



**AIRPORT OPERATORS ASSOCIATION
IN ASSOCIATION WITH
CIVIL AVIATION AUTHORITY**



Safeguarding of Aerodromes

Advice Note 4

Cranes and Other Construction Issues

1. Introduction

Aerodrome safeguarding ensures the safety of aircraft and their occupants when in the vicinity of an aerodrome by controlling potentially hazardous development and activity around it. For an overview of the safeguarding process see Advice Note 1 'Aerodrome Safeguarding – An Overview'.

Safeguarding concerns, in respect of a proposed development, may not end with the grant of planning permission. This Advice Note 4 considers the methods to be employed during construction, especially the use of cranes or other tall construction equipment, as these tend to be taller than the building under construction and may create a risk to flight safety. In appropriate cases, these operations may be the subject of conditions on any planning permission that may be granted.

Note: The Civil Aviation Authority provides supplementary guidance within CAP1096 'Guidance to crane operators on aviation lighting and notification', available at www.caa.co.uk

2. Cranes (and other Tall Construction Equipment)

Should a crane be required on, or in the vicinity of, an aerodrome the attention of the crane operator should be brought to:

“British Standard Institute Code of Practice for the safe use of Cranes, BS 7121: Part 1.

In particular paragraph 12.3.3 'Crane control in the vicinity of aerodromes/airfields', which states:

"The appointed person should consult the aerodrome/airfield manager for permission to work if a crane is to be used within 6km of the aerodrome/airfield and its height exceeds 10m or that of the surrounding structures or trees.

NOTE The Air Navigation Order makes it an offence to act recklessly or negligently in a manner likely to endanger aircraft."

The developer should contact the aerodrome at minimum 6-8 weeks before the crane (or other tall construction equipment) is anticipated to be on site. This should allow adequate time to assess the scheme and undertake appropriate consultation.

Most aerodromes have a procedure for issuing an **Authorisation Permit** for the operation of cranes and other tall construction equipment on, or in the vicinity of the aerodrome. Once construction details have been finalised, a formal application for the Permit must be made a **minimum one month before** the crane or other tall construction equipment arrives on site. This should allow the aerodrome operator adequate time to assess any impacts the equipment may have on airport operations and to undertake appropriate consultation.

To apply for a permit the following details will be required:

- The **exact location** of the centre of the crane, as an OS Grid reference (to at least 6 figures for each of eastings and northings), or marked on a map showing the OS Grid;
- The **maximum operating height** in metres Above Ordnance Datum (AOD), or the height of crane Above Ground Level (AGL) plus ground level in AOD (see Note below);
- The **type** of crane/equipment (e.g. Tower Crane, Mobile Crane, etc.);
- The **radius** of the jib/boom of a fixed crane/the **area of operation** of a mobile crane;
- The intended **dates** and **times** of operation;
- **Applicant's** name and contact details.

Note: Heights "Above Ordnance Datum (AOD)" are those shown on Ordnance Survey maps as "Above Mean Sea Level" (AMSL)

Once these details have been considered it will be determined as to whether the operation can proceed and whether restrictions will apply. The main areas of safety concern are the crane or tall structure acting as an obstacle to air navigation aircraft and they may also interfere with navigation/communication equipment and instrument flight procedures.



Figure 1. An 'on airport' development in progress

If the permit is agreed it will set out any appropriate restrictions. A copy of the authorisation permit must remain with the crane for the duration of its operation and must be produced if requested by an aerodrome official or a police officer.

3. Obstacles

Having been assessed, if the crane (or other tall construction equipment) is considered to be an obstacle to aircraft any of the following may be imposed to ensure the safety of aircraft:

- The fitting of obstacle lights;
- Restrictions on crane operating times;
- Crane operations dependant on the runway(s) in use;
- Restrictions on crane operating height;
- Restrictions during poor visibility (whether caused by fog or low cloud)
- A Notice to Airmen (NOTAM)

Where the design of the crane allows, it should be lowered when not in use, or when requested by an aerodrome official, such as during periods of low visibility. Where it cannot be lowered, it may be necessary for the jib to be parked in a particular direction when not in use. In some circumstances, the aerodrome may require the type of crane to be used as capable of being lowered.

When it has been determined that aviation warning lighting is required, the characteristics for the light(s) would be specified by the aerodrome operator. Normally, they would be steady red lights of either low intensity (200 candela) or medium intensity (2000 candela),

depending on the height of the crane. Lighting should be visible from all directions and located on the highest point of the crane/equipment.

For a tower crane, lighting should be provided on top of the tower and at the end of the jib and should be illuminated at all times. Unserviceable lamps should be replaced as soon as possible after failure and in any event within 24 hours, during this time the aerodrome should be contacted so that a notice (to pilots and air traffic control) can be issued.

4. Interference with Navigation/Communication Equipment and Instrument Flight Procedures (IFPs)

Upon assessment, where the crane (or other tall construction equipment) is considered likely to interfere with navigation/communication equipment and/or IFPs the following may be required.

- Restrictions on crane operating times;
- Crane operations dependant on the runway(s) in use;
- Restrictions on crane operating height.

5. Construction Management Strategy

For a project close to an aerodrome or under approaches to its runways, it may be necessary for a **Construction Management Strategy** to be produced by the developer and agreed with the aerodrome to ensure that construction does not prejudice the safe operation of the aerodrome. A Construction Management Plan might be required via a condition on any planning permission that may be granted.

In particular, but not exclusively, the Construction Management Strategy should address the following issues:

- Use of cranes or other tall construction equipment
- Control of activities likely to produce dust or smoke clouds;
- The design of temporary lighting to avoid distracting pilots (see Advice Note 2 'Lighting Near Aerodromes');
- Storage of materials, particularly compliance with height limits;
- Control and disposal of waste, to prevent attraction of birds (see Advice Note 3 Wildlife Hazards Around Aerodromes);
- Site management, to prevent attraction of birds through standing water and earthworks (see Advice Note 3 Wildlife Hazards around Aerodromes).

More information with regard to construction management can be found in Advice Note 1, section 4.5.

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The Advice Notes in this series are:

- **Advice Note 1 'Aerodrome Safeguarding – An Overview'**
- **Advice Note 2 'Lighting Near Aerodromes'**
- **Advice Note 3 'Wildlife Hazards around Aerodromes'**
- **Advice Note 4' Cranes and Other Construction Issues**
- **Advice Note 5 'Renewable Energy & the Impact on Aviation'.**

The Advice Notes are all available from the Airport Operators Association (AOA) at www.aoa.org.uk