

## **Comments from the Fellows of the MIRCE Akademy**

### **Gordon McKinzie, Honorary Fellow**

Thanks for passing the Concorde news item along to me. The article brings back some interesting memories for me: When I hired into United Airlines in November of 1968, I was assigned to New Aircraft Engineering, and because of my previous experience at Edwards AFB in military flight test, was given the Concorde as my first project. United had six delivery positions for the CCD at \$1mil apiece, but delivery was still a few years away. My immediate task was to examine the viability of the airplane on the SFO-HNL route, particularly for the overall economics of the city-pair. Unfortunately, my analysis showed that we would require a 40% surcharge on top of the current First Class full fare used on that route with our DC-8 aircraft. And 100% load factors (all seats filled) were absolutely required, whereas looking at the DC-8 we would work with (realistic) 60% LF in order to reach a break-even point on cost vs. revenue. And I recall that Jet A was only 19 cents a gallon at the time! Another critical "negative" was that we would have to fly the SFO-HNL-SFO trips with minimum turnaround times at HNL, which was difficult because of inordinately long ground servicing times (projected by Sud Aviation). At that time, of course, the exact details of turnaround times were unknown, but we knew it wouldn't be as short as the DC-8s. We could have used some MIRCE insight at the time!

Pan Am and TWA also had delivery positions, so we were all trying to "make it work." But we couldn't justify it economically, and flying subsonic across the country to take advantage of East Coast departures didn't even enter the equation. I presented my report to our Fleet Planning Department, and they accepted my conclusions, as did our Board of Directors. The Concorde was a "no start" for United Airlines. Happily, we got our deposit money back!

At the same time, I was also assigned to look at the Boeing 2707, a much bigger SST that was still in preliminary design at Boeing. They had just changed from a swept-wing version to a delta-wing variant when I arrived on the scene. The discussions at Boeing were intriguing, and they even had an engineering simulator for us to fly -- biggest issue was how to handle an inlet "unstart" (swallowed shock front) on an outboard engine without benefit of a super-fast yaw damper or (instantaneous) huge rudder deflection. The airplane was 300 feet long and had a yaw coupling problem -- yikes! United also had delivery positions signed up, but I think we were mainly in the analysis game because of Pan Am!

Today at our Museum of Flight there is a Concorde parked in our outdoor Pavilion that is a great attraction for our visitors. It is in British Airways livery and beautiful in every detail. I think that if fuel were still 19 cents a gallon, BA would still be flying it!

Thanks again for the anniversary reminder!

### **Chris Burden, Science Fellow**

I remember the initial flight (2nd March 1969 from Toulouse France) , prior to joining Rolls-Royce Bristol in 1971 after the company (went bankrupt in Derby due to

RB211 fan blade design/manufacturing issues) was made solvent by the Government Buy Out.

The Olympus engine was a Bristol program as it was a derivative engine from the TSR2 aircraft (military concept plane I used to watch as a young child fly in and out of Boscombe Down MoD) and therefore not a Rolls-Royce Derby engine as are all the new civil engines.

The Bristol test beds were the location for running a reheated jet engine type with the first computer type control system (not hydro-mechanical) and the old MoD Pyestock (near Farnborough) test plants were the home test plants in the UK for testing engines at high altitude (all now destroyed).

So the all engineers like my self cut our teeth on these programs followed by the RB199 engine for the Tornado and the EJ200 for the Eurofighter.

I was fortunate to have been selected to attend the last Concorde return flight to Bristol and the celebration event at Ashton Court where I received a memento of the final flight.