METEOROLOGY

Seeding May Reduce Rain

Spraying immature thunder clouds with silver iodide may decrease natural rainfall. Predicting thunderstorms from energy in atmosphere proposed.

➤ TRYING TO make it rain out of immature thunder clouds by seeding them with silver iodide may actually decrease the amount of rain which would have fallen naturally over an area. This is the opinion of Dr. E. J. Workman, president of the New Mexico Institute of Mining and Technology, presented at a session of the American Meteorological Society meeting in New York devoted to artificial rainmaking.

In fact, said Dr. Workman, if silver iodide crystals are efficient substitutes for natural water-droplet-forming nuclei in the air, it would appear reasonable to undertake a rain reduction program in some areas by extensive pollution of the atmosphere with these crystals.

Seeding immature clouds may dissipate some of the energy necessary within the general area for the creation of thunderstorms and thus actually reduce the amount of rain which otherwise would have fallen naturally.

This might have an effect on the weather over a very large area. Dr. Workman pointed to the theory held by Nobel Prize Winner Dr. Irving Langmuir that "rainmaking" with silver iodide in New Mexico had an effect on the weather over a large area of the United States.

Dr. Workman said that the local effect which he found of dissipating energy by seeding with silver iodide crystals might be responsible for the widespread effect rather than any local increase in rain over New Mexico.

Originally an enthusiast over the possibilities of increasing rainfall by cloud seeding, Dr. Workman admitted that "the enthusiasm with which we started about four years ago has not been sustained. Our simple field experiments designed to test elements of current rain-increasing practice have been inconclusive for the most part, and, moreover, our accumulated laboratory observations give us cause to doubt some of the basic assumptions inherent in the youthful rainmaking technology."

Dr. Langmuir, speaking at the same session, reported on a statistical study which, he said, showed that periodic seeding with silver iodide in New Mexico caused periodic effects in rainfall over a wide area of the United States.

He asserted that the agreement which he found between most of the rainfall and seeding phases "gives conclusive proof that the periodicity was actually caused by silver iodide seeding."

Dr. Langmuir disagreed with statistician Glenn Brier of the U. S. Weather Bureau. Mr. Brier stated that based on usual scientific standards "it appears that the hypothesis that silver iodide seeding affected the larger scale features of the weather or circulation has not been demonstrated."

Discussion of whether or not seeding with silver iodide crystals on a periodic basis actually causes large-scale changes in the weather has been going on for more than two years. Many meteorologists and physicists believe that the controversy will never be settled.

Forecasts for Jets

➤ WEATHER REPORTS will have to come from twice as high up and twice as fast when jet airliners go into commercial operation all over the world. Jet airliners will fly twice as high and twice as fast as the "old-fashioned" four-engined propeller planes now in use.

The need for more accurate reports of cloud and wind conditions up to 40,000 feet and for faster weather reporting to jet pilots was illustrated in test flights of the British jet airliner the Comet I. It will go into service on the London-Rome-Cairo run this spring.

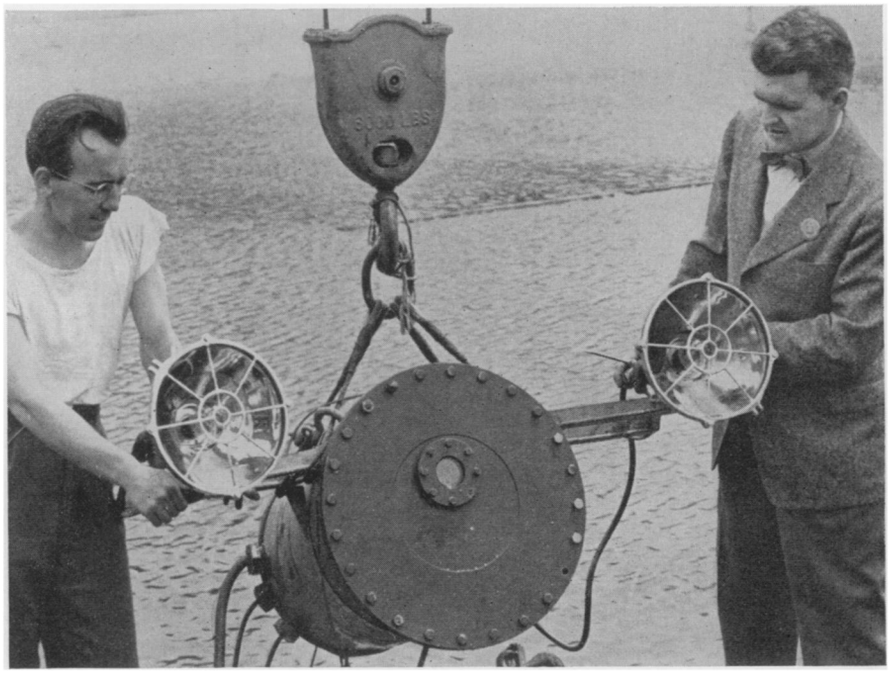
The meteorological problems involved were described by A. C. Campbell Orde, operations development director of the British Overseas Airways Corporation, operators of the Comet. He spoke at a joint meeting of the American Meteorological Society and the Institute of the Aeronautical Sciences.

Mr. Orde described a flight of the Comet from London to Singapore and return. The pilot was constantly receiving inadequate or inaccurate weather briefings as to what kind of cloud conditions and wind speeds and directions he would find at 40,000 feet along his route. The average cruising level of the Comet is 40,000 feet.

In addition the pilot needed, while in flight, quick and accurate information as to temperatures, visibility and wind speed and direction at the airport at which he planned to land. The same information was required for alternate landing fields. Several times on the flight some of this information was late in coming in.

Temperature of the field at take-off is extremely important to the Comet, Mr. Orde said. A difference of one degree Centigrade is equivalent to between 200 and 250 pounds in payload.

These problems did not prove to be unsolvable, the B. O. A. C. executive said. No fundamental changes are necessary—



UNDERWATER TV CAMERA—Engineers adjust the flood lights on one of the U. S. Navy's underwater television cameras before lowering it to the ocean's floor where it will serve as a "seeing eye" for divers. It is manipulated by remote control and records a picture that is transmitted to a television-like screen on the ship.