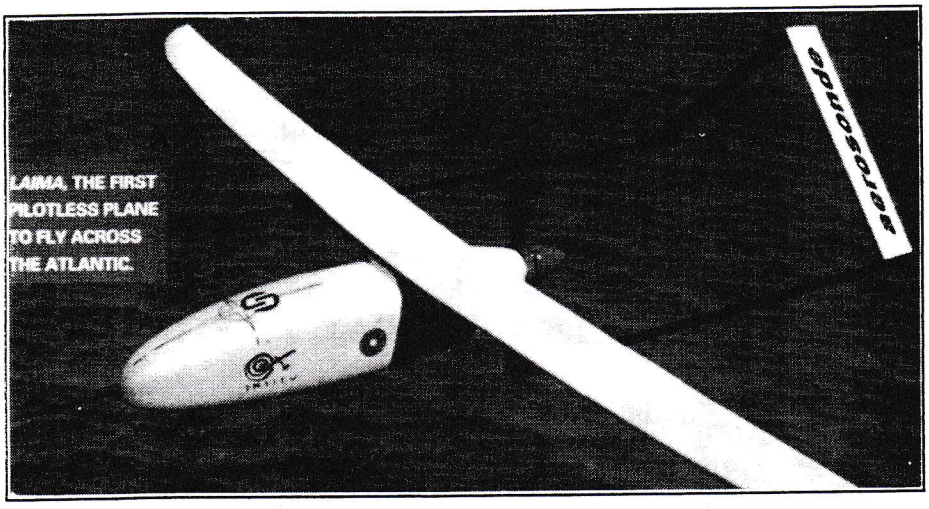
Aerospace:

No one at the controls:
the amazing flight of the aerosonde



WHEN engineers at Avro were faced with the ardous task of obtaining precise technical data about the potential flight characteristics of the Arrow, they innovately developed and used a telemetric system that, for the time, was amazingly accurate. The engineers, together with the electronic experts achieved this feat of electronics, not only because of their ingenuity, but also because of time pressure to obtain the much-needed data.

Perhaps a variant of such pressure was the stimulus that eventually resulted in the aerosonde. At least, this was the opinion of Juris Vagners, an aerospace engineer at the University of Washington on the California West Coast. Weather forecasting there is restricted by the lack of data about weather fronts coming in off the Pacific Ocean. "East Coast weather is easier to forecast because of the availability of data from the continental United States. "We just don't have the soundings from 3000 miles off the West Coast," he contended So researchers designed and constructed three aerosondes or robotic "flying weather stations". These scaled-down aeroplanes have a wingspan of 3 metres, are powered by a modified model-airplane engine and the total weight of the aerosonde is only 15 kilos. Each unit carries essential electronics: a radio, a GPS receiver, various meteorological instruments and a computer (Y2K compliant?), all crammed into a one-metre-long compartment. The aerosonde was successfully tested on short flights over the Pacific. The engineers next took it to Canada's East Coast for longer distance field trials. But it was never allowed to go out of sight. When the aerosonde behaved as expected, the next step was the Atlantic Ocean, a shorter distance than the Pacific. The aerosonde then flew from Newfoundland to Scotland, while autonomously following a flight plan – without ground control – for over several thousand kilometers and endured typically rough Atlantic conditions. This flight was heralded in the aviation and general press, perhaps not as tumultously as when Lindbergh landed in Paris in 1927, but nevertheless appropriately as befitting the occasion. It became a news item in many dailies and in the "Breakthrough" section of the science magazine *Discover*. The next long-distance flight for the aerosonde is slated for sometime in 2000 or 2001. The flight plan will be from California and ending in Hawaii. If successfully completed, the aerosondes will not be flying as part of a testing program, which included the efficacy of the instrumentation as well as the sturdiness of the aerosonde units. Rather, it can conservatively be expected that the twin-boomed aerosondes will be taking specified ocean weather data regularly after the completion of the Pacific long-distance trials. √

At the National Aviation Museum – Another Avro Arrow Artifact!

The National Aviation Museum (NAM) in Ottawa has a small Avro Arrow exhibit. But every now and then another item connected to the Arrow is found and quickly acquired. An example of this is reported in the Fall 1998 issue of Aviation Quarterly. Apparently NAM sent an a Canadair CL-84 Dynavert, which had been languishing in several crates at Rockcliffe, to Airtech Canada for restoration. NAM had no room in its facility to restore this aircraft and so out-sourced the work to Airtech, which does extensive work in aircraft maintenance, repair and restoration.

The office and shop are located just outside Peterborough at the municipal airport, in a rather picturesque outdoor setting. The airport has a 1500 m paved runway, including two IFR approaches; customers can drive or fly in. The crates with the CL-84 fuselage and other components were brought from Rockcliffe and soon the Airtech technicians set to work. When they took apart the crates, they found some parts that did not belong to the Dynavert. With a bit of fitting, they put them together. They were found to be part of a wind tunnel model of the Avro Arrow! NAM was informed of the find and in no time the parts were picked up, documented, cleaned and put on display right by the nose section of RL206.