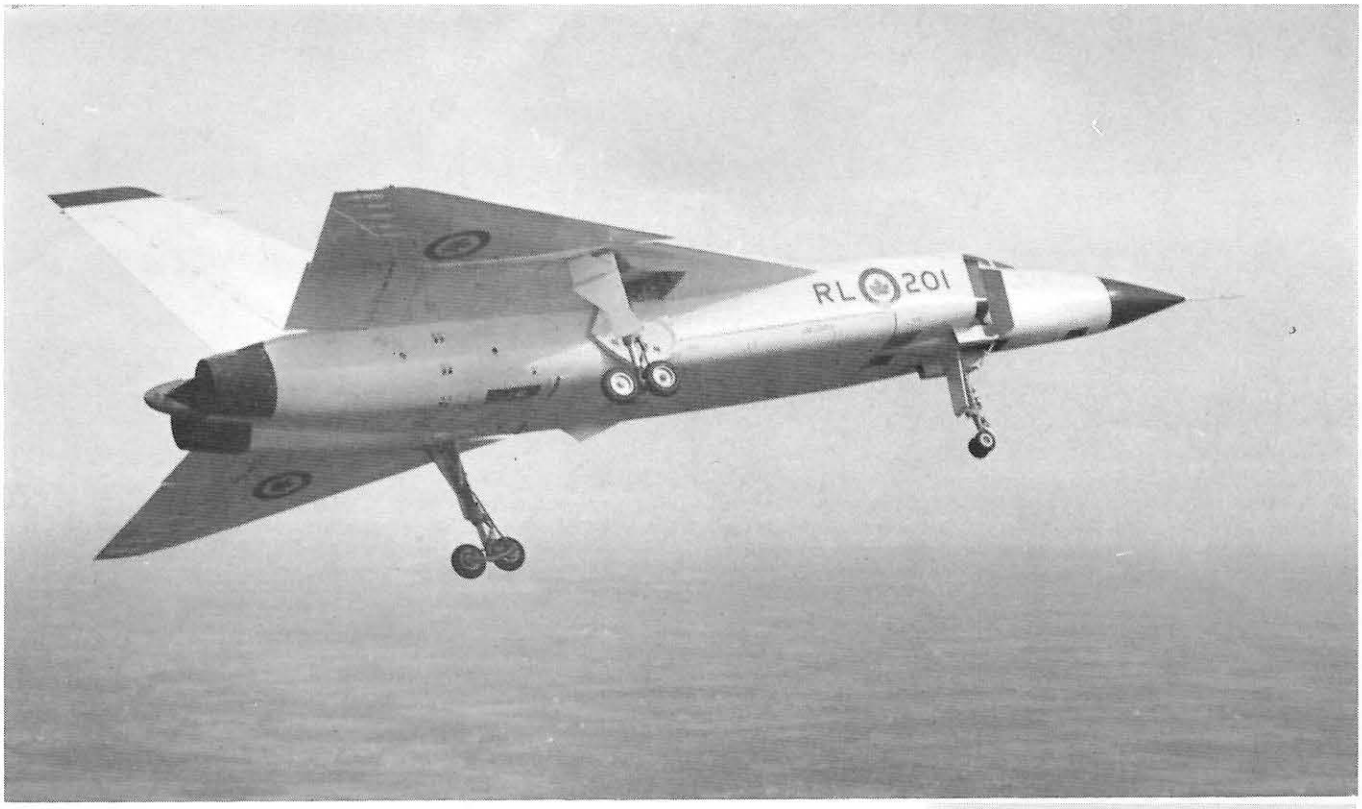

OVER MALTON at 10,000 feet, the Arrow makes a gentle turn to port. The undercarriage was retracted for a short while during the flight, then lowered to check the operating mechanism.

First Arrow Takes Off On Initial Test Flight

Canadian Aviation History Made In 35 Minutes

AT 9:49 a.m. on March 25, an Avro CF-100 with an Orenda Sabre trailing it, circled low over the button end of Runway 32 at Malton Airport. Suddenly, the CF-100 straightened out and swept along the east side of the runway. The Sabre took up a course on the west side.

This was the signal that Canada was entering the supersonic era of flight. On the runway, below, engines responded to throttle and powered the Avro Arrow toward its first take-off.

Some 3,000 feet along the runway, the Arrow lifted effortlessly from the ground and climbed gracefully to the north at a controlled low speed and rate of climb.

A routine radio check from the Toronto Tower officially recorded the historic event:

"Avro 201 off at 9:51 and cleared to company tower."

Avro's Chief Development Pilot, Jan Zurakowski acknowledged the call and continued climbing northward while the chase airplanes took up their respective positions. 'Spud' Potocki, Avro experimental test pilot, flew the CF-100. In the rear cockpit, Hugh MacKechnie of Photographic, unlimbered his assortment of still and movie cameras loaded with black and white and color film and began taking pictures.

Further back in the Sabre, F/L Jack Woodman, RCAF test pilot fitted a movie camera to a special adapter on his hard helmet and prepared to close up if MacKechnie's equipment developed trouble.

The trio flew over the Avro plant several times at different altitudes, exchanging procedure patter by radio and verbally reporting the Arrow's progress for a tape recording in Avro's tower monitor. Then the Arrow began letting down in what appeared to be a fairly tight circuit, approached Runway 32 and landed. The drag chute developed, and the big delta slowed to nearly a full stop before jettisoning it.

The flight had lasted 35 minutes. The Arrow taxied back to the run-up base, and Zura shut down the engines.

The first flight of Phase 1 of the Arrow Flight Test Program had been successfully completed.

Just 35 minutes . . . and Canadian aviation history was written.

The first flight of the Arrow climaxes

(Continued on Page 10, Col. 1)

AT MALTON where 10,000 hands proclaimed him hero of the day, Jan Zurakowski emerges from the Arrow after first flight. Ray Hopper, line chief, was first up ladder to greet Zura.

FIRST FLIGHT CONTROLLER in the Avro tower was Don Rogers, Chief of Flight Operations, shown above using the tower radio to maintain contact with the Arrow and its chase plane escorts during the history-making flight.

British View of Arrow From Flight Magazine

(Continued from Page 5, Col. 2)

dreds of bases for such devices as Bloodhound, Bomarc and Nike Hercules. It is a job which calls for a big, long-range, piloted aeroplane, with a flashing performance and all the tools of the interceptor's trade.

"It is fitting that the mighty task of producing such a weapon should fall to Avro Aircraft, since that youthful company was responsible for Canada's first home-defence interceptor (it was also the first all-Canadian aeroplane and the Dominion's first jet aeroplane."

Mr. Gunston went on to describe the CF-100 as "a tremendous achievement that has done much to instil into Canadians a long-overdue appreciation of their ability to design and build advanced aircraft fully comparable with those of America, Britain or any other country. This self-confidence must be regarded as a pre-requisite to the successful development of the CF-100's successor."

CHASE PILOT in the Orenda Sabre was F/L Jack Woodman of the RCAF. He is shown here in the cockpit of the Sabre wearing a hard helmet fitted with a special adapter for holding, aiming and operating a small movie camera.

Arrow's Initial Test Flight

(Continued from Page 3, Col. 2)

four and a half years of research in engineering and manufacturing, in fields completely unknown when the project was first undertaken.

It was in July, 1953 that the Government authorized a design study of the CF-105, the code name given to the Arrow. Within two months, the first wind tunnel tests were being run. These ranged from slow speeds to twice the speed of sound, and 17 models of various sizes were used to obtain necessary structural and aerodynamic data.

Wind tunnel limitations caused Avro engineers to explore further techniques for obtaining important aerodynamic data. Eleven large scale free-flight models with rocket-propelled boosters were fired at ranges in Canada and the United States between 1954 and January of 1957.

Power Plant Plans

The power plant program now in effect, and established in 1955, calls for twin Pratt & Whitney J 75s to power the pre-production Arrows. These will eventually be supplanted by the new Orenda Iroquois, which will give the Arrow a thrust to weight ratio of one to one. Although the Iroquois' development is well advanced, the combination of an untried engine and an untried airframe is considered not practical on an aircraft development flight test program.

From the time the basic configuration of the Arrow was established to the end of 1956, approximately 460 engineers, technicians and draftsmen worked on the design and development of the aircraft and its systems.

The wide variety of mechanical, hydraulic, electrical and electronic equipment in the Arrow is required to operate in a severe high-temperature, high-altitude environment with utmost reliability. Equipment which would perform satisfactorily under these conditions did not exist when the Arrow design got under way.

Long before the first of the 17,000 engineering drawings were released to Avro's Manufacturing Division, preparations for production planning and tooling-up were already well under way.

Each Move Experimental On Arrow's First Flight

(Continued from Page 2, Col. 1)

last Tuesday. His mission was to become familiar with, and obtain a pilot's assessment of Canada's first supersonic interceptor.

To do this, he took off, climbed to 5,000 ft., levelled off and raised the undercarriage.

He continued to 10,000 ft., with the chase planes watching each move, he made some gentle turns and let-downs, first with the gear up, then with it down in order to get the feel of the Arrow on approach to landing. During this time, mechanisms were checked and instrument readings noted. He then let down, approached the runway and landed.

The very significant first flight signalled the start of a detailed development program which will culminate in the most effective defensive weapon system in the history of Canada.

This, in brief, is the background of the first flight of the Arrow I in its airworthiness and equipment-functioning flight test program.

It doesn't even begin to touch on the strain and effort and, in many instances, selfless dedication by Avro personnel which made the first flight a successful historical episode in the introduction of Supersonic Flight in Canada. As the man says. "That's another story".

American Views Arrow In Aviation Week . . .

(Continued from Page 4, Col. 3)

the Arrow actually had to reach 75,000 ft. for its missile armament to destroy the hostile aircraft, but it does give some indication of the Arrow's altitude capability.

"In the design of the Arrow, the Canadians state that they have tried to make the best possible use of their association with two foreign aircraft industries. They maintain intimate contact with British and American work, especially with projects that are similar to their own. For instance, delta-wing flight test and experimental work at Convair and in England have aided Avro materially.

"J. C. Floyd, Avro vice-president, engineering, who has technical responsibility for the Arrow, is strong in his appreciation and praise for the kind of assistance Avro has received from NACA, the Air Force and Navy as well as some U.S. companies. Other Avro officers and Canadian government officials took the opportunity of the Arrow unveiling to make similar acknowledgements of U.S. help and co-operation.

"However, the exchange of information is anything but one-sided. Some of the most important Canadian contributions so far have been in metallurgy and aircraft and engine structural design and fabrication techniques."