



TEST RESULT

This shows what the machine on the facing page does to a rotor for an airplane's supercharger. The white lines on its surface are cracks in a brittle varnish with which the wheel was coated. As the wheel spun, centrifugal force caused it to expand. The cracks are at right angles to the stresses produced and are more numerous where the stresses are greatest.

driven by compressed air, is all that is needed.

Tests below the breaking speed are made by coating the wheel with a brittle varnish. As the wheel speeds up, centrifugal force causes it to expand. The varnish cracks in a direction at right

angles to that of the stress, and the greater the stress the more numerous the cracks. By examining the pattern of these cracks, the direction and magnitude of the stress at every point can be determined.

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PSYCHIATRY

Strict Pre-Induction Tests Avoid Mental Breakdowns

Psychiatrist Credits Greater Importance of Individual In This War For Low Incidence of Neuroticism Today

STRICT physical and mental examination before induction will enable the United States to avoid mental and nervous breakdowns among its armed forces, Dr. Robert Dick Gillespie, psychiatric specialist of Britain's Royal Air Force, told the New York Academy of Medicine in the Salmon Lectures.

There are remarkably few cases of psychoneuroses among members of the Royal Air Force because of the extreme care used in selection, Dr. Gillespie said.

Only the mentally and emotionally stable get past the weeding out process.

Everyone who flies for the RAF and most of the ground force has the "professional attitude" toward his work, whether he is a pilot or an air gunner, a mechanic or a rigger, he explained. His patriotic devotion is reinforced by his pride in his particular technique and his devotion to his job.

Dr. Gillespie credited the "greater importance which is attached to the indi-

vidual" in this war as one reason why there are fewer neurotics than in the last war. Even among the infantry today a man tends "to be more and more a technician, and less of a foot flogger."

Dr. Gillespie told of a hospital specially built for the care of psychoneurotic victims in the RAF that had to be closed after a few months and directed to other work because there were not enough patients to fill it.

Surprisingly enough, Dr. Gillespie continued, the war has given birth to two institutions, shelter life and community centers, which are highly successful as preventives of psychoneuroses.

"We have learned that shelter life with its common sharing of danger has helped people to withstand peril better than isolation in small groups, which often contributes to the development of psychoneuroses," he said. "The feeling of being with others during an air raid, even in an insecure shelter, brings courage."

Shelter life and community centers fill a need for companionship, Dr. Gillespie went on. In large cities, before the war, we had the paradox of want amid plenty, social want in the midst of social possibilities. Now persons return from safe areas to the shelters in large cities declaring, "I'd rather be bombed than bored."

Dr. Gillespie warned against apathy both among soldiers and civilians as "one of the most significant symptoms of psychoneuroses." This apathy, he said, is usually the result of the continual thwarting of simple desires—in the case of the soldier, the repeated thwarting of the instinct of self-preservation. In the case of the civilian, it is the thwarting of the desire for activity.

"Activity of some sort is a necessary condition of happiness," he said, "and for many people a necessary preventive of psychoneurotic or anti-social behavior. It is important for psychiatrists to recognize the apathy of restlessness which may precede psychoneurosis."

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● RADIO

Saturday, December 6, 11:45 a.m. EST

On "Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Sidney D. Kirkpatrick, editor of Chemical and Metallurgical Engineering, will discuss magnesium from seawater.

Listen in each later Saturday at 1:30 p.m.

Monday, December 8, 9:30 p.m., EST

Science Clubs of America programs over WRUL, Boston, on 6.04 and 11.73 megacycles.

One in a series of regular periods over this short wave station to serve science clubs, particularly in high schools, throughout the Americas. Have your science group listen in at this time.