



JET TARGET PLANE—The first illustration to be released, this artist's conception shows the Ryan Aeronautical Company's jet-propelled pilotless target plane, the Q-2, designed for anti-aircraft training and fighter plane interception problems.

TECHNOLOGY

Glass Paper, Tear-Proof Cloth Contained in Kit

► PAPER THAT will not burn, a thin coated fabric that is difficult to tear, layers of impregnated paper that are not marred by boiling water, and glass fibers used to increase the beauty of a plastic rather than add to its strength are the interesting items included in the latest THINGS of science unit issued by SCIENCE SERVICE.

All-glass paper, developed jointly by the Naval Research Laboratory and the National Bureau of Standards, is composed entirely of glass fibers. It has several important applications even though it lacks strength.

The paper seems particularly suited as the filter for gas masks and respirators. One use visualized is for filtering out radioactive dust in atomic energy installations. Like other glass products, it does not transmit electricity and so may prove valuable as an insulator.

Nylon cloth, woven of untwisted thread and coated with vinyl resin, is difficult to tear. The flat, ribbon-like thread makes a strong, thin fabric; the plastic coating helps it shed water. This new material has been found good for ponchos and raincoats, tents, covers and sails for life rafts, and truck tarpaulins.

Containing six specimens in all, the 1952 Fibreglas-Plastic Unit can be obtained for the nominal price of 75 cents, or three kits for \$1.50. Just write SCIENCE SERVICE, 1719 N St., N.W., Washington 6, D. C., and ask for it.

Science News Letter, October 18, 1952

TECHNOLOGY

Fire-Fighting Jeep

Self-contained, fire-extinguishing system is mounted on a jeep for speedy quenching of gasoline fires from plane crashes aboard Navy aircraft carriers.

► LIKE A spider rushing toward a trapped fly, the Navy's new fire-fighting jeep can dart up to burning plane wreckage on an aircraft carrier and swamp it in two minutes with 2,600 gallons of "bean soup." But whereas the spider is intent upon the kill, the two-man jeep crew is intent upon the rescue.

Unveiled in Washington before governmental and press representatives, the foam fire-fighting jeep is the latest product of a basic program carried on at the Naval Research Laboratory. The program is aimed at combatting one of the Navy's worst enemies—fire at sea.

When a plane crashes while attempting a landing on an aircraft carrier, the fire-fighting jeep springs into action. It can squirt a stream of foam 90 feet to the burning plane, or it can blanket the cockpit area with a protective cone of fire-killing foam 30 feet in diameter while rescue squads hasten to the trapped pilot.

"Bean soup," defined by a Navy lieutenant as "a frothy mass of goeey stuff that sticks all over everything," is made from air plus water and protein solutions carried in tanks built into the jeep. The foam is

mixed in a pump that whips the solution like an egg-beater, discharging the micro-bubbled foam from a nozzle mounted on the jeep's fender.

NRL scientists say the mobile fire extinguisher is so simple it can be operated by anyone "who can drive a jeep and pull a knob." Yet this effective gasoline- and oil-fire extinguisher can be built for about \$5,000, as compared to about \$30,000 for most airport crash fire trucks now being used, they estimate.

The jeep can squirt fire-fighting foam for two minutes before its foam-concentrate tanks are emptied. Then it can be connected directly to the ship's foam-piping system, drawing the fire-smothering chemicals from the ship's large storage tanks.

In mock tests in which 150 gallons of blazing gasoline were splashed over 600 square feet, "rescues" have been made within 24 seconds after the jeep went into action.

The fire-fighting jeep is entirely new to the Navy. It was designed and the test model was built at the Naval Research Laboratory.

Science News Letter, October 18, 1952

PHYSICS

Machine-Made Aurora

► THE SHIFTING curtains of light that streak the polar skies have been made to glow artificially in the laboratory by an atom-smashing machine that bombards the air with alpha particles or with hydrogen atoms stripped of their electrons.

A. B. Meinel, assistant professor of astronomy of the University of Chicago, has reported to the Air Force Research Center that he and an associate, C. Y. Fan, had created a "striking reproduction" of the northern lights by using the kevatron, an atom-smasher at the University's Institute for Nuclear Studies.

The machine bombards the air with protons and with alpha particles, producing a greenish-blue light. Protons are stripped hydrogen atoms, and alpha particles are the nuclei of helium atoms.

Long a student of the aurora, Prof. Meinel explained that the polar lights are produced two ways. Much of it is created by the movement of air molecules in the upper atmosphere when struck by protons. The remainder is produced when the protons regain electrons.

In nature, protons are expelled from the sun. As they approach the earth at speeds of 7,500,000 miles an hour, they are trapped

in the earth's magnetic field and are swept toward the poles. There they collide at high altitudes with air molecules and create the dancing lights that brighten the long nights at the north and south poles.

Science News Letter, October 18, 1952

BIOPHYSICS

Reduce Cell Damage From Atomic Radiation

► ATOMIC RADIATION damage to the chromosomes in the nuclei of cells can be reduced by either of two chemicals, sodium hydrosulfite or 2,3 dimercaptopropanol, better known as BAL, short for British anti-lewisite.

This is true at least in the case of the chromosomes of onion roots immersed in certain concentrations of these solutions before and after irradiation with gamma rays.

Studies showing this were reported by Dr. H. P. Riley of Oak Ridge National Laboratory, Oak Ridge, Tenn., to the American Institute of Biological Sciences.

Science News Letter, October 18, 1952