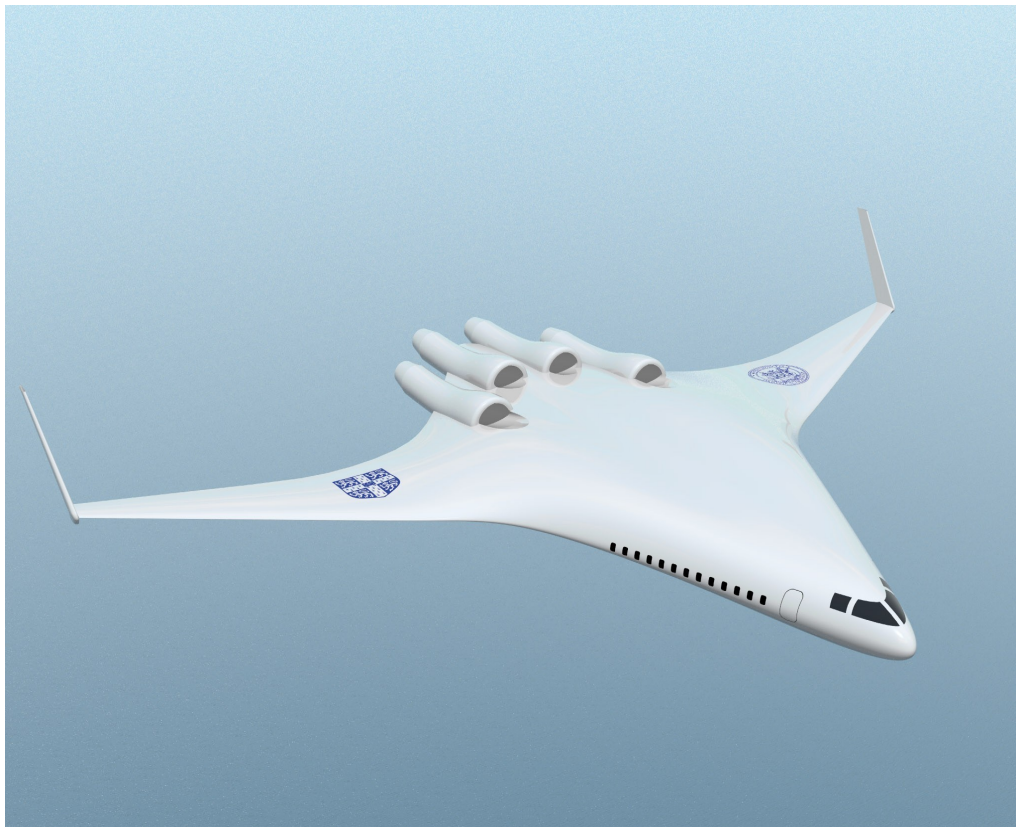# *CSAR*

"Hush, here comes an Aircraft"

The Silent Aircraft Initiative
Professor Ann Dowling

Department of Engineering, University of Cambridge

Monday, 23rd January 7.30 - 9.00 p.m.
The Wolfson Lecture Theatre, Churchill College, Cambridge

Chair: to be announced
Vote of Thanks: to be announced

Ann Dowling writes………..

What would an aircraft look like if a radical reduction in noise were a primary design goal?

The 'Silent' Aircraft Initiative sets a target for an aircraft to be imperceptible outside the airfield perimeter in an urban environment, and then addresses conceptual designs to meet this requirement. Avoiding some traditional aircraft noise sources requires a radical rethink about the configuration. An all-lifting design has many benefits, enabling a closer integration of airframe and engine than the traditional 'tube and wing'. Low-noise design includes taking advantage of shielding of engine noise by the airframe; low-noise engines with large, low speed jets; an order of magnitude increase in absorption by liners; and operations for low-noise informing the design. The current status on the design will be presented, together with a summary of what further work is needed to incorporate these and other low-noise features into a viable future aircraft.

About the speaker:

Ann Dowling CBE FRS FREng is Professor of Mechanical Engineering at the University of Cambridge, Director of the University Gas Turbine Partnership and Head of the Division in which research in aeronautics and energy is carried out at Cambridge. Her research is primarily in the fields of acoustics, vibration and combustion and is aimed, in particular, at clean combustion and quiet vehicles. She has held visiting posts at MIT (Jerome C Hunsaker Visiting Professor, 1999) and at Caltech (Moore Distinguished Scholar 2001). Ann serves on a number industry and government advisory committees, and is leading the Silent Aircraft Initiative, collaboration between Cambridge University and MIT funded by CMI Ltd.

The CSAR Organising Secretary adds………….

I live near Stansted, and some of the locals put a great deal of effort into stopping the airport acquiring a second runway. Part of the problem is the impact that aircraft have on the lives of those who live near airports.

If you think about it, aircraft were born out of military objectives, where noise could be considered an advantage. Concord, for example, was powered by Rolls Royce Olympus engines, straight off the Vulcan bomber! It never occurred to anyone at the design stage that noise would become a major problem for civilian aircraft!

An aircraft as quiet as a glider; now **that** would be a thing……….

Coffee and biscuits available, as usual, in the foyer outside the lecture theatre from ~7.00 p.m. Once again, we shall be charging non-members a nominal sum for entry.

Richard Freeman
CSAR Organising Secretary