



**PRIVY COUNCIL OFFICE**

**REPORT OF AN EXPERT COMMITTEE ON  
THE WORK OF PSYCHOLOGISTS  
AND PSYCHIATRISTS IN THE  
SERVICES**

**LONDON: HIS MAJESTY'S STATIONERY OFFICE**

**1947**

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## FOREWORD

(1) In 1942 His Majesty's Government appointed an Expert Committee to investigate and appraise the work of psychologists and psychiatrists in the Services and to consider its application to other purposes. The Report of this Expert Committee is now published, since it is felt that it may be of general interest.

(2) The Government is not necessarily committed to all the conclusions or recommendations of the Report ; but they have been fully studied and have been implemented in considerable measure.

(3) Since the Report was written, a great deal of psychological and psychiatric work has been done in all Services, and surveys are now being undertaken to decide whether further material, including much of the evidence on which the Report was based, could usefully be published.

PRIVY COUNCIL OFFICE.

*March, 1947.*

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## I. INTRODUCTION

### 1. The Expert Committee consisting of—

Sir Wilson Jameson, K.C.B., M.D., F.R.C.P. (*Chairman*), (Chief Medical Officer, Ministry of Health) ;  
Surgeon Vice-Admiral Sir Sheldon Dudley, K.C.B., O.B.E., F.R.S., M.D., F.R.C.P.,-K.H.P., Medical Director-General of the Royal Navy ;  
Air Marshal Sir H. E. Whittingham, K.C.B., K.B.E., LL.D., M.B., F.R.C.P., K.H.P., Director-General, Medical Services of the R.A.F. ;  
Lt.-General Sir A. Hood, K.C.B., C.B.E., M.D., K.H.P., Director-General, Army Medical Services ;  
Lord Moran, M.D., P.R.C.P., M.C. ;  
Professor F. C. Bartlett, C.B.E., F.R.S., M.A. (University of Cambridge) ;  
Professor D. K. Henderson, M.D., F.R.C.P. (University of Edinburgh) ;  
Dr. Aubrey J. Lewis, M.D., F.R.C.P. (Clinical Director, Maudsley Hospital) ;  
Professor A. W. Wolters, M.A. (University of Reading) ;  
were appointed in September, 1942. In March 1943 Professor Sir Francis R. Fraser, M.A., M.D., F.R.C.P., Director-General, Emergency Medical Service, was appointed Chairman in succession to Sir Wilson Jameson who had to resign owing to pressure of other duties.

### 2. The Committee were given the following terms of reference :—

- (1) To examine and correlate the facts and the results of the psychiatric and psychological work in the three Services.
- (2) To make suggestions in the field of further co-ordination or development or improvement of this work.
- (3) To study the application of these methods with a view to their post-war application.

A further direction was that " when selection tests are being discussed, the Director of Selection of Personnel, War Office, and the appropriate officers from the other Services will be added." As selection procedures have so far formed the main subject of their enquiry, the Committee have included, at almost all their meetings, the senior psychologist and the senior psychiatrist of each of the Services, or their representatives, and the Director of Selection of Personnel, War Office.

The Expert Committee have held thirty-two meetings. Sub-Committees appointed for special purposes have met on numerous occasions to prepare papers for the Committee. The Services Sub-Committee, under the Chairmanship of Professor A. W. Wolters, is a standing sub-committee and has met on thirty-five occasions. In it are also included representatives of psychologists and psychiatrists in the Canadian and United States forces.

3. In order to fulfil the first and second references, the Expert Committee have collected a considerable body of evidence on the work that is being performed by psychologists and psychiatrists in the Services ; this evidence is contained in the papers that have been prepared for the Expert Committee or Services Sub-Committee. The Expert Committee consider that the Ministerial Committee would wish to be informed of this work, and have therefore prepared a survey (Appendices I to IX) in which the various aspects are recorded briefly and their results and significance indicated.

4. We have devoted the rest of this Report to an outline of Service psychology (paragraphs 6 to 24) and psychiatry (paragraphs 25 to 48), in which we have dwelt mainly on the scope covered by these two sciences in the Services, the training of staff, and developments in other countries. In view of the fact that selection procedures have occupied so prominent a part in Service psychology

and psychiatry, we have added a special section on this subject (paragraphs 49 to 56). At the end of the Report we present our Conclusions and Recommendations (paragraphs 57 to 60).

5. We should perhaps observe at this point that the realisation of psychological and psychiatric problems has been slow. There has also been little opportunity to decide priorities, problems often being referred to psychologists and psychiatrists at too late a stage (and sometimes with the handicap of secrecy). An Inter-Service body which might take such matters in hand would therefore be desirable.

## II. SERVICE PSYCHOLOGY

### (a) The Scope of Psychology

6. Psychology, as the systematic study of human thought and behaviour, impinges on all human activities, and its applications to Service life have arisen from proven needs. That these needs are constantly expanding in scope is a factor which must be kept in view when questions of future organisation are under consideration.

7. Psychologists specialise in several different fields, and many are qualified to assess educability and personality, to ascertain optimal conditions of learning, training and working methods and conditions, to give vocational and educational guidance and to investigate the inter-relations between individuals and groups. An idea of the full scope of their Service work may be gathered from Appendix I. When engaged in research, psychologists are usually concerned with the study of the welfare of normal persons ; but they are not thereby excluded from the study of abnormal behaviour, which is more particularly the province of psychiatry. In the latter study, psychologists contribute to psychiatry by providing quantitative methods to replace or supplement clinical observations ; psychiatrists in turn indicate the directions in which research by psychologists into objective methods of assessment are most needed.

8. For more than thirty years psychology has been applied in many countries in education and child welfare, in vocational guidance and selection, in industry, in medicine, in the study of delinquency and crime and in military recruitment. It is now established, for practical purposes, that psychological tests and other selection procedures can usefully discriminate individual aptitudes and predict suitability for various occupational groups. The selection of men and women for Service duties and other cognate applications of psychology are merely extensions to Service problems of techniques of matching the man to the job which are very largely accepted in other fields. The same applies to the activities which may be described as matching the job to the man (see para. 10).

9. Already in the last war, a sub-section of the British Association were considering ways in which psychologists could help in time of war. Among the topics studied were (i) the use of tests for detecting the unfit, for selecting officers and for measuring special aptitudes or trade knowledge ; (ii) the classification of serving men with reference to leadership, capacity to withstand strain, potential neurosis, &c. ; (iii) psychological problems in aviation ; (iv) visual and auditory perception with special reference to the detection of aeroplanes and submarines and methods of camouflage ; (v) vision in the dark ; (vi) psychological problems in munitions industries—vocational guidance and selection, motion study, fatigue, hours of work ; (vii) " shell-shock " and raid shock ; (viii) rumour and publicity with special reference to recruitment in this country and propaganda in enemy countries ; and (ix) post-war problems, including education and rehabilitation and occupational therapy. Many memoranda prepared on these subjects were made available to Government Departments and municipal authorities (92).

10. For these and other reasons and, indirectly, as a result of corresponding investigations in other countries (particularly in the United States Army), the Industrial Fatigue Research Board (now the Industrial Health Research Board) was set up towards the end of 1918 under the Medical Research Council. The Board has its own trained psychological and psychiatric investigators who have studied a wide range of problems, such as the improvement of output, factory conditions, industrial efficiency and morale, methods of training in industry and commerce, industrial accidents, hours of work, rest pauses, dexterity and skill, vocational guidance and selection, methods of work, sickness rates and absenteeism (92). Similar developments have taken place in other social spheres, especially in schools and colleges where the assessment of educability and the study of teaching and training methods have made substantial progress.

### **(b) Service Applications of Psychology**

11. The work of psychologists for the Services proceeds in a number of main directions. In co-operation with psychiatrists and with the executive, personnel are allocated to those duties for which their ability to respond to training, their aptitudes, schooling, employment experience, interests, temperament, and physique make them most fitted. In conjunction with other scientists and with the executive staff concerned, advice is given on the design, lay-out and use of training and operational equipment ; on training and grading, considered as continuous selection ; on the design and use of questionnaires ; on interviewing technique ; on the use of drugs and vitamins ; on job analysis ; on conditions of work ; and on the assessment of fitness of personality for various Service roles and duties. Basic research in these directions and also on problems such as the psycho-physiology of fatigue and of harassing agents, is regularly pursued. *Ad hoc* enquiries are conducted from time to time to meet special needs. Statistical methodology is adapted to Service problems and, as a matter of course, follow-up and other validation schemes are undertaken as an integral part of the work itself.

12. It is not claimed that the aid of a professional psychologist is necessary in every problem which can be termed psychological. The plain man's experience of life will often serve. But we consider it highly important that there should be fostered a widespread awareness of psychological considerations, a readiness to seek psychological advice and to encourage psychologists to undertake research on new problems. For the contribution which they can make to Service efficiency and well-being is distinct from that made by scientists with different training. This is true both of their participation in Service tasks and of the advice they may be able to offer on methods of attacking new problems.

13. Personnel selection is the application of Service psychology which has been most prominent ; it tends to affect all persons in the Services. New and extensive selection projects have continually to be undertaken, and there is at present no predictable limit to their ultimate scope. Moreover, the selection staffs are from time to time invited to consider problems lying rather outside their original sphere, so that they tend to be regarded as a psychological pool.

14. In personnel selection, psychologists assist in the work of improving Service efficiency by devising procedures for the objective measurement or assessment of basic capacities to respond to training, of aptitudes for acquiring special skills and of qualities of personality necessary for leadership and for the performance of duty under stress. Procedures have also been elaborated for investigating the conditions and methods of learning, the objective measurement of proficiency and the relationships between individuals and groups to which Service life gives rise.



15. Most of this work, as indicated, requires close contact with the executive and with medical officers. In the routine application of procedures on a large scale, as, for example, in the selection of intake, the methodology is devised by the psychologist, but the day-to-day work is administered by personnel selection officers, N.C.O. testers or W.R.N.S., A.T.S., or W.A.A.F. assistants who are not qualified psychologists. Above all—and on this we would place much emphasis—close collaboration with psychiatrists is necessary for much of the work. The future establishment of Service psychology on a sound basis would necessitate its close co-ordination with Service psychiatry.

16. There are certain other broad ranges of activity in which the co-operation of psychologists is fruitful, such as training questions and the design of operational equipment and its employment to the best advantage. In these fields the qualities and attitudes of the human beings affected must always be a dominant factor requiring full scientific consideration. But the wide variety and extent of the work revealed by a survey of the factual evidence (Appendix I, Sections II to XIII) indicate that psychological issues may be raised in almost any Service activity. Witnesses, not themselves psychologists, have reported to us the frequency with which such problems confront them in their work.

### **(c) The training of auxiliary staff for psychological work**

17. The assistants of the Admiralty psychologists are mainly technical or clerical, the former being recruiting assistants or personnel selection officers. Recruiting assistants are all W.R.N.S. of a high standard intellectually with previous experience as teachers, welfare officers, &c. They receive a fortnight's intensive training in test administration, interviewing and in the keeping of records. Refresher courses are given periodically. Most personnel selection officers are W.R.N.S., but a few technically qualified male Naval officers are also employed. Training takes place in Naval Entry Establishments, special attention being given to interviewing for the purpose of making allocations to different categories of jobs, and to the use of oral trade tests. Many of these officers have had much previous experience in Combined Recruiting Centres and many have received instruction at Government Training Centres.

18. The auxiliary staff at the War Office Directorate of Selection of Personnel consist of personnel selection officers and sergeant testers. The former have a month's training course in job analysis, vocational selection, assessment of educational level and occupational experience, and in interviewing technique. They are all required to reach a certain standard of ability, knowledge and suitability for the work. Sergeant testers have two or three weeks' training in the nature and use of selection tests, and must also have a satisfactory standard of ability and aptitude for testing and scoring.

19. The auxiliary staff in Training Research (Air Ministry) consist of W.A.A.F. Clerks (Personnel Selection). They are required to have good qualities of personality and an aptitude for interviewing, test administration and scoring. A training course lasting four weeks is provided, during which instruction is given in the principles of selection procedures for air and ground duties, test administration, documentation, elementary statistics and in the relevant aspects of Service organisation. Trainees are expected to pass a qualifying examination on completing the course.

### **(d) Service use of other agencies**

20. (i) One feature of the growth of psychology in the Services is the wide variety of agencies which have taken part in it. These are listed in Appendix IV. Certain advantages may follow from this. A variety of outlooks and specialised knowledge will be represented when Service organisations, Supply Departments

and other agencies are all engaged. This multiplicity also implies certain dangers : of duplicated research on problems common to two or more Services ; of overlapping within a single Service ; of undesirable competition between Services for personnel. In practice, considerable attention has been given to the avoidance of such dangers, but there is no doubt that it would be of value to have an Inter-Service body consisting of the senior Service psychologists to ensure co-ordination where appropriate.

(ii) We think it would be well to distinguish between field research and laboratory research, and we are of the opinion that the Universities might have been more fully utilised on the latter problem before being denuded of staff and advanced students.

### **(e) Psychology in the German Army**

21. It is worth noting that military psychology has not been developed only by the Allies. The enemy countries, particularly Germany, have devoted a great deal of effort to the subject, though not quite on the same lines as in this country. Army testing programmes adopted in the United States in 1917-18 have been steadily developed by the Germans during the past ten or twelve years. As early as 1927 they introduced systematic selection procedures into the Army. Every army corps had a psychological section attached to it under the direction of a central organisation at the War Department in Berlin. Besides research and selection procedures, German psychologists have studied probable military, political and civilian reactions in enemy and potential enemy countries. One of their chief duties has been the selection of officers for the German Army, but they are also concerned with job analysis, design of machinery and equipment, training, morale, and propaganda (92).

### **(f) Special considerations**

22. In contemplating the application of Service psychological and psychiatric experience to civilian uses there is one important point of principle to which we would draw attention, and this relates particularly to selection procedures. In the Services and especially in war-time there is the element of conscription and there is also the pledge of confidence under which men and women are asked to impart personal information about themselves and to submit to certain tests. On being demobilised, Service men and women recover their civil liberties. It is therefore a matter for the most careful consideration whether any psychological or psychiatric data concerning individual Service men and women collected during their Service career should be disclosed in any circumstances. It is worth noting that the data collected for acceptance or rejection in the Services are not always directly applicable to employments in civilian life.

23. Not all psychological and psychiatric work in the Services is of an adequately high quality because of the variation in the training or competence of those who undertake it. This cannot be avoided in present circumstances since the demand for fully qualified psychologists and psychiatrists greatly exceeds the number at present available.

24. The evidence presented to us has emphasised the close way in which the sciences inter-lock when brought to bear upon Service problems. The bulk of the work indicated in Sections IV to XI in Appendix I belongs to a field of human biology which has engineering, medical, physical and physiological as well as psychological aspects. This is especially the case in such problems as the design of training and operational equipment and overcoming visual difficulties. In dealing with problems of this kind, the psychologist participates as a member of a team composed of various specialist and executive personnel. It was made clear in evidence that such a team should have sufficient permanence

in composition and location to enable it to become well assimilated to the Service unit with which it is working. When its members have come to be accepted by the Service, they usually gain greater facilities for their work and their findings may be more readily accepted. On the other hand, a mixed team of Service and civilian scientists has advantages, as each group has ways of getting things done which are not open to the other. Visits by consultants, though of great value, are not sufficient by themselves. Their advice is apt to be ineffective unless there is a competent person available to supervise its application.

### **III. SERVICE PSYCHIATRY**

25. In order to place Service psychiatry in its proper perspective, it is necessary, first to define its functions, secondly to show its connexion with civilian psychiatry, and thirdly to describe the order of magnitude of its various tasks. Paragraphs 26 to 43 are devoted to these topics and the rest of this section then deals with the special training of Service psychiatrists and medical officers, with the work of the Emergency Medical Service and with Service psychiatry in the United States and Canada.

#### **(a) The scope of psychiatry in relation to the Services**

26. Psychiatrists are specially trained medical practitioners who devote themselves wholly or predominantly to the care and treatment of persons suffering from mental illness, the latter term including every form of mental deviation (187). Like other medical officers or specialists, they are, however, primarily concerned with maintaining health, and because of the growing awareness of the need for a mentally healthy community, the psychiatrist's traditional function of alienist is tending to become subsidiary to his tasks in preventive medicine. In the preventive aspects of their work, psychiatrists have naturally to deal with supposedly normal individuals.

27. It is assumed in medical practice that familiarity with physiology and with abnormal conditions permits the recognition of physical fitness. In the absence of defect, a positive judgment may be given on the health of the individual. Similarly, the assumption in psychiatry is that close acquaintance with psychology and with mentally abnormal behaviour renders the psychiatrist competent, not only to detect abnormal traits in otherwise normal individuals, but also to accord grades of mental fitness. Further integration of psychiatry within medicine proper is still needed to reduce the stigma which superstition has long attached to mental disability. There are, however, signs that public opinion is now tending to accept such disability as a form of ill-health.

28. The term psychiatry is not synonymous with the term psycho-analysis, which is a body of special theory derived initially from a technique of prolonged treatment, to which only a small minority of psychiatrists fully subscribe. It is important, however, to appreciate that psychiatry and psychology alike have profited from the concepts evolved in the practice of psycho-analysis. Psychiatry, as a branch of medicine, should also be clearly distinguished from psychology, which is one of the basic biological sciences without being a division of medicine proper.

#### **(b) Psychiatric problems in civilian life**

29. The growth of Service psychiatry is the direct consequence of recent civilian developments in the same sphere. These developments are associated with the expansion and with a heightened awareness of the social needs of industrial communities. Increasing urbanisation, greater density of population, growing occupational specialisation, general insecurity, and a rising tempo of

life accompanied by changing social values, all underline the need for an approach to human problems in which the psychiatric element is given full consideration. In consequence, there has been a demand for special schools and clinics for defective or maladapted children and juveniles and wider psychiatric facilities for dealing with the unstable and anti-social.

30. It may be helpful at this point to refer briefly to the frequency of occurrence of various forms of psychiatric disability in the civilian community.

(i) *Insanity*.—The normal incidence of certifiable insanity in the civilian male population in the age period 18 to 45 is estimated at 0·8 admissions per 1,000 per annum. There were in England and Wales in 1938 about 160,000 patients (3·9 per 1,000 of the population), certified under the Lunacy and Mental Treatment Acts and notified as under care for mental disorder. Because of the fact that for various reasons many cases are not notified, these figures are an underestimate of the true rates.

(ii) *Mental Defect*.—The total number of persons in England and Wales who are mentally defective in the true sense (see para. 40 (iv)) is at least 300,000—about 8 per 1,000 of the total population. This figure does not include those whose defect is educational rather than social. Of the 300,000 at least half are adults, 43 per cent. of whom are under institutional care, the rest being at home. As in the case of insane persons, these figures are believed to be underestimates of the true rates. The entire dull, backward and defective group is at least 10 per cent. of the total population—dull and backward persons being defined as those with an intelligence quotient\* between 65 and 85 (182).

(iii) *Psychoneurosis*.—There is a considerable but unknown number of psychoneurotics and psychopaths in the civilian population. A great deal of industrial sickness and consequent reduced output is due to mental causes. This is clear from the annual number of compensation cases for neurosis in industry. In the seven main industries the number is estimated to be in the region of 10,000 cases a year (187). Neurosis and gastric disorders (the diagnoses of which are often in practice interchanged) together account for an appreciable proportion of sickness, absence and wastage in industry. To cite a representative instance from a Report by the Industrial Health Research Board (185): In one firm during a recent pre-war year, 4,475 men lost 1,034 days because of nervous disorders and 1,893 because of gastric disorders; the corresponding figures for 5,925 women in the same firm being 2,526 and 3,103. The following (unpublished) figures of the Industrial Health Research Board illustrate war-time industrial experience in this respect during the calendar years 1942 and 1943 respectively:—

	1942		1943	
	Men	Women	Men	Women
No. employed	2,450	5,704	2,549	5,813
Days lost through—				
Nervous disorders	1,380	16,024	2,530	22,787
Gastric disorders	3,198	13,045	6,100	10,499
Other sickness	26,185	98,607	27,805	128,144
<b>Total</b>	<b>30,763</b>	<b>127,676</b>	<b>36,435</b>	<b>161,430</b>

\* An intelligence quotient is defined as the percentage ratio between mental age and chronological age (I.Q. =  $\frac{\text{M.A.}}{\text{C.A.}} \times 100$ ). In the case of adults due account is taken of the fact that intelligence, as measured by tests, does not, after the age of about fifteen, vary with age.

A recent report (191) by the Department of Health for Scotland, dealing with the industrial population, shows that between the 1st July, 1937, and the 30th June, 1938, the rate of mental disability per 1,000 insured males was about 5.5 which is comparable with the corresponding psychiatric discharge rates in the Services and Merchant Navy. According to the same Report, the average duration of incapacity due to nervous and mental disorders (terminated in the year 1937-8) was 94 days in the "under 30" group, 185 days in the 30-50 group and 375 days in the "50 and over" group. If gastric disorders, which are commonly attributable to mental causes, are included, the duration of incapacity rises to 158, 287 and 494 days in the three age groups respectively.

In any random group of sick persons with obvious physical or mental symptoms seeking medical advice, about one-third are estimated to require psychiatric treatment. For example, in a study of 1,000 consecutive insured sick persons referred for examination psychoneurosis was considered to be the cause of incapacity in about 34 per cent. (184). This particular study was concerned with chronic cases only but similar results are found with random samples of unselected sick persons. There is, however, a fairly wide range of variation in the results of different investigators due to the different criteria they use (187).

### **(c) The Sphere of Service Psychiatry**

31. The introduction of conscription has, as might be expected, had the effect of bringing into the Services large numbers of unsuitable individuals who, on a purely voluntary system of recruitment, might have been very largely excluded by self selection. Apart from the lowest medical categories (Grades III and IV of the Ministry of Labour Medical Boards) and individuals reserved or exempted on industrial grounds, the Services are composed of individuals of all mental levels and types. It is therefore to be expected that the various forms of psychiatric disorder occurring in the civilian population will also be found, in comparable proportions, among the men and women of the Services. It is primarily to deal with the problems created by these conditions that psychiatrists have been drawn into the Services.

32. The historical development of Service psychiatry is worth noting (117). Army psychiatry, in particular, has attained its present status as a result of the cumulative experience of the war of 1914-18 and of the present conflict. Its scope and organisation are the outcome of a long process of growth in response to a variety of Army needs. In 1922, the Southborough Committee surveyed the psychiatric problems of the last war in its "Report of the War Office Committee on Shell Shock, 1922" (160). This Committee, having sifted the evidence of combatant officers and medical witnesses, produced a series of recommendations nearly all of which still have the full approval of informed psychiatric opinion. The report stressed, in particular, the importance of proper selection procedures in preventing psychiatric illness. Both executive and medical officers, it was emphasised, should co-operate in detecting mental deviations and for this purpose they should receive special instruction in the management of men and in the nature of psychiatric disability. Extracts from the recommendations of this Committee are given in Appendix X.

33. The scope of the psychiatrist varies considerably from one Service to another. This is due to the different kinds of problems which arise in the respective Services, to the differences in the categories and grades of personnel which each Service employs, and to differences in Service organisation and environment.

34. In the Navy and Air Force, psychiatry and neurology are regarded as two aspects of one subject closely linked with general medicine. In the Army, there is a separate Directorate of Psychiatry within the Army Medical Department. The Medical Directors-General in the three Services and in the Emergency Medical Service are advised as necessary by the consultants in psychiatry or neuropsychiatry.

35. The Service psychiatrist should work in a team in collaboration with psychologists, other medical officers and scientists, and especially with the executive. As a member of this team his concern is with the relationship of the individual to his job and environment. His function is thus to advise the executive authorities when matters of mental health and adjustment are in question.

#### (d) The Magnitude of the Service Problem

36.—(i) The magnitude of the psychiatric problem in the Services may be illustrated by the number of psychiatric cases which have to be discharged. About 118,000 such cases (men and women) were discharged between September, 1939, and June, 1944 (192). Between one-third and one-half of all medical invalids, men and women alike, are discharged from the Services on psychiatric grounds (180). This ranges from about 4 to 10 per 1,000 of average strength per annum. About one-third of such cases in the Navy and about one-quarter in the Army appear to have served less than one year (180). It is clearly desirable, therefore, that these individuals should be more closely examined at entry.

(ii) Of the 118,000 discharged from the Services on psychiatric grounds between September, 1939, and July, 1944, the proportions discharged under four diagnostic heads were as follows :—

	<i>Per cent.</i>
Psychoneurosis and Effort Syndrome ... ..	64·3
Psychoses ... ..	21·2
Mental Defect ... ..	6·4
Psychopathic Personality ... ..	8·1
Total ... ..	100·0

37. Some idea may be given of the burden on the State of psychiatric disability in the last war in terms of the number of pensions granted. In March 1939, there were about 120,000 pensioners who were either still in receipt of pensions or had received final awards for primary psychiatric disability (including neurasthenia, "shell-shock," effort syndrome, epilepsy and insanity); neurasthenia itself accounting for some 100,000 which represents about 2 per cent. of total serving troops (165). These 120,000 pensions represented about 15 per cent. of all pensioned disabilities.

The distribution of apparent exciting causes was (approximately) as follows :—

	<i>Per cent.</i>
" Constitutional " factors ... ..	40
War incidents and effects of Service overseas ... ..	35
Diseases ... ..	15
Miscellaneous ... ..	10
Total ... ..	100

38. There is good reason to believe that predisposition is of importance in determining psychiatric breakdown, though this does not imply that hereditary causes are of necessity predominantly operative. A survey (165) based on experience of the last war, came to the conclusion that the "constitutional" factor could be regarded as predominant in about 75 per cent. of those psychiatric cases who served at home only and in about 25 per cent. of those who had served overseas; about half of the latter percentage had served overseas less than six months. There is no doubt that those who break down show a much higher concentration of ominous signs, such as poor occupational record, than those who do not break down. Thus, in the Navy, inquiry showed that about 50 to 60 per cent. of psychiatric patients showed these ominous features as compared with about 15 per cent. in a normal group of sailors. The high proportion of such cases who return to duty in the Navy and do not relapse may be attributed to the good material which was until recently self-selected by expressing a Naval preference at recruitment. Although those with predisposition tend to break down without adequate exciting cause, it is generally recognised that there is a point at which almost any man will break down. Given conditions of severe and prolonged stress the soundest constitution may give way.

39. The Service activities to which psychiatrists contribute may be conveniently classified under the following five headings, which will be described in some detail in Appendix II :—

- (i) Selection of Personnel.
- (ii) Training.
- (iii) Morale.
- (iv) Treatment and Disposal.
- (v) Research and Validation.

40. Throughout this work it is the special function of psychiatrists to detect or recommend placement, treatment or rehabilitation, for the following classes of mental disability, each of which is highly heterogeneous in itself and may overlap with another : (i) Neurosis, (ii) Psychopathic Personality, (iii) Psychosis, and (iv) Mental Dullness or Defect. In their early stages or milder forms, these disabilities are difficult to distinguish from healthy variations within the normal.

- (i) Neurosis embraces a variety of non-certifiable conditions of failure in social adjustment, exhibiting, for example, anxiety, hysterical, or obsessional behaviour with immaturity in interpersonal relations. Very often there is a history of abnormality beginning in childhood. Some neurotic cases are either incapable of adapting themselves to Service conditions at all or require special placement.
- (ii) The psychopaths are those with weak or defective character expressing itself in unreliability, lack of persistence, or in perverted, aggressive, delinquent or otherwise anti-social conduct. Though they are not necessarily intellectually dull, they almost invariably have a poor social and occupational history which facilitates identification. Their character traits are not subject at present to modifying influences to any appreciable degree. Hence, they may be regarded as cultural misfits.
- (iii) Psychosis relates to certifiable cases which, unless they recover within a few weeks, are useless to the Service. The distinction between psychosis and neurosis has more administrative than scientific significance.

(iv) Mental dullness or defect must be clearly distinguished from neurosis and psychosis. Though the former may often be complicated by emotional instability in varying degree, it is basically a condition of congenitally low or very low intellectual ability. Even those who are backward without being certifiably defective frequently appear in civilian clinics on account of difficulties either in adapting to or retaining work or with personal problems of a social or sexual nature. Sometimes their troubles are more serious, delinquency or marked hysteria (or other neurosis) being the ground for referral to clinics. Mental defectives are not a distinctive type. They grade imperceptibly into the lower grades of the normal population. A mentally defective individual, whether child or adult, is defined as one who by reason of incomplete mental development is incapable of independent social adaptation.

41. This difference between a *disordered* and *defective* mind has been appreciated in this country since the thirteenth century, when a "born fool" was held to be distinct from one who "hath had understanding, but by disease, grief, or other accident, hath lost the use of his reason" (182). Subsequently, the distinction became blurred in the lay mind and has remained so to this day with unfortunate consequences from the point of view of accommodation and treatment in State institutions. Unlike dullness or defect, neurosis, and, very occasionally, psychosis, may be precipitated by operational stress. Neurotics or psychotics as such are not necessarily lacking in any qualities of ability or aptitude. The former may, indeed, be persons of high intellectual calibre and fine sensibilities who may render valuable service in appropriate circumstances. The occupational scope of dullards is strictly limited to routine work by the low level of their ability and poor scholastic record, while certifiable defectives are capable of performing only the most simple tasks without responsibility and under secure conditions.

42. Special emphasis is laid, in all three Services, on the early detection and treatment of mental abnormality and on the avoidance of hospitalisation. The reason for this is to prevent the spread by contagion of conditions, such as those of an hysterical or depressive nature, to other members of a unit. It has been shown that the longer the delay in treatment the less favourable is the prognosis for return to Service duty.

43. Psychiatric treatment in the Services embodies and amplifies purely clinical methods customary in pre-war practice. As in civilian life, Service psychiatrists are concerned with the treatment and welfare of their patients so as to hasten their recovery. In the newer procedures the task of readjusting the patient to his environment figures prominently. There are special difficulties with neurotic Service patients, partly because they often tend to resist treatment designed to fit them once again for their war duties, and partly because social considerations tend to be subordinated in the neurotic mind to purely personal motives. In individual therapy, continuous narcosis, insulin treatment, electric shock therapy and other forms of physical treatment are used, together with established methods of psychotherapy. Apart from such purely clinical methods of treatment, psychiatrists also employ occupational therapy, remedial training, educational lectures, gymnastics and recreations. Group therapy is also used. Some importance is attached to social case work to deal with problems of the familial background and to vocational guidance in which psychological testing and technical training may play a part.

#### (e) Special training of Service psychiatrists

44.—(i) Most Naval psychiatrists now have preliminary experience of conditions at sea. After several months of training, they begin serving as juniors under a senior Naval psychiatrist.



(ii) Army psychiatrists, after completing their first four weeks of initial training, are now posted to a field force unit as "trainees" to live for four weeks in the atmosphere of fighting units. During this period they act neither as medical officers nor as psychiatrists, but as observers of, and participants in, the unit's activities. The "trainee" then becomes apprenticed to an area psychiatrist for a period of not less than three weeks and his suitability for various types of military psychiatric work is assessed. At present, therefore, Army psychiatrists do not have the responsibility of treatment or disposal until they have had a minimum of three months' training in the special conditions obtaining in Army psychiatry. A series of technical memoranda on military psychiatry is issued to each new psychiatrist, and finally he attends a seven-day course at the Royal Army Medical College on administrative aspects of his duties.

(iii) In the Royal Air Force, neuropsychiatric specialists are, on entry, attached to the Central Medical Establishment for training in the general principles of neuropsychiatry as applied to the R.A.F. Subsequently, they are attached for a period to a neuropsychiatric centre for acquiring practical experience under a Service specialist. During the period of training they are attached for a period of two or more weeks to a Station from which squadrons are operating, in order that they may become acquainted with the conditions of Station life and obtain flying experience.

#### **(f) The psychiatric training of Unit Medical Officers (General Duty)**

45.—(i) Medical officers (General Duty) in the Navy, prior to service in aircraft carriers or Naval air stations, are given a brief course of instruction, by lecture demonstrations and attendance at medical boards, on neuropsychiatry in relation to flying duties. A short pamphlet on psychiatric cases and casualties is available to all newly joined medical officers, but they receive no specific instruction on the subject.

(ii) All Army medical officers receive general lectures on psychiatry during their initial period of training at the R.A.M.C. Depot. In addition, all unit medical officers receive instruction on the diagnosis and handling of acute psychiatric cases occurring in action. A pamphlet on this subject is issued to all army medical officers.

(iii) In the Royal Air Force, medical officers are instructed by lectures and memoranda (Appendix XXXIX to the Medical Officers' Handbook Air Publication 1269A) on measures for the prevention of psychological disorder and fatigue and on the detection of early signs of breakdown. Close co-operation between the unit medical officer of an operational squadron, the commanding officer and the neuropsychiatric specialist at the nearest centre has been laid down as a practical measure of the greatest importance. Among his many duties, the medical officer has to take all steps for the physical and mental welfare of the personnel in his care, maintaining close contact with all crew members and advising his commanding officer on the disposal of cases showing signs of the results of stress.

#### **(g) Psychiatry and Psychology in the Emergency Medical Service**

46. The staff of the E.M.S. Neurosis Centres have worked in liaison with the Army, and in the case of ground personnel, with the R.A.F. The work of E.M.S. psychiatrists has been directed primarily towards meeting Service requirements and, wherever possible, to fitting men for military duties after a period of psychiatric breakdown. At the same time, efforts are made to ensure that those who are discharged to civilian life should be restored to the same level of health

and efficiency as they had had before entering the Services. The staff of the E.M.S. hospitals has, therefore, been very similar in essentials to that of Service hospitals but has also included, for instance, psychiatric social workers and psychologists (151). The latter, who work closely with the psychiatrists, are engaged in testing for the purpose of vocational placement. Special attention is given to the measurement of mechanical and clerical aptitudes. Psychological research is also undertaken. Figures of admissions and disposal of Service cases at E.M.S. Neurosis Centres are given in Appendix IX.

## **(h) Psychiatry in the Armed Forces of other countries**

47.—(i) Service psychiatric problems are not peculiar to the armed forces of the United Kingdom, as United States and Dominion experience testify (155) (157). For example, in the last war, United States psychiatrists examined about  $3\frac{1}{2}$  million men at mobilisation centres and about 70,000 were rejected. In the course of the war, mental casualties increased alarmingly and a request came from abroad to make more careful selection of men bound for overseas duty. The rejection rate of 2 per cent. was considered altogether too small (170).

(ii) Of those disqualified for military service in the United States before June, 1941, 6.3 per cent. were rejected on nervous or mental grounds (190). Since the beginning of 1942 rejections on these grounds have been between 7 and 8 per cent., which amounts to about one-third of rejections from all causes (170). A survey (164) of personnel aspects of national defence suggests, on the basis of experience in the last war, that about 15 per cent. of male citizens are "so psychologically unstable as to be unable to withstand the stress of army life and participation in the activities of war." There is an official directive in the United States Army to indicate that men with a mental age of eight or less are not desirable in the Army. Even many above this mental age are considered undesirable unless they have exceptionally stable personalities. The Selective Service System has undertaken elaborate measures to identify unsuitable personnel with a view to exclusion or special placement (159). In the United States Navy as well, the exclusion of the mentally unfit is regarded as an important psychiatric problem. Measures to achieve this end include careful selection procedures, instruction of recruiting medical officers in psychiatry and the establishment of definite standards for rejection. Candidates are interviewed individually by recruiting officers and may be required to produce references of good character. As in the case of recruits for the United States Army, police, school, social service and mental hospital files are scrutinised and social histories are obtained for each recruit (158).

(iii) In Canada, between July, 1943, and March, 1944, the proportion of the total recruits examined for enlistment in the army who were rejected on "psychiatric and mental" grounds was 23.4 per cent. The percentage varied from 15.0 for volunteers to 32.0 for conscripts. Of the total rejections on all grounds, 43.8 per cent. were rejected on "psychiatric and mental grounds." The authorities in Canada and in the other Dominions, like those in the United States, have all adopted psychiatric procedure to cope with the problems of mental disability in recruits for the Services.

48. Rejections from military service on psychiatric grounds (nervous instability, mental disease, epilepsy, dullness and backwardness) at the Ministry of Labour Medical Boards in this country have been on a much smaller scale than those, for example, in the United States or Canada. In the first two years of war, about 2.0 per cent. of all men examined under the National Service Acts were rejected on these grounds. The corresponding proportion of

volunteers rejected would be much smaller. Since 1941, as a result of representations to exclude unsuitable men, the psychiatric rejections have increased, the proportion in October, 1942, being about 3·7 per cent.

#### IV. DEVELOPMENTS IN THE SELECTION AND ALLOCATION OF MEN AND WOMEN IN THE SERVICES DURING THE PRESENT WAR

49. In view of the new departure in procedures which is involved, particularly as far as psychiatry is concerned, special mention should be made here of the contribution of Service psychologists and psychiatrists to selection methods. The selection of men and women has been one of the main tasks so far allotted to Service psychologists, especially in the Admiralty and War Office, and it has occupied the time of many Army psychiatrists. Naval and R.A.F. psychiatrists have been more concerned with problems outside selection partly because the quality of personnel recruited by the Navy and Air Force is higher, on the average, than that recruited in the Army.

50. Service psychology has the positive aim of making the most effective use of human resources. Service psychiatry is more concerned in preventing human waste; hence, it gives first place to preventive measures. In both spheres of activity, the starting point is the fact of individual differences, for there is considerable variation in all human traits. The object of psychology and psychiatry alike is to ascertain these individual differences so that the unfit can be detected and the fit placed where they can function in a way most useful to the Service and satisfactory to themselves. Hence, the quality of men and women is as important as their quantity; in modern warfare it is no longer a question of "measuring Guardsmen by the yard."

51. The selection of personnel involves in the first instance the preliminary sorting of large numbers of men and women for allocation to training for different duties and trades. The Services are faced with the problem of helping to assign to new tasks, in the most rapid and efficient manner, large numbers of individuals who will differ markedly in the success with which they can perform them. It is necessary to improve on the former wasteful process whereby a man would have to try and fail many times before he could find the activity for which he was most suited. A system is therefore required which will predict, with a minimum of error and on the basis of objective data, whether an individual will respond favourably or otherwise to the Service environment, in what spheres he is unlikely to make any useful contribution, and the degree of success which he is likely to attain in the training courses to which he is allotted. Since the time factor is of great importance, it is also necessary to assess the rapidity with which a man will respond to training as well as the ultimate degree of proficiency which he is likely to attain. It is important to note that the application of Service psychology and psychiatry has usually to proceed through administrative and executive channels; the methods adopted, therefore, take as much account of Service organisation as of purely clinical considerations.

52. The contribution which psychiatrists make towards the selection of Army personnel is, as indicated, invariably bound up very closely with the selection procedures of psychologists. In the sphere of large-scale selection, the psychologist is chiefly engaged in the measurement of general ability to respond to training, and of special skills and aptitudes, and in the development of projective methods of assessing personality (see para. 7). The psychiatrist is concerned mainly with forming clinical assessments of fitness of personality for Service duties and of capacity to withstand stress. He provides clinical

data which may influence test scores and which, therefore, may help the psychologist in his task. Both psychologist and psychiatrist take account of other objective criteria, such as interests, previous training and work, hobbies and experience. Decisions on acceptance or rejection are always made by the executive authorities. Since the psychiatrist, by the very nature of his work, represents the viewpoint of the individual as well as of the Service group in which he is to participate, it is natural, in consequence, for the individual serving man to feel reassured by the way his interests, abilities, disposition and background are allowed for in fitting him into the Service framework.

53. The usual method employed by psychologists has been to conduct group tests and interviews, supplemented, where necessary, by individual tests. It is recognised that the ultimate criterion of efficient recruitment, selection, training and posting, as a unified process, is operational success. But this does not imply that selection for training should always be judged by this criterion. In the first place, selection is only one phase of a continuous process, and it is difficult to isolate the specific contribution of a series of tests because of the intimate way the tests enter into a much wider procedure. Secondly, a large number of men are selected for base or other duties which are unlikely to bring them under conditions of operational stress. Hence, the first acceptable criterion of the efficiency of selection for training is success or failure during training as measured by training wastage and by passing-out marks, trade tests and instructors' assessments. We have ample evidence that the psychological methods of selection for training as employed by the Services are justified by training results as evaluated by these criteria. Nevertheless, the available criteria are themselves not altogether satisfactory from the point of view of objectivity, and an extended use of objective proficiency tests would be a useful step forward. It should be made clear that the foregoing criteria are not relevant to the determination of "exclusion" levels from the Services, since here psychiatric considerations are particularly prominent.

54. The psychiatric contribution to selection is twofold. First, to assist in detecting men and women who, because of gross mental backwardness, emotional instability or character defect, would be unsuitable for Service duties altogether, or suitable only in a limited sphere; secondly, to assist in determining the suitability of officer candidates, prospective parachutists and R.A.F. ground personnel, so as to recommend allocation to specific duties. In regard to the first of these tasks, it is worth stressing the economic aspect. There can be few essential steps in the building up of the armed forces which pay so generously to the recruit, the Forces themselves and the Treasury as the proper screening of the mentally unfit (170).

55. The Services are not only anxious to recruit mentally and physically sound personnel, but also to maintain health and morale and to prevent breakdown. While they cannot afford in wartime to devote effort to the treatment of individuals likely to be physically or mentally disabled for a prolonged period, they are very much concerned to use all available measures at their disposal to reduce the incidence of mental breakdown. This is the essence of the psychiatrist's contribution. Whilst the psychologist estimates the degree of technical aptitude demanded of Service personnel by the complexity of modern weapons and equipment, the psychiatrist assesses their stability in the face of stress produced by the peculiar hazards of modern warfare. Because of the stringency of psychiatric man-power, candidates cannot be interviewed individually and a screening system has to be used, whereby, for example, all officer or parachute candidates who do not appear to be clear "passes" or "fails" and all recruits who appear doubtful from a psychiatric point of view, are referred to psychiatrists by psychologists or their assistants, or by personnel selection officers. The grounds of reference are usually low or anomalous

scores on intelligence or aptitude tests, poor educational background or occupational record or general instability. In theory, the first task mentioned above could be fully carried out at Ministry of Labour Medical Boards before candidates are accepted into the Service. It would necessitate securing, with the co-operation of the appropriate agencies, a complete medical, social and educational history for each recruit for consideration at this stage on the lines of the procedure introduced in the United States Selective System. But the system of psychiatric screening at Ministry of Labour Medical Boards in this country has been, by force of circumstances, inadequate, and hence many individuals have passed into the Services whom the executive authorities have found it necessary to discharge shortly after entry, though not before time and training have been spent on them. The training of defective, unstable or unreliable individuals is a waste of Service energy and time; moreover, the placing of such personnel in key posts may well endanger the lives of their fellows.

56. To sum up: The advantages of a joint psychological and psychiatric contribution to selection are many, though they cannot all be quantitatively assessed. In the first place, intellectual resources and personality qualities of personnel are directed where they can be of greatest use to the Service. Secondly, individuals are no longer liable to be allocated to duties much above or below their capacity, with the result that wastage of training time has almost certainly been much reduced. It has been estimated, for example, that up to the end of 1940 one in five of the Infantry intake and one in two of Pioneer Corps intake were capable of more skilled work than that to which they were posted; one in two of the intake to Tank Regiments and one in five of Infantry intake lacked the capacity to cope with the tasks they were expected to perform. Thirdly, introduction of psychiatric selection has helped to exclude from the Army many thousands of dullards and defectives, or to allocate them to Armed or Unarmed Pioneers; such individuals were formerly nothing but a burden to their units, training staffs and medical and disciplinary authorities. Fourthly, psychiatric selection has much reduced the intake of individuals with pre-disposition to psychiatric disorder, who, had they entered the Army, might have required discharge shortly afterwards. The considerable contribution of psychiatry to the selection of Army officer candidates has been comprehensively dealt with in a series of papers submitted to the Expert Committee or the Services Sub-Committee (19) (100) (117) (139).

## V. CONCLUSIONS AND RECOMMENDATIONS

### (a) Work of Psychologists

#### 57. CONCLUSIONS

- (1) Psychology (which is the systematic study of the thought and behaviour of human beings) has practical applications to the handling of personnel in all phases of their Service careers from recruitment through training to readiness for active operations.
- (2) There is a growing awareness of this at all levels of Service organisation.
- (3) The spreading of this awareness is essentially a gradual process which will depend largely on the effectiveness of the work. But some pressure and direction are still required. The experience and tradition accumulated during recent years should be preserved and applied in the Services after the war.
- (4) Psychologists have been mainly employed in—
  - (i) developing systems of personnel selection designed to allocate members of the Services to appropriate employment both as officers or other ranks;
  - (ii) improving methods of training and of assessing proficiency;

- (iii) assisting in the design of weapons and equipment ;
  - (iv) investigating psychological aspects of operational problems ;
  - (v) developing statistical methods of treating data derived from work on personnel problems.
- (5) Fundamental differences in the structure of the Services make it impossible to introduce one and the same type of psychological organisation in all of them. The pattern of organisation required by each Service must be developed in conformity with the administrative structure of that Service, and intimately related to its special needs.
- (6) A shortage of trained psychologists has embarrassed the expansion of psychological work.

#### 58. RECOMMENDATIONS

- (1) During the course of their training, all officers, combatant and non-combatant, should receive instruction in the psychological aspects of their future duties. Some should receive a much more advanced training, such as is offered to other Service specialists.
- (2) Psychologists, always including Service psychologists, should have the opportunity of being represented on the principal scientific and advisory committees and on other bodies concerned with personnel.
- (3) There should be an Inter-Service body consisting of the senior Service psychologists, to continue the discussion of new developments and research projects.
- (4) Psychologists should participate as observers in operations or battle exercises.
- (5) The sphere of psychological work in the Services should be extended to cover the problems listed in paragraph 109 of Appendix I.

#### (b) Work of Psychiatrists

#### 59. CONCLUSIONS

- (1) The scope of Service psychiatry has been extended considerably during the war in response to Service needs. The extension has been mainly on the preventive side of their work because of the need to economise in and preserve man-power. To this end the psychiatrists have assisted in measures for—
  - (i) Avoiding waste of time and labour on the training of persons unable to profit sufficiently from it or liable to breakdown under the conditions of employment.
  - (ii) Preventing breakdown and improving morale, first by placing persons in employment and positions of responsibility suited to their intelligence and temperament and, secondly, by the recognition of early or premonitory symptoms or of signs of predisposition and by appropriate preventive action.
  - (iii) Bringing cases of breakdown under treatment as promptly as possible and re-allocating the patients, following recovery, in suitable positions in the Services or in civilian employment.
- (2) The extent to which these measures have been developed has differed in each of the Services as a result of the special requirements and conditions in each, and the contribution of the psychiatrists has likewise varied. These measures have been generally successful and the contribution of the psychiatrists has been important and indispensable.
- (3) The detailed methods employed by psychiatrists have been greatly developed and adjusted in the light of experience, and this process is continuing, the psychiatrists co-operating at all stages with other medical officers, psychologists and executive and administrative officers of the Services.

## 60. RECOMMENDATIONS

- (1) To prevent undue wastage, psychiatrists should make their contribution to the appropriate aspects of selection, classification, training, mental hygiene and morale in the Services.
- (2) In all this work, psychiatrists should collaborate as closely as possible with Service psychologists.
- (3) More satisfactory procedures, in which psychiatrists should take part, should be developed for keeping out of the Forces men and women who are incapable of rendering efficient service on account of psychiatric disability.
- (4) Recruiting officers and other non-medical officers concerned should be instructed on the criteria for judging a candidate's suitability for the Services. Better "psychiatric" training is needed for those who have the task of referring candidates to psychiatrists.
- (5) A screening procedure should be adopted whereby suitably trained medical or executive officers or instructors should refer to psychiatrists individuals of doubtful mental stability, since it is impracticable, and perhaps unnecessary, to carry out a psychiatric examination of each candidate.
- (6) More instruction than at present should be given to medical officers of units on the handling of psychiatric problems, and to officers of units, especially combatant, in the psychiatric aspects of man-management and the maintenance of morale.
- (7) More psychiatrists than are at present available in the Services are required to meet current needs and, if they cannot be provided, arrangements should be made to train suitable medical officers for the purpose.
- (8) Steps should be taken to ensure that the medical branches of the Services should include after the war regular officers who are closely familiar with the psychiatric procedures that have been developed in selection and other military application since 1939.
- (9) There should be some recognised meeting-ground at which the senior Service psychiatrists could discuss common problems and make available to one another the procedures developed in each Service. To the same end, close contact should be maintained between field psychiatrists in the three Services.
- (10) A central co-ordinating and statistical section should be established for bringing the civilian Neurosis Centres of the Emergency Medical Services into closer contact with one another so far as Service patients are concerned, and with the corresponding Service departments.

## VI. CONCLUDING NOTE

61. We wish to record our grateful appreciation of the services of Mr. M. G. Russell, Mr. N. G. Luker, Mr. P. Allen and Mr. J. D. Peek, who have acted in succession as joint Secretaries to the Committee, and especially of Dr. J. Cohen, whose training and experience in psychology has been of the greatest assistance throughout the work of the Committee. We cannot commend too highly the skill and energy he has shown in the difficult task of drafting this Report.

We wish also to thank the many officers of the Services, including those of Canada and the United States, who have assisted the Committee and its Sub-Committee.

Signed, for and on behalf of the Expert  
Committee on the Work of Psychologists  
and Psychiatrists in the Services,

FRANCIS R. FRASER, *Chairman.*

*Offices of the War Cabinet, S.W.1.*  
31st January, 1945.

# APPENDICES

## PREFATORY NOTE

The Appendices which follow have been prepared on the basis of material made available by the Service Departments and other agencies concerned. No special investigations were undertaken for the purpose. Hence certain limitations in the presentation of the subject are apparent, but these cannot at present be removed without putting aside more urgent duties. Moreover, a survey of this kind cannot, in constantly changing Service conditions, be quite up to date. Modifications in procedure and administration are constantly being introduced as a result of the developing war situation or improved technique. There is, in addition, a time-lag between the acceptance of a change and an official report of it. In the main the Appendices relate to conditions, or information available, at the end of 1943, but most of the statements do, in fact, still hold good at the end of 1944.

## APPENDIX I SERVICE PSYCHOLOGY

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### I. Staff engaged in Psychological Work in Service Departments at the end of 1943 (paras. 1 to 3)

1. At the Admiralty, the Senior Psychologist is on the staff of the Second Sea Lord (Chief of Naval Personnel) and there are engaged in psychological work 10 industrial psychologists with about 300 assistants, largely W.R.N.S., mainly engaged in selection.

2. At the War Office, the Director of Selection of Personnel, who is in the Adjutant-General's department, has on his staff 19 psychologists, all officers, of whom 14 are men. There are also 31 officers or promoted sergeant testers with some psychological training, of whom 26 are men. In addition, there are 584 non-technical officers, of whom 531 are men, and 697 N.C.O.s, of whom 494 are men. Of the non-technical staff, 142 officers (including A.T.S.) and 120 N.C.O.s are on special temporary employment. There are also a small number of personnel with psychological training at the Directorate of Biological Research in the War Office Medical Department and in the Directorate of Scientific Research.



3. At the Air Ministry under the Air Member for Training, there are 4 civilian advisors in psychology on training methods, 17 specially trained W.A.A.F. officers engaged in aircrew selection, 14 engaged in selection for ground duties and about 100 junior technical assistants.

## II. Selection of Serving Men and Women (paras. 4 to 34).

4. A great deal of documentary evidence relating to personnel selection has already been presented and discussed. For ease of reference the main documents are listed below :—

“Work of the Admiralty Psychologists.” (11)

“Psychological Work for Training Directorates, R.A.F.” (31)

“Selection Tests in use in the Army.” (18)

“Principles followed in Army Selection.” (19)

“Report on the Validation of Psychological Tests and Procedures.” (74)

In addition, some 30 papers of the Services' Sub-Committees deal with various technical aspects of the same field of work.

5. The administrative framework in the three Services varies to a degree that makes it desirable to set out for each of the Services separately the procedures developed for selection purposes.

### ROYAL NAVY (paras. 6 to 18) (11) (12) (16)

6. In March, 1941, the Admiralty set up a Selection Test Committee to consider ways in which the Navy's methods of selecting and allocating its “Hostilities only” recruits might be improved. Most of the Committee's recommendations were accepted and in June, 1941, the Senior Psychologist's Department came into being. By August an improved selection procedure was in operation at Combined Recruiting Centres. In September the main Entry Establishments adopted an improved allocation procedure, aimed especially at producing more suitable men for training as mechanics. By this time another psychologist, who later joined the Senior Psychologist's staff, had begun research inquiries in the Anti-Submarine Schools.

7. In 1942, the foundations of the work were broadened by investigations into allocation procedure in other specialist schools, particularly Gunnery, Torpedo and Radar Schools; by the development of a scheme for the individual testing of patients by neuropsychiatrists; and by the appointment of a psychologist to the Training Establishment for R.N.V.R. Officers (Executive Branch).

8. In 1943, an officer selection procedure, similar to that devised by the War Office, was brought into operation. 1943 also saw an extension of the Navy's new allocation methods to the Royal Marines; the development of re-allocation procedures among “misfits”; an approach to the problem of selecting men for advancement to higher rates; an inquiry into the appropriateness of the “Special Entry” method of selecting cadets for R.N. engineering commissions; and the building up of a central records system designed to be of value for research and demobilisation purposes.

9. The institution of a useful records system has been regarded by the Admiralty psychologists as a matter of fundamental importance. Each Naval candidate completes, at his Combined Recruiting Centre, a written Questionnaire about his educational and occupational history, his leisure interests and his experience of leadership. On this form are then entered the results of his Combined Recruiting Centre tests (of intelligence and colour-vision) and notes are made by the W.R.N.S. recruiting assistant who interviews him before he

is seen—to be accepted or rejected—by a Naval Recruiter. The forms for accepted candidates are passed on to the appropriate Entry Establishment, where the results of further tests (of intelligence, mathematical attainments and mechanical aptitude) are entered on them, together with additional notes made by the W.R.N.S. or R.N.V.R. personnel selection officer who conducts the allocation interview. The Entry Establishment then records, on a document which goes to sea with each man, a summary of the information collected about him; the original form is returned to the Admiralty for use in research and demobilisation.

10. Since the inception of the present selection and allocation procedure, considerable stress has been laid on the value of a good "information service" for Naval Candidates and new entries. Leaflets, short lectures, wall-charts, photographs and the display of trade-test pieces have been the principal means adopted to interest men in the opportunities available to them in the Service. For the use of personnel selection officers, a series of notes on Naval types of employment has been prepared. The object of each note is to describe the essential features of the job, the training given for it, the qualifications required by it, the methods of entry to it, and the pay and prospects it offers.

11. The standard, basic battery of tests given to all new entries are five in number—

- (i) *SP Test 0* (Raven Progressive Matrices Test). This is administered with a 20-minute time-limit in Combined Recruiting Centres.
- (ii) *SP Test 1*—a verbal intelligence test based on the Shipley Abstraction.
- (iii) *SP Test 2*—based on the Bennet Mechanical Comprehension Test.
- (iv) *SP Test 3*—a mathematics test.
- (v) *SP Test 4*—the Squares Test of the National Institute of Industrial Psychology; it involves the perception of shapes and sizes.

*SP Tests 1 to 4* are administered in Entry Establishments.

A weighted score (known as *T2*) based on *SP Tests 1 to 4* has been found valuable as a general indication of a man's learning capacity. A few other tests, mainly of the same group paper-and-pencil kind as those already mentioned, are used for special purposes. Among the additional tests are oral tests of knowledge of fitting, machine tools, internal combustion engines, diesel engines and electrics; these were devised by Admiralty psychologists. In the assessment of the intellectual level of low-grade men, modifications of the Kohs Blocks Tests and the Wechsler Bellevue Intelligence Scale are often employed.

12. Considerable attention has been paid to the development of appropriate interview techniques, and to the sound training of personnel selection officers and recruiting assistants in their use. Lectures and discussions on this subject are supplemented by demonstrations and practical work. Normally, the first aim of the personnel selection officer's interview is to collect and collate relevant information about a man's potentialities; its second aim is to provide an estimate of the extent to which he is likely to use those potentialities effectively; its third aim is to make a suitable recommendation for him, and to ensure as far as possible that it is regarded by the man himself as an acceptable recommendation.

13. "Validation" is constantly in progress (13) (14) (15) (60) (74). A substantial amount of evidence has been collected concerning the value of the new selection and allocation procedure as a whole, and many investigations have been made into the significance of different parts of this procedure. For the most part, comparisons have to be made merely between initial test results and questionnaire data, on the one hand, and training course results, on the other hand, but whenever possible operational criteria are employed.

14. The assistants of the Admiralty psychologists are classifiable as mainly technical or as mainly clerical. The great majority of the first group can be sub-classified as (i) recruiting assistants and (ii) personnel selection officers.

15. The recruiting assistants are all Petty Officers, W.R.N.S., selected and trained for the purpose by psychologists and psychiatric social workers on the staff of the Senior Psychologist. Many of the recruiting assistants have been teachers, welfare officers or secretaries. Some have had a university training (not necessarily in psychology); all are of university calibre intellectually.

16. The recruiting assistants are trained for their Combined Recruiting Centre work by attending a fortnight's intensive course at the Admiralty followed by frequent "field" visits from one of the psychiatric social workers. They are instructed in the administration of a group intelligence test (the 1938 Progressive Matrices Test—*SP Test 0*); in the conduct of a "fact-finding" interview; and in the keeping of necessary records. Refresher courses are held from time to time at the Admiralty. Help with the training and refresher courses is given by the Director of Naval Recruiting, the Medical Director-General, the Ministry of Labour, the Industrial Health Research Board, and occasionally by others.

17. The majority of the personnel selection officers are Second or Third Officers, W.R.N.S., promoted from the Recruiting Assistant class on the recommendation of the Senior Psychologist, advised by his psychologists and psychiatric social workers. Their training as personnel selection officers is in the hands of the psychologists. A few of the personnel selection officers are R.N.V.R. officers with suitable technical qualifications, such as a university course in psychology.

18. The personnel selection officers, who (as already indicated) have nearly all had considerable relevant experience in Combined Recruiting Centres before promotion, are trained largely "on the job" in Naval Entry Establishments. (In the past, an attempt has been made to give all of them experience in more than one establishment, under more than one psychologist, but this is not now practicable.) Special attention is paid to the technique of category-allocation interviews, including the use of oral tests of trade knowledge. A good many of the personnel selection officers have spent several days at a Government Training Centre receiving basic instruction in the use of bench and machine tools. Bi-monthly meetings for personnel selection officers are held at the Admiralty.

#### ARMY (paras. 19 to 28) (18) (19) (21)

19. In the winter of 1940-41 a start was made in the testing of intakes by means of the F.H. 3 (later F.H.R.) Test. The testing was carried out by regimental officers, and the distribution of test material and collection of results was in the hands of the Army Education Officers. Arrangements were made for psychiatrists to have access to these test results and a nominal roll of low scorers was provided by commanding officers of all units that had been tested. It was seen in due course that these measures fell far short of requirements and it became necessary to make a fundamental change in the methods of posting men to units. At that time this was carried out by the Ministry of Labour, advised only to a slight extent by Military Advisers at the Recruiting Centres. Apart from tradesmen allocated by the Ministry of Labour to certain units within the Army, the system of allocation was more or less haphazard.

20. The Directorate of Selection of Personnel was set up in July, 1941, as a result of representations and proposals from various sources. It was not, however, until a year later that the General Service Corps Intake scheme was

introduced. In paragraphs 21 to 28, which follow, the work described relates to the activities of the Directorate of Selection of Personnel.

21. The psychologists' main task in this Directorate has been to improve methods of selection. They represent the viewpoint that in man-power planning, quality as well as quantity must be given proper weight. They are responsible for setting up a means of classifying personnel for training in such a way that the Army's demands can be met with the best available supply of men (19). In doing this they have to take account both of the speed with which men can absorb training in an emergency and of the eventual level of efficiency which they can attain.

22. In the Army and A.T.S. psychologists undertake the planning and inspection of selection procedures ; the training of a staff of several hundred officers and N.C.O.s who carry out the day-to-day work ; and the necessary research and development investigations.

23. The training provided for the auxiliary non-psychological staff of the Directorate of Selection of Personnel is variously adapted to the needs of personnel selection officers and sergeant testers.

The course for the personnel selection officers lasts about a month, and the main topics in the syllabus are (i) the psychological background of vocational selection, (ii) the job-analysis of Army trades and non-trade employments, (iii) the nature and uses of selection tests, (iv) the assessment of educational attainments and occupational experience, and (v) the technique of interviewing. The officers must all be of at least average intelligence, as measured by their own performance in the tests ; they must pass a written test of knowledge of selection procedure ; they must show themselves satisfactory in interviewing men for the double purpose of getting relevant information about their history and qualifications and of assessing their fitness of temperament for various duties ; and they must prove their ability to make the training recommendation most appropriate to a man's mental and physical qualities (88) (90).

The course for the sergeant testers lasts between two and three weeks, and the main topics in the syllabus are (i) the nature and use of selection tests, and (ii) the giving and scoring of selection tests. The sergeant testers must all be above average intelligence, as measured by their own performance in the tests, and they have to prove themselves capable testers and scorers.

24. Aptitude testing is widely employed and for administrative reasons has usually to be carried out in group rather than individual forms. It is always used as a supplement to the collection of information by interview, by questionnaire or by documentation about men's physical constitution, their education and work histories, their interests and their personalities.

25. Psychologists play a part in the following activities :—

(i) *Intake.*—Intake is classified into broad training categories (e.g., drivers, signallers, mechanical maintenance), which are then split up according to demand among the various Corps. Alternative recommendations are made so that supply and demand may be equated without serious misplacement. A wide range of recruits is marked for observation as possible officers, and for scrutiny by a War Office Selection Board. Potential army tradesmen and men fit only for straightforward labouring duties are individually identified and directed to their appropriate sphere immediately primary training is completed (88).

(ii) *Disbanding units and units converting to a new role.*—Personnel selection teams visit these units and advise on the reallocation of other ranks and N.C.O.s.

- (iii) "*Misfits*."—All men whose medical category is reduced below the limit of employment in their existing units, and all men reported as misfits by their Commanding Officers, are sent to Army Selection Centres, where they are tested and given recommendations for retraining or discharge.
- (iv) *Field Force*.—In a large Army Group, the special qualifications, general intelligence, special aptitudes, proficiency and soldierly qualities of all other ranks have been assessed. The resulting records facilitate the selection of men for special duties, the reorganisation and regrouping of men after battle, and vocational guidance for the education of soldiers during the release period (56).
- (v) *Prisoners of War*.—Repatriated prisoners of war (other ranks) are interviewed and, unless they object, tested by personnel selection teams, who make recommendations regarding their disposal.
- (vi) *Apprentice Tradesmen*.—In the initial selection of apprentice tradesmen, tests of intelligence and special aptitudes are used in combination with the ordinary examination.
- (vii) *Overseas*.—In North Africa, the Middle East, and India the selection of recruits, including non-Europeans, and the reallocation of misfits are carried out on the same lines as in the Home Forces.
- (viii) *A.T.S.*—Auxiliaries undergo much the same initial selection procedure as male recruits, except that they are recommended not for broad training categories, but for more specific duties. Auxiliaries for whom some change of duty later seems desirable are interviewed and tested at selection centres, where appropriate recommendations are made. (See also Appendix II, para. 7.)

26. In all the above schemes it is the practice to give a basic battery of tests with the option of further tests for personnel who appear likely candidates for particular duties. A Qualification Form is filled in by each person, an interview by a personnel selection officer is carried out, and, where necessary, rating conferences are held and rating scales employed.

The standard basic battery is composed of the following five tests :—

- (i) Intelligence,
- (ii) Mechanical Comprehension,
- (iii) Arithmetic,
- (iv) Verbal Facility,
- (v) Instructions.

A standard physical agility test is given to all male recruits.

Other tests employed, or in course of preparation, for specific purposes are—

Morse Aptitude Test (U.S. Army) for signallers.

Assembly test for drivers and mechanical tradesmen.

Spelling, Shorthand and Typing Tests for A.T.S. Signals and clerical grades.

Reading test for educationally backward men.

Tests of trade knowledge for potential tradesmen.

27. *Officer Selection*.—Psychologists are concerned in the work of War Office Selection Boards where they collaborate with military officers and psychiatrists in the selection of officer candidates. Candidates spend two or three days at a Board, where they undergo a number of carefully designed outdoor and indoor tests. Most of the outdoor tests superficially resemble military situations, assault courses, &c., but they are designed to throw light on the candidate's behaviour both as an individual and as a member of a group. Some idea of his resource and initiative emerges and, still more important, whether he naturally comes to the front in a group of his fellows and makes

himself accepted in the role of leader. Intelligence tests are given, two careful biographical questionnaires are used, and three projective techniques (see para. 63) designed to give "pointers" to important features of the candidate's personality. A conference of all observers is held at the end of the course and all cases of discrepancy are argued out under the Chairmanship of the President of the Board. The psychologists are concerned not only with the formal psychological tests but with the design of the whole procedure.

Following the adoption of the Progressive Matrices Test by the Army Medical Department and its use at Combined Recruiting Centres, a more difficult series of Matrix tests was devised for use at War Office Selection Boards. Tests of verbal intelligence and reasoning are also employed.

As soon as a new selection procedure for officers is introduced, a follow-up of its results is planned. The purpose of these enquiries is to assess the value of the new procedure and to discover where improvements may be made (71) (72). The same applies to selection procedures for other ranks and for A.T.S. (68) (70).

28.- Army psychologists have compiled a comprehensive "Guide to Civilian Occupations" (S.P. Book 3) for the use of personnel selection officers in securing information from new recruits about their work experience. They have also prepared a volume (S.P. Book 2) (88) setting out (i) the criteria by which personnel selection officers are to be guided in making training recommendations (ii) a list of Army trades and the minimum qualifications needed for them, and (iii) the distribution of personnel in the various Arms. All this is based on an elaborate job analysis of the Army as a whole carried out by psychologists in collaboration with executive officers.

#### ROYAL AIR FORCE (paras. 29 to 34) (31).

29. In the R.A.F., advisors in psychology conduct a section on training research which has liaison with several Service branches to enquire into and advise upon problems of selection, classification and training of R.A.F. personnel, air and ground. The work of the advisors includes:—

- (i) Planning and conducting of factual studies on the handling of men and women under training (e.g., examination of instructional procedures and measures of proficiency). Such studies usually involve field observation as well as the analysis of records.
- (ii) Standardising, validating, revising and improving the objective tests to be used by W.A.A.F. Clerks (Personnel Selection). This involves both experimental testing under Service conditions and also the special training of Clerks (Personnel Selection) to administer such tests as are approved for Service use.
- (iii) Developing effective methods of reporting on training progress. Such reports are indispensable not only for validating tests, but for providing factual evidence on questions relating to training policy.

30. (i) The W.A.A.F. trade of Clerks (Personnel Selection) referred to in para. 29 (ii) above was formed in August 1942 so as to facilitate the administration of testing and classificatory procedures in use for personnel under training. These clerks are required to conduct and supervise written and mechanical tests for the selection of flying or ground personnel, to record and collate the results for presentation to the Presidents of Aviation Candidates Selection Boards or Central Trade Test Boards and to assist in the development of new tests.

(ii) The qualifications required for acceptance in this trade are a stable personality, aptitude for interviewing and a genuine interest in social, vocational and individual welfare. The sources of supply are certain classes of serving airwomen and volunteers or recruits entering from civilian life. All candidates for the trade must pass a selection board which sits at the Air Ministry.

(iii) A Service training school has been established with permanent staff to conduct regular and refresher courses for this trade. The syllabus is modified and improved from time to time. The training course, which lasts four weeks, is designed to give general instruction in the principles of personnel selection for ground and air duties and in elementary statistics. Trainees are taught how to administer tests, individual or group, and how to document results. Provision is also made for trainees to acquire a working knowledge of the Service organisations engaged in selection and classification with special reference to the Central Trade Test Board and the Aviation Candidates Selection Board. On completion of the training course, trainees have to pass a qualifying examination in the principles and practice of the work they will have to carry out (91).

(iv) An arrangement has been made for a number of W.A.A.F. officers in this trade to assist R.A.F. psychiatrists in selection work, their duties being primarily to give individual tests and also to administer and analyse experimental questionnaire procedures. These officers have, in addition, operated a screening technique at the Re-Selection Centre for picking out candidates most likely to require a psychiatric interview. A special short course of tuition was provided for those so transferred for this work. The course included visits to an out-patient department of a hospital, instruction in simple psychiatric interviewing, and visits to a Naval Recruiting Centre and a War Office Selection Board for A.T.S. officers.

31. By agreement with the Medical Department, these W.A.A.F. officers have referred about 15 per cent. of intake of ground personnel who have lowest intelligence scores, to be clinically examined by an R.A.F. psychiatrist. Further bases for reference are under consideration (see Appendix II, para. 10).

32. (i) The following tests are authorised or on trial for recruits in the R.A.F. and W.A.A.F. Those for general intelligence and mathematics are given to all R.A.F. candidates, the others to appropriate groups :—

<i>Ground Staff.</i>	<i>Air Crew.</i>
GVK Intelligence.	General Intelligence.
Arithmetic.	Calculations.
Technical Information.	Morse Aptitude.
Fluency.	Pilot Aptitude (S.M.A.3.).
Morse Slip Reader.	Observer (Radio) Aptitude.
Radar (for temperament).	

(ii) Methods proposed as an aid to the special selection of Sector Control Officers and Filterers have been accepted and are regularly applied. Arrangements have been made for the extension of these methods to the selection of personnel in the Royal Observer Corps. It is proposed also to include some selection of Plotters and the preliminary enquiry into the suitability of the methods suggested has already been completed. The most pressing problems in this field still awaiting solution are how to obtain the best available recruiting material and how to improve methods of assessing temperament (32) (34).

33. Of recent years, particularly since 1937, psychologists have collaborated in researches in aviation medicine and in preventive medicine in the Air Force (35). A few examples are as follows :—

- (i) In 1937, an apparatus (Sensory Motor Apparatus No. 3) was designed to assess deftness of hands and feet, together with reaction time, with a view to assessing flying aptitude. During the next two years, this test was widely applied and validated (23).
- (ii) In 1940-41 an investigation was carried out with a view to assessing the value of a group of psychological tests designed to detect bomber and fighter pilot attributes.

- (iii) Among other tests carried out during 1939 and 1940 was the Angular Perception Test to assess an individual's judgment of approach and landing of aircraft (22) (24).

34. The following important modification of procedure in regard to aircrew selection may be noted. From about the middle of 1942, it was decided that the Aviation Candidates Selection Boards should accept candidates for the broad aircrew category, Pilot-Navigator-Bomb-aimer (P.N.B.). Subsequent allocation within this group has been based on performance at the Initial Training Wings and upon flying aptitude tests. Selection of pilots is determined by order of merit according to performance on flying tests; selection for navigators and bomb-aimers is determined by a number of factors, including the individual's expressed preference, his tests and examination results and by the quota needs of the Royal Air Force.

### **III. Questionnaires, Rating Scales and Interviews (paras. 35 to 37)**

35. Questionnaires are widely used in the Services, particularly when interviewing is impracticable. There are two kinds, one designed for recording factual details, the other to elicit opinions. Both kinds may be used, either by psychologists themselves, as for example, in enquiries into morale, discipline or the efficiency of training methods; or on their behalf as, for instance, by W.R.N.S. recruiting assistants, at Recruiting Centres (see para. 9 above) or by executive officers as in follow-up enquiries (71) (72). Psychologists often advise on the design of questionnaires for lay use in collecting data of various kinds, for example, battle information; advice is similarly given on the analysis of data so collected (20).

Sometimes, formal questionnaires are not appropriate and the interviewer has to elicit information in such a way as to impart it subsequently on standard lines. Such procedures, for example, have been involved in questioning enemy prisoners and our own troops for the purpose of studying the effects of our weapons and tactics on the enemy (20).

36. Rating scales are used in all three Services where more objective methods of assessment are difficult to obtain. For example, in interviewing new intake at Primary Training Centres, Army personnel selection officers use rating scales, as a matter of routine, for grading combatant temperament, employment record and leadership qualities (88). During training and in various follow-up enquiries, instructors' ratings are used as independent criteria of the proficiency of trainees.

37. Interviewing, often according to a standard procedure, is widely used in all three Services for eliciting information either as a technique in itself or in conjunction with questionnaires. The interviews may be conducted by the psychologists themselves or by specially trained assistants (see para. 9). Procedures have been devised, for example, at War Office Selection Boards, for improving interviewing technique so as to achieve greater internal consistency.

### **IV. The Layout, Placing and Display of Operational Equipment (paras. 38 to 40) (38) (39)**

38. This sphere of work mostly involves a study of the relation of motor habits to visual perception. Those problems which have to do with the control of the timing, speed and direction of objective movement are particularly important. Most of this work has been carried out on behalf of the Royal Air Force. Many visual display problems in Army Operations Rooms are, however much the same as those in similar R.A.F. Centres and they are now being investigated.



39. *Visual Display in Operations Rooms* (38).—There are two objectives in display : one is to ensure that it is easily seen by key men who control operations; the other is to devise methods convenient for the plotter, and for this purpose the testing of a variety of possible techniques is usually required. Experiments have also been made to determine (i) the relative importance of distance and angle of view in legibility with standard R.A.F. plotting arrows ; (ii) the influence of light-dark contrast between arrows and the surface brightness of the plotting table ; (iii) the significance of arrow shape and size. Other experiments are in progress to determine the effects of thickness of line on the accuracy of grid readings, on the legibility of standard letters and numbers, and on the relative value of isolated spot and continuous line plotting.

40. Various psychological aspects of gun-controls (e.g., radii and position of handles, turning efforts, accuracy to be expected with different types, &c.) are being investigated (38) (39).

## V. Advice on the Design and Construction of Training Equipment (paras. 41 to 48) (40) (42)

41. *Gunnery Teacher*.—This device throws a cinematograph picture of a fighter aircraft on a hemispherical screen in the centre of which is placed a standard turret, controlled by the air gunner. Most types of attack can be simulated, and the gunner's aim is recorded by the projection of a spot of light on the screen, account being taken of range and bullet time. The apparatus was designed for instruction in deflection aiming (40).

42. *Tracer simulator*.—This apparatus, designed for use with the gunnery teacher, projects on to the screen streaks of light simulating the appearance of tracer bullets. The shape and length of the trace is dependent on the movements of the turret as it is used in aim by the air gunner (40).

43. *Day landing teacher*.—This is the optical side of a device intended for training *ab initio* flying pupils to land an aircraft. Considerable study has been given to the question of the nature of the visual clues used in landing. The apparatus was planned to permit the utilisation of different types of clue and, in particular, to provide for binocular vision with a true sense of depth (40).

44. *Night approach trainer*.—The object of this device is to permit practice approaches to land under night conditions. A cockpit is fitted with flying controls and a standard instrument panel and a projection device throws on to a screen a picture of a flare path. The movements of the aircraft in relation to the flare path are simulated by making the picture on the screen change in size and angle according to the way the flying controls are used (40).

45. *Turret manipulation trainer*.—This is intended for use at the Initial Training Wing and in the earliest stages of gunnery training. The gunner sits in a dummy turret and sees the image of a graticule, similar to that seen in reflector sights, projected upon a screen having a stationary picture of an attacking aircraft. The graticule moves in response to the movements of the controls of the turret. The relative movements of turret and attacking aircraft are simulated by subsidiary movements of the graticule. The gunner's task is to keep the graticule stationary on the picture of the attacking aircraft. Provision is made for a series of exercises graded in difficulty, and a means of scoring is incorporated (40).

46. *Bomb aiming teacher*.—In using this device the bomb aimer looks through a standard bomb sight at a moving band beneath him. He has to press the bomb release switch when certain marks on the band come within the sight.

The amount of error in aim is instantly apparent. The device teaches a man to appreciate his own reaction time, and may also be of value as a selection instrument (40).

47. *Cockpit apparatus.*—A mechanical computing device has been developed which operates imitation aircraft instruments in response to movements of the controls in the cockpit, as in a Link-trainer but with more detailed scoring. This is being used for investigations of flying stress (42).

48. *Radio communication.*—In the earlier part of the war improved radio communication sets, especially for use in tanks, were designed. When these reached the stage of mass development and production the work passed on to other agencies.

## VI. Visual Problems (paras. 49 to 59) (39) (42)

49. *Instrument lighting for night use.*—Extensive experiments have been carried out to find the best levels of illumination and colour for instrument lighting in aircraft, tanks, warships and Service vehicles of various kinds (26) (27).\*

50. *Goggles, filters and dazzle effects.*—Goggles, colour filters and eye-shields have been designed for facilitating vision while becoming "dark-adapted," for reducing glare, and for making tracer more visible. At the same time, the reduction of vision through using unsuitable anti-dimming preparations has been assessed. Gunflash dazzle has been assessed and assistance has been given in various schemes for dazzling attacking fighters from bombers (30) (37).†

51. *Facilitation of visual routines.*—Studies have been made of the best scanning methods for use in searching for submarines from Coastal Command aircraft; further experiments are in progress for spotting planes in low-level bombing attacks. The visibility of aircraft in searchlight beams at different sweep speeds has been investigated in laboratory simulation experiments. Measurements have also been made of the loss of visual range through new and old perspex and glass (28) (29) (37).

52. *Night simulation.*—Various methods have been devised for simulating night conditions and night-flying conditions in the laboratory. Among the instruments devised for the former purpose has been a wide-angle lantern in which a slide can be moved mechanically at various speeds. For the second purpose, measurements of sky brightness at high altitudes have been made with the use of a photometer (25).

53. *Observation of the visual field.*—As instances of the work in this sphere, three inquiries may be mentioned. In the first, a study was made of the observation of the telescope field in the region of graticule lines where visibility is impaired on account of limitations in the human eye. It was shown that the obscuring effect of any proposed graticule can be estimated and an assessment made of its practical consequences. In the second, the task was to enlarge the erector lens of tank-sighting telescopes so as to increase the brightness of targets seen under low illuminations. In the third inquiry, a study was made of the blind zones due to existing vision devices in tanks and armoured cars. Various suggestions were made for changes in design so as to reduce blind zones to a minimum (83).†

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\* See also the reports of the R.A.F. Physiological Laboratory, Farnborough, circulated to the Vision Committee (of the F.P.R.C.)

† See also Minutes of the Vision Committee (F.P.R.C.)

54. *Eyestrain in Radar Operators.*—This problem has been investigated in units of the Home Fleet. Laboratory studies with various simulations of the displays have also been conducted (42).

55. *Ability to judge Approach.*—A rotating stereogram has been designed for this purpose. This apparatus, in conjunction with the amblyscope, has been used to correct muscular imbalance of the eye and so render certain otherwise fit individuals capable of learning to fly (35).

56. *Dark-Adaptation.*—Various photometers have been devised for measuring low illumination. A standard adaptometer has been developed for research in studying dark-adaptation. Many investigations on dark-adaptation and night-blindness have been carried out with various other adaptometers (41) (42).

57. Among other devices designed for use in this field may be mentioned various night-vision tests, including a rotating hexagon which is believed to measure perceptual ability as well as night visual capacity and luminous photometers for checking the brightness of the tests (42).

58. Psychologists have collaborated in experiments which have been carried out on the effects of oxygen lack, glucose, carbon monoxide, vitamin A deficiency, and fruit deficiency on dark-adaptation. A note has been prepared on the technique of seeing in the dark, summarising the latest information for practical use (38) (42) (81) (84).

59. *Other visual work.*—Other work directly or indirectly connected with vision includes experiments on the effects of protecting one eye from exposure to light; problems of display in the development of a new instrumental method of blind landing; map-reading at night; windscreen design and visibility from fighter aircraft; the design of gunsights for Light A.A. Batteries; failures in lamp signalling involving tests of the critical rate of frequency for extinction of flicker; design of tests of visual acuity and accommodation time; design of apparatus for computing the map position of moon reflections as seen from bombers; and a study of the perception of stationary and moving aeroplane silhouettes (39) (40) (41) (42).

## VII. Field Work being Developed in Conjunction with Research and in Partial Application (paras. 60 and 61)

60. An investigation has been carried out to study the effects of certain vitamins, or vitamin combinations, upon various forms of behaviour. There is evidence of a significant, favourable effect in certain cases, on work involving considerable effort carried out at speed but not needing much skill. The investigations now in process mainly concern the influence of the substances used upon performance tests which involve a certain degree of co-ordinated skill. For this work several special types of apparatus have had to be devised (38).

61. Studies have been made of the design of specific instruments and weapons to facilitate the use of controls by the greatest number of potential operators (17) (20). These problems involve essentially the "fitting" of new weapons to the men who have to handle them and aid is given during the earliest phases in the development of a weapon. It is necessary to take account of the specific demands of a weapon upon the mental capacity of the operator as well as of the basic abilities of the average man. The layout of instruments is studied with a view to ease of manipulation, comfort of operators and with the object of making the best use of visual, auditory and other sensory and psychophysical processes. Much of the work described in Sections IV, V, and VI belongs to this sphere. Two further illustrations may be given of the kind of

problem involved. An inquiry was carried out with a view to improving the accuracy of aim with the 6-pounder anti-tank gun by altering the design of the open sights for this gun. Tests of accuracy were made in daylight and dusk, and it was found that sights could be modified to give an improved performance in dim light (85). In another study, the effect of the gunner's reaction time in firing tank guns was examined. In consequence, the specified trigger load is believed to be now more rigidly enforced as an inspection limit (42).

### **VIII. Development of Methods of Assessing Personality, in Close Contact with Field Conditions (paras. 62 and 63) (38)**

62. In many ways it has become apparent that efficiency in the performance of many Service activities, such as, for example, flying duties or leadership, is to a great extent dependent on the possession of suitable qualities of personality. The basis of the special intellectual capacities or skills involved can, in many cases, be successfully detected but it is still possible that they may fail to be displayed just when they are most required. Present methods available for the assessment of qualities of personality depend predominantly upon skilled personal judgments. An endeavour is being made to analyse the factors entering into the making of expert judgments with a view to developing techniques which can be employed by people with less skill. Instances of these techniques are :—

- (i) *The after-contraction test.*—This appears to have diagnostic significance, as checked against gradings at Elementary Flying Training Schools, in respect of fatiguability and the use of skill in flying.
- (ii) *The endurance index method.*—This is an attempt to supplement the Harvard fatigue-index test, and to find a measure which indicates capacity to sustain continued strain. So far tasks have been dealt with which involve muscular effort only, and though many attempts have been made to estimate capacity to continue work involving little muscular effort but much skill, no finally acceptable methods have been devised. Some success has, however, been met in obtaining reasonably reliable tests, which reveal marked individual differences, and which certainly do measure something related to sensitivity to discomfort and toleration limit when hard muscular effort is required. The work is promising enough to justify further development.
- (iii) Many methods have been tried out, all having as their objective the measurement of a subject's capacity to avoid losing control of a situation and to remain collected and cool in emergencies. A number have failed, but a few have sufficient promise to be given extended trial.
- (iv) An apparatus has been developed which appears able to identify at least some of the temperament and skill factors involved in "accident proneness." This closely follows earlier work in the field. It has been widely applied with promising results.

It is now proposed to use these and other methods in a fairly large-scale trial, with controlled training and operational follow-up, which is being planned to test the possibilities of the early assessment of suitability of temperament for air-crew duties.

63. One development in the army is worthy of note as breaking new ground. This is the attempt to develop group methods of obtaining, by projective techniques, material of a clinical type which can be submitted for psychiatric interpretation and assessment. Projective techniques are those in which the subject is freely allowed to manipulate or interpret experimental material or situations, under expert observation. It is assumed that the materials or situations are used by the subject to express his conflicts or tendencies, *i.e.*, he

projects himself into them. This work, which entails the intimate collaboration of psychiatrists and psychologists, may be exemplified by the Word-Association test, the modified Thematic Apperception test and the Self-Description test as used at the War Office Selection Boards. Work is proceeding to produce a group test incorporating the principles of the Rorschach Test without the complexities of interpretation which the latter test entails. Psychologists and psychiatrists have further collaborated with the military staffs of War Office Selection Boards in the designing of their outdoor sets. They have helped to formulate principles of interpretation and to systematise the recording of the observations made by the military testing officers.

## **IX. Job Analyses, Hours and Conditions of Work, Time and Motion Study, &c. (paras. 64 to 66)**

64. Large-scale job analyses have been carried out to provide a basis for the selection of officers and other ranks (see para. 28). Two surveys of this kind in the W.R.N.S. and A.T.S. may be specially mentioned. In the W.R.N.S. a job analysis was made of the work of radio mechanics, air mechanics and torpedo W.R.N.S. In the A.T.S., assistance was given in the organisation of a War Office Selection Board for potential officers and, in particular, in the preparation of a job analysis of the work done by A.T.S. officers. The field of inquiry covered a job description of the seventeen branches of work on which A.T.S. officers were engaged, showing, for each, the officers' duties and environment, and the experience and qualities needed (40) (88).

65. Time and motion studies of gun drills, gun laying and general methods of handling weapons and equipment have been carried out. Apart from the ordinary methods, slow-motion camera analyses have been made and camera guns have been used. A time and motion study of stoking methods in merchant vessels has also been undertaken (20) (40).

66. Other work in this sphere covers the assessment of the effects of conditions akin to tropical climates on mental output, and surveys of conditions of work in Arctic convoys and in the tropics (17).

## **X. Training Problems (paras. 67 to 92).**

### **ROYAL NAVY (paras. 67 to 69)**

67. In the Navy, although advice on training matters comes within the scope of the Senior Psychologists's Department, shortage of skilled staff has been the main limiting factor in the participation of Admiralty psychologists in this sphere.

68. Admiralty psychologists have made a very comprehensive survey of training methods at anti-submarine schools (10). The report prepared was found useful by officers concerned with training in several Branches. Reports, together with numerous recommendations, have also been made on the training of radar operators and radio mechanics, and on telegraphist air-gunners (13) (14) (15).

69. Experimental work has been carried out on the instruction of Naval ratings with the aid of film and film-strip. The results appeared to justify the introduction of the film-strip as a regular feature in Naval training, particularly when films are not available (P.P. (S.C.) (43) 21).

### **ARMY (para. 70)**

70. No psychologists are specifically attached to the Directorate of Military Training in the Army and relatively little has been done by Army psychologists in the training sphere, but psychologists from the Directorate of Selection of

Personnel and the Directorate of Biological Research have collaborated with the Directorate of Military Training in order to discover the most suitable types of training at different levels of mental ability. Studies of gun drills and the like (see para. 65) and the training of teams to demonstrate training methods comprise almost the total contribution to date. The scope for extension of psychological work in the sphere of training is indicated in Section XIV.

R.A.F. (paras. 71 to 90)

71. In the R.A.F., where psychological advisers have had close contact with training (as well as with selection) common principles for the differentiating of personnel have been found to apply during training as they do for initial selection. This parallel will bear notice by the Services in general because it raises a basic issue of what kind and amount of differentiation can best be undertaken at the stage of admission, or alternatively, at some later stage.

72. Administrative arrangements within a Service may place selection and training under jurisdictions so remote that a close connection between them is difficult to maintain. There are obstacles in the way of that continuous link between selection and training processes which psychologists believe to be desirable. Where this happens, the recruit himself remains the sole link that binds together successive stages in the handling of personnel.

73. Some parallel aspects of initial selection and formal training may be briefly mentioned :—

- (i) The objective of initial selection is to grade applicants first into those accepted and those who are not. The former are usually further subdivided into particular categories which conditions their eventual assignment to specialised training ; while rejects, too, are disposed of in distinctive ways. The aim in selection is thus classificatory throughout.

Similarly, training is always a selective process ; it classifies trainees into grades of proficiency and also recognises degrees of failure, *e.g.*, absolute and relative (*i.e.*, those referred back for further training) failures respectively, on the special training in question. Absolute failures in one sphere then turn out to be only relatively so for the Service as a whole. This comes about through re-selection, where so-called absolute failures may be re-allocated for a fresh start in alternative training. Actually, training and selection are inseparable ; they are not two mutually exclusive functions but parts of one progressive classificatory process.

- (ii) While both training and initial selection are classificatory in outcome, there are differences in the means employed, and these are dependent on special circumstances which must be met in terms of war-time facilities and use of man-power.

Selection must issue in a decision on individual recruits, but in so doing it has to cope with large numbers in a very limited time. Its procedures are determined accordingly. Impressionistic methods, *e.g.*, by a brief interview alone, have universally proved insufficient and wasteful, involving an unnecessary amount of referral back, re-sorting, delay, and loss of morale in subsequent stages. Such methods have therefore been reinforced by group methods, in which performance on a variety of tests is used as an aid in predicting ability to respond to training. These tests are designed to differentiate individuals through a brief, immediate performance which they give on chosen tasks, independently of improvement through extensive practice.

Whilst selection tests have not replaced the selection interview, they bring into focus the conditions such interviews have to fulfil if they are to be effective. Thus Service interviews which accompany the testing procedures should be so systematised as to bring out all the points really important. Secondly, the interviewers should know the meaning and limitations of test scores well enough to be able to integrate them with interview results for selection purposes.

- (iii) In regard to training assessments, similar principles obtain but have to be somewhat differently applied. Instead of employing a preliminary test the performance of which occupies a few minutes, trainees are put through a progressive programme of training often lasting several weeks. Assessment here does not depend on a work sample preceding practice, but on training progress under controlled instruction. Finally, instead of predicting an outcome from a test performance before training, there is a known outcome as examined on and rated either during the course and/or at its conclusion.

Regarded in this way, training would seem to be closer to actual facts and less dependent on prediction than is initial selection. Actually, however, this difference is rather one of degree than of kind. Service training in the R.A.F. mostly proceeds in several stages (see Appendix V), each of which is selectively predictive for the next, just as initial selection aims to be predictive for all training. Moreover, the assessments made of progress or of final proficiency in a training course can be, and sometimes are, quite as subjective, impressionistic and lacking in uniformity as are the personal judgments made in initial selection.

In such circumstances, the Service later meets difficulties from poor decisions of its instructors analogous to those from poor decisions of its initial selectors. In effect, there will be no real assurance about what trainees to accept, reject or refer back for further training. A numerically large wastage rate will not necessarily mean that quality is improved or maintained; potentially good material may unwittingly be discarded. There may also not be very close correspondence between the predicted proficiency of those who pass and their subsequent performance in later training. Thus the selection involved in training assessments presents instructors with problems similar in essence to those encountered by initial selectors.

- (iv) In both settings, the solution of these problems is by quantitative evaluation of the performance given on the important elements and proper synthesis of these measurements to ascertain a dependable order of merit among trainees or recruits, as the case may be. In a training programme, such an order of merit is genuine to the extent that it will accurately predict the outcome in more advanced training. In short, the assessments in each stage of training must be validated in terms of later outcome precisely as should the assessments at initial selection. The entire sequence, in fact, is a continuous selective process from the outset onward to the ultimate users of personnel. The essential point is that like principles should be applied throughout, if man-power is to be conserved and effectively used.

Sound selection in training is important because the latter occupies a relatively large part of Service time and effort. When training assessments approximate a true order of merit, then quality of the trained product can be readily controlled by regulating the size of the training wastage to be dropped from the lower end of the trainee output. Rationalisation of Service demands as between quality and quantity then becomes possible. The problems of sources of recruitment, initial

selection, Service training and final posting for use can then be viewed as a continuous whole. Unless this whole sequence functions smoothly the Service will fail to achieve what it might with the man-power at its disposal.

Improvements are in process as experience accumulates. In the R.A.F. training was established as a Department in 1940, and has expanded to embrace an overseas basis. The relation between selection and training has grown closer with experience. For ground personnel, initial selection for trades and the direction of all technical and service training is unified under the Air Member for Training. For aircrew, selection and training are under separate authorities, but the trend here has been in the direction of depending more upon selective training and less upon detailed differentiation initially. Thus in 1942 (see para. 34) three categories were blended into one (P.N.B.) which is undifferentiated at the stage of initial selection ; these trainees are now classified into categories after their initial training (I.T.W.). Again, the Flight Test for pilot selection now uses an order of merit assessment on a few hours of elementary flying instruction (E.F.T.S.) as the basis of selection for the quota of potential pilots. Further developments are pending which should place aircrew classification upon more objective bases than hitherto.

To summarise : in the selection of recruits and their conversion into trained Service personnel, it may be pointed out that :—

- (a) Selection and training should not be approached as distinct and separable functions but as successive steps in a single procedure, viz., of progressively classifying personnel for Service use.
- (b) Differentiation for Service purposes, whether in initial selection, selective training, or selective posting, depends largely on the same principles applied to suit the given conditions.
- (c) Executively and scientifically, problems concerning differentiation of personnel at any stage should be viewed as affecting all stages between source and finished product.
- (d) This unitary whole must be studied and planned both forwards and backwards. To have meaning for the recruit it must be integrated forwards from the point of entry to outcome. For the user, however, meaning comes through the reverse approach ; here one's point of departure is the type of finished product the user requires, which has somehow to be developed out of the available raw material.

#### *Special Problems in Flying Training (paras. 74 to 88) (40)*

74. Experiments in Flying Training have been carried out with the object of utilising experience gained in the training of industrial workers. As a result, suggestions were made with a view to providing a specified time for ground instruction on the principles of flight, before air instruction. Attention was given to the pupil's ease of learning and to the morale of instructors. It was recommended that pupils should be provided with a simple textbook which would cover the basic principles of flight and which would set out the instruction given in the air : a draft of such a manual was prepared and this formed the basis for A.P. 1979A, the Cadets' Handbook of Elementary Flying Training, issued in 1943.

75. Since November, 1942, an adviser in psychology has been attached to the Research Flight of the Empire Central Flying School with the task of advising on research and of planning and supervising experiments on flying training methods.

76. Experiments in flying training call for some reliable criterion of flying skill by which the results may be judged. An accurate measure of flying performance is also needed if the results obtained by different instructors and



different schools are to be compared, and if satisfactory information on the effectiveness of selection procedures is to be obtained. A suitable measure which could be applied at frequent intervals throughout training would also permit the construction of learning curves for flying about which little is now known.

77. The testing of flying proficiency raises four main problems :—

- (i) how to obtain an objective measure of performance in terms of flying accuracy ;
- (ii) how to determine the relative value of different exercises and their components in differentiating between pilots of various degrees of skill ;
- (iii) how to assess the effect of weather conditions on performance ;
- (iv) how to assess airmanship, air sense and suitability of temperament for various types of pilot duty.

78. Different tests are required at different stages of flying training and the Research Flight has begun by working on a test suitable for the first 15 hours of *ab initio* training, and on one designed for use at the end of Service Flying Training. The work is still in the preliminary stages of collecting information on which to base the standard tests.

79. Pupils at a glider pilot *ab initio* school have been given a short test flight at 7 hours, 11 hours and 15 hours, during which the testers recorded the errors made, the degree of error, and the rapidity of correction for the error. A comparison of results obtained from these records will be made with the pupil's final ranking on the passing-out test given by the Chief Flying Instructor at the school (admittedly not a perfect criterion). This, it is hoped, will throw light on those parts of the test which have most diagnostic value. The records of pupils who are suspended from flying training before the completion of the course will also be examined from the same point of view.

80. It is hoped that the work will lead to the preparation of a simple test marked on the basis of deduction for errors which can be objectively defined. Such a test would be tried out on other groups of pupils undergoing elementary instruction to determine the reliability and diagnostic value of the test.

81. A more elaborate attack is being made on the problem of tests for advanced pupils. Apparatus has been constructed which permits the photographic recording of a special set of aircraft instruments. The instrument readings will provide information of the accuracy with which the aircraft is flown during the test. Records will be obtained from highly skilled pilots, from average pilots, and from pilots suspended from advanced training, so that those aspects of flying which differentiate most clearly between the three categories can be determined, and thus permit the preparation of a suitable standard test. It is proposed, in due course, to use the apparatus with pupils in earlier stages of training.

82. In order to throw light on the effect of weather on flying performance, series of records are being taken of pupils flying in different conditions of visibility and "bumpiness." A "bump recorder" will be used to obtain a measure of rough air, and it is hoped to work out correction factors to apply to test results.

83. If the photographic recording of instruments yields the results hoped for, the possibility of measuring flying proficiency by the use of automatic recording instruments is envisaged. Such a method, besides giving an objective basis for assessing flying accuracy, will permit the testing officer to concentrate his attention on the pupil's airmanship, air sense and temperament.

84. An experiment was carried out designed to throw light on the value of the synthetic day/night method of providing instruction in night flying, when the method is used at an Advanced Flying Unit. Two groups of pupils were trained in night circuits by Research Flight instructors, one group receiving instruction under real night conditions, and one with day/night. The pupils forming the two groups were first carefully matched in pairs in order to reduce the effect of difference in capacity when the results are available for comparison.

85. An investigation is in hand to determine whether the degree of "phenomenal regression" shown by a pupil is related to the ease with which he learns to land an aircraft. A special piece of apparatus was made to provide a rapid and easy measure of an individual's "phenomenal regression" co-efficient in four different circumstances. The apparatus was tried out on air-crew candidates and was then used at a Grading School. Measurements were obtained from pupils, on whom reports were made by their instructors concerning speed of learning to land, tendency to hold off or to "fly in," and any special difficulties. The instructors are also being tested on the apparatus, as it is thought possible that the relationship of the instructor's "phenomenal regression" co-efficient to that of his pupil may be of importance.

86. The Research Flight is engaged on a series of trials to discover the value of a day-landing trainer. The experiment is planned in three parts, to deal with three possible uses to which the device might be put :—

- (i) As a substitute for air instruction in circuits and landings once the stage in training appropriate to such instruction has been reached.
- (ii) For giving special coaching to those who have difficulty in learning to land.
- (iii) For teaching control of an aircraft in pitch, and also landing technique, before the pupil has any air instruction, and for estimating flying aptitude.

87. The first stage of this experiment is now nearing completion. An experimental group and a control group were given elementary instruction in the normal way except that the experimental group, when they reached the stage of being ready for circuits and landings—normally between two and a half and four hours' air instruction—received a period of instruction on the trainer. Each flying instructor concerned was given an equal number of experimental and control pupils and care was taken to keep their training as closely linked as possible to reduce difficulties arising from weather variations. The two groups were built up from pairs of pupils matched according to certain factors believed to be of importance in learning to fly, and on the basis of the results of tests which were especially administered at the Initial Training Wing from which the pupils were selected.

The second and third stages of the experiment are now under way.

88. A particularly interesting psychological problem is involved in a study which is being made of the advantages and disadvantages of an elementary training aircraft which permits one instructor to fly with two pupils at one time. It seems clear that the presence of the second pupil changes considerably the normal pupil-instructor relationship, and while, in some instances, a healthy spirit of competition may be introduced, in others the results are unfavourable. The study is in progress.

#### *Special Problems in Operations Rooms (paras. 89 and 90) (38)*

89. A variety of different training problems are being continually raised in Operations Rooms. Perhaps the most immediately practical of the questions has to do with the training of G.C.I. Height Readers. This is an operation the

accuracy of which it is now possible to check up with precision. It became obvious that numerous errors are made under operational conditions, and that these have a constant trend which improved methods of training should be able to control. A simple training instrument was therefore constructed and, after preliminary trials, arrangements made to test it under carefully controlled conditions. It has been decided to make use of the instrument at the Fighter Command Training School concerned.

90. A second problem which involved much experimentation, but may now be regarded as settled, demanded a comparison of the relative efficiency for training purposes of practice in two different methods of plotting. These are known as "clock" and "grid." Each has its strong supporters. Experiments have shown that one is about as good as the other and have thus cleared the way for a consideration of points that are of more genuine training significance.

#### *Special Surveys and Memoranda (paras. 91 and 92)*

91. Critical surveys have been made of the training methods employed in various Army establishments, e.g., assault landings, mine-field clearance, Airborne troops and Combined Operations. The problems involved in these investigations include teaching methods, incentives, causes of discontent and boredom, relationships between instructors and pupils and the like (20).

92. A number of memoranda on training methods and problems have been prepared. In one of these, the special selection of instructors was recommended, the tests being based on capacities known to be correlated with teaching skill. Another memorandum was based on replies to a questionnaire circulated in the Army to former students who had completed training for teaching. A third memorandum dealt with morale and its relation to discipline and efficiency. A fourth specially prepared for the use of N.C.O. instructors, has been published (48).

### **XI. Other Research Projects, including Problems still in the Stage of Investigation (paras. 93 to 102) (20) (42)**

93. Studies have been made of the characteristics of fatigue following highly skilled work. Most of this work has been done with the experimental cockpit, and it is now proposed to fit up a second cockpit with simplified and improved controls (see para. 47). It has been shown that the cockpit also has considerable possibilities as a setting for assessment of temperament. This is being further pursued and arrangements have been made to use the method in a projected trial.

94. For some time past skill fatigue has also been studied by methods more suitable for subjects who have had no flying training, and which are less time-consuming than the cockpit in their application. First efforts produced negative results, but suggested improvements of method which are being actively explored (38).

95. The lay-out of Service instruments has also been studied from the point of view of avoidance of fatigue.

96. Some urgent problems arise connected with the relation of visual display to motor adjustment (38). There are many cases in which any change of controlling mechanism made by an operator is first registered visually on some form of rate-of-turn indicator. The visually recorded change may lag behind the final required position or direction, say, of aircraft or gun. The operator then has a tendency to make a further motor adjustment which has the effect

of swinging the recorded change beyond the limits required, and a series of disturbing oscillatory adjustments is set up which impair efficiency. The difficulty can be overcome by a "learning" process, but this always remains to some extent unstable, and is apt to deteriorate under fatigue or strain. The problem is to adjust the time or phase relation between a visual record of change and the change actually effected by a given motor adjustment so as to reduce "learning" to a minimum. Apparatus for this has been built and the investigation is in progress.

97. In conjunction with medical and executive officers, a number of studies have been made of the operational use of drugs. Experiments have covered a fairly wide range of problems, including, for example, the effects of benzedrine and other analeptic drugs on behaviour. Attempts have been made to ascertain the effects of these drugs on cardiovascular reactions, on the capacity to sustain a certain level of work, and on the capacity to offset deterioration in performance and ward off fatigue (75) (76) (77) (78) (79) (80).

98. At one stage of the war a number of specific problems arose concerning the physiological and psychological effects of certain harassing and depressing agents, such as seasickness, airsickness, fatigue, arsenical smokes, etc. A standard method of assessing and measuring degree of harassment, based upon the use of specially designed apparatus was adopted in one case. A by-product of this work was the preparation of advice, both general and specific, on the design of questionnaires in such a way as to elicit the most reliable general information about proposed changes of equipment. Some further particulars of the actual inquiries follow below (86) (87).

99. Experiments have been carried out on the effect of repeated short exposures to carbon monoxide. It is known that carbon monoxide, once it has been absorbed, is excreted from the body very slowly. So repeated exposures produce a cumulative effect. An investigation was planned to discover the cumulative effects of repeated short exposures to relatively high concentrations of carbon monoxide such as may be met in gun fumes in tanks. The results showed, amongst other things, at what degree of carbon monoxide poisoning a person becomes incapacitated for light work and how frequently a given percentage of blood saturation can be endured without producing serious symptoms (82).

100. Studies have also been made of the effects of carbon monoxide, at various degrees of blood saturation, on performance in mental and skill co-ordination tests and on night vision (81).

101. In another investigation the aim was to study the effects of arsenical smokes on a number of different kinds of work as measured by certain psychological tests—Spotter Test, Triple Tester, Peg Board Test and a Physical Exercise Test. Preliminary trials were done in a 100 cubic metre chamber. In a later study the aim was to devise an objective method of assessing the effects of various arsenical smokes on military efficiency. The results suggested that problems concerning the effects of depressing situations or substances on physical performances should be studied in experimental situations which are sufficiently realistic to elicit full co-operation from Service personnel acting as subjects (86) (87).

102. A study is being made of 1,009 pilots going forward to bomber operations. These pilots are subjected to psychiatric and psychological tests with the object of obtaining evidence as to the suitability of psychiatric and psychological methods of selection before any decision is made regarding the general introduction of such tests for eliminating temperamentally unsuitable individuals

for air crew duties. This research entails the closest co-operation with executive personnel, medical officers and psychiatrists. A follow-up in the field is being planned to ascertain proficiency in operational flying (35) (see Appendix II, para. 102).

## **XII. Statistical Methods and Research (paras. 103 and 104)**

103. The judicious employment of statistical technique and the correct interpretation of statistical results in psychological work requires close familiarity with the relevant psychological data and problems. Hence it has been necessary for psychologists themselves to devote considerable effort to adapt or devise appropriate statistical devices for Service use. The methods have usually been based on techniques found suitable in civilian educational investigations and in vocational selection for industry. These have helped to make it possible to validate tests for personnel selection, to construct norms and to deduce borderlines of suitability. An elementary manual on psychological statistics has been prepared for the use of personnel selection officers and sergeant testers. Statistical analyses of the results of army tests have been made in the case of many specific problems, *e.g.*, in estimating the influence of selection on variability.

104. Apart from this, psychologists are frequently called upon to advise on methodology or design of experiments in non-psychological investigations. This is often their main contribution when participating as members of teams composed of scientists with varied training.

## **XIII. Miscellaneous Work (paras. 105 to 108)**

105. Apart from the activities described in Sections II to XII above, there is a fairly wide range of problems which have come wholly or partly within the province of psychologists. In 1939, psychological tests were applied on a large scale to A.A. Training Regiments. Courses of instruction on the aims and application of the tests were provided for selected senior A.A. officers and eventually for A.T.S personnel. Owing to difficulties of validation most of these tests were dropped when the Directorate of Selection Personnel was set up.

106. One of the recurring problems which is being investigated is that connected with the interference and transference of sensory habits which arise when personnel trained in one kind of equipment have to use another in practice (38).

107. Other inquiries cover such diverse subjects as problems of incentive ; methods of interrogating enemy prisoners ; morale effects of weapons on Allied and enemy troops ; casualty surveys and analysis of casualty and wastage statistics ; causes and prevention of aircraft accidents ; the design of tests for measuring impairment due to brain lesions ; training methods and tests of elementary training in the Home Guard ; psychological responses to flying ; the value of film instruction ; and the provision of advice on methods of teaching reading to Service illiterates (20) (35) (41) (46) (180).

108. During the last world war, the British Association appointed a Committee to consider psychological problems arising out of the war. Literature relating to military psychology was collected from available sources. During the present war a record has been kept of further work from available sources (92).

## XIV. Spheres in which the Extension of Psychological Work is Desirable (para. 109)

- 109.—(i) The selection of officers for specialised duties.  
 (ii) The selection and training of instructors.  
 (iii) The adequacy of the content of syllabuses to the subsequent duties for which they are designed.  
 (iv) The relations between training assessment and subsequent proficiency gradings.  
 (v) Methods of instruction.  
 (vi) Design of syllabuses.  
 (vii) Grouping men for training according to their levels of ability.  
 (viii) Assessment of proficiency and attainments in Service occupations.  
 (ix) The design of reports on (a) training progress and (b) operational efficiency.  
 (x) Opinion surveys.  
 (xi) Publicity in such fields as recruitment and hygiene.
- Certain advances have been made during the past few months in (i), (ii), (v), (viii), (ix) and (x).

## APPENDIX II SERVICE PSYCHIATRY

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### I. Number of Service Psychiatrists (at the end of 1943), (paras. 1 to 4)

#### ROYAL NAVY.

1. There are 35 medical officers engaged in neuropsychiatric work. These are distributed as follows:—

Consultants	2
Hospital neuropsychiatric units—	
United Kingdom	18
Abroad	3
Royal Navy Depots and Bases (Out-patients)	10
Other Naval Establishments	2
Total	35

#### ARMY.

2. (i) There are serving in the Army 197 specialist or graded psychiatrists, of whom 67 are abroad; in addition, there are 30 R.A.M.C. psychiatrists (not under War Office control) serving in India. In addition, about 70 medical officers (general duty) are also employed in Psychiatric Hospitals.

(ii) The psychiatrists in the United Kingdom are distributed as follows :—

War Office Staff	...	...	...	...	4
Royal Army Medical College (Consultants)	...	...	...	...	2
War Office Selection Boards	...	...	...	...	21
Commands (including 42 area psychiatrists)	...	...	...	...	58
Military Psychiatric Hospitals—					
Specialists and Graded Specialists	...	...	...	...	32
Specialists (unpaid)	...	...	...	...	13
Total					130

(iii) The medical officers on psychiatric work abroad, or in Field Force formations are distributed as follows :—

21st Army Group—					
Specialists and Graded Specialists	...	...	...	...	18
North Africa—					
Specialists and Graded Specialists	...	...	...	...	19
Middle East—					
Specialists and Graded Specialists	...	...	...	...	26
Gibraltar, Palestine, S. and W. Africa	...	...	...	...	4
Total					67

#### ROYAL AIR FORCE.

3. There are 37 Medical Officers engaged in neuropsychiatric duties. These are distributed as follows :—

Consultants at C.M.E.	...	...	...	...	3
N.Y.D.N. Centres	...	...	...	...	27
Recruit Reception Centres	...	...	...	...	3
Special Hospitals	...	...	...	...	8
Middle East and North Africa	...	...	...	...	2
Total					43

4. In considering the above figures showing the distribution of psychiatrists in the Services and, in particular, the relatively large number of psychiatrists in the Army, it should be borne in mind that, unlike the other two Services, the Army has a high proportion of its psychiatric man-power engaged in selection duties. Furthermore, Army psychiatric hospitals deal with a certain number of Naval and R.A.F. as well as Army cases, both at home and abroad.

## II. Contributions to Selection of Serving Men and Women (Paras. 5 to 12) (100) (117) (139)

### ROYAL NAVY (para. 5) (100)

5. (i) In the Navy, neuropsychiatrists have only very recently begun to participate in the psychological selection procedures for the allocation of ratings instituted in September 1941.

(ii) There does not appear to be any case for setting up at present in the Navy a system such as the War Office Selection Boards, as established in the Army (113). The number of officers who come under neuropsychiatric observation and whose breakdown could have been readily predicted has been extremely small. In these circumstances, if the chief role of Naval neuropsychiatrists is to recommend the exclusion of those likely to break down, their employment in officer selection would not seem to be justifiable. Doubtless, the system whereby men spend a period on the lower deck under active service conditions before being recommended for a commission has helped greatly in producing

the fine officer material that exists. It is noteworthy that, of those seen by psychiatrists and who appear likely to break down, many belong to the technical branch who had not undergone this probationary period.

ARMY AND A.T.S. (paras. 6 and 7) (101) (117)

6. Army psychiatrists are active in the following main aspects of selection :—

- (i) General Service Corps Intake.
- (ii) Selection Testing of Units.
- (iii) Army Selection Centres (see Appendix VII, Table 8).
- (iv) Selection of Parachutists (see para. 99).
- (v) Special Postings from Psychiatric Hospitals (see also para. 62 (iv) ).
- (vi) Officer Selection.
- (vii) Reclassification and disposal of misfit officers (see also para. 62 (iv) ).

(i) *General Service Corps Intakes* (103).—The practice of entering recruits into the General Service Corps instead of directly into field training units was introduced in July 1942. In General Service selection the psychiatrist's function is to advise the personnel selection officer. The latter or the medical officer refers recruits for psychiatric advice when necessary. Responsibility for making the final recommendation belongs to the personnel selection officer, who embodies the psychiatrist's advice in his Training Recommendations (T.R.) (88). The closest liaison, therefore, exists between the psychiatrist and the personnel selection officer. In fact, the psychiatrist, in General Service selection, regards the personnel selection officer, the medical officer and often the unit officers and himself as members of a "Board," each of whom contributes to the final decision as to where an individual can be most usefully employed in the Army. Men referred to psychiatrists fall into the following groups :—

- (a) Men in the lowest Selection Group on the various tests.
- (b) Stammerers and illiterates.
- (c) Men who were educated at special schools for the physically or mentally defective.
- (d) Men who have a history of psychiatric illness, apparent psychiatric symptoms or abnormal behaviour, anomalous results on the General Service test battery (see Appendix I, para. 26), or apparent lack of combatant temperament.

The best means at present of picking out recruits who need closer psychiatric scrutiny is by means of an interview assessment made by the personnel selection officer. During their training these officers receive instruction from psychiatrists in the obvious signs of mental abnormality. Emphasis is placed on the importance of the work record and social history and on the mannerisms and symptoms which, during the interview, suggest the presence of neurosis. The personnel selection officer is also encouraged to give a grading of combatant temperament. He places in the category "Combatant Temperament 3" and refers to a psychiatrist those whom he believes to be temperamentally unsuited for combatant duties. (See also Report, Section IV, and Appendix VII, Table 7.)

(ii) *Selection Testing of Units*.—The General Service scheme was introduced only in July 1942 ; consequently, the bulk of the Army has not undergone initial selection. At various stages in the war it has been necessary to convert whole units from one arm to another, e.g., Cavalry Regiments to Tank Battalions, Infantry Battalions to Anti-Tank Regiments, &c. Such conversions are now preceded by selection testing of the entire unit with a view to eliminating personnel unlikely to succeed in the new role. Psychiatric help is available to the personnel selection officers in the same way as in General Service intake procedure.



(iii) The following memoranda on the work of the War Office Selection Boards have already been submitted to the Expert Committee or Services' Sub-Committee :—

“ Follow-up of officer candidates ” (71).

“ Follow-up of W.O.S.B. Candidates at O.C.T.U.” (72)

“ The reliability and consistency of psychiatric opinions on officer quality ” (107).

“ Follow-up of W.O.S.B. cadets at O.C.T.U.” (104).

“ The role and status of the psychiatrist on War Office Selection Boards ” (114).

7. (i) The selection system in the A.T.S. is broadly parallel to that of the Army, cases being referred to psychiatrists in the same way.

(ii) There are certain special A.T.S. tests and procedures and a separate follow-up system. Experimental Selection Centres have been set up and have since been considerably expanded to meet the demands for specialists and skilled personnel.

(iii) Special investigations have been carried out to determine, for example, the use and suitability of auxiliaries in ordnance depots. N.C.O. Employment Boards have been set up to allocate surplus N.C.O.s. At these Boards, which combine W.O.S.B. and other-rank selection procedures, auxiliaries take a three-day course during which their future Service duties are decided—*i.e.*, whether to continue as N.C.O.s, to train as officers or to return to the ranks in a new trade.

(iv) In the A.T.S. generally, the recommendations for training and employment are more specific to particular trades than the broad training recommendations used at Army Primary Training Centres. A job analysis of A.T.S. trades has been carried out in considerable detail (see para. 64).

ROYAL AIR FORCE AND W.A.A.F. (paras. 8 to 11) (130) (132) (139) (141).

8. In the Royal Air Force, more perhaps than in the other Services, selection is a continuous process which extends throughout the training period (see Appendix I, para. 73). The elimination of unsuitable personnel and the allocation of aircrew categories is carried on progressively throughout the various phases of training. Initial selection at Aircrew Selection and Medical Boards only serves to reject the grossly unsuitable; the object of progressive selection is to detect potential failures at the earliest stages of training. Attempts have been made to encourage executive officers in charge of aircrew trainees to watch for any signs which might suggest ultimate failure either on grounds of intelligence or personality. Medical officers have been instructed to refer any doubtful cases, particularly those presenting themselves with physical complaints without appropriate physical signs, for advice as to possible mental origin. This has proved to be the most fruitful source of reference and is the normal method of utilising the service of psychiatrists. Arrangements exist for referring aircrew candidates and trainees to psychiatrists at all stages of their training and operational careers from the Aircrew Selection Board onwards, the method of reference being, as indicated, through the medical officer or instructor concerned.

A detailed description of these arrangements is given in Appendix V.

9. The R.A.F. has always had a Central Trades Test Board Staff of officers and N.C.O.s experienced in the various trades, whose duty it is to examine ground personnel on entry with a view to ascertaining their fitness for training in specific

jobs. In May 1942 psychiatric examination of certain cases of ground staff at the Recruits Receiving Centre was first tried out at the W.A.A.F. units and then extended to R.A.F. personnel. Psychiatrists have since been appointed to all Centres for this purpose.

10. Reasons for reference of ground staff to a psychiatrist were laid down as follows :—

- (i) A score below a certain level in the G.V.K. Intelligence Test.
- (ii) An agreed degree of discrepancy in the scores between Parts "G," "V" and "K" of this Test.
- (iii) Manifestations of unusual behaviour while undergoing the test, noted by the examiners of the Central Trade Test Board or by the examiner administering the tests.

The cases referred are interviewed by the specialists, individual intelligence tests being carried out if necessary. It was laid down that the psychiatrist's recommendations should be limited to an opinion on (a) suitability for trade training ; (b) unsuitability for training, but suitability for other duties ; and (c) unsuitability for any form of service—this last group is disposed of without the need for an invaliding Board. Owing to shortage of man-power, cases are now placed in the third group only when it is considered that they are grossly unsuitable or mentally unfit for any form of Service duty. At first the psychiatrist's opinions were not always acted upon and a number of cases in the third group were accepted by the executive for service. A follow-up is in progress to see how they have fared subsequently (see para. 106). Statistical reports of this psychiatric work (with ground staff) have already been submitted to the Expert Committee (174) (176) (178). As the existing methods of reference to the psychiatrist did not cover a large proportion of the emotionally unstable (psycho-neurotic and psychopathic) individuals, who contribute far more than the dullards to the total of psychiatric illness and invalidings from the Service, a questionnaire was introduced as an additional means of reference. This questionnaire has been given to 500 consecutive recruits in a preliminary trial. Those individuals who gave what appeared to be abnormal responses were referred for psychiatric examination and 3 per cent. of the total 500 were found to exhibit a degree of instability severe enough to make them poor psychiatric risks from the Service viewpoint. This is a higher proportion than was expected, and it has been proposed that a larger sample should be studied, most of those found unsuitable being allowed to continue on trial in the Service and their careers followed up. In the revised form of the experiment psychiatrists would also see a random sample of those who gave normal responses. As the standard for acceptance has now been much lowered, it is not considered economical to employ psychiatrists on selection duties any longer (see Appendix I, para. 31).

11. Psychiatrists have been consulted on selection for special wireless duties in the R.A.F. and W.A.A.F. Following a survey of the causes of psychiatric breakdown occurring among personnel engaged in these duties, psychiatric advice is now given on trainees who have completed their course of training. The whole of the proposed intake is seen by a psychiatrist who grades them. They are ultimately selected with the psychiatric opinion before the selecting officer.

#### E.M.S. NEUROSIS CENTRES (para. 12) (151)

12. The special postings (see Appendix IX, Table 16) which take place from these centres may be regarded as a form of selection. A large number of patients who are returned to duty are dealt with by this procedure of special posting and they constitute the bulk of successful "returns to duty" as judged by their subsequent history. Thus, of all those discharged from one centre who

were doing full duty satisfactorily a year later, about 73 per cent. had been posted for specific employment on the recommendation of the E.M.S. psychiatrist ; about half of these are still serving satisfactorily after six months (see also para. 62 (iv) ).

### **III. Training (paras. 13 to 16) (96)**

#### **ARMY (paras. 13 to 15) (106)**

13. Since their appointment, the advice of Army psychiatrists has been sought on many training problems ; details of some of these are dealt with in paragraphs 29 to 36. In addition, as early as 1940, they initiated experiments in the squadding of recruits by intelligence levels and the testing of the results of training by objective new-type examinations of attainments. Their advice on the training of men of sub-normal intelligence resulted in the formation of a Pioneer Training pool where such men were given basic education in addition to military training. Their advice on training has also been sought in formations abroad.

14. Following psychiatric advice submitted to the Director of Military Training in this country early in 1942, a psychiatrist was attached to the Directorate of Military Training, Middle East Force, from August 1942 to April 1943 and during this period he visited Training Depots and Schools of the various Arms, Battle Schools, the Parachute Training School, the Middle East Training Centre, Staff Colleges, the Middle East O.C.T.U. and formations training, resting and in the field. He made a large number of specific recommendations, a high proportion of which were accepted. The recommendations dealt with the following, among other, subjects :—

- (i) Quality of training staffs and their working conditions ;
- (ii) Improved methods of testing and training including familiarisation with German weapons in working order ;
- (iii) Recreational facilities designed to improve training ;
- (iv) Improved methods of parachute training and the handling of all paratroops throughout their training course.
- (v) New methods of selecting O.C.T.U. instructors and improved methods of O.C.T.U. training.

15. Another important aspect of this field of work is the training of medical officers and medical units. Psychiatrists lecture to all medical officers on entry into the Army and to many medical units, especially in the field force. In addition, courses lasting three months have been held at one of the Military Psychiatric Hospitals for general duty officers whose previous acquaintance with psychiatry has enabled them to benefit by intensive training of this kind.

#### **ROYAL AIR FORCE (para. 16).**

16. The contribution which R.A.F. psychiatrists make during the training period is confined to the interviewing or examination of men referred at all stages from the Aircrew Reception Centre to the completion of training. This work is described in paras. 8 to 11, for R.A.F. men and women other than air crew, and in Appendix V for aircrew.

### **IV. Contributions to Morale (paras. 17 to 48) (100) (119) (139)**

#### **INTRODUCTION (paras. 17 to 23)**

17. For the present purpose, morale may be described as the sum total of the attitudes of Service men and women towards their duties. As such, many of the factors determining morale are outside the scope of the work of psychiatrists since they may involve, for example, political and economic conditions on the

Home Front, the competence of commanders, the general conduct of the war and other conditions with which the psychiatrist as such is not concerned. But the state of morale is second only to selection of personnel among the influences which promote mental stability. All measures to foster morale, therefore, concern the psychiatrist to some extent.

18. Broadly speaking, Service psychiatrists are concerned with the influence on morale of the incentive to perform efficient duty. They have to consider how certain existing incentives can be strengthened and how others may be evoked. If these objectives are to be attained attention must be directed to two factors—mental stability and good leadership. Poorly integrated individuals with marked conflict cannot be expected to display high or sustained morale, so mental health is a prerequisite of Service efficiency. Morale also suffers in poorly integrated groups whose personal motives and sentiments are not subordinated to the common purpose and who are lacking in good leadership.

19. In the main, therefore, Service psychiatrists make an indirect contribution to morale. This consists primarily in giving due weight to personality in the placing of personnel so that individuals and groups can exert their maximum effort under stress. Fulfilment of this charge calls for psychiatric attention towards fitness of personality for various duties during selection, training and posting procedures; in prediction and prevention of breakdown; and in treatment and disposal to appropriate duties after breakdown. In a true sense, the whole apparatus of selection, of officers and other ranks alike, is essentially a contribution to morale.

20. Morale is also helped by recommendations for the removal of obstacles to efficient duty. For this to be done, a constant watch requires to be kept on mental health and working conditions. Various sources of frustration, for example, irregular mail, the break-up of units through re-posting and sending reinforcements, inadequate welfare, and domestic anxieties of personnel overseas adversely affect morale. Psychiatric advice can often lead to the improvement of these conditions or to counteract their ill-effects.

21. In endeavouring to prevent breakdown, the psychiatrist is guided by the need to conserve Service man-power not only quantitatively but qualitatively as well. He therefore evaluates the risk in recommending acceptance or retention of doubtful personnel in the light of their possible morale and Service value. In the course of treatment and disposal, his task is also to prevent undue wastage in man-power, and the methods which he uses with this end in view are largely designed to improve the morale of the cases referred to him.

22. Like the unit medical officer in the three Services, whose work in maintaining morale is fully recognised, the psychiatrist, when consulted, has to advise on methods of reducing fatigue and boredom of various kinds, on optimum rest and relaxation periods, on facilities for sport and recreation, on providing adequate leave, on proper clothing and equipment, on ways of dealing with complaints and on distinguishing genuine mental grounds for change or withdrawal from duty from disciplinary cases. He gives special attention to the need for regular activity in quieter periods; to fostering social or group life, to restoring damaged self-confidence, and to giving effective reassurance. Owing to the impossibility of attaching skilled psychiatrists to every ship, battalion or squadron, the unit medical officer is expected to deal with psychiatric problems as they arise from day to day and to act as a "screen" for the specialist.

23. Certain Army psychiatrists have made direct contributions to morale by special studies, *e.g.*, in the Army in the Middle East (see paras. 14 and 36), on absence without leave in the Army at home (para. 37) and on the morale

problems of repatriated prisoners of war, &c., using, besides clinical methods, the study of such matters as delinquency and minor sickness rates and questionnaire and other social survey techniques. Psychiatrists have produced various memoranda on such topics as "The Psychological Problems of the Soldier Overseas," "The Psychological Problems of Demobilisation" and pamphlets for wider circulation on man-management, the repatriation of prisoners of war and battle inoculation.

ROYAL NAVY (paras. 24 to 26) (100)

24. The participation of Naval neuropsychiatrists in general questions of morale has largely depended on local opportunity and interest. Reports and recommendations have been rendered on a wide variety of topics associated with morale, including the possible psychiatric contribution to selection, the desirable duration of commission, leave, the receipt of mail, welfare and amenities, the treatment of survivors, and recognition by decoration. Lectures by neuropsychiatrists to new recruits may also be classed under this heading.

25. An enquiry (94) has been carried out in the W.R.N.S. with a view to making recommendations for removing causes of neurotic breakdown or excessive fatigue. A high proportion of W.R.N.S. (wireless telegraphy) ratings reporting sick had broken down with neurosis. After a study of the situation, recommendations were made stressing, among other things, the need for selection of personnel, improved working and resting conditions, improved chances of promotion and social amenities.

26. Experience at Naval depots has shown that psychiatric work reduces the need for hospitalisation. It has been possible in two depots (Lowestoft and Clyde) to make comparisons between the numbers sent to hospital in the year before and the year after the appointment of a neuropsychiatrist. In both depots the gross number of men referred to hospital was reduced by about one-third (99).

The visit of a Service neuropsychiatrist to an E.M.S. Hospital admitting Service cases also helps to reduce the duration of stay. In the Clyde area in 1942 the average duration of stay per case before the appointment of a neuropsychiatrist was 15 days; in 1943, after the appointment of a neuropsychiatrist, the average duration of stay was reduced by four days.

ARMY (paras. 27 to 44) (119)

*Selection* (paras. 27 and 28)

27. Psychiatric recommendations for the most suitable placement of some 14 per cent. of Army intake since the middle of 1942 have without doubt lessened the liability of these individuals to suffer nervous breakdown. There has been a consequent benefit to their morale, *i.e.*, their general attitude to Army life and duties. Until 1941 there had been a great deal of uneasiness on this score, both in the Army and on the part of the public. Since then, the rank and file in the Army generally has been given a great deal of reassurance, as a result of the introduction of selection machinery, that man-power was being economically used and that recruits were being considered individually rather than being disposed of haphazardly. Furthermore, the proper allocation of other ranks and the use of newer and more thorough methods of officer selection have done much to allay public uneasiness.

28. A striking instance of improved morale following psychiatric selection occurs in the case of dull or backward men transferred to the Unarmed Pioneers. Previously, where these men had been employed in duties beyond their capacities, they had shown signs of poor morale, neurotic features, low personal esteem and

a sense of worthlessness to the Army This revealed itself in frequent absence without leave and in many other breaches of discipline A marked change became evident when they were grouped together in unarmed companies, where they became noted for keenness, discipline and industry.

*Battle Training (paras. 29 to 36).*

29. Early in 1942 the first Army Battle School was formed to provide a new, realistic battle drill and to condition soldiers to the noise and fog of war by using the maximum amount of live ammunition. It was realised that preparation of this kind might prevent breakdown in battle and psychiatric advice was accordingly sought. Considerable influence was exerted by the advisory psychiatrist who was appointed for the purpose. The methods adopted in due course became known as "battle inoculation." Shortly afterwards, at the request of G.H.Q., Home Forces, a psychiatrist was attached to the new G.H.Q. Battle School in order to advise the Chief Instructor on new forms of battle training.

30. Apart from conditioning students to the realism of war, the School intended to provide a training in "hate" by stimulating excitement through instructors' cries, display of atrocity photographs, visits to slaughter-houses and by throwing blood about the training area during exercises. The psychiatrist, when invited to design further measures of this kind, stated his view that training in "hate" and conditioning to the sight of blood might increase incidence of breakdown and incidents of fainting and vomiting gave point to his advice. He considered that inoculation to battle noise was valuable in training, but the value of intense battle realism in the earliest training stage was, he thought, doubtful and subsequent events suggested that this advice was sound, though there was reluctance to accept it at the time. The attempt to teach "hate" appeared to have been abandoned in March 1942, but a few months later some of the newly-formed Battle Schools renewed efforts to create a sadistic atmosphere. A ban on this kind of teaching was then imposed by the Commander-in-Chief, Home Forces, and a psychiatrist toured the Schools giving advice to the commandants and instructors on the potential harm of such teaching.

31. In March 1942, the Director of Military Training invited a psychiatrist to attend an experimental demonstration of "noise training," when several charges of Barrowite were exploded at varying distance from parties of men, some active and others inactive. The psychiatrist reported that those who first underwent a milder experience maintained throughout the test a much calmer behaviour than those who were introduced first to the severest experience. The latter showed a good deal of restiveness and fear and, unlike the former group, none of them was eager to repeat the experience. The view was given that haphazard noise "inoculation" seemed to have certain dangers and that further experiment was needed to decide the scale of safety.

32. At the psychiatrist's suggestion, an experiment was arranged in May 1942 when smaller initial charges were used. Two psychiatrists and an ear specialist were present. The proximity and size of the charges were slowly increased up to the maximal experience given in March and between each experience an interval for assimilation was prescribed. Despite the fact that the subjects were new recruits, the eventual maximal explosion produced less restlessness and no fear or abnormal signs. The group was fully prepared to repeat the maximal experience and their comments indicated growing tolerance. These clinical observations provided graduated scales of distances from the men to the explosions and scales of optimal sizes of the explosions which were set forth in a memorandum to G.H.Q. Home Forces.

33. The working hypothesis was laid down that by beginning slowly with battle-like experiences it was possible to help the soldier in forming military judgment and to reduce, during training, the over-estimation of the noise and fog of war. It was clear that training of this kind would have little value unless the conditions approximated as nearly as possible to those of actual battles and that the design of battle inoculation should therefore be based on the reality of war.

34. Useful measures were designed for combating exaggerated fears. In exercises of increasing severity students were over-run by tanks in slit trenches, advanced and worked near bombardments, heard steel fragments whistle over their heads while under cover and were shot over by small arms fired in great quantity. Occasional accidents made it plain to all that the students were not free from all risk. The Commander-in-Chief, Home Forces, who had welcomed and encouraged this development in battle training, accepted the risks. Safety rules were drawn up and standard procedures adopted.

35. The G.H.Q. Battle School had in two months trained the commandants and instructors of the new divisional battle schools and by June 1942 these were carrying out "battle inoculation" as part of their training programme. One known danger of encouraging the use of live ammunition was that officers were liable to use it as a test of nerves rather than as a training expedient. This danger had been recognised in March 1942, and warnings had been issued by the psychiatrist to all the newly formed Battle Schools. In order further to ensure the proper use of battle inoculation, he made a tour of over twenty Battle Schools in June and July 1942 and gave advice on this subject, at the same time giving lectures to the officer-students on the maintenance of mental health and morale.

36. In November and December 1942, the same psychiatrist was with the Eighth Army in the Middle East and obtained a check on some of the methods used in Britain. The opinion was strongly held among fighting men and officers that battle inoculation was a most important part of the training of reinforcements and should be given to all troops before their first action. After the Battle of Alamein, the psychiatrist met a number of officers who had had this realistic training in England and had seen action in the battle. They warmly affirmed its value as a preparation for battle.

#### *Disciplinary Problems (para. 37).*

37. An investigation (119) was carried out in 1941 with the object of ascertaining to what extent misfits and untrainable men in the Army were involved in absence without leave. The incidence of absence over an average period of eighteen months was examined in 6,177 other ranks, belonging to A.A. regiments, an Infantry Brigade or a Training Centre. 823 were absent once, 327 twice and 277 three or more times. 45 per cent of absences were due to about 4 per cent. of the men. Men with intelligence below the average were twice as frequent among recurrent absentees as might be expected on the basis of an average Army sample. Consideration was given to the various factors operative in absence without leave—boredom, misfits, resentment against unit, leave problems, domestic troubles and bombing effects. When the whole problem had been surveyed, a number of recommendations were made whereby the basic causes leading to absence without leave might be removed.

It is worth noting that a study (169) of several hundred absentees without leave in the United States Army showed that 15 per cent. were "basically unsuitable for military service." These were discharged.

*Nervousness, Welfare, Films* (paras. 38 to 44)

38. Psychiatrists have drawn attention to ways of improving the morale of nervous soldiers by placing them within groups of experienced personnel. Under such conditions they perform useful service.

39. An inquiry has been made into the conditions of work of special operators (wireless) of the A.T.S., among whom a high incidence of fatigue and nervous strain had been reported. Recommendations were made covering hours of work, and working and living conditions, including sleep and food. It was also pointed out that an improvement in morale would result if operators were told more about their work, within security limits (111).

40. To allay domestic anxieties of soldiers overseas, representations were made by the Consulting Psychiatrist, Middle East Forces, as a result of which an organisation has been set up by the Soldiers', Sailors' and Airmen's Families' Association which makes cable inquiries on behalf of the serving man through representatives in the United Kingdom who provide a report on home conditions.

41. The Director of Army Psychiatry participates in the work of several bodies concerned with various aspects of morale. One of these, the Morale Committee, which is under the Adjutant-General, considers such subjects as the frequency and regularity of mails to soldiers overseas, the character of news transmitted by the press and radio to soldiers at home and overseas, welfare problems affecting the relationship between the soldier and his family, and morale questions arising out of the relationship between the British Army and Allied and Dominion Armies.

42. Army psychiatrists are represented on the Anglo-American Relations (Army) Committee, which deals with factors likely to influence morale in the relations between British and United States troops, and on the Army Broadcasting Committee which guides the policy behind broadcasting to the Army. This latter body works through a Joint Army-B.B.C. Liaison Committee, on which the Director of Army Psychiatry is represented, which discusses the nature of programmes to be broadcast to the Forces both at home and overseas. As a result of experience in the Middle East, specific programmes have been devised intended to have a tonic effect on outlook and mental health.

43.—(i) Psychiatrists have appreciated the value of films in fostering morale. In September, 1942, Army psychiatrists drew attention to the help which films might give to a recruit's emotional training in military values. As a result of close collaboration with the Director of Military Training and the Director of Army Kinematography, a film—"The New Lot"—was made for showing to recruits. The aim of this film is to illumine the compensations of Army life, to suggest methods of overcoming emotional problems due to separation from home, and to convey to the soldier the satisfaction which accompanies increase in simple military skills.

(ii) The growth of relationship between officers and the men in their charge was the subject of another film suggested by psychiatrists for officer training units. On completion of the script, in the preparation of which Army psychiatrists collaborated, it was decided to make the film for public showing as well, and it has now been released under the title "The Way Ahead."

(iii) Psychiatric advice has been given to the Director of Army Kinematography on various psychological factors entering into film production. Attention has been drawn, for example, to the emotional significance of camera angles in military training films.

(iv) Experiments are being made in the use of films in the rehabilitation of repatriated prisoners-of-war.



44. Army psychiatrists have contributed to morale by lectures on "man management" to regimental officers and in staff courses and O.C.T.U's. In particular, during 1942 a series of lectures on morale was given to officer students and commanders of infantry battalions attending Battle Schools.

The subjects dealt with included :—

- (i) measures for maintaining the mental health of soldiers ;
- (ii) the exclusion of unsuitable men before battle ;
- (iii) the handling of incipient cases of breakdown during a campaign ;
- (iv) the principles of group feeling ;
- (v) the place of discipline in mental health ;
- (vi) the morale effects of enemy weapons ;
- (vii) battle inoculation ;
- (viii) the function of leadership in morale.

These lectures continue at the School of Infantry.

#### ROYAL AIR FORCE (paras. 45 to 48) (193)

45. Since the beginning of the war R.A.F. neuropsychiatrists have from time to time visited various stations and made recommendations designed to improve the morale of aircrews. In particular, a systematic survey was made of the opinions of operational commanders and others on the conditions which contribute to stress. This survey covered all Commands at the time—Bomber, Fighter, Coastal and Training Command—and the conclusions were embodied in a series of reports (126) (133) (136). Their earlier recommendations were summarised in F.P.R.C. (412) (d).

46. In the Middle East, psychiatrists have included in their lectures to combatant officers some instruction on the relationship between morale and neurosis. These lectures were especially concerned with the role of the Commander, with prophylaxis and mental hygiene ; and with detection and recognition of the early signs of fatigue and nervous illness, etc.

47. One of the functions of the neuropsychiatrist is to collaborate with the executive in dealing with men with persistent lack of confidence for flying duties. In the early stages of the war a tendency to attach the label "flying stress" to these cases was resisted as it was seen that, like the term "Shell-Shock" in the last war, it might become dangerous to morale. "Flying stress" as a diagnostic label, therefore, was forbidden.

48. A great deal of research remains to be done in the sphere of morale (92). Guidance is required, for example, on the relative importance of factors such as the following in developing or sustaining morale :—

- (i) severity of disciplinary methods ;
- (ii) rate of habituation to Service life ;
- (iii) mass or individual methods of training ;
- (iv) confidence in leaders ;
- (v) patriotic, humanitarian or vindictive motives ;
- (vi) quality of food, clothing, billets and general welfare, and quality and type of weapons and equipment ;
- (vii) methods of demobilisation.

#### V. Facilities for Treatment and Disposal (paras. 49 to 85) (100) (118) (139)

##### INTRODUCTION (para. 49)

49. Arrangements for accommodating patients, methods of treatment, types of disposal and facilities generally, have been variously developed in each of the Services to meet their own special needs and problems. For example, in

the Navy, cases who break down after prolonged duty at sea, often under stress, may be given a temporary disposal to shore service. In the Army, a considerable number of misfits have to be dealt with and the treatment may sometimes be simply a return to civilian life after due rehabilitation. The Air Force is particularly concerned with casualties who suffer psychiatric breakdown after operational stress. In all the Services, disposal policy varies from time to time with changes in man-power demand and supply. The policy adopted from the beginning has been that of treating the patients as early and as near the scene of action as possible. This general principle is derived from experience in the last war which showed that the chances of getting a man back to combatant duty tended to diminish with the increase in the distance at which treatment took place from the combat area.

#### ROYAL NAVY (paras. 50 to 59) (95) (100)

50. Neuropsychiatric units have been instituted as an integral part of the main Naval hospitals and specialists have been appointed to the main Naval depots and bases. Neuropsychiatrists in hospitals are also called upon to see patients in consultation. These patients may be referred by other medical officers in their own hospitals or from Naval establishments in the vicinity. Neuropsychiatric cases sent for consultation with, or admitted to hospital under a neuropsychiatric specialist are provided with a medical and executive report covering conduct, character, morale and stress experienced.

51. The work of neuropsychiatrists at depots is mainly confined to out-patients, but may also include charge of a limited number of beds in the local sick quarters. New cases are men reporting sick in depots, or men referred by medical officers in neighbouring ships (or establishments), or by the executive because of training or disciplinary trouble. In addition, there is a large attending list of old patients, many of whom have been discharged from hospital for a period of shore service and for further observation and treatment while at duty in the depot. A close liaison is maintained with the drafting and other executive branches.

52. Besides the facilities at general hospitals and depots, there are the following special arrangements :—

- (i) *Royal Naval Auxiliary Hospital (Knowle)*.—A separate section of about 100 beds has been set aside here where psychotics from the Navy as a whole can be collected and treated prior to discharge.
- (ii) *Royal Naval Auxiliary Hospital (Cholmondeley Castle)* for men of good morale and prognosis, who need a graduated and hardening course between ordinary hospital treatment and duty. This gap was formerly filled by sick leave. Selected cases are also sent here direct with previous admission to a general hospital.
- (iii) *H.M.S. Standard (Kieldar Camp) (97)*.—This establishment was set up for the rehabilitation of men of poor morale who had proved incapable of ordinary Naval service, but in whom no grounds for invaliding could be found, whilst their discharge on other grounds was undesirable in the interests of discipline and morale. Cases may be recommended either by the executive or medical branches, the final decision resting with the Commodores of the four large Naval depots, who are advised on the psychiatric aspect of every case by the neuropsychiatric specialist of the depot. The camp is staffed by an executive commanding officer and a specially picked ship's company. The medical officers are chosen for their ability to handle difficult men.

53. With the opening in the near future of R.N.A.H. Wraxall Court, containing 35 to 40 beds for officers, and the extension of R.N.A.H. Cholmondeley Castle by 100 beds, available accommodation for psychiatrist treatment will soon be, approximately :—

<i>Royal Naval Auxiliary Hospitals—</i>	<i>No. of beds</i>
Barrow Gurney ... ..	96
Wraxall Court ... ..	40
Knowle ... ..	220
Kingseat ... ..	80
Cholmondeley Castle ... ..	220
<i>Royal Naval Hospital—</i>	
Chatham ... ..	80
Total ... ..	736

Eighteen neuropsychiatrists are at present allotted to the above hospitals.

54. Although extensive use has been made of facilities provided by the Army abroad and in Northern Ireland, Naval psychiatric patients in this country have, until recently, and with few exceptions, all been treated in Naval hospitals. Because of pressure of beds at R.N.A.H. Knowle, however, an increasing number of psychotic cases have been admitted to Army Military Hospitals during the last few months, but owing to Army needs it is understood that this can no longer continue.

55. Arrangements for the Fleet Air Arm are, in general, similar to those for other Naval cases. Boarding for decision as to flying categories is, however, becoming increasingly centralised at the Central Air Medical Board. The President of the Board is advised when necessary by a medical officer with psychiatric experience who has served in an aircraft carrier and holds his "wings." The arrangements for flying personnel who show "lack of confidence" are now in many ways comparable to those that obtain for corresponding cases in the R.A.F.

56. There are no special Naval hospital facilities for W.R.N.S. with neuropsychiatric disorders. Suitable mild cases can be recommended for admission to the Mill Hill E.M.S. Neurosis Centre. The problem of psychotic W.R.N.S. still awaits solution, partly owing to the fact that W.R.N.S. do not come under the Naval Discipline Acts.

57. About two-thirds of all neuropsychiatric cases admitted to hospitals are returned to some form of duty. At R.N.A.H. Knowle, however, owing to the large number of psychotic cases admitted, only about 50 per cent. of admissions are returned to duty; about 10 per cent. of cases at this hospital diagnosed as schizophrenia have been certified. A recent investigation appeared to show that men are being returned to duty from hospital at five times the rate that relapsed cases are being re-admitted and about half the relapsed cases had remained outside hospital for a period of six months or more.

Because neuropsychiatrists in hospitals tended to recommend men discharged to duty for too long a period of shore service only, it is now usual for a man discharged from hospital to be returned to his depot for an initial period of one month's shore service only, his subsequent disposal being decided by the local depot neuropsychiatrist. The neuropsychiatrists in the four main depots have independently achieved very similar results and all keep about nine out of every ten cases referred to them at some form of duty. The co-operation received from the executive and drafting authorities is thought to be of very great importance in achieving the above results.

58. There is also close correspondence between medical and executive authorities in the handling of offenders. In nine out of every ten cases referred no medical reason can be found why the men should not receive full punishment if guilty. In every tenth case, mitigating circumstances are put forward or (less often) admission to hospital recommended. In one representative Naval depot, 5 per cent. of all offenders are referred for a psychiatric report.

59. Total medical discharges per 1,000 average strength were 15·8 in 1941, the psychiatric discharges being 5·1. In 1943, the comparable figures were 13·9 and 3·3, and in 1944 (for the first six months), 15·0 and 4·0. About two-thirds of the men invalided on psychiatric grounds have served in the Navy for over a year (180).

#### ARMY (paras. 60 to 65) (118)

60. A complete list of Military Psychiatric Hospitals, showing the date of opening and authorised establishment at the end of November, 1943, is given in Appendix VI. The number of beds provided for psychoneurotics and psychotics, officers and other ranks respectively, is also shown there.

#### 61. *Army Psychotics*

- (i) The peace-time psychiatric standards of hospital accommodation for army psychotics were very inadequate. Accordingly, parts of civilian hospitals were taken over in 1940. The main advantage of this arrangement is that patients can be admitted without certification and consequently there is less chance of any stigma attaching to a soldier, the term "mental" being avoided as much as possible. Accommodation and treatment were provided for R.A.F., Dominion and Allied psychotic cases and, later, for Italian and German prisoners of war.
- (ii) Except in cases of emergency, psychotic patients are only admitted to Military Hospitals on the direct recommendation of a Service or E.M.S. psychiatrist. This policy has been introduced to ensure that only patients are admitted who need special forms of nursing, supervision and treatment, which cannot be provided in Military or E.M.S. Centres for Neurosis.
- (iii) The peace-time policy of immediately discharging to civil care all soldiers suffering from psychoses aroused a good deal of public protest when applied during the early part of the last war. For this reason, it was decided in 1940 to retain such cases for treatment up to nine months if necessary. The question whether or not the illness is attributable to service can thus be explored carefully in each individual case. A modification was also introduced into the peace-time policy of discharging all recovered psychotics. A War Office instruction was issued to the effect that where a psychosis of short duration occurs in an individual of good constitution with severe precipitating cause and with apparently perfect recovery, such a case may be recommended by an officer in charge of a Psychiatric Hospital for retention in the Service.
- (iv) Treatment for psychosis includes all forms of active therapy, convulsion therapy, continuous narcosis, insulin and malarial therapy, etc., which have been carried out in conjunction with occupational therapy and physical training. On recovery from acute illness, most of the patients are fit to be discharged to the care of relatives.

#### 62. *Army Neurotics*

- (i) Until April, 1942, most Service neurotics were treated in E.M.S. Neurosis Centres. In 1940, preliminary arrangements were made for treating them in Military Hospitals, and in 1942 a civilian mental hospital was taken over and opened as the Military Psychiatric Hospital, Northfield.

This was an entirely new type of establishment, with 200 beds in the "Hospital" and rehabilitation facilities for a further 600 men in a "training wing." Active treatment is given in the hospital unit and from here patients are transferred to the training wing for receiving modified military training under combatant officers and N.C.O. instructors. They still remain, however, under medical supervision and continue out-patient treatment, if this is considered necessary by the hospital psychiatrists. In effect, this rehabilitation of neurotic soldiers is a form of occupational therapy in the military sphere. Only patients with a high chance of returning to duty are admitted to Northfield (apart from overseas convoys). In addition, a separate wing of 500 beds in a convalescent depot is provided for cases returning to duty from E.M.S. Hospitals and from those Military Psychiatric Hospitals which have not the facilities for full rehabilitation.

- (ii) Regular psychiatric out-patient sessions are held at most Military (General) Hospitals. Other such regular sessions are held at certain barracks, reception stations, camp reception stations and, in certain instances, at special psychiatric out-patient centres.
- (iii) In the treatment of psychoneurosis, all modern forms of psychotherapy short enough to be applicable to military cases have been successfully carried out, and certain experiments in group psychotherapy and occupational therapy have been undertaken. A.B.C.A. discussions and other general measures for the promotion of morale are employed at all Military Psychiatric Hospitals.
- (iv) As expected, it was found that many patients, who were apparently treated with success, relapsed when returned to their original units. In order to obviate this and hence to economise in man-power, a special scheme for the placement of these cases was introduced in May, 1941. This scheme has now been revised in the light of a follow-up recently carried out and has been introduced in all Military and E.M.S. Neurosis Centres. Whereas psychiatrists previously made recommendations for employment which were implemented by an executive branch of the War Office, the new method introduces a full selection testing procedure in the hospital and an interview by a personnel selection officer. The latter makes the "employment recommendation," taking note of the various limitations advised by the psychiatrist in charge of the patient. The recommendations are then passed to the executive branch through the Directorate of Army Psychiatry and the Directorate of Selection of Personnel, who advise on the technical aspects of each case. In this way, by putting the full facilities of Army selection procedure at the disposal of Hospital psychiatrists, it is hoped that greater success will be met with than in the past. In the case of officers treated for neurosis a similar scheme for special placement of "misfits" is operated through a modified W.O.S.B. procedure.

63.—(i) The disposals recommended for the proportion of General Service intake referred to psychiatrists are set out in Appendix VII, Table 7.

(ii) The disposals recommended for cases referred to psychiatrists at Army Selection Centres are shown in Appendix VII, Table 8.

(iii) Details of recommendations made by army psychiatrists for the disposal of out-patients and in-patients are shown in Appendix VII, Tables 9 and 10. About 19 per cent. of out-patients are recommended for return to duty, about 14 per cent. for transfer to the Pioneer Corps, about 15 per cent. for discharge and about 52 per cent. for further treatment or other disposal. The proportion of in-patient psychoneurotics recommended for return to duty is about 36 per cent.

64. Area psychiatrists are responsible for the examination of individual delinquents and for providing reports for officers convening courts-martial. In cases where environmental or psychiatric factors are important, the psychiatrist is responsible for making recommendations as to disposal.

65. The total medical discharge rate of officers and other ranks per 1,000 average strength was 30·7 in 1942 and 20·2 in 1943 (first six months). The corresponding estimated psychiatric rates were 9·6 and 6·1 (180).

ROYAL AIR FORCE (paras. 66 to 80) (139)

66. There are two distinct populations to be considered : aircrew and ground staff, with very different functions. The former, after training, are mostly combatant ; the latter are comparatively rarely exposed to enemy action. The age distribution is different in the two groups, and aircrew are on many grounds, other than age, more highly selected than ground personnel. These and cognate facts are reflected in the results of treatment in those who break down with psychiatric disorders in the two groups.

67. From the first days of the war operational stations have been visited by consultants in order to instruct squadron medical officers in elementary aspects of psychiatric diagnosis and treatment and to explain the pamphlet of instructions (A.M.P. 100) with which they had already been provided. Medical Officers were encouraged to take the responsibility themselves of treating the early and mild cases of psychoneurosis arising out of flying duties. When hostilities commenced in earnest in France a psychiatrist was attached for consultation purposes to the two advanced R.A.F. hospital units there.

68. The arrangements for treatment were founded on the conception of " filters." The unit medical officer himself treated the mildest cases ; the others he sent to the nearest N.Y.D.N. Centre. There are twelve such Centres in the United Kingdom and two overseas, in N.W. Africa and the Middle East at each of which at least one neuropsychiatric specialist is attached. These centres are mostly grafted on to R.A.F. General or Station Hospitals. A varying number of beds under the charge of one or two neuropsychiatrists is available in the hospitals or at the nearest sick quarters. The principle has been followed wherever possible of posting a specialist with experience both of neurology and psychiatry to those Centres where the specialist is single-handed. In other Centres, especially in operational areas, where the psychiatrist is senior, a junior neurologist has been posted to deal with head and spine casualties, and *vice versa*. Some Centres are situated as near as possible to operational units in order that cases may be promptly dealt with and contact established with the unit medical officers. Other Centres have been sited in the vicinity of R.A.F. areas where ground personnel are under training. The specialist advises on the disposal of out-patients or admits them to an N.Y.D.N. Centre for short treatment with the object of a return to some sort of duty at the earliest moment. Where more prolonged treatment is indicated, recommendations are made for admission to special hospitals. To save unnecessary movement of personnel, the specialist visits other hospitals to hold out-patient clinics. He watches for any unusual incidence of cases in particular units and may be required to give advice on any problems concerned with the mental hygiene of units in his area.

69.—(i) Recommendations for the disposal of aircrew at Neurosis (N.Y.D.N.) Centres are shown in Appendix VIII, Table 11. About 55 per cent. are returned to full or limited flying, about 2 per cent. are invalided and the rest are grounded.

(ii) Recommendations for the disposal of ground personnel at these centres are shown in Appendix VIII, Table 12. About 71 per cent. of the airmen and

about 56 per cent. of the W.A.A.F. are returned to full or limited duty or re-mustered. About 20 per cent. of the former and about 38 per cent. of the latter are invalided.

70.—(i) In Appendix VIII, Table 13, figures are provided which show, in relation to predisposition, the disposal of 1,329 flying personnel referred for psychiatric advice and treatment. All the cases had shown neurotic symptoms after flying duties. The results show clearly that the greater the predisposition to breakdown, the smaller is the chance of being returned to operational flying (135).

(ii) In Table 14, in the same Appendix the disposal of the 1,329 flying personnel is shown in relation to flying stress experienced. It is evident from the figures that the greater amount of flying stress to which the man had been submitted, the greater the chance that he would return to full flying duties and the less likely was he to be permanently grounded.

71. There are four R.A.F. Hospitals which provide for more intense and prolonged psychiatric treatment both for aircrew and ground personnel. Three of these, the Officers' Hospital at Cleveley's, Blackpool (formerly at Torquay), the P.M.R.A.F. Hospital at Halton, and the R.A.F. Hospital at Rauceby, are general hospitals with accommodation for neuropsychiatric cases, officers as well as airmen. The fourth, the R.A.F. Hospital at Matlock, is intended exclusively for the treatment of psychiatric conditions (exclusive of psychoses) and is now devoted entirely to other ranks of the R.A.F.

72. The Officers' Hospital (at Cleveley's) accommodates R.A.F. and W.A.A.F. officers and medical and surgical as well as psychiatric cases. It is thought to be better for the psychiatric patients to mix with the others instead of being segregated in a special unit. This Hospital has two neuropsychiatrists and the number of patients under treatment at any one time is about fifty. Broadly speaking, the cases fall into two groups: (i) those in whom external stress producing fatigue has been the main factor, and (ii) psychoneurotic cases, the latter being much more numerous. In addition to specialist treatment, the hospital is organised to provide as many recreational and social facilities as possible, as well as physical training, since the process of rehabilitation for return to duty is conceived comprehensively, and is not limited to treatment in the narrower sense.

73. If the specialist at an N.Y.D.N. Centre does not consider that treatment locally, either as in-patient or out-patient, will be sufficient, he sends the cases to one of the R.A.F. Hospitals mentioned above or, in certain instances, to an Aircrew Convalescent Depot or, if he is in doubt, to the Consultants at the Central Medical Establishment. Cases of organic illness are usually admitted to the nearest Centre for investigation and disposal while in-patient treatment is required.

74. Head and spinal injuries are frequently complicated by other injuries for which they are admitted to the nearest local hospital. Subsequent transfer to St. Hugh's Military Hospital, Oxford, or to some other similar special hospital, is carried out where appropriate. Where necessary and on request at the local hospital, the case is visited by one of the consultants or specialists.

75. Practically all flying personnel return to some sort of duty; very few are invalided at the end of their stay in hospital. Officers, R.A.F. or W.A.A.F., who are too ill for Cleveley's at Blackpool, go to the R.A.F. Hospital at Rauceby, or, if psychotic, they are sent to the Military Psychiatric Hospital at Dumfries (for R.A.F. officers) or to the Military Psychiatric Hospital for Women at Northampton (for W.A.A.F. officers), both of which are Army psychiatric hospitals.

76. In the case of other ranks, both aircrew and ground personnel, the R.A.F. Hospital at Matlock, with 135 beds, receives psychoneurotic and allied cases for intensive treatment, of which the average duration is about one month. The annual admission rate is approximately 1,200. Arrangements for treatment include, as in the officers' hospital, facilities for physical, social and recreational methods of rehabilitation. There is a workshop for occupational therapy. Among aircrew, the return to flying duties of some kind from the R.A.F. Hospital at Matlock is recommended in about 40 per cent., including 16 per cent. returned to operational flying. This rate is less than among officer patients at the officers' hospital, partly because those other ranks in whom fatigue is the outstanding factor may be treated instead at the Airmen's Convalescent Depot at Blackpool, where physical training and recreation are the main lines of treatment. Regular visits are paid by the neuropsychiatrists from the nearest N.Y.D.N. Centre to continue any psychotherapy required, and to give advice on other convalescent cases, whose physical complaints are suspected to have a mental basis. The original policy in regard to ground personnel was to invalid those who were not likely to give efficient service for any length of time after discharge from hospital. Subsequently, the policy was altered to return to duty all those in whom there seemed a hope of adjustment to Service conditions after leaving the hospital. A follow-up of cases returned to duty suggests that the previous policy was more in accord with requirements, since those found to be still giving efficient service at least a year after discharge from hospital amounted to 65 per cent. of the total personnel discharged to duty, the remaining 35 per cent. having been invalided, the great majority of them within six months of leaving the hospital.

77. Disciplinary cases may be referred to psychiatrists, by medical officers or by the executive, for an opinion on their mental state in relation to the charge against them.

78. At the R.A.F. Central Medical Establishment there is a Central Registry for cases of psychological disorder in flying personnel where data are collected on all cases seen by neuropsychiatrists in the Home Commands, Middle East and North Africa. These data are analysed and provide current information on the incidence and types of psychological disorder in different aircrew categories and in relation to different duties, together with the neuropsychiatrist's assessments of the main causal factors, which include varying degrees of flying stress, non-flying stress (domestic and personal worries) and neurotic predisposition (125). One report (135) deals with a series of 2,200 cases of neurosis attributable to flying duties and shows that the incidence of neurosis in different duties and Commands is related to the amount of hazard. In all categories it appeared that the greater the amount of predisposition the less the operational stress required to produce breakdown. Thirty-eight per cent. of all cases seen by the neuropsychiatrists returned to flying duties.

79. At the Central Medical Establishment are stationed the Consultants and No. 1 Central Medical Board as well as an NYDN. Centre, covering units in London and the South-Eastern area of the country, and dealing with out-patients only. No. 1 Central Medical Board deals with a large proportion of medical boards held on aircrew and commissioned officers in the Service.

80.—(i) In the study (135), referred to above, of 2,200 cases of neurosis in aircrew the incidence (calculated per 100 man-years) was found to be 3.2 for the Royal Air Force as a whole, 5.2 for air-gunners and 2.8 for pilots and navigators. (ii) The incidence due to night bombing duties was nearly four times that for the R.A.F. as a whole; it was twice that among day fighters and four times that among night fighters. The incidence of 1.0 during training was



one-fifth of that for operational commands. (iii) 43 per cent. of the cases occurred in Bomber Command, 20 per cent. in Flying Training Command and 9 per cent. in Fighter Command. (iv) Over half of the patients had not been exposed to more than slight flying stress and nearly a third to none at all. (v) In a single interview 75 per cent. of the patients showed convincing signs of predisposition to neurosis. About 20 per cent. were predisposed to such an extent that they would have been recommended by psychiatrists for rejection at entry had they then been identified. (vi) The total medical discharge rate of officers and airmen per 1,000 average strength in 1942 was 14.5 of which 4.0 were psychiatric discharges (180).

#### E.M.S. NEUROSIS CENTRES (paras. 81 to 85) (146) (147) (149)

81. The E.M.S. centres are located at Mill Hill, Sutton, Shotley Bridge, Cardiff, Southport, Dudley and Sheffield. There are also out-patient departments attached to the centres or conducted by E.M.S. psychiatrists at other hospitals.

82. E.M.S. Neurosis Centres have, from the outset, received large numbers of Service cases, many more indeed than civilian cases. Until April, 1942, most Army neurotics needing hospital care were treated in these Centres. In 1943, for every 60 admitted to Military Psychiatric Hospitals, 40 Army and A.T.S. cases were admitted to E.M.S. Neurosis Centres. Almost all cases of neurosis among the Women's Auxiliary Services are referred here if they need hospital care. The Centres have also provided treatment for Service cases after they have been invalided out. Merchant seamen and civil defence personnel have likewise been dealt with in addition to the purely civilian population.

83. The type of case admitted has varied because of administrative decisions. Thus, at one stage Army psychiatrists were instructed to refer to Neurosis Centres (with one exception) only men who would probably have to be discharged from the Service. In practice, however, this did not lead to any marked change in the proportion of men who had to be discharged.

84. The Centres have been able to develop active rehabilitation facilities. For example, one of them has constantly used 60 places put at its disposal at a technical institute to which suitable patients could be referred for appropriate preliminary occupational training while they were in hospital; this was in addition to extensive workshops within the Neurosis Centre itself. In another Centre, 200 places were set aside in a special rehabilitation annex, from which the majority of the patients were returned to military duty.

85. Special units exist for female military personnel, merchant seamen, and patients with effort syndrome. The last group have shown a higher rate of successful treatment, judged by fitness for military duty, than neurotics as a whole. Approximately 40 per cent. of all those admitted to units are found to be doing full military duty satisfactorily a year later (see also Appendix IX, Table 16).

#### VI. Volume of Work (paras. 86 to 95) (101) (102) (118) (139)

86. The figures provided in this section are only intended to give some idea of the number of persons who have to be dealt with by Service psychiatrists in the course of their work. Since so much of this work, as, for example, in the sphere of morale, cannot be quantitatively assessed in a simple way, these figures have a limited significance.

ROYAL NAVY (paras. 87 to 89) (98)

87.—(i) In 1942 about 5,000 fresh cases were admitted to the four main neuropsychiatric hospital units (Chatham, Barrow Gurney, Kingsseat and Knowle). In addition, neuropsychiatrists at these hospitals saw during the year about 3,000 new cases in consultation. The average duration of stay is between three and four weeks, except for obviously psychotic cases who remain longer. Each of the fourteen neuropsychiatrists concerned in this work has the care of about 35 to 50 beds.

(ii) At depots the number of cases referred in 1942 was about 10,000. In addition, the attendance list of old cases at the four main Naval depots was perhaps three to five times as many as the new cases. This work was carried out by nine neuropsychiatrists.

88.—(i) In 1943 there was an increase both in the number of cases admitted to neuropsychiatric hospitals and in the number seen as out-patients. In Great Britain alone, 492 officers and 5,649 ratings were admitted as in-patients to neuropsychiatric hospitals, and a total of 19,911 was seen, in the same year, as out-patients in barracks or in consultation. The number admitted as in-patients amounts to about 1 per cent. and the number seen as out-patients to about 3 per cent. of total Naval personnel. These rates have remained fairly constant since the beginning of the war.

(ii) In 1944 there was a marked rise in the number of in-patients and out-patients. This may be attributed to an increase in staff which brought more opportunity of ascertainment. In the first half of 1944, 284 officers and 3,232 ratings were admitted as in-patients and a total of 17,418 were seen as out-patients in barracks or in consultation.

89. The above figures, both for hospitals and depots, are approximate and refer only to the work of the neuropsychiatrists themselves. An unknown but very large number of psychiatric cases are dealt with by medical officers. Precise details of work abroad are not available, but it is known that during 1942 over 1,000 R.N. neuropsychiatric cases were admitted to army hospitals in the Middle East.

ARMY (paras 90 to 92) (101) (102) (103) (117) (118) (119)

90—(i) Some idea of the volume of work of army psychiatrists in seeing cases referred as out-patients or through psychological testing may be gathered from the following table (Table 1) which should be read with the accompanying footnotes. A full analysis of the recommendations for disposal of out-patients is given in Appendix VII, Table 9.

*Work of Army Psychiatrists in the United Kingdom up to October, 1943*

TABLE 1

Cases referred as out-patients <sup>(1)</sup>	...	...	...	...	194,037
Cases referred from Unit Selection Testing <sup>(2)</sup>	...	...	...	...	90,665
Men referred from General Service Selection Procedure <sup>(3)</sup>	...	...	...	...	47,126
Men referred from Army Selection Centres Procedure <sup>(4)</sup>	...	...	...	...	10,901
Total	...	...	...	...	342,729

NOTES

- (<sup>1</sup>) April 1941 to October 1943. Based on Command Returns.  
 (<sup>2</sup>) April 1941 to October 1943. Based on Command Returns and Returns from the A.T.S., Experimental Selection Centre.  
 (<sup>3</sup>) July 1942 to October 1943. Figures supplied by A.G. (Stats.).  
 (<sup>4</sup>) March to October 1943. Figures supplied by A.G. (Stats.). Excluding Returns from A.T.S. Selection Centres.

(ii) In the nineteen months from the 1st April, 1942, to the 31st October, 1943, 19,556 patients were admitted into Military Psychiatric Hospitals. Of these, 6,085 were psychotic and 13,471 psychoneurotic. About 83 per cent. of the total were Army and A.T.S. cases. During the same period, 18,958 patients were discharged from hospitals. Of these, 5,851 were psychotic and 13,107 psychoneurotic. Details of recommendations for disposal of in-patients are shown in Appendix VII, Table 10. The above figures exclude Army in-patient cases at E.M.S. Neurosis Centres admitted at the rate of about 700 a month.

(iii) At War Office Selection Boards, psychiatrists interview and report on about 50 per cent. of the candidates who number about 4,000 or 5,000 a month.

91. During 1942, 14,259 psychiatric cases were treated by Army psychiatrists in the Middle East. This total is composed of the following groups :—

United Kingdom	...	...	...	...	...	10,363
Dominion	...	...	...	...	...	1,855
Colonial	...	...	...	...	...	1,319
Allied	...	...	...	...	...	558
Women's Services	...	...	...	...	...	70
Others	...	...	...	...	...	94
<b>Total</b>	...	...	...	...	...	<b>14,259</b>

92. A consultant was posted to the Middle East early in 1940. A small number of psychiatrists followed and two Psychiatric Centres of 170 beds each were opened. In November, 1941, No. 41 Central Hospital (600 beds) was sent out. Very slowly, adequate hospital facilities were provided. The volume of in-patient work made it extremely difficult to provide area psychiatrists from the small number of personnel available especially since it fell during that period to the Army Medical Services to deal with Naval, R.A.F. and Allied psychiatric cases. Gradually, however, area psychiatrists were provided and it then became possible to develop "Forward" Psychiatry with the Eighth Army (181).

ROYAL AIR FORCE (paras. 93 and 94) (124) (139) (142) (143)

93. The total number of psychiatric out-patients at N.Y.D.N. Centres during a recent six-month period is shown in the following table :—

*Out-patients seen by Psychiatrists at N.Y.D.N. Centres during the period January to June, 1943*

		TABLE 2		
		<i>New patients</i>	<i>Old patients</i>	<i>Total</i>
Aircrew	...	2,366	2,205	4,571
Ground personnel—				
R.A.F.	...	5,207	2,259	7,466
W.A.A.F.	...	1,504	304	1,808
<b>Total</b>	...	<b>9,077</b>	<b>4,768</b>	<b>13,845</b>

94.—(i) During the same period (January to June, 1943), the number of in-patients admitted to N.Y.D.N. Centres (excluding R.A.F. Hospitals) was as follows :—

Aircrew	...	...	...	...	285
Ground personnel—					
R.A.F.	...	...	...	...	1,168
W.A.A.F.	...	...	...	...	272
<b>Total</b>	...	...	...	...	<b>1,725</b>

(ii) The approximate annual rate of admission of in-patients to the various R.A.F. Hospitals is as follows :—

R.A.F. Hospital, Matlock	...	...	...	...	...	1,200
R.A.F. Officers' Hospital, Blackpool	...	...	...	...	...	600
P.M. R.A.F. Hospital, Halton	...	...	...	...	...	800

(iii) The total number of cases seen by psychiatrists at Recruit Centres during 1943 was 6,116.

#### E.M.S. NEUROSIS CENTRES (para. 95) (150)

95. The number of Service cases admitted annually has been :—

1940 (4th Quarter)	...	...	...	...	...	1,650
1941	...	...	...	...	...	7,875
1942	...	...	...	...	...	9,528
1943	...	...	...	...	...	9,430

Before 1943, the figures include a small number of ex-Servicemen treated at these Centres. The 1943 admissions included 7,913 from the Army, 838 from the A.T.S., 426 from the Navy and 253 from the W.R.N.S. The average duration of stay is less than two months. Most of the cases are referred direct by Army psychiatrists; a proportion come from General E.M.S. hospitals or Service hospitals. Modes of disposal for in-patients are shown in Table 16, Appendix IX.

## VII. Research and Validation (paras. 96 to 106)

### INTRODUCTION (para. 96)

96. As stated earlier, the information embodied in this document has been compiled solely from available material, which must necessarily be somewhat fragmentary since a complete documentation of Service psychiatric work has not yet been made. In these circumstances, no attempt can be made here to formulate the results of the various investigations which have been undertaken as a systematic validation of Service psychiatric procedure as a whole. Service psychiatrists are aware of the need for securing evidence of the effectiveness of their work and they have undertaken research in many directions with this end in view. But there are many difficulties in the way of proper validation. One difficulty is due to the fact that psychiatrists work in close collaboration with psychologists, other medical officers or specialists and with the executive, often with all three combined. It is therefore by no means easy nor, in many cases, is it possible to isolate any given effect and to trace it to the use of a psychiatric procedure. Another difficulty is to secure sound criteria of the effectiveness of psychiatric work because the standard by which this effectiveness is judged is often sociological rather than medical. The many uncontrolled factors operating in the Services and the frequent changes in executive policy introduce further problems. It should be clear that there is no more, nor less, call upon psychiatrists to validate their forms of therapy than there is upon specialists in other fields of medicine. Most psychiatric research as described in scientific journals is, in fact, an attempt to demonstrate the validity of new or existing procedures.

In the following paragraphs in this Section, illustrations will be given of the methods which Service psychiatrists are able to use in validating their work and the results so far accomplished.

97. *Prediction of Breakdown* (96).—(i) The value of participation by psychiatrists in selection lies mainly in their being able to detect, within a reasonable margin of error, those recruits who are likely to break down under the stress of Service life. In the early days of the war, Naval psychiatrists soon found that much actual breakdown could have been readily predicted at the outset by fairly simple procedures. Thus, an analysis of cases admitted to a Naval hospital in 1940 suggested that about 40 per cent. were predictable. When the new intake procedure was organised in September, 1941, it was hoped that some method might be introduced for the detection of unstable individuals. Accordingly, W.R.N.S. recruiting assistants were then instructed, when checking up the questionnaires (S.P. Form Q.1) completed by recruits (see Appendix I, para. 9), to inquire into each candidate's past work record and allied matters and to ask certain questions bearing upon mental stability. By the use of such a filter it was hoped that information would be elicited in the case of markedly unsuitable candidates which would help the Naval recruiter to decide whether men suspected of instability should be rejected or not. Other candidates, while being accepted, might be given a psychiatric examination on reaching training establishments. It is only very recently, however, that this information concerning the stability of Naval candidates has become accessible to psychiatrists. This came about through the opening of a Central Reception Depot (H.M.S. *Royal Arthur*) through which nearly all entrants pass. A neuropsychiatrist has been appointed there to inspect the questionnaires (referred to above), to examine the cases picked out by the W.R.N.S. recruiting assistants and to advise accordingly. Arrangements have been made to follow up those regarded by the psychiatrist as bad risks.

(ii) Before this Reception Depot was opened, experiments were carried out in 1942 and 1943 so as to ascertain what proportion of recruits could profitably be subjected to a psychiatric examination, since it was impracticable for psychiatrists to interview all Naval candidates. The procedure was similar to that adopted at the entry stage. It was thought that evidence might be forthcoming to show that the employment of W.R.N.S. assistants might be an efficient method for detecting men who could usefully be examined by psychiatrists without too many normal persons being picked out at the same time. Such a method might lead to the rejection or early elimination of a number of individuals unlikely to be of use to the Service. Although the actual numbers involved would rarely, if ever, exceed about 2 per cent. of intake, the trouble they cause in terms of inefficiency and impairment of morale, is out of all proportion to their numbers.

(iii) The results of these investigations indicated that perhaps 5 to 8 per cent. of all new entrants might usefully be subjected to a psychiatric interview as the result of the procedure outlined above, but not more than 1 or 2 per cent. of the total intake should be rejected in view of the man-power situation. A higher proportion than this are doubtless predictable as bad psychiatric risks and are likely sooner or later to break down; yet many of them are capable of giving efficient service before they do, in fact, break down, and a substantial number, further efficient service after they have done so. (96)

## ARMY (paras. 98 to 100)

98. *Psychiatric Assessment of Officer Quality* (107).—(i) Various studies have been made of the value of the psychiatric interview as a means of assessing officer quality. In a preliminary experiment at the Scottish Command Company Commander's School in 1941 there was agreement between the estimates

of the psychiatrists and those of the commanding officers in about 80 per cent. of the cases. Whereas the psychiatric assessments were based on interviews lasting from half to one hour, those of the commanding officers were based (a) on personal knowledge of the student built up over four or five weeks, (b) on instructors' reports and (c) on reports from the student's previous units. The two series of estimates, by psychiatrists and commanding officers respectively, were made in complete independence of each other. It appeared, therefore, that the psychiatric interview could be a sound and economical method of selecting suitable candidates for the School.

(ii) A second experiment was carried out in 1942 with a sample of 222 officer students. On this occasion psychiatric assessments, based on short interviews and intelligence tests, agreed with the opinion of the instructors in about 88 per cent. of the cases. There was no appreciable variation in judgment among the psychiatrists themselves, nor did any individual psychiatrist vary unduly in the amount of his agreement with instructors in five successive Courses. Discrepancies in 12 per cent. of the cases between psychiatric assessments and the instructors' opinions were attributed to differences in assessments of intelligence and personality and to the discovery of latent psychiatric disability. After discussion, reconciliation was effected in about half the cases of divergent opinions. A follow-up is evidently desirable in the case of the 5 to 6 per cent. of the total for whom differences of judgment were not reconciled.

99. *Selection of Army Parachutists* (112).—(i) An inquiry was carried out to ascertain whether those who are likely to fail during parachute training can be detected beforehand by psychiatric selection. The training of the volunteer for parachute training is in two stages, first as a parachutist and then as an airborne infantry man. At the time of this inquiry the failure rate in the first stage alone was about 20 per cent. but in addition there was heavy wastage during the second phase of collective training. The facts summarised in sub-paragraphs (ii) to (iv) relate to the first stage and those in sub-paragraph (v) to the second stage of parachute training. Clearly, if the training wastage could be appreciably reduced a substantial saving in effort, time and cost could be effected.

(ii) The psychiatrists who undertook the investigations themselves took the hardening and parachute training course and qualified as parachutists. A screening procedure, similar to that used at War Office Selection Boards and carried out by sergeant testers, was introduced to select for psychiatric interview suitable cases among the volunteers for training. In this procedure all candidates were provisionally placed in one of five grades predictive of training success. The psychiatrists then interviewed :—

- (a) all those in the lowest grades, *i.e.*, Grades IV and V ;
- (b) all those difficult to grade ; and
- (c) a sample of those in Grades I to III.

A final psychiatric predictive grade was then allotted to each of those interviewed.

(iii) The results showed that the final grades of the psychiatrist corresponded closely with those allotted by the sergeant testers as a result of the screening procedure. A follow-up of 1,492 personnel to the end of the first stage of parachute training indicated that the final psychiatric grading gave effective prediction of all forms of training wastage other than that due to accidental injuries. Apart from those so injured only 3 per cent. in Grade I and 7 per cent. in Grade II failed during initial training, whereas in Grades IV and V the corresponding proportions which failed were 23 per cent. and 46 per cent. respectively. These results are set out overleaf.

*Results of Training as percentages of all Candidates in each Grade*

TABLE 3

<i>Psychiatric Predictive Grades</i>	<i>Training Failure</i>	<i>Accidental Injuries</i>	<i>Training Success</i>	<i>Total Candidates</i>
I ... ..	3	6	91	100
II ... ..	7	4	88	100
III ... ..	10	4	86	100
IV ... ..	23	4	73	100
V ... ..	46	4	50	100

(iv) It is evident from the above that the results during initial parachute training can be efficiently predicted by means of psychiatric procedures. If only Grade I candidates are accepted, wastage can be reduced to 3 per cent. (apart from cases of injury). The decision as to which Grades should not be allowed to proceed to training would, of course, rest with the executive.

(v) A second follow-up was conducted about twelve months later when the men were at their final stage of collective training in the 6th Airborne Division (which won high praise for its performance in Normandy). 1,038 men who had been posted to a certain brigade of this division during the preceding year were followed up. It was found that there had been a wastage from the division of 181 men (*i.e.*, 18 per cent. had proved unsatisfactory on medical, disciplinary or training grounds). Wastage from the highest two grades was only 15 per cent. as compared with a wastage of 25 per cent. in the lowest two grades over the same period. Taking one battalion of the brigade as a sample, each one of the 248 men who had previously been given a predictive psychiatric grade before posting to the battalion was followed up individually. It was found that 82 of these were now non-commissioned officers. The psychiatric grades were known neither to the men nor to their officers. Of the men in Grades I and II, 39 per cent. had been promoted to non-commissioned rank, whereas only 18 per cent. of the Grades IV and V had received similar promotion.

(vi) It may be said, therefore, that psychiatric grades have a significant relationship to success and failure during both the individual and collective training of parachutists.

(vii) A further follow-up is in progress of men of the same division who took part in the invasion of Normandy.

100. *Allocation of neurotic soldiers* (110).—(i) In order to reduce the wastage of man-power due to discharge from the Army of soldiers suffering from neurosis, special arrangements were made in May, 1941, for dealing with these cases at Neurosis Centres. It had been suggested that a high proportion of the personnel concerned were still capable of carrying out duties within the Army if they could be assigned to duties in accord with their mental status.

(ii) Arrangements were accordingly made for specialists in charge of the patients at the Neurosis Centre to make recommendations for employment and for special postings to be ordered by an executive branch of the War Office after reviewing the soldier's abilities, previous experience, physical condition and the specialist's recommendation. These special postings are regarded as an alternative to discharge.

(iii) An interim examination of the follow-up results of over 1,600 of these cases revealed that about 60 per cent. were retained in the Army and over 80 per cent. of these were successful in the sense of being willing and efficient workers, performing full or light duty and not frequently reporting sick (see also para. 62).

101. *Psychiatric disorder in aircrew.*—(i) The problems of discerning any signs of instability in potential aircrew are much the same as those confronting Naval psychiatrists (see para. 97). In the R.A.F. the need for doing so is even more urgent because of the relatively greater responsibilities of individual aircrew as compared with Naval ratings.

Success in air operations, for example, in those of Fighter Command, is much more directly dependent upon the stability and persistence of the individuals concerned than is the case in land or sea operations, where operations are more of a collective than of an individual nature. Every member of an aircrew is, more or less, a "key" man, whereas in land or sea units only a small proportion of the operational group can usually be described as "key" men.

(ii) Since the early days of the R.A.F., psychiatrists have devoted a great deal of effort to the study of psychological disorder in aircrew, its causes and possibilities of prediction. These studies have been continuously amplified to date. At the beginning of 1942, a statistical scheme was devised which provided for the collection, on uniform lines, of all psychiatric records of aircrew who came under the care of a neuropsychiatric specialist. The statistical material thus made available has been the basis of a number of reports on psychiatric disorders among flying personnel (120) (121) (123)-(126).

(iii) In order to assess the factors contributing to psychological disorder in flying personnel, neuropsychiatrists have visited representative stations in Fighter, Bomber and Coastal Commands with authority to seek information from station and squadron commanders as well as from medical officers (122) (123) (126). The inquiry led to discussion in some detail not only of the loading factors, but also of those which helped men to stand up to the load—varying from good leadership and discipline to leave and recreational facilities. At the same time, commanding and medical officers were questioned as to the earliest signs of deterioration under stress.

(iv) It was soon apparent (120) (121) that certain traits of personality were specially frequent in those who ultimately developed psychiatric disability. Nervous attributes in childhood and certain other characteristics, such as timidity, lack of aggressiveness, excessive visceral response to emotion, as well as some apparently inherited nervous or mental illness, were specially frequent. This impression has been statistically confirmed in the latest report (135) which covers 2,200 cases, showing that two-thirds exhibited signs of predisposition to neurosis, and that one-fifth were so heavily predisposed that they would have been rejected at entry had the facts been known. This contrasted with the results of various investigations of aircrew at various stages of their flying career, where 15 per cent. in all were found to show evidence of predisposition, whilst in 3 per cent. the predisposition was marked enough to have justified rejection in the beginning (129) (143). At the same time, it was recognised that in a proportion of cases with many predisposing features, other aspects of the personality might neutralise their effects and enable good service to be given (F.P.R.C. 412 (c)). Treatment is not, as a rule, effective in returning heavily predisposed men to operational flying. The most important factor in determining return to duty is the degree of predisposition (144).

(v) Evidence was early collected (121) and later statistically confirmed (135) which showed that severely predisposed individuals usually did much less operational work than others. Those who had suffered much external stress, apart from operational hours, tended to have little predisposition, whereas those with much predisposition tended to break down before undergoing much stress. "Where one of these factors was preponderant the causal significance of the other was slight" (135). The term "stress" is used "to designate (external)



strain and stresses to which flying personnel are exposed" (F.P.R.C 412). Breakdown, it appeared, was very often preceded by a period of operational inefficiency. A statistical analysis had also been made of the relative incidence in the various Commands and for the various positions in aircrew, air-gunners having the highest incidence and pilots and navigators the lowest. Air-gunners were more highly predisposed than pilots (135).

(vi) Prompted by this earlier work, a subsequent enquiry was carried out on the following lines. On arrival at their stations, 200 new members of heavy bomber aircrew in two squadrons were interviewed by a medical officer without psychiatric training but with long experience of duties in Bomber Command. Following a scheme based on experience with those who had already broken down (120) (121) (123), which took into account persistent airsickness, headaches, or other symptoms during training; poor school, occupational and sport records; inadequate reasons for becoming aircrew and the general impression gained at the interview, the men were classified into (a) those who would have been accepted unreservedly for flying duties and (b) those with two or more neurotic features whose success in operational flying would be considered doubtful. This predisposed group formed 16 per cent. of one squadron and 20 per cent. of the other. When every surviving airman had completed 30 operations, the data suggested that those suspected to be of unstable temperament are much less likely to complete the operational tour as they are much more likely to break down. Casualties are also more frequent among them.

102. *Psychiatric Selection of Aircrew* (139).—(i) Two experiments in the psychiatric selection of aircrew are now being conducted. The aim is to secure guidance on the question of eliminating during training aircrew predisposed to neurosis by ascertaining the extent to which operational failure is due to unsuitability of temperament for flying duties. In each experiment, a series of cases is interviewed by psychiatrists and then allowed to proceed with their training and operational career.

(ii) In the first enquiry, 608 aircrew trainees were examined at an Initial Training Wing and a school for wireless-operator-air-gunners—between May and July 1942. A scheme based on experience with those who had already broken down was used (120) (121) (123). Owing to the limited time available, each trainee was interviewed for about twelve minutes only. Degrees of predisposition were found in the following varying proportions of the total group of 608, consisting of 244 pilots, 101 observers, 165 wireless-operator-air-gunners, and 98 wireless-operators :—

<i>Degree of Predisposition</i>	<i>No.</i>	<i>Per cent.</i>
Very considerable ... ..	17	2·7
Considerable ... ..	36	5·9
Moderate ... ..	54	8·8
Slight ... ..	35	5·7
None discovered ... ..	466	76·6
<b>Total ... ..</b>	<b>608</b>	<b>100·0</b>

A follow-up of these cases is now in progress, but complete results are not yet available.

(iii) The second survey is now being carried out. 1,009 aircrew have been examined and the follow-up results will be available within six to twelve months from now (see Appendix 1, para. 102).

103. *Validation of psychiatric disposal of aircrew.*—A check on the psychiatric recommendations for the return to duty of aircrew after breakdown has been made by recording the progress of a hundred cases classified as fit for full flying duties by a medical board. 82 per cent. of the cases had returned to some form of flying duty after recovery, whilst 70 per cent. of the original series

were still employed on these duties at the end of nine months. Training wastage in the returned cases was, however, twice normal expectation and the breakdown rate three times normal expectation (131).

104. *Consistency of psychiatric opinion.*—(i) The criteria used by different psychiatrists to assess predisposition are bound to vary to some extent with their respective views. In order to obtain some objective indication of the consistency of psychiatric assessment in this respect, an experiment has been arranged whereby two psychiatrists independently examine a series of aircrew personnel who have not broken down, at the same time predicting the degree of instability which each individual will display. Subsequent progress reports will be followed up to determine the accuracy of the predictions.

(ii) Some incidental evidence bearing on the consistency of psychiatric opinion has, however, already emerged from another follow-up (131) of aircrew returned to duty after breakdown. There was little variation, among the aircrew seen by the different psychiatrists, in the kind or extent of duty they had carried out at the date of breakdown. Of the total numbers seen by each of two psychiatrists and the average of those seen by other psychiatrists, the proportions doing operational, non-operational or ground duties and the proportions relapsed or remustered, were much the same.

105. *Selection in the W.A.A.F.* (139).—(i) Since the introduction of selection procedures in the W.A.A.F., psychiatric recommendations for exclusion have usually been made on the ground of low intelligence or unsuitable temperament. Justification for this procedure is suggested by comparison between the proportions of different kinds of psychiatric reason for failure in trade training before and after the introduction of selection methods.

(ii) It has been possible to examine two small samples, one of training failures among W.A.A.F. enlisted before selection methods were introduced and one of failure after selection had been adopted. In the first sample (see Table 4 below), failures due to mental dullness constituted a much higher proportion of the total than in the second sample. In the second sample, the major proportion of failures was due to neurosis or psychopathic personality. The effect of selection therefore seems to have reduced training wastage due to the acceptance of mentally dull personnel.

TABLE 4

<i>Failures in Trade Training</i>	<i>Mental Dullness</i>	<i>Neurosis</i>	<i>Psychopathic Personality</i>	<i>Total</i>
A. Before the introduction of selection methods ...	30	16	9	55
B. After the introduction of selection methods ...	5	12	4	21

106. *The Selection of R.A.F. and W.A.A.F. Ground Personnel* (145).—(i) An opportunity for a provisional validation of psychiatric recommendations in the selection of ground personnel has occurred through the acceptance of a number of cases classified by psychiatrists as unfit for any form of R.A.F. service. These recruits were accepted owing to some delay in the implementation of agreed arrangements with the executive.

(ii) A follow-up study has been made of the subsequent careers of 187 out of a total of 262 accepted in this way. Of the 187, approximately 10 per cent. have been found satisfactory without qualification. The remaining 90 per cent. are either unsatisfactory in some degree or have been subsequently discharged from the Service. It should be noted, however, that these results refer to 71 per cent. of the total 262 and the status of the remaining 29 per cent. is either unknown or only approximately known at the present time. Judgment should be suspended until more information is available on the unknown 29 per cent.

## APPENDIX III

### SOURCES AND REFERENCES

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(173)	<i>P.P.</i> (43) 6	...	...	...	Third Report, February 1943.
(174)	<i>P.P.</i> (43) 12	...	...	...	Fourth Report, March 1943.
(175)	<i>P.P.</i> (43) 14	...	...	...	Fifth Report, April 1943.
(176)	<i>P.P.</i> (43) 16	...	...	...	Sixth Report, May 1943.
(177)	<i>P.P.</i> (43) 21	...	...	...	Seventh Report, June 1943.
(178)	<i>P.P.</i> (43) 30	...	...	...	Eighth Report, July 1943.
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## APPENDIX IV

### LIST OF AGENCIES WHO HAVE CARRIED OUT OR ARE ENGAGED IN PSYCHOLOGICAL WORK FOR THE SERVICES

#### 1. *Within the Services.*

##### *Navy.*

Senior Psychologist's Department.

Medical Department.

Directorate of Scientific Research (at Admiralty Research Laboratory; Admiralty Signals Establishments; and H.M.S. *Excellent*).

##### *Army.*

Directorate of Selection of Personnel.

Directorate of Biological Research.

Medical Department (especially Directorate of Army Psychiatry).

Army Operational Research Group (which is administered by the Ministry of Supply, the programme being laid down jointly by that Department and the War Office).

##### *R.A.F.*

Training Research.

Medical Department, especially Flying Personnel Research Committee.

R.A.F. Physiological Laboratory.

Operational Research Groups.

#### 2. *Outside the Services.*

The Psychological Laboratory, University of Cambridge.

The Psychological Laboratory, University of London.

The Psychological Laboratory, University of Edinburgh.

Institute of Experimental Psychology, University of Oxford.

National Institute of Industrial Psychology.

##### *Medical Research Council.*

The work for the Navy is under the direction of the Royal Naval Personnel Research Committee appointed by the Council in consultation with the Admiralty.

The work for the Army is mainly directed by the Military Personnel Research Committee appointed by the Council in consultation with the War Office.

The work for the R.A.F. is directed by the Flying Personnel Research Committee appointed by the Air Ministry in consultation with the Council.

Executive responsibility for the conduct of work for the Navy and Army lies with the Council ; in the case of the F.P.R.C., the responsibility lies with the Air Ministry, but members of the Council's staff participate.

Researches mainly of a psychological nature have been carried out in the Psychological Laboratory, University of Cambridge, under the direction of Professor F. C. Bartlett, F.R.S. Researches of a predominantly physiological but partly psychological nature have been carried out in the Council's Neurological Research Unit at the National Hospital for Nervous Disease, under the direction of Dr. E. A. Carmichael, F.R.C.P., and at the Council's Physiological Laboratory attached to the Armoured Fighting Vehicles School, Lulworth, under the direction of Professor I. de B. Daly, F.R.S. Work for the Army has been done at Cambridge, London and Lulworth, and in the field by workers from these centres.

Mill Hill Emergency Hospital.

National Physical Laboratory.

Anti-Aircraft Defence Research Establishment.

Telecommunications Research Establishment.

Royal Aircraft Establishment, Instrument and Design Departments, Research Departments of firms such as G.E.C., Nash and Thompson and Metropolitan Vickers.

## APPENDIX V

### STAGES OF AIRCREW SELECTION AND TRAINING AND ARRANGEMENTS FOR REFERRING CASES TO PSYCHIATRISTS (139)

1. At Aircrew Selection Boards men are interviewed by a Board of executive officers and are subjected to tests of intelligence, special aptitudes, and educational standards. Suitability of temperament and character for aircrew duties is also assessed. Psychiatrists have sat with a number of these Boards for periods varying from a week to a month to see how psychiatric advice could be utilised at this stage. It is not possible to supply each Board with psychiatrists in regular attendance, but arrangements exist for the reference of any case to a neuropsychiatric specialist when the President of the Board requires advice on questions of fitness of personality for flying duties.

2. At Aircrew Medical Boards, candidates are interviewed regarding their past medical history, according to a definite questionnaire laid down. This covers also their family history, schooling, games and employment record. A full physical examination is carried out. Psychiatrists are not directly attached to each Medical Board. Arrangements exist for the reference of cases to the nearest N.Y.D.N. Centre, which in most cases is easily accessible. A directive has been issued to Presidents of Medical Boards on the importance of conducting a careful interview and on the significance of data elicited, close co-operation with the President of the Aircrew Selection Board is advocated, particularly in doubtful cases.

3. A special Board has been established at which a certain number of candidates who have been rejected at their original Aircrew Selection Board are

reviewed. There are often difficult problems, the question of suitability of temperament being mainly at issue. A psychiatrist sits as a member of this Board, which is composed of a President and another member of the executive branch. Where necessary, the psychiatrist conducts a private interview and advises on matters of suitability of temperament for flying duties.

4. A re-Selection Board has been set up to examine members of aircrew who fail for various reasons at any level from Initial Training Wing up to and including operational units. Men are referred to this Board for assessment of their suitability for alternative duties, either as aircrew or on the ground. Two psychiatrists are attached to this Board and one psychiatrist assistant with psychological qualifications interviews those whose documents suggest the presence of a psychiatric factor in producing failure, and any cases referred by the executive for opinion. The psychiatrists advise the Board on any limitations which the man's medical category or condition are likely to impose on his future employment and also on the question of suitability, from the psychiatric point of view, for any particular duty proposed. A trained W.A.A.F. assistant carries out any individual intelligence tests which may be required.

5. At the Aircrew Reception Centre candidates accepted for aircrew are received after their period of deferred service. Here they stay for a period of some weeks. Some may have changed their minds while on deferred service and present themselves either with neurotic symptoms or with physical complaints of a functional type, motivated by a desire to be taken off flying training. Others may have developed neurosis, epilepsy or head injuries during deferment. A few cases are referred by the executive officers on account of some conduct disorder. A psychiatrist has been posted to this unit to deal with any cases referred to him. The principal source of reference is from sick quarters or from various specialists who co-operate in detecting cases whose disorder is probably functional. It has been difficult to advise executive officers on indications for seeking psychiatric advice about doubtful candidates in their charge owing to the short period of stay at this unit. During the year ended February 1943, 256 cadets were seen and suspension of training recommended in the case of 199.

6. At Initial Training Wings, large numbers of cadets are stationed for a period of some months. There is a high proportion of potential failures among them. Instructions have been issued by the Commander-in-Chief, Training Command, to the effect that trainees who show signs of unsatisfactory progress in the subjects taught, or any conduct abnormality, particularly suggesting timidity, should be carefully investigated, and, if necessary, psychiatric advice should be sought to determine whether training should be continued. No routine psychiatric examination of all trainees has been possible owing to the large numbers, nor does any automatic machinery for reference of suitable cases exist. The detection of the suitable case has to depend on the acuity of observation of those in charge of trainees. A psychiatrist was posted for several months to the Central Sick Quarters of a group of Initial Training Wings as an experiment, but this was discontinued because the personnel in charge of trainees referred such a small number of cases. Arrangements now exist for regular visits by psychiatrists to the largest Initial Training Wings to examine any cases collected by the residential medical staff. Otherwise, cases are referred to the nearest N.Y.D.N. Centre by the senior medical officer.

7. At Grading Schools, candidates do their first few hours' flying for training purposes under the Pilot-Navigator-Bomb-aimer scheme. At this stage and during all subsequent stages of flying training, instructors and medical officers have been advised on the methods of detecting signs of undue nervousness in the air or other similar evidence of unsuitability. This advice is given

to instructors through a memorandum prepared by one of the consultants in neuropsychiatry and to medical officers in the course of lectures which they receive at entry and at visits to training units by the Consultants. Any case about which the chief flying instructor has doubts may be referred to the nearest N.Y.D.N. Centre for psychiatric advice. The commanding officer may also refer any pupil, about whom he has any doubt, to the medical officer, who may then send him to the psychiatric specialist at the nearest N.Y.D.N. Centre.

8. At the Personnel Despatch Centre, prior to posting overseas, trainees are informed of their classification under the P.N.B. scheme. Certain problems sometimes arise in connection with their dissatisfaction at classifications or similar matters on which the commanding officer may need psychiatric advice. Some trainees, after their first experience of flying at the Grading Schools, decide that they do not want to continue. Others balk at the idea of leaving home and may present themselves with physical complaints. The elimination of the unsuitable at this level is important in order to avoid wastage incurred by the transport of potential failures overseas. A psychiatrist attends this Centre weekly to advise on any cases referred to him.

9. Flying Training Schools in Canada and the U.S.A. have been visited by one of the consultants in neuropsychiatry, and similar measures to detect potential failures at an early stage and to refer them for psychiatric advice, where necessary, have been adopted there.

10. At Advanced Flying Units, Operational Training Units and Operational Squadrons the medical officers have been instructed to be on the watch for all cases showing evidence of unsuitability for operational duties under training or of incipient psychological disorder at operational units. Cases may be referred for advice to N.Y.D.N. Centres with full reports from the commanding officer and medical officers.

11. Other categories of aircrew, not included under the P.N.B. scheme, are referred during their course of training to the nearest N.Y.D.N. Centre if they develop psychological disorder or if the question of their suitability for further training is raised.

12. A refresher course exists to which aircrew personnel who have committed minor disciplinary offences are posted, in order that they may become acquainted with the principles underlying discipline in the Service. Arrangements have been made for obtaining psychiatric opinion of any case about which the commanding officer has doubts.

The relatively full account given in this Appendix of psychiatric participation in R.A.F. aircrew selection is necessary in order to explain how this work fits in with the new and intricate R.A.F. organisation. Nevertheless, in spite of these elaborate arrangements, the numbers seen by psychiatrists are relatively small and it would be more profitable if the system allowed for adequate psychiatric examination at entry.

## APPENDIX VI

### *Military Psychiatric Hospitals at the end of November 1943*

Note : pp. — psychotic ; pn. — psychoneurotic.

TABLE 5.

Hospital	Beds authorised	Date of opening
Banstead Military Hospital, Surrey ...	400 pp. other ranks...	26th March, 1940
Ashurst Military Hospital, Oxford... ..	240 pp. other ranks...	29th May, 1940
Clifton Military Hospital, York ... ..	150 pp. other ranks...	1st August, 1940
Talgarth Military Hospital, Brecon ... ..	315 pp. other ranks...	18th October, 1940
Royal Victoria Hospital, Netley, "D" Block	72 pp. other ranks... 2 pp. officers ...	} In existence before the war
Carstairs Military Hospital, Lanarkshire ...	200 pp. other ranks...	
Dumfries Military Hospital... ..	40 pp. officers ... 40 pn. officers ...	} 6th December, 1940
Graham Holm Military Hospital, Belfast	60 pp. other ranks... 60 pn. other ranks...	
Northampton Military Hospital (Women)	113 pp. other ranks... 7 pp. officers ...	} 6th October, 1941
Queen Alexandra Military Hospital, Shenley, Herts. ....	5 pp. officers ...	
Military (Psychiatric) Hospital, Northfield	150 pn. other ranks...	} October, 1939
Bellsdyke Military Hospital, Larbert ...	800 pn. other ranks...	} 1st April, 1942
	300 pn. other ranks...	} 1st January, 1941

### *Total Number of Beds Provided*

TABLE 6.

Psychosis		Neurosis		Total
Officers	Other Ranks	Officers	Other Ranks	All Ranks
62	1,550	40	1,310	2,962

## APPENDIX VII

### *Recommendations for disposal of General Service intake referred to Army Psychiatrists<sup>(1)</sup>*

TABLE 7.

Recommendations	Per cent. of total intake
None of a psychiatric kind ... ..	6.0
Posting to a Service Corps rather than to a fighting arm ... ..	1.0
Specific employment ... ..	3.0
Transfer to Armed or Unarmed Pioneer Corps ... ..	3.7
Reduction of medical category, admission to Psychiatric Hospital or discharge by a Medical Board	0.3
Total ... ..	14.0
Intake not seen by psychiatrists ... ..	86.0
Total ... ..	100.0

<sup>(1)</sup> The figures relate to a recent four-month period ; the various proportions are, however, fairly constant month by month.

## APPENDIX VII (continued)

*Recommendations for disposal of cases referred to psychiatrists at Army Selection Centres<sup>(1)</sup>*

**TABLE 8.**

Recommendations	Per cent. of intake
None of a psychiatric kind ... ..	6·0
Specific employment ... ..	18·3
Transfer to Armed or Unarmed Pioneers ... ..	5·3
Concurrence in :—	
Transfer to Command Labour Company or Young Soldier's Training Units	0·7
Discharge as unemployable	13·0
Reduction in medical category	3·6
Admission to Psychiatric Hospital, discharge by Medical Board as neurotic or mental defective	—
Total ... ..	46·9
Intake at Selection Centres not seen by psychiatrists ... ..	53·1
Total ... ..	100·0

(1) The figures are expressed as percentages of total intake at these Centres and relate to a recent three-month period.



## APPENDIX VII (continued)

*Recommendations by Army Psychiatrists for Out-patients<sup>(1)</sup> seen in all Commands at home during the period April 1941 to October 1943<sup>(2)</sup>*

TABLE 9.

	Return to Unit	For observation in Unit or Out-Patient Treatment	To E.M.S. Neurosis Centre	To Military Neurosis Centre	Military Psychiatric Centre	To other Hospital	Reduction of Medical Category	Transfer to Armed, Unarmed, or within Pioneer Corps	Other Disposal	Discharges	Total
Neurosis and Psychopathic Personality ... ..	13,209	14,115	16,657	7,687	2,960	1,552	12,275	1,932	15,554	22,266	108,207
Mental Dullness or Defect ... ..	12,234	1,379	104	26	133	58	295	23,694	11,540	6,268	56,231
Psychosis ... ..	112	122	227	78	5,043	208	55	406	326	415	6,992
Other Diagnoses ... ..	11,321	2,265	357	100	208	356	356	414	5,762	968	22,607
Total ... ..	37,376	17,881	17,345	7,891	8,344	2,674	12,981	26,446	33,917	29,182	194,037

<sup>(1)</sup> Referred by Unit Medical Officers to Out-Patient Centres or seen in Hospital Wards. Excluding Army Selection Centres, General Service Intake, Selection Testing or W.O.S.B. Interviews.

<sup>(2)</sup> The figures are based on Command Monthly Returns and have not been submitted to A.G. (Stats.).

*Recommendations<sup>(1)</sup> by Army Psychiatrists for In-patients at Military Psychiatric Hospitals during the period April 1942 to October 1943*

TABLE 10.

	To Duty	To Civil Life	To Care of Relatives	To Civilian Mental Hospitals	To Other Hospitals	Died, Absconded, Repatriated	Total
Psychosis—							
Army and A.T.S. ... ..	151	1,288	1,840	256	375	49	3,959
Others ... ..	281	289	410	183	505	224	1,892
Total ... ..	432	1,577	2,250	439	880	273	5,851
Psychoneuroses—							
Army and A.T.S. ... ..	4,226	5,772	546	—	1,194	33	11,771
Others ... ..	540	429	72	—	273	22	1,336
Total ... ..	4,776	6,201	618	—	1,467	55	13,107

<sup>(1)</sup> The figures are based on Hospital returns and have not been submitted to A.G. (Stats.).

## APPENDIX VIII

*Recommendations for the disposal of 2,056 aircrew at N.Y.D.N. Centres during the first six months of 1943*

**TABLE 11.**

—	Percentages
Full duty ... ..	37.6
Limited flying ... ..	16.8
Grounding—	
Temporary ... ..	15.5
Permanent ... ..	27.6
Invaliding ... ..	2.4
Total ... ..	100.0

*Recommendations for the disposal of 6,031 airmen and 1,604 W.A.A.F. at N.Y.D.N. Centres during the first six months of 1943*

**TABLE 12.**

—	Percentages	
	Airmen	W.A.A.F.
In-patient treatment ... ..	8.9	6.0
Full duty ... ..	30.3	40.3
Remustering ... ..	4.6	9.8
Limited duty ... ..	35.9	6.3
Invaliding ... ..	20.3	37.7
Total ... ..	100.0	100.0

*Predisposition in relation to disposal of 1,329 Flying Personnel*

**TABLE 13.**

Predisposition	Number	Disposal (percentages)			
		Full flying	Grounded	Others	Total
Nil ... ..	317	57	31	12	100
Mild ... ..	677	26	63	11	100
Severe ... ..	335	8	83	10	100

*Flying Stress in relation to disposal of 1,329 Flying Personnel*

**TABLE 14.**

Flying Stress	Number	Disposal (percentages)			
		Full flying	Grounded	Others	Total
Nil ... ..	493	21	73	6	100
Slight ... ..	401	27	61	2	100
Moderate ... ..	290	37	48	15	100
Severe ... ..	133	45	46	9	100
Exceptional ... ..	12	41	33	26	100

## APPENDIX IX

### *Admission of Service cases to E.M.S. Neurosis Centres during 1943 and 1944<sup>(1)</sup>*

TABLE 15.

	Army		Navy and Air Force		Total	
	Male	Female	Male	Female	Male	Female
1943 ... ..	7,913	838	426	253	8,339	1,091
1944 <sup>(1)</sup> ... ..	4,482	458	297	144	4,779	602

<sup>(1)</sup> January to June

### *Disposal of Army male In-patients at E.M.S. Neurosis Centres*

TABLE 16.

	Returned to Unit under Category <sup>(1)</sup>			Transferred to other Units	Category E. <sup>(1)</sup>	Transferred for Treatment Elsewhere		Deaths, Desertions, &c.	Total
	A	B	C			Physical	Mental		
1942 <sup>(2)</sup> Number ... ..	861	238	193	1,940	4,590	428	165	24	8,439
Percentage ... ..	10.2	2.8	2.3	23.0	54.4	5.1	2.0	0.3	100.0
1943 Number ... ..	880	280	365	1,417	4,803	362	172	15	8,294
Percentage ... ..	10.6	3.4	4.4	17.1	57.9	4.4	2.1	0.2	100.0
1944 Number ... ..	910	253	801	444	5,176	2,145 <sup>(3)</sup>	187	18	9,934
Percentage ... ..	9.2	2.6	8.1	4.5	52.1	21.6	1.9	0.2	100.0

<sup>(1)</sup> Medical categories A, B and C refer to first, second and third grade constitutions respectively. Category E means unfit for military service

<sup>(2)</sup> February to December.

<sup>(3)</sup> Includes a large proportion transferred to military convalescent depots.

## APPENDIX X

# EXTRACTS FROM THE RECOMMENDATIONS OF THE WAR OFFICE COMMITTEE OF ENQUIRY INTO "SHELL- SHOCK" (1922) (160)

### PREVENTION OF BREAKDOWN

#### *Recruiting.*

1. Every effort should be made at the time of enlistment to ascertain the nervous and mental conditions of candidates both from their previous histories and from their present condition.

2. Only "fit" men as judged by the pre-war standards for the regular Army should be enlisted into the regular Army. If it is desirable to accept men falling into Grade II or III of the Ministry of National Service for the Militia or Territorial Army, they should be re-graded (with those accepted for Grade I) every year.

3. All Regular, Special Reserve and Territorial Force Medical Officers should undergo a prescribed course of instruction in the methods of examination of recruits and the physical and mental standards required. Special officers should be earmarked in each district for these duties on mobilisation. In addition, a selection should be made from those who served with His Majesty's Forces or were employed as civilians on the examination of recruits during 1914-18, and a separate list kept of those selected.

4. On mobilisation the recruiting machinery should be expanded on the lines indicated above and measures should be taken to see that recruits receive an adequate medical examination. As soon as possible Medical Boards should take the place of single recruiting medical officers.

5. The allocation of recruits to suitable military units should be the function of Posting Boards advised by special medical officers.

6. If military service is made compulsory the procedure employed by the Ministry of National Service for the medical examination and grading of recruits should be put into operation.

#### *Training.*

1. Every possible means should be taken to promote morale, *esprit de corps* and a high standard of discipline.

2. Training should be sufficiently prolonged to ensure that the soldier is not only physically fit and efficient, but also that he has had time to acquire such a standard of morale as will enable him to put the welfare of his unit before his own personal safety.

3. Close observation should be made by officers, both regimental and medical, and by non-commissioned officers of the unit on individuals during the whole of their training, so that abnormalities from which mental or nervous instability may be inferred may not be overlooked. For this purpose there should be the frankest co-operation between regimental and medical officers.

4. The study of character, so far as it is applicable to military life, is recommended for all officers with a view to teaching Man-Mastership.

5. Special instruction should be given to Royal Army Medical Corps officers in the psycho-neurosis and psychoses as they occur in war, and selected officers should be encouraged to specialise in the study of these disorders.

*On Active Service.*

1. The practice of withdrawal of officers and men showing incipient signs of nervous breakdown or over-fatigue for rest either in the battalion or divisional area should be officially recognised and systematised.

2. So far as the military situation permits, tours of duty in the front-line in stationary warfare should be short, especially in bad sectors. Adequate rest and organised recreation should be provided for units when out of the line.

3. Monotony should be avoided by changing units, as circumstances permit, between fronts and sectors. Leave home should be encouraged.

4. The promotion of all measures making for good sanitation and the physical comfort of the men, both in the line and also in rest billets and base depots, should receive constant attention.

5. Rest of mind and body is essential in all cases showing signs of incipient nervous breakdown, and when possible it should be given under conditions of security, and comfort and freedom from all military duties.

6. The fullest use should be made of Convalescent Depots for re-training and hardening men discharged from hospital. These units should invariably be pervaded by an atmosphere of complete cure.

The above recommendations, suitably modified to meet particular circumstances, should be applied to the other fighting services.

## LIST OF ABBREVIATIONS

A.B.C.A.	...	...	Army Bureau of Current Affairs.
A.G. (Stats.)	...	...	Adjutant-General (Statistics).
A.M.P.	...	...	Air Member for Personnel (Member of the Air Council).
A.P.	...	...	Air Publication.
B.P.C.	...	...	Body Protection Committee (of the Medical Research Council); now known as the Military Personnel Research Committee (M.P.R.C.).
C.M.E.	...	...	Central Medical Establishment (Air Ministry).
D.S.P.	...	...	Director of Selection of Personnel (War Office).
E.F.T.S.	...	...	Elementary Flying Training School.
E.M.S.	...	...	Emergency Medical Service.
F.H.R.	...	...	early War Office intelligence tests named after the initials of the authors.
F.P.R.C.	...	...	Flying Personnel Research Committee.
G.C. 1	...	...	refers to a secret Radar instrument.
G.V.K.	...	...	Intelligence test used in the R.A.F.; the letters "G," "V," "K," refer to components of the test, measuring general, verbal and spatial (or practical) intelligence respectively.
I.T.W.	...	...	Initial Training Wing.
N.Y.D.N.	...	...	"Not yet diagnosed nervous" (name given to R.A.F. Neurosis Centres).
O.C.T.U.	...	...	Officer Cadet Training Unit.
P.M.R.A.F.	...	...	Princess Mary Royal Air Force Hospital.
P.N.B.	...	...	Pilot-Navigator-Bomb-aimer.
P.P.	...	...	Expert Committee on the work of Psychologists and Psychiatrists in the Services.
P.P. (S.C.)	...	...	Services Sub-Committee of the Expert Committee on the work of Psychologists and Psychiatrists.
R.D.F.	...	...	Radio Direction Finding.
R.N.A.H.	...	...	Royal Naval Auxiliary Hospital.
S.M.A. 3	...	...	Sensory Motor Apparatus, 3 (Air Ministry Test).
SP	...	...	Senior Psychologist (Admiralty).
S.P.	...	...	Selection of Personnel.
SP Form Q. 1	...	...	Senior Psychologist's Form, Questionnaire I.
T.R.	...	...	Training Recommendation (at Army Primary Training Centres and Wings).
W.O.S.B.	...	...	War Office Selection Boards (for selecting officer candidates).