Pre-Flight

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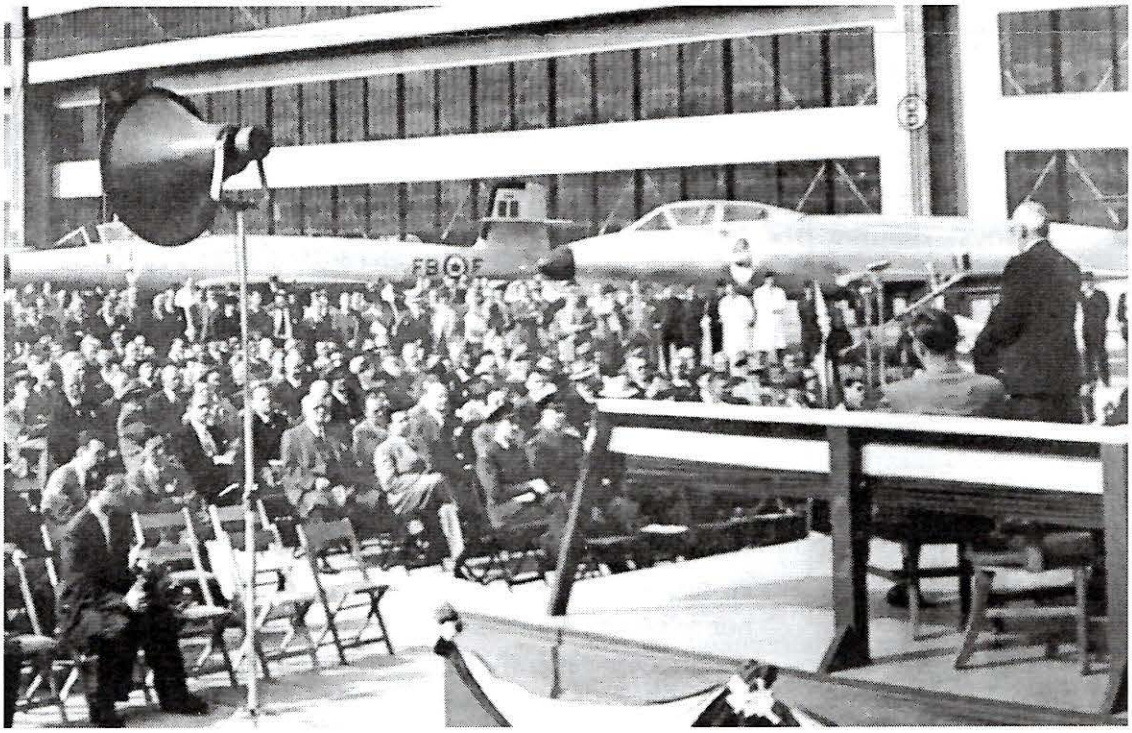
The Way Up



C.D Howe at Malton October 17, 1951: *"It is my privilege today to deliver to the Royal Canadian Air Force a CF-100 military aircraft equipped with twin Orenda engines. The airplane and its engines were designed, developed and built in Canada by Canadian workmen using Canadian materials. Not only is this the first aircraft to be completely designed, developed and produced in Canada, but the Orenda engine is the first airplane engine to be designed, developed and produced in this country.*

"The aircraft as it stands before us is a notable Canadian achievement, marking as it does a new milestone in Canada's industrial advancement."

Continued from November – December Issue

In a way which applied to A. V. Roe Canada's future, Sir Frank quoted Robert Louis Stevenson: "To travel hopefully is better than to arrive." There seem three distinct bases for that hope as this company travels past its tenth birthday. One is the present corporate structure. The people and the plants they run make up the second. And the third is in the realm of organized dreamland on which, in this business, the first two must rely.

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From The President

I trust you all will have a fine Christmas and will have good times as the year goes from 2016 into 2017 and not as I indicated as 2016 in the last issue. Also in the last few issues of 2016 we have been covering, from Avro's booklet "Jet Age", A. V. Roe Canada Limited, 10th Anniversary 1945 – 1955 as reported by the late Scott Young's, article "The Way Up". When the article is concluded, I am happy to say Nick has received an article from a long time friend, Fred Matthews, of 7 Angier Road, Lexington, Massachusetts, USA, 02420-1608, (a real true Avroite). Fred's article is called "The Real Reason for the Arrow Cancellation" it was updated 28 May, 2016.

Frank Harvey

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In many ways, among them corporate structure, a company usually progresses in a series of overlapping eras. This one's original era began with its creation in 1945. There is every reason for pride in that first era, which ended in 1951 when Walter Deisher retired in ill-health, and Crawford Gordon, Jr., took over as president and general manager, with Sir Roy Dobson becoming chairman of the board.

What was the goal for this second era? Crawford Gordon, then 37, a commerce graduate of McGill, was in a remarkable position to see it clearly. Through his association with private industry, and as one of the dollar-a-year men loaned by industry to the government during war emergencies, he had acquired a breadth of industrial experience which normally would take a lifetime to accumulate.

In the department of munitions and supply during World War II, where he first was director-general of organization and later assistant co-ordinator of production, he'd often seen the tight spots caused by our reliance on others for the basics of our aircraft and other industries. As director-general of industrial conversion in the immediate postwar period, he'd had an intimate look at Canada's new industrial capacity and potential. He had returned to private industry for several years. The government had asked for him on loan again when the Korean war began. In 1951 he was co-ordinator of defence production, and when Sir Roy said, "Come and run this company," he knew what had to be done.

"For nearly six years we've been designing, planning, testing, carrying on intricate research," he said about that time. "We've achieved very ambitious objectives - a Canadian jet engine, a Canadian jet airliner, a Canadian jet fighter. The next step is to produce them in quantity."

In his first days with the company, he wrote down a list of essentials not only for reaching that goal of quantity production, but looking beyond that, far into the future. They were a remarkable combination of theories of industrial technique with those of human relations. Because engines and aircraft were separate products, with separate problems and

markets, he wanted them separated into gas turbine and aircraft divisions. Then he would concentrate on the organization of these new divisions --- upgrading people to positions of greater responsibility where they could work with a minimum of interference, giving them titles equivalent to these new positions, encouraging them to high objectives through various incentives. He wanted for this company the best men anywhere, but if all else was equal a Canadian would be preferred. He knew that the work force would have to be doubled or more. Such an influx would need housing. So he was one of the prime movers in urging the government's later-adopted plan for defence workers' housing, with low down payments and low interest rates, and hundreds of these houses since have been built near the company's plants.

Those were immediate aims. For the future he wanted a diversification of products to reduce the company's reliance on military production. This would mean that A. V. Roe Canada would have to get into the commercial industrial field. It did not take long to reach this goal. Today, four years later, a fifty-fifty balance has been achieved.

First part of these broad plans to go in effect was separating the company into aircraft and gas turbine divisions. Fred Smye became acting general manager, aircraft, and Crawford Gordon acting general manager, engines. The new engine plant was already underway. The aircraft production lines would expand into the space thus vacated. Veterans moved up. New men were added. As months went by, the production pipeline that had been dry showed a trickle; as years went by, a flood. The promise to produce in quantity has been fulfilled.

One way to measure the extent to which the twin intentions of de-centralization and diversification have been fulfilled is to look at what happened later in the company's corporate structure. On December 2, 1954, a day after the ninth birthday of that 300-man outfit in 1945, two new companies were announced with A. V. Roe Canada as the parent company.

Fred Smye became vice-president and general manager, Avro Aircraft. Named to head Orenda Engines was Walter McLachlan, who had joined the gas turbine division in October, 1953, after a distinguished career in private industry and a year on loan to the department of defence production as director of its electronics division.

At the same time, Canadian Steel Improvements Limited, making vital engine forgings, was added to the group --- and C.S.I. also makes a wide range of commercial products, including wire and cable applications, and bobbins for the textile trade. And in September, 1955, Canadian Car and Foundry was bought and became part of the group. As well as manufacturing aircraft and parts, Can-Car is a leader among manufacturers of railroad rolling stock, auto buses, trolley buses, and heavy castings, with exports to 26 countries. These are obviously big steps toward Crawford Gordon's early aims for wide diversification of company products.

In all this, since that standing start in 1945, Hawker Siddeley has made a permanent investment in Canada of more than $16 millions of capital. In addition, not a cent of profit has been taken out of Canada, all earnings being re-invested in the further development of the company, so that today A. V. Roe Canada Limited's group is one of the largest single British industrial developments in Canada, with 5.4 million feet of floor space and 22,000 employees. Maybe this tenth anniversary will be seen later to have been the beginning of a third era, even greater than the other two.

But fundamentally, for the purposes of this ten years, A. V. Roe Canada had meant engines and aircraft--- Orenda, CF-100, Jetliner and, farther back, converted Lancasters, Mitchells and Sea Furies. When growth is as fast as this has been, sometimes it is hard for the people involved to see it clearly. But when the Prime Minister goes by, or a governor-general, Field Marshal Montgomery, or foreign royalty, or cabinet ministers, or top ranking air force teams of the United States and Britain - they're not just here for the exercise.

A lot has happened. There's been excitement and rapid growth right from the procurement departments, dealing with a thousand Canadian companies now supplying parts we used to buy abroad, to flight testing under Don Rogers of both experimental and production aircraft. Sometimes this department has had 35 aircraft on the line ready to fly, has made as many as 29 test flights in a day, the pilots working each

air- craft through a set routine, noting all deviations on a "snag-list" which will be covered before the aircraft is tested again. Until Glen Lynes died in a crash in October, 1955, no production aircraft had been lost in a test. The most serious earlier crash had been in the second prototype CF100, caused --- a board of inquiry decided --- by failure of the pilots' oxygen equipment. The R.C.A.F. once made a point of issuing a statement saying that the accident rate now, with jets, is no greater than the one established over the years with many types of aircraft.

On December 18, 1952, Jan Zurakowski dove an experimental Mk. 4 CF-100 through the sonic barrier, the first straight-winged jet in the world to exceed the speed of sound. In September, 1955, he electrified the Farnborough air show in England with his work in a CF-100 powered with twin Orenda 11s. Below, Sir Anthony Eden and Sir Roy Dobson sat together to watch. With the air elite of the world to write about, the headlines the next day were about Canada's CF-100 and Zurakowski.

Behind those headlines, if one only knew where to look, are some good stories. There was the time nearly four years ago that Herb Stangel and a few of the boys decided there must be a better way to check the CF-100's complex electrical system with its maze of junction boxes, relays, switches and motors than crawling around in the belly of the aircraft. They found one --- a test bed which contains every bit of equipment found anywhere in a CF-100, including the device for firing rockets. To test any item, they merely put it into the test bed where applicable. It was such a good idea that it's doubtful Avro ever will make another aircraft without first building a test bed. The fourth is now in operation.

And who will forget the day the first production Mk. 4, CF-100 came off the production line? It was September 30, 1953, a date set one year before, and one which one man right on the line, working his head off all that summer, would bet $20 they couldn't make.

A lot of the reasons why that production date was achieved lay in a U. S.-trained Canadian named Harvey Smith. He was a production executive for Kaiser in Detroit in 1952 when Crawford Gordon and Fred Smye were looking for someone who could execute that promise to "produce in quantity". He arrived in Malton in October, 1952, a few weeks before the first production Mk. 3 CF100 came off the line. The Mk. 4 was in the prototype stage then. It was nominally a modified Mk. 3, but it was really a totally new aeroplane --- of the total of about 15,000 parts, 14,000 would be new. Harvey Smith hadn't been in his job a week before he knew he was faced with one of the toughest production jobs of his career.

The tools and dies to make these new parts were being made in Detroit. "The big thing was to get them to Malton and into action in time," Harvey Smith says now. "No matter how good a man is --- and we had plenty of good ones --- he can't put a part into an airplane until you make the part and hand it to him." Twice a week or more he or one of his men went to Detroit to prod the 15-odd companies making these tools and dies. Once when a man said he couldn't get the work out on time, and "So what?" Harvey Smith said, "This is what," and took the job away from him that hour, shipped it across Detroit, and got another shop to make it on time. In July they began to arrive at Malton, in train after train and truck after truck. In August, the stream of parts began to flow. On the morning of September 30, Crawford Gordon and Fred Smye went down and shook hands with some of the men who were rolling the first production Mk. 4 off the line --- on time.

One man absent from the celebration that day was Harvey Smith, stricken the day before with appendicitis. But in the weeks that followed, the base laid down in a hard year of unremitting labor by himself and his staff showed worth which, to a production man, means much more than getting one plane off the line on time.

Harvey Smith

(Continued March- April issue)