

depth, water pressure, on the body. You just can't dive as deep as you want for as long as you like, and then when your air is about run out, rise to the surface. You have to stay within specific limits to be safe - and keep the risk of an accident to a minimum.

PF: What about the boat?

Divers need a good-sized boat; the bigger, the better. A lot of equipment will be needed for the summer dive to find the Arrow models. For example, besides diving gear and divers, we will carry a sidescan sonar, a GPS (ground positioning system) unit, safety and emergency items, and so on. McQuest Marine has an excellent boat (*Extreme Surveyor*) and equipment. Hopefully, it will be used on the dive. We may get help from the Canadian Navy, with the HMCS Kingston and her divers. This would be great. We hope to find at least three of the models; I surmise from the shape on the camera that that's what they were. There are possible three more, but farther out. And covered with at least three generations of mussels and silt. It will be some job to bring the models up and restoring and preserving them for exhibit. It will be hard and time-consuming work, boring at times. With costs. And stress.

PF: Is this all your responsibility?

RS: I am lucky to have excellent team members: Bill Coyle, Ian Farrar, Jim Garrington, Ken McMillan and Bil Thuma.

PF: Back to diving. What about the bends?

RS: A good question. First, you have to remember that the air we breathe is made up of approximately 20% oxygen, 79% nitrogen and 1% other gases. Nitrogen is not used by the body and goes into the blood. We learned in school that oxygen is fuel and carbon dioxide is the waste product. At sea level, the pressure of the air that we breathe is 14.7 psi or 1 atmosphere (atm); at 30 ft - 2 atm (the mixture is the same, but twice the nitrogen and oxygen); at 60 ft (3 atm) it's 3 times, and so on. Yet the lungs need air supplied at the same pressure as the surrounding water. It's like a plastic bottle of pop. If not opened still under pressure, the carbon dioxide in the pop stays put. Open the bottle, and the bubbles rise rapidly as the pressure is released. In the same way, as the diver ascends, nitrogen (remember, it goes into the blood) returns to its gas form as pressure is released. And here is where problems can happen - when the gas bubbles are too big, they can block arteries. The result - joint pains; rupture of tiny lung vessels; even a stroke or heart attack. That's the whole reason for the dive tables I mentioned. The ascent to the surface, depending on

depth and time in the water, has to be gradual so that the body can properly absorb the nitrogen.

PF: And nitrogen narcosis ...

RS: That's when the diver, because of breathing large amounts of nitrogen, begins to feel a false sense of well-being, lightheaded - sort of drunk. It can happen anytime. The remedy - in the first place, dive with a buddy who is always close by; recognize what is happening; and start ascending until the feeling passes.

PF: Anything else you want to add?

Just a few last comments. Water looks nice most of the time; natural, peaceful. Below the surface, it can be a noisy place. That's because water conducts *sound* very well and a diver hears this amplified sound easily. The only trouble is that the diver cannot really tell where a noise or sound is coming from! And water changes colour according to depth: at 15 ft, reds are gone; at 30 ft, so are oranges; by 60 ft, greens and yellows; and at 100ft, everything is bluish. So if you want to see what something underwater is really like, you really need some sort of light. I hope I didn't give the impression that underwater is a hostile place. It can be, that's true. But it also can be fascinating, always challenging. Just as long as the diver knows what he is doing, and is watchful and prepared.

PF: Bob Saunders, thanks very much for taking time from your very busy schedule to tell our members some of the basic facts about scuba diving. Hopefully, you'll have much more to tell us about the underwater Arrows in a future PRE-FLIGHT. Good luck in your endeavours!

PF

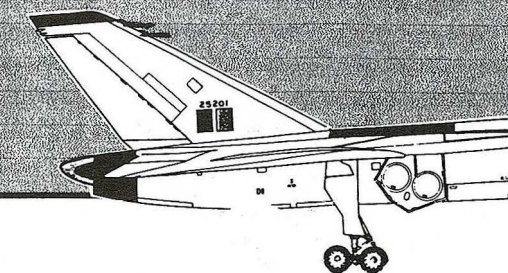
NOTICE OF ANNUAL GENERAL MEETING

AEROSPACE HERITAGE
FOUNDATION OF CANADA

SATURDAY, JUNE 24, 2000
10:00 AM

TORONTO AEROSPACE MUSEUM
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Pre-Flight



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A seven year dream: finding the Arrow models

An Interview with Bob Saunders,
AMRP Co-ordinator



After the tragedy of the destruction of the Arrow, those who worked to make this aerodynamic masterpiece fly were in shock. Not only were they disillusioned, they were stunned; and they were deeply angered at their inability to do anything. They felt powerless. And so they went to other places and fields; their talents were not wasted. Their bitterness and anger at this senseless act of the Canadian government stayed with them. To terminate the program with no plausible explanation! To make sure the Arrow and its memory would not return to haunt the government and those responsible for the deed! Not one Arrow for succeeding generations to marvel at, to admire its creators. Yet the Americans knew about the Arrow and used its research findings most effectively to the benefit of U.S. industries. The British knew. The Germans knew. And certainly, the Soviets knew and had the documentation and even more. Sadly, as Bill Turner pointed out in the previous issue of *Pre-Flight*, the Canadian people did not know, to a great extent thanks to the cooperative print and radio media. But the Arrow stayed in the memory of those who drew the lines, moulded the metal, connected the pieces, touched the multitude of parts, put them all together and made them fly in the Arrow. One of these who worked on it was the late Gerald Saunders, founding member of AHFC and father of Bob Saunders. Gerald passed on his memories, his disappointment and sense betrayal by the government to his son, Bob, a certified diver. Seven years ago, Bob decided that he had to research and locate the Arrow aluminium/magnesium models that were fired and fell into Lake Ontario. He was interviewed, not so much to tell of the search itself, but of the complexities and dangers linked with underwater exploration, especially in an unforgiving, cold Lake Ontario.

