

## AERONAUTICS

# CAA Is Searching For Crash-Proof Gasoline Tank

## Advances in Bullet-Proof Fuel Tanks Have Stimulated Research on Tanks That Will Not Cause Explosions

**F**UEL tanks of air transports of the future will not spray burning gasoline to add to crash horrors if research work now under way achieves success.

The Civil Aeronautics Administration is now studying this problem and John W. Baird, CAA engineer, asked for comments and suggestions from the industry in a paper before the National Aeronautics Meeting of the Society of Automotive Engineers in New York.

Recent advances in bullet-proof and self-sealing fuel tanks on military and naval airplanes have stimulated anew the work of developing for commercial craft tanks that will not cause explosions and fire after accidents.

The type of fuel tanks now used for military planes does not offer the best solution of a crash-proof tank for civil airplanes, Mr. Baird said, because the increase in weight due to the adoption of self-sealing tanks in an airplane of a fuel capacity of 1,000 gallons would amount to around 1,000 pounds.

Various types of crash-proof tanks now being developed, it is expected, will compare in weight with conventional metallic tanks.

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## Birds a Hazard to Planes

**C**OLLISION with birds, particularly large specimens, is a real hazard to transport planes, sometimes causing destruction of the plane and threatening the life of pilot or passengers, Allen L. Morse, chief of the aircraft development section of the Civil Aeronautics Administration, told the national aeronautic meeting.

Airplane accidents involving bird collision, Mr. Morse said, have amounted to 61 since 1939, two-thirds of which occurred at night, and more than one-third shattering or penetrating the windshield.

Mr. Morse told of one pilot whose plane collided with a flock of five swans at night. One swan penetrated the leading edge of the left wing; the second almost tore off the left vertical stabilizer,

jamming the rudders, the third swan struck and dented the engine cowl, and later two swans went through the propeller. A portion of a swan, taken from the wing after landing, weighed 11½ pounds. Wild swans weigh as much as 20 pounds.

Such reports show that impact forces in collisions with birds are enormous. Even small birds, Mr. Morse went on, not only have penetrated the windshield, but in one instance continued through the bulkhead, traveled the length of the cabin, penetrated the rear cabin wall, and lodged finally in the baggage compartment. Fortunately in this case neither passengers nor crew were struck.

For use in tests to devise adequate protection against birds, Mr. Morse called for development of a high-pressure air catapult which could shoot freshly-killed carcasses against a plane windshield, thus simulating actual flight-collision. Freshly-killed birds are necessary, since their bodies offer the same resistance as live birds.

Meanwhile windshield combinations of glass and plastics offer some protection. It is to further test these combinations that the high-pressure catapult is needed.

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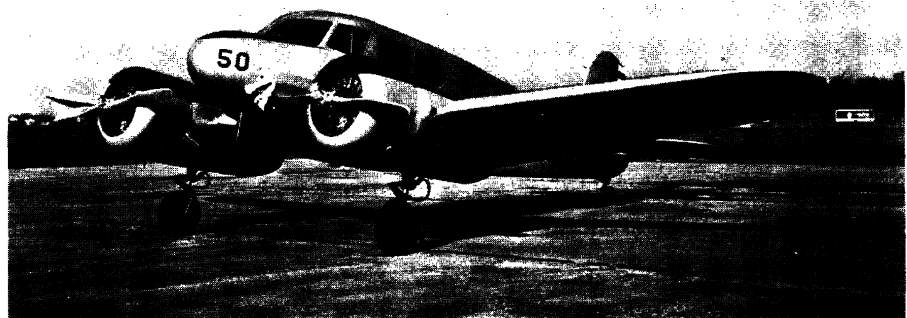
## AERONAUTICS

## Two-Engine Transition Training Plane Designed

**A** NEW type of transition training plane, to bridge the tremendous gap between the ordinary light trainer and the complex, heavy, two- or four-engine tactical plane, with its multiple instruments and controls, has been designed by the Army Air Corps, it is announced at Wright Field. Another new type of training plane is designed especially for the instruction of navigators and bombardiers.

To try to fly a multi-engine airplane immediately after completion of training in single-engine trainers, officials said, would be something like trying the big jump after the first few skiing lessons.

A composite view of the four new models of pilot-trainers, just announced, would show a low-wing monoplane with a 40-foot wing span and powered with two radial engines in the 270-horsepower class. They have the same general performance and operation characteristics of their tactical big brothers, and a gross weight of 5,125 pounds.



**TRANSITION TRAINER**

*Pilots who have learned to fly in a small single-engine training plane will now be able to continue their training in a two-motor trainer having the general handling characteristics of larger heavy multi-engine fighters and bombers. This AT-8 (Cessna) is the first twin-engine transition trainer produced for the Air Corps from designs just announced at Wright Field. The photograph is an official Army Air Corps picture.*