

The young scientist, who is a senior at Roslyn High School, claims that a direct hit by one of his missiles would knock down a bomber. It is comparable, he says, to a 4-inch strato-gun shell, and a plane armed in this manner would be a flying anti-aircraft battery without the terrific weight of conventional anti-aircraft weapons.

Mr. Chester admits drawbacks to his system. The missiles, he says, are expensive, heavy and hard to handle. The loading system he has designed is complicated and, he adds, the whole thing will require a

heavier combat aircraft than now exists. He suggests something like a B-47.

The young scientist, who would like to become a chemical engineer, designed an automatic firing system because, he said, supersonic speeds do not give the pilot enough time to aim and fire manually. He designed the casing, propellant, warhead and loader of the rocket after much computation and experimentation.

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For other descriptions of work of STS winners, See SNL, Feb. 24.

ENGINEERING

House of Molasses

➤ A HOUSE of molasses is not just one man's dream—such a house has actually been built with a molasses driveway leading up to it.

Dehydrated molasses is the basic ingredient in the new building material. Heavy residual oil acts as the catalyst to turn it into a plastic, reports George W. Rappleyea, its inventor.

Mixed with clay and sand, a strong plastic adobe building brick is produced. Combined with clay, pulp or fiber, it creates a durable facing material that can be sprayed on. The basic product, of molasses and heavy oil, is good for paving streets and roads, playgrounds, tennis courts and landing strips.

First step in the production of Plas-mo-falt, as Mr. Rappleyea has dubbed this new molasses plastic, is to completely dehydrate the molasses. First the blackstrap molasses is forced by a high pressure pump through an atomizer into a drying chamber. Here within a few seconds the molasses particles

surrender their moisture to form small grains of dried molasses.

This dehydrated molasses is suitable for cattle feed, but is also the basis of a durable building material.

A building of this plastic adobe brick costs only one-third to one-half as much as a similar edifice of ceramic brick, claims Mr. Rappleyea. The brick insulates against both heat and sound, is fireproof, insect proof and can be painted or plastered.

A liquid form of this material can be applied with a spray gun under pressure for four cents a square foot, the inventor figures. An attractive Spanish-type home using this material can be built for as little as \$150 a room, exclusive of plumbing and electrical costs.

Much of the material for these building blocks can be secured locally, thus keeping the cost to a minimum. Sand and clay are usually readily available. If an oil field is near, crude oil right from the producing wells can be mixed with the dehydrated

molasses. For buildings on distant islands, heavy fuel oil from the ship's bunker fuel oil tanks can be employed.

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HORTICULTURE

Predict Picking Date For Fruit Crops

➤ FORECASTING the ripening date of fruit crops such as apricots, prunes and pears is getting to be almost as accurate as predicting an eclipse.

Apricot picking time, for example, can be forecast with certainty within four days, using a mathematical formula, states Reid Brooks, of the University of California Agricultural Experiment Station.

During a 17-year period, all predicted apricot maturity dates were spotted within four days. Almost equally successful have been forecasts of prune and pear ripening dates.

By knowing in advance the approximate date of crop maturity, the fruit grower can plan to share his labor and make other necessary preparations for harvest well ahead of time, Mr. Brooks pointed out.

The mathematical formula is based on the number of heat units the trees have accumulated within the first six weeks after full bloom. A heat unit is one degree Fahrenheit per day above a given base temperature of 45 degrees.

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AERONAUTICS

New Helicopter Has Two Rotors in Tandem

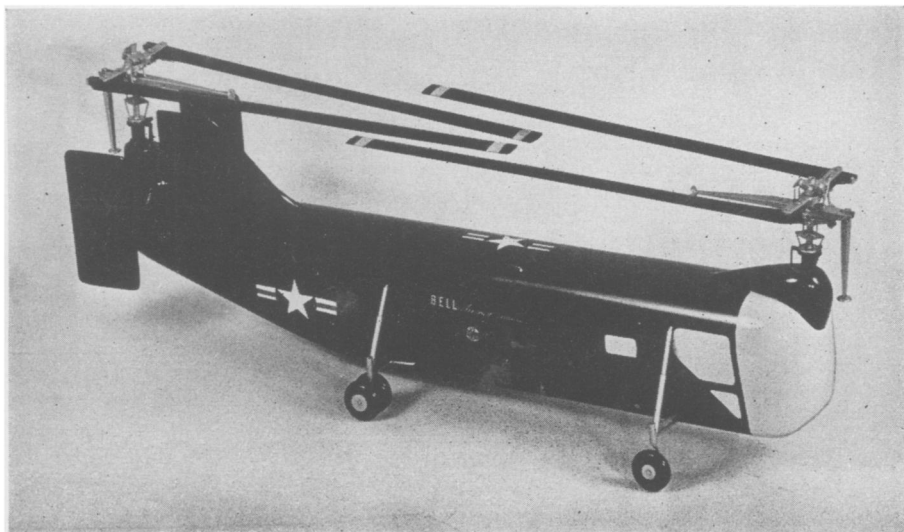
➤ THREE helicopters of the tandem-rotored type are under construction by the Bell Aircraft Corporation. They are designed particularly for anti-submarine warfare and are being built for the U. S. Navy.

The more familiar helicopter has but one set of rotating propeller blades to provide both lift and forward motion. However, two-rotored helicopters are in use, and even three-rotored craft have been developed. This tandem-rotored helicopter marks Bell's first departure from the single rotor type.

The Bell Aircraft Corporation was awarded this contract after winning a Navy anti-submarine helicopter competition last summer. The rotors of the Bell craft are at forward and rear ends of an elongated body. They are interconnected and power is supplied by a Pratt and Whitney R-2800 engine.

In the new helicopter, basic Bell rotor system principles are incorporated, particularly the rigid two-bladed rotors and an automatic stabilizing device. Rotor blades can be folded to a position over the body to aid in the transportation of the aircraft on an aircraft carrier or other type of vessel.

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TANDEM-ROTORED—This unconventionally designed helicopter has its rotors folded so as to occupy less space on the deck of a carrier. This is an artist's conception of how the new helicopter will look.