

# **Physical Standards and Instructions**

FOR THE MEDICAL EXAMINATION  
OF SERVING SOLDIERS AND  
RECRUITS FOR THE CANADIAN  
ARMY. . . . .



**ACTIVE AND RESERVE 1943**

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## Section I

## GRADING IN GENERAL

1. Physical standards are designed for the use of Medical Boards of the Canadian Army (Active and Reserve). Two considerations should be kept in mind by Medical Officers on Boards examining recruits. The first is the danger of grading a man for overseas duty in face of a disability which may be regarded too lightly. It must be realized that this may involve a large expenditure in training, transport overseas and back, and maintenance, most of which may be profitless, and all of which lessens combat strength.
2. The second is the exact contrary—that a man in whom is found a disability of moderate grade, who has carried on his work as a civilian without interruption caused by that disability, and who is otherwise sound, should not be given an unnecessarily low category, which would either reject him or keep him from going overseas, only because of a vague uncertain fear that under war strain his disability might get worse and lead to discharge. To strike the happy mean requires clinical judgment in every borderline case.
3. The decision should be based primarily upon function, that is, the capacity to perform the work involved in a given type of military duty. In other words, while allocation of the recruit to a particular Corps or Arm (or to a particular speciality within the Corps or Arm) is not the responsibility of Medical Boards as such, the process of Medical Boarding, being based upon the general function to be performed by the recruit, necessarily involves an intimate relationship between medical grading and personnel selection.
4. For this purpose medical gradings have been set down under seven general sub-divisions of bodily and mental function. These sub-divisions are designated as follows:
  - P. Physique.—(This includes a man's general development, height and weight, his potential capacity to acquire physical stamina with training, his capacity for work.)
  - U. Upper Extremities. — (Functional use of hands, arms, shoulder girdle and upper spine.)



- L. Lower Extremities.—(Functional use of feet, legs, pelvis and lower spine, etc.)
  - H. Ears and Hearing.
  - E. Eyes and Eyesight.
  - M. Mental Capacity—Intelligence.
  - S. Stability (Emotional).
5. There are five grades in each sub-division, except that in M. & S. there are four. Grade 1 implies normal function; grade 5 signifies total disability for Army work. Grades 2, 3 and 4 are used to indicate intermediate degrees of functional ability
  6. The grades assigned under each sub-division are determined by the officers of the Board and are based upon the evaluation of the recruit's physical and mental equipment relative to Army functions. It is therefore necessary to view these grades not only in medical terms and standards, but also in terms appropriate to military duties. The anatomical lesion should not, of itself, in any rigid way, form the basis of classification or grading; although the strict medical condition, recorded and reflected in the grading assigned, plays a vital part in the analytical description of the man's physical and mental status. The grading must, however, be regarded also in terms of functional ability for types of Army work. These types of work, greatly increased in variety over those of former wars by the development of modern military science, cannot be learned in close detail by the large number of Medical Officers serving on Examining Boards for recruits and serving soldiers. But by regarding the gradings under each sub-division in terms appropriate to general functions, and by broadly classifying the various military tasks into functionally related groups, the purely medical standards on the one hand may be brought into close relationship with functional designations on the other.
  7. The system of grading may therefore be described in three ways, each of which is correlated with the other two:—
    - (a) Grading by Medical Standards.
    - (b) Functional Interpretation of Medical Grades.
    - (c) Classification of types of Army duties, based upon the system of functional grades.

These are presented in Sections II, III and IV respectively.



8. In deciding upon the particular grade to be assigned under any one of the seven sub-divisions, grades 1 and 5 will usually be recognized with comparative ease. Difficulty will frequently arise in connection with grades 2, 3 and 4. In general the decision should be made upon a prognosis as to whether or not the particular disability can be expected to become aggravated (with ultimate risk or downgrading, hospitalization or discharge), even if the man is appropriately employed. (Sections III and IV should be studied carefully in this connection.) In allotting grades 2, 3 or 4 examiners will set down, under "Remarks", a clear explanation of the diagnosis and their reasons for assigning the given grade.
9. In general, the grades are to be interpreted as follows:—
  - Grade 1 will be consistent with full combatant service;
  - Grade 2, with accessory or mechanized front-line work (drivers, mechanics, sappers, signallers) provided that the particular disability (grade 2) does not limit functional efficiency in the specialty assigned;
  - Grade 3, with duties on lines of communication or at the Base;
  - Grade 4, with appropriate Home War Establishment duties. (Any Grade 4 will be sufficient to limit a man to service in Canada—unless he is overseas when so graded, in which case he will be retained overseas. In general this grade reflects disabilities that are reasonably safe from aggravation under appropriate army life in Canada, but offer risk of aggravation under unfamiliar and more strenuous circumstances abroad. Whether applied to soldiers overseas or in Canada, it represents inability to assume duties in operational units.)
  - Grade 5, any Grade 5 represents reason for rejection or discharge.
10. *Remedial Treatment*—If a condition presents itself which by surgical operation or other treatment may be remedied within three months, the recruit in question may be accepted, or the serving soldier referred for treatment.

In case of disabilities that are considered to be remediable, and consent has been obtained for treatment, the letter "R" is placed immediately after the figure indicating the present grade under the appropriate sub-division. For example a man may be graded P4R in the case of a remediable hernia; or U3R in the case of limiting lipoma or arm or



shoulder. Training will be appropriately adjusted during the period preceding remedial treatment, and again subsequent to upgrading.

11. Each Examiner's report and grading will be entered on M.F.M.1 or 2 (or equivalent forms for N.P.A.M., C.W.A.C., etc.). When gradings under each of the seven headings are placed in the proper order, there is formed a fairly complete profile of the functional capacity of the individual.

The order specified for the reports of all Boards is:—

P--U--L--H--E--M--S

12. In addition to the seven sub-divisions, with the appropriate gradings, the age of the man examined will be represented by the last two figures of the year of birth, placed immediately before the Pulhems profile.

13. *Examples of Grading:—*

(1)

Year of Birth	P	U	L	H	E	M	S
09	1	1	1	1	1	1	1

This man is fit in every way.

(2)

Year of Birth	P	U	L	H	E	M	S
15	1	1	2	1	1	1	1

This profile indicates minor limitations of locomotion, sufficient to preclude full front line service.

(3)

Year of Birth	P	U	L	H	E	M	S
10	2	2	3	3	1	1	1

Some limitations of Physique and upper extremities, with more marked defects of locomotion and hearing.



(4)

Year of Birth	P	U	L	H	E	M	S
12	1	1	1	1	1	5	1

This man, while physically fit, is too low in mental ability to be useful in the army.

(5)

Year of Birth	P	U	L	H	E	M	S
14	2	1	4	5	1	1	1

Minor limitations of physique, locomotion adequate for acceptance for service in Canada only, hearing sufficiently impaired to warrant rejection or discharge.

(6)

Year of Birth	P	U	L	H	E	M	S
11	5	3	3	1	2	1	1

Rejection or discharge on grounds of physique.

(7)

Year of Birth	P	U	L	H	E	M	S
16	4R	1	1	1	1	1	1

Physique limiting the man to service in Canada until Remedial treatment warrants upgrading. Otherwise fit.

(8)

Year of Birth	P	U	L	H	E	M	S
13	3R	1	1	1	1	1	1

Similar to No. 7, but present condition, Grade 3.



14. When profiles of the type illustrated above are supplemented by the report of the Army Examiner (Personnel Selection Officer) concerning occupational and educational background, personal qualities, interests, attitudes, etc., they contribute markedly to effective personnel selection and placement, and to practicable application of standards of rejection or discharge. Thus a recruit represented by Profile No. 1 (above) is obviously fit to be placed and trained in a unit for full combatant duty. Profile No. 2 indicates a slight defect of locomotion, sufficient to preclude full front-line service; but the profile is not inconsistent with mechanized combat or heavy driving duties. Limitations represented in Profile No. 3 do not of themselves preclude such employment as that of clerk. Profiles No. 4, 5 and 6 indicate unfitness for active service because of limitations in mental capacity, hearing and physique respectively. Profiles No. 7 and 8 draw attention to remediable conditions.





## GRADING BY MEDICAL STANDARDS

### 1. General Instructions

15. The greatest care must be taken in the examination of a soldier or a recruit. The decision as to physical fitness rests entirely with the Medical Board concerned in the examination. Every man who is examined must be stripped and the examination conducted in a thoroughly systematic manner. In recording results on the Medical History Sheet, M.F.M.1 or 2 (or corresponding form for N.P.A.M. (MFB235d) and C.W.A.C. (M.F.M. 153) etc.) it is absolutely essential that all defects are noted and entered. Information obtained from the recruit or soldier must be secured and entered by a member of the Medical Board.
16. Since the descriptive analysis of the man's physical and mental status, represented by the Board's report, plays an important role in many major future considerations concerned with his welfare (e.g. considerations in regard to placement in the Army, pensions, etc.) not only must the functional grading be executed with great care, but also clear and adequate descriptions of physical and mental conditions, particularly those determining the gradings assigned, are essential.

### 2. Medical History

17. In appraising the physical and mental status of an individual the medical history is of paramount importance. The following points have been listed according to the order usually followed in taking the medical history of a recruit (M.F.M.2). They indicate the types of defect frequently discovered only by careful eliciting of the health history.
18. *Rheumatism or joint injury*:
  - (1) Rheumatic fever within previous two years.
  - (2) Arthritis with X-ray findings.
  - (3) Myalgia or fibrositis with presence of objective signs.
  - (4) Joint injuries which are totally disabling.
19. *Tuberculosis or other lung diseases*:
  - (1) Active tuberculosis of the lungs.
  - (2) Tuberculosis of the genito-urinary tract.
  - (3) Gross bronchiectasis.



- (4) Emphysema with chronic bronchitis and barrel chest or short breath.
  - (5) Empyema within previous three years.
  - (6) Tuberculous Pleurisy within previous three years.
20. *Bronchitis, Asthma and Hay Fever:*
- (1) Proven history of chronic (recurrent) Bronchitis.
  - (2) Proven history of chronic (recurrent) asthma.
  - (3) Hay Fever ordinarily should not be ground for rejection.
21. *Heart Disease:* A proven history of any of the following:
- (1) Coronary occlusion.
  - (2) Chronic Myocarditis.
  - (3) Progressive endocarditis.
  - (4) History of Pericarditis.
  - (5) High Blood Pressure, limits 150/100.
  - (6) A history of tachycardia or palpitation without organic base is not a ground for rejection.
22. *Kidney and Bladder Trouble:* A proven history of any of the following:
- (1) Chronic nephritis.
  - (2) Chronic Cystitis.
  - (3) Albuminuria (not orthostatic).
23. *Stomach, Bowels and Rectum:* A proven history of any of the following:
- (1) Peptic ulcer within the previous two years.
  - (2) Presence of rectal fistula (but not if superficial to sphincter ani).
  - (3) Colitis.
  - (4) Recurrent Appendicitis.
  - (5) Gall bladder attacks.
24. *Ruptures.* (See under Hernia).
25. *Varicose Veins.*
- (1) History of varicose ulcer, or a chronic eczematous or oedematous condition in lower leg, or swollen cyanotic feet.
26. *Foot Trouble:*
- (1) History of corns, calluses, acute or chronic foot strain, or



injuries which impair locomotion, should be carefully obtained in order that the Examining Officer may make a decision as to whether or not the applicant should be accepted.

27. *Nose, Throat, Antrum or Sinus Trouble:*

(1) A proven history of frequent sore throats with recurrent pan-sinusitis demands a thorough investigation.

(2) Nasal obstruction alone or chronic tonsillitis alone, are not a cause for rejection.

28. *Ear Disease:*

(1) Proven history of existing chronic recurrent middle ear disease with perforation of drum, is a ground for rejection.

29. *Eye Disease:*

(1) History of chronic, recurrent, or progressive eye disease should be carefully obtained, and acceptance or rejection will depend on the history and physical findings.

30. *Mental or Nervous Trouble:*

(1) Proven history of institutional treatment must be carefully investigated.

(2) Proven history of enuresis beyond age of 13 calls for a psychiatric examination.

(3) Proven history of convulsions or fits is a ground for rejection.

(4) Proven mental defectives should be rejected.

(5) Proven alcoholics and drug addicts should be rejected.

(6) History of marked psychoneurosis, instability, persistent delinquency, poor educational and occupational background should lead to very careful psychiatric investigation. (See mental status).

31. *Syphilis:*

(1) A proven history of neuro-syphilis or cardio-vascular syphilis, deep visceral syphilis is a ground for rejection.

(2) Early syphilis amenable to treatment is not a ground for rejection.

32. *Gonorrhoea:*

(1) Recent gonorrhoea amenable to treatment is not a ground for rejection.



33. *Skin Disease:*

(1) A proven history of chronic recurrent skin disease is a ground for rejection. (See Skin Disease).

34. *History of Previous Military Service in Great War or previous service in this War.* Should be enquired into and previous disability recorded.

## 3. Physical Examination

## 35. The following directions for general physical examination will be followed whenever there is a question of medical grading involved. No examination will be carried out unless the man is completely undressed. His height, weight and chest measurements are recorded.

## 36. He is directed to walk up and down the room smartly two or three times, to hop across the room on the right foot, and back again on the left. The hops should be short and upon the toes.

He is halted, standing upright, with his arms extended above his head, while the medical officer walks slowly round him carefully inspecting the whole surface of his body.

## 37. An estimate is formed of the general physique and of his age.

The objects to be observed and noted in this part of the examination are the following: the general physical development; the formation and development of the limbs, the power of motion in joints, especially in the feet and hips; extreme flatness of the feet; formation of the toes; skin disease; varicose veins; cicatrices of ulcers; and any special marks from congenital or accidental causes and tattoo marks.

38. *Examination of the Trunk*—The trunk is examined from below upwards. The following will be the order of inspection:—

The medical officer notes indication of venereal disease.

He examines the scrotum to ascertain if the testicles have descended and are normal, or if there be varicocele or other disease.

He inserts the point of his finger by invagination of the scrotum in the external abdominal ring on each side, and directs the man to cough two or three times to ascertain if he be ruptured.

He examines the abdominal walls and parietes of the chest.



39. *Examination of the Chest*—Careful clinical examination of the heart and lungs is carried out. Particular search should be made for post-tussic crepitations at the bases. A flat X-ray plate of the chest will be made on all recruits. (See Section II, Appendix I).
40. *The Upper Extremities*—The examination of the upper extremities will be made from below upwards. Time is saved by the medical officer himself acting as well as telling the man the movements he desires to be made.  
The following are the directions:—  
Stretch out your arms with the palms of your hands upwards.  
Bend the fingers backwards and forwards.  
Bend your thumbs across the palms of your hands.  
Bend your fingers over your thumbs.  
Bend your wrists backwards and forwards.  
Bend your elbows and rotate your forearms.  
Swing your arms around at the shoulders.  
This comprises the inspection for loss or defects of the fingers, thumbs, wrists, elbows and shoulder joints, and power of rotating the forearm.
41. *The Lower Extremities and Back*—The inspection of the lower extremities and back will be made from below and upwards. recruit first faces the medical officer, afterwards turns his back to him.  
The following are the directions given facing:  
Stand on one foot, put the other forward.  
Bend the ankle-joint and toes of each foot alternately backwards and forwards.  
Kneel down on one knee.  
Up again.  
Down on the other knee.  
Up again.  
Down on both knees, and up from that position with a simultaneous spring of both legs.  
Turn around.  
Separate the legs.  
Touch the ground with the hands.  
Test knee and ankle reflexes.  
While the recruit performs these movements the medical officer

will observe the action of the knee-joints, the conditions of the perineum and the spinal column. This includes the inspection for defects of the toes, ankle and knee joints; for haemorrhoids, prolapsus ani, fistula in perineo and spinal deformity.

42. *The Head and Neck*: The examination of the head and neck will be made from above downwards. The medical officer will note the intelligence, character of voice and power of hearing of the recruit by his replies to the questions put to him. The following are the directions:

Have you had any blows or cuts on the head?

Are you subject to fits of any kind?

He examines the scalp.

He examines the ears.

He examines the nostrils.

He examines the mouth, teeth, palate and fauces, and then tells the recruit to say loudly "Who comes there".

He examines the neck.

He tests pupillary reflexes.

This comprises the inspection for injuries of the head, deafness, disease of the ears, defects of voice; polypus of nose; glandular enlargements and defects of the eyes and teeth.

43. *Teeth*: The partial or total absence of natural teeth, and the carious or other defective conditions of those remaining will not constitute causes for rejection. The possession of dentures is not obligatory. Recruits will not be accepted, however, with marked malformation of the jaws.

44. *Urine*: See Section II, Appendix II.

45. *Age*: Except as provided hereunder, minimum age is 18 years, maximum age is 45 years.

Recruits whose grading bars them from Overseas duty and who are not over 50 years of age who possess qualifications for employment as tradesmen or specialists may be enlisted into Active Units on Home War Establishments.

Recruits within any medical grading above Grade 5 and not less than 18 or more than 50 years of age may be accepted for enlistment into all units of the Reserve Army.

The maximum age for Canadian Forestry Corps Units is 50 years.

For the Veterans Guard of Canada, Active and Reserve, the maximum age is 55 years.



The same standard as above will apply to the medical examination of Officers, except that there is no upper age limit for officers.

46. *Standards for Chest Measurements:* At least 32 inches at expiration.

The recruit will be made to stand erect with his feet together, and to raise his arms over his head. The tape will be carefully adjusted round the chest with its upper edge at the back touching the inferior angles of the scapulae, and its lower edge in front, the upper part of the nipples. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The recruit will then be directed to take a deep inspiration several times, and the maximum expansion of the chest will be carefully noted. It is often attempted to conceal the true minimum measurement, but it can be obtained by a little manipulation and by drawing off attention from the examination by a few questions.

The maximum expansion rarely exceeds the average minimum by more than 2 or  $2\frac{1}{2}$  inches.

In recording measurements, fractions of less than half an inch should not be noted. The maximum is the standard measurement, and a recruit must also reach the range of chest expansion laid down in the table of physical equivalents.

47. *Height*—The minimum standard for height is five feet. The recruit will be placed against the standard with the feet together, and the weight thrown on the heels, and not on the toes or outside of feet. He will stand erect, without rigidity, and with the heels, calves, buttocks and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar, and the height will be noted in parts of an inch to quarters.
48. *Weight*—The minimum standard of weight is 104 pounds. The following table showing correlation of height, weight and chest measurement is for guidance.

Variations from the standard given in the table are permissible when the applicant is active, has firm muscles, and is evidently vigorous and healthy.

Weight above the standard is not disqualifying, unless sufficient to constitute obesity.

**BODY BUILD—MALE**

Weight				Chest Measurement	
Height	Minimum	Average	Maximum	At Expiration	Range of Expansion
5'	104	123	142	32	2
5'1"	106	126	146	32	2
5'2"	109	129	150	32	2
5'3"	112	133	154	32	2
5'4"	114	136	158	32	2
5'5"	117	139	162	32	2
5'6"	120	144	168	32½	2
5'7"	124	149	174	33	2
5'8"	129	154	179	33½	2½
5'9"	136	159	183	34	2½
5'10"	144	166	184	34½	2½
5'11"	151	169	186	35	2½
6'	158	173	189	35½	3

**4. Physique (P)****A. General**

49. Assessment of the man's physique is to be based upon careful observation of such general things as apparent muscular development, age, height, weight and the correlation of these; potential ability to acquire physical stamina with training. *(Any disability affecting general health and capacity for work and not specifically referable to any of the other Pulhems subdivisions, will affect this grading).*
50. The assessment will, in general, conform to the following gradings:—
- P1 — Fit
  - P2 — Mild disability
  - P3 — Moderate disability
  - P4 — Marked disability
  - P5 — Unfit



51. The actual grading by the figures 1, 2, 3, 4 and 5 will represent the examiner's opinion concerning the recruit's general physical capacity to carry out the work which is briefly described in the text, and in Sections III and IV. Stamina is probably the best word to define the general meaning. Thus, for example, a small thin man with poor muscular development, who has been a "sedentary" man all his life, has not played games, and who looks as if he could not undergo Basic Training or Advanced Training, could not be graded P1 or P2, which is reserved for the front line. Similarly a recruit who is constitutionally obese, although otherwise a grade 1 or 2 man, should have a P3 or even P4 grading. If Basic Training later makes him fit he can be recategorized upward.
52. *Correlation of Height, Weight, Chest Measurement and Age*—The height, weight and chest measurement of a man should accord with each other, and with his age, agreeably to the table of standards laid down in these instructions. Regarding weight, this table is to be considered as a guide only, and the medical officer is to exercise his own judgment as to general fitness of the man under examination.
53. *Determination of Age by Physical Development* — Should a recruit on presenting himself for enlistment, bring no satisfactory proof of his age, the medical officer who examines him, will by comparing the height with the weight and general development, and also from the recruit's appearance, decide his age, which will be entered on the Medical History sheet "apparent age".

#### B. Cardio-Vascular System

54. It is suggested that examination of the heart always be conducted with the recruit in the recumbent position and also in the left lateral position. When a murmur is discovered the effect of exercise, posture, and respiration should be determined and recorded. It is obligatory that the examiner should describe and record all murmurs regardless of his opinion in respect to their significance.
55. Cardiac reserve may be roughly estimated by a history of the manual work and the athletic activities that have been well tolerated; that is, without undue fatigue, dyspnoea, faintness, palpitation, or signs of congestive failure. Exercise tolerance tests may give some information in doubtful cases. The production of obvious dyspnoea and distress by these tests is more significant than the effect on the pulse.

56. *Significant Cardio-Vascular Disease* is rarely overlooked after careful physical examination and X-ray. Slight departures from what is physiological should not be regarded too seriously. For this reason no recruit should be placed in a minor grade in the absence of demonstrable physical evidence of disease. The following rules should apply:—

57. *Cardiac Hypertrophy*—The impression gained by physical examination must be corroborated by the X-ray films. Normal hearts may appear to be enlarged on the X-ray under the following circumstances: Scoliosis, Fibrosis of Pleura or lung, Funnel-shaped Deformity of Thorax, Hypersthenic individuals, and defective X-ray technique. All these conditions should be ruled out before the X-ray opinion, as to hypertrophy, is accepted. If the transverse diameter of the heart is more than 55% of the transverse diameter of the inside of the thorax at its widest point, the man should be placed in Grade 5.

58. *Murmurs*—(a) *Diastolic Murmurs* of all sorts call for rejection. They sometimes are passed, having been thought to be systolic in time. Such errors can be prevented if every murmur is carefully timed by the apex thrust or the carotid pulse.

(b) *Pre-Systolic Murmurs* are difficult to identify with certainty. If actually present they indicate rheumatic endocarditis (mitral stenosis) and call for Grade 5. But the presence of mitral stenosis must be judged on signs that are less subtle than a pre-systolic murmur, i.e., a thrill and characteristic cardiac confirmation as shown on the X-ray.

Every supposed pre-systolic murmur must be associated with at least one of these findings before mitral stenosis is diagnosed. In cases of doubt the recruit should be referred to the consultant physician.

(c) *Systolic Murmurs* unassociated with other definite signs of cardio-vascular disease are to be noted but do not influence grading. Although most cases of gross heart disease are associated with a systolic murmur, it is also true that most systolic murmurs are not significant. Their presence calls for an exhaustive examination and the case must be disposed of on the associated findings. The signs to be particularly looked for and their significance are noted below:—

(i) A definitely palpable thrill indicates organic disease and places the recruit in Grade 5.



51. The actual grading by the figures 1, 2, 3, 4 and 5 will represent the examiner's opinion concerning the recruit's general physical capacity to carry out the work which is briefly described in the text, and in Sections III and IV. Stamina is probably the best word to define the general meaning. Thus, for example, a small thin man with poor muscular development, who has been a "sedentary" man all his life, has not played games, and who looks as if he could not undergo Basic Training or Advanced Training, could not be graded P1 or P2, which is reserved for the front line. Similarly a recruit who is constitutionally obese, although otherwise a grade 1 or 2 man, should have a P3 or even P4 grading. If Basic Training later makes him fit he can be recategorized upward.
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53. *Determination of Age by Physical Development* — Should a recruit on presenting himself for enlistment, bring no satisfactory proof of his age, the medical officer who examines him, will by comparing the height with the weight and general development, and also from the recruit's appearance, decide his age, which will be entered on the Medical History sheet "apparent age".

#### B. Cardio-Vascular System

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(ii) A definite diastolic murmur may be brought out by exercise and change of posture and disposal made on grounds of diastolic murmur.

(iii) Hypertension may be discovered and disposal is made in accordance with the rules laid down.

(iv) The X-ray may show right or left cardiac hypertrophy and calls for rejection as laid down under Cardiac Hypertrophy.

59. *Arrhythmias*—Sinus arrhythmia and occasional extra systoles are of no significance. Frequent, regularly recurring and persistent extra systoles call for a searching cardio-vascular examination and the opinion of a consultant. Cases with definite evidence of paroxysmal tachycardia should not be higher than Grade 4. Articular fibrillation and heart block, place the recruit in Grade 5.

60. *Blood Pressure*—A recruit is considered to have hypertension when the systolic pressure is in excess of 150 millimeters of mercury and/or the diastolic pressure is in excess of 100 millimeters of mercury, diastolic pressure being based on diminution of sound and not disappearance of sound. It is suggested that these readings be obtained with the recruit in the recumbent position over a period of at least three-quarters of an hour. Where the case is in doubt, *a diagnosis of hypertension would not be made on a single reading*, since the excitement attending examination will in some individuals transiently elevate the blood pressure.

(a) Recruits with arterial hypertension, as above defined, regardless of the size of the heart, the exercise tolerance, or the presence or absence of endocardial disease, should be placed in Grade 5 except as in sub-para. four below.

(b) Recruits with elevation of the blood pressure almost up to the level defined with slight enlargement, i.e., cardio-thoracic ratio in excess of 55", or with limitation of effort, or albuminuria, are considered unfit for Active service and should be placed in Grade 5.

(c) Elevation of the diastolic pressure above 90 must be regarded with suspicion; albuminuria must be particularly looked for.

(d) Recruits under 30 with systolic pressure up to 170 but normal diastolic and otherwise normal cardio-vascular system, as determined by a consultant, may be Grade 3.



61. *Anginal Pain: Coronary Thrombosis*—Attacks of Angina on Effort or coronary pain, if confirmed by consultation, call for Grade 5. An attack of coronary thrombosis places the recruit in Grade 5.

62. *Effort Syndrome (D.A.H.)*—The recruit giving a history of Effort Syndrome should be examined by the Internist and Psychiatrist, and if the history is substantiated and there are marked signs of general physical inferiority or emotional instability, he should be Grade 5—otherwise to be enlisted Grade 4.

The soldier suffering from Effort Syndrome should be categorized depending on the exciting cause of the Effort Syndrome.

63. *Goitre*—(a) Non-Toxic Diffuse Goitre.

A recruit with non-toxic diffuse goitre, if not so large as to cause undue deformity and/or pressure symptoms, is eligible for Grade 1; others should be rejected. This condition is met with in only the young recruit. In individuals over 25 years of age these simple adolescent goitres become nodular.

- (b) Non-toxic Nodular Goitre.

A recruit with a small non-toxic nodular goitre should ordinarily be placed in Grade 1, but if unduly large or if it interferes with his collar or causes pressure symptoms or deviation of the trachea he should be rejected.

- (c) Toxic Goitre.

A recruit with a toxic goitre, either diffuse or nodular, should be rejected.

A man who has been operated on for toxic goitre should not be considered for enlistment for at least one year after operation, and then even if apparently well, not in a grade higher than 3 or 4 at the discretion of the Board.

64. *Varicose Veins*—(a) Internal or Long Saphenous.

Varicose Veins in general involving the internal saphenous vein are divisible into two distinct groups:—those which are confined to the leg below the knee, and those which involve the thigh also up to the sapheno-femoral junction. When the latter are not visible or distinctly palpable, the Trendelenburg test must be done.



(i) In the "below-knee" class the valves above the knee are obviously competent and there is no reverse flow of the blood in a long column from groin to foot. The valvular incompetency is therefore confined to a segment of the superficial venous system in the lower leg, and in the young, without previous history of mechanical causes such as the rare condition of deep femoral phlebitis, may be interpreted as due to a localized congenital imperfect laying down of the valves. As communications are free with the rest of the superficial veins, and particularly with the deep femoral vein, the return of blood to the heart is not materially impeded, and, indeed, is rather favoured than otherwise by the muscular action of exercise. Symptoms are very often entirely absent and such cases may be enlisted in Grade 1 or 2. Treatment by injection or operation is unnecessary.

The condition just described may in rare cases be unusually extensive, reaching from knee to foot, and may then be accompanied by symptoms of tiredness or aching after prolonged standing, without walking, as on some sentry duties; but here the recruit with such a history may still be enlisted under Grade 3, as the condition is easily remediable with an elastic stocking, or eventually by injections.

(ii) When the sapheno-femoral valve is found incompetent there exists a reverse flow of blood in the whole leg, in the erect position, and varicosities will usually be visible or palpable in the thigh as well as below. The Trendelenburg test will be positive (see below). Mild symptoms as above are commonly present; but also often absent. Such cases in the early stage with skin perfect are still remediable by elastic stockings, or, if necessary, by high ligation in the groin with usually retrograde injections, either at the time or later, and may consequently be enlisted in Grade 4R. If operation is refused the grade remains 4.

If open ulcer or a healed ulcer is present, grade should be 5. If oedema and chronic thickening of the skin or eczema in the leg or foot is found, grade is 5. A few small pigmented spots, with no history of ulcer or of deep phlebitis, and with leg otherwise in good condition, may permit Grade 4R. One or two phlebo-



liths need not cause rejection. A history suggesting an attack of deep femoral phlebitis, with later development of compensatory varicosities, imposes Grade 5. Such cases need special tests for diagnosis.

65. (b) *Lesser Saphenous*—These veins empty into the popliteal vein, but there are superficial communicating veins with the long saphenous which occasionally are also varicose. It is important to distinguish the two systems.

The varicosities are confined to the lower leg posteriorly and laterally. In some cases the upper ones may be found as high as the upper end of the popliteal space.

If, as usual, they cause no symptoms, treatment is unnecessary, and Grade 2 or 1 may be given. When symptoms are complained of they constitute a discomfort rather than a disability, and Grade 2 or 3 may be assigned. It is rare when these veins are attacked by phlebitis, or ulcer. Is so, Grade 5 is indicated.

66. *Diagnostic Tests in Varicose Veins*—In the presence of Varicose Veins below the knee it is desirable to know four things:—

(a) Are the veins above the knee, often invisible, varicose or not? In particular is the sapheno-femoral valve competent or not?

(b) Is the lesser saphenous vein varicose; that is, is the sapheno-popliteal valve competent or not?

(c) Is the deep system of veins, tibial, popliteal, and femoral, open and competent?

(d) Are the valves of the communicating veins from superficial to deep competent?

Incompetency of valves under (c) and (d) is rare.

67. With incompetent valves above the knee, the dilated thigh veins can usually be seen or felt. Sometimes, with much subcutaneous fat, this is not possible. In such cases, the Trendelenburg test should be carried out. With the patient standing, observe the whole limb, and notice the position and degree of distention of the veins below the knee. Then lay the recruit on an examining table; elevate the leg; empty the veins; compress the long saphenous in the groin, just medial to the femoral artery, with two fingers or with bandage or rubber band; stand the recruit up, remove the finger pressure or band, and observe the rate at which the veins below the knee fill up.

If this occurs immediately, the sapheno-femoral valve at the top and all other lower valves are grossly incompetent.

If it occurs more slowly, but within 5 to 10 seconds, the valves are only partly incompetent.

If it takes 30 to 60 seconds for the veins to fill up, the valves above the knee are competent and the venous blood is coming with normal slowness from the capillary bed of leg and foot.

If it takes more than 10, and less than 25 seconds, the lesser saphenous vein may be incompetent and the blood is in reverse flow from the popliteal and through superficial veins communicating with the long saphenous. This may be obvious from the postero-lateral situation of the lesser saphenous varicosities. But it may also mean that, though the lesser saphenous is competent, the communicating veins between deep and superficial systems are incompetent and allow blood to flow from the deep to the superficial.

68. The question can be settled by a constriction just below the popliteal space with bandage or rubber band, preventing back-flow from the popliteal into the lesser saphenous. If now the veins should dilate in the same length of time, the conclusion is that it is the communicating veins which are at fault.
69. A block of the deep femoral vein from old phlebitis, with compensatory superficial varices, is a rare event, but should always be excluded. In general, if the foot of the varicose leg does not become cyanotic on walking or standing, the deep femoral is almost certainly open and the valves competent. But a very simple test had better be carried out—the Perthes test. The recruit stands and faces the examiner. A rubber band (ordinary rubber tubing will do) is placed around the thigh above the mid-level and tightened only sufficiently to obstruct the superficial venous current. Following this procedure the size of the veins below the rubber band will usually change very little but when the recruit is asked to walk smartly to and fro across the room a few times (in all 20 to 30 smart steps should be sufficient) the enlarged vein quickly empties and often little evidences of it remains. This response is proof of the efficiency of the deep circulation and may be taken as evidence of the stimulating effect on the venous circulation of muscular activity.

### C. Respiratory System

70. The taking of radiographs of each recruit does not obviate the necessity of a careful history and examination of the lungs.



*The radiograph will detect tuberculosis but will fail to disclose many cases of non-tuberculous pulmonary diseases—conditions which are much more common. These conditions can usually be discovered by history and physical examination.*

71. *Thoracic Deformities*—Pigeon breast or funnel deformity, if not very marked, is compatible with complete physical fitness. Kyphotic and scoliotic deformity of mild degree may be graded "1"; moderate degree not higher than grade "4" and marked cases, Grade 5.

72. *Non-Tuberculous Pulmonary Diseases—*

(a) *Chronic Bronchitis*—If rales or rhonchi are heard in the chest of a recruit who gives a history indicating chronic non-tuberculous pulmonary disease, and the examiner is in doubt, the recruit is to be deferred and re-examined in one month.

A soldier with a long history of chronic cough and sputum with rales or rhonchi heard in the chest repeatedly over a period of months is to be graded not higher than Grade 4. If considerable pulmonary disability or ill health is present, Grade 5.

(b) *Non-Tuberculous Pulmonary Fibrosis*—Cases showing a small amount of fibrosis with slight impairment of pulmonary function may be graded not higher than Grade 4. All cases with moderate or marked fibrosis are to be graded 5.

(c) *Emphysema*—Pulmonary emphysema is the commonest cause of respiratory breakdown in the Active Forces. Careful examination at Reception Centres will discover most cases. Every recruit above the age of 35 should be suspected. The shape and motility of the thorax should be carefully noted, beginning barrel shaped deformity can often be best appreciated when the recruit is supine. Mild cyanosis, weak breath sounds and epigastric pulsation are suggestive findings. X-ray evidence (low flat diaphragms, increased penetrability, and horizontal position of the ribs) often give valuable confirmatory evidence. A history of unproductive paroxysmal morning cough and dyspnoea on effort may be discovered on direct interrogation.

All men with moderate or severe emphysema with symptoms are to be graded 5.

(d) *Asthma*—Men having mild (not incapacitating) asthmatic attacks at very infrequent intervals and only under exceptional circumstances such as during a pollen season or as a result of certain rare inhalents or foods, may be graded not higher than 4.

All cases having moderately severe, or frequent attacks of asthma, and those where the attacks are not attributable to causes such as outlined above, to be graded 5.

Hay Fever—Mild seasonal hay fever or attacks at infrequent intervals do not influence grade. If attacks are severe and prolonged, Grade 3.

(e) *Bronchiectasis*—Cases of bronchiectasis with absent or mild symptoms and no appreciable loss of pulmonary function may not be graded higher than 4. All other cases of bronchiectasis to be graded 5.

(f) *Other Pulmonary Condition*—Mediastinal masses, silicosis, lung abscess to be graded 5.

(g) *Acute Non-Tuberculous Pulmonary Condition*—Cases showing symptoms, signs, or X-ray findings of acute or sub-acute pulmonary infection should be temporarily rejected and re-examined in one month.

73. *Pleurisy*—A history of “dry pleurisy” is too vague to be of significance. If it appears likely that effusion has been present the recruit shall be regarded as potentially tuberculous and disposed of in accordance with the following circumstances:—  
In Grade 1 if:

(1) Three years of good health and normal activity has intervened since the pleurisy.

(2) The lungs show no pulmonary involvement.

(3) Evidence of residual fibrosis of pleura is minimal; this is to be judged by indrawing, reduced movements, shifting of mediastinum, and evidence of pleural calcification.

74. *Pulmonary Tuberculosis*—An authentic history of active pulmonary tuberculosis (substantiated if possible by sanatorium reports or X-ray films) during the previous five years places a recruit in Grade 5. If there has been an interval of five years with good general health, no cough or expectoration, and X-ray is normal, or shows evidence of minimal healed disease only, as outlined in Appendix I, the Grade may be as high as 1.



Cases with symptoms, signs, or X-ray findings, suggesting active tuberculosis disease shall be disposed of by the consultant. They should be immediately referred to the Provincial Health Department for observation, treatment or differential diagnosis.

75. *Chest Wounds*—In penetrating wounds of the chest with impairment of pulmonary function the Grade assigned will depend on secondary changes. Suggested grades resulting from these possible secondary changes are found above.

#### D. Digestive System

76. *Peptic Ulcer (Duodenal and gastric)*—Recruits presenting proof of having had an active peptic ulcer, symptomless for two years or more, may be graded not higher than 4.  
Recruits with proven chronic peptic ulcer with symptoms within two years to be graded 5.
77. *Functional Dyspepsia*—Recruits giving a history suggestive of mild Functional Dyspepsia and otherwise fit may be graded 1 and 2.

Recruits giving a history of moderately severe functional Dyspepsia, particularly if they show evidence of other functional disturbances, to be seen by Medical Consultant and by Neuropsychiatrist before grading is completed. These causes should be graded either 4 or 5 depending on individual findings.

78. *Other Diseases of the Digestive Tract*—Grave or incapacitating diseases of the gastro-intestinal tract will be graded 5.
79. *Surgical Conditions*—

(a) *Haemorrhoids* that have not caused symptoms may be accepted in any grade otherwise indicated.

When of moderate severity causing occasional bleeding or mild attacks of phlebitis the recruit may be accepted in Grades 2 or 3R. If of severe grade with much bleeding, difficult to reduce, with a history of several attacks of phlebitis, and especially if accompanied by definite prolapse of the lower rectum, the recruit should be rejected (Grade 5).

(b) *Fissure in Ano*—This condition is a remediable one. The grade may be that appropriate to the rest of the graph with the letter "R" added. If operation is refused, Grade 3 may be given, but if there have been several attacks

and the fissure has become chronic and causes pain frequently the grade is 4.

(c) *Fistula in Ano*—If the fistula is a superficial one, which can be cured by excision, without risk of involving damage to the sphincter ani, either external or internal, the recruit may be graded on the basis of the rest of his graph, with the addition of "R". If the operation is refused he may still be given Grade 3. There should be no suspicion of a tuberculous origin, such as might be suggested by a history of chronic onset, long standing, and possible associated evidence of tuberculosis elsewhere.

If the fistula runs high outside the sphincter ani, and above the levator ani, Grade 5 should be assigned.

(d) *Pilonidal Cyst*—Nearly all cases are remediable by thorough excision, and should be graded on the basis of the rest of the graph, with the added "R".

With a history of repeated attacks of inflammation and if the recruit refuses operation, Grade 5 is applicable.

#### E. Mouth, Nose, Fauces, Pharynx, Trachea, Oesophagus and Larynx

80. Care must be taken to check the medical history for evidence of the following conditions:—

(a) Frequent sore throats, including quinsy and swelling of the glands in the neck.

(b) Nasal or post-nasal discharge with or without headaches.

(c) Any nasal or sinus operation.

81. *Tonsillitis*. Men suffering from chronic tonsillitis may be included in grade 1. Similarly enlarged tonsils or adenoids will not cause men to be down-graded. A notation of conditions of this type, however, must always be made on M.F.M.1 or 2, in order to indicate the pre-enlistment condition.
82. *Tumours*. Men with small benign tumours of the nasal or buccal mucous membrane may be placed in grade 1. Small nasal polypi, however, will cause the grade to be 3 and if the condition is severe or multiple it should be grade 5.
83. *Nasal Septum*. Deviation of the nasal septum which allows more than 50% of nasal breathing need not cause downgrading. Men with perforated septums, however, should be placed in



grade 2. If the septum is deviated sufficiently to interfere markedly with nasal breathing, the man must be placed in grade 4.

84. *Sinusitis.* Men with acute primary sinusitis may be placed in grade 1. If they have chronic sinusitis with mild symptoms they should be placed in grade 4. If the symptoms are severe they should be placed in grade 5.
85. *Rhinitis.* Mild vasomotor rhinitis need not cause downgrading. Men with atrophic rhinitis, however, will be placed in grade 3 if the condition is not associated with offensive odour—otherwise, grade 5.
86. *Mouth breathers.* Men who are mouth breathers, if the condition is not associated with multiple polypi or markedly deviated septum, can be placed in grade 2.
87. *Hay Fever.* Men who give a definite history or show evidence of mild hay fever may be placed in grade 2. Severe hay fever necessitates grade 3.
88. *Other Conditions.* Laryngitis, unless due to tuberculosis, syphilis or malingering, will not cause downgrading. Laryngeal paralysis, however, should cause the man to be placed in grade 5. Other conditions causing grading in 5 are:
  - (a) Marked deformities of the mouth, throat and nose which interfere with mastication of ordinary food, speech or breathing.
  - (b) Unrepaired cleft palate.
  - (c) Aphonia.
  - (d) History of repeated nasal operations.

#### F. Neurological Disorders

89. A neurological examination will be carried out on each recruit as a part of the general medical examination. This will include at least a check on the function of the cranial nerves and quick tests of motor power, and sensory appreciation as well as the deep reflexes and the Rhomberg sign. Disorders or diseases with a progressive or recurrent course will always cause the man to be assigned to Grade 5. Men with non-progressive disabilities (e.g., certain types of paralysis) may be placed in Grade 4, provided they have special desirable qualifications for a particular job in the Army.



90. *Syphilis of the central nervous system.*—A history of asymptomatic or symptomatic neuro-syphilis shall be reason for rejection. (See para. 104.)
91. *Tumours of central nervous system.*—A history and evidence of an operation for a tumour of peripheral nerves, spinal cord or brain, is sufficient to place the recruit in Grade 5.
92. *Meningitis.*—Recruits with a history of meningitis of any type should be placed in a category higher than Grade 5, only if they have been and are completely symptom free for over two years after the illness.
93. *Brain abscess.*—A history of brain abscess is sufficient to place the man in Grade 5.
94. *Neuritis.*—Recruits with a proven history of multiple neuritis within the past five years will be placed in Grade 5. A higher category may be assigned if the recruit has been symptom free for five years, and has no signs of neuritis, he may be assigned to Grade 1. In the case of recruits with residual signs of a mononeuritis they may be assigned Grade 2, if the degree of paralysis is mild, and if the residual symptoms do not interfere with locomotion, and in the case of the upper limb providing the master hand is not affected. Recruits with more severe degrees of paralysis may be assigned Grade 4 providing the recruit has special qualifications (technical training) which fits him for sedentary work. Recruits who have had recurrent attacks of sciatica and who have neurological signs of nerve involvement, will be assigned Grade 5. Recruits with a history of one attack of a sciatic neuritis may be assigned Grade 4 if the attack was of short duration (usually 3 weeks or less) and if they are now free of signs of nerve involvement.
95. *Acute Anterior Poliomyelitis.*—History of a proven attack within two years prior to enlistment will serve to place a recruit in Grade 5. A higher category may be assigned such as Grade 2, if the resulting paralysis has been very mild and if it does not interfere with locomotion. Grade 4 may be assigned in cases with greater paralysis and there may be moderate interference with locomotion if the recruit has technical training which fits him for a special sedentary job in the army.
96. *Cerebrovascular accidents* including hemorrhage, thrombosis and embolism. A proven history of subarachnoid hemorrhage (unless due to trauma) will be sufficient to place a recruit in Grade 5.



97. *Epilepsy*.—If the diagnosis of epilepsy is established and includes grand mal or petit mal attacks, Grade 5 is assigned. Cases with Jacksonian epilepsy from any cause will be placed in Grade 5. Care must be exercised in interpretation of attacks of unconsciousness and the diagnosis on the history alone should be made only by a neurologist.
98. *Head Injuries*.—A recruit with a proven history of a severe head injury and causing loss of consciousness or amnesia for more than 24 hours, with history of hospitalization, should be placed in Grade 5. Recruits with a history of a depressed fracture of the skull or who have a cerebral decompression, are to be placed in Grade 5 unless special permission is obtained from N.D.H.Q. Recruits giving a definite history of a post-traumatic cerebral syndrome with loss of time from work, exceeding two to three months should be placed in Grade 5. Great care should be taken before assigning a category higher than Grade 5, where there is a history of severe head injury even in childhood. Recruits with a proven history of a moderate head injury under 16 years of age, from which they have made a full recovery, may be placed in Grade 4 if they have a stable personality. A history of a moderate head injury (unconsciousness or amnesia less than 24 hours), with a proven history or hospitalization need not disqualify for Grade 4 providing the recruit did not receive compensation or disability insurance of any kind and providing the recruit has been entirely free from symptoms for two years.
99. *Congenital Anomalies and diseases dating from birth*.—The presence of such disorders will be sufficient to place the recruit in Grade 5, if they are incapacitating, for example, Little's Disease. All minor anomalies will be considered on their merits and the category evaluated on the basis of the symptoms or impairment of function.
100. *Miscellaneous*.—Degenerative, toxic inflammatory diseases, and diseases of unknown etiology which are progressive in their course and which are known to be incapacitating should result in the recruit so afflicted being placed in Grade 5.
- Multiple or disseminated sclerosis.
  - Encephalomyelitis.
  - Hereditary ataxias and other hereditary diseases.
  - Chorea, torsion spasm, Parkinson's syndrome (Post Encephalitic syndrome)
  - Hematomyelia and syringo-myelia.

Paraplegia due to any cause.

Muscular atrophies and muscular dystrophy.

Arteriosclerosis of the central nervous system.

Combined sclerosis due to any cause.

Meniere's Syndrome.

## G. Diseases of the Skin

101 Men suffering from the following types of skin diseases may be placed in grade 1.

(a) Acute non-exanthematous and non-communicable diseases of the skin, which ordinarily run a temporary course.

(b) Diseases which are trivial in character and which do not interfere with the general health and are not incapacitating. Among these common and usually trivial diseases may be enumerated:

(i) Acne, mild or moderate. (Care must be taken to exclude individuals with chronic severe acne, particularly when the face is involved to the extent of being markedly disfiguring, or the shoulders extensively involved making it likely to be aggravated by shoulder straps or packs or other military equipment.

(ii) Anomalies of pigmentation, vitiligo, etc.

(iii) Scars not extensive, disfiguring nor incapacitating in character.

(iv) Skin infections, if mild and considered of no significance.

(v) Acute eczema, if mild.

(vi) Naevi which are not greatly disfiguring and are not so located as to be subject to irritation or trauma by the normal wearing of military equipment.

(vii) All form of pediculosis.

(viii) All forms of ringworm, unless severe and not easily remediable.

(ix) Scabies.

(x) Mild and not extensive psoriasis.

(xi) Warts.



(xii) Simple ulcers or other acute pathological conditions of the skin which are easily curable.

(xiii) Unusual skin conditions should arouse suspicion of self-inflicted lesions (dermatitis factitia).

(xiv) Alopecia areata.

102. Men suffering from the following types of skin diseases will be placed in grade 4.

(a) Such conditions as chronic disease of skin of the type which disqualify for general military service provided the individual has successfully followed a useful vocation in civil life.

(b) Pilonidal cyst or sinus. (If there is only a simple dimpling of the skin or a short sinus in the postanal region, the individual should be accepted).

103. Men with serious or incapacitating open disorders will be placed in grade 5. Examples of these are serious or incapacitating skin disorders such as:

(a) Chronic skin disease, chronic eczema, chronic ulcers of the skin.

(b) Atopic eczema.

(c) Dermatitis herpetiformis of long duration.

(d) Widespread psoriasis of long standing.

(e) Generalised dermatitis of long duration.

(f) Allergic dermatoses, if severe and not easily remediable.

(g) Cysts and benign tumours of the skin of such size and/or location as to interfere with the normal wearing of military equipment and which are not remediable.

#### H. Venereal Disease

104. *Syphilis*.—Recruits with primary, secondary and latent syphilis will be enlisted under grade 1, 2, or 3 for remedial treatment provided that medical examination otherwise warrants such grading.

Recruits with neurosyphilis (symptomatic or asymptomatic) cardiovascular and other deep visceral syphilis, and syphilis of the special sense organs shall be rejected.



105. *Gonorrhoea*.—Male recruits with forms of gonorrhoea who may be expected to respond to treatment satisfactorily within six weeks, shall be enlisted under grade 1, 2, or 3 for remedial treatment provided that medical examination otherwise warrants such grading. This regulation holds also for cases of non-specific urethritis.

Male recruits with other forms of gonorrhoea and female recruits with any forms of gonorrhoea shall be rejected.

#### I. Genito/Urinary

106. *History of enuresis*, frequency of dysuria calls for special care in diagnosis. A history with proof, of a renal lesion (surgical or medical) within the preceding two years calls for rejection or grade 5.

107. *Undescended Testicle*:

(a) If the testicle is inside the abdomen the recruit may be accepted in any grade otherwise indicated.

(b) If it lies in the Inguinal canal being of fair size the recruit should be rejected unless (i) it is so moveable that it could be easily brought down well into the upper scrotum or if small, it could be replaced in the abdomen in a pocket in the extra peritonea space or (ii) is atrophied and small and the recruit consents to its removal. Under these circumstances the recruit may be accepted in the Grade of 4 with R appended for remedial operation. If there is found coincident inguinal hernia, the same procedure applies.

(c) If it lies merely high in scrotum and below the pubic bone the recruit may be accepted in any Grade.

108. *Hydrocele*.—No small or medium size hydrocele which is not tense and not causing symptoms or inconvenience is to be considered cause for rejection. Such recruits may be enlisted in whatever grade is otherwise suitable.

If the hydrocele is large, tense, or if it is causing symptoms of inconvenience, or a sense of weight, the recruit may be accepted under Grade 3 R with remedial operation in prospect.

Chronic Giant hydrocele is to be rejected, Grade 5.

109. *Varicocele* is not to be considered a cause for rejection so long as it is not causing symptoms. Even when the condition is massive or "severe", it does not often cause disability, and Grade 1 can ordinarily be assigned. Minor complaints can usually be disregarded.



110. If of this grade and causing definite distress, the recruit should be referred to the psychiatrist for special report. If this is favourable, the recruit may be placed in Grade 3 R. If unfavourable he is to be rejected.
111. *Loss of One Kidney.*—Removal of one kidney because of trauma or simple pyogenic infection should not be considered grounds for rejection provided that the remaining kidney is free from disease and is normal in size and shape and functioning normally. If the recruit is otherwise physically fit he may be placed in a grade as high as Grade 2, at the discretion of the Board.  
Removal of one kidney because of tuberculous infection or new growth, are definite grounds for rejection.

## J. Hernia

112. A very small indirect or direct inguinal, or femoral bulging, clearly too small to form a true hernial sac or to contain a loop of bowel, and without complaint of symptoms, should not be diagnosed to the recruit as hernia (though it should be recorded) nor need operation be proposed. Enlistment is permissible in any otherwise appropriate grade. Sudden aggravation of such a condition is rare. If it should grow into a true hernia, the remedy can be applied later.
113. If the recruit is otherwise in good condition, Hernia of itself is not a cause for rejection. The recruit may be accepted provisionally under Grade P3R or P4R (i.e., remediable) with a view to remedial operation, and probable grading up to 1 or 2.
114. Recruits enlisted in P3R or P4R because of hernia shall be immediately brought forward on M.F. B.227 for treatment. If remedial treatment is refused the grading will remain as P3R or P4R.
115. Until such time as remedial treatment has been performed and the man reboarded into grade 1 or 2 he shall not take Basic Training.
116. A recruit with hernia who is placed in grade 4 for a disability other than hernia may be enlisted in grade 4.
117. The above applies to most forms of simple hernia in any situation. The exceptions will be enlisted in grade 4 or in unpromising cases, will be rejected. These exceptions are here listed in detail.

118. The following conditions may be enlisted in grade 4 if otherwise fit, and if the hernia is controllable by a truss:

(a) *Indirect or Oblique Hernia.*

Which has recurred after one operation.

(b) *Direct Inguinal Hernia.*

If it has recurred after one operation.

(c) *Femoral Hernia.*

If it has recurred after one operation.

(d) *Umbilical Hernia.*

(i) The congenital form, if small and without symptoms, may be accepted in grade 1. When there is a sac large enough to contain a loop of bowel with impulse on coughing, the size of a small hen's egg or less, he may be accepted in grade 4. He would be a candidate for remedial operation.

(ii) If the hernia is materially larger than this, he is to be rejected.

(iii) If the hernia is not congenital but is part of an incisional hernia, he is to be rejected.

(e) *Epigastric Hernia.*—If quite small and not causing symptoms, the recruit may be accepted in grade 1. If the hernia is larger and contains a definite sac, the recruit may be accepted in grade 1R as a candidate for remedial operation. If it represents a recurrence from a previous operation, he is to be rejected.

(f) *Incisional Hernia.*

(i) If occurring in the mid-line above or below the umbilicus, or in an upper quadrant, the recruit should be rejected, unless the hernia is a very small one, and is not causing symptoms, in which case he may be accepted in grade 3 or 4.

(ii) If occurring in either of the lower quadrants, usually the right side following appendix operation the recruit is to be rejected only if the hernia is large, occupying all or most of the line of incision. Otherwise he may be accepted for remedial operation.



(g) *Bilateral Hernia*.—Is to be considered under the same rules as unilateral.

119. The age limit for operation on hernia is as follows:

(i) For grade 1 and 2 men—45 years.

(ii) For grade 3 men—50 years.

(iii) For grade 4 men—50 years.

## K. Old Wounds

120. *Scalp Wounds*—Cases of this nature, so localized that the continuous wearing of the steel helmet causes pain, should be classed in Grade 3, with R at discretion of Medical Board.

121. *Muscle Wounds*—Scars, particularly adherent scars, about the back, shoulders and chest, so situated as to cause pain and discomfort from friction or pressure by the wearing of full infantry equipment, must be carefully considered and no such recruit should be classed higher than Grade 2, or 3. If the scar has caused pain in civil life, the grade should not be higher than 3.

## 5. Musculo-Skeletal System (U. and L.)

122. This section, dealing with the musculo-skeletal system is mainly concerned with the basis of grading U. and L. in the PULHEMS series. Where matters are dealt with which are not specifically referable to U. or L., P (Physique) is the appropriate subdivision.

123. The functional disabilities of the upper and lower extremities, including the shoulder girdle, the pelvis and the spine, must be judged carefully with reference to the degree of interference with the various types of army work briefly indicated in the text and in Section III. In general it will be chiefly traumatism to joints, with resulting stiffness, which will be responsible for the loss of function. Stiffness from disease or old inflammations demands more cautious grading. Loss of fingers or toes will account for a few cases. Tumours and cysts of the soft parts, or the bones, will be rare.

124. It is this system which from the mechanical standpoint may occasion the most difficulty in deciding between overseas duty and duty in Canada only. In principle, any given disability should be judged on the basis of its being able to stand or not

to stand front line work, first as a fighting man (Grade 1) or, second, as an accessory, non-fighting man, which allows from 1 to 3 according to the job. This should be correlated with the experience of his previous occupation. A recruit used to heavy labour with no loss of time because of his disability may be graded 1 or 2, while one used to sedentary work only, with an occasional ache in his stiff joint, would be given only 3 or 4. Cripples, or potential cripples should not be sent overseas; and no grade 4 man may be sent overseas. It is therefore particularly necessary in this system that the Medical Board should interpret the Grade given by adding an explanatory note under remarks.

125. Stiffness in the joints from old inflammation must be very cautiously graded. Because of the risk of a flare-up of the old inflammation men with such disability should seldom be graded higher than 4.
126. As to the shafts of the bones, any history pointing to osteomyelitis demands X-ray examination before enlistment. If operation has been done with apparent cure, and no flare-up has occurred in the previous 5 years, and if no sequestrum or Brodie's abscess is seen in the film, Grade 3 may be assigned. Otherwise Grade 5.
127. A benign tumour of the soft parts, which is removable without loss of function, can be graded high. Likewise moderate contractures from burns are judged remediable. Mild degrees of muscle atrophy following anterior poliomyelitis may be graded from 2 to 4, depending upon the degree of functional loss, while pronounced cases should be rejected.
128. *Musculo-skeletal Arthritis.*
  - (a) *Rheumatoid Arthritis* with slight involvement of one or two joints and no acute phase for two years may be graded 3. Moderately severe rheumatoid arthritis with multiple joint involvement, or apparently arrested mild cases but with an acute phase within the two years, will be graded 5.
  - (b) *Osteo-Arthritis.* Mild osteo-arthritis with very slight or no symptoms or loss of function will be graded 3. All moderately severe cases with slight loss of function Grade 4. All other cases, Grade 5.
  - (c) *Acute (febrile) Polyarthritis.*—Men giving a history of



Acute (febrile) Polyarthrititis or so-called Rheumatic Fever will be graded 1 and 2 unless some evidence of joint or heart involvement is present at the time of examination. If definite joint or heart involvement, as described in section under murmurs, is present, to be graded 5.

(d) *Fribrositis and Myositis*.—A recruit giving a history, or a soldier suffering from symptoms which justify the above diagnosis, particularly when supposedly causing “low back pain”, should have a complete investigation by a consultant to exclude some other cause of the pain, (for instance, marked psychoneurosis, arthritis, sacro-iliac strain, nucleus pulposus, etc.). In the absence of such other cause, which of itself will determine the grade, rarely should the above diagnosis result in a grade lower than 2, or in the serving soldier, in a permanent change of grade.

#### A. Upper Extremities (U)

##### 129. *Upper Extremities*.—Summary of Grading.

U.1.—All joints and bones normal. Muscles normal and well developed.

U.2.—A “mild” or “first degree disability” in the upper extremity which unfits a man for hand to hand fighting, but is such as to allow heavy and prolonged work under considerable strain, and in emergencies, defensive fighting.

This disability will usually affect bones, joints, or muscular action. It must be slight, stabilized, non-progressive, and not painful on use. Examples are old sprains, fractures, or dislocations, which have left a residuum of slight stiffness, unimportant limitation of joint movements, slight muscular atrophy, or slight deviation of axis of bone.

The man must, after being trained, be able to use rifle and bayonet, throw grenades, use a spade, lift 50 pounds above head, manage wheel of heavy trucks, lift motor cycles out of ruts, drag and push strongly, climb into tanks or lorries, and do all other heavy labour needing use of upper extremities, back and shoulders.

U.3.—The disability (“moderate” or of the “second degree”) makes the man unreliable as a front line Combatant or Accessory Combatant by reason of loss of sufficiently free movements of joints, especially of the elbows and fingers.

The disability will usually represent the conditions mentioned under Grade 2, but of greater degree.

U.4.—A disability of the “third degree”; it allows sedentary and routine physical work. For example it will often be a fibrous or bony ankylosis of shoulder, elbow, or wrist joint, or a joint with not more than half the normal range of movement, both resulting from accident. It may also be a marked loss of pronation and supination, following fracture of radius and ulna. Other examples are, severe grades of Dupuytren’s Contracture, moderate stiffness and loss of muscle power following Volkmann’s ischaemic paralysis of mild degree, the loss of the whole thumb, or of two or more digits, (except ring and little finger), peripheral nerve palsies, if only moderately disabling, scar contractures, following burns or other injuries, which are not remediable.

U.5.—This grade represents severe disability as far as the upper extremity is concerned.

130. *Fingers*.—Total loss of one digit, other than the thumb, on one or both hands, or of the fourth and fifth fingers on one hand, permits Grade 1. Loss of the index and the middle finger on one hand restricts to Grade 3. Loss of part of the thumb, still allowing some grip, calls for Grade 3. Loss of the whole thumb on the hand means Grade 4. Partial loss, of one or two phalanges of any finger, or fingers, should be judged on the basis of function remaining, but should not be cause for rejection; indeed many such cases could qualify for Grade 1. Loss of the entire right index finger, provided the middle finger is normal, may be given Grade 1. Scars and deformities of moderate degrees of the hand or hands which do not interfere with normal function, may be given Grade 1.
131. *Hands*.—Loss of the hand alone or any part of the arm is cause for rejection. Exception may be made for key men, requested for special jobs. Application with full particulars must be forwarded to N.D.H.Q. Ganglion of tendon sheaths qualify up to Grade 1 according to degree of interference with function. If causing disability, remedial operation is in place. Scars and deformities of moderate grade, not interfering with function, may be accepted in Grade 1, but the power of grip must be perfect or close to it.
132. *Dupuytren’s Contracture*.—
  - (a) A deformity sufficiently small to permit the recruit to grasp a rifle or a spade should be assigned grade 1 or 2. Otherwise grade 4 may be given. If bilateral and severe, grade 5 is proper.



(b) A deformity greater than described in (a) should not be graded higher than 4.

133. *Wrist*.—Loss of dorsi-flexion of wrist is disabling for the combat area. Grade should not be higher than 3. With dorsi-flexion preserved, and palmar flexion lost, provided finger movements are free, Grade may be as high as 2. If the limitation is not more than one quarter of the full range, both in flexion and extension, Grade 1 is permissible. Chronic inflammation of carpus and wrist, as from tuberculosis or V.D.G., and rheumatoid or osteo-arthritis, are to be rejected. Dislocation of the semilunar bone, un-united fracture of the scaphoid, Kienbock's disease of the carpus, even if only slightly disabling, should not be given higher than Grade 4. Ganglion, see under hands.

134. *Elbow*.—Slight limitation of joint movement, not exceeding 15 degrees from extreme flexion or extreme extension, need not bar a recruit from Grade 1. Ankylosis in any position means, in special cases Grade 4; otherwise 5. Intervening grades, according to degree of limitation, may be accepted in Grade 2, 3, or 4.

135. *Shoulder Girdle*.—Owing to compensation from scapular swing, stiffness of this joint can be interpreted somewhat more liberally. Yet, for Grade 1 and 2, abduction must be at least to the shoulder level, above which the scapular movement allows sufficient elevation. Any greater limitation of abduction reduces Grade to 3 or 4.

External rotation is also important for Grades 1 and 2; loss of half the full range lowers grade to 3.

Recurrent dislocation, if not frequent, allows grade 4 for sedentary work only. If frequent and disabling, rejection is indicated.

136. *Clavicle*.—

(a) *Malunion of Fracture*, on account of the pain often caused by pressure of the shoulder strap when full equipment is carried, disqualifies a recruit from grades 1 and 2; but 3 and 4 may be assigned. It is not a cause for rejection.

(b) *Acromio-Clavicular Dislocation*.—If the separation is slight and if there has been no complaint of it during heavy work in civil life, allows Grade 1 or 2. If there has been complaint, give Grade 3 or 4. If the separation is marked, give Grade 4.

(c) *Sterno-Clavicular Dislocations*.—The same remarks apply.

(d) *Scapular Fractures*.—If these are consolidated, and cause no symptoms, Grade is not affected.

## B. Lower Extremities (L)

### 137. *Lower Extremities*.—Summary of Grading.

L.1.—All joints and bones normal. Muscles normal and well developed.

L.2.—A slight defect in locomotion may be allowed in this grade, but the disability (of the first degree) must be stabilized, non-progressive, and cause no pain on walking or in work, and these reservations apply to all such disabilities under L of whatever grade. The man must be able to march up to twenty miles, use rifle and bayonet, dig quickly, climb into tanks or lorries, or up hills, or ladders, crouch low, rise quickly, crawl on hands and knees, and do all other heavy labour needing use of the lower extremities and the lumbo-sacral spine.

Slight limitations of joint movements in general, and unimportant foot troubles, need not exclude a recruit from this grade. These will be usually the result of old injuries. Any marked deviation of the line of weight bearing, such as severe knock-knees and the everted pronated foot, with flattening of the arches, excludes the recruit from this grade.

L.3.—The disability (of the "Second degree") present makes the man unfit for Grades 1 and 2, usually by reason of loss of sufficiently free movements of joints, or by faulty weight-bearing. Men giving a history of foot strain must be carefully examined for evidences of fallen arches, with pronation and eversion. Such should be excluded from this grade unless mild enough to be remediable. Slight degrees of hallux valgus, if there is no history of metatarsalgia, can be accepted; also hammer toes, without corns. Total loss of the big toe excludes, but not loss of the terminal phalanx; total loss of any one of the other toes does not exclude; but total loss of two toes is not admissible.

L.4.—In this grade the disability (of the "third degree") may allow the men to do only sedentary work or routine physical work, but without material risk of breaking down. It will usually be a more advanced degree of the abnormalities mentioned under L.3, but still not such as to make locomotion difficult. Recruits in this grade may have moderately stiff joints, mal-



united fractures without pain, painless flat-feet, moderate grade bunions, hallux rigidus, mild pes cavus, loss of the great toe, or two of the other toes, mild grades of club-foot, slight paralysees from anterior poliomyelitis, or other painless and non-progressive abnormalities, all of which can be judged as not disabling for sedentary or moderate physical work.

L.5.—This grade represents severe disability as far as the lower extremity is concerned.

138. *Toes*.—Less important abnormalities of the toes, such as corns, hammer-toes, and hallux valgus *if not dependent upon falling of the arches* are frequently the result of poorly fitting shoes and in such instances when properly fitting foot-wear is provided, the discomfort complained of previously often disappears, and Grade 1 or 2 may be assigned.

(a) *Hallux Valgus*.—If of mild to moderate degree and if symptomless while wearing a roomy shoe, the recruit may be placed in Grade 1; but if giving discomfort, the transverse arch will often be found flattened, and the recruit should not be placed higher than Grade 3. A recruit with a severe degree of hallux valgus, with a painful bursitis and large exostosis, should be rejected, Grade 5.

(b) *Hallux Rigidus*.—For normal marching 45 degrees of dorsi-flexion at the metatarso-phalangeal joint is necessary; a soldier suffering from hallux rigidus should not be placed higher than Grade 3. Complete rigidity of this joint means Grade 4 or 5.

(c) *Hammer toes*.—A simple hammer toe is not usually a cause of disability. However, if there is a painful callus on the dorsum of the middle joint, on the tip of the toe, and below the head of the respective metatarsal bone, and if there is limited mobility at the metatarso-phalangeal joint, there will be disability, often because of falling of the transverse arch, and Grade 1 should not be allotted. Usually Grade 3 will be correct. If mobility is good Grade 2 may be given.

139. *Loss of toes*.—The total loss of both great toes will be ground for rejection. Total loss of one great toe may be accepted in Grade 4 for sedentary occupations. Loss of the terminal phalanx of the great toe with a painless stump should not affect category.

Loss of the 5th toe is unimportant.

Total or near total loss of two of the intervening toes is likely to produce disability because of the effect on the transverse arch. Ordinarily Grade 3 or 4 should be allotted.

140. *Paralysis-Feet.*—Candidates with an appreciable degree of weakness and atrophy due to anterior poliomyelitis, but still able to carry on in civil occupations, should not be placed higher than Grade 4. Men with marked paralysis due to lesions of peripheral nerves should be considered unfit for any grade above 4, and then only if other grades are high and they are fit for special types of work.
141. *Flat Feet.*—*The longitudinal arch* varies in height as a normal inherited feature. A perfectly competent low arch is not to be confused with true "flat foot", which, being due to the giving way of the supporting ligaments and muscles under strain, is usually accompanied by symptoms. Consequently, if a low arch is found incidentally during examination, and there is no history of attacks of foot strain, category is not thereby affected, and the condition should be recorded not as "flat foot", but as "low normal arch". Judgment is based on function, not upon anatomy, and the foot history is much more important than the mere appearance of "flat feet".
142. A history of foot ache upon unaccustomed standing or walking, apart from such obvious causes as sprains or recent illness or illfitting shoes, or the habit of out-toeing, or simply adolescence, means a stretching and giving way of the chief support of the arch, that is, the inferior calcaneo-scapoid ligament which ties the sustentaculum tali to the scaphoid. This, if continued, allows the head of the astragalus to rotate downwards carrying with it the sustentaculum tali and depressing the longitudinal arch. The tubercle of the scaphoid becomes more prominent and the fore-foot tends to rotate outwards at the mediotarsal joint.

The line of weight-bearing is thus altered in the direction of the foot. The arch sags downwards and medialward in front of the heel. In a developed flat-foot of this type the deformities mentioned are best seen with the patient standing and observed from behind. Particular attention should be paid to the line of weight-bearing, which will be seen to run medial to the midline of the heel, while the forepart of the foot is abducted.
143. Much of the support of the longitudinal arch depends also upon



three groups of muscles:—the intrinsic muscles of the foot; the outer or peroneal group, which act as evertors, or abductors, or pronators of the foot; and, most important of all, the tibialis anticus (a dorsal flexor), the tibialis posticus (a plantar flexor and the flexor longus hallucis, which is also a plantar flexor of the great toe and has a special importance in protecting the arch, as it runs in a special groove directly under the sustentaculum tali. This third group rotate the foot medially, in this way elevating the longitudinal arch. They are invertors, adductors, or supinators of the foot. The second and third groups oppose each other; but to maintain the arch the third group should be and normally are, stronger than the second group. But in cases of foot strain of a severe type this ratio of strength may be reversed and the pronator group may be the stronger. In rare cases the peronei may stand out in spasm under the skin.

144. Pronation and eversion, therefore, of the forefoot usually accompany any marked flattening of the arch and form an essential part of the picture. If the arch can be voluntarily restored by the patient it means that his inverter muscles, the third group, are still able to overcome the evertors, or pronators, that the foot has not become rigid, and consequently that the condition is remediable by treatment.
145. At this point, therefore, the most important fact to be determined is the degree of mobility of the joints of the foot, that is, the extent to which the longitudinal arch can be reformed by active or passive movements. In early flat foot, with a short history and easy reformation of the arch, grade 2 is indicated, with the expectation of cure under remedial treatment, and possible raising of grade. If, in the second state of a "flat foot", the arch can be only partly restored and there is a history of recurrent pain, grade 4 may be assigned for sedentary occupations. In long-standing cases, those of the third stage, the joints become fixed in the new position, the foot is entirely flat and rigid, and there may or may not still remain some pain. Those without pain, who have been able for years to do ordinary walking may be accepted in grade 4 for sedentary occupations or for routine physical work. Those who still have pain should be rejected.
146. One further distinction should be made. In the non-rigid type of flat foot, there may be in the history, or rarely, there may be present at the moment, two distinct conditions, viz., the Acute and the Subacute. The Acute form, characterized by

extreme pain and sudden development, is, of necessity and irrespective of the exciting factor, ground for rejection. The Subacute condition is the one most frequently met with, characterized by localized tenderness and pain over the tubercle of the scaphoid as well as diffusely through the foot, and sometimes under the tip of the external malleolus, with a tendency to swelling. A foot predisposed to this condition is the long, narrow type. No such cases of subacute nature should be classed higher than grade 3, but remedial treatment will often raise the grade assigned.

147. *The transverse anterior arch.*—This is formed by the heads of the metatarsal bones. The ligamentous support is weak and the arch is maintained almost wholly by muscular action, in particular the intrinsic muscles of the foot together with the common flexor of the toes and the peroneus longus. The falling of this arch is often a result of flattening of the longitudinal arch and the pronated splay-foot. But it also occurs independently following unusual strain in walking or running. In the literature attention has been called to the not infrequent evidence of a shorter than normal 1st metatarsal bone which predisposes to flattening of the feet with accompanying deformities such as hammertoes and callosities. Callosities are apt to form under the heads of the metatarsals and in some cases Morton's metatarsalgia occurs. The metatarsals can always be pushed up into normal position, and the condition will be frequently remediable by orthopaedic treatment. Grade 3 may be assigned, unless the condition is associated with a seriously flattened longitudinal arch, with pronation and eversion, in which case the recruit is rejected. Minor grades of falling of this arch even with a history of metatarsalgia, may be graded 3R. Such conditions are remediable.
148. *Pes Cavus.*—It is necessary to differentiate between the normally high arch and Pes cavus. A diagnosis of Pes Cavus may be made if the following findings are present to an appreciable extent:—
  - (a) The longitudinal arch is high.
  - (b) The line of weight-bearing is lateral to the midline of the heel.
  - (c) The transverse arch is low and has thickened calluses underneath and the toes are held semi-flexed.
  - (d) The forepart of the foot is adducted.



A recruit with such findings, even if of moderate degree, should be rejected. Such feet will not tolerate the stresses of strenuous training and they are difficult to fit with boots. Men with special aptitudes may be exceptionally listed in grade 4 for sedentary occupations.

149. *Talipes—Club Foot.*—This is met with in the form of *Talipes calcaneus*, *T. equinus*, *T. Valgus*, *T. Varus*, and the different combinations of these basic forms. Many are congenital but some are due to an early disease of the central nervous system, notably acute anterior poliomyelitis with its accompanying atrophy of the muscles of the affected leg. All of these, if severe and disabling, are to be given grade 5. An exception may be made in the milder degrees of club foot, if the recruit has been able to go about freely, and his other grades are high; in such cases grade 4 or even 3 may be assigned, particularly if he has special aptitudes useful to the Army.

150. *Ankle Joint.*—Loss of function of the ankle joint will ordinarily be the result of old injuries and will consist in limitation of movements or complete ankylosis.

In general, function and grading will depend upon the preservation of good position at a right angle with the tibia, with the foot usable and the line of weight bearing neither to one side nor the other. Pain on walking must be absent in the history. Under these conditions a range of movement which runs from 15 degrees in dorsi-flexion, to 15 degrees in plantar-flexion or more, does not constitute a grave disability and may be given grade 3.

152. The same is true for bony ankylosis at a right angle, or so close to it that the recruit can walk on the sole of his foot in the Army boot, provided that the tarso-metatarsal and the metatarsophalangeal joints are mobile. If these are not mobile, or if the foot is either adducted or abducted in regard to the tibia so that the line of weight-bearing is faulty, or if it has been a painful foot in civil life, the grade should be 5. Cases in which the man walks chiefly upon his heel, or chiefly on his forefoot, are to be rejected, save for the occasional "key man".
153. *Knee.*—Even mild disabilities of the knee are very disabling from the standpoint of army work. Any lesion of the joint that impairs its function in the direction of (a) moderate limitation of range of movement, (b) Instability of the joint (c) pain during function, is sufficient reason for grading a recruit so afflicted not higher than 4. This may include recruits with evidence of traumatic arthritis, if it is arrested and giving fair function

without pain or an ankylosed knee joint in the extended position giving no trouble other than the loss of a flexible joint.

154. All gross lesions such as advanced arthritic changes from any cause constitute sufficient reason for rejection.
155. A recruit with a history of dislocation of the meniscus on one or two occasions with no recurrence during the previous three years and with no impairment of function in the interval, no demonstrable instability of the joint, and no arthritic changes as shown by X-ray, may be accepted in Grade 2, or even in grade 1.
156. A recruit with not more than three dislocations but free from pain or apparent disability during the previous year, with good movement in the joint, no instability, and no evidence of arthritic changes as shown by X-ray, may be graded 4.
157. In recurring dislocation of the knee cartilage with disabilities greater than above, for instance atrophy of muscles, arthritic changes, instability of the joint, or pain on use, the recruit should be rejected.
158. *Hip-Joint.*—Disabilities involving the hip-joint and the neck of the femur will concern mostly old fractures or dislocations, more rarely osteoarthritic changes, and will consist in joint adhesions or hypertrophic changes, limiting movements, or mal union of fractures at the neck or in the intertrochanteric region, with faulty weight-bearing.
159. If these conditions have been stabilized for at least one year and do not interfere with the heavy work of the front line, (as indicated in the definition of grades), grade 1 or 2 may still be given. But if there is any history of limping or pain upon prolonged exercise, the grade should not be higher than 3. Serious gross interference with function, or a history of pain being easily provoked, signifies grade 5. Something better than this, with a history of regular work under sedentary conditions, may justify grade 4. A specialist's opinion is very necessary in the majority of these cases.
160. *Pelvis.*—*Fracture of the Pelvic Ring and Dislocation of the Symphysis.*—The majority of the above lesions will have united with very little and often no disability remaining, and may be placed in grade 1 or 2, but a history of slight or moderate impairment of function in locomotion, or the evidence of a tilted pelvis, should lower the grade to 3 or 4 or to 5 if severe.



161. *Shafts of Bones. Malunited Fractures.—Tibia and Femur.*—It has been found from experience that men with old fractures of the tibia or femur, malunited, or with shortening, after a period of duty at the Front of not long duration, have to be re-graded lower owing to their inability to endure the necessary marching over uneven and difficult ground, and no such case should be classed higher than grade 4.
162. *Loss of Limb.*—A recruit with the loss of a limb, a hand or foot, is not to be accepted without special authority from National Defence Headquarters, and when asking for special authority full particulars of the reason for the request must be given.
163. *Sacralization* of the transverse process of the 5th lumbar vertebra on one or both sides, not causing symptoms, and discovered only on X-ray examination, is to be disregarded. Grade 1 or 2 is permissible.
- If low back pain, on examination, is diagnosed as due to this condition grade 5 should be given.
164. *Thoracic and Lumbar Spine.—Congenital defects.*—Hemi-vertebra and spina bifida occulta in the cervical and upper thoracic regions, if discovered only on X-ray examination of the chest and not causing symptoms, need not prevent grading up to 1.

*Spina-bifida occulta* is frequently found in the lumbo-sacral region incidentally on X-ray examination, and if symptomless, should not affect grading. If the medical history discovers neurological symptoms, sensory or motor, or of the autonomic supply to bladder or rectum the grade should be 5.

*Traumatic spondylitis*—This represents the persistence of pain in the back following probably slight unrecognized displacement or compression fracture of one of the vertebrae. There may be slight deformity either kyphotic or scoliotic, or there may be none. Carrying a pack would be impossible. The grade should be 5, or in mild cases 4 for sedentary occupation.

166. *Scoliosis*—Cases of scoliosis should not be regarded as of great importance, if not severe, and if examination is otherwise negative, especially if men have been accustomed to heavy labor. The condition may be the result of occupation in civil life, or due to disease or malnutrition in childhood. If the convexity of a scoliosis is as much as  $1\frac{1}{2}$  inches from the midline, the grade should not be above 4. Lesser deviations need not affect grading. Severe deviations should be rejected.

167. *Kyphosis*—That variety of "round shoulders" seen in young men, due to early rickets or to the habit of stooping in reading or writing during adolescence, often associated with myopia and poor general physique, should not be graded higher than 3; but if found in well developed men used to hard labor may be graded 2. Tuberculosis must be excluded.
168. A condition of *lower kyphosis*, "low round back" should awaken suspicion of Scheuermann's disease, which consists of a progressive but slow atrophy of the vertebral bodies, confined to the 7th to 10th dorsal vertebrae, with consequent wedging of the vertebrae at this level. An X-ray lateral film is necessary for diagnosis. It is to be distinguished from compression fractures of the vertebrae, which usually involve the 11th or 12th. These recruits do not stand training, and grading should not be higher than 4.
169. *Compression fractures* of the lowest dorsal vertebrae, if discovered by the history of back injury and an X-ray film, are to be judged for grading on the presence of pain, the degree of wedging, the ability to perform hard labour, the time-period since accident. If these factors are favourable, Grade 3, or, with apparently normal strength and function, even Grade 2. Chronic pain means Grade 5. Marked wedging, so that the anterior surface is reduced by three quarters, but with fair working strength retained means Grade 4. If the accident occurred within the past six months Grade 5 and deferment for six months is advised.

## 6. Hearing (H)

170. *Examination of the Ears and Hearing*—Examination of the ears will be made by auriscope in every case. To facilitate this, care must be taken that the cerumen is removed. Following the auriscope examination the usual tests of acuity of hearing will be carried out. This is determined by the ability of the man to hear a conversational voice at various distances with each ear separately. Normal acuity is recorded as the ability to hear a conversational voice at distance of 20 feet. This is recorded as "C.V.20".
171. Occasionally the ear canal is so blocked with cerumen that examination of the drum and of hearing acuity is considerably hindered. The following simple methods are suggested to facilitate the removal of excess cerumen:

(a) Instil hydrogen peroxide (10 vols.) into the meatus by



means of a pipette with rubber teat, and by alternately compressing and releasing the antitragus over the external auditory meatus, thoroughly massage the solution into the mass of wax.

Douching with warm water is then most safely and satisfactorily performed by using an "adaptable" rubber syringe with Eustachian catheter, size 9 attached. Traction upwards and backwards of the auricle so as to straighten the aural canal facilitates removal. This may be done by an assistant, or by the patient putting his hand over his head and pulling the ear as suggested above.

(b) If this fails to remove the wax, with the aid of an electric auriscope, carefully insert a flat probe between the surface of the wax and the meatal wall and gently detach the wax.

This manoeuvre will make a channel to allow the douching stream to get beyond the mass of wax and force it out of the meatus.

172. *Grading of Hearing*—The definitions of the various grades in hearing is combined below with a brief description of the types of defects causing lowered grades:

H1—Hearing not less than C.V. 15 ft., other ear C.V. 10 ft. Recruit with the following conditions may be placed in Grade 1:

- (a) Symptomless exostosis of external auditory canal.
- (b) Healed unilateral simple mastoid scar if the operated ear is dry the drum intact and hearing fulfils requirements.

H2—Hearing not less than C.V. 20 ft., other ear C.V. 0.

Hearing not less than C.V. 10 ft., other ear C.V. 10.

Hearing not less than C.V. 15 ft., other each C.V. 5.

Recruits with the following conditions provided hearing is adequate may be put in Grade 2.

- (a) Unilateral atresia of external auditory canal.
- (b) Unilateral perforation of ear drum (dry 2 years).
- (c) Thin scars of drum membrane.

H3—Hearing not less than C.V. 10 ft., other ear C.V. 5.

Hearing not less than C.V. 15 ft., other ear C.V. 0.

Recruits with the following conditions may be placed in Grade 3:

(a) Unilateral Radical Mastoid (dry) with sufficient hearing in other ear.

(b) Bilateral simple mastoid with perforation one ear drum only, dry 2 years and sufficient hearing.

H4—Hearing not less than C.V. 5 ft., other ear C.V. 5.  
Hearing not less than C.V. 10 ft., other ear 0.

Bilateral perforations of both ear drums with history of ears being dry one year.

H5—Hearing less than C.V. 5 ft. in both ears.

Hearing less than C.V. 10 ft. in one ear, no hearing in the other ear.

Recruits with the following conditions *MUST NOT* be accepted:

(a) Unilateral or bilateral chronic purulent otitis media.

(b) Bilateral radical mastoid.

(c) Atresia of both external auditory canals.

(d) Meniere's disease.

(e) Nerve deafness.

(f) Oto-sclerosis.

(g) Definite chronic progressive catarrhal otitis media, manifested by a history of progressive loss of hearing, ringing or buzzing in the ears and a thickened retracted drum.

(h) Chronic recurrent eczema of ear canal with thickened canal walls—debris—dry scales or exudate, etc. In these cases ear drums should be carefully examined as middle ear suppuration may co-exist.

(i) Chronic progressive otitis media.

173. *Test for Suspected Malingerers*—(a) Blindfold recruit and while testing him step back noiselessly foot by foot. Examiner places his hand on the blindfolded recruit's head, tells him that he will hold his hand on his head to make him concentrate and meanwhile will speak to him, then unknown to recruit he has an assistant who has been previously coached, put his hand on the head of the recruit, then examiner steps back noiselessly foot by foot, meanwhile repeating test words.

The above simple method is often sufficient.



(b) Another simple and easily available test for malingering is the use of an ordinary binaural stethoscope. The tubing leading to the ear-piece to be applied to the normal ear is occluded by clamping with a hemostat and the ear-pieces are placed in the ears of the blindfolded suspect. The examining physician speaks in a soft tone or counts into the bell-shaped chest portion of the stethoscope and the suspect is told to repeat what he hears. The tubes are removed from the ears and the assistant is told to occlude the normal ear. The same words or numerals are repeated. The suspect will now claim failure to hear the words or numerals which he had previously heard through the tube with the allegedly deaf ear.

(c) The Chiman-Moose test is made with the "C2" tuning fork. The vibrating tuning fork is held at equal distance from each ear, the suspect may claim that he hears it better in the normal ear, the vibrating tuning fork is then placed on the vertex of the skull. The suspect hearing it equally well in both ears will at first hesitate and then state he hears it better in the normal ear. In diseases of the conducting apparatus he should hear it better in the diseased ear. If now the external meatus of the normal ear is tightly closed and the vibrating tuning fork is placed upon the vertex of the skull, the individual with the diseased ear will state he hears it better in the normal, closed ear, or it may be impossible for him to decide in which ear he perceived the tone better. The suspect, with the normal ear tightly obstructed, will state that he does not perceive the sound of the fork when thus placed on the vertex of the skull. The above test is merely a quantitative one.

174. It should be remembered that tact and patience are necessary in dealing with malingerers. Malingering should not be the first but the last diagnosis made by an examiner.

## 7. Eyesight (E)

175. In examining a recruit's vision he will be placed with his back to the light, and his visual acuity will be tested, without glasses, by means of the standard illuminated eye-test cabinet, when available, or test types placed in ordinary daylight, at a distance of twenty feet from the recruit. The visual acuity of each eye in the case of approved recruits will be entered on the Medical History Sheet.
176. To secure uniformity in placing figures on Medical History Sheet, the following will be the course of procedure:

(a) Direct applicant to read the test types from top of chart down as far as he can see, and record his vision for each eye with the distance of 20 feet as the numerator of a fraction, and the size of the type of the lowest line he can read correctly as the denominator.

(b) If he reads the 20 feet type correctly his vision is normal and should be recorded 20/20.

(c) If he only reads the 60 feet type, he shows defective vision, and his vision should be recorded 20/60.

(d) The degree of impairment of vision will be shown in feet according to the following scale:—

20/20

20/30

20/40

20/60

20/80

20/100

20/120

20/200

20/400

(e) Each eye will be tested separately, without the aid of glasses, and the recruit must look straight to the front with both eyes open wide. The eye not under examination will be covered with a card.

(f) Each eye must have full field of vision as tested with hand movements, and be free from organic disease.

(g) If a man cannot read a line completely, the line above will be recorded as his vision.

177. *Eyesight—Summary of grading—*

E1—Vision not less than 20/40 in right eye, and 20/100 in left eye without glasses.

Vision not less than 20/100 in both eyes corrected to 20/40 in both eyes.

E2—Vision not less than 20/120 in right eye; not less than 20/200 in left eye; corrected to 20/40 in both eyes.

E3—Vision not less than 20/200 in both eyes; corrected to 20/40 in both eyes.



E4—Vision not less than 20/400 in both eyes corrected to 20/40 both eyes.

A recruit who has no useful vision in one eye or with one eye enucleated is not to be accepted without special authority from National Defence Headquarters. Where special authority is asked for such cases, full particulars and the reasons for requesting authority will be given. This must be accompanied by a certificate from an ophthalmologist that the vision in the remaining eye is not less than 20/40 without glasses and likely to remain so.

E5—Vision less than E.

178. *Disabilities and their grading—*

E1 and E2—Recruits with the following conditions may be placed in Grades 1 and 2:—

- (a) Slight conjunctivitis.
  - (b) Small pterygium not encroaching on the cornea.
  - (c) Ptosis which does not interfere with vision.
  - (d) Colour blindness (see note 4).
  - (e) Blepharitis marginalis if slight.
  - (f) Blepharospasm if mild.
- E3 (a) Nystagmoid movements if not persistent or pronounced and if true nystagmus is excluded.
- (b) Slight inversion of eyelid provided there is no trichiasis.
  - (c) Slight eversion of the lid.
  - (d) Slight chronic blepharitis.
- E5 (a) Deformity of the eyelid or eyelids such as inversion or eversion if of a degree that forcible closure fails to cover the eyeball.
- (b) Pronounced exophthalmos.
  - (c) Chronic keratitis.
  - (d) Chronic ulcer of the cornea.
  - (e) Any active disease of the retina choroid or optic nerve.
  - (f) Detachment of the retina.
  - (g) Nystagmus.
  - (h) Glaucoma.

(i) Trachoma.

(j) Chronic suppurative dacryocystitis.

*Note 1*—Recruits with 20/100 in both eyes have sufficient eyesight even though they lose their glasses or have to see without them.

*Note 2*—Recruits with strabismus may be placed in grade according to visual acuity.

*Note 3*—Lenticular opacities which in the opinion of the oculist are likely to remain stationary will not affect the grade of visual acuity.

*Note 4*—Certain types of colour blindness may have to be excluded from certain specialist duties. This will be indicated in the specifications for personnel for these special duties.

179. Comparative table of vision in feet, and meters and international acuity rating with A.M.A. Efficiency rating and percentage of loss:—

Snellen Feet ....	20/400	20/200	20/100	20/80	20/60	20/40	20/20
Snellen Meters	6/121	6/60	6/30	6/24	6/18	6/12	6/6
International Acuity Rating	5%	10%	20%	25%	33%	50%	100%
A.M.A. Efficiency Rating ....	313%	20%	48.9%	58.5%	69.9%	83.6%	100%
Loss ....	96.7%	80%	51.1%	41.5%	30.1%	16.4%	00%

180. Ratio of near vision as tested by Jaegar's test types or by various sizes of printing such as that used in newspapers, text books, children's books, etc., to distant vision as measured by Snellen's test types.

Jaegar's Test		Distant Vision by
Types	Various Sizes of Printing	Snellen's Test Type
Jaegar 1.	Printing in small bibles	Approx. 20/25
Jaegar 2.	Printing in want advertisements	" 20/30



Jaegar 3.	Printing in telephone directory	"	20/40
Jaegar 4.	Printing in newspaper text	"	20/50
Jaegar 5.	Printing in magazine	"	20/60
Jaegar 6.	Printing in adult text books	"	20/70
Jaegar 7.	Printing in books of children 9-12 yrs.	"	20/80
	Printing in books of children 8-9 yrs.	"	20/100
	Printing in books of children 7-8 yrs.	"	20/130

Many malingerers will read newsprint and refuse to read more than 20/200 on the chart. To test these recruits, have them read Jaegar test type at 14 inches. If they read, for example, Jaegar 4 at 14 inches, then they should be able to read 20/50. Test each eye separately.

The same ratio between other Jaegar type and distance vision may be obtained by referring to the above tables.

181. *Visual tests for detection of malingerers*—Malingers who wish to evade military service by feigning impairment of vision may be divided into two classes, as follows:—

- (1) Those who claim total loss of vision in one eye.
- (2) Those who claim partial loss of vision in one or both eyes. Either group may have a normal acuity of vision or may exaggerate a defect actually present.

*The following equipment may be necessary:*

- (1) Trial frame, blank, spherical lenses—16, 3, 0, 25, 3, 2, 1, 0.25.
- (2) Ophthalmoscope (electric battery in handle).
- (3) Condensing lens.
- (4) Loupe.
- (5) Red and green letters on chart.
  - (a) Spectacle frame containing red and green glasses.
- (6) Set of pins, with red, green and white heads for taking visual fields.
- (7) Near vision test chart—(a) Lebensohn, (b) Jaegar's.
  - (a) *Test with colored glasses and letters*—This consists in

directing the individual to read a row of special red and green letters on the chart through a special red and green glass. The red letters will be invisible to the eye that has the green glass, and vice versa, but if all the letters are correctly read irrespective of their color there must be sight in the "blind" eye. The proper illumination of the chart must be observed. This test is not applicable to individuals who are colour-blind to red and green.

(b) *Test with trial glasses*—A high-plus glass is placed before the good eye and a low-plus, or minus before the "blind" eye. If the distant type is read, the vision in the "blind" eye is good.

(c) *Bar Test*—Interpose a ruler about  $1\frac{3}{4}$  inches wide vertically midway between the two eyes at about 4 to 5 inches; direct the man to read from a printed page with lines at least 4 inches long. If able to read the lines, binocular vision exists. Recruit must not move his head and examiner must hold ruler steady during this test.

By using various sizes of print a fair idea may be reached by this test of degree of vision in each eye.

(d) *Diplopia Test*—(1) Note if any head tilt present. (2) Test recruits complaining of double vision by means of the cover test. Test muscles by testing in six cardinal directions of gaze. Cover and uncover each eye alternately with white card while patient fixes a pen mark on another white card held at about 18 inches from his eyes.

Cardinal Direction of Gaze—Right

Left

Up and right

Up and left

Down and right

Down and left.

By covering and uncovering the eyes alternately while patient gazes in the six different directions any lagging or lack of motility in any eye muscle is seen.

## 8. Mental Status (M and S)

182. *General Considerations*—One of the most important and at the same time difficult parts of the examination of the recruits



is the appraisal of the mental status. In spite of the reiteration of the importance of psychiatric standards, there have been more soldiers discharged from the army because of mental and nervous disorders than from any other single type of disability.

183. The difficulties and problems raised by the acceptance of men who are mentally unfit are legion. Such men have a bad effect on training efficiency and disturb morale and discipline generally. It must be recognized once and for all that the army is not a corrective institution and will never "make a man" out of a mental defective, a neurotic or a psychopath. Such men are much more effectively employed in farm work and war industry where, in the security of their homes and families, they can lead a fairly productive although sheltered existence and in this way contribute to the national war effort. As soldiers, they are failures and usually terminate their service with a long listing of vague illnesses or delinquencies, or both. A conservative attitude should be adopted by the medical board, therefore, especially in connection with the appraisal of recruits. Fairly definite information is usually available as to intelligence and learning ability, but emotional and nervous stability is more difficult to assess. Where there is doubt concerning the latter, error should be made on the side of rejection rather than acceptance.
184. *Procedure*—Each medical examiner must be constantly on the alert for signs of mental or nervous disorder, even though he be engaged in the examination of an entirely different system. Any suspicious sign or symptom should be recorded for the attention of the psychiatrist.
185. Examiners should be on the watch for the following types of personality disorders, most of which can be easily spotted during the physical examination:
  - (a) Inability to understand and execute simple commands quickly and correctly.
  - (b) Unusual stupidity and awkwardness.
  - (c) Resentful, suspicious, sullen or surly attitude.
  - (d) Unusual anxiety and tension.
  - (e) Silly inappropriate laughter.
  - (f) Excessive shyness and seclusiveness.

(g) Appearance of sadness—usually with sluggishness.

(h) Over-boisterousness.

(i) Abnormal autonomic responses, especially excessive blushing, perspiration, fainting, pallor, cold extremities, rapid pulse, tremor.

186. Usually the result of the "M" test is available. This is very helpful in determining intelligence and aptitude for learning. In addition, preliminary screening by the Army Examiner, either in the form of short personal interviews or a psychiatric questionnaire, will reveal many recruits of doubtful stability who must be carefully examined by the psychiatric specialist to determine their mental fitness.
187. The diagnosis of mental disorders depends for the most part on an adequate history. This of course may be difficult to evaluate since it comes from the recruit himself. It should be supplemented, where necessary, by information from the individual's physician, police records, hospital records, employment records, etc. A social worker is provided in the establishment of reception centres in order to help the medical board obtain adequate social histories of this type. In addition to the history, the diagnosis is based on the examiner's appraisal of the recruit's general behaviour in the examination environment and his responses to conversational questioning.
188. The psychiatric examination should be conducted in private, preferably in a warm quiet room. The most successful approach is one of straightforward, professional inquiry, coupled with a genuine respect for the individual's personality and with due consideration for his feelings. A friendly objective attitude is required, and brusqueness and haste should be avoided. An adequate examination can never be completed in less than fifteen minutes.
189. Questioning should begin with points obviously relevant to the situation. It is always sound to begin with questions relating to general health, the existence of complaints, pains and aches, etc. This can lead easily and naturally to a canvass of the conditions under which he has been working and his occupational history. Attitudes toward his boss and his relationships generally with friends and family can then be assessed. From this point the questioning can proceed without embarrassment to school and family history and other items of significance.
190. *Psychiatric Standards*—The criterion of acceptance in the Army



must be intelligence and stability sufficient to allow the recruit to complete the training necessary for the type of work which his allocation demands.

191. By intelligence is meant the general learning ability and aptitude of the man in relation to Army training. The soldier's intelligence should be at least within the normal range. His mental age should be over 10 years. He should show reasonable alertness in the speed and correctness with which he answers simple questions and obeys simple commands.
192. By stability is meant the temperamental and emotional aspects of his personality. The soldier should have reasonable poise and nervous stability as indicated by usual physiological indices, e.g., heart rate, perspiration, tremor, temperature of extremities, etc. Signs of emotional instability, sullenness, anxiety, shyness, excessive laughter or tears, sadness or over-boisterousness must be regarded seriously as limiting factors in army life. Similarly, evidence indicating inability to get along with family, friends, the various authorities in school, occupation and society indicates temperamental instability. Defects of speech (stuttering and stammering) are often indicative of instability. The man's speech must be readily understood, although a mild degree of defect is allowed if he is otherwise physically, intellectually and emotionally fit.

193. *Mental—Summary of Grading—*

- M1. Intelligence sufficient for full combatant duty and training, including appropriate tradesman or specialist training.
- M2. Intelligence sufficient for non-tradesman or non-specialist combatant duties or trades requiring experience rather than ability.
- M4. Specific defect in intelligence or learning ability so that full training cannot be absorbed. Has sufficient intelligence however to be useful at simple routine duties, simple labour, etc.
- M5. Unsuitable for service anywhere in any capacity because of insufficient intelligence.

NOTE:—It is stressed that these gradings are definitely *not* made on the basis of the "M" test results alone. Careful clinical appraisal of the man's intelligence is absolutely necessary (see para. 195).

194. *Stability—Summary of Grading—*

- S1. Emotionally stable. No signs of psychoneurosis or any serious divergence from the normal in autonomic nervous system function or stability.
- S2. Same as S1.
- S3. Some history of emotional instability in early life with good adult adjustment. Usable overseas for all but full combatant duty.
- S4. Has evidence of emotional instability but not sufficient to preclude useful work in certain restricted army duties. Grade 4 in both M and S should prevent enlistment or warrant discharge of a serving soldier.
- S5. Unsuitable for service anywhere in any capacity because of instability.

195. *Diagnostic Criteria—Mental deficiency* (feeble-mindedness, imbecility, idiocy). Diagnosis should be based on poor educational and occupational achievement, lack of general knowledge concerning his native environment and poor performance on psychological tests. The "M" test results (see para. 193) may be supplemented by other clinical tests as necessary. The estimation of intelligence, however, remains a clinical judgment and should not be based on test results alone. All factors must be considered. Illiteracy *per se* is not to be classified as mental deficiency and is not a cause for rejection. In recording the diagnosis on M.F.M.2, care should be taken not to use such terms as "imbecile" or "moron". A better expression is "Intelligence insufficient for military training".

196. *Psychoneurosis* (anxiety states, hysteria, obsessive compulsive states, hypochondriasis, etc.). Diagnosis should be based on a history of vague complaints which have interfered with progress in civil occupational life. Family history of chronic physical or mental illness or instability in parent, brothers or sisters is important, as is the history of a home broken during the individual's childhood. The presence of many symptoms without evidence of organic pathology is suggestive, to wit: palpitation, sweating, dizziness, fainting spells, headaches, paralysis or paraesthesia. Psychoneurotics are often emotionally immature, unstable, dependent, suggestible and hypochondriacal. They often have specific fears, (e.g., dark, certain foods, crowds, etc.) and certain types display obsessive and compulsive behaviour, (e.g., inflexible rituals concerning food,



sleeping, dressing and recurrent obsessional thoughts). Certain men who have a potential value to the army as tradesmen or specialists may be put in Grade 4 if the neurosis is mild and not totally disabling.

On no account should they ever be sent overseas.

197. *Psychopathic personality*—Diagnosis cannot often be made without full information about the social and occupational background. The chief characteristic of this disorder is inability of the individual to profit by experience. Men with this disorder are unable to meet the usual adult social standards of truthfulness, decency, responsibility and consideration for their fellow associates. They are emotionally unstable and absolutely not to be depended upon. They are impulsive, show poor judgment and in the Army they are continually at odds with those who are trying to train and discipline them. They often present a favourable impression superficially and may have good intelligence. Their past history of incorrigibility, restlessness, frequent changes of job, will indicate the real defect. Among this group are many homosexuals, chronic delinquents, chronic alcoholics and drug addicts. All such men should be regarded as medically unfit for service anywhere in any capacity.

198. *Psychosis* (insanity, frank mental illness). The most commonly occurring psychosis of the military age group are *Dementia Praecox* (schizophrenia) and *Manic Depressive Psychosis*. The diagnosis of *Dementia Praecox* is based usually on odd, eccentric or bizarre behaviour coupled with unusual seclusiveness, evidence of strange ideas, attitudes and suspicions. Frequently the individual has peculiar attitudes towards his own body and body-functions, and the feeling that he is different from others, set apart for a special mission, etc. Often there is evidence of disturbed emotional behaviour such as silly inappropriate laughter or unusual apathy or indifference. There may be evidence of delusions and hallucinations. *Manic Depressive Psychosis* may be suspected in men showing marked emotional depression and melancholia with psycho-motor retardation; or the reverse, euphoric boisterousness with restlessness and over-talkativeness. There may or may not be a history of treatment in a mental hospital.

The diagnosis of a psychosis of any type of a clearly marked pre-psychotic state (schizoid, paranoid or cyclothymic personality types) or a history of treatment in a mental hospital will exclude or discharge the man from military service.

199. *Malingering*—True malingering is defined as the conscious and deliberate attempt by the individual to feign a physical or mental disease for the definite purpose of attaining a particular end which, in the army, is usually rejection or discharge. It is frequently suspected in those individuals who are more or less unwittingly exaggerating (c.f. "skrimshanking"). It is also often confused with clear cut psycho-neurotic reactions.
200. The commonest types of true malingering are simulated defects in mentality, vision, hearing and enuresis (bed-wetting).
201. It is always a difficult problem to decide whether a malingerer is worth keeping in the army in view of the trouble and expense he causes. The danger of a rejection or discharge too easily obtained, is that the difficulty will spread and become epidemic. Generally speaking, if the malingerer does not have an unfavourable past record and if he is otherwise acceptable, he should not be rejected. Most of the recruits who attempt to mangle are trying it for the first time and are easily discovered. When confronted with the situation and given time to reconsider, most of them decide to co-operate. Where evidences of psychopathic tendencies are discovered, the recruit should be rejected, and the serving soldier should be discharged.
202. *Feigned mental deficiency*—This is frequently encountered among illiterates. On careful interview, discrepancies will almost always be found in the educational and occupational history. Non-language psychological tests frequently reveal characteristic responses (e.g., failing on ridiculously easy items and passing harder ones, etc.). Examination by psychiatric specialist is indicated in these cases.
203. *Simulated defects of vision* (See Para. 181)—Various tests using prisms and coloured lens as well as the ophthalmoscope have been designed to test the malingerer. One of the most difficult conditions to judge in this regard is the claim to night blindness. The ophthalmologist should examine all such cases.
204. *Simulated defects of hearing* (See para. 173)—Many simple tests can be used for determining malingering here. One of the best is the use of the binaural stethoscope. This is fully described in section on hearing.
205. *Enuresis*—This may be real or simulated and is frequently en-



countered in mild epidemics in barracks and training centres. In either case, it is very difficult to deal with. Careful history and where possible documentary evidence indicating the presence of the disability in civilian life may be necessary to exclude malingering. True enuresis is cause for discharge. Malingerers should be placed in a cot without a mattress until they are cured.

## APPENDIX I

### X-RAY EXAMINATION OF CHESTS

206. *Candidates for Appointment or Enlistment*—The X-ray examination of the chest will be made by a single postero-anterior vertical film. The tube film distance will be at least 6'. The tube will have a focal spot of approximately 4 mms. or less. The exposure time is to be approximately 1/10 seconds or less. Films are to be taken during deep inspiration with the scapulae well out of the lung fields. Intensifying screens must be free from defects. The films must be of a good diagnostic quality and enclosed in an individual envelope.

Modification of the physical factors used in making these X-ray films is not to be made except in case of necessity and by authority of the D.G.M.S. or D.M.S.

These films are to be interpreted by a competent radiologist or a physician specially conversant with the interpretation of chest films, as approved by the D.G.M.S. or D.M.S.

207. The following regulations will apply in estimating physical fitness from the X-ray examination of the chest:—

(a) A healed primary complex, calcined glands of the lung root or pleural thickening at the apices, should not be considered of themselves sufficient grounds for rejection. This sub-paragraph is subject to qualification as per para. (e) below.

(b) Scattered, well calcified, small, discrete shadows suggesting multiple healed tuberculous foci, including a few small, calcified nodules above the level of the first rib, of themselves, are not sufficient grounds for rejection.

(c) Adhesions involving the diaphragm, in the absence of clinical features, should not be considered of themselves sufficient grounds for rejection. These cases are to be referred for special clinical examination by a chest specialist.

A history of idiopathic pleurisy within three years with or without effusion, or signs or symptoms suggesting activity, will be grounds for rejection.

(d) Cases presenting in the X-ray film, shadows suggesting recent or unstable tuberculosis are to be referred for clinical examination by a chest specialist, and if tuberculosis is diagnosed, the individual will be rejected.

(e) Shadows indicating former massive pulmonary tuberculosis are sufficient grounds for rejecting the individual. This includes large, well calcified lesions which may be clinically inactive.

(f) Cases showing shadows suggestive of acute inflammatory lesions are not to be accepted, but may be re-examined at a later date. At such time—if their films are normal—they may be accepted.

(g) In measuring the heart, the transverse diameter is to be obtained by selecting the two widest points on each border and joining them at right angles to the central perpendicular line. The sum of these measurements is to be considered the transverse diameter.

(h) The transverse diameter of the chest is to be taken as the widest diameter of the chest, measured from the inside of the ribs, at approximately the normal level of or above the left dome of the diaphragm.

(i) In cases where the transverse diameter of the heart is more than half the width of the thoracic cage or the contour of the heart suggests a cardiac lesion (see para. 57) they should be referred for clinical examination by a chest specialist.

(j) All cases showing shadows indicating or suggesting emphysema, silicosis, bronchiectasis, substernal thyroid, tumour, aneurysm, evidence of old empyema, or any pathological condition of the thorax are to be referred for clinical examination.

## APPENDIX II

### EXAMINATION OF THE URINE FOR ALBUMIN AND SUGAR

208. *Albumin*—(a) If the urine is not clear, a sample should be made clear either by filtration or centrifugation.



(b) If it is not acid as shown by the urine turning blue litmus paper red, a sample should be made acid by adding sufficient acetic acid.

(c) Strongly ammoniacal urine should not be accepted for test.

(d) Very light coloured urines of low specific gravity should have added to the sample for test a small quantity of salt or one-third volume of saturated salt solution.

209. The test for albumin depends on its precipitation by heat or chemicals.

The Sulphosalicylic Acid test and the Heat plus Acetic Acid test on the clear sample of urine are recommended.

210. *Sulphosalicylic Acid Test—*

*Material:*

(a) 10% Sulphosalicylic Acid in 10% phosphoric acid solution, or, if the above is not available,

(b) 10% Sulphosalicylic Acid in aqueous solution.

*Technique:*

(1) In a small test tube mix equal quantities of urine and solution.

(2) Set aside for two minutes.

(3) Compare with clear urine against a dark background.

(4) Report according to density of opacity as absent, trace, 1, 2, 3 or 4 plus.

211. *Heat and Acetic Acid Test—*

(1) Fill a test tube two-thirds full with clear urine.

(2) Heat the upper part of the liquid over a small flame, rotating the tube, until it boils vigorously. (A precipitate which forms may be due to phosphates or carbonates or albumin.)

(3) Add 3-10 drops of glacial acetic acid, drop-wise, at a few seconds interval. (If any precipitate that had formed with heating clears on adding the acid, it is not due to albumin.)

(4) Examine against a dark background.

Report as absent, trace, 1, 2, 3 or 4 plus.

Trace—The precipitate is just visible by comparison with clear urine below the heated portion.

1 plus—The opacity is definite but does not separate.

2 plus—Opacity is marked and fine white particles are sifting to the bottom.

3 Plus—Opacity is dense and large white lumps are falling to the bottom.

4 plus—The upper part contains a solid white mass.

212. Either of the above tests properly performed and examined should show definitely the absence or presence of albumin and the approximate amount.

If there is any doubt about the test it should be repeated and checked with the alternative test and if necessary with a fresh specimen.

213. All urines showing albumin should be examined microscopically, both uncentrifuged and centrifuged sediment and without and with acetic acid. If red cells are thought to be present, a benzidine test should be done. (See below.)

214. The report should record absence or presence of R.B.C., W.B.C. and casts and the number per high power field. It should state specifically whether the findings are for uncentrifuged urine or centrifuged sediment.

215. In many cases of albuminuria, the Medical Officer may request complete examination of a fresh specimen and a specimen of the first morning urine.

216. *Benzidine Test for Blood*—(a) All glassware should be thoroughly clean.

(b) *Technique*:

(i) Centrifuge about 10 c.c. urine and pour off the supernatant.

(ii) Boil a few drops of sediment in order to destroy enzymes of pus cells which might otherwise give a positive test.

(iii) Add an equal amount of freshly prepared saturated solution of benzidine in glacial acetic acid.



(iv) Add about 1 c.c. of hydrogen peroxide.

A blue colour denotes haemoglobin either in R.B.C. or in solution. As stated above, pus will give a positive test. Possibility of this must be eliminated by boiling.

Report negative or positive.

217. *SUGAR (Glycosuria)*—Benedict's qualitative solution which may be obtained from Medical Stores or made according to directions given below is used. The test depends on the reduction of the cupric salt, to cuprous salts by glucose in an alkaline medium.

Benedict's solution should be made from chemicals of C.P. grade as follows:

Recrystallized copper sulphate .....	17.3 grams
Sodium or potassium citrate .....	173.0 grams
Sodium carbonate (anhydrous) .....	100.0 grams
Distilled water to make .....	1,000.0 c.c.

Dissolve the citrate and carbonate in 700 c.c. of water with heat. Filter if necessary and add the copper sulphate (dissolved in 100 c.c. of water) slowly, with constant stirring. Cool, and add water to make 1000 c.c.

218. *Technique:*

(a) To 5 c.c. of Benedict's solution in a test tube add eight drops of urine and mix.

(b) Boil two minutes by the watch over a free flame or five minutes in a vessel filled with boiling water.

(c) Set aside to cool.

(d) Examine.

If when cool, the mixture becomes completely opaque when shaken, "sugar" is present. Colour change is not the criterion: complete opacity is necessary; the colour may be green or yellow or red, depending in part on the concentration of sugar present. With excess urates or phosphates, a few greyish flakes may be present. With sugar-free urine, the test solution remains blue.

219. The intensity of the reaction is graded: trace, 1 plus, 2 plus, 3 plus and 4 plus. With a trace, window bars, light filaments

or fine print are just blotted out, the precipitate seldom settles out in five minutes' cooling. With 1 plus the opacity is quite definite, the colour usually is green on shaking; a yellow precipitate settles out before cooling is complete. With 2 plus, the blue colour of the solution is much faded and a yellow precipitate separates; the opacity, after shaking, is greenish yellow. With 3 plus, the blue colour of the solution has disappeared leaving a clear supernatant fluid, the opacity, when shaken, is yellow or red. With 4 plus, all blue colour has disappeared from the cool solution and is replaced by a yellow or yellowish brown shade in the fluid supernatant to a red precipitate; on shaking the opacity is red.

220. More difficulties arise from failure to follow simple directions than from any other cause. False positives are generally due to:
  - (a) Dirty glassware.
  - (b) Faulty technique.
  - (c) Impure reagents.
  - (d) Faulty interpretation.
221. All positive tests should be repeated.
222. When there is any question that a positive test may be due to some substance other than glucose (pentoses, glycuronates, etc.) the sample should be submitted to the nearest Provincial Laboratory with a request for identification of the reducing substance.

#### *DISPOSAL OF RECRUITS WITH ALBUMINURIA AND GLYCOSURIA*

223. *Disposal of Recruits with Albuminuria*—Albuminuria occurs in a considerable proportion of normal individuals after heavy exercise. Less strenuous exercise in individuals temporarily unfit from lack of training or from recent illness unrelated to the urinary tract may result in albuminuria. About 5 per cent. of young soldiers have periodic albuminuria. Albuminuria occurring in otherwise healthy individuals under these conditions may be termed functional albuminuria. This type of albuminuria, which is not a cause for a rejection of a recruit, should be differentiated from pathological albuminuria, the result of renal or extrarenal disease.



(a) If the recruit gives a history of renal disease or oedema, reject and advise to consult his family physician.

(b) If the blood pressure is over 145 m.m. Hg. systolic or 90 m.m. Hg. diastolic, reject and advise to consult his family physician.

(c) If the recruit is otherwise healthy, examine a specimen of urine collected on awakening after a night's rest:

(1) If the examination of this second sample of urine is negative for albumin, the recruit should be accepted for active service:

(2) If the examination of the second sample of urine is also positive for albumin, a microscopic examination of the centrifuged sediment of the urine should be made:

(i) If microscopic examination is negative for abnormalities, accept for active service;

(ii) If microscopic examination is positive for cast or red blood cells the recruit should be rejected and referred to family physician.

(iii) If microscopic examination is positive for 10 white blood cells per H.P.F., the recruit should be considered temporarily unfit and referred to family physician.

**224.** *Disposal of Recruits with Glycosuria*—The finding of a positive reduction test in the urine does not necessarily indicate that glucose is present in the urine, nor does it necessarily indicate, providing the reduction be due to glucose, that the underlying condition is diabetes mellitus. The use of impure reagents, faulty technique in making the Benedict test, or faulty interpretation of result of the test may give factitious results. The Benedict test for the detection of glucose in the urine depends on the reduction in an alkaline solution of cupric to cuprous salts. Reducing agents other than glucose, such as pentoses, glycuronates when certain drugs are given, homogentistic acid and melanin, may be present in sufficient amounts in the urine to give a positive reduction test. Glycosuria is produced by other causes than diabetes mellitus, e.g., renal glycosuria, toxic goitre, emotional strain, cerebral vascular

accidents, fracture of the skull, concussion, intracranial tumour, pituitary disease, infections and even simple hyperalimentation.

(a) If factitious results and non-glucose reducing substances can be excluded as a cause for a positive reduction test in the urine of a recruit, he must be presumed to have glycosuria.

(b) If any clinical manifestations of diabetes mellitus accompany the glycosuria, the recruit should be rejected for military service and advised to consult his family physician.

(c) If the Medical Board are unable to satisfy themselves as to the cause of the glycosuria, the recruit should then be advised to consult his family physician. The prospective recruit may present himself at a later date if he so desires.





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## Functional Interpretation of Medical Grades

Grade	Physique (P)	Upper Extremities (U)	Locomotion (L)	Hearing (H)	Eyesight (E)	Mental (M)	"S"
1	Fit after training, for full strain and fatigue of combatant duty. A front line fighter.	Able to lift 50 lbs. up to head level. Can use rifle to shoot and for bayonetting. Can throw grenades, dig and potentially able to drive heavy vehicles. Fit for hand to hand fighting.	Able to march 20 miles per day after having completed training. No disabilities of feet or legs which would hamper the man in standing, running, climbing, or digging.	Able to hear normal spoken voice at 15 feet distant in one ear and 10 feet distant in other ear.	Able to see to shoot using right eye without glasses 20/40 right eye, 20/100 left eye. If with glasses must have better than 20/100 both eyes correctible to 20/40 in both eyes. Have binoculars (stereoscopic) vision sufficient for driving and use of binocular instruments.	Intelligence sufficient for full combatant duty, including appropriate tradesman or specialist training.	Emotionally stable, —no signs of choreoeriosis, or any serious divergence from the normal in autonomic nervous system function or stability.
2.	Fit for all normal work or strain but unable to endure extreme degrees for long periods.	Able to lift 50 lbs. up to head level use rifle and bayonet, throw grenades, dig, lift, push or drag strongly, drive heavy vehicles.	Able to march 5 miles per day after having completed training. Must have no difficulty in standing, running, climbing or digging.	C.V. one ear 20', other 0'. C.V. one ear 10', other 10 ft. C.V. one ear 15', other 5 ft.	Must have 20/120 R, 20/200 L, correctible with glasses to 20/40 in both eyes. No stereoscopic vision required. Not dependent on glasses.	Intelligence sufficient for non-tradesman or non-specialist combatant duties or for trades requiring experience rather than ability.	Same as No. 1.
3.	Fit to do ordinary general duty. Has not the stamina, even after training, to endure the strain and fatigue of full combatant duty. Will be used as storemen, batmen, clerks, certain bench trades, etc.	Able to lift 25 lbs at least to shoulder height. Is potentially able to drive light vehicles. In an emergency can fire a rifle or sub-machine gun.	Able to walk 5 miles per day and do limited standing but not able to do continuous standing for long periods. (e.g. guard duty).	Completely deaf in one ear, but able to hear spoken voice at 15 ft. distant with other ear, or C.V. at 10 ft. in one ear and 5 feet in other ear.	Must have 20/200 or better in both eyes, correctible with glasses up to 20/40 in both eyes. No stereoscopic vision required. Dependent on glasses.		Same as No. 1. Some history of emotional instability in childhood with good adult adjustment. Usable overseas for any but full combatant duties.
4.	Specific diseases of internal organs, e.g. peptic ulcer, or certain surgical conditions, for which see details under "Systems."	Specific defects or defect which necessitate keeping the man in Canada, such as: serious interference with use of joints, muscles, spine, especially those with pain on use, or of a possible progressive character.	Specific defects or defect which necessitate keeping the man in Canada.	Specific defect or defects which necessitate keeping the man in Canada (e.g. more deaf than grade 3 but can hear spoken voice at least 5 ft. away).	Specific defect or defects which necessitate keeping the man in Canada (e.g. 20/400 in both eyes correctible to 20/40).	Specific defect or defects which necessitate keeping the man in Canada. Useful only in Works Companies, Pioneer Companies, etc.	Some evidence of emotional instability: no sufficient disability to preclude useful work in Army. Grade 4 in both 'M' & 'S' should preclude enlistment or warrant discharge of a serving soldier.
5.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.	Unsuitable for service anywhere in any capacity.
Factors to be considered.	Age, build, strength, stamina, guts.	Strength, range of movement and general efficiency of upper arm, shoulder girdle, and back.	Strength, range of movement and efficiency of feet, legs, pelvic girdle and lower back.	Auditory acuity.	Visual acuity.	Intelligence.	Emotional stability Personality.



Prescriptions for the treatment of the various diseases

Section III

## Section IV

### CLASSIFICATION OF ARMY DUTIES

(Not included in this edition)



VI. 100

## Section V

## PHYSICAL STANDARDS FOR FEMALE RECRUITS

225. Physical standards for men will apply for C.W.A.C. personnel with the following additions:

*Gynaecological Requirements*

226. *History*—The history shall further include a careful inquiry into the woman's gynaecological history (see section dealing with gynaecological examination) and shall note the following:

*Menstrual History*

- (A) 1. Date of onset of menstruation.
  - 2. Rhythm.
  - 3. Duration.
  - 4. Amenorrhoea.
  - 5. Dysmenorrhoea, severity and duration.
  - (B) 1. Irregular bleeding.
  - 2. Discharge, character, duration and severity.
  - 3. Menopause, date, post-menopausal symptoms.
  - 4. Pelvic pain or pressure.
  - 5. Obstetrical history, number of children, type of delivery, number of miscarriages.
  - 6. Prolapse, degree, duration, with or without incontinence.
227. *Gynaecological Examination*—1. Where a recruit gives a positive history of any pelvic complications within the regulations laid down below (para. 2) she shall be referred to a consultant gynaecologist for a complete pelvic examination and shall be dealt with in accordance with the report of such gynaecologist providing she has not already been rejected on other grounds.
228. 2. (i) Menstruation—shall be considered normal if the period does not occur oftener than every twenty-one days and does not last longer than seven days.



- (ii) Amenorrhoea—either primary or secondary shall always be referred to the consulting Gynaecologist unless it is due to natural or surgical menopause which is symptomless.
- (iii) Dysmenorrhoea — resulting in inability to work for three hours or more shall be referred.
- (iv) All cases of irregular bleeding shall be referred.
- (v) History of vaginal discharge other than physiological leucorrhoea shall be referred.
- (vi) Moderate or severe *menopausal syndromes* shall be referred. Mild menopausal symptoms may be assessed by the local board.
- (vii) All cases of pelvic pain and of established or suspected *prolapse* shall also be referred.

229. 3. Routine gynaecological or rectal examinations are not to be undertaken. In no case are they to be undertaken without the consent of the recruit. (Written).

*Guide to Grading for Gynaecological Consultants*

230. 1. *Pelvic Inflammatory Disease.*

- (i) Acute—Grade 5.  
Chronic—mild—Grade 2 or 3.
- (ii) Chronic—severe—Grade 5.  
G.C. Cervicitis—Grade 5.

2. *Chronic Cervicitis*—Grade 2 or 3.

3. *Menorrhagia.*

- (i) Subacute Endometritis (subinvolution) Grade 3.
- (ii) Functional—Grade 5.

4. *Uterine and Ovarian Tumours.*

- (i) *Fibroids*—a. small and non-symptomatic—Grade 1.  
b. with menorrhagia, i.e., submucous—Grade 5.  
c. Pedunculated and small (subserous)—Grade 1.
- (ii) *Ovarian Tumours*—Grade 5.

5. *Prolapse*

- (i) Symptomless cystocoele and/or rectocoele—Grade 2.
- (ii) Gystocoele with incontinence—Grade 5.
- (iii) Procidentia—Grade 5.

6. *Menopausal Syndrome.*

- (i) Moderate or severe constitutional or mental disturbances shall be—Grade 5.
- (ii) Mild disturbances shall be treated by a competent consultant and shall be placed in Grade 1.

7. *Uterine Enlargement.*

- (i) Pathological—Grade 5.
- (ii) Physiological—If pregnancy is clinically established, the recruit is rejected. If pregnancy is suspected she may report for a second examination in one month or the diagnosis may be established by Aschheim-Zondek or Friedman tests. (Contract for which will be made with civilian hospitals. One in each Military District.)

8. *Breasts.*

Careful examination should be made of the breasts noting abnormally large painful or pendulous breasts, the presence of nodules or tumours, retraction of or discharge from the nipple. Grading should be according to the diagnosis and potential disability. Benign lesions without symptoms may be enlisted.

231. *Arterial Hypertension for C.W.A.C. Recruits*—Blood pressure is to be taken on every recruit. A recruit is considered to have hypertension when the systolic pressure is in excess of 140 millimetres of mercury and/or the diastolic pressure is in excess of 90 millimetres of mercury. Diastolic pressure being based on diminution of sound and not disappearance of sound. It is suggested that these readings be obtained with the recruit in a recumbent position and at least three readings be taken if the reading is above the standard after not less than thirty minutes complete rest.



232. *Average Body Build*—The following table of heights and weights is submitted as a guide. Weight alone is not to be taken as grounds for rejection providing such weight is within normal limits.

Height	Average	Range of Weights	
4'10"	114	134	90
4'11"	116	138	101
5'	118	142	104
5'1"	120	146	106
5'2"	122	150	109
5'3"	125	154	112
5'4"	129	158	114
5'5"	132	162	117
5'6"	136	168	120
5'7"	140	174	124
5'8"	144	179	129
5'9"	148	183	136
5'10"	152	187	144
5'11"	155	189	151
6'	159	193	158
6'1"	162	198	168
6'2"	166	202	176

233. *Standards of Vision*—Standards of Vision for C.W.A.C. recruits are to be the same as for men.

234. *Varicose Veins*—(a) Where there are symptomless varicose veins below the knee uncomplicated by any abnormality of the skin or subcutaneous tissues, and where the deep circulation is found to be normal, may be accepted for Grade 1.

(b) Where there is oedema or thickening of the skin with or without ulceration or where there is a history of phlebitis or of previous varicose ulcer even if healed at present time and no oedema, the recruit should be rejected.

235. *Haemorrhoids*—(a) Haemorrhoids which are symptomless are to be disregarded and the recruit placed in Grade 1, if no other reason for a lower category is present.

(b) Haemorrhoids that are giving symptoms should be

referred for a gynaecological examination to the Consultant Gynaecologist, who will assess the case on its merits. Bleeding haemorrhoids or haemorrhoids due to a fundamental organic abnormality should be referred to the D.P. & N.H. for treatment (see P.C. 2291). Haemorrhoid cases which show a secondary anaemia will be rejected, Grade 5.

236. *Herniae*—See physical standards for men with the following exceptions:  
Inguinal—direct or indirect and femoral herniae as Grade 5R.  
Umbilical—1. Very small and symptomless should be disregarded.  
2. If causing any kind of symptoms should be Graded 5.
237. *Goitre*—Symptomless adolescent goitres and small non-toxic nodular goitres may be accepted, Grade 1.
238. *Chest Measurement*—Are not applicable to C.W.A.C.
239. *Urinalysis*—When a recruit is menstruating at the time of her physical examination, the recruit will be accepted and a specimen of urine will be obtained at the cessation of the menstrual period and the result recorded on appropriate documents.
240. *Consultant Gynaecologists*—Qualified gynaecologists presently on H.W.E. may be used. If no R.C.A.M.C. gynaecologists are available, the services of qualified gynaecologists may be obtained through the D.P. & N.H.



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## Section VI

## PHYSICAL STANDARDS FOR PARATROOPS—ALL RANKS

241. (a) Alert, active, supple, with firm muscles and sound limbs, capable of development into aggressive individual fighter with GREAT endurance.
- (b) Age: 18 - 32, both inclusive.
- (c) Physically qualified as follows:—
- (1) *Weight*: Maximum not to exceed 190 lbs.
  - (2) *Height*: Maximum not to exceed 72 inches.
  - (3) *Vision*: Distant vision uncorrected must be 20/40, each eye.
  - (4) *Feet and Lower Limbs*: Flat feet not acceptable. Better than average bone structure and muscular development of the lower limbs.
  - (5) *Genito-Urinary System*: Venereal disease to disqualify.
  - (6) *Nervous System*: Evidence of highly labile nervous system to disqualify. History of nervous complaints to disqualify.
  - (7) *Bones, Joints and Muscles*: Lack of normal mobility in every joint, poor or unequally developed musculature, poor co-ordination, asthenic habitus, or lack of better than average athletic ability to disqualify.
  - (8) *Hearing*: W.V.—10 ft. both ears, i.e., a man standing with his back to the examiner and using both ears must be able to hear a forced whisper 10 ft. away. Must have patent Eustachian Tubes. Perforations or thin scars of the ear drums disqualify.
  - (9) *Dental*: Men must not drop with false teeth; consequently there must be eight sound or repairable teeth (including 2 molars) in the upper jaw, in good functional opposition to corresponding teeth in the lower jaw.



- (10) *Medical History*: A history of painful arches, recurrent knees or ankle injuries, recent or old fractures with deformity, pain or limitation of motion, recurrent dislocation, recent severe illness, operation or chronic disease to disqualify, (unless recurring, properly healed fractures not to disqualify).
- (11) *Mental and Intelligence Standard*: It was agreed that men with alert minds are required for this type of training and that men with doubtful intelligence should be eliminated by intelligence test.
- (12) Other than as listed above, physical standards to be the same as grade 1 throughout.



## Section VII

## REMEDIAL DEFECTS

242. *Definition of Remedial Defects*—In general a remedial defect is one which in the opinion of the Medical Board can be cured, either by medical or surgical means, or by non-operative orthopedic treatment, so that the recruit or the serving soldier in question will be rendered thereby acceptable for enlistment, or for further service, in the Army in any one of the four permissible classes,—Combatant, Accessory Combatant, Lines of Communication or Home War Establishment.

The operation or course of treatment applicable in each case should be judged as giving reasonable promise of accomplishing its object within a period of six weeks to three months.

A list of such remedial surgical and orthopaedic conditions is appended for the guidance of Medical Boards; but much in the way of clinical judgment in each questionable case is left to their discretion.

Generally speaking, candidates for remedial treatment will be those who will thereby be made fit for Overseas duty in Grades 1 and 2, (preferably in Grade 1). But there may be found a certain number of men, who would ordinarily be classed in Grade 5 but who, with medical treatment would qualify for Grade 3. In such cases there is need of careful judgment with due consideration of all eventual deficiencies in the remaining systems as recorded in the "profile" graph.

Recruits with irremedial disqualifying defects will be placed in Grade 5 and given a rejection certificate M.F.M.12 for Active recruits, M.F.M.141 for N.R.M.A. recruits.

In the case of severe flat feet and other serious foot conditions, major remedial operations will very seldom be indicated in the Army as rejection will be preferable. Remedial treatment will ordinarily be confined to proper boot fitting, wedging, various supports (insoles, pads, metatarsal bars, etc.) and graded exercises; it should be carried out by an Orthopaedist.

243. *Conditions in Recruits Remedial by Surgical Treatment—Surface Inflammations*—Furuncles, Carbuncles, localized superficial abscesses. (Reject deep inflammations of viscera or bones).



*Tumours*—All benign, easily eradicable tumours of the external parts; lipoma, chondroma, fibroma, papilloma, but only if causing disability.

*Thyroid*—See para. 63.

*Haemorrhoids*—See para. 79.

*Hernia*—See paras. 112 - 119.

**GENITO-URINARY** — Circumcision, if condition is causing symptoms from retention or inflammation.

*Hydrocele*—See para. 108.

*Undescended Testicle*—See para. 107.

#### **LOCOMOTOR SYSTEM—**

*Knee, Semilunar Cartilage Dislocation*—See para. 157.

*Feet, Foot Strain*—If recent only and not chronic, and without marked falling of the longitudinal arch and with a supple foot.

*Hammer Toe*—If causing disability.

*Tendons*—Ganglion, if causing disability.

#### **LATE EFFECTS OF TRAUMA (INCLUDING BURNS)—**

Scar contractions of skin slightly limiting joint movements.

Joint adhesion of mild grade, curable by manipulation.

## Section VIII

## PERSONNEL SELECTION

244. *Personnel Selection*—The functions of the Army Examiners Personnel Selection Officers at reception centres are two: to provide information about a man's intelligence and other estimated qualities of personality for the use of Medical Boards, and in the event of acceptance for Army service to recommend to the Officer Commanding the District Depot the recruit's allocation to Arm or Corps and prospective duty within the Arm.
245. As a partial basis for the fulfilment of these aims, Army Examiners administer to all men entering the reception centre a classification test for the measurement of general mental level, known as Revised Examination "M". This test consists in a printed booklet containing a number of problems, and is provided in both English and French forms. It may be given to a group of men (usually about 50) simultaneously, and is then scored and the results entered on M.F.M.196 (Personnel Selection Record).
246. Scores on Revised Examination "M" range through 0 to 211. An average score on the English form is 125 or 130, and on the French form rather less (the latter is regarded as containing somewhat more difficult problems). These raw scores are usually expressed in terms of Groups, from I to VI, defined and generally interpreted as follows:—

247. Group	Range of Scores		Interpretation
	English	French	
I	175-211	160-211	Superior ability, when combined with other necessary qualities, will make suitable officers, N.C.Os. and high grade technical specialists.
II	160-174	145-159	
III	130-159	115-144	High average ability. The majority of trade trainees, specialists, and N.C.Os. score in this range.
IV	100-129	85-114	Low average ability. Usually non-specialists.



V	70-99	55-84	Restricted ability. Many will succeed in normal training, but will be slow in learning; some may be unable to succeed at normal basic training.
VI	0-69	40-54	Very little likelihood of success in normal basic training; some, however, may be suitable for educational basic training.

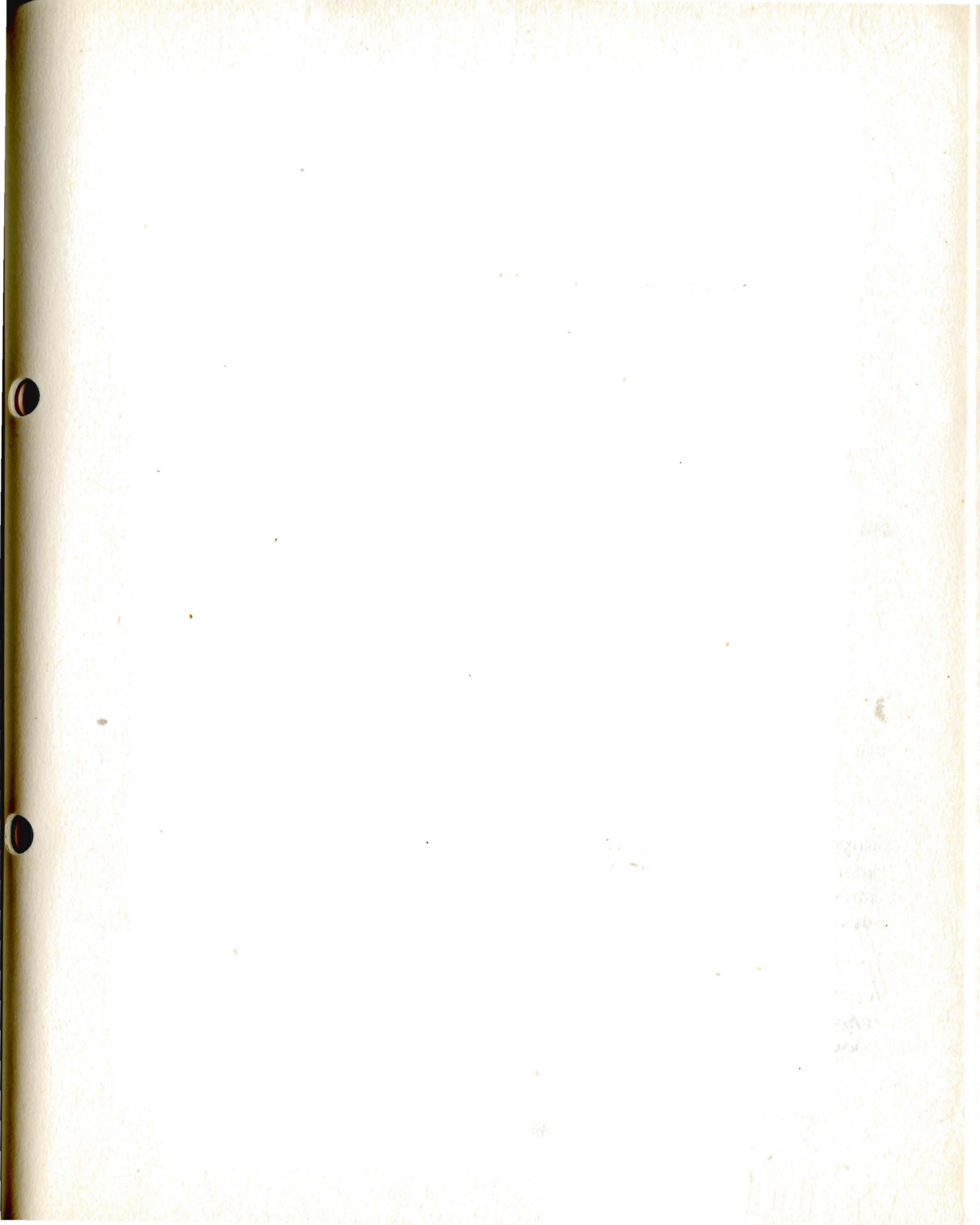
248. The total score on Revised Examination "M" is derived by the simple addition of the scores on eight sub-tests contained in one printed booklet. Of these sub-tests, three are non-verbal (that is, do not require ability to read or write) and five are verbal. It is therefore possible for a man of good native ability but deficient in formal English or French education to do well in the first three tests and poorly in the last five. Where this is the case, he will often prove suitable for educational basic training if he appears to possess other desired qualities.
249. M.F.M.196 (Personnel Selection Record) and the Qualification Card (as in use Overseas) contains not only the score made by each recruit upon Revised Examination "M" but also an account of his educational, occupational and previous military background, together with observations upon his social or family history and apparent personal qualities which seem to the Army Examiner to be relevant to the recruit's placement and training. This additional information about the man is gained from a personal interview conducted by the Army Examiner in the reception centre. The whole record of test and interview serves as a basis for a recommendation for the recruit's employment.

M.F.M.196 upon completion becomes a part of the soldier's regimental documents, and is frequently consulted at various stages of his military training by Army Examiners, Regimental Medical Officers, Company Commanders and others, with a view to its use in adjustment of his allocation to Arm or Corps, selection for specialist or trade training, promotion, disciplinary action, etc.

250. The Qualification Card is used in very much the same way. The emphasis overseas, however, is naturally on re-allocation of serving soldiers and on the selection of personnel from the Army for special duties.
251. The relation between the allocation or re-allocation as recommended by the Army Examiners and the functional grading as determined by the officers of the medical boards is obvious. The one is completely dependent on the other. A very close working liaison is therefore absolutely necessary.







## Section IX

## NOTES ON WAR PENSIONS

252. These notes have been compiled with a view to giving the Medical Profession of Canada, including the Officers of the Canadian Army Medical Corps, an insight into the pension legislation which has evolved since the last war. This is not a comprehensive survey of all the problems connected with this important question, but it does explain the fundamental basis on which disability pension is granted.
253. Up to the end of the last fiscal year, March 31st, 1939, Canada has paid in cash over nine hundred and twenty million dollars (\$920,000,000) for disability and dependent pensions arising from the last war. The annual expenditure is roughly forty-two million dollars (\$42,000,000), and this will continue for some time to come. This vast sum does not include the cost of administration, treatment, and vocational training.
254. Pension is compensation for handicap in the labour market, or for death suffered during service, which is paid by the State to ensure for the man or his dependents maintenance which he is unable to provide. The right to receive this compensation in respect to the Great War is established and regulated by the Canadian Pension Act, and the provisions of this Act have been extended to participants in the present war.
255. The keystone of the pension legislation, known as the insurance principle, is contained in Sections 11 and 12 of the Pension Act, which in part reads as follows:—  
“SECTION 11 (1) In respect of military service rendered during the war,
- (a) pensions shall be awarded to or in respect of members of the forces who have suffered disability in accordance with the rates set out in Schedule A of this Act, and in respect of members of the forces who have died, in accordance with the rates set out in Schedule B of this Act, when the injury or disease or aggravation thereof resulting in disability or death in respect of which the application for pension is made was attributable to or was incurred during such military service;
  - (b) no deduction shall be made from the degree of actual disability of any member of the forces who has served in a theatre of actual war on account of any disability or



disabling condition which existed in him at the time at which he became a member of the forces; but no pension shall be paid for a disability or disabling condition which at such time was wilfully concealed, was obvious, was not of a nature to cause rejection from service, or was a congenital defect;

(c) an applicant shall not be denied a pension in respect of disability resulting from injury or disease or the aggravation thereof incurred during military service or in respect of the death of a member of the forces resulting from such injury or disease or the aggravation thereof solely on the ground that no substantial disability or disabling condition is considered to have existed at the time of discharge of such member of the forces;

(d) when a member of the forces is, upon retirement or discharge from military service, passed directly to the Department of Pensions and National Health for treatment, a pension shall be paid to or in respect of him for disability or death incurred by him during such treatment;

(e) when a member of the forces has, during leave of absence from military service, undertaken an occupation which is unconnected with military service no pension shall be paid for disability or death incurred by him during such leave unless his disability or death was attributable to his military service;

(f) subject to the exception in paragraph (b) of this subsection, when a pension has been awarded to a member of the forces who has served in a theatre of actual war, it shall be continued, increased, decreased or discontinued, as if the entire disability had been incurred on service.

NOTE:—In respect of service in Canada after the 21st May, 1940, pension may be awarded only if disability or death is the direct result of the performance of military duties.

SECTION 12. A pension shall not be awarded when the death or disability of a member of the forces was due to improper conduct as herein defined: Provided

(c) that in the case of venereal disease contracted prior to enlistment and aggravated during service pension shall be awarded for the total disability at the time of discharge in all cases where the member of the forces saw service in

a theatre of actual war, but no increase in disability after discharge shall be pensionable. 1925, c.49, s.2."

256. The Pension Act defines improper conduct as follows: "Wilful disobedience of orders, wilful self-inflicted wounding and vicious or criminal conduct".
257. It may be stated at once that the pension adjudicating bodies have no responsibility as to whom is accepted in the army. Their duty is, in part, to protect the State when the question of compensation arises, and to ensure that every disabled veteran receives justice and fair compensation for any disability he may have as result of service.
258. The purpose of medical examination on enlistment is not only to establish fitness of a recruit for some type of military service, but also to provide and record accurate information in regard to his physical condition, which will be of service in dealing with possible applications for compensation arising in future years.
259. As is well known, a perfectly fit man (a perfect specimen) is a rarity. It is a fact that on mobilization in the last war many recruits received, if at all, only a very cursory and superficial examination. Volunteers were attested with no record of defects on the Medical History Sheet, months later to be lowered in category, or discharged from the Army with blind eyes, deafness, varicose veins, deformed feet, etc., and even with artificial limbs,—conditions which antedated enlistment. Many of these are now in receipt of disability pension. Many are receiving pension on the basis that the disability was incurred during service, because there was no record on the Medical History sheet, and while from a medical standpoint we know that the disease or deformity existed from years before enlistment, in deciding pension entitlement there must be definite evidence recorded at the time before we can say authoritatively that the condition antedated enlistment and was aggravated, or not aggravated, as the case may be. The basic evidence (or lack of it) upon which the decisions effecting these payments were made is the written record made by Military Medical Officers of examination at enlistment, of medical treatment during service, and of examination at discharge. The seriousness of incomplete records is emphasized when the provisions of Section 63 of the Pension Act, quoted below, are considered. This Section makes it practically mandatory for the Crown to prove the negative side of the case.



"SECTION 63. Notwithstanding anything in this Act, on any application for pension the applicant shall be entitled to the benefit of the doubt, which shall mean that it shall not be necessary for him to adduce conclusive proof of his right to the pension applied for, but the body adjudicating on the claim shall be entitled to draw and shall draw from all circumstances of the case, the evidence adduced and medical opinions, all reasonable inferences in favour of the applicant. 1930, c.35, s.14."

260. You are aware that machinery for assisting applicants to obtain pension has been highly developed by soldier organizations over the past twenty years. Medicine not being an exact science, it is evident that the benefit of the doubt argument enters into the great majority of applications. An applicant's entitlement to pension is dependent almost entirely on the contents of his military medical documents, and bearing in mind that compensation claims may be made some years following army discharge, the extreme importance of a complete medical record from enlistment to discharge cannot be too strongly emphasized. The history of every disease or injury, with a full report thereof, is extremely important. Every medical report on a condition, no matter how trivial, should be a clear pen portrait, and should contain an accurate diagnosis, so that in future years when the question of compensation arises, there will be no necessity for conjecture and guess work.

261. The following example of an application for disability pension, while hypothetical, is not an uncommon type:—

Some years after his army discharge as fit (Category A), a man applies for pension for defective hearing due to otitis media. He states that during service and while a casualty for measles, he developed discharging ears, and received treatment. As supporting evidence, he forwards a medical certificate to demonstrate that he has otitis media, and the physician certifies that he treated him in 1924 for the condition. He also submits lay evidence from members of his Unit to the effect that they remember he was having ear trouble during service, with other lay evidence from friends to establish ear trouble and diminished hearing over the post-war years. The military documents merely record the following, "Ten days' hospitalization for measles. Return to duty", and there is no record of complaint in respect to deafness or suppurating ears. Bearing in mind that evidence submitted is based on memory

only, and that the application is made several years after discharge, what would be your decision as to entitlement to pension for otitis media? How much easier to adjudicate in such a case if the Medical History Sheet had the following entry, "Ten days' treatment for measles. No complications", or, "Ten days' treatment for measles and acute otitis media", as the case may be.

262. It is probable that, despite a diligent medical examination on enlistment, there will be recruits attested who through constitutional and mental defects will not make efficient soldiers. Under military discipline, change of environment, regulated exercise and change of diet, constitutional and mental defects not apparent on the primary examination may become manifest. If the Platoon N.C.Os. and Commanders, Company Commanders, etc., co-operate with the Medical Officer of the Unit, and apprise him of any obvious defects noted in the personnel, it is believed that many unfits and potential applicants for compensation could be weeded out, or at least properly categorized, and in each case the Medical History Sheet should be brought up to date with detailed information as to why the category was altered.
263. It is realized that in the stress of a campaign, owing to shortage of staff and pressure of time, it is not always possible to complete fully Medical Case Sheets, Medical History Sheets, and Medical Boards. In this connection, the great shortage of documentation of a medical nature in the last war occurred while the recruit was training in Canada.
264. The following table, showing the number of disability pensions in force as on March 31st, 1938, grouped under medical nomenclature, will prove of interest. From a study of this tabulation it will be apparent to all that the origin of the condition for which pension claimed is of paramount importance, with the exception of wounds, of course.

Medical Nomenclature and Groups	Number
General Diseases	6841
Nervous System	4485
Special Senses	6403
Circulatory System	8720
Respiratory System	12625



Gastro-intestinal System	3197
Urinary and Genital	1756
Amputations and Disarticulations	1827
G.S.W.'s and injuries to joints	6117
G.S.W.'s injuries, fractures	24562
General diseases and injuries	3148
Venereal diseases sequelae	195
	<hr/>
Total	79876
	<hr/>

265. There is a great responsibility in granting entitlement to pension for any disease or injury. Depending on the degree of disablement, there follows a monthly pension payment with a proportionate allowance for dependents, if any, and this award may be continued for years. To illustrate, a man with a twenty per cent. disability who has a wife and two dependent children will receive a yearly allowance of three hundred and twelve dollars (\$312.00). If he continues to draw this sum for a period of thirty years, he will have received nearly ten thousand dollars in pension award alone, not to mention the cost of other benefits to which he is entitled, such as free treatment for his pensionable condition in a Government Institution with Pay and Allowances, entitlement to orthopaedic appliances for his disabling condition if required, and entitlement to War Veterans' Allowance and unemployment relief if otherwise eligible.

266. What is a disability? As defined by the Pension Act, "Disability means the loss or lessening of the power to will and to do any normal, mental or physical act. If by reason of disease or injury the soldier is unable to follow any of the many unskilled employments, he has a disability. The wider the range of restriction, the greater the disability. The degree of disability is expressed in percentages, and is ascertained by a comparison with the condition of a normal, healthy man of the same age. The award is made on a medical basis, and not on an economic one. By authority of Parliament, the Pension Commission, on the advice of several outstanding Specialists and Compensation Boards, created a Table of Dis-

abilities for guidance of physicians and surgeons dealing in pension matters. This Table gives a series of estimates for definite disabilities.

267. An applicant may have been wounded in the thigh. It was superficial, and healed readily. A scar from the wound is present. If it is well healed and non-adherent to underlying structures, if there is no atrophy or disturbance of circulation, no nerve involvement, and no weakness or limitation of movement in the joints of the wounded limb, it is perfectly apparent that there is no disability. In other words, a man cannot be considered as having an assessable degree of disability, unless there are definite objective symptoms resulting from a disease or injury which will restrict him in any of the unskilled jobs; this again emphasizes the importance of describing all conditions in detail.
268. This discussion of one of the basic phases of war pension administration is not an exhaustive review, but is designed only to provide general insight into the fundamental relationship between pension award, and medical history and record obtained during active service.







## Section X

## MORBIDITY CODE

## INDEX

CLASS I	—INFECTIOUS AND PARASITIC DISEASES.
CLASS II	—CANCER AND OTHER TUMOURS.
CLASS III	—RHEUMATIC DISEASES, DISEASES OF NUTRITION. ENDOCRINE GLANDS, AND OTHER GENERAL DISEASES.
CLASS IV	—DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.
CLASS V	—CHRONIC POISONINGS AND INTOXICATIONS.
CLASS VI	—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.
CLASS VII	—DISEASES OF THE CIRCULATORY SYSTEM.
CLASS VIII	—DISEASES OF THE RESPIRATORY SYSTEM.
CLASS IX	—DISEASES OF THE DIGESTIVE SYSTEM (CANCER EXCEPTED).
CLASS X	—DISEASES OF THE GENITO-URINARY SYSTEM (TUMOURS EXCEPTED).
CLASS XI	—DISEASES OF PREGNANCY—CHILDBIRTH AND THE PUERPERAL STATE.
CLASS XII	—DISEASES OF THE SKIN AND CELLULAR TISSUE.
CLASS XIII	—DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.
CLASS XIV	—CONGENITAL MALFORMATIONS (STILL-BIRTH NOT INCLUDED).
CLASS XV	—DISEASES OF EARLY INFANCY.
CLASS XVI	—SENILITY.
CLASS XVII	—(a) ACCIDENTS AND OTHER EXTERNAL VIOLENCE. (b) WOUNDS OR OTHER TRAUMA DUE TO WAR SERVICE—CODED UNDER CLASSES 40—50—51—55.
CLASS XVIII	—ILL-DEFINED CAUSES.
CLASS XIX	—PREVENTIVE MEDICAL CARE.
CLASS XX	—DEATHS ON MILITARY SERVICE.



## Department of PENSIONS AND NATIONAL HEALTH

The Morbidity Code as contained in this booklet is based upon the structure of the International List of the Causes of Death, Fourth Decennial Revision of 1929.

The Fifth Decennial Revision of the International List was carried out in 1938 to take effect in the year 1940. It was anticipated that the Morbidity Code revision would follow in due course but owing to certain important work already in progress prior to the receipt of the official revision, it was considered inadvisable to revise the Code at this time, the changes involved being few in any case.

The present Morbidity Code, with the exception of the Classes 40, 50, 51 and 55 dealing with conditions due to war, was accepted as a standard for Canada by the Dominion Council of Health in the year 1936. The Provincial Board of Health of British Columbia prepared an extensive index for the Code in 1937.

Four column numbering was adopted in order that one hundred numbers might be allotted under each class, at the same time permitting the first two code numbers to indicate the class numbers. Thus, in Class II, Cancer and other Tumour the first two numbers are always 02; Class VII, Circulatory Diseases, 07; Class X, Genito-Urinary Diseases, 10; etc. This arrangement greatly facilitates the sorting of Hollerith cards into the various classes, or permits the taking out of any class for examination.

There are 375 separate items in the Code up to and including Class XIX, but, with the addition of Classes 40, 50, 51 and 55 to cover war conditions 113 further items have been added to the original code, and it is thought that these should cover the bulk of all conditions suffered. It is not desirable to itemize all the possible medical conditions, therefore, like conditions must be grouped under suitable headings and those using the Code should select the item that is most descriptive of the condition.

### CLASS XVII—ACCIDENTS AND OTHER EXTERNAL VIOLENCE

In order that ordinary accidents may be kept separate from those injuries arising from the direct results of the war, Class XVII has two sections. Numbers between 1701 and 1749 are allotted to the usual accidental conditions, and Classes 40, 50, 51 and 55 are appended in order that traumatic conditions arising out of military service may be coded in detail.

## CLASS XX—DEATHS

This class was arranged for the convenience of the Department of National Defence in order to facilitate the collections of information on the circumstances surrounding deaths in the army.

### INSTRUCTIONS RE USE OF CODE

1. These codes are to be used in all cases where an individual comes within the jurisdiction of the Department of Pensions and National Health for pension, hospitalization or for any reason whereby it is necessary to allot a medical designation.
2. Accidents, pre-enlistment — not aggravated on service, or post-discharge accidental conditions will be coded in Class 17 between the numbers 1701 and 1749 only. Pre-enlistment accidents aggravated by service will be coded under Classes 50 and 51.
3. G.S.W. will be coded under Class 40 only.
4. Accidents or injuries on service will be coded under Classes 50 and 51.
5. Diseases resulting in amputations will be coded under Class 55.

## CLASS I

### Infectious and Parasitic Diseases

- 0101. Typhoid fever
- 0102. Paratyphoid fever
- 0103. Undulant fever
- 0104. Smallpox
- 0105. Measles
- 0106. Scarlet fever
- 0107. Whooping cough
- 0108. Diphtheria
- 0109. Influenza—La grippe
- 0111. „ —with respiratory complications
- 0112. „ —with intestinal complications.
- 0113. Dysentery
- 0114. Erysipelas
- 0115. Acute poliomyelitis and acute polioencephalitis
- 0116. Lethargic or epidemic encephalitis
- 0117. Epidemic cerebro-spinal meningitis



- 0118. Rabies
  - 0119. Tetanus
  - 0120. Minimal T.B., apparently arrested.
  - 0121. Tuberculosis of respiratory system.
  - 0122.        "        of meninges & central nervous system
  - 0123.        "        of intestines and peritoneum
  - 0124.        "        of the vertebral column
  - 0125.        "        of the bones and joints (vertebral column ex-  
cepted)
  - 0126.        "        of the skin and subcutaneous cellular tissue
  - 0127.        "        of the lymphatic system (bronchial, mesenteric  
and retroperitoneal glands excepted.)
  - 0128.        "        of the genito-urinary system
  - 0129.        "        of other organs.
  - 0130.        "        Pleura (0121)
  - 0131.        "        disseminated
  - 0132. Leprosy
  - 0133.
  - 0134.
  - 0135.
- (see Nos. 0174—0179.)
- 0136. Gonorrhoea
  - 0137. Gonococcic ophthalmia
  - 0138. Gonococcic rheumatism
  - 0139. Other venereal diseases
  - 0140. Infectious Mononucleosis
  - 0141. Purulent infection, septicaemia (non-puerperal)
  - 0142. Malaria
  - 0143. Chicken-pox
  - 0144. German-measles
  - 0145. Vaccination (results of)
  - 0146. Mumps
  - 0147. Favus, ringworm, sycosis, athlete's foot
  - 0148. Trench fever
  - 0149. Other infectious and parasitic diseases (see Nos. 39, 40, 41  
42, 43 & 44 of International List).
  - 0151. Diphtheria Carrier (0108)
  - 0151. Typhoid Carrier (0101)

- 0153. Meningococcus Carrier (0117)
- 0170. Gonoccal Cervicitis
- 0171.         „         Urethritis
- 0172.         „         Salpingo-oophoritis
- 0173. Vaginitis—Trichomonas Vaginalis
- 0174. Syphilis—prenatal (congenital)
- 0175. Syphilis—acquired—primary
- 0176. Syphilis—acquired—secondary
- 0177. Syphilis—acquired—latent
- 0178. Syphilis—acquired—tertiary—(excluding 0603, 0606, 0721  
and 0724)
- 0179. Syphilis—acquired—form not specified
- 0199. N.Y.D. but in this class

## CLASS II

### Cancer and other Tumours

- 0201. Buccal cavity and pharynx
- 0202. Digestive tract and peritoneum
- 0203. Respiratory system.
- 0204. Genito-urinary organs
- 0205. Breast
- 0206. Skin
- 0207. Glandular system
- 0208. Bones and joints.
- 0209. Brain, including glioma
- 0211. Nerve tissue, brain excepted
- 0219. Other or unspecified organs.

### Benign Tumours

- 0221. Ovary
- 0222. Uterus
- 0223. Other female genital organs.
- 0224. Brain
- 0225. Nerve tissue, neuroma, etc.
- 0226. Thyroid gland
- 0227. Prostate gland
- 0228. Skin and cellular tissue, lipoma, cysts, etc.
- 0229. Buccal and nasal cavities, etc., polypi
- 0239. Other or unspecified organs.
- 0299. Tumours, the nature of which is not specified or N.Y.D.



## CLASS III

Rheumatic Diseases, Disease of Nutrition, Endocrine Glands, and  
other General Diseases

- 0301. Rheumatic fever, acute and chronic
- 0302. Rheumatoid arthritis
- 0303. Osteo-arthritis
- 0304. Villous arthritis
- 0306. Spondylitis
- 0306. Fibrositis, myalgia, lumbago and sciatica
- 0307. Septic Arthritis (0309)
- 0308. Traumatic Arthritis (0309)
- 0309. Other conditions of arthritic nature.
- 0310. Post scarlet fever arthritis (0309)
- 0311. Diabetes mellitus
- 0312. Scurvy
- 0313. Pellagra
- 0314. Rickets (6 months or over)
- 0315. Diseases of the pituitary gland
- 0316. Simple goitre
- 0317. Exophthalmic goitre
- 0319. Other diseases of the thyroid and parathyroid glands.
- 0320. Beriberi (0329)
- 0321. Diseases of the thymus gland
- 0322. Diseases of the adrenals (Addison's) not indicated as of T.B.  
origin
- 0323. Degeneration—albuminoid, amyloid, fatty
- 0329. Other general diseases
- 0330. Obesity, Simple
- 0331. Malnutrition, Underweight
- 0332. Acute (febrile) polyarthritis, unknown etiology (0309)
- 0399. N.Y.D. but in this class

## CLASS IV

## Diseases of the Blood and Blood-Forming Organs

- 0401. Simple purpura
- 0402. Haemophilia
- 0403. Pernicious anaemia
- 0404. Other anaemias
- 0405. Leukaemia
- 0406. Aleukaemia (Hodgkin's disease)
- 0407. Diseases of the spleen
- 0409. Other diseases of the blood and blood-forming organs.
- 0499. N.Y.D. but in this class.

## CLASS V

## Chronic Poisoning and Intoxications

- 0501. Delirium tremens.
- 0502. Alcoholism, other forms.
- 0503. Chronic morphinism
- 0504. Chronic cocainism
- 0505. Chronic poisoning by other drugs.
- 0506. Chronic poisoning by other organic substances, occupational
- 0507. Chronic poisoning by other organic substances, non-occupational
- 0508. Chronic lead poisoning, occupational
- 0509. Chronic lead poisoning, non-occupational
- 0511. Chronic poisoning by the other mineral substances. Occupational
- 0512. Chronic poisoning by the other mineral substances, non-occupational.
- 0513. Sulphonamide Drug Reactions, including Haematuria.
- 0599. N.Y.D. but in this class.

## CLASS VI

## Diseases of the Nervous System

- 0601. Encephalitis (non-epidemic) and Brain abscess.
- 0602. Meningitis (non-epidemic) (exclude meningococcic meningitis and tuberculosis meningitis).
- 0603. Neurosyphilis, all forms, including asymptomatic meningeal, meninovascular, tabes dorsalis, taboparesis—excluding 0606 (general paresis)
- 0604. Diseases of the spinal cord. (Including multiple (disseminated) sclerosis, lateral sclerosis, spastic paraplegia, syringo-myelia, subacute combined degeneration. Inflammatory or infective conditions (to be specified), progressive muscular atrophy, amyotrophic lateral sclerosis. (Disorders due to trauma will be classified under 4008 or 5008, diseases due to tumor under 0211).
- 0605. Disease of the cerebrovascular system (including cerebral haemorrhage, subarachnoid haemorrhage, cerebral thrombosis and embolism, central nervous system arterio-sclerosis and other types (to be specified)).
- 0606. Psychosis with syphilis of the central nervous system (including general paresis).



- 0607. Dementia praecox (schizophrenia).
- 0608. Manic-depressive psychosis (specify type).
- 0609. Paranoia and paranoid conditions.
- 0610. Pre-psychotic personalities—Schizoid, paranoid and cyclothymic types (0623).
- 0611. Psychopathic personality.
- 0612. Other Psychosis (specify type).  
*Note*—Pre-senile and senile psychosis will be classified under 1603 and 1601.
- 0613. Epilepsy—idiopathic.
- 0614. Convulsions—of known origin including traumatic epilepsy *not* due to injuries received on service (specify etiology).
- 0615. Chorea and other movement disorders such as athetosis and the dystonias, including Huntington's chorea.
- 0616. Migraine, neuralgia and neuritis (including trigeminal neuralgia polyneuritis or neuronitis (etiology to be specified where possible); radiculitis and lesions of the plexus.
- 0617. Paralysis agitans and Parkinson's syndrome of post encephalitic origin.
- 0618.—Sclerosis and degenerative lesions of the brain (i.e., the central nervous system other than the spinal cord). Senile dementias are classified under 1601-1603.
- 0619. Mental deficiency—(Idiocy) Mental age under two.
- 0621. Mental deficiency—(imbeciles and low grade morons). Mental age under nine.
- 0622. Mental retardation—Including high grade morons, borderline intelligence and some dull normals who cannot be classified as mentally deficient in the usual sense but who have insufficient intelligence to take normal training under existing standards.
- 0623. Psychoneurosis—Anxiety neurosis, including anxiety states, neurasthenia and hypochondriasis.
- 0624. N.Y.D. Mental.

- 0625. Psychoneurosis—Hysteria.  
If conversion hysteria specify type, e.g., deafness, paralysis, etc. (0623).
- 0626. Psychoneurosis—Psychasthenia including obsessive compulsive types. (0623).
- 0627. Psychoneurosis—Other types (specify). Including reactive depression, situational anxiety and those psychosomatic conditions in which the emotional factor is the predominant feature. (0623).
- 0628. Temperamental Instability—Includes mild disorders of the emotional and impulsive type which cannot be classified definitely under 0611, 0623, 0625, 0626 or 0627.
- 0629. Other diseases of the nervous system (specify).
- 0653. Traumatic Psychosis.
- 0654. Involutional Melancholia (0612).

#### Diseases of the Organs of Vision

- 0631. Conjunctiva, lids, lacrimal organs.
- 0632. Eyeball, cornea and sclera.
- 0633. Lens (cataract); aqueous and vitreous choroid, iris and ciliary body.
- 0634. Optic nerve and retina.
- 0635. Errors of refraction.
- 0639. Other diseases of the organs of vision.
- 0649. Others under this title.

#### Diseases of the Ear and of the Mastoid Process

- 0641. Auditory canal and outer ear.
- 0642. Middle ear, eustachian tubes.
- 0643. Inner ear labyrinth.
- 0644. Mastoid process.
- 0645. Otitic barotrauma. (See also 0806).
- 0650. Seasickness.
- 0651. Airsickness.



- 0652. Other forms of motion sickness.
- 0653. Traumatic Psychosis.
- 0654. Involutional Melancholia (0612).
- 0699. N.Y.D. but in this class.

#### **Mental and Nervous Conditions Covered Elsewhere in the Code**

- 0116. Lethargic epidemic encephalitis.
- 0117. Epidemic cerebro-spinal meningitis.
- 0122. T.B. of meninges and C.N.S.
- 0209. Malignant brain tumors.
- 0224. Benign tumors of the brain.
- 0313. Pellagra.
- 0320. Beriberi.
- 0403. Pernicious anaemia.
- 0501. Delirium tremens.
- 0502. Alcoholism, other forms.
- 0503-0512. Chronic poisonings.
- 0709. Functional heart disease.
- 0710. Effort syndrome.
- 0725. Blood pressure abnormalities—hyper- and hypo-tension.
- 0829. Asthma—(incl. Hay fever).
- 0912. Ulcers of stomach and duodenum.
- 0915. Functional dyspepsia.
- 1017. Enuresis.
- 1601. Senility.
- 1603. Presenility.
- 1724. Concussions.
- 1725. Shock (nervous, mental) result of accident.
- 1801. Exhaustion.

- |             |   |                                 |
|-------------|---|---------------------------------|
| 4001 & 5001 | } | Damage to the cranial contents. |
| 4008 & 5008 |   |                                 |
| 4009 & 5009 |   |                                 |
| 4011 & 5011 |   |                                 |
| 4012 & 5012 |   |                                 |
- 4075 & 5075. Concussion (not shell shock).
- 4082 & 5082. Post-traumatic epilepsy.

## CLASS VII

### Diseases of the Circulatory System

0701. Pericarditis.
0702. Endocarditis—acute.
0703. Endocarditis—chronic and valvular.
0704. Endocarditis—unspecified.
0705. Myocarditis—acute.
0706. Myocarditis—chronic.
0707. Myocarditis—unspecified.
0708. Coronary arteries, including angina pectoris and embolism and thrombosis.
0709. Functional diseases of the heart including arrhythmia, asystole, auricular fibrillation tachycardia, brady-cardia.
0710. Effort Syndrome, D.A.H. (0709).
0711. Cardio-renal disease.
0713. Rheumatic Heart Disease, including Mitral Stenosis (0703 & 0706).
0714. Functional Heart Murmurs (0709).
0718. Neuro-circulatory asthenia.
0719. Other and unspecified diseases of the heart.
0721. Aneurysm.
0722. Arterio sclerosis.
0723. Gangrene.



- 0724. Aortitis, arteritis, thrombo-angritis obliterans.
- 0725. Blood pressure abnormalities; hyper-tension, hypo-tension.
- 0726. Haemorrhoids.
- 0727. Varicose veins, phlebitis (non-puerperal), etc.
- 0728. Varicocele (0729).
- 0729. Other diseases of the arteries and veins.
- 0731. Adenitis.
- 0732. Lymphadenitis.
- 0739. Others under this title.
- 0799. N.Y.D. but in this class.

### CLASS VIII

#### Diseases of the Respiratory System

- 0801. Cold, coryza, rhinitis.
- 0802. Deviated septum.
- 0803. Hypertrophied turbinates.
- 0804. Diseases of the accessory sinus.
- 0805. Ethmoiditis.
- 0806. Sinus Baratrauma (see also 0645).
- 0809. Other diseases of the nasal fossae and annexa.

#### Diseases of the Larynx

- 0811. Croup (not diphtheritic), including false croup, stridulous croup, etc.
- 0819. Other diseases of the larynx, including laryngitis, abscess, oedema of glottis, tracheotomy.
- 0820. Tracheitis (0819).

#### Diseases of the Bronchi and Lungs

- 0821. Bronchitis—acute.
- 0822. Bronchitis—chronic.

- 0823. Bronchitis—unspecified.
- 0824. Broncho-pneumonia, capillary bronchitis.
- 0825. Lobar pneumonia.
- 0826. Pneumonia, unspecified.
- 0827. Pleurisy.
- 0828. Congestion, oedema, haemorrhagic in fraction.
- 0829. Asthma, including hay fever.
- 0831. Pulmonary emphysema.
- 0832. Occupational diseases of the respiratory system.  
(T.B. excepted).
- 0833. Primary Atypical Pneumonia—unknown etiology (0826).
- 0834. Empyema (0827).
- 0835. Idiopathic Pleurisy with Effusion (0827).
- 0836. Haemothorax (0829).
- 0837. Pneumothorax, spontaneous (0839).
- 0838. Pneumothorax, traumatic (0839).
- 0840. Bronchiectasis (0822).
- 0841. Lung Abscess (0839).
- 0842. Pulmonary Embolism and Thrombosis (0828).
- 0899. N.Y.D. but in this class.

## CLASS IX

### Diseases of the Digestive System (Cancer Excepted)

- 090x. Trench mouth.
- 0901. Diseases of the buccal cavity and annexa( abscesses, canker  
of mouth, dental caries, parotitis (not mumps), pyorrhoea  
ranula, etc.
- 0902. Diseases of the tonsils and adenoids.
- 0903. Quinsy.
- 0904. Streptococcal infection.



- 0905. Vincents angina.
- 0906. Pharyngitis.
- 0907. Stomatitis (0901).
- 0909. Others in this group.
- 0911. Diseases of the oesophagus, including abscess, obstruction rupture, ulceration and stricture.
- 0912. Ulcers of stomach and duodenum.
- 0913. Acute gastritis.
- 0914. Chronic gastritis
- 0916. Functional Dyspepsia (0623).
- 0919. Other diseases of stomach (cancer excepted).
- 0921. Diarrhoea and enteritis.
- 0922. Intestinal ulceration including colitis.
- 0923. Appendicitis.
- 0924. Hernia.
- 0925. Post-operative hernia.
- 0926. Intestinal obstruction.
- 0927. Diseases of anus and rectum, ischiorectal abscess, etc.
- 0929. Other diseases of the intestinal tract.
- 0931. Cirrhosis of liver, specified as alcoholic.
- 0932. Cirrhosis of liver, not specified as alcoholic.
- 0933. Catarrhal Jaundice (0939).
- 0934. Jaundice, Arsenical (0939).
- 0939. Other diseases of the liver; including yellow atrophy of liver, abscesses, portal obstruction, etc.
- 0941. Biliary calculi, including biliary colic.
- 0949. Other diseases of the gall-bladder and biliary passages.
- 0951. Diseases of the pancreas.
- 0952. Peritonitis, cause not specified.

- 0953. Adhesions.
- 0959. Others in this class.
- 0999. N.Y.D. but in this class.

## CLASS X

### Diseases of the Genito-Urinary System (Tumours Excepted)

- 1001. Nephritis, acute.
- 1002. Nephritis, chronic.
- 1003. Nephritis, unspecified.
- 1004. Abscess of kidney.
- 1005. Floating kidney.
- 1006. Nephrosis.
- 1007. Pyelitis.
- 1008. Hypronephrosis (1006).
- 1009. Other diseases of the kidneys and ureters.
- 1010. Pyelonephritis (1003).
- 1011. Calculi of urinary passages.
- 1012. Cystitis.
- 1013. Pyuria.
- 1014. Retention of urine.
- 1015. Non specific Urethritis (1021).
- 1017. Functional Urinary Disorders (enuresis, etc.) (1009 & 0623).
- 1018. Glycosuria, Renal (1009).
- 1019. Other diseases of the bladder.
- 1021. Diseases of the urethra, including stricture (unqualified) urethral abscess, etc.
- 1022. Diseases of the prostate.
- 1023. Diseases of the male genital organs (not specified as venereal including hydrocele, balanitis, etc.
- 1024. Phimosis and circumcision (1023).



- 1025. Orchitis and epididymitis (1023).
- 1026. Albuminuria, orthostatic (1009).
- 1027. Penile condylomata (1023).
- 1028. Penile ulcers, non-specific (1023).

**Diseases of Female Genital Organs (not specified as venereal)**

- 1031. Ovary, fallopian tube, and parametrium.
- 1032. Uterus.
- 1033. Breast.
- 1034. Endometriosis (1039).
- 1036. Endometrial Hyperplasia (1039).
- 1037. Dysmenorrhoea (1039).
- 1038. Menorrhagia (1039).
- 1039. Other diseases of female genital organs.
- 1099. N.Y.D. but in this class.

**CLASS XI**

**Diseases of Pregnancy—Childbirth and the Puerperal state**

- 1101. Prenatal care.
- 1102. Normal confinement.
- 1103. Abortion with septic condition.
- 1104. Abortion without mention of septic condition (to include haemorrhages).
- 1105. Ectopic gestation with septic condition specified.
- 1106. Ectopic gestation without mention of septic condition.
- 1109. Other accidents of pregnancy (haemorrhages excluded).
- 1111. Puerperal haemorrhage.
- 1112. Puerperal septicaemia (not specified as due to abortion).
- 1113. Puerperal albuminuria and eclampsia.
- 1119. Other toxæmias of pregnancy.

- 1121. Puerperal phlegmasia alba dolens, embolism (not specified as septic) and confinement ending in sudden death.
- 1122. Dystocia.
- 1123. Caesarean section.
- 1124. Other surgical operations and instrumental delivery.
- 1125. Other accidents of childbirth.
- 1126. Puerperal diseases of the breast.
- 1129. Other diseases or conditions of the puerperal state.
- 1199. N.Y.D. but in this class.

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## CLASS XII

### Diseases of the Skin and Cellular Tissue

- 1201. Boils, carbuncle, furunculosis.
  - 1202. Cellulitis, acute abscess.
  - 1203. Skin diseases specified as occupational.
  - 1204. Scabies (1209).
  - 1205. Dermatitis unspecified (1209).
  - 1206. Eczema (localized or generalized) (1209).
  - 1207. Impetigo contagiosa (1209).
  - 1208. Pediculosis (1209).
  - 1209. Other diseases of the skin and annexa and of the cellular tissue.
  - 1210. Psoriasis (1209).
  - 1211. Dermatitis Herpetiformis (1209).
  - 1212. Acne Vulgaris (1209).
- (N.B.—See also Class I, No. 0147).



**CLASS XIII.****Diseases of the Bones and Organs of Locomotion  
Bones T.B. Excepted**

- 1301. Osteomyelitis.
- 1302. Abscess of bone.
- 1303. Osteitis, periostitis, osteoporosis.
- 1304. Necrosis, sequestrum.
- 1305. Resection of bone.
- 1306. Grafting of bone.
- 1307. Spinal curvature.
- 1308. Ununited fracture.
- 1309. Other diseases of the bones.

**Joints. (T.B. and Rheumatism excepted)**

- 1311. Abscess of joint.
- 1312. Ankylosis.
- 1313. Synovitis.
- 1314. Loose cartilage.
- 1315. Relaxed ligaments of joint.
- 1316. Sacroiliac disease.
- 1317. Suppuration of joint.
- 1319. Other diseases of the joints.

**Other Organs of Locomotion**

- 1321. Bursitis.
- 1322. Abscess—bursa, muscle, or tendon.
- 1323. Dupuytren's contraction.
- 1324. Ganglion.
- 1325. Tarsalgia.
- 1326. Hallux valgus and varus.

- 1327. Hammer toe.
- 1328. Flat foot.
- 1329. Pes cavus, valgus.
- 1331. Disarticulation.
- 1332. Tenosynovitis.
- 1333. Tenotomy.
- 1334. Union of divided tendon.
- 1335. Club-foot or hand (not congenital).
- 1336. Muscular dystrophy.
- 1339. Others in this group.
- 1399. N.Y.D. but in this class.

For fibrositis, myalgia, etc., see Class III, No. 0306.

#### CLASS XIV

##### Congenital Malformations (Stillbirth not Included)

- 1401. Congenital hydrocephalus.
- 1402. Spina bifida and meningocele.
- 1403. Congenital malformation of heart, including all heart conditions under one year.
- 1404. Monstrosities (if they have breathed).
- 1405. Congenital Deformity of Spine other than Spina Bifida
- 1409. Other congenital malformations.  
(1409).

#### CLASS XV

##### Diseases of Early Infancy

- 1501. Newborn full term normal.
- 1502. Newborn premature birth.
- 1503. Congenital debility, including malnutrition and cachexia.
- 1504. Injury at birth.



- 1505. Atelectasis.
- 1506. Icterus of new born.
- 1507. Sclerema and oedema.
- 1508. Athrepsia.
- 1509. Other diseases of early infancy, including lack of care.

### Senility

- 1601. Senility with senile dementia (70 years and over).
- 1602. Senility without senile dementia (70 years and over).
- 1603. Premature senility (55 years—under 70).

## CLASS XVII

### Accidents and Other External Violence

- 1701. Food poisoning.
- 1702. Other acute poisoning.
- 1703. Plant poisoning—including ivy, oak, sumac.
- 1704. Strangulation and suffocation.
- 1705. Submersion.
- 1706. Burns and scalds.
- 1707. Asphyxia (gas or vapour).
- 1708. Wounds, lacerations, bruises, abrasions, etc.
- 1709. Wounds by firearms (not war).
- 1710. Effects of blast (1749). (See also 5092).
- 1711. Injuries due to electricity.
- 1712. Fractures—cranium, skull.
- 1713. Fractures—jaw and other parts of head.
- 1714. Fractures—shoulder girdle.
- 1715. Fractures—thorax, ribs.
- 1716. Fractures—pelvis.
- 1717. Fractures—spinal column.

- 1718. Fractures—limbs (upper).
- 1719. Fractures—limbs (lower).
- 1720. Fractures—multiple (1712-1722).
- 1721. Fractures—bones of hands or feet.
- 1722. Fractures—unspecified.
- 1723. Sprains, luxations.
- 172x. Dislocations.
- 1724. Concussions.
- 1725. Shock (nervous, mental)—result of accident.
- 1726. Loss of limbs or part (traumatic amputation).
- 1727. Loss of teeth (trauma to teeth or gums).
- 1728. Loss of eye or eyesight.
- 1729. Internal injuries, ruptured viscera, etc.

#### Foreign Bodies Inserted, Inhaled or Swallowed

- 1731. Ear.
- 1732. Respiratory tract.
- 1733. Digestive tract.
- 1734. Genito-urinary tract.

#### Foreign Bodies Inserted, Inhaled or Swallowed

- 1735. Eye.
- 1736. Skin, muscles, bone, etc.
- 1737. Chest cavity.
- 1738. Abdominal cavity.
- 1739. Deprivation, food or water.
- 1740. Immersion foot (see also 5130).
- 1741. Excessive cold, frost bite.
- 1742. Excessive heat, sunstroke.



- 1743. Injuries by venomous animals or insects.
- 1744. Trench foot.
- 1745. Trauma to joint.
- 1746. Trauma to muscle.
- 1747. Infected Wounds (1749).
- 1748. Self-inflicted wounds.
- 1749. Other or unspecified accidents or injuries.

### CLASS XVIII

#### Ill-Defined Causes

- 1800. Flying fatigue (1801).
- 1801. Exhaustion.
- 1802. Debility, unspecified.
- 1803. Biliousness.
- 1804. Fever unspecified.
- 1805. Fainting and dizziness.
- 1806. Irregular habits.
- 1807. Operative condition, unspecified—**plastic surgery.**
- 1808. Old foreign bodies, war and other.
- 1809. Breaking down old wounds, old amputations, **etc.**
- 1811. Oedema, unspecified.
- 1812. Incomplete certification.
- 1819. Other ill-defined conditions.
- 1821. Prosthetic appliances, fitting eyes, limbs, braces, **etc.**
- 1887. Poliomyelitis contact.
- 1888. Encephalitis contact.
- 1889. Chicken pox.
- 1891. Measles contact.
- 1892. German measles contact.

- 1893. Mumps.
- 1894. Scarlet fever contact.
- 1895. Cerebro-spinal meningitis contact.
- 1896. Diphtheria contact.
- 1897. Removal of cast.
- 1898. No appreciable disease.
- 1899. Observation. N.Y.D.

### CLASS XIX

#### Preventive Medical Care

- 1903. Vaccination
- 1904. Immunization (serum sickness)
- 1905. Physical examination.
- 1906. —
- 1907. —
- 1908. —
- 1909. Others in this class.

### CLASS XX

#### Deaths on Military Service

- 2011. Killed in action
- 2012. Killed or drowned (by enemy fire at sea)
- 2021. Died of wounds
- 2022. Died of wounds (by enemy fire at sea)
- 2032. Died—enemy gas
- 2041. Accidentally killed
- 2042. Died of injuries
- 2043. Drowning (other than enemy fire)
- 2044. Suicide
- 2051. Found dead (cause not stated—not enemy fire)



2052. Died—P. of W. (cause not stated)

2061. Missing (not yet presumed dead)

NOTE—If presumed dead code under **Killed in Action**.

2071. Shot by order of courts martial

2081. Died disease

2082. Died disease (enemy caused)

2083. Other or unstated deaths.

NOTE—If the causes of accidents are required, use the classes in the supplement from **XXI** to **XXXVI** to replace the first two numbers, i.e., (17) in class **XVII**. Thus if a man were in a railway accident and suffered a fracture spine the code would be 2917.

## SUPPLEMENT

### Classes of Conditions due to Violence

Class **XXI**—Intentional violence against oneself

Class **XXII**—Intentional violence against another

Class **XXIII**—Accidental falls

Class **XXIV**—Crushing, falling objects, landslides, etc.

Class **XXV**—Cataclysm

Class **XXVI**—Injuries by animals

Class **XXVII**—Mining accidents, (including quarries)

Class **XXVIII**—Machine accidents

Class **XXIX**—Railway accidents

Class **XXX**—Street-car accidents.

Class **XXXI**—Automobile and motorcycle accidents.

Class **XXXII**—Other land transportation accidents.

Class **XXXIII**—Water transportation accidents.

Class **XXXIV**—Air transportation accidents.

Class **XXXV**—Accidents due to participation in sport.

Class **XXXVI**—Other accidents.

# GUNSHOT WOUNDS AND OTHER TRAUMA ON SERVICE FIRST AND SECOND GREAT WAR

Class 40		Class 50
G.S.W. Only	Penetrating Wounds and Wounds Involving Eye or Nerve Tissue	Accidents and Injuries on Service
4001	Penetrating wounds skull, or wounds affecting cranial contents	5001
4002	Penetrating wounds chest	5002
4003	Penetrating wounds abdomen	5003
4004	Penetrating wounds with loss of one eye	5004
4005	Penetrating wounds with loss of both eyes	5005
4006	Penetrating wounds with loss of vision of one eye	5006
4007	Penetrating wounds with loss of vision of both eyes	5007
4008	Penetrating wounds involving spinal cord	5008
4009	Penetrating wounds involving nerves lower extremity	5009
4011	Penetrating wounds involving nerves upper extremity	5011
4012	Penetrating wounds involving other nerves or nerve tissue	5012
4013		5013
4014		5014
Flesh Wounds Soft Tissue Only—No other Involvement		
4015	Flesh wound face or scalp (head)	5015
4016	Flesh wound neck	5016
4017	Flesh wound shoulder	5017
4018	Flesh wound upper extremity	5018
4019	Flesh wound back	5019
4021	Flesh wound chest wall or abdominal wall	5021
4022	Flesh wound hip	5022
4023	Flesh wound lower extremity	5023



4024	Flesh Wound Hand or fingers	5024
4025	Flesh Wound foot or toes	5025
4026	Flesh Wound multiple severe	5026
4027	Flesh Wound multiple slight	5027
4028		5028
4029		5029

### Amputations

4031	Amputation fingers and thumbs	5031
4032	Amputation hand to wrist	5032
4033	Amputation forearm	5033
4034	Amputation elbow joint	5034
4035	Amputation upper arm	5035
4036	Shoulder disarticulation	5036
4037	Amputation toes	5037
4038	Amputation foot to ankle	5038
4039	Amputation leg	5039
4041	Amputation knee joint	5041
4042	Amputation thigh	5042
4043	Hip disarticulation	5043
4044	Multiple amputations (major)—to be used in addition to the sites mentioned above	5044
4045		5045
4046		5046
4047		5047
4048		5048
4049		5049

### Fractures

4050	Fracture of cranium or skull	5050
4051	Fracture of jaw or other parts of head	5051

4052	Fracture of shoulder girdle	5052
4053	Fracture of thorax, ribs	5053
4054	Fracture of pelvis	5054
4055	Fracture of spinal column	5055
4056	Fracture of limbs, upper	5056
4057	Fracture of limbs, lower	5057
4058	Fracture of bones of hands or fingers	
4059	Fracture of bones of feet or toes	5059

(If multiple fracture, code major fracture)

#### Loss of Joint Movement. Ankylosis or Flail Joint

4060	Spinal column	5060
4061	Shoulder girdle	5061
4062	Shoulder joint	5062
4063	Elbow joint	5063
4064	Hand or wrist joint	5064
4065	Fingers or thumbs	5065
4066	Hip joint	5066
4067	Knee joint	5067
4068	Ankle or foot joint	5068
4069	Toes	5069
4071		5071
4072		5072
4073		5073
4074		5074

#### Other Conditions Directly Due to War or G.S.W.

4075	Concussion (not shell-shock)	5075
4076	Shell shock (recorded)	5076
4077	Gas, effects of (recorded)	5077



4078	Burns, including flame and corrosives	5078
4079	Crushing, buried, etc.	5079
4080	G.S.W. or Accidents resulting in disfigurement	5080
4081	G.S.W. or Accidents resulting in T.B.	5081
4082	G.S.W. or Accidents resulting in epilepsy	5082
4083	G.S.W. or Accidents resulting in osteomyelitis	5083
4084	G.S.W. or Accidents resulting in circulatory involvement aneurysm, etc.	5084 5084
4085	G.S.W. or Accidents resulting in other diseases	5085
4086	G.S.W. or Accidents resulting in loss of nose	5086
4087	G.S.W. or Accidents resulting in loss of ear	5087
4088	G.S.W. or Accidents resulting in loss of teeth	5088
4089	G.S.W. or Accidents resulting in loss of genitalia (total or part)	5089 5089
4091	Ear, traumatic rupture of tympanic membrane	
4092	Blast, effects of (see also 1710)	
4093		5093
4094		5094
4095		5095

# CLASS 51

## Accidents and Injuries on Service Not G.S.W.

Food Poisoning	5101
Other acute poisoning	5102
Plant poisoning—including, ivy, oak, sumac	5103
Strangulation and suffocation	5104
Submersion	5105
Burns and scalds	5106
Asphyxia (gas or vapour)	5107

Wounds, lacerations, bruises, abrasions	5108
Wounds by firearms (not war)	5109
Injuries due to electricity	5111
Sprains, luxations	5112
Dislocations	5113
Concussions	5114
Shock (nervous, mental) result of accident	5115
Internal injuries, ruptured viscera, etc.	5116
Hernia (traumatic)	5117

#### Foreign Bodies Inserted, Inhaled or Swallowed

Ear	5118
Respiratory tract	5119
Digestive tract	5121
Genito-urinary tract	5122

#### Foreign Bodies Due to Violence (Not firearms)

Eye	5123
Skin, muscle, bone, etc.	5124
Chest cavity	5125
Abdominal cavity	5126
Deprivation, food or water	5127
Excessive cold, frost bite	5128
Excessive heat, sunstroke	5129
Immersion foot (See also 1740)	5130
Injuries by venomous animals or insects	5131
Trench foot	5132
Trauma to joint	5133
Trauma to muscle	5134
Self-inflicted wounds	5135



	5136
	5137
	5138
Other or unspecified accidents or injuries	5139

### Class 55

#### Diseases Resulting in Amputations

NOTE: These codes are to be used in addition to code showing site of amputation, using section 5031 to 5044.

Tuberculosis	5501
Cancer or sarcoma	5502
Diabetes	5503
Thrombo-angeitis obliterans	5504
Osteomyelitis	5505
Gangrene	5506
Eye diseases resulting in removal of eye(s)	5507
Acute infections (septicaemia, blood poisoning, etc.)	5508
Others (including old deformities, hands or feet)	5509













DEPARTMENT OF LABOUR  
NATIONAL SELECTIVE SERVICE  
Mobilization Division

OTTAWA, Ontario, July 21, 1943.

This copy of "Physical Standards and Instructions for the Examination of Recruits, 1943" is forwarded to you in order that you may be familiar with the changes in certain standards shown therein.

CIVILIAN PHYSICIANS WILL CONTINUE TO CATEGORIZE UNDER THE OLD SYSTEM EXCEPT THAT CATEGORIES "A2", "B2" and "C2" WILL NO LONGER BE USED.

MEN WILL BE PLACED IN CATEGORIES "A", "B", "C", "D" and "E" ACCORDING TO YOUR PHYSICAL AND MENTAL FINDINGS.

THE PULHEMS GRAPH SYSTEM AS SHOWN HEREIN WILL NOT BE USED TO DESIGNATE YOUR FINDINGS OR TO INDICATE CATEGORY.

Methods to be employed in examination and the interpretation of findings from the Army view-point are commended to your attention.

The Mobilization Division, Department of Labour, desires to take advantage of this opportunity to express appreciation of the service rendered under difficult conditions by civilian physicians and to hope that the co-operation which has been received will be continued in the future.

*H H Christie*  
Director of Medical Services,  
Mobilization Section,  
Department of Labour.



# INDEX TO PHYSICAL STANDARDS

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