EXAMINATION OF APPLICANTS FOR AVIATION
SERVICE, U. S. ARMY—DISQUALIFYING FAC-
TORS IN FIFTEEN HUNDRED CASES—SOME
OBSERVATIONS OF PAST-POINTING
AFTER ROTATION.*

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An impression has become very general that it is almost impossible to successfully pass the tests of the physical examining units established by the aviation section of the Signal Corps throughout the country, unless one is a sort of super-man physically. This impression is absolutely erroneous. It has gained circulation through the exaggerated accounts of disqualified candidates and their friends. As a result of their malicious yarns, some men come to our examinations primed with false notions of what they are going to experience in the way of physical tests. They proceed to make friends with the Sergeant, and then guardedly and with apparent unconcern ask when they might expect the mallet test, or the pistol and needle test. The Sergeant, a nice, kind fellow, explains the whole process in detail, adding that special orders from Washington have recently added a few new tests for try out. If I suddenly approach an applicant after he has had such confidential inside information, he will break into a cold sweat and immediately have urgent business down the corridor.

Perhaps it is only proper that I should explain these mythical tests in detail. In the mallet test, the candidate is supposed to be led into a room alone with two examiners. He is seated at ease, while an examiner holding a stop watch, engages him in conversation. The second examiner is behind the chair, and cannot be observed. At the proper moment—that is, when the candidate is thoroughly calmed by conver-

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sation—he is tapped on the head with a mallet, secundum artum at a nonvital spot. If he recovers consciousness in twenty seconds, he is normal. In the pistol and needle test the candidate is again seated at ease. He holds a needle between his thumb and forefinger, the point being against the forefinger and the head against the thumb. While he is engaged in conversation concerning his knowledge of pastoral pursuits, a pistol is suddenly discharged. If the needle pricks his finger and draws blood, he is disqualified as nervously unfit.

The physical requirements of the aviation section of the army are really in no way unduly severe or rigid. We are enjoined to obtain men with perfect aural mechanism, perfect vision, including normal ophthalmoscopic findings, excellent hearts and lungs, sound teeth, and no form of hernia. All other minor defects may be overlooked or waived. Certainly this standard is not too high, and no qualified person would think of suggesting that it be relaxed. Frequently rejected men tell me that the Canadian Royal Flying Corps will accept them. I know this to be true, as Captain MacDonald, C. R. F. C., has told me that he accepts men with 20/30 vision. It may be that we will eventually find it necessary to reduce our standard of physical requirement to conform with that of the aviation sections of other armies, but at present there does not seem to be a remote possibility of this occurring.

It would save considerable annoyance, and avoid mutual ruffling of tempers if physicians having patients who have been rejected by the New York unit would bear in mind that I do not personally set the standard. If a man has a spot of choroiditis, no matter what his vision is, he does not fly for the United States; the same also applies to slight defects in hearing. These matters generally seem to be of little consequence from the standpoint of successful flying, when one's personal patient is rejected. Remember, that if the condition is admitted as being present, the prescribed causes of disqualification cover the case absolutely. If the condition is not admitted as being present, I will always be glad to refer the doctor to the proper authorities for arranging a reexamination, when the opinions of the consultants of the unit would be available. There is no Board of Appeal. All cases are re-

ferred back to the original examining unit for reexamination.

Soon after taking charge of the New York unit last November, I realized that the profession was greatly interested to know how many men we were examining, the total number disqualified, and the number disqualified under subheadings in the the three different departments—eye, ear, nose and throat—and physical. As no data was at hand, it was necessary to arrange some method by which such tabulation could be carried and checked up daily so as to be available for immediate reference. After considerable experimenting, a card system was worked out along lines suggested by Sergeant Dana, who got the idea from some reports he had been required to keep at Camp Upton. The system was put into operation December 6th, and has proved quite satisfactory, save that we now see that some of the subheadings could have been again divided to furnish more detailed information. Copies of the card of February 7th will be passed to each of you. This card is a record of flyers only; a separate card is kept for nonflyers, whose examination is the same as that given to any line officer, and will not be considered here.

The entire number of men examined from December 6th to date, flyers and nonflyers included, is 1,752. Eleven hundred and thirty-two of these were passed, and 620 were rejected. Considering the flyers alone, 1,364 were examined in this period; of these, 850 were accepted and 514 rejected. This makes 38 per cent rejections among the flyers.

Grand		Carried	February 7, 1918	
Total	Over	Current		
1364	850	837	13	Accepted.
	514	505	9	Rejected
	84	83	1	Stereoscope
	6	6	....	Spontaneous Nystagmus
	16	16	....	Ocular Movements
	8	8	....	Visible Lesion
	63	63	....	Color Vision
	8	8	....	Hypophoria
	11	11	....	Exophoria
	12	12	....	Esophoria
	170	165	5	Visual Acuity
	34	34	....	Near Point
	21	21	....	Vitrious Opacities
	30	30	....	Opacities Lens

Grand Total	Carried Over	Current	
25	25	....	Choriditis
.....	.....	....	Retinitis
1	1	....	Nerve Head
489	483	6	Total Rejections, Eyes
12	12	....	Ear Drum
86	86	....	Hearing
2	2	....	External Canal
11	11	....	Ozena
8	8	....	Ethmoiditis
8	8	....	Static and Dynamic
8	8	....	Nystagmus Prolonged
8	8	....	Nystagmus Shortened
4	4	....	Marker Unequal Nys.
1	1	....	Falling
148	148	....	Total Ear, Nose, Throat, Rotation
133	130	3	Weight
12	12	....	Height
45	43	2	Chest Measurement
3	3	....	Respiratory System
23	22	1	Bones and Joints
17	17	....	Blood Pressure
55	55	....	Heart
19	19	....	Hernia
2	2	....	Hemorrhoids
10	9	1	G. U. System
3	3	....	Urinalysis
322	315	7	Total Physical

Additional rejections not recorded on the card:

Psoriasis, two cases.

Paresis of vocal cord, one case.

Pyorrhea, one case.

Unsound or absent teeth, four cases.

Thyroid enlargement, two cases.

Explanation of the Record Card.—It is marked in three columns, the first designated "Current," which gives the result of the day; the second, "Carried Over," gives the total result from the date when the system was established; the third, "Grand Total," which gives the total result of all examinations to date.

The rotation tests in the examination for aviation service have come into considerable prominence, due largely to the number of published magazine and newspaper articles, some

of them illustrated and all written as news items for public consumption. This test is the one most feared by the candidates; not understanding it, they feel that it is something developed with a special view to disqualifying a large number. As a matter of record in the New York unit, only twenty-one men out of 1,364 have been disqualified for failing to respond correctly to the rotation tests. The test is extremely important, as a normal balance mechanism is absolutely essential in aviation service.

Quoting from one of Major Jones papers, "The rotation test constitutes an objective measurement of the degree of function of the eighth nerve; we are not dependent on mere subjective impressions of the patient. Furthermore, if the Bárány tests show normal responses, they indicate not only normal labyrinth, but normal eighth nerves and normal vestibular pathways throughout the medulla oblongata, pons, six cerebellar peduncles, the cerebellum, and the pathways through both the cerebral crura to the cerebral cortex."

If these tests are carried through according to the prescribed directions, candidates rarely experience any unpleasant effects. Physicians when first taking up this work always furnish different returns in their results than they do when more experienced. Some examiners constantly have cases that cross-point or diverge in pointing. The result of their observation of the after-nystagmus following rotation is rarely equal in both directions of the rotation, because of inattention to prescribed detail.

I have never had a case of persistent cross-pointing or divergent pointing turned over to me for reexamination that did not point properly when care was exercised to maintain a correct position in the chair and rotate exactly ten times in ten seconds, stopping the rotation with considerable jolt. I would estimate that I have reexamined thirty or forty such cases. It has never been necessary to resort to the caloric test to clear up the unusual results occasionally returned by the examiners. I would say that nine out of ten cases should show an equal duration of after-nystagmus following rotation in either direction. The past-pointing will then take place an equal number of times with both arms to the right and to the left. If the after-nystagmus has been prolonged, the past-pointing will continue

longer, and vice versa, which would respectively give higher or lower number of past-points.

The cause of cross-pointing and divergent pointing is absolutely an improper position of the head during rotation. At the present time there is not an entirely satisfactory chair manufactured for this type of work. I have knowledge, however, that promising experiments are in progress.

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