ROCKETS AND MISSILES

Space: USA-22; USSR-6

AGAINST Russia's six spectacular bids for world leadership in space exploration, the United States has made more than three times as many successful launchings. Who is ahead? The U.S. satellites have stayed up longer than the USSR's. More U.S. moons now circle the earth.

The American satellites have discovered that the earth has belts of radiation about it and that the earth has a pear shape. They have made the first determination of the density of micrometeors in interplanetary space and the first measurements of interplanetary magnetic fields. An American satellite first beamed the recorded human voice from space.

And Pioneer V has established a space communications record. Tiros I is sending to earth excellent photographs of the earth's cloud cover.

Against the U.S.'s 22 shots the USSR has made six.

But Russia has accomplished these feats:

Sputnik I, weighing four tons, on Oct. 4, 1957, became the world's first satellite. Sputnik II, weighing about the same, carried the dog "Laika" and led to the discovery that the sun significantly influences upper atmosphere densities.

Sputnik III carried 7,000 pounds aloft, 2,925 pounds of which formed the instrumented payload. On Jan. 2, 1959, Lunik I became the first artificial satellite of the sun.

The USSR's Lunik II, bearing the Soviet coat of arms, hit the moon on Sept. 13, 1959. Less than a month later Lunik III produced photographs showing 70% of the far side of the moon.

The payloads of these six shots weighed half again as much as the weight of all the U.S. payloads put together.

Science News Letter, April 30, 1960

The Space Race

Compiled by Science Service from official data.

NAME	LIFE DURATION	
Sputnik I, USSR 4-ton sphere	Oct. 4, 1957 to Jan 4, 1958	First man-made moon
Sputnik II, USSR 4-ton sphere	Nov. 3, 1957 to April 14, 1958	Bore dog, showed sun affects upper atmosphere density
*Explorer I, USA 31-pound cylinder	Jan. 31, 1958 to 1961-1963	Discovered radiation belt around the earth
*Vanguard I, USA 3.25-pound sphere	March 17, 1958 to 2158-2958	Still helping Army pinpoint islands in the Pacific
Explorer III, USA 31-pound cyclinder	March 26, 1958 to June 27, 1958	Temperature, radiation and cosmic dust data yielded
Sputnik III, USSR 7,000-pound cone	May 15, 1958 to April 6, 1959	Studied earth's magnetic field, micrometeors
Explorer IV, USA 38-pound cylinder	July 26, 1958 to Oct. 22, 1959	More valuable data on radiation belts
Pioneer I, USA 84.4-pound toroid	Oct. 11, 1958 to Oct. 12, 1958	Failed as moon probe but showed radiation is a band
Pioneer III, USA 13-pound cone	Dec. 6, 1958 to Dec. 7, 1958	Found second radiation belt around earth
Project Score, USA 8,750-pound unit	Dec. 18, 1958 to Jan. 21, 1959	First time a recorded human voice beamed from outer space
*Lunik, USSR 3,245-pound sphere	Jan. 2, 1959	Believed to be in orbit around the sun
*Vanguard II, USA 21-pound sphere	Feb. 17, 1959 to 1969 or more	Interpretation of data difficult
*Pioneer IV, USA 13-pound cone	March 3, 1959 into solar orbit	Radiation data
Discoverer I, USA 1,300-pound cylinder	Feb. 28, 1959 to March 5, 1959	Tumbling hampered signals to earth
Discoverer II, USA 1,610-pound cylinder	April 13, 1959 to April 26, 1959	Recovery experiment failed
*Explorer VI, USA 142-pound paddlewheel	Aug. 7, 1959 for year or more	First pictured earth from space
Discoverer V, USA 1,700-pound unit	Aug. 13, 1959 to Sept. 16, 1959	Re-entry capsule not recovered
Discoverer VI, USA 1,700-pound unit	Aug. 19, 1959 to Sept. 16, 1959	Re-entry capsule not recovered
Lunik II, USSR 858-pound sphere	Sept. 12, 1959 to Sept. 13, 1959	Hit the moon
*Vanguard III, USA 100-pound sphere	Sept. 18, 1959 to 1989-1999	Magnetic and micrometeorite studies
*Lunik III, USSR 4,037-pound station	Oct. 4, 1959 Fall expected soon	Photographed moon's hidden side
*Explorer VII, USA 91-pound unit	Oct. 13, 1959 to about 1979	Still broadcasting
Discoverer VII, USA 1,700-pound unit	Nov. 7, 1959 to Nov. 26, 1959	Did not operate properly
Discoverer VIII, USA 1,700-pound unit	Nov. 20, 1959 to March 8, 1960	Re-entry capsule not recovered
*Pioneer V, USA 90-pound paddlewheel	March 11, 1960; orbiting sun	Established long-distance radio record
*Tiros I, USA 270-pound hatbox	April 1, 1960 for decades	Photographing world's cloud cover
*Transit I-B, USA 265-pound sphere	April 13, 1960 for 16 months	Sends signals for navigation
*Discoverer XI, USA 300-pound capsule	April 15, 1960 uncertain	Recovery experiment failed

*Still in space.

GENERAL SCIENCE

Science Fair Days Proclaimed by Governor

NATIONAL Science Fair Days were proclaimed for May 10 through 14, 1960, by Gov. Harold W. Handley of Indiana, in an executive order.

In his proclamation, Gov. Handley stated that during the second week of May "the greatest concentration of winning teen-age science projects ever to be assembled in one place" will be in Indianapolis when the 11th National Science Fair-International opens at Butler University Fieldhouse. The international event is conducted annually by SCIENCE SERVICE, Washington, D. C.

The Governor cited the combined efforts of the many individuals, associations, and corporations who are cooperating in the science fair program. Scientists and educators agree, he said, that the fairs are a great stimulus to those students from whom will come the great scientists of tomorrow.

Urging all citizens to do everything possible to further stimulate and create scientists from the secondary school age group, Gov. Handley stated that "it is fitting and proper that we recognize and honor these scientists, their sponsoring teachers and parents."

Some 370 high school students will come to the National Science Fair-International as finalists from about 200 affiliated regional and area fairs. The official party of over 1,000 people will include the finalists, educators, scientists and press representatives. More than 60,000 visitors are expected.

Science News Letter, April 30, 1960