

AVIATION MEDICINE

German Research Used

Among developments surrendered by Nazis is catapult seat for bailing out of planes at high speed. Will save lives of American flyers in Pacific.

► RESEARCH by German scientists will soon be saving the lives of American flyers fighting in the Pacific. Col. W. Randolph Lovelace, who has recently returned from Germany where he accepted the surrender of precious results of painstaking and valuable scientific investigations, said that he expects some of the German developments to be of great value to us. Col. Lovelace is Chief of the Aero Medical Laboratory at Wright Field, Ohio.

Perhaps the most important of those that can be made public is a catapult seat for airplane pilots which will make it possible for the pilot to bale out of a plane flying at a speed of over 500 miles an hour and out of control. At the will of the pilot, this seat will automatically toss him, seat and all, 15 or 20 feet into the air above the plane and clear of it. It is the only safe way, Col. Lovelace said, to get out of a plane going at that speed, and there are circumstances in combat when it is not possible for the pilot to reduce the speed of his plane before jumping. The seat will work at an altitude of 30,000 feet, and it is good at low altitudes, too.

The Germans, Col. Lovelace found, realized fully the importance of basic research and kept it up even under great difficulties of bombing and having to move from place to place as our forces and those of our allies swept over Germany. They also kept up the training of men for scientific research; enrollments in technical schools were still high up until last summer.

Col. Lovelace found the German scientists quite willing to cooperate with their American captors. They had been ordered to burn all documents and research papers of a secret or confidential nature. But in many cases this was not done. Instead, the Germans carefully filed their documents in metal boxes which were welded shut and then buried. These were cheerfully dug up at the request of the Americans. All reports were made out in careful detail and research was of an excellent quality. It will save us years of time as well as lives. In other cases, the documents were burned as ordered, but previously were all microfilmed to

preserve the scientific labor involved.

In addition to turning over reports already completed, the scientists offered to make drawings showing their developments, make parts if required, or even outline plans for future research.

Other research of importance to us was the work on optics—optical testing and experimental equipment, equipment for grinding special glasses, and telescopes, which was conducted at the Zeiss laboratories. A novel and useful instrument was one for measuring the illumination of the night sky.

They have done wind tunnel research on the ability of men to withstand a wind of as high as 530 miles per hour. We have done wind tunnel research on human subjects, but only went up as high as 180 to 200 miles per hour. The German medical scientists acted as their own subjects for this research.

In only one investigation was it found that the German flight surgeons used prisoners for their medical research. That was in a study of the effects of being in cold water or very cold environment. In six cases this research was carried up to the point of death. Death would occur, Col. Lovelace said, in water of about freezing temperature with a high wind after only about 30 minutes exposure. The prisoners used were both military and political prisoners, but did not include any Americans.

In most fields it was found that American research is better than the German research was. Outstanding of our own developments in use over Germany is the 2½ pound G-suit. This light suit helps to prevent or delay "blackout" of flyers in the fast loops and turns of combat by automatically applying support to the abdomen and legs. It had a great deal to do with the ability of American flyers to shoot down the Germans' fast ME-262 plane in combat against our P-51. The Germans were preparing to copy our suit when the war ended.

The Germans also credited our flyers who were captured by them with knowing more about the physiology of how the human body acts during flight than was known to some of the German flight surgeons. Col. Lovelace attributed this

to a book which presents scientific findings about flight in an interesting and humorous way with a liberal use of cartoons, "Your Body in Flight."

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Animal hoofs and horns do not yield glue, but the piths of the horns are good sources of raw material for this widely used material.

Digger pine, or gray pine, found only in California, bears rich nutlike seeds, on which Indians once subsisted during a part of each year.

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