

METEOROLOGY

Rain-Making, Pro and Con

Weather Bureau officials feel that artificial rain making will not solve the water shortage problem. Other scientists feel this method offers a very probable solution.

➤ NO great help for the water shortage problem either in New York or in the western states will come from any attempt at artificial rain making, Ernest Christie, meteorologist in charge, New York Branch, U. S. Weather Bureau, claims.

He differs with Nobel prize winner Dr. Irving Langmuir of General Electric who has declared that it is "highly probable" that the cloud seeding technique of rain making could solve New York's water shortage problem as well as the shortages in the western states.

Mr. Christie asserts that there is always enough natural rain over the New York water shed area. The problem is not to produce more rain, he declares, but to use the rain received properly.

Much the same controversy exists over the water resources of the 17 western states. Dr. Langmuir claims that cloud seeding will help both New York and the western states. Weather Bureau experts declare that he has not proved his case yet and express doubt that he will.

Dr. Langmuir and his associates believe that the meteorologists are being stubborn about accepting their findings. Furthermore, they claim that the meteorologists do not know anything about cloud physics.

The chief of the U. S. Weather Bureau, Dr. F. W. Reichelderfer, is happy to admit that Dr. Langmuir's experiments in seeding clouds with the artificial nuclei around which rain or snow may form are providing valuable new data that the meteorologists can use.

"The general conclusion has been that there are relatively few cases where the lack of nuclei is responsible for the lack of rain," Dr. Reichelderfer asserts. "Dr. Langmuir may have brought new evidence to our knowledge."

Another Weather Bureau meteorologist, William Lewis, assigned to work with Dr. Langmuir on his rain making experiments, is even more positive about nuclei. To Dr. Langmuir's statement that very often there are not enough nuclei for moisture filled clouds to produce rain, Mr. Lewis has a categorical answer. He declares that there are "always sufficient natural nuclei so that with the proper air circulation, ice crystals, which are nature's nuclei, form naturally."

"Artificial seeding, therefore," Mr. Lewis continues, "will not produce an appreciable change in the distribution of rain."

In a paper delivered recently before meetings of the American Meteorological Society, Dr. Langmuir pointed to experiments in New Mexico of seeding clouds

with silver iodized particles. He presented an analysis of radar data, weather bureau rain measurements and measurements of river flow to support his claim that he made it rain in large quantities over New Mexico.

Mr. Lewis points out that on each of the two days in question there was a cold front in the area and a southerly component of winds aloft. Both these conditions, says Mr. Lewis, have a high correlation with rain.

"We made that cold front," asserts Dr. Langmuir, "and there is almost always a southerly component of wind aloft in New Mexico. Also, if our cloud seeding didn't make the rain, why didn't the Weather Bureau predict the rain which occurred on those two days?"

Even though meteorologists feel that Dr. Langmuir goes too far in his claim, they are eager to have cloud seeding experiments continued.

Project Cirrus under which Dr. Langmuir's work has been done is sponsored by Office of Naval Research, the Army Signal Corps and General Electric Research Labo-

ratory. All of them and the Weather Bureau feel that much of the data collected are providing valuable new knowledge on the behavior of moisture in the air.

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ENGINEERING

Device Counts Parts Passing for Inspection

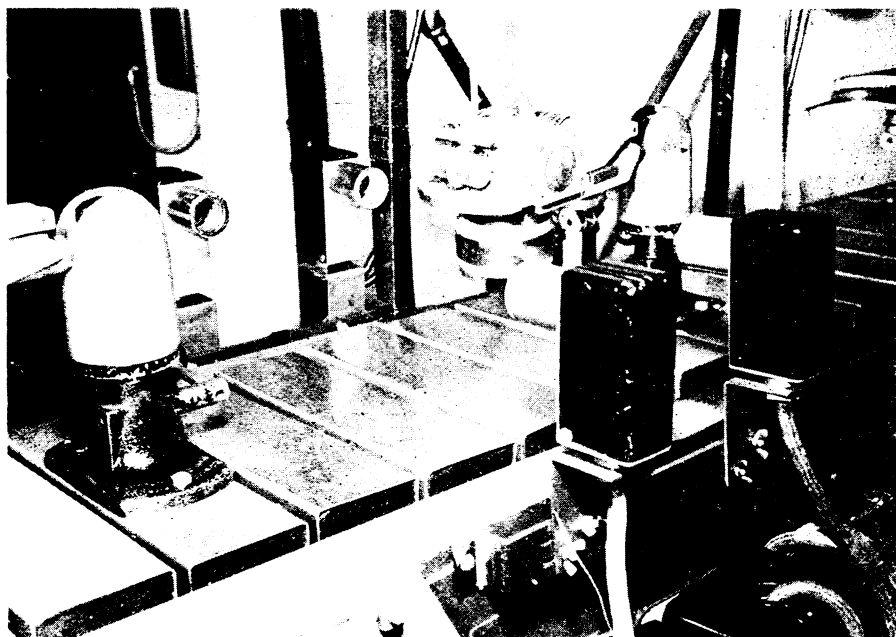
➤ ELECTRIC eyes count the number of machine parts as they pass on a conveyor belt for inspection, and "rejects" are discarded in the totals, in a new General Electric machine. This "quality control indicator" is already in use in a GE plant at Erie, Pa.

Manufactured articles to be assembled into completed devices, such as compressors for refrigerators, in passing along the line, cut a beam of light from a source on one side directed against a photo-electric cell on the other. Cutting the beam activates the eye which in turn activates a counting apparatus.

When any one of the inspectors on the line finds a defective part, he presses a button. These two signals are registered on the quantity control indicator.

Statistical analysis of production and rejection rates in the past has been made by time-consuming computations, lagging behind production by hours or days. The new instrument eliminates this lag.

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ELECTRICAL INSPECTION—Refrigerator compressors moving along this assembly line are counted as they pass between light sources (right) and "electric eyes" (left) on either side of the line. The line is monitored by a new instrument called the quality control indicator, which gives an automatic check on quality of material being assembled.