AERONAUTICS

Aircraft Noise Problem

Distress caused by noisy planes affects more and more people as more powerful propulsion systems come into wider use. No easy solution seen.

➤ NO EASY and inexpensive solution to the aircraft-noise problem is available at present, according to a report of the National Advisory Committee for Aeronautics. The conclusion is the result of a survey made by Harvey H. Hubbard, of the NACA's Langley Aeronautical Laboratory at Langley Field, Va.

Aircraft noises are particularly distressing to persons living near airports where airplanes are constantly taking off and landing, but they are also of concern to others when low-flying planes pass overhead, and they are of concern to crew and passengers on board. Real estate values near airports are often low because of the noise nuisance of arriving and departing planes.

The principal sources of aircraft noises are the propellers, the engine, and the turbulence generated in the boundary layer of the airplane as it moves through the air. Reductions in propeller and engine noises are possible in some cases, Mr. Hubbard states, but only if a possible performance penalty is acceptable.

The problem of aircraft noise and its reduction has been of interest for many years, but it is becoming of greater concern because of higher noise levels from the more powerful propulsion systems now in use. NACA, other government agencies and the aircraft companies are continuing their basic studies in an attempt to solve the problem.

One way to decrease propeller noise is to use more propeller blades and decrease the speed with which the tips of the blades rotate in the air. This is effective when the tips travel at a speed less than that of sound, but only a relatively small benefit results if the tips are traveling at supersonic speeds.

The main source of noise from the reciprocating engine is the exhaust. The exhaust-noise intensity depends on the type of manifold system used and, in some instances, may be about the same as the propeller noise.

As engine rotating speed increases, exhaust noise increases at a slower rate than does the propeller noise. When some provision is made to reduce propeller noise, the exhaust noise must be reduced in order to achieve effective over-all noise reduction.

Science News Letter, June 7, 1952

INVENTION

Two Inventions Make Fabrics Water-Repellent

➤ TWO NEW, related methods of waterproofing both natural and artificial fabrics so they stand up to laundering better and are easier to handle have received patents from the government.

The inventor is Firth L. Dennett, Midland, Mich., who assigned his patents, numbers 2,588,365 and 2,588,366 to the Dow Corning Corp., Midland.

According to one patent, the material to be made water-repellent is wetted with a mixture of two organosiloxane polymers and then heated at temperatures of from 100 to 475 degrees Fahrenheit for a short period of time. This treatment, the inventor says, will render the material substantially water-repellent even after laundering or dry cleaning. It also eliminates or materially reduces "Mark-offs," lines which appear where materials made water-repellent by other methods have been folded or creased.

The second method uses a mixture of three organosiloxane polymers, but the same heat treatment. Other methods using siloxanes, the inventor says, made smooth-fibered fabrics, such as rayon and nylon, too slippery. This affects handling and cutting. His method, the inventor claims, eliminates this problem.

Science News Letter, June 7, 1952

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