



Operational Safety Instruction

Aircraft Tugs - Push Back and Towing

20th April 2020

ASGrOps_OSI_026

v2.0

It is the responsibility of all employers to ensure that relevant OSIs are brought to the attention of their staff. However, individuals remain responsible for their own actions and those who are in any doubt should consult their Supervisor or Manager.

1. Introduction

- 1.1 This Instruction sets out the policies and procedures to be followed by all members of the community who drive or operate aircraft tugs airside.
- 1.2 This OSI is to be read in conjunction with the criteria laid down in OSIs:
 - 1.2.1 ASDRVE_OSI_008 Vehicles and Equipment Airside – Requirements
 - 1.2.2 ASDRVE_OSI_005 Vehicles and Equipment Airside – Operation
 - 1.2.3 ASGrOps_OSI_023 Aircraft Departure Procedures off Stand
 - 1.2.4 ASWeather_OSI_052 Low Visibility Operations
 - 1.2.5 ASGrOps_OSI_073 Use of Remotely Operated Pushback Vehicles
 - 1.2.6 ASDRVE_OSI_010 ATC Radio Frequencies Control of Vehicles on the Manoeuvring Area
- 1.3 Specific instructions for Remotely Operated Pushback Vehicles in ASGrOps_OSI_073 supersede generic instructions within this document.
- 1.4 The following OSIs are hereby cancelled:
 - 1.4.1 ASGrOps_OSI_029 Access to Bealine Base for Aircraft Under Tow
 - 1.4.2 ASGrOps_OSI_028 Aircraft - Code F Aircraft on Mike Taxiway
 - 1.4.3 ASGrOps_OSI_026 v1.0



2. Definitions

Abbreviation	Description
AOF	Airside Operations Facility
'M' ADP	Manoeuvring Airside Driving Permit
'R' ADP	Runway Airside Driving Permit
ASD	Airside Safety Department
A-SMGCS	Advanced Surface Movement Guidance and Control System
ATC	Air Traffic Control
Code F Aircraft	Airbus A380-800, Boeing 747-8
NATS	National Air Traffic Service

3. Safety Procedure

3.1 Listening to ATC Frequency – Push Back With Flight Crew

- 3.1.1** Tug crews must be equipped with a headset or other communication device which allows communication with the flight deck and monitoring of the appropriate ground frequency.
- 3.1.2** Tug crews should be ready to operate the vehicle and listen to the correct ground movement frequency prior to the flight crew calling ATC for permission to push.
- 3.1.3** The flight crew must request permission from ATC to push back.
- 3.1.4** The flight crew request should include the stand number, this will provide confirmation for the tug crew that they are listening to the correct request. If the stand number is not provided then ATC will confirm the stand number.
- 3.1.5** When ATC issue push back approval, the instruction may include a condition to be complied with. For example, 'after A320 taxies behind, push back approved'.
- 3.1.6** The flight crew will relay the ATC clearance to the tug crew. If it appears that the message relayed is different to the clearance that the tug driver heard ATC issue, or if any doubt exists as to which aircraft is the 'subject aircraft' of a conditional clearance, the tug operator must ask the flight crew to confirm with ATC.
- 3.1.7** Tug crews must inform the flight crew if they are unable to execute an instruction / face difficulty in executing an instruction.



3.2 Listening to ATC Frequency – Push Back Without Flight Crew

- 3.2.1 In some circumstances (such as remote parking or towing aircraft to maintenance hangars) a tug driver may be required to tow an aircraft with no flight crew on board. In these circumstances the flight crew are not part of the chain of communication with ATC.
- 3.2.2 Tug crews must ensure they are monitoring the correct ground movement frequency throughout the tow.
- 3.2.3 The tug driver must request push back directly from ATC.
- 3.2.4 The tug driver must ensure they comply with all instructions communicated by ATC throughout the tow. If the tug driver requires clarification on any instruction confirmation must be gained through ATC.

3.3 Conventional Tug - Communication With The Break Operator

- 3.3.1 Prior to the commencement of towing there must be a clear line of communication between the tug driver and the brake operator.
- 3.3.2 Two-way communication must be maintained between the brake rider and the tow team until the aircraft comes to a stop at its final parking position.

3.4 Use of Transponders

- 3.4.1 Heathrow is equipped with A-SMGCS which will display target information to ATC. The system displays the callsign of a 'live' aircraft on the screen. The system also has the ability to display the registration of an aircraft under tow, but this relies on the appropriate selection and operation of the aircraft transponder. If an ATC allocated 'squawk' (transponder code) is selected on the transponder unit it will display the aircraft's callsign. If, however, the transponder is set to a code ending in '000' the aircraft registration will be displayed on the ATC screen.
- 3.4.2 The incorrect use of transponders during towed operations at Heathrow poses a significant safety risk. If ATC are unable to correctly identify towed movements it may lead to safety events on taxiways and/or runways. During reduced visibility this risk increases, as ATC depend on the correct transponder setting on all aircraft to safely and effectively control aircraft.

3.4.3 Use of Transponders - Aircrew Procedures

- 3.4.3.1 The UK Aeronautical Information Publication (AIP) requires flight crews to select Mode A code 2000 when the aircraft is fully parked on stand. The transponder must then be set to OFF or STANDBY.



3.5 Aircraft Under Tow – Operating Under Positive Control

- 3.5.1 Tug crews who operate under positive control from ATC must be appropriately trained and competent in Radiotelephony. Guidance can be found in Supplement to CAP 413 - Radiotelephony Manual. Standard phraseology must be used for all verbal communication between the flight deck and tug crews.
- 3.5.2 An illuminated red stopbar means STOP. Tug crews must not put any part of the aircraft beyond the stopbar until it is extinguished and ATC permission has been received.
- 3.5.3 Tug crews must give full readbacks to ATC instructions. Additional care should be taken when tug crews are subject to a conditional clearance. It is vital that the correct aircraft or vehicle specified in the condition is identified. If there is any doubt, tug crews must seek clarification from ATC.
- 3.5.4 Tug crews should adopt 'sterile cockpit' conditions, minimising distractions and unnecessary conversation. Communication between the tug crew regarding route and traffic information is encouraged to maximise situational awareness.
- 3.5.5 Tug crews without an 'R' ADP must not cross a runway unless under a leader escort from Airfield Operations. The tug crew should wait until the leader vehicle has arrived before pushback clearance is requested.
- 3.5.6 Tug crews must inform ATC if they are unable to execute an instruction or face difficulty in executing an instruction.

3.6 Aircraft Under Tow – Failure of Lighting

- 3.6.1 It is requirement that aircraft under tow must have their anti-collision lights illuminated.
- 3.6.2 Aircraft under tow on the manoeuvring area at night and during low visibility operations are required to have their navigation and anti-collision lights illuminated.
- 3.6.3 In the event that the required lighting fails tug crews must inform the ATC. ATC will take appropriate action, which may include the following procedures:
 - 3.6.3.1 During push-back, if an aircraft suffers lighting failure it shall be instructed to pull back on to stand.



3.6.3.2 ATC may consider instructing the tug driver to stop briefly to attempt to re-establish the aircraft lights, provided that doing so would not unduly increase the risk to other aircraft or vehicles, it is acknowledged this process may not be possible with towbarless tugs.

3.6.3.3 Active runway crossings will entail ATC contacting the Heathrow Aircraft Operations Unit and request an alternate stand that would not require a runway crossing. The aircraft will then be directed to the revised stand.

3.6.3.4 If ATC considers it necessary, they will request the ASD to provide a Leader vehicle to shadow and provide lighting for the unlit aircraft. The tug driver will be advised by ATC.

3.7 Aircraft Under Tow – Access to Bealine Base

3.7.1 Aircraft under tow must only enter the Bealine Base via the taxiway centreline (marked as a solid yellow line and lit during the hours of darkness). Aircraft under tow must not deviate from this centreline until inside the Bealine Base.

3.8 Identification of Code F Aircraft Under Tow

3.8.1 Some areas of the airfield are not available for Code F aircraft movements. Code F routes are detailed in the Aeronautical Information Publication entry for Heathrow Airport.

3.8.2 All tug drivers towing Code F aircraft MUST ensure that when communicating with ATC, they append the word 'super' to the end of their call-sign to identify themselves as a Code F movement e.g. 'Bealine Echo Alpha Super'.

3.9 Code F Aircraft on Mike Taxiway

3.9.1 Taxiway Mike is a Code E designated taxiway, however an operating protocol is in place between NATS and ASD that enables it to be used for towed Code F aircraft providing the procedure outlined below is followed.

3.9.2 Prior to a Code F aircraft being towed along this route, three uncontrolled vehicle crossings must be closed. This is to ensure the section of roadway in Grass Area 10, between the two taxiways are clear of vehicles, thereby providing the required taxiway to object distance. The three uncontrolled vehicle crossings requiring closure are listed below. A diagram is attached for information, see Appendix A.

3.9.2.1 Barrier 3 to Eagle Road East across Alpha taxiway

3.9.2.2 Barrier 2 to Eagle Road East across Mike taxiway

3.9.2.3 Barrier 1 to AOF across Mike taxiway



3.9.3 If the aforementioned uncontrolled vehicle crossings are closed and clear of vehicles, towed movements for Code F aircraft on Taxiway Mike are permissible.

3.9.4 The operation of taxiway Mike remains unchanged for all other aircraft.

4. Enquiries

Any questions concerning this instruction should be addressed to the Heathrow Airfield Duty Manager AfDM; Telephone 020 8745 7373, Email – airfield.duty.manager@heathrow.com

5. References

ASDRVE_OSI_008 Vehicles and Equipment Airside – Requirements

ASDRVE_OSI_005 Vehicles and Equipment Airside – Operation

ASGrOps_OSI_023 Aircraft Departure Procedures off Stand

ASWeather_OSI_052 Low Visibility Operations

ASDRVE_OSI_010 ATC Radio Frequencies Control of Vehicles on the Manoeuvring Area

UK Aeronautical Information Publication (AIP)

CAP 413 - Radiotelephony Manual



Appendix A

