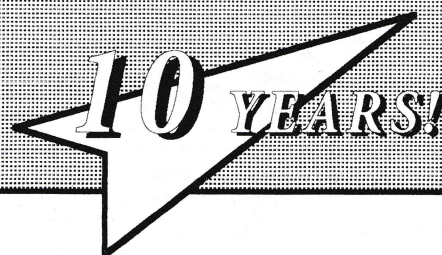


Pre-Flight



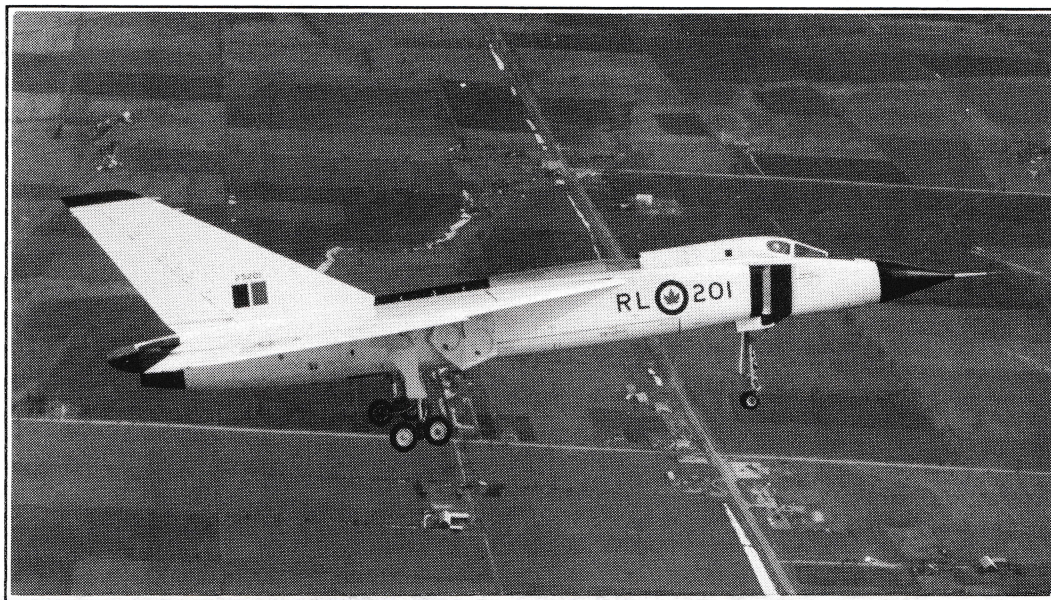
A Publication of the Aerospace Heritage Foundation of Canada
P.O. Box 246, Etobicoke "D", Etobicoke ON M9A 4X2

Vol. 10, No. 1

January – February 1999

The Avro Arrow Flies Again!

by Paul Irvine



"The only place the Arrow flies now is in the memories of those who saw it."

So ends the Ontario Science Centre's *Arrow* display video. My good friend Bill Penny (Ajac RC) has a unique memory of the *Arrow*. Bill's brother-in-law worked at Avro Canada as a design engineer. On one occasion, he informed Bill of scheduled high-speed and manoeuvrability tests that were to take place the next day over Lake Scugog. Bill (also a full-scale pilot) rented an Aeronca Champ from Fred Gilly's Air Service and in the Fall of '58, at 8,000 feet, Bill witnessed a dazzling display of *Arrow* aerobatics, including rapid rolls and loops. He notes that the *Arrow* broke the sound barrier numerous times, which sent out shock waves that rocked his Champ. Needless to say, Bill was in shock when Black Friday hit and the Avro *Arrow* program was

cancelled by the Diefenbaker government. Still, the *Arrow* lives on as one of Canada's outstanding contributions to the advancement of aviation. In fact, it not only lives on, but it's alive and well, especially within the aeromodelling community, which brings me to the point of this article. Within the Radio Control Flying Club of Toronto, there are two *Arrows* being built. The first, an 1/8 scale *Arrow* (and I mean scale!), involves a team: former President John Dutkoski as chief wood butcher, Jim Henderson as chief brain and design engineer and Ted Antonopoulos as the fiberglass wizard. The second *Arrow* is being built by former Wings Officer Bernie Lehman and is a Fhyber Models (Collingwood) 1/12 scale kit.

(Cont'd on p. 2)

RL 893-1999

FOUNDED 1988

AHFC

Aerospace Heritage Foundation of Canada



Patron William Coyle
 President Nicholas Doran
 V. President Frank Harvey
 Secretary John Thompson
 Treasurer Al Sablatnig
 Assistant Treasurer Ross De Grandis
 Directors Clifford Caunter
 Bill Daniels
 Ross De Grandis
 Mike Deschamps
 Ian Farrar
 John Hughes
 Christine Mason
 Don Pearsons
 Bob Saunders
 Gerald Saunders
 William Turner
 Kemp Watson
 Honourary Director Dr. Shelley
 Saunders
 PR Consultant Dita Vidron
 Legal Consultant Jerry Faivish
 PRE-FLIGHT Ted Harasymchuk

President's mailing address:

14 Eagle Road
 Etobicoke ON M8Z 4H5
 (416) 231-0438

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.

✓ **Western Canada** – please contact:

Michael L. Bullis, 164 Berkshire Close NW,
 Calgary AB T3K 1Z4. Phone (403) 274-7497.

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:

**The Aerospace Heritage Foundation
of Canada,**

P.O. Box 246, Etobicoke "D"
Etobicoke ON M9A 4X2

FROM THE PRESIDENT

It's been a couple of months since I last had the opportunity to talk to you, the members of AHFC. We were saddened to hear of the passing of Gerry Saunders, one of the first Board members, who dedicated his retirement years to the AHFC. Our newsletter is late due to circumstances beyond our control. Even though we were ready to go to press, key photos were unavailable, until finally, we had to resort to other means. Meanwhile, the Board of Directors has been having its regular meetings, preparing for the summer and autumn seasons. Our public education program has started and we will be at larger aircraft-related gatherings. Some members have already sent in their membership renewals, even though the renewal forms have yet to be sent. Thank you sincerely. One more thing. In these final months of the 20th century, I warmly encourage members to become more active in AHFC – to become volunteers. If you can spare even a couple of hours a month, it will help AHFC to fulfill its mandate. Call me if you want to be a volunteer or for more general information.

Nicholas Doran

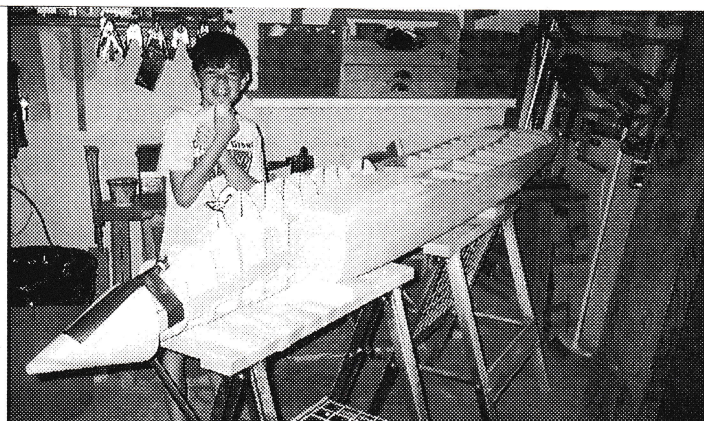
NICHOLAS DORAN

Arrow flies, continued:

Jim Henderson and John Dutkoski discuss the Arrow mould.

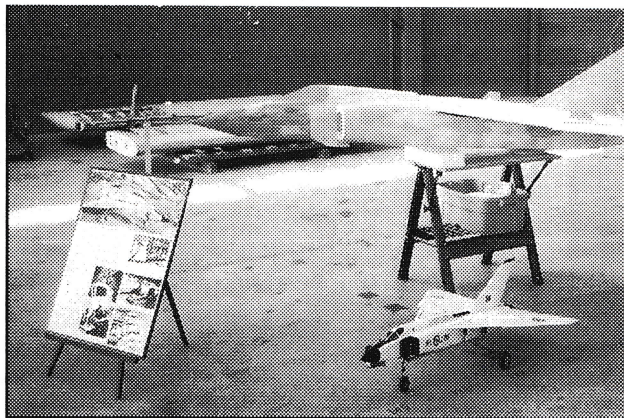
THE INTERVIEW

I met up with John, Jim and Bernie at John's workshop last March to talk about their projects. One thing was evident from the start: these gentlemen are extremely knowledgeable and passionate about the Arrow's history and technical data. I'll start with a little background info on what one might call John's Arrow, but in fact it was Jim's initial dream and good fortune in acquiring a full set of factory drawings from which he designed their model. Jim had started his designs about five years ago. He had an investor in



John's son with the Arrow in progress.

- continued on p. 3



John, Jim and Ted's Arrow on display at Toronto Aerospace Museum full-scale Arrow meeting in April. John's smaller scale Arrow, prop driven, is in the foreground.

Arrow flies, continued:

his project (you can imagine the costs) but the investor eventually withdrew his support. The project sat dormant.

Fortunately, John was increasingly becoming an Arrow fan. You may remember John's smaller scale Arrow at last year's Beauty Show. John wanted to build a large scale version of the Arrow and he found out through another club member about Jim and his Arrow plans. Jim recognized John's expertise in scale subjects, as he was concerned because he had not yet done a proving analysis of the lofting. This involves the curved shapes that have to come together smoothly and precisely as did the full-scale Arrow.

Eventually, Jim supplied the necessary paperwork to John and Ted. They spent two full evenings just to cut out the fuselage formers that would form the frame on which 1/4" pine strips were attached (much like boat building) to form a "plug" for the fiberglass mold. There were numerous setbacks in achieving the scale dimensions; details that would otherwise go unnoticed become key elements in a scale model rendering.

One of the real gems on their model will be the exact scale landing gear. Jim, I should point out, is a machine designer/draftsman. He has a set of full-size plans from Doughty Manufacturing, original maker of the gear. The mechanism is mind-boggling. But Jim confidently explained how he intends to go about the task.

AND IT WILL FLY!

This model was meant to fly and attention to weight and structure has been constant throughout the project. With an all-up length of 126", a wingspan of 75", power supplied by a twin Ramtec/OS91 Ducted Fan combination and a "wet" target of 35 lbs., John, Jim and Ted's Arrow represents an enormous number of man hours and personal cash (\$700 in 'glass alone). John was fortunate to round up Duragrit as a sponsor. The company wants to use the Arrow in its brochure and supplied John with every conceivable shaping/sanding tool imaginable. Free, of course.

John hopes to have an assembled static version by June, in time for the Rally of Giants in Belleville. Actual flights should take place out at the new Toronto Aerospace Museum at Downsview airfield in the Fall. I ask if they intend to market their 1/8 scale Arrow. John offers that "maybe in a limited edition..., with cash up front."

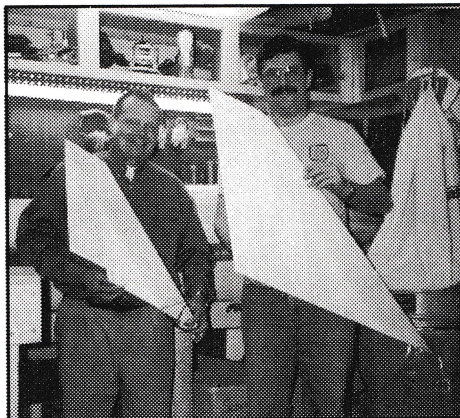
A DATE WITH A TOP MODEL

Bernie's 1/12 scale Arrow, on the other hand, is, as mentioned, from a kit by Fhyber Models. Its design has been fully flight-tested. In fact, Bernie was in touch with its designer/creator, John Houghton right from the start. The length is 79" and the wingspan is 50". It will be powered by a Ramtec OS91 Ducted Fan unit. Bernie demonstrated the simple and unique mechanism which draws the main gear up as it rotates to fit inside the "bullet-proof" fiberglass wings. Bernie swears that this model represents the pinnacle of his modelling career and if he crashes it... Well,

I'll let Bernie tell you what he plans to do. Nonetheless, Bernie points out that his Arrow is being financed by his bank manager.

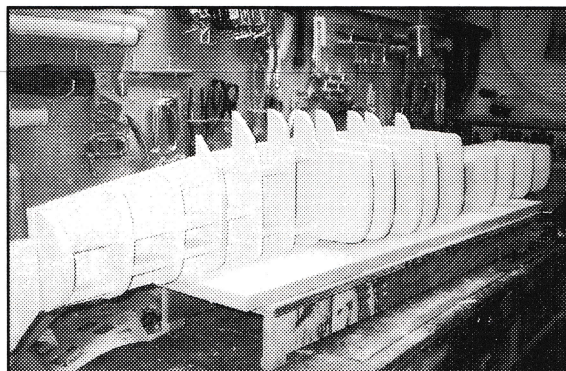
ME AND MY ARROW...

I wish John, Jim, Ted and Bernie all the best for their initial flights. Judging by the level of workmanship that is going into these projects and their RC flying experience, I believe they may be enjoying many seasons of happy landings. Good luck, gentlemen! Take comfort in the fact that no politician can stop you now.



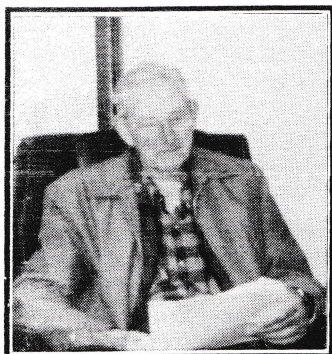
Bernie and John with their respective Arrow's vertical fins.

PF



Fhyber
Models 35 Eighth Street
Collingwood, ON L9Y 2C4
tel: 705-445-7869
fax: 705-445-2994
Email: houghton@georgian.net
Internet: www.georgian.net/~houghton

Gerald Thompson Saunders
1917 – 1999



After a short illness, Gerald Saunders passed away on Sunday, January 10, 1999, at Oakville-Trafalgar Memorial Hospital. He is survived by his wife Maryon, to whom he was married for 56 years, children Geri, Shelley, Robert and grandchildren Rob, Barb and Mieka. Shelley is Honorary Director of AHFC and Bob heads up the underwater search team for the Arrow models. Gerry was always interested in aircraft. After high school, he enrolled in the aircraft technology course at Central Technical Institute in Toronto. He studied for four years and learned everything there was to know about an airplane in the mid '30s. He was one of three top students in his class and so, even before graduating, was sent to DeHavilland to work on Tiger and Puss Moths and the like. He wanted to join the RCAF, but the recruiting officer would not accept him because he considered him too thin. He was told that he was more needed to build airplanes. So Gerry went to work at National Steel Car in Malton, building Lysanders, Ansons, and other aircraft as needed. Within a short time, the line to build Lancasters was set up, and personnel who could read British-style 3-view plans were desperately needed. Gerry, having received broadly based education and training at Central Tech, stepped forward and at once was transferred to Engineering, eventually becoming Chief Engineer. After hostilities, with Avro on the scene, he went on to work building the Jetliner, CF 100 and the fabulous Arrow. It was at Avro that he met and married his wife Maryon, who worked in the blueprint department. After Black Friday, Gerry went to the USA to North American, working on such experimental aircraft as the XB-70 "Valkyrie"; X-29, a tilt-rotor; and X-15, which was used to test parameters for the Space Shuttle. While working at North American, he went to the University of Ohio

and completed his engineering degree. After five years in the USA, Gerry returned to Canada, and worked at De Havilland on the development of the DH line of STOL aircraft, including Dash 7 and 8. He retired from De Havilland in 1984, after dedicating a major portion of his life to the Canadian aircraft industry. Leaving DeHavilland, he put his considerable talents to work, designing equipment at Cliffside for another three years. It was in 1987 that he retired, this time definitively. He felt it was time for him to enjoy whatever he decided to enjoy. Gerry was a dedicated Director of the Aerospace Heritage Foundation of Canada and a member of the Canadian Warplane Heritage.

pf

CALL FOR ASSISTANCE

The AHFC
will be holding a Dinner on Saturday,
August 7, 1999
to mark the 50th Anniversary
of the inaugural flight
of the C102 Avro Jetliner.
This dinner will be held
at the Toronto Airport Holiday Inn.

We need help to set up displays
and other related items.
So to any of you volunteering types out there, who
can help, we would really appreciate hearing from
you. You would have to be at the Holiday Inn
before 10:00h on the day of the dinner.

For volunteering and/or more information,
please contact:

Frank Harvey
at 905-624-4909