



Official U. S. Navy Photograph.

ROBOT BOMB—Pulley device lifts the Bat to its launching position under the wing of a Privateer. The giant patrol carries a Bat under each wing.

RADAR

"Bat" is Guided Bomb

Its own radar guides it to its target; planes carry one or two bats, releasing one or both at the same time.

► A RADAR-GUIDED "suicide" bomb, that glides like an airplane and blows itself up when it almost unerringly finds its target, got its first public showing in Chincoteague, Va.

The bat, latest Naval guided missile, is no longer an experiment. It is ready for active combat use. It is now standard equipment. Navy officials are confident that it will give a good account of itself, if another war is fought.

Like the little flying animal after which it is named, the bat emits invisible waves and uses them in navigation. But the Navy's bat uses the high-frequency radio waves of radar instead of the high-pitched sound waves of the animal bat.

With a ten-foot wingspread and a body length of about 12 feet, the bat looks like a small airplane without engine or propeller. Radar equipment in its nose keeps the missile, after its release from its mother-plane, headed directly on the target, which may be an enemy ship or a land installation.

Its target can be attacked day or night, in clear or foggy weather. The bat's radar equipment is focussed on the target

before its release. An operator on the mother-plane spots the enemy by radar if necessary.

The mother-plane carries the bat under its belly or under its wings. The release is made from four to eight miles away, and preferably from an altitude of from several thousand to 12,000 feet. The bat sweeps downward and forward, when freed, in a long glide to approach its prey at a low angle. Once the bat is launched, the mother-plane flies off to safety.

The radar device is somewhat like the kind used with anti-aircraft guns to keep them accurately aimed on moving aircraft. It sends out radar pulsations which originate in the bat's own battery. Reflected pulses are received on its own receiving antenna. If the target is out of the radar field center, delicate mechanisms elevate or lower the bat, or turn it to right or left, until it is in exact attacking position.

In experiments, the bat hit its target some 50% of the trials made. When it hits, its bombload explodes. It is a "suicide" craft, except that no human

lives are involved as the craft is not manned.

If a big and powerful vessel is the target, two bats are released from a single plane at the same time, and they will hit at almost the same instant. The double blow would be effective upon most ships.

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ORNITHOLOGY

Owls Love Darkness, Though Their Deeds Are Not Evil

See Front Cover

► OWLS, bats and black tomcats are always dominating motifs in Halloween party decorations, presumably because these nocturnal creatures were supposed to be the familiars of warlocks and witches, hobgoblins and demons who traditionally held carnival on the eve of the Feast of All Saints.

For owls at least a disclaimer can fairly be entered. True, they love the darkness, but not because their deeds are evil. Owls, like their day-flying kindred, the hawks, are honest, hardworking birds whose principal business is catching mice and other destructive small rodents. Anyone who kills an owl is doing himself a spite, just as much as if he kills a hawk.

The short-eared owl, shown on the front cover of this SCIENCE NEWS LETTER, sometimes violates the working rules of its own union by doing a little daylight hunting when the overcast is heavy and the daylight dim. Unlike most other owls also, it is a bird of open spaces, often being called marsh owl or prairie owl. This particular specimen was taken about 70 miles south of Chicago, and was photographed by Rev. Joseph W. Baechle, C.P.P.S., of St. Joseph's College, Collegeville, Ind.

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INVENTION

Receiving Set Combines Hearing Aid Radio

► TWO DAYTON, Ohio, inventors, T. B. Fordham and T. W. Moore, have taken advantage of the fact that the vacuum-tube hookup and battery equipment in a hearing aid are quite similar to those in a portable radio receiving set to combine both functions in one instrument, on which they have received patent 2,409,481. The user can summon any entertainment or news that may happen to be on the air.

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