ARMORED MEDICAL RESEARCH LABORATORY

FORT KNOX, KENTUCKY

First Partial Report On

PROJECT NO. 8 - PRESELECTION TESTS

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Project No. 8

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ARMORED FORCE MEDICAL RESEARCH LABORATORY
Fort Knox, Kentucky

Project No. 8
File No. 220.105

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PARTIAL REPORT NUMBER I
ON PRESELECTION TESTS

1. PROJECT: Preselection Tests.

a. Authority - First indorsement, dated November 26, 1942, by Commanding General, Headquarters Armored Force, Fort Knox, Kentucky, file 400.112/6 GNOHD, to letter by Armored Force Medical Research Laboratory dated November 10, 1942.

b. Purpose - To determine the need for preselection tests.

2. DISCUSSION:

a. Present selection of Army personnel is that which is achieved by examination procedures at the reception centers. Better initial selection will reduce wastage. In addition, suitable preselection of men in relation to the requirements of their tasks will materially shorten the training period and yield a more efficient unit. To do this, criteria of selection must be established and the mechanics of the test procedure set up. To prepare the criteria for selection and to apply them the following studies must be carried out:

(1) An analysis of the existing situation to determine what the present method of selection achieves--how well is the personnel selected by it suited to its tasks and, are the unfit screened out?

(2) An analysis of certain specialized tasks within the Army to define the physiological requirements needed to carry them out and an estimation of the advantages to be gained from selection of men of superior qualifications for the tasks. (Job analysis)

(3) An analysis of the physiological characteristics of personnel known to be exceptionally good at certain tasks to validate the conclusions obtained from a study of the jobs.

(4) A study of the feasibility, and the advantage gained by screening out men who cannot fulfill tasks because of physiological limitations.

(5) Finally, a study to determine the most practical procedure for carrying out the tests and placing the personnel. The method decided upon must be at least as effective as the process of elimination during training as now practiced, and must be far less time consuming and wasteful.

b. The present report deals with item (1) above, namely, the adequacy of the present technique of selection. The data were obtained by an analysis of the board proceedings of the 12th Armored Division and from a statistical report of the Classification Section of that division. Detailed data is tabulated in the Appendix. The physical examination records of fillers do not accompany them from the induction centers. It was necessary for the division surgeon to re-examine every man to discover the defects. He did so on his own initiative to prevent serious loss of time during the training period. This procedure should not be necessary.

3. CONCLUSIONS:

a. Of the 13,184 fillers received (supposedly fit for any duty), 1237 (9.4%) were immediately reclassified as unfit for combat duty.

b. These men were reclassified solely on the basis of obvious physical defects (1.1% for mental disorders). One-third (33+1/3%) of all defects necessitating reclassification were due to hernia or symptomatic flat feet, both of which are readily demonstrable.

c. To this division were also sent 568 men (4.3%) who are illiterate. Of these, 50% came from the 4th and 8th Service Commands.

d. There was a marked difference between the percentage of rejections among men under 35 years of age as compared with men 35 and over. For the former, the percentage was 4.3, whereas for the older group 31.6% were rejected.

e. Improvement in the quality of basic personnel sent to combat divisions is necessary.

4. COMMENT: The inadequacy of the induction centers for selection of men for combat service is apparent. If 9.4% of fillers for a division are found on arrival to be unfit for any tasks in a combat division, and another 4.3% are wholly illiterate, then the procedure which allowed them to be sent to a combat division is not satisfactory. Moreover, the examination of the fillers at this division was not comprehensive and additional reclassification during the training period is inevitable. There will be much wastage and encumberment of training because of this. It is inescapable that improvement in the quality of basic personnel sent to divisions is necessary if sufficient raw material, for preselection tests that will place men, is to be had. Present practice is based on the assumption that because large numbers are dealt with, a sufficient number of efficient combat personnel will be found to carry out the function of the division properly, despite the losses through initial reclassification and rejection, and the weeding-out during training. This practice is dangerous in that it wastes time and effort in training, it delays the procedure of organizing the division, and moreover permits the passing on of responsibility for proper examination of men by the reception center to the division surgeon.

a. This situation can be corrected in several ways:

(1) The Ground Force Command may request that the induction centers (Service of Supply) properly carry out the function of classifying men., All Arms and Services will benefit therefrom.

(2) The Ground Force Command may set up classification centers with proper billeting areas for studying its quota of men before allocating them to the various units under its jurisdiction. In such an area special test procedures necessary for the selection of men for any Arm or Service might be carried out. Artillery men, Tank Corps men, Reconnaissance men, Signal men, etc., could be selected for the divisions at such a center. All men whose physiological capacities would make it impossible to do such special jobs could be placed in less demanding circumstances. Such a procedure requires that the special needs of every Arm or Service be determined and tests for them devised. This job will be materially simplified if the Service of Supply does its preliminary selection job at induction centers thoroughly, and then sends the physical and mental data with the inductee to the Ground Force Classification Center for its further use. Some duplication of effort by the two commands is desirable if all unfit personnel are to be weeded out before combat training begins.

(3) If all the various Arms and Services under the Ground Force Command are not yet ready to decide upon their own needs, more specialized classification centers for the Armored Force or the Signal Corps or any other group, may be set up. Their function would be to select from their total allotment of fillers, men for the special jobs within that unit and to distribute them to their combat divisions accordingly.

(4) Amplify the present Division Classification Center to include tests which will most adequately place men in jobs they can learn quickly and do well. The present assumption that most of military work is sufficiently similar to some civilian occupations, that civilian experience may be used as a criterion for classification is unsound. Furthermore, with a large number of the present inductees falling into the 18-19 age group, there is no work experience upon which to judge the capacities of these men, and the present system falls down completely.

(5) All of these alternatives require that the classification units be thoroughly trained to do this job. Also, they should be under the direction of a research group who will continuously study the problems of the classification units and will validate the procedures used by analysis of the experience of men selected by them.

5. RECOMMENDATIONS:

a. That no new man over 34 years of age be accepted by subsequently activated combat divisions. This limit may be changed by other considerations at a later date, but setting it at this limit now will eliminate a very considerable amount of wasted time in divisions to be activated in the near future.

b. That all available information on the causes of reclassification and CDD's from other Armored divisions as they are activated be made available to the Armored Force Medical Research Laboratory for analysis.

1 Incl.
Appendix A

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APPENDIX A

The attached sheets contain the detailed data from which this report was written.

ORIGIN BY SERVICE COMMAND OF 1237 MEN
RECOMMENDED FOR RECLASSIFICATION OR C. D. D.
(13,184 Fillers Received by 12th Armored Division)

Service Command	No. Men Received	No. Men Rejected	Percent Rejected From Each Service Command
1	499	57	11.4
2	2542	261	10.3
3	1595	132	8.3
4	407	32	7.9
5	1949	162	8.6
6	2262	194	9.7
7	1764	171	10.9
8	792	86	9.6
9	1374	130	
Area Not Reported		12	
TOTAL	13,184	1237	9.4

NUMBER AND PERCENTAGE DISTRIBUTION OF DEFECTS BY AGE

(Among 1237 out of 13,184 Fillers Received by 12th Armored Division)

Age Group	No. of Defects	Per Cent of Total No. of Defects
18-19	1	0.1
20-24	268	17.9
25-29	155	10.3
30-34	127	8.5
35-39	195	12.9
40-44	631	42.0
45-up	91	6.1
Age not Reported	33	2.2
TOTAL	1501	100 %

Total Number of Defects	1501
Total Number of Men Represented	1237
Average No. or defects per man	1.21

PERCENTAGE OF ILLITERATES
AMONG 13,184 FILLERS RECEIVED BY 12TH ARMORED DIVISION
By
SERVICE COMMAND ORIGIN

	NO. RECEIVED	NO. ILLITERATE	PERCENTAGE
1st Service Command	499	14	2.805
2nd Service Command	2542	44	1.731
3rd Service Command	1595	38	2.383
4th Service Command	407	77	18.918
5th Service Command	1949	50	2.565
6th Service Command	2262	118	5.216
7th Service Command	1764	36	2.040
8th Service Command	792	170	21.464
9th Service Command	1374	21	1.528
TOTAL	13184	568	4.308

DISTRIBUTION BY AGE OF 1237 MEN RECOMMENDED FOR RECLASSIFICATION OR C.D.D.

(Out of 13,184 Fillers Received by 12th Armored Division)

AGE GROUP	Men Received		Men Rejected	
	Number	Percent	Number	Percent Rejected in Each Group
18-19	256	1.8	1	0.4
20-24	7600	54.0	228	3.0
25-29	2118	15.0	126	5.9
30-34	1304	9.2	101	7.7
35-39	1216	8.6	159	13.1
40-44	1164	8.3	517	44.4
45-Up	140	1.0	73	52.1
Age not Reported	300	2.1	32	10.7
TOTAL	13,184	100.0	1237	9.4

SUMMARY OF PHYSICAL DEFECTS

Among the 1237 Men Recommended for Reclassification or C.D.D.

PHYSICAL DEFECT	NUMBER	PER CENT OF TOTAL NO. OF DEFECTS
General Physical Condition (Stamina, Agility, Obesity, Underweight)	300	20.0
Feet Defective	270	18.0
Hernia	230	15.3
Cardio-Vascular Disorders	197	13.1
Teeth, Defective	107	7.1
Secondary Results of Old Injuries	106	7.1
Hearing, Defective	55	3.6
Varicose Veins	55	3.6
Miscellaneous Diseases	46	3.1
Vision, Defective	42	2.8
Skeletal and Muscular Disorders	36	2.5
Genito-Urinary Disorders	19	1.3
Mental Disorders	17	1.1
General Body Deformities	15	1.0
Skin Diseases	6	0.4
TOTAL	1501	100 %

AGE DISTRIBUTION AND PHYSICAL DEFECTS OF 1237 MEN REQUIRING RECLASSIFICATION

PHYSICAL DEFECT	AGE GROUP 18-19	20-24	25-29	30-34	35-39	40-44	45-Up	Age Not Rep.	Total	%
BODY DEFORMITIES GENERAL	0	4	3	0	3	5	0	0	15	1.0
CARDIO-VASCULAR										
Arterial Hyper-tension	0	6	7	7	5	20	3	0	48	
Low Cardiac Reserve	0	8	4	1	7	26	5	1	52	
Tachycardia	0	9	2	2	4	13	3	0	33	
Valvular Heart Disease	1	21	5	2	3	17	0	3	52	
Other	0	4	4	1	0	1	2	0	12	
Total-Cardio-Vascular	1	48	22	13	19	77	13	4	197	13.1
FEET										
Pes Planus	0	45	19	12	35	73	7	2	193	
Pes Cavus	0	2	3	6	8	19	0	1	39	
Other	0	2	3	4	7	17	5	0	38	
Total - Feet	0	49	25	22	50	109	12	3	270	18.0
GENERAL PHYSICAL CONDITION										
Lack of Physical Stamina & Agility	0	3	1	5	13	157	18	5	202	
Obesity	0	9	7	3	10	35	8	2	74	
Underweight	0	5	5	3	4	5	1	1	24	
Total - Gen. Phys. Condition	0	17	13	11	27	197	27	8	300	20.0
GENITO-URINARY DISORDERS	0	5	3	4	1	4	1	1	19	1.3
HEARING										
Defective	0	8	3	6	4	12	2	0	35	
Diseases of ear, etc.	0	7	2	2	1	4	2	2	20	
Total - Hearing	0	15	5	8	5	16	4	2	55	3.6

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PHYSICAL DEFECT	18-19	20-24	25-29	30-34	35-39	40-44	45-Up	Age Not Rep	Total	%
HERNIA										
Inguinal	0	48	24	22	24	82	11	3	214	
Other	0	1	3	2	5	4	0	1	16	
Total - Hernia	0	49	27	24	29	86	11	4	230	15.3
INJURY, SECONDARY RESULT OF										
Contusions	0	1	0	1	4	6	1	0	13	
Dislocations	0	2	6	2	2	6	0	0	18	
Fractures	0	9	12	5	9	7	2	3	47	
Other	0	8	8	2	5	3	1	1	28	
Total - Injuries Secondary Results	0	20	26	10	20	22	4	4	106	7.1
MENTAL										
Mental Deficiency,	0									
Uncl.	0	2	5	1	0	1	0	0	9	
Psychoneurosis	0	4	0	0	2	0	0	2	8	
Total - Mental	0	6	5	1	2	1	0	2	17	1.1
NOT CLASSIFIED										
Asthma	0	5	2	2	1	1	1	0	12	
Neurocirculatory Asthenia	0	5	1	1	3	1	2	0	13	
Other	0	6	5	1	4	4	0	1	21	
Total - Not Classified	0	16	8	4	8	6	3	1	46	3.1
SKELETAL and MUSCULAR DISORDERS										
Arthritis	0	2	0	0	1	4	3	0	10	
Atrophy of Muscles	0	1	3	1	0	0	0	0	5	
Rheumatic Fever	0	4	0	0	0	0	0	1	5	
Other	0	6	0	5	1	3	0	1	16	
Total - Skeletal, Muscular	0	13	3	6	2	7	3	2	36	2.5

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PHYSICAL DEFECT	18-19	20-24	25-29	30-34	35-39	40-44	45-up	Age Not Rep.	Total	%
SKIN DISEASES	0	4	0	0	1	1	0	0	6	0.4
TEETH										
Defective Dentition	0	4	2	9	10	72	10	0	107	7.1
VARICOSE VEINS	0	4	8	10	12	19	2	0	55	3.6
VISION										
Defective	0	13	2	3	4	8	1	1	32	
Diseases of the Eye	0	1	3	2	2	1	0	1	10	
Total - Vision	0	14	5	5	6	9	1	2	42	2.8
TOTAL - ALL DEFECTS	1	268	155	127	195	631	91	33	1501	100
PER CENT OF TOTAL NO. OF DEFECTS	0.1	17.9	10.3	8.5	12.9	42.0	6.1	2.2	100	