

## List of pages in this Trip Kit

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Airport Information For EGCC

Terminal Charts For EGCC

Revision Letter For Cycle 08-2013

Change Notices

Notebook

General Information

Location: Manchester Gbr  
IATA Code: MAN  
Lat/Long: N53° 21.2' W002° 16.5'  
Elevation: 257 ft

Airport Use: Public  
Magnetic Variation: 2.3°W

Fuel Types: Jet A-1  
Customs: Yes  
Airport Type: IFR  
Landing Fee: Yes  
Control Tower: Yes  
Jet Start Unit: No  
LLWS Alert: No  
Beacon: No

Sunrise: 0511 Z  
Sunset: 1908 Z,

Runway Information

Runway: 05L  
Length x Width: 10000 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 231 ft  
Lighting: Edge, ALS, Centerline, TDZ  
Displaced Threshold: 1401 ft

Runway: 05R  
Length x Width: 10007 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 189 ft  
Lighting: Edge, ALS, Centerline

Runway: 23L  
Length x Width: 10007 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 227 ft  
Lighting: Edge, ALS, Centerline  
Displaced Threshold: 611 ft

Runway: 23R  
Length x Width: 10000 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 256 ft  
Lighting: Edge, ALS, Centerline, TDZ  
Displaced Threshold: 600 ft

**Communication Information**

- ATIS 128.175 Arrival Service
- ATIS 121.975 Departure Service
- ATIS 113.55 Arrival Service
- Manchester Ground Tower 121.85
- Manchester Ground Tower 121.7
- Manchester Tower 119.4
- Manchester Tower 118.625
- Manchester Delivery Clearance Delivery 121.7
- Manchester Radar Approach Control 135.0
- Manchester Radar Approach Control 118.575
- Manchester Director Approach Control 121.35

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**1. GENERAL**

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**1.1. ATIS**

D-ATIS Arrival      128.17    113.55  
D-ATIS Departure    121.97

**1.2. NOISE ABATEMENT PROCEDURES****1.2.1. GENERAL**

The following procedures may at any time be departed from to the extent necessary for avoiding immediate danger. Every operator of ACFT using the APT shall ensure at all times that ACFT are operated in a manner calculated to cause the least disturbance practicable in areas surrounding the APT.

**1.2.2. PREFERENTIAL RWY**

RWY 23R/L shall be used for all movements when tailwind component is not greater than 5 KT on RWY or at 2000'.

**1.2.3. NIGHTTIME RESTRICTIONS**

Restrictions are imposed on jets, details to be obtained from the Airfield Duty Manager.

RWYs 23L/05R will not normally be used between 2200-0600LT, except when RWYs 23R/05L closed for maintenance.

Between 2330-0559LT ACFT in group QC 4 will not be scheduled to depart.

**OPERATIONAL RESTRICTIONS:**

Between 2300-0659LT ACFT in groups QC 8 and QC 16 will not be scheduled to take-off and land except in emergency or if exempt.

Jet and turbo-prop ACFT approaching Manchester APT are expected to minimize noise disturbance by use of low power, low drag and between 2200-0559LT continuous descent approach procedures.

**1.2.4. RUN-UP TESTS**

ATC will approve idle ground engine runs. A safety man must be positioned behind the ACFT to warn road traffic.

Permission for ground testing in excess of idle must be requested through the Airfield Duty Manager, Ext 3331. Engine test above idle must commence in the Engine Test Bay.

Times of operation are 0600-2300LT.

Engine testing on the open airfield will only be allowed for Chapter 2 ACFT between 0900-1700LT and for Chapter 3 ACFT between 0600-2300LT.

Propeller driven ACFT are to be classified as Chapter 3.

**1.2.5. AUXILIARY POWER UNITS (APUs)**

Fixed Electrical Ground Power Units (GPUs) must be used where available, use of GPUs and APUs should be limited.

**1.3. LOW VISIBILITY PROCEDURES (LVP) DURING CAT II/III OPERATIONS****1.3.1. GENERAL**

APT operates two stages of LVP in CAT II/III operations:  
ATC LVP and ATC LVP due ceiling.

**1.3.1.1. ATC LVP (RVR less than 600m)**

- Reversion to a single RWY operation 23R or 05L. For any residual departures from 23L/05R, the centerline lights are spaced at 30m intervals which requires that, except where an AOC (air operator certificate) holder has less restrictive state authorised take-off minima, departures in RVR of less than 400m are not permitted.
- Departing ACFT: ATC will require departing ACFT to use the following CAT III holding points:
  - RWY 23R: J1.
  - RWY 05L: A1.

## 1. GENERAL

- Arriving ACFT: Only the following designated exits will be illuminated for ACFT to vacate:  
RWY 23R via HST BD, AE or link A,  
RWY 05L via link J.

### 1.3.1.2. ATC LVP due ceiling (RVR 600m or greater and ceiling of 200' or less)

- RWY 23L/23R dual RWY operation or RWY 05L single RWY operation.  
All available RWY exits associated with either RWY 23R or RWY 05L will be illuminated.  
ACFT may vacate at any of these exits.  
23L/23R dual RWY operation will require departing ACFT to "hold short" of RWY 23R at the following CAT III holding points as instructed, H1, G1, F1 or D1. Pilots are required to read back all ATC "hold short" instructions.
- Ground Movement Radar (GMR) is normally available to monitor pilot "RWY vacated" reports. When GMR is not available RWY LOC Sensitive Area (LSA) vacation will be assessed by receipt of a pilot report that the ACFT has passed the last alternate yellow and green centerline lights.  
These lights denote the extent of the ILS LSA.
- Pilots will be informed of the relevant procedure that is in operation by Arrival and Departure ATIS or by RTF.
- When LVP are in force the appropriate landing rates that can be expected are:

| RVR(m)                 | Expected Landing Rate |
|------------------------|-----------------------|
| Between 1000m and 600m | 20                    |
| Between 600m and 400m  | 12                    |
| Less than 400m         | 10                    |

## 1.4. RWY OPERATIONS

General operating principles for two RWY segregated operations. The two RWYs are 1280'/390m apart and staggered by 6070'/1850m in order to comply with ICAO rules for simultaneous operations on parallel or near-parallel instrument RWYs (SOIR). Therefore in normal operations arrivals can operate independently on one RWY whilst departures use the other.

Dual RWY segregated operations are normally in force between: Mon-Fri 0630-1030LT and 1600-2000LT, Sat 0630-1030LT and Sun 1600-2000LT. At other times, single RWY, mixed-mode operations are in force using RWY 05L/23R.

Pilots requiring use of RWY 05R/23L for ACFT performance reasons outside dual RWY segregated hours should advise ATC at the earliest opportunity. Efforts will be made to make RWY 05R/23L available, however, some delay may be experienced.

Returning this RWY to service may take in excess of 30 minutes and it should not be assumed to be available as a diversion alternate to RWY 05L/23R.

Due to local planning constraints, RWY 05R/23L is not normally available between 2200-0600LT.

## 1.5. TAXI PROCEDURES

RWY 05L/23R has a turning circle at the Northeastern end, ABEAM Link J, for use by ACFT up to A380.

RWY 05R/23L has a turning circle at 5971'(1820m) from RWY 23L threshold for use by ACFT up to B767.

All turning circles have unlit painted centerline and blue edge lighting beyond RWY edges.

ACFT should follow the painted centerline in a clockwise direction, unless directed otherwise by ATC.

Jet ACFT are to engage minimum power when using TWYs A, B and C due to the proximity of light ACFT ops in this area.

Entry to RWY via TWY G:

MAX B737 from East, MAX B767/A300 from West, use MIM power.

## 1. GENERAL

A 380 ACFT: Reduced TWY centerline to object clearance of 161' (49m) applies along TWYs A and J (between J1 and J5).

Pilots of long-wheelbase ACFT such as B777-300 and A340-600 should exercise caution when negotiating TWY curves and intersections as main-gear to pavement edge clearance may be limited.

AN-124 ACFT will be provided with wing-tip escort vehicles on TWYs northside of RWY 05L/23R.

Pilots are reminded of the need to exercise caution on wingtip clearances from other ACFT when manoeuvring in close proximity on the ground. Particular care should be taken in the RWY holding areas and at RWY crossing points.

Do not cross red stop bars unless authorized to do so by ATC.

RWY 05L/23R: The hard shoulders outboard of the RWY side stripes have only 25% of the RWY bearing strengths and should not be used by ACFT turning on the RWY or when backtracking. The grass verges are unstrengthened and when wet unlikely to sustain loads.

ACFT using TWY L are to use minimum power. B777, A340-600 and A380 ACFT are prohibited from using this TWY.

MIM power to be used by outbound ACFT using TWY D between holding point D7 and ABEAM stand 32 (Pier C).

### 1.6. PARKING INFORMATION

Stands 100 and 101 have downward slopes of 1.5% from center of stand towards TWY D.

TWYs P and Q may be used for ACFT parking. In darkness or if Low Visibility Procedures are in force a Follow-me car will be provided.

All Terminal 1 and 2 stands (except stands 21 and 201), all Terminal 3 pier served stands and stands 72 and 73 equipped with SAFEDOCK.

On all remote stands (except stands 72 and 73) and stands 21, 56 thru 58, 100, 101 and 201 marshaller required.

### 1.7. OTHER INFORMATION

#### 1.7.1. GENERAL

Pilots should note that RWY 05L/23R has a convex profile, the highest point is ABEAM TWY G/HZ.

#### 1.7.2. WARNING

Pilots are warned, when landing on RWY 23R in strong Northwesterly winds, of the possibility of turbulence and large windshear effects.

Flocks of up to 100 racing pigeons may be encountered flying across the APT below 100' during the racing season, April-September.

4 high visibility bright lights from golf driving range 1500m/0.8NM LEFT of THR 23R.

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## 2. ARRIVAL

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### 2.1. NOISE ABATEMENT PROCEDURES

#### 2.1.1. GENERAL

Unless otherwise authorized by ATC ACFT using the ILS shall not descend below 2000' before intercepting GS, nor thereafter fly below it. ACFT approaching without ILS or radar assistance follow a descent path which will not result in its being at any time lower than the approach path which would be followed by an ACFT using the ILS GS.

For visual approaches, or following a visual circuit, to RWY 23R/L the following additional limitations apply:

- Jet ACFT shall not join the final approach at a height of less than 1760'.
- Propeller driven ACFT whose MTWA exceeds 5700kg shall not join the final approach at a distance of less than 3NM from the landing THR and at a height of less than 1260'.

#### 2.1.2. NIGHTTIME RESTRICTIONS

Between 2300-0600LT, visual approaches are not permitted. ACFT shall be positioned, by RADAR, to join the final APP at a distance of not less than 7NM from touchdown. This restriction does not apply to non jet ACFT whose MTWA is 5700kg or less.

#### 2.1.3. REVERSE THRUST

Avoid use of reverse thrust consistent with the safe operation of the ACFT, especially between 2300-0700LT.

### 2.2. CAT II/III OPERATIONS

RWY 05L is available for CAT II/III operations, however due to terrain profile CAT II approaches may only be made by ACFT CAT A & B (Vat no greater than 120 KT), and when the ILS status is CAT III.

RWY 23R is available for CAT II/III operations, CAT II approaches may only be made when ILS status is CAT III.

### 2.3. RWY OPERATIONS

#### 2.3.1. MINIMUM RWY OCCUPANCY TIME

Pilots are reminded that rapid exits from the landing RWY enable ATC to apply minimum spacing on final approach that will achieve maximum RWY utilisation and will minimise the occurrence of "go-arounds".

RWY 05R arrivals: All ACFT must vacate the RWY no later than VB and proceed direct to TWY V.

ACFT remaining on the RWY to vacate at VA or T will infringe the ILS LOC critical area.

Similarly TWY S is not to be used.

RWY 05L arrivals: TWY F available as exit during daylight hours only. TWY D is not available as RWY exit.

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## 2. ARRIVAL

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### 2.4. OTHER INFORMATION

#### 2.4.1. GENERAL

When landing on RWY 23R, the apex lies 2300'/700m into the TDZ. Should the ACFT still be flared beyond this point, the RWY surface will be falling away at a significant rate, with the risk of a late touchdown.

#### 2.4.2. LOW POWER/LOW DRAG PROCEDURES

ACFT should descend at a rate of at least 500' per minute, ATC will advise an estimate of track distance to touchdown when clearance to descend below the transition altitude is given. Further distance information will be given between descent clearance and the instruction to turn onto the intercept heading to the ILS localizer.

Due to high ground East of the APT, descent below 3000' will be in accordance with chart Manchester 10-1R.

Recommended speeds:

210 KT-240 KT intermediate approach

160 KT-180 KT at a range of 12NM from touchdown

160 KT from 8NM to 4NM from touchdown.

ATC may request specific speeds for accurate spacing and pilots are requested to comply with any speed adjustments as promptly as feasible within operational constraints. If a speed change for ACFT performance reasons is necessary, advise ATC.

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## 3. DEPARTURE

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### 3.1. START-UP, PUSH-BACK & TAXI PROCEDURES

Pilots that require the RWY 23L starter extension (ie take-off from TWY T intersection) should notify ATC on first contact with MANCHESTER Delivery.

Pilots are required to inform MANCHESTER Delivery when ready to start.

Start-up and push-back clearance is given by MANCHESTER Ground.

Start-up approval does not imply approval to push-back.

When requesting start-up or push-back pilots should give the full call sign, type and stand number.

ACFT must be ready in all respects to start before calling on the appropriate frequency. Pilots should only request push-back when they are actually ready to do so.

When requesting push-back clearance, pilots are to inform ATC if headset communication with ground crew is not established.

Push-back clearance must not be requested until ground crew has confirmed to flight deck, that ACFT is closed up and tug is manned and fully ready to move.

Pilots are advised that delays in excess of 10 min can be expected at the holding point during busy morning and evening periods. Sufficient time should be allowed for start, push-back and taxi to take account of such delay especially if to comply with a Calculated Take-off Time (CTOT).

ACFT will not be permitted to reverse off pier-served stands under own power.

ACFT requesting push-back must be in direct communication with the tug crew, via headset person. ACFT must inform ATC if they have no direct communication with a headset person.



### 3. DEPARTURE

Flights subject to en-route ATC delays may request, or may be required to push off stand and reposition at a remote location awaiting CTOT. Airlines must co-ordinate push and park requests via Handling Agent, who must liaise with Airfield Control. Requests to push and park are to be made to Delivery. Clearance for push and park manoeuvre will be given on the GND frequency to the tug crew and not to the flight crew. Flight crew should monitor MANCHESTER Ground frequency and note instructions given. Remote locations for push and park are limited and subject to the conditions stated in the Manchester Airport Aerodrome Manual. At remote location flight crew must monitor Delivery frequency. ACFT may taxi away from a remote parking location with CAUTION and using MIM power.

#### 3.2. NOISE ABATEMENT PROCEDURES

Link Alpha should be used for all jet ACFT and all large propeller driven ACFT departing from RWY 05L.

Between 0600-2330LT any ACFT may depart from links AG, AF and B subject to operational requirements by ATC/pilots.

Between 2330-0600LT all jet ACFT and large propeller driven ACFT shall depart from the most westerly link available.

After take-off operate every jet ACFT so that it is at or above 1260' at the point nearest to the noise monitoring terminal for the relevant departure.

ACFT are to be operated in the quietest possible manner, ACFT exceeding the following noise levels will be subject to an initial penalty of 750 GBP, plus an additional 150 GBP for each decibel thereafter:

| Period (LT) | MAX Level dB(A) |
|-------------|-----------------|
| 0600-0700   | 82              |
| 0700-2300   | 90              |
| 2300-2330   | 82              |
| 2330-0600   | 81              |

Details of noise monitoring locations and performance are obtainable from Environment Department (Tel.: + 44 161 489 3504, eMail: [environment@manairport.co.uk](mailto:environment@manairport.co.uk)).

Jet ACFT maintain a minimum climb gradient of at least 500' per minute at power settings to ensure progressively decreasing noise levels at points on the ground under the flight path beyond the monitoring terminal.

### 3. DEPARTURE

The noise preferential routes and procedures depicted on chart 10-4 and on Manchester SID charts are to be flown by all departing ACFT until the level defined stated below is reached:

| Via                                      | Termination preferential route |
|------------------------------------------|--------------------------------|
| - LISTO<br>from RWYs 05L/R, 23R/L        | 5000'                          |
| - WAL, MONTY or NOKIN<br>from RWYs 05L/R | 4000'                          |
| from RWYs 23R/L                          | 3000'                          |
| - POL, DESIG<br>from RWYs 05L/R, 23R/L   | 4000'                          |
| - HON<br>from RWYs 23R/L                 | 5000'                          |

Exempted are:

- ACFT of 5700kg MTWA or less,
- those ACFT instructed by ATC to make early turns in order to expedite traffic flow, such instructions may be issued between 0700-2300LT, to propeller ACFT of 23000kg MTWA or less and the following jet ACFT :  
BAe 146 (Avro RJ series), Canadair Regional Jet, Embraer EMB-135/145,
- and unless otherwise instructed by ATC or deviations are required in the interests of safety.

The use of these routes is supplementary to noise abatement take-off techniques. After take-off, pilots should ensure that they are at a minimum altitude of 760' before commencing any turn.

Non-standard departure instructions will not normally be issued between 2300-0700LT.

### 3.3. RWY OPERATIONS

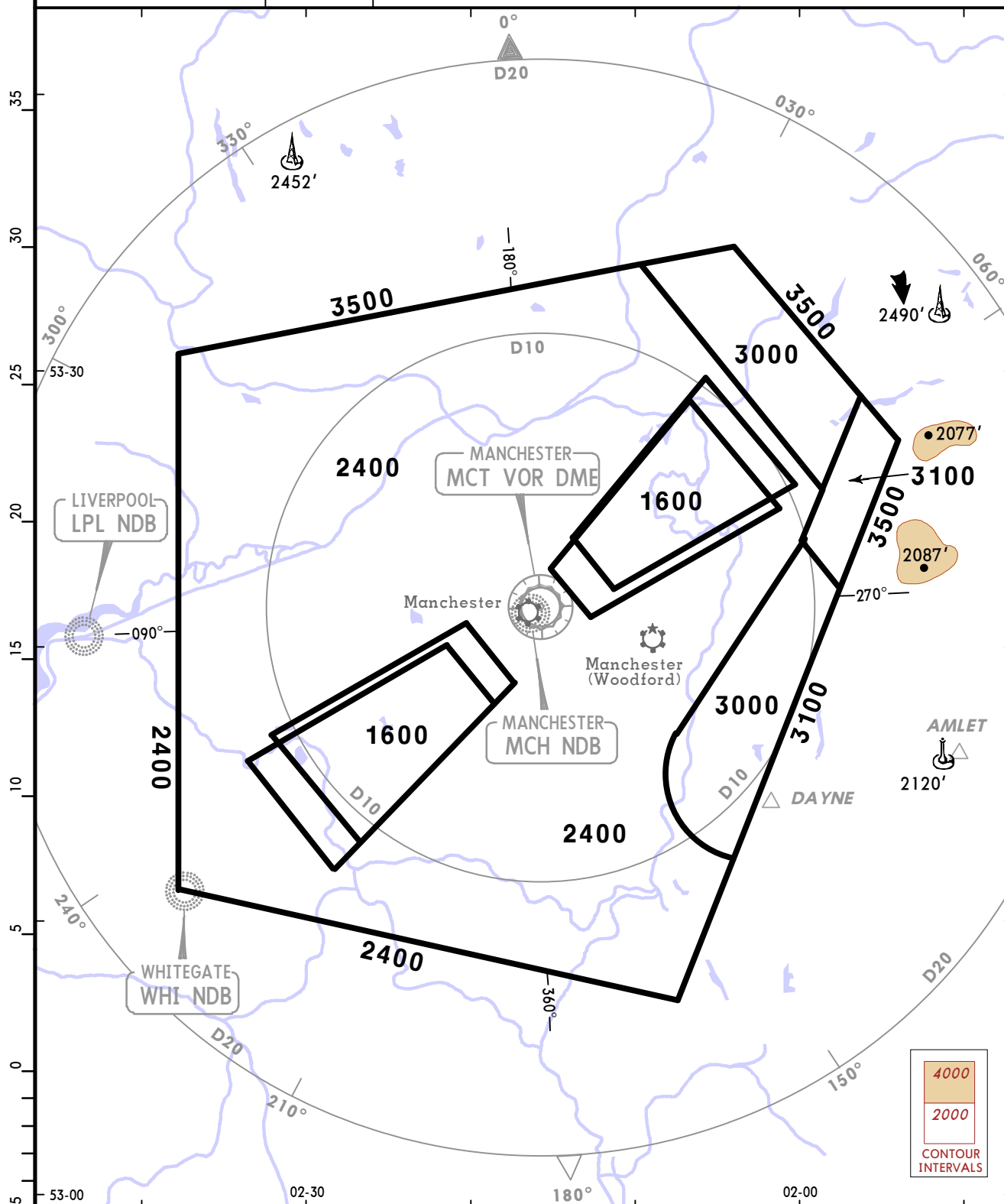
#### 3.3.1. MINIMUM RWY OCCUPANCY TIME

On receipt of line-up clearance pilots should ensure commensurate with safety and standard operating procedures, that they are ready to taxi to the correct position at the hold and line up on the RWY without delay. Unless otherwise advised, ATC will expect pilots to be ready for take-off.

Whenever possible, cockpit checks should be completed prior to line up and any checks requiring completion whilst on the RWY should be kept to the minimum required. Pilots should ensure that they are able to commence the take-off roll immediately after take-off clearance is issued.

### 3.4. OTHER INFORMATION

When lined up for take-off from RWY 05L/23R, the full length of the RWY surface may not be visible from the flight deck.

MANCHESTER Radar (APP)  
135.0 \*118.57Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'**OUTSIDE THE DESIGNATED RADAR MINIMUM ALTITUDE AREA**

The minimum altitude to be allocated by the radar controller will be either the Minimum Sector Altitude or **1000'** above any fixed obstacles:

- within 5 NM **①** of the aircraft or
- within the sector 15 NM **②** ahead of and within 20° either side of the aircraft's track.

3 NM **①** or 10 NM **②** when the aircraft is within 15 NM of the radar antennae.

**PROCEDURE****LOSS OF COMMUNICATION PROCEDURE****INITIAL APPROACH**

Continue visually or by means of an appropriate approved final approach aid. If not possible proceed to DAYNE holding via AMLET or ROSUN holding via BURNI at **FL60** or last assigned level if higher, as appropriate to the final approach chart.

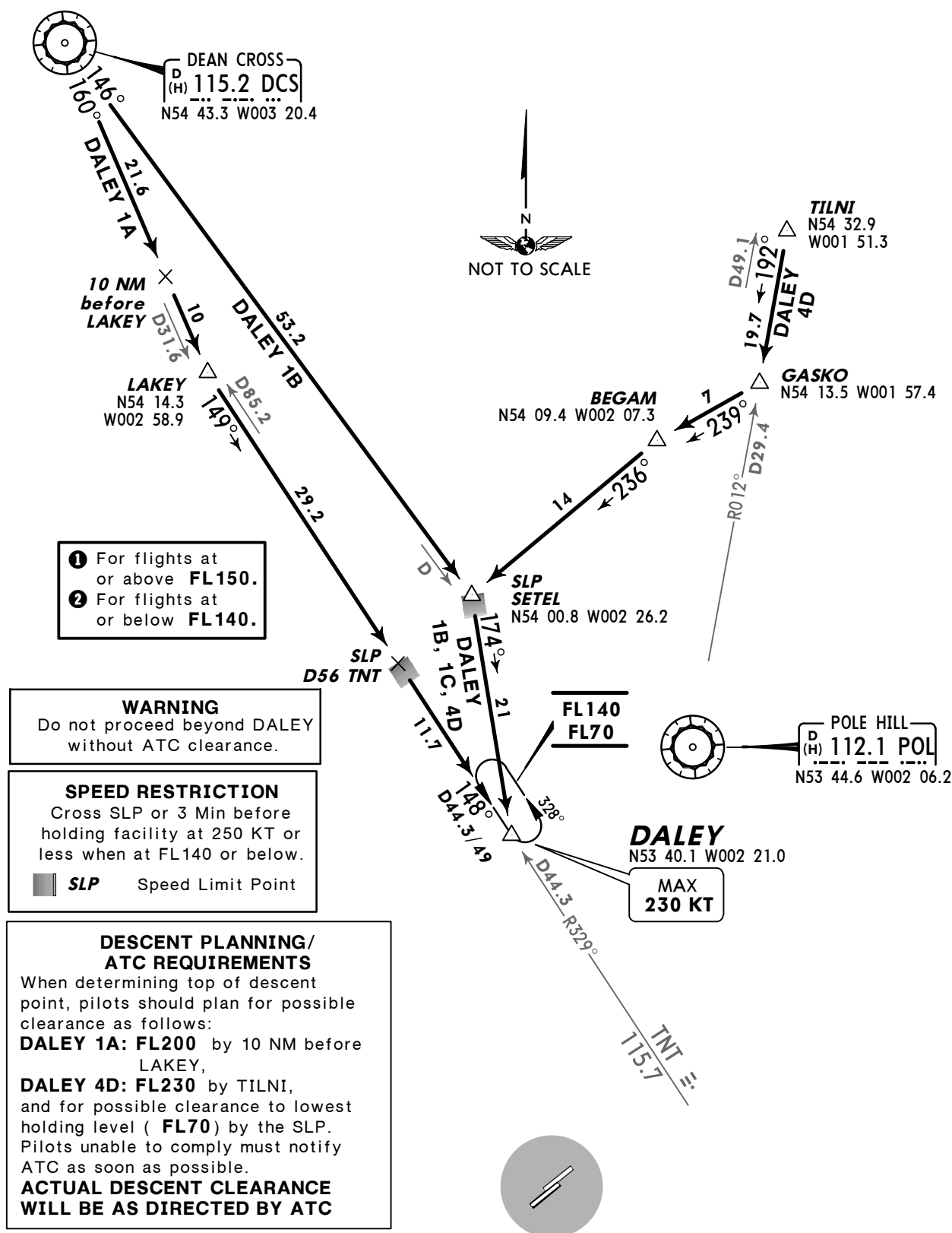
**INTERMEDIATE AND FINAL APPROACH**

Continue visually or by means of an appropriate final approach aid. If not possible follow the Missed Approach Procedure to DAYNE holding via AMLET or ROSUN holding via BURNI, as appropriate to the final approach chart.

D-ATIS  
128.17 113.55Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'  
Aircraft joining controlled airspace from  
northeast will route via SETEL.No MSA  
publishedDALEY 1A [DALE1A] ①  
DALEY 1B [DALE1B] ②  
DALEY 1C [DALE1C]  
DALEY 4D [DALE4D]

## ARRIVALS

TO BE USED WHEN MCT UNSERVICEABLE



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D-ATIS  
128.17 113.55Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'DAYNE 2A [DAYN2A]  
DAYNE 1B [DAYN1B]  
ARRIVALS

## DESCENT PLANNING/ATC REQUIREMENTS

When determining top of descent point, pilots should plan for possible clearance as follows:

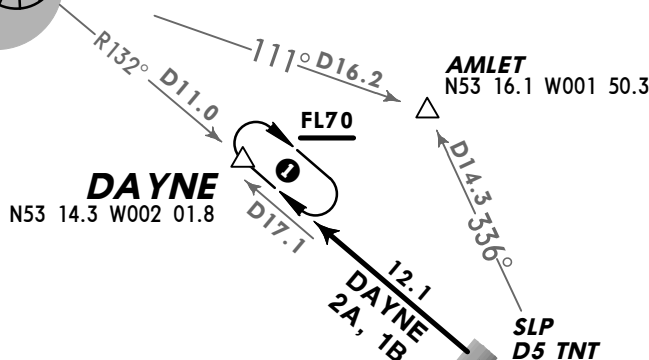
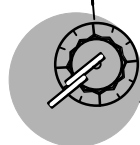
**DAYNE 2A:** FL200 by 25 NM before TNT (N-57, Q-4),  
FL200 by ELVOS (T-420),

**DAYNE 1B:** FL200 by D25 TNT,  
and for possible clearance to lowest holding level (FL70) by the SLP.

Pilots unable to comply must notify ATC as soon as possible.

**ACTUAL DESCENT CLEARANCE WILL BE AS DIRECTED BY ATC**

MANCHESTER  
D (H) 113.55 MCT  
N53 21.4 W002 15.7



## SPEED RESTRICTION

Cross SLP or 3 Min before holding facility at 250 KT or less when at FL140 or below.

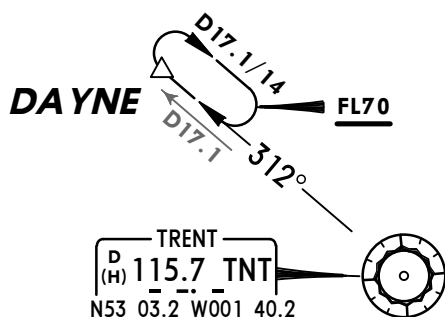
■ SLP Speed Limit Point

## WARNING

Do not proceed beyond DAYNE without ATC clearance.

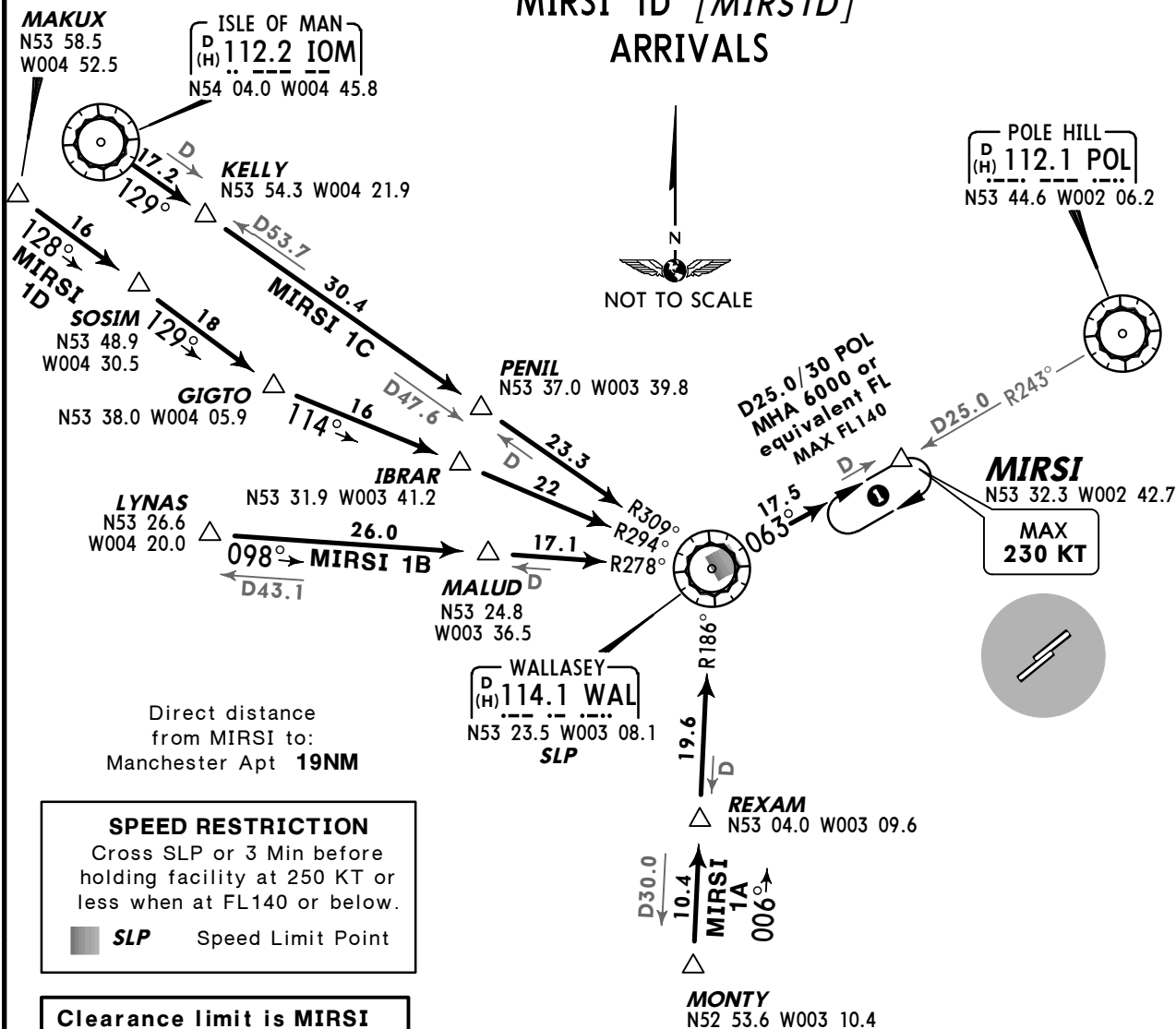
## ① ALTERNATE HOLDING

To be used when MCT VOR or DME u/s.

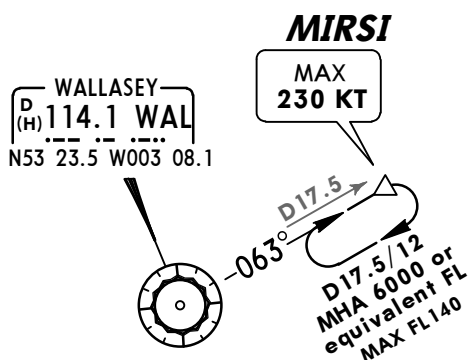


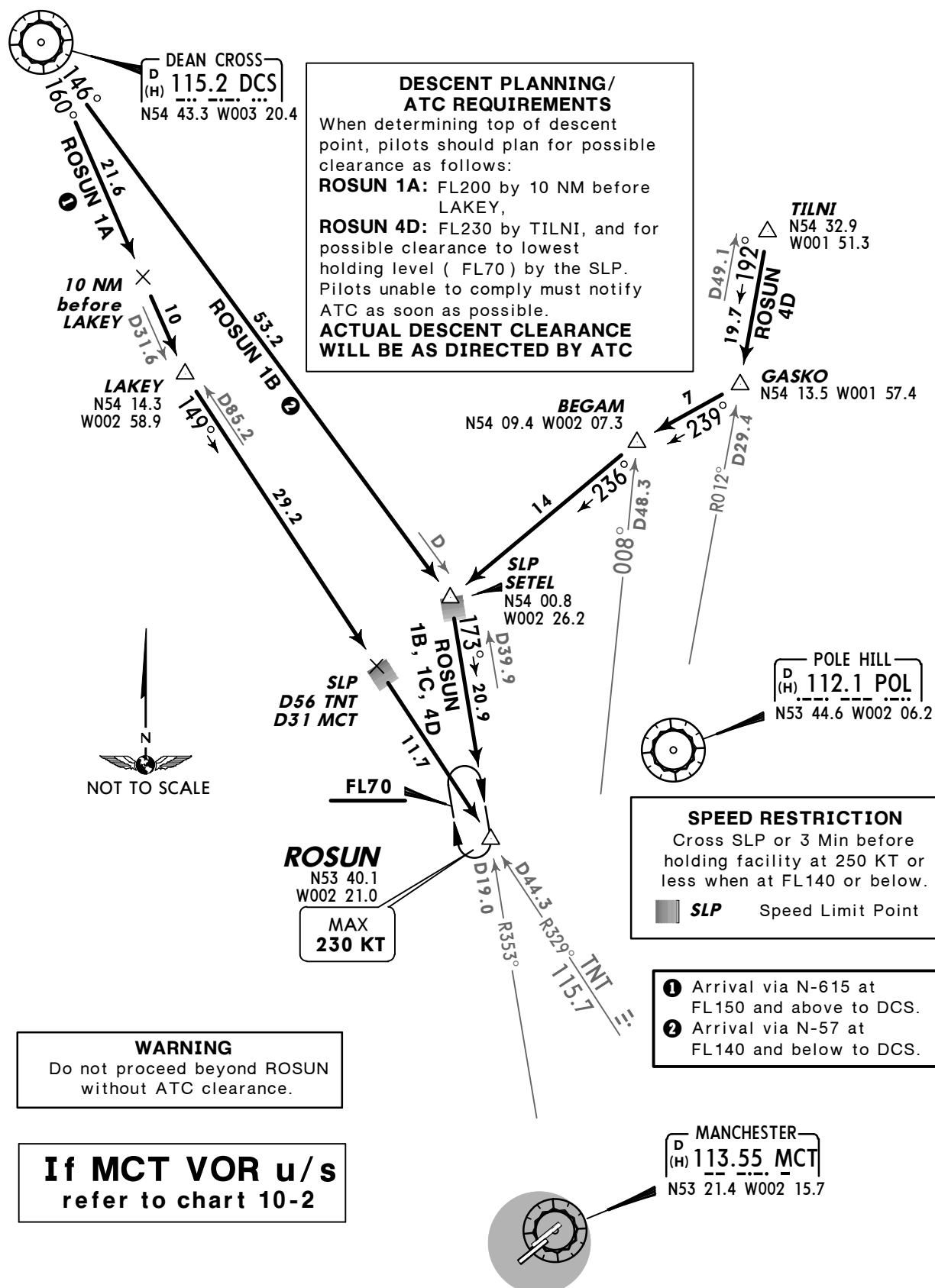
## GROUND PROXIMITY WARNING SYSTEM (GPWS) NUISANCE WARNINGS

To minimize occurrences, aircraft enroute DAYNE holding to RWYs 23L/R, MAX 210 KT between TNT R-300 and R-350 unless otherwise authorized by ATC.

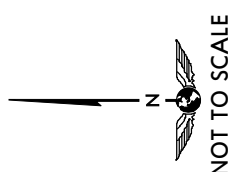
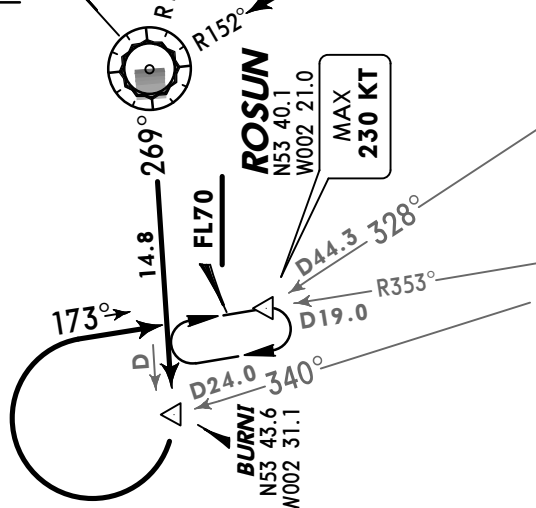
D-ATIS  
128.17 113.55Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'MIRSI 1A [MIRS1A]  
MIRSI 1B [MIRS1B]  
MIRSI 1C [MIRS1C]  
MIRSI 1D [MIRS1D]  
ARRIVALS

## ① ALTERNATE HOLDING

To be used when  
POL VOR or DME u/s.

D-ATIS  
128.17 113.55Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'  
Aircraft joining controlled airspace from  
northeast will route via SETEL.No MSA  
publishedROSUN 1A [ROSU1A] ①  
ROSUN 1B [ROSU1B] ②  
ROSUN 1C [ROSU1C]  
ROSUN 4D [ROSU4D]  
ARRIVALS



D-ATIS  
128.17 113.55Apt Elev  
257'Alt Set: hPa  
Trans level: By ATC Trans alt: 5000'ROSUN 2E [ROSU2E] ①  
ROSUN 1F [ROSU1F]  
ROSUN 1G [ROSU1G]  
ARRIVALS① Arrival via L-975 east  
at FL80 to GOLESPOLE HILL  
D 112.1 POL  
(H) N53 44.6 W002 06.2  
SLPIf MCT VOR u/s  
refer to chart 10-2A

## SPEED RESTRICTION

Cross SLP or 3 Min before  
holding facility at 250 KT or  
less when at FL140 or below.

SLP Speed Limit Point

## WARNING

Do not proceed beyond ROSUN  
without ATC clearance.TRENT  
D 115.7 TNT  
(H) N53 03.2 W001 40.2MANCHESTER  
D 113.55 MCT  
(H) N53 21.4 W002 15.7

## DESCENT PLANNING/ATC REQUIREMENTS

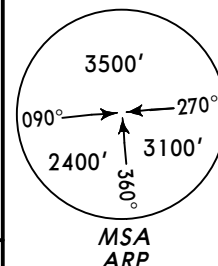
When determining top of descent point, pilots should plan for pos-  
sible clearance as follows:ROSUN 1F: FL280 by OTBED,  
FL170 by GOLES.ROSUN 1G: FL200 by GOLES,  
and for possible clearance to lowest holding level ( FL70 ) by the  
SLP. Pilots unable to comply must notify ATC as soon as possible.

ACTUAL DESCENT CLEARANCE WILL BE AS DIRECTED BY ATC

No MSA  
published

MANCHESTER  
Control  
136.57Apt Elev  
257'

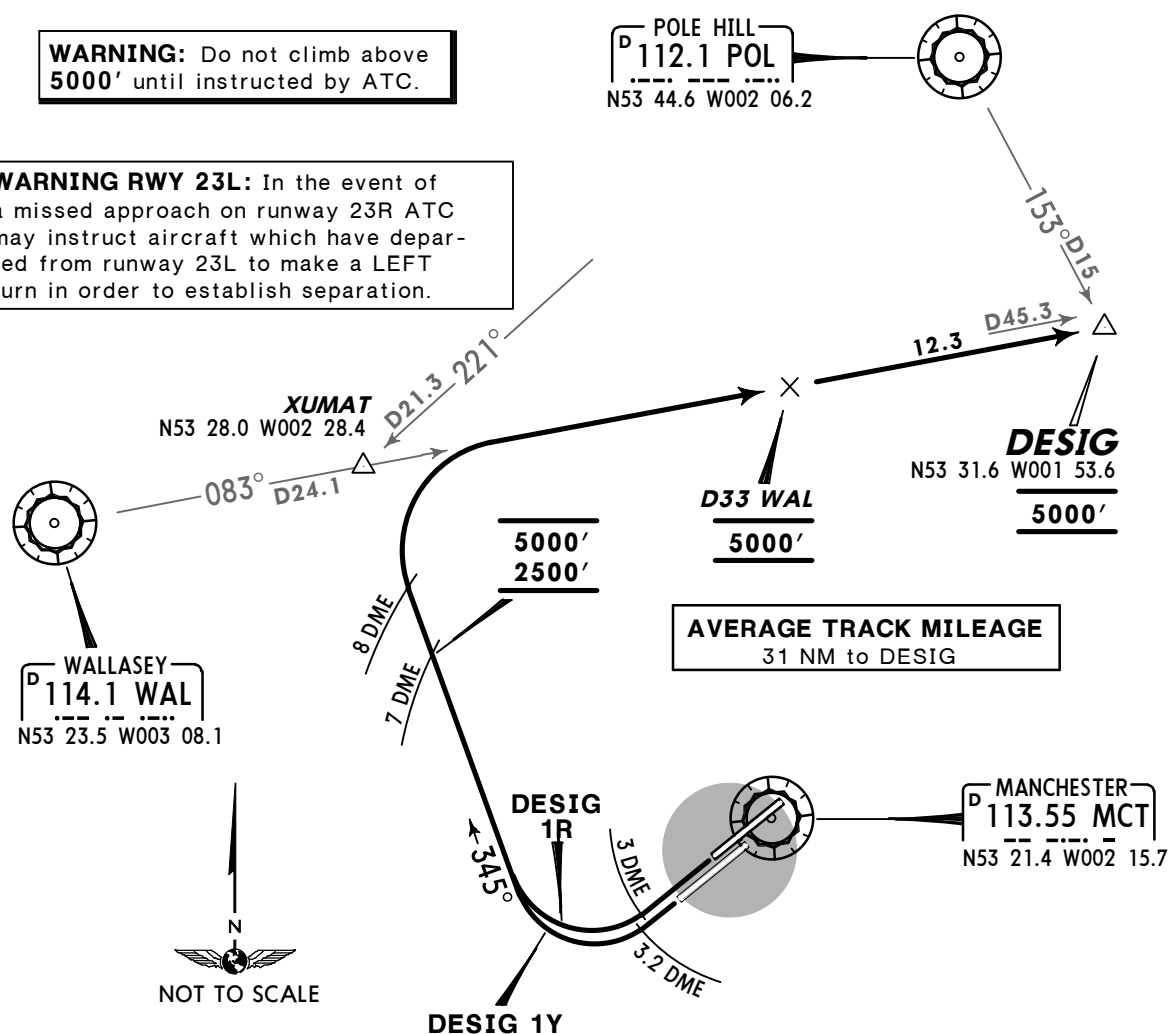
Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 23R: EXPECT close-in obstacles.



DESIG ONE ROMEO (DESIG 1R) [DES11R]  
DESIG ONE YANKEE (DESIG 1Y) [DES11Y]  
RWYS 23R/L DEPARTURES  
**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.

**WARNING RWY 23L:** In the event of a missed approach on runway 23R ATC may instruct aircraft which have departed from runway 23L to make a LEFT turn in order to establish separation.



These SIDs require minimum climb gradients of

**DESIG 1R**

340' per NM (5.6%) until MCT 3 DME, then 292' per NM (4.8%) up to **2500'** for ATC or airspace purposes.

**DESIG 1Y**

747' per NM (12.3%) until MCT 3.2 DME, then 292' per NM (4.8%) up to **2500'** for ATC or airspace purposes.

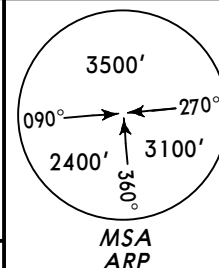
| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
|--------------|-----|------|------|------|------|------|
| 747' per NM  | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 340' per NM  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 292' per NM  | 365 | 486  | 729  | 972  | 1215 | 1458 |

If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

| SID      | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                   |
|----------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIG 1R | 23R | Climb straight ahead, at MCT 3 DME turn RIGHT, 345° track towards XUMAT, cross MCT 7 DME at or above 2500' (MAX 5000'), at MCT 8 DME turn RIGHT, intercept WAL R-083, cross D33 WAL at 5000', to DESIG at 5000'.   |
| DESIG 1Y | 23L | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 345° track towards XUMAT, cross MCT 7 DME at or above 2500' (MAX 5000'), at MCT 8 DME turn RIGHT, intercept WAL R-083, cross D33 WAL at 5000', to DESIG at 5000'. |

MANCHESTER  
Control  
136.57Apt Elev  
257'

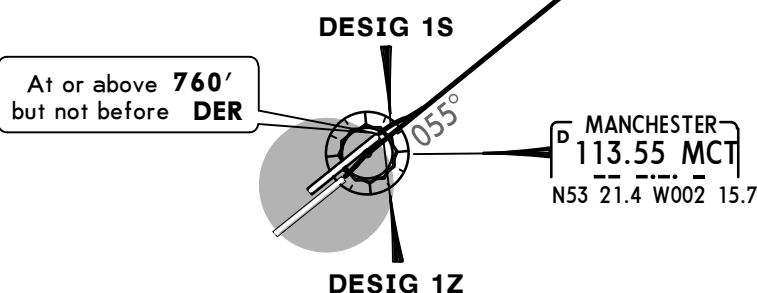
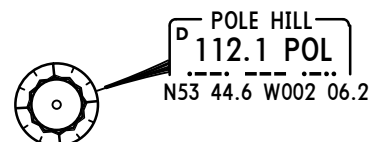
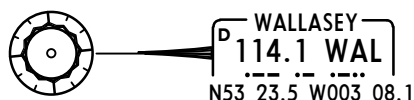
Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 05L: EXPECT close-in obstacles.



**DESIG ONE SIERRA (DESIG 1S) [DESI1S]**  
**DESIG ONE ZULU (DESIG 1Z) [DESI1Z]**  
**RWYS 05L/R DEPARTURES**  
**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.

**WARNING RWY 05L:** In the event of a missed approach on runway 05R ATC may instruct aircraft which have departed from runway 05L to make a LEFT turn in order to establish separation.



**DESIG**  
N53 31.6 W001 53.6  
**5000'**  
153° D15  
083°  
D45.3  
**D14 MCT**  
N53 30.0 W001 57.3

**D12 MCT**  
**5000'**  
**4000'**

At or above **760'**  
but not before **DER**

**MANCHESTER**  
**113.55 MCT**  
N53 21.4 W002 15.7



**AVERAGE TRACK MILEAGE**  
**DESIG 1S: 17 NM to DESIG**  
**DESIG 1Z: 16 NM to DESIG**

These SIDs require a minimum climb gradient of 346' per NM (5.7%) up to 4000' for ATC or airspace purposes.

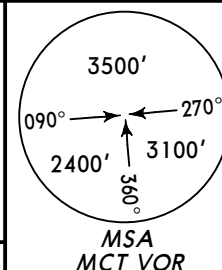
| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 346' per NM  | 433 | 577 | 866 | 1155 | 1443 | 1732 |

If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

| SID             | RWY        | ROUTING/ALTITUDE                                                                                                                                                                            |
|-----------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DESIG 1S</b> | <b>05L</b> | Climb straight ahead, at or above 760', but not before DER intercept MCT R-055, cross D12 MCT at or above 4000' (MAX 5000'), at D14 MCT turn RIGHT, intercept WAL R-083, to DESIG at 5000'. |
| <b>DESIG 1Z</b> | <b>05R</b> | Climb straight ahead on MCT R-055, cross D12 MCT at or above 4000' (MAX 5000'), at D14 MCT turn RIGHT, intercept WAL R-083, to DESIG at 5000'.                                              |

SCOTTISH  
Control  
134.42Apt Elev  
257'

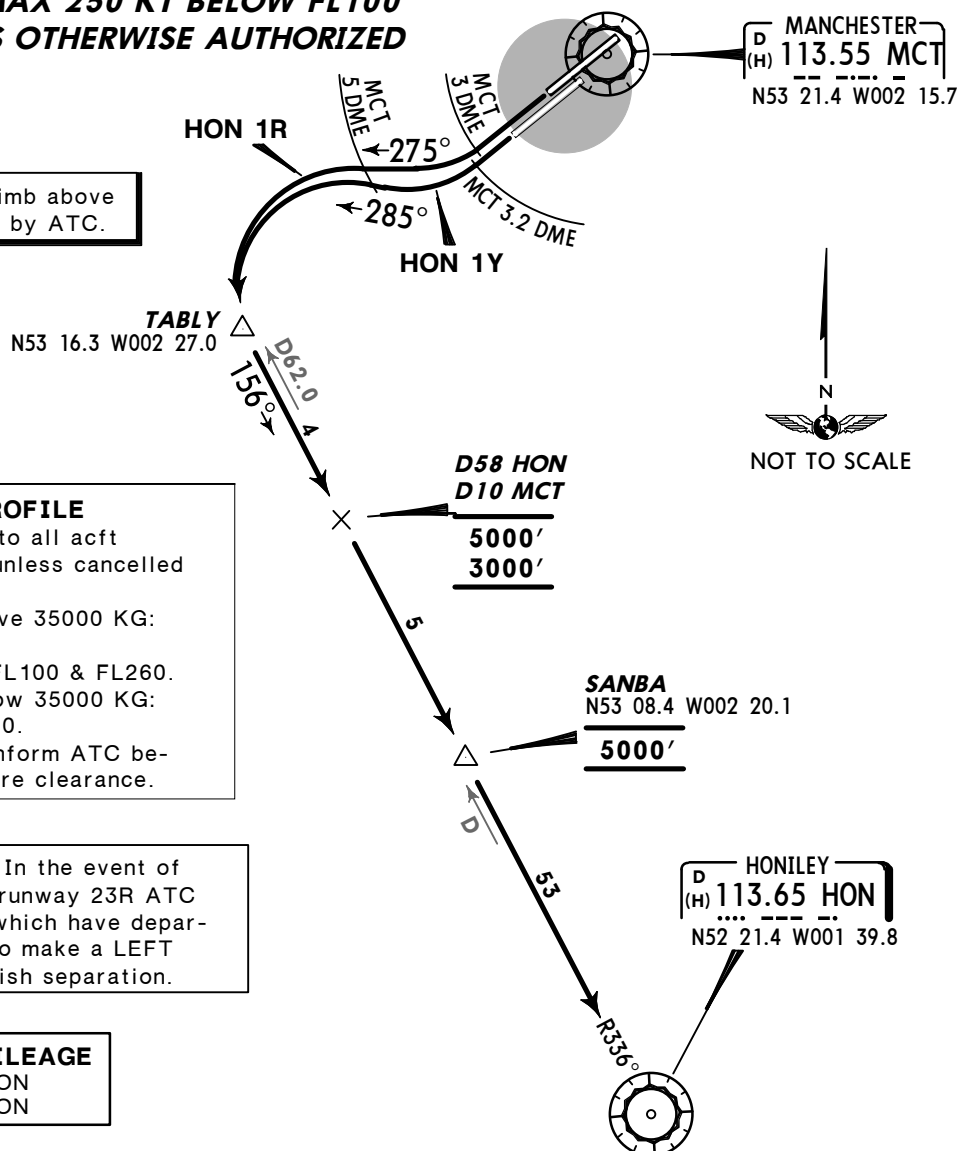
Trans level: By ATC Trans alt: 5000'  
1. When instructed contact SCOTTISH Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by SCOTTISH Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 23R: EXPECT close-in obstacles.



**HONILEY ONE ROMEO (HON 1R)  
HONILEY ONE YANKEE (HON 1Y)  
RWYS 23L/R DEPARTURES  
JET-AIRCRAFT ONLY**

**~~SPEED~~ MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.



**SPEED PROFILE**

Speed profile applies to all acft following these SIDs unless cancelled by ATC.

Jet traffic MTOW above 35000 KG:  
250 KT until FL100.  
280-290 KT between FL100 & FL260.  
Jet traffic MTOW below 35000 KG:  
240-250 KT until FL260.  
If unable to comply, inform ATC before obtaining departure clearance.

**WARNING RWY 23L:** In the event of a missed approach on runway 23R ATC may instruct aircraft which have departed from runway 23L to make a LEFT turn in order to establish separation.

**AVERAGE TRACK MILEAGE**

**HON 1R:** 71 NM to HON  
**HON 1Y:** 69 NM to HON

These SIDs require minimum climb gradients of

**HON 1R**

5.6% until MCT 3 DME, then  
4.6% up to 5000' for ATC or airspace purposes.

**HON 1Y**

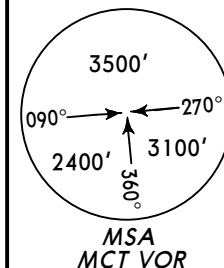
12.3% until MCT 3.2 DME, then  
4.9% up to 5000' for ATC or airspace purposes.

| Gnd speed-KT    | 75  | 100  | 150  | 200  | 250  | 300  |
|-----------------|-----|------|------|------|------|------|
| 12.3% V/V (fpm) | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 5.6% V/V (fpm)  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 4.9% V/V (fpm)  | 372 | 496  | 744  | 992  | 1241 | 1489 |
| 4.6% V/V (fpm)  | 349 | 466  | 699  | 932  | 1165 | 1398 |

| SID    | RWY | ROUTING/ALTITUDE                                                                                                                                                                                             |
|--------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HON 1R | 23R | Climb straight ahead, at MCT 3 DME turn RIGHT, 275° track, at MCT 5 DME turn LEFT to TABLY, intercept HON R-336 inbound, cross D58 HON/D10 MCT at or above 3000' (MAX 5000'), SANBA at 5000', then to HON.   |
| HON 1Y | 23L | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 285° track, at MCT 5 DME turn LEFT to TABLY, intercept HON R-336 inbound, cross D58 HON/D10 MCT at or above 3000' (MAX 5000'), SANBA at 5000', then to HON. |

SCOTTISH  
Control  
134.42Apt Elev  
257'

Trans level: By ATC Trans alt: 5000' 1. When instructed contact SCOTTISH Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by SCOTTISH Control (at or below FL190) or LONDON Control (above FL190). 5. In order to alleviate airspace congestion and improve ATC flexibility, pilots of jet aircraft allowed to fly the LISTO SID may be offered HON 1R/1Y SID at a late stage prior to departure. Pilots unable to accept a Honiley SID when offered must inform ATC. 6. Rwy 23R: EXPECT close-in obstacles.

**LISTO TWO ROMEO (LISTO 2R) [LIST2R]  
LISTO TWO YANKEE (LISTO 2Y) [LIST2Y]****RWYS 23L/R DEPARTURES****RESTRICTED USE ①****VIA AIRWAYS AND FOR LEAVING CONTROLLED AIRSPACE VIA TNT****~~SPEED~~ MAX 250 KT BELOW FL100****UNLESS OTHERWISE AUTHORIZED**

① Available to non-jet acft and the following jet acft: acft up to 35000 KG MTOW, BAe 146 (Avro RJ series); Embraer E135, E145; Bombardier CRJ1/2/7/9; BD-700 Global Express; Gulfstream 5. **Pilots must ensure adherence to clearance as issued by ATC.**

**AVERAGE TRACK MILEAGE**  
LISTO 2R: 15 NM to LISTO  
LISTO 2Y: 14 NM to LISTO

**SPEED PROFILE**

Speed profile applies to all acft following these SIDs unless cancelled by ATC.  
Jet traffic MTOW above 35000 KG:  
250 KT until FL100.  
280-290 KT between FL100 & FL260.  
Jet traffic MTOW below 35000 KG & all non-jet traffic:  
210-250 KT until FL260.  
If unable to comply, inform ATC before obtaining departure clearance.

**WARNING:** Do not climb above 5000' until instructed by ATC.

② Aircraft requesting cruising levels at or below **FL70** will be routed via PEDIG.

**WARNING RWY 23L:** In the event of a missed approach on runway 23R ATC may instruct aircraft which have departed from runway 23L to make a LEFT turn in order to establish separation.

These SIDs require minimum climb gradients of

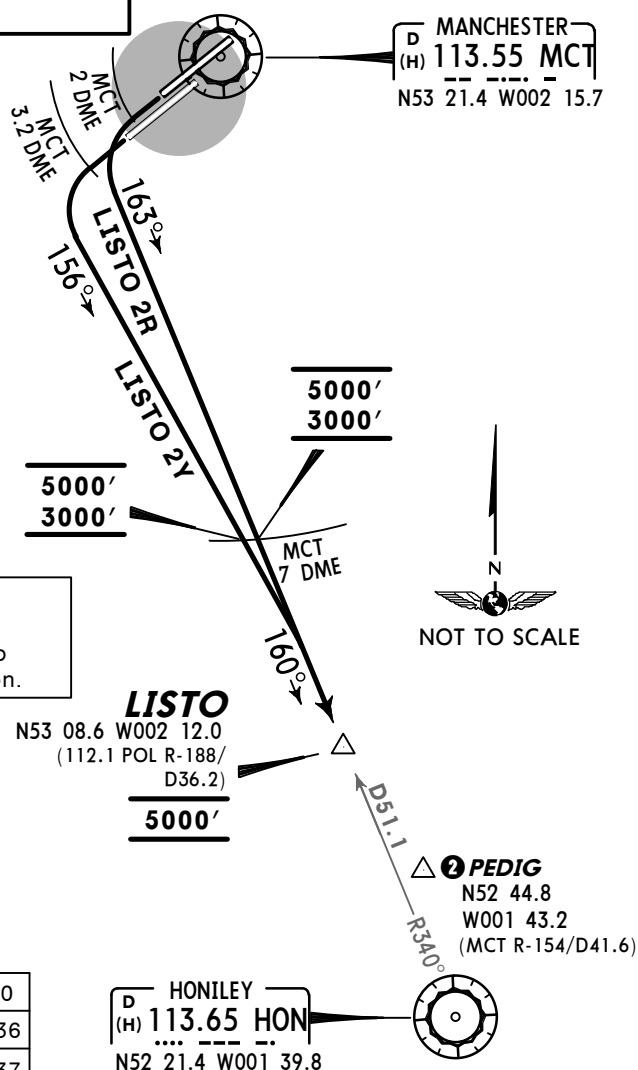
**LISTO 2R**

14.6% until MCT 2 DME, then  
6% up to 5000' for ATC or airspace purposes.

**LISTO 2Y**

12.3% until MCT 3.2 DME for ATC or airspace purposes.

| Gnd speed-KT    | 75   | 100  | 150  | 200  | 250  | 300  |
|-----------------|------|------|------|------|------|------|
| 14.6% V/V (fpm) | 1109 | 1479 | 2218 | 2957 | 3696 | 4436 |
| 12.3% V/V (fpm) | 934  | 1246 | 1868 | 2491 | 3114 | 3737 |
| 6% V/V (fpm)    | 456  | 608  | 911  | 1215 | 1519 | 1823 |



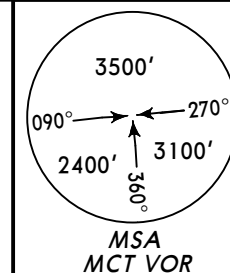
| SID      | RWY | ROUTING/ALTITUDE                                                                                                                                          |
|----------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| LISTO 2R | 23R | Climb straight ahead, at MCT 2 DME turn LEFT, 163° track, cross MCT 7 DME at or above 3000' (MAX 5000'), intercept HON R-340 inbound to LISTO at 5000'.   |
| LISTO 2Y | 23L | Climb straight ahead, at MCT 3.2 DME turn LEFT, 156° track, cross MCT 7 DME at or above 3000' (MAX 5000'), intercept HON R-340 inbound to LISTO at 5000'. |

SCOTTISH  
Control  
134.42Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'

1. When instructed contact SCOTTISH Control after take-off.
2. SIDs include noise preferential routes (refer to 10-4).
3. No turns below 760'.
4. Cruising levels will be allocated enroute by SCOTTISH Control (at or below FL190) or LONDON Control (above FL190).
5. Rwy 05L: EXPECT close-in obstacles.

**LISTO TWO SIERRA (LISTO 2S) [LIST2S]**  
**LISTO TWO ZULU (LISTO 2Z) [LIST2Z]**  
**RWYS 05L/R DEPARTURES**  
**VIA AIRWAYS AND FOR LEAVING CONTROLLED AIRSPACE VIA TNT**  
**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**



MANCHESTER  
D (H) 113.55 MCT  
N53 21.4 W002 15.7



POLE HILL  
D (H) 112.1 POL  
N53 44.6 W002 06.2

**SPEED PROFILE**

Speed profile applies to all acft following these SIDs unless cancelled by ATC.

Jet acft above 35000 KG MTOW:  
250 KT until FL100,  
280-290 KT between FL100 & FL260.  
Jet acft below 35000 KG MTOW &  
all non-jet acft:  
210-250 KT until FL260.

If unable to comply, inform ATC before obtaining departure clearance.

**WARNING:** Do not climb above 5000' until instructed by ATC.

**WARNING RWY 05L:** In the event of a missed approach on runway 05R ATC may instruct aircraft which have departed from runway 05L to make a LEFT turn in order to establish separation.

These SIDs require minimum climb gradients of

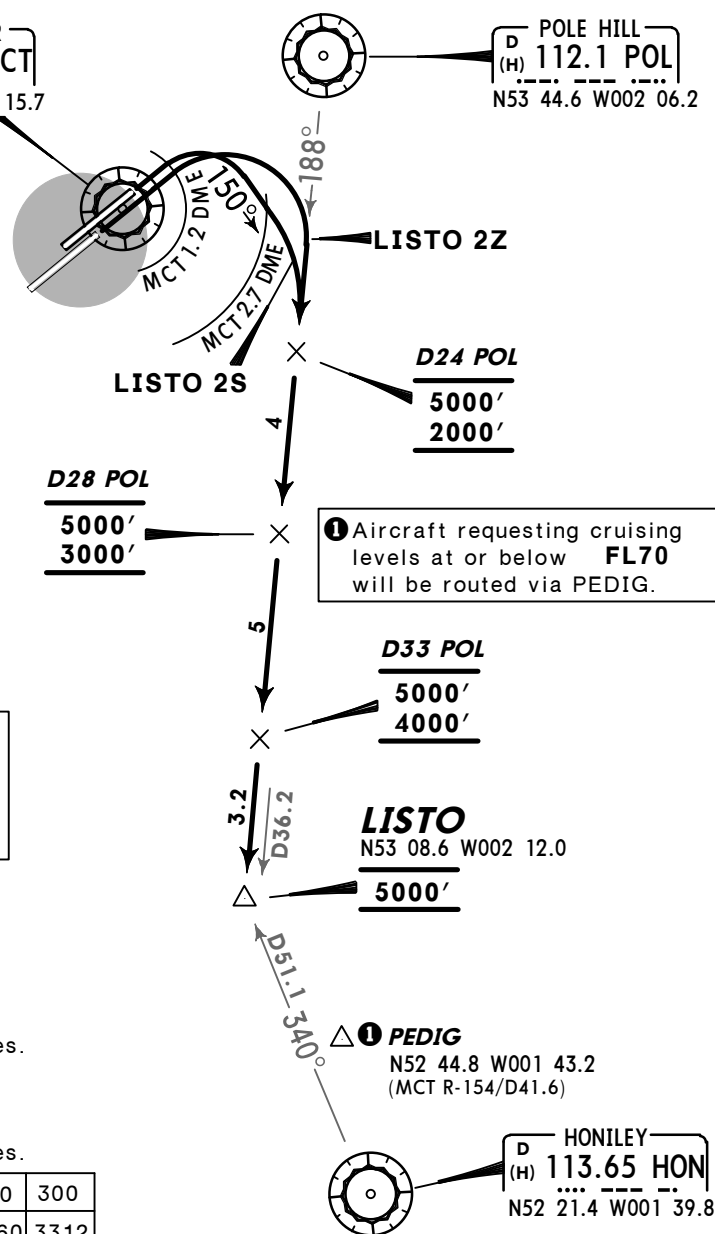
**LISTO 2S**

10.9% until MCT 1.2 DME, then  
6.9% up to 2000', then  
5% up to 5000' for ATC or airspace purposes.

**LISTO 2Z**

4.9% until MCT 1.2 DME, then  
6.9% up to 2000', then  
5% up to 5000' for ATC or airspace purposes.

| Gnd speed-KT    | 75  | 100  | 150  | 200  | 250  | 300  |
|-----------------|-----|------|------|------|------|------|
| 10.9% V/V (fpm) | 828 | 1104 | 1656 | 2208 | 2760 | 3312 |
| 6.9% V/V (fpm)  | 524 | 699  | 1048 | 1398 | 1747 | 2096 |
| 5% V/V (fpm)    | 380 | 506  | 760  | 1013 | 1266 | 1519 |
| 4.9% V/V (fpm)  | 372 | 496  | 744  | 992  | 1241 | 1489 |

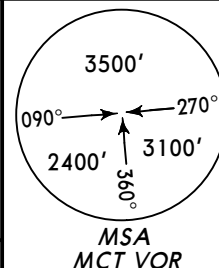


**AVERAGE TRACK MILEAGE**  
18 NM to LISTO

| SID      | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                                                           |
|----------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LISTO 2S | 05L | Climb straight ahead, at MCT 1.2 DME turn RIGHT, 150° track, at MCT 2.7 DME turn RIGHT, intercept POL R-188, cross D24 POL at or above 2000' (MAX 5000'), D28 POL at or above 3000' (MAX 5000'), D33 POL at or above 4000' (MAX 5000'), to LISTO at 5000'. |
| LISTO 2Z | 05R | Climb straight ahead, at MCT 1.2 DME turn RIGHT, intercept POL R-188, cross D24 POL at or above 2000' (MAX 5000'), D28 POL at or above 3000' (MAX 5000'), D33 POL at or above 4000' (MAX 5000'), to LISTO at 5000'.                                        |

SCOTTISH  
Control  
128.05Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact SCOTTISH Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by SCOTTISH Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 23R: EXPECT close-in obstacles.



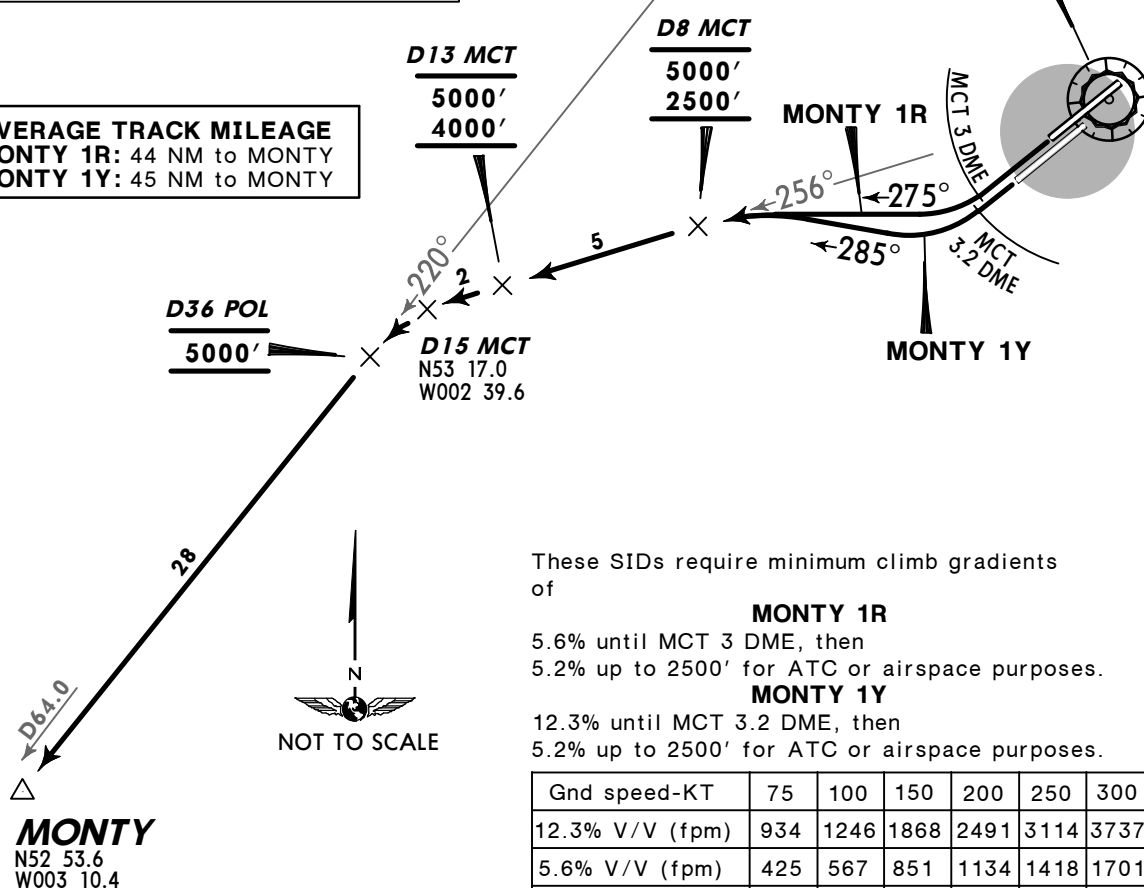
**MONTY ONE ROMEO (MONTY 1R) [MONT1R]  
MONTY ONE YANKEE (MONTY 1Y) [MONT1Y]  
RWYS 23L/R DEPARTURES  
FOR AIRCRAFT LEAVING CONTROLLED AIRSPACE AT MONTY**

**~~SPEED~~ MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above  
5000' until instructed by ATC.

**WARNING RWY 23L:** In the event of  
a missed approach on runway 23R ATC  
may instruct aircraft which have departed  
from runway 23L to make a LEFT  
turn in order to establish separation.

**AVERAGE TRACK MILEAGE**  
MONTY 1R: 44 NM to MONTY  
MONTY 1Y: 45 NM to MONTY



These SIDs require minimum climb gradients  
of

**MONTY 1R**

5.6% until MCT 3 DME, then  
5.2% up to 2500' for ATC or airspace purposes.

**MONTY 1Y**

12.3% until MCT 3.2 DME, then  
5.2% up to 2500' for ATC or airspace purposes.

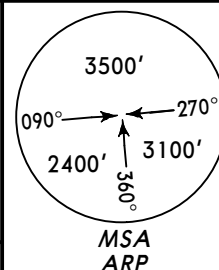
| Gnd speed-KT    | 75  | 100  | 150  | 200  | 250  | 300  |
|-----------------|-----|------|------|------|------|------|
| 12.3% V/V (fpm) | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 5.6% V/V (fpm)  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 5.2% V/V (fpm)  | 395 | 527  | 790  | 1053 | 1317 | 1580 |

| SID      | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                                                  |
|----------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MONTY 1R | 23R | Climb straight ahead, at MCT 3 DME turn RIGHT, 275° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), D13 MCT at or above 4000' (MAX 5000'), at D15 MCT turn LEFT, intercept POL R-220, cross D36 POL at 5000', to MONTY.   |
| MONTY 1Y | 23L | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 285° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), D13 MCT at or above 4000' (MAX 5000'), at D15 MCT turn LEFT, intercept POL R-220, cross D36 POL at 5000', to MONTY. |

MANCHESTER  
Control  
128.05

Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 05L: EXPECT close-in obstacles.



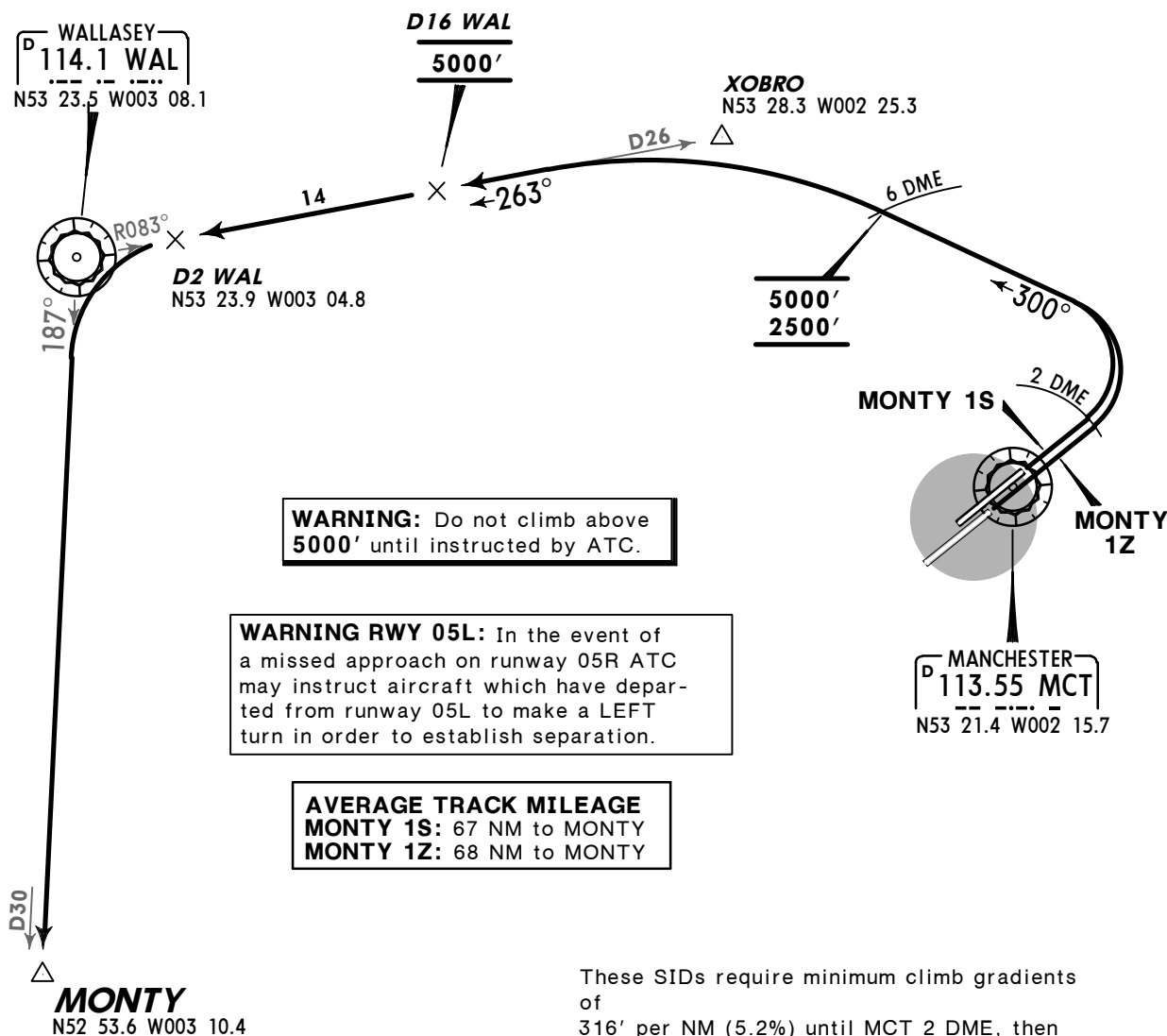
**MONTY ONE SIERRA (MONTY 1S) [MONT1S]**

**MONTY ONE ZULU (MONTY 1Z) [MONT1Z]**

**RWYS 05L/R DEPARTURES**

FOR AIRCRAFT LEAVING CONTROLLED AIRSPACE AT MONTY

**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**



These SIDs require minimum climb gradients of  
316' per NM (5.2%) until MCT 2 DME, then  
243' per NM (4%) up to **2500'** for ATC or  
airspace purposes.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |
| 243' per NM  | 304 | 405 | 608 | 810  | 1013 | 1215 |

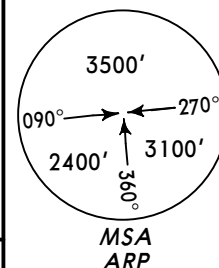
If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

| SID             | RWY        | ROUTING/ALTITUDE                                                                                                                                                                                                               |
|-----------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MONTY 1S</b> | <b>05L</b> | Climb straight ahead, at MCT 2 DME turn LEFT, 300° track towards XOBRO, cross MCT 6 DME at or above 2500' (MAX 5000'), intercept WAL R-083 inbound, cross D16 WAL at 5000' to D2 WAL, turn LEFT, intercept WAL R-187 to MONTY. |
| <b>MONTY 1Z</b> | <b>05R</b> |                                                                                                                                                                                                                                |



MANCHESTER  
Control  
128.05Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 23R: EXPECT close-in obstacles.

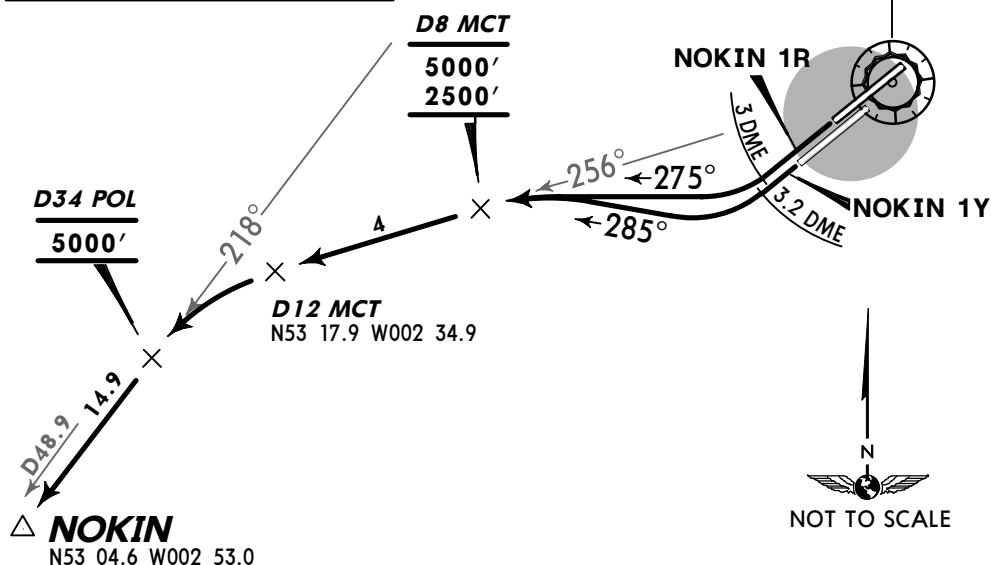


**NOKIN ONE ROMEO (NOKIN 1R) [NOKI1R]**  
**NOKIN ONE YANKEE (NOKIN 1Y) [NOKI1Y]**  
**RWYS 23R/L DEPARTURES**  
**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.

**WARNING RWY 23L:** In the event of a missed approach on runway 23R ATC may instruct aircraft which have departed from runway 23L to make a LEFT turn in order to establish separation.

**AVERAGE TRACK MILEAGE**  
**NOKIN 1R: 29 NM to NOKIN**  
**NOKIN 1Y: 28 NM to NOKIN**



| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
|--------------|-----|------|------|------|------|------|
| 747' per NM  | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 340' per NM  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 316' per NM  | 395 | 527  | 790  | 1053 | 1317 | 1580 |

If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

These SIDs require minimum climb gradients of

**NOKIN 1R**

340' per NM (5.6%) until MCT 3 DME, then 316' per NM (5.2%) up to **2500'** for ATC or airspace purposes.

**NOKIN 1Y**

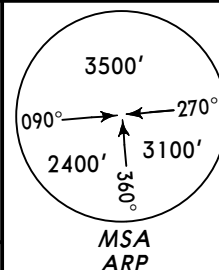
747' per NM (12.3%) until MCT 3.2 DME, then 316' per NM (5.2%) up to **2500'** for ATC or airspace purposes.

| SID                  | RWY        | ROUTING/ALTITUDE                                                                                                                                                                                          |
|----------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NOKIN 1R</b><br>① | <b>23R</b> | Climb straight ahead, at MCT 3 DME turn RIGHT, 275° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), at D12 MCT turn LEFT, intercept POL R-218, cross D34 POL at 5000' to NOKIN.   |
| <b>NOKIN 1Y</b><br>① | <b>23L</b> | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 285° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), at D12 MCT turn LEFT, intercept POL R-218, cross D34 POL at 5000' to NOKIN. |

① Airway **UN 862:** Aircraft requesting a cruising level of **FL270** or above can expect a clearance from LONDON Control to cross AMRAL at or above **FL270**.

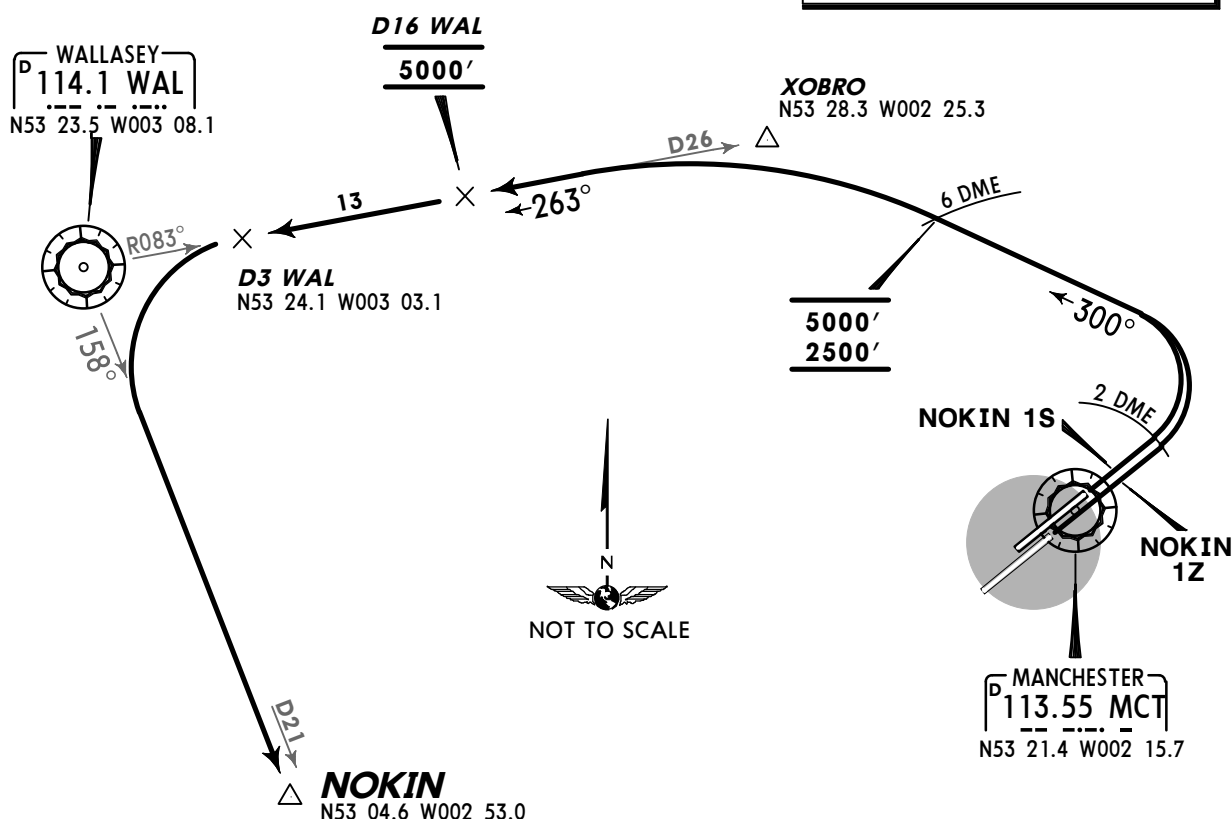
MANCHESTER  
Control  
128.05Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190). 5. Rwy 05L: EXPECT close-in obstacles.



**NOKIN ONE SIERRA (NOKIN 1S) [NOKI1S]  
NOKIN ONE ZULU (NOKIN 1Z) [NOKI1Z]  
RWYS 05L/R DEPARTURES  
SPEED MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.



These SIDs require minimum climb gradients of  
316' per NM (5.2%) until MCT 2 DME, then  
243' per NM (4%) up to **2500'** for ATC or  
airspace purposes.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |
| 243' per NM  | 304 | 405 | 608 | 810  | 1013 | 1215 |

If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

**WARNING RWY 05L:** In the event of a missed approach on runway 05R ATC may instruct aircraft which have departed from runway 05L to make a LEFT turn in order to establish separation.

**AVERAGE TRACK MILEAGE**  
NOKIN 1S: 58 NM to NOKIN  
NOKIN 1Z: 59 NM to NOKIN

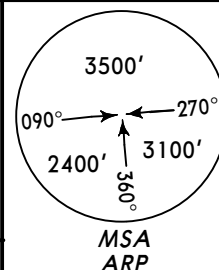
| SID           | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                                |
|---------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NOKIN 1S<br>① | 05L | Climb straight ahead, at MCT 2 DME turn LEFT, 300° track towards XOBRO, cross MCT 6 DME at or above 2500' (MAX 5000'), intercept WAL R-083 inbound, cross D16 WAL at 5000', at D3 WAL, turn LEFT, intercept WAL R-158 to NOKIN. |
| NOKIN 1Z<br>① | 05R |                                                                                                                                                                                                                                 |

① Airway UN 862: Aircraft requesting a cruising level of **FL270** or above can expect a clearance from LONDON Control to cross AMRAL at or above **FL270**.

MANCHESTER  
Control  
136.57Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'

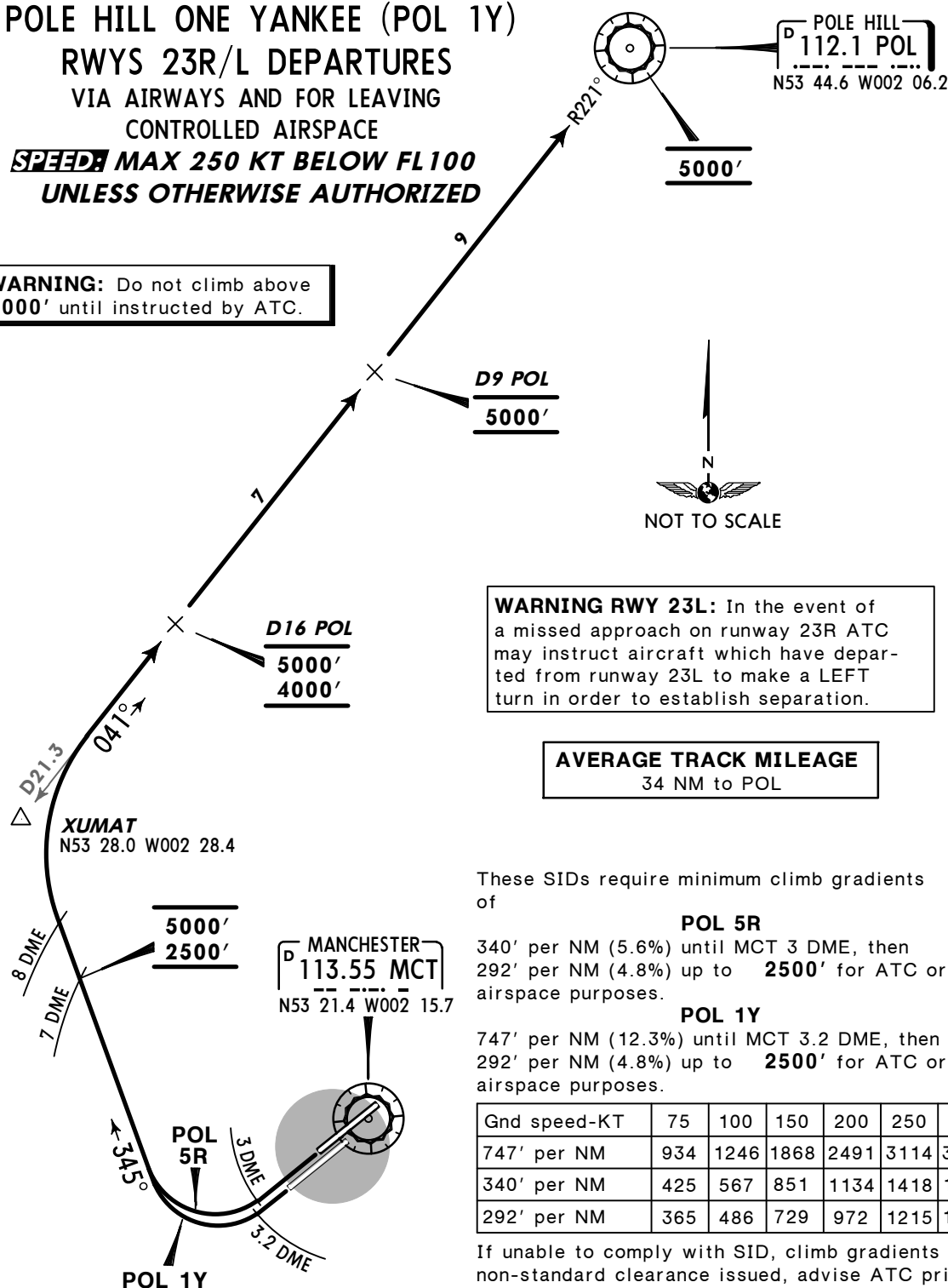
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL270) or SCOTTISH Control (above FL270). 5. Rwy 23R: EXPECT close-in obstacles.



POLE HILL FIVE ROMEO (POL 5R)

POLE HILL ONE YANKEE (POL 1Y)

RWYS 23R/L DEPARTURES

VIA AIRWAYS AND FOR LEAVING  
CONTROLLED AIRSPACE**~~SPEED~~ MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED****WARNING:** Do not climb above  
5000' until instructed by ATC.

These SIDs require minimum climb gradients of

**POL 5R**

340' per NM (5.6%) until MCT 3 DME, then 292' per NM (4.8%) up to **2500'** for ATC or airspace purposes.

**POL 1Y**

747' per NM (12.3%) until MCT 3.2 DME, then 292' per NM (4.8%) up to **2500'** for ATC or airspace purposes.

| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
|--------------|-----|------|------|------|------|------|
| 747' per NM  | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 340' per NM  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 292' per NM  | 365 | 486  | 729  | 972  | 1215 | 1458 |

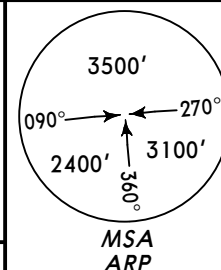
If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

| SID    | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                                                               |
|--------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POL 5R | 23R | Climb straight ahead, at MCT 3 DME turn RIGHT, 345° track towards XUMAT, cross MCT 7 DME at or above 2500' (MAX 5000'), at MCT 8 DME turn RIGHT, intercept POL R-221 inbound, cross D16 POL at or above 4000' (MAX 5000'), D9 POL at 5000', to POL at 5000'.   |
| POL 1Y | 23L | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 345° track towards XUMAT, cross MCT 7 DME at or above 2500' (MAX 5000'), at MCT 8 DME turn RIGHT, intercept POL R-221 inbound, cross D16 POL at or above 4000' (MAX 5000'), D9 POL at 5000', to POL at 5000'. |

MANCHESTER  
Control  
136.57Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'

1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL270) or SCOTTISH Control (above FL270). 5. Rwy 05L: EXPECT close-in obstacles.



**POLE HILL FOUR SIERRA (POL 4S)**  
**POLE HILL ONE ZULU (POL 1Z)**  
**RWYS 05L/R DEPARTURES**  
**VIA AIRWAYS AND FOR LEAVING CONTROLLED AIRSPACE**  
**~~SPEED~~ MAX 250 KT BELOW FL100**  
**UNLESS OTHERWISE AUTHORIZED**

**AVERAGE TRACK MILEAGE**

POL 4S: 25 NM to POL

POL 1Z: 26 NM to POL



**WARNING:** Do not climb above  
**5000'** until instructed by ATC.

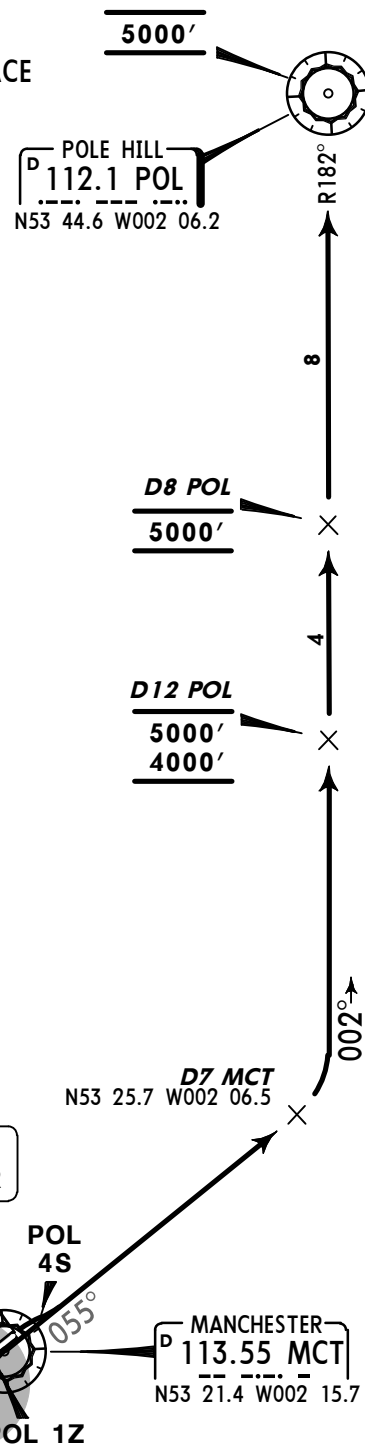
**WARNING RWY 05L:** In the event of  
a missed approach on runway 05R ATC  
may instruct aircraft which have departed  
from runway 05L to make a LEFT  
turn in order to establish separation.

These SIDs require a minimum climb gradient  
of  
261' per NM (4.3%) up to **4000'** for ATC or  
airspace purposes.

|              |     |     |     |     |      |      |
|--------------|-----|-----|-----|-----|------|------|
| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
| 261' per NM  | 327 | 435 | 653 | 871 | 1089 | 1306 |

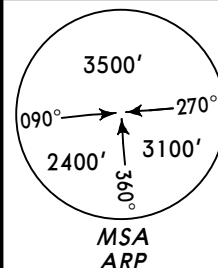
If unable to comply with SID, climb gradients or  
non-standard clearance issued, advise ATC prior  
to take-off and request alternative clearance.

| SID           | RWY        | ROUTING/ALTITUDE                                                                                                                                                                                                         |
|---------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>POL 4S</b> | <b>05L</b> | Climb straight ahead, at or above <b>760'</b> , but not before DER intercept MCT R-055, at D7 MCT turn LEFT, intercept POL R-182 inbound, cross D12 POL at or above 4000' (MAX 5000'), D8 POL at 5000', to POL at 5000'. |
| <b>POL 1Z</b> | <b>05R</b> | Climb straight ahead, intercept MCT R-055, at D7 MCT turn LEFT, intercept POL R-182 inbound, cross D12 POL at or above 4000' (MAX 5000'), D8 POL at 5000', to POL at 5000'.                                              |



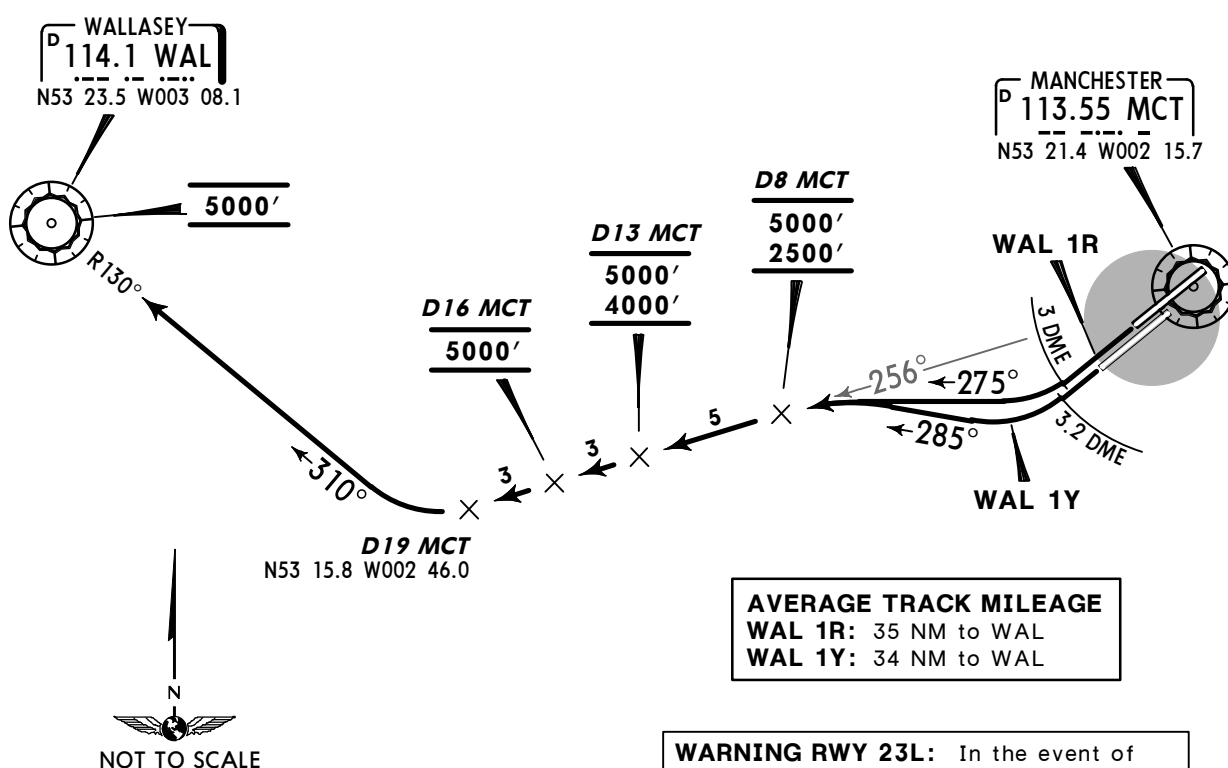
MANCHESTER  
Control  
128.05Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL240) or LONDON Control/SCOTTISH Control (above FL240). 5. Rwy 23R: EXPECT close-in obstacles.



**WALLASEY ONE ROMEO (WAL 1R)  
WALLASEY ONE YANKEE (WAL 1Y)  
RWYS 23R/L DEPARTURES  
~~SPEEDS~~ MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.



**AVERAGE TRACK MILEAGE**  
WAL 1R: 35 NM to WAL  
WAL 1Y: 34 NM to WAL

**WARNING RWY 23L:** In the event of a missed approach on runway 23R ATC may instruct aircraft which have departed from runway 23L to make a LEFT turn in order to establish separation.

These SIDs require minimum climb gradients of

**WAL 1R**

340' per NM (5.6%) until MCT 3 DME, then 316' per NM (5.2%) up to 2500', then 207' per NM (3.4%) up to 5000' for ATC or airspace purposes.

**WAL 1Y**

747' per NM (12.3%) until MCT 3.2 DME, then 316' per NM (5.2%) up to 2500', then 207' per NM (3.4%) up to 5000' for ATC or airspace purposes.

| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
|--------------|-----|------|------|------|------|------|
| 747' per NM  | 934 | 1246 | 1868 | 2491 | 3114 | 3737 |
| 340' per NM  | 425 | 567  | 851  | 1134 | 1418 | 1701 |
| 316' per NM  | 395 | 527  | 790  | 1053 | 1317 | 1580 |
| 207' per NM  | 258 | 344  | 516  | 689  | 861  | 1033 |

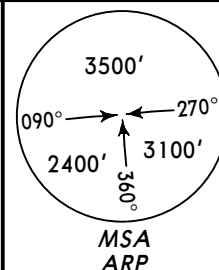
If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

| SID    | RWY | ROUTING/ALTITUDE                                                                                                                                                                                                                                           |
|--------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WAL 1R | 23R | Climb straight ahead, at MCT 3 DME turn RIGHT, 275° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), D13 MCT at or above 4000' (MAX 5000'), D16 MCT at 5000', at D19 MCT turn RIGHT, intercept WAL R-130 inbound to WAL at 5000'.   |
| WAL 1Y | 23L | Climb straight ahead, at MCT 3.2 DME turn RIGHT, 285° track, intercept MCT R-256, cross D8 MCT at or above 2500' (MAX 5000'), D13 MCT at or above 4000' (MAX 5000'), D16 MCT at 5000', at D19 MCT turn RIGHT, intercept WAL R-130 inbound to WAL at 5000'. |

MANCHESTER  
Control  
128.05

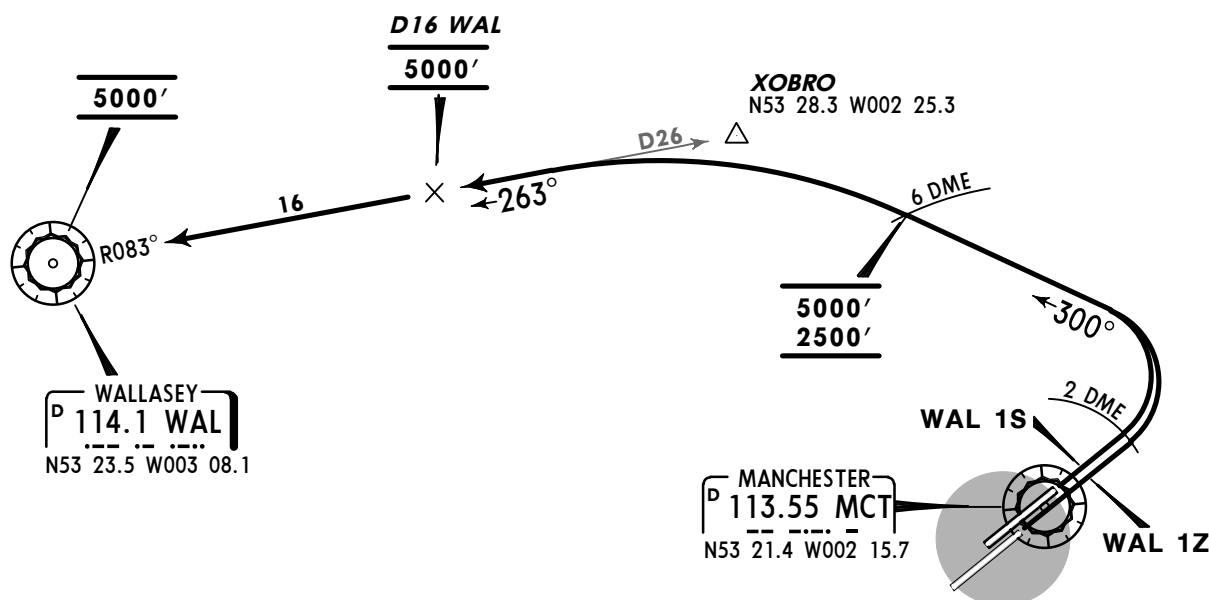
Apt Elev  
257'

Trans level: By ATC Trans alt: 5000'  
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL240) or LONDON Control/SCOTTISH Control (above FL240). 5. Rwy 05L: EXPECT close-in obstacles.



**WALLASEY ONE SIERRA (WAL 1S)  
WALLASEY ONE ZULU (WAL 1Z)  
RWYS 05L/R DEPARTURES  
~~SPEED~~ MAX 250 KT BELOW FL100  
UNLESS OTHERWISE AUTHORIZED**

**WARNING:** Do not climb above 5000' until instructed by ATC.



**AVERAGE TRACK MILEAGE**  
WAL 1S: 37 NM to WAL  
WAL 1Z: 38 NM to WAL

These SIDs require minimum climb gradients of  
316' per NM (5.2%) until MCT 2 DME, then  
243' per NM (4%) up to 2500' for ATC or  
airspace purposes.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |
| 243' per NM  | 304 | 405 | 608 | 810  | 1013 | 1215 |

If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.



**WARNING RWY 05L:** In the event of a missed approach on runway 05R ATC may instruct aircraft which have departed from runway 05L to make a LEFT turn in order to establish separation.

| SID    | RWY | ROUTING/ALTITUDE                                                                                                                                                                             |
|--------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WAL 1S | 05L | Climb straight ahead, at MCT 2 DME turn LEFT, 300° track towards XOBRO, cross MCT 6 DME at or above 2500' (MAX 5000'), intercept WAL R-083 inbound, cross D16 WAL at 5000', to WAL at 5000'. |
| WAL 1Z | 05R |                                                                                                                                                                                              |

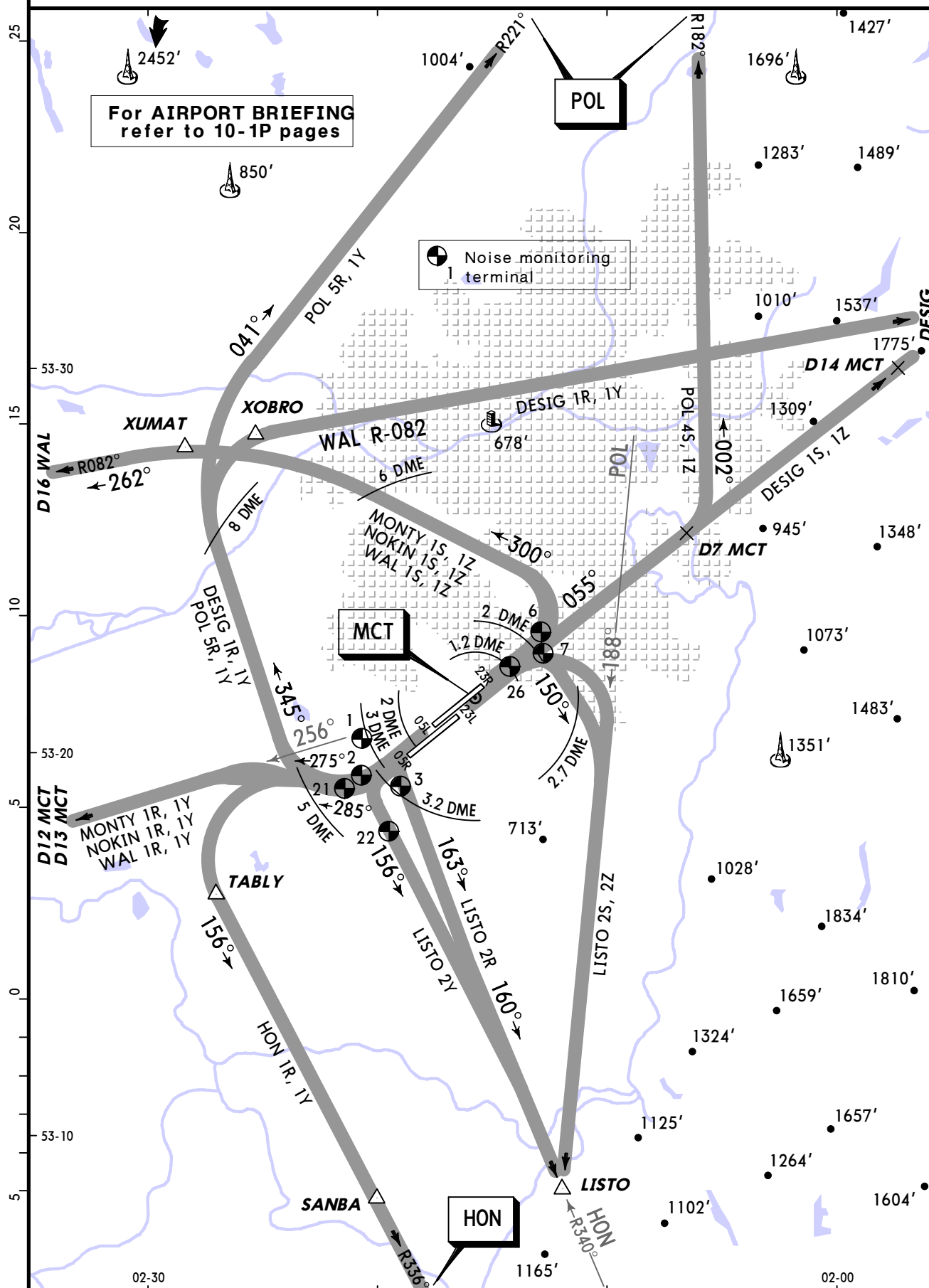
## NOISE ABATEMENT

| Rwy | NMT | NM  |
|-----|-----|-----|
| 23R | 1   | 3.4 |
|     | 3   | 3.4 |
|     | 2   | 3.8 |

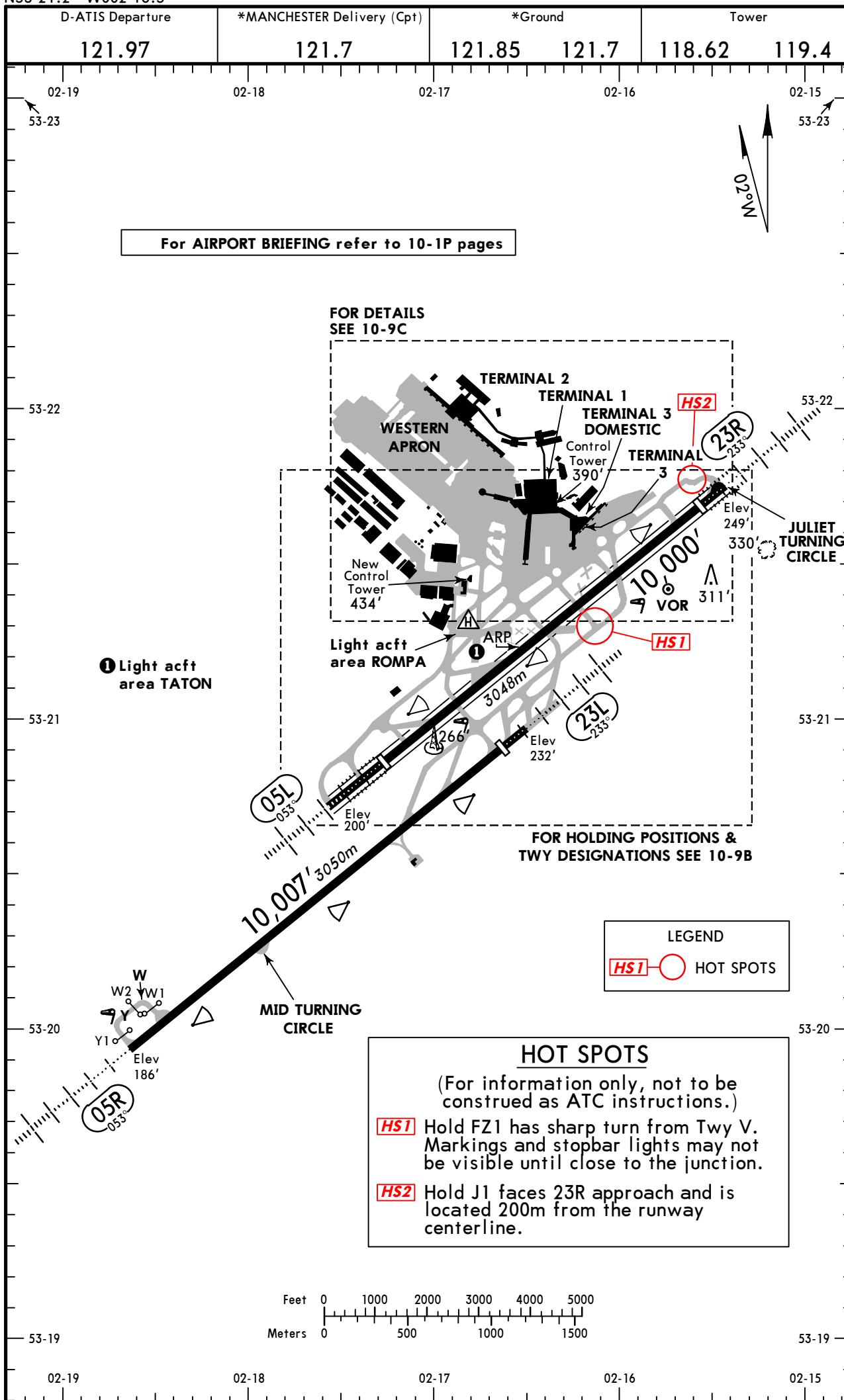
| Rwy | NMT | NM  |
|-----|-----|-----|
| 23L | 21  | 3.5 |
|     | 22  | 3.5 |

| Rwy | NMT | NM  |
|-----|-----|-----|
| 05L | 7   | 3.4 |
|     | 6   | 3.7 |

| Rwy | NMT | NM  |
|-----|-----|-----|
| 05R | 26  | 3.5 |



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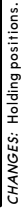
## USABLE LENGTHS

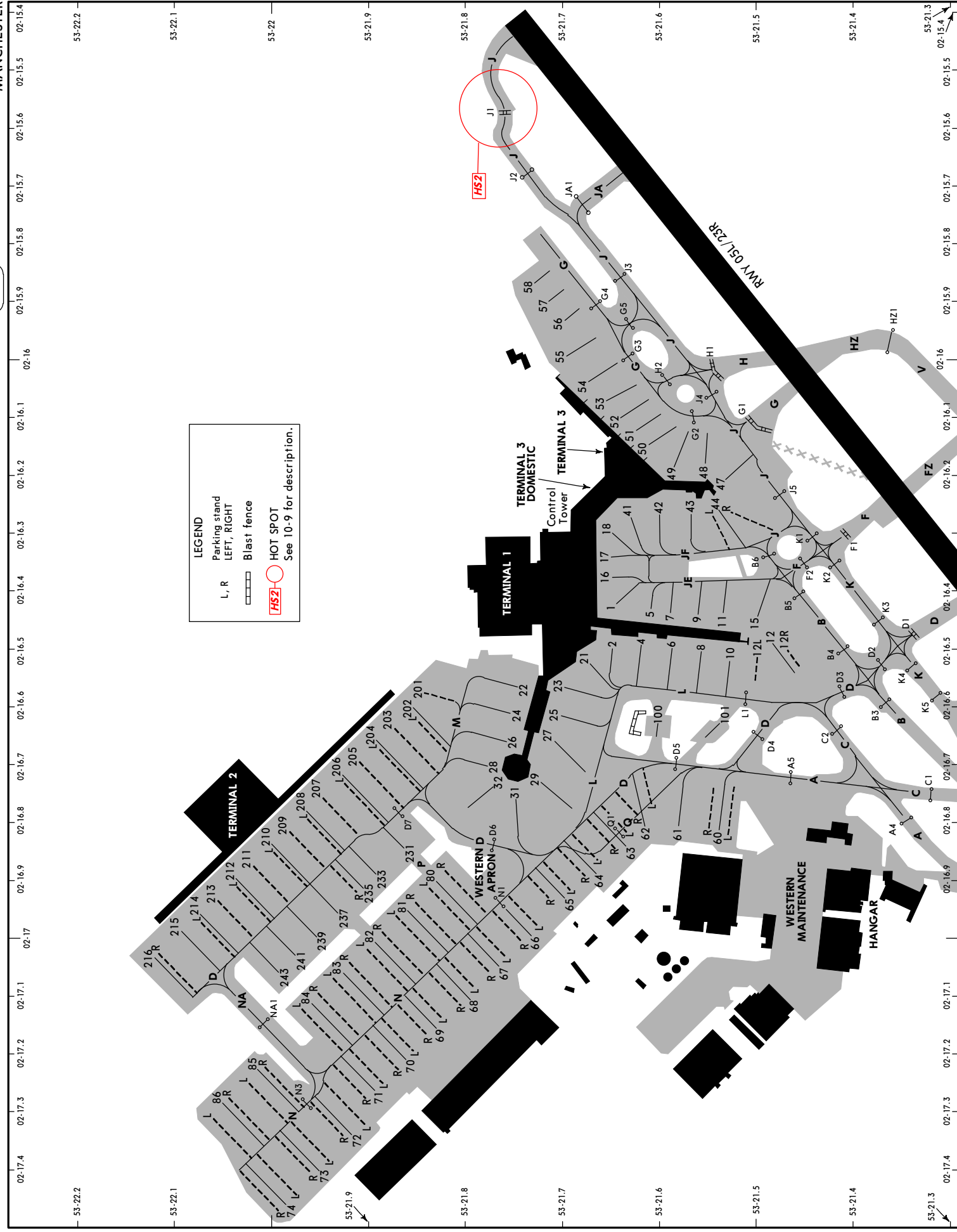
twy G int 6719' (2048m)

|            |               |
|------------|---------------|
| twy VC int | 8215' (2504m) |
|------------|---------------|

## TAKE-OFF 1

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| INS COORDINATES |             |           |                |             |           |
|-----------------|-------------|-----------|----------------|-------------|-----------|
| STAND No.       | COORDINATES |           | STAND No.      | COORDINATES |           |
| 1               | N53 21.7    | W002 16.4 | 81R            | N53 21.9    | W002 16.9 |
| 2               | N53 21.6    | W002 16.5 | 82 thru 83     | N53 21.9    | W002 17.0 |
| 4               | N53 21.6    | W002 16.5 | 83L            | N53 21.9    | W002 17.1 |
| 5               | N53 21.6    | W002 16.4 | 83R            | N53 21.9    | W002 17.0 |
| 6 thru 9        | N53 21.6    | W002 16.5 | 84, 84L        | N53 22.0    | W002 17.1 |
| 10 thru 15      | N53 21.5    | W002 16.5 | 84R            | N53 21.9    | W002 17.1 |
| 16              | N53 21.7    | W002 16.4 | 85, 85L, 85R   | N53 22.0    | W002 17.2 |
| 17, 18          | N53 21.7    | W002 16.3 | 86             | N53 22.0    | W002 17.3 |
| 21              | N53 21.7    | W002 16.5 | 86L            | N53 22.1    | W002 17.3 |
| 22 thru 25      | N53 21.7    | W002 16.6 | 86R            | N53 22.0    | W002 17.3 |
| 26              | N53 21.7    | W002 16.7 | 100            | N53 21.6    | W002 16.6 |
| 27              | N53 21.7    | W002 16.6 | 101            | N53 21.5    | W002 16.6 |
| 28              | N53 21.8    | W002 16.7 | 201            | N53 21.8    | W002 16.6 |
| 29, 31          | N53 21.7    | W002 16.7 | 202 thru 203   | N53 21.9    | W002 16.6 |
| 32              | N53 21.8    | W002 16.7 | 204, 204L      | N53 21.9    | W002 16.7 |
| 41 thru 44L     | N53 21.6    | W002 16.3 | 204R           | N53 21.9    | W002 16.6 |
| 44R             | N53 21.5    | W002 16.3 | 205 thru 206L  | N53 21.9    | W002 16.7 |
| 47              | N53 21.5    | W002 16.2 | 207            | N53 21.9    | W002 16.8 |
| 48 thru 50      | N53 21.6    | W002 16.2 | 208 thru 210L  | N53 22.0    | W002 16.8 |
| 51, 52          | N53 21.6    | W002 16.1 | 211 thru 213   | N53 22.0    | W002 16.9 |
| 53, 54          | N53 21.7    | W002 16.1 | 214            | N53 22.1    | W002 17.0 |
| 55 thru 57      | N53 21.7    | W002 16.0 | 214L           | N53 22.1    | W002 16.9 |
| 58              | N53 21.7    | W002 15.9 | 215, 216, 216R | N53 22.1    | W002 17.0 |
| 60, 60L, 60R    | N53 21.5    | W002 16.8 | 231            | N53 21.8    | W002 16.8 |
| 61 thru 63R     | N53 21.6    | W002 16.8 | 233 thru 235L  | N53 21.9    | W002 16.9 |
| 64 thru 65R     | N53 21.7    | W002 16.9 | 237, 239       | N53 21.9    | W002 17.0 |
| 66, 66L, 66R    | N53 21.7    | W002 17.0 | 241            | N53 22.0    | W002 17.0 |
| 67              | N53 21.8    | W002 17.0 | 243            | N53 22.0    | W002 17.1 |
| 67L             | N53 21.7    | W002 17.0 |                |             |           |
| 67R thru 69L    | N53 21.8    | W002 17.1 |                |             |           |
| 69R, 70, 70L    | N53 21.8    | W002 17.2 |                |             |           |
| 70R             | N53 21.9    | W002 17.2 |                |             |           |
| 71              | N53 21.9    | W002 17.3 |                |             |           |
| 71L             | N53 21.9    | W002 17.2 |                |             |           |
| 71R thru 72R    | N53 21.9    | W002 17.3 |                |             |           |
| 73, 73L, 73R    | N53 21.9    | W002 17.4 |                |             |           |
| 74, 74L, 74R    | N53 22.0    | W002 17.4 |                |             |           |
| 80, 80L         | N53 21.8    | W002 16.9 |                |             |           |
| 80R, 81         | N53 21.9    | W002 16.9 |                |             |           |
| 81L             | N53 21.9    | W002 17.0 |                |             |           |

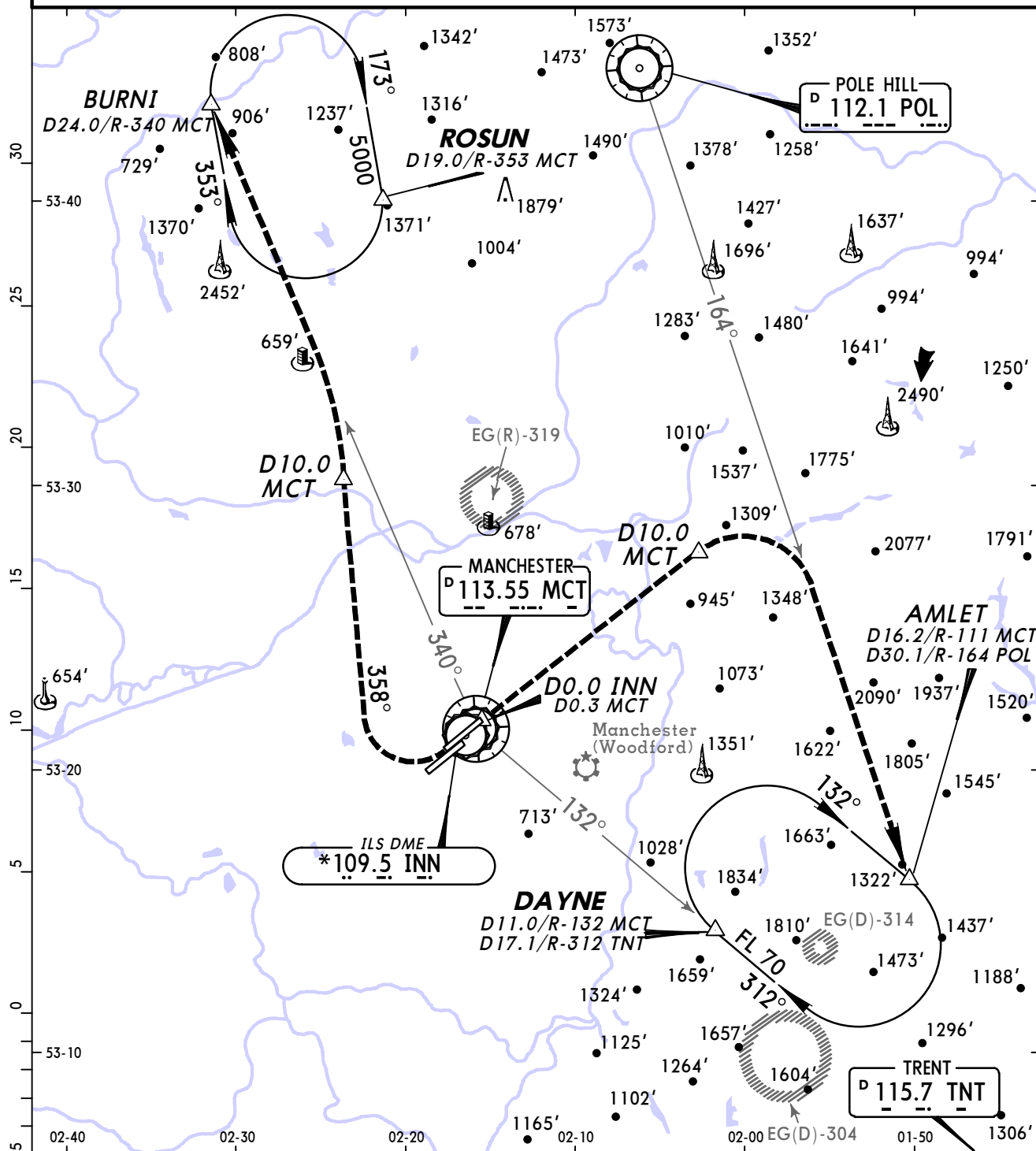
| STRAIGHT-IN RWY |               | DA(H) / MDA(H) | RVR (ALS/ALS out) |
|-----------------|---------------|----------------|-------------------|
| 05L             | CAT 2 ILS DME | 312' (100')    | RA 107' - 300m    |
|                 | ILS DME       | 412' (200')    | 500m / 1000m      |
|                 | LOC           | 640' (428')    | 800m / 1000m      |
|                 | VOR DME       | 690' (478')    | 1000m / 1000m     |
| 05R             | ILS DME       | 386' (200')    | 500m / 1000m      |
|                 | LOC           | 530' (344')    | 800m / 1000m      |
|                 | VOR DME       | 630' (444')    | 800m / 1000m      |
| 23L             | RNAV          | 680' (453')    | 1000m / 1000m     |
|                 | VOR DME       | 690' (463')    | 1000m / 1000m     |
| 23R             | CAT 2 ILS DME | 349' (100')    | RA 102' - 300m    |
|                 | ILS DME       | 449' (200')    | 500m / 1000m      |
|                 | LOC           | 640' (391')    | 800m / 1000m      |
|                 | VOR DME       | 690' (441')    | 800m / 1000m      |

| CIRCLE-TO-LAND | MDA(H)      | VIS   |
|----------------|-------------|-------|
|                | 750' (493') | 1000m |

| TAKE-OFF RWY 05L/R, 23L/R         |                        |                                       |                       |                         |
|-----------------------------------|------------------------|---------------------------------------|-----------------------|-------------------------|
| LVP must be in Force ❶            |                        |                                       |                       |                         |
| RL, FATO<br>LTS, CL &<br>RVR info | RL, FATO<br>LTS & RCLM | Unlit/unmarked<br>defined<br>RWY/FATO | Nil Facilities<br>DAY | Nil Facilities<br>NIGHT |
| 150m                              | 200m                   | 200m                                  | 250m ❷                | 800m                    |

❶ Without LVP 400m are stipulated.

❷ Or rejected take-off distance whichever is the greater.

PROCEDURES TO BE USED IN THE EVENT OF RADIO  
FAILURE FOLLOWING A MISSED APPROACH**MISSED APCH:**

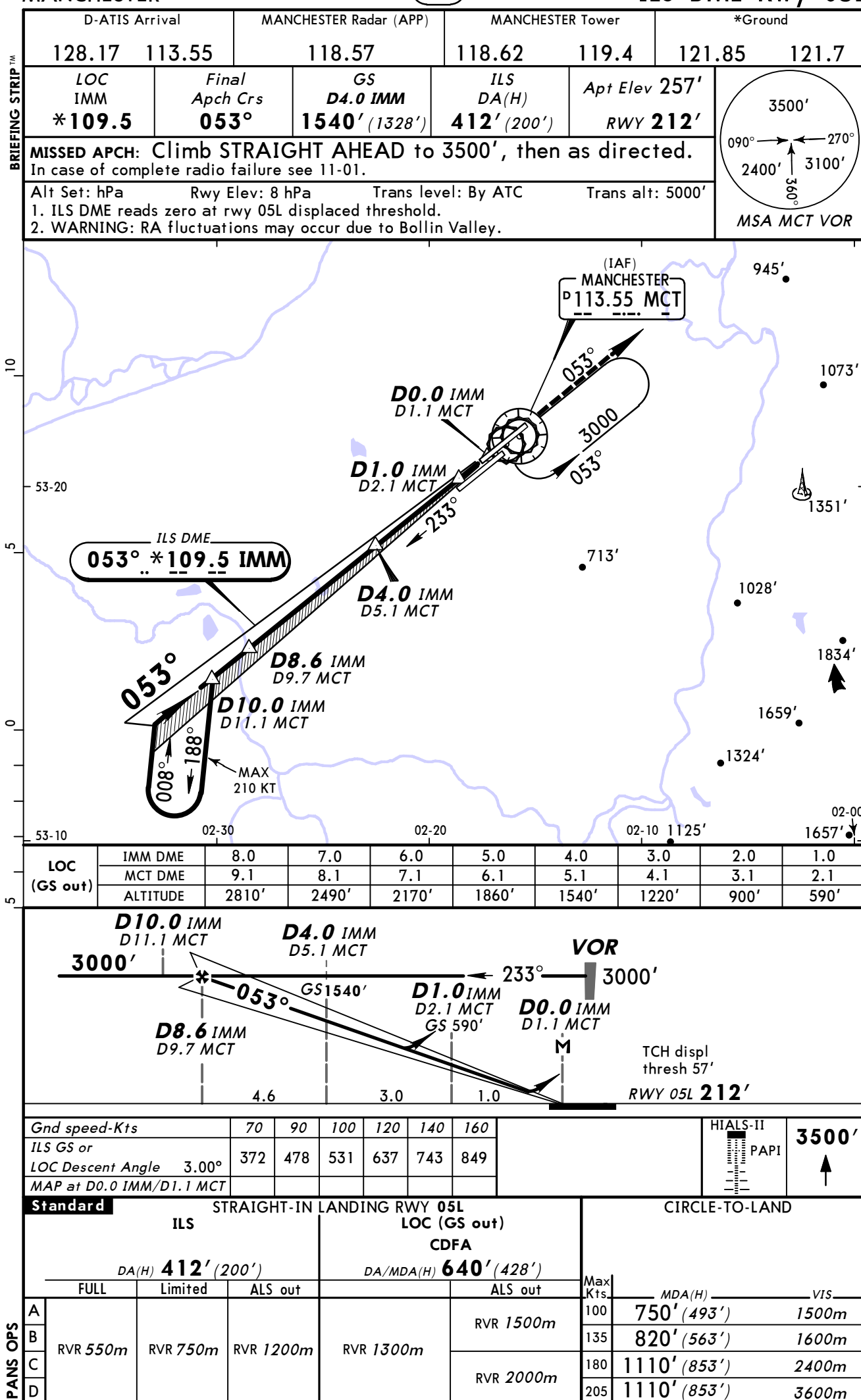
**Rwy 05L:** Climb STRAIGHT AHEAD to 3500'. At D10.0 MCT turn RIGHT climbing to FL 70 to intercept and follow R-164 POL to AMLET to enter DAYNE holding.

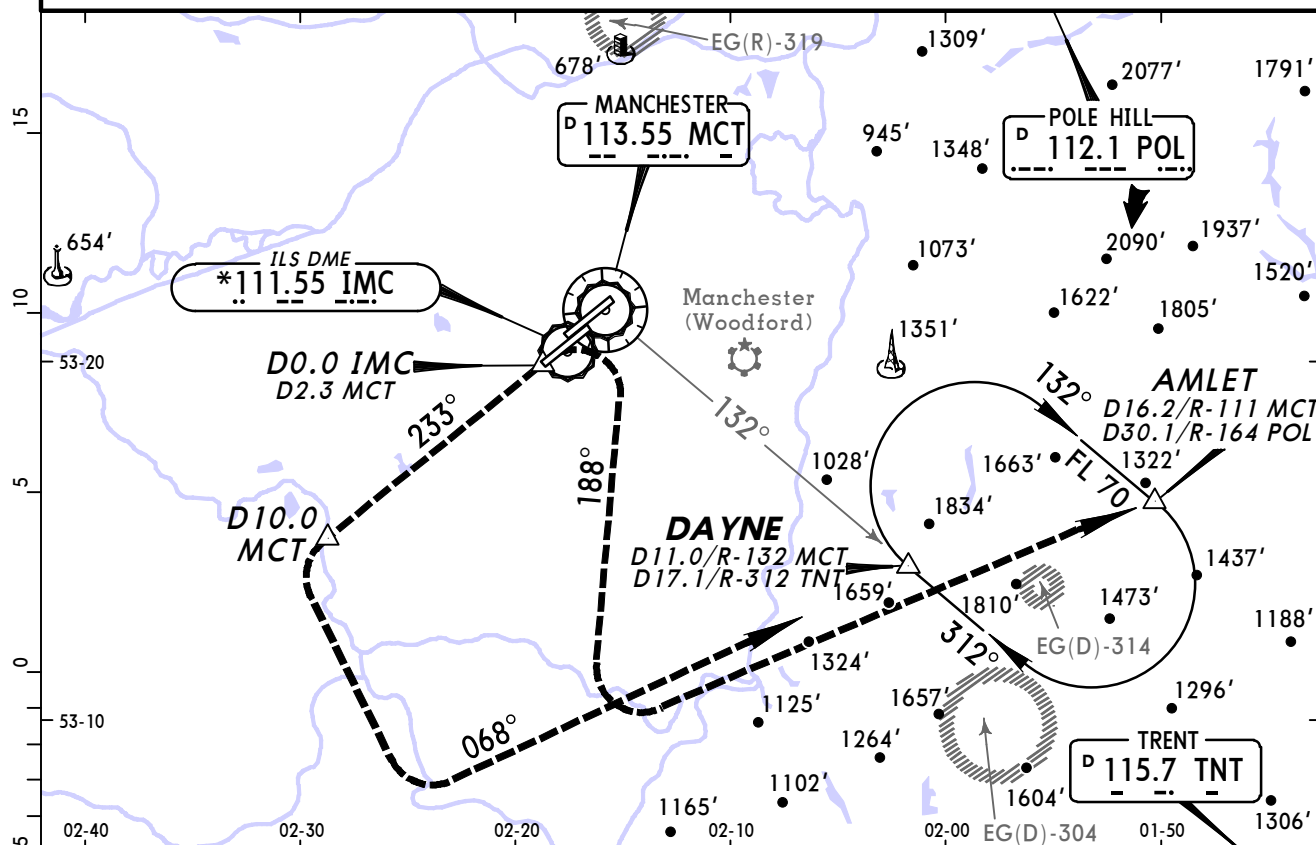
Acft unable to reach 3500' at D10.0 MCT, climbing turn LEFT at D10.0 MCT until reaching 3500', before proceeding to DAYNE holding as detailed above.

**Rwy 23R:** Climb to 3500'. STRAIGHT AHEAD until passing 750' or D0.0 INN (D0.3 MCT) inbound, whichever is the later, then turn RIGHT onto track 358°. At D10.0 MCT turn direct to BURNI (D24.0/R-340 MCT) climbing to 5000' to enter ROSUN holding.

Acft unable to reach 3500' before D10.0 MCT, commence climbing turn LEFT at D10.0 MCT to 3500'. At or above 3500' continue LEFT turn and proceed direct to BURNI.

PANS OPS



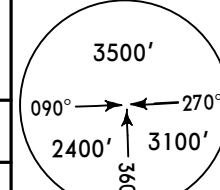
PROCEDURES TO BE USED IN THE EVENT OF RADIO  
FAILURE FOLLOWING A MISSED APPROACH**MISSED APCH:**

Rwy 05R: Climb to 3500'. **ILS & LOC:** STRAIGHT AHEAD to 700' or D0.0 IMC (D2.3 MCT) inbound, whichever is the later, **(VOR DME:** STRAIGHT AHEAD to 700'), then turn RIGHT onto track 188° climbing to FL 70. When established on track 188° and above 3500' turn LEFT direct to AMLET to join DAYNE holding.

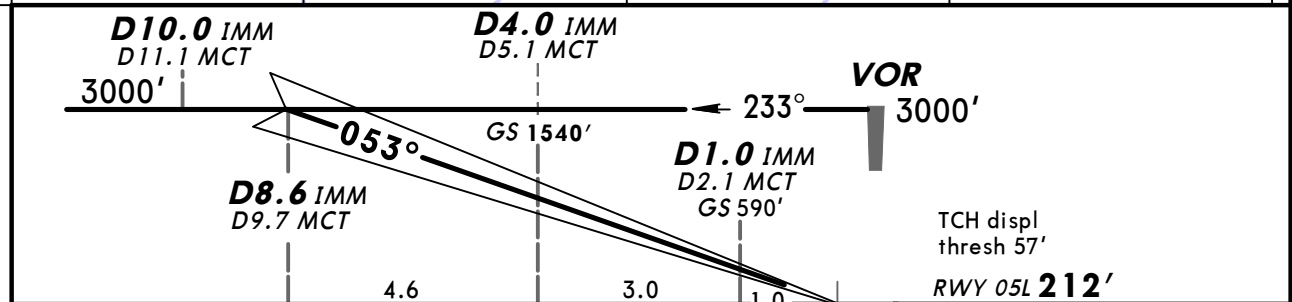
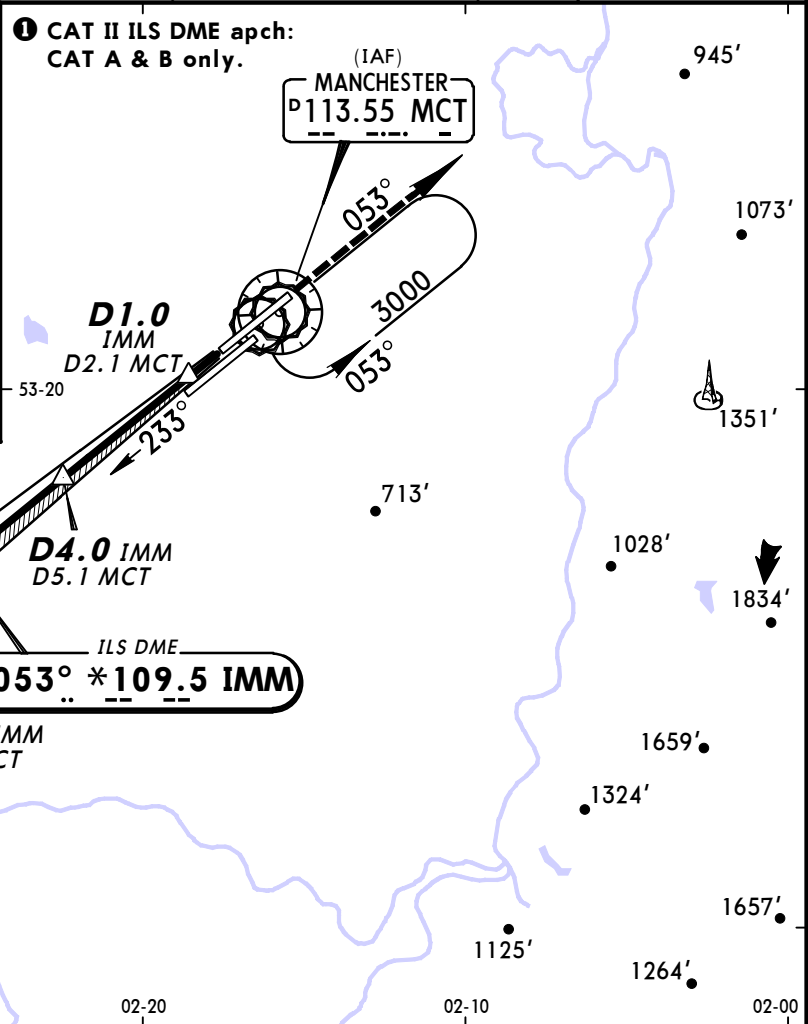
Rwy 23L: Climb STRAIGHT AHEAD to 3500'. At D10.0 MCT turn LEFT onto track 068° continue climbing to FL 70 to enter DAYNE holding.

Acft unable to reach 3500' before D10.0 MCT, climbing turn LEFT at D10.0 MCT until reaching 3500', before proceeding to DAYNE holding as detailed above.



|                                                                                                                                                                     |                           |                                 |                                              |                           |  |                                                                                                    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|----------------------------------------------|---------------------------|--|----------------------------------------------------------------------------------------------------|--|
| D-ATIS Arrival                                                                                                                                                      |                           | MANCHESTER Radar (APP)          |                                              | MANCHESTER Tower          |  | *Ground                                                                                            |  |
| 128.17 113.55                                                                                                                                                       |                           | 118.57                          |                                              | 118.62 119.4              |  | 121.85 121.7                                                                                       |  |
| LOC<br>IMM<br>*109.5                                                                                                                                                | Final<br>Apch Crs<br>053° | GS<br>D4.0 IMM<br>1540' (1328') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 257'<br>RWY 212' |  | <br>MSA MCT VOR |  |
| MISSED APCH: Climb STRAIGHT AHEAD to 3500', then as directed.<br>In case of complete radio failure see 11-01.                                                       |                           |                                 |                                              |                           |  |                                                                                                    |  |
| Alt Set: hPa                                                                                                                                                        |                           | Rwy Elev: 8 hPa                 |                                              | Trans level: By ATC       |  | Trans alt: 5000'                                                                                   |  |
| 1. Special Aircrew & Acft Certification Required. 2. ILS DME reads zero at rwy 05L displaced threshold. 3. WARNING: RA fluctuations may occur due to Bollin Valley. |                           |                                 |                                              |                           |  |                                                                                                    |  |

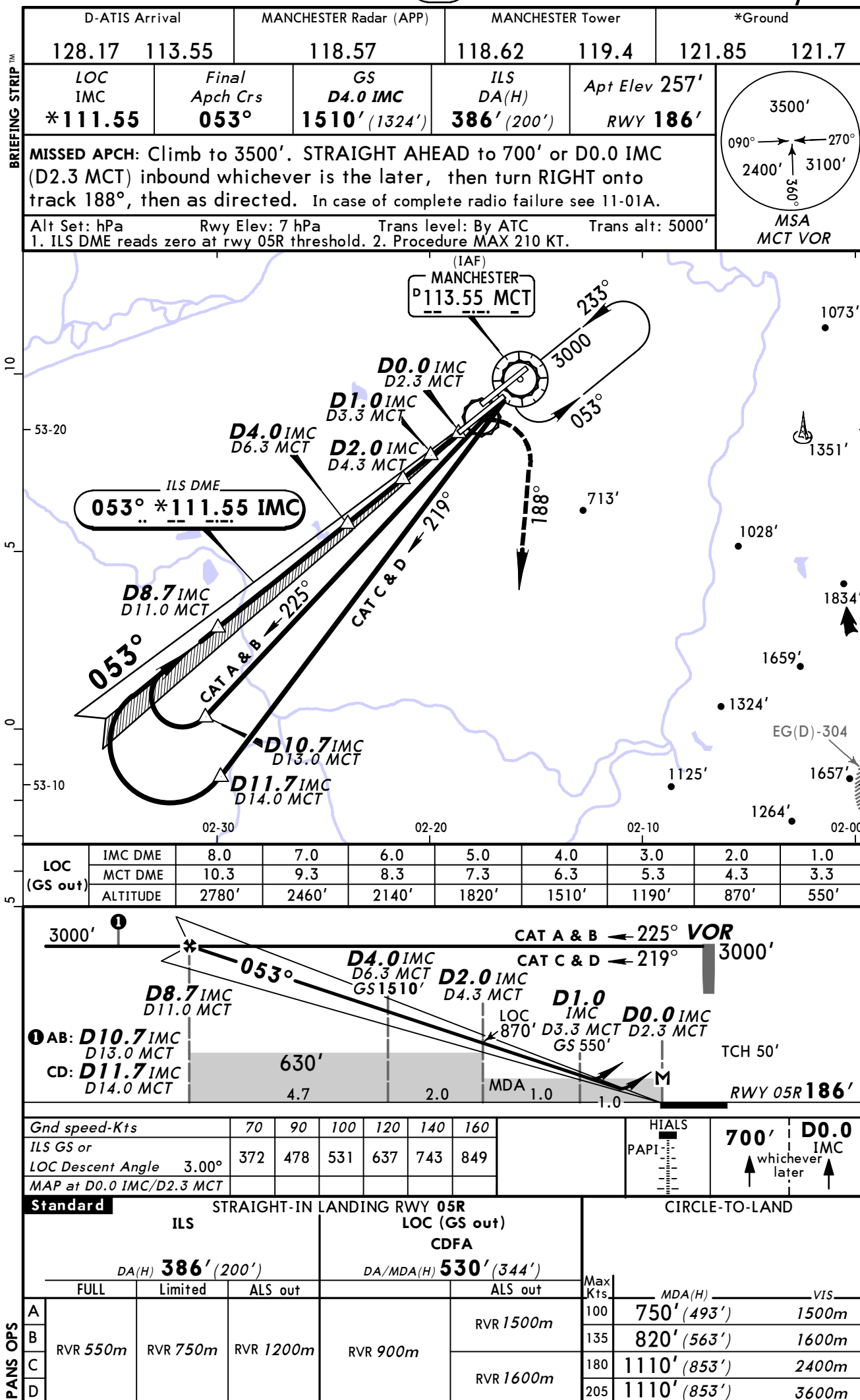
The Bollin Valley causes radio altimeters to show a height increase just below a height of 200' above the rwy threshold. This disturbance lasts for approx 2 seconds. Thereafter the radio altimeter stabilizes. Operators should ensure that pilots are aware of the increase in radio altimeter height indications, just below 200' above the rwy threshold, and it is advisable to consider using a "50 ft above" call instead of the normal "100 ft above" call. Prior to operational use a minimum of four practice approaches to CAT II DH in better than CAT I conditions required.



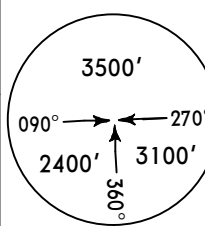
|               |       |     |     |     |     |     |                           |
|---------------|-------|-----|-----|-----|-----|-----|---------------------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | HTALS-II<br>PAPI<br>3500' |
| GS            | 3.00° | 372 | 478 | 531 | 637 | 743 |                           |

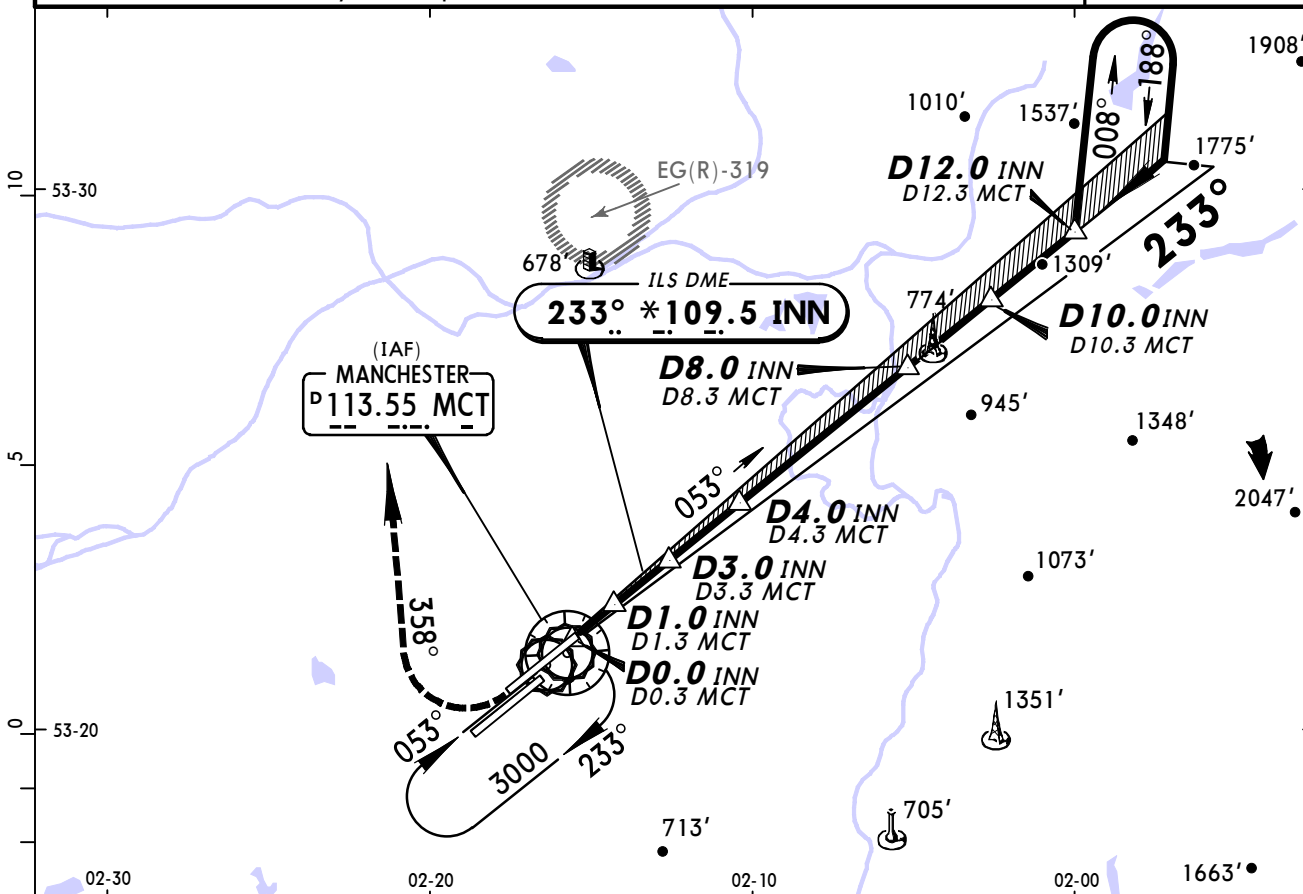
|              |  |                                    |                             |                |  |
|--------------|--|------------------------------------|-----------------------------|----------------|--|
| Standard     |  |                                    | STRAIGHT-IN LANDING RWY 05L |                |  |
| CAT IIIA ILS |  | CAT II ILS                         |                             | CD             |  |
| DH 50'       |  | AB<br>RA 107'<br>DA(H) 312' (100') |                             |                |  |
| RVR 200m     |  | RVR 300m                           |                             | NOT AUTHORIZED |  |

Operators applying U.S. Ops Specs: Autoland or HUD required below RVR 350m.

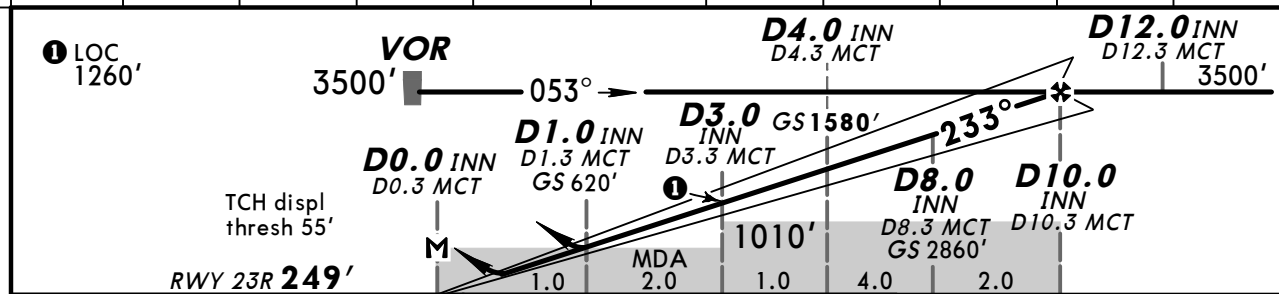


BRIEFING STRIP

|                                                                                                                                                                                                                                                                                                                                                 |                           |                                  |                             |                                  |  |                                                                                                       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------|-----------------------------|----------------------------------|--|-------------------------------------------------------------------------------------------------------|--|
| D-ATIS Arrival<br>128.17 113.55                                                                                                                                                                                                                                                                                                                 |                           | MANCHESTER Radar (APP)<br>118.57 |                             | MANCHESTER Tower<br>118.62 119.4 |  | *Ground<br>121.85 121.7                                                                               |  |
| LOC<br>INN<br>*109.5                                                                                                                                                                                                                                                                                                                            | Final<br>Apch Crs<br>233° | GS<br>D4.0 INN<br>1580' (1331')  | ILS<br>DA(H)<br>449' (200') | Apt Elev 257'<br>RWY 249'        |  | <br>MSA<br>MCT VOR |  |
| <b>MISSED APCH:</b> Climb to 3500'. STRAIGHT AHEAD until passing 750' or D0.0 INN (D0.3 MCT) inbound, whichever is the later, then turn RIGHT onto track 358°, then as directed. For separation from departing traffic RWY 23L expedite climb through 750' before commencing RIGHT turn onto 358°. In case of complete radio failure see 11-01. |                           |                                  |                             |                                  |  |                                                                                                       |  |
| Alt Set: hPa                                                                                                                                                                                                                                                                                                                                    |                           | Rwy Elev: 9 hPa                  |                             | Trans level: By ATC              |  |                                                                                                       |  |
| ILS DME reads zero at rwy 23R displaced threshold.                                                                                                                                                                                                                                                                                              |                           |                                  |                             |                                  |  |                                                                                                       |  |

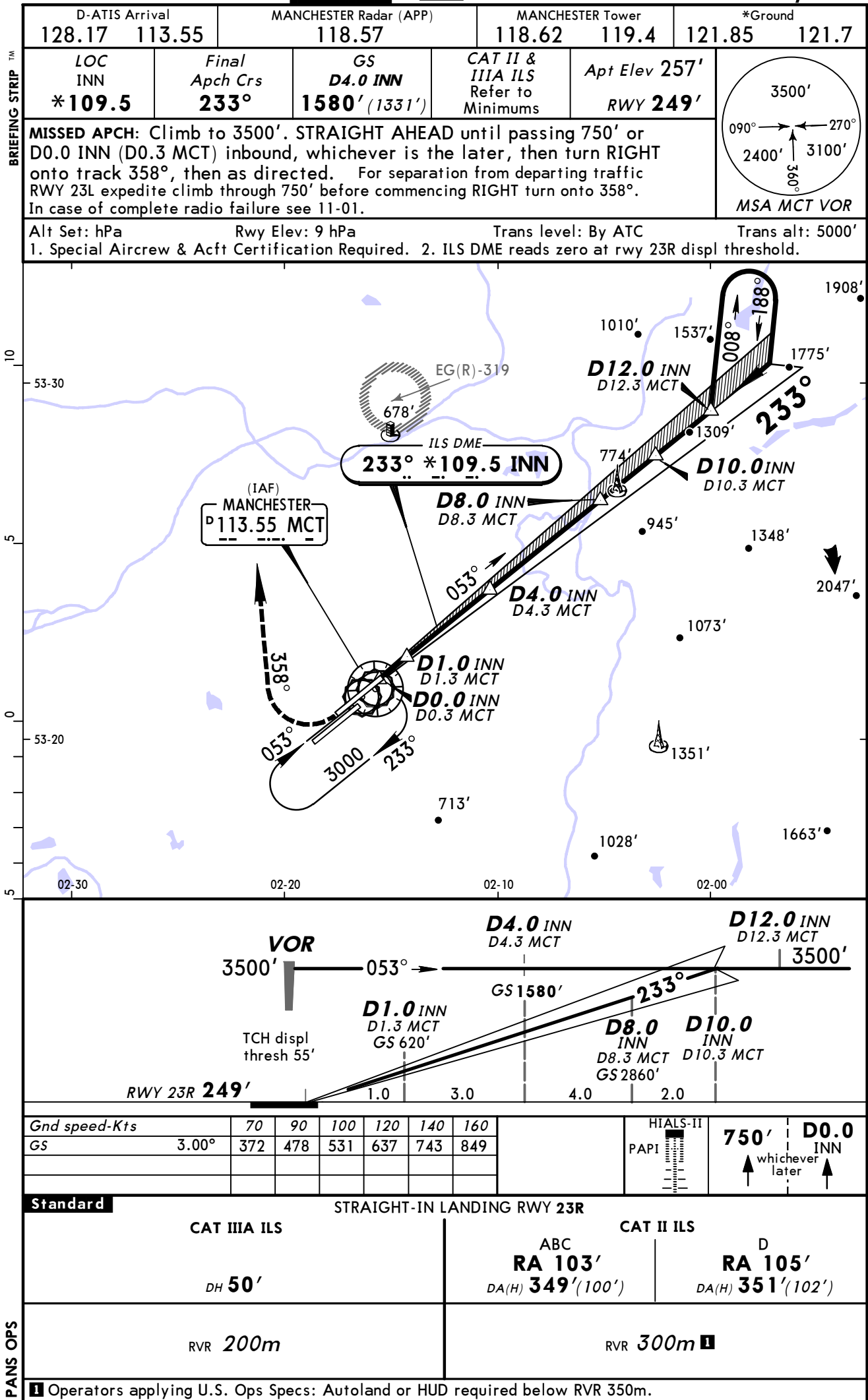


| LOC (GS out) | INN DME  | 1.0  | 2.0  | 3.0   | 4.0   | 5.0   | 6.0   | 7.0   | 8.0   | 9.0   |
|--------------|----------|------|------|-------|-------|-------|-------|-------|-------|-------|
|              | MCT DME  | 1.3  | 2.3  | 3.3   | 4.3   | 5.3   | 6.3   | 7.3   | 8.3   | 9.3   |
|              | ALTITUDE | 620' | 940' | 1260' | 1580' | 1900' | 2220' | 2540' | 2860' | 3180' |

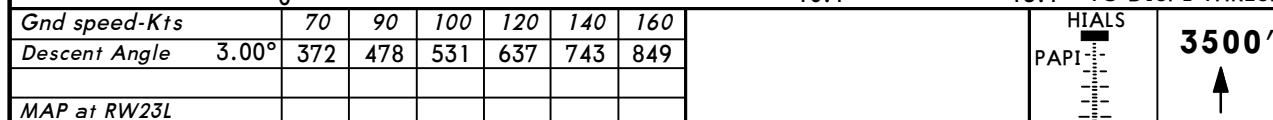


|                          |     |     |     |     |     |     |                                                                                       |
|--------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------|
| Gnd speed-Kts            | 70  | 90  | 100 | 120 | 140 | 160 |  |
| ILS GS or                | 372 | 478 | 531 | 637 | 743 | 849 |                                                                                       |
| LOC Descent Angle 3.00°  |     |     |     |     |     |     |                                                                                       |
| MAP at D0.0 INN/D0.3 MCT |     |     |     |     |     |     |                                                                                       |

| Standard             |          |          |           | STRAIGHT-IN LANDING RWY 23R |           | CIRCLE-TO-LAND |                    |
|----------------------|----------|----------|-----------|-----------------------------|-----------|----------------|--------------------|
| ILS                  |          |          |           | LOC (GS out)                |           | CDFA           |                    |
| DA(H) 449' (200')    |          |          |           | DA/MDA(H) 640' (391')       |           | DA/MDA(H)      |                    |
| FULL Limited ALS out |          |          |           | ALS out                     |           | Max Kts        | VIS                |
| A                    |          |          |           |                             |           | 100            | 750' (493') 1500m  |
| B                    | RVR 550m | RVR 750m | RVR 1200m | RVR 1100m                   | RVR 1500m | 135            | 820' (563') 1600m  |
| C                    |          |          |           |                             | RVR 1800m | 180            | 1110' (853') 2400m |
| D                    |          |          |           |                             |           | 205            | 1110' (853') 3600m |

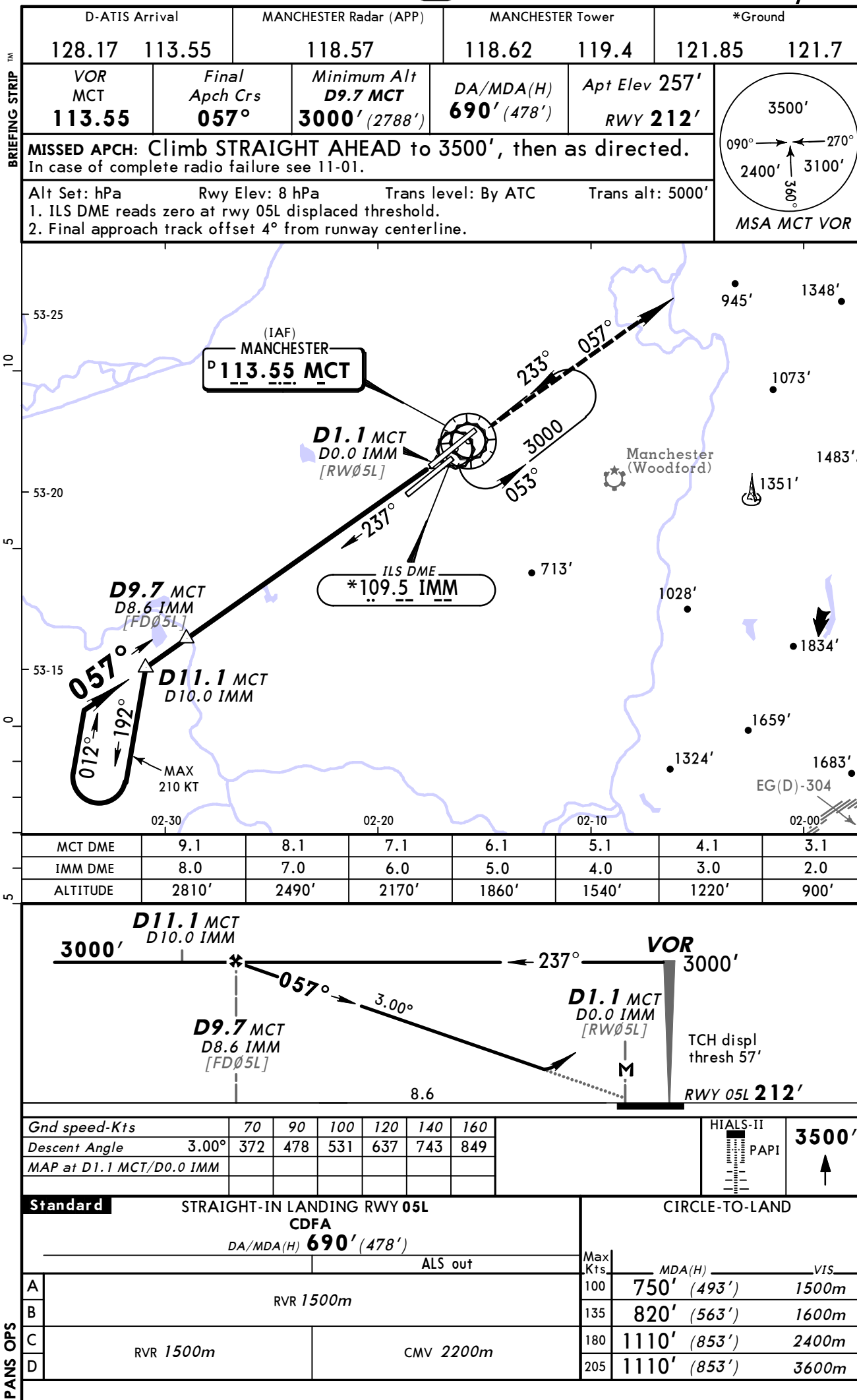


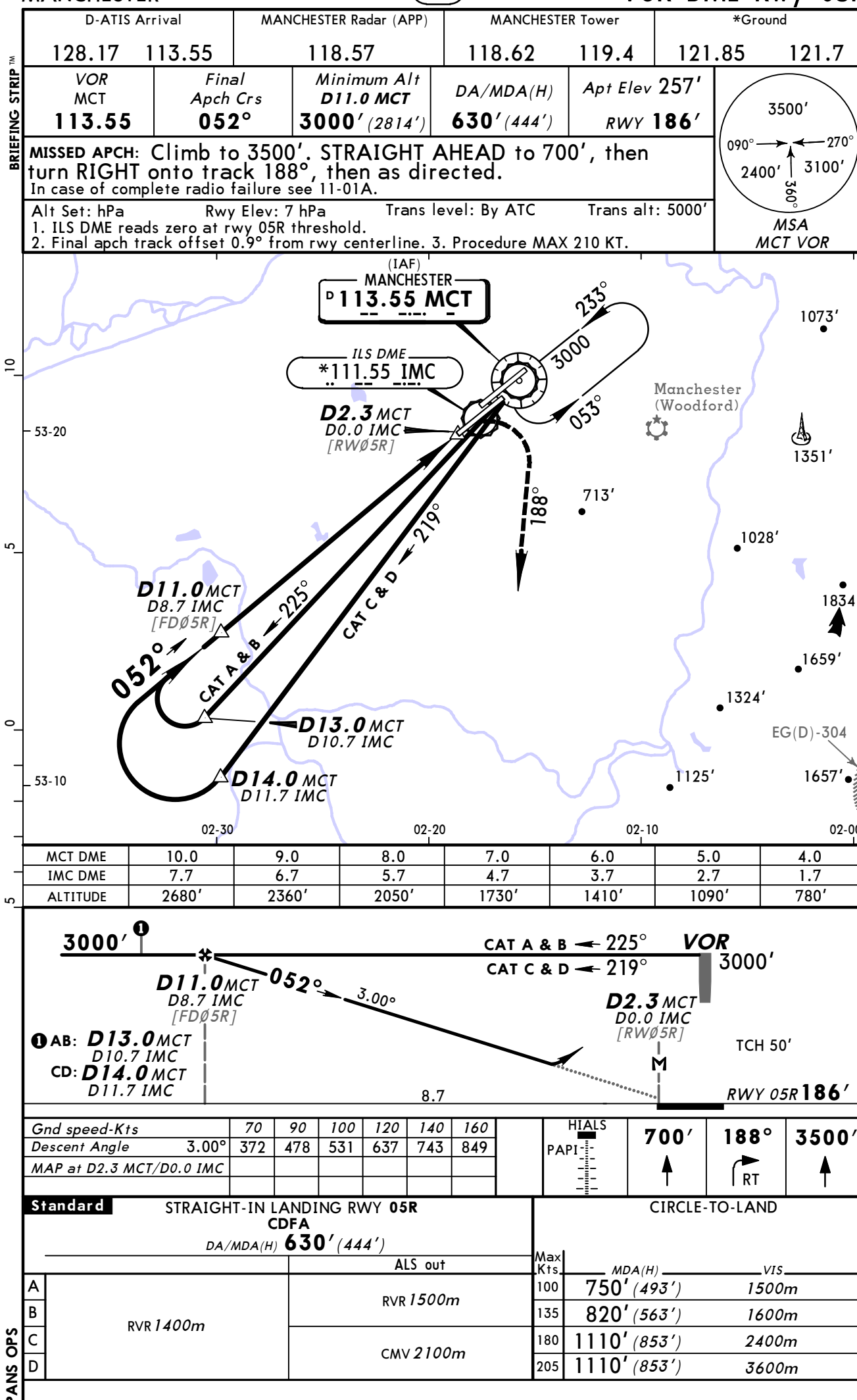
**BRIEFING STRIP™**

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## PANS OPS







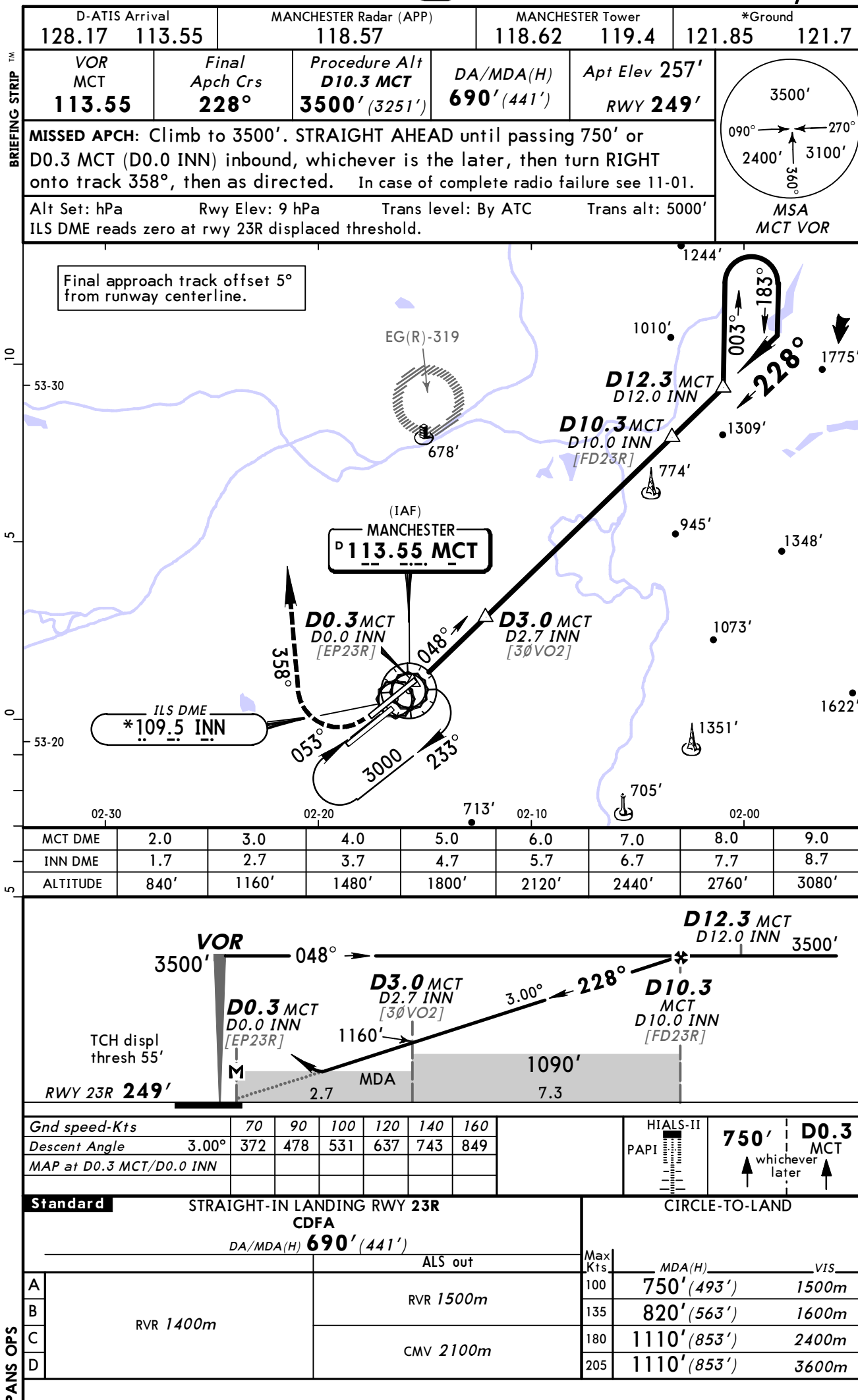
**BRIEFING STRIP** <sup>TM</sup>



## PANS OPS

| Standard |           | STRAIGHT-IN LANDING RWY 23L  |     | CIRCLE-TO-LAND |             |       |
|----------|-----------|------------------------------|-----|----------------|-------------|-------|
|          |           | CDFA                         |     |                |             |       |
|          |           | DA/MDA(H) <b>690'</b> (463') |     |                |             |       |
|          |           | ALS out                      |     | Max<br>Kts     | MDA(H)      | VIS   |
| A        | RVR 1500m |                              |     | 100            | 750' (493') | 1500m |
| B        |           |                              |     | 135            | 820' (563') | 1600m |
| C        | RVR 1500m | CMV 2200m                    | 180 | 1110' (853')   | 2400m       |       |
| D        |           |                              | 205 | 1110' (853')   | 3600m       |       |





**MANCHESTER, (MANCHESTER - EGCC)**

**TERMINAL CHART CHANGE NOTICES**

**No Chart Change Notices for Airport EGCC**