to 200 miles an hour.

Man-made earthquake was created by a blast of 4,600 tons of high explosive set off at Helgoland, and vibrations of the blast were recorded on 18 seismographs along a line from the North Sea to the Adriatic.

Volcanoes that erupted include: Mayon volcano in the Philippines, Akutan volcano in the Aleutians, Sicily's Mount Etna, Mount Hekla in Iceland, the Nicaraguan volcano Cerro Negro, and Mount Asama in Japan.

Srangely - colored, never - freezing lakes similar to some in Yellowstone National Park were spotted in Antarctica.

Plans were completed for a World Meteorological Organization to replace the old but unofficial International Meteorological Organization.

Torrential rains in June caused Mississippi and Missouri rivers and all their northern tributaries to go on a ruinous rampage; hurricanes in September devastated parts of Florida and Louisiana.

ENGINEERING AND TECHNOLOGY

Dry Ice Seeding of Cloud Makes Rain and Snow

MAN-MADE snowfall and rain, produced by seeding a supercooled cloud with dry-ice fragments, pointed the way to possible artificial climate changes that might result in less severe thunderstorms, elimination of hail and airplane icing; water seeding was also proposed for making rainfall.

One-step camera produced a finished, dry picture and completely developed negative in one minute; heavy-weight camera for reconnaissance work showed pairs of photographs one minute after they were snapped.

Laboratory camera for taking and developing research pictures was announced; matchbox camera and vestpocket darkroom were devised for pictures one-half inch square; machine automatically processed X-ray film in one hour.

Motion picture camera, for use in research and industrial processes, took five million pictures a second, ten times more than high-speed cameras produced before.

Electronic photo-flash unit that fires photographic flashes at three-second intervals was developed; camera with an effective exposure time of four hundred-millionths of a second, used in studies of electrical discharges, was described.

Aerial photographs for large area surveys were taken along straight and parallel lines in the sky through use of a position indicator working in conjunction with Shoran, war-developed navigation aid based on radio.

Automatic pilot successfully varied the altitude of a V-2 rocket in flight, furnishing the first step toward guiding the flight of rockets from the ground by radio control; diffuser of a ram-jet or "flying stovepipe" was successfully tested through use of V-2 rockets.

Flight of long-range rockets was recorded on motion-picture film through the use of an astronomer's telescope placed on the mount of an anti-aircraft gun.

Aluminum metal was obtained from kaolin clay through a process that consists of roasting the clay, digesting it with dilute hydrochloric acid, filtering to remove the insoluble silica, and adding hydrochloric acid gas to produce aluminum chloride crystals.

The common clay bentonite was used to produce a new plastic by taking advantage of the chemical reaction between bentonite and resin-forming organic polymers.

Nickel and cobalt were successfully plated on metal without the use of an electric current by chemical reduction of nickel or cobalt salt with hypophosphite in hot solution.

Titanium was made possible as a pure metal for industrial use through an improved process that reduced titanium tetrachloride with pure molten magnesium in the presence of helium gas under pressure.

Gas for generating power and manufacturing synthetic products was produced by burning unmined coal in the ground.

Coal-burning gas-turbine locomotives were developed to use finely pulverized coal.

Optical glass for television mirrors was successfully cleaned by bombarding it with electrons under vacuum.

Glass-free porcelains, capable of withstanding heat up to 2,000 degrees Fahrenheit, were made from alumina, beryllia, zirconia and thoria.

Series of tough, serviceable new paints was produced from lactic acid, souring agent in milk.

Electronic stopwatch measured the speed of atomic particles to one thousandth of a millionth of a second and determined the energy of the charged particles in nuclear reactions.

Invisible infra-red rays, used in the same manner as in an Army snooperscope, were reported superior for examining human eyes as they do not disturb the eye under observation.

New chemical resin emulsion, when pumped with water down the well in secondary recovery of oil, was found to plug the more permeable layers from which oil has been driven and to direct the water pressure to the other layers.

Dangerous factory and mine gases were detected by an electronic ear that analyzes mixtures of two gases by measuring the speed of sound waves passing through them.

Colored leads were used to record on ordinary paper colored pictures transmitted by wire or radio waves by a facsimile process.

Clearer long-distance telephone reception resulted from use of pulse code modulation technique that, instead of transmitting a continuous speech wave, sends samples at a very rapid rate using a set of code consisting of a definite arrangement of electrical pulses.

Speedy transmission of telegrams from outlying areas resulted from installation of a push-button system at the central office that called for only one typing of the message, at the point of origin.

Low pressure system to obtain oxygen from air, developed during the war, was adapted to industrial use, including possibly getting gasoline from natural gas.

Man-made crystals successfully replaced natural quartz used in telephone circuits.

Electroplated wire that can be bent, hammered, woven and twisted without flaking was produced by electroplating quarter-inch rods, then drawing them out into fine wire.

Robot electronic egg candler utilized the differences in quantities of electronic energy absorbed to separate good eggs from bad.

Production of a powerful 3,000-watt mercury vapor lamp greatly widened possi-

HONEYCOMB SANDWICH—This type of panel construction has gone into the building of an experimental house by the government. The core, which is the insulating material, is shaped by special machinery to resemble honeycomb. The picture shows a plywood cover being placed over it to be bonded to the core by a highly water-resistant phenolic resin glue. ***(See page 397.)***