

# The Civilian Medical Examiner

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OUT OF our rapidly advancing civilization has developed a rapidly advancing industry. This new industry has forced upon medicine a new field or specialty, and that specialty is aviation medicine. Aviation medicine was first developed in the United States by the Medical Department of the Army, but as aviation has broadened its usefulness so rapidly from that of war to business and pleasure, the work of aviation has had by necessity, to be partly taken over by the civilian doctor.

The doctor has been appointed by the Department of Commerce to act as a civilian medical examiner. A large number of men and women are being sent to these doctors for examinations, and the number will increase each year. Therefore, the civilian medical examiner has had a responsibility placed upon him and a duty to perform that I am sure he did not realize when he first accepted his appointment. I am sure that I did not, at first, realize this responsibility.

To determine whether or not an applicant is capable both mentally and physically of adapting himself to air surroundings, requires time and a definite knowledge of what is required of an aviator under various flying conditions. The medical examiner must keep before him that not alone is he

responsible for the life of the man or woman examined, but he is also responsible for many persons who may ride with the aviator he examines. These passengers accept the physical and mental qualifications of the pilot because, posted in the ship, is a permit that reflects the work of the civilian medical examiner.

In order to teach the civilian medical examiner, the first regulations were sent to him on mimeographed paper, with careful instructions trying to cover every problem that might confront him. Later a revised "Physical Standards for Aeroplane Pilots," was used. Again, another revised edition was issued, but still problems confront the civilian examiner that he must work out for himself. He must know that it is not his duty to keep as many men out of aeronautics as he can but to get as many in, as he can with absolute safety. To do this he should know something about an aeroplane as well as medicine and neurology. He should taxi one about a flying field, and should ride in one occasionally.

I am wondering whether it would not be one step forward in aviation medicine, for the Department to require an affidavit from a transport pilot issued to the Civilian Medical Examiner stating that he had ridden

in a plane one hour and that he taxied the plane about the field. I am sure that, should such a procedure be inaugurated, the examiner would be more capable and conscientious as well as enjoy his work of making examinations in aeronautics.

The new work of the civilian medical examiner is a different sort of a job than he has hitherto undertaken. The examination is a different type of an examination than any other type in medicine. He is, as Lieutenant Frederick R. Haselton says, striking out into a new sea of uncharted psychology as well as the new uncharted sea of medicine and aviation surgery.

In making an insurance examination, the company insuring the individual wants to know how long the applicant is going to live and the examination is built around that question. The routine examination of a patient in a doctor's office is, first, to make an accurate diagnosis, and second, to institute proper treatment to relieve the patient of illness either psychic or otherwise, and to correct deformity.

The aeronautical examination does not include specific treatment and a specific diagnosis is not required only in so far as it gives the Medical Director a complete picture of the applicant's deviation from the normal in order to assist the Department in classifying applicants. To do our best, mistakes will be made both ways by the civilian medical examiner. Some men will be kept out of aeronautics who should be in, and others who should be kept out will secure the permit to fly. If the mistake is made on the part of the examiner and the permit is issued, it may be costly to

life and property. The examiner should understand that approximately 60 per cent of the accidents in Aviation are not due to some mechanical defect on the part of the plane, but to errors of judgment on the part of the pilot controlling the plane.

One of the greatest differences between the ordinary routine office examination and the application of an applicant for aviation is that the person coming to the doctor for a diagnosis or treatment will assist the doctor by giving him a complete, and in some cases too complete a history. While making an aviation examination the civilian medical examiner can expect no help in the matter of family history or past medical history. Here, the civilian medical examiner has a person who will answer questions, but, one who will not jeopardize his chances to obtain a permit to fly. Here, he has a person who has given a great deal of time and thought to aviation. One who is usually at the age where the matter of cost enters into the question. He has spent time working and has saved the money to pay for his flying education or he has, by a great deal of persuasive arguments convinced his parents that the future of aviation is great and that the danger is more apparent than real. He has finally gained their consent and secured the money from them to pay for his flying training. He is now up against a man whom he thinks holds the whole matter of his future in his hands. Of course, he is nervous, of course he is not going to volunteer any information that may jeopardize his chances of entering the life of an

aviator. Many times he will evade the truth in many of his statements.

It is the work of the civilian medical examiner to gain his information by quietly cross-questioning the applicant until the whole story is before him. Many times after the story is told the examiner will find in the examination, some physical defect that will take him back into the question of past history that will be of a great deal of aid in determining the capability of the applicant. The careful history and the quiet talk had with the applicant will do as much to determine whether a permit should be issued as the physical examination.

The job of the examiner is, then, to issue permits to those who are capable of flying safely and not to issue them to those who are not capable, and the latter group should know the reason why. These men think that should they be able to get by the examiner, the rest is easy and they fail, for the moment, to realize that other examinations must be made at regular intervals.

The civilian medical examiner has a different task than the Army or Navy Examiner, because these things should be explained to the applicant. Why he is rejected, why he should not spend his time and money to enter a field of work which will eventually cause him to lose the time that should be spent in perfecting himself for some other useful field of endeavor. This explanation takes but a few moments of the examiner's time and certainly helps the individual a great deal.

Occasionally, one finds an individual who will not listen and tries out another examiner in another state or

city omitting to state that he failed to meet the requirements at a previous examination. This, of course does him no good because, eventually, he will be washed out.

During March 1928, a young man came to my office for a student pilot examination. His family history revealed a blood pressure record. His mother died with apoplexy. One brother, also died with apoplexy. He had one sister living who had high blood pressure. His examination revealed no abnormality except a hypertension. Systolic blood pressure was 195 mm. Hg., and diastolic blood pressure was 120 mm. Hg. On different days, over a period of two weeks the blood pressure readings were above normal and he was washed out. After a few months he returned stating that a student pilot permit was issued by a civilian medical examiner elsewhere, but he had a letter from the Department, asking him to return to the original examiner for re-examination. The blood pressure this time, was 200 systolic over 120 diastolic and he was again washed out. I have since learned that the second examiner has discontinued his work as a civilian medical examiner. The above experience shows that the examiner can feel that the Medical Department stands firmly behind anything he does providing he is conscientious.

The civilian medical examiner meets at times, a nervous applicant who feels that aviation is a cure for nervous maladies and comes to the examiner with the idea that should he or she be able to pass the first examination and secure a student pilot's permit, all will be well with him or her. He gets

the idea probably from some glowing newspaper account that all nervous and mental diseases can be cured the same as some diseases of the ear, (also fallacious).

This is well illustrated by an examination made by me March 15th, 1930. A boy 28 years old, applied for a student pilot permit. He was a strapping, large fellow, six feet, two inches tall, weighing 188 pounds, who looked perfectly healthy. His physical examination was negative in every way except for a systolic blood pressure of 90, and diastolic blood pressure of 70. A study of personality in this individual revealed one of those inferiority complex, mental make-ups, who could not stand the modern stress and strain of every day civilization and who told me at the completion of the examination that he was going to take up aviation to cure his nervousness.

In the instance above, I am sure the nervousness would have been cured by aviation but the cure might be worse than the disease because he certainly would crash his plane should anything out of the ordinary develop while he was in the air.

After reviewing the examinations made by me, I have come to the conclusion that aside from a pure medical examination, the work of the civilian medical examiner is to determine the ability of the applicant to think and think fast. We may call it what we may, personality study, nervous examination, measuring psychoneurosis or what not, but after all, it is the thinking ability of the aviator that counts. If we are to accept the statement, that only 20 per cent of the

people have the ability to think, and the other statement, that the hardest job is to get people to think, then it is easy to realize the difficulty of a civilian medical examiner.

The civilian medical examiner must be firm in his decision as to the undesirability of an applicant and can not be influenced by his many friends, political or otherwise. This angle of the examination may enter into the question because the medical examiner also practices medicine in the same vicinity and may have a great deal of pressure brought upon him. The answer must be that to fulfill the obligation of the civilian medical examiner, he owes something to the person applying for the examination, and he must fulfill his obligation to the Department; he also has a duty to the public, and that is protection.

In that portion of the examination devoted to special senses and head conditions, the line of demarcation is much more sharply drawn and defects can be clearly demonstrated to the applicant with sufficient explanation as to why he is not eligible for the class of flying for which he applied. In spite of the prevalence of repeated physical examinations and all the agitation about periodical health tests, an occasional applicant is found who has no idea of what may be expected of him. He is exceedingly apprehensive and in a high state of nervous tension. We have found that a few personal questions seem to put the applicant at ease; such questions relating to taking up aviation as a means of livelihood; whether or not he expects to take up transport flying and what his reaction is to flying in general,

at the same time advising him about the needless expense of taking training, if he expects to be a transport pilot and in case he does not have the physical qualifications to pass the transport test.

It has been found that if the nose and throat and ear examination is done prior to the vision test that the reaction of the individual is much better than, if the eye tests are done first.

The self-balancing test seems to be a back breaker to the one who shows the most nervous tension. Occasionally, an individual is found who holds himself so rigid that it would be absolutely impossible for him to balance if he were perfectly normal; such an individual is usually given another trial with the balancing test at the completion of the rest of the examination.

Errors of refraction play a great part in the early development of an individual's habit reflexes. It is a well known fact that a youngster, with a high refractive error avoids sports requiring physical contact and develops to a greater sense, introspection and habits of life which are more or less sedentary, does not have judgment as to distance nor speed and usually is not found to be very active in any type of out of door sports; his entire make-up is apt to be self centered and he is much more apt to be of a neurotic temperament and introspective, and, while he may think quickly his ability to execute muscular movements is far below the ordinary individual, who will excel in out of door sports.

The relation of the different phorias

to accurate vision, especially in the judgment of distance and speed has long been known. However, an occasional individual will be found who will carry two degrees of hyperphoria without any particular discomfort. He may even be a good marksman or be as proficient as the average individual in sports, but the greater majority of the phorias, especially the hyperphorias, gives considerable disturbance in the way of headaches and blurring of vision. It is also probable that such a man under long continued strain or fatigue would develop a double vision, which might result fatally either to himself or his passengers, while under ordinary conditions he might carry and suppress his double vision by purely muscular effort.

The examiner has found the so called malingering prism, which consists of a flat piece of plate glass beveled off at one end to produce a prism, a very useful adjunct in the testing of diplopia in all of the visual fields. It is possible, in the use of this prism, to have a perfectly plain glass which produces no diplopia or which can be slipped, unconsciously to the patient, to produce diplopia in any position. It is also possible by this same prism to produce monocular diplopia, when conditions arise for the necessity of it. The depth perception instrument gives a certain insight into the individual's make-up, particularly in the field of accuracy. The careless individual will give the cords a couple of pulls and say, "that's all right," when his results may be very imperfect; the careful painstaking individual must necessarily be coached to make his setting in the allotted time,

and the individual whose judgment is uncertain or vacillating never seems to finish getting his pins in position, and is always uncertain as to just when he is through. The problem of depth perception without correcting lenses seems to be exceedingly important for if a pilot's glasses should become lost or if they should become covered with oil, mud, snow or sleet and he had to remove them, he would be at a great loss to land his ship properly, possibly jeopardizing his own life and those of his passengers, if he was unfortunate enough to have anyone along with him at the time.

Failures to pass examinations are particularly trying. It must be borne in mind that we operate as a group over the entire United States. We must be scrupulously honest and industrious for what good would it do to pass an individual and let him spend his time and his money learning the new vocation of aviation and then have him remove to another town to some other examiner, who would reject him on account of some glaring physical abnormality. Even if considerable pressure has been brought to bear on the examiner in his local community to pass the applicant, there would be an exceedingly sore spot in this man's make-up, if he had expended considerable amount of time and money and energy to no avail.

The time consumed in the examining of applicants who are unable to pass the class for which they make application varies considerably with the pa-

thology which is found. Usually, it will be found that it is possible to examine four or five normal individuals and pass them on in the amount of time that it requires to examine a defective individual and satisfy both the examiner and the applicant, as to the reasons why he is unable to take up his desired vocation. Even from a selfish viewpoint on the part of the examiner, it is very much better to have the applicant clearly understand why he is ineligible than simply to tell him that he is not eligible and send him on his way.

Until aviation has become large enough to have definite special examiners devoting their full time and all of their energy to the examination and the solving of problems of aviation medicine, it seems that the most logical solution of the medical problem at the present time lies in the close cooperation between the internist and the specialist, working in conjunction, providing congenial working arrangements can be made between honest, faithful, industrious workers, those who have at heart not only the safeguarding of the public welfare with regard to rejection of the physically unfit candidates, but, also the ability to see the future of aviation and to act in a measure as a local representative of the Department of Commerce and aviation in general in the distribution of good will and the dissemination of information to both the medical profession and the laity.