



FACILITY FOR AIRBORNE ATMOSPHERIC MEASUREMENTS

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Technical Manager

FAAM Overview

Partnership between NERC and Met Office
One of the NERC Centres for Atmospheric Science

Aircraft owned and converted by BAE Systems

Operated by Directflight

Maintained by Avalon Aero

History

- Aircraft contract placed Dec 01
- Conversion of aircraft: based upon the prototype BAe-146, originally registered as G-SSSH which first flew in September 1981



Conversion at BAE Systems, Woodford, UK

- Conversion was a major project, taking 2 years



History

- Aircraft contract placed Dec 01
- Aircraft Certificate of Airworthiness May 04
- Directflight Air Operator's Certificate Jul 04
- Aircraft Acceptance for Role Jan 05

Home-based and Detached Campaigns


- Azores
- Northern Italy
- Antigua

Individual and Collaborative Programmes

- Europe and USA

Aircraft Characteristics

BAe 146-301



Crew	2 Pilots, 1 Cabin Crew
Scientists	18 Max
Length	31m
Wingspan	26m
Height	8.4m
Engines	4 Honeywell LF507-1H Turbofans
Max Altitude	35000ft
Min Altitude	50ft
Range	3700km
Cruise Altitude	27000ft
Typical Sortie Duration	5hr
Science Speed	200kts
Payload	4000kg Instrumentation

Personalities

13 Staff

Contacts

FAAM - Microsoft Internet Explorer

Address <http://www.faam.ac.uk/>

Home Page
Bulletin Board
What's new

Aircraft
Description
Schedule
Position Reports
Photos
Instruments

Ground Facility
Cranfield
Data
BADC

People
Contacts
Meetings
Vacancies
Using FAAM
Campaigns
Project History
Links

FAAM CONTACTS AND COMMITTEES

CRANFIELD

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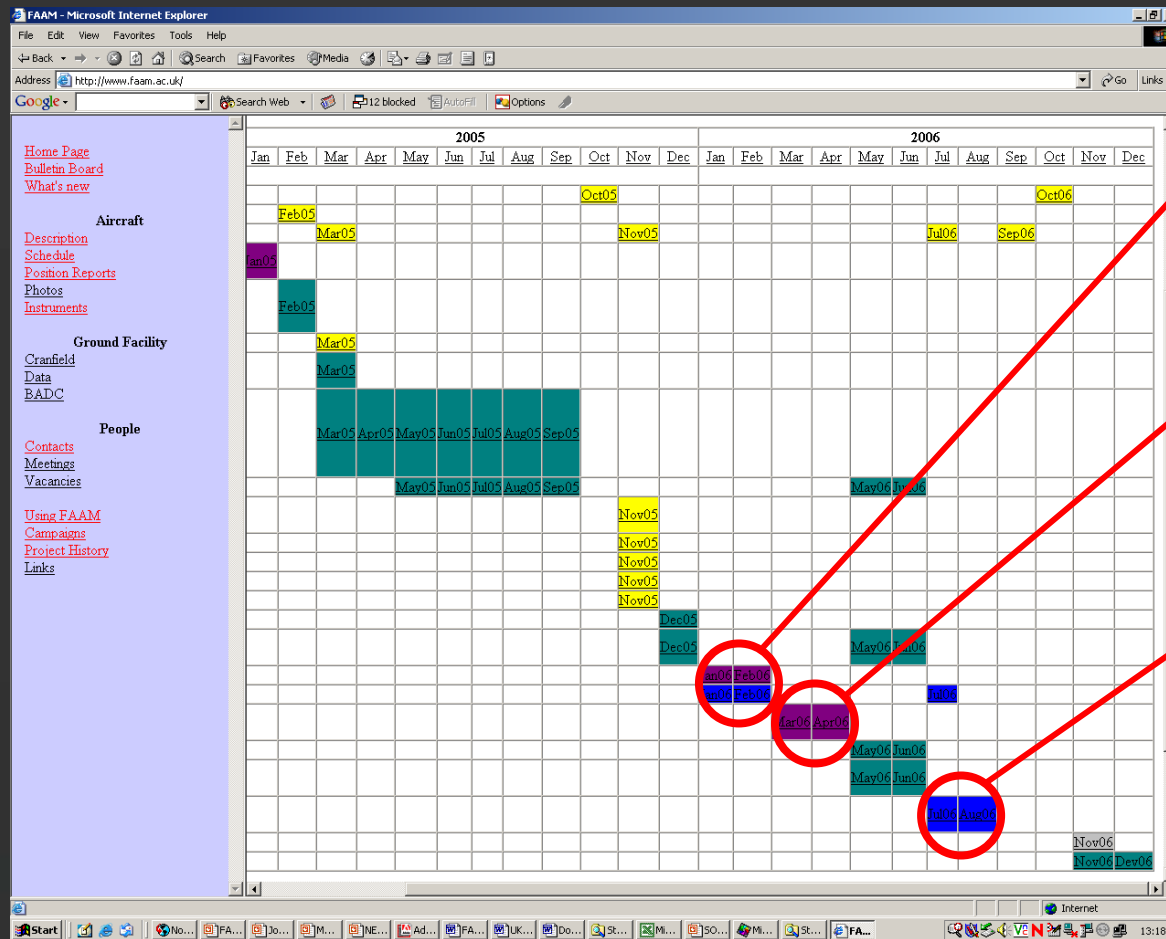
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Information



Schedule



Africa

USA

Africa

Configuration change
as required to support
users' needs

Instruments

Core – provided, maintained and operated by FAAM

Non-Core – by arrangement between campaign PIs and FAAM Technical Manager

Instruments

FAAM INSTRUMENTS
Last updated 24th December 2004

Most of the scientific instrumentation in the aircraft is mounted in [racks](#) constructed to a common design.

Many [infrastructure](#) services (power, communications and data) are provided from Sidewall Service Points. [Inter-connection](#) is described in [CM0078](#).

Instruments can access the central aircraft [timescode information](#) and some [central real-time data](#).

Nick Jackson has produced a paper on [future options](#) for the onboard data system.

Scientific instruments fitted to the aircraft (or within 10 metres of the aircraft) are covered by SAE Sentry insurance. Instruments on FAAM's premises are covered by a Manchester policy. Instrument owners are responsible for the insurance of their instrument when it is in transit to/from FAAM and if it is removed from the aircraft on detachment.

CORE INSTRUMENTS

- Core instruments are provided and operated by FAAM. Data will be made available routinely at BADC.
- Some core instruments may be operated at heights.
- The standard core instrument can, in some cases, be enhanced (e.g. provided at higher frequency or with greater accuracy) by collaboration with another group.
- Use of core instruments for processing for non-core instruments must be arranged with the instrument provider. This might be as a purchased service or as a scientific collaboration.
- Although use of core instruments incurs significant extra charges for consumables (e.g. dropsondes, SATCOM data transfer), these additional costs have to be recovered directly from the user.
- The list of "core" instruments will be periodically reviewed by the FAAM [Operations Committee](#). Instruments may be removed or added to the list depending on changes in user requirements.

In the following table, core instruments are shown with a red background. Instruments which are hoped will be upgraded to "core" when they have been validated are shown with a yellow background. It is the responsibility of the Campaign PI to negotiate the use and operation of non-core instruments.

Name	Instrument	Measures	Provider
AVAPS	Airborne Vertical Atmospheric Profiler System (Dropsonde)	Profiles of pressure, temperature, relative humidity, wind speed and direction	FAAM
BRIS	Broad Band (pyranometers and pyrometers) Radiometers	0.3 - 3 μ m hemispheric irradiance 0.7 - 3 μ m hemispheric irradiance 4 - 50 μ m hemispheric irradiance	FAAM
Data Probe	Console	Signal processing for wing raster probe instruments	FAAM
FSSP	Fast Forward Scattering Spectrometer Probe (FSSP)	1-second averaged values of droplet number concentration, liquid water content, mean volume radius, effective radius and droplet size spectrum (1 - 47 μ m)	FAAM

Engineering Events

- Regular: Annual October 'C' Check
- Instrument Integration/Installation
- Role Changes:
 - Configuration around standard racking
 - Potentially large variety of fits
 - Changes conducted on behalf of science community
 - Adoption of a more pragmatic approach to configuration
 - One configuration made to cover a variety of campaigns
 - Simple, pre-Certified changes to single racks
 - Programme tends to be divided into similar campaign types

Engineering

Some works are directly required by FAAM:

- Role Changes
- Changes to Core instrumentation

Other works are on behalf of Facility users:

- Met Office
- Universities, via NERC funding for projects
- European funded research activities – EUFAR

Examples:

- Spring 08 Role Change by FAAM on behalf of the science community for OP3 project in Borneo
- LIDAR installation by Cambridge University
- IIR camera installation by Met Office

Reminder: FAAM website



