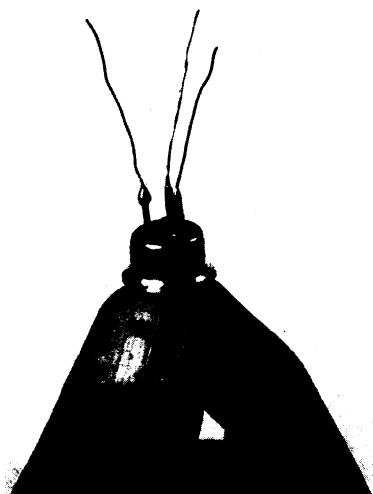


AERONAUTICS

North American Defense



TINY GIANT—This thimble-size, power-type transistor has an output of 20 watts.

ELECTRONICS

Goliath-Sized Transistor Has Record Power Output

► A GOLIATH-SIZED transistor has been developed that has a lusty 20-watt output, more than 100 times more powerful than the tiny nugget-like transistors now going into "tubeless" hearing aids and radio equipment.

About the size of a small thimble, the transistor is designed to work in the field of automatic controls. It already has been applied to a prototype aircraft electronic fuel gage. The transistor is not yet commercially available, Minneapolis-Honeywell engineers in Minneapolis report.

Science News Letter, November 21, 1953

AGRICULTURE

Harvest Dates for Peas Predicted Accurately

► A METHOD of forecasting the harvest dates of peas has been developed to a degree of great accuracy at the New York Agricultural Experiment Station, Geneva, N. Y.

Prof. Charles B. Sayre has found that by using a 27-year temperature average for each day of the growing season and the known growth patterns of pea varieties, it is possible to predict the date of harvest for a specified maturity.

Though the possibility of abnormal weather and other variables keeps the forecasts from being absolutely accurate, the method is still useful to large growers who need to harvest their vegetable crops at a certain period of maturity.

Science News Letter, November 21, 1953

► OFFICIALS AT Royal Canadian Air Force headquarters visualize Canada's air might as a segment of a continental unit rather than as an all-inclusive air arm of one country that can do everything.

They see Canada's air potential defending North America while working hand-in-glove with the U. S. Air Force. As such, they are concentrating the air force build-up on a fighter element that can punch an aggressor with telling force. They are relying upon the U. S. for support if strategic bombing operations are required.

RCAF officials reached this decision after realizing it would not be feasible for Canada to maintain a strategic bombing force of her own. Strategic bombing operations, it was discovered, would tax the RCAF's resources to such a point that none of its operational elements would be more than a token force.

The RCAF has enlisted Jet Vampires, Mustangs, CF-100 Canucks and F-86 Sabres in its fighting wings. Just a small number of Mustangs were obtained. They were, in the immediate post-war years, the best available type of piston-driven fighters for Canadian conditions. They now are being supplemented with modern CF-100 Canucks.

TECHNOLOGY

Tape Recorded TV Shows

► TAPE RECORDINGS of color and black-and-white television shows should have a revolutionary impact on the video industry in the not-too-distant future.

As a result of the economies offered by television tapes, hard-pressed sponsors may be able to buy more with their advertising dollar than they can at present. This in turn may mean better programs on your video screen.

Such a recording system has been developed. It climaxes years of intensive research by various organizations that have been racing to find a way of recording television programs more easily and cheaply than can be done at present with movie film.

Television broadcasters are intrigued with the promise tapes offer. They permit immediate playback after recording with no laboratory processing; they can be wiped clean and used over and over; they cost less than movie film, are easily duplicated and require less storage space. However, video tape recording equipment probably will come with a high price tag.

The Radio Corporation of America's color and black-and-white recording system uses a magnetic tape similar to, but wider than, tapes found in the home and in broadcast studios.

The tape is a half-inch wide and is elec-

The Canuck is a Canadian venture from start to finish. Designed and built by A. V. Roe Canada Ltd., it is powered by twin Orenda jet engines. It is a long-range, all-weather, two-seater fighter especially created to meet Canadian flying conditions. It now is in squadron operational use.

The Sabre, which distinguished itself in Korean dogfights, is an American-designed plane. Created by North American Aviation, Inc., it now is being built in Canada under license by Canadair Ltd., at Montreal. The RCAF uses it as a day fighter. It also helps fill the RCAF squadrons serving with the NATO Air Division in Europe.

Build-up of the RCAF began at the end of World War II, but was accelerated to a record pace in 1950 when the Korean War started.

At present, a \$400,000,000 RCAF construction program is under way to fortify North America against aerial attack. Stretching across Canada and into the Northland, the building program involves the construction or expansion of operational flying and training stations, supply and repair depots, command and station headquarters, radar outposts and other essential projects.

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trically recorded and reproduced. Although this tape width is twice the size of home tapes, it is smaller than might be expected.

Taking down on magnetic tape the extremely high frequencies that make up a television picture has been a major problem to research engineers. Tape machines that record sound merely have to handle signals up to about 15,000 cycles a second. But video tape recorders must handle everything from zero to 4,000,000 electric "pulses" a second.

By "trick" recording methods, engineers have found they can overcome some of the problems created by the high video frequencies. But to do it, they have had to use tapes as wide as four inches.

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TECHNOLOGY

Ultrasonic Device Used By Norwegian Whalers

► A GERMAN whale-spotting device that beams "silent sound" into the water now is being used on 27 Norwegian whalers to help fishermen locate and startle whales nearly five miles away. The device emits short pulses of ultrasonic sound waves to which the whales react.

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