

Silent, Invisible Airplanes Soon

Aviation

Airplanes that will be silent as they move through the air and practically invisible from the ground, may be one of the next steps in aviation. Already remarkable progress is being made in experiments conducted on behalf of various European governments. France, England, Russia and Germany are said to be conducting such researches.

The silencing of the aero-engines is in many ways the simplest of the problems, but immediately that any mechanism is employed which reduces engine noise there are other sounds which begin to make themselves apparent, the high-pitched notes set up by rapidly revolving air screw or screws.

To cope with these propeller noises is more difficult than to quiet the engines. One way, however, in which this particular problem is being approached is illustrated by experiments now in progress.

Instead of using an ordinary two or four-bladed propeller, tests are being made with screws having six or more blades of rather a small size. These blades—embodying a very large amount of laboratory work—are designed and shaped specially with a view to lessening the noise they make when in rapid motion.

It is probable that before long secret demonstrations, which are already being discussed, will be conducted with large airplanes equipped with silenced engines and "noise-

less" types of multi-bladed metal air screws; and the sounds these machines make as they rush through the air will be further reduced by the elimination of external wires and friction producing projections.

A more immediately practical field of research, and one almost equally fascinating, lies in the progress which is being made with "invisible" paints or dopes.

In England the authorities have evolved a queer, dark dope of a dull, greenish hue. This not only makes a big machine elusive to sight when moving against a background of cloud, but it is also the color which has been found least conspicuous when a high-flying machine comes into the rays of searchlights directed on it from the ground.

A problem even more complex than those already mentioned is now reported to be under investigation in certain German laboratories. This deals with the reduction and, if possible, with the elimination of tell-tale shadows.

Recently German designers and builders have accomplished remarkable strides in the production of giant metal monoplanes simplified in construction so as to offer a minimum of resistance to their own progress through the air.

Such huge craft have their motors sunk in a big single wing projecting on either side of the streamlined hull, and when they are flying immediately towards any observer viewing them

from the ground these very large machines, widespread though their wing span is, present an astonishingly small object to the eye.

But when such a machine, as it is flying, passes overhead until it is in a position almost directly above, the eye is attracted by dark all-revealing shadows which are formed and held under the lower surface of the large curved wing. It is these shadows under the wing, rather than the wing itself, which draw one's attention to the machine.

One of the lines of research which, it is understood, is being followed in German laboratories, and also at certain Russian experimental stations, is to devise special means whereby, owing to secret treatment of plane-surfaces and adjacent parts, heavy shadows are so distributed and broken up that, when viewed from below, they no longer reveal so plainly the shape and size of a wing.

In many respects such aerial researches are the most significant—and also the most sinister—ever undertaken. The evolution of a machine which will rush through the air unseen and almost unheard has possibilities which are practically illimitable.

Used as a weapon of war, its horrors would be almost unspeakable. It would represent in stark, terrible reality that silent and invisible death which writers of fiction have so often described.

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Strange Stone Age Burial

Archæology

An extraordinary prehistoric burial, unlike others of the southwest and resembling the practices of some ancient Roman tribes, is one of the discoveries reported by the archæological expedition sent out this fall by the University of New Mexico and the School of American Research.

The expedition under the direction of Dr. Edgar L. Hewett, of the University of New Mexico, has been investigating the site of the ruined pueblo of Ungshage, 40 miles northwest of Santa Fe, in order to advance the knowledge of the ancient people whose history is buried in the ruins of this region. More than a score of large ruins are located very near together, yet almost nothing beyond the fact of their existence is known about them.

A large number of skeletons, most of them well preserved, were taken from the rubbish heaps of the pueblo, which had served as burial places. The customary pueblo method of burying the individual in a curled-up sitting position was generally followed, and each grave contained pottery which had been broken or "killed" to allow the life spirit to escape.

One body found under the floor of a room was buried full length, however, and sealed over with a mound of clay. This manner of burial is believed to be unique in southwestern archæology. The bones of this individual were slighter than those of other skeletons in the ruin, and the teeth were perfect, whereas teeth of the other individuals were worn down to the pulp from

eating corn meal containing grit. The bones will be especially studied to see whether this individual belonged to the group, or whether he was a stranger.

Pottery, flint and bone weapons, household implements, and fetishes found in the ruin all point to a Stone Age culture, untouched by any European influence, the archæologists conclude. This region was a scene of many important historic events in early Spanish colonial times. Much of the plotting of the Pueblo Revolt in 1680, resulting in complete expulsion of the Spanish conquerors from New Mexico for a time, occurred here. But this pueblo had evidently been abandoned long before these events, possibly because of a scarcity of good agricultural land nearby.

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