Report

Workshop on SHARE/EGRETT, 31.01.2008, Winterthur Switzerland

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Attachments and auxiliary material

- Position paper by ZHAW and ARA
- Agenda
- List of Attendees
- Presentations of the meeting available via http://aviatik.zhwin.ch/index.php?id=egrett2008

Purpose of the meeting

The motivation for the meeting was to evaluate the future use of the ARA Egrett as a high altitude aircraft for European Research, intended to be operated in Switzerland by a consortium around ZHAW, and possible stronger inclusion in the EUFAR aircraft fleet. The meeting provided a platform for discussions between the potential operator consortium, potential users and representatives from industry as potential supporters. The early link to industry and the FOCA (Federal Office for Civil Aviation) seemed important because a practical reason to bring the Egrett to Europe is that some necessary overhaul work might be easier in Europe than in Australia.

Preparation of the meeting

Jorg Hacker (ARA) together with Bruno Neininger (ZHAW/MetAir) prepared a position paper of the characteristics and potential use of the Egrett in Europe and distributed it to EUFAR and potential attendees of the meeting (attached).
Cornelius Schiller (FZJ) informed the potential user community via email and in a meeting along the AMMA/SCOUT/ACTIVE/TWPICE workshop in Manchester on 08.01.2008. The initiative was presented by Tom Peter (ETH Zurich)

Minutes of the workshop

Concept of SHARE/EGRETT: The Egrett is intended to fill the gap of a high-flying platform in the SERA (Small Environmental Research Aircraft) fleet, to which e.g. the enviscope Lear Jet and the MetAir Dimona can be categorised. There is no immediate competition seen to the LFAC (Large Facility Aircraft) platforms as HALO and the Geophysica, as with the low budget concept a different user group is envisaged. ZHAW is interested to organise the operation of the Egrett in the future, including the experience of the ARA team as the current operator. Initial investment (transfer of the aircraft from Australia to Europe, overhaul) is required. Characteristics of the aircraft are: Two seater (i.e. mission scientist operating instruments during flight), max ceiling 15 km, low speed, easy integration concept (open U-bay), flexible operations.

Potential applications (presented by potential users, see agenda): The aircraft has, due its low speed, advantages for measurement tasks where high spatial resolution is required, e.g. in inhomogeneous cloud pattern or for turbulence studies. The altitude range is of interest for (transport) studies in the extratropical (especially subtropical) UTLS. The easy integration concept and the comparatively low operational costs make it interesting to groups performing frequent (e.g. monthly) observations, for the testing of new airborne equipment and for instrument comparisons.

Alternative platforms: The German HALO, available in 2009, will operate at similar altitudes with higher payload capacity and longer range; almost fully booked for first two years. The Russian Geophysica, covering a significantly higher altitude range, is fully operational again (overhauled, new management concept), proposals for scientific missions are going to be submitted. There are concepts for a new Grob aircraft (G600) with extended capabilities, but no funding has been allocated so far for this project. The enviscope Learjet has a similar altitude range, the operational concept (primarily used by a different user community) covers the basic costs and does not leave a financial risk to the scientific community.

Discussion: Basically, three questions were addressed:

- Is there a need for such an aircraft in Europe?
  PIs who expressed their interest to use the Egrett and to seek for funding are J. Whiteway (Canada), MPI Jena (Germany), ETHZ, and groups from the U.K. and Japan. Many groups are, however, already committed to the alternative platforms (e.g. German groups to HALO) or need the higher altitude range of the Geophysica. The enviscope LearJet was not officially represented during the workshop, but we were aware of possible overlaps.
- What is required in terms of technical overhaul and certification?
  Transfer from Australia, new painting, hot section inspection of the turbine, first estimate is 500-800 kCHF (300-500 kEUR) as initial costs. Support for instrument integration, maintenance and operations depends on personnel (number, sufficient experience). A suitable hangar (with required infrastructure) needs to be found. An operation with scientific projects for three years seems to be sufficient to justify spending the initial costs.
- Which partners are prepared to cover the initial costs?
  ZHAW would coordinate the acquisition of national and international funding required to support the operation. RUAG is prepared to support operations, certification and modification on a commercial basis. Other invited industry partners like Grob and Pilatus were not present at the workshop.

Advice to users (other scientists) and instrument operators

Potential users have to seriously seek for funding resources at least to cover the aircraft operations. They should contact ZHAW or ARA within the next months and provide at least a letter of intent and an outline for potential projects, which can be used by ZHAW and ARA in order to attract potential sponsors.

Advice to aircraft operators

ARA, ZHAW and other potential partners of the SHARE-Egrett consortium have to present a business plan, e.g. assuming a three-year deployment of the aircraft for different scenarios of flight hour usage and fixed costs (initial costs, hangar etc.). Such a plan has to be iterated between potential users and the consortium in order to demonstrate the feasibility of the programme to potential sponsors. Time line: autumn 2008.

Advice to funding agency

Coverage of (at least part) of the initial costs by national (Swiss) or EU funding agencies or sponsors is recommended to start the programme. Such funding is much lower than for infrastructure programmes for large facilities and is an essential complement to successfully acquire science projects for the aircraft.
This recommendation does not anticipate the general EUFAR planning for a stratospheric aircraft in its fleet, as the workshop was concentrated on the SHARE/Egrett project and the potential user group, but did not assess the alternative platforms in a similar way.

Summary of the impression of the core team after the workshop

Although this first workshop was initially planned to initiate the dialogue of the SHARE/Egrett idea with potential users, the discussion covered important issues, such as the financial and technical aspects, The discussion of the latter was somewhat hampered by the fact that some of the envisaged more technically oriented participants such as FOCA and GROB were not present. The discussion then focussed on the views of the potential users and the need for defining a business plan, which must include an assessment of the needs, the technical issues that are precondition to operating the Egrett in Europe, the associated costs and the availability of resources within the scientific community interested to use the Egrett in future projects.

Important aspects that must be taken into account in future discussions is the recent return of the Geophysica as a European-based high altitude science platform and the fact that most funding for UTLS research especially in Germany will be focused on HALO during the next years. Furthermore, the ongoing transformation in Europe from national aviation authorities to EASA suggests that it is not an ideal time to realise the SHARE-Egrett idea on a broad basis at this stage. Based on the discussion during the workshop we do not expect to have the Egrett in Europe within a few months.

The initiators of the workshop have the impression that the main short-term outcome was that an important part of the scientific community was informed of the continuing possibilities to use the Egrett for experiments in Australia. Such use of the aircraft would serve as a new seed for increasing the use of the Egrett in Australia and would thus help to increase the potential for European users including the transfer of the Egrett to Europe for larger European experiments. The workshop also opened new insight into options to carry out the refurbishment of the Egrett in Adelaide.