MILITARY SCIENCE

Can Planes Be Stopped?

Intercepting supersonic planes carrying A-bombs would be job for complex radar-computer mechanism. Aim is to explode "eggs" short of target.

➤ TO KEEP atomic bombs away from American cities, some means is needed to intercept a supersonic bombing plane or long-range flying bomb and explode its atomic "eggs" short of the intended target.

No such "anti-missile missile" as the ordnance experts put it, seems to exist although there have been published rumors of a "deflection beam" that is supposed to be able to turn a bomb from its course.

A rocket that would intercept an incoming A-bomb traveling faster than the speed of sound would have to be guided by a most complex radar-computer mechanism which would affect its controls and make it meet the invading missile. Radar would detect the invader. The defending missile would have to get started when the invading missile was many miles and many minutes away. The defending missile would need to be controllable, responsive to the changes that the invading missile makes in its direction or speed.

Some of the parts of the mechanism needed already exist in the radar-linked fire control devices for anti-aircraft artillery which utilize computers, but these controls and anti-aircraft batteries themselves are almost obsolete now that the supersonic bomber and missiles are realities.

It will do no good to shoot down invading planes after they have discharged their bomb loads. The big problem is to catch them before they get to their targets and destroy them in the air.

Any countering device would have to have enough punch and momentum to affect the invading missile or plane. Newton's laws of motion apply.

No beam of radiation would have enough to it to do the job, even if the relatively immense distances involved did not dissipate the energies involved. So-called "death rays" have not worked even over limited distances on the ground.

Sound has been suggested as a weapon and various experiments have been made both in this country and in Germany during World War II. Sound carries energy and can be made directional. Rabbits have been killed by sound at short range. But stopping A-bombs with sound would seem to be impossible.

The Germans tried anti-aircraft wind guns, projecting plugs of air by explosions of mixed hydrogen-oxygen gas and other explosives. This might bring down an airplane at several hundred yards, but again it would be ineffective at long range.

Such unconventional methods do not seem promising. Success, if it comes, will probably be along rather conventionally-principled rocket and jet devices with extremely complex and complicated controls, mothered by electronic "brains", perhaps riding along radiation beams moved to make the guided missile intercept the enemy's A-bomb.

All of which will take millions upon millions of dollars and require a major part of our technical and scientific skill.

Science News Letter, April 7, 1951

GENERAL SCIENCE

Boston Has New Museum, Show Window for Science

➤ THE NEWEST thing in museums is Boston's show window for science, the new Museum of Science. A modern building that can be rearranged completely inside to meet future needs, it now contains the world's only permanent atomic energy exhibit outside of the government display at Oak Ridge. Other exhibits show a big airplane engine and a telephone setup that allows visitors to see and hear their own voices. A mechanical man and dog, electrically operated, greet visitors.

Science News Letter, April 7, 1951

CHEMISTRY

Smash Atoms for Better Thyroid Chemical Treatment

➤ A CHEMICAL made in the atom-smashing cyclotron might become a remedy for certain thyroid gland disorders, maybe even including cancer, if it proves as effective in humans as it did in rat trials reported to the American Association of Anatomists, Detroit.

The chemical is astatine, formerly known as element 87. It is a sister chemical to iodine. Radioactive iodine is now used to treat cancer of the thyroid gland in the neck and also one form of goiter, the toxic goiter in which the gland is overactive.

Radioactive iodine can be used for this because the thyroid gland picks up and utilizes almost all the iodine in the human system, normally about 80 times as much as any other tissue. The beta rays of the radioactive iodine destroy the overactive gland and, in the case of cancer of the gland, destroy the cancer.

Astatine, sister to iodine, is also picked up by the thyroid gland, a seven-man research team at the University of California reported. Like radioactive iodine, it destroys thyroid tissue.

Astatine is effective at lower doses than radioactive iodine. This, the scientists suggested, may be because it gives off alpha rays, whereas radioactive iodine gives off beta rays.

Even with the biggest doses, astatine did not damage the parathyroid glands, small but important structures located very close to the thyroid.

The scientists reporting this work are: Drs. C. W. Asling, J. G. Hamilton, K. G. Scott, P. C. Wallace, W. M. Garrison, G. P. Thilo and D. C. Morrison.

Science News Letter, April 7, 1951

ORNITHOLOGY

Wrens Avoid Yellow Bird Houses for Nests

➤ HOUSE WRENS for some reason avoid a bird house painted yellow, it was indicated in tests made by Profs. R. A. McCabe and R. S. Ellarson, of the University of Wisconsin's wildlife management department.

As part of a study on the nesting of songbirds, the two men checked 10 groups of wren houses for four years, each group consisting of five boxes of the same type except for color. Each group included a red, yellow, green, white and a blue box.

It was found that only one wren will nest in each group, and the wrens, for reasons unknown, seemed to avoid the yellow boxes. They showed no definite preference for any one of the other colors.

Songbirds will be much more apt to nest and stay in a place where plenty of water is kept available for them to drink and bathe in, it has been shown. Birds like the sight and sound of water in motion, so hanging a can filled with water above a bird bath and letting the water drip into the bath through a hole in the bottom of the can, will help attract birds to the premises.

Science News Letter, April 7, 1951

INVENTION

Magnesium Alloy Has High Structural Strength

➤ A STRUCTURAL magnesium alloy, on which a patent was granted, has exceptionally high strength value, especially under compression loads, making it suitable for many applications where other magnesium alloys cannot be used.

This alloy is 6% to 12% lithium, 16% to 25% zinc, 1% to 20% cadmium and the balance of magnesium. The inventors are Donald L. Leman, Freeland, and John J. Casey, Midland, Mich. Patent 2,546,931 was awarded to them. Patent rights are assigned to The Dow Chemical Company of Midland, but the government was given the right to use it for governmental purposes without the payment of royalties.

Science News Letter, April 7, 1951