

Water Ingestion

CAeS has the unique capability of operating water ingestion trials at the UK's only specially constructed facility.

Water ingestion trials are a safety critical evaluation of an aircraft's engines during take-off and landing manoeuvres through puddles

Noise Surveys

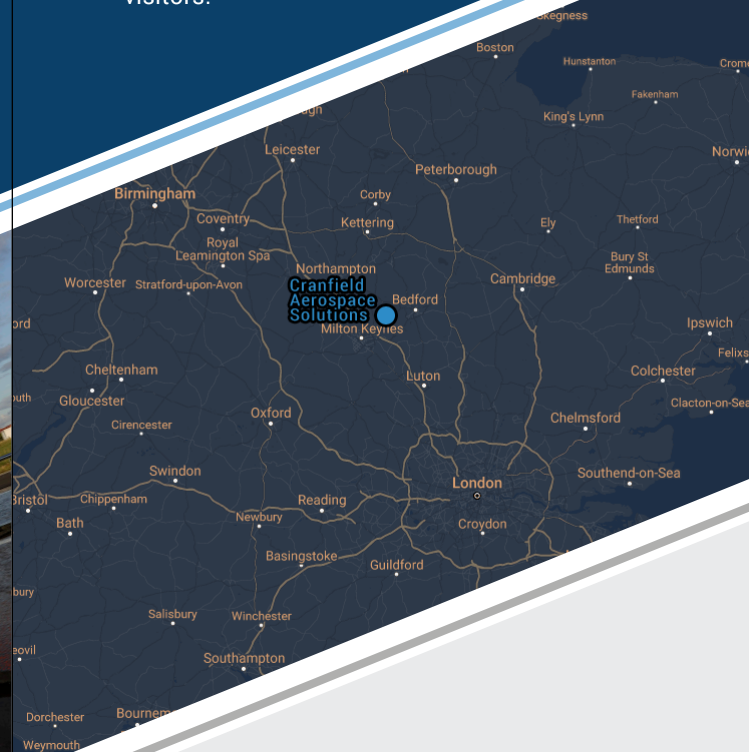
Measuring the impact of the noise generated by aircraft and, to support the reduction of such noise.

Conduct noise surveys and assessments to improve design and noise management and also to assess an aircraft's compliance with regulations.

Cranfield Aerospace Solutions is based at the only University in Europe with its own runway.

Operating base and main office – central UK – with airfield facilities, adjacent to Cranfield University and Technology Park.

1870m runway, equipped with ILS, NDB, VOR for civil, military and business visitors.



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Aerospace
Solutions

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**Ensuring Safe
Aircraft Ground Operations**



Cranfield
Aerospace
Solutions

Aircraft Certification Services

Aircraft Noise Testing

Water Ingestion Testing



Noise Measurement

- » Noise generated by aircraft continues to have an impact and CAeS offers comprehensive noise surveys and assessments to improve design, noise management and assess an aircraft's compliance with international and local policies and standards.
- » Aircraft noise surveys include weather, background and aircraft generated noise measurements to allow the assessment of the impact of noise on the environment.
- » CAeS test Effective Perceived Noise levels (EPNL) for compliance with ICAO regulations.
- » All CAeS measuring equipment and proposed test set-ups shall be approved by EASA an CAeS.

To certify the aircraft, the requirements are to measure noise during:

Flyover

The point on the extended centre line of the runway, at a distance of 6.5 km from the start of roll.
(No height is specified or any take off angle.)

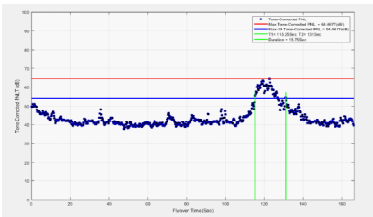
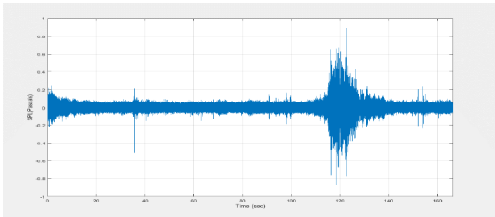
Take-off

The point on a line parallel to and ± 450 m from the runway centre line, where the noise level is a maximum during take-off.

Approach

The point is located on the extended centre line of the runway, at a distance of 2 km from the threshold.
On level ground this corresponds to a position of 120 m vertically below the 3 degree descent path originating from a point 300 m beyond the threshold.

Typical Take-off Lateral noise measurement



Water Ingestion Testing

Water ingestion trials are performed as a safety critical evaluation of an aircraft's engines and other systems during take-off and landing manoeuvres through puddles. Here at Cranfield Aerospace (CAeS) we have the unique capability to run, manage and support water ingestion trials at the UK's only specially constructed water ingestion testing facility. Our unique facility is integrated into the main runway at Cranfield Airport and allows complete control over the number of runs, direction and depth of water required to meet regulatory requirements. Each dedicated trial is designed to put an aircraft through its paces and ensure that any water ingested by the engines during take-off and landing does not cause unacceptable power loss, damage or failure.

For water ingestion testing, CAeS can offer:

- » **Years of experience conducting successful water ingestion trials**
- » **UK's only specifically constructed water ingestion test runway**
- » **Dedicated project managers and experienced trials engineers**
- » **Commercial, business and private aircraft testing**

