

**MET OFFICE CIVIL
CONTINGENCY
AIRCRAFT**

ALTO AEROSPACE LTD





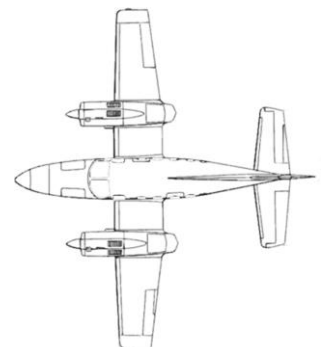
Following the eruption of the Eyjafjallajökull volcano in 2010 there was significant disruption to UK and European airspace from the ash cloud as well as some disruption to air travel. In order to be in a high state of readiness for any future volcanic eruptions and provide a platform capable of responding to a wider range of civil contingency events, the Met Office Civil Contingency Aircraft (MOCCA) was commissioned.

MOCCA is owned and operated by Alto Aerospace working side-by-side with the Met Office on behalf of the Civil Aviation Authority (CAA). Additionally, with the advance equipment fittings such as data analysis capability, the MOCCA aircraft serves as a platform for environmental research projects.

The MOCCA aircraft's versatility combined with the MET Office's specially designed systems provides a unique aerial science platform unmatched around the world. The pre-installed wing-pods and other features also allow MOCCA to be re-rolled as required for specialist tasks; offering on-board internet and SATCOM for air-ground communication.

MOCCA - Cessna 421C Golden Eagle

No of Pax:	1 x Crew, 1 x Task Specialist + Observer
Science Speed:	160Kts
Cruise Altitude:	500 Ft - FL250
Range:	~ 800 NM
Special Features:	Meteorological & Air data Analysis, Wing Pods, Lidar, Internet, SATCOM, radiation monitoring & more.



SPECIFICATIONS



TECHNICAL SPECIFICATIONS OF THE MOCCA AIRCRAFT EQUIPMENT

Satellite Communications - Gives simultaneous data and voice link to a HQ centre.

AIMMS-20 Air Data Probe - Wing tip mounted probe that provides measurement of temperature, humidity, pressure, wind speed and Turbulence.

Cloud Aerosol and Precipitation Spectrometer (CAPS) Probe - Wing tip mounted measurement of aerosol particle and cloud hydrometeor size distributions.

Aerosol Lidar - UV aerosol backscatter lidar that provides information on distribution of aerosols / clouds above and below the aircraft.

Gaseous Inlet - Supplies externally sampled air through four outlets for gas sampling instruments (currently sampling SO₂, Ozone & NO₂)

Thermo Scientific 43i TLE - SO₂ Analyser

Brechtel Iso-kinetic Aerosol Inlet - Minimises particle losses through specially designed inlet.

Integrating Nephelometer - Measures the light scattering coefficient of atmospheric aerosols.

Dedicated GPS - A mission-dedicated GPS receiving GLONAS & NAVSTAR.

Mission Computers - Two computers for real-time derivation of atmospheric data & logging.

ZEUS - Detects electrostatic build-up on the airframe when flying through volcanic ash.

Clean Air Box - Measures PM₁₀ / PM_{2.5} particles & black carbon.



 **Met Office**

MOCCA RANGE MAP



*THEORETICAL RANGE OF ~ 800NM FROM BOURNEMOUTH AIRPORT (BOH; EGH)



APPLICATIONS

EXAMPLE TASK APPLICATIONS OF THE MOCCA AIRCRAFT



Volcanic Ash Observation & Analysis



MOCCA is the only aircraft in the UK with a safety risk assessment to operate in areas of forecast volcanic ash of mass loading >4000 microgrammes per cubic metre.

As per her original commission, the aircraft acts as a front-line operation keeping vital traffic moving by identifying areas of safe passage for all commercial and private aircraft flying in UK airspace.

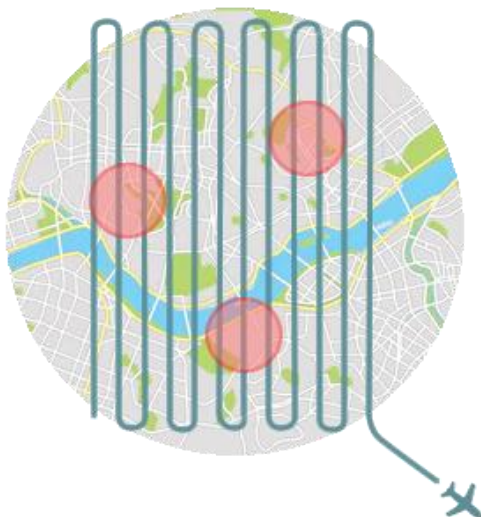
Pollution Control & Air Quality Monitoring



The MOCCA aircraft provides a unique aerial platform for pollution control in shipping lanes, as well as land-based onward air quality monitoring for cities and rural areas.

Collating data from ground-based systems allows our scientists to produce atmospheric models which have a multitude of applications in research and development.

LIDAR & Live Data Feeds



The current fit utilises a Leosphere LIDAR for aerosol & ash detection. Interchangeable units on the MOCCA mean the Spectrometer LIDAR can be exchanged for aerial mapping facilities using clients equipment.

Using the aircrafts air-ground connectivity, this means live data can be transferred instantly to HQ for real-time data processing.



CONTACT US

For more information please contact us on:

T: +44 (0) 1202 570 087 \ Operations@altoaero.com

Alto Aerospace Ltd \ Aerial Court \ Bournemouth Airport \ Christchurch \ Dorset \ BH23 6NE

ALTOAERO.COM