TECHNOLOGY

A-Plane Overdue

With a vigorous developmental program launched now, the United States could catch up to within two years of the Soviet Union in its plans for an atom-powered airplane.

IF A DECISION could be made to develop an atomic airplane under the "philosophy of concurrency," the United States might catch up to within an estimated two years of Russia.

The best guess is that Russia will fly its prototype atom-powered airplane in 1963, and the U. S. might have a plane flying by 1965 if it starts a vigorous developmental program now.

At present, the U. S. has only two developmental contracts out. Both are for reactor-engine systems. Under the philosophy of concurrency, development of engines, airframe, controls, instruments, ground-support equipment and crews would go on simultaneously. The idea would be to bring everything into readiness by a target date.

The philosophy of concurrency originally was proposed by Air Force Lt. Gen. Bernard Schriever, now commander of the Air Research and Development Command. It was aimed at speeding up development of the Atlas and Thor missiles to an operational status. The philosophy is credited with making the Atlas operational in September, two to three years ahead of the time that would have been achieved under a normal step-by-step developmental program.

Development of the Atlas took five years after contracts were signed. Development of an atomic-powered airplane with all its strange, new problems might compare roughly on a time scale to development of the Atlas, which is an exceedingly complex instrument.

The Government has a contract with General Electric Company for development at its Evendale, Ohio, plant of a direct-cycle nuclear engine system. In this engine, compressed air is heated in a reactor core and exhausted directly through an engine turbine and nozzle.

Another contract, with Pratt & Whitney Aircraft Division of United Aircraft Corporation, East Hartford, Conn., is for an indirect cycle engine. In this engine, compressed air is heated in a heat exchanger by a liquid-metal coolant circulated through the reactor.

There is no contract for development of an airframe. At the moment, the U. S. has two engines under development but no airframe under development to fly them in.

Meanwhile in Moscow, Yu N. Sushkov of the All-Union Society for the Dissemination of Scientific and Political Knowledge wrote a paper stating Russia had ironed out many developmental problems and was ready then (in 1958) to start building a prototype.

If Russia applies its own brand of concurrency, in its zeal to beat the U. S. in scientific accomplishments, it is believed the Soviet Union could have its prototype atom plane ready to fly by 1963.

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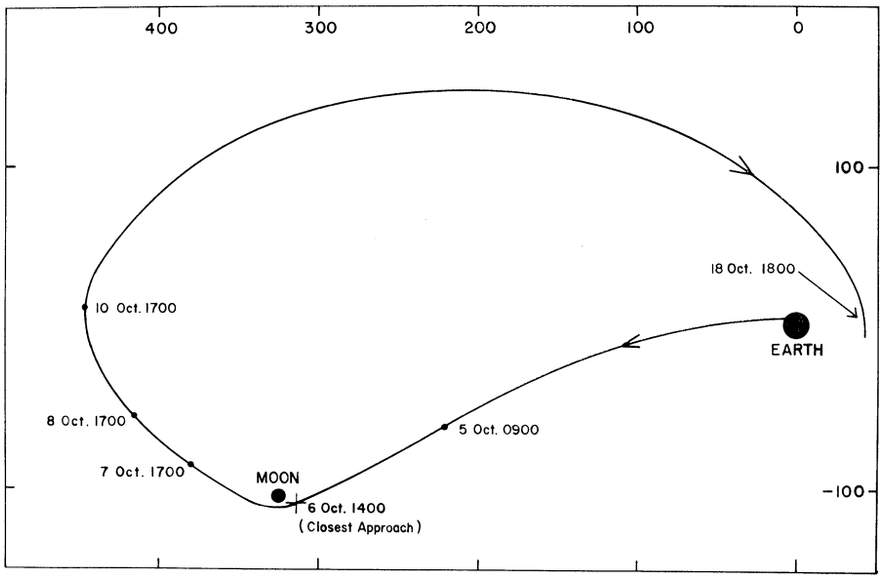

RUSSIAN MOON—This diagram of the artificial satellite launched by Russian scientists and now circling the earth and its moon was prepared by the Smithsonian Astrophysical Observatory, Cambridge, Mass. Lunik III, as the satellite is called, takes an estimated 13 days to make a complete circuit of its orbit. Its perigee, or nearest point to the earth, is estimated at 24,853 miles; apogee is 292,000 miles. Lunik III's life expectancy is described as "unlimited."

GEOPHYSICS

Conference Seeks Future Peace for Antarctica

REPRESENTATIVES of 12 nations are meeting in Washington, D. C., in hopes of being able to agree to a treaty that will insure that Antarctica's future will be as peaceful as her past.

Antarctica is a continent twice the size of the United States with an interior ice dome ten times as high as the Empire State Building.

It is cut by a gorge twice as deep, though not nearly as long as the Grand Canyon, and contains a mountain range about five times as large as the Adirondacks, with at least one peak as high as Mt. McKinley.

Clothed in ice and battered by nature's fiercest onslaughts, its manufacture of cold air affects all the world's weather.

Although many nations have laid claim to parts of it, the Antarctic belongs to no nation and has never echoed the sounds of war.

This conference on Antarctica was proposed by President Eisenhower on May 3, 1958, in letters to the 11 other nations that cooperated in the Antarctic program of the International Geophysical Year. The nations participating are Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom and the United States.

Successful conclusion of a treaty would guarantee the freedom of scientific investigation and continuation of scientific cooperation in the Antarctic that characterized the I.G.Y. Also, it would insure that the world's only uninhabited continent would be used solely for peaceful purposes and be free of military bases.

The conference will not deal with territorial claims. Although many nations have made such claims on the basis of proximity and exploration, the United States and Russia have not. Nor do these two nations recognize other claims. What is sought is merely the continuation of this lifeless polar expanse as a peaceful scientific laboratory for the benefit of all nations.

Exploration both prior to and during the I.G.Y. added much to man's knowledge of Antarctica, but much, such as the extension and accessibility of its mineral deposits, still remains a mystery that only a cooperative effort can solve.

It is hoped by many that successful internationalization of the last mass of unassigned land on earth might lead to a similar solution to the control of outer space.

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