1 Availability of the airport to very large aircraft

1.1 Context

For this instruction, a 'Very Large Aircraft' is defined as one falling within the ICAO designation Code F, (wingspan 65-80 metres and a main wheel span of 14-16 metres), or larger. Certain considerations also apply to aircraft within the ICAO designation E but having a very long wheelbase (see paragraph 5).

The airfield infrastructure at Manchester Airport is designed primarily to comply with the requirements for ICAO Code E aircraft, with certain areas meeting ICAO Code F or an interim standard. Details of runway and taxiway characteristics are given at Part C, paragraphs 4.2 to 4.4.

Pavement widths and taxiway to obstacle clearances do not in some cases meet the requirements for Code F aircraft. Furthermore, there are certain ultra-large types in service for which there are no internationally agreed airfield design requirements. Whilst movements of these types through the airport are not frequent, they can be expected to visit from time to time on an ad hoc basis and therefore procedures to ensure their safe handling are required.

Examples of the ICAO Code F (or greater) aircraft are:

Aircraft type	Length	Wingspan	ICAO Code
Antonov AN124	69.1 m	73.3 m	F
Airbus A380	72.8 m	79.8 m	F
Boeing 747-8	76.4 m	68.5 m	F

1.2 Availability

Very Large Aircraft types will be subject to the same airport availability procedures as all other types except that the Airport Authority (through the Head of Airfield Operations (HoAO)) reserves the right to refuse permission for a Very Large Aircraft to land or take-off, or to otherwise place constraints on the timing of such movements. Such refusal or constraint may be necessary to avoid causing unacceptable disruption to scheduled airport operations.

Airlines Operators wishing to use these types of services into Manchester Airport must be aware that the airfield infrastructure does not in some cases meet the ICAO requirements for Code F and larger types. Whilst the specific procedures set out in this instruction are intended to facilitate limited frequency of movement by these types, it is a matter for airline operators to consider the operating and safety implications and to ensure they have approval for such operations from their respective regulatory body.

Airport Co-ordination Ltd must refer any slot requests for the aircraft types listed in the table at 1.1 to the HoAO for approval.

2 Runways

Both runways at Manchester meet ICAO Code F requirements. Paved shoulders are provided and offer protection against jet blast erosion and ingestion by the outboard engines of very large aircraft. The use of aircraft larger than ICAO Code F is acceptable provided that the aircraft operator has certification from their respective regulatory body to operate the type from such runways. There are no specific aerodrome or Air Traffic Control (ATC) procedures applying to the use of runways by very large aircraft other than restrictions on the exit and entry points, which may be used.

3 Taxiways

In order to minimise the risk of aircraft wheels straying off pavement or wingtip collision with a fixed obstacle, the taxiway routings available to Very Large Aircraft are restricted as set out below, with the exception of the A380 for which procedures are given at paragraph 6.

Movement	Routing	Comments
Arrival Runway 05L	Vacate runway via Link M & J only. Taxiway J – K – D – E	B747-8 and Code E types may use any runway exit
Arrival Runway 05R	Vacate runway at any exit. Cross 05L at DZ then route via P, or K – D – E	
Arrival Runway 23L	Must use W/Y loop and backtrack to vacate runway at any exit. Cross at DZ then route as for 05R arrival.	
Arrival Runway 23R	Vacate runway at AE, AG or A. Route A – B – D – E	
Depart Runway 05L	Route E – D – B – A Enter runway for departure at A1	
Depart Runway 05R	Route E – D – B (cross 05L) BZ - V - VD (backtrack 05R) W. Enter runway for departure at Y1	
Depart Runway 23L	Route P, (cross 23R) DZ. Enter runway for departure at T1	
Depart Runway 23R	Route E – D – K – J Enter runway for departure at J1	AN225–avoid 23R departure wherever possible.

4 Further considerations

4.1 Contingencies

Should any of the above routings not be available, alternative routings are to be agreed between the Airfield Operations Duty Manager (AODM) and the Air Traffic Control (ATC) Watch Manager, using the Level 3 HAZOPS (See Safety Management Manual).

4.2 Constraints

The standard routings given in the table above have been derived by consideration of the constraints on pavement widths, taxiway intersections and obstacles. The majority of potential obstacles exist around the apron and terminal areas. Of particular concern are the apron roadways, many of which lie within the Code E taxiway/ taxilane strip. With the aircraft on the taxiway centreline, wingtips of Code F or larger aircraft will overhang roadways. To ensure clearance from fixed obstacles, all aircraft must stay on the taxiway centreline, and

therefore to ensure the safety of vehicles on the roadways traffic will need to be temporarily halted as a Very Large Aircraft passes abeam. The AODM will ensure that Airfield Operations staff are positioned to warn and control road traffic accordingly. This may involve an Operations vehicle driving alongside the wingtip as an 'outrider' - clearing traffic off the roadway ahead.

5 Ground manoeuvring by long-wheelbase code E aircraft

In the case of long-wheelbase Code E types such as the B777-300 and A340-600, pavement widths at certain taxiway intersections and curves do not ensure adequate main wheel to pavement edge clearance when normal cockpit-over-centreline steering techniques are employed. This constraint can be mitigated by the use of 'judgemental over-steering', a technique authorised by aircraft manufacturers and aided by the use of on-board cameras to monitor the position of the aircraft landing gear. This technique is recommended to be used by pilots of long-wheelbase Code E aircraft when manoeuvring on all taxiways of less than Code F category.

6 Operations by Airbus A380 aircraft

Manchester Airport is available to scheduled passenger operations using Airbus A380 aircraft. It is stressed that the airfield infrastructure currently at Manchester Airport does not in all respects comply with ICAO requirements for aircraft designated as Code F, although parts of the airfield have undergone progressive upgrading to these standards. Where this is the case, facilities are provided on the basis of the 'Common Agreement Document 2002' produced by the A380 Airport Compatibility Group. A full schedule of airfield characteristics assessed against Code F and AACG requirements is included in the 'Operational Safety Case for A380 Scheduled Services' and approved by the UK CAA.

Owing to the present limitations in the aerodrome infrastructure, the operation of an A380 through Manchester Airport will be subject to certain restrictions and special procedures. Delays to A380s and other airport traffic are possible during ground movement between runway and parking stand.

6.1 Aerodrome availability and procedure overview

Facilities currently available for the A380 are limited and only three A380s would normally be accommodated on the ground at any one time. This will be reviewed during times of significant disruption and /or emergency scenarios by the ADOM and a Hazard Analysis will be conducted prior to any approvals.

An airline operator intending to divert an A380 into Manchester must notify the ATC Watch Manager and/or the AODM either directly or via their handling agent. Notification at the earliest opportunity of the intention to divert will be beneficial in enabling advanced planning and will help to ensure that the aircraft is not unduly delayed upon arrival. Arrangements should be in place with a nominated Handling Agent to provide all required ground support. In particular it is essential that a serviceable tow-bar and tug is available in order that the aircraft can be pushed back from the parking stand.

6.2 Runways available

Runway 05L-23R has a total paved width of 90 metres, comprising 45 metres full bearing strength between edge-lights, plus 2 x partially load-bearing shoulder of 23 metres width.

Runway 05R-23L has a total paved width of 60 metres, comprising 45 metres full bearing strength between edge-lights, plus 2 x partially load-bearing shoulder of 7.5 metres width. Outside of the paved shoulder is a further unpaved shoulder of stabilised grassland.

A380s will generally operate through Manchester under the same segregated runway manner as other aircraft.

6.3 Taxiway routings available

A chart indicating the A380 routings is published in the UK AIP.

6.4 Parking Stands

The parking stands to be allocated to A380s are Stand 12, 206, 210 and 214.

Scheduled passenger A380 flights will be parked at Stand 206, Terminal 2. Stand 206 has a 'MARS' (multiple-choice centreline) layout. A380s will always park on the main centreline '206' using the Safedock AVDGS. Stands 206L and 204 are unavailable when Stand 206 centre is occupied by any type.

Stand 210 will be used on occasions when Stand 206 is not available. Stand 210 has a 'MARS' (multiple-choice centreline) layout. A380s will always park on the main centreline '210' using the Safedock AVDGS. Stands 210L and 208 are unavailable when Stand 210 centre is occupied by any type.

Stand 214 has a 'MARS' (multiple-choice centreline) layout. A380s will always park on the main centreline '214' using the Safedock AVDGS. Stands 214L and 212 are unavailable when Stand 214 centre is occupied by any type.

6.5 Turnaround arrangements

There is adequate space around the aircraft at Stand 12, 206, 210, 214 2 for all turnaround activities to be performed and the clearances available comply with the latest Manchester Airport stand design characteristics.

Fuel hydrants are in the pavement beneath both inboard engines. All A380 capable Stands are equipped with 4 x 90kVA Fixed Electrical Ground Power units at the head of stand. If FEGP is unserviceable and sufficient mobile units are not available, the aircraft's APU may be run during the turnaround.