



"SPARROW I" GUIDED MISSILE—Jet fighter planes of the U. S. Navy are now equipped with the air-to-air supersonic guided missiles known as "Sparrow I's." This photograph shows a Chance-Vought F7U-3M "Cutlass," after carrier launching, equipped with airborne guidance gear developed by the Bureau of Aeronautics and Sperry Gyroscope Company to direct the missiles singly or in groups.

GENERAL SCIENCE

Russia's Air Scientists

► SOME of Russia's aeronautical scientists are as good as any in the world, but they are only a small, hard core of highly trained men atop a shaky engineering pyramid.

This is the conclusion of a Massachusetts Institute of Technology study on the current state of Russia's aeronautical science.

The few top air scientists have solved a number of theoretical problems singled out to keep Soviet air science neck and neck with any competitor in the present development race, the report states, but they are perched on a shaky base.

"The full cross section of engineers in the Soviet Union," says Dr. Leon Trilling, assistant professor of aeronautical engineering at M.I.T., who prepared the report, "have apparently not yet acquired that degree of engineering 'feeling' which only broad familiarity with machinery can bring. They work by book and require detailed direction."

This factor, Dr. Trilling explains, results in excellent designs being adapted to "inferior execution," and tooling and high-grade workmanship saved for only key parts of the design.

Aeronautical engineering, he states, probably represents the Russians' best effort in engineering. Education received by Soviet engineers stresses service to the State.

"On the basis of the evidence," says Dr. Trilling, "it is our conclusion that there exists in the Soviet Union a group of talented people with drive and ambition who are generally permitted to reach the top,

sometimes quite rapidly, and that their number has increased as a direct result of Soviet educational policy.

"But there are still only a few men who carry the Soviet engineering apparatus on their shoulders, being simultaneously teachers, scientists, and designers.

"There can be little doubt that the ability and knowledge of this key nucleus is on a par with that of the best men in similar positions anywhere, but that at the present time these men do not have adequate support."

Science News Letter, April 21, 1956

MARINE BIOLOGY

Squid Squirts Ink as Decoy

► THE SQUID, a ten-armed sea creature similar to the octopus, ejects blobs of ink in the water to serve as a decoy, a British scientist has learned.

The squid does not eject a large cloud cover of ink as is usually supposed. Observations at the Regional Fisheries Research Station, Singapore, show that a squid puts out just enough ink to color a volume of water its own size.

An enemy in pursuit often mistakes the ink for the squid. Meanwhile the squid, which can change color at will, becomes pale and makes a getaway, Dr. D. N. F. Hall reports in *Nature* (April 7).

Science News Letter, April 21, 1956

EDUCATION

Nobelist Says America Has Unused Geniuses

► AMERICA has hundreds of potential scientific geniuses whose talent will never be used, Dr. Glenn T. Seaborg, Nobel Laureate and co-discoverer of plutonium, said in San Francisco.

"In addition, among the young people of our country today there are many thousands, perhaps tens or hundreds of thousands, who could become very successful scientists and engineers, who will never do so because they fail to receive the initial inspiration to consider seriously trying their hands in this field," Dr. Seaborg said.

The scientist stated that, in view of the very great important science assumes in our daily lives, "the neglect of scientific disciplines in the pre-college school system presents one of the big paradoxes of present-day American society."

Dr. Seaborg said that the high school system is failing to fulfill its functions in preparing young people for science careers, and that the colleges and universities should considerably increase their teaching of science.

He spoke at the presentation of the Bay Area Outstanding High School Chemistry Teacher Award of the San Francisco Chapter of the Armed Forces Chemical Association. Winner of the award was Robert Rice, Berkeley High School teacher.

Science News Letter, April 21, 1956

PUBLIC HEALTH

Smog Hits Top From November to January

► THE SMOGGIEST MONTHS in Berkeley, Calif., are November, December and January, Dr. Bernard D. Tebbens of the University of California School of Public Health has found.

Tuesdays and Fridays are the worst days of the week, and Sunday is the cleanest.

Noontime most often brings the highest peaks of air pollution during the day.

The smog measurements, made with a smoke sampler that measures how dirty the air is at two-hour intervals, are reported in the journal, *Air Repair*. Dirty spots on long reels of filter paper exposed to the atmosphere record the amount of pollution.

Meaning of the findings is not yet clear, Dr. Tebbens said, but several lines of research are suggested.

For example, since automotive travel and industrial activity do not increase to a peak at noon and then taper off, weather conditions may account for the hourly differences. Yearly peaks may also be due to weather.

Weather changes, however, could not explain why the air is consistently dirtier on certain days than others, nor why Sundays are the cleanest. Reasons for this must come from a study of air pollution sources.

Science News Letter, April 21, 1956