

the U. S. Relay I satellite, the first successful space link between North and South America for the sending of voice, facsimile and data-processing signals. Canada participated in the building of Relay I by providing the communications system which was produced in RCA's Montreal laboratories. Canadian engineers also took part in many of the studies and analyses which helped determine the technical requirements for the ground stations as well as other satellite components.

Canadian Westinghouse Co. showed Wortac, a device for testing and calibrating aircraft radar. Wortac allows airborne radar to be tested on the ground, and to date has been bought by manufacturers of the F104 Starfighter aircraft in six countries.

A conference session on the Canadian space program included four papers on aspects of research—gun-launched research vehicles; rocket-launched research vehicles; orbiting satellites; and radio astronomy.

Earlier this year engineers and scientists from McGill University began firing research vehicles into the upper atmosphere, using a revamped 16-inch U. S. Navy gun, mounted at a site in the Barbados. They have already put vehicles above the 300,000 ft. mark. A paper presented by G. V. Bull of McGill University described the objectives of HARP (High Altitude Research Project) and the advantages of this kind of launch.

The paper on rocket-fired vehicles was given by P. A. Forsyth of the University of Western Ontario, London, Ont. He traced the development of space research with rockets in Canada since its beginning during the International Geophysical Year, and described some of the techniques which have been devised in Canada for studying the aurora.

G. A. Harrower of Queen's University, Kingston, Ont., talked on radio astronomy and how it has encouraged the development of new equipment useful in the field of communications.

J. H. Meek of the Defence Research Telecommunications Establishment, Ottawa, discussed the Alouette satellite, and plans for other satellites. He also described the part played by Canadians in co-operating with scientists from other countries by providing information, airborne components and ground support.

Military

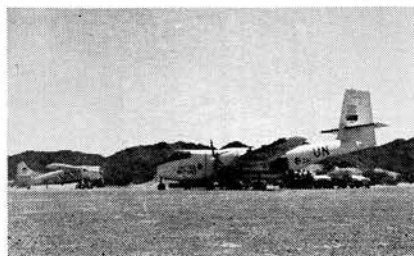
On patrol in Yemen

Patrolling the troubled borders of Saudi Arabia and Yemen are men of No. 134 Air Transport Unit of the RCAF, flying de Havilland Otter and Caribou aircraft. Until June of this year, some of them had never even heard of Yemen, or its burning desert and jagged mountains. Then about 50 officers and men of the transport unit were assigned there as the aerial contingent of an eight-nation United Nations observing team.

Yemen is situated on the eastern shore

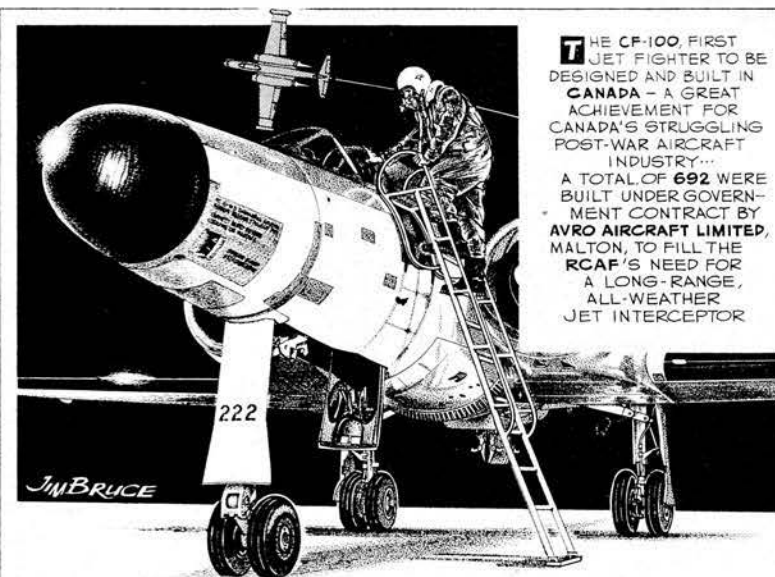
of the Red Sea, about 1,400 miles south of the Suez Canal, between Saudi Arabia and Aden. Its 74,000 square miles are populated by four million people—today embroiled in civil conflict. Before the arrival of the Otter and Caribou, the camel was the principal means of transportation.

The United Nations group is composed of both civilian and military representatives. The vague borders separating Saudi Arabia and Yemen is patrolled by Yugoslav Army personnel while air transport and aerial reconnaissance is provided by the RCAF.



RCAF in the Yemen

THROUGH THE YEARS with Canadian Aviation



THE CF-100, FIRST JET FIGHTER TO BE DESIGNED AND BUILT IN CANADA — A GREAT ACHIEVEMENT FOR CANADA'S STRUGGLING POST-WAR AIRCRAFT INDUSTRY...

A TOTAL OF 692 WERE BUILT UNDER GOVERNMENT CONTRACT BY AVRO AIRCRAFT LIMITED, MALTON, TO FILL THE RCAF'S NEED FOR A LONG-RANGE, ALL-WEATHER JET INTERCEPTOR

THE PRELIMINARY SPECIFICATION FOR THE CF-100 WAS DRAFTED BY AIR FORCE HEADQUARTERS IN 1945, JUST BEFORE THE END OF WORLD WAR II.

THE PROTOTYPE (RCAF SER. NO. 18101), POWERED BY ROLLS-ROYCE AVON ENGINES, FIRST FLEW ON JANUARY 19, 1950.

THE CF-100'S POWERPLANT WAS THE FAMOUS, CANADIAN-DESIGNED ORENDA TURBOJET, PRODUCT OF ORENDA ENGINES LIMITED, MALTON,

WHOSE ASSEMBLY LINES TURNED OUT 3,794 OF THESE ENGINES IN SIX DIFFERENT MODELS...

AT ONE TIME, THE ORENDA WAS THE EQUAL OF ANY JET ENGINE IN THE WORLD.

THE CF-100 SERVED WITH THE RCAF FOR MORE THAN A DECADE, PLAYING A VITAL ROLE IN NORAD AND WITH FOUR NATO SQUADRONS BASED IN EUROPE. NOW OBSOLETE, THE CF-100 HAS BEEN REPLACED BY THE CF-101 Voodoo AND CF-104 STARFIGHTER.

AVRO CF-100 MK5 — TWO-SEAT, TWIN ENGINE, ALL-WEATHER JET INTERCEPTOR
DIMENSIONS — LENGTH 54 FT. 2 IN., SPAN 60 FT. 10 IN., HEIGHT 14 FT. 6 IN.
POWERPLANT — TWO ORENDA SERIES 11 (7,500 LBS. STATIC THRUST EACH)
GROSS WEIGHT 33,600 LBS. MAX SPEED AT SEA LEVEL 650 M.P.H.

NEXT MONTH: Alan Arnett McLeod, V.C.

Six Otter and two Caribou aircraft are in use. The Caribou fly on air transport and reconnaissance flights out of Sanaa to the outposts of Najran and Quizan in Saudi Arabia and Sada in the Yemen. The Otters operate out of the Saudi Arabian bases where Canadian airmen and Yugoslav troops work in close co-operation.

Operating conditions are poor in that mid day temperatures exceed 100 deg F. At Quizan is the added discomfort of over 90% humidity while at Najran by noon a stiff breeze is usually blowing sand across the area lowering visibilities to less than a hundred feet.

European Sabres retire

The last of the RCAF Sabres in Europe has been retired. No. 439 Sabre Tooth Tiger Squadron, the last of the RCAF NATO Squadrons flying the well-known jet fighters, has stood down. The squadron based at Marveill, France, will be reformed early in 1964, flying the supersonic CF-104 Starfighter in a strike