Comparisons Given on U.S. and Soviet Space Programs

By ALVIN B. WEBB JR.

Cape Canaveral – (UPI) – "Vi gavarfeetye-pa-rooskie?"

This is a phonietic phrase, passed along for the benefit of future U.S. astronauts. It means, "Do you speak Russian?"

At the rate the space race is going, it could be the first question American explorers will have to answer when they reach the moon.

The implication is that the world's leading producer of television sets, swimming pools and electric can-openers may lose the No. 1 prize in space to a nation that only a few years ago had many soldiers who thought toilets were indoor drinking wells.

Fifteen months ago, President Kennedy officially squared off the United States against the Soviet Union for the most spectacular and costly "prestige" struggle in history – a no - holds - barred race to land the first men on the moon. America's goal: 1967, and 1970 at the latest.

The first huge chunks of a 20 to 40 billion - dollar "pledge" for the moon project sent U.S. industry into action. The first of a manpower force that eventually will reach 500,000 was brought to harness "paper" projects poured off drawing boards like confetti from New York skyscrapers during a parade.

U.S. Hopes Rise

And from behind the Iron Curtain there was a year of comforting silence, broken only by the occasional launching of an unmanned Soviet "scientific" satellite. U. S. hopes rose on the tacit interpretation that the silence denoted trouble in the Russian scientific camp.

In a way, America itself had gone into a sort of "orbit" about the moon project named "Apollo" — and was jolted rudely back to earth when a pair of silvery spaceships streaked from the Russian heartland into the skies on the mornings of Aug. 11 and 12.

For three days, Soviet "space brothers" Andrian Nikolayev and Pavel Popovich soared round and round a stunned world which had for weeks anticipated a new Russian "spectacular," and had expected almost anything but this.

Dramatic as the performance was, its implications for the future of the race to the moon were even more so. For the first time, there was a hint of a Soviet target date for a manned lunar landing-1965, anywhere from one to five years ahead of the U.S. goal.

Shows Lead

Although dubbed a "propaganda stunt" in many quarters, the Soviet twin - orbit feat actually was a solid scientific accomplishment that demonstrated an equally solid Russian lead in man-in-space techniques:

1. The performance indicated Soviet scientists have mastered the difficult precision launching of large rockets. The ability to fire these giant boosters, apparently within seconds of the planned launching times, still evades their U.S. counterparts.

2. The extremely close orbits of Vostoks 3 and 4 demonstrated precision in guidance techniques that closely approached the accuracy needed for flights toward the moon. The United States is a full two years away from any comparable test.

3. Many free world scientists interpreted the nearness of the spaceships to one another to mean this was a first step toward "rendezvous," a technique by which capsules and propulsion units could be hurled into separate orbits and there be assembled for flights to the moon.

Is Revelation

It was a startling revelation — the Soviet Union apparently has decided against tackling the troublesome technical problems of building a single gigantic rocket for a "direct" shot at the moon and has shifted to the "rendezvous" principle that would permit use of smaller rockets.

This is the track that U.S. space experts, after months of shuffling around among ideas, decided upon But for some unexplained reason, they failed to anticipate that Russia might do likewise. At least, there was little, if any, advance speculation that the Soviets would attempt a twin-orbit flight.

It is believed the Soviet Union already is preparing another two-man "spectacular," possibly within the next two to three months, and that will take one of two courses:

–The launching of two Vostoks into similar orbits, a la Nikolayev and Popovich, with an attempt to bring the two close enough so that one cosmonaut could leave his ship and join his compatriot in the second for a joint ride back to earth.

–Or the launching of two men into orbit aboard a single spaceship for an extended flight of perhaps a week or two.

Dreary Prospect

Between now and the day the first men land on the moon, the United States faces the dreary prospect of getting beaten time after time in man - in - space accomplishments. James Webb, administrator of the National Aeronautics and Space administration, has conceded that Russia likely will put up the first two - man spaceship into orbit and probably will accomplish the first manned flight around the moon.

At this critical point, America cannot match Russia's rocket power or capsule size — and it's a case of some unwanted chickens coming home to roost.

What the United States cannot buy now is time. This was the valuable commodity that was lost during the years after World War II, when American military experts could see no reason for building ballistic missiles since they had manned bombers.

Russia, on the other hand, had a meager manned bomber force and had to go for something else to deliver atomic warheads. The answer was the ballistic missiles and the Soviet Union started developing them before 1950.

The payoff was that Russia already had a stock of large, tried - and - true rockets on hand when the race for space started in 1957. It escaped the problem the United States is facing — building a giant new rocket almost from scratch in a few comparatively short years.

Main Hope

America's main hope for eventually beating the Russians to the moon may well rest in its very wealth. Financing a manned lunar expedition is costly, to the Soviet Union as well as to the United States, and Russian Premier Nikita Khrushchev himself on several occasions has complained about the expense.

Some U.S. experts feel that, if the Soviet Union faces any more agricultural difficulties of the type it had last year, Russian leaders may be forced to pull some funds off the space program to keep the economy going. The Soviets spent more than the Americans on space research last year — about 2 billion dollars to 1.8 billion dollars, it has been estimated.

The degree of importance of the Nikolayev - Popovich flight to the long - run goal of first on the moon is still a subject of hot debate between U.S. space chiefs on the "official" level, who contend America will win, and other "unofficial" scientists, technicians and experts who are beginning to doubt it.

'Official' Reaction

The "official" reaction to the two - orbit feat was, in spots, at considerable variance with the "unofficial" view:

Official – Chiefs of the National Aeronautics and Space administration pictured the Nikolayev - Popovich flight as a "baby step" which told nothing of who would win.

Unofficial — morale at Cape Canaveral hit a new all - time "low" among scientists and technicians who realized the United States won't be ready for a similar "baby step" for another two years.

Official — Deputy NASA Administrator Hugh Dryden said there is no evidence that Russia has developed a big enough rocket to send a space craft to the moon.

Unofficial — some U.S. scientists speculated that the new Vostoks weighed perhaps seven or eight tons, denoting a rocket perhaps twice as powerful as the boosters that sent the first Soviet cosmonauts, Yuri Gagarin and Gherman Titov, into orbit.

Official — Wernher Von Braun, America's most famous space scientist, said the U.S. rocket accuracy is just as good as that demonstrated by Vostoks 3 and 4.

Cannot Prove

Unofficial — The United States, unfortunately, cannot prove it anytime soon. There is only one launching pad for manned flights set up at Cape Canaveral and it takes a minimum of 30 to 60 days to get each shot off. Two U.S. spaceships in orbit at present is an impossibility.

Official — the U.S. Defense department said it saw no military significance to the two-orbit flights.

Unofficial — Soviet Defense Minister Rodion Malinovsky observed the safe landings of the two cosmonauts with this warning: "Let our foes know what technology and what militancy are in the possession of Soviet power."

One congressman commented confidently that "our space program is on solid ground."

To which a bitter Cape Canaveral technician replied: "That's the trouble — space programs belong in space, not on the ground."

Pollen Storage May Lead Way to Better Seedlings

Corvallis – Possibilities for improving tree seed quality by storing pollen from superior, selected trees were reported this week by Oregon State university scientists during the meetings of the American Institute of Biological Sciences.

Under natural conditions, pollen life is limited to a brief period after discharge.

The Oregon State scientists are "freeze-drying" the pollen to extend its life – perhaps for years – and to provide a supply of quality pollen for use in tree breeding projects. It would be possible too to ship pollen to any place in the world if the treatment is found feasible.

Results for one year only so far indicate that freeze-dried pollen produces seeds which are as good as wind pollinated seed in regard to seed weight, germinability and seedling size.

Trees Will Be Bred

Selected trees will be bred with the treated pollen each spring for the next four years.

The research report was read by Gordon K. Livingston, a graduate research assistant. Leaders of the project are a husband-wife scientist team, Dr. Kim K. Ching, forest geneticist in the Oregon State University Forest Research laboratory, and Dr. Te May Ching, agronomist in the Agricultural Experiment Station Seed laboratory.

The freeze-drying of human blood to hold in blood banks gave birth to the idea of freeze-drying pollen, it was reported, and a similar machine is used.

First collections of pollen for the study were made last spring from Douglas fir trees. The pollen is frozen in a cooling solution of dry ice and acetone and is then vacuum dried to remove the moisture in the pollen and facilitate storage. Fresh pollen has a moisture content of 12 to 16 per cent. That is reduced to 2 per cent in the freeze-dry treatment.

Vacuum Sealed

Pollen is vacuum sealed in glass ampoules and stored at varying temperatures, ranging from room temperature to 18 degrees below zero.

Forest yield seed crops only about once in every three or four years because seed production is hampered by many known and unknown factors, it was noted.

The demand for tree seed in world markets far exceeds the supply, especially for the seed which will produce trees with desirable characteristics. This project might provide some clue toward supplying this demand.

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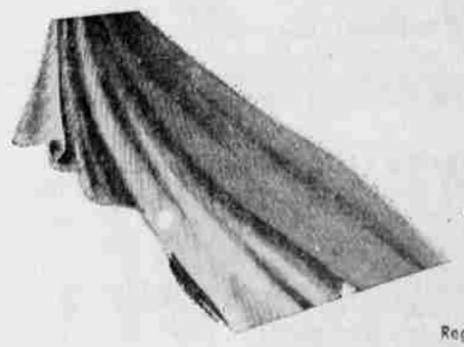

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