

## The Search, cont'd

supersonic aerodynamics. Since the 500 pound models had sunk to the bottom, Harvey and crew figured they must still be down there.

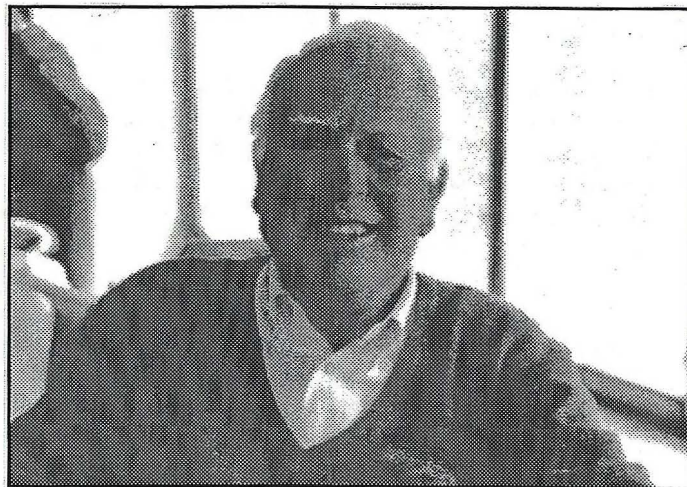
Last July, the Canadian navy donated the services of two minesweepers and scanned the bottom of the lake with sonar and a remote-controlled, camera-equipped submersible. If they found anything promising divers would have gone down for a closer look. "Part of the problem with the Arrow models is, we don't know the condition of them after travelling at Mach 2", Harvey says. "They could have deteriorated a bit and could have suffered damage. And they might have drifted with the currents". They did find the Nike boosters on the lakebed, but they could not even bring those to the surface. Everything on the bottom of Lake Ontario is covered with zebra mussels, which are illegal to bring to the surface. "We have licence to search but not salvage", Harvey explains. We're going to sit back until spring and see about raising more money and go searching again," Harvey says. It would be nice to get the Canadian navy to help again, and go a little bit further out this time." And if they do find a model you can bet they'll apply for that salvage permit faster than a speeding arrow!

## Members Matter

Occasionally, we include in this column a sketch of a member who has a connection with the years of Avro and/or aerospace. Here is a look at the life of **Peter L. Gallimore** and some of his memories.

After graduating from the deHavilland Aeronautical Technical School, where Peter specialized in Aero-dynamics, in 1948 and a short period as an aerodynamicist with General Aircraft in England, he joined British Overseas Airways Corporation (now British Airways) in London, where he was engaged in the Engineering Department assessing the qualities of new aircraft for the airline. In 1950 the deHavilland Comet had just been delivered and in August of that year he moved over to the Operational Development Unit of BOAC where he participated in all the flight and performance trials and was responsible for analyzing the performance flight test results and ultimately for the preparation of performance data for the flight crew operating manual.

In late 1952 Peter was hired by Avro Aircraft of Toronto, Canada and immigrated to Canada that year. The assignment at Avro was to analyze the effect of a new engine on the Jetliner performance and to assess whether sales could be resurrected following the hold which the Canadian Government had placed on the project in favor of moving ahead with further refinement of the CF-100 All-Weather Interceptor Fighter and the Avro Arrow. About 1954,



J. C. Floyd, our VP Engineering, returned from one of his visits to meet with Mr. Howard Hughes in California with the Boeing performance brochure for the Boeing 707. Mr. Hughes had apparently requested an evaluation since the 707 was under consideration by Trans World Airlines (TAW). Suffice to say that the Jetliner could not compete with the 707 and that was just about the end of the line for such a remarkable airplane - just a little bit late and badly hurt by the Government suspense to support the Canadian commitment to America, for the Korean War.

In 1953 the Jetliner program was finally cancelled and that same year Jim Floyd established a design research group which Peter joined to handle the aerodynamics of new design proposals. He remained in this group until 1958 when he joined the Avro Service Department as Chief Service Engineer. It was becoming clear by mid-1958 that although the Arrow was progressing remarkably well in its flight tests, the British parent was seemingly not prepared to finance any new project, the Canadian Air Force was becoming infuriated with Avro Customer Service and the Boeing Bomarc was becoming a very real threat to the Arrow advancing to a production contract.

"For all these reasons, my wife and I decided to see what the U.S. aircraft industry had to offer and during the 1958 summer vacation we drove to the West Coast and interviewed at four U.S. airlines and manufacturers. We received four offers for employment, including my wife, who worked in the mathematics group at Avro as a mathematician, all quite good and all very similar. We made the big decision based on my wife's love of the mountains around Seattle and today Boeing is the only survivor of the four companies interviewed! One does need a little good luck in life! It is interesting to note that on the day in February 1959, when my wife and I arrived in Seattle, the Seattle evening paper headline was 'Canadian Aircraft Company lays off 14,000'!

Boeing has been an incredibly interesting and good place to work and the Seattle area is a wonderful place to live. I recently retired after 44 years of service. In retrospect, the Avro demise was tragedy and a great loss to Canada. There were some quite brilliant people on the staff and Avro collectively had a first class design team and engineering department under Jim Floyd. It could have gone so far. The United States was very definitely the beneficiary of that great company's demise.

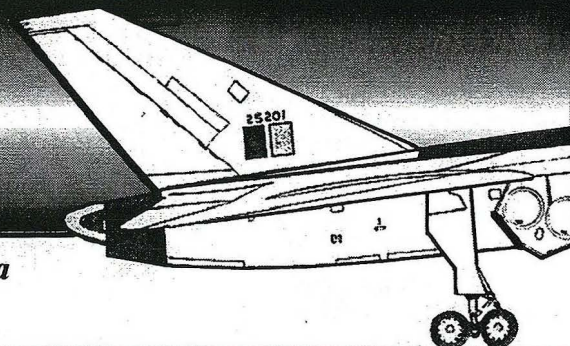
It is good to know that a group of dedicated folk established a heritage society which keeps some of the Avro lore alive and I wish it all good fortune for the future."

# Pre-Flight

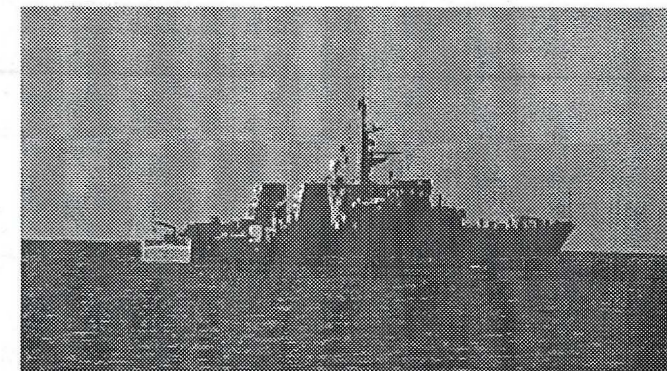
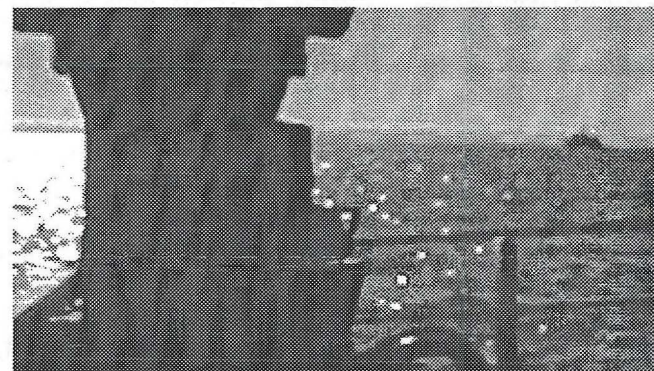
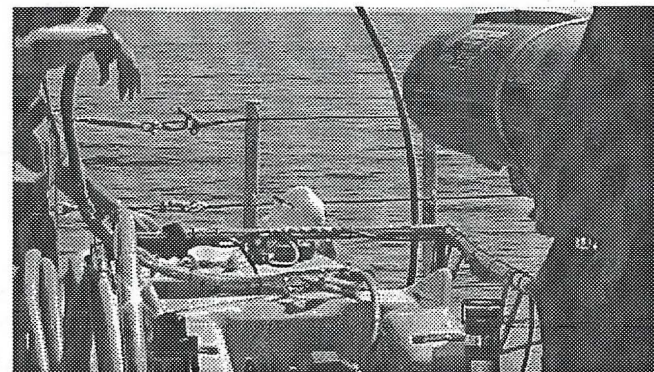
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## Where are they?



*This first issue of Pre-Flight for 2005 is focused on the search for the Underwater Arrows. Bob Saunders', as the one responsible for the search for these ten-foot Arrow models, must have had the above question run through his mind a thousand times over the years. He offers his thoughts and comments in a direct, to-the-point article. Frank Harvey, our President, offers us what transpired during the search last year in July. He is also featured in the article by Phil Scott, writing in Air and Space Smithsonian Magazine. A short and snappy summary from south of the border.*



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AHFC

Aerospace Heritage Foundation of Canada



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## From the President

This issue contains a copy of an article that appeared in the November 2004 issue of Air & Space Smithsonian magazine. I would like to thank Patricia Trenner, Senior Editor Air & Space Smithsonian and writer Phil Scott of New York City for permission to send this to our members (I owe Phil a bag of green M&Ms if any member knows where to buy them).

Recently with the assistance of Jim Floyd and Mario Pasando we were able to locate the gravesite of John Hiebert who lost his life while serving as Engineering Observer flying with Janusz Zurkowski in a CF100 test flight on August 23, 1954.

John Hiebert's family lived in Winnipeg at the time and all their records had been lost. John Hiebert's niece Nancy Boese contacted me to see if the AHFC could help with the families' search, and with Jim's and Mario's help we narrowed the search to the Weston area and suggested St. Phillip's Church. Nancy e-mailed me that she had been in contact with the Church and the gravesite has now been found.

I would like to take this opportunity to wish all members a Happy New Year

Frank

## Arrow Model Recovery Project Status Report

by Bob Saunders

Well, it's been an exciting summer for the project. As many of you have probably seen and heard the AHFC's AMRP was out this July for three days of searching for the Arrow models. Both the HMCS Kingston and HMCS Glace Bay were down on the lakes and thanks greatly to the help of Bill Coyle (AHFC Patron), we were able to work together to try and locate one or more of the models. Sadly, I must report that we did not find any models. However we did manage to locate three booster rockets and possibly a velvet glove missile as well as a 100+ year old sailing ship in mint condition. None of the boosters found were the ones used to launch the Arrow models. This location was at one time a C.A.R.D.E. range and many different types of missiles and rockets were fired and tested there. If there are any readers who have any knowledge of any other testing at the range, please contact me, it might be useful information for the model search.

We have wound down the search for another year and must take the time to look at where we have been and where we are going with the search. Over the years (10 so far) since I started this project I have had many ups and downs, people who started with me on the project have moved on to other things and some have even passed away. Three of whom I would like to take the opportunity to acknowledge. Firstly, my father Gerald Saunders, our past president Ian Farrar and Bill Turner. Their support and encouragement helped me to continue through the years and I miss them very much. One area which must be considered if this project is to continue is the area of funding. Just for this years work I needed to spend over \$700 and that was only for accommodation and meals. This is a very expensive project and I am unable to run the project and fund raise at the same time all in my own spare time.

## AMRP cont'd

This is one of those projects that sounds great to everyone to do, but when it comes to the crunch there is no one to be found. This was so much the case for funding, everyone willing to put the money in ONCE the models were found but it takes money to find them in the first place. Any one out there with a few hundred thousand lying around willing to take a chance?

I am going to take this winter to really think about where we are going and see if it is worth taking a chance. I hope I'll see you next year, maybe with an Arrow model.

## The Search Last Year

by Frank Harvey,  
President AHFC

Early on the morning of July 6th I accompanied our Patron Bill Coyle on the 2 1/2 drive to Picton where we met up with AHFC Director Bob Saunders along with a Canadian Navy dive team in a local coffee shop at 5 am. Bob had been in Picton since Sunday July 4th and on Monday had been aboard HMCS Glace Bay conducting the search for the Arrow models.

After being brought up to date with the results of Monday's activities we departed for the pick up point about a 30 minute drive away. There we boarded a tender and were taken out to the ships. Boarding the ship by rope was a little bit of a challenge as I am not as agile as I was a few years ago. By 6:30 am we were all aboard.

Once aboard we were shown to the ship's Officers wardroom where we met other guests of the Navy, included were a CBC news crew of three, a Globe and Mail reporter and a reporter from the Kingston Whig Standard, a camera operator from CTV joined us later in the day. After breakfast we all attended the Crews morning briefing in the ships operations room while the ships were underway to the search area.

Reaching the predetermined search area the dive team lowered the ROV (remote operated vehicle). Once the vehicle reached the required depth Bob took over the operation and started searching the lake bottom for any signs of man made items. The rest occupied the operation's room and viewed the underwater activities on a large screen. The images taken by the TV cameras on the ROV were then transmitted to the ships computer which in turn projected them onto the viewing screen. The pictures were very clear and showed the bottom covered by masses of Mussels which seemed to be clinging to every available surface. A few fish were seen but it was not until around 4 pm

that we finally spotted the remains of a rocket booster but sadly no Arrow models. While this phase of the search was being conducted sister ship the HMCS Kingston was conducting a side scan radar search of another target area looking for other search targets for the next days ROV investigation.

At 6 pm Bill Coyle and myself along with the media people disembarked and started on our way back home. Bob Saunders stayed aboard to continue with the search the rest of the day and carried on the next day also. Unfortunately in the three days there was no sign of the Arrow models although a few missile remains were seen.

Although it was a very long day it was an experience that I will never forget and along with Bill Coyle and Bob Saunders want to thank both ship's Officers and Company for there help and hospitality during the three day search.

## Arrowheads

by Phil Scott

(with thanks for permission of Patricia Tenner, senior Editor, Air & Space Smithsonian magazine, to print this article by Phil Scott in their the November 2004 issue.)

Frank Harvey's group, the Aerospace Heritage Foundation of Canada (AHFC) searched the bottom of Lake Ontario for three days and couldn't find an Arrow anywhere. But disappointment is nothing new to this bunch.

The Avro Arrow was Canada's fighter-interceptor effort (see "Fallen Arrow", April/May 1998). Designed in the 1950s, the ultra-modern fighter (with fly-by-wire controls, 25 years before they became a standard feature on the United States fighter) had an estimated top speed in excess of Mach 2. A.V. Roe Canada built six before hideous cost overruns and politics shot the project down. An oddly vindictive Canadian government decreed that all evidence of the Arrow be eradicated. "They ordered that all pictures, film, everything was supposed to be destroyed," says Harvey. The prototypes were dismantled, and the photographs, designs, drawings and test data confiscated from the engineers. Presumably it all ended up plowed under a field somewhere with lime sprinkled on the furrows.

Dedicated to preserving the memory of the Avro Arrow, the AHFC tracked down all that remains of the Arrow effort. In the Arrow days, engineers had mated nine one-eighth-scale models to Nike rockets and launched them over Lake Ontario to test the aircraft's