METEOROLOGY

Artificial Weather Made

Pelting certain types of clouds with dry ice may lead in future to less hail damage, man-induced snow and rainfall and ice-free flying for planes.

See Front Cover

➤ WIDESPREAD man-made climate changes, particularly in the winter, may be possible with techniques now used to produce snowfall or rain from certain types of clouds.

This revolutionary prospect was disclosed by Dr. Irving Langmuir of the General Electric Company, Schenectady, N. Y., in the first official report on Project Cirrus, the joint Army Signal Corps, Office of Naval Research, Air Force and General Electric program for research into controlling weather.

Other possibilities suggested by Dr. Langmuir included:

Less severe thunderstorms.

No hail.

Man-induced snow and rainfall over mountain areas to fill reservoirs for irrigation and hydroelectric power.

Prevention of ice storms, storms of freezing rain and icing conditions in clouds.

Fewer clouds in the northern U. S. during the winter.

These are future possibilities. Already scientists on the project believe they have conquered the problem of ice formation on airplanes, the report explained, as shown on the front cover of this week's SCIENCE NEWS LETTER.

Attacking dangerous, ice - forming clouds with dry ice, perhaps in the form of bullets shot ahead of the plane, will clear a safe path through the clouds, flight experiments have proved.

A plane flying over an icing cloud should be able to clear a hole through the cloud in 15 minutes with a bombardment of dry ice, it was reported. In taking off, the plane would "seed" the lower layer of the cloud with dry ice to clear a path up through the dangerous cloud.

Attempts to change the cloud formations over an area such as the northern U. S. will have to wait for research development and experiments.

"Obviously," Dr. Langmuir pointed out, "experiments producing widespread effects should be made in relatively unpopulated regions such as Alaska or northern Canada."

Wartime smoke generators using silver iodide instead of smoke might be used on the ground for large-scale cloud changes, the scientist suggests. Use of silver iodide instead of dry ice is being studied by another General Electric scientist, Dr. Bernard Vonnegut. "Many other substances" may be found for this attack on clouds, the report predicts.

Dry ice dropped over beginning thunderstorms as soon as the tops reach freezing level can now produce less severe storms, Dr. Langmuir explains. This would also prevent hail, which claims an estimated annual damage of $15,000,000 on farm crops.

Over mountain areas, dry ice might be seeded on clouds to produce greater snowfall. This snow, which would fall as rain from the lower layers of clouds, might end the plague of dry years in irrigated valleys.

First experiments in converting a supercooled cloud to snow were in the General Electric Research Laboratory by Vincent J. Schaefer in July, 1946. Mr. Schaefer is now working with Dr. Langmuir in directing the cloud study.

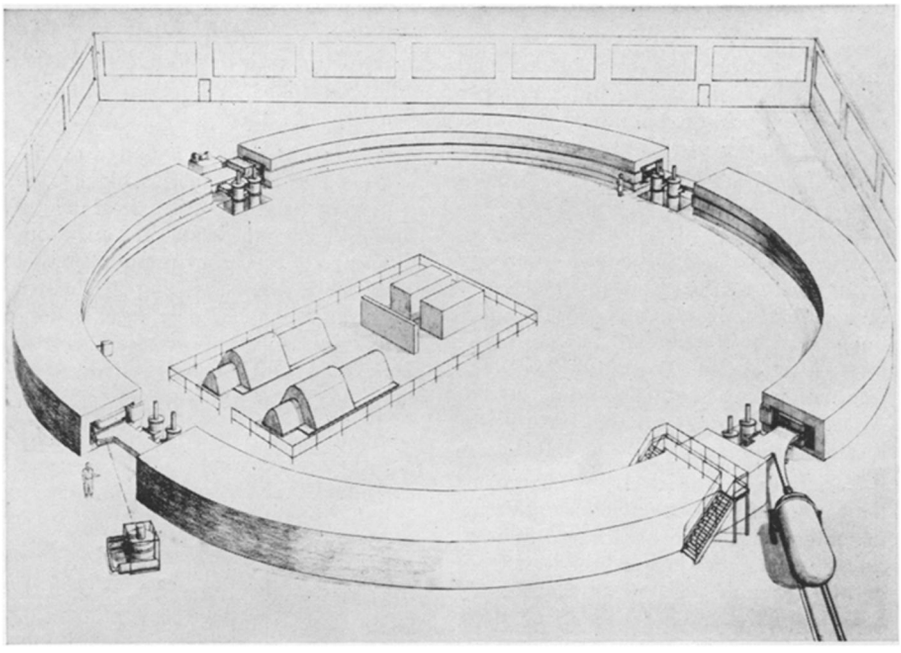
In addition to the flights and laboratory experiments made, five new flights are planned to attempt various new artificial weather operations. In one experiment, the scientists will attempt to produce clouds in clear air.

Whether or not scientists are able to tailor-make weather, the cloud experiments are revealing new facts which will help meteorologists predict weather more accurately.

Science News Letter, November 1, 1947

A chemical called *cylohexanone* is found to be a good solvent for DDT; it appears to irritate certain insects, making them move around more actively thus resulting in their making better contact with the DDT in the mist of the spray.

Maturity of *cotton* fiber is sometimes determined by a dyeing process; mature fiber is thick-walled, and immature fiber is thin-walled, with the result that they take up the same dyes differently.



BEVATRON—Some day this gigantic atom-smasher, plans for which are announced by Prof. E. O. Lawrence, may be built at the University of California. (See SNL, Oct. 25). It would accelerate protons, the nuclei of hydrogen atoms, to 10 billion electron volts. They are fed into it by the Van de Graaff generator shown at the lower right. The beam emerges near the man standing at the left and hits the cloud chamber generator housing in the center.