Pre-Flight 10 years!

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The Way It Was:

a look at those not-so-distant years, so full of promise, a glimpse of the people then, the aircraft they designed, built and flew, and a lesson to those who lived in later years.

The following article was taken from Avro Canada 'Jet Age', Summer 1952.

HORIZONS UNLIMITED

by

Squadron Leader
Janus Zurakowski,
Avro Canada Test Pilot

Zurakowski's name has lately become familiar to almost every airman around the globe, for last year he plotted and flew a sideways, wingtip-over-wingtip spin to produce the first entirely new aerobatic in 20 years. It was immediately dubbed 'The Zurabatic Cartwheel'. Educated as a Polish officer, he made his first flight in 1929 in a Lublin L.K.L.5. A Battle of Britian pilot with the RAF, he shot down six enemy aircraft. He was decorated with the Virtuti Militare. Graduating from the Empire Test Pilots' School in '44, for the next three years he was a test pilot at the Aircraft and Armament Experimental Establishment at Boscombe Down. There he flew nearly every British and American type of fighter. Called "Zura" by his Avro colleagues Peter Cope, Mike Cooper-Slipper and chief test pilot Don Rogers, the short, sharp, balding airman is rated one of the "hottest" in the business. To date he has flown more than 3,000 hours and Avro Canada's CF-100 makes his 60th type.

MUCH MORE than 17 years of development time separate the prop-pulled, high wing, RWD8 monoplane in which I made my first flight back in 1935 in Poland, and the jet-propelled, delta GA5 which I recently flew this year. During this period, aviation progress has been tremendously accelerated by war and the threat of war and the increasing dependence upon commercial air transportation. Most of this development has been incorporated in the CF-100 fighter I am now flying almost daily, plus many improvements that Canadians have devised.

FOUNDED 1989
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The Aerospace Heritage Foundation of Canada (AHFC) is a federally-chartered not-for-profit organization. The current emphasis is on Avro and Orenda and the Foundation is actively trying to locate former employees of these companies.

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Cash donations over $25.00 and "gifts-in-kind" will be acknowledged by a receipt for income tax purposes. For more information on the AHFC and how to support its activities, please write to:

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FROM THE PRESIDENT

I thought things would slow down a little, now that the summer is over. Not a chance.

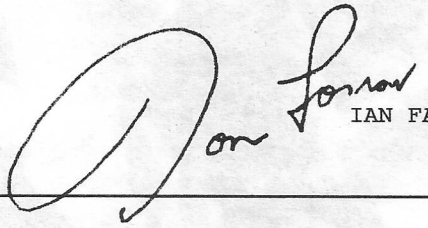
I went down to the RCAF Museum at CFB Trenton for discussions on our Arrow Model Recovery Program and planned activity. The people at the museum are very keen to have one of the models for display. I was able to assure the Director that while the National Aviation Museum in Ottawa was No. 1 on the list, the RCAF museum was No. 2.

I had a chance to see how the Halifax Restoration Program operates. It is truly awesome. The museum is virtually rebuilding the Halifax. It is well worth a look if you are down that way.

The USAF museum at Wright-Patterson AFB in Dayton, Ohio has acquired a CF-100, which will be part of its upcoming NORAD display. The museum asked Orenda Aerospace if AHFC could help them find two Orenda series engines for this aircraft. It just so happened that Orenda has two time-expired engines in storage and Orenda donated them to the USAF museum. The USAF could send an aircraft to pick up the engines but how could they be moved from Orenda onto the aircraft? Mike Deschamps, AHFC VP, who works for Air Canada Cargo, arranged for Air Canada to load the engines into a C-130. The Canadian Forces provided the truck to move the engines from Orenda to Air Canada Cargo. Mission accomplished.

In addition, Orenda has agreed to donate an Orenda engine to AHFC.

Finally, on October 31st, I attended the 10th annual massed military band spectacular at Roy Thomson Hall. It was really an outstanding performance and anyone who loves music should try and get tickets for the next performance on October 15, 2000.



IAN FARRAR

Horizons, continued:

There is no doubt in my mind that in the CF-100 we have a very good aircraft in initial production. Probably unequalled by any other production aircraft this side of the Iron Curtain, it should be able to fulfill its role of defending Canada's northern skies very well, particularly because of its powerful armament. Its high rate of climb, good range, and powerful armament should make it an excellent defender against enemy bombers.

During my flying career, I have flown over 50 different aircraft. Each of them has provided me with a different type of thrill, something new to learn. Now I have been persuaded to put down a few of my thoughts on flying in the hope they may be of some use to the hundreds of young Canadian pilots who soon will be trying their wings on the CF-100.

Like most pilots, I shrink at putting down my personal feelings and experiences. I recognize, though, that these feelings and experiences might be of interest simply because they are denied to non-flying people. Most pilots, particularly experimental pilots, are keen on flying because it provides an ever-new challenge, ever-new flight problems. Test pilots are particularly fortunate because they are helping in the development of new aircraft and they are the first to see how, flight by flight, they are progressing.

I disagree with the recent publicity that flying nowadays has none of the challenge of the early days and as a result it is difficult to find young men as pilot recruits. Despite what experience I have had, I feel that I have much to learn, much to experience. The days of the pilotless aircraft are not yet here even if some flights have been carried out this way.

It is my personal estimate that in about ten years time we will switch from jet engines to rocket propulsion for military flying, but even then I believe we will still depend upon pilots. Despite all our research, we still have not developed a machine as capable of flying as a pilot, to guide the aircraft through the varied conditions of combat. Flying requirements, in a few years, might be more demanding as new aircraft are developed, but I think you will find that the human pilot can more than satisfy them, particularly because of the new equipment which will help him. Experimental pilotless aircraft which were developed to gather material on supposedly dangerous transonic flight conditions are now just being put out after the pilots had gathered the same data themselves.

Yes, there will continue to be a place for pilots, particularly in test work. The technical people themselves say they rely on the test pilot who, in many cases, finds new problems in flight, never met before.

The basic thrill of flying still has not changed nor will it change, no matter what our method of propulsion or design of airfoil. It is true it requires considerable more technical knowledge to fly today but it is really not any more difficult physically to fly a jet than a light propeller trainer. I myself find it much easier to fly than to write.

Although the CF-100 is basically sound, we foresee many problems ahead simply because it is a new design. Gloster, with its Meteor, had 1500 airframe modifications and over 600 modifications of the engines, in five years. We do not foresee any major snags in the CF-100, but we are facing the world-wide problem of making a complicated, new piece of flying machinery, fully operational and fully reliable.

From the flying point of view, the Orenda engine will undoubtedly offer little trouble. When its power is boosted and its fuel consumption bettered, its right to a front-rank place in world aviation will be strengthened.

There is obviously a great future ahead for Canadian aviation. (As a matter of fact, that is one of the reasons I came to Canada and to Avro Canada particularly.) This country is now at the beginning of tremendous developments in the field. We have all the basic requirements for an aircraft industry-hydro-electric power, such raw materials as aluminum and we are close to the U.S. development, tooling and mass production methods. Provided Canada plans on producing for world markets, there are splendid sales opportunities for our aviation products. The success of the industry however, basically depends on the intense enthusiasm Canadians have for flying.

Of that enthusiasm, undoubtedly, the horizon is unlimited. √

OBITUARIES

It frequently has been said, when talk came around to the Avro Arrow, that those who worked in their many capacities on this advanced fighter were the best in the world at the time. The notification of the passing of some of these gifted men can be read in the obituary page of local papers. The death of many others passes quietly, not noticed publicly except, perhaps, by relatives and close friends.

As noted in the Toronto Star last August, one of such men was ***Anthony Riklicky****. He came to Canada in 1939, somehow managing to escape the horrors of the Nazi regime. Becoming a skilled toolmaker in Czechoslovakia, he found work in Trenton as a supervisor for Bata, switching from shoes to gun mounts and gyroscopes for torpedo guidance systems. His skills placed him among the key personnel at Bata. He received rarely given awards from the Allies for his wartime work and research. After Bata, he worked on the Avro Arrow, where his expertise in supervision and meticulous, hands-on toolmaking contributed much to the production of the Arrow. He died in Toronto on August 29th, just short of his 90th birthday.*

Conrad Maheux *was another. A Quebecois, he graduated in physics from Laval University in 1951 and began to work in his field with the Canadian Defence Research Medical Laboratory. During the Korean War, he was sent to the USA, developing new forms of body armour. His new technique of measuring strain on vest fibres, resulted in the development of lighter, stronger body armour. He played a very important role in the design of the Arrow. Drawing on his short stay at IBM, he installed an IBM 704 computer at Avro to be used in the design of the Arrow. This was no easy task. It was made up of a series of separate computers and was packed with 40 kilometers of wiring and over 4000 electronic tubes. Perhaps a more daunting task was to teach programmers how to use the 704 to make the critical calculations for the various components of the airframe and some of the engine. After the Arrow cancellation, he returned to IBM to work on cutting-edge research. The latter part of his life was occupied with ensuring that technology was safe and that the public knew which technology was safe. He focused on standards; as a result of his constant efforts, Canadian standards are accepted anywhere in the world. Conrad Maheux, 73, died at of heart failure at his home in North York.*

PROGRESS REPORT:
ARROW MODEL RECOVERY PROJECT (AMRP)

Significant progress took place in the Arrow Model Recovery Project (AMRP) in mid 1999. Working on the coordinates derived from trajectory flight information and anecdotal details, Ken McMillan and Darrin Keyes of McQuest Marine Sciences in their specially equipped vessel *Extreme Surveyor*, conducted a sidescan sonar survey over a quarter of the splashdown area. Their meticulous data interpretation resulted in picking five targets of possible anthropogenic origin.

One month later, on June 20th, Jim Garrington of Shark Marine, together with Bob Saunders and Bil Thuma returned to these to relocate on the coordinates provided by Darrin and to identify the sources of the very subtle anomalies. Using Shark's Remotely Operated Vehicle (ROV), the gimbaled video camera proved one target to be geological. On the third drop, the ROV settled on the bottom near the anchor set on McQuest target No. 5 differential GPS parameters. As Jim manoeuvered the ROV, the camera panned on an object six metres away - the hulk of something definitely man-made. The ROV slowly approached and circled this mysterious object encrusted in several generations of quohog mussels -it was beyond the depth of zebra mussel inhabitation. Wing roots were visible, as was the telltale dayglow orange paint and probably stainless steel in one small exposed section. Speculation is that this is one of the Arrow models or something very, very close in size, shape and composition.

Time did not permit a dive to confirm this, and it will have to wait until next season to confirm and recover this object.

Presently, the AMRP team is waiting for Ministry approval of a plan submitted in July to proceed with the recovery of this targeted object. The team has the support of the Canadian Conservation Institute in Ottawa.

The attention of this discovery has been all positive, with expression of interest to participate in the project by the Ontario Heritage Foundation, HMS Kingston, and the Canadian National Exhibition. The team and the AHFC appeared on CBS National and Midday, CITY-TV, Global, and CTV. All the newspapers carried the story with follow up, and several on-air radio interviews were given.

The search and recovery season is over until 2000. But rather than a lull in activity, we will be conducting a major funding campaign, using whatever resources we can muster and capitalizing on the good media coverage we have had since late June. Hopefully, this will bear results, as the most limiting factor in recovering the models is the lack of modest funds to take our reliance off donated boats and equipment.

The team, led by Bob Saunders, wishes to thank Ken McMillan of McQuest Marine in Burlington and Jim Garrington of Shark Marine for their contributions of time, equipment and manpower.

— W. R. (Bil) Thuma
AMRP team member