

AERONAUTICS

Supersonic Air Transport

A future supersonic transport which would compete with other forms of transportation economically, was reported feasible by a scientist.

► **WEIGHT** for weight, a future supersonic transport plane flying at high altitudes will give as many miles per gallon of fuel as your automobile, the National Academy of Sciences was told in Berkeley, Calif.

Robert T. Jones of the Ames Aeronautical Laboratory of the National Advisory Committee for Aeronautics took issue with opinions that flight faster than sound will be "excessively wasteful." He declared that aerodynamic theory of slender plane bodies and wings indicates that supersonic flight will be competing with other forms of transportation economically.

The plane which Mr. Jones envisions as a future supersonic transport would carry a conventional load at an altitude of 60,000 feet. Design requirements of such a plane would enable it to fly slowly enough at low altitudes for landing.

Using present turbojet engines, this plane would give a fuel economy in miles-per-gallon that would "not fall far short of that achieved by other forms of transportation," Mr. Jones' studies indicate. The comparison was made on the basis of weight in relation to fuel requirements.

The supersonic plane would be much like today's air transports in many respects, but it would use sweepback wings to reduce the drag which results from going faster than the speed of sound. This type of wing is now incorporated on some high speed planes, as is the very slender body which the future supersonic craft would have.

When such a transport will be available, Mr. Jones did not estimate. But when it is flying, it will compete economically with other forms of transportation, he concluded.

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MEDICINE

Causes for King's Ill

► **IMPAIRED BLOOD** circulation to the legs from which the King of England is reported suffering, may arise from many different causes. Among them are infection, injury, heart disease and diabetes. Hardening of the arteries is another and a common cause of impaired circulation.

In artery hardening, the walls of the blood vessels thicken and lose elasticity. As a result, the lumen of the artery, corresponding to the bore of a hollow tube, becomes smaller and smaller. If it is entirely closed by this process, no blood can get through to nourish the tissues of that part.

This artery hardening condition, together with the blood vessel disease called thromboangiitis obliterans, or Buerger's disease, make up almost 95% of all cases of disease of the blood vessels of the extremities, according to one authority.

The probable outcome depends to some extent on whether arteries or veins are affected. For example, if the veins are affected, the great danger is that of a clot breaking loose and making its way to the heart or lungs where it may become fatal. If the arteries are involved, the consequent lack of blood supply may cause gangrene and the loss of a limb.

Pain is the most common symptom of diseases of the blood vessels of the ex-

trimities. The pain may range from a mild "gnawing" to excruciating. Weakness and fatigue of the affected limb are also common. Patients often have sensations of tingling and "pins and needles," or they may complain of numbness.

Treatment for these blood vessel diseases varies according to the condition. Tobacco is usually forbidden though alcohol may in some cases be allowed and even encouraged. Surgery, various drugs and physical therapy may be used. For clots, doctors in some cases use two relatively new anti-blood clotting drugs, heparin and dicumarol.

Radioactive tracer chemicals and fluorescent dyes are being used fairly widely to study the circulation through veins and arteries of the extremities in the hope of learning how they become diseased and how such conditions can be prevented or remedied.

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ENTOMOLOGY

Sowing DDT on Snow Keeps Mosquitoes Down

► **THE OLD PRACTICE** of sowing grass seed on March snow in order to insure a good lawn now has a parallel in the mos-

quito-fighting techniques being developed to make life more endurable in the Far North. U. S. Department of Agriculture entomologists, in cooperation with the Army and with Canadian scientists, have found that sowing DDT onto Arctic snow from airplanes is an effective means for keeping down the hordes of bloodthirsty insects that often make work out-of-doors impossible in the Far North.

As soon as the snow has melted and formed a wet sheet among the plants of the tundra, arriving mosquitoes are accustomed to lay their eggs. Now they find their erstwhile nursery a death-trap for both themselves and their young.

One advantage of the new technique is its relatively low cost. Sprinkled from low-flying airplanes, one pound of DDT is sufficient to treat 10 acres.

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WILDLIFE-AERONAUTICS

New Job for Jet Planes; Counting Ducks and Geese

► **THE TOUGH JOB** of counting wild ducks and geese at their wintering grounds was made easy and speedy with a jet plane and high-speed camera, the U. S. Fish and Wildlife Service reported.

The plane, a U. S. Air Force RF-80, photographed with a Sonne S-7 camera a 22-mile strip of marshes where wildfowl were feeding in California's San Joaquin Valley in 3.3 minutes recently. A ribbon picture 9.5 inches wide was made with the camera, which was synchronized with the 400-miles-per-hour speed of the plane.

Aerial surveys with slower planes have been handicapped by the roar of the plane's engines which frightened the birds and caused them to break into flight. Some of them would fly out of the camera's range. But the jet plane went over the ducks and geese before they were aware of its noise.

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CHEMISTRY

Capacitron Sterilization Helped by Partial Vacuum

► **CAPACITRON** sterilization of foods and medicinal products such as serums and vaccines is accomplished more quickly and with fewer undesirable by-effects if it is carried out in a partial vacuum, state Drs. Arno Brasch and Wolfgang Huber of the Electronized Chemicals Corporation, in the journal, *SCIENCE* (Nov. 12).

This improvement in the sensational new method for low-temperature preservation works best on finely powdered solids, slightly less well on liquids and compact solids. Desirable reduction in exposure time can be achieved by stepping up radiation intensity.

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