

## GENERAL SCIENCE

# Disasters Spell Progress

The price of scientific and technological advance is often paid in tragedy, but disaster has never stemmed man's march ahead. New discoveries will bring new hazards.

► DISASTERS pave the path of human progress. This is small solace to the victims of such tragedies as the collision of airplanes over the Grand Canyon.

It does not minimize the loss in life that occurs due to the growing use of automobile transportation, hour by hour, even though the propaganda accent is greatest on holiday weekends.

These disasters do not stem the progress of technology. They never have. The prehistoric caveman who burned his fingers in his new-found fire did not forego the warmth of flame and the taste of roast meat. The hazard of runaway horses was not the cause of the passing of the horse-and-buggy age.

For the future, the world may expect more disasters, although they can be minimized by careful and scientific testing and planning. We have learned to work out methods of anticipating what may happen as new things are developed and then preventing the trouble that might have happened.

Nevertheless, here are some of the great troubles that are possible if not probable:

1. Atomically, the greatest disaster would be multiple explosions of H-bombs in the anger of war. This could poison great areas of the earth, contaminate the atmosphere and kill many, many millions. Of the survivors, most would have their lives shortened and there would be permanent damage to the heredity of the human future, visiting upon future generations warped minds and bodies of the mutation changes of the atomic age.

2. Barring atomic war, there is the chance of atomic power reactor explosions. This is very worrisome, as is shown by the extraordinary precautions that are being taken, such as enclosing the fissioning elements in at least two gas-tight protecting layers. If there should be a runaway reactor, as did happen without disaster a couple of years ago at Chalk River, Canada, the hope is that it will not leak to the outside, contaminating nearby populations. The reality of a reactor explosion is shown by the fact that the insurance risk far exceeds the amount that any group of commercial companies could write. The Government is being asked to provide up to \$500,000,000 liability insurance.

3. Industrial installations of various sorts have hazards of great magnitude. There was, for instance, the Texas City nitrate explosion of some years ago that caused great loss of life and extensive property damage. Large refineries and chemical plants, although managed with great precaution and care, are great risks. A very

large high-speed turbine wheel in Chicago recently ruptured, wrecking the station and costing \$10,000,000. New metals, difficult to separate from the ores, for that very reason, are fire and explosion dangers. They rush to join again with air when they are given the chance.

Thorium, an atomic energy metal, was involved in the radioactive fire and explosion recently in New York. Zirconium is another metal being separated for atomic purposes, and its powder combines violently with both oxygen and nitrogen.

4. There are likely to be major earthquakes in American cities that have had them before. San Francisco, Boston, the region of St. Louis, Charleston, S. C., are some localities that within our recorded past have had really big ones. Earthquakes are not new but the concentrations of people and buildings that they could wreck are a modern growth, involving new hazards.

5. Hurricanes and tornadoes are meteorological events of great violence whose ef-

fects are also magnified by civilization's concentrations.

6. Airplanes are built larger, carrying more people. They fly faster. Railroads still have wrecks. Steamships are still lost in storms and by explosion.

These hazardous events of the future we must accept, try as we may to prevent them.

These future disasters are part of the price of progress.

Science News Letter, July 21, 1956

## EDUCATION

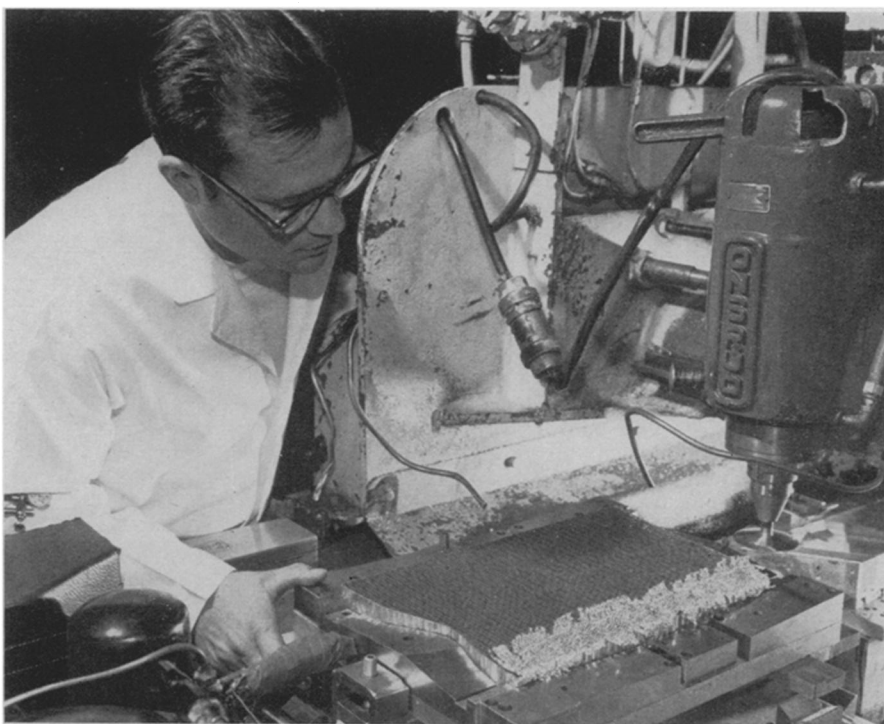
## Basic Education Training Sought by New Council

► A NATIONAL GROUP will seek more effective training for teachers and students in basic subjects, especially English, mathematics, science, history and foreign languages.

Operating as the Council for Basic Education, Dr. Arthur Bestor, professor of history at the University of Illinois, has been elected president, and Prof. Harold L. Clapp of Grinnell College has been made executive secretary for a year, with offices in Washington. Dr. Howard A. Meyerhoff of the Scientific Manpower Commission is treasurer and temporary organizing chairman.

Support to the extent of \$114,000 has been secured from a foundation for a five-year program.

Science News Letter, July 21, 1956



**PRECISION MILLING**—Fragile honeycomb parts can be cut exactly to the shape desired by a new method of tooling worked out at Northrop Aircraft, Inc. Parts are first filled with water, then frozen quickly. This process enables them to be milled as readily as steel, although formerly they were hard to handle.