



Private 'Enterprise' seeks to bring space to masses

By SHIRLEE IDEN

You don't have to go to the moon or into outer space to enjoy the spectacular advances from space technology.

William Green, a technical communications person for the Rockwell International Corporation, said recently that current space technology is aimed at making it cheaper to go into earth orbit and making that ability work for people on earth.

"Already we can inventory crops from space and will be able to spot disease in forestry or crops," he said. "Today no hurricane can form anywhere on the earth without being detected. We're opening up a whole new era when earth orbit can be used to help mankind."

Green came to Oakland County to

speak about the implications of the present space program. An Illinois native, he has lived in California for 17 years.

An engineer by training, he has been involved in space since the Apollo program in 1963. He was trained in the Air Force during the Korean War and said he has "simply grown with the space program" which he calls "fantastic."

Currently Green is on a tour of a series of cities where he speaks about the space and its implications for today.

"BASICALLY I speak a great deal about what we're doing with the space shuttle transportation system," he said. "This summer, of course, we flew a craft off the top of a 747 aircraft. With that we proved that you can take a space craft and release it, fly it and land it on a runway."

"That would be comparable to the last few minutes of an actual space flight with no engines. It was very successful and proved out fine."

Green, in a Southfield interview, said that was called the "Enterprise" mission and that is now undergoing modification.

"In March, it will go to Huntsville, Ala. and we'll mate it with an external tank for the first time," he explained.

"What we'll do is set it on its tail and three large engines will be placed in the tail. The propellants will be in the tank in the belly and that will give it the thrust."

Green said 1978 is scheduled to be a year of static firing tests of the engines.

Much of the current planning and engineering is designed to make the space program economically feasible.

"The cut in the NASA budget has meant compromising and as a result the space craft is now fully reusable. Twenty-seven miles up in space the solid rocket boosters will separate from the craft but they'll be recovered and reused."

"THE LARGE external tank is the



Enterprise separates from its mother ship on its maiden voyage.

only thing that is not reusable because it will burn up on reentry into the earth's atmosphere. The craft will go on into earth orbit."

The space craft will be able to carry seven people. Four will be crew and three passengers.

"The commander and the pilot will be astronauts as in the past," he said and there will be a mission specialist and a mission handling specialist. The other three will probably be scientists or technicians."

Green said the atmosphere in the space craft will be exactly like that on earth so that space suits will not be required.

"Anyone will be able to fly in it if they are in good health," he said.

Rockwell's space craft is designed to carry a large satellite or other cargo up to 65,000 pounds. "It can carry a large 60 foot satellite," he said.

"Today if a satellite booster fails, it's a million dollar loss but we'll be carrying these satellites right up into space and can even replace one in space either with an astronaut doing it or by use of the manipulator arm in the space craft."

According to Green, space technologists proved they could do repair work in space in 1973 when the solar shield on a space craft didn't work and astronauts did the necessary repairs.

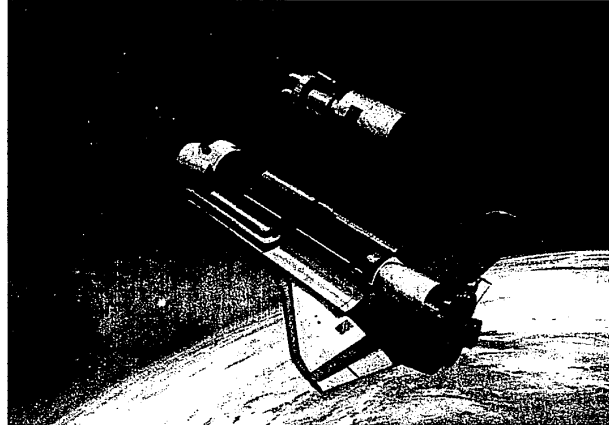
NASA is planning a seven day mission for the space shuttle but the craft actually will have the capacity to stay up for 30 days, Green stated.

"THIS CRAFT will operate from 100 to 600 miles from earth and is not meant to be sent to another planet," he said. "It will be used to boost things into earth orbit."

Made primarily of aluminum, the craft uses a thermo-protective system that is applied to the superstructure. It will not burn, char or break.

"And this new craft can be used for about 100 missions," he said. "It will enter space like a rocket, then fly like a jetliner so that we can control the speed."

He said the first flight into space is



One of the payloads under consideration for Space Shuttle is interplanetary-bound spacecraft which will be transported to earth orbit aboard the shuttle orbiter and then boosted into deep space trajectory by Interim Upper Stage (IUS).

planned for the second quarter of 1979, and that six flights are scheduled into 1980.

"On the seventh flight, NASA will consider the space shuttle operational," he said. He added that will be eight years after Rockwell's initial contract with the government to develop it.

Green explained that more than 10,000 people are employed in the space shuttle project but that 52 per cent of the work in sub-contracted throughout the nation.

"There are 13 companies in the Detroit area that are involved and almost every city of some size has something to do with it," he said. "A

consortium of 11 European nations is building a space lab to fit into the cargo bay of the craft."

Green said the potential for helping mankind has not even begun to be tapped.

"In 1975 the Apollo and Soyuz missions both took kidney cells up into space in order to extract urikine, the only known substance that can dissolve blood clots," he said.

"THE RESULTING substance was much purer than can be manufactured on earth and this is only the beginning. In zero gravity we can do many things we can't do on earth."

Current research will undoubtedly

lower the cost of putting communication satellites up on earth as well as manufacturing items in zero gravity.

"It costs \$40 to \$50 million to put up a communications satellite and it will stay up four or five years," he said.

"Now we'll be able to put up four or five satellites in one mission. The communication satellites are built by private industry and they reimburse NASA for putting them up, so the taxpayers pay nothing."

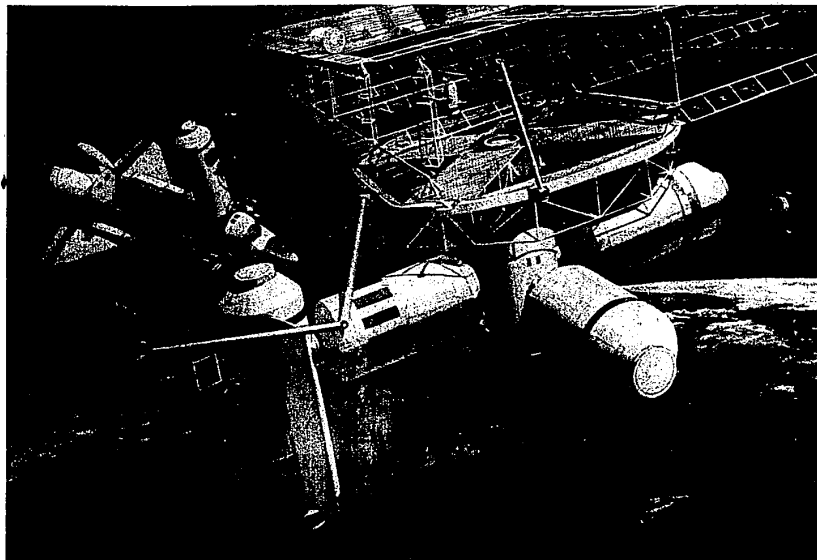
America's space program, born in the spirit of competition, seems now to be headed toward comprehensive advances of a practical nature which can benefit mankind.



WILLIAM GREEN



With main engines and solid rocket motors roaring, Space Shuttle lifts off from launch pad in a conceptualization by Rockwell International Corporation's Space Division.



Assembly of large space structures using materials carried into space in the cargo bay of the shuttle orbiter will provide solar power plants, such as that seen in this artist's concept.