AERONAUTICS

Plan Atomic Air Tug

➤ AN ATOMIC - POWERED FLYING TUG to tow gliders across the Atlantic is now being designed by the British Ministry of Supply. It is part of the national drive to speed the industrial application of atomic energy.

Because of the danger of radioactive contamination in the event of accidents, as well as the great weight of the shielding involved, neither nuclear-powered planes or autos are high on the priority list.

But the idea of an atomic-powered aerial tug that could fly back and forth across the ocean for weeks on end has engaged the attention of Government scientists, who regard the plan as having intriguing possibilities.

The atomic tug would be built as a flying boat, to take off and land on water, so that the weight of the aircraft would not be limited. This would also mean that it would not be restricted to the long runways at major airports.

It is visualized that the plane would remain in the air for extensive periods, flying with multiple crews who would rotate duties and be relieved periodically rather in the manner of lighthouse keepers.

The Ministry's scheme is for large jet airliners to take off from land airports under their own power and fly to the coast. There they would hook on to the atomic tug in much the same manner as has already been proved possible in flight refueling systems.

The airliner would then shut off its own engines and be towed until, when in sight of the coast on the other side of the Atlantic, it would restart its own power and fly to an airport. The tug, with its potentially dangerous atomic reactor, would thus never approach inhabited areas.

The economics of the scheme look attractive because of the low cost of operation of an atomic-powered aircraft and the fact that the towed jet-airliners would not have to carry great tonnages of normal jet fuel across the Atlantic but could carry paying freight instead.

Science News Letter, April 6, 1957

CHEMISTRY

Strontium-90 Main Hazard

➤ THE MAIN WORLD-WIDE HAZARD from large atomic and hydrogen bomb explosions lies in the slow fallout and later accumulation of strontium-90, a bone-seeking chemical similar to calcium, two Weather Bureau scientists have found.

They said most of the strontium-90 that remains in the atmosphere a few months after atomic and nuclear tests is contained in very small particles, about a one-hundred-thousandth of an inch in diameter.

Drs. L. Machta and R. J. List of the Bureau's Washington, D. C., office said the "delayed" fallout is injected into the stratosphere to heights of about 15 miles by the mushroom clouds from H-bomb explosions. They told the American Meteorological Society meeting in Chicago that the particles are so small they behave almost like air molecules and do not fall out of the stratosphere.

Instead they are mixed slowly downward by atmospheric turbulence. This stratospheric storage lessens the hazard by allowing for radioactive decay.

Eventually, however, the particles pass into the lower atmosphere, or troposphere, where they are brought to the ground by raindrops that wash them from the air. They estimate that it will take about three to five years for half of the material now in the stratosphere to reach the lower atmosphere, and a period of weeks or months after that before it is finally deposited on the ground.

These long times mean the material is widely spread over the world before it finally reaches the ground, and this tends to reduce the hazard from strontium-90.

Charles K. Shafer, a Weather Bureau consultant for the Federal Civil Defense Administration, Battle Creek, Mich., reported that the present fallout forecast program now includes Canada, Alaska and Hawaii as well as the United States. The program, he said, takes into account the possible occurrence of aircraft being shot down with their nuclear devices exploding at any location within the U. S. Originally it covered only 70 critical target areas in the U. S.

Science News Letter, April 6, 1957

AGRICULTURE

Plastic Cover Used to Make Silos in Fields

➤ BLACK PLASTIC COVERS have been used successfully to make silos in the field, a Purdue University research team reported in Lafayette, Ind.

The scientists made quality silage stored under polyethylene film at far below the cost the farmer now pays. No new equipment but only a supply of the black film, trade-named Visqueen, is needed.

The silos may be located wherever convenient both for making and feeding the silage, but the site should be far enough away from trees to eliminate the possibility of puncture.

To protect silos from damage, the Purdue scientists recommended that livestock and other animals be fenced out.

Punctures and tears should be repaired immediately with a suitable pressure adhesive tape, since the success of the silo depends on the airtight seal.

Drs. D. L. Hill, C. H. Noller, B. W. Crowl and N. S. Lundquist of Purdue's Agricultural Experiment Station in Lafayette conducted the experiments with silos covered by Visqueen, which is made by Visking Company, a division of Union Carbide and Carbon Corporation, Terre Haute, Ind.

Science News Letter, April 6, 1957

PLASTIC SILO—A sheet of black Visqueen polyethylene film covers a loaf-shaped silo ensiling forage harvested within a short distance. A fence around the plastic silo restrains farm animals from damaging the air-tight cover. A Purdue University research team and the Visking Company, Terre Haute, Ind., cooperated in development of the plastic silos.

Science Service, Inc. is collaborating with JSTOR to digitize, preserve, and extend access to The Science News-Letter. www.jstor.org