

*The FAAM research aircraft is jointly owned by the UK Meteorological Office and the Natural Environment Research Council.*

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## Take it to the skies

### FAAM, a state-of-the-art airborne facility for meteorological research

FAAM, or Facility for Airborne Atmospheric Measurements, is a major asset of the UK research community. It is a research aircraft jointly owned by the Meteorological Office and the Natural Environment Research Council who also share its cost.

The FAAM aircraft is a modified BAe146, similar in appearance to hundreds of regional jetliners operating around the world. It first flew in 1981 as the prototype for the 146 series and became operational as a meteorological research platform in 2005. Previously the role had been occupied by a C130 operated by the Royal Air Force on behalf of the Met Office. FAAM is much more economical to use and has inherited much of the instrumentation of its predecessor, including its AVAPS (Airborne Vertical Atmospheric Profiler System) used to collect data from dropsondes. The AVAPS system has recently been upgraded to allow use of the latest digital Vaisala Radiosonde RD93F. These

use code-correlating GPS windfinding technology and incorporate many of the features of the Vaisala Radiosonde RS92.

#### Various projects and operating locations

FAAM operates from Cranfield Airport in Bedfordshire, UK. It has a busy schedule and a high utilisation rate. The Met Office and UK universities make extensive use of its capabilities. It was also flown at short notice to sample a cloud of smoke which covered much of southern England following the Buncefield fuel depot explosion and fire in December 2005. In its first three years of operation it has also operated over the Adriatic, California, Portugal, Switzerland, and the Sahara. FAAM was also involved in the AMMA project (African Monsoon Multidisciplinary Analyses, introduced in the previous article), releasing numerous dropsondes.

AMMA is typical of many FAAM projects, involving collaboration between

different research groups using a variety of airborne and ground-based instruments. Data from different sources often complement each other allowing a more complete picture of the atmosphere to be built in three dimensions.

#### Supporting research and complimenting other observations

Much of the research carried out using FAAM data is not merely of academic interest but has longer-term practical implications for operational forecasting. Aircraft observations can provide independent verification of observations from operational instruments, including satellite and remote sensing instruments. They are also useful in identifying causes of discrepancies between observations or between observations and computer models. There will be plenty of work for FAAM for the foreseeable future. ■