Second World War* (London, 1958), p. 251.

<sup>21</sup> N. Thalassis, 'Treating and Preventing Trauma: British Military Psychiatry during the Second World War', (Salford Univ. Thesis, 2004), pp. 219-24.

<sup>22</sup> Jones and Wessely, *Shell Shock to PTSD*, p. 99.

A second theme emerging from the historiography of army psychiatry was the importance of prophylaxis. Scholars have commented on a number of military measures and assessed their value in the prevention of psychiatric casualties. Screening and scientific selection were among the strategies implemented. Ahrenfeldt argued that initial attempts to introduce comprehensive screening and selection methods were rejected because the Army Medical Services (AMS) did not understand the principles of social medicine. Action was only taken when it became clear that highly intelligent men were reserved for industry, the navy, the RAF and the Civil Defence Service. This led to the establishment of a Directorate for the Selection of Personnel, which undertook a complete job-analysis for the multitude of tasks in the army. From this, it was able to lay down standards of intelligence and aptitude for each job.<sup>23</sup> Despite this rational scientific approach, scholars have argued that it was ineffective. According to Thalassis, psychiatric screening and selection meant that a disproportionately high number of casualties were attributed to psychiatric disability. Any man deemed to be of low intelligence could be discharged.<sup>24</sup> Jones, Hyams, and Wessely shared this view and argued that screening and selection failed to minimise psychiatric casualties. What is more, attempts to do so were deemed counterproductive, as they often led to the rejection of men who could have made good soldiers.<sup>25</sup> While the army was committed to prevention, it is clear that screening and selection procedures created more casualties by discharging those considered predisposed to mental disorders.

This thesis will also examine the role of neuropsychiatrists in the selection and screening of flying personnel. RAF psychiatrists claimed that an assessment of predisposition upon enlistment would prevent wastage from neuropsychiatric disorders. It

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<sup>23</sup> Ahrenfeldt, *Psychiatry in the British Army in the Second World War*, pp. 31-50.

<sup>24</sup> N. Thalassis, 'Useless Soldiers: The Dilemma of Discharging Mentally Unfit Soldiers during the Second World War', *Social History of Medicine*, 23 (2010), p. 112.

<sup>25</sup> E. Jones, K.C. Hyams, and S. Wessely, 'Screening for vulnerability to psychological disorders in the military: an historical survey', *Journal of Medical Screening*, 10 (2003), pp. 40-6.

will critically assess attempts to reform the screening of aircrew candidates, which allows for the evaluation of the relationship between the division and air force commanders and administrators, who had to approve and facilitate reform. It will therefore provide evidence of how far neuropsychiatric knowledge was valued in the aerial war effort.

The treatment of army psychiatric casualties also encompassed a preventive element, which was dictated by the priorities of the theatre and treatment location. Historians such as Copp and MacAndrew, Harrison, Shephard, and Thalassis have argued that in forward areas psychiatric disorders tended to be defined as temporary impairments. This was motivated by the need to effect quick returns to duty.<sup>26</sup> Treatment on the home front was arranged along different lines. Psychiatrists were not constrained by the conditions of forward areas and had more time and therapeutic freedom over the treatment of casualties. Certain specialists saw this as an opportunity to introduce innovative therapies. The treatment and experiments undertaken at the Northfield Military Hospital form a prime example. Thalassis and Harrison have argued that the hospital and its work were ‘unique oases of liberalism within a military world.’ The psychiatrists at this hospital believed that the good health of patients and the needs of the army were linked, as a healthy citizen would be willing to stand and fight for his country. These values were promoted and supported through the examination of social relationships and the provision of an environment where soldiers could practise accepting their responsibilities.<sup>27</sup>

In other facilities, prognosis was the major focus and its determination could dictate the treatment given. Thalassis examined arrangements at Sutton Emergency Hospital, where patients were attended by pessimistic civilian psychiatrists with little

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<sup>26</sup> M. Harrison, *Medicine and Victory: British Military Medicine in the Second World War* (Oxford, 2004), p. 183; Shephard, *A War of Nerves: Soldiers and Psychiatrists, 1914-1994*, p. 171; Thalassis, ‘Treating and Preventing Trauma’, ch. 5.

<sup>27</sup> N. Thalassis, ‘Soldiers in Psychiatric Therapy: The Case of the Northfield Hospital, 1942-1946’, *Social History of Medicine*, 20 (2007), pp. 351-68; T. Harrison, *Bion, Rickman, Foulkes and the Northfield Experiments: Advancing on a Different Front* (London, 2000).

knowledge of war neuroses. The casualties were therefore treated along the same lines as civilian patients. Their prognosis was invariably poor as the specialists believed that they were constitutionally inferior and unable to return to duty.<sup>28</sup> Military and civilian psychiatrists therefore differed in their views on prognosis and value of treatment.

This work will examine the treatment of neuropsychiatric casualties in the RAF, by examining therapeutic practice in station sick quarters and specialist facilities.<sup>29</sup> Therapy was delivered by a range of medical professionals, including generalist medical officers and neuropsychiatric specialists, who each provided different levels of care. This extended from preliminary treatment on the station to advanced care in a hospital or neuropsychiatric facility. The need for manpower economy and combat efficiency underpinned the treatment process and the thesis will examine how this shaped and dictated the course of therapy.

### ***Medicine and the Management of Modern Warfare***

While this thesis is a case-study of the RAF neuropsychiatric division, it should not be viewed in isolation. It was one of many specialist areas, which together comprised an efficient medical machine. This work therefore makes a contribution to the ongoing study of the relationship between war and medicine. Modern warfare was often regarded as separate from society and culture; its harshest critics framed it as a disastrous departure from ‘the march of civilization’, of which medicine was both handmaiden and a ‘stunning exemplar.’ Many scholars believed that war was inimical to health and welfare, and could never be the centre of attention for fear of endorsing militarism.<sup>30</sup> But war and medicine

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<sup>28</sup> Thalassis, ‘Treating and Preventing Trauma’, p. 152.

<sup>29</sup> The vast majority of RAF neuropsychiatric cases were treated in UK hospitals. Records covering overseas theatres were not marked for permanent preservation by the Ministry of Defence.

<sup>30</sup> This was certainly the case in the era of the new social history (1970s and 1980s): Roger Cooter, ‘Medicine in War’, in D. Brunton (ed.), *Medicine Transformed: Health, Disease, and Society in Europe, 1800-1930* (Manchester, 2004), pp. 331-2.

are not separate from society and culture: they are socially-produced and evolve with the rest of humanity.<sup>31</sup>

Not only are war and medicine inextricably bound by society and culture, they are part and parcel of modernity. Writing in the era of the Great War, Max Weber identified a myriad of social processes and forms that he saw crystallising about him. These included the growth, differentiation, and integration of bureaucracy; the rise of organisational and managerial systems; the standardisation and routinisation of administrative action; and the employment of experts to define and order these systems. Unification and uniformity were important aspects of ‘rational’, as opposed to, ‘traditional’ society.<sup>32</sup> The modernising project had a great impact on medicine, as it did to other parts of social and cultural life.

In Britain, the public and private sectors began to use medical science to improve ‘efficiency’, particularly in the organisation, mobilisation, and management of society. In an age of imperial and industrial competition, argued Pickstone, the health and strength of the population was a central concern. The productive power of the economy depended on a large, able-bodied workforce. As a result, the state and armed forces took an increasingly ‘productionist’ approach to medicine, commissioning studies into disease, hygiene, and antenatal care. The improvement of the health and productive capacity of military and civil populations was the anticipated result.<sup>33</sup> According to Harrison, the reduction of disease and the promotion of health were part of a modernising ideology shared by all industrialised nations. They recognised that medicine and public health played a vital role in the rational management of the state’s human resources.<sup>34</sup> In times of

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<sup>31</sup> T. Travers, *The Killing Ground: The British Army, the Western Front and the Emergence of Modern Warfare, 1900-1918* (Barnsley, 2003), p. xvii.; R. Cooter, ‘Medicine and the Goodness of War’, *Canadian Bulletin of Medical History*, 7 (1990), p. 147.

<sup>32</sup> Max Weber, ‘Bureaucracy’, in H.H. Gerth and C. Wright Mills (eds.), *From Max Weber: Essays in Sociology* (London, 1948), pp. 196-244.

<sup>33</sup> John Pickstone, ‘Production, Community and Consumption: The Political Economy of Twentieth Century Medicine’, in R. Cooter and J. Pickstone (eds.), *Medicine in the Twentieth Century* (Amsterdam, 2000), pp. 7-9.

<sup>34</sup> M. Harrison, *Disease and the Modern World: 1500 to the Present Day* (Cambridge, 2004), p. 146.

war, the efficiency of human resources was more important than ever and medicine played a fundamental role in the management of *materiel*.

The modernising project therefore extended to the armed forces and their respective medical services, where the principles of industry were increasingly applied.<sup>35</sup> Frederick Taylor's theory of scientific management had grown in popularity from the late nineteenth century, which promoted the value of standardisation, systemisation, and specialisation in industry. Taylor believed that efficient work could only be achieved if men and machines were fully integrated.<sup>36</sup> Aspects of Taylorite theory were applied in the military context. Harrison's studies of military medicine give several examples of this in action. During the Great War, he argued, the British army built an efficient 'medical machine' on the Western Front. Managerial reforms in the AMS allowed for the better observation of men and morale, which reduced wastage and improved efficiency. The casualty clearing process resembled a factory production line, with a chain of evacuation extending from medical officers at the front, through dressing stations and mobile hospitals, to permanent establishments at the base. The medical machine was also flexible to allow for changes to be made to preserve manpower and combat efficiency.<sup>37</sup> By the Second World War, the medical machine had grown larger and more sophisticated. In an age of total war, with manpower at a premium, all resources in the army had to be utilised effectively and supported by excellent medical services. The application of specialist medicine was deemed essential to ensure prevention and the effective treatment of illness,

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<sup>35</sup> Roger Cooter and Steve Sturdy, 'Of War, Medicine and Modernity: Introduction', in R. Cooter, S. Sturdy and M. Harrison (eds.), *War, Medicine and Modernity* (Stroud, 1999), p. 3.

<sup>36</sup> F. Taylor, *The Principles of Scientific Management* (London, 1911), pp. 9-29.

<sup>37</sup> M. Harrison, *The Medical War: British Military Medicine in the First World War* (Oxford, 2010), p. 63. See also: R.L. Atenstaedt, *The Medical Response to Trench Diseases in World War One* (Cambridge, 2011), p. 7.

injury, and disease. The medical machine expanded to incorporate specialist knowledge.<sup>38</sup> This was common in both military and civilian spheres.

The specialisation of medicine can be viewed simply as the division of medical labour: the erection of specialist boundaries, influenced by the expansion and accumulation of medical knowledge.<sup>39</sup> According to Rosen, this process began in the nineteenth century with social and economic forces creating conditions favourable to specialty formation. The movement of people and ideas, immigration, and the spread of shipping and communications accelerated this process.<sup>40</sup> Stevens concluded that specialisation was inevitable and inescapable for it was the natural accompaniment to scientific advance.<sup>41</sup> The historiography of specialisation is well-developed, with many accounts charting the rise of medical specialties and their impact on the development of modern medicine as a whole.<sup>42</sup> The history of British psychiatry has received extensive attention, and neurology has recently been addressed. Scholars have found that since the late nineteenth century, these professions witnessed the rise and fall of the asylum, the establishment of professional societies and organisations, the challenge of shell-shock, the emergence of psychoanalysis, and a physiological turn in the interwar years, to give but a few examples.<sup>43</sup> The most significant developments were in the areas of therapeutic

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<sup>38</sup> Harrison, *Medicine and Victory: British Military Medicine in the Second World War*, p. 1.

<sup>39</sup> Gerry Larkin, 'Health Workers' in R. Cooter and J.V. Pickstone (eds.), *Companion to Medicine in the Twentieth Century* (London, 2003), p. 531.

<sup>40</sup> G. Rosen, *The Specialization of Medicine with Particular Reference to Ophthalmology* (New York, 1944), pp. 14-30.

<sup>41</sup> R. Stevens, *American Medicine and the Public Interest* (New Haven & Berkeley, 1971 & 1988), p. 4.

<sup>42</sup> For an excellent survey of specialisation in the west, see: G. Weisz, *Divide and Conquer: A Comparative History of Medical Specialization* (Cary, 2005).

<sup>43</sup> E.g. A. Babington, *Shell Shock: A History of Changing Attitudes to War Neurosis* (Barnsley, 2003); S.T. Casper, *The Neurologists: A History of a Medical Specialty in Modern Britain, c. 1789-2000* (Manchester, 2014); H. Freeman and G.E. Berrios (eds.), *150 Years of British Psychiatry, 1841-1991*, (2 Vols., London, 1991) ii; L.S. Jacyna and S.T. Casper (eds.), *The Neurological Patient in History* (Rochester, 2012); T. Loughran, 'Shell-shock in First World War Britain: an intellectual and medical history, c. 1860-c.1920', (Queen Mary, Univ. London Thesis, 2006); J. Oppenheim, *Shattered Nerves: Doctors, Patients, and Depression in Victorian England* (Oxford, 1991); E. Shorter, *A History of Psychiatry: From the era of the asylum to the age of Prozac* (London, 1997); E. Showalter, *The Female Malady: Women, Madness and English Culture, 1830-1980* (London, 1980).

innovation and changes in psychiatric knowledge and practice.<sup>44</sup> RAF neuropsychiatrists went to war armed with a sense of therapeutic optimism, for treatment techniques were advancing and the physiological turn gave the specialties enhanced credibility.

In wartime, specialisation was not only desirable, it was essential. In his study of the professional development of orthopaedics, Cooter suggested that Taylorite principles had shaped the organisation of the military medical profession during the Great War. Efficient management was required to treat mounting casualties and the specialisation of medicine was one way of ensuring that treatment was rational and efficient. Orders were issued on the proper sorting, treatment, labelling, and transport of casualties, and branches of medicine were reorganised, which demonstrated greater functional unity and efficiency.<sup>45</sup> What is more, specialisation thrived in wartime, argued Stevens, with the army acting as a ‘filtering system for quality.’<sup>46</sup> Howell substantiated this claim in his study of cardiology. He believed that the conditions of the Great War were conducive to specialty development: war provided large groups of patients, specialist facilities, and the financial resources to support specialisation.<sup>47</sup> Due to medicine’s newly-found functional utility, there was a marked shift from general medicine to medical specialties, and the supersession of clinical medicine by disease prevention.

By the Second World War, the armed forces were fully committed to specialisation and this was reflected in the structure of medical services. The AMS led the way, for they had recognised the value of specialist medicine from as early as the Great War. The official history noted that upon enlistment, medical officers took advanced instruction in a specialist area that was deemed important, with specialties including surgery, tropical

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<sup>44</sup> E.g. German Berrios, ‘Early Electroconvulsive Therapy in Britain, France and Germany: a conceptual history’, in Freeman and Berrios (eds.), *150 Years of British Psychiatry: The Aftermath*, ii, pp. 3-6.

<sup>45</sup> R. Cooter, *Surgery and Society in Peace and War: Orthopaedics and the Organization of Modern Medicine, 1880-1948* (Basingstoke, 1993), p. 123.

<sup>46</sup> Stevens, *American Medicine and the Public Interest*, p. 127.

<sup>47</sup> J.D. Howell, ‘Soldier’s Heart: The Redefinition of Heart Disease and Specialty Formation in Early Twentieth-Century Great Britain’, *Medical History*, 5 (1985), pp. 34-52.

medicine, pathology, and hygiene.<sup>48</sup> By the Second World War, specialisation was widespread and advanced: the numbers of specialists had grown from eight in 1923 to over 3,000 in 1945.<sup>49</sup>

The specialisation of military medicine was not only important in terms of the division of labour; it also facilitated the prevention of disease. In the army, for instance, hygiene was considered to be the most important specialty for its ultimate responsibility was the treatment and prevention of disease and ill-health, broadly-defined. This area was concerned with anti-malarial organisation and environmental management, for example.<sup>50</sup> Moreover, scholars have demonstrated that importance of prevention in their studies of military medicine. The use of antibiotics, mass vaccination, and prophylactics were considered essential. They found that, on the whole, attitudes towards prevention were pro-medical.<sup>51</sup>

The Royal Air Force Medical Services (RAFMS) were also committed to specialist medicine from their inception in the interwar years. The official history indicated that a limited number of medical specialties were included in the fledging service but they demonstrated a renewed commitment in 1927, through the introduction of the Central Medical Establishment (CME). The CME was an administrative body that coordinated specialist work and employed specialists in six different areas from 1927. By the end of the Second World War, it had consultants employed in 13 specialist areas, showing that

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<sup>48</sup> F.A.E. Crew (ed.), *The Army Medical Services, Administration* (2 Vols., London, 1953), i, p. 81.

<sup>49</sup> *Ibid.*, pp. 149, 152.

<sup>50</sup> Crew (ed.), *The Army Medical Services, Administration*, ii, chs. 2-4.

<sup>51</sup> E.g. P. Baldry, *The Battle Against Bacteria: A Fresh Look* (Cambridge, 1976); A.M. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States Since 1880* (Oxford, 1985); Mark Harrison, 'Sex and the Citizen Soldier: Health, Morals and Discipline in the British Army during the Second World War', in R. Cooter and M. Harrison (eds.), *Medicine and Modern Warfare* (Amsterdam, 1999), pp. 225-50; M. Harrison, 'Medicine and the Culture of Command: the case of Malaria Control in the British Army during the two world wars', *Medical History* 40 (1996), pp. 437-54; J. Laffin, *Combat Surgeons* (Stroud, 1999); H.J. Parish, *Victory with Vaccines* (Edinburgh, 1968).

the value of specialisation had been recognised.<sup>52</sup> In a separate official study, it is apparent that the focus on specialisation had yielded results, as major advances were made in oxygen management, cabin heating, night vision, clothing, survival, and fatigue.<sup>53</sup>

Popular accounts of the development of aviation medicine emphasised the fruits of specialisation. Gibson and Harrison, for instance, celebrated the great advances made by specialist researchers, including the development of flying suits and oxygen provision.<sup>54</sup> This Whiggish trajectory is not representative, for the acquisition of medical knowledge in the RAF was often reactionary and based upon ‘trial and error.’ Other publications continued in this vein, emphasising the achievements of specialisation, whilst neglecting the research process, relationships between researchers, and attitudes of personnel to medical innovation.<sup>55</sup>

Mayhew’s study of the treatment of RAF burn casualties during the Second World War is a notable exception. Focussing primarily on Archibald McIndoe’s ‘Guinea Pigs’, Mayhew gave equal attention to the medical and military efforts made on behalf of injured flying personnel. She argued that burn casualties were unique because of the volume and severity of their injuries, and because of the environment in which those injuries were sustained.<sup>56</sup> The RAF’s engagement with burn casualties took place in a military framework; the state did not have to assume responsibility for these injured personnel.

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<sup>52</sup> S.C. Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, (3 Vols, London, 1954), i, pp. 65-73.

<sup>53</sup> E.g. Samuel Rexford-Welch, ‘The Royal Air Force Medical Services’, in A.S. MacNalty and W.F. Mellor (ed.), *Medical Services in War* (London, 1968), pp. 215-36.

<sup>54</sup> T.M. Gibson and M.H. Harrison, *Into Thin Air: A History of Aviation Medicine in the RAF* (London, 1984), pp. 60-3.

<sup>55</sup> E.g. R.J. Benford, *The Heritage of Aviation Medicine: An Annotated Directory of Early Artifacts* (Washington, 1979); E. Engle and A.S. Lott, *Man in Flight: Biomedical Achievements in Aerospace* (Annapolis, 1979); D.H. Robinson, *The Dangerous Sky: A History of Aviation Medicine* (Henley-on-Thames, 1973).

<sup>56</sup> E.R. Mayhew, *The Reconstruction of Warriors: Archibald McIndoe, the Royal Air Force and the Guinea Pig Club* (London, 2004), p. 18. See also: R. Hillary, *The Last Enemy* (London, 1942).

McIndoe created a unique therapeutic environment at East Grinstead that reconstructed the 'heroes' of the air war and the very concept of 'heroism' itself.<sup>57</sup>

In the Royal Navy, specialisation was considered essential but was difficult to achieve. The RNMS suffered from an acute shortage of medical personnel and their quota of doctors dropped consistently. By 1945, the situation was perilous with only three medical officers per thousand seamen.<sup>58</sup> Despite this, the RNMS allocated its limited number of specialists and medical officers to sick berth duties, hospital ships, the blood transfusion service, neuropsychiatry, dentistry, and preventive medicine.<sup>59</sup> Preventive measures were only established gradually, however, when their potential value was proven. Initially, issues of hygiene were only a concern when seamen went ashore but the Medical Director-General, a specialist in preventive medicine and epidemiology, warned that preventive measures should be applied in all situations.<sup>60</sup> As a result, the navy established a number of measures, which were designed to prevent infectious disease and other illnesses, such as malarial prophylaxis and environmental management.<sup>61</sup> Prevention was therefore considered important across the armed forces and it was the concern of every medical specialty.

Management techniques, efficiency, specialisation, and prevention will be explored extensively in this work. The historiography will be challenged, however, as it implied that medicine was advanced and pro-active during the Second World War. Before the conflict, the young and inexperienced RAF had little opportunity to examine the medical problems of flying, including nervous and mental disorders. A reactionary stance was inevitable and research was deemed essential to preserve manpower.

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<sup>57</sup> Mayhew, *The Reconstruction of Warriors: Archibald McIndoe, the Royal Air Force and the Guinea Pig Club*, p. 202.

<sup>58</sup> Coulter (ed.), *The Royal Naval Medical Services, Administration*, i, p. 16.

<sup>59</sup> *Ibid*, chs. 4, 9, 10, 12, & 16.

<sup>60</sup> Coulter (ed.), *The Royal Naval Medical Services, Administration*, i., p. 173.

<sup>61</sup> *Ibid*, ch. 12.

### *The Social and Cultural History of Air Power*

Literature on the RAF in the Second World War is prolific and expands almost on a daily basis. As a result, we know much about the great aerial battles of the Second World War, the operational commands, and the broader social history of the air force.<sup>62</sup> Only in the last 25 years has air power – the application of aircraft to military conflict – received scholarly attention but the focus has been on doctrine, combat, and aircraft production.<sup>63</sup> More recently, scholars have turned their attention to the social and cultural history of air power. It was recognised that air forces have their own social history separate from, if related to, the nature of combat. Matters of recruitment, the social origins of recruits, and their educational and cultural backgrounds have begun to be analysed.<sup>64</sup>

Stone, for instance, examined the experience of servicewomen in the Women's Auxiliary Air Force (WAAF). Through the 'double helix' model of gender relations, she focussed on women as workers and the adoption of military uniform, and considered the ways in which they built an identity as integrated members of a military service.<sup>65</sup> Francis examined how 'the flyer' was represented in British popular culture during the Second World War and found that cultural representations encompassed both the gentle, chivalrous warrior and the uncompromising agent of destruction. He discussed how

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<sup>62</sup> E.g. S. Bungay, *The Most Dangerous Enemy: A History of the Battle of Britain* (London, 2009); M. Hastings, *Bomber Command* (London, 1980); P. Bishop, *Bomber Boys: Fighting Back 1940-1945* (London, 2011).

<sup>63</sup> E.g. T.D. Biddle, *Rhetoric and Reality in Air Warfare: the Evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton, 2002); C. Barnett, *The Audit of War: the Illusion and Reality of Britain as a Great Nation* (London, 1986); S. Ritchie, *Industry and Air Power: the Expansion of British Aircraft Production, 1935-1941* (London, 1997); J. Zeitlin, 'Flexibility and Mass Production in War: Aircraft Manufacture in Britain, the United States and Germany, 1939-1945', *Technology and Culture*, 36 (1995), pp. 46-79; S. Cox and P. Gray (eds.), *Air Power History: Turning Points from Kitty Hawk to Kosovo* (London, 2002).

<sup>64</sup> Richard Overy, 'Introduction', in Cox and Gray (eds.), *Air Power History: Turning Points from Kitty Hawk to Kosovo*, pp. xi-xii.

<sup>65</sup> T. Stone, 'Creating a (Gendered?) Military Identity: the Women's Auxiliary Air Force in Great Britain in the Second World War', *Women's History Review*, 8 (1999), pp. 605-24. For the reverse, see: R. Pennington, *Wings, Women and Warfare: Soviet Airwomen in World War II* (Washington, 1992).

matters of courage, cowardice, and fear impacted on the masculinity of flyers and shaped their wartime experience.<sup>66</sup>

Most recently, Ellin examined the 'lives and emotions' of RAF ground personnel. He criticised the historiography for its focus on the flyer and air power, and argued that the experience of four-fifths of the service are too often neglected. Ground personnel were frequently reduced to stereotypes, the 'Erk', who serviced the aircraft or the WAAF 'chop girl', whose sexual promiscuity presaged death. He argued that a study of the gendered hierarchy of ground trades was essential, for this deeply influenced the experiences of personnel. Some felt that they were overstretched, while others felt that they were not 'doing their bit.'<sup>67</sup> While Ellin is correct to address the bias toward the flyers, ground personnel were employed to support the elite flying personnel in their duties.

The most important works that have shaped this thesis have focussed on allied and Commonwealth aircrew experience. Wells' *Courage and Air Warfare* was the first dedicated study of the effects of war on the morale of allied aircrews in the Second World War. He compared the processes of aircrew selection and classification, and the impact of operational flying on the United States Eighth Air Force and RAF Bomber Command. This work raises important themes and questions. Wells identified a commonality between the American and British air forces, which was the importance of the 'human element.' While technology and tactics were significant, the quality of aircrews was the essential factor. Morale was generally high and both forces produced effective leaders. Differences between the nations were also apparent, particularly in the area of aircrew selection. The American system drew upon experience gained in the Great War and took a scientific approach, whereas the British equivalent was based on traditional notions of valour and social class. Despite the differences, Wells argued that both systems worked and produced

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<sup>66</sup> Francis, *The Flyer: British Culture and the Royal Air Force, 1939-1945*, pp. 201-4.

<sup>67</sup> D. Ellin, 'The Many Behind the Few: The Lives and Emotions of Erks and WAAF's of RAF Bomber Command, 1939-1945', (Warwick Univ. Thesis, 2015), pp. 347-57.

thousands of healthy and motivated flying personnel. He concluded that the resolve of aircrew against the stresses of combat was remarkable and that courage was certainly an important variable in the management of aerial warfare.<sup>68</sup>

English's work on the Royal Canadian Air Force (RCAF) was another important contribution to the historiography. He examined the RCAF's selection and training procedures and the policies for aviators who were unsuited to operational duties. English examined the overall effectiveness of the RCAF's use of manpower and questioned if flying personnel were the 'cream of the nation's crop.' By focussing on the human element of air power, English argued that personnel considerations had as much influence on the effectiveness of air forces as material and technological factors.<sup>69</sup>

All works on the social and cultural history of air power have emphasised the importance of the human element. While this thesis is primarily a medical history, it will also engage with this facet of air power history. It will explore how the neuropsychiatric division preserved and developed the flying personnel of the RAF, through the prevention and treatment of mental illness, and attempts to reform the selection and screening of aircrew. The ultimate aim of the division was to ensure efficiency and flying personnel were the primary focus.

### ***War and Society, 1939-45***

Like the history of the RAF, much has been published on Britain in the Second World War. Scholarly works raise a number of fundamental questions on the relationship between war, the armed forces, and British society. As war is not separate from society and culture, this study draws upon this historiography.

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<sup>68</sup> Wells, *Courage and Air Warfare*, pp. 51, 132, 21-2, 209-13.

<sup>69</sup> English, *The Cream of the Crop: Canadian Aircrew, 1939-1945*, pp. 17-40, 61-80, 103-30, 145.

Crang, for instance, explored the British Army as a social institution and assessed the impact of the mass civilian intake and attempts to integrate these citizen soldiers into the armed forces. Through case studies of other rank and officer selection, promotion, officer-man relations, working life, welfare, and education, he concluded that a great deal of social change took place in the army of the 'People's War'. It became more responsive to human values, the needs and aspirations of soldiers, and more democratic in spirit.<sup>70</sup> French has also considered the social composition of the army in his study of the combat performance of soldiers. He argued that there were three elements that sustained fighting ability: the conceptual, the material, and the moral. The British never believed that they could win the war by 'pitting man against man', for it was 'better to be soldiers than warriors.'<sup>71</sup> Most recently, Newlands built upon this scholarship by using the 'military body' as a case study. By analysing examinations of physical appearance, aesthetics, and the adornment and manipulation of the soldier's body, she uncovered the aims and operations of the army and the wartime state, as they sought to prepare men for warfare. She also found evidence of the investments made by men in their own bodies to 'construct themselves as citizens and soldiers.'<sup>72</sup>

Other scholarship has focussed on broader society and culture, particularly the psychological capacity of the British people. Overy argued that interwar Britain was a nation enveloped in a culture of pessimism and crisis. The First World War had irreparably fractured civilisation and this view was transmitted to the nation via radio, the press, paperback literature, and public information films. Britain became accustomed to

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<sup>70</sup> J. Crang, *The British Army and the People's War, 1939-1945* (Manchester, 2000), pp. 139-42.

<sup>71</sup> D. French, *Raising Churchill's Army: The British Army and the War against Germany, 1919-1945* (Oxford, 2000), pp. 11, 274-85.

<sup>72</sup> E. Newlands, *Civilians into Soldiers: War, the Body, and British Army Recruits, 1939-1945* (Manchester, 2014), pp. 8-9, 184-90.

seeing the world in pessimistic terms, which could only be resolved by war.<sup>73</sup> Recent works have focussed on the maintenance of civilian morale and the capacity of British people to withstand the psychological strain of bombing. Like Overy, Shephard attributed this concern to the fears of British society. There was a common belief that Britain was powerless against aerial bombardment; a view that was endorsed by military theorists, major politicians, reputable scientists, alarmist publications, and apocalyptic films. Mass panic and hysteria was expected for Britain was a pampered nation that lacked courage and discipline – civilian neurosis centres were set up as a result.<sup>74</sup>

Casper extended this argument in his study of the Anglo-American research alliance during the Second World War. Expected neurotic casualties in the civilian population gave the enemy the impression that Britain was psychologically vulnerable. Increasing mental instability would have implied diminishing morale, which would be exploited in propaganda. The Anglo-American research alliance, however, debated the impact of air raids on the mental health of the population and found that they had little effect on morale and health, with cases decreasing from September 1940.<sup>75</sup> Indeed, Jones, Woolven, Durodie and Wessely supported this view and concluded that British people faced air raids with courage and resilience. Morale fluctuated but never broke and large scale panic was never experienced.<sup>76</sup>

This thesis draws upon the themes of this historiography. Flying personnel were the product of this society and therefore carried their attitudes, values, and experiences into the wartime air force. This work will examine preconceptions on the psychological

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<sup>73</sup> R. Overy, *The Morbid Age: Britain and the Crisis of Civilisation, 1919-1939*, (London, 2009), pp. 1-8. See also: R. Mowat, *Britain Between the Wars, 1918-1940* (London, 1955).

<sup>74</sup> Shephard, *A War of Nerves*, pp. 174-5.

<sup>75</sup> S.T. Casper, 'The Origins of the Anglo-American Research Alliance and the Incidence of Civilian Neuroses in Second World War Britain', *Medical History*, 52 (2008), p. 383.

<sup>76</sup> E. Jones, R. Woolven, B. Durodie and S. Wessely, 'Civilian Morale During the Second World War: Responses to Air Raids Re-examined', *Social History of Medicine*, 17 (2004), pp. 463-79.

stability and courage of civilians, and will make conclusions on how this shaped the practice of neuropsychiatry and the administrative decisions of the air force.

### **Sources and Methodology**

This is a qualitative source-based research project that gives due attention to the experiences of the RAF neuropsychiatric division in the Second World War. A thematic approach will be taken to allow for the in-depth assessment of the various duties of the division and to highlight developments over the course of the conflict. Like war, however, developments did not follow a strict timetable. It is therefore impossible to stick to a chronological timeline and to bring every theme up to 1945. In the area of treatment, for instance, many records are protected by data legislation and this work will therefore draw conclusions on what is available. A broad range of primary material will be consulted and sources can be divided into three major types.

Official documentary material forms the basis of the research. Documents will be examined from the Air Ministry, War Office, Ministry of Health, Medical Research Council, Cabinet Office, and Ministry of Pensions' file holdings. The materials are frustratingly diffuse and this thesis attempts to structure them into a coherent linear narrative. The documents are primarily administrative in nature and detail the construction of official neuropsychiatric measures and interventions, the understanding of neuropsychiatric disorders, and the application of specialist knowledge in the RAF. This material provides crucial information on the organisation, purpose, and practice of neuropsychiatry, and relationships between specialists, operational commanders, and flying personnel. Official publications will also be examined. *Air Publications*, for instance, disseminated the results of neuropsychiatric research, the application of

preventive measures, and communicated decisions of policy. This material is particularly useful on occasions where documentary materials are unavailable.

It is important to be aware of the limitations of these sources. Official documentary evidence only reflects the public opinions and practices of the neuropsychiatric division. The documents, on the most part, were written to form an official paper trail, outlining progress and developments over time. They were often received by high-ranking medical administrators and operational commanders, who were driven by positive results. The content of certain materials may have been carefully crafted, as administrative authority and therapeutic freedom depended upon the support of these officials. Moreover, official documents do not highlight the personal experiences and relationships of personnel of the neuropsychiatric division. It is therefore essential to examine personal sources to gain further evidence.

Personal sources offer a unique insight to service life and practices. The papers of medical officer David Stafford-Clark, for instance, contain personal correspondence, diaries, and memoirs. From these papers it is possible to gauge personal attitudes to service, relationships between divisional personnel and the flyers, research priorities, and broader attitudes about the war. A small number of memoirs and auto-biographies will also be explored, as revealing anecdotes and personal opinions can be found. Furthermore, oral history interviews with flyers will be integrated to gauge the opinions and experiences of personnel on aspects of RAF service.

This work will also draw upon a range of medical sources. Published research papers will be critically assessed to convey the understanding of neuropsychiatric disorders and approaches to treatment. The primary sources in this area are: *The British Medical Journal*, *The Lancet*, *Journal of the Royal Naval Medical Services*, and contemporary medical textbooks. Newly-released medical board record cards and treatment records have

been examined in chapters concerning the treatment of neuropsychiatric casualties in the two world wars. Royal Flying Corps medical board record cards detail the diagnosis and disposal of flying personnel during the Great War, allowing for the analysis of nomenclature, quantification of conditions, prognosis, and returns to duty. Approximately 24,000 of these cards have been manually processed and conclusions on the incidence of mental disorders will be made. The treatment records of the Military Hospital for Head Injuries, Oxford, contain information on the treatment of service patients with head injuries and associated conditions. The thesis draws upon the treatment records of RAF flying personnel who had developed a neuropsychiatric disorder. These sources explain in some detail the exchanges between neuropsychiatric consultants and their cases, treatments administered, progress made, and final disposal. The inclusion of these sources gives this thesis a unique dimension, as such material is conspicuously absent from the historiography.

It is also important to clarify what this thesis does not address from the outset. Certain themes and trends in the history of modern medicine and military history may be expected in this work but have not been engaged with in any detail. It is therefore important to provide justifications for what may be perceived as key omissions. First of all, this is not a work of military history. Scholars of air power and war studies may criticise this study for its lack of engagement with military developments. The experiences of flying personnel in certain operations are outlined, such as the Battles of France and Britain, to contextualise early neuropsychiatric practice and recommendations. Blow-by-blow accounts are not necessary, however, as operations have been examined by qualified military historians. A discussion of morale may also be expected but this concept has eluded military scholars and contemporaries. The neuropsychiatric division believed that

they were maintaining morale through the prevention, observation, and treatment of neuropsychiatric casualties, which is the focus of this thesis.

Secondly, this is not a history of the patient. Since Porter's cry for a 'medical history from below', where at least an acknowledgement to the 'patient's view' was deemed essential, it is often expected that accounts of modern medicine should engage with the patient's narrative.<sup>77</sup> In a separate work, Porter lamented, 'we have histories of disease but not of health, biographies of doctors but not of the sick' – written at a time when the historiography was condemned for its Whiggish trajectory and 'scientific' focus.<sup>78</sup> Such imbalances have begun to be addressed but it is not always possible. While the patient's view is important, it is often non-existent. This thesis will not engage with patient experience in the RAF because this has never been fully expressed.

The RAF neuropsychiatric division did not view their casualties as patients; they instead treated 'cases.' Neuropsychiatry was largely a utilitarian activity, guided by principles of scientific management. The interests of practitioners were often dictated by the needs of the state and military-medical machine. Sympathy for the casualty was therefore superseded by military considerations. Neuropsychiatric practitioners had to approach their charges with an objective eye, for it was their duty to return these men to their former efficiency. 'Cure' was not in their vocabulary; they were forced to view cases as *materiel* in order to understand neuropsychiatric disorders and to devise efficient programmes of treatment. Indeed, some practitioners could be accused of dehumanising their cases: they were not people, for they were defined by their position in the aircraft,

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<sup>77</sup> R. Porter, 'The Patient's View: Doing Medical History from Below', *Theory and Society*, 14 (1985), pp. 175-98. On the doctor-patient relationship, see: A. Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1770-1911* (Cambridge, 1994); M. Fissell, *Patients, Power and the Poor in Eighteenth Century Bristol* (Cambridge, 1991); M. Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (London, 1973); N.D. Jewson, 'The disappearance of the sick man from medical cosmology, 1770-1870', *Sociology*, 10 (1976), pp. 225-44; D. Porter and R. Porter, *Patient's Progress: Doctors and Doctoring in the Eighteenth Century England* (London, 1989).

<sup>78</sup> Roy Porter, 'Introduction', in R. Porter (ed.), *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society* (Cambridge, 1985), p. 1.

their disorder, and their potential to render effective service. Others took a more sympathetic approach, discussing emotions and negative experiences, but only insofar as this would assist in diagnosis and treatment. What is more, the stigma surrounding mental illness in the Second World War has also discouraged the afflicted from sharing their experiences in the post-war years. Mental disorder was often held in the same contempt as cowardice and their reluctance to recount the circumstances of their illness is not surprising.

### **Thesis Summary**

This study is divided into two sections. Section I is formed of two chapters and considers the ‘making’ of neuropsychiatry in the Royal Air Force. Chapter 1 situates neuropsychiatry within the broader historical context of air power and military medicine. Focussing on the period 1914-38, it assesses the approach taken to the research and understanding of the disorders of flying personnel and how these were managed by medical personnel of the army, naval, and air force medical services. It will examine the social, medical, and cultural factors that shaped medical thought and practice, by considering the elite culture of the flying services and the men employed on flying duties. Research conducted during this period formed the basis of neuropsychiatric knowledge in the RAF, with the understanding of disorders reflected in the organisation, administration, and practices of the division. This chapter engages with a range of medical journals, textbooks, official sources, and memoirs to chart the development of knowledge over time. Most importantly, it integrates previously unexplored medical board record cards, which allow for the analysis of nomenclature and the incidence of conditions in the Royal Flying Corps.

Chapter 2 is set on the eve of war and outlines the establishment of the RAF neuropsychiatric division. It situates neuropsychiatry within the broader medical service

and culture of specialisation. This allows for the assessment of the division's position in the RAF's medical machine and to establish what was expected of its practitioners. Neuropsychiatry was fundamentally shaped by the needs of the state, air force, and specialist personnel and this chapter examines how this affected practice. In extension to this, the preparations made for the prevention and reception of neuropsychiatric casualties are explored. Considerations of manpower economy, the need for efficient management, and competing demands from government agencies are assessed. This chapter therefore explores the mobilisation and militarisation of medicine, and the making of neuropsychiatry in the RAF.

Section II is comprised of five chapters and examines the role of neuropsychiatry in the management of aerial warfare. Chapter 3 considers the role of the neuropsychiatric division in the selection of flying personnel and attempts to make procedures more scientifically rigorous. It will show that the methods of industrial psychology were enlisted to provide assessments of intelligence and aptitude upon enlistment. Psychiatrists of the neuropsychiatric division decided that procedures were inadequate for they were admitting individuals who were predisposed to mental disorders. This chapter will therefore consider criticisms of the methods of selection and research into the nature of predisposition. It will question how far psychiatric knowledge was valued in the RAF and wider neuropsychiatric division. It will assess the decisions made on reform and further research into temperament and predisposition.

Chapter 4 is a case study of the practical application of neurology in the RAF. This thesis argues that neurology was the dominant specialty in the neuropsychiatric relationship and this chapter questions what neurologists had to offer the service. It will critically assess the role of the division's Consultant in Neurology in the establishment of the Military Hospital for Head Injuries and the provisions made for neurotic casualties.

This chapter makes extensive use of unexplored case notes from the archives of St Hugh's College, Oxford, which forms a significant contribution to the historiography. It will examine the treatment of neuropsychiatric casualties in this neurosurgical hospital to determine how far this facility assisted in the maintenance of manpower economy and combat efficiency.

Chapter 5 re-examines the issue of 'lack of moral fibre.' The historiography has sustained the myth that neuropsychiatry was at the heart of LMF and this chapter dispels it. It assesses the context in which LMF was created, examining the effects of disastrous early operations on the morale and confidence of the air force, and the neuropsychiatric casualties sustained during this period. The chapter documents the construction and administration of LMF policy to establish what role the neuropsychiatric division and medical service had in its application. It also examines criticisms levelled at the measure, including its disciplinary emphasis and its effect on the work of the neuropsychiatric division. The chapter draws upon previously unexplored oral history evidence to gauge the opinions of flying personnel on the measure in order to establish its deterrent effects. Overall, the chapter aims to establish what role the division had in the application of LMF and if it was able to effect change to maintain manpower and combat efficiency.

Chapter 6 is a study of research undertaken by the division into the problem of 'flying stress.' This was the first systematic attempt to understand the psychological problems of flying personnel. The chapter will examine the role of the division in the research of this syndrome to establish the nature of mental disorders in the air force and the stresses of operational flying. Following the research into flying stress, the RAF had scientifically-informed nomenclature in place and this chapter will therefore question how neuropsychiatric knowledge was communicated across the air force and in what ways it was applied. This chapter will show that research into flying stress represented a

watershed in the understanding of the neuropsychiatric problems of flying personnel, which was conducive to the maintenance of manpower and combat efficiency.

The final chapter examines the treatment of neuropsychiatric casualties by medical officers and neuropsychiatric specialists. It analyses arrangements made for the observation and treatment of casualties on stations and in dedicated specialist facilities. The duties of both medical officers and neuropsychiatric specialists will be considered, for each had a fundamental role to play in the psychological care of flying personnel. The chapter will examine the diagnosis, treatment, and prognosis of neuropsychiatric disorders to establish the principles that guided therapy and disposal. Overall, the chapter aims to assess whether the neuropsychiatric care of flying personnel made an important contribution to manpower economy and combat efficiency.

## **Section I: The Making of Neuropsychiatry in the Royal Air Force**

### **Chapter 1**

#### **Per Ardua:<sup>1</sup>**

### **The Origins and Development of Neuropsychiatry in the British Flying Services, 1914-38**

#### **Introduction**

In the early twentieth century, aviation was a very public technology. The notion of man in flight had captivated the minds of the British people since the pioneer aviators went aloft in heavier-than-air machines. The aeroplane was a symbol of progress and many advocated for British involvement in its development. Enthusiasts courted politicians and got the public behind the new technology through air shows and exhibitions. Aeronautical lobbies were formed and specialist periodicals introduced, demonstrating that the aeroplane was an object of value and fascination. Pressure extended to the state with the Parliamentary Aerial Defence Committee (1909) established to convince the Liberal government that higher spending on aviation was crucial.<sup>2</sup> The early twentieth century was therefore a period of great aeronautical enthusiasm but it was also punctuated by aggressive militarism. Between 1914 and 1918, Britain was embroiled in a global war and struggled to retain control of its vast empire and economy in the aftermath. The aeroplane was transformed from a piece of public technology into a means of waging war; its potential was harnessed by the armed forces and it became a demoralising and murderous machine. The contribution of the aeroplane and its flyers to the war effort was recognised, resulting in the formation of the world's first independent air force in 1918.

It was not only the aeroplane that underwent development and transformation; many of the social structures and values of Edwardian Britain were doomed by modernity.

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<sup>1</sup> *Per Ardua* is the first half of the Royal Air Force's Latin motto. It translates at 'Through Adversity', which adequately summarises the experience of doctors and neurological specialists working with flying personnel during the period, 1914-38.

<sup>2</sup> D. Edgerton, *England and the Aeroplane: Militarism, Modernity and Machines*, 2<sup>nd</sup> edn., (London, 2013), pp. 39-40.

During the Great War, the old way of life was swept away ‘in a gale of creative destruction’, in which traditional state liberalism gave way to interventionism.<sup>3</sup> As the government became more hands-on, the differences between civil and military spheres were no longer clear. Civil liberties were curtailed and life on the home-front became increasingly regimented and efficient. The battlefield was transformed by civil inventions; networked by railways, telegraphic communications, and specialised emergency services, while the new military aeroplane roared overhead. The rationalisation deemed essential for the conduct of business in Victorian and Edwardian cities were considered essential in the operational of mass armies.<sup>4</sup> The military and civilian spheres were reorganised and disciplined in accordance with notions of socio-economic efficiency.<sup>5</sup> The waging of war was thoroughly industrialised, as human life and labour were subordinated to the needs of mechanical and other technologies.<sup>6</sup> But military aviation technology was in its infancy and a number of lessons would be learned, including the toll of modern inventions and warfare on the mind and body.

Despite the wealth of material available on the disorders of flying personnel, scholars have naturally gravitated toward the problem of ‘shell-shock.’ We know much about the incidence and treatment of this disorder; the paradigmatic shift from functional to psychological understandings; issues of gender, masculinity, and ideals of heroism; and notions of class, discipline and societal impact.<sup>7</sup> The experiences of the British air forces

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<sup>3</sup> Edgerton, *England and the Aeroplane: Militarism, Modernity and Machines*, pp. 36-7.

<sup>4</sup> Cooter and Sturdy, ‘Of War, Medicine and Modernity: Introduction’, in Cooter, Sturdy, and Harrison (eds.), *War, Medicine and Modernity*, p. 3.

<sup>5</sup> M. Mann, *States, War and Capitalism: Studies in Political Sociology* (Oxford, 1988), p. 124.

<sup>6</sup> Cooter and Sturdy, ‘Of War, Medicine and Modernity: Introduction’, p. 4.

<sup>7</sup> E.g. A. Babington, *Shell Shock: A History of Changing Attitudes to War Neurosis* (Barnsley, 2003); P. Barham, *Forgotten Lunatics of the Great War* (Yale, 2004); J. Bourke, *Dismembering the Male: Men’s Bodies, Britain and the Great War* (London, 1999); Joan Busfield, ‘Class and Gender in Twentieth Century British Psychiatry: Shell Shock and Psychopathic Disorder’, in J. Andrews and A. Digby (eds.), *Sex and Seclusion, Class and Custody: Perspectives on Gender and Class in the History of British and Irish Psychiatry* (Amsterdam, 2004), pp. 295-322; T. Loughran, ‘Hysteria and neurasthenia in pre-1914 British medical discourse and histories of shell shock’, *History of Psychiatry*, 19 (2008), pp. 25-46; M. Roper, *The Secret Battle: Emotional Survival in the Great War* (Manchester, 2010).

and the Royal Navy have been largely neglected, as indeed, as those of the army fighting away from the Western Front. Such work that exists on the other services examines the issue of psychological disorders obliquely. The recent work of Philpott examined combat experience in the Royal Flying Corps and Royal Navy from a military history perspective. Medical texts were cited sporadically in reference to morale but were not engaged with in any detail. Functional disorders and the nature of physical casualties were not discussed anywhere in this volume.<sup>8</sup> Collins also examined the British flying services and claimed that he was studying the diagnosis of traumatic neurosis in pilots and observers. Again, this paper suffers from a paucity of medical sources and his contribution merely adds to the historiography of masculinity in the Great War and the ‘cult’ of the aviator.<sup>9</sup> Without an understanding of how the treatment and classification of disorders were approached during the Great War, we cannot begin to understand how the RAF neuropsychiatric division undertook similar processes during the Second World War.

The period 1914-38 was an important era in the development of aerial technology and aviation medicine. It was recognised that the aeroplane could play a deadly and demoralising role in modern warfare but little was known of the effects of operational flying on the body. During the Great War, the army and naval flying services were mobilised to support land and sea operations and were staffed by the *crème de la crème* of the male population. Flying in the face of the elements as well as the enemy often had deleterious effects on the mind and body, and it was the duty of medical officers to restore flying personnel to their health and former efficiency. Nervous and psychological strain made casualties of thousands and many more admitted to symptoms associated with stress. This chapter will investigate how the disorders of flying personnel were understood by the

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<sup>8</sup> M. Philpott, *Air and Sea Power in World War I: Combat and Experience in the Royal Flying Corps and Royal Navy* (London, 2013).

<sup>9</sup> M. Collins, ‘A Fear of Flying: Diagnosing Traumatic Neurosis Among British Aviators During the Great War’, unpublished paper, (University of California, Davis, 2013).

military medical services, by examining the diagnosis and disposal of flyers suffering from nervous and psychological disorders. It will critically assess commissioned and *ad hoc* research, which aimed to establish the aetiologies of the ‘new’ conditions. Such research was deemed essential to ensure that treatment was rational and efficient. The chapter will examine the social, cultural, and medical factors that guided this research and therefore shaped the understanding of the neuropsychiatric disorders of flying personnel.

During the interwar years, the lessons of the Great War were quickly forgotten. The fledgling RAF and RAFMS were keen to establish a voice in the hierarchical world of the British armed forces and to demonstrate that the new air force was not constrained by the traditions and failures of the past. Experience gained in the Great War had proven that flying personnel had unique medical requirements but nervous and psychological disorders were not a major consideration. The chapter will argue that the desire to assert its independence and the belief that flyers were a unique breed, coupled with the economic crisis, limited further research into the disorders. It will chart the origins and development of neuropsychiatry in the British flying services during the period 1914-38 but will also determine whether the service had adequate knowledge and expertise to negotiate the casualties of the Second World War.

### **The Deluge: Nerves, Flying and the Great War, 1914-18**

The aeroplane was little over a decade old when the Great War began and it was one of the newest technological additions to the British armed forces.<sup>10</sup> The war ministries and military officers were initially sceptical about the new-fangled contraption and questioned its potential value or role in modern warfare. Indeed, Minister for War Lord Richard Haldane was alleged to have stated, somewhat ironically, that “the aeroplane will never

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<sup>10</sup> The army used the balloon as a means of reconnaissance during the Boer War (1899-1902). The aeroplane was used for a similar purpose in the First Balkan War (1912) but its widespread application was not achieved until the Great War.

fly.”<sup>11</sup> The winds of change blew rapidly, however, with Louis Blériot’s pioneering cross-Channel flight capturing the government’s attention and demonstrating the aeroplane’s potential. As a result, ‘the future developments of aerial navigation for military and navy purposes’ were carefully considered by the Committee of Imperial Defence and its members quickly recommended that a ‘British Aeronautical Service’ be formed and designated ‘The Royal Flying Corps.’

The Royal Flying Corps consisted of naval and military wings and a Central Flying School for the training of new pilots. Less than a year later, however, the wings split due to differences in service requirements, showing that the aeroplane had great functional utility. In April 1912, the Royal Flying Corps (RFC) was formed to support the army in artillery spotting and reconnaissance, and the Royal Naval Air Service (RNAS) would undertake flying duties in support of naval operations and coastal defence.<sup>12</sup> Later in the war, both engaged in aerial combat, the bombing of enemy positions, and the strafing of soldiers on the ground. Each service was under the direct control of the army or navy and would therefore make use of their structural facilities, uniforms, ranks, and medical services. The fascination with aviation in the pre-war period inspired thousands of young men to become pilots, meaning that the air forces had an abundance of willing volunteers. It is important to understand the selection process and the type of men recruited for flying duties, for this would have an impact on how they would be treated in the event of a psychological or nervous breakdown. It also informed the ways in which medical officers approached the research of their conditions.

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<sup>11</sup> D. Edgerton, ‘England and the Aeroplane: An Essay on a Militant and Technological Nation’, (Manchester Univ.Thesis, 1991), p. 3.

<sup>12</sup> W. Raleigh, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force* (6 Vols, Oxford, 1922), i, pp. 198-9.

### *The Selection of Flying Personnel*

In August 1914, the RFC and RNAS were both shore-based forces of roughly the same size, with 63 and 50 aircraft respectively. Between them, they had enlisted 2,073 officers and men: more than half of the 900 qualified civilian pilots were in the air services.<sup>13</sup>

Thousands more wanted to join, believing that it would be ‘over by Christmas.’

Volunteering for the flying services was a particularly attractive form of war service and experienced selection officer Lieutenant Lord Hugh Cecil believed that it was the sheer ‘novelty’ of the RFC and the equation of flying with a sport that helped to attract thousands of volunteers.<sup>14</sup> But the mere desire to become a pilot or observer did not guarantee acceptance to the air services. From the outset, the forces were determined to establish a technological elite and enforced exacting entry requirements.

While the image of the young man ‘taking the King’s Shilling’ dominates popular imagination, it does not adequately reflect the process of becoming a pilot or observer in August 1914. The aeroplane was the pinnacle of military technology and the aspiring aviator had to prove himself ‘worthy’ of the position. Although the aeroplane was a symbol of modernity, this did not encourage the air services to take a wholly modern view of who should operate the technologically-advanced machinery. They did not reach out to men with technical prowess nor specialist knowledge of flying in the first instance; they clung to traditional values. Selection boards actively discriminated between volunteers and social class was an inevitable consideration. In the first two years of the war, prospective pilots were typically officers who had transferred from the army or navy, or public school and university students recruited by the training depots.<sup>15</sup> The pre-war ‘Short Guide to Obtaining a Commission in the Special Reserve of the Royal Flying Corps’ made it perfectly clear that flying personnel would be officers and only gentlemen were

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<sup>13</sup> Edgerton, *England and the Aeroplane*, p. 36.

<sup>14</sup> H. Cecil, *The Work and Training of the Royal Flying Corps* (London, 1918), p. 3.

<sup>15</sup> Collins, ‘A Fear of Flying.’

suitable.<sup>16</sup> Although there was a social broadening of the officer corps from 1914, with the needs of Lord Kitchener's mass army exhausting the traditional supply, the army still preferred to select men from wealthier socio-economic backgrounds, particularly public school types. These men were considered to have innate authority and to be naturally-suited to leadership roles.<sup>17</sup> In the RFC, these standards were even more important, as officers not only had to exude superiority; they had to be intelligent to learn the complex process of flying.

Once a volunteer had satisfied the selection boards that he was of the correct social standing, his technical abilities were tested. The prospective officers were required to obtain a training certificate in flying from the Royal Aero Club, which allowed for advance vetting and ensured that only technically-competent men were accepted for commissions. Gaining this accreditation was an expensive process, however, and required an advance outlay of £75 for the certificate alone, not to mention the cost of flying lessons.<sup>18</sup> Even then, they were not guaranteed to be accepted for a commission.<sup>19</sup> During the war, this entry requirement was slackened to allow gentlemen to take the certificate at the Military Flying School. Candidates were not eligible for any pay or allowances, had to maintain themselves at their own expense, and had no claim to compensation in the event of an accident.<sup>20</sup> Only men with the financial means would be able to bear these costs. Stringent educational requirements were also set in place, which were in line with those required for regular commissions in the army. Candidates had to produce on demand, a

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<sup>16</sup> TNA, AIR 1/516/16/4/16, *Short Guide to Obtaining a Commission in the Special Reserve of the Royal Flying Corps*, reprinted 1915, pp. 1-4.

<sup>17</sup> G.D Sheffield, *Leadership in the Trenches: Officer-Man Relations, Morale, and Discipline in the British Army in the Era of the First World War* (Basingstoke, 2000), pp. 35, 38-9; C. Moore-Bick, *Playing the Game: The British Junior Infantry Officer on the Western Front, 1914-18* (Solihull, 2011).

<sup>18</sup> All costs were refunded if the candidate was successful: TNA, AIR 1/363/15/231/3, Letter from Director of Training to Prospective Applicant for Short Commission, 16 July 1913.

<sup>19</sup> TNA, AIR 1/363/15/231/3, Letter from Director of Training to Prospective Applicant for Short Commission, 19 July 1913.

<sup>20</sup> TNA, AIR 1 /516/16/4/16, 'Short Guide to Obtaining a Commission in the Special Reserve of the Royal Flying Corps', reprinted 1915, p. 2

leaving or qualifying certificate obtained at the Royal Military Academy, Sandhurst, or to pass the Army Entrance Examination. Alternatively, the candidate could present a matriculation certificate from a 'recognised university' and as a last resort, a statement from the headmaster of a secondary school regarding his educational achievements.<sup>21</sup> Men from working class backgrounds were virtually eliminated from the selection process, as they could not meet the educational and financial requirements.

Flying personnel were typically gentlemen until much later in the war when mounting casualties and a dwindling pool of preferred types began to dry up. This necessitated the acceptance of men from the 'lower middle and artisan class.' Even with a shortage of manpower, the selection boards lamented the demise of recruits from the 'great English public schools' and made proposals to recruit more of these young gentlemen at the annual Headmaster's Conference.<sup>22</sup> The available men were therefore judged on the qualities of the archetypal gentleman pilots.<sup>23</sup> The British Army considered such obstacles to be important, as flying personnel would form a technological elite. Much to the cavalry's dismay, they were placed on an equal footing, for they were the 'cavalry of the clouds', and possessed the same nerves of steel and superiority of body and mind.<sup>24</sup> The RFC attempted to ratify this in what they perceived to be scientific terms.

The Great War was fought in a scientific age and it was not uncommon for the armed forces to apply aspects of science to military life, including medical theory. 'Temperament' was an important consideration in the selection of flying personnel. In the early twentieth century, this was understood principally as an innate variable – the sum total of an individual's natural tendencies. It was a relic of humoral medicine, which had

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<sup>21</sup> TNA, AIR 1 /516/16/4/16, 'Short Guide to Obtaining a Commission in the Special Reserve of the Royal Flying Corps', p. 2.

<sup>22</sup> TNA, AIR 1/462/15/312/121, Extract from Minutes of the 177<sup>th</sup> Meeting of the Air Board, 14 December 1917.

<sup>23</sup> 'The Temperament of Aviators', *Flight*, 3 October 1918, 1117.

<sup>24</sup> Wells, *Courage and Air Warfare*, p. 4.

all but disappeared due to the rise of germ theory in the mid-nineteenth century.<sup>25</sup> German physician Wilhelm Wundt, for instance, drew upon theories of Galenic medicine and distinguished four temperamental types, which were closely aligned to the four humours. ‘Cholerics’ and ‘melancholics’ were characterised by strong emotional reactions, whereas ‘sanguines’ and ‘phlegmatics’ were weak by comparison. Wundt believed that each temperament had its advantages and disadvantages, and the art of life consisted of tailoring the four temperaments to specific situations.<sup>26</sup>

British nerve doctors relied heavily on theories of temperament, for they struggled to articulate a general medical theory to encompass and explain neurotic disorders. They constructed the concept of a ‘nervous temperament’, which measured sensitivity to external stimuli, excitability, irritability, and exhaustibility. James Crichton-Browne, physician to the influential West Riding Lunatic Asylum, described an ‘intensely nervous temperament’ to be characterised by an ‘exquisite susceptibility and incompetency to sustain the trials of life, and a liability to mental derangement.’<sup>27</sup> Such theories depended heavily on heredity. If an individual was temperamentally unstable, the chances were that his ancestors were to blame. Writing in the early twentieth century, Albert T. Schofield insisted that a wide variety of functional nervous disorders were ‘all strongly hereditary.’<sup>28</sup> The army adopted this scientific term but it is unclear if they understood the theories of temperament. It is likely that they subscribed to their own definition, which corresponded closely to the qualities that they sought in flying personnel. They believed that they could successfully identify pilots of a suitable temperament, for the best aviators possessed a particular set of characteristics.

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<sup>25</sup> Oppenheim, *Shattered Nerves: Doctors, Patients, and Depression in Victorian England*, p. 88.

<sup>26</sup> W. Wundt, *Outlines of Physiological Psychology* (Leipzig, 1887), cited in J. Strelau, *Temperament: A Psychological Perspective* (Hingham, 1998), p. 5.

<sup>27</sup> Oppenheim, *Shattered Nerves*, p. 88.

<sup>28</sup> A.T. Schofield, *Functional Nerve Diseases* (London, 1908), p. 62, cited in Oppenheim, *Shattered Nerves*, p. 89.

As the war progressed and experience was gained, the RFC began to refine the qualities sought in flying personnel. By 1918, they had identified the ‘model aviator.’ Medical officers conducted research into the temperamental characteristics of successful and unsuccessful pilots and observers, based on four years of wartime observations. Medical officer, Captain T.S. Rippon, together with pilot E.G. Manuel, outlined a range of factors which characterised successful aviators. Young, unmarried men of ‘good character’ were considered to make the best pilots. The resilience of youth and a lack of responsibility helped them to negotiate the demands of a new occupation and to recover from the strains in a timely fashion. In terms of ‘character’, they possessed ‘resolution, initiative, presence of mind, sense of humour, [and] judgement’ and were typically ‘alert, cheerful, optimistic, happy-go-lucky...and frequently lacking in imagination.’ ‘High-spirited’ types were desirable, especially those who would ‘indulge in a really riotous evening once or twice a month.’ Other characteristics identified by Rippon and Manuel reflected the traditional biases of the RFC. Men with sporting prowess were favoured for they equated flying with a competitive sport.<sup>29</sup> Games and sports were a well-known feature of the public school regime and socially-elite men were therefore more likely to possess the correct temperament. Second Lieutenant Cecil Lewis, for instance, recalled that his selection interview focussed heavily on his education at Oundle and his sporting colours in ‘rugger’ and rowing.<sup>30</sup> The psychological concept of temperament had therefore been shaped to meet the needs of the socially-exclusive RFC. Their use of the term gave their claims scientific credibility and therefore, legitimacy.

Temperament was also a serious consideration in the selection of flying personnel for the RNAS. Surgeon-Captain Henry Graeme Anderson considered temperament to be second only to eyesight in the medical examination of aviators. He explained:

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<sup>29</sup> T.S. Rippon with E.G. Manuel, ‘Report on the Essential Characteristics of Successful and Unsuccessful Aviators with special reference to Temperament’, *Lancet*, 192 (1918), pp. 411-415.

<sup>30</sup> C. Lewis, *Sagittarius Rising* (London, 1936), p. 10.

Undoubtedly there is a particular temperament or aptitude for flying, and its distribution is peculiarly interesting, whether looked upon from its racial aspect and ethnological origin or in relation to previous health, life, and habits... The ideal aviator must have good judgment, be courageous, and not upset by fear, although conscious of the perils of his work. He must be cool in emergencies, able to make careful and quick decisions and act accordingly.<sup>31</sup>

The temperament of the aviator was inherited or shaped by life experiences, and was a psychological marker of natural emotional inclinations. It could therefore have a bearing on how an individual would react in the air. Those of a suitable temperament were afforded protection from the rigours of aerial warfare, for their life history and psychological make-up guaranteed this.

The subjective notion of ‘courageousness’ was also considered in the selection process. This trait was inextricably linked to temperament and ultimately, social class. According to Roper, the ‘Muscular Christianity’ of the late nineteenth century had eroded and men were expected to replace its constituents of character and well-being with secular and aggressive ideals. Stoicism was essential, for it would afford protection against the stresses of flying. Men of the upper and middle classes were considered to embody such virtues, which were instilled via the public school regime of athletics, games, and Spartan living.<sup>32</sup> This was not just the military’s vision of manliness and courage; it was shared by wider society. When discussing the pilots of the RFC, popular periodical *Flight* suggested that these qualities were innate:

They are a new type of men, these pilots and observers of the Royal Flying Corps. It is difficult to place them or to account for them. They seem to have been born to fly... The fearlessness of our men is not a virtue with them. It is a natural instinct. They attack unequal odds with the gusto of schoolboys who fling themselves into a football scrimmage.<sup>33</sup>

There was a widespread assumption that a certain class of men were particularly suitable for flying duties because of hereditary factors: RFC pilots were ‘born to fly’ and

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<sup>31</sup> H. Graeme Anderson, *The Medical and Surgical Aspects of Aviation* (Oxford, 1919), pp. 19-20.

<sup>32</sup> M. Roper, ‘Between Manliness and Masculinity: The “War Generation” and the Psychology of Fear in Britain, 1914-1950’, *Journal of British Studies*, 44 (2005), p. 347.

<sup>33</sup> ‘From other sources’, *Flight*, 17 August 1916, 705-6.

possessed ‘natural instincts.’ Links between socio-economic standing, inborn talent, and the officer class were therefore well-established and applied rigorously in the RFC.

While class and courageousness were important considerations, volunteers had to satisfy stringent medical requirements. The British Army had standardised the medical examination of new recruits to allow medical officers to quickly ascertain the suitability of individuals to perform military duties. A system of lettering and numbering was introduced to enable abilities to be categorised efficiently. For example, category ‘A1’ meant that a man could march, see to shoot, hear well, was able to withstand active service conditions, and was fit for dispatching overseas.<sup>34</sup> These standards were applied for land-based roles, such as infantry and artillery. The RFC was considered to be a special case, however, which necessitated stricter medical requirements.

To be deemed fit for flying, a volunteer had to satisfy the medical officer that he was at the peak of physical fitness, for flying had a physiological impact on everyone that took to the air. The dangers of altitude and oxygen deprivation were well-known from the late nineteenth century but there was no universal medical examination for entry to the flying services.<sup>35</sup> RFC medical officer Lieutenant-Colonel Martin Flack, recalled that a ‘routine’ medical examination aimed to assess the volunteer’s cardiovascular and neuromuscular condition, including his medical history, pulse conditions, effects of exertion, and nervous reactions.<sup>36</sup> In the RNAS, it aimed to find ‘a sound constitution, free from

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<sup>34</sup> W.G. Macpherson, *History of the Great War Based on Official Documents: Medical Services General History*, (4 Vols., London, 1921), I, pp. 120-22.

<sup>35</sup> The physiological effects of high-altitude were known from the nineteenth century but were new to medical officers of the Great War, Please see, Primary: P. Bert, *La Pression Barométrique* (Paris, 1878); J. Glaisher, C. De Fonvielle, and G. Tissandier, *Travels in the Air* (London, 1871). Secondary: T.M. Gibson and M.H. Harrison, *Into Thin Air: A History of Aviation Medicine in the RAF* (London, 1984); V. Heggie, ‘Experimental Physiology, Everest and Oxygen: from the ghastly kitchens to the gasping lung’, *The British Journal for the History of Science*, Open Access, 12 October 2012; J. Lossio, ‘Life at High Altitudes: Medical Historical Debates (Andean region, 1890-1960)’, (Univ. Manchester Thesis, 2006); D.H. Robinson, *The Dangerous Sky* (Washington, 1974); J.B. West, *High Life: A History of High-Altitude Physiology and Medicine* (Oxford, 1998).

<sup>36</sup> Martin Flack, ‘Report VI: The Selection of Candidates for Flying: Report on the examination of a series of successful pilots and unsuccessful pupils from the point of view of their cardiovascular and neuro-

organic disease', good eyesight, and a strong physique. This would allow the individual to withstand the effects of cold, fatigue, and diminished oxygen. Emphasis was also placed on family history, which could help in the estimation of a candidate's ability to withstand the 'strain of wartime flying.'<sup>37</sup> Formal psychological testing was not a part of the medical examination, for the assessment of an individual's character and temperament would provide an adequate estimation of nervous liabilities.<sup>38</sup>

Becoming a pilot in the British flying services was not an easy process. The air forces were attempting to establish an elite, technological image and unique service identity. This was achieved through high selection standards. A prospective pilot-officer had to prove that he possessed characteristics of good temper and courage, and these variables were considered to be innate. In extension to this, the flying services were also forging a unique medical identity. Flying personnel had to be at the peak of their physical fitness and possess 'nerves of steel.' High standards of fitness were justified by the mental and physiological challenges of flying. It soon became, clear, however, that selection based on school ties and pseudo-science did not afford protection against the physical and psychological strains of aerial warfare.

### ***The Nervous Flyer***

The harsh reality of aerial warfare was revealed in August 1914. The RNAS immediately mounted coastal patrols and covered the passage of the British Expeditionary Force (BEF) and RFC to France.<sup>39</sup> In a matter of days, the flying services would receive their first casualties on active service. Second Lieutenant Evelyn Perry and Air Mechanic Herbert

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muscular systems', in Medical Research Council No. 53, *The Medical Problems of Flying: Including Reports Nos. I-VII of the Air Medical Investigation Committee* (London, 1920), p. 81.

<sup>37</sup> Graeme Anderson, *The Medical and Surgical Aspects of Aviation*, pp. 19-20.

<sup>38</sup> Nor was it a requirement in the broader army or navy at this time. It was only the United States Army that routinely tested their personnel. E.g. J.H. Capshew, 'Psychology on the March: American Psychologists and World War II', (Pennsylvania Univ. Thesis, 1986), ch. 1.

<sup>39</sup> Raleigh, *The War in the Air*, i, p. 293.

Parfitt were killed in a crash at their aerodrome – demonstrating that aerial technology could be just as dangerous as the enemy.<sup>40</sup> The German infantry claimed two more on 22 August.<sup>41</sup> Aerial warfare was a dangerous business and elite status did not afford protection against death or injury. Indeed, the first British aviators began to complain of somatic and psychological symptoms, showing that ‘nerves of steel’ and ‘stoicism’ had their limits.<sup>42</sup> The Great War starkly revealed the propensity of flying personnel to neuropsychiatric disorders, thereby demonstrating that notions of manliness and courage did not adequately prepare men for the physical and psychological challenges of operational flying.

Pilots frequently complained of ‘nerves’ during the conflict. ‘Nerves’ was a medical and metaphorical term simultaneously, with distinct yet inter-related meanings. On the one hand, the nerves were a physical part of the human body that produced animal functions, namely the internal and external senses, and the involuntary action of the muscles. During the Victorian era, physicians reported that the nerves could experience ‘shattering’ physiological changes, resulting in ‘nervous disorders.’<sup>43</sup> The effects of the nerves were known to the army, for the problem of ‘wind contusions’ and associated ‘cerebro-spinal shock’ were identified during the Napoleonic Wars (1803-15).<sup>44</sup> Characterised by tingling, twitching, and partial paralysis, this disorder was not unlike the first cases of ‘shell-shock’ reporting to casualty clearing stations in 1914.

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<sup>40</sup> Perry may have been the first British officer to be killed on active service during the Great War. Please see: ‘Casualty Details: Perry, Evelyn Walter Copland- 16 August 1914’, Commonwealth Graves Commission, accessed 20 June 2015 at <http://www.cwgc.org/find-war-dead/casualty/204609/PERRY,%20EVELYN%20WALTER%20COPLAND>. See also: ‘The First To Fall: Britain’s First Casualties of the War’, Western Front Association, accessed 20 June 2015 at <http://www.westernfrontassociation.com/great-war-on-land/britain-allies/3992-the-first-to-fall-britains-first-casualties-of-war.html>.

<sup>41</sup> I. Philpott, *The Birth of the Royal Air Force* (Barnsley, 2013), p. 183.

<sup>42</sup> Collins, ‘A Fear of Flying.’

<sup>43</sup> Please see Oppenheim’s excellent study of the deeply contested Victorian nerves and attempts to understand and treat them: Oppenheim, *Shattered Nerves*, ch. 3.

<sup>44</sup> Wind contusions were thought to be caused by the velocity of a passing artillery shell. It was also known as ‘windage’ during the American Civil War (1861-65). Please see: E. Jones and S. Wessely, ‘The origins of British military psychiatry before the First World War’, *War and Society*, 19 (2001), p. 91; Jones and Wessely, *Shell Shock to PTSD*, pp. 1-18.

The terms ‘nervous’ and ‘nervousness’ therefore had a place in medical nomenclature but the study of the nerves was not an exact science. In 1895, Cambridge Professor T. Clifford Albutt, complained that ‘the so-called diseases of the nervous system’ were a ‘vast, vague, and most heterogeneous body, two-thirds of which may not primarily consist of diseases of nervous matter at all.’<sup>45</sup> From the 1880s, however, the new diagnostic category of ‘neurasthenia’ – ‘tired nerves’ – gave the term enhanced medical legitimacy but also a real distinction to the sundry symptoms of ‘nervousness.’<sup>46</sup>

The imprecision of the term ‘nerves’ was conducive to its adoption by laymen. It came to describe a broader feeling in times of stress or heightened tension – to feel ‘nervous.’ The official history of *The War in the Air* described operational flying as ‘a nervous business’ and for many it was.<sup>47</sup> The memoirs of wartime pilots and observers made similar references. RFC observer Lieutenant ‘Sholto’ Douglas admitted to feeling nervous in aerial combat and believed that his feelings were shared by other flying personnel:

Whenever I went into a scrap I knew, as everyone else did, a tightening of one’s nerves, an awareness of anxiety that caused some fear; and once clear of the fight I usually felt only too glad that I was out of it and still intact...Ours was a strain of a new and peculiar temper that even now is hard to analyse. In some cases the abrupt change from the quiet of our way of life on the ground to the heat of being in a scrap in the air over the front lines, often in a matter of only a few minutes, led to a tension or strain that, I must admit, had severe effects on the nerves. Stomach ulcers became one of the hallmarks of our trade, and insomnia and nightmares sometimes made a mockery of sleep; and there were young pilots who broke under that particular strain and had to be sent home as unfit for further service at the front. They were casualties not listed as officially wounded, but they were nevertheless still casualties, and some of them were wrecked in health for the rest of their lives.<sup>48</sup>

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<sup>45</sup> T. Clifford Albutt, ‘Nervous Diseases and Modern Life’, *Contemporary Review*, 67 (1895), p. 110.

<sup>46</sup> Neurasthenia will be discussed later in this chapter. Oppenheim, *Shattered Nerves*, p. 79.

<sup>47</sup> Raleigh, *The War in the Air*, i, p. 253.

<sup>48</sup> William Sholto Douglas, 1<sup>st</sup> Baron Douglas of Kirtleside, GCB, MC, DFC (1893-1969) was a senior commander in the Royal Air Force, with a career spanning from the Great War to 1948, when he became Marshal of the Royal Air Force and Commander of the British Zone of Occupation (Germany): W.S. Douglas, *Years of Combat: The First Volume of the Autobiography of Sholto Douglas* (London, 1963), pp. 252-3.

Douglas' account showed that the nerves could be adversely affected by the brutality of aerial warfare, which could lead to physical manifestations. His closing comment reflected on the lasting impact of strains of operational flying but it was the realisation that life could be brutally cut short that affected the nerves of many.

Major Edward 'Mick' Mannock was one of Britain's most celebrated flying aces. Despite suffering from partial sightedness, he claimed at least 15 aerial victories and was awarded the Distinguished Service Order, the Military Cross, and later, the Victoria Cross for his brave conduct and meritorious actions. To many, he was a cold killer who relished shooting the enemy down in flames, exclaiming "Flamerinoes chaps!" in their wake. His diary and personal letters tell a very different story; one of a man deeply affected by the strains of aerial warfare.

In April 1917, Mannock had completed his training and was sent to France to join a squadron. On 20 April, he reflected on his first experiences in his diary, where he acknowledged that flying had a negative impact on the mind and body. He therefore felt that nervous reactions were justified:

Now I can understand what a tremendous strain to the nervous system flying is. However cool a man may be there must always be more or less of a tension on the nerves under such trying conditions. When it is considered that seven out of ten forced landings are practically 'write offs', and 50 per cent are cases where the pilot is injured, one can quite understand the strain of the whole business.<sup>49</sup>

Mannock was acutely aware of his own mortality and this marked the beginning of a sharp decline in his mental state.

Only two months into service, Mannock admitted to feeling nervous following a near-crash in the unreliable Nieuport Scout, and taking his first 'Hun' did not bolster his confidence. On 14 June 1917, he noted in his diary: 'Feeling nervy and ill during the past

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<sup>49</sup> F. Oughton, *The Personal Diary of Mick Mannock* (London, 1966), p. 49.

week. Afraid I am breaking up.’<sup>50</sup> He was often sick before take-off and various accounts indicated that he was drinking heavily. Pilots that had arrived after him were already dead and the effects on him were severe.<sup>51</sup> In a letter to his sister on 16 June, he confided that his nerves were ‘getting the better of him’: ‘Things are getting a bit intense just lately and I don’t quite know how long my nerves will last out...These times are so horrible that occasionally I feel that life is not worth hanging on to myself...’<sup>52</sup> According to Smith, Mannock was sent home for rest on a number of occasions but he never received treatment for his nervous condition. He was sent back to the front, where he continued to perform his duties, in spite of his increasingly erratic behaviour.<sup>53</sup> Mannock’s fear of death would be realised in July 1918, when he was shot down in flames by a German pilot. His body was never recovered.

The nerves of thousands of pilots and observers, whether physical or metaphorical, were worn down during the conflict for a number of reasons. The supposedly superhuman aviator was therefore vulnerable to the physical and psychological strains of aerial warfare. It was the duty of medical officers to diagnose, treat, and return the nervous flyers to duty but this process was complicated by numerous factors.

### ***Diagnosing Neuropsychiatric Disorders in the Royal Flying Corps***

During the Great War, efficient management was essential in the treatment of mounting casualties. Orders were issued that dictated the proper sorting, treatment, labelling, and transport of the sick and injured.<sup>54</sup> Diagnosing the neuropsychiatric disorders of flying personnel presented unique challenges to the armed forces medical services, for medical

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<sup>50</sup> I. Jones, *King of Airfighters: The Biography of Major Edward ‘Mick’ Mannock, VC, DSO, MC* (Newbury, 2009), p. 153.

<sup>51</sup> A. Smith, *Mick Mannock, Fighter Pilot* (Basingstoke, 2001), p. 72.

<sup>52</sup> *Ibid*, p. 118.

<sup>53</sup> *Ibid*, p. 72.

<sup>54</sup> Cooter, *Surgery and Society in Peace and War: Orthopaedics and the Organization of Modern Medicine, 1880-1948*, p. 123.

officers had little or no medical knowledge of the nervous and psychological effects of flying. In peacetime, no research had been conducted in this area, as flying was generally a hobby. If an aviator decided that he was too frightened or nervous to continue, he could simply give it up with only a loss of capital and wounded pride to contend with. In the armed forces, however, flying personnel were duty-bound to continue under threat of court martial. Avoidance was not an option.

It was during the war that the potential hazards to the nerves and psyche were exposed for the first time. This undoubtedly came as a surprise to the army and navy, for they had constructed the image of the elite, superhuman flyer. The practical experience of flying personnel had belied their rhetoric. Even the medical profession was confounded by the emerging symptoms. Neurologist Major James Birley admitted that he had been caught off-guard. In his own words, he was ‘deluged by surprises’ and confessed to a ‘profound ignorance’ of the conditions before him.<sup>55</sup> It must be considered that if a specialist in neurology found the symptoms challenging, generalist medical officers must have felt completely out of their depth. The conditions of warfare dictated that there was little time to reflect on the symptoms, as the men had to be returned to duty for the sake of manpower economy and combat efficiency. Two factors hastened this process.

The prevalence of ‘shell-shock’ necessitated the speedy diagnosis of flying personnel. This disorder had confounded the military medical services from the winter of 1914, when casualties reported a variety of nervous symptoms, including tremor, paralysis, headache, and mutism. It was initially conceived as a neurological lesion, a form of *commotio cerebri*, linked to high explosive artillery shells.<sup>56</sup> This view was contested,

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<sup>55</sup> J.L. Birley, ‘Goulstonian Lectures on The Principles of Medical Science as applied to Military Aviation, Lecture I’, *The Lancet*, 195 (1920), p. 1147.

<sup>56</sup> E.g. F.W. Mott, ‘Special discussion on shell shock without visible signs of injury’, *Proceedings of the Royal Society of Medicine*, 9 (1916), pp. i–xxiv; F.W. Mott, ‘The microscopic examination of the brains of two men dead of commotion cerebri (shell shock) without visible external injury’, *British Medical Journal (hereafter BMJ)*, 2 (1917), pp. 612–615.

however, with other doctors expressing the view that symptoms could be psychological in origin, making shell-shock a ‘traumatic neurosis.’<sup>57</sup> The diagnosis of shell-shock was not applied extensively in the RFC and RNAS. Reasons for this are not outlined in the primary material but informed assumptions can be made.

Flying personnel were considered to be ‘superhuman’, the sheer embodiment of manliness and courage. The very notion that they were suffering from a hysterical illness challenged such beliefs. Secondly, shell-shock was considered to be a problem exclusive to the infantry – flying personnel could not experience this disorder, for their combat environment was completely different. But while they were protected from explosions on the ground, they negotiated unique dangers and psychological trauma in the air. By 1917, the flying services started to pay serious attention to nervous and psychological disorders, as mounting casualties dictated that they could not afford to lose trained pilots to these conditions. The preservation of manpower and combat efficiency was essential.

The experience of combat in 1917 further hastened the diagnostic process. In this year, the RFC suffered its highest losses of men and machines. In the month of April alone, 275 aircraft were lost to the ‘Red Baron’s Flying Circus’, who were greater in number and better equipped. The result was 421 casualties of which 207 died.<sup>58</sup> The nervous and psychological effects of ‘Bloody April’ took their toll on many flying personnel. Experienced pilot Lieutenant Harold Balfour remembered his nerves getting the better of him, as he crashed and was taken away in a Field Ambulance:

I was moved back with other wounded cases and can just remember coming to as I was put into a Field Ambulance. I was being very sick and as the ambulance started rattling down the road some of our howitzers [artillery] let off from one of the battery positions nearby. I suppose that this was too much for me, and that,

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<sup>57</sup> E.g. Jones and Wessely, *Shell Shock to PTSD*, pp. 21-48.

<sup>58</sup> The Red Baron’s Flying Circus was a highly mobile, combined tactical unit that could move at short notice to different parts of the front. It was named in honour of their leader Manfred von Richthofen (1892-1918), who was famous for flying a red aeroplane: P. Hart, *Bloody April: Slaughter in the Skies over Arras, 1917* (London, 2005), p. i. See also: H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force*, (6 vols., Oxford, 1922), iii, ch. 6.

with the crash, my nerves had for the moment gone. I can remember crying to myself with fright and self-pity as these appalling crashes and discharges continued.<sup>59</sup>

His comrade Lieutenant Alan Dore recorded in his diary that Balfour was sent home and was 'said to be temporarily loony.'<sup>60</sup> There were at least 63 recorded cases of mental and nervous disorders in April 1917, many of whom would never return to flying.<sup>61</sup> It was therefore essential to diagnose and treat the nervous and psychological effects of operational flying, as they were making casualties of a dwindling pool of elite flying personnel.

It is no coincidence that the management of casualties improved from 1917. The RFC began to keep 'representative medical sheets' of common casualties to allow for the quantification and research of the conditions. Nervous disorders featured prominently within them. For example, a 24-year-old Second-Lieutenant from No. 11 Squadron RFC had served for 3 years before his admittance to hospital, labelled "Mental". On 27 October 1917, he was admitted to No. 3 Stationary Hospital in a 'physically normal' condition but he was 'mentally depressed, very restless, self-deprecatory, unhappy.' On describing his symptoms to the examining medical officer, 'he stated that whilst shaving he was suddenly seized with a strong impulse to cut his throat.' According to his medical sheet, he 'slept poorly' except with Veronal – the first commercially-produced barbiturate. He had been unwell for some months and had felt the loss of his friends acutely, which he had brooded over until his 'suicidal impulse' struck. The examining medical officer stated that the pilot impulsively repeated: "You know what is the matter with me, there is no doubt I have fuked it. I will never fight again, it's all up with me."

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<sup>59</sup> H.H. Balfour, *An Airman Marches* (London, 1933), p. 93.

<sup>60</sup> RAF Museum (hereafter RAFM), A.S.W. Dore, Transcript Diary, 1 May 1917.

<sup>61</sup> This figure was calculated through the systematic processing of c. 24,000 medical board record cards covering the period 1917-20, held at the Royal Air Force Museum, London.

Upon transfer to 'D' Block, Netley, the army's main psychiatric unit, the medical officer stated that his symptoms were due to being 'under fire' and his case was 'purely psychoneurotic.' After a few weeks of treatment, he was 'decidedly better and apart from some slight general nervousness and slight tremor there [was] little wrong with him.' The case was transferred to the 4<sup>th</sup> London General Hospital for convalescence and boarding.<sup>62</sup> From the case sheet, it is clear that army medical officers were trying to gain a fuller picture of the circumstances surrounding the development of common nervous disorders. This particular case cited a number of factors that contributed to his suicide attempt but the medical officer believed that it was the direct result of aerial combat.

In addition to medical sheets, record cards were produced for every officer and airman seen by medical boards. Approximately 23,518 of these cards exist, which detail the diagnosis and disposal of all casualties in the RFC, during the period 1917-20.<sup>63</sup> Medical boards were responsible for returning men to duty following an injury or illness, making recommendations on future employment, and discharging the mentally unfit. These records are unique, as no comparable collections exist in the public domain for the other armed forces.<sup>64</sup> They provide useful qualitative and quantitative data that allows for the analysis of nomenclature, the incidence of certain conditions, and disposal statistics, which also reflects their purpose at the time of creation.

The medical board record cards show that 3,149 flying personnel were diagnosed with nervous and mental disorders. This figure may appear negligible but it represents 13 per cent of all casualties seen during the period 1917-20. The flying services were keen to

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<sup>62</sup> The name of the casualty has been redacted. TNA, Ministry of Health records (hereafter MH), 106/2202, Medical Case Sheet of Second-Lieutenant X, 1917.

<sup>63</sup> From April 1918, the medical board record cards reflected casualties in the newly-formed RAF.

<sup>64</sup> The Ministry of Pensions gathered the medical records of army and navy pensioners in the interwar years, when studies of war pensions were conducted. This information is understood to be in the possession of the Department of Work and Pensions. Please see Appendix A for the confidentially agreement signed upon accessing this material at the RAF Museum. Names and service numbers have been redacted to protect the identity of the casualties.

downplay the incidence of such conditions to maintain their elite image but they could not deny that they were prevalent. Indeed, some pilots and observers were diagnosed with nervous disorders on more than one occasion. Case no. 325, for instance, reported sick with ‘nervous symptoms’ in April 1918 and later complained of ‘insomnia’.<sup>65</sup> The incidence of relapse meant that 3,283 diagnoses were recorded in 3,149 personnel – the conditions and statistics are outlined in Table 1.

**Table 1: The diagnosis of mental disorders in the Royal Flying Corps, 1917-20**

<b>Diagnosis</b>	<b>No. of cases seen by medical boards</b>
Neurasthenia	1,386
Nervous Debility/Instability	1,068
Flying Stress/Stress of Service	417
Nervous Exhaustion/Fatigue/Strain	118
Shell-Shock	88
Traumatic/Nervous Shock	67
Insomnia	33
Loss of Confidence	27
Psychasthenia	23
Temperamentally Unfit	18
Other	14
Depression/Melancholia	5
Anxiety-neurosis	4
Psychopathia	4
Mania	3
Psychosis	3
Aero-neurosis	2
Delusional/Confusional Insanity	2
Hysteria	1
<b>Total:</b>	<b>3,283</b>
<b>Source:</b> RAFM, Medical Boards Collection (uncatalogued), 1917-20.	

Nervous disorders were prevalent in the RFC, particularly nervous shock, nervous debility, nervous exhaustion, and neurasthenia. These accounted for 80 per cent of diagnoses, with neurasthenia claiming the most casualties. Neurasthenia was one of the

<sup>65</sup> RAFM, Medical Board Record Cards Collection (uncatalogued), Filing Drawer 1, Case no. 325, ‘Nerves/Insomnia’, April 1918.

most recognised disorders in British psychological medicine; posited as an opposite to hysteria, a disorder located in the psyche rather than the nerves.<sup>66</sup> It rose to prominence in the late nineteenth century, following the publication of American neurologist George Miller Beard's seminal work. Beard did not introduce neurasthenia to neuropsychiatric nomenclature but had identified a credible organic basis for the condition. He stated: 'the central nervous system becomes dephosphorized, or perhaps, loses somewhat of its solid constituents...and as a consequence, becomes more or less impoverished in the quantity of its nervous force.'<sup>67</sup> Beard attributed the rise of 'tired nerves' to the hazards of contemporary living. According to Oppenheim, British doctors found the concept of neurasthenia invaluable and gave it a prominent place in nomenclature. Its theoretical core, the pressures of modern living, confirmed long-standing British medical convictions: shock, overwork, and mental strain could result in a breakdown of the nerves with psychological manifestations.<sup>68</sup> The diagnosis of neurasthenia in flying personnel was therefore appropriate. The nerves of pilots and observers were tired from overwork and the constant bombardment of the senses.

Neurasthenia was not merely a medical category; it had a deeper socio-cultural significance. Before the war, argued Leed, hysteria and neurasthenia were differentially distributed along class lines. This trend continued in wartime with officers diagnosed as neurasthenic and other ranks as hysterical.<sup>69</sup> According to Showalter, hysteria and neurasthenia were also gendered diagnoses. Soldiers were framed in demeaning terms as hysterical females, whereas neurasthenic officers were experiencing a condition closer to

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<sup>66</sup> T. Loughran, 'Hysteria and neurasthenia in pre-1914 British medical discourse and in histories of shell shock', *History of Psychiatry*, 19 (2008), p. 26.

<sup>67</sup> George Miller Beard (1839-1883) was a prominent American neurologist and electrotherapist: G.M. Beard, 'Neurasthenia or nervous exhaustion', *Boston Medical and Surgical Journal*, 80, (1869), p. 218.

<sup>68</sup> Oppenheim, *Shattered Nerves*, p. 96.

<sup>69</sup> E. Leed, *No Man's Land: Combat and Identity in World War One* (Cambridge, 1979), pp. 163-4.

an acceptable male ideal.<sup>70</sup> As flying personnel were mainly officers, the diagnosis of neurasthenia was a continuation of norms established before the conflict and one that was applied across the services. The nerves were merely tired, which was not a sign of weakness, a decline in masculinity, nor the symptom of a degenerate constitution. Neurasthenia therefore appealed to the RFC's elite self-image, for it was a temporary illness befitting of an officer and gentleman.

The medical case sheet of a 24 year-old Second-Lieutenant recorded the rationale for the diagnosis of neurasthenia. This pilot experienced a crash in July 1917, after his engine cut and nose-dived to the ground for 30 feet. He was not physically injured and only felt a 'little dazed.' Five days later, he went up again and was 'all right while in the air, but fainted on alighting. He then went off his sleep, developed headaches, deafness and amnesia.' The medical officer diagnosed him as 'neurasthenic', for his nerves had shattered after a traumatic event, without hysterical symptoms. By October 1917, he was feeling much better, showing that it was a temporary state.<sup>71</sup>

Conversely, the diagnosis of psychological disorders was not prevalent in the RFC. This is not surprising considering that the flying services were keen to distance themselves from the shell-shock debacle. Hysteria, the binary opposite of neurasthenia, was diagnosed only once and the treatment was partially successful, with the officer returning to duty in a ground trade.<sup>72</sup> Contrary to their beliefs, however, shell-shock did occur in flying personnel but did not present insuperable difficulties, accounting for *c.* 2.7 per cent of the casualties. Moreover, medical officers reported success in treating or suppressing the condition, as 73 pilots or observers out of the 88 reporting symptoms were retained within the service in flying or ground duties. Whether this success was permanent or just a means of producing returns to duty is impossible to discern from the material.

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<sup>70</sup> Showalter, *The Female Malady*, p. 175.

<sup>71</sup> TNA, MH 106/2202, Medical Case Sheet of Second-Lieutenant Y, 1917.

<sup>72</sup> RAFM, Medical Board Collection (uncatalogued), Filing Drawer 1, Case 1072, 'Hysteria', Oct 1916.

The nomenclature applied also suggested that there was a lack of psychological or neurological expertise in the care of flying personnel. While certain diagnoses, such as neurasthenia, insomnia, and psychopathia were ratified scientific terminology, others were vague and imprecise. ‘Temperamentally unfit’, for instance, was not a formal medical diagnosis – it was primarily a descriptive term used to judge emotional inclinations. It is likely that this was applied by a non-specialist military medical officer, who could not account for the symptoms in any other way. The same can be said for ‘loss of confidence’, which was merely a statement. The use of ‘nervous debility/instability’ also implied a lack of expertise, for the medical officer had not committed himself to a specific nervous disorder. Moreover, different terms were often used to describe the same conditions. Neurasthenia and ‘nervous exhaustion/fatigue/strain’ were essentially the same disorder, where the nerves had become tired. Despite the limits to medical knowledge, the non-specialist medical officers could claim some success in treating these conditions.

Disposal statistics suggest that medical officers were optimistic regarding the prognosis of cases and their future war contributions. This set the RFC apart from the infantry, where soldiers were often discharged following diagnosis – although as the war went on, many were not given a fixed diagnosis and many were not evacuated beyond the regimental aid post at the front lines. There was a belief that rest and reassurance could enable soldiers and flying personnel to return to active duty after a very short time.<sup>73</sup> In 1917, however, United States Army neuropsychiatrist Thomas Salmon reported that shell-shock was responsible for approximately one-seventh of discharges from the British Army and by 1918, 32,000 war pensions had been awarded for the condition.<sup>74</sup>

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<sup>73</sup> Harrison, *The Medical War*, pp. 114-5.

<sup>74</sup> It is unclear if RFC cases were included in these estimates. T.W. Salmon, ‘The care and treatment of mental diseases and war neuroses (“shell shock”) in the British army’, *Journal of Mental Hygiene*, 1 (1917), pp. 509-547; ‘Return of officers and men pensioned for disability’, *War Pensions Gazette*, 23 (1919), p. 282.

Medical boards could recommend three different types of disposal, depending on the severity of a case. The casualty could be passed as fit and returned to full flying duties upon full recovery. If only a partial recovery was achieved, however, they could be passed as fit for ground duties only. If the case showed no signs of improvement and their prognosis was poor, discharge was the only option.<sup>75</sup> The statistics indicated that the medical boards preferred to retain as many personnel in flying or ground duties as possible; this was undoubtedly influenced by the need for manpower, and combat efficiency in the face of mounting casualties – see Table 2.<sup>76</sup> The boards, however, did not have military commanders influencing the decisions of the panel. Two civilian practitioners and one military medical officer made the recommendations and if any disagreements occurred, the case would be referred to an appeal board.<sup>77</sup> With regard to the statistics, 75 per cent returned to duty, with 33 per cent resuming flying duties, and 42 per cent confined to the ground. This suggested that the disorders experienced were temporary, meaning that with rest and effective treatment, flying personnel could render effective service. Indeed, the service only lost 15 per cent of their neuropsychiatric casualties during this period.

**Table 2: The disposal of neuropsychiatric casualties, 1917-20**

<b>Disposal</b>	<b>No. of Cases</b>	<b>Percentage of Total Cases</b>
Fit for Full Duties	1,034	33
Fit but Permanently Unfit as Pilot or Observer	1,322	42
Discharged	477	15
Died	7	<1
Unknown	309	10
<b>Total:</b>	<b>3,149</b>	<b>100</b>
<b>Source:</b> RAFM, Medical Boards Collection (uncatalogued), 1917-20.		

<sup>75</sup> James L. Birley, 'Inefficient Pilots and Observers', in *Air Service Medical* (Washington DC, 1919), p. 108.

<sup>76</sup> Whether this was a direct instruction from commanding officers or actually proof of successful treatment is impossible to discern as no official documents exist.

<sup>77</sup> Macpherson, *History of the Great War Based on Official Documents: Medical Services General History*, i, p. 133.

The statistics also included seven men who died during their treatment but it is unclear if this was a result of physical injuries apart from their disorder or suicide.<sup>78</sup> With regard to other cases, the decision is unknown. The medical officer did not record the final decision on the cards of 309 cases and it is possible that they were still under hospital treatment, under appeal boards or transferred to civilian authorities after 1920. Overall, the statistics clearly indicated that the flying services sustained a significant number of such casualties but they managed to retain the services of most men affected. Most crucially, the link between operational flying and neuropsychiatric disorders had been made. The services could no longer claim that elite flying personnel were immune to the nervous and psychological effects of aerial warfare.

### *Neuropsychiatric Research in the Flying Services*

In light of the rising numbers of casualties and the growing incidence of shell-shock, the research of the nervous and psychological disorders of flying personnel was deemed essential. The war ministries, particularly the War Office, were keen for field studies to take place on ‘mental disability’ for the purposes of pensioning.<sup>79</sup> They expressed this view in 1915 but little had been done until an observant operational commander provided the impetus. Lieutenant-General Sir David Henderson, the General Officer Commanding the RFC in the Field, was well aware of the physical and psychological strains of aviation. He approached the Air Board to recommend that a ‘Special RFC Medical Board’ be formed to consider the medical vetting of prospective pilots – thereby implying that

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<sup>78</sup> Suicide was common in the RFC. Cook Florence Parrott commented that she ‘was tired of going to funerals.’ Please see: IWM, Sound Archive, 8857, Parrott, Florence Mary, 1985.

<sup>79</sup> TNA, AIR 2/139, Memorandum on the inclusion of disabilities due to gas, shock, etc. in the term ‘Injuries’, 30 June 1915.

existing procedures were inadequate.<sup>80</sup> Moreover, the expansion of recruitment to include men of the middle and artisan classes is likely to have necessitated stricter medical investigations – these men were suitable but they were not ‘superhuman’ like the original gentlemen pilots. According to Gibson and Harrison, each failed aviator cost the country c. £2,000 and any methods of reducing wastage were deemed desirable. The AMS were initially reluctant to free-up medical officers for these purposes, as they did not believe that there were any specific medical problems associated with flying. Henderson’s experience of the casualty clearing process allowed him to argue to the contrary and his accounts persuaded them to take action.<sup>81</sup>

The board was formed in 1916 with the purpose of researching the physiological effects of flying and the selection of aviators. With regard to the latter, they could claim more success than the army selection boards, for they tended to select the most successful aviators. A year later, the Special Medical Boards evolved into the Air Board Research Committee (Medical), which was established with a broader remit and a ‘view to bringing together more effectively the scientific work being done for the flying services.’<sup>82</sup> One of the areas was neuropsychiatric research.

From 1917, a number of medical officers, with interests in the nervous and psychological effects of aviation, undertook investigations of common symptoms and created a body of knowledge. The diagnoses commonly applied in the RFC, such as neurasthenia and nervous exhaustion, were also applied in peacetime but medical officers did not believe that they accounted adequately enough for the unique physiological and psychological stresses of operational flying. Moreover, hysterical conditions were

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<sup>80</sup> The Air Board was a department of the British government responsible for the effective coordination of the air services. TNA, Cabinet Office Records (hereafter CAB), 44/1, C.B. Heald, ‘Genesis of Aviation medicine in the Fighting Services of the Royal Flying Corps and Royal Air Force’, 1965.

<sup>81</sup> Gibson and Harrison, *Into Thin Air: A History of Aviation Medicine in the RAF*, pp. 28-9.

<sup>82</sup> Unfortunately, the records of this committee remain closed under the Data Protection Act (1998). Medical Research Council No. 53, *The Medical Problems of Flying: Including Reports Nos. I-VII of the Air Medical Investigation Committee*, p. 3.

considered to be specific to the lower social orders, and disorders of this type were not befitting of elite flying personnel. The belief that flyers were a unique breed led to the assumption that they were suffering from a disease specific to their employment. This guided the work of specialist and generalist medical officers, who were keen to elucidate the causes, symptoms, and types of disorders. This led to the discovery of conditions specific to the rigours of operational flying.

Captain Dudley Corbett, a medical officer attached to the 24<sup>th</sup> General Hospital, Etaples, was commissioned by the War Office to undertake a field study of the nervous and psychological disorders of flying personnel. Major James Birley, Medical Officer in Charge of the RFC in the Field, ensured that all flying personnel evacuated with relevant symptoms would pass through this facility, which provided a pool of research subjects.<sup>83</sup> Corbett interviewed each of the casualties and closely monitored the progression of their disorders. From his observations, he believed that he had identified a condition specific to operational flying, which he introduced to nomenclature.

‘Flying fatigue’, argued Corbett, was a nervous disorder brought-on by mental and physical exhaustion, with psychological manifestations. With regard to the common signs of the disorder, he stated:

A man begins to notice that he is beginning to feel generally tired, and that he has lost some of his original keenness. His sleep does not refresh him. He gets occasional headaches. Later he does not get off to sleep quite so well as he did, or he may get off fairly soon, and yet wake up early in the morning. He may lose his appetite...His sleep may be troubled with dreams of flying and fighting, and nightmares of all kinds. He may notice that he is getting irritable, and that he cannot stand the society of his friends...He probably feels quite fit and keen in the air but has to force himself to go up. After landing, he may be shaky and feel utterly exhausted...

Corbett explained that the strain of flying at the peak of operations gave rise to this disorder. Although the total number of flying hours was few, pilots were constantly at

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<sup>83</sup> Robinson, *The Dangerous Sky*, p. 101.

‘stand-by’ and were subjected to ‘short and irregular hours of sleep.’ There were no fixed days or periods of rest due to the constancy of the aerial war and this exacerbated the problem. The men had exhausted their supply of nervous energy, which led to the emergence of psychological symptoms.

However, those circumstances alone were not enough to account for the symptoms. Corbett argued that ‘the explanation of flying fatigue must be sought in the fact that flying takes a man into an element for which he was not specifically designed for by nature.’<sup>84</sup> Of course, he was referring to the single-most factor that made service in the air forces unique: flying at high altitudes. Corbett had therefore proposed that flying itself could have deleterious effects on the nerves of flying personnel, which could give rise to psychological symptoms. This was a disorder specific to the rigours of aerial warfare, which set apart pilots and observers as men with unique medical requirements.<sup>85</sup> Moreover, this was not a psychological disorder – it was a nervous condition that could be experienced by the healthiest of men. The introduction of a nervous disorder linked to flying marked a shift away from the favoured diagnoses of the medical boards, indicating that they lacked sufficient knowledge of the environmental and psychological stresses of operational flying.

While the work of Corbett was commissioned, *ad hoc* investigations also took place. Much like Corbett, the medical officers began to comment on the aetiology of the conditions. But the prevalence of shell-shock complicated matters, particularly for the RFC, as the vast majority of experts in psychological and neurological medicine were bogged-down in the research of infantry casualties. The exception to the rule was Major James Birley: a ‘brilliant nerve specialist’, who ‘devoted an immense amount of energy to

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<sup>84</sup> Dudley Corbett, ‘Flying Fatigue and Efficiency’, 3 August 1917, reprinted in *Air Service Medical* (Washington DC, 1919), p. 115.

<sup>85</sup> Other medical officers also studied the effects of fatigue and offered similar observations and conclusions. For instance, please see: James L. Birley, ‘1. Report on the Medical Aspects of High Flying’ in Medical Research Council No. 53 and H. Graeme Anderson, ‘Aeroplane Accidents’, *BMJ*, 1 (1918), pp. 73-76 .

his work for the RFC.<sup>86</sup> As conditions of the nerves were common in flying personnel, Birley sought to link these to the hardships of operational flying. He believed that a 'loss of nerve' had occurred, which could have a physical or psychological bases. His use of terminology was not scientifically rigorous but he attempted to present a model of 'loss of nerve', linked to specific aspects of operational flying.

Birley reported that cases under his care had lost their nerve for: flying any machine, stunting, aerial combat, anti-aircraft shells, or crashes. Each loss had different exciting causes and prognoses. With regard to 'loss of nerve for flying any machine', the major sign was psychological in nature – an inability or refusal to fly. This state of mind was permanent and it was recommended that affected personnel were removed from flying duties. Conversely, 'loss of nerve for stunting' was a temporary affliction and associated with symptoms of vertigo – a physical problem located in the brain and inner-ear. Pilots were to be removed from their current aircraft to 'heavy and stable bombing machines', where confidence could be rebuilt.<sup>87</sup> Most significantly, each type of loss of nerve was linked to a specific aspect of operational flying, meaning that this could not be experienced by anyone but flying personnel. 'Loss of nerve' was therefore a post-combat disorder with specific links to their type of employment, demonstrating that flying personnel were medically-unique.

Surgeon Captain Sheldon Dudley (RNAS), a generalist with interests in the psychological care of flying personnel, also observed a 'loss of flying nerve' in personnel under his care, which he linked to the nature of operational flying. Dudley compared the situation of the airman to that of an infantry soldier and argued that the latter had a greater chance of being killed but could last longer, in the psychological sense, as he was fighting in a mob. The pilot, on the other hand, was flying against the elements as well as the

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<sup>86</sup> L.A. Strange, *Recollections of an airman* (London, 1933), p. 169.

<sup>87</sup> Birley, 'Inefficient Pilots and Observers', in *Air Forces Medical*, p. 108.

enemy, which meant that he expended more nervous energy on trying to regulate his core bodily functions, controlling the aircraft, and engaging with hostile combatants.<sup>88</sup> ‘Loss of flying nerve’ could therefore have psychological or nervous origins, and was specific to operational flying.

While aetiological research was essential, other researchers emphasised the importance of prevention. Formal nervous and psychological testing was not part of the selection process, as officers on selection boards believed that they could identify the most suitable candidates. This chapter has already demonstrated that educated gentlemen were preferred, for men of this class were considered to exude the qualities of courageousness and sportsmanship, and possessed the correct temperament for flying. The matter of temperament was also discussed in medical publications.

Birley believed that ‘temperament for flying’ was of little importance but ‘temperament for fighting and combatant service’ was a matter demanding close attention. To him, temperament was ‘intimately bound up with Character, both hereditary and acquired’, and should be measured at the recruitment stage.<sup>89</sup> His contribution broadly supported the approach taken to the selection of RFC flying personnel, which gave elitism a scientific basis. Moreover, Surgeon Captain John Murphy (RNAS) suggested that the medical officer should monitor the confidence and psychological state of pilots continuously, as their temperament could be ‘enigmatical.’ If the aviator showed any signs of stress, he should be taken off flying duties, rather than risking poor performance, crashes, or death. Based on his observations of flying personnel in the course of the war, he recommended that pilots should be sent to the front directly from training – this removed the mystery, fear, and worry about what lay ahead. These practical observations aimed to reduce the burden of psychological disorders that were linked to temperamental

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<sup>88</sup> S.F. Dudley, ‘Active Service Flying: The Medical Point of View’, *Journal of the Royal Naval Medical Services* (hereafter *JRNMS*), 4 (1918), p. 131.

<sup>89</sup> James L. Birley, ‘8. Temperament and Service Flying’, in Medical Research Council No. 53, p. 141.

factors.<sup>90</sup> Murphy did not propose monitoring at the selection stage, however, thereby implying that a candidate's life history would not have a bearing on their emotional reactions in the air.

Other medical officers researched and devised scientific tests to assist in the identification of suitable flying personnel. Surgeon Captain Henry Graeme Anderson (RNAS) extolled the value of prevention and emphasised the importance of careful selection. He believed that men of an 'unsuitable temperament' should be weeded-out at the recruitment stage, thereby suggesting that hereditary or personal predisposition could give rise to disorders. Anderson argued that it was the duty of the medical officer to frame standards of physical and mental fitness 'by knowing the requirements of the aviator's life by studying the psychology and physiology of flying.'<sup>91</sup> A sound temperament and good emotional reactions were essential standards. Although these variables were subjective in nature, he relied upon physical tests to measure them. This allowed for generalisations to be made and standards applied across the board. Anderson proposed that a candidate should have a pneumograph attached to his chest (a device that measured respiratory rhythm), a trembler in one hand (a device that measured tremor), and a doigtier in the other (a device that measured finger strikes), which were connected to a recorder that would show the effects of fear on respiratory rhythm, vasomotor control, and tremor. Behind the candidate, a revolver would be fired and their reactions recorded: those with the shortest reaction times would become the best pilots, as they could compose themselves quickly.<sup>92</sup> Anderson had therefore offered a means identifying the temperamentally unsuitable, which aimed to decrease the incidence of neuropsychiatric disorders.

In addition, Martin Flack, a physiologist of the Medical Research Committee, offered his contribution. He believed that candidates should have their neuro-muscular

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<sup>90</sup> J.S. Murphy, 'Some Medical Points in Connection with Flying', *JRNMS*, 4 (1918), pp. 281-2.

<sup>91</sup> Graeme Anderson, *The Medical and Surgical Aspects of Aviation*, p. 18.

<sup>92</sup> *Ibid*, pp. 26, 39.

and cardiovascular systems tested before joining the service. This was of more value than the study of temperament, for it largely ‘baffle[d] assessment.’ He found that men who should have made excellent flyers had to be ‘practically driven into machines’, thereby implying that the selection process was fundamentally flawed.<sup>93</sup> Flack therefore advocated physical tests to ascertain potential nervous strain, based upon the examination of the cardiovascular system; particularly the diastolic and pulse pressures.<sup>94</sup> He concluded that men of 20-27 years of age were more likely to succeed as pilots than younger men, as flying exposed the body to the greatest physiological strains and a fully-developed physique would be able to withstand the pressures.<sup>95</sup> Like Anderson, Flack had proposed a means of prevention based upon physiological testing.

The Great War therefore exposed the propensity of pilots to neuropsychiatric disorders associated with operational flying. Perceptions of the elite, superhuman flyer were directly challenged, as thousands began to suffer from nervous and psychological symptoms. A number of factors shaped the research and understanding of the disorders, including considerations of image, the prevalence of shell-shock, and mounting casualties. It was found that personnel of the air forces were suffering from conditions specific to their employment, which could have a nervous or psychological basis. These were the understandings taken into the newly-formed RAF.

### **The Doldrums: Neuropsychiatry and the Royal Air Force, 1918-38**

The RAF was formed on 1 April 1918 by the amalgamation of the RFC and RNAS. In an age of ruthless efficiency, the obvious overlapping of the functions of the two corps, competition between them for resources, and the failure of supply organisations to meet

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<sup>93</sup> Flack, ‘Report VI: The Selection of Candidates for Flying: Report on the examination of a series of successful pilots and unsuccessful pupils from the point of view of their cardiovascular and neuro-muscular systems’, p. 84.

<sup>94</sup> *Ibid*, p. 83.

<sup>95</sup> *Ibid*, p. 82.

their demands meant that the organisation of military aviation needed to be addressed. A great proponent of an amalgamated, independent service was General Jan Christian Smuts, a British Transvaal citizen and prominent military figure. He played a particularly notable role in the formation of the RAF by reviewing the future of British air power. In this regard, he stated:

There is absolutely no limit to the scale of its future independent war use. And the day may not be far off when aerial operations with their devastation of enemy lands and destruction of industries and populous centres on a vast scale may become one the principal operations of war, to which the older forms of military and naval operations become secondary and subordinate.<sup>96</sup>

Smuts had foreshadowed the nature of the RAF's first independent engagements, for it undertook the policing of empire in the Middle East, with the bomber as the weapon of choice.<sup>97</sup>

The creation of an independent air force was inextricably linked to the building of a unique service identity. To emphasise the merger of the military and naval air services, the titles of officers had a naval flavour – Air Commodore forms a prime example. The RAF adopted a distinctive uniform made from a sky blue cloth, which was later replaced by a darker slate blue due to questions of practicality. The service adopted a Latin motto, which was particularly essential in forging an independent identity: *Per Ardua Ad Astra* – ‘Through Adversity to the Stars.’ Thus from its inception, the RAF attempted to establish a unique reputation as a professional, technologically-advanced armed force. It was *avant-garde*, forward-thinking, and not bound by customs, and outdated practices.<sup>98</sup>

While discussions were taking place on the new air force, plans were also made for the establishment of an independent medical service. The Flying Services Medical

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<sup>96</sup>‘Short History of the Royal Air Force’, Air Historical Branch (official publication), p. 25, accessed 21 June 2015 at <http://www.raf.mod.uk/history/shorthisoryoftheroyalairforce.cfm>.

<sup>97</sup> For an account of RAF engagements during the interwar years, please see: J. James, *The Paladins: The story of the RAF up to the outbreak of World War II* (London, 1991). On empire: D. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, 1990).

<sup>98</sup> Royal Air Force, *Short History of the Royal Air Force*, p. 51.

Advisory Committee was formed to consider the matter, under the directorship of renowned surgeon Sir William Watson Cheyne.<sup>99</sup> They drew up proposals, which recommended that a new medical service be formed on the grounds of practicality and the nature of the work that would be undertaken. The committee felt it was evident that difficulties would arise if medical officers working under two different services were to work under the same command: questions of authority and procedure were inevitable. Most importantly, the Great War had starkly demonstrated that aviation medical work was so specific that it required specialist attention:

Aviation presents new physiological and pathological problems which require special study and which can only be dealt with satisfactorily by a specially trained body of medical men. Medical officers who are not only familiar with the ailments of non-flying men cannot, without previous and special study of the matter, properly deal with or understand the conditions which may arise in aviators... So far, our knowledge of these matters and of the best methods of dealing with them is still in quite an early stage. Nevertheless, in certain directions, some points have already been made out which have proved of great practical importance in the selection of Flying Officers, in obviating some of the special risks...<sup>100</sup>

Once again, flying personnel were set apart from their counterparts in the army and navy as men with unique medical requirements, specific to aerial warfare. They therefore required specialist medical care.

The plans submitted by the Watson Cheyne committee allowed for a gradual take-over of the medical responsibilities for the air services, the establishment of an advisory board, and a medical directorate. From April 1918, medical officers attached to the flying services were to take orders from the Medical Department of the Air Force and by July, senior medical officers were appointed who were responsible for the medical arrangements of all units in their area. There was considerable delay in gaining financial approval for the new medical service and it was not until July 1920 that the first permanent and short

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<sup>99</sup> Sir William Watson Cheyne, 1<sup>st</sup> Baronet KCMG, CB, FRCS, FRS (1852-1932) was a renowned British surgeon and bacteriologist. He pioneered methods of antiseptic surgery under the direction of Joseph Lister.

<sup>100</sup> TNA, AIR 2/87, Report on the formation of a medical service for the air force, November 1917, p. 1.

service commissions were granted. The Royal Air Force Medical Service (RAFMS) was officially formed.

This branch, like the RAF, was not bound by the traditions of the other armed forces and asserted its independence whenever it could. In designing their cap badge, they decided to dispense with the staffs and serpents favoured by the other medical services, in favour of a central Egyptian ankh, entwined with a snake.<sup>101</sup> Thus from its inauguration, the RAFMS was keen to establish a unique identity among the military medical services. It was a specialist department with knowledge of the complex physiological aspects of aviation and were keen to advance this message at any given opportunity.

### ***The War Office Committee of Enquiry into Shell-Shock, 1920-22***

The first opportunity for the medical service to assert its independence and specialist knowledge came with the establishment of the War Office Committee of Enquiry into Shell-Shock. In 1920, Lord Southborough expressed the view that the ‘vast and complicated subject’ of shell-shock required investigation and had to ‘be approached with care and circumspection.’<sup>102</sup> The Ministry of Pensions were dealing with an unprecedented number of claimants and it was therefore the duty of the government to record all of the knowledge and expertise in this area. He proposed that a committee be formed to investigate the matter.<sup>103</sup> The motion was carried and Southborough became chairman of the War Office Committee of Enquiry into Shell-Shock five months later; the results of which had ramifications for the future of psychological medicine in the British armed forces.

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<sup>101</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services*, i, pp. 7-10.

<sup>102</sup> Francis Hopwood, 1<sup>st</sup> Baron Southborough GCB, GCMG, GCVO, KCSI, PC (1860-1947) was a British civil servant with experience of high-profile committee work. He was secretary to the Irish Convention, which explored solutions to the Home Rule question and chairman to the Franchise Committee, which looked into suffrage in India: Parliamentary Debates: House of Lords, Wednesday 28<sup>th</sup> April 1920, Vol. 39, No. 29, Official Report (unrevised), (London, 1920), col. 1094.

<sup>103</sup> Ibid, col. 1095-8.

The committee was composed of civil servants, representatives from the armed services, military medical services, and psychological and neurological experts. Each delegate was chosen based upon his expertise or vested interests in the condition. However, representatives from the RAF were excluded from the initial invitations and this offended the newly-formed Air Ministry. The organisation and administrative aspects of the fledgling RAFMS were still under discussion but this did not stop medical personnel from seeking opportunities to establish a voice in the hierarchical world of military medicine.

The secretary of the Air Ministry therefore approached the chairman to ask for representation. By making such a request, the RAFMS were contradicting Great War medical officers, who were determined to prove that flying personnel were immune to hysteria and were suffering from an employment-specific disorder. This was the most prolific medical investigation of its time and this may account for their interest. It provided a platform upon which to assert their independence and specialist medical knowledge. The secretary of the Air Ministry nominated Birley to comment in his former capacity as Medical Officer in Charge of the RAF in the Field; Wing Commander Martin Flack, the Officer in Charge of the RAF Physiological Laboratory; and alternatively, Wing Commander John McIntyre, who would later become Director-General of the RAFMS.<sup>104</sup> Southborough reluctantly granted the Air Ministry representation but the fact that they were not invited in the first instance is illuminating.

Reasons for the exclusion of the RAF have not been outlined in the committee papers but informed assumptions can be made. First of all, shell-shock was assumed to be an army problem. The disorder was initially observed in infantry personnel and they formed the vast majority of pension claimants. It would have been a reasonable

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<sup>104</sup> TNA, War Office Records (hereafter WO), 32/4747, Letter from W.J. Nicholson, Secretary of Air Ministry to Southborough, 29 July 1920.

assumption that shell-shock would not have affected flying personnel, for their combat environment and stresses were entirely different. Indeed, aviation medical research sought to prove this; accordingly, the incidence of shell-shock in the RFC was set at *c.* 2.7 per cent.<sup>105</sup> Secondly, from August 1914 to April 1918, flying personnel served in the RFC or RNAS, and received treatment from the army or naval medical services. These were merely specialist units of the broader services and not distinct flying forces; thus representatives from the War Office and Admiralty could comment on the experiences of flying personnel, as well as soldiers and seamen. Finally, the formation of the RAF as an independent flying service came only eight months before the end of the war. It was highly unlikely that the experiences of personnel and medical officers would be any different to their predecessors'. The exclusion of the RAF therefore implied that shell-shock did not occur in flying personnel.

The committee met 41 times from 7 September 1920 to consider the different types of psychological problems that were commonly known as shell-shock. They gathered expert knowledge with a view to advise, whether by training or education, if some method of guarding against its occurrence could be devised.<sup>106</sup> In order to gain this crucial information, the committee called 59 witnesses from the medical profession, the government, and the armed services, to give evidence on their experiences of the condition.<sup>107</sup> The witnesses were issued with a guidance questionnaire prior to their appointment that consisted of no less than 38 parts. It asked for their opinions on the origins of shell-shock, the symptoms of the disorder, and armed forces selection

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<sup>105</sup> See Table 1.

<sup>106</sup> TNA, WO 32/4747, War Office, Publicity Department, Committee on "Shell-Shock" Cases, 1<sup>st</sup> September 1920.

<sup>107</sup> TNA, WO 32/4748, Report of the War Office Committee of Enquiry into "Shell-Shock" Presented to Parliament by Command of His Majesty, 1922, p. 3.

procedures to give but a few examples.<sup>108</sup> At each of the meetings, committee members put forward suggestions of who should be interviewed and for sources to be investigated. Wing Commander Flack stated that RAF personnel should be called and agreed to investigate what records were available in relation to shell-shock in flying personnel during the first meeting.<sup>109</sup> He found, however, that the majority of the records were with the army and navy, and that the RAF only held case notes for those who had developed the condition after April 1918. Furthermore, the Air Ministry did not think that they had a suitable officer to examine these records, which shows that there was a lack of psychological or neurological expertise in the RAFMS.<sup>110</sup> Its investigation was impossible.

Although the RAF held no data on the occurrence of shell-shock, Flack was keen to impart knowledge on the nature of neuropsychiatric disorders in flying personnel. By the 30<sup>th</sup> meeting of the committee, no evidence had been gleaned from the RAF regarding any type of disorder, let alone shell-shock. Flack highlighted this discrepancy but was met with resistance. Southborough was sceptical and questioned if RAF representatives ‘could add anything to the evidence already obtained from Combatant Officers of the other services.’<sup>111</sup> No evidence was given that referred to the RFC nor RNAS, which meant that flying personnel had not been adequately represented. Southborough was still of the opinion that shell-shock was a problem exclusive to the army and navy, and that their medical officers could account for any symptoms in flying personnel. He relented, however, and agreed for RAF witnesses to be called. As a result, the RAFMS was allowed

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<sup>108</sup> TNA, WO 32/4747, Questions for the guidance of Witnesses giving evidence before the War Office Committee of Enquiry on “Shell-Shock”, 1920-21.

<sup>109</sup> TNA, WO 32/4747, War Office Committee on Shell Shock, Minutes of 1<sup>st</sup> Meeting, 7<sup>th</sup> September, 1920, p. 1.

<sup>110</sup> TNA, WO 32/4747, War Office Committee on Shell Shock, Minutes of 2<sup>nd</sup> Meeting, 21 October 1920, p. 7.

<sup>111</sup> TNA, WO 32/4747, War Office Committee on Shell Shock, Minutes of 30<sup>th</sup> Meeting, 22 September 1921, p. 1.

to contribute to the biggest investigation of its time and attempted to establish itself as an authority on the unique disorders of flying personnel.

In total, two witnesses were permitted to give evidence on shell-shock and mental disorders in the flying services. The first was Air-Vice Marshal Sir John Salmond, a high-ranking RFC and RAF commander who served in the Great War.<sup>112</sup> This operational commander had no medical training, let alone psychiatric or neurological expertise, but spent his war in close contact with flying personnel. He was therefore in a position to give evidence on his observations. Salmond defined shell-shock as ‘a nervous state which seriously interfered with the patient’s capacity for all forms of work...render[ing] him unfit to carry on the ordinary forms of everyday life...’ His account was non-specific – no mentions were made of shells or the combat environment, showing that shell-shock could be experienced by flying personnel. Men who were ‘highly strung and nervous’, he continued, were the most likely to be affected by the condition; evidence to suggest that he subscribed to the RFC’s views on temperament. Further to this, most individuals, when given treatment according to their temperament, could be brought back to efficiency.<sup>113</sup> The condition was therefore treatable and the pilot or observer could be returned to duty.

Most crucially, Salmond made a few points in his statement that summarised the medical theories of the Great War but also raised a greater overarching issue:

...all war pilots would inevitably break down in time if not relieved. The period of time before varies according to the temperament of the individual pilot and the nature of his flying duties...when officers in positions of responsibility break down [it] usually took the form of complete mental and physical exhaustion brought on by constant overwork. “Shell shock”...is in most cases greater among pilots who have been in the line for some length of time, as their powers of endurance are to a large extent used up. If the leaders of units, such as Flight Commanders of a

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<sup>112</sup> Sir John Maitland Salmond GCB, CMG, CVO, DSO & Bar (1881 – 1968) was a high-ranking RFC and RAF officer. During the Great War, he served as a squadron commander, a wing commander, and as General Officer Commanding the RAF on the Western Front.

<sup>113</sup> TNA, WO 32/4748, Report of the War Office Committee of Enquiry into “Shell-Shock” Presented to Parliament by Command of His Majesty, pp. 83-4.

squadron, are allowed to get into a fatigued state...their lethargy will be caught by their juniors, who look to them for example, energy and initiative.<sup>114</sup>

Salmond had therefore framed shell-shock as the cumulative effects of fatigue. He had effectively recast the hysterical infantry condition into a type specific to flying personnel. What is more, this state was considered to be 'contagious', as it was believed that juniors could 'catch' the lethargy of their leaders. Salmond's most important contribution stemmed from the argument that mental breakdown was inevitable. His position was justified as neuropsychiatric casualties comprised at least 13 per cent of all casualties seen by medical boards during the period 1917-20. Salmond had therefore demonstrated that flying personnel exhibited a unique form of shell-shock, quite apart from the hysteria experienced by soldiers and seamen. This statement justified the very existence of the RAFMS, who were specially-trained to negotiate the complex psychological and physiological strains of operational flying.

Evidence provided by Squadron Leader Craig of the RAFMS supported Salmond's account but cited other potential causes of shell-shock in flying personnel. He presented a list of 18 contributory factors, all of which were potentially hazardous to the nerves of pilots and observers.<sup>115</sup> His multi-faceted account outlined physiological strains including cold, oxygen want, and failure of the respiratory mechanism at high altitudes. It also considered the specific dangers of operational flying. Linked to this was low morale; if there were high casualties in the unit, a lack of confidence in certain machines, or fellow personnel, the men were more susceptible to the effects of shell-shock. Moreover, conditions related to sleep-deprivation and fatigue were also highlighted as potential triggers. Flying personnel often flew for long periods, without leave or transfer to a home station. Insomnia was common, as men were unable to relax. Flying put the body under

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<sup>114</sup> TNA, WO 32/4748, Report of the War Office Committee of Enquiry into "Shell-Shock" Presented to Parliament by Command of His Majesty, p. 84.

<sup>115</sup> *Ibid*, pp. 86-7.

severe strain in a short period of time, which was physically and mentally exhausting. These represent but a few examples but Craig's account demonstrated that shell-shock was a complex disorder with multiple variables at play. Like Salmond, his explanations were specific to the air force, showing that flying personnel faced different physical and environmental stresses to their counterparts in the army and navy.

Discussions during the War Office Committee of Enquiry into Shell-Shock indicate a pervading sense of denial. It was initially believed that the condition was not experienced by personnel of the air forces in great enough numbers to warrant investigation, nor was there an expert to undertake this work. The evidence given by witnesses suggested that RAF personnel did suffer from shell-shock – a type specific to the rigours of operational flying. Their arguments were constructed from a number of studies conducted in the Great War, which ironically sought to distance the flying services from the disorder. The limited participation of the air force in the enquiry led to the assumption that mental and nervous disorders were not a major issue in the RAF. This bred the complacency that would characterise the interwar years.

### *Attitudes to Neuropsychiatric Disorders and Research, 1922-38*

The shell-shock enquiry clearly demonstrated that it was important to research and understand the nervous and mental disorders of service personnel. In the RAF, however, little research was completed between the wars due to funding cutbacks.<sup>116</sup> In the midst of a global economic crisis, the RAF was fighting for its very survival and had to economise. Priority was therefore given to physiological research, including oxygen provision and the effects of cold, for such studies would have an impact on every man that took to the air. Psychological and nervous disorders would only affect a small proportion by comparison.

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<sup>116</sup> English, 'A Predisposition to Cowardice? Aviation Psychology and the Genesis of 'Lack of Moral Fibre'', p. 18.

A physiological laboratory was loaned to the RAF by the Medical Research Council to conduct research of this type. The laboratory consisted of two offices and a toilet in a large hut but it allowed physiologist Wing Commander Martin Flack and his assistants to carry out a number of investigations. These included testing pilots' responses to temperature changes and pressure in an environmental chamber, the potential effects of chemical warfare, the prevention of head injuries and hearing loss, and the optimum layout of cockpit instruments.<sup>117</sup> Due to the focus on physiological research, the understanding of the mental and nervous disorders of flying personnel began to stagnate but the physiological researchers did attempt to advance the study of the conditions.

Flack conducted research into the operational limits of flying personnel, which implied that pilots and observers had a 'breaking point.' He believed that physical and mental staleness could be identified through the use of a 'manometer.' This was a U-shaped tube, designed to measure lung capacity and expiratory force, as candidates supported a column of mercury whilst exhaling. This technique was designed to identify cases of staleness at the earliest possible stage. He actively promoted the use of this procedure, for its objectivity allowed for greater accuracy and for performance to be compared over time.<sup>118</sup> Flack's contribution was important for he had proposed a means of identifying men prior to nervous breakdown using simple physiological testing. The procedure could be standardised and produce efficient and quantifiable results.

While Flack's research was ground-breaking, Birley was considered to be the leading expert on the nervous and psychological effects of operational flying. He gained recognition for his work in the Great War and was invited to deliver a series of Goulstonian Lectures to the Royal College of Physicians. In his lectures, he reflected on

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<sup>117</sup> T.M. Gibson and M.H. Harrison, 'Aviation medicine in the United Kingdom: from the end of World War I to the End of World War II, 1919-1945', *Aviation, Space, and Environmental Medicine*, 76 (2005), p. 689.

<sup>118</sup> Martin Flack, 'Applied Physiology of Aviation', reprinted in Graeme Anderson, *The Medical and Surgical Aspects of Aviation*, pp. 41-58.

what was learned during the war and identified areas for future improvement. Birley believed that the aviator passed through three stages in his flying career, all of which could have a bearing on mental and nervous health, and combat efficiency: the periods of inexperience, experience, and stress.

The 'period of inexperience' was a particularly dangerous time in a pilot's career, for his training and first operations were carried-out at this stage. It was unanimously agreed that the pilot was 'likely to become a casualty himself than to inflict casualties on the enemy' at this time. Birley noted that 70 per cent of neuropsychiatric casualties occurred during this period, particularly in the first two months of service. If the pilot survived, he would progress to the 'period of experience': 'the summer of his career, a period of confidence and self-assurance, of initiative and dash, of skill and wise discrimination, of success and achievement.' The length of this period varied between individuals but the pilot would inevitably hit the 'period of stress.' This was defined by mental and physical fatigue, and resulted in the pilot feeling 'stale' or 'burnt out.' It was therefore recommended that the medical officer should monitor the men closely to identify the start of this period, to ensure that rest was given 'at the critical moment.'<sup>119</sup> Birley had therefore recognised that all flying personnel were vulnerable to the physiological and psychological effects of operational flying and required careful monitoring.

Birley also commented on the assessment of temperament that was common in the war. In this respect, he stated that he had 'little sympathy' for attempts to identify men with a suitable temper for flying by physiological and psychological means. Instead, he suggested that 'flying aptitude' should be assessed and compared with any other form of activity requiring perfect hand and eye coordination. Birley quoted neurologist Henry Head, who stated: 'Flying introduces no elements which are not in evidence in riding a

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<sup>119</sup> J. L. Birley 'Goulstonian Lectures on The Principles of Medical Science as applied to Military Aviation, Lecture I', p. 1149.

motor-bicycle, game-shooting, cricket, or golf.’ He mused that two individuals may be equally good at the same game or sport, yet their methods may vary, and so too their temperaments may differ but their end results the same. Birley therefore advocated the use of psychometric testing, which had afforded promising results in the French flying services. He envisaged tests that would illicit simple and complex reactions, and choice, which were measurable by a ‘chronometer’ that would record visual, auditory, and tactile reactions. Those with the quickest reaction times would become the best pilots.<sup>120</sup> Birley had therefore proposed a means of identifying the most suitable pilots in an efficient and objective manner.

The application of physiological methods and theories to psychological medicine was not a new concept, particularly in relation to stress. Mechanistic conceptions of stress and mental disease rose to prominence in the late nineteenth century. There was a belief that the body was in a state of equilibrium, which could be disturbed or imbalanced in periods of ill-health. This view was advanced by 1914, when American surgeon George Crile inspired a generation of psychiatrists and neurologists to take a mechanistic view of disease. Physical and psychological disorders were understood to be the product of physiological attempts to adapt to environmental conditions. Crile argued that the physiological system was working at an ‘overwhelming rate of speed’ by the ‘stress of our present-day life.’ Overstimulation was a major problem and if the body could not adapt to environmental conditions, the function of vital organs, such as the brain and adrenal glands, would be disturbed.<sup>121</sup> This indicated a belief that the body worked on the principle of coordinated biological activity and that stress was an external, environmental

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<sup>120</sup> Birley ‘Goulstonian Lectures on The Principles of Medical Science as applied to Military Aviation, Lecture I’, p. 1148.

<sup>121</sup> G.W. Crile, *The Origin and Nature of the Emotions* (Charleston, 1915), cited in M. Jackson, *The Age of Stress: Science and the Search for Stability* (Oxford, 2013), p. 56.

variable.<sup>122</sup> Such theories influenced the dominant ‘psychobiology’ of the interwar years where specialists such as Adolf Meyer argued that abnormal behaviours were a manifestation of the failure to adapt to environmental stresses.<sup>123</sup> Birley and Flack’s emphasis on physiological conceptions of stress and mental disease were therefore products of their time.

Moreover, the emphasis on physiology was a conscious attack on the psychological turn in British medicine. The somatic orientation that had characterised turn-of-the-century accounts of nervous exhaustion, insanity, and trauma were beginning to be eclipsed by psychological explanations. According to Jackson, many studies purposefully reiterated the investigations and interpretations of earlier physiologists, who had focussed their attentions on the state of the nervous system. Birley, for instance, cited the work of physiologists such as Walter Cannon and J.S. Haldane on emotions and the regulation of the body, as well as publications by psychologists W.H.R. Rivers and Sigmund Freud.<sup>124</sup> This position was reiterated in a lecture to the RAF Staff College in 1923. Despite the title, ‘A Lecture on the Psychology of Courage’, Birley outlined criticisms of psychological methods:

The Freudian psychology is, however, open to one important criticism, especially when it is applied, as its adherents are now applying it, to normal behaviour, and the criticism is that its point of view is essentially human and ignored biological considerations... The comparative or biological method is naturally free from this objection... In its study of man the comparative method adopts the point of view that man as a solitary animal is unknown, that he is not completely free to act as his individual fancy dictates, but is subject to certain instinctive influences, some of them common to all animals and to others that are not.<sup>125</sup>

He therefore implied that certain mental disorders were the product of inherited traits or biological make-up. For the remainder of his lecture, Birley framed ‘courage’, and the loss

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<sup>122</sup> Jackson, *The Age of Stress: Science and the Search for Stability*, p. 67.

<sup>123</sup> Rhodri Hayward, ‘Medicine and the Mind’ in M. Jackson (ed.), *The Oxford Handbook of the History of Medicine* (Oxford, 2011), p. 533.

<sup>124</sup> Jackson, *The Age of Stress*, pp. 54-5.

<sup>125</sup> J.L. Birley, ‘A Lecture on the Psychology of Courage’, *The Lancet*, 201 (1923), p. 781.

of such a state, in psychobiological terms. For instance, he argued that fatigue was the primary cause of a loss of courage, which could be brought about by sleep deprivation, exposure, and the effects of high-altitude. As a result, ‘courage and morale tend[ed] to evaporate at high altitudes...fear which had hitherto been completely suppressed, gradually obtrude[d] into consciousness.’<sup>126</sup> While Birley’s rejection of psychological methods was significant, the location of the lecture was even more important.

Birley was invited to address junior officers at the newly-formed RAF Staff College. The graduates would eventually command high-ranking posts, carrying their lessons from the Staff College with them.<sup>127</sup> The fact that Birley had been invited to speak to such an important cadre of men came as a surprise:

...in the good old days, not so long ago perhaps, both the lecture and the lecturer would have been officially banned. It would have been tacitly assumed that courage was inherent in every soldier because he was a soldier, and that under no imaginable circumstances could any soldier lack this quality. It would have been realised that any inquiry into courage must inevitably involve an inquiry into fear, a most reprehensible and dangerous subject for discussion in a school of military instruction.<sup>128</sup>

The delivery of this lecture implied that the RAF was more psychologically-minded than their predecessors. They had admitted that courage was not inborn and that the understanding of the nervous and psychological effects of aviation was important.

This position was short-lived, however, for the RAF had committed itself once more to traditional standards in the selection of flying personnel. According to Collins, veteran aviators training new officers at a new cadet facility at Cranwell, deliberately targeted public school boys, for they had no ‘inherited faults of moral depravity.’<sup>129</sup> Lord Hugh Cecil, an experienced selection officer, sat on the committee that decided upon the

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<sup>126</sup> Birley, ‘A Lecture on the Psychology of Courage’, p. 784.

<sup>127</sup> Collins, ‘A Fear of Flying’.

<sup>128</sup> Birley, ‘A Lecture on the Psychology of Courage’, p. 779.

<sup>129</sup> Collins, ‘A Fear of Flying’.

entrance requirements for cadets and extolled the need for ‘gentlemanly chivalry’ and ‘heroism’ among the recruits.<sup>130</sup>

What is more, the RAF introduced a new branch to the service that was open to the wealthiest classes. The Auxiliary Air Force (AuxAF) was the vision of Marshal of the RAF, Lord Hugh Trenchard, who wanted to create squadrons of elite civilians that would be ready to fight a war when required. Traditional pre-war procedures were reinstated and candidates were expected to fund the cost of flying lessons and licensing by themselves in the first instance. An article in *Flight* estimated the cost per candidate at around £96, meaning that the AuxAF was only open to the wealthier sort.<sup>131</sup> Despite mounting evidence that flying personnel were vulnerable to the nervous and psychological effects of aerial warfare, the RAF were too concerned with their elite image to even consider the amendment of selection procedures. This also cemented the view that the research of nervous and mental disorders was not necessary, for the ‘knights of the air’ could rise above such trifling matters. The lessons of the Great War had been forgotten.

Medical knowledge on the nervous and psychological disorders of flying personnel began to stagnate. Even when the RAFMS employed neurological staff this did not change matters. In 1923, Birley was engaged as a Civilian Consultant in Neurology, and the discipline featured among the first specialties of the Central Medical Establishment— a new body responsible for the assessment of fitness of serving officers and aircrew, and candidates for entry to the service.<sup>132</sup> Dr Hugh Burton, a former medical officer at the Moss Side State Institution, Maghull, became the RAF’s first permanent Consultant in Neurology; a position that he remained in until his retirement in 1944.<sup>133</sup> No psychiatric

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<sup>130</sup> TNA, AIR 10/6, Regulations Affecting Entry and Training of Cadets, c. 1918.

<sup>131</sup> ‘Auxiliary Air Force’ *Flight*, 8 October 1925, pp. 663-4.

<sup>132</sup> TNA, AIR 49/370, Central Medical Establishment: report 1917-1945 (3<sup>rd</sup> draft), 1951, p. 1.

<sup>133</sup> E. Jones, ‘Shell Shock at Maghull and the Maudsley: Models of Psychological Medicine in the UK’, *Journal of the History of Medicine and Allied Sciences*, 65 (2010), pp. 371-3; Editor, ‘Naval and Military Appointments, *Supplement to the BMJ*, 19 November 1921: 191; His Majesty’s Stationery Office (hereafter

staff were employed at this point; a decision which was undoubtedly influenced by the perceived elite quality of flying personnel. Indeed, the official medical manuals for the RAF confirmed this belief once more by extolling the importance of temperament and fearlessness in the selection process. The examination of the circulatory and respiratory mechanisms was the only way to identify liabilities to nervous strain and fear. If a man suffered a breakdown, ‘no abstruse psychological methods’ were required; only a fortnight’s rest to prevent a ‘prolonged breakdown later.’<sup>134</sup> It is clear that the RAF did not perceive neuropsychiatric disorders to be a threat due to the elite quality of flying personnel but this complacency was unfounded.

Neuropsychiatric disorders were prevalent in the interwar RAF. According to the *Reports on the Health of the Royal Air Force* for the period 1929-1938, ‘Diseases of the Nervous System and Brain’ accounted for a considerable number of casualties – see Table 3. This administrative grouping covered all psychological and neurological cases, and encompassed disorders such as psychoneurosis, mental diseases, and epilepsy. The number of such cases never dropped below 200 and in 1937, the figure reached a peak of 371.<sup>135</sup> Although diseases of the nervous system and brain never represented more than two per cent of the total casualties, they were the leading cause of discharge during this period. In 1937, 123 men were invalided with diseases of this type, and the percentage of total invalids ranged from 23.1 in 1929 to 37 per cent in 1937.

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HMSO), *The Air Force List*, (January 1938), col. 890; Editor, ‘H.M. Forces Appointments’, *Supplement to the BMJ*, 19 August 1944, p. 44.

<sup>134</sup> TNA, AIR 10/1296, *Manual for Medical Officers of the Royal Air Force*, (London, 1927), pp. 164-70.

<sup>135</sup> The latter figure can be attributed to the increased intake of personnel to the RAF and a broader demographic, as the RAF Volunteer Reserve was formed a year earlier – this will be discussed in the next chapter.

**Table 3: Diseases of the nervous system and brain in the Royal Air Force at home and abroad, 1929-38**

<b>Year</b>	<b>Cases</b>	<b>Invalided</b>	<b>Percentage of Cases</b>	<b>Percentage of Invalids</b>
1929	230	55	1.6	23.1
1930	200	49	1.5	26.2
1931	226	73	1.6	30.5
1932	203	55	1.6	25.2
1933	203	66	1.5	35.1
1934	220	55	1.8	35.5
1935	237	46	1.7	27.1
1936	333	85	1.6	32.2
1937	371	123	1.6	37.0
1938	261	102	-	-

**Sources:** Statistical information drawn from the *Reports on the Health of the Royal Air Force* for the years 1927-1938. TNA, AIR 10/1785, AIR 10/1812, AIR 10/5560-5566.

Thus it is clear that the RAFMS was still reluctant to admit the prevalence of neuropsychiatric disorders. The interwar years were defined by a lack of research, meaning that the understanding of nervous and psychological conditions remained firmly rooted in the Great War. The air force's preoccupation with image bred this denial and complacency, for flying personnel were highly-selected, fearless, and of the correct temperament. The experience of flying personnel demonstrated that this assessment was optimistic, for the number of neuropsychiatric casualties rose throughout this period, and most were discharged from the service.

### **Conclusion**

The period 1914-18 was a particularly turbulent era in the history of the British flying services. Flying personnel, men who were considered to be physically and mentally superior to soldiers, began to break down in their thousands and it was the job of the medical services to diagnose, understand, and treat their conditions. Success in this area relied upon a deep understanding of the nervous and psychological disorders of flying personnel and this chapter has investigated the social, cultural, and medical factors that

shaped the research of these conditions. A number of important conclusions can be drawn; many of which would have ramifications for the practice of neuropsychiatry during the Second World War.

First of all, the prevalence of neuropsychiatric disorders in flying personnel came as a surprise to the British flying services. It was soon realised that socially-elite pilots and observers, men selected for their innate attributes of manliness, courageousness, and temperament, could break down in time, which belied the ideology of air force commanders. The flying services were concerned with building an elite image and therefore attempted to set their personnel apart from hysterical infantrymen. Specific diagnoses were applied with the intention of distancing the air forces from the traumatic neuroses affecting the army and ensured that personnel would receive a diagnosis befitting officers and gentlemen. Conditions of the nerves were the most prevalent and the majority of men were returned to duty, showing that with rest, tired nerves could be restored. Research was also deemed essential in understanding these conditions and medical officers found that flying personnel were suffering from diseases inextricably linked to operational flying. It is clear that the Great War represented a period of discovery for air force medical officers, with neuropsychiatric disorders representing an unprecedented burden.

By the interwar years, these important lessons had been forgotten. Widespread denial was prevalent across the government and newly-formed RAF with regard to the propensity of flying personnel to mental disorders. At the War Office Committee of Enquiry into Shell-Shock, the RAFMS sought to build a unique image and establish a voice for the newly formed medical branch. They were not awarded an automatic space on the committee showing that shell-shock was considered to be an army problem but they fought for representation and won. Once successful they somewhat ironically tried to prove that shell-shock was in fact a problem in the flying services, dismantling the efforts

of their forebears. Further research was limited for funding cutbacks and the belief that flying personnel were a unique breed dictated that nervous and psychological disorders were unlikely to present problems. Moreover, the RAF maintained their traditional selection procedures, emphasising manliness and temperament, despite mounting evidence to suggest that such standards did not guarantee success or protection against the strains of aerial warfare. What is more, the RAFMS employed only one permanent neurologist in a consultative capacity, in spite of the mounting neuropsychiatric casualties at home and overseas.

The RAF was therefore completely unprepared to meet the challenges of the Second World War. There was a belief that neuropsychiatric disorders were not experienced by the elite flying services and as a result, little research was conducted. The neuropsychiatric division would have to rely upon the knowledge of their forefathers to gain an impression of how neuropsychiatric disorders were conceived. The division would also have to negotiate the needs of the state and operational commanders to be able to perform its important duties.

**Chapter 2**  
**The Mobilisation of Medicine:**  
**The Royal Air Force Medical Services and the Making of Neuropsychiatry**

**Introduction**

On the eve of the Second World War, it was recognised that preventive and specialist medicine would play an important role. Experience gained in the Great War had demonstrated that it could assist in the management of human resources.<sup>1</sup> This was vital during the Second World War, as under the conditions of aerial bombardment, it was expected that c. 35,000 civilians would be killed per day and thousands more physically or psychologically injured.<sup>2</sup> Well-organised medical provision was therefore essential. This was equally necessary for the armed forces. With manpower at a premium, medical resources had to be mobilised and used to their fullest extent to preserve combat efficiency.<sup>3</sup> Medical personnel would assist in the prevention and treatment of casualties and studies of human performance were sanctioned to ensure that the forces were working at the peak of their efficiency. Medicine was therefore shaped by the needs of the state and armed forces: it was a key agent of rationalisation.<sup>4</sup>

Specialist medicine was applied extensively in the armed forces. The RAFMS expanded its medical provision to meet the needs of the growing wartime service and was flexible in its employment of specialist manpower and knowledge.<sup>5</sup> Prevention and efficient treatment was at the forefront of planning in all specialist areas, including neuropsychiatry. The purpose of employing psychiatrists and neurologists was to reduce

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<sup>1</sup> Harrison, *Medicine and Victory*, p. 1.

<sup>2</sup> Shephard, *A War of Nerves*, p. 174.

<sup>3</sup> Harrison, *Medicine and Victory*, p. 1.

<sup>4</sup> E.g. Roger Cooter, 'War and modern medicine', in W.F. Bynum and R. Porter (eds.), *Companion encyclopedia of the history of medicine* (London, 1994), pp. 1536-73.

<sup>5</sup> For instance, see Rexford-Welch's chapter on 'medical manning', which outlines the growth of specialist medicine and personnel during the Second World War: Rexford-Welch (ed.), *The Royal Naval Medical Services, Administration*, i, ch. 1.

wastage and this was the principle that underscored practice in different military contexts.<sup>6</sup> In the RAF, however, no preparations had been made for the reception and treatment of neuropsychiatric casualties and it was only in 1939 that the matter was given adequate attention. As the RAF built its medical machine and the state discussed the management of neurotic cases, a neuropsychiatric division was formed. Over the course of the Second World War, it would treat at least 76,190 cases of mental and nervous disorders and it was their responsibility to return as many to duty as possible.<sup>7</sup> Neuropsychiatry therefore played an important role in the management of aerial warfare.

This chapter will examine the mobilisation of medicine in the RAF and the making of the neuropsychiatric division. It will critically assess the factors that shaped the practice of psychiatry and neurology in the service. Neuropsychiatry was the product of a culture of specialisation common in the era of the Second World War and this chapter will gauge its relative importance in the air force's medical machine. It will also establish what was expected of its practitioners. But first, it is necessary to contextualise the growth of medical specialisation by examining attitudes toward British civilians in this period, for the state would call upon them to man the armed forces.

### **Civilians to Airmen: The Wartime Royal Air Force**

The patriotic fervour of August 1914 was not replicated in the late 1930s: the British public was dreading the coming conflict. Jaded by earlier war experiences and the subsequent economic depression, there was a widespread consensus that nothing good could come of it. What is more, the government believed that the population was terrified about what lay ahead. Throughout the interwar years, citizens were bombarded by

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<sup>6</sup> Thalassis, 'Treating and Preventing Trauma', p. 1.

<sup>7</sup> TNA, AIR 10/6657, Report on the Health of the Royal Air Force for the year 1939; AIR 10/5568, Report on the Health of the Royal Air Force, 1940; AIR 10/5569-5573, Statistics on the Health of the Royal Air Force and Women's Auxiliary Air Force, 1941-1945.

literature, speeches, images, and moving pictures that painted an apocalyptic picture of the country under bombing.<sup>8</sup> The endorsement of this view by reputable scientists and the establishment of an Air Raid Precautions Committee (1924) only exacerbated the situation. The view that ‘the moral effect of air attack is out of all proportion to the material effect’ was to exercise a profound and enduring influence.<sup>9</sup> In 1931, Lord President of the Council and *de facto* Prime Minister Stanley Baldwin merely fanned the flames in his ‘A Fear of the Future’ speech. He issued the stark warning that ‘no power on earth can prevent the man in the street from being bombed...the bomber will always get through.’<sup>10</sup> This view shook the country to the core and influenced a generation of writers, including respected scientists. In 1938, communist scientist J.B.S. Haldane penned an alarmist publication on bombing, which he dedicated to ‘the ordinary citizen, the sort of man and woman who is going to be killed if Britain is raided from the air.’<sup>11</sup> Doom-laden scenarios were not merely the preserve of the alarmists; they also influenced preparations for war, which began in earnest during the late 1930s. Widespread panic and hysteria were expected and eminent psychiatrists warned that there would be three psychiatric casualties to every one physical.<sup>12</sup> The capacity of the British people to withstand the effects of bombing was not only significant in medical terms; the country would call upon such people to man the armed forces.

Throughout the interwar years, there were calls to increase the size of the RAF but almost without exception, they were shelved or reduced by subsequent amendments on the grounds of economy. In certain quarters, there was a tendency to regard the RAF ‘not as an integral part of the national defence system, but as a kind of fire brigade, for use only in

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<sup>8</sup> E.g. G. Douhet, *Command of the Air* (London, 1921); H.G. Wells, *The Shape of Things to Come* (London, 1933).

<sup>9</sup> Jones, Woolven, Durodie, and Wessely, ‘Civilian Morale During the Second World War: Responses to Air Raids Re-examined’, p. 465.

<sup>10</sup> ‘Mr Baldwin on Aerial Warfare – A Fear for the Future’, *The Times*, 11 November 1932, 7.

<sup>11</sup> J.B.S. Haldane, *A.R.P.: Air Raid Precautions* (London, 1938).

<sup>12</sup> Shephard, *A War of Nerves*, pp. 174-5.

an emergency and therefore, if the house could be made fireproof, an expensive luxury.<sup>13</sup>

It was not until 1935-6 that it was deemed necessary to double the size of the service to bolster offensive and defensive air power. German rearmament provoked the revision of British defence policy and the service was split into four functional commands that specialised in different types of operational work. Bomber Command would control the RAF's bomber forces; Fighter Command was formed to allow for more specialised control of fighter aircraft; Coastal Command was the RAF's maritime arm, and Training Command was responsible for flying and ground training.<sup>14</sup> But it was also apparent that the force had insufficient aircraft and personnel, and proposals were made to bolster the regular RAF and AuxAF.

Director of Training, Air Commodore Arthur Tedder was responsible for the introduction of a new reserve.<sup>15</sup> This was to be a 'Citizen Air Force', which would form a second line of defence to the regulars; similar to the Territorial Army. Any new reserve would have to appeal to the broad mass of the country and respond to popular aspirations.<sup>16</sup> According to Priestley's *English Journey*, the country was defined by the cinema, dance hall, greyhound racing, and the wireless; cars, bypasses, petrol stations, and motor buses. It was a country of Woolworths and department stores, and factory workers in semi-detached houses. Priestley claimed that in this new England, the young were no longer content with answering to their masters and were broadly pacifist.<sup>17</sup> The Air Ministry had to take these factors into account when planning the new reserve.

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<sup>13</sup> H. St George Saunders, *Per Ardua: The Rise of British Air Power, 1911-1939* (Oxford, 1944), p. 286.

<sup>14</sup> S.C. Rexford-Welch (ed.), *The Royal Air Force Medical Services: Commands*, (3. vols, London, 1955), ii, p. 4.

<sup>15</sup> J. Terraine, *The Right of the Line: The Royal Air Force in the European War, 1939-1945* (London, 1985), pp. 43-4.

<sup>16</sup> T. Mansell, 'Flying start: educational and social factors in the recruitment of the pilots of the Royal Air Force in the interwar years', *History of Education*, 26 (1997), p. 86.

<sup>17</sup> J.B. Priestley, *English Journey: Being a Rambling but Truthful Account of what One Man Saw and Heard and Felt and Thought During a Journey Through England during the Autumn of the Year 1933* (New York, 1934), pp. 371-5.

The Royal Air Force Volunteer Reserve (RAFVR) was formed in 1936 and encouraged men to fly in their spare time at local airfields. This new branch was a forward-thinking and democratic organisation, which was designed to appeal to young men without class distinctions.<sup>18</sup> The Air Ministry took into account the social and political leanings of the age, and emphasised sportsmanship rather than militarism in advertising.<sup>19</sup> The new force was open to the entire middle class, in the widest sense of the term, namely the output of public and secondary schools. It was felt that it would be inappropriate to grade the members on entry as officers or airmen, according to their social class. Entry was therefore on a common-footing as airman, pilot, or observer. Promotions to commissioned rank were made at a later stage, in accordance with abilities for leadership actually displayed.<sup>20</sup> This would have appealed to the meritocratic sensibilities of the modern men. It was initially thought that the reserve could be absorbed into the AuxAF but this group was 'reluctant to sacrifice its exclusive character to serve wider interests. Its standards of expenditure and social rigidity were incompatible with a democratic reserve.'<sup>21</sup> The Volunteer Reserve was certainly popular as between April and September 1937, the branch had enlisted 10,217 personnel in the roles of pilot, observer, and wireless operator/air gunner.<sup>22</sup> In 1939, these men would be called up for active service and the RAFVR would be the primary mode of entry to the wartime air force. At its peak strength in 1944, 1,012,000 men were serving in the reserve.<sup>23</sup>

At the outbreak of war, the RAF was therefore socially diverse. It comprised the pre-war regulars of Cranwell, the gentleman flyers of the AuxAF, and the weekend flyers of the RAFVR. In 1939, the auxiliary merged with the regulars and together with the

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<sup>18</sup> Terraine, *The Right of the Line*, p. 44.

<sup>19</sup> TNA, AIR 6/27, Meeting on RAF Expansion Measures No. 59, November 1936.

<sup>20</sup> Terraine, *The Right of the Line*, p. 44.

<sup>21</sup> TNA, AIR 6/27, Meeting on RAF Expansion Measures No. 59, November 1936.

<sup>22</sup> Terraine, *The Right of the Line*, p. 44.

<sup>23</sup> Please see: CMD. 6832, *Strength and casualties of the Armed Forces and Auxiliary Services of the United Kingdom 1939 to 1945* (London, 1946).

volunteers, they went to war with an air of confidence. Service leaders and air-minded politicians argued that the force could make a serious contribution to grand strategy, evidenced by the potential of the bomber to confer serious strategic benefits and to render damage to enemy industrial production. Flying personnel, particularly the regulars, believed that they represented the future of warfare and this led to the development of the ‘highly self-conscious aura of modernity’ that characterised air force culture. The flyers saw themselves as a new type of warrior; a band of thoroughly modern men, whose skills would be tested by their ability to manipulate the most advanced military technology. They quickly dispensed with the army and navy’s view of the flyer, which emphasised traditional skills such as knowledge of horses and sportsmanship. To the new air force, this reflected the inherently backward army culture. What is more, the RAF seemed to shun traditional service and martial discipline. Senior officers appeared oblivious to protocol and flying personnel developed a lax attitude to drill, saluting, and standards of deportment. This apparent lack of standards appalled the army and navy but the opinions of ‘old sea-dogs’ and ‘Colonel Blimps’ were quickly written-off as irrelevant in the modern age.<sup>24</sup>

By 1939, the RAF had the reputation of a carefree weekend flying club but that would change in an instant, as early operations tested the morale and confidence of the fledgling air force. It must be remembered that the modern men of the 1930s were considered to be ‘soft’ and ‘lacking in the courage and discipline of their masters.’ The men of the new air force were therefore prone to ‘cracking-up.’<sup>25</sup> The RAFMS had failed to make any real attempt to understand the psychological and nervous disorders of flying personnel and approached the Second World War in a state of ignorance. They had one

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<sup>24</sup> Francis, *The Flyer*, pp. 14-16.

<sup>25</sup> Shephard, *A War of Nerves*, p. 175.

permanent neurologist and a clear history of neuropsychiatric casualties. It was therefore essential to establish an organisation that would reduce the inevitable wastage.

### **The Mobilisation of Experts: The Royal Air Force Medical Services and the Specialisation of Medicine**

The Second World War was a ‘war of experts.’ It depended upon the mobilisation of highly-skilled professionals and specialist knowledge.<sup>26</sup> Medical expertise was valued because it helped to define and regulate the requirements of the human body and it was manpower that would run the military machine. This type of knowledge was applied to all aspects of military life, with physiologists calculating military rations, while psychologists were determining the optimum conditions for human performance.<sup>27</sup> The Second World War was also a ‘medical war’, with medicine crucial to the conduct of mass armed forces. It would play a vital role in the conservation of manpower and combat efficiency, and was organised and shaped to this end. The armed forces medical services were extended to meet the needs of the expanding forces and specialist medicine was at the heart of provision.<sup>28</sup>

The RAFMS had engaged with medical expertise from its inception in the early 1920s. Civilian consultants were commissioned to conduct specialist work and research in their respective areas but this was done in isolation and not regulated by a central body. In 1927, the RAFMS reaffirmed its commitment through the introduction of a new directorate known as the Central Medical Establishment (CME). Medical personnel employed on professional work in the subjects of medicine, neurology, surgery,

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<sup>26</sup> See Edgerton’s work on the role of experts in the Second World War: D. Edgerton, *Britain’s War Machine: Weapons, Resources and Experts in the Second World War* (London, 2011).

<sup>27</sup> Harrison, *Medicine and Victory*, p. 3.

<sup>28</sup> This section will focus on the RAF but for information on the expansion of the AMS and RNMS see: Crew (ed.), *The Army Medical Services, Administration*, i, ch. 9; Coulter (ed.), *The Royal Naval Medical Services, Administration* i, chs. 4, 9, 10, 12, 16.

bacteriology and parasitology, radiology, anaesthetics, ophthalmology, and otology, came under the governance and regulation of this organisation in ‘special reserve posts.’ Their particular skills were considered vital by the RAFMS and this entitled them to recognition. By November 1930, certain specialties had demonstrated their value sufficiently enough to be rewarded with ‘consultant’ status and officer ranks.<sup>29</sup>

Consultants were required to advise on the arrangements and facilities for work in their specialist areas. This allowed them to make appeals to the Officer Commanding the CME and the Air Ministry on matters concerning the treatment of casualties. They had to be available for work at the CME and at other units as required, and to advise medical boards on the disposal of certain cases. Operations record books from the Second World War showed that the Consultants in Neuropsychiatry regularly visited operational stations and hospitals when their expertise was required.<sup>30</sup> Consultants therefore played an important role in the conservation or disposal of manpower, as their opinion could determine a man’s future within the service. Moreover, the consultants were empowered to select medical officers and airmen for specialist work in their areas, which allowed for the employment of additional specialist manpower, as and when required. What is more, they were also responsible for the organisation of research in their own subjects, whether such work was commissioned by them or not.<sup>31</sup> The RAF’s medical machine was therefore flexible and responsive to the needs of casualties, as well as the air war.

Upon the outbreak of war, extra consultants were employed in the areas of medicine, surgery, and neurology. The expansion of the air force before and during the war, and the opening of general and station hospitals, created a need for their specialist qualifications and experience. As the war progressed and the nature of casualties became clear, extra consultants were employed according to need. For example, a third consultant

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<sup>29</sup> The official history of the RAFMS does not state what their particular achievements were.

<sup>30</sup> TNA, AIR 29/764, Operations Record Books, RAF Officer’s Hospital, Torquay, 1939-1945.

<sup>31</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, pp. 67-8.

in surgery was engaged in 1941 because the others did not have enough time to carry out their widespread visits and to perform the large amount of surgical work associated with aircraft crashes. By 1944, the RAFMS employed 21 consultants in a number of different areas showing that the value of specialist medicine was recognised and rational extensions made – see Table 4. The areas of surgery and neuropsychiatry employed the highest numbers of consultants, showing that this type of expertise was required in light of growing casualties. Neuropsychiatry referred to the specialist work of neurologists and psychiatrists and four were employed by 1944: one with the rank of Air Vice-Marshal and three others with the rank of Air Commodore.<sup>32</sup>

**Table 4: Consultants employed by the Central Medical Establishment by 1944**

<b>Specialist Area</b>	<b>Number Employed</b>
Medicine	2
Surgery	4
Orthopaedic Surgery	1
Neuropsychiatry	4
Pathology and Tropical Medicine	1
Ophthalmology	2
Oto-rhino-laryngology	1
Gynaecology	1
Venereology	1
Mass Radiography and Tuberculosis	1
Anaesthetics	1
Hygiene	1
Radiology	1
<b>Total:</b>	<b>21</b>
<b>Source:</b> Rexford-Welch, (ed.) <i>The Royal Air Force Medical Services, Administration</i> , i, pp. 72-3.	

While the numerical strength of consultants was low, they were assisted by medical officers, who were engaged in specialist work throughout the service. These men were typically specialists in their respective areas in civilian life and were chosen due to their

<sup>32</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, p. 73.

qualifications and experience for specialist work.<sup>33</sup> The specialists were in charge of all medical and surgical cases in their facilities and the giving of medical and surgical advice on an out-patient basis. By the end of the war, there were 236 specialists employed in this capacity; the types and numbers are indicated in Table 5. Thirteen neuropsychiatric specialists were employed in hospitals and a further thirteen were engaged in specialist research throughout the service.

**Table 5: Specialist medical officers employed in Royal Air Force hospitals by 1945**

<b>Type of Specialist</b>	<b>Number Employed</b>
Surgeon	36
Physician	28
Anaesthetist	17
Ear, Nose, and Throat	16
Eye	11
Orthopaedic	15
Clinical Pathologist	15
Registrar and Administrative	5
Radiologist	4
Gynaecologist	1
Venereal Disease	5
Neuropsychiatrist	13
Infectious Diseases	6
Officer Commanding	24
General Medical Duties	40
<b>Total:</b>	<b>236</b>
<b>Source:</b> Adapted from Table IV: Royal Air Force Hospitals: Employment of Medical Officers, Rexford Welch (ed.), <i>The Royal Air Force Medical Services, Administration</i> , i, p. 80.	

The RAFMS was therefore committed to specialist medicine. Neuropsychiatry should be viewed as part of a medical machine that was programmed to meet the same ends: the maintenance of manpower and combat efficiency. Specialist medicine rationalised the prevention and treatment of casualties in the air force, with the division of medical labour and expertise guaranteeing quick and effective treatment. Within this, the

<sup>33</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, p. 68.

neuropsychiatric division was charged with the prevention and treatment of mental and nervous disorders, and the research of conditions with a neuropsychiatric basis. It is important to assess the factors that shaped the work of this division during the war.

### **The Making of Neuropsychiatry in the Royal Air Force**

Historically speaking, defining any mental health specialty is difficult, as types of practice, research, and treatments were guided by the training and personal interests of the specialist, and the context in which it was being practised. This was certainly the case with neuropsychiatry, according to Berrios and Markova, for it was defined in different periods according to investigative techniques, assumptions, the types of patients it dealt with, therapeutic value, or a combination of these factors. It was never a unitary activity and was often defined by social and economic circumstances.<sup>34</sup>

When neuropsychiatry is placed in the context of the RAF, the picture is further complicated as traditionally, psychiatrists and neurologists tended to work in isolation. From the late nineteenth century, ‘nerve doctors’ and psychiatrists were trying to distinguish themselves as separate specialties with different scientific bases.<sup>35</sup> As a result, they would only work in consultation to gain therapeutic and preventive benefits. During the Great War, for instance, psychiatrists and neurologists worked on the same types of casualties but tended to distinguish themselves along professional lines. To illustrate, esteemed neurologist Dr Frederick Mott published a number of articles on the effects of high-explosive shells on the brain and central nervous system, in an attempt to find an organic basis to what psychologist Charles Myers termed ‘shell-shock.’<sup>36</sup> Later in the war, however, this condition was understood principally as a form of psychological trauma and

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<sup>34</sup> Berrios and Markova, ‘The concept of neuropsychiatry: a historical overview’, p. 630.

<sup>35</sup> Casper, *The Neurologists: A history of a medical specialty in modern Britain, c. 1789-2000*, p. 54.

<sup>36</sup> For example, please see: F.W. Mott, ‘Effects of High-Explosives upon the Central Nervous System’, *The Lancet*, 1 (1916), pp. 545-53. For Myers original article on shell-shock, please see: C.S. Myers, ‘A Contribution to the Study of Shell-Shock’, *The Lancet*, 185 (1915), pp. 316-20.

research was largely taken up by psychiatrists, who rejected organic explanations.<sup>37</sup> What is more, the physiological turn of the interwar years was the neurological counterattack against psychological conceptions of mental and nervous disease. Neurology and psychiatry were therefore awkward bedfellows – an alliance could be characterised by potential rivalries and disagreements on the origin, symptoms, and diagnosis of neuropsychiatric disorders.

In the United States, however, neuropsychiatric practice was well-established and had yielded significant therapeutic benefits. Douglas Thom, a proponent of neuropsychiatry, argued that it had made major contributions to the selection of military personnel, the cultivation and preservation of morale, and the detection of the vulnerable.<sup>38</sup> Yet textbook definitions of the combined specialties conveyed the sheer complexity of the relationship and how it was shaped by socio-economic factors. Distinguished American neurologist Stanley Cobb believed that neuropsychiatry served a crucial economic function. It played a vital role in reducing the 3.5 million nervous and mental disease patients in the United States but he was not clear on how the alliance worked. He stated: ‘When one undertakes the study of neurology, psychiatry, and neuropathology, his practical aim is the cure of nervous and mental disorders.’ While ‘neuropsychiatry’ was shaped by these disciplines, he did not explain how they related to one another in the prevention and treatment of nervous and mental disease.<sup>39</sup> Indeed, the manner in which he presented his definition implied that the specialists were working independently in the treatment of collective medical concerns.

However, Lowell Selling contended that neuropsychiatry was not an independent speciality. It was composed of two specialist fields of medicine – neurology and

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<sup>37</sup> Jones and Wessely, *Shell Shock to PTSD*, ch. 2.

<sup>38</sup> Douglas A. Thom, ‘Neuropsychiatric Experiences of the First World War’, in H.C. Solomon and P.I. Yakolve (eds.), *Manual of Military Neuropsychiatry* (Philadelphia, 1944), p. 1.

<sup>39</sup> S. Cobb, *A Preface to Nervous Diseases* (London, 1936), pp. 1-2.

psychiatry – which were ‘independent and coalescing’ simultaneously. Neurology was defined as the specialty that dealt with an organic, mechanical inability to adjust to the demands of daily life, and the lesions that caused these ‘nervous disorders.’ Psychiatry, on the other hand, was concerned with addressing a patient’s inability to adjust their behaviour in their economic, social, and cultural lives, with no lesions to account for their actions. Most crucially, Selling outlined how the specialties worked together and effectively became neuropsychiatry:

The two specialties overlap where there is:

- A. A physical lesion of the nervous system causing a conduct disorder. Example: In *paresis* gross changes can be seen in the brain, and the patient behaves in an irresponsible fashion.
  
- B. A mechanical disorder due to a psychological rather than a physical cause. Example: In *hysterical paralysis* there is nothing to be seen pathologically, but the patient is as unable to move as though his spinal cord were cut.<sup>40</sup>

Neuropsychiatry was therefore an alliance of specialties, where neurologists and psychiatrists collaborated on cases where they had collective interests and expertise. Methods and knowledge were drawn upon from either or both specialties to provide a patient with the most effective treatment.

The RAFMS never outlined what it understood by ‘neuropsychiatry’ but it was certainly shaped by what the air force required it to achieve: manpower economy and combat efficiency. Historically, flying personnel suffered from a range of psychological and nervous disorders. Experience gained in the Great War dictated that the dangers of operational flying could impair the functioning of the brain, central nervous system, and psyche, with nervous disorders, and to a lesser extent, psychological conditions, emerging *en masse*. During the Second World War, the risks had increased, as flying was fully mechanised, the weapons more powerful, the fuel load heavier, and aircraft could reach

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<sup>40</sup> L.S. Selling, *Synopsis of Neuropsychiatry* (London, 1944), p. 17.

higher altitudes and speeds. They were facing a well-equipped and motivated enemy, who would stop at nothing to ensure that the RAF was annihilated. Flying was therefore dangerous in different ways and psychologically challenging. A range of physical and psychological problems were therefore inevitable and would pose a threat to the maintenance of manpower and combat efficiency. The alliance of neurology and psychiatry was a potentially efficient way of dealing with the nervous and psychological casualties of aerial warfare.

### *The Neuropsychiatrists*

The ‘neuropsychiatrists’ of the RAFMS were neurologists and psychiatrists in civilian life and brought their understandings and approaches to the service. It is essential to examine the history and character of the consultants, for these men were the directors of the division. Three consultants were particularly prominent during the war.<sup>41</sup> One was a pre-war regular and two others were drawn from civilian backgrounds into service with the RAFVR. Their expertise and eminence shaped their research priorities and administrative decisions, their working relationships, and the emphasis that they placed upon particular methods or theories. These variables therefore defined and shaped the practice of neuropsychiatry in the RAFMS.

Historically, neurological expertise was enlisted to reduce the burden of mental and nervous disorders in flying personnel. When Birley died, he was quickly replaced by another neurologist. Dr Hugh Burton was engaged in this position; he was an elusive character and his career was difficult to trace. According to Jones, he was employed as a deputy medical officer at Manchester Prison before the Great War and by November 1914, he was working as an assistant medical officer at the Moss Side State Institution, Maghull.

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<sup>41</sup> The fourth consultant was employed in the Middle East. This work will not engage with this particular theatre due to the paucity of records.

Once Maghull fell under the remit of the War Office, he was granted a temporary commission in the Royal Army Medical Corps (RAMC). In 1915, however, Lieutenant Burton requested a transfer to the BEF in France and this was granted due to his youth and the pressing need for doctors at the front.<sup>42</sup> Burton was therefore a skilled and qualified doctor with experience of treating the casualties of war. By 1921, he was granted a short service commission with the RAFMS as a Flight Lieutenant and was eventually posted to the CME.<sup>43</sup> The records of the early history of the RAFMS and CME are sparse and it is not known if he was engaged exclusively in neurological work at this time. Burton did not publish any research articles, probably owing to his career path in the forces, where the need to prevent and treat illness was prioritised over publications and professional advancement. Burton remained in his position during the Second World War until his retirement in 1944.<sup>44</sup> As a service neurologist, Burton was accustomed to the rigid military culture of the RAFMS and what neurology was supposed to achieve. He was therefore thoroughly ‘militarised.’

In 1939, Dr Charles Symonds (1890-1978) was commissioned as an additional Consultant in Neurology and can be described as the most exacting of the group. Educated at Rugby, New College Oxford, and Guy’s Hospital, he was an accomplished and highly respected neurologist in the civil sphere. During the Great War, he qualified in medicine and gained the position of medical officer in the RAMC.<sup>45</sup> Symonds knew war and all of the trauma and injury that it could bring. It was during the conflict that he decided to forge a career in clinical neurology and an Oxford scholarship enabled him to study in the

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<sup>42</sup> Jones, Shell Shock at Maghull and the Maudsley: Models of Psychological Medicine in the UK’, pp. 371-2.

<sup>43</sup> Editor, ‘Naval and Military Appointments’, *Supplement to the BMJ*, 19 November 1921, p. 191.

<sup>44</sup> Editor, ‘H.M. Forces Appointments’, *Supplement to the BMJ*, 19 August 1944, p. 44.

<sup>45</sup> Editor, ‘Obituary: Sir Charles Symonds’, *BMJ*, 2 (1978), p. 1793.

United States under Adolf Meyer and Harvey Cushing.<sup>46</sup> Symonds gained prestige within his field at this time by making two major contributions to the field of neurology: a study of intracranial aneurysms and *otitic hydrocephalus*.<sup>47</sup> While prestigious, he was cold and unlovable. The death of his young wife in a cycling accident and an unhappy second marriage hardened him and shaped his attitudes toward people. He had mastered his own misfortunes and expected others to do the same.<sup>48</sup> Symonds was therefore a pragmatist by nature and this shaped the way that he approached neuropsychiatric cases in the Second World War.

Symonds was also an ambitious and forward-thinking specialist, who was keen to advance his career and the field of neurology. He was a member of ‘The Hexagon Club’ – a group that he formed in the early 1930s to discuss aspects of neurology and neurosurgery. Its membership included Hugh Cairns, Macdonald Critchley, Dennis Denny-Brown, George Riddoch, and Russell Brain. In essence, it was a dining and debating club, with members enjoying a free platform to discuss their interests in a convivial atmosphere. According to Critchley, ‘many a paper which eventually found its way into *Brain* had been tried out as an immature, unpolished, and tentative contribution to the Hexagon, where it was debated, censured, and modified.’<sup>49</sup> This close-knit network also used the time to make plans for the future of their specialties and to create opportunities to accelerate career development. Symonds was keen to prove the value of neurology in the treatment of head injuries and with the assistance of Cairns, he was instrumental in establishing a hospital for this very purpose.

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<sup>46</sup> Ian Mackenzie, ‘Symonds, Sir Charles Putnam, (1890-1978)’, rev. Oxford Dictionary of National Biography, (Oxford, 2004); online edn, Oct 2008, [<http://www.oxforddnb.com/view/article/31744>], accessed 11 April 2014.

<sup>47</sup> Please see: C.P. Symonds, ‘Clinical Study of Intracranial Aneurysms’, *Guy’s Hospital Reports*, 73 (1923), pp. 139-58; C.P. Symonds, ‘Otitic Hydrocephalus’, *Brain*, 54 (1939), pp. 55-71.

<sup>48</sup> Shephard, *A War of Nerves*, p. 289.

<sup>49</sup> M. Critchley, *Citadel of the Senses* (New York, 1985), p. 109.

In 1938, Symonds extolled the value of neurology and neurosurgery in the treatment of such cases to Director General of Medical Services (DGMS), Air Vice-Marshel Sir Victor Richardson. This was an important move, as this was traditionally the territory of orthopaedic surgeons.<sup>50</sup> He implored Richardson to agree:

You will probably agree that the differential diagnosis and treatment of head injuries requires special experience. This is especially true of the large number of patients with non-penetrating wounds who complain of headache, mental fatigue, dizziness etc., and who may or may not present signs of organic brain injury. For the rapid and effective disposal of such cases neurological training is essential.<sup>51</sup>

Symonds' case was strengthened further, as he had a plan that would allow for the expert care of these patients. He proposed that a dedicated, specialist-run 'Head Injuries Centre' be established; an environment in which neurology, neurosurgery, and he could flourish. This paved his way into the RAFMS, as the DGMS wanted the RAF to take the lead in this area. He therefore commissioned Symonds as a Consultant in Neurology.<sup>52</sup>

Symonds had consolidated his administrative authority and therapeutic freedom early. His plans for a specialist hospital, in which he could freely research and treat neurological cases guaranteed this. It is clear that Symonds intended to carve a major place for neurology in the RAFMS. His personal ambitions and desire to further the knowledge and prestige of his specialty were his guiding principles.

While the disorders of flying personnel were considered functional, it was inevitable that psychological cases would emerge. The RAFMS therefore employed a Consultant in Neuropsychiatry to manage the neurotic casualties. Dr Robert Gillespie (1897-1945), a young Scottish psychiatrist of some renown, was employed as a neuropsychiatric specialist from 1939 and would later take the role of consultant.

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<sup>50</sup> Their dwindling numbers of orthopaedic surgeons and ambiguous boundaries meant that neurologists and neurosurgeons began to take the lead in this area. Please see: Cooter, *Surgery and Society in Peace and War*, p. 229.

<sup>51</sup> TNA, AIR 2/3948, Letter from Dr C.P. Symonds to Air Vice-Marshel Sir Victor Richardson, 10 October 1938.

<sup>52</sup> TNA, AIR 2/3948, Letter from Professor Hugh Cairns to Richardson, 4 February 1939.

Educated at Hutcheson's Grammar School and the University of Glasgow, Gillespie graduated in 1920 with a degree in medicine. Upon graduation, he was appointed Assistant Physician to the Glasgow Royal Mental Hospital, under the mentorship of Chief Superintendent Dr David Henderson. In this hospital he was noted for his 'enthusiasm and quick insight, his humanitarian outlook, and his natural flair for psychiatric work.' Like Symonds, he undertook training in the United States under Adolf Meyer, where his interests in psychiatry were stimulated further.<sup>53</sup> His career went from strength to strength during the interwar years, during which time he co-authored *A Text-book of Psychiatry* with his former mentor in 1926.<sup>54</sup> At the age of 29 years, he succeeded Sir Maurice Craig as Physician for Psychological Medicine at Guy's Hospital, London, where he became known for establishing the York Clinic.<sup>55</sup> At Guy's he was respected and loved by his staff and patients alike. Henderson recalled with some fondness that he always had children hanging around his waist and enjoyed playing games with his younger patients.<sup>56</sup> In contrast to Symonds, Gillespie had a more humanitarian outlook and believed that psychiatry held the answers to neurotic illness.

As a psychiatrist, Gillespie understood neuropsychiatric conditions in a different way from Symonds, who looked for lesions and diseases of function. In his 1943 publication, *Psychological Effects of War on Citizen and Soldier*, Gillespie argued that the conditions of modern warfare should be understood as a product of 'constitutional predisposition', the stresses of the environment, and 'inner psychological factors', of

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<sup>53</sup> D.K. Henderson, 'In Memoriam: Robert Dick Gillespie, 1897-1945', *The American Journal of Psychiatry*, 102 (1946), pp. 572-3.

<sup>54</sup> This publication was in its sixth edition by 1940 and still in print until the 1980s. Please see: D.K. Henderson and R.D. Gillespie, *A Textbook of Psychiatry for Students and Practitioners*, 5<sup>th</sup> edn., (Oxford, 1940).

<sup>55</sup> Henderson, 'In Memoriam: Robert Dick Gillespie, 1897-1945', p. 573.

<sup>56</sup> D.K. Henderson, *Guy's Hospital Report*, 95 (1946), pp. 1-6.

which the urge to flee was the most common.<sup>57</sup> Such theories guided his work throughout the conflict but contrasted sharply with Symonds' organic views.

Symonds and Gillespie took very different approaches to mental and nervous disorders, due to their training and character. Before the war, they were equally territorial, which led to a bitter rivalry that persisted well into 1939. In an interview with RAF medical officer David Stafford-Clark, Shephard discovered that the two men had a fractious relationship at Guy's Hospital. Gillespie did not see a place for neurology in the York Clinic, as the work was predominantly psychological in nature. Symonds, however, saw himself as the champion of his discipline and argued that 'psychiatry was only applied neurology.' He was angry to find himself marginalised by an upstart psychiatrist.<sup>58</sup> Indeed, Critchley noted that Symonds had viewed psychiatry as a 'poor relation of neurology' since working with Meyer.<sup>59</sup> By 1939, the matter had come to a head and the specialists clashed very publicly in the correspondence pages of *The Lancet*. Their argument was over the differences in psychoses and neuroses, where Symonds argued that the degree of difference was merely quantitative, whereas Gillespie understood it to be qualitative. They also disagreed over whether psychotherapy required expert training or if it was something that could be undertaken by any doctor.<sup>60</sup> The tension between them persisted throughout the war but Symonds was the one that would be favoured in the RAFMS.

Symonds was a commanding figure and was confident in the military environment. He had served in war before, which counted for a lot in the RAFMS. According to Stafford-Clark, 'nobody seemed to know what Gillespie had done in the First World War, if anything.' He was uncomfortable in uniform and came across as 'shifty.' Although he

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<sup>57</sup> R.D. Gillespie, *Psychological Effects of War on Citizen and Soldier* (London, 1943), p. 166.

<sup>58</sup> Shephard, *A War of Nerves*, p. 289.

<sup>59</sup> Critchley, *Citadel of the Senses*, p. 113.

<sup>60</sup> R.D. Gillespie, 'Letters to the Editor: Neurosis or Psychosis', *The Lancet*, 234 (1939), p. 576; C.P. Symonds, 'Letters to the Editor: Neurosis or Psychosis', *The Lancet*, 234 (1939), pp. 622-3.

was a first-rate psychiatrist, he was not good at asserting himself or showing empathy. Stafford-Clark believed that people often got the impression that Gillespie was avoiding issues, whereas ‘Symonds came out and said what he said.’<sup>61</sup> Gillespie would find himself marginalised as the balance of power tipped in favour of the neurologists. In 1941, he commented to *Time Magazine*: ‘In the 30 years since I left elementary school, I have never been more idle than when serving in the Royal Air Force.’<sup>62</sup>

Lunching with Gillespie in 1941, Stafford-Clark found him ‘sad because he was being asked to do something he had never envisaged doing – being part of a machine that sent young men to their death.’ His professional pride was hurt by the way Symonds had effectively taken over neuropsychiatric division and at his attempts to shut out psychiatry.<sup>63</sup> Not only was psychiatry shunned in the RAFMS, wartime Prime Minister Sir Winston Churchill was a vociferous opponent. He argued that it was the responsibility of the government to restrict the work of psychiatrists, who were ‘capable of doing an immense amount of harm with what may very easily degenerate into charlatany.’<sup>64</sup> He supported the Lord Privy Seal in the construction of a committee that would investigate the work of psychologists and psychiatrists in the service.<sup>65</sup> It is clear that this attitude was not confined to the RAF. In a study written in 1945, Gillespie expressed doubts over ‘whether in the case of flying personnel we know all we should know about psychiatric disabilities after flying accidents and terrifying experiences in combat.’ He questioned whether the medical profession was doing them ‘less than justice.’<sup>66</sup> In 1945, Gillespie was discharged

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<sup>61</sup> Shephard, *A War of Nerves*, p. 290.

<sup>62</sup> ‘Medicine: War & Sanity’, *Time Magazine*, 01 December 1941, accessed 21 June 2015: <http://content.time.com/time/subscriber/article/0,33009,802221-1,00.html>.

<sup>63</sup> Shephard, *A War of Nerves*, p. 291.

<sup>64</sup> W.S. Churchill, *The Second World War: The Hinge of Fate* (6 Vols., London, 1950), iv, p. 814.

<sup>65</sup> The returns made to this committee will be examined throughout this thesis. TNA, AIR 2/5998, MEDICAL (Code B, 48): Expert Committee on Work of Psychologists and Psychiatrists in the Services, 1942-1943.

<sup>66</sup> R.D. Gillespie, ‘War Neuroses after Psychological Trauma’, *BMJ*, 1 (1945), p. 653.

on the grounds of ill-health and returned to Guy's Hospital. On 30 October, he took his own life. In 1946, Symonds was knighted.<sup>67</sup>

The neuropsychiatric division was therefore composed of psychiatrists and neurologists with different views on the origins, prevention, and treatment of neuropsychiatric casualties. Consultants were esteemed specialists in their respective fields and would bring their vast expertise to the service. The fraught relationship between them, however, would continue throughout the war and would ultimately guide the administrative decisions of the division. The polarisation of psychiatry and neurology common in civil society was still prevalent in the air force and practitioners would continue to practise their specialties individually. While an alliance between neurology and psychiatry could have potential therapeutic benefits, the reality of neuropsychiatric practice in the RAF was that of two independent specialties working on the same cases.

### ***Pensions***

In 1939, the British population was profoundly different to that on the eve of the Great War. Men were taller, better nourished, and generally much healthier, which was reflected in the improved standards observed in army recruits: 70 per cent were found to be healthy, compared to the 36 per cent of the Great War.<sup>68</sup> While improved physical health was valuable in military terms, mental health demanded close attention. It was believed by many that Britain was a pampered nation, lacking in the courage and grit of their forefathers. Middle-class men actively shied away from activities that could cause personal injury and tended to look after their comforts. A decreasing birth rate in the 1920s dictated that these 'soft' men would have to go to war but it was feared that they

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<sup>67</sup> Shephard, *A War of Nerves*, p. 297.

<sup>68</sup> R.K. Webb, *Modern England*, 2<sup>nd</sup> edn., (London, 1980), p. 550; Mowat, *Britain Between the Wars*, pp. 512-3.

could not withstand the psychological strain.<sup>69</sup> The country would have to be prepared for the inevitable casualties but it was neither psychiatrists nor the armed forces that took-up this challenge in the first instance.

Planning for the psychiatric casualties of the Second World War was spearheaded by the Ministry of Pensions – a government department that was smarting from the financial burden of shell-shock. Thousands continued to claim for war neuroses developed in the earlier conflict. Permanent Secretary Sir Adair Hore outlined the gloomy situation:

Expert discrimination in addition of course to recovery of mental balance, death and other natural causes has operated to reduce the number of pensioners in the course of 20 years from 70,000 to 40,000. General considerations of policy make it unlikely, however, that any further reduction can properly take place. It is necessary to secure from the outset, the support of the general medical practitioners, the public and the politician for any scheme which may be suggested for dealing with the neuroses of war.<sup>70</sup>

Like the armed forces, the Ministry of Pensions had become medically-minded and actively sought specialist knowledge to shape their wartime initiative. The agency recognised that specialist medicine and high-ranking medical officers could discuss and advise on the policy to be adopted. With this in mind, a number of meetings were called to allow service representatives and ‘leading neurologists’ to give their advice on the line to be taken. Medicine was therefore mobilised to meet the needs of the state, which was determined to prevent another shell-shock debacle. These crucial meetings would shape the prevention and treatment of casualties in the armed forces, and in turn, dictated the practice of neuropsychiatry in the RAF.

The most comprehensive account of the Ministry’s exchanges is provided by Shephard and the following represents a summary of his findings. Securing the support of the medical profession for a standard war scheme would occupy the whole of 1939. The question was formally addressed by the Ministry’s psychiatric adviser Francis Prideaux,

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<sup>69</sup> Shephard, *A War of Nerves*, pp. 172-4.

<sup>70</sup> TNA, Ministry of Pensions files (hereafter PIN), 15/2401, Conference of Neurologists and Psychologists and Representatives of the Service Departments, 3 July 1939.

who circulated a memorandum to ‘leading neurologists’ with expertise in shell-shock, and high-ranking medical officers who were in a position to implement change. Prideaux centred his report on the vast pensions bill from the earlier conflict and underlined the Ministry’s opinion that no compensation should be granted for war neuroses. The Ministry took a hostile view of the situation and argued that they had been deceived on a large scale and were paying pensions to men, whose disorder had little to do with the war. It was held that these men had a ‘constitutional predisposition’ to mental disorders, which was either inborn or acquired in early life. To award pensions to the predisposed, argued Prideaux, was in fact a damaging act for it did not encourage them to recover.<sup>71</sup>

The second phase of the discussion was based on a questionnaire, where doctors could respond to his comments. Prideaux largely received the answers that he was looking for. Most agreed that pensions should not be paid but proper treatment provided instead. If compensation was justified, however, it was to take the form of a one-off gratuity instead of an on-going payment. It was believed that the term ‘shell-shock’ should be rigorously repressed and replaced by clarified and simplified official terminology.<sup>72</sup> While Shephard’s account is exhaustive, it fails to engage with the opinions of high-ranking medical officers which were equally significant.

Medical representatives from the three armed forces were invited to give their opinions at a Ministry conference on war neuroses. The medical Director-Generals of the army and navy contributed their extensive knowledge and opinions of neuroses but the RAF’s DGMS Air Vice-Marshal Sir Victor Richardson offered little to the discussions. The long-standing belief in the mental and physical superiority of air force personnel may account for his relative silence. Official minutes show that he only put forward his opinion when directly addressed, but his few remarks were important ones.

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<sup>71</sup> Shephard, ‘Pitiless Psychology: the role of prevention in British military psychiatry in the Second World War’, pp. 497-99.

<sup>72</sup> *Ibid*, pp. 505-10.

On 3 July 1939, the Director-Generals discussed the examination of recruits on enlistment. It was believed that by screening prospective personnel for a history of neuropsychiatric illness, they could prevent predisposed individuals from entering the service. They all agreed that the nervous system of potential recruits was not examined unless concerns were raised. Such an examination, they argued, would provide an adequate estimation of nervous liabilities and no further psychological assessments were required.<sup>73</sup> The aggressive physiological turn of the interwar years may account for this position, as psychotherapy was seen as an anathema to recovery and progress.

According to Richardson, the RAF took particular care to ‘weed out’ aircrew recruits who had a ‘constitutional predisposition’ to breakdown. However, no formal neuropsychiatric testing formed part of the air force’s selection process. These men could only be pruned if they offered this information to selection officers. If an officer or airman developed a disorder in the course of service, it was believed that it was in the best interests of the individual and the state that he remained in the RAF in a different capacity.<sup>74</sup> On paper, the RAF was therefore committed to preventing neuropsychiatric disorders, yet they had failed to introduce comprehensive neuropsychiatric assessment.

The opinions of the medical officers were considered by the conference of experts and were taken into account in the final recommendations. The consensus reached dictated the approach to be taken to the prevention and treatment of neuroses in the coming war. The committee agreed that any policy adopted by the government in war should take into consideration two major principles. The first was that nobody should be allowed to think that the loss of nervous or mental control would provide an ‘honourable escape’ from military service. Secondly, it was believed that discharge from the service for neurosis or the granting of financial compensation would increase the incidence and duration of

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<sup>73</sup> TNA, PIN 15/2401, Conference of Neurologists and Representatives of the Service Departments. Compensation in Cases of Neurasthenia and Psychosis, 3 July 1939, p. 4.

<sup>74</sup> *Ibid*, p. 5.

mental breakdowns. They made a number of recommendations that would directly address the mistakes of the past and would prevent a mass outbreak of neurosis:

1. During a war, so far as is practicable, no man should be discharged from any of the Fighting Services in consequence of developing a neurosis.
2. Similarly during a war no civilian should be granted exemption from any liability for national service in consequence of developing a neurosis.
3. During a war, no person should be ordinarily given a pension on account of a neurosis.
4. At the termination of a war, expert consideration should be available for individual cases with reference to any possible residual incapacitation.
5. Recruits when examined for enlistment should be questioned concerning any previous illnesses of a psychotic or psychological nature.
6. Idiopathic epilepsy should not be regarded as a disability due to or aggravated by war service; but epilepsy which developed in definite relation to a head injury caused by enemy action should be accepted as attributable to war service.<sup>75</sup>

Under this scheme, the RAF was bound to retain men for treatment within the service and no pensions would be paid on the grounds of war neurosis. Volunteers for service in the air force would have to be screened for a history of psychological and nervous illness to determine if they were predisposed to developing a disorder. It was the responsibility of the RAFMS and neuropsychiatrists to uphold the Ministry's line, which therefore dictated the preventive and therapeutic approach to be taken by the neuropsychiatric division.

### ***The Reception of Airmen of Unsound Mind***

While the matter of pensions was under discussion, the establishment of formal procedures for the evacuation diagnosis, retention, and disposal of neuropsychiatric casualties were also under investigation. This became vital when decisions were reached with the Ministry of Pensions, as the agreements dictated that men had to be retained for treatment within the service. Moreover, advanced preparation was essential in light of the large numbers of men volunteering for service in the air force. This stimulated discussion

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<sup>75</sup> TNA, PIN 15/2401, Report, 28 September 1939.

within the services on the treatment and disposal of neuropsychiatric casualties and some were better prepared than others.

The army was primed for the inevitable casualties of the Second World War, having recent experience of dealing with shell-shock and an infrastructure to deal with the evacuation of personnel.<sup>76</sup> The RAF, on the other hand, was a newcomer to the armed forces and did not have an extensive history of regulations to draw upon. Due to their relative inexperience, they were confused on how to proceed. An historical survey was conducted and procedures for the evacuation of RFC neuropsychiatric casualties were critically assessed. It was found that Great War airmen suffering from mental disorders were retained in the service for as long as possible – cases were evacuated to war hospitals, under the administration of the AMS.<sup>77</sup> By the Second World War, however, the RAF was an independent service and did not have access to the same facilities; the procedures were therefore impracticable.

Consultant in Neurology, Group Captain Hugh Burton opened an investigation into the matter in March 1939 and carefully considered future regulations. His progress was obstructed, however, by laws governing the treatment and confinement of lunatics.<sup>78</sup> The only way to avoid the provisions of civil legislation was to retain a man for treatment within the service and subject to Air Force Law. This was only practical, however, if he had a reasonable prospect of recovery. Concerns with efficiency dictated that those with incurable mental diseases would have to be discharged, which brought legal questions to the fore and clashed with the agreement reached with the Ministry of Pensions. Burton sought the advice of the legal branch but did not receive any clarification until the war was

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<sup>76</sup> See for instance: TNA, AIR 2/4019, Extract from King's Regulations for the Army: Disposal of Soldiers of Unsound Mind, c. 1912.

<sup>77</sup> Personnel were retained for treatment in the RFC until accommodation shortages necessitated a limit of nine months to be fixed. Please see: TNA, AIR 2/4019, Note of meeting held to discuss the question of the disposal of airmen of unsound mind, 14 November 1939.

<sup>78</sup> TNA, AIR 2/4019, Letter from H.L. Burton to the Officer Commanding the Central Medical Establishment, 3 March 1939.

in progress – the lack of forward-planning in the interwar years meant that the care of the first neuropsychiatric casualties would have to be improvised.

While Bomber Command was over the North Sea in November 1939, a legal advisor outlined the options open to the medical services. It was found, however, that each channel of disposal presented further questions of practicability. The care and confinement of the mentally-disordered in civil society was governed by two pieces of legislation – the first was the Lunacy Act (1890). This law placed the asylum in a legal framework that prescribed rigorously the terms on which treatment could be imposed upon individuals. It outlined the procedures for the issuing of committal orders and detailed the care and restraint of the ‘certified.’ A person could be committed to an asylum by a local magistrate, with a supporting certificate of lunacy signed by a recognised physician.<sup>79</sup> RAF casualties could therefore be transferred to civil mental hospitals via committal orders. The legal advisor explained, however, that the provisions of the Lunacy Act were inappropriate, as they could not classify RAF cases as ‘persons not under proper care and control.’<sup>80</sup> He therefore looked to the Mental Treatment Act (1930), which was a more progressive law that aimed to reduce the stigma associated with psychiatric treatment. The act removed local magistrates from the admission process and authority was bestowed upon medical professionals. The opinions of two doctors could secure the committal of an individual. Voluntary admissions were allowed for the first time, which represented a shift away from legalism and incarceration. ‘Temporary Treatment Orders’ were also introduced, which could be applied to patients who were incompetent and could neither assent nor dissent to their committal.<sup>81</sup> Most importantly, however, was the supersession of the much maligned ‘asylum’ with the ‘mental hospital’, which conveyed a reorientation

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<sup>79</sup> Please see: Lunacy Act, 1890, 53, Vict. c. 5, particularly ‘Part 1: Reception of Lunatics.’

<sup>80</sup> TNA, AIR 2/4019, Letter from R. Monk Jones, RAF Legal Branch to The Board of Control, 3 November 1939.

<sup>81</sup> Please see: Mental Treatment Act, 1930, Geo V., c. 23.

towards therapeutic relief instead of coercion and restraint.<sup>82</sup> The legal advisor believed that the provisions of this act were the most appropriate, as the RAF could take the necessary action to obtain orders allowing for temporary treatment.<sup>83</sup> The matter was discussed thoroughly in the following months.

From November 1939, a number of meetings were held to discuss the treatment and disposal of flying personnel of ‘unsound mind.’ The detailed exploration of the legal options uncovered a host of additional problems. The question of public opinion loomed large in discussions and conveyed a fear of repeating the mistakes of the shell-shock era. Representatives of the Board of Control for Lunacy and Mental Deficiency referred to past experiences on a number of occasions and stated that the certification of service patients under the 1890 Act was inadvisable. During the Great War, this practice had generated ‘strong public feeling’ and led to accusations of ‘war heroes herded with pauper lunatics.’<sup>84</sup> Sir Hubert Bond, a psychiatrist and administrator of the Board of Control, explained that a ‘small but noisy clique’ openly discussed being ‘herded’ in those institutions.<sup>85</sup> Servicemen and their families were humiliated by their association with the Poor Law system, where soldiers were stripped of their markers of personal identity and social status, including their rank and medals. Confinement in an asylum was degrading and supposed to be reserved for the pauper lunatics of society; not soldiers who had gone ‘insane through fighting for their country.’<sup>86</sup>

While public pressure was inconvenient, Bond explained that the committal of airmen to mental hospitals had to continue, as they required ‘structural facilities’ for

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<sup>82</sup> N. Glover-Thomas, *Reconstructing Mental Health Law and Policy* (London, 2002), pp. 19-22.

<sup>83</sup> TNA, AIR 2/4019, Letter from R. Monk Jones, RAF Legal Branch to The Board of Control, 3 November 1939.

<sup>84</sup> TNA, AIR 2/4019, Note of meeting held to discuss the question of the disposal of airmen of unsound mind, 14 November 1939; Note of meeting prepared by Sir Hubert Bond, 14 November 1939; Record of a meeting held in Room 1782, Thames House, to discuss the policy to be adopted in war in respect of the hospital accommodation and treatment of mental cases in the Services, 22 November 1939.

<sup>85</sup> TNA, AIR 2/4019, Note of meeting prepared by Sir Hubert Bond, 14 November 1939.

<sup>86</sup> P. Barham, *Forgotten Lunatics of the Great War* (New Haven, 2004), chs. 5, 6 & 11.

successful treatment. Certain cases required treatment under detention and were therefore unsuitable for temporary treatment under the 1930 Act. The RAF was therefore legally bound to certify or to retain the men in the service and refer them for treatment in a 'War Hospital.'<sup>87</sup> Mental wards in these institutions were not held in the same regard as Poor Law asylums, for they were viewed as places where the mentally wounded went to recover. In 1939, however, war hospitals were limited in number and there was competition for additional spaces. Fear of aerial attack in the 1930s compelled the Ministry of Health to organise medical provision for the inevitable civilian casualties and they made plans for a casualty organisation that would operate for the duration of the war: the Emergency Medical Services (EMS).

The EMS planned to requisition *c.* 300,000 beds in civilian hospitals for the physical casualties of air raids but it was assumed that bombs would not only kill and maim, they would drive people mad. In accordance with this belief, *c.* 40,000 beds were therefore reserved for mental casualties in 'neurosis centres.'<sup>88</sup> This meant that few facilities were left for the services to convert to war hospitals. At a meeting on 15 November 1939, the RAF representatives were warned of the shortages created by the EMS scheme and advised that they would have to discuss provision directly with the Ministry of Health. The RAF needed full service mental hospitals or sections of facilities converted for this purpose and at the very least, observation wards in general hospitals.<sup>89</sup> In peacetime, RAF neuropsychiatric cases were sent to the army hospital at Netley for treatment. This invitation had been withdrawn, however, as the army required the space for their own personnel.<sup>90</sup> Moreover, when the Ministry of Health was approached to

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<sup>87</sup> TNA, AIR 2/4019, Note of meeting prepared by Sir Hubert Bond, 14 November 1939.

<sup>88</sup> C. Dunn, *The Emergency Medical Services: England and Wales*, (2 vols., London, 1952), i, pp. 30-7.

<sup>89</sup> TNA, AIR 2/4019, Note of further meeting prepared by P.J. Crisp on the question of the disposal of airmen of unsound mind, 15 November 1939.

<sup>90</sup> No explanation was given. TNA, AIR 2/4019, Note of meeting to discuss the question of the disposal of airmen of unsound mind, 14 November 1939.

discuss provision for mental cases, they declared that they had no accommodation to spare.<sup>91</sup> The RAF was therefore plunged into crisis. They were obliged to retain airmen for treatment within the service but had no accommodation in which to deliver therapy.

Shortages of suitable pre-existing accommodation forced the RAF to improvise. Service hospitals were surveyed and extended to make room for wartime casualties, including neuropsychiatric cases. The Princess Mary RAF Hospital at Halton, for instance, saw great expansion in the pre-war years and offered neurological facilities during the Second World War. Temporary hutted hospitals were erected on larger stations and many provided beds for neuropsychiatric cases, such as the RAF Station Hospitals at Innsworth, Padgate, and Yatesbury. Moreover, large buildings were requisitioned for hospital use. Although the Ministry of Health had reserved civilian hospitals, they had no claim on old hydropathic institutions, hotels, and public spaces. Cleveley's Hydro and the Palace Hotel, Torquay were therefore requisitioned and became Officer's Hospitals with dedicated neuropsychiatric wards. The Transport and General Workers Union premises at Littleport, Cambridgeshire was converted into a treatment annexe, with a large neuropsychiatric section. The largest neuropsychiatric facility was located at The Rockside Hydro, Matlock which became the RAF Neurological Hospital. This facility housed treatment and convalescence facilities, including an occupational therapy department.<sup>92</sup> From the official history, it is impossible to discern how many neuropsychiatric beds were available but it is clear that Burton and the RAFMS had taken steps to expand neuropsychiatric accommodation.

The investigation of the procedures to be taken for the treatment and disposal of flying personnel of unsound mind clearly demonstrated how the practice of

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<sup>91</sup> TNA, AIR 2/4019, Note of meeting prepared by Sir Hubert Bond, 14 November 1939; Record of a meeting held in Room 1782, Thames House, to discuss the policy to be adopted in war in respect of the hospital accommodation and treatment of mental cases in the Services, 22 November 1939.

<sup>92</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, ch. 5.

neuropsychiatry was dictated and shaped by the needs of the state. The division was obliged to retain men for treatment within the service to comply with Ministry of Pensions' procedures but did not have suitable accommodation in which to deliver therapy. Their efforts to establish suitable accommodation were hampered by the needs of competing government departments, who had equally valid claims to hospital beds. The situation was salvaged by Burton, who used his initiative and requisitioned various buildings for conversion into war hospitals.

### ***Research***

A final factor that shaped the practice of neuropsychiatry in the RAFMS was the need for medical research. This thesis has argued that the air force had lagged behind on neuropsychiatric research in the interwar years but this was a problem that affected all medical specialties. In May 1937, for instance, Consultant in Ophthalmology, Wing Commander Philip Livingston visited Germany to view the Luftwaffe's medical research facilities. Following a tour, he was thoroughly shocked to find that the establishments were elaborately equipped and staffed by high-calibre scientists. He argued: 'I had learned more about the medical hazards of the air in these three hours than I had in ten years in my own service.'<sup>93</sup> On his return to London he wrote a letter to the DGMS, comparing Britain's backwardness in aviation medicine and paucity of facilities.<sup>94</sup> The RAF had nothing in place apart from the Physiological Laboratory that had since moved to a slightly larger wooden hut in Hendon. Livingston happened to mention his concerns to Member of Parliament, Captain A.G. Lamplugh, during a routine eye examination, who passed on his concerns to a friend in the Air Council. Livingston was reprimanded for bypassing normal channels but the matter was taken seriously. Chief of the Air Staff, Air

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<sup>93</sup> P. Livingston, *Fringe of the Clouds* (London, 1962), p. 163.

<sup>94</sup> *Ibid*, p. 172.

Marshal Sir Cyril Newall called a meeting of the Medical Advisory Committee of the Air Ministry who discussed the provision of adequate medical facilities for the RAF. DGMS Richardson bemoaned the paucity of provision, research subjects, and the lack of cooperation between the branches of the CME. As a result, there was no clear idea on what worked needed to be done and with war fast approaching, this could not continue.<sup>95</sup>

The Flying Personnel Research Committee (FPRC) was therefore appointed in January 1939 to advise the Secretary of State for Air on the medical aspects of matters ‘affecting Royal Air Force personnel which might conduce to safety and efficiency in flying.’ Their initial remit included problems associated with the ‘scientific selection of flying personnel and into measures designed to maintain their physiological efficiency.’<sup>96</sup> From its inception, it was an interdisciplinary committee which employed RAF consultants and civil advisers in a range of medical specialties. Collaborative work was encouraged by the chairman – wartime DGMS Air Marshal Sir Harold Whittingham.<sup>97</sup> The work completed by the FPRC was largely reactive, as the war represented the first opportunity for organised, systematic research, for there was a large pool of research subjects. The emphasis on research was unique to the RAF, as no comparable programmes existed in the army and navy at this time.

By 1940, the work of the organisation had been distributed to various subcommittees to make for economy and efficiency, and by 1941, they had produced 460 reports on medical issues, including oxygen deprivation and visual disturbance, for example.<sup>98</sup> The FPRC was therefore an organisation that was guided by the principle of efficiency and conducted research that would maintain and improve this variable. It would

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<sup>95</sup> Gibson and Harrison, *Into Thin Air*, pp. 59-60.

<sup>96</sup> TNA, AIR 20/6014, Flying Personnel Research Committee, Report to the Secretary of State for Air on the Committee’s Activities for the Period June 1940 to December 1945, n.d., p. 1.

<sup>97</sup> TNA, AIR 20/11045, Memorandum on the activities of the Flying Personnel Research Committee by H.E. Whittingham, 13 April 1939.

<sup>98</sup> TNA, AIR 20/6014, Flying Personnel Research Committee, Report to the Secretary of State for Air on the Committee’s Activities for the Period June 1940 to December 1945, n.d., p. 2.

take a systematic approach to the research of the medical problems of flying and tackle issues that were not conducive to manpower economy and combat efficiency. RAF neuropsychiatrists were all involved with the research of the FPRC, whether directly through committee membership or indirectly via research studies and recommendations. Symonds was appointed to the committee in February 1941 to assist in the investigation of a neuropsychiatric issue known as ‘flying stress’ – a condition that was causing wastage in operational personnel.<sup>99</sup> The neuropsychiatric division was therefore required to assume a crucial research function to gain a better understanding of the mental and nervous disorders of flying personnel. This would allow them to reduce wastage and preserve combat efficiency.

## **Conclusion**

The RAFMS had recognised that medicine was vital to the conduct of the air war. They mobilised expert knowledge to manage the casualties of the Second World War, to meet the need for manpower economy and combat efficiency. Specialist medical provision was extended and the duties of the branches were shaped to meet the requirements of the service. Neuropsychiatry was therefore the product of the culture of specialisation characteristic of the Second World War and would play a valuable role in the management of aerial warfare. The division was duty-bound to prevent and treat the nervous and psychological disorders of flying personnel, allowing these crucial figures to return to duty.

Sophisticated management techniques were introduced to the RAFMS to rationalise the medical service. The employment of experts – consultants – allowed for the planning and effective delivery of specialist medical care. These men would manage and

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<sup>99</sup> Flying stress is discussed in Chapter 6. TNA, AIR 20/10727, Minutes of the First Meeting of the D.G.M.S.’s Committee on Flying Stress in Aircrews, 4 February 1941.

supervise work in their respective areas and ensured that the needs of the RAFMS, state, and casualties were being met. They were supported by a team of specialists, who would carry out specialist work and conduct research into the medical problems of flying. The neuropsychiatric division employed a number of consultants and specialists to carry out these important duties. The organisation of neuropsychiatric work was therefore rational and efficient.

The practice of neuropsychiatry was shaped by the interests of the RAF, the state, and its practitioners. The RAF required neuropsychiatry to prevent and treat casualties to meet its aims, whereas the Ministry of Pensions desired that care would be geared toward economic efficiency. The practitioners, on the other hand, saw service in the neuropsychiatric division as a prime opportunity to advance the image and professional knowledge of their respective specialties, as well as to prevent and treat disorder. Neuropsychiatry was not merely a medical specialty with potent preventive and therapeutic capabilities; it had something to offer each of these key stakeholders. The preventive and therapeutic duties of the neuropsychiatric division were shaped by these priorities.

The RAF's historic preference for neurological expertise would have ramifications for the practice of psychiatry. The division employed high-ranking specialists but two of the consultants, Symonds and Gillespie, had a history of personality and professional clashes, and each were deeply committed to the methods of their individual specialties. The confidence, pragmatism, and military experience of the Consultant in Neurology would tip the balance of power in favour of the neurologists. Additionally, prejudice towards psychiatry and psychiatric methods was ingrained not only in the RAFMS but also at the state level, who feared that psychiatrists would create disturbance in healthy individuals.

The lack of forward planning for neuropsychiatric casualties was starkly demonstrated in 1939. The service did not have any procedures for the screening of candidates upon enlistment. Nor did the service have measures or facilities in place for the reception and disposal of neuropsychiatric casualties. The matter would not be resolved until the war was in progress and the division was duty-bound to retain men for treatment within the service. Shortages of specialist accommodation dictated that the division would have to make-do with requisitioned properties converted for this purpose. Research was also deemed essential, as little was known of the medical problems of flying. The work of the neuropsychiatric division was shaped by these considerations, too. Despite these teething problems, the RAF had a functioning neuropsychiatric division with a clear remit to face the challenges of aerial warfare.

## **Section II: Neuropsychiatry and the Management of Aerial Warfare**

### **Chapter 3:**

#### **Scientific Selection:**

#### **Psychology, Psychiatry and the Selection and Screening of Flying Personnel**

### **Introduction**

One of the greatest problems facing military authorities during the Second World War was selecting personnel for the multitude of jobs in the technological armed forces.<sup>1</sup> The expansion of the services through volunteering and conscription meant that millions of men had to be processed by the army, air force, and navy for military service.<sup>2</sup> Between 1939 and 1945, approximately six and a half million men were interviewed and medically-examined to assess their suitability for service, of which one and a half million volunteered and five million were called up.<sup>3</sup> The British armed forces introduced a number of administrative and personnel reforms to integrate and process the mass intake of volunteer and conscript manpower. Standardised basic training and scientific testing were introduced to reduce the incidence of ‘square pegs in round holes.’<sup>4</sup> The purpose of scientific selection was to increase efficiency and to ensure that the right men were in the right jobs.

The armed forces were also legally bound to select the most suitable personnel. The Ministry of Pensions would no longer pay compensation to neurosis cases and the services were advised to carefully select their manpower to reduce wastage. The value of scientific selection methods had been recognised from the Great War when the United

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<sup>1</sup> Crang, *The British Army and the People's War, 1939-1945*, p. 5.

<sup>2</sup> This chapter makes no distinction between volunteers and conscripts as the RAF neuropsychiatric division did not consider this.

<sup>3</sup> R.E. Whitting, ‘Civilian medical recruiting boards’, in A.S. MacNalty (ed.), *The Civilian Health and Medical Services* (2 vols., London, 1953), i, p. 358.

<sup>4</sup> The cited works are on the British army but this was also the case in the RAF: J. Crang, ‘Square pegs in round holes: Other rank selection in the British Army, 1939-45’, *Journal of the Society of Army Historical Research*, 77 (1999), pp. 293-98. See also: T. Harrison-Place, *Military Training in the British Army, 1940-44: From Dunkirk to D-Day* (London, 2000); P. Summerfield, ‘Education and politics in the British armed forces in the Second World War’, *International Review of Social History*, 26 (1981), pp. 134-5; Newlands, *Civilians into Soldiers*, chs. 1, 2.

States Army introduced screening procedures to exclude ‘insane, feeble-minded, psychopathic, and neuropathic individuals from the forces.’<sup>5</sup> This resulted in the rejection of 72,000 recruits on neuropsychiatric grounds and only 4,039 servicemen were invalided from the American Expeditionary Force.<sup>6</sup> Neuropsychiatric screening had therefore afforded preventive benefits. It was also during the Great War that medical officers researching the flying services suggested that prevention was better than cure. Surgeon Captain Henry Graeme Anderson emphasised the importance of careful selection and the ‘weeding out’ of those with an unsuitable temperament for operational flying. Martin Flack also advocated scientific selection, favouring the physiological testing of personnel to assess their bodily reactions to stress.<sup>7</sup> Yet despite evidence and clear calls for action, the RAF did not take the matter of selection and screening seriously until the Second World War.<sup>8</sup>

The RAFVR was a particularly attractive service for volunteers. Thousands were drawn by the prospect of flying and wearing the smart blue uniform, which was a beautiful contrast to the drab khaki of the army.<sup>9</sup> Only the best could be selected for highly-desirable flying duties and it was the remit of the Aviation Candidates Selection Board to filter the volunteers and identify those most likely to succeed. In 1939, the RAF relied upon traditional standards in the selection of flying personnel. A non-standardised interview and a medical was all that stood between a volunteer and flying training.

According to Wells, the RAFs selection of pilots and aircrew was based upon socio-

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<sup>5</sup> Salmon, ‘The care and treatment of mental diseases and war neuroses (“shell shock”) in the British Army’, *Mental Hygiene*, 1, pp. 529-30.

<sup>6</sup> W.C. Porter, ‘Military psychiatry and the Selective Service’, *War Medicine*, 1 (1941), p. 365; Pearce Bailey, ‘Direction and elimination of individuals with nervous or mental disease’, in P. Bailey, F.E. Williams, and P.O. Komora (eds.), *The Medical Department of the United States Army in the World War, Neuropsychiatry* (14 vols., Washington, 1929), x, pp. 57-86.

<sup>7</sup> Graeme-Anderson, *Medical and Surgical Aspects of Aviation*, p. 18; Flack, ‘Report VI: The Selection of Candidates for Flying: Report on the examination of a series of successful pilots and unsuccessful pupils from the point of view of their cardiovascular and neuro-muscular systems’, in Medical Research Council No. 53, p. 81.

<sup>8</sup> Jones, Hyams, and Wessely, ‘Screening for vulnerability to psychological disorders in the military’, p. 41.

<sup>9</sup> Francis, *The Flyer*, p. 23.

economic factors. Recruiting materials emphasised their goal of finding as many public schoolboys as possible, with calls for leadership, sportsmanship, and knowledge of hunting. Inevitably, spiralling requirements for aircrew outstripped the supply of traditional candidates and the RAF had to draw upon the millions of men from lower socio-economic backgrounds to meet the shortfall.<sup>10</sup> The traditional interview was therefore no longer fit for purpose and the RAF required assistance to identify the best candidates for air crew training. What is more, by 1942 it had become clear that the service was admitting men who were vulnerable to psychological disorders. Consultant in Neuropsychiatry, Group Captain Robert Gillespie believed that it was his duty to make recommendations that would reduce wastage.

This chapter will critically assess the RAF's selection and screening procedures and attempts to make them more scientifically rigorous, with particular reference to the work of Professor Frederic Bartlett and Group Captain Gillespie. Early war selection procedures will be reviewed to establish why the system was inefficient and producing high levels of wastage. The work of Professor Frederic Bartlett in the areas of intelligence and aptitude testing will be assessed, as the FPRC believed that industrial psychology was the solution to the problem of selection. Gillespie argued, however, that these reforms were not enough, as the RAF were admitting predisposed men to the service. His research into predisposition and temperamental suitability for service flying will be assessed to understand the scope and scientific basis of his recommendations. The chapter will show that his attempts at reform were thwarted by considerations of manpower, combat efficiency, and suspicion towards psychiatric methods. It will question if it was the attitudes of the air force or Gillespie's design that were problematic. This chapter not only

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<sup>10</sup> Wells, *Courage and Air Warfare*, pp. 12-13.

assesses attempts at reform but also demonstrates how open the RAF was to specialist advice and knowledge.

### **Tradition and Selection: The Recruitment and Training of Flying Personnel in 1939**

Becoming a member of aircrew was a lengthy process, as selection was not merely decided by a local selection board. Wells has described the process as ‘survival selection’, as candidates progressed through various levels of interviews, training, and examinations. Candidates could be eliminated at any time if they did not meet exacting standards.<sup>11</sup> Volunteers began the multi-stage process at the local recruitment office. Colin Wise recalled that upon volunteering, he had his first interview which consisted of no more than ‘a chat and a perfunctory medical’; the purpose of which was to ascertain his social background, age, education, general fitness, preference for flying or ground duties, and his reasons for joining.<sup>12</sup> If the volunteer met the criteria for aircrew training, which varied according to the whims of the interviewing officers, he had to undergo a more exacting interview at the Aviation Candidates Selection Board (ACSB). Traditional standards would present barriers to some volunteers, as notions of courage and social class were prevalent among selection officers, who were typically long-serving regulars.<sup>13</sup> Such attitudes shaped the selection process and the experience of volunteers.

Ken Rees remembered the traditional biases that underpinned his interview. From a farming background, he felt that it was necessary to lie to progress toward aircrew training:

[The interviewer asked] Do you ride? And I said yes. I thought, he hadn’t got a horse outside so there was nothing he could do about that...he asked about the Hunt, about who the Master was etc. etc...he turned around to the others and said, pilot I think.<sup>14</sup>

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<sup>11</sup> Wells, *Courage and Air Warfare*, p. 13.

<sup>12</sup> IWM, Sound Archive, 17609, Wise, Colin, June 1997.

<sup>13</sup> Wells, *Courage and Air Warfare*, p. 13.

<sup>14</sup> IWM, Sound Archive, 28775, Rees, Ken, n.d.

Other working class men felt stigmatised by the boards and suspected that their social background and education prevented them from becoming pilots. John Coles aspired to become a pilot to avenge the Dunkirk survivors but his hopes were dashed at the ACSB.

With regard to his rejection, he stated:

I think I was slightly unlucky there. Most of the intake on the day that I went were university undergraduates and although I wanted to become a pilot, I wasn't up to the standard, so they said you'll become a wireless operator/air gunner...I was overwhelmed.<sup>15</sup>

Importance was also placed on physical fitness and all candidates had to pass a stiff medical examination. Medical requirements for aircrew were stringent and volunteers had to undergo a number of rigorous checks.<sup>16</sup> John Dixon remembered that he had to blow into a tube for as long as possible to test his lung capacity, while the medical officer checked his pulse simultaneously. In his opinion, the eyesight tests were the most important and led to his rejection for pilot training. The examining medical officer declared that he was 'lacking visual acuity' and was therefore unsuitable for piloting aircraft.<sup>17</sup> Gerry Roberts, on the other hand, was frightened by the results of his medical; it had highlighted problems of which he was unaware:

...I had a medical which rather shook me...first of all, when I came to the final interview they said, well I am sorry your chest size really isn't with it but anyway they sent me back, and the doctor had made a bloody fool of himself...and secondly, when it came to vision, my vision was very good, except I was declared colour blind. I was tested on the Ichihara [a test for red/green colour vision]...if you can see a figure then you are alright; if you can't well you're in trouble. He tested me on the lantern [identification of coloured lights] and I was passed 'colour vision defective- safe'.<sup>18</sup>

Standards for medical examination therefore varied across the board: both men had visual problems but only one became a pilot.

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<sup>15</sup> IWM, Sound Archive, 30252, Coles, John, September 2007.

<sup>16</sup> Exact details of the medical tests cannot be found and specific patient data is closed under the Data Protection Act.

<sup>17</sup> IWM, Sound Archive, 30285, Dixon, John, December 2007.

<sup>18</sup> IWM, Sound Archive, 26580, Roberts, J.G. 'Gerry', December 2003.

Quite often, the purpose of medical tests was not explained to the volunteers and this caused a great deal of confusion. William Collins, for instance, argued that his medical was ludicrous and did not have a bearing on how he would react in the air. Collins was told to sit in a swivel office chair, was spun around for one minute, and then told to stand and walk in a straight line. He described this as ‘bloody difficult.’ Collins later understood that the test was to establish his equilibrium but doubted that ‘50 per cent of the people could do it any way.’<sup>19</sup> The medical tests were therefore exacting and failure in one or more areas could prevent a volunteer from accessing his desired role or result in his rejection.

No formal neuropsychiatric screening took place at the ACSB. Although the Ministry of Pensions recommended that the services screened all potential candidates, the RAF took no action. Medical officers had to rely upon the information volunteered in this respect. Wells argued that ‘emotional evaluation’ was unsophisticated and non-standardized. One veteran recalled:

...it was carried out by observation and assessment of answers to questions such as: ‘Why do you want to fly?’... ‘Do you consider yourself normal?’ I replied words to this effect: ‘What is normal?’ I was one of only two out of fifty who were passed as fit aircrew, and we two at first glance looked like the nuts of the pack...<sup>20</sup>

More often than not, however, the volunteer’s potential for neuropsychiatric illness would go undetected. The RAF was therefore accepting men who had, or were predisposed to, mental disorders. Those who progressed to the next stage in the selection process had more challenges to overcome, particularly pilots.

Once a volunteer had proven his suitability for pilot training, he would embark upon the multi-stage training regime outlined in the ‘Standard War Syllabus.’ This

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<sup>19</sup> IWM, Sound Archive, 6673, Collins, William Patrick, March 1983.

<sup>20</sup> W.T. MacFarlane interview with author: Wells, *Courage and Air Warfare*, p. 14.

publication, written by officers of Training Command, began by stating the ‘problem’ that all instructors had to negotiate in the training process:

The problem in pilot training is to train men, taken from civilian occupations, to become officers or NCOs, to take charge of valuable aircraft, and to use such aircraft as weapons of war. All this must be done in a comparatively short space of time. To the average man such training does not present any insuperable difficulties, but it does involve a change in outlook, the acceptance of new responsibilities, and the learning of new subjects and new ideas. There is a limit to how much can be absorbed in any given time, and therefore the first aim in this syllabus is to provide a training that is progressive from start to finish and leads the cadet step by step from civilian life towards the captaincy of operational aircraft.<sup>21</sup>

Not only did Training Command recognise this problem, the neuropsychiatric division fully sympathised. ‘There was little place in the Service for the men of poor mental quality,’ argued Burton, for ‘personnel were either air-crew, for which very good material was necessary, or non-combatant, highly-skilled tradesmen.’<sup>22</sup> The RAF therefore required motivated, intelligent men to pilot aircraft, as they were the most likely to adapt to the rigorous, multi-stage training process. Training Command had also recognised that even intelligent men could only absorb a limited amount of information at any given stage and had reflected this in their programme. They believed that their system encouraged men with good aptitude to progress and allowed them to identify those who were unsuitable for flying duties.<sup>23</sup>

Volunteers began the multi-stage training at the Air Crew Reception Centre (ACRC), where they were presented with uniforms, paybooks, service documents, and given a basic introduction to RAF life. They then progressed to basic training at the Initial Training Wing (ITW), which provided a rounded introduction to the service, including service customs, procedures, and traditions. The volunteers received instruction in subjects related to flying including navigation, armaments, meteorology, principles of

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<sup>21</sup> TNA, AIR 10/2316, AP 1388a, Standard War Syllabus of Pilot Training in the Royal Air Force, n.d., p.1.

<sup>22</sup> TNA, AIR 2/5998, Minutes of the third meeting of the Expert Committee on the Work of Psychologists and Psychiatrists in the Services, 24 October 1942.

<sup>23</sup> TNA, AIR 10/2316, AP 1388a, Standard War Syllabus, p. 1.

flight, principles of engines, and physics. Officer and NCO training began at this point, which armed the volunteers with the basic knowledge upon which their future training depended.

Candidates received preliminary flying instruction at the Elementary Flying Training School (EFTS) and further instruction in all subjects. They learned how to handle a simple type of aircraft in all conditions and gained confidence in their flying abilities. Officer and NCO training continued and subjects were taught related to service flying. The syllabus booklet stated at this point: ‘During this stage, cadets who seem unlikely to make Service pilots must be eliminated from further training...and diverted into other training in which they are more likely to make good.’<sup>24</sup> Training Command had therefore acknowledged that not all educated men would make the grade and had to be ‘weeded out’ to ensure the protection of aircraft, morale, and combat efficiency.

Candidates then progressed to advanced aircraft training at the Service Flying Training School (SFTS). Here they were taught how to fly more powerful aircraft with confidence and skill in all conditions. They learned to fly from one place to another, and to use the aircraft as a weapon of war. Officer or NCO training was completed at this stage.<sup>25</sup> Upon the conclusion of training, the cadets were sent to Operational Training Units (OTUs), where they received instruction tailored to their particular operational command and would then become fully operational. The entire process took around six months.<sup>26</sup> It is clear that the training and selection procedures for pilots and aircrew were rigorous and only the most able and intelligent men would make the grade. Throughout training, the men would have their aptitude tested and this resulted in heavy wastage.

The expansion of the wartime service had created problems in the initial selection of flying personnel and the Director of Training, Air Commodore Wilfred McClaughry

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<sup>24</sup> TNA, AIR 10/2316, AP 1388a, Standard War Syllabus, p. 1.

<sup>25</sup> *Ibid.*, p. 2

<sup>26</sup> For a schematic of air crew training please see Appendix B.

was becoming increasingly concerned. He noted that ‘standards of educational history and achievement which could be applied and were more or less valid in peace time’ were becoming increasingly difficult to apply. As a result, there was ‘considerable and to some extent avoidable wastage’ in flying training. McClaughry believed that Training Command had to establish ‘more exact standards of intelligence’ for all prospective air crew personnel, regardless of their educational background and to find a standardised procedure for the ‘assessment of the important personal qualities.’<sup>27</sup> As intelligence was understood to be a heritable biological concept, he turned to the FPRC for advice on the matter.<sup>28</sup>

### **Psychology and Efficiency: The Bartlett System of Tests**

In May 1939, the FPRC was only a few months old and was composed of a small number of specialists. Burton was the only neurologist at this time and there were no psychiatrists employed in the organisation or the wider medical service. It was therefore clear that this research could not take place within the confines of the RAFMS. When FPRC chairman, Air Marshal Sir Harold Whittingham considered who would be best suited to the problems of selection, he therefore looked to his civil advisers.<sup>29</sup> From its inception, the FPRC drew upon the knowledge of civil experts in a number of specialist areas. Whittingham therefore approached Professor Frederic Bartlett, who was a renowned specialist in experimental psychology and director of the Cambridge Psychology Laboratory. Industrial psychology had been recognised as an important and valuable field, since psychologists carried out applied and experimental research on munitions workers’

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<sup>27</sup> TNA, AIR 2/8057, Notes preliminary to a Conference to be held at the Air Ministry on Monday June 3<sup>rd</sup> at 11 am to discuss proposed revisions of the present procedure at Aviation Candidates Selection Boards, p. 1.

<sup>28</sup> Barham discusses the understanding of intelligence in the early twentieth century: Barham, *Forgotten Lunatics of the Great War*, pp. 88-9.

<sup>29</sup> TNA, AIR 20/11045, Memorandum on the Flying Personnel Research Committee, 10 April 1939.

productivity with the Industrial Fatigue Research Board during the Great War.<sup>30</sup>

Renowned psychologist Charles Myers deemed this to be the first work of industrial psychology in Britain and went on to establish the National Institute of Industrial Psychology in 1921.<sup>31</sup> From that point, industrial psychology went from strength to strength with the National Institute carrying out investigations at the request of industry or firms to increase efficiency in production and to train and promote investigators in industrial psychology.<sup>32</sup>

As a former student and colleague of Myers and William Halse Rivers, Bartlett was particularly adept in the area of industrial psychology and its application to military settings.<sup>33</sup> His 1927 publication, *Psychology and the Soldier*, stated that the psychologist not only performed an important job in assessing a man's fitness for military service but also for what branch of military service he may be best suited. 'The business of detecting specialised abilities', he argued, 'is a very important part of modern applied psychology.' Bartlett believed that as the armed forces were becoming more varied and technical in nature, the more important it was 'to apply to their organisation any methods which can be shown to save time and money in training and to improve the efficiency of the trained material.'<sup>34</sup> The RAF had learned this lesson the hard way with high pilot wastage in the training regime and it was down to Bartlett to reduce this burden and make the selection process more efficient.

On 3 June 1939, Bartlett addressed a conference of RAF training officers on the problems of selection and how he proposed to tackle them. Bartlett started his paper by

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<sup>30</sup> M. Chong, 'Military Efficiency: Industrial Psychology and the British Armed Forces in the Second World War', (Univ. Oxford MSc Thesis, 2013), p. 13.

<sup>31</sup> C.S. Myers, *Industrial Psychology in Great Britain* (London, 1926), p. 14.

<sup>32</sup> Chong, 'Industrial Psychology and the British Armed Forces in the Second World War', p. 13.

<sup>33</sup> D.E. Broadbent, 'Bartlett, Sir Frederic Charles (1886-1969)', rev. Hugh Series, *Oxford Dictionary of National Biography*, Oxford University Press, 2004, accessed online: <http://ezproxy-prd.bodleian.ox.ac.uk:2167/view/article/30628>, 8 June 2015.

<sup>34</sup> F.C. Bartlett, *Psychology and the Soldier* (Cambridge, 1927), p. 14.

sympathising with Training Command, blaming the increased intake for the problems of selection, rather than the methods in place. He acknowledged that men of lower educational and social backgrounds were progressing to the ITWs and were ‘a fine set of people’ but they made ‘the problem of initial selection a little different.’ Fighter and Bomber Commands were constantly demanding intelligent candidates and this raised the crucial questions of ‘how to keep the standards up; and will those who are taken on be able to research the necessary standard?’ The mathematical and navigation exams at the ITW produced wastage of 15-17 per cent, which was unacceptably high and Bartlett proposed two tests that would eliminate unsuitable candidates before they had progressed as far as the ITW.<sup>35</sup>

Bartlett designed selection tests for use in the initial selection procedures at the ACSB, which focussed on general intelligence and mathematical ability. He stressed that ‘either test can be done without any special training.’ The tests were standardised and each could be administered in a group setting in only 15 minutes. The rapid grading of the scripts would follow, with specially-trained ‘recorders’ doing the marking. The grades would then be passed to the Selection Board before the candidate’s interview. In Bartlett’s opinion, the major advantage of the test was that it allowed ACSBs to reject the ‘greater part of the 15% to 17% who fail[ed] to pass their exams’ at the ITW. Those who failed to achieve a score above 40 per cent on the general intelligence test could be rejected instantly and the successful would progress to take the mathematics test. But if they scored lower than 20 per cent they could also be rejected on the grounds of low intelligence.<sup>36</sup> Bartlett concluded that ‘the decision to adopt these two tests and to eliminate on the basis of the standards obtained by candidates would have the effect of selecting people of better intelligence and getting rid of the people of such poor education

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<sup>35</sup> TNA, AIR 2/8057, Proceedings of a Conference held at the Air Ministry on Monday June 3<sup>rd</sup> at 11 am to discuss proposed revisions of the present procedure at Aviation Candidates Selection Boards, 1939, pp. 2-3.

<sup>36</sup> Ibid, p. 3.

that they would be incapable of standing up to the technical training required.’ The tests were therefore harsh and discriminatory but promised to improve efficiency.<sup>37</sup>

By 1940, the Bartlett system of tests was in use at all ACSBs. For the general and mathematical intelligence tests the candidate was given a question paper, in which he was required to underline the correct answer or insert figures into a blank space.<sup>38</sup> The general intelligence test, for instance, included a range of questions that tested the candidates’ abilities in measurement, sense of direction, relationships between people and objects, word association, probability, and reasoning. For example:

A man was walking in daylight in June in England with his shadow straight in front of him. The shadow was longer than the man was tall. An east wind was blowing and the man’s hat blew off and fell behind him. Underline the correct answers to the following questions: -

(10) In which direction was the man walking?

(i) North (ii) South (iii) East (iv) West.

(11) Was it (i) early morning (ii) noon (iii) early afternoon or (iv)

evening?<sup>39</sup>

The intelligence test consisted of 20 closed-response, multiple-choice questions, which made for efficiency, as the scripts could be graded quickly by a non-specialist. One mark was awarded for each correct answer, which allowed the recorders to categorise candidate scores into the following bands: very good (16-17 marks); good (14-15 marks); average (10-13 marks); below average (8-9 marks) and very poor (0-7 marks). The results of the assessment, together with the score and band of the 12 question mathematical intelligence test, would be passed to the selection officers to help them in their decision.<sup>40</sup> The selection officers would also grade the candidate’s interview responses on the same scale

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<sup>37</sup> In the British Army, low intelligence was an uncontested reason for rejection or dismissal from the service. See: Thalassis, ‘Useless Soldiers: The Dilemma of Discharging Mentally Unfit Soldiers during the Second World War’, pp. 105-6.

<sup>38</sup> Please see Appendix C for a faithful reproduction of the intelligence test.

<sup>39</sup> TNA, AIR 2/8057, Aviation Candidates Selection Board, General Intelligence Test A, n.d.

<sup>40</sup> TNA, AIR 2/8057, Memorandum for Aviation Candidate Selection Boards, 1940.

and made a decision based upon all available evidence. Bartlett had therefore made the selection process more efficient and scientifically rigorous.

Almost a year after the tests were introduced, Bartlett's research assistant E.G. Chambers analysed the results of testing and made comments on the efficiency of the new procedures. He found that the ACSBs were making some use of the test scores in their selection of candidates but there were a few points that were reducing the efficiency of the measure. Chambers argued that quite a number of candidates who were graded 'Very good' and 'Good' were rejected. He felt it would be useful to know what factors influenced these decisions. The tests could only work to their full benefit if results were taken into account in ACSB decisions. Chambers found that on the whole, the tests seemed to be applied consistently, as the distribution of test scores was satisfactory and indicated that they were administered and marked correctly. He concluded with the warning, however, that 'no system of initial selection ever has been or ever can be invented that will avoid all mistakes.' The intelligence tests would still allow a small proportion to get through who would not 'make good' and some would fail who could become 'moderately good performers.'<sup>41</sup> This was the main criticism of the selection tests applied in the army for they led to the rejection of candidates who could have made good soldiers.<sup>42</sup>

Bartlett and his team at Cambridge were also tasked with the development of pre-selection tests, which would establish if certain personnel were suited to flying duties and particular roles in the aircraft. From 1937, the laboratory had been canvassing the Air Ministry to take-up an apparatus that would help to identify those with aptitude for flying. The Sensory Motor Apparatus SMA-3 was 'a test of rapidity and reaction of eyes, hand,

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<sup>41</sup> TNA, AIR 2/8057, Report on Aviation Candidates Selection Board intelligence test results, 19 August 1940.

<sup>42</sup> Jones, Hyams, and Wessely, 'Screening for vulnerability to psychological disorders in the military: an historical survey', pp. 40-6.

and feet, and also a test of co-ordination of movement.’ The candidate was required to retain a spot of light as close as possible to the point of intersection of a vertical and a horizontal line. The position of the line would be moved by the examining officer and the candidate would have to control the lateral movement of the apparatus with his feet, and vertical movement with his hands. The apparatus was able to test for ‘clumsy’ or ‘exaggerated’ movement and gave an indication of the capacity of an individual to properly control an aircraft.<sup>43</sup> This was not the only sensory-motor apparatus available on the open market but in Bartlett’s opinion, it was the most promising of the lot.<sup>44</sup> The Air Ministry initially rejected this apparatus but their reasons have not been given in primary material. Gibson and Harrison assumed that it would have led to the rejection of potentially good pilots and that it did not distinguish between suitability for bomber or fighter duties.<sup>45</sup> During the war, however, pilot wastage was high and the Directors of Training decided to introduce the apparatus as a means of selecting pilots from other aircrew candidates. Accordingly, 20 sets of the apparatus were ordered on the basis of two per board and members of the WAAF were trained to operate the machinery.<sup>46</sup>

What is more, Bartlett developed five pre-selection tests to ‘assess particular characteristics pertinent to flying duties’, which would allow flying personnel to be categorised into training for bomber or fighter roles. These tests included the ‘decoding test’, which was designed to assess speed and method of working, both mentally and manually. The second was the ‘double dotter test’, which was used to determine a preference for fast or slow work from a physical aspect. The ‘interrupted pursuit meter’ was intended to judge alertness and field of attention. The ‘tied association test’ was

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<sup>43</sup> TNA, AIR 2/8057, Minutes of a meeting held Saturday, 23 November 1940, to discuss the Bartlett Psychological Test for Aircrew Candidates.

<sup>44</sup> Other devices included the Mashburn Serial Apparatus and the Reid Reaction Tester. See: A.D. English, ‘Canadian Psychologists and the Aerodrome of Democracy’, *Canadian Psychology*, 4 (1992), 663-72.

<sup>45</sup> Gibson and Harrison, *Into Thin Air*, p. 241.

<sup>46</sup> TNA, AIR 2/8057, Minutes of a meeting held Saturday, 23 November 1940, to discuss the Bartlett Psychological Test for Aircrew Candidates.

similar to the double dotter but measured preference for ‘fast work for short periods’, or ‘dull work for long periods.’ The final test was one of ‘sensory conflict’, which got the candidate to assess whether decisions regarding the position of his body (or aircraft) were made from bodily sensations or from instruments. Each test would take two hours to complete and would be administered by a trained medical officer (MO).<sup>47</sup> It is unclear if these tests were applied during the war but the fact that Bartlett was allowed to trial it showed that the RAF were open to psychological methods.<sup>48</sup>

Bartlett had therefore successfully demonstrated that psychological methods were useful in the selection of flying personnel. He managed to introduce quick, discriminatory tests that allowed ACSBs to identify, accept, and reject would-be flying personnel on sound scientific grounds. The intelligence tests were standardised, easy to administer, and could be marked by personnel with no previous psychological training. This made for economy and efficiency as medical personnel could be engaged in other vital work and it would also reduce wastage later in the selection process. Bartlett’s methods were harsh; the tests were designed to eliminate those of poor intelligence rather than to identify those with good aptitude. However, the Cambridge Psychological Laboratory were also involved in the development of tests that would assess aptitude for flying and the categorisation of candidates into specific aircraft roles. The RAF was therefore open to psychological methods and the selection of flying personnel had become more efficient as a result. But these selection tests did not assess the capacity of an individual flyer to the psychological strain of operational flying and this caused further wastage.

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<sup>47</sup> TNA, AIR 2/8057, Letter from H.E Whittingham to Director of Flying Training Command regarding Pre-Selection of Flying Personnel, 16 December 1941.

<sup>48</sup> Aptitude tests evolved up until 1944 but the purpose of this chapter is to assess neuropsychiatric testing. See: P.E. Vernon and J.B. Parry, *Personnel Selection in the British Forces* (London, 1949).

## **Neuropsychiatric Screening: The Predisposition of Flying Personnel to Mental Disorders**

While Bartlett's methods aimed to improve the efficiency of air crew selection procedures, they did not fully resolve the issues surrounding selection. After men had passed through the training regime, they progressed to operational work, where more wastage was noted on the grounds of 'temperamental unsuitability.' The primary function of the neuropsychiatric division was to reduce wastage and to prevent the development of mental and nervous disorders. It therefore fell to them to make recommendations on this matter. Consultant in Neuropsychiatry, Group Captain Robert Gillespie believed that the division could meet their objectives by taking an active part in the selection process. In his view, their main concern should be to identify unsuitable individuals from the point of recruitment, yet 'the question of predisposition to war neuroses, so called, appear[ed] to have obtained relatively little attention.'<sup>49</sup> This fundamental problem required consideration for the RAF were admitting personnel who were liable to neuropsychiatric illness.

Gillespie's claims were supported by wastage rates of aircrew under training during the period 1941-2. Bartlett's tests did not take into account predisposition to mental disorders and as a consequence, men were beginning to break down even before they had left the ground. Burton reported that 26 personnel were referred for neuropsychiatric opinion at ACRCs because they were exhibiting symptoms of a psychological origin. The neuropsychiatric specialists found that the majority of cases were of 'temperamental unsuitability' or definite psychological disorder, and others suffered from 'disturbance of consciousness' and epilepsy. Thirteen were considered unsuitable for further training; six were fit to continue and a further three whilst under observation; two were admitted to

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<sup>49</sup> TNA, AIR 2/6345, 'Predictability of Breakdown under War Conditions', by R.D. Gillespie, 1942.

hospital for further investigation and were ‘probably unfit’; one was recommended for a six month deferral, and another was referred to the executive. Burton acknowledged that this figure was low but he attributed it to a reduction in air crew intake and inevitable delays in neuropsychiatric referral.<sup>50</sup> It was therefore the responsibility of the division to address this problem and as a trained psychiatrist, Gillespie believed that the methods of his specialty would increase efficiency and identify those who were temperamentally unsuitable for flying duties.

Gillespie based his research on the premise that certain aircrew were predisposed to developing or exhibiting neuroses, and this accounted for their temperamental unsuitability. The theory of predisposition, which stated that an individual was liable to develop a mental disorder due to hereditary factors or environmental stress, had grown to prominence in the late nineteenth century. This theory was cited by proponents of the eugenics movement and later in Nazi Germany, to demonstrate the role of heredity in mental disorders and to advocate ‘racial hygiene.’<sup>51</sup> In his textbook, *Psychological Effects of War on Citizen and Soldier*, Gillespie argued that the factor of predisposition appeared to have less attention paid to it than would have been expected, given experiences in the last war. He drew upon the works of fellow psychiatrists and neurologists, who spoke of ‘martial misfits’, citing predisposition in up to 75 per cent in neurotic cases. He claimed that war was wholly unsuitable for men of a ‘timorous disposition.’<sup>52</sup> With this theory in mind, Gillespie proposed that the psychiatric method of examining life experiences would highlight any existing or potential neuroses in flying personnel. He described the Bartlett system as ‘unsatisfactory’ but conceded that it produced ‘useful pointers.’ In his opinion:

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<sup>50</sup> TNA, AIR 2/6345, Letter from Burton to the Air Officer Commanding the Central Medical Establishment, 9 March 1942.

<sup>51</sup> For a summary of historic literature on predisposition, please see: B. Cooper, ‘Nature, nurture and mental disorder: old concepts in the new millennium’, *British Journal of Psychiatry*, 40 (2001), pp. 91-101.

<sup>52</sup> *Ibid*, p. 167.

The best test is probably still the historical one contained in the patient's experience of life... What sort of reactions has the individual exhibited in the past? How has he met the ordinary trials of everyday life or even the ordinary situations which may be pathogenic in his case and therefore indicative of faults?<sup>53</sup>

In accordance with this view, Gillespie proposed a questionnaire for use in the selection process that would gauge the history of an individual's emotional and neurotic reactions. This included 29 questions that aimed to assess 'morbid fears' including fears of the dark, being alone, heights, and water; 'physiological instability' such as restless sleep, sleepwalking, stammering, bed-wetting, nail-biting, and nose-picking; 'traits of timidity' including avoidance of flights, swimming, boxing, climbing, dangerous sports, being bullied, and distaste for blood sports; 'other kinds of nervousness', such as depression, anxiety, inferiority feelings, and obsessional traits, and finally, 'volition disorders' including obstinacy and lack of persistence.<sup>54</sup> Each of the responses was allocated one mark if found to be a positive indicator of a neurotic trait.<sup>55</sup> Thus Gillespie was keen to establish a link between a candidate's life history and his present neurotic symptoms. A questionnaire was an efficient means of gathering this information, as it could be scored quickly and produced quantifiable data for comparative work and statistical analysis.<sup>56</sup>

Gillespie trialed his questionnaire on 56 neurotic patients at the RAF Neurological Hospital, Matlock. The examination of those who had already developed a neurosis was the quickest way to discover the nature of predisposition.<sup>57</sup> In the report he cited a handful of cases and their scores, and categorised their responses under pre-defined headings. 'Case 2', for instance, was given 10 marks for neurotic traits. For 'historical traits in childhood and youth', it was noted that he had continued to bite his nails into adulthood,

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<sup>53</sup> TNA, AIR 2/6345, 'Predictability of Breakdown under War Conditions', p. 1.

<sup>54</sup> Please see Appendix D for a full schedule of traits and questions.

<sup>55</sup> TNA, AIR 2/6345, 'Predictability of Breakdown under War Conditions,' p. 6.

<sup>56</sup> *Ibid*, p. 5.

<sup>57</sup> *Ibid*, p. 1.

wet the bed until he was 14 years old, used to pick his nose, was bullied as a child, and was frightened of the dark. In terms of ‘visceral responses’, the case felt nervous in high-pressure situations, such as interviews, where he would ‘led [his] mind run away from [him]’. He also displayed signs of ‘timidity’, for he would only fight if he had to in early life and was concerned about a dream when he had ‘knocked Mr Chamberlain down.’ His ‘reasons for joining the RAF’ were not positive, as he viewed service as ‘the only way out.’ It was also noted that he was from a ‘broken home’ – his father had left when he was four years old. In terms of ‘temperament’, he was classified as the ‘anxious-depressive type.’<sup>58</sup> Thus, responses to the questionnaire had allowed Gillespie to quantify historic neurotic traits, which could have contributed to mental breakdown.

The 56 cases were analysed, scored, and compared to two control groups, who had not experienced a war-related psychological breakdown. The first was formed of 109 cases of ‘nervous and average children’, drawn from patients under examination at the York Clinic, Guy’s Hospital. Gillespie retained the Chair in Psychological Medicine and directorship of this facility, which accounts for this particular choice. The second group was 48 surgically convalescing aircrew personnel, who he described as ‘Healthy, Young Male Adults.’ Gillespie administered the questionnaire to the 213 individuals and categorised the collective results under four main headings: poor sleep, enuresis, morbid fear (including fear of the dark, death, and illness), and nervousness (including timidity, instability of mood, depression, and anxiety). His findings are summarised in Table 6.

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<sup>58</sup> TNA, AIR 2/6345, ‘Predictability of Breakdown under War Conditions’, p. 8.

**Table 6: Incidence of neurotic traits in early history (%)**

<b>Group</b>	<b>Poor Sleep</b>	<b>Enuresis</b>	<b>Morbid Fear</b>	<b>Nervousness</b>
Nervous and Average Children	17	22	26	39
War Neurosis	28	14	79	54
Healthy, Young Male Adults	8	4	20	20
<b>Source:</b> TNA, AIR 2/6345, 'Predictability of Breakdown under War Conditions', by R.D. Gillespie, 1941.				

By comparing the percentages of each group, the war neurosis cases showed a significant excess in all of the neurotic traits in comparison to the control groups. This is with the exception of enuresis, as there were far more cases under study in the nervous and average children category. The war neurosis group had the highest percentage of morbid fear in childhood with an incidence of 79 per cent; their childhood fears of the dark, death, and illness, may have been rekindled by their wartime experiences.

Gillespie also made assumptions on the causation of neuroses in childhood. He argued that the most obvious facts were those concerned with an individual's family history and environment. Thirty-one per cent of war neurosis cases came from broken homes, where the family was broken by death, divorce, desertion, or separation. Only 13 per cent of the control group of healthy, young male adults experienced a 'similar misfortune.' In the war neurosis group, 37.5 per cent of the mothers and 23 per cent of the fathers had either been 'eccentric' or 'unstable'.<sup>59</sup> Gillespie therefore suggested that predisposition was the direct result of heredity or family environment. These variables, and the other neurotic traits and markers, were carried through life by an individual. Thus the predisposed were permanently unsuitable for flying duties.

Gillespie also quantified the total early traits in each group and made comments on the percentages of morbid fear, physiological instability, and timidity and lack of

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<sup>59</sup> TNA, AIR 2/6345, 'Predictability of Breakdown under War Conditions, pp. 8-13.

aggressiveness. He found again that the war neuroses group were well in excess of the two control groups. Forty-one per cent of the war neuroses group admitted to a morbid fear, compared to 15 per cent of surgical casualties, and 21 per cent of fit pilots. In terms of physiological instability, 44 per cent of the war neuroses group had traits of this type, whereas only 10 per cent of the surgically convalescing cases and 36 per cent of the fit pilots did. Most significantly, 74 per cent of the war neuroses group displayed timidity and lack of aggressiveness, which contrasted starkly with the four per cent of surgical casualties, and six per cent of the fit pilots. Gillespie described these results as ‘striking.’<sup>60</sup>

Armed with his report on ‘Predictability of Breakdown under War Conditions’, Gillespie was confident that he could research the problem of predisposition. Before he could do this, he had to gain support from his fellow consultants. The institutional bias toward neurology in the RAF has already been noted and Consultant in Neurology, Group Captain Charles Symonds was typically sceptical of psychiatric methods.<sup>61</sup> When Gillespie sent him the report, he naturally had plenty to say. He considered the findings in some detail and veiled his criticisms in constructive feedback. Symonds questioned the ability of psychiatrists to rate question responses consistently and to pose them *verbatim*. He argued that without this skill, inaccurate scores would be produced and would lead to a skewed assessment of predisposition. He conceded that the questionnaire would produce useful quantitative data but criticised the design as it ‘limited the examiner’s’ freedom’; it left no room for elaboration and he instead suggested that an examiner should follow the patient’s lead ‘but to his own advantage.’ Symonds also argued that the questionnaire was too long, which meant that the candidate could get bored and give random answers to get through it quicker. It was also impractical to subject all new recruits to neuropsychiatric examination. What is more, Symonds suggested that medical officers could administer the

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<sup>60</sup> TNA, AIR 2/6345, ‘Predictability of Breakdown under War Conditions’, pp. 6-7.

<sup>61</sup> See Chapter 2.

questionnaire to recruits instead, which suggested that psychiatric opinion was not required. Symonds proposed that instructors at training units should be encouraged to refer cases of nervousness to the unit medical officer, who could refer to guidance in assessing temperamental unsuitability and make a specialist referral when required.<sup>62</sup>

In contrast to Symonds, Burton supported Gillespie's work. As a long-serving consultant and the senior-most figure of the division, his opinion was valued by the RAFMS executive. The regard in which he was held was important in Gillespie gaining the freedom to research predisposition, as the DGMS was also sceptical of his plans. Air Marshal Sir Harold Whittingham had already entrusted the matter of selection to Bartlett, for he had extensive experience of industrial psychology and wondered if psychiatry could add anything to the work already completed. Burton defended Gillespie by stating that although the work at Cambridge was valuable, in his twenty years of experience of selection, it was of 'greater importance to attempt the assessment of a candidate's potentiality to stand up to the nervous stress of flying, without the risk of breakdown.' Gillespie's proposals would prevent these men from entering the service, whereas potential air crew trainees could pass the aptitude and intelligence tests, and still be temperamentally unsuitable. Burton urged him to allow Gillespie to continue his experimental work at the ITW in Torquay, which would enable him to collate more quantitative data. Burton was also concerned that the army had 'ranged ahead' in this respect.<sup>63</sup> Thus he was not only concerned that Gillespie's ideas were being dismissed, he was anxious that the army, with its comparatively inferior recruits and psychiatrists, was pushing ahead with essential research.

The support of the executive was secured by March 1942. The DGMS contacted the Commander-in-Chief of Training Command to seek his permission for experimental

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<sup>62</sup> TNA, AIR 2/6345, 'Notes on Predictability of Breakdown under War Conditions', by C.P. Symonds, 1941.

<sup>63</sup> TNA, AIR 2/6345, Letter from H.L. Burton to Whittingham, 27 December 1941.

work to be carried out. It was proposed that an interview was held with each cadet of approximately 30 minutes' duration.<sup>64</sup> The Commander-in-Chief did not object to Gillespie's intervention but offered another practical point-of-view. He believed that it was more suitable that efforts were concentrated on the elimination of the temperamentally unfit at the ACSB. He stated: 'Apart from the loss of time and effort in the training organisation, elimination after acceptance for aircrew training tends to produce disappointment and a feeling of inferiority, which may last throughout a man's service.'<sup>65</sup> The commander needed to maintain morale in the organisation to ensure that training was not compromised. At the same time, Gillespie sought the opinion of Bartlett, who believed that his interview was 'worth trying' but 'naturally he [did] not express an opinion one way or another of what [would] come of it.'<sup>66</sup> Bartlett's opinion undoubtedly stemmed from a desire to protect his own methods, as Gillespie's research suggested that selection procedures were inadequate.

Research at ITWs in Torquay began in Spring 1942, where Gillespie examined 101 observers and one pilot under training at No. 3 ITW between 23 April and 8 May. He also assessed the predisposition of 244 pilots at No. 4 ITW between 9 May and 13 June. In this large sample, each of the trainees was interviewed by Gillespie using his proposed questionnaire. He encountered difficulties, however, as he could only spend 12 minutes with each man, in order to get a sufficient number of cases seen. This finding was crucial, as it was highly unlikely that selection and training officers would be able to spend 30 minutes interviewing each candidate. Gillespie defended the shortcomings of his model, however, stating that it hardly challenged the German procedures or the two-and-a-half-

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<sup>64</sup> TNA, AIR 2/6345, Letter from Whittingham to the Air Office Commanding-in-Chief, Flying Training Command, 3 March 1942.

<sup>65</sup> TNA, AIR 2/6345, Letter from Air Marshal, Commanding in Chief Flying Training Command to the Under Secretary of State, 12 March 1942.

<sup>66</sup> TNA, AIR 2/6345, Memorandum from Gillespie to the Commanding Officer RAF Hospital Torquay, 25 February 1942.

day examination used by the British Army for officer selection. Out of 343 individuals, he found that 9 were predisposed ‘very considerably’, 19 ‘considerably’, 24 ‘moderately’, and 21 ‘slightly’. 2 cases were unaccounted for. In total, 73 cases had predisposition of varying degrees. This was a significant finding as 21 per cent of recruits were potentially unsuitable for flying duties and it was clear that neuropsychiatrists could be useful in the selection of air crew personnel.<sup>67</sup>

Following the advice of Training Command, Gillespie continued his research in ACRCs in early 1943. He hoped to interview at least 200 Air Gunners under training at Abbey Lodge and had reduced the interview time to 15 minutes per man to ensure that enough cases were seen.<sup>68</sup> His research had caught the attention of key figures in the air force, including the Director-General of Training, Air Vice-Marshal Edward Goodwin who was ‘extremely interested’ to learn about temperamental suitability for flying and was ‘naturally most anxious’ to cooperate.<sup>69</sup> In 1943, Symonds and his research assistant Denis J. Williams, also undertook their own analysis with a much larger sample. Of the 2,200 men diagnosed with a psychological disorder, 75 per cent showed evidence of predisposition, and 20 per cent of them were so heavily predisposed that they should have been rejected at the ACSB.<sup>70</sup> Although he advocated the use of his questionnaire, it cannot be discerned from the sources if Gillespie intended for all personnel predisposed to mental disorders to be rejected from the service. As Wells has suggested, this would have been a matter for the Air Council and RAF commanders.<sup>71</sup>

The results of the preliminary research were sufficient to convince the Air Ministry that the matter of aircrew selection required further examination. The DGMS established a

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<sup>67</sup> TNA, AIR 2/6345, Summary of Gillespie’s findings at the ITW Torquay, 1942.

<sup>68</sup> The records for the ACRCs are not available at the National Archives. TNA, AIR 2/6345, Letter to Squadron Medical Officer of No. 54 Group from Gillespie, 21 December 1942.

<sup>69</sup> TNA, AIR 2/6345, Letter from the Director General of Training to Whittingham, 19 March 1943

<sup>70</sup> TNA, AIR 2/6252, FPRC Report 547, ‘Clinical and statistical study of neurosis precipitated by flying duties’, by C.P. Symonds and D.J. Williams, August 1943.

<sup>71</sup> Wells, *Courage and Air Warfare*, p. 17.

sub-committee of the FPRC to assess the matter in detail. Medical and operational officers with interests in aircrew training and selection were invited to participate. Among the membership was Bartlett and Gillespie, and the small group was chaired by Symonds. The sub-committee was advised to ‘coordinate the various lines of approach to the assessment of temperament in connection with air crew selection, which could be quickly validated, and which would assess suitability of temperament for air crew operational duties.’ Gillespie’s questionnaire was naturally one of the methods discussed but the sub-committee did not believe that they had enough evidence to support the introduction of a questionnaire.<sup>72</sup> This may have been due to prejudice against psychiatric methods within the service, for Bartlett’s tests had been introduced with little experimentation – though it must be remembered that the methods of industrial psychology were proven in civilian settings.

Gillespie’s methods were deemed impracticable, for the questionnaire was lengthy and took a considerable amount of time to administer. The sub-committee proposed that a semi-structured interview would produce quicker results. The aim was for the candidate to ‘recount his history in such a way as to bring out naturally the kind of characterisation that are considered...to make breakdown in flying or some form of failure from psychological reasons more likely.’ It also aimed to ‘counter-balance any tendency of that kind.’ Scoring based on points was also eliminated; most likely on the grounds of Symonds’ complaint that psychiatrists would have to grade consistently. Instead, the interviewer was to note a simple ‘yes’ or ‘no’ response for traits in the following areas: family history, previous nervous breakdown, morbid fears and anxiety, physiological instability, timidity, lack of aggressiveness, lack of persistence, affective liability, obsessional, and psychological immaturity. The scale of predisposition was also streamlined and divided

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<sup>72</sup> TNA, AIR 2/6345, Minutes of the meeting of the Technical Advisory Sub-group of the Sub-committee on Assessment of Temperament in connection with Air Crew Selection, 11 May 1943, p. 2.

into four types: nil, mild, moderate, and severe.<sup>73</sup> The areas that Gillespie had identified would still be assessed, albeit in a different form. His original questionnaire did not make for efficiency in administration and was adapted to meet military requirements.

The matter was considered further from July 1943. Their progress was hastened as the RAF's war was about to enter a more aggressive phase. British and American heavy bombers were engaged in nightly attacks on German industry, military installations, and the population. The 'Casablanca Directive' was issued on 4 February which outlined the aims of the Combined Bombing Offensive: 'The progressive destruction and dislocation of the German military, industrial and economic systems and the undermining of the morale of the German people to the point where their capacity for armed resistance is fatally weakened.'<sup>74</sup> The Combined Bombing Offensive had begun on 10 June with attacks on German industry in the Ruhr. Flying personnel nicknamed this area as the 'crump-dump', for this was where many crews had lost their lives to heavy anti-aircraft defences.<sup>75</sup> It was therefore essential that Bomber Command aircrews were composed of men who could withstand the psychological strain of the raids.

The FPRC sub-committee sought to test Gillespie's methods in a formal trial. A Psychiatric and Psychological Research Section was set up at No. 7 Personnel Receiving Centre in Harrogate, in order to 'introduce an experiment on psychiatric and psychological methods of detecting air crew personnel who are likely to fail in operational flying on account of temperamental unsuitability.' A memorandum on this subject stated that the 'reliability and validity' of this form of assessment had yet to be established and the object of the research was to obtain 'satisfactory evidence' before any decision was made on the

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<sup>73</sup> TNA, AIR 2/6345, Minutes of the meeting of the Technical Advisory Sub-group of the Sub-committee on Assessment of Temperament in connection with Air Crew Selection, 11 May 1943, pp. 2-3.

<sup>74</sup> A.T. Harris and S. Cox, *Despatch on War Operations: 23 February 1942 to 8 May 1945* (London, 1995).

<sup>75</sup> Shephard, *A War of Nerves*, p. 281.

general introduction of tests.<sup>76</sup> Two neuropsychiatrists tested Gillespie's methods by interviewing 1,000 bomber pilots under training, under the direction of Symonds. The specialists graded the candidate's degree of predisposition on the scale of 'Nil', 'Slight', 'Moderate' and 'Severe', and their progress would be followed up once on operations. They were also instructed to record against each candidate a mark for each neurotic trait they came across. At the conclusion of the investigation, the psychiatrists applied the same methods of assessment to a representative population of pilots who had completed an operational tour on heavy bombers for the purposes of comparison – see Table 7.<sup>77</sup>

**Table 7: Predisposition of pilots under training at No. 7 ACRC Harrogate and pilots who had completed an operational tour on heavy bombers**

Predisposition	No. of cases		Per cent of Cases	
	Harrogate	O.T.U.	Harrogate	O.T.U.
Nil	421	240	42	72
Slight	470	88	46	26
Moderate	97	5	10	1.5
Severe	21	2	2	0.6
<b>Total:</b>	1,009	335	100	100
<b>Source:</b> TNA 57/10 'The Psychiatric Assessment by Wing Commander J. Flind and Squadron Leader E. Gates of Pilots Under Training at the Personnel Receiving Centre Harrogate, and Pilots at Operational Training Units and Heavy Conversion Units who had completed an operational tour in heavy bombers', by C.P. Symonds, April 1944, p. 1.				

According to an interim report written by Symonds, it was found that, on the whole, the degree of predisposition in flying personnel varied markedly between pilots under training and those who had completed an operational tour. For example, pilots under training had a higher incidence of 'slight' predisposition at 46 per cent, compared to the 26 per cent of pilots at the OTU. The biggest contrast was in the area of 'moderate'

<sup>76</sup> TNA, AIR 57/10, Memorandum to all commands on Bomber Pilot Assessment of Temperament Experiment, 28 July 1943.

<sup>77</sup> TNA, AIR 57/10 'The Psychiatric Assessment by Wing Commander J. Flind and Squadron Leader E. Gates of Pilots Under Training at the Personnel Receiving Centre Harrogate, and Pilots at Operational Training Units and Heavy Conversion Units who had completed an operational tour in heavy bombers: Interim Report', by Air Vice-Marshal C.P. Symonds, April 1944, p. 1.

predisposition, for 10 per cent of pilots at Harrogate were graded as such, whereas only 0.6 per cent of those in OTUs were. 'Severe' predisposition was rare with only 21 out of 1,009 personnel declared as such at Harrogate and two in the OTU. There was evidence to suggest, however, that over half of the sample of 1,000 pilots under training had predisposition of some form and Gillespie's methods had helped to identify this.

Symonds argued that the validity of the psychiatric assessments had yet to be ratified by means of a follow-up experiment but it was possible to make some tentative conclusions based on the available evidence. Symonds was largely critical of the neuropsychiatric specialists for they had taken into account factors that were not on the list of traits. They had compromised the standardised nature of the experiment, which may have led to skewed results. For this reason, the score alone was not of practical value in eliminating personnel from the service.<sup>78</sup> In terms of the traits, there was no single trait in the severely predisposed group that would rule them out in selection. Combinations of two or more traits were found in the severely predisposed and very rarely in the others. For example, previous nervous breakdown with timidity occurred in 13 per cent of the severely predisposed and in 0.036 per cent of the others. Symonds therefore concluded that particular combinations of traits would almost certainly lead to the assessment of severe predisposition.<sup>79</sup> Despite the limitations, Symonds believed that the methods of using special traits in the assessment of temperamental suitability for aircrew duties could be profitably carried forward, taking into account both loading traits and balancing traits, and looking for significant combinations of positive and negative traits.<sup>80</sup> The war came to

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<sup>78</sup> TNA 57/10 'The Psychiatric Assessment by Wing Commander J. Flind and Squadron Leader E. Gates of Pilots Under Training at the Personnel Receiving Centre Harrogate, and Pilots at Operational Training Units and Heavy Conversion Units who had completed an operational tour in heavy bombers: Interim Report', by Air Vice-Marshal C.P. Symonds, April 1944, p. 2.

<sup>79</sup> *Ibid.*, p. 3.

<sup>80</sup> TNA AIR 57/10, FPRC Report 529 (o), 'Investigation into Psychological Problems in Flying Personnel: Assessment of Temperament in Connection with Aircrew Section: Report on the Psychiatric Method Employed', by C.P. Symonds and D.J. Williams, July 1944, p. 19.

an end before the experiment could be completed and personnel selection was not reformed until the post-war years.

## **Conclusion**

The problem of selection was a matter of great importance to the RAF. Like the other armed forces, they required intelligent and motivated personnel to fulfil technical roles and the mass intake of personnel inevitably posed problems in this area. The service enlisted the expertise of industrial psychologist Frederic Bartlett to make the selection process more scientifically rigorous. Bartlett developed general and mathematical intelligence tests for use at ACSBs to improve the efficiency of selection procedures. What is more, pre-selection tests were introduced for grading pilots into the categories of aircrew duties. It is clear that the RAF valued medical knowledge and applied it to improve efficiency.

However, Consultant in Neuropsychiatry Gillespie believed that selection reforms had not gone far enough. While the process was underpinned by scientific considerations, the RAF was still admitting men apparently predisposed to mental disorders. This led to wastage during training and on operational duties. Gillespie believed that it was his duty to reform procedures and undertook research into the nature of predisposition. He had to combat the prejudices of key personnel, who were not convinced that psychiatric methods could add anything to the selection process. Eventually, he was granted the freedom to conduct his research and gained enough quantitative data to make a case for reform. The FPRC, however, merely opened an investigation into the matter, which aimed to validate his methods of assessment. This resulted in the transformation of Gillespie's questionnaire.

Gillespie's methods were also applied in a controlled trial on an operational station between 1943 and 1944, and it was found that his questionnaire identified a degree of

predisposition in over half the sample. Neuropsychiatrists were criticised for not following procedures and there were problems in assessing which traits would result in the elimination of an aircrew candidate. Therefore, while the RAF was clearly open to specialist medical knowledge, this knowledge had to preserve manpower economy and combat efficiency.

**Chapter 4:**  
**Putting the ‘Neuro’ in Neuropsychiatry:**  
**Neurology, Neurosis and the Military Hospital for Head Injuries, Oxford**

**Introduction**

The administrative and therapeutic duties of the neuropsychiatric division were guided by the interests of the air force, state, and practitioners, but neuropsychiatry was in fact a misnomer. It implied that neuropsychiatrists were working together to maximise therapeutic and preventive benefits but practitioners tended to work in isolation and neurology was the dominant partner in the relationship. In the reformation of selection procedures, psychiatric methods were questioned extensively. Gillespie’s recommendations were not applied and Symonds was a particularly vocal critic.

Historically, neurological expertise was drawn upon in the prevention and treatment of neuropsychiatric disorders and neurologists assumed an important position during the Second World War. This chapter will examine the consolidation of this position by Group Captain Charles Symonds. Symonds was a prominent figure in the neuropsychiatric division. He assumed the role of Consultant in Neurology in 1939 and undertook fundamental research for the FPRC. He had paved his way into the RAFMS by demonstrating neurology’s potential utility in the prevention and treatment of head injury and was instrumental in the establishment of a specialist-run centre for this purpose.

The Military Hospital for Head Injuries has been celebrated as an elite institution; upheld as an example of one of the first to specialise in the treatment of head injuries and for pioneering medical technologies. Plaques celebrating the achievements of Sir Hugh Cairns and his predecessor, Freda Newcombe, adorn the walls of the library of St Hugh’s College, Oxford – the site of the hospital during the conflict. Yet this institution, its patients, and those who worked there have yet to receive scholarly attention. Schurr, a

consultant neurosurgeon, wrote a celebratory account of the medical research, advances in neurosurgery, and the role of Cairns in the hospital.<sup>1</sup> Quare, on the other hand, discussed the geographical and spatial significance of the hospital in relation to the evacuation and treatment of casualties in a short article for the British Broadcasting Corporation.<sup>2</sup> While both accounts are well-informed, they emphasise the role of ‘great men’ and the fabric of the hospital, meaning that the pioneering treatment that took place has been overlooked.

Neither article mentioned the neuropsychiatric cases treated at the Military Hospital, which comprised a small proportion of its 13,000 patients. But the archive at St Hugh’s College holds case notes that detail the care of head injuries and the treatment of neuropsychiatric cases.<sup>3</sup> These files are incomplete, as the material was specifically selected by neurologists and neurosurgeons for further research. However, the available case notes are useful, as they detailed the diagnoses applied, treatments given, and the recommended disposal of patients. The study of such material allows for the detailed examination of the treatment of neurotic cases by Symonds and forms a case-study of what neurology had to offer the air force.

Using these notes, this chapter will examine the diagnosis, treatment, and disposal of neurotic casualties at the Military Hospital for Head Injuries, Oxford. It is a case-study of the treatment administered and overseen by Consultant in Neurology, Group Captain Charles Symonds. The chapter will determine the value attached to neurology by medical administrators; examining the role of Symonds in the establishment of this crucial facility. It will assess the administrative arrangements in place for the running of the institution and

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<sup>1</sup> P.H. Schurr, ‘The Contribution to Neurosurgery of the Combined Services Hospital for Head Injuries at St Hugh’s College, Oxford, 1940-1945’, *The Journal of the Royal Army Medical Corps*, 134 (1988), pp. 146-48.

<sup>2</sup> Quare was the archivist of St Hugh’s College, Oxford: ‘Oxford Military Hospital (Head Injuries)’, Deborah Quare, BBC Online Archive: WW2 People’s War, August 2003, accessed 23 June 2015 at <http://www.bbc.co.uk/history/ww2peopleswar/stories/87/a1145387.shtml>.

<sup>3</sup> Please see Appendix E for the confidentiality agreement signed upon accessing this material. A large proportion of case notes are dedicated to the treatment of head injuries in dispatch riders following motorcycle accidents, a particular passion of Sir Hugh Cairns.

the reception and treatment of neurotic cases. Furthermore, it will provide a detailed overview of the treatment strategies of Symonds and his colleagues. This will reveal attitudes towards neuropsychiatric casualties, the prognoses of certain conditions, and the types and efficacy of treatment available. The examination of the Military Hospital not only makes for an excellent case study of the application of neurology; it provides a detailed study of neuropsychiatric treatment at a predominantly neurosurgical facility.

### **The Establishment of the Military Hospital for Head Injuries**

The process of establishing the Military Hospital reveals much about the tactics employed by Symonds and his collaborators in the effort to gain administrative authority and therapeutic freedom. Although it is not explicit in official sources, it appears that the very idea was conceived by a band of neurologists and neurosurgeons who referred to themselves as the Hexagon Club.<sup>4</sup> This demonstrates the importance of ‘networks’ in the advancement of medical professions.

In 1938, a letter-cum-manifesto was sent to the DGMS, Air Vice-Marshal Sir Victor Richardson. It aimed to carve a position in the RAFMS for Symonds and extolled the virtues of neurology and neurosurgery in the diagnosis and treatment of head injuries and associated illnesses. This was disputed territory, as orthopaedic surgeons traditionally cared for head injuries, nerve injuries and related conditions. But due to their dwindling numbers and ambiguous boundaries, neurologists and neurosurgeons began to take the lead in this area.<sup>5</sup> Special provision, argued Symonds, should be made for the care of head injuries, as the number of such cases would ‘undoubtedly be large’. This prediction was based upon statistics for gunshot wounds to the head during the Great War (1914-18), which made pensioners of 18,000 men. The introduction of technologically-advanced

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<sup>4</sup> Critchley, *Citadel of the Senses*, p. 109.

<sup>5</sup> Cooter, *Surgery and Society in Peace and War*, p. 229.

weaponry, the extensive use of aircraft for offensive purposes, and the employment of targeted bombing offensives, meant that Symonds' opinions were justified. He implored Richardson to concur that specialist care was essential by highlighting that neurological training would be particularly useful in the treatment of non-penetrating wounds.<sup>6</sup>

Symonds was therefore attempting to advance the case of neurologists and neurosurgeons, as orthopaedic surgeons would eventually lay claim to this type of work. He subtly highlighted the differences in the scope of the two professions, as neurologists had experience of diagnosing and treating subjective, functional symptoms, whereas orthopaedic surgeons were concerned with physical injuries to the brain, skull, and spine. Furthermore, Symonds had a plan that would allow for the expert care of these cases. In his opinion, the most effective means of dealing with these injuries was through the establishment of a dedicated, specialist-run 'Head Injuries Centre' – an environment where he could demonstrate the value of neurology and where his wartime contribution could be made.<sup>7</sup>

Symonds proposed that a specialist treatment facility should be established for the use of the armed forces medical services. This would be staffed by neurologists and neurosurgeons who would treat servicemen with non-penetrating head injuries that showed signs of brain damage, or in which symptoms such as dizziness, headache, or mental change were unusually severe or refused to abate. Cases of late surgical complication would also be cared for, if conditions such as brain abscess or subdural haematoma were suspected.<sup>8</sup> The facility would serve three major functions – the first was 'to act as a sorting station', which would be organised along the following lines. Cases of surgical complication would be admitted and re-categorised as medical if no further surgery was

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<sup>6</sup> TNA, AIR 2/3948, Letter from Dr C.P. Symonds to Air Vice-Marshal Sir Victor Richardson, DGRAFMS, 10 October 1938.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

necessary. Those with ‘closed’ head wounds would be admitted as medical cases, and following observation would be divided into one of two groups: those likely or unlikely to be fit for further service. The former group would be transferred to Ministry of Pensions’ hospitals for further treatment, and the latter would be sent to neighbouring hospitals with neurologically-trained staff, under the direct supervision of the Head Injuries Centre. Secondly, the facility would act in an advisory capacity on matters concerned with head injuries. Specialists would be sent to other hospitals to offer expert advice on difficult cases, and when necessary, the patients would be brought under the direct care of the Centre. Finally, it would provide a Mobile Unit consisting of a team of neurologists, neurosurgeons, and assistants, that would work where required, at home or in overseas theatres.<sup>9</sup>

Thus, Symonds had made the aims and purposes of the proposed hospital clear and the value of neurology and neurosurgery in its functioning. This was to be a hospital for the expert treatment of head injuries – neuropsychiatric cases were not included in these initial plans. The depth of organisational detail in the letter showed that Symonds not only wanted to advance the position of neurology in the military medical services, but he wanted this on his own terms. This included the location of the proposed facility, which was significant.

It was believed that a pre-existing neurosurgical unit, with staff and equipment, should be requisitioned for this purpose – an economical suggestion in view of the coming war. Symonds suggested that the Neurosurgical Unit at the Radcliffe Infirmary, Oxford, under the management of his Hexagon Club partner, Professor Hugh Cairns would fulfil these requirements.<sup>10</sup> Australian-Born Hugh Cairns (1896-1952) was a renowned neurosurgeon, who had trained under Boston neurologist Harvey Cushing and had

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<sup>9</sup> TNA, AIR 2/3948, Letter from Symonds to Richardson, 10 October 1938.

<sup>10</sup> Ibid.

achieved respected appointments. Cairns, however, became best known for the establishment of a neurosurgical school at the Radcliffe Infirmary, University of Oxford, with the support of Lord Nuffield, a local philanthropist, and Sir Farquhar Buzzard, the Regius Professor of Medicine at Oxford, in 1938.<sup>11</sup> Symonds marked out the potential of this new twenty-bed neurosurgical centre, of which he undoubtedly knew much through meetings of the Hexagon Club, and sought to earmark it for military use.

Additional beds for medical cases would be required but Symonds stated that these could be housed in the grounds of an Oxford college adjacent to the Radcliffe Infirmary. St Hugh's, which was the closest at the time, was requisitioned for this purpose. This was a sound choice, as the college itself was relatively new—the earliest buildings dated from 1915, which meant that they were easy to heat and maintain. They were not constructed on the traditional staircase system that characterised Georgian Oxford colleges, which facilitated the movement of staff and patients.<sup>12</sup> It was believed that the University would readily offer the services of the existing personnel, which consisted of Cairns, four assistants, and a histologist, and also the use of the existing operating theatre and x-ray equipment.<sup>13</sup> Naturally, staffing levels would have to be increased to meet the numbers of military patients once hostilities had commenced.

With regard to the medical side of the Centre, Symonds proposed that up to 100 beds be provided and this area would be staffed by one senior and two junior neurologists. Military culture and tradition dictated that officers and other ranks had to be accommodated in separate wards and Symonds had factored this into his plans.<sup>14</sup> The

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<sup>11</sup> Cairns became the first Nuffield Professor of Surgery. Please see: Peter H. Schurr, 'Cairns, Sir Hugh William Bell (1896–1952)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Oct 2007 [<http://www.oxforddnb.com/view/article/32243>], accessed 29 June 2013.

<sup>12</sup> St Hugh's was the closest college, as Green, St Anne's, and St Antony's did not exist at this time. See: 'Oxford Military Hospital (Head Injuries)', Deborah Quare, BBC Online Archive: WW2 People's War, August 2003, accessed 23 June 2015 at <http://www.bbc.co.uk/history/ww2peopleswar/stories/87/a1145387.shtml>.

<sup>13</sup> TNA, AIR 2/3948, Letter from Symonds to Richardson, n.d.

<sup>14</sup> *Ibid.* It is not known if further segregation according to service was applied.

preliminary organisation and planning was therefore complete. Symonds had proposed an elite hospital, which would be staffed by the most advanced neurosurgical unit in Britain, thus demonstrating the value of neurology and neurosurgery in the treatment of head injuries. All that was required was agreement from Richardson and broader support within the RAFMS.

Canvassing the opinion of Richardson was a sound tactical move. As DGMS, he was in the ultimate position of authority and had the potential to gain support from senior officers in the medical service and Air Ministry. Richardson carefully considered Symonds' proposal and agreed that the specialist treatment of head injuries by trained neurologists would be a valuable addition to the broad range of medical services that would be established for the duration of the war. Richardson wholeheartedly supported the plans, took up Symonds' cause at the Joint Medical Services Committee, and drummed up support from key medical professionals and administrators.<sup>15</sup> Firstly, he sought the backing of Burton, the regular RAF Consultant in Neurology, and was successful. Burton agreed that Symonds' suggestions were valuable and believed that they would 'form a nucleus' for wartime practice to be built upon. Moreover, as the facility would also be used by the AMS, it would have value beyond the RAF and would 'make for economy and efficiency'.<sup>16</sup> Naturally, as Burton was a practising neurologist it would be sensible to assume that he would be in favour of any plans that allowed for the advancement of the profession. But Richardson's unswerving support highlighted the value placed on specialist advice and care, and the importance of neurology to the administrators of the medical service.

The next stage in the establishment of the hospital was to get Hugh Cairns behind the venture. Richardson adopted a number of strategies to secure his approval. A two-

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<sup>15</sup> TNA, AIR 2/3948, Letter from Richardson to Symonds, 10 October 1938.

<sup>16</sup> TNA, AIR 2/3948, Letter from H.L. Burton to Richardson, 12 October 1938.

pronged approach was taken, with Richardson asking the medical director-general of the AMS, Lieutenant-General William MacArthur to join him in pressuring Cairns into agreement.<sup>17</sup> It was essential to convince Cairns that his unit was indispensable, as his cooperation would ensure that the University would allow for the use of staff and accommodation. Richardson then turned his attention to Cairns himself and explained the value of the proposed centre in specialist and geographical terms. As Quare noted, Oxford was close to RAF Brize Norton, where the wounded could be received and transferred to the Military Hospital or the Radcliffe Infirmary for treatment.<sup>18</sup> Cairns' reply, however, showed that Symonds had manipulated Richardson into believing that he was unaware of the plans.<sup>19</sup> He was already on side, as Symonds and Sir Farquhar Buzzard had contacted him to discuss the various administrative aspects.<sup>20</sup> Richardson had therefore been duped, as the details had been decided privately, showing that networking was important in the professions of neurology and neurosurgery.

Cairns stated that the University of Oxford was prepared for the armed forces to make use of the unit for the duration of the conflict and would offer the present staff for free. The neurosurgical team already cared for military cases with payment on a *per capita* basis, and the administrators at the Radcliffe Infirmary were keen to establish a similar arrangement for the coming war. The University, however, would not pay the salaries of the additional wartime staff and this would be a matter for the Admiralty, Air Ministry, and War Office to negotiate. Cairns believed that only high quality, expert staff should be employed and specified that 'in this connexion I may say that Buzzard and I are very anxious that Symonds should be included in the scheme.'<sup>21</sup> Although it was not

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<sup>17</sup> TNA, AIR 2/3948, Letter from Richardson to Lieutenant-General William MacArthur, 1 February 1939.

<sup>18</sup> Quare, 'Oxford Military Hospital (Head Injuries)'.

<sup>19</sup> TNA, AIR 2/3948, Letter from Richardson to Professor H. Cairns, 1 February 1939.

<sup>20</sup> TNA, AIR 2/3948, Letter from Cairns to Richardson, c. February 1939

<sup>21</sup> TNA, AIR 2/3948, Letter from Cairns to Richardson, 4 February 1939.

specified in the official documents, it can be argued that this had been agreed in advance of the approach to Richardson to ensure that Symonds had a wartime position.

Richardson agreed to his demands and wrote to Symonds in May 1939, outlining his intentions to commission him in the Medical Branch of the Volunteer Reserve as a Consultant in Neurology.<sup>22</sup> Symonds, who was undoubtedly thrilled that his plans had come to fruition, replied the next day stating that he was grateful to know of his position and indicated that he was 'ready to serve on whatever basis [Richardson thought] would be most useful.'<sup>23</sup> He did present one condition that would consolidate his administrative authority and therapeutic freedom. He demanded that he and Cairns should be in charge of classification and treatment methods.<sup>24</sup> Thus Symonds had succeeded in his aims: he was instrumental in the establishment of a neurosurgical hospital, claimed this territory for the neurological profession, and had secured a prestigious wartime career in the process.

As the preliminary arrangements and agreements had been established, administrative organisation began in earnest. Symonds, for instance, set the classification and treatment standards in an extensive memorandum, with topics ranging from operative treatment methods to disposal and after care.<sup>25</sup> Courses of instruction for medical officers on the care of head injuries were also planned.<sup>26</sup> Suggestions were made for additional staff; who of course had made significant contributions in the field of neurology and neurosurgery. Neurologist Denis Williams, for instance, was suggested for electroencephalogram research, as he was credited for introducing this apparatus to Britain.<sup>27</sup> Symonds also suggested William Ritchie Russell, an award-winning Scottish

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<sup>22</sup> TNA, AIR 2/3948, Letter from Richardson to Symonds, 3 May 1939.

<sup>23</sup> TNA, AIR 2/3948, Letter from Symonds to Richardson, 4 May 1939.

<sup>24</sup> *Ibid.*

<sup>25</sup> TNA, AIR 2/3948, Memorandum on the classification and treatment of head injuries, 1939.

<sup>26</sup> See for example: TNA, AIR 2/3948, Courses of instruction for Medical Officers, November 1941.

<sup>27</sup> TNA, AIR 2/3948, Letter from Symonds to Richardson, 17 December 1939; See also: 'Featured Neurologist: Denis John Williams (1908-1990)', Dictionary of Neurology, 26 March 2011, accessed 02 June 2015 at <http://www.dictionaryofneurology.com/2011/03/featured-neurologist-denis-john.html>.

neurologist, as a permanent member of staff. Potential staff were carefully chosen, as Symonds explained that ‘...success at Oxford, both from the service and research aspects, will depend very largely upon the choice of the original team.’<sup>28</sup> Thus staff were recommended on the basis of their professional achievements. Psychiatrists, however, were not included in these plans, showing that this hospital was designed only for head injuries and conveyed a great deal of confidence on the part of the neurologists in the treatment of associated neuropsychiatric conditions.

The final matter under consideration was to set an admissions policy. With regard to the RAF, a number of observations were made with specific reference to head injuries sustained in service. The hospital would only admit RAF cases after the acute stage, meaning that most cases would be ‘blunt, with or without fractures’ and casualties would be ‘suffering from the effects of cerebral contusion.’<sup>29</sup> These cases would be transported to the hospital by ambulance and it was specified that the journey should not exceed two hours, as bumpy roads could present further injury or exacerbate existing symptoms.<sup>30</sup> Upon arrival, and following an initial examination, the cases would be categorised into three major groups:

- A. Those whose symptoms are due to neurotic perpetuation of an organic syndrome.
- B. Those whose symptoms have an organic basis, but are likely to improve to the point of fitness for duty within a reasonable time (two or three months) with special treatment.
- C. Those whose symptoms are organic or irrecoverable, or unlikely to improve up to the point of fitness for duty.

It was recognised that the hospital would receive neuropsychiatric cases and that they would have to be treated without the assistance or expertise of psychiatrists. Despite this, Symonds was confident that they could be treated by neurological staff. Disorders at the Military Hospital were primarily functional; a product of head injury, and this was the

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<sup>28</sup> TNA, AIR 2/3948, Letter from Symonds to Richardson, 17 December 1939.

<sup>29</sup> TNA, AIR 2/3948, Details for admission, February 1940, p. 1.

<sup>30</sup> *Ibid*, p. 2.

territory of the neurologist. The admissions policy dictated that Group A would be given psychological treatment and discharged to duty. B would receive treatment at the hospital or at a nearby convalescence depot.<sup>31</sup> It was hoped that the majority of Group B cases would recover and be discharged to duty. The predicted prognosis for Group C, however, was poor and it was believed that most patients would be invalided at a medical board, as it was not likely that they would recover from their trauma.<sup>32</sup> The forecasts for admissions and prognosis were put into practice just a few months later, as the Military Hospital for Head Injuries began accepting patients in early 1940.

The predictions and plans to return as many to duty as possible were realised in the first year of opening. Symonds wrote a detailed quantitative report, detailing the disposal of RAF cases in 1940. It showed that head injury was certainly common, justifying the existence of such a centre. The hospital admitted 554 patients in the first year of which 102 were RAF cases. This figure may appear negligible but the RAF was a smaller service than the army, and many of their cases may not have received treatment at Oxford due to mortality or geographical location. There was a high concentration of Bomber Command stations in East Anglia and Yorkshire, and cases of head injury in that area were deemed too far away, due to the rules for ambulance transportation. These cases would have been sent to an EMS hospital that had provision for neurological examination and surgery. Out of the 554 admissions, only 300 were classified as head injury; RAF cases formed 25 per cent with 76 admissions. From that figure, 41 were flying personnel (53 per cent). In terms of disposal, out of the total of 76, 61.8 per cent were returned to duty, 9.1 per cent were invalided, 22.3 per cent were still convalescing, and 2.6 per cent had died. These

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<sup>31</sup> Little is known about the functions and practices of these ancillary institutions. A popular/local history was published on Headington Hill Hall. Please see: D. Griffis, *Headington Hill Hall: The Forgotten Years, 1939-1958* (Lulu Self Publishing, 2012).

<sup>32</sup> TNA, AIR 2/3948, Details for admission, February 1940, p. 1.

figures clearly demonstrate that the expert team was able to effect returns to duty in a high proportion of cases and that their predictions for prognosis were correct.

However, there are cases unaccounted for. 102 RAF cases were admitted in 1940 and only 76 of these were diagnosed as suffering from head injuries. This raises questions on the classification of the remaining 26 cases.<sup>33</sup> No specific information was given in Symonds' report but it can be assumed that a considerable proportion were neuropsychiatric cases and this trend would continue in the following years. This chapter will now turn to consider the treatment of such patients at the hospital.

### **Royal Air Force Neuropsychiatric Casualties at the Military Hospital for Head Injuries**

The Military Hospital was not designed to accommodate patients with neurotic or psychotic symptoms but it was believed that they would receive a high number of such cases. Symonds, however, was confident that they could be quickly processed and predicted: 'It is anticipated that this group will be a large one. Experience has shown that early diagnosis and treatment are important if good results are to be obtained.'<sup>34</sup> With the principles of early diagnosis and treatment in mind, and the need to effect rapid returns to duty, it was believed that the care of neurotic cases would be likely to yield the highest and quickest return of effective personnel.<sup>35</sup> These cases, however, were not meant to reach the hospital at all. It was believed that if all cases of head injury were assessed in the first instance by a neuropsychiatric specialist, no cases would be transferred to the Military

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<sup>33</sup> TNA, AIR 2/3948, RAF Personnel discharged from Military Hospital (Head Injuries), St Hugh's College, Oxford up to 22.11.40.

<sup>34</sup> Underlined text, Symonds' emphasis. TNA, AIR 2/3948, Details for admission, February 1940, pp. 1-2.

<sup>35</sup> Ibid, p. 1.

Hospital unnecessarily.<sup>36</sup> Thus a failure in the sorting and evacuation of cases had led to neuropsychiatric casualties being transferred to Oxford for treatment.

Details for the treatment of ‘psychoneurosis’ in the *Manual for Medical and Dental Officers of the Royal Air Force* may account for this confusion. The ‘Notes on Functional Disease’ stated that in many cases, reaching an exact diagnosis was difficult. Where symptoms of psychoneurosis arose following a head injury, the case was to be designated ‘Concussion, effects of’, to avoid the stigma of functional nervous disease.<sup>37</sup> It did not state, however, whether these cases should be sent to a neuropsychiatric facility for further assessment or to a hospital specialising in the care of head injuries. The lack of distinction may account for their evacuation to the Military Hospital.

Of the case notes retained in the archives at St Hugh’s College, 913 concern RAF cases, of which 49 were suffering from neuropsychiatric conditions. This small figure, which represents five per cent of the total, may not be entirely representative, as these particular notes were kept for research purposes. They do, however, provide insight to the nature of cases sent to the hospital, outlined in Table 8, and the treatments that they received. The majority of the diagnoses were clear and scientifically-informed. ‘Psychoneurosis’, ‘anxiety’, and ‘depression’ accounted for most cases, whereas non-specific diagnoses such as ‘flying stress’ and ‘loss of confidence’ were experienced by a smaller proportion.

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<sup>36</sup> TNA, AIR 2/3948, Memorandum from Symonds to the Officer Commanding the Central Medical Establishment, Halton, 31 January 1941.

<sup>37</sup> AP 1269, *Manual for Medical and Dental Officers of the Royal Air Force*, 3<sup>rd</sup> edition, (London, 1938), pp. 368-9.

**Table 8: The classification of neuropsychiatric cases at the Military Hospital for Head Injuries, 1940-42**

<b>Classification</b>	<b>No. of Cases</b>
Psychoneurosis	30
Anxiety	8
Depression	5
Psychopathy	2
Flying Stress	3
Loss of Confidence	1
<b>Total:</b>	<b>49</b>
<b>Source:</b> Catalogue for 'All Conditions', Head Injuries Archive, St Hugh's College, Oxford.	

***Diagnosis***

When a head injury case was evacuated to the Military Hospital, the individual was subjected to a rigorous medical and mental assessment, which was comprehensively logged on the patient case sheet. A 20-year-old officer, for instance, was transferred to the facility and his form showed that he was under treatment for 75 days, and then returned to full duties. The clinical notes indicated that his initial diagnosis was of 'cerebral concussion, effects of' but this was changed to 'psychoneurosis', as his treatment progressed and the nature of his symptoms became apparent. The form described the occurrence of his injury and detailed his functional symptoms:

Details of case: Fainted from trauma to his knee 13/7/1941. When he fainted he apparently struck his head on the concrete floor. Amnesia 10 minutes. Headache and vomiting since that time. Also some dizziness.

A full assessment of the individual's 'condition on admission' was also taken, which described the various steps taken in diagnosing his illness. The whole body was subjected to examination. The first point of reference was naturally the head, which in his case was N.A.D. (Nothing Abnormal Detected). The abdomen was also examined, which was tender in the lower hypochondrium, the spleen was missing, and the colon was 'waded'. Next came the assessment of the central nervous system, which assessed cranial

nerves and the motor system – both N.A.D. The reflexes were also tested and were found to be normal with the exception of arm jerks, which were ‘not elicited.’ Finally the five senses were explored and his were described as normal. All of these tests aimed to find evidence of an organic disorder or the effects of a head injury on function.

An assessment of mental state followed the physical examination, which described the case in question as a ‘normally intelligent youth, not of a sensitive type.’ The form also included a section where the neurologist was to note the progress of each case. In the current example, it was found that by 27 August 1941, his headache, dizziness, and nervous tension were ‘rapidly diminishing’ but that he ‘still vomit[ed] occasionally.’ By 16 September, his diagnosis was changed to ‘psychoneurosis’ and his case notes read:

16/9/41 Trauma effects have come of psychoneurotic illness. The EEG [electroencephalogram] is abnormal and consistent with recent concussion.<sup>38</sup>

Rigorous diagnostic checks were therefore applied to each admission in order to establish a clear diagnosis. This particular individual was admitted with a concussion but after a physical examination had ruled out any possibility of an organic illness, he was deemed to be suffering from psychoneurosis as a result of his head injury.

The diagnosis of neuropsychiatric conditions was often a laborious process, due to the complex, subjective nature of cases. Symonds explained the problems faced by neurologists to the Section of Neurology of the Royal Society of Medicine, based on his experiences at the Military Hospital:

The problem of differential diagnosis and treatment in such cases may be divided into two. First there is the case in which the neurologist has seen the patient in the acute stage and has been able to observe subsequent progress. This is relatively simple. The second type of case is that in which the patient is first seen in the post-contusional or ambulant stage... These cases are not only the most difficult, they are also the most common. Patients with head injuries are usually admitted to the nearest hospital and it is generally some time before the neurologist sees them. What, at this stage, is the general nature of the problem? Is that of a patient with a

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<sup>38</sup> St Hugh’s College Library and Archives (hereafter STHC), HHA 1/1/11 – psychoneurosis, case sheet, 1941.

variety of subjective complaints, little in the way of abnormal physical signs, and regrettably often, a quite inadequate record of the early stages of his illness.

Symonds believed that the only solution to this problem was accurate diagnosis and correct treatment. But this process would require time, powers of judgement, and considerable effort to arrive at a satisfactory conclusion.<sup>39</sup> The post-contusional/ambulant group effectively described the patient population at the Military Hospital. Their head injuries were closed and the complaints were largely subjective, including headaches, dizziness, or pain in the extremities. The neurologists at the facility had to negotiate a number of steps to reach an accurate diagnosis.

The first step was to accurately reconstruct the events leading to injury. The neurologist had to rely upon the often scant information provided by the patient, who could be affected by retrograde or post-traumatic amnesia. Symonds thought that the recollection of events was influenced by factors apart from the injury and were sometimes related to the nature of the accident. Were the events worth remembering? Were they dull or exciting? Commonplace or unusual?<sup>40</sup> An example of such a case was Case 593, who was suffering from ‘neurosis (traumatic depression).’ The reconstruction of his injury was as follows:

Knocked unconscious in October 1939 in a forced landing. He remembers the beginning of the accident and recovered consciousness the next day. His face was lacerated. Dull, aching pains in his head ever since the accident, with vomiting occasionally in the first month.<sup>41</sup>

The neurologist was therefore presented with very basic information. The individual could not remember anything during the incident, as he was unconscious for a considerable period, and his complaints were of a subjective nature. The reported symptoms would therefore have to be investigated in order to reach a diagnosis.

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<sup>39</sup> C.P. Symonds, ‘Discussion on Differential Diagnosis and Treatment of Post-Contusional States’, *Proceedings of the Royal Society of Medicine*, 35 (1942), p. 601.

<sup>40</sup> Symonds, ‘Discussion on Differential Diagnosis and Treatment of Post-Contusional States’, p. 601.

<sup>41</sup> STHC, HHA 1/1/593 – psychoneurosis, case sheet, 1940.

The predominant symptom in most neuropsychiatric conditions was headache. Headache was a particularly confounding symptom, as it could take many forms and be easily feigned. Indeed, Symonds believed that the headache could serve as a window into the patient's state of mind; often masquerading as a symptom of head injury. The neurologist therefore had to consider a number of questions:

We want to know, for example, not only whether he had headache and what kind of headache, but when he first had it, how often, and under what conditions it was worse or better. What was the effect upon it of having visitors, of sitting up, or first getting out of bed? All these questions apply equally to giddiness, and to the state of thought and feeling. If he was depressed or anxious, when and in relation to what circumstances, reflections or anticipations? What has his attitude of mind been towards the accident and its aftermath and what have been the stages in the development of his present attitude? This leads naturally to the analysis of his present complaints. Subjective symptoms are many and important.<sup>42</sup>

These questions were important in the diagnosis of neuropsychiatric conditions because they often revealed the 'true nature' of the headache, which was sometimes unrelated to the patient's injury.

Case 2204 complained of headaches as the principal symptom but further investigation yielded significant results. Correspondence from the hospital where he had been treated in the acute stage stated that he had had an accident and the x-ray confirmed the presence of a depressed fracture. The individual had complained of headaches in the frontal region with neurological signs in his right leg and ankle – he was returned to duty after a period of treatment.<sup>43</sup> When interviewed upon admission at the Military Hospital, he was described as 'a small, dejected looking man with asymmetrical face. Frankly disgruntled with RAF.' It was gathered from interview responses that he was 'unsatisfied' with his work in the Balloon Section and aspired to be a driver. A week into his stay, he had not responded to treatment and had shown 'no will to get well.' Symonds eventually examined the man and recommended that he was sent back to duty and would have to

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<sup>42</sup> Symonds, 'Discussion on Differential Diagnosis and Treatment of Post-Contusional States', p. 601.

<sup>43</sup> STHC, HHA 1/1/2204, Letter from Officer in Charge of Ashridge Hospital Berkhamsted to Professor Hugh Cairns, Military Hospital for Head Injuries, 20 February 1941.

‘make the best of things.’ His diagnosis was changed from ‘cerebral contusion, effects of’ to ‘psychoneurosis’ – he was given a week’s sick leave and returned to duty.<sup>44</sup> Thus the exploration of attitude to service had assisted in the diagnosis in this case, as it soon became apparent that the functional symptom reported was either feigned or a manifestation of his negative mental state.

A dislike for wartime work was a common reason for the development of genuine or feigned psychoneurosis. The interview was therefore the most powerful diagnostic tool. Case 3256, employed as a clerk, was admitted to the facility in July 1941, complaining of a pain ‘like a red hot poker behind his eyes’ and dizziness. He attributed his symptoms to an accident in South Kensington Train Station in October 1940, where he fell on to the line and struck his head upon the rail. He was treated at St Luke’s Hospital, London and was returned to duty after seven days. Upon investigation at the Military Hospital a neurologist found that he had:

Volunteered in Sept/39 for flying. Taken off flying in Oct/40 because of air sickness. Fed up about this. Forced to be a pay clerk, and feels disappointed not to have a commission.

A neurologist suggested that his fall in the station was actually a suicide attempt, due to the disappointment that he faced in his RAF career. The individual denied this completely and in the neurologist’s opinion, ‘perhaps too rigorously.’ During his final consultation, Symonds expressed the opinion that the symptoms were ‘entirely neurotic’ and repeated the belief that the accident was a suicide attempt. Despite this, he recommended a return to duty.<sup>45</sup>

Disappointment of another variety contributed to the diagnosis of ‘psychopathy’ in another case. Case 342 was transferred to the Military Hospital from the RAF Neurological Hospital, Matlock for further investigation. His chief complaint was being

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<sup>44</sup> STHC, HHA 1/1/2204, psychoneurosis, case sheet, 1941.

<sup>45</sup> STHC, HHA 1/1/2356, psychoneurosis, case sheet, 1941.

‘fed up for 2 years.’ According to the examining neurologist, numerous incidents were responsible for his state of mind, which were summarised in the statement that ‘he had everything that he wish[ed] for 2 years ago but since then he ha[d] lost everything.’ He was a professional boxer before the war and had won a number of titles. His troubles began after a losing streak. As a result of his losses, he suffered from financial difficulties and found himself in a considerable amount of debt. His wife received the majority of his RAF pay, meaning that he did not have the means to keep himself or to provide for his daughter. Furthermore, he had separated from his wife two years previously, on the grounds of cruelty, but he still loved her very much. He feared that his 22-year-old spouse was not mature enough to look after a home or his baby. Moreover, his house was ‘blitzed’ two years before, which meant that he had lost all of his possessions, including his prized boxing trophies. Finally, he was court-martialled for being absent without leave and cited boxing as his reason. On this occasion, the neurologist’s job was simple. This man had a clear history of external stresses that were affecting his service performance, coupled with multiple traumas to the head from boxing matches.<sup>46</sup>

Furthermore, the stresses of wartime flying were often cited as a contributory factor in the development of a neuropsychiatric condition. A 23-year-old Flight Sergeant was deeply affected by his operational experiences and was diagnosed as suffering from ‘psychoneurosis.’ His clinical notes outlined the stresses that he had faced and the subsequent symptoms:

Slight head injury following parachute descent in Oct 1940. Since then he has been under considerable strain both in the RAF and at home. He has lost friends...finally shot up when returning from raid on Germany in Feb...He began to have attacks of dizziness with blood rushing to his head. No loss of consciousness. Twelve attacks altogether. He was very anxious and depressed. Felt he could not fly again. His symptoms were made worse when his station was heavily bombed and he twice had narrow escapes. No attacks while flying.<sup>47</sup>

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<sup>46</sup> STHC, HHA 1/1/342, psychoneurosis, following head injury, case sheet, 1941.

<sup>47</sup> STHC, HHA 1/1/342, psychoneurosis, following head injury, case sheet, 1941.

Three cases were diagnosed with ‘flying stress’ – a non specific-condition linked to the stresses of operational flying. For example, a Flying Officer was diagnosed with this syndrome following a particularly traumatic flight:

Whilst flying a Spitfire at 25,000 ft was suddenly thrown violently about following enemy A.A. [Ack Ack – anti-aircraft fire]...He brought a damaged aircraft to safety back across the sea.

He complained of headache, tiring easy, and loss of confidence following the incident. He was recommended for a return to duty but with non-operational flying duties.<sup>48</sup> The diagnosis of flying stress was made as his symptoms were the direct result of operational flying but the diagnosis of this condition, in general, was inconsistent. In the case of the Flight Sergeant, his symptoms were related to operational flying but he was diagnosed as suffering from psychoneurosis.<sup>49</sup>

Finally, the issue of predisposition to mental disorder was often investigated in admissions reporting subjective symptoms. Each admission had his family history assessed, as this was considered to be a reliable marker of a patient’s susceptibility to neurotic illness. Indeed, this was found to be the case in Case 1190 who was diagnosed with an ‘anxiety neurosis’. He was involved in a forced landing in 1940, where he was knocked unconscious for over an hour, and was hospitalised for 12 days before returning to duty. Since then, he had attacks of ‘nervous instability’. Following a neurological investigation, it was found that members of his family had suffered from neurotic illnesses, meaning that he was constitutionally predisposed to mental disorder and unsuitable for operational flying. Following a consultation with Symonds, he was recommended for

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<sup>48</sup> STHC, HHA 1/1/1487, anxiety neurosis (flying stress), case sheet, 1941.

<sup>49</sup> Flying stress will be examined in Chapter 6.

discharge, as he was permanently unfit for service. His symptoms meant that he would never be an effective flyer.<sup>50</sup>

The neurologists could also rely upon a battery of mental tests in the assessment of predisposition and intelligence. Only intelligent men were considered for employment as flying personnel, due to the mental challenges of aircraft operation. Case 64 was diagnosed with a 'post-concussional anxiety state' and was subjected to mental testing. The tests revealed a 'mentally dull man with poor concentration.' He was given a digit retention test, which was abandoned, as he was unable to complete mental calculations due to his 'poor concentration.' His general information was also tested, which was described as 'fair' – he could recall the names of monarchs, Prime Ministers, capitals of countries, the date of Armistice Day, the date of the Battle of Dunkirk, seaports, what the different colours at traffic lights meant, and his name and address. His memory was also tested through the 'cowboy story.' The neurologist read aloud a story about a cowboy in San Francisco and the individual had to retain as much information as he could. It was found that he could only remember 'basic facts'. The neurologists also made use of standard intelligence testing used by the other armed forces in the selection of personnel. He had to take the progressive matrix test, formulated by leading specialist in psychometrics John Raven.<sup>51</sup> This test required him to complete a pattern and was thought to measure 'inborn intelligence'. He performed poorly scoring only 42 per cent. As a result of his mental tests, Cairns advised a return to duty in a non-technical job, as he did not possess the intelligence required in aircrew.<sup>52</sup> It is therefore clear that the neurologists at the Military Hospital had kept abreast of the methods and theories of psychometrics, which helped

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<sup>50</sup> STHC, HHA 1/1/1190, anxiety neurosis, case sheet, 1940.

<sup>51</sup> For information about intelligence testing in the British army, please see: N. Thalassis 'Treating and Preventing Trauma', ch. 3.

<sup>52</sup> STHC, HHA 1/1/64, anxiety state, post-concussional, case sheet, 1941.

them to predict a patient's prognosis and to accurately diagnose their condition. Once a diagnosis had been reached, the neurologists could treat the disorder.

### *Treating Neuropsychiatric Casualties: A Case Study of Psychoneurosis*

The treatment of neuropsychiatric casualties at the Military Hospital was based upon alleviating the symptoms of disorders, restoring normal thought processes, and aimed to return a man to his former efficiency. Most importantly, the neurologist had to achieve these goals as quickly as possible. Psychoneurosis was the most common condition cited in case notes and is worthy of a case study. Thirty men were diagnosed with this condition and the neurologist relied upon a number of different treatment methods to alleviate the effects of the disorder.

The most common treatment applied to psychoneurosis was the prescription of psychoactive or analgesic drugs. These were used to treat the predominant symptoms of the disorder, such as headache. Twenty patients reported this as their chief complaint and once the neurologist had ascertained that it was not related to head injury, he could reduce its effects.<sup>53</sup> Headaches were largely treated by the prescription of phenacetin – a fast-acting analgesic. It was introduced in 1887, as one of the first non-opioid pain relievers, which blocked pain from the central nervous system, thus relieving the headache. The neurotic headache could therefore be managed and abated. Other symptoms of psychoneurosis included nervous tension, depression, lack of concentration, and lassitude – all of which could lead to exhaustion and insomnia. Bed rest was a tried and tested cure for such symptoms, as once the patient had complete rest it could reduce the intensity and frequency of his symptoms. The very nature of psychoneurosis, however, often prevented patients from resting or sleeping and this had to be addressed. The neurologists routinely

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<sup>53</sup> The statistic was drawn from the case notes of the 30 suffering from psychoneurosis at STHC.

prescribed chloral and bromide for the treatment of insomnia and disturbed sleep but advances in medical knowledge meant that they could use other hypnotic drugs to assist in the treatment process.

Barbiturates were commonly prescribed at the Military Hospital. They were not new drugs, having been introduced to the European marketplace in 1903, following Emil Fischer and Joseph Von Mering's discovery of their therapeutic value in the treatment of neurotic patients.<sup>54</sup> A significant breakthrough in barbiturate research came in the early 1930s when Erich Lindemann of the Psychopathic Hospital, Iowa reported that the intravenous use of sodium amytal induced:

...a feeling of serenity and wellbeing, a desire to communicate and to speak about problems or personal matters usually not spoken of to strangers. There was also the feeling of being unable to guard against saying things which one does not want to and an inability to refuse to answer questions even if they refer to very intimate matters.<sup>55</sup>

This finding was significant, as this drug could be used to elicit a response from a patient regarding his symptoms. The drug was used extensively at the Military Hospital for this very purpose, and across the armed services.<sup>56</sup> Pentothal and sodium amytal were applied in patients at the Military Hospital for differential diagnosis and cases of amnesia. It was noted that in a patient suffering from psychoneurosis, that his 'bad memories immediately returned'.<sup>57</sup> In another patient, amytal was administered and it was found that he had made a number of false statements in the description of his accident and these were immediately corrected.<sup>58</sup>

When assessing the effectiveness of the treatments for psychoneurosis, it is impossible to discuss cure. If a patient was returned to duty, it does not follow that he was

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<sup>54</sup> E. Shorter, *A Historical Dictionary of Psychiatry*, p. 37.

<sup>55</sup> Ibid.

<sup>56</sup> See: R.R. Grinker and J.P. Spiegel, *Men Under Stress* (London, 1945) and also, *War Neuroses in Africa* (1943).

<sup>57</sup> STHC, HHA 1/1/374, psychoneurosis, case sheet, 1941.

<sup>58</sup> STHC, HHA 1/1/1765, psychoneurosis, case sheet, 1941.

completely free of his symptoms but they were effectively managed. Cases may have been readmitted to other RAF hospitals with the same problems following their return to duty; this was not logged in the case notes. What can be commented on is how far the neurologists had met their aims: to return neuropsychiatric patients to duty as quickly as possible.

The return to duty rate following the treatment of psychoneurosis was relatively high. Thirteen patients from the 30 diagnosed were returned to service and only three were discharged. The remaining 15 were either transferred to another hospital, a convalescence depot, or details were not given regarding their disposal.<sup>59</sup> It is impossible to ascertain whether they managed this quickly, as figures for 'days under treatment' are skewed. According to case notes, this ranged from as low as four days to as high as 550. The latter figure was of a patient who had been readmitted on several occasions. It can be stated, however, that the majority of cases were returned to duty in under 75 days, and the neurologists had met their aims.

## **Conclusion**

Consultant in Neurology, Charles Symonds held great administrative authority and therapeutic influence in the establishment of the Military Hospital for Head Injuries and the treatment of RAF neuropsychiatric casualties therein. He achieved this control through negotiation, a skill in which he was particularly adept, and secured crucial support from high-ranking medical administrators in the armed forces medical services. Manipulation was often necessary in order to achieve the ultimate aim: a hospital that specialised in the care of head injuries. He also relied upon the support of his professional network, including Hugh Cairns and members of the Hexagon Club. By doing so, Symonds

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<sup>59</sup> The figures were ascertained from the study of the case notes of 30 patients suffering from psychoneurosis.

succeeded in securing his desired treatment location, carved himself a wartime position, and recognition as an authority in matters concerning head injury. Most importantly, he had successfully promoted the importance of neurology and neurosurgery in the treatment of head injuries, effectively shutting out orthopaedic surgeons. Thus, from the earliest stage, Symonds held a great deal of authority and enjoyed therapeutic freedom at the Military Hospital, with neurology considered important by the medical administrators of the RAFMS.

Symonds favoured a rapid approach to care which ensured that he could effect quick returns to duty. Although the Military Hospital was not designed to care for neuropsychiatric cases, they were treated with these principles in mind. Therapeutic optimism underpinned care and Symonds was confident that most would return to duty in a short period. With regard to the diagnosis of cases, however, the neurologists working at the hospital were confounded by an array of subjective symptoms and complaints. They had to reach a diagnosis through a convoluted process of elimination. Although patients complained chiefly of organic symptoms, these were often manifestations of a functional nervous disorder. Upon investigation, the major causes of breakdown in the RAF were related to job satisfaction, domestic worries, symptoms pre-dating the war, and the strains of operational flying. The investigation of each casualty comprised a full physical and mental examination, of which the interview was the most important part. This allowed Symonds and his team to understand fully the nature of each casualty and to devise appropriate treatment.

Furthermore, the neurological team at the Military Hospital had kept abreast of new methods in psychiatry and psychometrics to allow for the correct diagnosis and treatment of neuropsychiatric casualties. The process of diagnosis was facilitated by the use of mental testing, which measured intelligence and memory. The results were indicative of

an individual's liability to neuropsychiatric disorder on the grounds of mental capacity and intelligence – an assumption common in all armed forces. Secondly, the taking of family histories and life events allowed the neurologists to gauge if a man was predisposed to disorder, due to heredity or life experience. The inclusion of such tests in the diagnostic process showed that Symonds, Cairns, and the neurologists working at the Military Hospital were prepared to meet the challenges of caring for neuropsychiatric patients. Their knowledge of contemporary treatment methods ensured that casualties received effective care.

Possessing such knowledge bore fruit as the neurologists were able to treat neuropsychiatric cases efficiently and effectively. The prescription of analgesic and psychoactive drugs meant that symptoms could be reduced, or at the very least, controlled. The effective use of such medications ensured that a high proportion of men suffering from psychoneurosis could be returned to duty in under 75 days, which would have satisfied Symonds' desires for quick treatment and patient turnover. Most crucially, this showed that neurologists could treat neurotic cases, which were traditionally the territory of psychiatrists.

Thus it is clear that neurology had much to offer the RAF. Symonds held a great deal of responsibility and authority in the treatment of neuropsychiatric cases at the Military Hospital. His gift for forward planning and persistence led to the establishment of a neurosurgical hospital that would treat 13,000 cases of head injury and neuropsychiatric disorders. Above all, Symonds' methods of persuasion had ensured that neurology would have a firm place in the RAFMS for the duration of the war. He had carved out a position of power and utility by successfully conveying the importance of specialist care.

**Chapter 5**  
**'LMF':**  
**Neuropsychiatry and Discipline**

**Introduction**

The maintenance of service discipline was another problem faced by the armed forces during the Second World War. Military authorities questioned how they could control and discipline millions of young men, who were taken from civilian jobs and put into uniform. They had to be integrated into the military machine to ensure combat efficiency but these men were not soldiers. The traditional deterrent, the death penalty for cowardice and desertion, had been abolished and senior officers could no longer rely upon this ultimate form of coercion to ensure that men kept fighting.<sup>1</sup> The RAF, the youngest of the three armed forces, wore its intentional lack of formality and discipline as a badge of honour. The service took a distinctly lax attitude to drill, saluting, and standards of deportment, and the boys in blue were known for their riotous parties and pranks, on and off the station.<sup>2</sup> This behaviour was tolerated by senior officers, providing that the men continued to fight efficiently in the air but this was where the problem lay. As Terraine has noted, discipline could be maintained on the ground via observation and punishment but in a single-seat fighter there was no-one to answer to. In a bomber, there was only a crew of six, usually of the same age, and more or less equal in rank. 'Discipline had to come from within.'<sup>3</sup>

A number of issues conspired against the maintenance of discipline in the RAF. These were common across the armed forces: a fear of death in its myriad horrific forms, high casualties in the unit, and a lack of confidence in service commanders or equipment.<sup>4</sup> These issues became apparent in early operations, where flying personnel were faced with the harsh realities of aerial warfare and questioned what they were fighting for. The first

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<sup>1</sup> French, *Raising Churchill's Army*, p. 122.

<sup>2</sup> Francis, *The Flyer*, pp. 15, 18, 22.

<sup>3</sup> Terraine, *The Right of the Line*, p. 534.

<sup>4</sup> E.g. French, *Raising Churchill's Army*, ch. 4.; Francis, *The Flyer*, ch. 5.

neuropsychiatric casualties of the war began to fill station sick quarters and suspicions of malingering were rife. Senior officers tried to negotiate the problem of men who flagrantly disregarded orders and refused to continue flying. Both issues posed a threat to the maintenance of manpower and combat efficiency, and swift action was deemed essential. It was not the neuropsychiatric casualties that would receive attention at this time. The restoration of discipline was the focus and a measure was introduced that would cast a shadow over the lives of flying personnel for the remainder of the war.

‘Lack of moral fibre’ or LMF as it was colloquially known, was a controversial administrative measure that was introduced to preserve service discipline and to deter men from refusing to fly without a medical reason. It was a stigmatising label, which implied cowardice or malingering. After an investigation, those branded LMF were subjected to severe sanctions, including their removal from flying duties, demotion, and the allocation of demeaning chores. The measure challenges the portrayal of the heroic and selfless flyer and as a result, it has received extensive scholarly attention. But each contribution to the historiography has sustained a myth that was prevalent during the war: neuropsychiatry was at the heart of LMF. It is important to state from the outset that this was not the case.

Medical and military historians have both examined the problem of LMF and the role of neuropsychiatrists in its implementation. Military historians have argued that neuropsychiatrists had a fundamental role to play in its application and that research into the psychological problems of flying personnel was undertaken to prevent future LMF cases.<sup>5</sup> This has skewed the limited historiography, as it implied that the primary function of the neuropsychiatric division was to sustain service discipline. This thesis contends that while neuropsychiatrists did play a role in the application of the measure, later research into the psychological problems of flying personnel was motivated by wastage, rather than

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<sup>5</sup> McCarthy, ‘Aircrew and ‘Lack of Moral Fibre’ in the Second World War’, pp. 87-101; English, ‘A Predisposition to Cowardice? Aviation Psychology and the Genesis of ‘Lack of Moral Fibre’, pp. 15-34.

disciplinary problems.<sup>6</sup> Others have argued that RAF neuropsychiatrists struggled to implement the measure due to their lack of training in psychiatry.<sup>7</sup> But as the neuropsychiatric division employed highly-trained psychiatrists and neurologists, such opinions are misinformed. It is therefore essential to re-examine LMF and thereby reshape the historiography of RAF neuropsychiatry.

The administration and application of LMF forms another example of how medicine was shaped to meet the needs of armed forces. It was the primary duty of the medical officer or specialist at war to maintain the fighting strength of his unit by monitoring the health of men and treating them accordingly. But this duty was underpinned by concerns of efficiency rather than the needs of the individual.<sup>8</sup> As a result, medicine in the armed forces had a disciplinary function. The medical officer was charged with the detection of malingering, for ‘shirking’ and ‘swinging the lead’ were common.<sup>9</sup> He was also the principal conduit of propaganda in terms of health and morals.<sup>10</sup> In accordance with this expectation, medical officers and the neuropsychiatric division had a fundamental role to play in the application of the LMF measure. By assisting in the differentiation between malingerers and the sick, they helped to preserve manpower and combat efficiency. LMF was not a diagnosis but a stigmatising label and the neuropsychiatric division played no part in its construction. The chapter will show that the division played a reluctant role in its implementation due to its disciplinary nature. In fact,

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<sup>6</sup> This will be discussed in Chapter 6.

<sup>7</sup> Brandon, ‘LMF in Bomber Command: Diagnosis or Denouncement?’ p. 119.

<sup>8</sup> This shaped the role of the regimental medical officer in the Great War: Ian R. Whitehead, ‘Not a Doctor’s Work? The Role of the British Regimental Medical Officer in the Field’, in H. Cecil and P. Liddle, *Facing Armageddon: The First World War Experience* (Barnsley, 2003), p. 506.

<sup>9</sup> This has been discussed extensively in relation to the First World War. See for instance: Roger Cooter, ‘Malingering in Modernity: Psychological Scripts and Adversarial Encounters during the First World War’, in Cooter, Harrison, and Sturdy, *War, Medicine and Modernity*, pp. 125-148. J. Bourke, *Dismembering the Male: Men’s Bodies and the Great War* (London, 1996), ch. 2.; I.R. Whitehead, ‘Medical Officers and the British Army During the First World War’, (Leeds Univ. Thesis, 1993), pp. 323-4.

<sup>10</sup> See Harrison’s work on venereal disease and the armed forces: Mark Harrison, ‘Sex and the Citizen Soldier: Health, Morals and Discipline in the British Army during the Second World War’, in Cooter, Harrison and Sturdy (eds.), *Medicine and Modern Warfare*, pp. 225-250; M. Harrison, ‘The British Army and the Problem of Venereal Disease in France and Egypt during the First World War’, *Medical History*, 39 (1995), pp. 133-158.

they actively opposed the measure because it was impairing the efficacy of neuropsychiatric work.

### **The School of War: The Psychological Effects of Early Operations, 1939-40**

On 3 September 1939, Prime Minister Neville Chamberlain delivered the unwelcome news that the country had been waiting for: Britain was at war with Germany.<sup>11</sup> For the second time in the twentieth century, mass armed forces were raised and mobilised to face the German aggressors. Less than forty-five minutes after the declaration, a twin-engine bomber took off from RAF Wyton to make a reconnaissance of German naval ports in the North Sea. The flight formally marked the entry of Bomber Command and the RAF into the Second World War.<sup>12</sup> The Advanced Air Striking Force (AASF) and the Air Component of the BEF were dispatched to France to counter a certain German invasion.<sup>13</sup> A period of uneven calm would last for seven months until the Germans made a decisive move that would not only end the 'Phoney War' but would change the course of European history.

Western Europe descended into catastrophe in May 1940, as German forces rampaged across the continent taking Norway, Belgium, the Netherlands, and Luxembourg in their wake. Chamberlain resigned and Winston Churchill became Prime Minister, offering his 'blood, toil, tears, and sweat', and expected the same in return.<sup>14</sup> The flying personnel of the RAF offered this and more, with the service assuming an important offensive and defensive role, sustaining significant casualties in the process. The North

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<sup>11</sup> 'Transcript of Neville Chamberlain's Declaration of War', 3 September 1939, BBC Archive, accessed 22 June 2015 at <http://www.bbc.co.uk/archive/ww2outbreak/7957/.shtml?page=txt>.

<sup>12</sup> Terraine, *The Right of the Line*, p. 95.

<sup>13</sup> D. Richards, *The Royal Air Force 1939-1945, The Fight at Odds* (3 Vols, London, 1953), i, p. 37; L.F. Ellis, *The War in France and Flanders, 1939-40* (London, 1954), p. 27.

<sup>14</sup> 'Transcript of Blood, Toil, Tears and Sweat', 13 May 1940, accessed 22 June 2015 at <https://www.winstonchurchill.org/learn/speeches/speeches-of-winston-churchill/92-blood-toil-tears-and-sweat>.

Sea Campaign (1939), and the Battles of France and Britain (1940) would push the RAF to its limits in terms of aircraft production, readiness, and personnel. These early operations posed a major challenge to the confidence and combat capabilities of the force. The first neuropsychiatric casualties of the war and a perceived breakdown in service discipline were the result. The conditions of this early period necessitated the introduction of LMF and it is important to assess the effects of early operations on the confidence of flying personnel.

### ***The North Sea Campaign, September – December 1939***

The initial reconnaissance flight over the North Sea marked the beginning of a futile bombing campaign, which would claim the lives of hundreds. On 4 September 1939, Bomber Command was given the objectives of sinking the *Scheer* and *Emden* cruisers at the German naval base at Wilhelmshaven, before the enemy could devise stronger defences. Ten aircraft from Nos. 110 and 117 Squadrons, based at RAF Wattisham, were given this task, with each squadron contributing five Bristol Blenheims. No. 110 Squadron formed the first wave but bad weather over the North Sea necessitated an attack at low-height. Flying Officer Kenneth Doran recalled that the element of surprise conferred initial advantages. From 500 feet, he saw German naval personnel standing idly on deck, with 'washing hanging around the stern'; a sure sign that they had not anticipated an attack. Despite hitting some of their targets, the 500 lb bombs dropped on the *Scheer* failed to explode. It was reported that they had bounced overboard from the armoured decks. The squadron lost one of their aircraft, which had crashed into the deck of the *Emden*; four returned safely. The initial attack meant that the Germans were ready for No.

107 Squadron and they annihilated them: only one of their five Blenheims returned to Wattisham.<sup>15</sup>

While the ten aircraft were over Wilhelmshaven, the remaining squadron personnel anxiously awaited their return. The result of this raid would determine what was to come. Flight Sergeant Leonard Stanley, an observer with No. 107 Squadron, recalled the painful period of waiting for his comrades to appear on the horizon:

I remember the apprehension, we all of us suffered on the station, as we lined the tarmac waiting for their approach, and it was very encouraging when No. 110 Squadron, the four survivors, came in and were greeted with cheers, but we still hoped that there would be a fifth but no sign was ever seen...Apprehension grew as No. 107 Squadron were long in arriving and when one in pretty bad shape came in, we feared the worst and that became justified.

Stanley believed that the loss of the four aircraft had a profound impact on the confidence and morale of 107 Squadron. He stated: 'It was pretty low for a time. It would have been easier to take if we had been able to follow up with another raid in a short time but that was really a token gesture, I suppose.'<sup>16</sup> Ronald Cooper, a pilot with No. 107 Squadron, disagreed with this assessment. 'I never found that morale was knocked by casualties', he stated, 'one was paying so much time to looking after your own skin. Absolutely selfish, that is the only way to describe it.'<sup>17</sup> Despite their different views on morale, it is clear that aircrew were beginning to feel the psychological strain of war from a very early period.

Daylight bombing of the German fleet continued for several months with little success. Operations over the North Sea were called-off after a final disastrous raid on Wilhelmshaven, where 12 out of 24 bombers were lost. Overall, in the course of 861 sorties, Bomber Command had dropped 61 tons of bombs but the material achievement was negligible. Slight damage was rendered to the *Emden* and *Scheer*, a U-boat and minesweeper were sunk, and ten fighter planes were destroyed. The cost, however, was

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<sup>15</sup> Richards, *The Royal Air Force 1939-1945, The Fight at Odds*, pp. 39-40.

<sup>16</sup> IWM, Sound Archive, 12303, Fearnley, Leonard Stanley, September 1992.

<sup>17</sup> IWM, Sound Archive, 12807, Rotherham, Ronald Cooper, October 1992.

the loss of 41 aircraft and the deaths of hundreds of young men.<sup>18</sup> The North Sea campaign therefore tested the air power and morale of the RAF. Bomber Command was not ready in terms of machines, tactics, or munitions, and the casualties began to affect the confidence of air crews. They went to war with excellent morale but the gross realities of war compromised this psychological state. But a greater test was to come.

### ***Battle of France, May-June 1940***

The campaign in Western Europe of 1940 was a pivotal and defining moment of the Second World War. The Germans had achieved in a matter of weeks what their predecessors had failed to deliver in the four years of the Great War.<sup>19</sup> The Battle of France, according to Terraine, was characterised by blindness, hysteria, dogma, and at times, sheer folly on the part of the allies.<sup>20</sup> Allied aircrews flew with no regard to their personal safety or force protection to halt the advance of the German armoured divisions that had penetrated the forests of the Ardennes. This only worked to their detriment as command and control collapsed; they became operationally paralysed and financially stricken.<sup>21</sup> The allies were pushed back to the coast of Northern France and *Operation Dynamo* was put into action, resulting in the evacuation of the majority of British units from Dunkirk. France was defeated in a mere six weeks and Britain found herself isolated. This failure had a profound effect on the confidence and morale of the RAF.

The RAF's experience of the battle can be summed up in the phrase 'bloody attrition.' Their first major losses were made during this short campaign and their confidence shaken. The force was fighting this operation 'looking over both shoulders', as

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<sup>18</sup> Richards, *The Royal Air Force 1939-1945, The Fight at Odds*, i, p. 47.

<sup>19</sup> Stuart W. Peach, 'A Neglected Turning Points in Air Power History: Air Power and the Fall of France', in S. Cox and P. Gray (eds.), *Air Power History: Turning Points from Kitty Hawk to Kosovo* (London, 2002), pp. 161-2.

<sup>20</sup> Terraine, *The Right of the Line*, p. 121.

<sup>21</sup> Bungay, *The Most Dangerous Enemy*, p. 105.

Terraine has put it, being outnumbered, under-equipped, and lacking the experience and leadership of the Luftwaffe.<sup>22</sup> According to Bungay, the Luftwaffe had assigned 2,750 aircraft to the operation, compared with the RAF's 416, and the French, 1,200. The Luftwaffe therefore had technical superiority of 3:2 in force strength.<sup>23</sup> The RAF knew that they were outnumbered and one pilot commented wryly that it was 'a bit of a worry', but it had no real effect on morale at the beginning of the campaign.<sup>24</sup> But the Germans' numerical superiority would soon become clear in action and posed a threat to the confidence of flying personnel.

Wing Commander Norman Hancock, a pilot with No. 1 Squadron, recalled flying into the path of '100+' Heinkel HE 111 medium bombers, while he was in a standard squadron of 12 Hurricanes. While the odds were stacked against them, they had no choice but to attack.<sup>25</sup> This was a common experience during the battle. The Germans' consistently held the initiative and dictated where and when attacks would take place.<sup>26</sup> The RAF was fighting a losing battle, for the Germans were one step ahead in all respects. The confidence of flying personnel was seriously threatened.

The amalgamated AASF and BEF Air Component were the only permanent aerial presence in France. The British and French Air Staff believed that the war would be decided by air strikes before ground operations became pressing. The emphasis was therefore on the bomber.<sup>27</sup> Commander-in-Chief of Fighter Command, Air Chief Marshal Hugh Dowding agreed that bombers would play the most important role in France and was concerned that if his smaller fighter force was drawn in, they would be 'bled white.' He feared that Britain would be left without strategic defence and therefore blocked any

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<sup>22</sup> Terraine, *The Right of the Line*, p. 121.

<sup>23</sup> Bungay, *The Most Dangerous Enemy*, p. 105.

<sup>24</sup> IWM, Sound Archive, 12172, Donaldson, Edward Mortlock, August 1991.

<sup>25</sup> IWM, Sound Archive, 10119, Hancock, Norman Patrick Watkins, February 1988.

<sup>26</sup> Bungay, *The Most Dangerous Enemy*, p. 105.

<sup>27</sup> John Buckley, 'The Air War in France', in B. Bond and M.D. Taylor (eds.), *The Battle of France and Flanders 1940: Sixty Years On*, (Barnsley, 2001), p. 121.

proposals to send fighters to France on a permanent basis. Fighters were committed on a day-by-day basis, returning to British airfields most nights.<sup>28</sup> This ultimately limited the offensive and defensive roles that they could play. The bomber force stationed in France, however, were overworked, ill-equipped, and vastly outnumbered. The principal aircraft, Fairey Battles and Blenheims, were outdated and overwhelmed by German fighters and flak. This point was driven home on 14 May 1940, when the bombers were ordered to attack pontoon bridges and soldiers at the Sedan. The written testimony of Squadron Leader Peter Sarll, a Blenheim pilot in No. 21 Squadron, highlighted the psychological impact of this action:

I do not think that anyone who did not experience what we were called upon to perform this day could ever visualize the tremendous courage of our people, so many of whom died. We were three to a crew, twelve crews to a squadron, and our lives depended upon one another. We reached out to one another for strength and support: when one was low, we tried to boost him up. I remember seeing many of them vomiting before getting into the aircraft – a sure sign of physical and mental exhaustion... I used to look back on the old Blenheim days and wonder how any of us survived.<sup>29</sup>

His reaction was not surprising, given the losses recorded. Out of 71 aircraft sent on this raid, 39 did not return – apparently the highest loss in an operation of this size ever sustained by the RAF. The physical and psychological impact of the air war in France was beginning to take its toll; only four days into the battle.

Not only were the RAF and land forces under military attack, the morale of flying personnel was in danger of collapsing. Air Vice-Marshal Harold Bird-Wilson, serving with No. 17 Squadron, remembered that confidence had begun to waver and battle-spirit had turned to revulsion. Men in his squadron had heard tales of the shooting of parachuting pilots and the strafing of refugees on the roads around Lille. He was deeply

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<sup>28</sup> Terraine, *The Right of the Line*, p. 121.

<sup>29</sup> 'Mental and Physical Exhaustion', Peter Sarll, RAF Bomber Command Website, accessed 22 June 2015 at [http://www.rafbombercommand.com/personals\\_2\\_dangersofwar.html](http://www.rafbombercommand.com/personals_2_dangersofwar.html).

shocked by this news. In his own words, ‘the Germans had changed the rules.’<sup>30</sup> While British flying personnel begun to waver, the French were in the throes of depression. Air Chief Marshal Frederick Rosier recalled that upon his crash-landing at Lille, the French were refusing to fly. He was ‘livid with rage’ owing to his near-death experience but could not blame them for their lax attitude. Their morale was at ‘rock-bottom’ due to number of refugees.<sup>31</sup> In other instances, however, their absence was noted when their presence was vital. Flight Lieutenant Hugh Dundas, for example, felt particularly isolated during the Dunkirk evacuation. His comrades were fighting and dying for continental freedom yet he did not register any support from the French or Belgian air forces.<sup>32</sup> Moreover, Hancock questioned the morality of the French people. His time in France was spent ‘in retreat’ and ‘anxiety’, and he had defended the French to the best of his ability. But as the German army crept ever closer, the French station commander was ready to turn him in as a prisoner in an instant. His sense of betrayal was entrenched when his camp was looted by French peasants – the very people that he was protecting.<sup>33</sup> Thus some were beginning to question what they were fighting for and the justness of the war from an early stage; a clear sign of faltering morale.

While the RAF was questioning where their supporters were, the army was asking the same questions of them. Although the air force was supposed to provide close support for ground troops, there is a widespread consensus that commanders had given little thought to the matter and their coverage was patchy or non-existent.<sup>34</sup> At the time of the Dunkirk evacuation, cries of ‘Where the bloody hell are the RAF?’ were common. The RAF was indeed there, but their presence paled in comparison to the Germans who were

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<sup>30</sup> IWM, Sound Archive, 10093, Bird-Wilson, Harold Arthur Cooper, January 1988.

<sup>31</sup> IWM, Sound Archive, 10157, Rosier, Frederick Ernest, March 1988.

<sup>32</sup> IWM, Sound Archive, 10159, Dundas, Hugh Spencer Lisle, March 1988.

<sup>33</sup> IWM, Sound Archive, 10119, Hancock, Norman Patrick Watkins, February 1988.

<sup>34</sup> Please see: Terraine, *The Right of the Line*, p. 383; J. Connell, *Wavell: Scholar and Soldier*, (New York, 1965), p. 204.

bombing and strafing the beaches. Bird-Wilson described the relationship between the RAF and army, and how the situation could come to blows:

...the army made the accusation that they never saw the RAF fighters over Dunkirk. This surprised us greatly because...we had two patrols over Dunkirk per squadron per day, from dawn 'til dusk...we did do quite a lot of interception of Germans over Dunkirk and we protected the beaches quite considerably... We had an unfortunate situation of a couple of our chaps being shot down by a JU-88 [Stuka dive-bomber]...and they landed by parachute quite near to the beach and they made their way to the boats. I recall that [these] officers were not allowed to get on board one of the boats by an army officer. It ended up by the Pilot Officer...having to fight his way to get on board the boat, and I think it came to a bit of a fisticuff...he said that the boats were for the army and not for the Royal Air Force.<sup>35</sup>

Similar accounts were given by other flying personnel serving in the battle.<sup>36</sup> Flying personnel were risking their lives to support land forces but this had not been recognised

The Battle of France was challenging on both military and psychological grounds. The RAF was facing a well-equipped and motivated enemy, who was always one step ahead, challenging the force's elite self-image and conceptions of air power. Flying personnel were shocked by the realities of war and some were physically and mentally exhausted by the relentless nature of the campaign. By the time, General Maxime Weygand of the French army had declared 'The Battle of France is over', the RAF had lost 959 aircraft, half of which were fighters. The Germans were not finished with the RAF, however, and had laid plans to challenge them again. Only this time it was on familiar territory.

### ***Battle of Britain, July-September 1940***

Defeated and depleted, the British armed forces began to regroup on home soil.

Commanders knew that they had little time to rest as a German invasion was an immediate prospect. Germany had conquered Western Europe in less than three months and Hitler's

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<sup>35</sup> IWM, Sound Archive, 10093, Bird-Wilson, Harold Arthur Cooper, January 1988.

<sup>36</sup> See also: IWM, Sound Archive, 12404, Brown, Ronald John Walker, 1992; 10159, Dundas, Hugh Spencer Lisle.

aggression was therefore likely to be turned toward the British Isles. Prime Minister Winston Churchill called his nation to arms and for immense courage in the face of adversity:

...I expect that the Battle of Britain is about to begin. Upon this battle depends the survival of Christian civilization. Upon it depends our own British life, and the long continuity of our institutions and our Empire. The whole fury and might of the enemy must very soon be turned on us. Hitler knows that he will have to break us in this Island or lose the war...Let us therefore brace ourselves to our duties, and so bear ourselves that, if the British Empire and its Commonwealth last for a thousand years, men will still say, "This was their finest hour."<sup>37</sup>

The Prime Minister's call inspired the nation to action. The armaments industry began its work with fierce determination. Workers emerged in the evenings from offices and workshops to march with their Local Defence Volunteers. Men perched themselves upon church towers and hilltops to look for aircraft and parachutes in the distance. The south coast became a maze of barbed wire and concrete walls, and trenches were dug into the South Downs. RAF ground personnel armed themselves with two-foot lengths of piping.<sup>38</sup> The nation was determined to see Hitler off at the doorstep.

The RAF had only a few weeks to prepare for the German onslaught. The emphasis had switched from bomber to fighter and Dowding had to postpone his retirement in order to rebuild his weakened command. It was believed that Fighter Command would defend Britain from 'the knock-out blow.' By July 1940, Fighter Command's deployment consisted of 52 squadrons in three groups (a fourth would join them later in the month); 19 squadrons were equipped with Spitfires, 25 with Hurricanes, two with Defiants, and six with Blenheims. A total of 644 aircraft from an establishment of 800 were available for operations and these would be flown by 1,259 pilots.<sup>39</sup> Their first test would come on 14 July 1940, when the Luftwaffe attacked British convoys in the

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<sup>37</sup> 'This was their finest hour', Winston Churchill, 18 June 1940, The Churchill Centre, accessed 22 June 2015 at <http://www.winstonchurchill.org/learn/speeches/speeches-of-winston-churchill/122-their-finest-hour>.

<sup>38</sup> Richards, *The Royal Air Force 1939-1945, The Fight at Odds* i, p. 151.

<sup>39</sup> Terraine, *The Right of the Line*, p. 174.

Straits of Dover. Around 30 Stuka dive bombers and a similar number of Messerschmidt 109s, were intercepted by No. 615 Squadron and seven Hurricanes from No. 151 Squadron, who were patrolling the area. They were joined by 12 Spitfires from No. 610 Squadron. Accounts of this battle were confused, with multiple pilots claiming to have shot down the same aircraft but at least three German machines were lost and the remainder returned to France.<sup>40</sup> The BBC produced an eye-witness account of this first engagement, with the presenter narrating with the gusto of a sports commentator. This brought the battle to the homes of the British people and to the mess rooms of RAF stations.<sup>41</sup> The BBC broadcast was generally well-received, inspiring infectious war enthusiasm, but it was the RAF that would carry on the fight.

The image of the glamorous Brylcreem boys, taking to the skies against overwhelming odds has dominated popular imagination regarding the Battle of Britain. This has resulted in a skewed portrayal of the battle, as some flying personnel were profoundly affected by their experiences. The rigours of operational flying were recognised by commanders at the height of the battle in August 1940. Overy argued that the pilots of Fighter Command were affected by the relentless nature of the fighting, which he described as ‘physically-draining and nerve wracking.’ Dowding had recognised this and ordered a period of 24 hours’ rest per week to repair the damage suffered by men ‘swept around on a carousel of noise, danger, and fear.’ Games and exercise were introduced to provide an outlet for nervous tension and an escape from the strains of operational flying. The Treasury subsidised electric lighting for energetic games, such as squash.<sup>42</sup> This small gesture did not go unnoticed but some criticised the commanders for not going far enough.

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<sup>40</sup> Bungay, *The Most Dangerous Enemy*, p. 145.

<sup>41</sup> ‘News Report: Air Battle off Dover’, 14 July 1940, BBC Archive, accessed 22 June 2015 at <http://www.bbc.co.uk/archive/battleofbritain/11431.shtml>.

<sup>42</sup> R. Overy, *Battle of Britain: New Edition* (London, 2004), pp. 75-6.

A peace-time psychologist turned airman wrote to the Mass Observation project – an organisation that aimed to record the experience of everyday life in Britain – and called upon ‘psychologists’ to do more in the preservation of morale:

In many fighter squadrons, air-crews spend hour after hour slouching arm-chairs waiting for the call to "scramble base". Few lectures are given, no attempt is made to encourage intelligent mental relaxation. Even if a chessboard and magazines are available it is probably more luck than judgment. Here, surely, is a chance for the psychologist to devise some not too childish method of passing the weary hours of waiting, that will nourish morale instead of reducing it to a listless minimum...Education in general, (though one hears continually of wonderful schemes "in preparation") is very scarce, and the facilities are publicised as little as possible. Entertainments vary tremendously from station to station, some places having all the luck, and the whole organisation of leisure activity is completely misunderstood, depending on individual station commanders and their particular whims. That these "extra-curricular" activities have great bearing on morale is admitted, but the job of organizing them and setting standards for all RAF stations seems to be given only to those who are no use for anything else.<sup>43</sup>

Thus it was recognised that not only was the daily fighting during the Battle of Britain physically and psychologically draining, waiting for the next call to scramble afforded little peace of mind.

Experiences of the Battle of Britain show that ‘the few’ may have been brave but their morale was compromised by exhaustion, fear, and casualties. The RAF was almost completely destroyed by the stronger, more capable Luftwaffe. A tactical error saved Britain from ‘the knock-out blow.’ Flying personnel had the weight of a country on their shoulders, which added pressure to the fear that they were already experiencing. Such events meant that many broke down under the strain of operational duties.

### ***Neuropsychiatric casualties, 1939-40***

Following the devastating early operations, the neuropsychiatric division began to receive the first casualties of the war. This was its opportunity to prove that specialist medicine

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<sup>43</sup> Underlined text –author’s emphasis: University of Sussex Special Collections, Mass Observation Archive, File Report 734: Morale in the Ranks of the RAF, 1941.

had a valuable role to play in the maintenance of manpower and combat efficiency. Squadron Leader Robert Gillespie commented on the nature of 33 casualties received at the RAF Neurological Hospital, Matlock. Increased alcohol consumption with a lack of appetite and a disinclination to fly had alerted squadron and station medical officers to most of these cases. These men complained of a range of physical symptoms, including headache, vomiting, sinking feelings, nightmares and a feeling of emptiness. These were accompanied by loss of memory, a fear of responsibility, loss of confidence, an inability to concentrate, fear of impending disaster, depression and indecision.<sup>44</sup> Squadron Leader D. Bateman, a 'medical specialist', was 'so impressed by the part played by fatigue in causing psychological disturbances' in air crew that he proposed a generic term "Operational Fatigue" for these disorders.<sup>45</sup> It was the duty of neuropsychiatrists to treat these disorders and to effect returns to duty.

Between 1 January 1939 and 31 December 1940, 5,302 personnel received treatment for 'mental and nervous diseases' – a grouping that encompassed a broad range of psychological and neurological disorders. In the *Report on the Health of the Royal Air Force for the Year 1939*, nervous and mental disorders were tabulated with other disease types and approximately 1,312 personnel had reported sick with a condition from this group – see Table 9. But 'mental and nervous diseases' accounted for only three per cent of all diseases reported in 1939, which justified Whittingham's opinion. Compared to infections, the rate of neuropsychiatric disorders was negligible: 24,981 personnel (56 per cent) had succumbed to an infection, a disease class that included common complaints

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<sup>44</sup> TNA, AIR 57/8, 'RAF Hospital Matlock, Report on the first 6 months from 10.10.39', by R.D. Gillespie, in FPRC Report 412 (a), 'Investigation into Psychological Disorders in Flying Personnel: Review of reports submitted to the Air Ministry since outbreak of war', April 1942', by C.P. Symonds, pp. 2-3.

<sup>45</sup> TNA, AIR 57/8, D. Bateman, 'Notes on Operational Fatigue: Hitherto called Flying Stress, 14.12.40', in FPRC Report 412 (a), 'Investigation into Psychological Disorders in Flying Personnel: Review of reports submitted to the Air Ministry since outbreak of war, April 1942', p. 3.

such as influenza, the common cold, and tonsillitis.<sup>46</sup> In terms of mental and nervous disease types, there was a marked increase in cases of psychoneurosis and conditions of ‘indefinitely etiology’, such as enuresis, migraine, tic, and vertigo. Psychoneurosis, an ill-defined disorder with a basis in emotional conflict, was the most common diagnosis, accounting for 388 cases. Diseases of ‘indefinite etiology’ were experienced by 194 personnel, showing that the neuropsychiatric division required greater knowledge of the psychological effects of operational flying. Approximately 100 personnel were reporting sick with nervous and mental diseases daily and the average duration of treatment was 28 days. On the whole, the division managed to return 69 per cent of casualties to duty, thereby meeting the expectations of the RAF, and the state, who desired that as many men should be retained as possible.

**Table 9: Cases of mental and nervous diseases, 1939**

<b>Type of Disorder</b>	<b>Number of cases</b>	<b>Number finally invalidated</b>	<b>Average duration of case in days</b>
Psychoneuroses	388	91	24
Psychoses	131	73	42
Psychopathic personality	84	64	39
Mental defect	7	5	26
Epilepsies	135	98	29
Indefinite etiology	194	21	16
Brain	44	18	38
Cranial Nerves	57	6	28
Spinal cord	19	12	46
Spinal and peripheral nerves	201	3	27
Neuromuscular system	5	3	29
Headache concussive	40	8	37
Others	7	7	50
<b>Total:</b>	1,312	409	-
<b>Source:</b> Adapted from AIR 10/6657, Report on the Health of the Royal Air Force for the Year 1939, June 1945.			

<sup>46</sup> AIR 10/6657, Report on the Health of the Royal Air Force for the Year 1939, June 1945.

By 1940, however, cases of mental and nervous disease had risen sharply. The rate had increased from 9.3 per 1000 in 1939 to 12.3 in 1940. The condition which accounted for the rise was psychoneurosis, which had increased from 2.5 per 1000 in 1939 to 5.3 in 1940.<sup>47</sup> 3,990 men had reported sick with nervous or mental symptoms and 1,082 were invalided from the service – see Table 10. Despite, the increase in casualties of this type, the neuropsychiatric division still managed to return 73 per cent to service, showing that with quick and effective intervention, manpower economy could be preserved.

**Table 10: Cases of mental and nervous diseases, 1940**

<b>Type of Disorder</b>	<b>Number of cases</b>	<b>Number finally invalided</b>	<b>Average duration of case in days</b>
Psychoneuroses	1,707	398	25
Psychoses	282	159	47
Psychopathic personality	272	179	31
Mental defect	23	19	19
Epilepsies	336	194	24
Indefinite etiology	490	46	16
Brain	93	20	32
Cranial Nerves	100	4	29
Spinal cord	40	17	34
Spinal and peripheral nerves	570	26	27
Neuromuscular system	12	6	28
Headache concussive	54	8	22
Others	11	6	26
<b>Total:</b>	3,990	1,082	-
<b>Source:</b> Adapted from, AIR 10/5568, Report on the Health of the Royal Air Force for the Year 1940, 1946.			

Early operations therefore had a negative nervous and psychological effect on flying personnel. The futility and poor organisation of the aerial war effort had dented the confidence and morale of individuals and operational squadrons. The result was the

<sup>47</sup> TNA, AIR 10/5568, Report on the Health of the Royal Air Force for the Year 1940, 1946, p. 2.

emergence of neuropsychiatric disorders in their thousands, which were treated effectively and allowed men to return to duty. The neuropsychiatric division had begun to prove that they had a valuable role to play in the management of trauma and could meet service requirements. Their achievements, however, would be eclipsed by the actions of the Air Council, who would introduce a measure that would shape the future role of the division.

### **Lack of Moral Fibre: Discipline and the Royal Air Force, 1939-45**

While the neuropsychiatric division was fulfilling service requirements by treating and returning men to duty, broader matters of discipline and efficiency had come to the fore. The division viewed neuropsychiatric disorders as illnesses, which they were duty-bound to treat. The Air Council, however, were obsessed with efficiency and took an entirely different view of such casualties. At the height of the North Sea Campaign, casualties represented a challenge to the smooth-running of the service when manpower was at a premium. What is more, it was believed that some of the cases could be malingering. It was widely held that indiscipline and malingering were rife throughout the service and this was evidenced by men refusing to fly on hazardous operations. The RAF, once relaxed over behaviour and standards, were becoming increasingly concerned about service discipline, as refusals to fly compromised combat efficiency and set a dangerous precedent.

This underlying fear of indiscipline and malingering can be linked to pre-war attitudes toward British civilians. The men going to war in 1939 were different from those who had volunteered to fight in the Great War. They knew their rights, were fitter, better fed, had enjoyed rising living standards, and in the view of some, had become 'soft' as a result. These men brazenly questioned authority and felt betrayed by the failure of the

government to deliver on their promises of a country ‘fit for heroes’.<sup>48</sup> Commenting on the flying personnel of 1940-3, Inspector General of the RAF, Air Chief Marshal Philip Joubert de la Ferté argued:

The vast majority had been born and brought up in conditions of security – a policeman at the end of the street to keep order... a benevolent government to insure them against the heavier blows of fate. The tough and riotous citizens who enlisted in 1914 are not to be found in the RAF of 1940/43. They were the product of a rougher, more robust period, where cruder virtues flourished in the place of refinement and comfortable living.<sup>49</sup>

Thus some flying personnel were flagrantly disregarding orders while others had experienced a nervous or mental breakdown. Both were the products of modernity. Indiscipline was dangerous and needed to be extinguished at source, for it could hamper combat efficiency and morale. However, there was no administrative machinery in place to distinguish between the two.

In the aftermath of the disastrous North Sea campaign, Bomber Command was suffering a crisis of confidence. While new tactics were introduced to reduce high rates of attrition in the Wellington bomber, it was deemed necessary to increase pressure on crews to undertake dangerous missions.<sup>50</sup> On 21 March 1940, the newly appointed Air Member for Personnel, Air Vice-Marshal Leslie Gossage convened a meeting with Commander-in-Chief of Bomber Command, Air Vice-Marshal Charles Portal; Air Officer Commanding No. 3 Group, Air Vice-Marshal Jack Baldwin, and Chief of the Air Staff, Air Chief Marshal Sir Cyril Newall. They believed that ‘some procedure for dealing with cases of flying personnel who will not face operational risks’ had to be introduced as a matter of urgency.<sup>51</sup> As Air Member for Personnel, it fell to Gossage to draw up draft procedures. It was this document that would form the basis of a controversial disciplinary measure.

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<sup>48</sup> Shephard, *A War of Nerves*, pp. 172-4.

<sup>49</sup> TNA, AIR 20/3083, Report of the Inspector General on discipline and fighting spirit, 14 May 1943, p. 1.

<sup>50</sup> Jones, ‘LMF: The Use of Psychiatric Stigma in the Royal Air Force’, p. 442.

<sup>51</sup> TNA, AIR 2/8591, Minutes, 21 March 1940.

The draft letter from the Air Council stated that they had under consideration the problem of the disposal of air crew members, whose conduct had led to the forfeiture of the confidence of their Commanding Officer (CO) in their ‘determination and reliability in the face of danger.’ The first was the case of an airman who had continued to carry out his duties but had still lost the confidence of his CO. The second was an airman who had lost the CO’s confidence by stating that he did not intend to carry out dangerous duties. It was believed that some cases would arise from ‘genuine medical reasons’ and that these personnel may respond to ‘encouragement and tactful handling.’ But the letter went on to state:

It must however be recognised that there will be a residuum of cases where there is no physical disability, no justification for the granting of a rest from operational employment, and in fact, nothing wrong except a lack of moral fibre. The council regard it as of the utmost importance that these cases should be quickly disposed of.<sup>52</sup>

The draft letter was circulated to members of the Air Council. Portal, as Commander-in-Chief of Bomber Command and former Air Member for Personnel, contributed his expertise at this stage. He added to the letter: ‘...cases of loss of morale among flying personnel should be frankly recognised and reported to higher authority and that no attempt should be made to obtain posting action on other grounds.’<sup>53</sup> In an age of efficiency, it was common for personnel to be remustered to a different trade if they were unsuitable for a certain job but this was tantamount to awarding malingerers.<sup>54</sup>

The draft letter was sent to Director of Personal Services, Air Commodore Ronald Oxland; Director of Postings, Air Vice-Marshal Philip Babington, and legal adviser, R. Monk Jones. They turned this disciplinary idea into a formal administrative measure, which was introduced by Principal Assistant Secretary Charles Evans to the heads of all

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<sup>52</sup> TNA AIR 2/8591, Draft Letter of the Air Council, c. March 1940.

<sup>53</sup> TNA, AIR 2/8591, Draft Letter of the Air Council with Portal’s comments, c. March 1940.

<sup>54</sup> Reselection Centres were established to organise remustering in 1942: TNA, AIR 2/8171, Reselection of aircrew for alternative training or employment, 1942.

Commands at home and overseas.<sup>55</sup> Jones has argued that this procedure was significant because it was introduced by operational commanders and not bureaucratic civil servants.<sup>56</sup> While this was an astute observation, it was particularly significant due to its effects on the practices of the neuropsychiatric division. Consultants were not involved in its construction yet the division were duty-bound to assist in the operation of this administrative machinery.

### *The Administration of Lack of Moral Fibre*

Evans' letter became known as the 'waverer's letter' and outlined the scope of 'LMF'. COs were empowered to remove flying personnel 'who [had] come to forfeit their confidence', with the 'least possible delay.' The men in question had refused to fly or face dangerous operational duties. On paper, the procedure appeared simple. There were two types of men that came under scrutiny: medical cases and those who had forfeited the confidence of their CO without the excuse of exceptional operational strain. The Air Council acknowledged that in practice it could be difficult to differentiate between the two. The medical case, on the one hand, was 'simple to deal with', as once diagnosed, suitable treatment could be administered. The other type required investigation. The waverer's letter dictated that there had to be 'no question of medical disability' to account for his inability to face operational flying. The CO had to be sure that there was nothing wrong with the airman except a 'lack of moral fibre.'<sup>57</sup> The cooperation of the CO and medical officer (MO) was therefore crucial in the assessment of this type of case.

It was believed that the CO should 'know his men more intimately than anyone else' and because of this, certain cases may recover morale and 'become a sound member

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<sup>55</sup> TNA, AIR 2/8951, Letter from the Air Council to Commanding Officers of the Royal Air Force, 22 April 1940.

<sup>56</sup> Jones, 'LMF: The Use of Psychiatric Stigma in the Royal Air Force', p. 442.

<sup>57</sup> TNA, AIR 2/8951, Letter from the Air Council to Commanding Officers of the Royal Air Force, 22 April 1940.

of operational crew.’ It was the CO that would refer a member of flying personnel for executive action and would know when his confidence had been forfeited. On the other hand, the MO was expected to undertake the medical and psychological care of flying personnel by maintaining a close watch on variations in behaviour. It was recommended that he liaised with the CO regularly to ensure that neither had missed any signs of potential illness.<sup>58</sup> This would also ensure that he would not ‘assume too readily that lack of confidence to fly or fear of flying [were] necessarily symptomatic of nervous illness.’<sup>59</sup> The Air Council therefore believed that COs were more qualified to differentiate between fit and unfit personnel, and it was their responsibility to ensure that the provisions of the waverer’s letter were upheld.

The Air Council’s advice was generally followed to the letter and LMF cases were removed immediately from their squadrons to prevent loss of morale. The Air Council then considered their options for disposal.<sup>60</sup> Air Gunner Sergeant Edward Gearing recalled that an entire crew were accused of LMF, after a particularly ‘hairy’ operation. They were put on parade and were publicly ‘stripped of their flying brevets.’ He considered this public humiliation unfair.<sup>61</sup> Furthermore, Sergeant Pilot Charlton Haw came across an LMF case who ‘wanted the glamour’ but without the work. The non-commissioned officer (NCO) concerned was demoted to Aircraftsman Second Class, the lowest rank in the service, and was given the job of cleaning the latrines.<sup>62</sup> This provides clear evidence of LMF’s disciplinary nature. The purpose was to dispose of such cases to maintain order, and prevent the destruction of morale and combat efficiency. Medical cases often came

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<sup>58</sup> TNA, AIR 2/8591, Letter from Air Council to Commanding Officers of the Royal Air Force, 28 September 1940.

<sup>59</sup> TNA, AIR 20/10727, A.M. Pamphlet 100A: Notes for the Guidance of Medical Officers on the Differentiation Between Personnel Unfit for Flying for Medical and Temperamental Reasons, 1940.

<sup>60</sup> TNA, AIR 2/8591, Letter from Charles Evans to All Commanding Officers in the RAF, 28 September 1940.

<sup>61</sup> IWM, Sound Archive, 10745, Gearing, Edward Sydney Robert, July 1989.

<sup>62</sup> IWM, Sound Archive, 12028, Haw, Charlton, May 1991.

under examination, as many refused to fly or developed a mental disorder as a result of operational experience. The LMF procedure dictated however that these men were to be subjected to the same investigation, as it provided a means of differentiating between illness and indiscipline.

As the procedures were introduced in great haste, problems with implementation were inevitable. In June 1940, legal adviser, R. Monk Jones commented that MOs were struggling to differentiate between ‘cases of loss of courage and resolution’ and ‘medical cases where there is some definite mental or nervous disease.’<sup>63</sup> MOs were typically general practitioners with no experience of psychological medicine and usually sent cases of suspected neuropsychiatric illness to a specialist. The Air Council’s procedure required them to make harsh judgements. In response to the difficulties experienced, a pamphlet was produced that summarised the options available to the MO, to assist him in the differentiation between personnel unfit for flying for medical and temperamental reasons. The guidance given showed that MOs played an important role in the application of this disciplinary measure:

The individual is seen by the unit MO who may:

- I. Discover evidence of physical or mental illness. Follow medical procedures for disposal e.g. treatment on the station, recommendation for leave, admission to hospital, or recommendation for medical board.
- II. Discover no evidence of the above, yet consider that the individual is lacking in moral fibre and may, therefore, be unsafe or ineffective in the air. This is the type of case which requires executive action. MO should see CO who will submit a report to GHQ [Group Headquarters] on the individual.
- III. Discover no evidence of physical or nervous illness, yet remain in doubt whether he should regard the case as one of sickness or lack of moral fibre. The MO should send the case with the report from the CO to the specialist in neuropsychiatry at the nearest NYDN [Not Yet Diagnosed Neuropsychiatric] centre. The Specialist may decide that the case is one of

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<sup>63</sup> TNA, AIR 2/8591, Memorandum from R. Monk Jones to Director General of Medical Services, Air Vice-Marshal Sir Harold Whittingham, 9 June 1940.

sickness and recommend treatment or a medical board. If he is found to be LMF the case will proceed under II.

The MO therefore had three options at his disposal, including the opinion of a specialist at a neuropsychiatric centre. This pamphlet, however, did not fully address the problem of differentiating between types. It merely gave a hypothetical example that required the MO to place himself in the shoes of a Great War MO and to consider the question:

...if this man were in the infantry and reported sick with the complaint that he could no longer face shell fire, should I regard him as medically unfit and send him down the line?" If the answer is "yes" he is entitled to consider the case as one of neurosis and send [him] to a hospital with the label 'NYDN.'<sup>64</sup>

The role of the MO in the implementation of this measure showed that medical personnel were expected to uphold service discipline. While the measure differentiated between cases of neuropsychiatric illness and malingering, the MO was required to pass judgements on both, showing that he was expected to act as an air force officer, as well as a medical doctor.

Medical cases were divided into two major classes, which rendered a man unfit for flying duties. Some were exhibiting symptoms of psychological illness, whereas others were physiologically or pathologically affected by flying. With regard to the latter, Air Gunner Sergeant John Toombes remembered the accusation of LMF levelled at a rear gunner, who suffered from nausea and disorientation when flying backwards and believed that he was unfit to fly.<sup>65</sup> On the other hand, Flight Engineer Sergeant Eddie Dawson recalled the case of a pilot who had developed a nervous disorder and was accused of LMF in 1944. The pilot was diagnosed with neurasthenia and 'disappeared' from the squadron.<sup>66</sup> He would have received treatment for his illness but it is unlikely that his

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<sup>64</sup> TNA, AIR 20/10727, A.M. Pamphlet 100A: Notes for the Guidance of Medical Officers on the Differentiation Between Personnel Unfit for Flying for Medical and Temperamental Reasons, 1940.

<sup>65</sup> This particular case was judged LMF: IWM, Sound Archive, 28633, Toombes, John Richard 'Jack', June 2005.

<sup>66</sup> IWM, Sound Archive, 13284, Dawson, Eddie, March 1993.

fellow crew members were told that and assumed the worst. Indeed, in cases of doubt over sickness or LMF, the MO was to refer the case with a report from the CO to a neuropsychiatric specialist. The responsibility was then in the hands of the specialist to render a judgement, calling on the opinion of a Consultant in Neuropsychiatry, if necessary.<sup>67</sup> If the case was judged LMF at this stage, he would be referred for executive action. Thus even with a medical emphasis, the measure was disciplinary in nature. The major aim was to expose LMF rather than illness and unfortunately, neuropsychiatric cases were caught in the cross fire.

The disciplinary elements of measure only extended to those judged as lacking moral fibre. Those individuals were referred to the Air Council for executive action. At this point there was no question of an airman being ‘given an opportunity to rehabilitate himself or given non-operational employment’; their documents were endorsed ‘W’ for waverer and a variety of sanctions were imposed. Officers would be terminated from the service by force or persuaded to resign. These men were supposed to lead impressionable young men and had set a bad example. Airmen, on the other hand, would be reverted to basic trades or discharged.<sup>68</sup>

LMF was therefore an entirely disciplinary measure. It allowed COs to remove members of squadrons who would not take operational risks and acted as a deterrent. It was not designed to stigmatise neuropsychiatric illness; a myth that has been perpetrated by Brandon, Jones, and Wells. It in fact highlighted neuropsychiatric disorders and singled them out for special treatment. MOs and neuropsychiatric specialists played a crucial role in identifying sick personnel and evacuating them for treatment. However, by doing so, the medical personnel were playing a formal role in the application of the procedure, showing that medicine was used to uphold service discipline.

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<sup>67</sup> TNA, AIR 2/8591, Letter from Air Council to Commanding Officers of the Royal Air Force, 28 September 1940.

<sup>68</sup> Ibid.

### *Criticism of Lack of Moral Fibre*

Almost from its inception, LMF was criticised by the neuropsychiatric division. The Consultants in Neurology were not consulted on its construction for it was a disciplinary measure and therefore the responsibility of operational commanders. As a result, problems with its application were inevitable, which impaired the efficiency of neuropsychiatric work in the service. Difficulties in differentiating between LMF cases and neuropsychiatric disorders were just the tip of the iceberg and the neuropsychiatric division did what they could to get the measure amended.

Director of Personal Services, Air Commodore Oxland convened a meeting to discuss the ‘medical aspects of wavering’, where the Consultants in Neurology gave their opinions on the measure. Symonds and Burton argued that the measure was too harsh and allowed for the punishment of undiagnosed neurotic cases. They supported the Director of Personal Services in the removal of the ‘waverers’ but advocated for the sympathetic treatment of the ‘borderline case’, which was ‘attributable to severe and shattering experiences’ and could respond to ‘careful handling.’ The effects and extent of operational strain were unknown at this point; indeed the number of individuals with mental and nervous diseases of ‘indefinite etiology’ was considerable. The LMF measure did not take this into full account. However, Oxland argued to the contrary, stating that the ‘lenient treatment of failure’ would have an undermining effect on COs who were trying to maintain morale.<sup>69</sup> Thus the consultants were genuinely concerned that neuropsychiatric casualties would be treated too harshly but the Director of Personal Services believed that the needs of the CO had to supersede their concerns, for the sake of morale and combat efficiency. The administrative authority of the neuropsychiatrists was therefore curbed by

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<sup>69</sup> TNA, AIR 2/8591, Minutes of Conference Held to Consider Medical Aspects of ‘Wavering’, 16<sup>th</sup> July 1940.

an emphasis on the needs of operational commanders. This was often to the detriment of suspected LMF cases.

A report from the Station MO at RAF Elsham Wolds detailed the examination process of a 'borderline LMF case.'<sup>70</sup> A Flight Sergeant was sent to be medically-examined, as he refused to fly in May 1942. The station and squadron MOs conducted a full medical examination and the NCO in question was found to be fit for the full duties of his trade.<sup>71</sup> No physical illness was found. The personal statement of the Flight Sergeant to the officer commanding the squadron painted a complicated medical picture. He stated that he wished to be relieved of aircrew duties, due to a 'complete lack of confidence.' When employed as a radio observer, he had complained of visual disturbance, catarrh, and ear trouble in earlier sorties, which had prevented him from completing his duties. He was also hospitalised for a back injury sustained at the gym, and spent three weeks in hospital suffering from catarrhal jaundice. The Flight Sergeant was shocked to be posted to flying duties as an air gunner, as he thought that a mistake had been made. He had trained as a radio observer and had no experience or knowledge of gunnery. The Flight Sergeant stated that he had already asked to be relieved from flying due to his fears and medical complaints, which made him 'irresponsible for [his] actions in the air.' He indicated that he could complete ground duties with complete confidence rather than flying in 'mortal fear.'<sup>72</sup>

In a report to the Flight Sergeant's CO, the investigating officer stated that he had tried to encourage him to fly but he had refused. The squadron gunnery leader believed that the Flight Sergeant could be an air gunner with more training. The officer commanding had advised him that he had lost his confidence and that he would be making

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<sup>70</sup> The names of the CO, MO and LMF case have been redacted to protect their identities.

<sup>71</sup> TNA, AIR 2/8591, Report from Station Medical Officer, RAF Station Elsham Wolds to Officer Commanding RAF Station Elsham Wolds, 6 June 1942.

<sup>72</sup> TNA, AIR 2/8591, Personal statement from Flight Sergeant under investigation to Officer Commanding 103 Squadron, 7 June 1942.

a report.<sup>73</sup> He described the Flight Sergeant as ‘delusional’ and requested ‘that immediate disposal action be taken to post this NCO from Elsham as his influence will tend to have a very bad moral effect on the remainder of aircrew personnel.’<sup>74</sup> The medical history of this case was written off as mere excuses; his symptoms could not be investigated for most of them occurred in the air. If this Flight Sergeant was in fact ‘delusional’ and had admitted to being terrified of flying, he could have been investigated as a neuropsychiatric case. However, the LMF policy measure dictated that he was to be disposed of from the service, as the CO had declared that he was feigning it.

While the neuropsychiatric division opposed the severity of the measure, the involvement of medical personnel in its implementation was also questioned. Air Vice-Marshal Arthur Harris, Commander of No. 5 Group Bomber Command, stated in a letter to the Under Secretary of State that he did not consider LMF harsh enough. He thought that many pilots were abusing the measure to avoid flying certain types of aircraft, as MOs would make recommendations for duties on different machines on their behalf. He argued:

It is essential to stop this outlet, whether the pilots are in fact instigated by unwillingness to face the operational risks of flying heavy bombers over enemy country, or otherwise honest in their intentions but making a light-hearted attempt to “wangle”, through any possible channel, transfer to a type of operational work which exercises a greater appeal to the individual concerned.

Harris believed that fit pilots who could not handle the responsibility of carrying a crew were completely useless to the service in any form. A lack of confidence in a particular type of aircraft indicated that the pilot would not be suitable for any type of aircraft. He called for the reduction of the powers of MOs in LMF cases and specified that they should only make recommendations; the final decision should be made by the Air Staff and them

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<sup>73</sup>TNA, AIR 2/8591, Report from Officer Commanding No. 103 Squadron RAF Station Elsham Wolds to Commanding Officer RAF Station Elsham Wolds, 6 June 1942.

<sup>74</sup> TNA, AIR 2/8591, Report from Group Captain Commanding RAF Station Elsham Wolds, to Headquarters No. 1 Group, 7 June 1942.

alone.<sup>75</sup> Harris' objections implied that MOs were in fact hampering the efficiency of the measure and that it should be an entirely disciplinary matter. According to Probert, when Harris was appointed to lead Bomber Command and presented with high casualties, he was firm its application.<sup>76</sup>

The neuropsychiatric division was still adamant that LMF was a wholly unfair designation and the consultants made representations to the Air Council on their behalf. In 1942, Symonds challenged the Air Council and argued that LMF was just a smoke-screen to cover what they really meant. He firmly believed that the Air Council were trying to avoid the use of the word 'cowardice', which had fallen out of fashion due to its association with shell-shock during the Great War.<sup>77</sup> Many neuropsychiatrists were using the term 'lack of confidence' instead to describe personnel under assessment. This term was formally sanctioned in 1941 and allowed squadron medical officers to differentiate between sickness or a lack of confidence.<sup>78</sup> This removed connotations of malingering and allowed for distinctions to be made between men who had performed their duties but had lost confidence in their abilities, cases of neuropsychiatric illness, and those who lacked discipline. In September 1942, Squadron Leader Donald Reid, a research assistant to the neuropsychiatric division, attempted to introduce another category: 'temperamental unsuitability.' This would allow the Air Council to be lenient in the case of a man who had struggled with his 'neurotic predisposition', despite attempts to build his morale. He believed that these men should be treated differently from LMF cases; they should be removed from flying duties but should not face prejudice in terms of future employment in

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<sup>75</sup> TNA, AIR 2/8591, Letter from Air Vice-Marshal Arthur Harris to the Under Secretary of State, Air Ministry, 10 October 1940.

<sup>76</sup> H. Probert, *Bomber Harris: His Life and Times* (London, 2001), pp. 212-3, cited in Jones, 'LMF: The Use of Psychiatric Stigma in the Royal Air Force', p. 446.

<sup>77</sup> TNA, AIR 20/10727, Letter from Air Commodore Charles Symonds to the Air Council, 7 October 1942.

<sup>78</sup> AIR 2/8591, Disposal of Air Crew, 19 September 1941.

the service.<sup>79</sup> According to Jones, this designation was not adopted because it was proposed when the bombing offensive over Germany was getting underway and commanders were reluctant to ease service discipline.<sup>80</sup>

Although it was clear that LMF would not be abandoned, neuropsychiatric specialists conveyed their difficulties in applying the measure. While the final decision on disposal was in the hands of the Air Council, they relied upon reports from MOs and neuropsychiatric specialists. Squadron Leader Eric Jewesbury, a neuropsychiatric specialist compiled a report on the ‘work and problems’ of his neuropsychiatric facility in 1943 – LMF was highlighted as an issue that hampered efficiency.<sup>81</sup> Jewesbury believed that air crew out-patients were generally of good quality, as their selection ensured that they were of a better type of personality than some of the ‘constitutional neurotics’ in ground crew. The majority of these men were referred because ‘their fitness or willingness to withstand the stress of further flying [was] questioned.’ He believed, however, that the designation of ‘lack of moral fibre’ was inappropriate. Jewesbury argued that 21 per cent of cases under his care instead ‘lacked confidence’ to continue flying and that 79 per cent were suffering from debilitating neurotic symptoms.<sup>82</sup> He stated: ‘It is no part of the neuropsychiatrist’s function to label a man “lacking in moral fibre”. The doctor’s job is to state whether or not there is any medical reason why the man should not continue flying.’ Jewesbury therefore objected to the duty assigned to him for he was a medical doctor and should not be concerned with service discipline.

Jewesbury believed that the most difficult question for the neuropsychiatrist was to establish whether the man’s inability to continue flying was due to simple lack of

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<sup>79</sup> TNA, AIR 20/10727, ‘Report into the Psychological and Physical Stresses Imposed by Flight’ by D.D. Reid, September 1942, p. 12, cited in Jones, ‘LMF: The Use of Psychiatric Stigma in the Royal Air Force’, p. 448.

<sup>80</sup> Jones, ‘LMF: The Use of Psychiatric Stigma in the Royal Air Force’, p. 448.

<sup>81</sup> TNA, AIR 49/357, ‘The Work and Problems of a Neuropsychiatric Centre’, by E.C.O. Jewesbury, 1943, p. 24.

<sup>82</sup> *Ibid*, p. 3.

confidence or whether it stemmed from a ‘nervous predisposition or illness outside of his control.’ He preferred to use ‘lack of confidence’ as it did not imply cowardice and reflected the hours of flying undertaken. For instance, Jewesbury reported:

Case 8, for example, is that of a Warrant Officer, a navigator aged 26, who had flown 600 hours altogether and was on his second operational tour. His first tour of 27 sorties has been in Coastal Command. He encountered no undue stress during this work and he then became an instructor at an O.T.U. While at the O.T.U. he went on two “thousand bomber” raids. He was shot-up over Cologne and made a crash landing on return, but nobody was injured. His pilot got the D.F.C. On returning from Essen he was attacked by a night-fighter. He next transferred to a bomber squadron and went on two raids to Lorient. He said that he had become scared of flying and wished to be taken off operations. There was no personal history or family history of nervous instability. He felt fit, ate and slept well and had no symptoms of nervous disorder. His executive report stated that he was perfectly normal in conduct, efficient at his work and had shown no signs of nervous tension. He was not therefore regarded as a medical problem. Since he felt that he could not do any more operational flying he was advised to discuss the matter with his C.O.<sup>83</sup>

Thus Jewesbury rejected the application of LMF, as it did not take into consideration individual differences nor service history. According to Jones, this view was common and doctors were generally reluctant to send an airman down the LMF route if he had proven himself in combat.<sup>84</sup>

### ***Flying Personnel and Lack of Moral Fibre***

The ruthless nature of LMF also provoked strong opinions from flying personnel. For instance, Wireless Operator/Air Gunner Sergeant Ted Hitchcock questioned the severity of the procedures. He remembered feeling flabbergasted by a particular case of LMF. In 1943, a decorated pilot refused to fly the Bristol Buckingham, a medium bomber, which was nicknamed ‘The Abortion’ and described as flying ‘like a ruptured duck.’ He stated:

... the skipper [pilot] had a job to land it, the conditions were really bad and he put it down and said “I am not flying the thing anymore” and he went to the bloke in charge and he said “I’m not flying this anymore”. He was reported to the station

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<sup>83</sup> TNA, AIR 10/6657, Report on the Health of the Royal Air Force for the Year 1939, June 1945., pp. 14-5.

<sup>84</sup> Jones, ‘LMF: The Use of Psychiatric Stigma in the Royal Air Force’, p. 447.

commander and he had to go and see him and he said, he wanted him to sign an LMF form. This was a bloke here on his second tour, a DFM [Distinguished Flying Medal], he got his DFC [Distinguished Flying Cross] later and he wanted him to sign an LMF form, lack of moral fibre and he said I'll get another pilot sent in for your crew.<sup>85</sup>

Regardless of rank, decoration or previous history of valour, an officer or airman who refused to fly would be open to accusations of LMF.

While some flying personnel were questioning the severity of the measure, others questioned if it was necessary. Flying Officer Arthur Kirk, a Mosquito pilot, never came across any cases of LMF and believed that it was a Bomber Command problem. He stated that it was often discussed in the RAF's monthly magazine but thought it was a rare occurrence and there was nothing to be gained from it.<sup>86</sup> Flight Lieutenant Victor Hester shared this view. As a pilot with Coastal Command, he never came across any cases of LMF but heard that there were measures in place. He believed that enough men wanted to be pilots and that there would be a large enough pool to replace those who were unfit or did not want to fly anymore. He considered LMF completely unnecessary.<sup>87</sup> Indeed out of the 64 interviews that discussed LMF, 15 approached the necessity of the policy and eight interviewees felt it was unnecessary. Those who thought it necessary also held strong opinions.

Aircraftsman Stanley Wright recalled the case of a Sergeant who had refused to fly following particularly heavy losses. He viewed this refusal as 'chickening out' and believed that the servicemen of the RAFVR had a relatively easy service career:

...if you like to look at this, we were all in the VR [Volunteer Reserve] because we wanted to be. We didn't want to go marching around on our flat feet in the infantry. I had one short trip in a tank and I didn't enjoy it...at least in the air force...you slept in comfortable sheets, you were fed regularly...you lived comfortably...you had a bill to pay didn't you?<sup>88</sup>

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<sup>85</sup> IWM, Sound Archive, 30005, Hitchcock, Ted, June 2007.

<sup>86</sup> IWM, Sound Archive, 10621, Kirk, Arthur Thomas, February 1992.

<sup>87</sup> IWM, Sound Archive, 12426, Hester, Victor Albert, February 1992.

<sup>88</sup> IWM, Sound Archive, 11744, Wright, Stanley Francis, December 1990.

It is worth mentioning, however, that Wright was a member of ground crew and had never flown on operations.

Another airman believed that LMF was a necessary measure. In 1944, Bomb Aimer Arthur Smith was accused of LMF. He had frozen in flight due to his fear of flying and could not complete his duties. On return to the station, he was examined by an MO, who explained the penalties and offered him a chance to redeem himself. Smith took the opportunity and was grateful for it:

...when I saw the alternative...what was actually going to happen to me, I realised that I would rather face my fear and not be a coward for the rest of the tour and rather than what I thought would happen, I would be branded a coward for the rest of my life and that's the way it seemed to me...you were courageous or you were yellow...and that is what I realised I had done, I had ducked out and let everybody down. I hadn't conquered my fear and I decided I'd rather conquer my fear than face life having turn my back on it... I've got no complaints about the way I was treated because of my fear but certainly some people who cracked like I did have room for complaint. I was given the choice of coming back, as far as I can make out, this was very rare, I think very few people came back.<sup>89</sup>

For Smith, LMF was a positive measure. He was given the opportunity to face his fear and avoid the stigma of cowardice, which was very important to him. It also implies that his fear of being branded LMF was greater than his fear of flying. This view was shared by other flying personnel.

LMF was viewed as a particularly effective deterrent. Bomber Command MO Victor Tempest recalled that 'a Wing Commander with a row of medals once confided: "I am a coward not because I am frightened to fly operationally, but because I am frightened to let anybody know that I am frightened."<sup>90</sup> The threat of LMF had effectively silenced this man. Arthur Kirk, who did not believe that LMF was necessary, thought that flying personnel feared being accused of it and went to great lengths to avoid examination.<sup>91</sup> He

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<sup>89</sup> IWM, Sound Archive, 13048, Smith, Arthur, Barraclough Carey, 1992.

<sup>90</sup> V. Tempest, *Near the Sun : The Impressions of a Medical Officer of Bomber Command* (Brighton, 1946), p. 51.

<sup>91</sup> IWM, Sound Archive, 10621, Kirk, Arthur Thomas, February 1992.

did not specify which aspects airmen were afraid of nor the methods undertaken to avoid

it. Flying Officer Thomas Tredwell also believed that it was an effective deterrent:

You know the term LMF, Lack of Moral Fibre? That was feared by a lot of people; more than going on ops, perhaps. Being branded with LMF, which was a rather disgusting thing, I felt, particularly if people had done a number of operations and their nerves had simply gone, they couldn't take it. As you probably know they were stripped of all rank, all their documents were endorsed 'LMF' and they were reduced to the ranks and posted to some of the worst situations. So I understand.<sup>92</sup>

Tredwell's evidence suggests that the penalties associated with LMF acted as an effective deterrent.

Many officers viewed LMF as an important disciplinary measure, particularly COs who were responsible for dispatching crews and maintaining discipline and combat efficiency. Peter Drury, a Squadron Commander, admitted to sending the 'odd people off on LMF'. He justified his actions:

that kind of thing [LMF] was in itself not very useful from the point of view of the morale of the squadrons...it's a way out, it wasn't easy to do that and if you've got a chap who was appearing to be, shall we say, trying to take the easy way out, which a lot of the people would like to have done, then it was necessary to use this big stick, the LMF stick and it wasn't a very pleasant business to do.<sup>93</sup>

Furthermore, it was believed that LMF was contagious and could spread through an entire squadron, as Brandon has suggested.<sup>94</sup> Squadron Leader John Aitken believed that LMF cases, whether medical or disciplinary in nature, could quickly become 'epidemic':

We could never keep on anybody who thought it for one moment because you know...it's a very catching business and if that had happened in any way it would have been quite wrong therefore. There was this horrible thing LMF...it became a bit of a joke...the fact of the matter was it could have become a disease, unless it had been stopped.<sup>95</sup>

To COs, LMF was therefore a useful tool for maintaining discipline but also dangerous from the point of view of conserving morale.

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<sup>92</sup> IWM, Sound Archive, 10743, Tredwell, Thomas Cameron, June 1989.

<sup>93</sup> IWM, Sound Archive, 22367, Bird, Peter Drury, January 2002.

<sup>94</sup> Brandon, 'LMF in Bomber Command: Diagnosis or Denouncement?', p. 127.

<sup>95</sup> IWM, Sound Archive, 2803, Aitken, John William Maxwell 'Max', Thames TV, 1972; See also: 14834, Andrew, Thomas Raithby, December 1994; 22367, Bird, Peter Drury, January 2002.

### *The Incidence of Lack of Moral Fibre, 1941-45*

With regard to figures for LMF, it is difficult to discern whether its application was commonplace or widespread. The Air Ministry's efforts to centralise the reporting of LMF were unsuccessful and official documentary evidence on the measure is limited. Moreover, the neuropsychiatric division claimed that some 30 per cent of LMF cases were disposed of without specialist consultation.<sup>96</sup> References to the measure are littered across a series of documents but some figures have emerged.

Reflecting on the experience of the division over the course of the war, Consultant in Neurology Air Vice-Marshal Charles Symonds, together with his research assistant Wing Commander Denis Williams, reported on the incidence of LMF cases investigated by the neuropsychiatric division. They cited a total of 1,029 cases covering the period 1942-45, showing that LMF was nowhere near as common as cases of mental and nervous diseases.<sup>97</sup> Psychoneurosis alone accounted for 4,387 cases in 1941, rising to 6,220 in 1942, 7,179 in 1943, 9,427 in 1944, and 7,914 in 1945.<sup>98</sup> Of these figures, a total of 8,402 were aircrew personnel. What is more, LMF in aircrew had dropped from 416 from the 1941-42 period to 306 in 1944-45.<sup>99</sup> Therefore, the neuropsychiatric division did not process a high number of LMF cases.

Other reports also commented on the relatively low incidence of LMF. In a confidential report, Wing Commander W.C.J. Lawson stated that 2,726 personnel were classified as LMF from a total of 4,039 cases.<sup>100</sup> Jewesbury, on the other hand, reported in

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<sup>96</sup> Wells, *Courage and Air Warfare*, p. 205.

<sup>97</sup> TNA AIR 2/6252, FPRC Report 412 (1), 'The Occurrence of neurosis in Royal Air Force (aircrews), 1944-1945', by C.P. Symonds and D.J. Williams, 1945.

<sup>98</sup> These figures included cases in ground crew – distinctions have not been made within the sources: AIR 10/5569-5573, *Statistics on the Health of the Royal Air Force and Women's Auxiliary Air Force, 1941-1945*.

<sup>99</sup> TNA AIR 2/6252, FPRC Report 412 (1), 'The Occurrence of neurosis in Royal Air Force (aircrews), 1944-1945', by C.P. Symonds and D.J. Williams, 1945.

<sup>100</sup> The Lawson Memorandum remains in the possession of the Air Historical Branch. Wells was allowed access to this document and cited the figures: Wells, *Courage and Air Warfare*, p. 205.

his study of the period 1941-2, the medical cases at Rauceby outnumbered LMF cases by 4 to 1, showing that the vast majority were genuine cases of psychological disorder.<sup>101</sup>

From the limited figures it is clear that LMF was not perceived to be a widespread problem with contemporary commentators citing consistently low rates. Whether this can be taken as evidence of deterrence is difficult to discern. The scale of indiscipline could have been misinterpreted in 1940 but it is clear that neuropsychiatric disorders were a greater problem.

## **Conclusion**

The first year of the Second World War was disastrous for Europe and the RAF. Catastrophic daylight raids over the North Sea resulted in high losses of aircraft and lives, provoking the reassessment of tactics. The German army's rapid advance over the continent resulted in the deaths of thousands, the destruction of property, and the brutal oppression of survivors. The RAF attempted to counter their relentless assault in the skies of Western Europe but was not ready to face the Luftwaffe. The air force limped back to Britain and waited for the inevitable attack. The Battle of Britain almost destroyed Fighter Command in its entirety but a tactical flaw gave them the time to rebuild and eventually win the campaign. What is more, these early operations posed a major challenge to the confidence and morale of the force.

The RAF not only found itself challenged in terms of air power, the operations were taxing on psychological grounds. They were facing a highly-equipped and motivated enemy, stronger in numbers and always one step ahead. This challenged the force's elite self-image and conceptions of power. Flying personnel were faced with the gross realities of aerial warfare, in which meeting a horrific early death was a daily possibility. They had

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<sup>101</sup> TNA, AIR 49/357, 'Work and Problems of an RAF Neuropsychiatric Centre' by E.C.O. Jewesbury, p. 17.

to manage their fear and emotions for psychological survival. This was not an easy task, however, as the relentless nature of operations meant that many were physically and mentally exhausted. Privately, some flying personnel began to question what they were fighting for and if the casualties were truly worth the material gains. Such feelings were only exacerbated by a lack of appreciation from the other armed forces and a failure to change tactics. This resulted in a number of men breaking down under the strain.

The disastrous early operations exposed the propensity of flying personnel to mental and nervous diseases. The first neuropsychiatric casualties reported to sick quarters and it was the duty of the neuropsychiatric division to treat these men and return them to duty. On the whole, they were successful, with the vast majority of men returning to flying duties after a short period of treatment. The rate of discharge on the grounds of nervous and mental disease was never more than 30 per cent. Neuropsychiatric casualties were not a major cause for concern; indiscipline and malingering were the focus of the Air Council, who sought to devise a measure to deter men from this behaviour.

The draconian LMF measure was introduced to restore order by exposing those who were refusing to fly whilst taking into account medical reasons. The neuropsychiatric division was not involved in its construction but together with MOs, they played a crucial role in its application. Specialist medicine was shaped by service requirements once more and the Air Council dictated that medical personnel had to assume a disciplinary function. This measure was not welcomed by the consultants and specialists in neuropsychiatry, who thought that it subjected ill men to the stigma of cowardice, and argued that it was not their job to deal with disciplinary matters. Their concerns were largely ignored, for it was believed to be an effective deterrent but they could claim some success through the introduction of a new humanitarian category: 'lack of confidence.' Airmen felt that the measure was unnecessary but feared coming under its gaze, whereas officers believed that

it helped them to maintain authority. Despite conflicting opinions, this disciplinary measure operated with little revision until the end of the war

**Chapter 6**  
**'Flying Stress':**  
**The Classification of the Neuropsychiatric Disorders of Flying Personnel**

**Introduction**

Early operations exposed the propensity of flying personnel to neuropsychiatric disorders. Case numbers were rising in the first two years of the war but discipline was considered a greater problem. By 1941, however, the nervous and mental disorders of flying personnel came into sharp focus, as the war entered a particularly aggressive phase. The expert management of neuropsychiatric casualties was therefore vital in terms of manpower economy and combat efficiency. Following the Battle of Britain, the country was under siege, as the Luftwaffe mounted a series of bombing raids known as 'The Blitz.' These aerial strikes rendered severe material damage to major cities and morale, and civilian casualties were high.<sup>1</sup> It was imperative that Britain responded to the aerial onslaught and the RAF was given this task.

Politicians and the Air Staff, however, had very different ideas on how to retaliate most effectively. The politicians, guided by public opinion, wanted swift and brutal revenge on Berlin. The Air Staff, however, were acutely aware that to reach the German capital, British aircraft had to fly five times as far as the Germans attacking London. They therefore favoured raids on objectives within easier range. A compromise was reached. The Air Staff agreed that Berlin was a priority target but insisted that attacks should be on precise objectives, such as industrial areas, rather than the population at large. Indiscriminate attacks on the population were considered extravagant and successful raids on industrial plants would be just as effective in undermining morale. From 1941, Bomber Command began regular night-time raids on industrial targets in Germany, which

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<sup>1</sup> R. Mackay, *Half the Battle: Civilian Morale in Britain during the Second World War* (Manchester, 2002), p. 91.

increased in frequency and intensity as the war progressed. What is more, Coastal Command was occupied with German naval blockades in the Atlantic, and the new Desert Air Force was charged with the destruction of Italian forces at Tobruk.<sup>2</sup> The RAF had therefore assumed a strategically important offensive role in a number of theatres. But if the experiences of 1939-40 were the litmus test, the force would not fare well in terms of neuropsychiatric casualties.

From 1941, medicine would play an increasingly important role in management of aerial warfare. Flying personnel had to operate at the peak of their efficiency and the medical service attempted to sustain this through prevention and rapid treatment. The neuropsychiatric division was duty-bound to maintain manpower and combat efficiency but the specialists were mindful of early casualties. Neurotic illness was a cause for concern but so were cases of 'indefinite etiology.' The latter reflected the state of medical knowledge on the neuropsychiatric problems of flying, which presented challenges to prophylaxis and treatment. 'Flying stress', in particular, came under scrutiny, for it was ill-defined and had a variety of signs and symptoms. The neuropsychiatric division was not clear on what constituted flying stress and this did not make for efficiency in prevention and treatment. Consultant in Neurology, Group Captain Charles Symonds was vehemently opposed to the diagnosis of this syndrome and called upon the medical service to research its components for the first time.

Flying stress was not merely the concern of the neuropsychiatric division; it affected combat efficiency. If men were suffering from the effects of stress, they were not performing at their peak and this deeply concerned operational commanders.<sup>3</sup> It was also the concern of the RAFMS as a whole, for they were duty-bound to protect health and morale by medical means. The DGMS, Air Marshal Sir Harold Whittingham, deemed

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<sup>2</sup> Richards, *The Royal Air Force 1939-1945, The Fight at Odds*, i, ch. 8.

<sup>3</sup> TNA, AIR 20/10727, Memorandum From Headquarters No.3 Group to all Air Force Stations on the Medical Supervision of Flying Personnel, 31 October 1940.

interdisciplinary research vital to address the problem. The matter was passed to the FPRC and a dedicated sub-committee was formed to consider the problem of flying stress.<sup>4</sup> This interdisciplinary group embarked upon a radical programme of research in order to fully investigate the stresses of flying and the neuropsychiatric disorders of service personnel. This was the first major neuropsychiatric initiative, which had implications for the practice of neuropsychiatry, the treatment of airmen, and the understanding of disorders affecting aircrew.

This chapter will examine the research process by which the neuropsychiatric disorders of flying personnel were investigated, with specific reference to flying stress. This was the first systematic attempt to understand the physical and psychological strains of operational flying to improve efficiency in the diagnosis and treatment of conditions. The neuropsychiatric division did not act alone in this respect for they were supported by the interdisciplinary FPRC, who had the relative expertise to research constituents of the disorder. The chapter will examine the objections of the neuropsychiatric division to the use of the diagnosis, particularly those outlined by vociferous opponent Group Captain Charles Symonds. Its common usage was considered to be potentially damaging to the health and morale of the RAF, and the professional standing of neurologists in the service. The FPRC investigated this quasi-medical disorder, which resulted in a greater understanding of its objective and subjective symptoms. This led to the reclassification of flying stress. The chapter will move to assess the impact of the removal of flying stress from diagnostic language by examining the use of terminology in subsequent months, the re-education of MOs, and the impact of the understanding of the stresses of operational flying on the prevention and treatment of disorders. It is therefore a case-study of how medicine and neuropsychiatry were employed to improve the efficiency of the RAF.

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<sup>4</sup> TNA, AIR 20/10727, Minutes of the First Meeting of the D.G.M.S.'s Committee on Flying Stress in Aircrews, 4 February 1941, p. 1.

## **Investigating flying stress: interdisciplinary research and the Flying Personnel Research Committee**

From October 1940, flying stress represented a challenge to combat efficiency. The DGMS had become acutely aware of the problem, for he was passed a memorandum from the Headquarters of No. 3 Group, who were concerned about the psychological stresses of crashes and emergencies. The memorandum stated: ‘Cases have recently occurred in which air crews have suffered from some degree of emotional shock following a crash or an unpleasant experience, such as having to abandon their aircraft, and who have subsequently developed signs of flying stress.’<sup>5</sup> A report was also compiled in 1940, which was based upon six weeks of research at operational stations, including interviews with MOs, pilots, and crew members of Fighter and Bomber Commands. It described flying stress as a ‘condition that may be observed during the flying life of an individual, as the result of abnormal strain being placed on a normal individual.’ This disorder was observed in pilots and aircrew alike, and was particularly common in operational crews. ‘Mental exhaustion’ was the chief symptom and the writer believed that this would occur at around 125 hours of flying. The relentless pace of fighting and high rates of attrition only exacerbated the problem. The report acknowledged that it was difficult to find accurate figures of the condition but stated: ‘At the present time, while a problem, is not a severe one, during the “blitz” of June, August, and September, 1940, there were approximately 250 cases requiring hospitalization.’ The report ended on a crucial note, however, which conveyed a fear of this condition spreading like a disease:

It must be emphasized that once flying stress has developed, that no attempt should be made to treat it in the Squadron by giving sick leave etc. This, in fact, may be harmful. He should be treated in a suitable hospital. Once having been removed from flying status, he should not be allowed to remain at the station among tired men – the condition is infectious.<sup>6</sup>

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<sup>5</sup> TNA, AIR 20/10727, Memorandum From Headquarters No.3 Group to all Air Force Stations on the Medical Supervision of Flying Personnel, 31 October 1940.

<sup>6</sup> TNA, AIR 20/10727, Report on Flying Fatigue and Stress as Observed in the R.A.F., c. 1940.

It was therefore essential to understand and treat the disorders of flying personnel to preserve manpower and combat efficiency. The condition was potentially ‘contagious’ and could destroy the morale of a squadron.

Whittingham was presented at once with an array of different symptoms, all under the banner of flying stress. The belief that it could spread conveyed a fear of epidemic neurosis and there were similarities with the controversial LMF measure. This was enough to force him to action. In February 1941, the DGMS formed a sub-committee of the FPRC to fully-investigate the problem of flying stress. It was composed of a variety of medical experts with relevant knowledge and expertise, including Group Captain Charles Symonds. At the first meeting, members were encouraged to discuss the modification of existing psychological literature and advice on flying stress; means to lessen the syndrome by recommending minimum periods of leave to avoid neurosis and fatigue, and the number of flying hours to be undertaken by bomber crews. In Bomber Command, 65 sorties had been cancelled over the course of nine months on the grounds of ‘indisposition’ and it was suspected that flying stress was the cause. Suggestions for suitable research projects in the areas of neurology, psychology, and physiology were sought and members were encouraged to familiarise themselves with the work of other branches. As stress was considered to be have a physiological basis as well as neuropsychiatric effects, interdisciplinary work was encouraged.<sup>7</sup> The major work had therefore begun with Whittingham at the helm, encouraging research into neurosis and fatigue. His use of these terms was significant as flying stress was beginning to be unpacked into specific disorders, guided by the reports of the syndrome. As a result, extensive research was conducted into the causes, symptoms, and prevention of such conditions.

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<sup>7</sup> TNA, AIR 20/10727, Minutes of the First Meeting of the D.G.M.S.’s Committee on Flying Stress in Aircrews, 4 February 1941.

### *The Use and Abuse of Flying Stress*

Consultant in Neurology, Group Captain Charles Symonds was chosen to investigate the neuropsychiatric aspects of flying stress. He was appalled by the use of this ill-informed, pseudo-scientific label. The correct use of terminology was essential following the shell-shock debacle. It prevented confusion in diagnosis and the spread of epidemic neurosis. Use of the term flying stress, however, reflected the mistakes of the past and doomed the air force to repeat them.<sup>8</sup> Symonds' obsession with correct terminology could also be linked to his character. From his early career, he gained a reputation for being a pedant and a perfectionist in equal measure. Whilst training under eminent neurologist Gordon Holmes, he was scolded for his use of elaborate and impenetrable language in his description of patients. On one occasion, a frustrated Holmes twisted Symonds' arm violently behind his back and screamed: "Don't use long words like that! Describe what you observe!"<sup>9</sup> This was a habit that he refused to relinquish, however, and it would have ramifications for the practice of neuropsychiatry in the RAF.

Symonds began the research of the neuropsychiatric aspects of flying stress by reviewing the literature and outlining his objections in a report to the FPRC entitled: 'The Use and Abuse of Flying Stress.' Symonds stated that the problem of nomenclature became apparent in the interwar years with different meanings attached to confounding symptoms. He believed that the reasons were not far to seek:

At that time, aviation was in its infancy and little was known of the effects of altitude and gravity upon the human body. When flying personnel developed functional disorders of any kind it was at once assumed that this was a physical effect of the new and unknown factors which were called flying strain or flying stress.<sup>10</sup>

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<sup>8</sup> C.P. Symonds, 'The Use and Abuse of the Term Flying Stress', in AP 3139, *Psychological Disorders of Flying Personnel in the Royal Air Force: Investigated during the War 1939-1945* (London, 1947), p. 19.

<sup>9</sup> Wellcome Library (hereafter WL), PP/CPS/3, Private Papers of Charles Putnam Symonds: Memories of Gordon Holmes, n.d.

<sup>10</sup> C.P. Symonds, 'The Use and Abuse of the Term Flying Stress', in AP 3139, p. 19.

Thus flying stress was the product of a general lack of knowledge and understanding of the effects of aviation on the mind and body. Various disorders were arranged neatly under this heading for convenience and this caused confusion in diagnosis. Crucially, Symonds' assessment suggested that earlier research had mistakenly linked the conditions to operational flying. This implied that the men were suffering from disorders observable in civilian life that were merely brought on by the strains of flying.

Symonds firmly objected to the use of the term 'stress' in this label for research into the condition did not correspond to accepted understandings of 'stress' and 'adaptation.' These ideas rose to prominence from the late nineteenth century, when there was a belief that the body was in a state of equilibrium, which could be disturbed or imbalanced in periods of ill-health. French physiologist Claude Bernard, for instance, argued that the body required a perfect internal environment to allow organs to survive and function correctly. Complex organisms would therefore have to compensate for changes in the external environment that could have a negative impact on bodily functions.<sup>11</sup> The physiological focus informed the work of later writers, who took a mechanistic view of disease. Physical and psychological disorders were understood to be the product of physiological attempts to adapt to environmental conditions. This indicated a belief that the body worked on the principle of coordinated biological activity and that stress was an external, environmental variable.<sup>12</sup> The use of the term stress in relation to flying stress endowed the condition with a false scientific specificity, as accounts of the condition conflicted with accepted definitions of stress and adaptation. Symonds objected to its misuse and argued that flying stress caused more confusion than assistance in the diagnostic process.

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<sup>11</sup> Jackson, *The Age of Stress*, p. 64.

<sup>12</sup> See Chapter 2.

Symonds criticized the flying stress literature on the grounds of fundamental errors in practice and confusion in thought. The psychological problems of aviation had not been surveyed by practitioners with experience in psychiatry or neurology; they were merely the observations of general medical officers working in the Great War. This meant, he argued, that their understanding of conditions was basic and often ill-informed. This led to great confusion in thought and terminology, which meant that some of the research would not have a place in modern psychiatry.<sup>13</sup> His critical review of the literature is not only illuminating in terms of the state of medical knowledge and problems of production. It also reveals trends in psychiatric thought and practice, and Symonds' personal opinions – all of which would inform research into flying stress.

Symonds reviewed the work of Birley on 'Temperament and Service Flying', which framed flying stress as a 'symptom picture of psychological disturbance.' Like Symonds, Birley was critical of flying stress, as he believed that temperamental unsuitability should be considered, as well as the 'strain of flying' – a positive family or personal history of temperamental problems could have a bearing on the development of the condition. If a pilot exhibited symptoms of flying stress, he did not have the temperament to meet the demands of operational flying.<sup>14</sup> He concluded his report with the remark: 'certain conditions which are at present called flying stress could more appropriately be designated by the title 'flying distress.' Symonds interpreted this as an admission that flying stress was only applicable to a state caused by the excessive strain of flying duties; it should not be applied if a constitutional defect was a contributing factor.<sup>15</sup> Birley's explanation reflected a failure to adapt to operational conditions but stress was

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<sup>13</sup> C.P. Symonds and D.J. Williams, 'Critical Review of the Published Literature', in AP 3139, p. 1.

<sup>14</sup> TNA, Medical Research Council Records (hereafter FD) 4/53, J.L. Birley's Report on Temperament and Service Flying, (1920).

<sup>15</sup> Symonds, 'The Use and Abuse of the Term Flying Stress', p. 18.

understood to be the product and not the cause of illness. This rejected the accepted theories of stress and conveyed confusion.

Symonds turned to Anderson's conceptions of flying stress, which reflected the trend for mechanistic explanations of stress. He framed flying stress as a physiological complaint: the result of the cumulative effects of strain upon the nervous system and the respiratory and circulatory mechanisms.<sup>16</sup> Again, this definition implied that stress was understood to be the product rather than the cause. He had identified the effects of strain as precipitating factors but used the term stress incorrectly. Symonds also reviewed the work of Gotch, who defined flying stress as a number of different conditions, including 'aero-neurosis, conditions of tiredness or staleness, toxic state, oxygen want, air sickness, heterophobia and constitutional pathology', as well as having mental origins.<sup>17</sup> Gotch had effectively pigeonholed a variety of different conditions under the convenient banner of flying stress. Symonds' assertion that the nomenclature had caused confusion was therefore justified: flying stress was not understood, nor did it tally with accepted theories of stress and adaptation.

Nomenclature was not the only concern of Symonds'; he feared that flying stress was too closely-related to another burdensome condition. Shell-shock, a syndrome that the flying services had taken measures to distance themselves from, was remarkably similar to flying stress. During the Great War, the causes of both flying stress and shell-shock were entirely unknown, as they were both 'new' conditions developed in the foreign environment of mechanised conflict. Shell-shock was designated as such because it was believed that high explosive artillery shells had damaged the nerves. Flying stress, on the other hand, was associated with the nervous and psychological stresses of operational flying. Both came to be used to describe syndromes rather than causes. The War Office

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<sup>16</sup> Anderson, *Medical and Surgical Aspects of Aviation*, pp. 54-66.

<sup>17</sup> Oliver Gotch, 'The Aero-Neuroses of War Pilots' in Anderson, *Medical and Surgical Aspects of Aviation*, pp. 67-95.

Committee of Enquiry into Shell-Shock recommended that the term should be eliminated from official nomenclature and RAF officers contributed to discussions. Symonds argued, however, that the evidence that they gave differed in no material respect from those observed in soldiers. He believed that this was a tacit admission that shell-shock and flying stress were in fact the same syndrome – ‘our old friend shell-shock in disguise.’<sup>18</sup> The Ministry of Pensions ensured that shell-shock disappeared from nomenclature by banning quasi-medical terminology and those which were likely to become ‘catch-words’ – a fearful reaction in light of the ‘spread’ of the condition.<sup>19</sup> Flying stress, however, had endured and therefore negated the RAFMS’ commitment to preventive recommendations: it was non-specific, unscientific, and had already become a catch-word in the medical profession. Symonds firmly believed that flying stress had to be eradicated to avoid the problems associated with shell-shock.

Objections to flying stress were also intertwined with matters of professional standing. The use of such a term posed a threat to the professional credibility and scientific authority of neurology and its practitioners. During the interwar years, neurology and its branches gained political favour. Their unique skills made them valuable to the state, argued Casper, which was forced to care for large numbers of soldiers who were physically and mentally damaged by the Great War. Neurologists were able to provide expert care to persons suffering from conditions associated with head and spinal injuries, such as paraplegia and paralysis. This raised the profile of neurology and its associated branches, as they could assist in the treatment of these conditions.<sup>20</sup> Furthermore, RAF consultants in neurology and neuropsychiatry were making considerable contributions to knowledge in their respective fields at this time. The use of

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<sup>18</sup> Symonds, ‘The Use and Abuse of the Term Flying Stress’, p. 19.

<sup>19</sup> TNA, PIN 15/2401, Neurosis in Wartime, October 1939, pp. 1-2.

<sup>20</sup> S.T. Casper, ‘The Idioms of Practice: British Neurology, 1880-1960’, (Univ. College London Thesis, 2006), pp. 139-158.

unscientific terminology, however, threatened to damage this elite status, as flying stress was non-specific and did not reflect a commitment to advancing medical knowledge.

### ***The Investigation of Flying Stress in Bomber, Coastal, and Fighter Commands***

The investigation of the neuropsychiatric constituents of flying stress was conducted at operational stations. It was essential to understand the factors contributing to stress in aircrews and this could only be done by visiting airfields. Symonds, accompanied by research assistant, Wing Commander Denis J. Williams<sup>21</sup>, mounted preliminary investigations into the 'incidence and causes of flying stress' and based their research on the following premise:

Flying stress represents the sum of all those factors which constitute the mental and physical strain of flying under war conditions. The effects of this load upon a man vary in relation to its weight and to the mental and physical stamina of the individual. When the load is too heavy for a man to carry, its effects are revealed by signs of fatigue, anxiety or inefficiency, and in other ways...

The researchers made it clear that the term flying stress was not used to describe the ill-effects but was 'a synonym for the load or strain of war flying.' They therefore researched the 'signs' of operational stress and the 'load' which aircrews had to carry: the former being the effects of flying stress on the individual and the latter, the equivalent of flying stress e.g. the factors that contributed to the development of neurosis or fatigue. Between October and December 1942, Symonds and Williams visited operational stations in Bomber, Coastal, and Fighter Commands, and interviewed flying personnel and their commanders, and station and squadron medical officers, to gain information on the occurrence and nature of the signs and load. On the whole, the signs by which the effects

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<sup>21</sup> Denis J. Williams (1908-1990) was a qualified in medicine and surgery, and had undertaken training in neurology with Stanley Cobb at Harvard. He is credited as bringing the electroencephalogram (EEG) machine to Britain. During the war, he worked with Symonds at the Military Hospital for Head Injuries, Oxford, and acted as his research assistant. See: 'Featured Neurologist: Denis John Williams (1908-1990)', Dictionary of Neurology, 26 March 2011 accessed 02 June 2015: <http://www.dictionaryofneurology.com/2011/03/featured-neurologist-denis-john.html>.

of flying stress were recognised were similar across the commands but there were points of difference, owing to the nature of their duties.<sup>22</sup>

With regard to signs, 'loss of efficiency' was reported in all commands. The nature of this variable was similar in Bomber and Coastal Commands, where observers remarked that the standard of flying declined; foolish errors of judgement and gross carelessness led to bad landings and crashes, and on some occasions, complete catastrophe. In both of these commands, there was an apparent tendency to return home early from patrols or operations, citing mechanical failure or engine trouble as the reason. On other occasions, crews failed to press home the attack.<sup>23</sup> In Bomber Command, this caused squadron commanders anxiety, for they were under pressure to ensure that their crews were carrying out orders. Many investigated the problems themselves or provided encouragement to the crews to get them in the air. Inefficiency over-the-target was another sign, with crews wittingly or unwittingly jettisoning the bomb load on the fringe of the target or from a high altitude, where they were safe from flak.<sup>24</sup>

In Fighter Command, poor landings were also considered a marker of operational stress but a different sign, specific to the nature of the command, was reported. Squadron commanders explained that individual pilots would sometimes lag or break away from the formation in flight and this was considered to convey their loss of enthusiasm. Fear was also apparent. The cumulative effects of physical and mental stress weakened the resistance of fighter pilots to fear and considerable effort had to be made to control it. One officer reported that during the Battle of France, he recognised that a particular pilot had

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<sup>22</sup> The following report refers to their experience with Bomber Command but the method of gathering data was the same across the operational commands: TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', by C.P. Symonds and D.J. Williams, August 1942, p. 1.

<sup>23</sup> TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', p. 4; FPRC Report 412 (h), 'Personal Investigation of Psychological Disorders in Flying Personnel of Coastal Command', by C.P. Symonds and D.J. Williams, December 1942, p. 1.

<sup>24</sup> TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', pp. 4-5.

reached his limit: he sweated profusely on entering an aircraft and complained of insomnia. He carried on regardless and became a decorated pilot.<sup>25</sup>

A commonality between the commands was the belief that it was easy to detect these signs and that it was essential to take action. In Bomber Command, for instance, a squadron commander stated: ‘You can usually tell when a man has had enough...He either takes undue risks or becomes over-cautious. If you study a man carefully you will find that he behaves rather differently during operations.’<sup>26</sup> This was dangerous and could end in the loss of an entire crew. In Coastal Command, a failure to react was reported and an experienced crew crashed into a hillside near the station.<sup>27</sup> The signs were therefore obvious in each of the commands.

As per the DGMS’ instructions, the operational limit was also discussed. The length of operational tours varied between the commands – in Bomber and Fighter Commands, the first operational tour was set at 200 hours but in Coastal Command, it varied between aircraft and duties. In Fighter Command, 200 hours was, on the whole, considered satisfactory but those who criticised it emphasised that no consideration was taken of stress encountered during a tour. Fighter pilots could be engaged in long or short trips over the sea, sweeps or convoy work, shallow or deep penetration, and engaged in aerial combat. Furthermore, it did not take into account individual capacity for strain.<sup>28</sup>

Personnel of Coastal Command persistently criticised the operational limit. The nature of duties in the command made it difficult to reach the specified tour length. One medical officer remarked: ‘it would take up to 18 months to do 1,000 hours in Catalinas

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<sup>25</sup> TNA, AIR 57/8, FPRC Report 412 (g), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Fighter Command’, by C.P. Symonds and D.J. Williams, August 1942, pp. 1-2.

<sup>26</sup> TNA, AIR 57/8, FPRC Report 412 (f), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command’, pp. 4-5.

<sup>27</sup> TNA, AIR 57/8, FPRC Report 412 (h), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Coastal Command’, p. 1.

<sup>28</sup> TNA, AIR 57/8, FPRC Report 412 (g), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Fighter Command’, p. 2.

[flying boats] and this station is so isolated that this should be taken into account.’ A Flight Commander in a Photographic Reconnaissance Unit said that in 13 months he had just passed half of his tour and it was the ‘monotony which affected him rather than the nature of the operations.’ They firmly believed that the operational limit should take into account these differences, when deciding to rest and rotate crews.<sup>29</sup>

In Bomber Command, 200 hours was generally considered to be satisfactory. A MO reported that he had never heard of anyone taken off before 200 hours without disciplinary action. There was a general feeling, however, that the limit should be flexible to take into account differences between squadrons and the stress faced on operations.<sup>30</sup> Symonds and Williams had therefore found that the operational limit was too rigid and prioritised standardisation at the expense of the health of aircrews.

The researchers also investigated the ‘load’ in some detail. They found that there were special ‘loading factors’ in Fighter Command. In the day, long sweeps over the sea and enemy-occupied territory were cited as particularly stressful and this was often coupled with anxiety over mechanical failure and petrol shortage. Anticipation was another contributory factor and was often considered worse than flying on the actual operation. One pilot explained: ‘The greatest strain is hanging about before operations and having them postponed – then getting keyed up to a pitch and then brood.’ Long periods of operational inactivity were also cited but this affected far less personnel.<sup>31</sup>

The load carried by Coastal Command was specific to their type of duties. Strains imposed by the weather, flying over the sea, long trips, and subsequent fatigue, were considered to be much more taxing than in the other commands. Commanders believed

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<sup>29</sup> TNA, AIR 57/8, FPRC Report 412 (h), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Coastal Command’, pp. 2-3.

<sup>30</sup> TNA, AIR 57/8, FPRC Report 412 (f), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command’, pp. 8-10.

<sup>31</sup> TNA, AIR 57/8, FPRC Report 412 (g), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Fighter Command’, p. 2.

that the sheer monotony of the duties was the most important factor: 'Miles and miles of flying over the water with nothing to look at, staring to look for something with no idea of where it will appear. The desire to take half an hour off is strong.'<sup>32</sup>

In Bomber Command, the character of the load was varied owing to the greater number of aircrew. The problem of anticipation experienced in Fighter Command was cited as a particular strain but weather was also high on the list. The weather could have a demoralising effect, particularly over the target when poor visibility compromised accuracy and stopped crews from seeing the results of their raid. The hazards of enemy defences were also mentioned, particularly the nature and intensity of the defences. As one squadron commander put it: 'You would go crackers if you were kept going to Essen or Kiel, whereas Bremen is easy.' On the whole, the most demoralising was enemy searchlights because they were obviously looking for the aircraft and the effects of being 'coned' were so serious.<sup>33</sup> Other Bomber Command personnel had specific fears, such as sea-crossings, flak, and detection by searchlights.<sup>34</sup> Symonds and Williams therefore found that the load was varied and this was due to the nature of the duties of each of the commands.

Factors affecting the ability of an individual to carry the load were also explored. Physical factors were mentioned in all three commands, particularly the effects of fatigue and cold. In Fighter Command, the fatiguing effects of flying at high altitude were frequently mentioned: 'You are tired, limp and cannot be bothered, so you sink into a chair, your muscles feel flabby; you have not the physical energy to pick up a book...you

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<sup>32</sup> TNA, AIR 57/8, FPRC Report 412 (h), 'Personal Investigation of Psychological Disorders in Flying Personnel of Coastal Command', pp. 3-4.

<sup>33</sup> 'Coned' was RAF slang and can be described as follows: 'when one searchlight, often radar controlled, picked up an aircraft all of the others in the target area would swing onto that aircraft, thus "coning" it - then the flak would be "poured into the cone"'. Please see: 'Glossary of RAF Slang and Terminology', Nature Online, accessed 22 June 2015 at <http://natureonline.com/37/56-ap4-glossary.html>.

<sup>34</sup> TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', pp. 11-13.

feel absolutely weak and washed out, and just want to go to sleep.<sup>35</sup> Naturally, this was a particular issue in Bomber Command, as they flew at high altitudes as a matter of course, and MOs took particular care to ensure that crews were not being overworked.<sup>36</sup> Other factors mentioned were the importance of good leadership, training, and recognition. All three of these factors had a morale-boosting effect and convinced flying personnel that they could trust their leaders, were competent, and doing an important job. These variables were particularly important to the understanding of flying stress, as recommendations could be made on prevention. Only some of them could be addressed by medical means, however, and this dictated the research undertaken by the FPRC.

### ***Research into fatigue and neurosis***

The results of the research conducted by Symonds and Williams led to a better understanding of the physical and psychological strains of operational flying. They had evidence of a number of variables that contributed to ‘flying stress’ and these broadly supported the research undertaken by the FPRC. Some practitioners made general observations on the ‘condition’, whereas others took certain aspects and analysed them in detail. An example of the latter was fatigue. This condition was commonly cited in reports of flying stress and was a concern for concern from the Great War. In 1920, Birley stated that fatigue was a major cause of human error and therefore, a cause of crashes in the flying services. Fatigue, he argued, was the product of cumulative mental conflicts provoked by the stress of combat flying. It was therefore a functional disorder, which meant that aircrew were not working at their peak.<sup>37</sup> The mental conflicts described were

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<sup>35</sup> TNA, AIR 57/8, FPRC Report 412 (g), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Fighter Command’, p. 3.

<sup>36</sup> TNA, AIR 57/8, FPRC Report 412 (f), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command’, p. 13.

<sup>37</sup> Birley, ‘Goulstonian Lectures On the Principles of Medical Science as Applied to Military Aviation’, pp. 1147-51.

psychological in nature but by the late 1930s, the emphasis had shifted from emotional to physical factors. Regardless of its origin, Whittingham was determined to prevent fatigue from occurring for the sake of the maintenance of manpower and combat efficiency. To lose highly trained air crew in enemy action was inevitable during the war; losing aircrew to preventable illness was another matter entirely. The FPRC were therefore committed to identifying, and where possible, eliminating factors which contributed to fatigue.<sup>38</sup>

Flying Officer C.B. Willie of the RAF Physiology Laboratory conducted one of the first studies of fatigue for the FPRC. He reported that in the summer of 1940, it was found that those continually engaged in altitudes of 25,000 feet became ‘unduly fatigued and showed a marked disinclination for exertion.’ These men tended to sleep between patrols, were generally irritable, and lacked appetite. Although fatigue was understood at that time to be associated with the increased attention necessary to fly at high altitudes and to avoid surprise by the enemy, Willie hypothesised that the height itself had an impact upon the body quite apart from oxygen deprivation. The effects of high flying on three volunteer Spitfire pilots were measured, who were exposed to an altitude of 32,000 feet for 45 minutes, over the course of a week. No changes were made to their daily routines but in flight, oxygen deprivation was eliminated by turning on the supply at 10,000 feet. Physical and mental fatigue was measured by personal observation, daily questioning, and the testing of blood. Willie reported that all pilots noticed that they felt less tired after 45 minutes exposure, as compared to a patrol at a similar height for a shorter duration. Their appetites increased, they slept soundly, and had sufficient energy to amuse themselves between operations. With regard to pathological testing, no significant changes were found but at altitude, the blood pressure tended to rise. Willie concluded that providing oxygen deprivation was eliminated there was no evidence of a specific effect of height as a

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<sup>38</sup> TNA, AIR 58/547, IAM Report No. 615 on British Aviation Medicine During the Second World War: Fatigue, Flying Stress, and Accidents by M.H. Harrison and T.M. Gibson, June 1982, pp. 1-2.

factor in the development of fatigue. High flying produced this state by the extra demands on concentration required to control the machine in a 'rarefied atmosphere' and the extra strain of avoiding surprise by the enemy.<sup>39</sup>

The FPRC also called upon civil advisers to make their contribution to the study of mental fatigue. The Cambridge Psychological Laboratory, under the leadership Bartlett, undertook this crucial work. The neuropsychiatric division was not involved in this research but this was not a reflection on their abilities. The civil laboratory specialised in industrial psychology and mechanical methods of measurement, and had ready access to research subjects at a nearby Initial Training Wing. Physiological psychologist Dr Kenneth Craik designed an instrument that would help to measure the effects of fatigue in a simulated environment. The instrument was known as 'The Cambridge Cockpit', which was in fact, a real Spitfire cockpit with all controls and instrument panels intact. This device responded realistically to pilot input and the actions of the instrument were designed to be similar to a real flight. The pilot could therefore be sent on a simulated flight of any duration and throughout, his movements would be recorded and analysed afterwards.<sup>40</sup> Using this machine, the research team at Cambridge began to measure 'mental fatigue' and 'skill fatigue.' Studies operated on the premise that 'the task demanded must be complicated...and each of the subject's reactions must be registered; particular attention must be paid to behaviour in response to ambiguous, conflicting, or irrelevant stimuli.'<sup>41</sup>

According to Gibson and Harrison, the Cambridge Cockpit experiments were a positive response to Whittingham's request for the measurement of the effects of flying

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<sup>39</sup> TNA, AIR 20/10727, Study of Fatigue at High Altitudes by C.B. Willie, 1941, pp. 1-4.

<sup>40</sup> TNA, AIR 58/547, IAM Report No. 615 on British Aviation Medicine During the Second World War: Fatigue, Flying Stress, and Accidents by M.H. Harrison and T.M. Gibson, June 1982, pp. 16-7.

<sup>41</sup> TNA, AIR 49/376, FPRC Report No. 73, 1939.

fatigue, particularly in terms of how many hours a pilot could safely fly.<sup>42</sup> The psychologists hypothesised that fatigue was a major factor in pilot error and that this was frequent towards the end of a period of work. The experiments were carried out for three years and involved hundreds of subjects. The hypothesis, however, was not proven. The pilots certainly made mistakes but these could not satisfactorily be explained in terms of fatigue. What they did find, however, was that temperamental factors were of great importance in determining safety – ‘stability of skill under stress.’ The psychologists found that some pilots’ skills were affected adversely not just by external stress but in the anticipation of stress.<sup>43</sup> This paved the way for emotional studies of flying stress.

While early experiments on the physiological and psychological effects of fatigue were valuable, they were not enough to explain the problem of flying stress. They rejected emotional reactions to environmental stresses and the ways in which these could be prevented. Consultant in Neurology, Group Captain Hugh Burton believed that psychological states and physiological problems were inextricably linked, which meant that emotional explanations could not be discarded. In a report to the FPRC, he stated that to keep flying personnel at the ‘highest possible pitch of efficiency’ due care had to be exercised in the areas of physiological and psychological fitness. He continued:

These are so closely linked that it is of little avail to concentrate on one to the exclusion of the other. Dysfunction in the sphere of one is quite likely to manifest itself in the form of symptoms in the other. Great care is required in the assessment of a real causative factor, for symptoms cannot always be taken at their face value. A common error is the perfunctory treatment of some symptom in the mistaken view that it must have an organic basis, to the neglect of the fact that it may be significant of some underlying serious psychological state.<sup>44</sup>

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<sup>42</sup> TNA, AIR 58/547, IAM Report No. 615 on British Aviation Medicine During the Second World War: Fatigue, Flying Stress, and Accidents by M.H. Harrison and T.M. Gibson, June 1982, p. 20.

<sup>43</sup> Ibid.

<sup>44</sup> TNA, AIR 20/10727, ‘Diagnosis, Treatment and Disposal of Cases of Flying Stress and Psychoneurosis’, by H.L. Burton, 1941.

Symonds and Williams had discovered a wide-range of ‘loading factors’ that could produce psychological symptoms in flying personnel and these were investigated in some detail by the division.

Psychoneuroses were recognised constituents of flying stress and were commonly diagnosed in the RAF. Burton argued that the terminology was inherently problematic, as the psychoneuroses were not easy to define. They were ‘characterised by various symptoms, appearing in both the mental and physical spheres for which no complete explanation in organic terms can be discovered.’ Psychoneuroses were assumed to have a psychological origin and were the product of ‘mental disharmony.’ He cautioned, however, that the discovery of an existing stress did not justify jumping to the conclusion that the symptoms were due to this particular stimulus. Burton argued that it may have been a ‘dummy’ advanced to throw the investigator off track either wittingly or unwittingly by the individual. The effects of stress, he continued, depended upon the psychological constitution of the casualty. He described some as ‘lacking in imagination, self-confident, tough minded and inured to risks’, whereas others were ‘more vulnerable...more timid and sensitive, hyper-imaginative, and lacking confidence.’ The former type was more likely to outlast the latter, but even he could ‘degenerate’ as a result of prolonged physical or mental stress.<sup>45</sup> Burton had therefore demonstrated that any type of man could develop a psychoneurosis if he was worn down sufficiently. He therefore gave advice on the observation and prevention of psychoneuroses in war-time:

In time of war, the stresses become enormously increased, as regards both intensity and duration. The effects become cumulative owing to lack of opportunity for adequate recuperation. Once the individual has reached the limits of his endurance, his deterioration is rapid. The importance of countering stress as far as possible by appropriate measures, together with extra vigilance in watching for signs of deterioration is vital. Waste of personnel has to be avoided by every means. Physiological and psychological strains reset upon one another to establish a

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<sup>45</sup> TNA, AIR 20/10727, ‘Diagnosis, Treatment and Disposal of Cases of Flying Stress and Psychoneurosis’, by H.L. Burton, 1941, pp. 3-4.

vicious circle, which, if not broken early, will inevitably lead to accident or breakdown...It is essential to view the case as a whole, and not to pay too much attention to the one particular symptom.

According to Burton, psychoneuroses could take the form of hysteria, obsessional states, borderline states, and affective disorders, such as anxiety and depression. Like flying stress, the diagnosis of psychoneurosis was one of convenience rather than a specific disorder. Psychoneurosis was therefore a syndrome and had to be investigated in detail to understand its nature.

Each psychoneurotic condition had its own complex symptomatology. Hysteria, for instance, was characterised by a disturbance of the sensori-motor system, including blindness or deafness, loss of memory, fugues, and hysterical states. Obsessional states, on the other hand, were characterised by the occurrence of compulsive ideas and impulsive actions taking over the patient's consciousness, which he could not dispel without carrying them out. Phobias were common and caused considerable mental distress.<sup>46</sup> Flying stress was therefore composed of various psychoneuroses, which could not be classified under a catch-all diagnosis. What is more, these disorders were also common in civilian life, showing that flying was the precipitating factor but the conditions were not specific to it.

A MO from the RAF Hospital, Matlock reported to the FPRC on his experiences of flying stress between April and September 1940. He argued that there was evidence to suggest that the incidence of symptoms among flying personnel was directly proportionate to the duration of the period in which they had flown on operational duties. Two thirds of the personnel exhibiting symptoms showed evidence of predisposition. This was indicated by two main tendencies in their character: anxiety and timidity, which were borne of childhood experiences or family history. The MO outlined the operational work completed by the flying personnel before they were taken off duties and referred for

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<sup>46</sup> TNA, AIR 20/10727, 'Diagnosis, Treatment and Disposal of Cases of Flying Stress and Psychoneurosis', by H.L. Burton., pp. 8-10.

treatment. In 25 personnel of Bomber Command, for instance, the average number of sorties before breakdown was 12. The pre-disposed, however, had deteriorated in efficiency before coming off flying duties. In contrast to Burton's study, there were very few cases of psychoneurosis – only five in total and the majority of them were concerned about personal matters outside of the service, such as financial and domestic worries. They were all confident pilots and not afraid of flying. The MO advocated psychotherapy to treat 'flying stress,' which he believed was characterised by a fear of flying. The therapist had to consider whether the fear was the product of timidity or anxiety in service life or childhood, morbid anxiety from a repressed memory or just current fears taking the upper hand. With regard to therapeutic success, only one quarter were considered fit for flying duties, whereas the remainder were unfit and unlikely to improve. The MO, therefore, presented a complicated picture of flying stress as a fear response to the dangers of operational flying over a prolonged period.<sup>47</sup>

Another MO offered his 'personal observations' on flying stress. Squadron Leader David Stafford-Clark observed hundreds of cases of flying stress at RAF Waterbeach. Stafford-Clark believed that cases of mental disturbance could be divided into two major groups according to the nature of their breakdown with sub-divisions. The first group was 'temporary' and this was divided into '8<sup>th</sup> to 12<sup>th</sup> trip waverers' (Group A), and 'early fatigue cases, 24<sup>th</sup> trip onwards' (Group B). The second group was 'permanent' and was subdivided into 'initial failures; essentially unsuitable types' (Group C) and 'extreme stress reactions' (Group D). Each sub-group required careful handling, according to the nature of their complaint. The waverers of Group A, for example, were encouraged to continue. The MO had to rekindle his resolution through tact and sympathy. The patient was not to be sent off station for neuropsychiatric assessment but a mild tonic or sedative could be

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<sup>47</sup> TNA, AIR 20/10727, Memorandum on the incidence of flying stress at RAF Neurological Hospital Matlock, c. 1941.

used to supplement his treatment, which was based upon encouragement. Group B, however, were 'true cases of flying stress', as they exhibited constitutional signs and symptoms of stress and exhaustion. Tachycardia, insomnia, exhaustion, depression, anorexia, and weight loss were common symptoms. The patient required immediate rest and would usually return for a second tour of operational duties. The permanent cases of Group C were never going to make efficient pilots. They tended to break down in their first six trips without experiencing any significant stress. Stafford-Clark noted that these were essentially LMF cases, who did not possess the resolve to continue flying. From an operational point of view, they were useless as their morale was intrinsically low. These cases were to be removed from squadrons immediately and sent for executive action. In complete contrast, Group D cases had experienced 'exceptional strain.' Their breakdown could occur at any time during the tour and their prognosis was bad. They were to be referred for specialist opinion at a neuropsychiatric facility.<sup>48</sup> Stafford-Clark had demonstrated that suspected cases of flying stress had to be considered individually, as their symptoms, time of breakdown, and temperament would dictate their prognosis.

The FPRC had therefore conducted the first major survey of the neuropsychiatric problems of flying personnel to attempt to account for the condition 'flying stress.' It was found that flying stress was composed of fatigue states, which could be mental or physical, and a variety of psychoneuroses. Flying stress was not a condition in itself but rather a range of disorders. Individually, the conditions were so complex that they could not be categorised under a neat heading. Flying stress had no place in neuropsychiatric nomenclature.

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<sup>48</sup> TNA, AIR 20/10727, 'Personal Observations on Flying Stress' by D. Stafford-Clark, 1941, pp. 1-4.

## **The End of Flying Stress: Recommendations and the Reclassification of Neuropsychiatric Disorders**

Intense interdisciplinary research into the problem of flying stress was therefore fruitful. The FPRC had gained enough scientific data to make compelling recommendations on the future care of flying personnel. At the first meeting, the FPRC had resolved to modify psychological literature and to make recommendations on the amendment of flying hours and rest period. They could draw upon a solid base of scientific research to support their claims and in turn, prevent future casualties and effect positive change to the physical and psychological health of flying personnel.

Armed with their knowledge, the FPRC submitted a memorandum to the Air Council, outlining their recommendations on operational limits and flying hours. The report claimed that the amount of stress that could be endured by any individual without the deterioration of health and efficiency, depended upon the duration and nature of the operational duties; the degree and kind of stress encountered, and the temperament and stamina of individual flyers. The committee admitted that it was impossible to estimate an individual's endurance capacity in terms of duration but it was desirable that flying personnel should know that there was a limit beyond which they would not be called to go. They gave due consideration to the limit and made recommendations on the maximum duration. For flying personnel in all bomber classes of aircraft in Bomber, Coastal and other commands, the recommended limit was set at 30 sorties or 250 hours operational flying or 6 months, whichever was reached first. For fighter pilots and crews, 150 hours flying in the presence of the enemy was recommended. What is more, the committee made recommendations on leave. They recognised that 'adequate leave for recreation [was] necessary for all, particularly for flying personnel, who [had] to be fresh and quick off the mark in their operational work.' It was 'strongly recommended' that a period of 48

hours leave off the station be granted every two weeks to all operational personnel, subject to operational exigencies.<sup>49</sup>

The Air Council took the research of the FPRC into account when amending flying hours and distributed the following statement to all commands in 1942. They advised that flying personnel should be relieved from operational flying after a maximum of 200 hours had been reached in one tour, as far as the war situation permitted. It stated, however, that some personnel would reach their limit quicker than others. These personnel were either to be discharged, if they were unlikely to render any future service, or posted as instructors at Operational Training Units. They also advised that a minimum of six months' relief should be applied between operational tours, subject to service exigencies.<sup>50</sup> The understanding of flying stress had therefore allowed the Air Council to make changes to the numbers of hours flown, in order to minimise fatigue and psychological breakdown. Expert knowledge had therefore improved the efficiency of the air force's procedures, which was conducive to manpower economy and combat efficiency.

Psychological literature was modified following the investigation of flying stress and the results of new research were distributed. The RAFMS made a concerted effort to educate MOs in the problems of fatigue and neurosis. Research was condensed, published in pamphlet form and distributed to RAF MOs across Britain and the Middle East. The pamphlet detailed different types of fatigue; gave direction on what symptoms to be aware of; what effects it could have on performance and efficiency, and practical advice on how to prevent this and treat those who had developed it.<sup>51</sup> In addition to this, the DGMS ordered that lectures were to be given to new MOs at RAF hospitals across the country.

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<sup>49</sup> TNA, AIR 20/10727, Recommendations of the Flying Personnel Research Committee, 1942, p. 1.

<sup>50</sup> TNA, AIR 20/10727, Letter from Charles Evans, Air Council to all groups and commands, 1942.

<sup>51</sup> TNA, AIR 20/10727, Air Pamphlet 154: Notes for Medical Officers on the Prevention of Fatigue in Flying Personnel, 1943, pp. 1-8.

These were delivered by neuropsychiatric specialists.<sup>52</sup> The lecture content included two reports completed by Symonds on the development of neurosis and unconsciousness in flying personnel, and wider advice on prevention and treatment.<sup>53</sup> The investigation of flying stress therefore had a positive impact. The RAFMS was keen to impart information that would assist MOs in the prevention and treatment of neurosis and fatigue, which effectively ended the use of the term flying stress and promoted efficiency.

Most crucially, however, the RAFMS and medical service advocated the use of standardised nomenclature in the diagnosis of neuropsychiatric casualties. 'Psychoneurosis' was divided into nine new classes to reflect the advancement of medical knowledge in terms of the disorders of flying personnel: anxiety, depression, elation, fatigue syndrome, hysteria, obsessional, schizophrenia, organic acute, and organic chronic.<sup>54</sup> This new classification system solved the majority of problems created by flying stress. There was a clear understanding of the diagnoses; there were no similarities to shell-shock; no quasi-medical language was used, and the research reflected the image of an elite, scientific profession. Most importantly, it was found that there were no neuropsychiatric conditions specific to operational flying. Intensive research had effectively transformed categories of neuropsychiatric diagnosis and the understanding of mental disorders specific to flying. Flying stress was officially a redundant term.

The research into flying stress also gave MOs the confidence and knowledge to treat casualties suffering from neurosis or fatigue. In a follow-up report to the FPRC, dated August 1945, Symonds and Williams explained that unit MOs had treated 286 personnel who would have been previously diagnosed as 'flying stress cases.' Early

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<sup>52</sup> TNA, AIR 20/10727, Letter from Air Commodore C.P. Symonds to Squadron Leader K.A. Letter, 16 July 1943.

<sup>53</sup> TNA, AIR 20/10727, FPRC Report 547, 'Clinical and statistical study of neurosis precipitated by flying duties', by C.P. Symonds, 1942; FPRC Report 562, 'Episodes of unconsciousness, amnesia and confusion while flying,' by C.P. Symonds, 1942.

<sup>54</sup> Symonds, 'The Use and Abuse of the Term Flying Stress', p. 20

detection was commonplace by 1945 and the circumstances noted carefully. The report detailed the diagnosis and disposal of individuals and gave detailed case histories. For example:

Case 26: A Sergeant navigator, aged 32, with no operational experience, was seen at a heavy bomber OTU complaining that “he has been worried and unable to think clearly all day. He could not sleep after last night’s flying is pale and tense and asks to be taken off flying for the night.” On the previous night his aircraft had nearly crashed, overshooting three times owing to unserviceable flaps. Six weeks previously he had been in a crash landing and was trapped in the fuselage. Five months previously he had been in a forced landing with an engine on fire. The medical officer found no neurotic predisposition, took him into Sick Quarters, administered 3 grains of Nembutal, and gave him an encouraging talk the next morning. He returned to full flying duties and finished his course.

The report concluded that the symptoms in this case were acute but mild, and were relieved by ‘prompt and efficient treatment.’<sup>55</sup>

The standardised diagnoses were followed to the letter and it was observed that 78 per cent of the diagnoses were of anxiety state (244 cases). This implied a state of fear, almost invariably arising from operational duties. The remaining personnel were diagnosed with hysteria (28 cases), fatigue syndrome (26 cases), and depression (14 cases).<sup>56</sup> What is more, standardised diagnoses gave MOs the confidence to provide preliminary treatment, which sometimes prevented the need for the case to be evacuated to a NYDN centre. The report explained that 199 cases (70 per cent) were treated on the station, while the others were immediately boarded or sent for neuropsychiatric assessment. Of the 199 that were treated on the station, 157 were given psychotherapy. In so far as all the cases were interviewed by the MO, they received psychological treatment – 80 per cent were given explanation, persuasion, or suggestion, usually reinforced by other methods, such as taking the man into the air, sending him on leave, or admitting him to sick quarters. Under half of the group were given medical treatment – 46 per cent. In

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<sup>55</sup> TNA, AIR 57/8, FPRC Report 412 (k), ‘Investigation of Psychological Disorders in Flying Personnel by Unit Medical Officers’, by C.P. Symonds and D.J. Williams, February 1945, p. 4.

<sup>56</sup> *Ibid*, p. 5.

most instances, this was mild sedation, such as three grains of Nembutal or 10 grains of Medinal, but in some, it included symptomatic treatment, such as alkalis for dyspepsia. This treatment was usually administered with knowledge of its psychological value.<sup>57</sup>

Symonds and Williams judged the value of treatment on the stations from the 127 cases in which a final disposition had been made. It was found that 54 men returned to full flying duties, seven to limited flying, 26 were grounded, and 39 were referred for executive disposal. While it was impossible to comment on the efficacy of the methods used, it was found that nearly half of the cases treated on the station returned to flying duties, compared with a third of the cases interviewed by a neuropsychiatrist.<sup>58</sup> The research into flying stress had therefore improved efficiency. MOs were able to detect, treat, and return to duty cases of neurosis and fatigue on the station. The research had effectively contributed to the conservation of manpower and combat efficiency.

## **Conclusion**

The problem of flying stress represented a watershed in the understanding of the physical and psychological problems of operational flying. It revealed how little was known about these conditions and forced the neuropsychiatric division and FPRC to react. Flying stress was believed to hamper combat efficiency, with men unable to carry out sorties during periods of high-intensity fighting, such as the Battles of France and Britain. The diagnosis was applied but it was not understood, however, and this was a cause for concern amongst the neuropsychiatrists and wider air force. The intensity of the research that followed conveyed a sense of fear. MOs believed that flying stress was potentially contagious, like shell-shock and LMF, and the DGMS was keen to avoid the problems associated with

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<sup>57</sup> TNA, AIR 57/8, FPRC Report 412 (k), 'Investigation of Psychological Disorders in Flying Personnel by Unit Medical Officers', by C.P. Symonds and D.J. Williams, February 1945, p. 12.

<sup>58</sup> *Ibid*, p. 15.

these terms. This led to the reclassification of flying stress and a deeper understanding of the neuropsychiatric disorders of flying personnel.

The neuropsychiatric division played an important role in the research of flying stress. Symonds was a vociferous opponent, with many objections on the grounds of problematic terminology, conflicts in definition, and professional considerations. Together with Williams he completed the first survey of the physical and psychological strains of operational flying, which informed later research into fatigue and neurosis. The results gave the neuropsychiatric division a deeper appreciation of the problems. The FPRC found that flying stress was in fact a syndrome, composed of a number of constituents with different exciting causes, including operational and psychological stresses. Physiological and psychological research showed that flying stress was complex and multi-faceted. Its constituents were so specific that they could not be summarized in pseudo-scientific terms.

The results of research were largely positive. Flying stress was removed from neuropsychiatric nomenclature and in its place was a new classification system, composed of a variety of mental disorders that were understood and ratified by specialist research. This meant that MOs and neuropsychiatric specialists could make a specific diagnosis, with full knowledge of the symptoms and treatment in mind. The RAFMS made an effort to disseminate the new information to MOs at home and overseas, which ensured that approved diagnoses were used across the service and flying stress was eradicated from nomenclature.

The study of flying stress raises important questions about the administrative authority and therapeutic freedom of the neuropsychiatric branch. The inclusion of neuropsychiatric representatives in the FPRC shows that their knowledge was valued and they were allowed to conduct research in their area without restriction. The results of the research guaranteed future therapeutic freedom, as the neuropsychiatric branch had a clear

understanding of the conditions and could therefore design treatments appropriate to specific disorders. Most importantly, the time and effort invested in the research of flying stress showed that the understanding of neuropsychiatric disorders was important to the RAF. Medical professionals and operational commanders each had an important role to play in the prevention of these conditions.

**Chapter 7**  
**Treating and Preventing Trauma:**  
**The Scientific Management of Neuropsychiatric Casualties**

**Introduction**

By 1943, the RAFMS had a nuanced understanding of the nervous and psychological effects of operational flying. Research into flying stress had promoted the active participation of COs and MOs in the prevention of fatigue and neurosis, through behavioural observation and the monitoring of stress. The reclassification of mental disorders meant that MOs and neuropsychiatric specialists could make a diagnosis with confidence, for the nomenclature was supported by rigorous scientific evidence. The focus on predisposition in the attempted reformation of selection procedures highlighted that certain men were more liable to breakdown than others, and this had to be borne in mind in the admittance of candidates. Though this was not achieved during the Second World War, it raised awareness of this crucial issue, which represented a threat to manpower economy and combat efficiency. The neuropsychiatric division and the wider RAFMS were therefore in a better position to treat the mental and nervous disorders of flying personnel for they could base their methods on up-to-date scientific principles.

The purpose of treatment in the armed forces was simple. Medical services worked to restore men to health and to effect returns to duty. In terms of neuropsychiatric illness, wastage of this sort was deplorable, as the armed forces could not afford to lose trained manpower in the face of mounting physical casualties. The treatment of psychiatric and neurological casualties was therefore shaped by the needs of the services and was based upon rapid and effective therapy. In British Army forward areas, for instance, psychiatric disorders tended to be defined and treated as temporary impairments rather than

established mental illnesses.<sup>1</sup> A network of forward psychiatric centres were established along the same lines as the Great War 'PIE' arrangements, which were based on three principles: proximity to battle, immediacy, and expectation of recovery.<sup>2</sup> This allowed men to return duty with the least possible delay.

In the RAF, treatment was based on these exact principles. Flying personnel had to be treated and returned to duty to maintain manpower economy and combat efficiency. But the neuropsychiatric division was relatively small compared to the army's offering, which comprised 3,000 psychiatrists by 1945.<sup>3</sup> The management of neuropsychiatric casualties had to be carefully organised to ensure that specialist manpower was allocated effectively. Station MOs, neuropsychiatric specialists, and consultants, each had a role to play in the evacuation and treatment of casualties. The principles of scientific management were drawn upon to ensure that specialist resources were distributed carefully and the maximum number of casualties could be processed. While prevention was the primary aim, a comprehensive chain of neuropsychiatric care was established: starting at the station and progressing to specialist facilities. This was arranged on roughly the same lines as the evacuation of other types of casualty in the air force.<sup>4</sup> The treatment process acknowledged, and was shaped by, research into flying stress and predisposition, and it is therefore important to examine this in detail.

This chapter will examine the treatment of neuropsychiatric casualties in the RAF. It will assess the therapeutic and preventive duties of MOs and neuropsychiatric specialists, at each stage of the chain. The chapter will also discuss the network of treatment centres, including station sick quarters, Not Yet Diagnosed Neuropsychiatric

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<sup>1</sup> Copp and MacAndrew, *Battle Exhaustion*, pp. 43-6. See also: Shephard, *A War of Nerves*, p. 171; Harrison, *Medicine and Victory*, p. 183.

<sup>2</sup> See: E. Jones and S. Wessely, 'Forward Psychiatry in the Military: Its Origins and Effectiveness', *Journal of Traumatic Stress*, 16 (2003), pp. 411-9.

<sup>3</sup> Crew (ed.), *The Army Medical Services, Administration*, i, p. 152.

<sup>4</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, chs. 1 & 5.

centres, and specialist hospitals with neuropsychiatric provision. It will assess what types of treatment were available at each level and the responsibilities of medical professionals in the processing of neuropsychiatric casualties. The impact of the research into flying stress and predisposition will also be examined, by assessing how this informed the process of diagnosis and treatment. It will also consider the prognosis of cases and the disposal of the sick at medical boards, to ascertain the impact of treatment on returns to duty. This chapter not only provides an account of neuropsychiatric treatment, it also gives a unique insight to the human element of the air war. Medical case notes give detailed information about the circumstances surrounding breakdown and personal reflection.

### **The Medical Officer's 'Great Responsibility': Neuropsychiatric Care on the Station**

Like the flying personnel of the RAF, MOs were widely considered to occupy a privileged position. They enjoyed excellent pay and conditions, consumed good food and alcohol, retired to a comfortable bed, and were in comparatively less danger than their counterparts in the army and navy. This lifestyle attracted qualified doctors like Roland Winfield, who had ruled out the AMS on the grounds of 'loud sudden bangs, mud, marching, and discomfort.' He considered service with the RAFMS as a more 'rewarding way' to spend the war.<sup>5</sup> Victor Tempest also considered his lot 'fortunate', as he had 'the honour to live with a highly select band of men.'<sup>6</sup> A large number of doctors were attracted for the same reasons and positions in the RAFMS were highly sought after. This popularity was fortunate, as high rates of casualties dictated that as many should be employed as possible. The numbers of MOs grew accordingly, from a mere 554 in September 1939 to 2,664 in March 1945 – see Table 11. The vast majority were not pre-war regulars; they had

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<sup>5</sup> R. Winfield, *The Sky Belongs to Them* (London, 1976), p. 25.

<sup>6</sup> Tempest, *Near the Sun*, p. 9.

enlisted to the RAFVR for the duration of the war and had to adapt to the conditions of the air force.<sup>7</sup> MOs were distributed across the service in establishments where they could be profitably employed, with postings ranging from general practice on home stations to medical depots overseas.<sup>8</sup>

**Table 11: Strength of medical officers, September 1939-March 1945**

<b>Date</b>	<b>Strength of RAF at home and overseas</b>	<b>Strength of Medical Officers employed at home and overseas</b>
1.9.39	119,351	554
1.3.40	229,605	739
1.9.40	379,067	1,026
1.3.41	533,257	1,369
1.9.41	746,736	1,753
1.3.42	819,230	1,969
1.9.42	877,317	2,251
1.3.43	948,560	2,434
1.9.43	982,438	2,505
1.3.44	1,005,276	2,538
1.9.44	1,004,990	2,640
1.3.45	988,682	2,664
<b>Source:</b> Adapted from Rexford-Welch (ed.), <i>The Royal Air Force Medical Services, Administration</i> , i, p. 84.		

Station MOs were the workhorses of the RAFMS, responsible for duties in a number of areas, including general practice, specialist referrals, first aid, hygiene, and health education, to give but a few examples.<sup>9</sup> On a typical operational station, there were two MOs – the senior with the rank of Squadron Leader.<sup>10</sup> The clinic was not merely confined to station sick quarters, the MO was responsible for making recommendations on living accommodation, sanitation, food, and recreational opportunities; all of which had a bearing on the ‘preservation of health.’ Moreover, the MO had important administrative

<sup>7</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, p. 43.

<sup>8</sup> *Ibid.*, p. 84.

<sup>9</sup> AP 1269, *Manual for Medical and Dental Officers of the Royal Air Force*, 3<sup>rd</sup> edn., (London, 1938), p. 1.

<sup>10</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, i, p. 84.

responsibilities including the preparation of medical records and statistics, and the ordering of stores.<sup>11</sup> The duties of the MO were therefore varied and formidable, and were performed in pursuit of an overarching objective: the maintenance of combat strength and efficiency.

The MO played a fundamental role in the scientific management of sick personnel and the casualties of aerial warfare. He was in close contact with the air and ground crews on his station and could therefore observe changes in health. His daily tour of duty typically started with a parade, where the daily sick would present themselves for diagnosis and sorting. On an average station, around 15 men and three to four women of the WAAF reported sick per morning.<sup>12</sup> According to Tempest, the largest proportion of his patients were ground staff. He noted that the illnesses of ground and aircrews were usually different since each man tended to suffer the disabilities of his trade. Aircrew were comparatively fit, being drawn from the healthiest section of the population, and their complaints were typically associated with flying – problems of the ears, nose, and throat were the most common afflictions. Ground crew, on the other hand, complained of gastric problems, painful feet from standing for long hours, varicose veins, and many of the everyday conditions experienced in general practice. Entries were made in the daily sick book and the men were admitted to sick quarters.<sup>13</sup>

While the primary function of the daily sick parade was to monitor cases of sickness on the station, Bomber Command MO, Squadron Leader David Stafford-Clark, used it to separate cases of real illness from the ‘melancholy and improbable tales of woe.’ At RAF Waterbeach, he argued, the daily sick list was generally divided into a minority of personnel who were actually ill and the remainder: ‘feeble-spirits and faint-hearts – some martyrs to a consuming self-pity, some hopeful scroungers, some simply malingerers.’

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<sup>11</sup> AP 1269, *Manual for Medical and Dental Officers of the Royal Air Force*, p. 1.

<sup>12</sup> D. Stafford-Clark, ‘Aspects of War Medicine in the RAF’, *BMJ*, 1 (1943), p. 139.

<sup>13</sup> Tempest, *Near the Sun*, p. 62.

Stafford-Clark therefore undertook this duty knowing that ‘unless the MO succeeds with them their numbers may increase until the sick parade itself swells and the efficiency of the station begins to decline.’<sup>14</sup> MOs played an important role in the operation of the LMF measure by confirming if a man was truly sick or malingering. The MO was therefore charged with the detection of feigned illness to ensure that manpower and combat efficiency could be maintained.

With regard to true medical cases, the MO could admit them for treatment and observation in the station sick quarters. Tempest’s station had consulting rooms, an operating theatre, an electrical treatment room, wards for officers, airmen, and isolation cases, and the usual medical stores. It was here that the treatment of common complaints was carried out under the instruction of the MO and general care provided by a team of orderlies and nurses. The sick quarters were usually comfortable, with homely furnishings and comforts.<sup>15</sup> Stafford-Clark argued that the MO had to ensure that the sick quarters were viewed as a place to get medical attention and encouragement, but not ‘sanctuary’, and to maintain or restore fitness rather than to excuse it on ill-health.<sup>16</sup> Again, this was to ensure that malingerers did not see the sick quarters as a way out of service and a place to hide from the gross realities of war. If a case showed no signs of improvement or could not be treated effectively on the station, the individual would be evacuated by ambulance to the nearest RAF Hospital. It was there that the officer or airman would receive treatment from specialists in a relevant field to restore health and efficiency.<sup>17</sup> The MO therefore played an important role in the scientific management of casualties. He effectively performed triage by sorting, labelling, and administering preliminary treatment to cases before they could be returned to duty or sent to the nearest service hospital.

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<sup>14</sup> Stafford-Clark, ‘Aspects of War Medicine in the RAF’, p. 139.

<sup>15</sup> Tempest, *Near the Sun*, p. 67.

<sup>16</sup> Stafford-Clark, ‘Aspects of War Medicine in the RAF’, p. 139.

<sup>17</sup> Please see Appendix F for Victor Tempest’s detailed description of the evacuation process: Tempest, *Near the Sun*, p. 67.

The duties of the MO were not merely curative, he also had responsibilities in the area of prevention, including the inspection of sleeping quarters, ablution facilities, mess accommodation, kitchens, and general matters of sanitation.<sup>18</sup> This was to ensure that conditions were conducive to the preservation of health but most importantly, the prevention of disease. What is more, he was expected to respond to all medical emergencies, particularly aircraft crashes. MO Aidan MacCarthy recalled watching in horror as a plane flew over the boundary fence, clipping a bomb dump in its path. The aircraft flipped and burst into flames. MacCarthy ‘climbed into the flames, while the firemen tried to hose down the inferno.’ With the ambulance crew, he managed to drag out the badly burnt and injured aircrew but nothing could be done for the pilot, who was ‘very clearly dead.’ MacCarthy ‘wept for his inexperience and his mistakes’, but mainly for his lost youth.<sup>19</sup> The duties of the MO were therefore varied and at times, dangerous. But certain MOs believed that some duties were more important than others.

Squadron Leader David Stafford-Clark, who would become a psychiatrist in the post-war period, argued that the primary function of the MO was to preserve morale and combat efficiency:

The first duty of the Service medical officer in war is to maintain the effective strength of his unit by every means in his power. This duty precedes his individual obligations to his patients even as those obligations precede his personal gain; moreover it charges the medical officer of the Royal Air Force with a threefold responsibility. He must be a sound, responsible, and decisive clinician in both medicine and surgery; he must show an imaginative appreciation of the physiology and psychology of flying; and he must always concern himself not only with the physical welfare of his men but above all with their morale. Failure to recognize this underlies the fallacy that – much of a junior M.O.’s work is exasperatingly trivial, whereas an intelligent grasp of this aspect of war medicine enables him to render unique and valuable service.

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<sup>18</sup> AP 1269, *Manual for Medical and Dental Officers of the Royal Air Force*, p. 1.

<sup>19</sup> A. MacCarthy, *A Doctor’s War* (London, 1979), p. 36.

The maintenance of morale and combat efficiency could be achieved in a number of ways but the psychological care of flying personnel was considered to be ‘the medical officer’s supreme task.’<sup>20</sup>

### ***The Psychological Care of Flying Personnel***

MOs were typically general practitioners with no specialist training in neurology or psychiatry; qualified individuals were usually employed in specialist work.<sup>21</sup> When it was discovered that MO Henry Rollin held the Diploma in Psychological Medicine, he was summoned to the CME for a meeting with Burton and was at once promoted to Specialist in Neuropsychiatry.<sup>22</sup> The MOs were given some training on ‘the psychological health of flying personnel’, consisting of lectures and pamphlets, but most learned ‘on the job.’<sup>23</sup> As Ellin has argued, it was unlikely that station MOs would have actively sought such training, unless they were particularly interested in psychiatry.<sup>24</sup> It was for this reason that they were only given the most basic administrative authority and therapeutic duties in the handling of such cases.

MOs were given rudimentary instructions on psychological matters. This information was initially conveyed in a 1939 pamphlet, ‘Notes for Medical Officers on the Psychological Care of Flying Personnel’, which was hastily introduced in the wake of the Ministry of Pensions conference. The MO was reminded that his aim was to ‘keep the flying personnel under his charge at the highest possible pitch of efficiency’, which depended on ‘both physiological and psychological fitness.’ In order to deliver efficient

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<sup>20</sup> Stafford-Clark, ‘Aspects of War Medicine in the RAF’, p. 139.

<sup>21</sup> Rexford-Welch (ed.), *The Royal Air Force Medical Services, Administration*, ii, p. 127.

<sup>22</sup> H.R. Rollin, *Festina Lente: A Psychiatric Odyssey* (London, 1990), pp. 27-32.

<sup>23</sup> For example, Symonds delivered lectures to MOs on flying stress and advice pamphlets were produced on neurosis and fatigue, see Chapter 6. See also: Editorial, ‘The RAF Medical Service, 1939-1945’, *BMJ*, 2 (1945), p. 397; D. Stafford-Clark, ‘An Hour of Breath’, *Psychiatric Bulletin*, 11 (1987), p. 218.

<sup>24</sup> Ellin, ‘The Many Behind the Few: The Lives and Emotions of Erks and WAAF’s of RAF Bomber Command, 1939-1945’, p. 253.

and effective care, he had to ‘watch personnel closely in order to detect at the earliest possible moment any evidence suggesting deterioration.’<sup>25</sup> The pamphlet emphasised that treatment must be delivered early in order to effect returns to duty and outlined the prevalent nervous and psychoanalytical theories of disorders, which were common in medical literature on soldiers.<sup>26</sup> ‘Warning signals of incipient breakdown’ were given, which included ‘fatigue, increased indulgence in alcohol or tobacco, a tendency to become unsociable or irritable, loss of interest, disinclination of effort, emotional crises, loss of self-control, falling off in flying efficiency, and physical symptoms such as loss of appetite, of sleep or of weight, the presence of tremors or tachycardia and typical anxiety facies.’<sup>27</sup> These were indicators of a ‘pre-neurotic state’ for which a period of change, rest, or leave could resolve. The document went on to discuss how to deal with these cases, and emphasised the importance of tact, discretion, and sympathy. The pamphlet, however, did not indicate how these disorders should be medically treated, which implied that the MO was not to take any action in this respect. It stated that if the friendly intervention of the MO did not effect any positive results, they should be evacuated to the care of a neuropsychiatrist for specialist treatment.<sup>28</sup>

Later advice notes only gave ‘brief outlines of those he is likely to meet’ and that he should not be ‘deterred by the lack of previous special experience’, for ‘common sense, interest in the activities of those in his care, together with observation and tact, compensated for any lack of special knowledge.’ Again, the MO was reminded that

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<sup>25</sup> TNA, AIR 2/8591, AM Pamphlet 100, ‘Notes for Medical Officers on the Psychological Care of Flying Personnel’, May 1939, p. 1.

<sup>26</sup> The author of the pamphlet cited the works of prominent psychologists, whose advice was commonly drawn upon in the treatment of soldiers, including: F. Bartlett, *Psychology and the Soldier* (Cambridge, 1929); W.H.R. Rivers, *Instinct and the Unconscious: A Contribution to Biological Theory of Psychoneuroses* (Cambridge, 1920).

<sup>27</sup> TNA, AIR 2/8591, AM Pamphlet 100, ‘Notes for Medical Officers on the Psychological Care of Flying Personnel’, p. 9.

<sup>28</sup> *Ibid*, p. 16.

‘specialists are available to whom he can turn for advice.’<sup>29</sup> He was therefore not qualified to deliver this type of treatment to flying personnel but it was recognised that he could play a fundamental role in prophylaxis.

The MO held a unique position in the psychological care of flyers, as he lived in close proximity to them, shared an officer’s mess, and could be accessed 24 hours a day. Flying personnel could go to him with small complaints, rely on him to respond quickly to emergencies, and express their fears and anxieties to him in confidence. Due to his situation, the MO was considered to be of great importance in the maintenance of squadron morale and mental health.<sup>30</sup> Indeed, Tempest stated that his proximity to crews allowed him to witness objectively ‘the reactions of men who [were] really fighting the war’ and to ‘share some of their emotions.’<sup>31</sup> The neuropsychiatric division believed that the MO should always be ‘in intimate contact with the crews.’ This involved proactively socialising and drinking with them, and attending mess parties. They advised that the MO should fly occasionally to establish a common interest and be concerned for all aspects of squadron life – ‘in fact he should “think squadron and live squadron” every minute of the day.’<sup>32</sup>

Stafford-Clark followed this advice to the letter. He knew his squadron members intimately, called them by their nicknames, attended parties, joined them in the mess, and mourned them when they were lost. On 5 February 1941, a squadron member was killed and he recorded his thoughts in his personal diary:

[He] was one of the most impressive men I have ever met or imagined. Tall, curly haired, dark with a remarkably [illegible] yet beautiful face. Contrasting violently with his wide grey eyes – sometimes violent sometimes contemplative, he was a

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<sup>29</sup> TNA, AIR 10/2309, Appendix XXXIXB, ‘The Psychological Care of Air Crew Personnel’, *Appendices to Manual for Medical and Dental Officers of the Royal Air Force* (Reprinted, 1940), p. 1.

<sup>30</sup> TNA, AIR 57/8, FPRC Report 412 (f), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command’, p. 7

<sup>31</sup> Tempest, *Near the Sun*, p. 9.

<sup>32</sup> TNA, AIR 57/8, FPRC Report 412 (f), ‘Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command’, p. 29.

friend of mine who often baffled me, once wounded me, finally paid me the highest compliment and then was killed attempting the impossible...<sup>33</sup>

Stafford-Clark's esteem for flying personnel was obvious. It was he who declared the psychological care of flying personnel as the MO's 'great responsibility.'<sup>34</sup>

The MO was advised to make his observations of aircrew secret and informal. If a member of flying personnel asked to see him, an immediate meeting would be granted and thorough notes should be taken after he had left. One squadron MO arranged for a heavy bomber crew to come to the station sick quarters for ultra violet light treatment and during the time they sat around the lamp, the MO got to know them personally. Another arranged informal discussions on oxygen, equipment, and quasi-medical affairs, ostensibly for education, but actually for observation and personal contact.<sup>35</sup> He was required to have significant '*savoir faire*' in his dealings with flying personnel, to ensure that they would come to him in a moment of crisis. This allowed him to share 'the load.'<sup>36</sup>

Having noticed the earliest signs of deterioration, the neuropsychiatric division advised that the MO discussed the future management of the case with the squadron or flight commander, who usually welcomed his advice. One commander stated in this respect: 'The doctor sees a man from one angle and I see him for another.' Others believed that 'the medical officer is the most important man in the squadron' and '...the most important doctor in the air force.' His contact with the CO allowed them to discuss resting particular flying personnel before they suffered a neurotic breakdown.<sup>37</sup>

What is more, the MO assisted the neuropsychiatric division in crucial administrative duties. When a man reported sick with fatigue or neurotic symptoms, the

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<sup>33</sup> WL, PP/DSC/A/2/2, Private Papers of David Stafford-Clark: Main War Diary, Wednesday 5 February 1941.

<sup>34</sup> Stafford-Clark, 'Aspects of War Medicine in the R.A.F.', p. 139.

<sup>35</sup> TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', p. 28.

<sup>36</sup> *Ibid*, p. 27.

<sup>37</sup> *Ibid*, p. 7.

MO was required to fill in a card that would be sent to the division for the purposes of research and statistical analysis. The card was basic and gave clear instructions about the details required. The preliminary diagnosis was sought and this was made as simple as possible, with the MO required to pick one of the approved diagnoses from a list. The main symptoms were to be listed and the causes, which could be attributed to operational flying or other issues, including financial worries and marital troubles. An assessment of his predisposition to neurosis was also required and any symptomatic treatment given, for example, painkillers for headache and sleeping pills for insomnia. In the event that the MO was not clear on what to do, a completed specimen card was included for his reference.<sup>38</sup>

The MO therefore played an important role in the scientific management of the sick and neuropsychiatric casualties. He was the first point of contact for flying personnel reporting sick and they could rely upon him for discreet, professional treatment. His proximity to crews rendered him crucial to the psychological care of flying personnel, for he could monitor changes in behaviour closely and remove men from flying duties before an illness took hold. It was also him that would refer flying personnel for further assessment following a discussion with the CO.

### **‘NYDN’: Treatment at Not Yet Diagnosed Neuropsychiatric Centres**

When the MO diagnosed a neurotic case, he was advised to refer the individual for further assessment at a specialist neuropsychiatric facility. Not Yet Diagnosed Neuropsychiatric (NYDN) Centres were run by neuropsychiatric specialists and were the main facilities for the treatment of mental and nervous disorders in the RAF. The acronym NYDN originated in the Great War, when a suitable label was sought for forward psychiatry centres, to

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<sup>38</sup> TNA, AIR 57/8, FPRC Report 412 (k), ‘Investigation of Psychological Disorders in Flying Personnel by Unit Medical Officers’, p. 1.

deliberately avoid the use of the problematic term shell-shock. Neurotic cases were to be described in such a way until all possibilities of organic illness were explored.<sup>39</sup> The suppression of such terminology was a matter of official policy in the Second World War and this accounts for the use of this particular label.<sup>40</sup> The RAF was also legally-bound to treat neuropsychiatric cases within the service, which necessitated the establishment of such facilities.<sup>41</sup>

In 1942, there were eleven NYDN centres in operation, including the CME for outpatients: four centres for operational squadrons, and six for non-operational squadrons.<sup>42</sup> The higher figure for non-operational squadrons suggests that a significant proportion of men were developing neurotic symptoms during training. By 1943, the number of centres had risen to thirteen, showing that there was demand for this type of provision.<sup>43</sup> The centres operated on a regional basis and covered the majority of the United Kingdom. At a typical centre, a neuropsychiatric specialist directed the therapeutic work and had a team of MOs subordinate to him – he prescribed treatment and supervised its administration. At larger centres, such as Rauceby, a second specialist acted as an assistant, and their expertise typically contrasted with the other: one specialised in neurology, and the other in psychiatry. This ensured that a full range of expertise could be drawn upon, as and when required.

Personnel exhibiting symptoms of a neurotic or neurological nature would receive in-depth assessment, treatment, or were referred for disposal through these centres. Beds were available for observation and short treatment only. Any cases requiring lengthy

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<sup>39</sup> Jones and Wessely, *Shell Shock to PTSD*, p. 26.

<sup>40</sup> See Chapter 2: TNA, PIN 15/2401, Report, 28 September 1939.

<sup>41</sup> See Chapter 2: TNA, AIR 2/4019, Letter from R. Monk Jones, RAF Legal Branch to The Board of Control, 3 November 1939.

<sup>42</sup> These were at the CME, Halton, Littleport, Rauceby, Blackpool, Wilmslow, Cosford, Gloucester, St Athan, Yatesbury, and Gleneagles. TNA, AIR 2/5998, Report on the Organisation of Neurology in the RAF, pp. 1-3.

<sup>43</sup> Please see Appendix G for a comprehensive list of the regional NYDN Centres in operation from 1943.

therapeutic intervention were sent to the RAF Neurological Hospital, Matlock or an EMS Facility. It was the policy of the RAF not to retain psychotic individuals, who were to be evacuated to an EMS facility and discharged from the service.<sup>44</sup> The organisation of the NYDN network was therefore rational and made for efficiency in diagnosis and treatment.

### *Diagnosis*

Establishing a diagnosis was the first priority of the neuropsychiatric specialist. Squadron Leader Eric Jewesbury of the NYDN Centre, Rauceby, stressed that a clear diagnosis was essential to avoid delays in treatment and disposal. The specialists were under pressure to diagnose and treat patients with the least possible delay. The report of the station MO was of 'the utmost value', as it held crucial details on the degree of incapacitation, suitability for operational work, general attitudes, and value to the service. In the case of aircrew, the opinion of the CO was paramount, for he could comment on an individual's value and conduct. His opinion often guided disposal.<sup>45</sup> The work of the specialist was therefore guided by the opinion of MOs and COs, who were in close proximity to flying personnel and could comment on an individual's service history.

Upon admittance to the NYDN centre, the patient was typically subjected to a physical examination to rule out organic illness and a one-hour neuropsychiatric interview. Neuropsychiatric specialists Ironside and Batchelor elaborated on the content and importance of this initial interview. The object of the clinical meeting was to establish diagnosis and prognosis but also to gain a full picture of the individual's service life. In the course of the interview, the examiner endeavoured to learn, in the time available, as much as possible about the 'individual's temperament and his attitude towards flying.'<sup>46</sup>

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<sup>44</sup> TNA, AIR 2/5998, Report on the Organisation of Neurology in the RAF, pp. 1-3.

<sup>45</sup> TNA, AIR 49/357, 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, July 1943, p. 6.

<sup>46</sup> R.N. Ironside and I.R.C. Batchelor, *Aviation Neuropsychiatry* (Edinburgh, 1945), p. 21.

The case was encouraged to enumerate his various complaints spontaneously, while the specialist discreetly recorded information on the duration of symptoms and the history of the illness.

An outline of the entire flying history was taken, from training to operational work, with a particular emphasis on the dates of ‘flying mishaps’ and their causes. What is more, the taking of the family and personal history was as essential as it was in the civilian sphere, for it provided ‘valuable information on the degree of constitutional nervousness or instability on which prognosis [was] largely based.’ The personal history was particularly revealing, as it allowed the examiner to elucidate nervous traits in earlier life, including his attitude to ‘rough games, boxing, and wrestling’, and if he had ‘the confidence to learn to swim and dive.’ Incidences of bed-wetting, shyness, self-confidence, reclusiveness, morbid fears, food fads, sensitivity to noise and glare, and notions of physical culture were recorded.<sup>47</sup> From the reading of this text and reports from NYDN centres, it is clear that the diagnostic process was guided by two major factors: flying stress and predisposition.

In order to elicit information on predisposition and stress, the neuropsychiatric interview was an important tool. Squadron Leader A.G. Campbell, a neuropsychiatric specialist at the RAF Officer’s Hospital, Torquay, found the narrative of flying personnel of considerable diagnostic value. In his opinion, first-hand accounts ‘illustrate[d] better than any second-hand account, the feelings and experiences of these pilots.’<sup>48</sup> He transcribed the notes of a night fighter air gunner who was initially admitted with a fractured leg and sent to convalesce. He quickly returned, however, due to insomnia and nightmares. Campbell described him as ‘a shy, quiet, introspective type of man with considerable inferiority feelings as a result of his upbringing and history.’ The pilot’s personal account was particularly revealing, as he continually emphasised his working

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<sup>47</sup> Ironside and Batchelor, *Aviation Neuropsychiatry*, ch. 4.

<sup>48</sup> TNA, AIR 49/357, ‘Individual Stress of Pilots and Medical Notes’, by A.G. Campbell, p. 1.

class background and feelings of inferiority. After serving as an engineering apprentice from 1923, he became a pilot cadet in 1929. He noted that he was becoming 'nervous in the air' and was taken off flying; he was 'perfectly happy' to serve as an engineer. But in 1940, after 'much worrying' he was commissioned as an air gunner. Before flying he had to pray for 'courage and strength' and when he crashed, his 'old fear' returned. Due to his testimony, Campbell believed that the degree of flying stress he had encountered was obvious and that it was 'unnecessary to stress the considerable nervous predisposition present.' He was in no doubt that the man's trouble was solely due to a 'psychological problem.'<sup>49</sup>

Jewesbury also recognised the importance of flying stress and predisposition in the diagnostic process. In this regard, he stated, 'Perhaps the two most important lines of enquiry are (1) How much, if any, predisposition to nervous upset has this man?, and (2) How much flying stress has he encountered?' In aggregation, these factors could conspire to render a man psychologically-ill and cast doubt on his future of flying in the RAF. He believed that there were four main types of case seen by the neuropsychiatrist at NYDN centres. Type one was a case with 'very marked' predisposition and 'nil or mild' flying stress – this individual was 'temperamentally unsuited for flying.' Type two was a case with 'mild to moderate predisposition' and 'marked' flying stress and was therefore 'medically no longer fit for flying.' The third was a case with 'nil or mild' predisposition and 'moderate or marked' flying stress. This type of case was judged to be 'lacking in confidence.' And the fourth had no predisposition, no flying stress, and was therefore an LMF case and should be subjected to executive action.<sup>50</sup>

Jewesbury gave examples of all four types of case. For example, Case 4 was an example of a 'type two' case, who was 'medically no longer fit for flying.' Jewesbury

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<sup>49</sup> TNA, AIR 49/357, 'Individual Stress of Pilots and Medical Notes', by A.G. Campbell, Case 5, p. 9.

<sup>50</sup> TNA, AIR 49/357, 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, p. 10.

noted that he was navigator with Bomber Command and had completed 350 hours of flying, including 60 operational hours of night bombing. He was described as a ‘difficult solitary person and apt to worry easily’ but was fully confident of flying when his aircraft was ‘badly shot-up’ over Germany. The main flight systems were put out of action but the machine limped back to Britain. The crew had to bale out on the English coast, as the aircraft had lost altitude but it continued in-land and ‘crashed on a house and killed three people.’ On future sorties, the individual complained of feeling ‘very agitated’ and always felt ‘apprehensive when flying, gripped the side of his seat tightly and felt hot, sweaty and on edge.’ He slept poorly and developed a fear of all flying. Jewesbury believed that this man was a clear medical case and recommended that he was removed from flying duties for six months.<sup>51</sup>

Research into flying stress had demonstrated that there were no mental or nervous disorders specific to flying and specialists were therefore bound to the official diagnoses sanctioned by the RAFMS: anxiety, depression, elation, fatigue syndrome, hysteria, obsessional, schizophrenia, organic acute, and organic chronic. In reality, however, specialists at NYDN centres tended to use their own categories of illness, which were close to the official nomenclature. Records detailing diagnoses are sparse but a few NYDN centres reported on the progress of treatment and diagnoses were outlined.

In his report on Rauceby, Jewesbury noted that psychological disorders and organic nervous diseases accounted for the majority of his cases, with 212 (71 per cent) diagnosed with the former and 88 (29 per cent) with the latter – a detailed breakdown of psychological diagnoses can be found in Table 12. Affective disorders accounted for the majority of cases – a disease grouping that encompassed anxiety and depressive states.<sup>52</sup> Ironside and Batchelor noted that affective disorders tended to manifest as an ‘increased

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<sup>51</sup> TNA, AIR 49/357, ‘The Work and Problems of a Neuropsychiatric Centre’, by E.C.O. Jewesbury, p. 12.

<sup>52</sup> *Ibid*, p. 4.

and apprehensive awareness of the environment’, where ‘the dangers of flying were at the forefront of the consciousness.’<sup>53</sup> Hysteria was not as common and aircrew tended to only complain of these symptoms while they were flying. The predisposed were particularly prone to this type of disorder, which would usually develop early in the flying career and manifest while on rest from operational flying. This type of disorder often had confounding physiological symptoms.<sup>54</sup>

Ironside and Batchelor included case notes on both types of disorder in their textbook. Case No. 2 was a pilot with a total of 980 flying hours, of which 80 were operational. Previous to being involved in three flying accidents in four months, he was a confident pilot, employed on test flying and ferrying duties. After the accidents, he felt nervous in the air and had nightmares, before being removed to a training unit to rebuild his confidence. When he returned to flying duties, he felt constantly apprehensive, sweated abnormally, and looked for flat fields suitable for emergency landings. On the ground, he chain-smoked, was jumpy and over talkative, and indulged in excessive alcohol to ensure his sleep. Ironside and Batchelor described him as ‘an intelligent and aggressive individual, he had never had nervous symptoms previously and was not predisposed to neurotic breakdown.’ He was diagnosed with an anxiety state and was grounded for three months, with a good prognosis for future flying duties. The specialists concluded that severe flying stress could cause a normally ‘stable’ individual to develop an anxiety state.<sup>55</sup>

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<sup>53</sup> Ironside and Batchelor, *Aviation Neuropsychiatry*, p. 39.

<sup>54</sup> *Ibid*, p. 46.

<sup>55</sup> *Ibid*, p. 40.

**Table 12: The diagnosis of 200 consecutive psychological cases at Rauceby NYDN Centre, 1942-3**

<b>Type of Disorder</b>	<b>Number of Cases</b>
Affective Disorder	153
Hysteria	23
Nocturnal Enuresis	7
Mental Deficiency	7
Obsessional Neurosis	5
Anxiety-Hysteria	4
Psychopathic Personality	1
<b>Total:</b>	<b>200</b>
<b>Source:</b> TNA, AIR 29/357, 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, June 1943.	

With regard to hysteria, Case 7 was a Wireless Operator/Air Gunner who had flown a total of 150 hours, of which 30 were operational. It was found that this particular case experienced difficulties in the training regime and was given extra time to qualify. Having completed, he was posted to the Middle East where his voice 'went off into a hoarse whisper.' He was given thorough treatment in hospital, including 'gargles and inhalations' but to no effect. He flew on two operational sorties, and on each, the skipper complained that he would not answer on the intercom. He was posted to another squadron, where he completed another three sorties and the same problems occurred. He stated that in the air his mind went blank and when anyone spoke to him on the intercom he felt tense and seemed unable to find his voice. On his last sortie, he vomited on the wireless set. Because of his 'inefficiency' he was grounded by his CO. Ironside and Batchelor believed that this was a case of 'hysterical aphonia', where the vocal cords could not reach the middle line. They described him as 'a timid individual, who had never learned to swim and who had always avoided fights, easy going, mild tempered, preferring quietness...His father had suffered from shell-shock in the war of 1914-18.' He was permanently grounded for hysteria, one year after the onset of symptoms.<sup>56</sup>

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<sup>56</sup> Ironside and Batchelor, *Aviation Neuropsychiatry*, p. 49.

Similar diagnoses were applied at the RAF Officer's Hospital, Torquay. In 1943, Gillespie analysed 100 aircrew neuropsychiatric cases, of which 87 were pilots and the remainder, observers or air gunners. He noted that cases of hysteria were rare, with only four 'gross cases', two of 'mild amnesia', and nine with 'bodily complaints.' The remainder were anxiety and psychoneurosis cases, which were found in the 'anxious or timid', 'the unaggressive', 'the obsessively anxious', but also, 'suitable and tough types who had passed the limit of their endurance.' Gillespie also found 'fatigue not arising from physical disease.' This was usually developed through fighting off anxiety, in the 'obsessional and ultra-conscientious.' The main symptom was 'loss of zest.' It was often associated with poor physical fitness, 'uncongenial duties', enemy action, and a heavy casualty rate. Of the 100 cases, 51 were judged to have considerable predisposition.<sup>57</sup> Notes were also made on degree of flying stress and Gillespie concluded that 26 had experienced no stress, 12 slight stress, 33 moderate stress, and 29 severe stress. Many of those listed as having had severe stress had been involved in a crash, usually with fatalities in the crew.<sup>58</sup>

Thus the diagnostic process was guided by research into flying stress and predisposition. Neuropsychiatric specialists questioned how much flying stress an individual had experienced and the degree of his predisposition to guide treatment and disposal.

### ***Treatment***

The majority of treatment records remain closed to the public but it is possible to comment on some of the therapies applied in NYDN centres. In terms of organisation, treatment

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<sup>57</sup> TNA, AIR 29/357, 'Report on Analysis of Neuropsychiatric Cases at Torquay Hospital', by H.L. Burton, 1943, pp. 1-2.

<sup>58</sup> TNA, AIR 29/357, 'Report on 100 Cases of Flying Personnel at Torquay Hospital', by R.D. Gillespie, 1943, p. 5.

was either administered on an in or outpatient basis. Certain centres only accepted outpatients such as the CME, whereas other centres specialised in inpatient care, including the RAF Neurological Hospital, Matlock.<sup>59</sup> The availability of outpatient care suggests that certain disorders were not severe and the individual could remain under medical care at his station. At Rauceby, Jewesbury explained that outpatients were seen daily by appointment. 'Aircrew cases [were] always given precedence' and were often moved up the waiting list. A large number of outpatient appointments were made for individuals whose fitness for a commission, to become aircrew, or to undergo court martial or detention was in question. Medico-legal problems were not uncommon, particularly cases of 'absence without leave', petty theft or other action 'open to doubt.' Jewesbury noted that medical treatment was only applied in cases with a good prognosis for future flying, as there was 'little to be gained from inpatient treatment of the man who is unlikely to fly again. Removal of the cause of his anxiety, namely, removal from flying, [was] the only practical therapeutic measure.'<sup>60</sup>

In 1942, a total of 1,687 men were seen on an outpatient basis at Rauceby of which 687 were aircrew. A further 86 flying personnel were admitted on an in-patient basis out of a total of 546.<sup>61</sup> These figures suggest that ground personnel were particularly prone to psychological disorders, which is probably due to their greater numbers. Between 1940 and 1941, there were 859 admissions to Matlock and 316 were flying personnel.<sup>62</sup> What is more, between June and December 1942, there were on average 1,200 new cases seen as out-patients by specialists at NYDN centres each month, of which 23 per cent were flying personnel. Furthermore, 1,628 personnel were admitted for inpatient treatment, including

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<sup>59</sup> TNA, AIR 49/357, Air Ministry memorandum on accommodation and disposal of neuropsychiatric cases, January 1943.

<sup>60</sup> TNA, AIR 29/357, 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, pp. 6, 26.

<sup>61</sup> *Ibid*, p. 10.

<sup>62</sup> TNA, AIR 2/5998, 'Report on the work of the RAF Hospital Matlock for the period 1 September 1940 to 31 August 1941.'

277 aircrew.<sup>63</sup> The organisation of treatment at NYDN Centres was therefore rational and efficient. Cases were treated on an in or outpatient basis, depending on the severity of their condition and this allowed the neuropsychiatric specialists to focus their attentions on those who had a reasonable prospect of recovery.

In terms of treatments applied, psychotherapy was used sparingly and mainly by specialists from psychiatric backgrounds. This form of treatment was actively discouraged, as it was believed to be too time-consuming and was thought to have prolonged cases of shell-shock in the Great War.<sup>64</sup> Across the armed forces a 'quick psychiatric interview' comprised the majority of treatment and in the RAF the initial interview with the neuropsychiatric specialist played a similar psychotherapeutic role.<sup>65</sup>

Gillespie was a staunch advocate of psychotherapy and stated:

...it consists in explanation, careful history taking, and then lucid explanation on the basis of that of the origin of their symptoms. The patient is sooner or later confronted with the need to drop his symptoms or his interest in them and face the prospect of return to duty.'

He noted that when the position was made clear to the individual, he may 'exhibit the feeling that he is bound in honor to make the best of the situation, and not infrequently in the long run he decides to face it again.'<sup>66</sup> Psychotherapy was therefore based on the principle that by merely discussing symptoms, individuals would recognise their illness and were empowered to conquer it.

Common drugs, like those used in the Military Hospital, were prescribed to reduce the symptoms of neurotic illness. Jewesbury, for instance, used 'a simple sedative or hypnotic' to help patients adjust to service life.<sup>67</sup> In extension to this, bed rest was a

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<sup>63</sup> TNA, AIR 2/5998, Expert Committee on the Work of Psychologists and Psychiatrists in the Services, Future Work of the Committee, 27 November 1942, Tables 19 & 20.

<sup>64</sup> TNA, AIR 2/5998, Expert Committee on the Work of Psychologists and Psychiatrists in the Services, Note by the Chairman, 17 September 1942, p. 9.

<sup>65</sup> Harrison, *Medicine and Victory*, p. 178; Ellin, 'The Many Behind the Few', p. 324

<sup>66</sup> Gillespie, *Psychological Effects of War on Citizen and Soldier*, pp. 202-3.

<sup>67</sup> 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, p. 26.

common treatment in cases of exhaustion and psychoneurosis. Once the patient had complete rest, it was found that the symptoms reduced in intensity and frequency. This method of passive treatment was introduced in the nineteenth century by neurologist Silas Weir Mitchell for use in neurasthenic patients, as it was believed to give them a physical and moral boost. Most importantly, it removed them from the toxic environment which led to the development of their symptoms.<sup>68</sup> The symptoms of psychoneurosis, however, often prevented patients from resting or sleeping and this had to be addressed. Chloral and bromide were frequently prescribed for the treatment of insomnia and disturbed sleep. These drugs were almost 100 years old by the Second World War and were known for their hypnotic effects.

Neuropsychiatric specialists also experimented with the latest advances in treatment techniques. Electric convulsion therapy (ECT) was one of the newest treatments available and had arrived in the United Kingdom in 1939. The technique was pioneered by Italian professor of neuropsychiatry Ugo Cerletti for the treatment of schizophrenia and it was his assistant Lothar Kalinowsky who had brought it to the Britain. He demonstrated the technique at the Burden Neurological Institute and wrote an article in *The Lancet* explaining its therapeutic benefits in the treatment of schizophrenia.<sup>69</sup> This discovery piqued the curiosity of Gerald Fleming, the medical superintendent of Barnwood House Hospital, psychiatrist Frederic Golla, and neurophysiologist William Grey Walter. They tested the technique on five chronic schizophrenic patients from Barnwood House to ascertain the relative advantages and dangers of the method, with some success reported.<sup>70</sup> From 1942, it was applied to military patients and neurologist William Sargant reported a

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<sup>68</sup> Oppenheim, *Shattered Nerves*, p. 211.

<sup>69</sup> L. Kalinowsky, 'Electric convulsion therapy in schizophrenia', *The Lancet*, 234 (1939), pp. 1232-3.

<sup>70</sup> G.W.T.H. Fleming, F.L. Golla and W. Grey Walter, 'Electric-Convulsion Therapy of Schizophrenia', *The Lancet*, 234 (1939), pp. 1353-5.

rapid improvement in 75 per cent of cases with severe depression.<sup>71</sup> It is unclear how widely ECT was applied in NYDN centres but it is known that one patient received the treatment at Matlock.<sup>72</sup>

In 1944, Flight Engineer Dennis Wiltshire was admitted to Matlock after an ‘emotional blackout’ and described the treatment in some detail:

That’s not a nice story...they decided that I had to have treatment in the basement. And I was wheeled down, taken down in a lift, and they had decided to give me shock treatment and that is not funny at all. I had been completely stripped with just a white gown on and I went into this small annexe, and there was just a bed with nothing but a rubber covered mattress and a pillow. And then an orderly came in with the doctor...they put some form of gel on both my temples and then the doctor took these paddles and put one on the left and one on the right temple. And then he gave me an injection in my left arm and I went out like a light. But I had seen other people having this treatment and it is pretty horrific. These are obviously electrical paddles and they adjust the rear stat to a set reading which they wanted and switch on...and you are violently, absolutely violently shaking, they check to make sure you don’t have any dentures or anything like that. We were not tied to the bed in any way but being on our backs, I could do nothing anyway. I could do nothing about it.

Wiltshire recalled that he felt nauseous for a number of days after the treatment and vomited several times. He believed that it was ineffective, as it did not reduce his symptoms.<sup>73</sup> While on this occasion the treatment rendered no effect, it is clear that neuropsychiatrists were aware of the potential therapeutic value of such techniques and were willing to try them to return men to duty.

Another new technique was promoted by Symonds, who was made aware of a new therapy in use in the United States Army Air Force. He had read the work of Lieutenant Colonel Roy Grinker and Captain John Paul Spiegel on the treatment of war neuroses in North Africa.<sup>74</sup> He was particularly interested in ‘narco-synthesis’, which was described as a combination of ‘superficial analysis, suggestion and persuasion, facilitated by a dose

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<sup>71</sup> W. Sargant, ‘Physical Treatment of Acute War Neuroses’, *BMJ*, 2 (1942), 575.

<sup>72</sup> Gillespie discussed the therapeutic value of ECT in his co-authored textbook. See: Henderson and Gillespie, *A Text-Book of Psychiatry for Students and Practitioners*, pp. 246-62.

<sup>73</sup> IWM, Sound Archive, 28561, Wiltshire, Dennis, RDF Media, July 2004.

<sup>74</sup> R.R. Grinker and J.P. Spiegel, *War Neuroses in North Africa: The Tunisian Campaign* (New York, 1943). See also: R.R. Grinker and J.P. Spiegel, *Men Under Stress* (London, 1945).

of pentothal.<sup>75</sup> Pentothal was part of a group of barbiturates that were largely prescribed to induce sleep in neurotic patients. This drug, along with sodium amytal, was found to have therapeutic applications in certain types of mental disorder. Symonds believed that the use of narco-synthesis would allow neuropsychiatrists to elicit negative emotions and memories, which they could replace with positive thought processes.<sup>76</sup>

Occupational therapy was also carried out in NYDN centres and convalescent depots. Two neuropsychiatric specialists noted that it was 'fully utilized' and was 'most beneficial and popular.'<sup>77</sup> At Rauceby, patients were given instruction in handicrafts such as leather work, clay modelling, rug making, book-binding, and model-plane making.<sup>78</sup> Gillespie was a firm believer in the benefits of operational therapy and wanted a workshop installed at Torquay for this purpose. He felt that it would be a useful 'occupation' or a distraction from the illness and allowed the patient to be productive. He believed that another desirable addition would be 'some arrangement with local farms' who would take individuals for several weeks of farming and groups of patients for a day or two in the hay-making season. Gillespie stated: 'It is notable how morale improves and physical symptoms disappear as they become physically fit again...On the curative side, it illustrates the old adage about the sound mind and the sound body.'<sup>79</sup> Describing the work of a convalescent depot, Tempest argued that the work done there was 'very real': 'The Royal Air Force have recognised that in order to restore a man he must be taught to work, not just to play.' Patients not only did light work, they received a certain amount of

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<sup>75</sup> TNA, AIR 49/357, 'War Neuroses in North Africa': Comment on the booklet by Lt. Col. Grinker and Capt. Spiegel of the USAAF by C.P. Symonds, 1943.

<sup>76</sup> *Ibid.*

<sup>77</sup> S.I. Ballard and H.G. Miller, 'Neuropsychiatry at a Royal Air Force Centre: An analysis of 2000 cases', *BMJ*, 2 (1944), p. 42.

<sup>78</sup> Ellin, 'The Many Behind the Few', p. 329.

<sup>79</sup> TNA, AIR 29/357, 'Report on 100 Cases of Flying Personnel at Torquay Hospital', by R.D. Gillespie, 1943, p. 5.

technical instruction in their job, so that they felt that they had not lost anything by absence from the station.<sup>80</sup>

### *Disposal*

The disposal of flying personnel was a matter demanding careful handling. On the one hand, the air force required as many skilled aircrew returned to duty as possible for the sake of manpower economy and combat efficiency. But if an individual could not be returned to his former efficiency, he had to be permanently grounded or discharged without delay. Medical boards were held frequently at NYDN Centres. In fact, Jewesbury argued that medical board work was a 'time consuming occupation' and that 'the number of medical boards held on patients with neuropsychiatric disabilities far exceed[ed] the number held on any other group of patients.' A medical board was called when a recommendation was made after an outpatient consultation or period of treatment. If a man was no longer fit for his category of work or indeed, any further work in the air force, a board had to be called to discuss the options for disposal.<sup>81</sup> With regard to flying personnel, Ironside and Batchelor outlined the major principles and questions that guided the work of medical boards:

1. A final decision about disposal should be reached as soon as possible because failure to do this may prolong the neurosis.
2. If an individual develops what is purely a neurotic reaction to flying, his fitness to continue flying should be seriously questioned.
3. Individuals who develop neurotic reactions at an early stage in their flying careers should usually be permanently grounded. The more highly skilled and experienced the individual, the longer the time that should be allowed for recovery before a decision is made.
4. Temporary grounding for periods not longer than three months should usually not be advised in cases of neurotic reactions reactive to flying.
5. A limited flying category should usually be regarded as a step towards the individual's regaining his full flying category.

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<sup>80</sup> Tempest, *Near the Sun*, p. 69.

<sup>81</sup> TNA, AIR 49/357, 'The Work and Problems of a Neuropsychiatric Centre by E.C.O. Jewesbury', p. 6.

6. In most cases, if full efficiency is not regained after six months' limited flying, the individual is unlikely to regain full efficiency. He may stabilise at a stage short of complete recovery, and if skilled and conscientious, he may be usefully employed on a permanently limited category.<sup>82</sup>

These principles were clearly shaped by the need to retain manpower, as there was no discussion of discharge. In wartime, shortages of manpower and economic considerations often compelled modifications of policy, meaning that those who would have traditionally been invalided from the service were retained in a limited role.<sup>83</sup>

The medical boards had three major decisions to make with regard to disposal. An individual could be retained in his present role, in the hope that he would 'adjust', which was Grade 1. Alternatively, he could be downgraded to Grade 3 (permanently unfit for overseas service), or Grade 4 (permanently unfit for any service – invalided). With regard to 200 consecutive cases of psychological disorder at Rauceby, Jewesbury noted that 74.4 per cent of cases were categorised as Grade 4 and invalided from the service, 2.4 per cent were considered permanently unfit for overseas service, and 23.2 per cent were fit for full duties.<sup>84</sup> It is important to consider what factors shaped these decisions.

Flying stress and predisposition were the two major factors that guided the disposal of flying personnel. At Torquay, Gillespie treated 14 cases who were described as 'men of good morals, who had been overworked, or had felt upset by heavy losses...or had a 'bad experience.' In this group, some men became somewhat aggrieved for reasons other than flying, such as a lack of recognition and poor pay for dangerous work. Other cases were fatigued through overwork, were physically unfit, and felt the monotony of instructing new pilots.<sup>85</sup> A second larger group, however, had a latent predisposition to nervous breakdown and they became ill after 'severe trauma.' Three of them had been involved in severe

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<sup>82</sup> Ironside and Batchelor, *Aviation Neuropsychiatry*, pp. 74-5.

<sup>83</sup> *Ibid*, p. 74.

<sup>84</sup> TNA, AIR 49/357, 'The Work and Problems of a Neuropsychiatric Centre', by E.C.O. Jewesbury, p. 4.

<sup>85</sup> TNA, AIR 29/357, Report on 100 Cases of Flying Personnel at Torquay Hospital by Air Commodore Gillespie, 1943, pp. 2-3.

crashes and two of them had been severely burnt. The symptoms of eleven men of this group included insomnia, night terrors, repetitive dreams, the horror of being burnt, accompanied with the acute agony this involved. Gillespie believed that they were the most important to consider, particularly from the point of view of prophylaxis for it demonstrated the value of assessing nervous predisposition by an early interview. A third smaller group was populated with cases with an additional physical disease. Certain cases had ulcers, which could be a sign of a nervous disorder and others were recovering from a head injury, which had facilitated the development of a neurosis.<sup>86</sup>

In terms of prognosis, Gillespie felt that the outlook of the first and third groups was 'reasonably good'. Once physical ailments had healed, and with a change, rest, and psychotherapy, most would return to flying duties. With regard to actual disposal, Gillespie noted that 12 cases returned to full flying duties, five were fit for limited flying, five were fit for temporary ground duties, and none of them were permanently unfit. The predisposed second group, however, had an 'unsatisfactory' prognosis. Only three were fit for full operational flying, five for limited flying, seven for temporary ground duties, and seven were permanently unfit for flying.<sup>87</sup> Thus Gillespie's disposal decisions emphasised the importance of flying stress and predisposition. Those with flying stress could normally make a good recovery providing they were not predisposed to breakdown, whereas the predisposed were temperamentally unfit and unlikely to get well.

Like treatment records, data on disposal is sparse but judging from the limited evidence NYDN centres played a valuable role in the treatment and disposal of neuropsychiatric casualties. They managed to effect a return to duty in those who were temperamentally fit to fly, which made for combat efficiency.

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<sup>86</sup> TNA, AIR 29/357, Report on 100 Cases of Flying Personnel at Torquay Hospital by Air Commodore Gillespie, 1943, pp. 2-6.

<sup>87</sup> Ibid, pp. 7-8.

## **Conclusion**

The RAF took a scientific approach to the management of neuropsychiatric casualties. A comprehensive chain of evacuation was established, which ensured that personnel exhibiting evidence of a nervous or psychological disorder were evacuated and treated as quickly as possible. Treatment aimed to return men to duty with the least possible delay to ensure that manpower and combat efficiency were not compromised. Flying personnel received treatment on the station and specialist neuropsychiatric centres to ensure that treatment was rational and efficient. MOs and neuropsychiatric specialists each had an important role to play in the prevention, diagnosis, and disposal of mental disorders.

MOs played a particularly important role in the prevention and preliminary treatment of flying personnel. As they were living in close proximity to the men, they were in a unique position to detect flying stress and illness at the earliest possible stage. They therefore had the opportunity to prevent illness from occurring through quick intervention. MOs were advised to establish close relationships with personnel and to become a trusted member of the squadron. This would allow crews to come to them in the event of illness or a crisis of confidence. MOs also had a fundamental role to play in the evacuation and administration of casualties. They provided neuropsychiatric specialists with important notes on the history and symptoms of sick individuals and were responsible for making referrals to NYDN centres.

NYDN centres were the primary location for acute neuropsychiatric care in the RAF. They were set up on a regional basis to make for speedy and efficient care. At these centres, cases were treated on an in or outpatient basis, depending on the severity of the disorder. The diagnosis, treatment, and disposal of flying personnel were guided by research into flying stress and predisposition. The levels of both could determine an individual's future in the service. Treatments aimed to restore men to their former

efficiency and the RAF had kept abreast of the latest developments in psychological care, including ECT and narco-analysis. Treatment was generally administered to flying personnel who were likely to return to duty, as they were the most important members of the RAF. Prognosis depended on the degree of flying stress and personal predisposition, and this was often reflected in the final disposal of personnel. On the whole, neuropsychiatric specialists worked efficiently, as a large proportion were returned to duty.

The neuropsychiatric care of flying personnel was therefore rational and efficient. The sophisticated management of casualties allowed for the processing and rapid treatment of neuropsychiatric cases, and was designed to return as many to duty as possible. The RAF had recognised the key human element of aerial warfare, as men were constantly observed for signs of illness and removed from flying if they showed any signs of stress or illness.

## **Conclusion**

This work has critically assessed the role of neuropsychiatry in the management of aerial warfare. The RAF enlisted the expertise of neurologists and psychiatrists to reduce wastage from neuropsychiatric disorders and to improve combat efficiency. The thesis has explored how far, and in what ways, the neuropsychiatric division met these objectives and assessed if this type of specialist medicine made a valuable contribution to the aerial war effort. In doing so, several lines of enquiry were pursued. It explored the factors that shaped the practice of neuropsychiatry in the service, the ways in which the division preserved the fundamental human element of aerial combat, and how neuropsychiatric knowledge improved the efficiency of the air force. In addressing these crucial points, the thesis assessed the administrative and therapeutic duties of the neuropsychiatric division in a number of different areas including the reformation of personnel selection, the maintenance of service discipline, neuropsychiatric research, and the treatment of casualties. A number of important conclusions can be drawn.

## **Summary and Findings**

The first objective of this work was to demonstrate that a study of the air force forms a valuable contribution to the historiographies of military psychiatry and medicine. Scholarship has hitherto focussed upon the experiences of psychiatrists working in the British Army and this has skewed the historiography. By focussing exclusively on land forces, scholars have unwittingly implied that war neuroses were specific to infantry soldiers. This work has shown, however, that the British air forces suffered from nervous and psychological disorders from as early as the Great War and that these conditions

affected at least 13 per cent of casualties seen by RFC medical boards.<sup>1</sup> What is more, the vast majority of these casualties were returned to duty, which implied that they were handled more effectively than shell-shock in infantry soldiers, which made pensioners of at least 70,000 men.<sup>2</sup> In the Second World War, the neuropsychiatric division treated a total of 76,190 personnel suffering from a nervous or mental disorder, including 18,000 flying personnel.<sup>3</sup> As the RAF employed 1,012,000 personnel at its peak, these figures may appear negligible.<sup>4</sup> But putting statistics aside, the process of understanding neuropsychiatric disorders was complex and the effects of such conditions were no less profound to affected personnel. What is more, it was a concern at the operational level. To win the air war, highly-selected and trained flying personnel had to operate at the peak of their efficiency at all times. Wastage of any type posed a threat to manpower economy and combat efficiency. Medical services were therefore charged with the maintenance of these crucial variables.<sup>5</sup> A study of the air force is essential to highlight the approach taken to the management of neuropsychiatric casualties in this service environment.

In studying the practices of the RAF neuropsychiatric division, this thesis has promoted a new line of enquiry. It has argued that it is essential to examine the practices of the individual armed forces, for each service had experiences unique to their service cultures and combat environments.<sup>6</sup> The air force waged war in the sterile environment of the air in some of the world's most advanced technology. This was a world apart from the infantry battlefield. The air force took the fight directly to the enemy, with fighters and bombers conducting sorties over the treacherous sea, evading heavily-defended enemy

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<sup>1</sup> Please see Table 1.

<sup>2</sup> PIN 15/2401, Conference of Neurologists and Psychologists and Representatives of the Service Departments, 3 July 1939.

<sup>3</sup> A.P. 3139, *Psychological Disorders in Flying Personnel of the Royal Air Force Investigated During the War 1939-1945*, p. 1.

<sup>4</sup> For figures on the strength of the RAF, please see: CMD. 6832, *Strength and casualties of the Armed Forces and Auxiliary Services of the United Kingdom 1939 to 1945* (London, 1946).

<sup>5</sup> Harrison, *Medicine and Victory*, p. 1; Thalassis, 'Treating and Preventing Trauma' p. 1.

<sup>6</sup> Mayhew made similar claims in her study of RAF burn casualties, as the environment in which these injuries were sustained were unique to the air force: Mayhew, *The Reconstruction of Warriors*, p. 18.

positions, and engaging with the well-equipped and highly-motivated Luftwaffe. At the end of the day, those lucky enough to survive their combat missions retired to a home station with comfortable beds and free-flowing alcohol.<sup>7</sup> This work has shown that the ‘load’ which aircrews had to carry was specific to the peculiarities of the air war and this necessitated research into the psychological disorders of flying personnel. The RAF and army waged fundamentally different wars and negotiated unique combat stresses. Studies of the air force are therefore essential to highlight differences in experience across the British armed forces.

This study has found that neuropsychiatry played a valuable role in the management of aerial warfare. The RAF had recognised that medicine could make a vital contribution to the maintenance of manpower and combat efficiency. By treating the inevitable casualties and making recommendations that would maximise the efficiency of personnel, medical knowledge was highly-respected and applied to all aspects of air force life. Neuropsychiatry, among other specialties, commanded a position of authority in the medical services. The division was run by consultants who answered to the DGMS, rather than an operational officer.<sup>8</sup> The division was represented at the highest levels of the medical hierarchy and consultants were endowed with considerable administrative authority through their position in the CME. What is more, specialist NYDN centres were established for the research and treatment of the disorders of air force personnel, which allowed the division the therapeutic freedom required for the successful management of casualties. The division therefore held considerable administrative authority and therapeutic freedom, which allowed them to fulfil their important duties.

However, it is important to acknowledge that the RAF was slow to recognise the potential therapeutic and administrative value of neuropsychiatric knowledge. The

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<sup>7</sup> Francis, *The Flyer*, ch. 5.

<sup>8</sup> In the army, the psychiatric branch was run by an army officer but the psychiatrists were given considerable administrative authority and therapeutic freedom: Thalassis, ‘Treating and Preventing Trauma’, p. 219.

advances made in neuropsychiatry during the war were particularly remarkable in light of the air force's historical record. The Great War had exposed the propensity of flying personnel to nervous and psychological disorders, yet the RAF made no attempt to amend selection procedures, to introduce screening, or to take a systematic approach to the research of the disorders in the aftermath.<sup>9</sup> Shell-shock was the priority of the state and Ministry of Pensions, who were keen to prevent a similar financial burden in future conflicts. The emphasis on hysterical conditions and the belief that flying personnel were a unique breed, limited further research into disorders associated with flying.

Neuropsychiatric casualties continued to rise throughout the interwar years, yet only one consultant was employed to negotiate the trauma. As a result, the RAF approached the Second World War with a limited understanding of the psychological strains of flying, forcing the division to take a reactive stance throughout the conflict.

The division contributed to the management of aerial warfare in a number of ways. The responsibilities of consultants and specialists were similar to the psychiatrists in the army but their approach was tailored to the requirements of the air force. The division was duty-bound to make recommendations that were conducive to the maintenance of manpower and combat efficiency, and to take administrative and therapeutic action to reduce wastage. The area of personnel selection concerned Consultant in Neuropsychiatry Group Captain Robert Gillespie for the RAF was admitting men who were predisposed to mental disorders. He therefore proposed that the neuropsychiatric division should screen personnel for vulnerability to such conditions. Though his methods were not applied during the Second World War, it provoked the re-examination of selection methods for flying personnel.

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<sup>9</sup> Nor did the army introduce screening until the Second World War was in progress: Thalassis, 'Useless Soldiers: The Dilemma of Discharging Mentally Unfit Soldiers during the Second World War', p. 112.

Medical officers and specialists played a fundamental role in ensuring men were fit to perform their duties but they were also responsible for exposing malingerers. While they were doctors, they were also air force officers and expected to uphold service discipline.<sup>10</sup> Following disastrous early operations, the LMF measure was introduced in 1940 in response to a perceived breakdown in service discipline. Medical officers and neuropsychiatric specialists played an important role in the application of this stigmatising measure by separating cases of sickness from malingerers, who would be subjected to harsh executive action. Personnel of the division objected to this duty, for they believed that their medical training did not qualify them to make judgements on malingering. It also stigmatised men, whose refusal to fly was the result of severe flying stress and the measure compromised the treatment process at NYDN centres.<sup>11</sup> Accordingly, the division did what it could to amend this draconian measure and had some success in the introduction of a new humanitarian category – ‘lack of confidence’. But while they objected to LMF, they enhanced the efficacy of the measure by ensuring that sick men were not subjected to executive action.

The division also played a fundamental role in the management of aerial warfare by researching the psychological problems of flying personnel. The Consultants in Neurology were given a position of importance in the FPRC. They conducted research into a non-specific syndrome known as ‘flying stress’, which compromised the efficacy of

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<sup>10</sup> This was common in the army, especially in the Great War: Whitehead, ‘Not a Doctor’s Work? The Role of the British Regimental Medical Officer in the Field’, in Cecil and Liddle (eds.), *Facing Armageddon: The First World War Experience*, p. 506; Cooter, ‘Malingering in Modernity: Psychological Scripts and Adversarial Encounters during the First World War’, in Cooter, Harrison, and Sturdy, *War, Medicine and Modernity*, pp. 125-148; Bourke, *Dismembering the Male*, ch. 2.; Whitehead, ‘Medical Officers and the British Army During the First World War’, pp. 323-4. In the Second World War, the medical officer was the principal conduit of propaganda in terms of health and morals: Harrison, ‘Sex and the Citizen Soldier: Health, Morals and Discipline in the British Army during the Second World War’, in Cooter, Harrison and Sturdy (eds.), *Medicine and Modern Warfare*, pp. 225-250; Harrison, ‘The British Army and the Problem of Venereal Disease in France and Egypt during the First World War’, pp. 133-158.

<sup>11</sup> TNA, AIR 2/8591, Minutes of Conference Held to Consider Medical Aspects of ‘Wavering’, 16<sup>th</sup> July 1940; AIR 49/357, ‘The Work and Problems of a Neuropsychiatric Centre’ by E.C.O. Jewesbury, 1943, p. 24.

neuropsychiatric work and had the potential to become 'epidemic' like shell-shock. Interdisciplinary research found that air force personnel were suffering from common conditions, such as psychoneurosis and fatigue, and that these were the response to the physical and psychological stresses of flying. As a result, the air force adopted scientifically-informed nomenclature that standardised the diagnosis of neuropsychiatric conditions, allowing medical officers and neuropsychiatric specialists to prevent the development of disorders and to treat conditions efficiently.

In the preservation of manpower, the neuropsychiatric division played a fundamental curative role. The treatment of neuropsychiatric disorders was based upon rapid evacuation and effective therapy. Specialists and medical officers aimed to return men to duty with the least possible delay, to ensure that combat efficiency was not compromised. MOs and neuropsychiatric specialists each had an important role to play in the prevention, diagnosis, and disposal of neuropsychiatric casualties. Flying personnel were typically evacuated to NYDN centres, which were the primary location for acute neuropsychiatric care. The diagnosis, treatment, and disposal of flying personnel were guided by research into flying stress and predisposition, which could determine an individual's future in the service. Treatment aimed to restore men to their former efficiency and was generally administered to flying personnel who were likely to return to duty. Prognosis depended on the degree of flying stress and personal predisposition, and this was often reflected in the final disposal of personnel. On the whole, neuropsychiatric specialists worked efficiently, as a large proportion of casualties were returned to duty.

This work has also investigated the factors that shaped the practice of neuropsychiatry in the RAF. It supports the contention of Berrios and Markova, who argued that neuropsychiatry was shaped by a number of factors including economic considerations, the interests of specialists, and the context in which it was being

practised.<sup>12</sup> This was certainly the case in the RAF, where neuropsychiatry was not only a medical specialty with preventive and therapeutic abilities; it also had something to offer the state, the air force, and its practitioners.

First and foremost, neuropsychiatry served the interests of the air force. The practice of neuropsychiatry was fundamentally shaped by what the service required it to achieve: the maintenance of manpower and combat efficiency. The RAF required men to operate at the peak of their efficiency and it was the job of specialists to make recommendations that were conducive to this. The service had recognised that flying was dangerous and psychologically-challenging; a range of physical and psychological disorders were inevitable and represented a threat to manpower economy. The alliance of neurology and psychiatry was a potentially efficient way of dealing with the nervous and psychological casualties of aerial warfare.

Secondly, neuropsychiatry was valuable to the Ministry of Pensions, who were smarting from the financial burden of shell-shock. They believed that preventive medicine was the key to reducing personnel wastage from mental and nervous disorders, which would reduce the number of pension claimants in the aftermath. They took a 'pitiless' approach to problem and imposed considerable restrictions on who could claim a pension.<sup>13</sup> The armed forces medical services agreed that no man should be discharged from the services on the grounds of neurosis, no pensions should be granted, screening for all recruits should be introduced, and that no quasi-medical language should be used.<sup>14</sup> These recommendations shaped the work of the division, particularly in the retention of airmen, treatment, and the reformation of nomenclature.

The consultants of the division also fundamentally shaped the practice of neuropsychiatry in the RAF. The neurologists and psychiatrists took different approaches

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<sup>12</sup> Berrios and Markova, 'The concept of neuropsychiatry: a historical overview', p. 629.

<sup>13</sup> Shephard, 'Pitiless Psychology: the role of prevention in British military psychiatry', pp. 497-99.

<sup>14</sup> TNA, PIN 15/2401, Report, 28 September 1939.

to the prevention and treatment of mental disorders and this affected the value placed on the individual specialties by the medical hierarchy. Historically, the RAFMS engaged neurologists to negotiate the nervous and psychological effects of flying but the predictions for neurotic cases necessitated the introduction of psychiatrists to the service for the first time. Consultant in Neurology, Group Captain Charles Symonds was a well-respected specialist and represented the neuropsychiatric division in the FPRC. He had already proven his potential value by proposing the establishment of the Military Hospital for Head Injuries, where he demonstrated that neurologists could treat psychological trauma, as well as physical injury. The value of psychiatry remained to be proven in the service and there was reluctance to accept or trial psychiatric methods. Gillespie met resistance in the proposed introduction of neuropsychiatric screening but his methods were eventually tested in a controlled trial and the nature of predisposition was considered in the treatment process. Neurology was the dominant partner in the neuropsychiatric relationship, with consultants represented on committees and the highest levels of the medical hierarchy. Psychiatry, on the other hand, was primarily concerned with treatment.

The need for research also shaped the practice of neuropsychiatry in the service. As the RAFMS had little knowledge of the psychological strains of operational flying, research became a major responsibility of the division. The neuropsychiatric division conducted research commissioned by the FPRC but specialists also studied the nature of casualties under treatment to advance knowledge of the psychological strains of operational flying. Research was essential, as the division was required to make recommendations that were conducive to the maintenance of manpower and combat efficiency. This could only be achieved with scientific knowledge of the stresses of flying.

The thesis also engaged with the fundamental human element of aerial combat. It supports the works of Wells and English, who argued that the quality of aircrew was the

essential factor in the waging of the air war.<sup>15</sup> While the air forces promoted technological prowess, it was men who operated this advanced machinery. The division did much to preserve and protect the interests of the men. They attempted to amend the LMF measure to defend those who had suffered ‘severe and shattering experiences.’ Research into flying stress allowed neuropsychiatrists to engage with the psychological problems of flying personnel and much was learned about the stresses of operational flying. This allowed recommendations to be made on the resting and employment of personnel, and enabled MOs and operational commanders to recognise the signs of incipient breakdown. Advice was given to MOs on the psychological care of flying personnel to allow for the prevention or early detection of mental disorders, and they could rely upon a team of experts to treat any personnel that developed a condition.

The thesis also assessed if the neuropsychiatric division worked effectively in the management of aerial warfare and if it improved the overall efficiency of the air force. It is important to acknowledge that it is difficult to judge efficiency in retrospect. The historian is presented with two options: to make judgements based on actor’s categories or to apply their own standards. This thesis has examined efficiency in relation to the standards applied by the RAF. The maintenance of manpower and combat efficiency was the responsibility of every branch of the air force to allow the service to operate effectively. The efficiency of the division has therefore been judged according to these objectives. Taking such an approach avoids the inevitable pitfalls of applying different standards, which could lead to anachronistic judgements and the removal of the sources from their historical context. Judging the actions of the division according to modern values is potentially ahistorical for it was a product of its time and worked to the standards and objectives set for them.

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<sup>15</sup> Wells, *Courage and Air Warfare*, pp. 209-23; English, *The Cream of the Crop*, pp. 145-54.

Overall the neuropsychiatric division worked effectively and improved the efficiency of the RAF. The neuropsychiatrists made recommendations that were conducive to the maintenance of manpower and combat efficiency. The reformation of flying hours following research into flying stress is a prime example of how neuropsychiatric knowledge worked to reduce wastage and to improve the efficiency of air force personnel. Reduced flying hours meant that pilots and aircrew were less likely to develop a neuropsychiatric disorder or fatigue, as the limits of physical and psychological endurance had been established. Operational commanders could therefore rest their personnel before the stress became too much to bear and after time away from flying duties, they could resume operations feeling refreshed. What is more, the way that the neuropsychiatric division worked was rational and efficient. The organisation of the administrative and therapeutic duties of the division was divided among consultants and specialists to ensure that they were meeting their objectives. The chain of evacuation for neuropsychiatric casualties was effective and allowed for specialist care to be provided to those most likely to return to their former efficiency.

It is also important to acknowledge that it is difficult to trace a connection between the neuropsychiatric services offered and the perceived results. This is a problem common to all studies of psychological medicine in the armed forces, as the personal views of air force commanders and the patient's opinion cannot be discerned from documentary evidence. Even if oral history interviews were recorded, the value of the data would inevitably be compromised by hindsight and later life experiences. Neurology and psychiatry have made great advances since the Second World War and most personnel would judge the record of the air force harshly in light of contemporary developments. This work has therefore judged the efficacy of recommendations and therapy by statistical means and reports produced by the division. Overall, the thesis has shown that the

neuropsychiatric division did meet the expectations of the air force and produced results. Their knowledge was valued by operational and medical commanders in matters concerning flying personnel and they were given considerable administrative authority and therapeutic freedom.

### **Areas for Further Consideration**

The history of RAF neuropsychiatry is a particularly rich topic area, with literally thousands of documents covering the Second World War alone. This thesis is naturally limited in scope and has focussed on areas that have been highlighted in the current historiography of military psychiatry. This work may be criticised for its broadly institutional, top-down approach but such a study is essential to provide a springboard for future work in this area. With an understanding of the institutional structures, scholars will be able to comment on other aspects of RAF neuropsychiatry and mental health, which this thesis has not been able to address.

First of all, there is scope for a separate study of the role of industrial psychology in the management of aerial warfare. This project has engaged with the work of the Cambridge Psychology Laboratory in personnel selection, to provide context for the reformation of RAF methods and to a lesser extent, the research of flying stress. As a civil adviser to the FPRC, Professor Frederic Bartlett contributed his years of experience in industrial psychology to research concerning the medical aspects of flying. He was a respected and fully-integrated member of the FPRC. Together with his team at Cambridge, he developed apparatus that would assist in the selection of flying personnel but also undertook research into methods of reducing flying accidents.<sup>16</sup> The University of Cambridge Department of Manuscripts and University Archives hold the private papers of

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<sup>16</sup> E.g. TNA, AIR 20/975, Flying accidents: preventative measures, 01 December 1943 – 31 December 1946.

Bartlett, which cover his entire career, including his time with the air force.<sup>17</sup> The history of industrial psychology is an under-researched area and a study of this type has the potential to make a contribution to the historiographies of military psychiatry and medicine, and also the history of psychology.<sup>18</sup>

This work has not engaged with the experiences of the individual commands in any detail. This omission is justified as, on the whole, the neuropsychiatric division viewed flying personnel as a collective, rather than members of Fighter, Bomber, and Coastal Commands. The exception to the rule was in the study of flying stress, where Symonds and Williams conducted research into the unique strains faced by each of the commands.<sup>19</sup> The results of their research demonstrated that the stresses negotiated by each command varied due to the nature of their operational work. Combat in a single-seat fighter aircraft produced different types of stress to the bombing of civilian populations and the monotonous patrol of British sea lanes. There may be potential for separate studies of the psychological stresses of Bomber, Coastal, and Fighter Commands.<sup>20</sup>

As stated in the introduction, this study did not attempt to engage extensively with operational developments. The psychological effects of early operations were introduced, as these provided the impetus for neuropsychiatric research in the service and the introduction of LMF. The official histories noted the effects of specific operations on the

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<sup>17</sup> Cambridge University Library, Department of Manuscripts and University Archives, Sir Frederic Charles Bartlett: Notebooks and Papers, GBR/0012/MS Add. 8076.

<sup>18</sup> The historiography is limited. E.g. J.H. Capshew, 'Psychology on the march: American psychologists and World War II (Univ. Pennsylvania Thesis, 1986); L.L. Koppes (ed.), *Historical Perspectives in Industrial and Organizational Psychology* (Hove, 2007); F. Samelson, 'World War I Intelligence Testing and the Development of Psychology', *Journal of the History of the Behavioural Sciences*, 13 (1977), pp. 278-842; J. Zeidner and A.J. Drucker, *Behavioral Science in the Army: A Comparative History of the Army Research Institute* (Alexandria, 1988).

<sup>19</sup> TNA, AIR 57/8, FPRC Report 412 (f), 'Personal Investigation of Psychological Disorders in Flying Personnel of Bomber Command', by C.P. Symonds and D.J. Williams, August 1942; FPRC Report 412 (h), 'Personal Investigation of Psychological Disorders in Flying Personnel of Coastal Command' by C.P. Symonds and D.J. Williams, December 1942; FPRC Report 412 (g), 'Personal Investigation of Psychological Disorders in Flying Personnel of Fighter Command', by C.P. Symonds and D.J. Williams, August 1942.

<sup>20</sup> Wells has started this process, focussing on Bomber Command in the allied air offensive: Wells, *Courage and Air Warfare*, chs. 1, 3, 5, 6, 8.

psychological health of flying personnel but the thesis could not integrate this material, as it was not a specific focus of the neuropsychiatric division.<sup>21</sup> Neuropsychiatrists were concerned with the disorders of flying personnel rather than the operations on which they were sustained. Studies from the operational perspective would be useful, however, as they could situate the problems created by neuropsychiatric disorders firmly into the context of aerial combat. Such research would make a valuable contribution to the historiography of air power, for the human element of operations is often overlooked.

This work has engaged with a number of themes that have contemporary relevance. Rates of mental disorder, including PTSD, continue to rise even after the British armed forces have withdrawn from Iraq and Afghanistan. During the period 2013-14, 6,804 new cases were investigated by the armed forces medical services and 79 per cent were assessed as having a mental disorder, which represents a rate of 30.4 per 1,000 strength.<sup>22</sup> The figure for RAF personnel rose by 14 per cent on the previous year, with 1,342 new cases investigated and 1,100 diagnosed as suffering from a mental disorder.<sup>23</sup> What is more, the standards of physical and psychological fitness for piloting aircraft have come under question in the last year. In March 2015, Germanwings Flight 9525 crashed in the French alps by a co-pilot who was alleged to suffer from depression. This has raised questions within the mass media on mental health and pilot licensing.<sup>24</sup> As trauma continues to be a part of warfare and the topic of mental health and flying is firmly on the

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<sup>21</sup> For instance, please see: C. Webster and N. Frankland, *Strategic Air Offensive Against Germany* (4 vols., London, 1961).

<sup>22</sup> 'UK Armed Forces mental health: Annual Summary and Trends Over Time, 2007/08-2013/14', Ministry of Defence, 31 July 2014, p. 1, accessed 29 June 2015 at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/338212/20140729\\_Annual\\_Mental\\_Health\\_report\\_2013\\_14.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338212/20140729_Annual_Mental_Health_report_2013_14.pdf).

<sup>23</sup> *Ibid*, pp. 6, 10.

<sup>24</sup> 'Preliminary Report, Accident on 24 March 2015 at Prads-haute-Bléone to the Airbus A320-211 registered D-AIPX operated by Germanwings', Bureau d'Enquêtes d'Analyses pour la sécurité de l'aviation civile, May 2015, accessed 29 June 2015 at <http://www.bea.aero/docspa/2015/d-px150324.en/pdf/d-px150324.en.pdf>; 'How Pilots Are Screened for Depression and Suicide' *Time Magazine*, 25 March 2015, accessed 29 June 2015 at <http://time.com/3760132/germanwings-plane-crash-pilot-suicide-andreas-lubitz/>.

agenda, further studies on fitness to fly are desirable to provide an evidence base and historical context for current investigations.

## Appendix A

### **CONFIDENTIALITY AGREEMENT – ACCESS TO FIRST WORLD WAR MEDICAL CARDS**

Ms Lynsey Shaw  
Wolfson College  
Linton Road  
OXFORD  
OX2 6UD

Research project: Doctoral research project examining Royal Air Force neuropsychiatry during the Second World War. (First World War cards will be used to plot the incidence and prognosis of psychological and neurological disorders, nomenclature used and will contextualise the broader project).

I understand that:

1. The age of the records and the personnel concerned is such that they are now probably deceased and therefore the Data Protection Act does not apply;
2. The medical cards contain information that may cause distress to the descendants and relatives of the personnel concerned;
3. Access to the records is given for the purpose of collecting and analysing data for the project described above.
4. The RAF Museum will retain this confidentiality agreement indefinitely as a record that I have accepted the conditions specified below.
5. The RAF Museum will not share my personal information with any third party, unless I have given my consent.

I undertake:

1. To collect the minimum data necessary for the project;
2. To use the data gathered for no other purpose;
3. Not to use the information obtained from my research in any way which might allow the identification of named individuals;
4. Not to copy individual record cards in any way other than manuscript notes; if illustrative records are required for my thesis or subsequent publications these will be provided – suitably redacted – by the Museum.
5. To provide draft text in advance of publication should I wish to publish data from these records;
6. To make an acknowledgement to the Royal Air Force Museum in any published work.

[signature redacted]

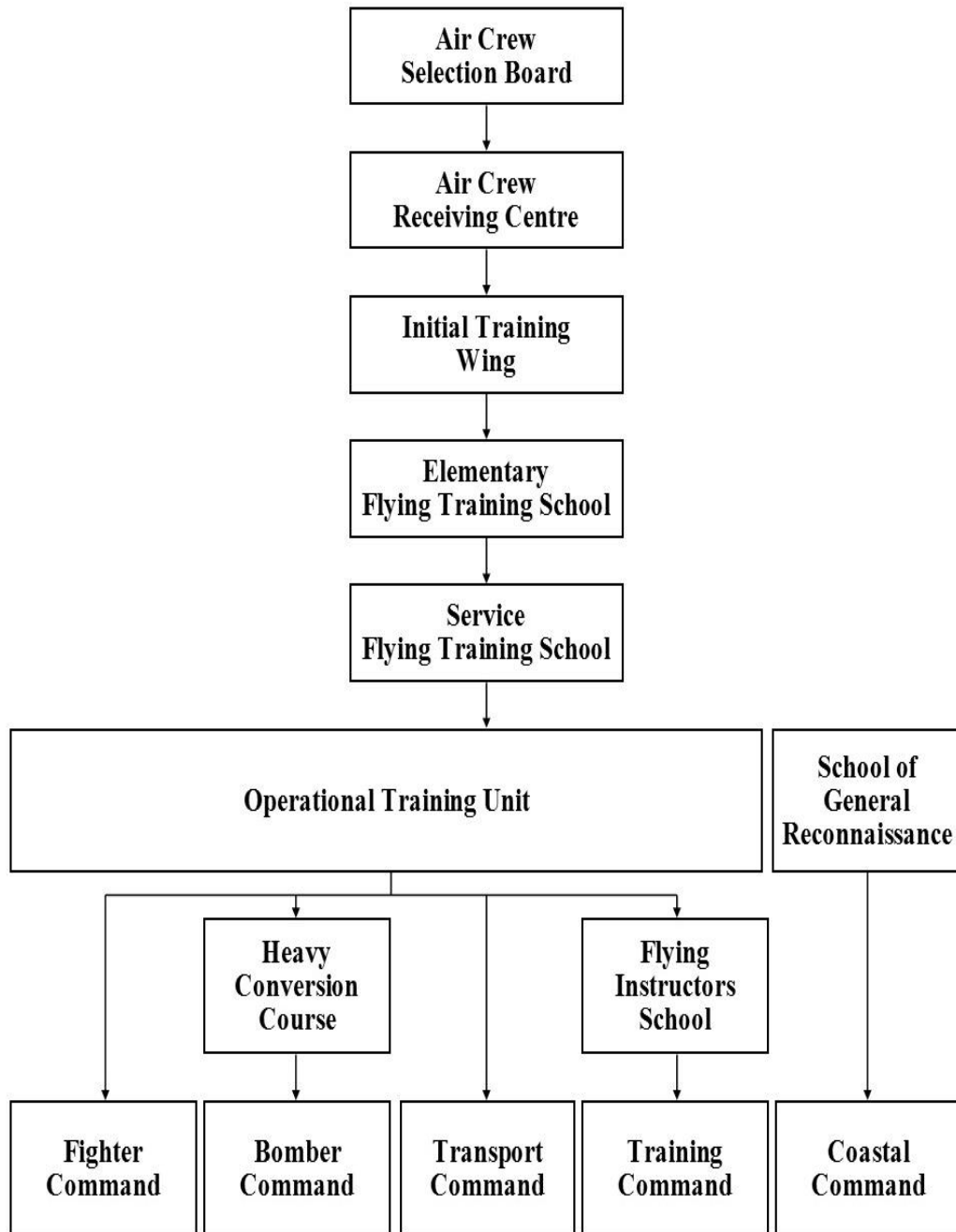
Date

[signature for the Museum redacted]

Date

## Appendix B

### Schematic of Air Crew Training, 1939-45



**Source:** TNA, AIR 10/2316, Air Publication 1388a, Standard War Syllabus of Pilot Training in the Royal Air Force, Revised Edition, February 1945, p. 1

## Appendix C

### General Intelligence Test A

(1-2) Imagine the following two series of measures or objects arranged in order of their size or value. Without actually writing them in order, underline the one in each case which would be in the middle of the re-arranged series:–

- (1) inch, mile, furlong, yard, foot
- (2) half-crown, shilling, penny, farthing, florin

(3) A squad of men at drill are facing south. They are given the following orders:– “Right Turn” “About Turn” “Left Turn.” Which way are they now facing? Underline the correct direction below.

- (i) North, (ii) South, (iii) East, (iv) West.

(4) What relation to an only child is his grandfather’s grand-daughter? Underline the correct answer below.

- (i) Mother, (ii) Sister, (iii) Cousin, (iv) Niece, (v) Uncle.

(5) If the day after tomorrow is the day before Sunday, what day was yesterday? Underline the correct day below.

- (i) Monday, (ii) Tuesday (iii) Wednesday, (iv) Thursday, (v) Friday, (vi) Saturday, (vii) Sunday.

(6-8) Underline one word in the group of four at the end of each line below to make a true statement in each case.

(6) GOOD is to BAD as WHITE is to...RED, BLACK, EVIL, WICKED

(7) TAILOR is to CLOTHING as BAKER is to...BREAD, MILK, TROUSERS, COAT

(8) EARS are to HEARING as EYES are to...BELIEVING, PICTURE, MUSIC, SEEING

(9) Carton is 50 miles due east of Denville and Denville is 50 miles due south of Bostover. Is Bostover (i) North-east, (ii) North-west, (iii) South-east or (iv) South-west of Carton? Underline the correct answer.

(10-11) A man was walking in daylight in June in England with his shadow stretching straight in front of him. The shadow was longer than the man was tall. An east wind was blowing and the man’s hat blew off and fell behind him. Underline the correct answers to the following questions:–

(10) In which direction was the man walking?

- (i) North, (ii) South, (iii) East, (iv) West.

(11) Was it (i) early evening, (ii), noon, (iii) early afternoon or (iv) evening?

(12-14) In a certain country half the people were men, two-thirds spoke English and three quarters were white. Underline the answers to the following questions:–

(12) Did any women speak English?

- (i) Yes, (ii) No, (iii) Insufficient evidence to say.

- (13) Did any men who were not white speak English?  
 (i) Yes, (ii) No, (iii) Insufficient evidence to say.
- (14) Were there any white folk who did not speak English?  
 (i) Yes, (ii) No, (iii) Insufficient evidence to say.

(15-19) In all the words printed below the letters have been jumbled. In each case one of the words in the group of four on the right means the opposite of the word printed by itself on the left. Underline this word in each row.

- |            |       |       |          |        |
|------------|-------|-------|----------|--------|
| (15) DYR   | DOL   | TEW   | DER      | PTA    |
| (16) ASTE  | LASE  | STEW  | CHULN    | OBX    |
| (17) THORS | GOLN  | CHITK | LTI L TE | UGHE   |
| (18) RYMER | NUFYN | LISLY | YERCHE   | MOGOYL |
| (19) BEAVO | ROOFL | OLWEB | LUDOC    | RASTS  |

(20) Brown was four days older than Smith and Smith was born on December 29<sup>th</sup>, 1899. The year 1900, New Year's Day was on a Monday. Underline the day of the week on which Brown was born.

- (i) Monday, (ii) Tuesday, (iii) Wednesday, (iv) Thursday, (v) Friday (vi) Saturday (vii) Sunday

**Source:** AIR 2/8057, General Intelligence Test A, n.d.

## Appendix D

### **Schedule of questions and traits in use during Gillespie's investigation of predisposition, 1942**

1. Quality of sleep in childhood and adolescence. One positive mark is scored if there is a history either of frequent nightmares, habitual restless sleep, or sleep walking more than twice.
2. Stammering. If this is exhibited at all it is given one mark.
3. Nail biting. This is given one mark if continued after the age of ten.
4. Bed wetting. One mark if after the age of three.
5. Any other nervous habits, including tics, is given one mark.
6. Sociability. If shyness and solitariness have been pronounced beyond the age of puberty one mark is given.
7. History of violent temper, if frequent and pronounced, or of obstinacy, or both, is awarded one mark.
8. If bullying at school is admitted to have been definite and prolonged one mark is awarded.
9. Frequent change of school. This is only marked positive if due to some difficulty in the boy himself.
10. Fainting or other excessive reaction to the sight of blood or some similar spectacle is given one mark.
11. Excessive visceral response before ordeals, such as sleeplessness before an exam, is given one mark.
12. Evidence of timidity at games, such as avoidance of boxing, or swimming or diving, is awarded one mark.
13. Aversion to blood sports or cognate experiences. This is given one mark.
14. Reasons for joining the RAF. One mark is given if these are inadequate, as for example, for lack of some other job or from reasons of pronounced inferiority or, as in some instances, to avoid more direct participation in combat.
15. Broken home. Awarded one mark provided it has occurred in childhood or early adolescence (up to the age of sixteen).
16. Occupational record before joining the RAF. If this is unsatisfactory, usually in the form of frequent change of job, it is given one mark.
17. Previous mental or psychoneurotic illness in a parent or in more than one brother or sister or even in only one sibling if the mental illness has been severe. One mark is given for this.
18. Pronounced nervousness or neurotic character in a parent is given one mark if it exists in the absence of mental breakdown in the parent.
19. Habits. One mark if alcohol is excessive, for example, six pints a day or beyond, or frequent intoxication, or unusual reaction to small doses.
20. Smoking. Marked positive if cigarettes smoked amount to forty a day or over before flying career starts.

**Source:** TNA, AIR 2/6345, Tentative method of selection of flying personnel from the psychiatric standpoint, 1942.

**Appendix E**  
**Confidentiality Agreement for St Hugh's College Archive, Oxford**

**Researcher Application**

**for access to closed sensitive and confidential personal data,  
in compliance with the Data Protection Act 1998**

**I** (name) LYNSEY SHAW

**of** (address)

**request permission to consult** (details of records)

RECORDS PERTAINING TO RAF NEUROLOGICAL AND  
NEUROPSYCHIATRIC PATIENTS TREATED AT ST  
HUGH'S MILITARY HOSPITAL DURING THE SECOND  
WORLD WAR.

**for the following research purposes**

TO BE INCLUDED IN MY DOCTORAL THESIS IN A  
CHAPTER CONCERNING THE TREATMENT OF  
CASUALTIES.

**I understand that I shall become responsible for compliance with  
the Data Protection Act 1998 in relation to any processing by me of  
personal data obtained from the above records.**

*Please read the conditions listed overleaf and sign the Research Agreement*

## Researcher Agreement

for access to closed sensitive and confidential personal data,  
in compliance with the Data Protection Act 1998

1. My research will not be used to support measures or decisions with respect to particular individuals.
2. My research will not cause or be likely to cause substantial damage or substantial distress to any person who is the subject of those data while he or she is alive or likely to be alive (assuming a life span of 100 years).
3. I shall not make the results of my research available in a form which identifies any data subject without the consent in writing of the data subject and the data controller.
4. I understand that the processing of any personal data disclosed to me, including copying, realignment, transmission abroad and publication, is subject to the Data Protection Act and is my responsibility.

Signed

(Researcher)

Date

Signed

(for St Hugh's College)

Date

## **Appendix F**

### **Description of the evacuation of a typical casualty from a Royal Air Force station**

The following is an extract from the memoirs of Bomber Command MO Victor Tempest. He outlined the efficient evacuation and treatment of a hypothetical case of knee injury, from injury to convalescence. It outlines the individual steps taken in the evacuation of a casualty, the types of treatment available at each step of the chain, and the medical personnel the casualty met along the way:

The medical officer, working in his consulting room, which is normally a very simply furnished place with just the necessary desk, couch, tables, chairs, and wash basin, decides that the knee required “watching.” It may be a case of torn cartilage, but it is also possible that it is a simple sprain. He writes a short note in his daily sick book and completes a form for the patient to take to the airmen’s ward. On his way to it Smith passes the operating theatre, and electrical treatment rooms, as well as the dental surgery. The average-sized sick quarters contains a male ward of some twenty beds, and rooms for officers, WAAF, and cases in isolation or under observation. The total accommodation is for up to thirty-five, and apart from the doctors and dentist, a staff of about ten orderlies to run it.

There is no formality about the airmen’s ward. It is well built and the Royal Air Force and Red Cross have not skimped to furnish it. The orderlies are not exactly trained nurses, but after three or four years of nursing they usually can do quite as well as, if not better than, probationer nurses in most hospitals.

Although he has a pleasant rest for two days doing nothing but listen to the wireless, Smith’s knees makes no progress, expect in that it continues to swell, and the medical officer decides that after all a cartilage is probably torn. So the ambulance is graced on its daily run to the hospital with Smith as a passenger on his way to see the orthopaedic specialist.

The Royal Air Force hospital where he arrives is a drive of some twenty miles from his station. It is a large establishment. In fact, it has hundreds of beds and vies with any of London’s teaching hospitals in the facilities it offers, for there are specialists not only in orthopaedics, but also in surgery, medicine, ophthalmology, gynaecology, neurology, and psychiatry, pathology, radiotherapy, X-ray diagnosis, dermatology, and VD and last, but not least in the Royal Air Force, ear, nose and throat diseases.

At the hospital Smith, after waiting around for an hour or two and giving his particulars to a nurse-secretary in VAD uniform, is wheeled before the Wing Commander, Chief of the Orthopaedic Department, and told, after his knee has been pulled in all directions, that an operation is advisable after some rest, and that unless he has any very strong objection he will be admitted forthwith. Contrary to popular belief, Smith can refuse an operation in the Services just as easily as his civilian brother can. If Smith were suffering from a condition that was puzzling to the specialist, the latter would probably ask the advice of the consultant in that disease to the RAF and would receive the very best opinion available in the country.

But our man has a simple cartilage tear, and finds himself in a large ward with some twenty or thirty others suffering from joint or bone injuries. Like Smith, the others for the most part are suffering from accidental injuries, for the proportion of injuries by enemy action is very small indeed in the RAF. After his operation, Smith stays in the RAF hospital until he is fit enough to walk about, and then he is moved to one of the rehabilitation centres, where he is taught to regain complete control over his musculature.

The rehabilitation centres have four aims – to restore a man socially, technically, psychologically, and physically to at least as good a condition as before his injury; and in a very large percentage of cases they succeed.

One of the rehabilitation centres, and the one to which Smith goes to, is situated at a north-west seaside resort, where a whole row of hotels have been taken over. The work Smith does there is very real. The Royal Air Force have recognised that in order to restore a man he must be taught to work, not just to play; and exercise, as well as massage and other treatment, is planned for him on the basis of a full time for each day.

He also receives a certain amount of instruction technically in his job, so that he feels that he has not lost anything in that way by his absence from his camp. On his return to his unit after a short period of sick leave he is again seen by his station medical officer, and at intervals a check is made on his condition to be certain that the results of the operation and after care are fully successful.

**Source:** V. Tempest, *Near the Sun: The Impressions of a Medical Officer of Bomber Command* (Brighton, 1946), pp. 68-70.

## Appendix G

### The location of NYDN Centres in the United Kingdom by 1943

The table shows that the NYDN centres were operating on a regional basis and covered the vast majority of the United Kingdom. Provision in Scotland was limited, as there were only a handful of RAF stations in geographically-diverse locations. Cases therefore had to make use of the facilities at Auchterader, Perthshire, or attend an EMS hospital or army neuropsychiatric centre.

<b>Name of Centre</b>	<b>Area Served</b>	<b>Remarks</b>
Blackpool	West Yorkshire, Westmorland, Cumberland, Durham, Northumberland, North Lancashire	
Cosford	Northamptonshire, Staffordshire, Shropshire, North Worcestershire, Warwickshire	
Gloucester	Gloucester, Hereford, South Worcestershire	
Halton	South Essex, Middlesex, Kent, Surrey, Sussex, South Hertfordshire, Buckinghamshire	Ground personnel and officer in-patients on specialists' recommendation
Kelvin House (CME)	South Essex, Middlesex, Kent, Surrey, Sussex, South Hertfordshire, Buckinghamshire	Outpatients only. Flying personnel from these areas and ground personnel unless Halton is more accessible.
Littleport	Norfolk, Suffolk, Huntingdonshire, Cambridgeshire, Bedfordshire, part of Essex	
Matlock	Derbyshire and surrounding district	Primarily for in-patient treatment but outpatients can be seen by special appointment
Rauceby	Rutland, Lincolnshire, Nottinghamshire, Derby, Leicestershire, Yorkshire (East and South)	
St Athan	South Wales	
Torquay (Cleveleys from July 1942)	Devon, Cornwall, West Somerset, West Dorset	
Wilmslow	Cheshire, Derby, South Lancashire, West Yorkshire, North Wales	
Calne	Berkshire, Wiltshire, Hampshire, Oxford, Dorset, East Somerset	
Auchterader	All Scotland	Outpatients all ranks flying personnel. Admits all ranks flying personnel with neurosis.

**Source:** TNA, AIR 49/357, Air Ministry memorandum on accommodation and disposal of neuropsychiatric cases, January 1943.

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