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Airport Information For EGCC

Terminal Charts For EGCC

Revision Letter For Cycle 15-2013

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: 0408 Z
Sunset: 2023 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

1. GENERAL

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

A380 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 wind shear effects.

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

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

2. ARRIVAL

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.

RWY 23R arrivals:

TWYs D and F are not available as exits.

2. ARRIVAL

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.

3. DEPARTURE

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

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).

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 from RWYs 05L/R, 23R/L	5000'
- WAL, MONTY or NOKIN from RWYs 05L/R from RWYs 23R/L	4000' 3000'
- POL, DESIG from RWYs 05L/R, 23R/L	4000'
- HON 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.

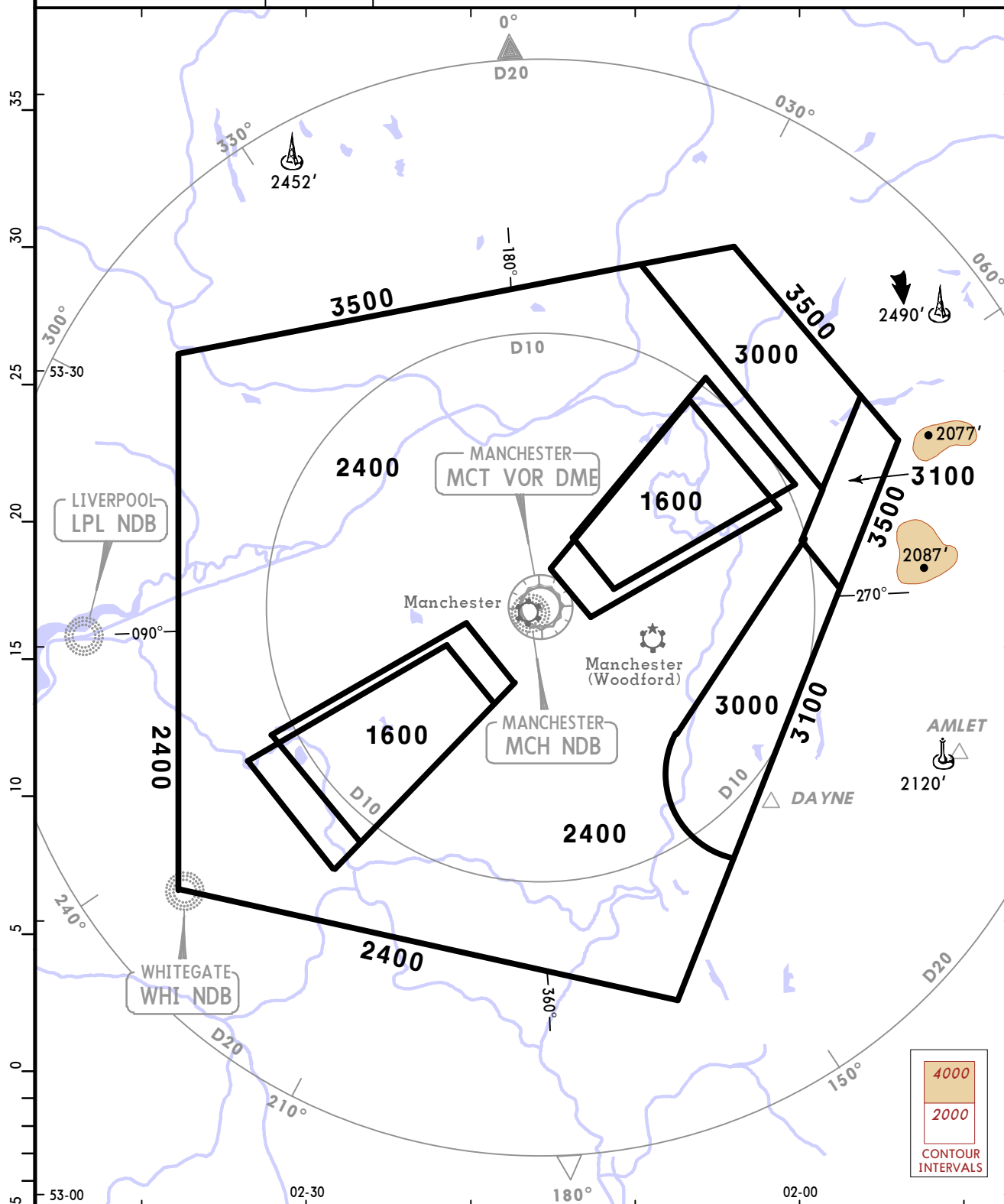
3.3. RWY OPERATIONS

3.3.1. MINIMUM RWY OCCUPANCY TIME

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.

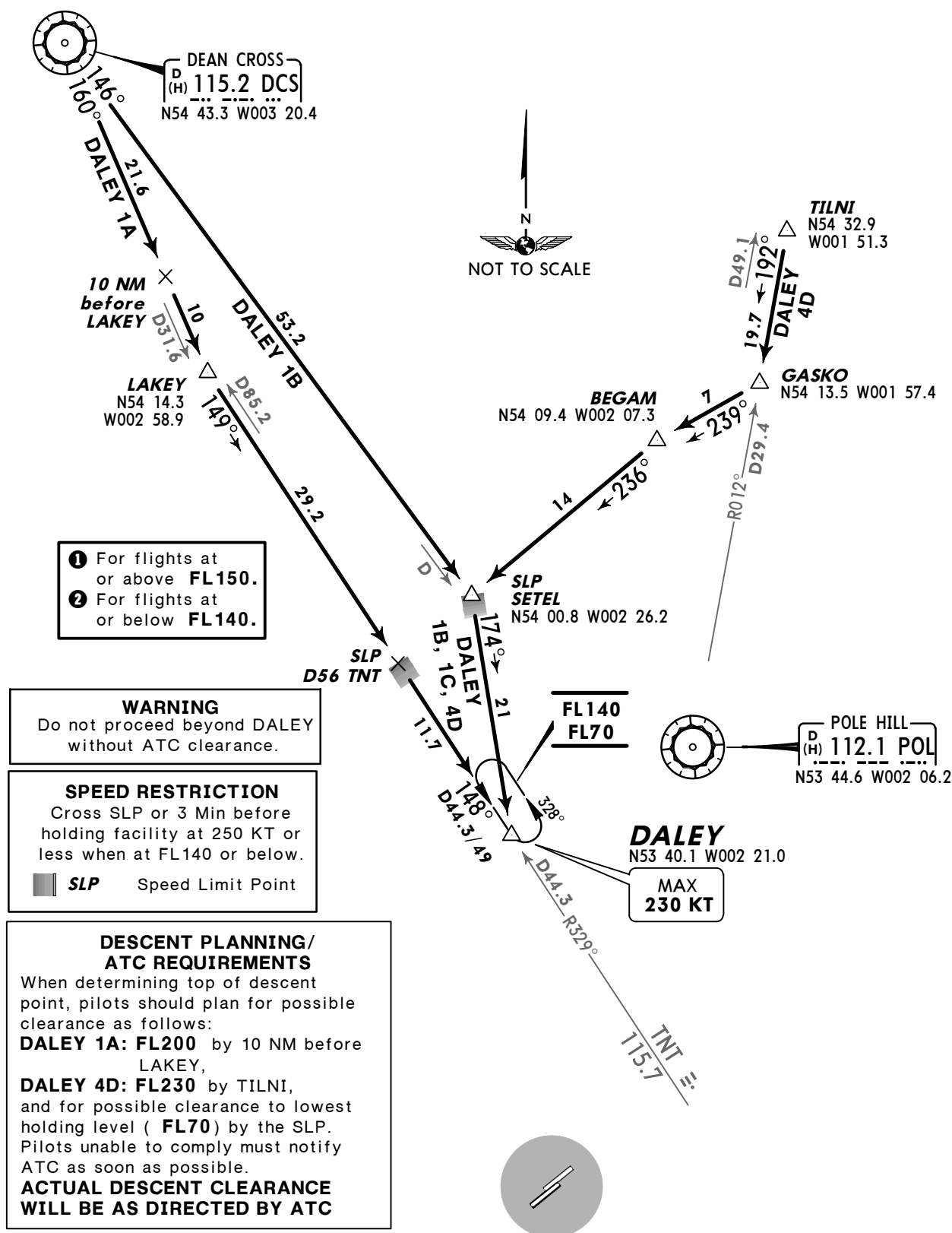
INTERMEDIATE AND FINAL APPROACH

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



D-ATIS
128.17 113.55Apt Elev
257'Alt Set: hPa
Trans level: By ATC Trans alt: 5000'DALEY 2E [DALE2E]
FOR FLIGHTS AT FL80DALEY 1F [DALE1F]
DALEY 1G [DALE1G]ARRIVALS
TO BE USED WHEN
MCT UNSERVICEABLENo MSA
published

DESCENT PLANNING/ATC REQUIREMENTS

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

DALEY 1F: FL280 by OTBED,

FL170 by GOLES,

DALEY 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

SPEED RESTRICTION

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

SLP Speed Limit Point

TRENT
(H) 115.7 TNT
N53 03.2 W001 40.2POLE HILL
D 112.1 POL
N53 44.6 W002 06.2
SLPARTHA
N53 47.0
W002 17.1FL140
FL70DALEY
N53 40.1
W002 21.0MAX
230 KT

WARNING

Do not proceed beyond DALEY
without ATC clearance.

D44.3/49

148°

6.9

292°

R152°

R105°

15.0

332°

D

D44.3

R328°

21

DALEY 2E

UPTON

N53 35.2 W001 18.1

8

260°

D

285°

GOLES

N53 36.5 W001 05.0

37.3

DALEY 1F, 1G

110° D30.2

42

DALEY 1G

280°

LIBSO

N53 31.5

E000 05.6

44

DALEY 1F

299°

OTBED

N53 17.3

E000 01.9

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:

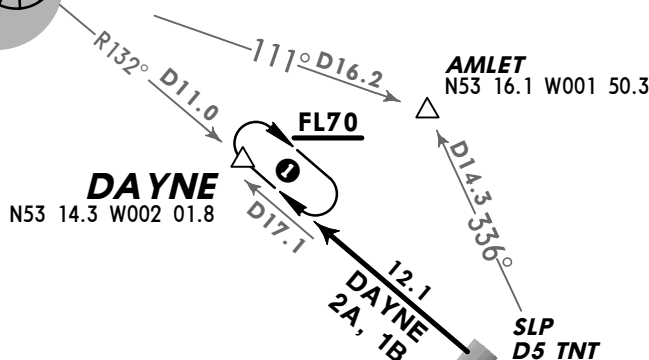
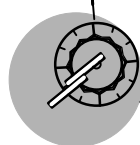
DAYNE 2A: FL200 by 25 NM before TNT (N-57, Q-4),
FL200 by ELVOS ((U)T-420),

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.

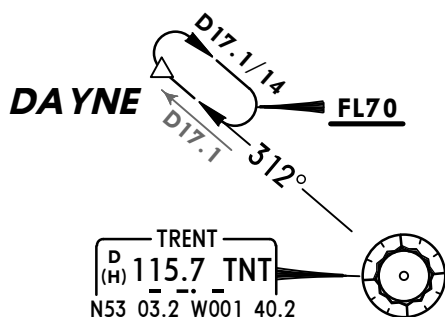
■ SLP Speed Limit Point

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.

**MIRSI 1A [MIRS1A]
MIRSI 1B [MIRS1B]
MIRSI 1C [MIRS1C]
MIRSI 1D [MIRS1D]**

ARRIVALS

MAKUX
N53 58.5
W004 52.5

ISLE OF MAN
D(H) 112.2 IOM
N54 04.0 W004 45.8

KELLY
N53 54.3 W004 21.9

SOSIM
N53 48.9
W004 30.5

GIGTO
N53 38.0 W004 05.9

LYNAS
N53 26.6
W004 20.0

IBRAR
N53 31.9 W003 41.2

PENIL
N53 37.0 W003 39.8

WALLASEY
D(H) 114.1 WAL
N53 23.5 W003 08.1
SLP

MALUD
N53 24.8
W003 36.5

REXAM
N53 04.0 W003 09.6

MONTY
N52 53.6 W003 10.4

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

MIRSI
N53 32.3 W002 42.7
MAX 230 KT

DIRECT DISTANCE FROM MIRSI TO:
Manchester Apt 19NM

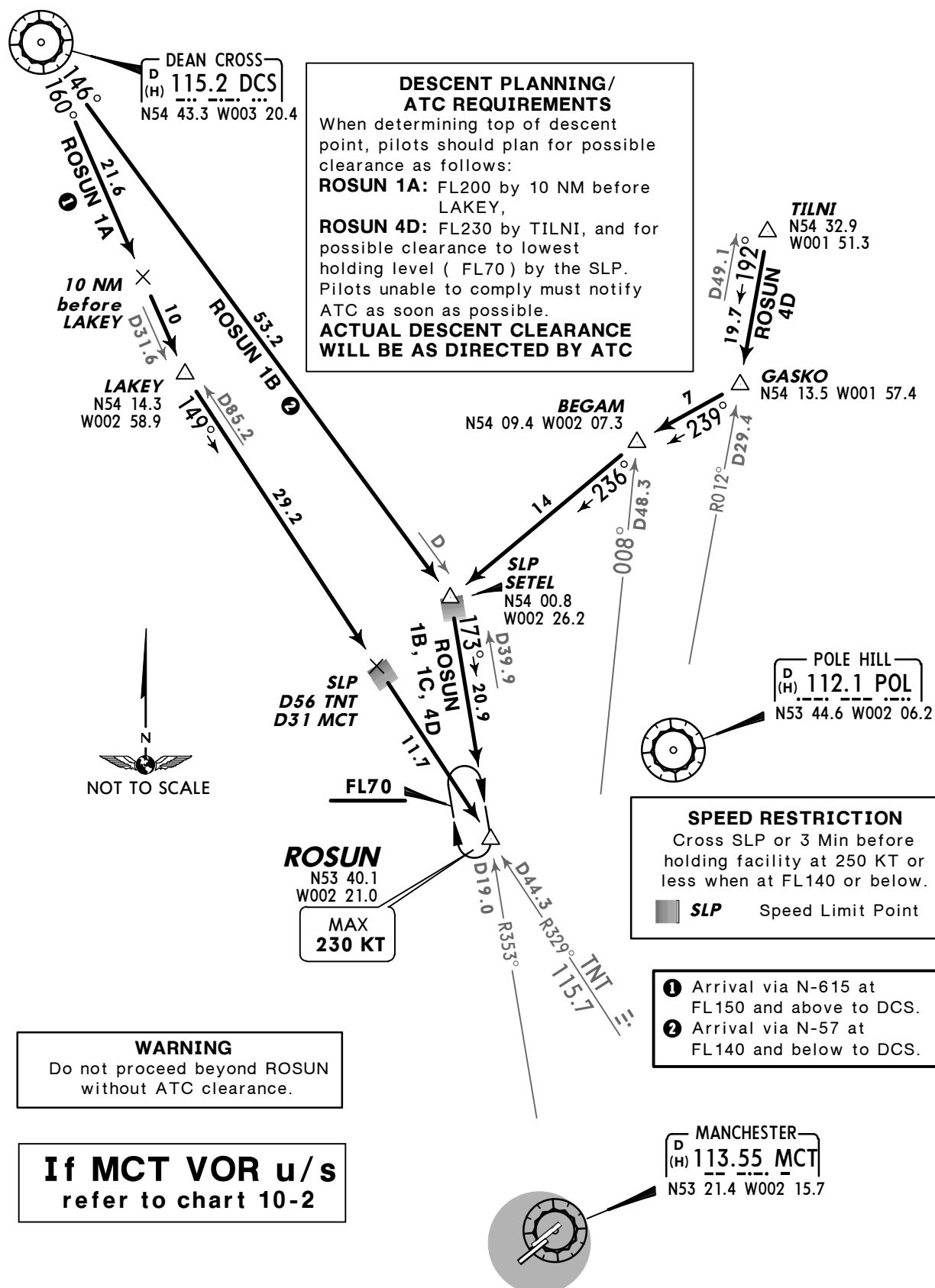
SPEED RESTRICTION
Cross SLP or 3 Min before holding facility at 250 KT or less when at FL140 or below.
SLP Speed Limit Point

Clearance limit is MIRSI unless otherwise instructed by ATC.

WARNING
Do not proceed beyond MIRSI without ATC clearance.

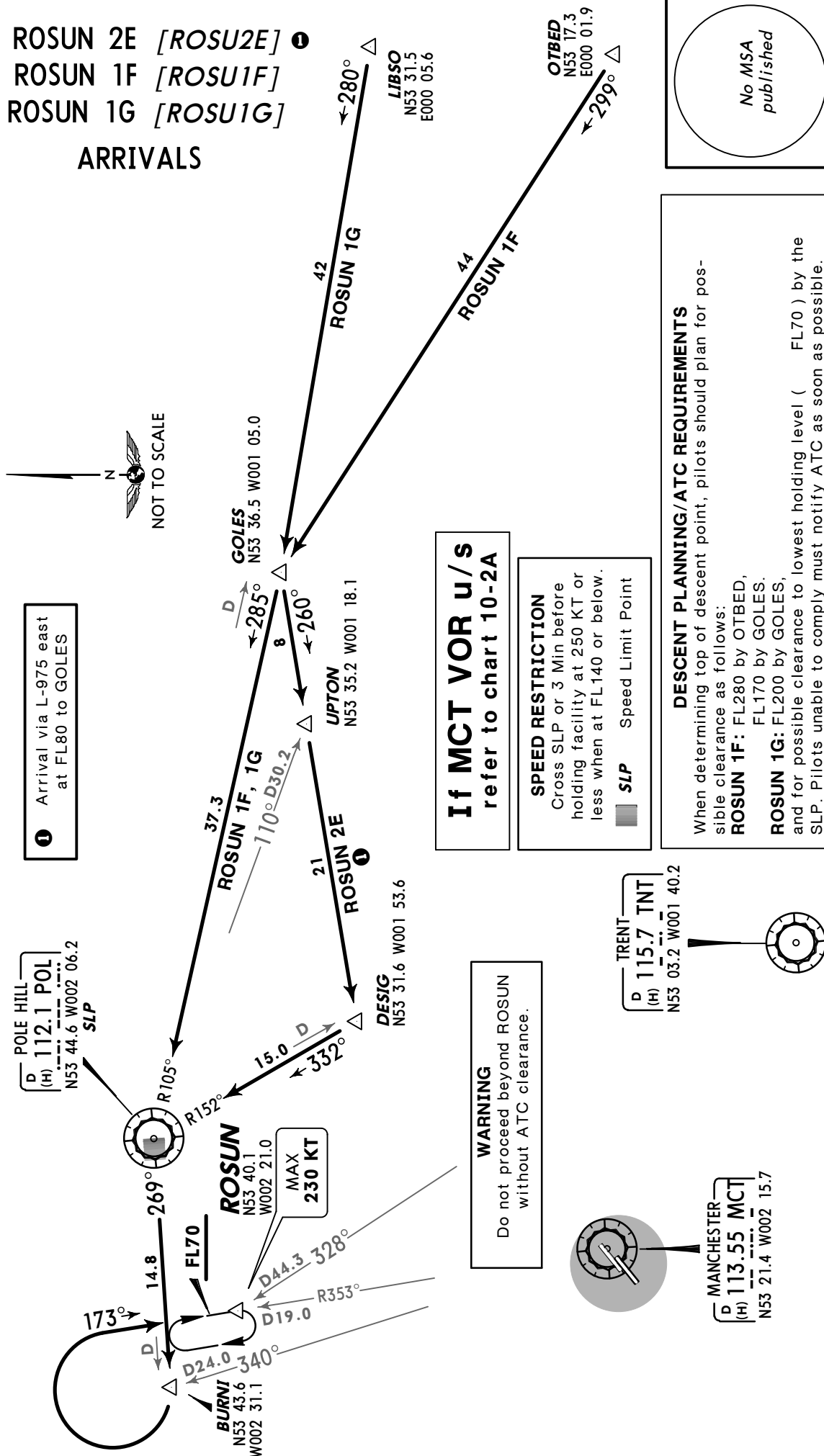
① ALTERNATE HOLDING
To be used when POL VOR or DME u/s.
MIRSI
MAX 230 KT
D17.5/12 MHA 6000 or equivalent FL MAX FL140

DESCENT PLANNING/ATC REQUIREMENTS
When determining top of descent point, pilots should plan for possible clearance as follows:
MIRSI 1A: FL200 by OKTEM,
MIRSI 1B: FL270 by LIFFY between 0630-2300 LT, FL170 by MALUD,
MIRSI 1C: FL170 by PENIL,
MIRSI 1D: FL270 by MAKUX, FL170 by IBRAR.
All STARs: Lowest holding level (6000' or equivalent FL) by MIRSI.
Pilots unable to comply must notify ATC as soon as possible.
ACTUAL DESCENT CLEARANCE WILL BE AS DIRECTED BY ATC

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

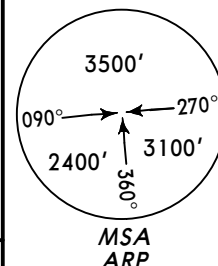
D-ATIS
128.17 113.55Apt Elev
257'Alt Set: hPa
Trans level: By ATC Trans alt: 5000'ROSUN 2E [ROSU2E] ①
ROSUN 1F [ROSU1F]
ROSUN 1G [ROSU1G]

ARRIVALS



MANCHESTER
Control
136.57Apt Elev
257'

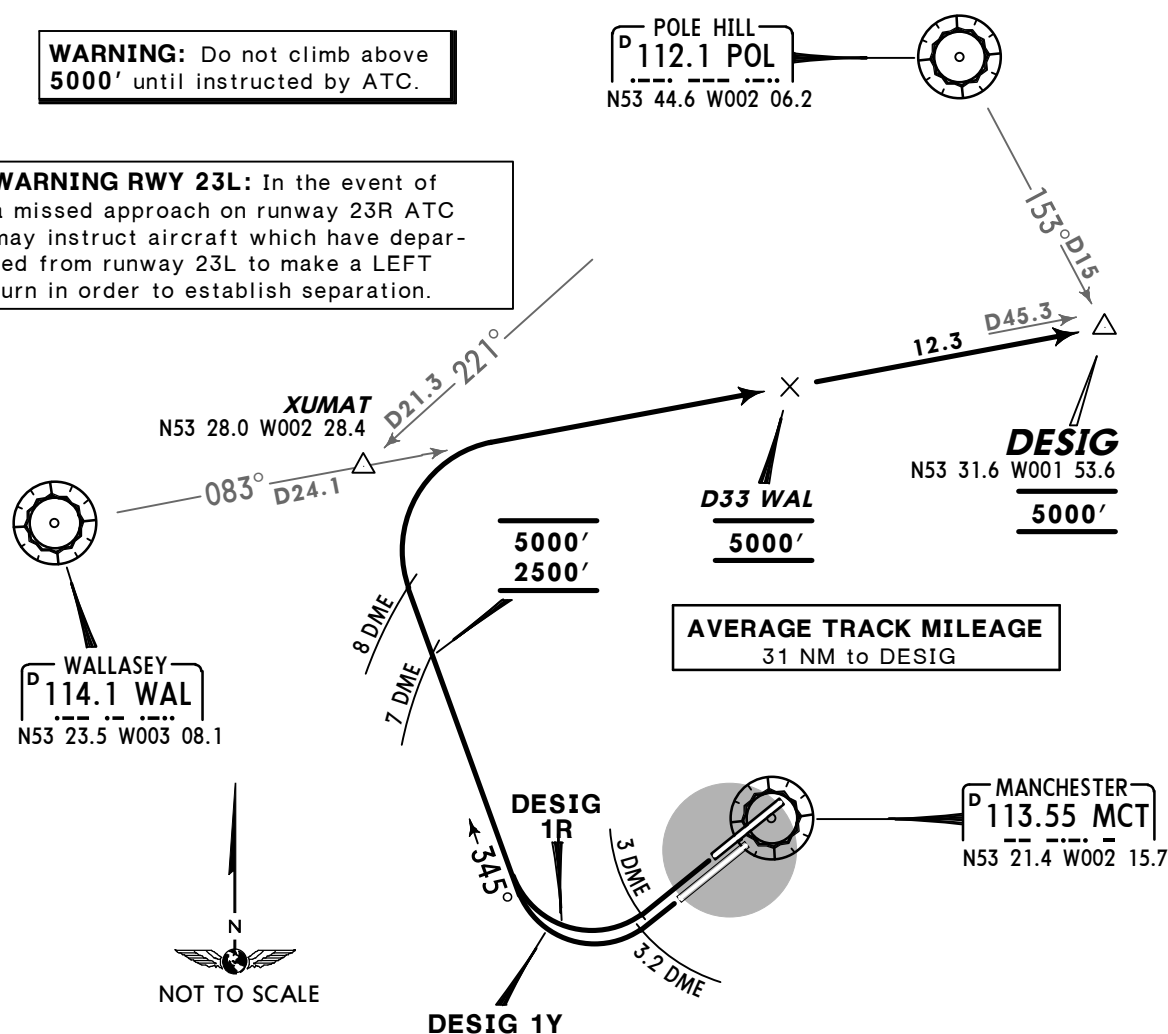
Trans level: By ATC Trans alt: 5000'
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190).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

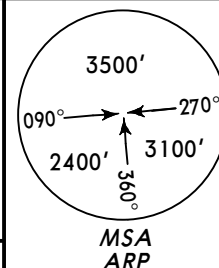
Gnd speed-KT	75	100	150	200	250	300
747' per NM	934	1246	1868	2491	3114	3737
340' per NM	425	567	851	1134	1418	1701
292' per NM	365	486	729	972	1215	1458

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'

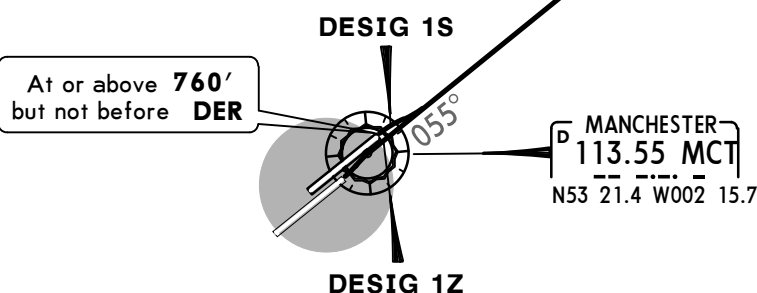
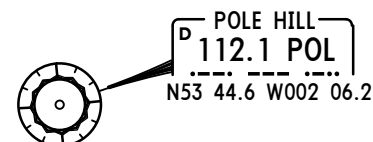
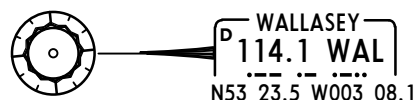
Trans level: By ATC Trans alt: 5000'
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL190) or LONDON Control (above FL190).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



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.

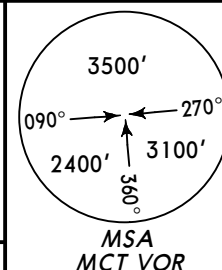
Gnd speed-KT	75	100	150	200	250	300
346' per NM	433	577	866	1155	1443	1732

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
DESIG 1S	05L	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'.
DESIG 1Z	05R	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'

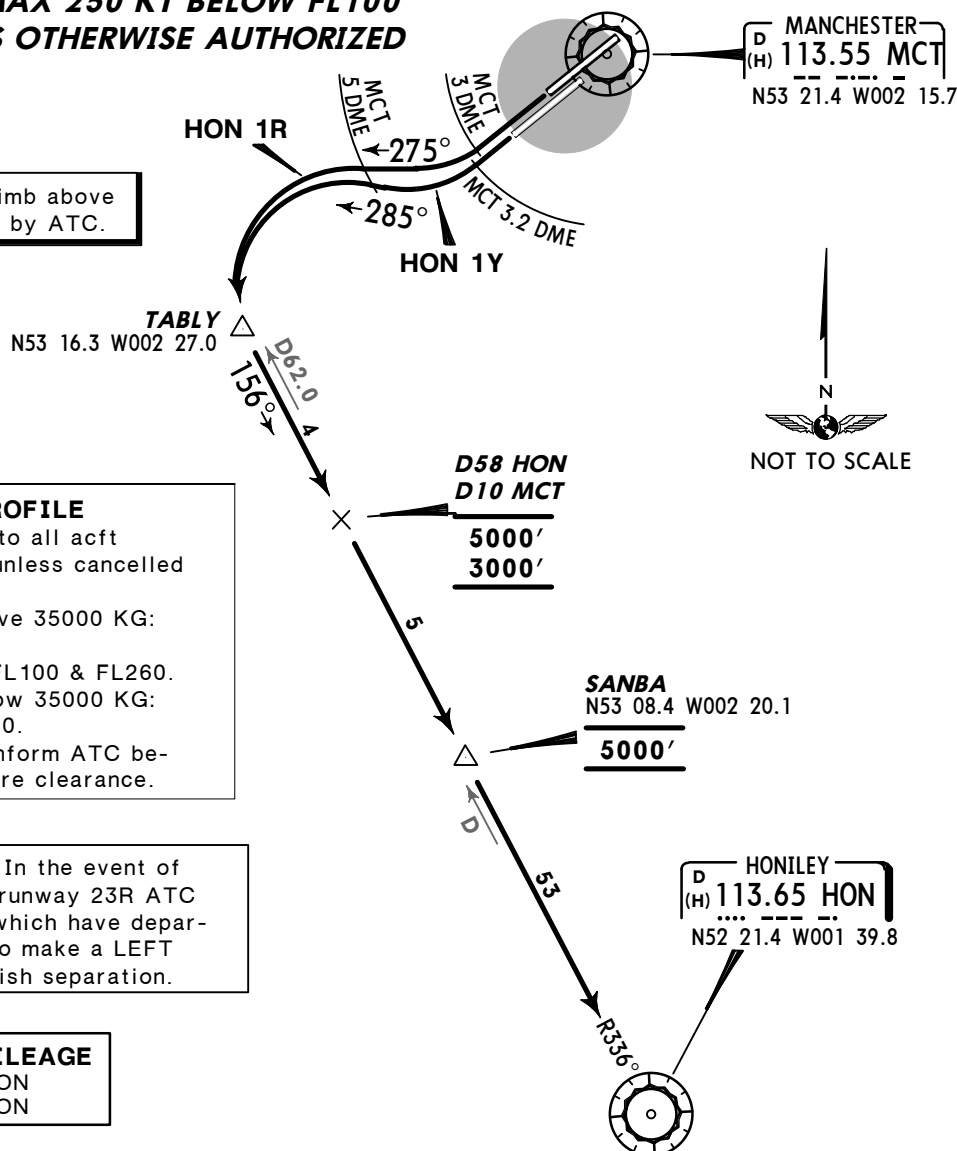
Trans level: By ATC Trans alt: 5000'
1. When instructed contact SCOTTISH Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by SCOTTISH Control (at or below FL190) or LONDON Control (above FL190). 5.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

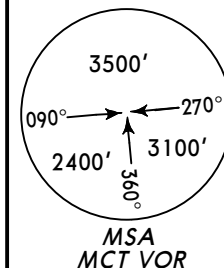
12.3% until MCT 3.2 DME, then
4.9% up to 5000' for ATC or airspace purposes.

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

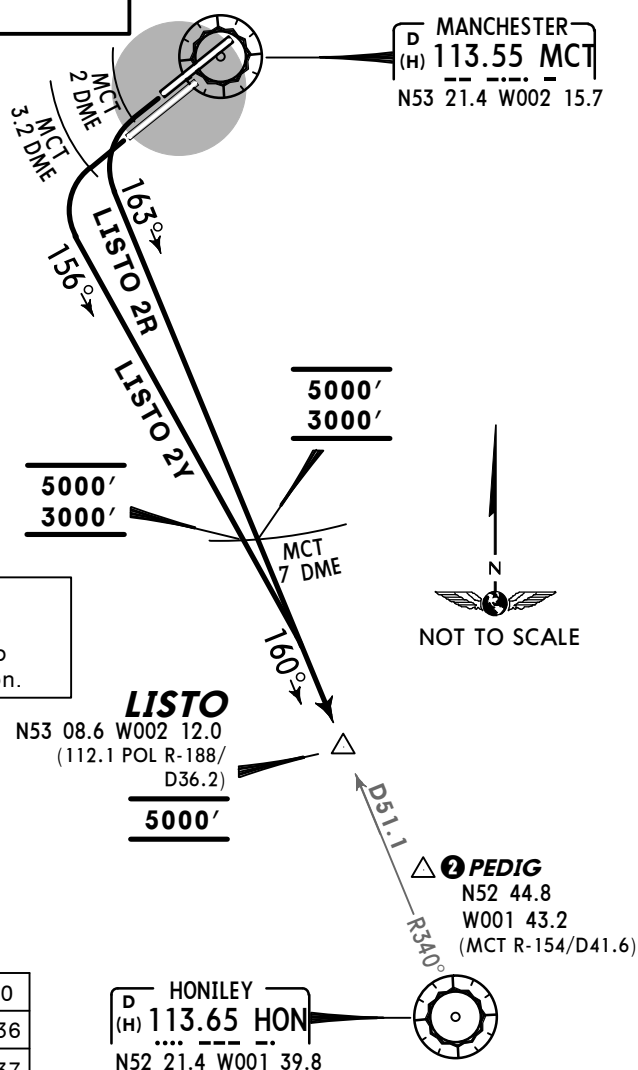
LISTO 2R

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



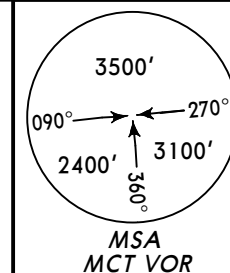
SID	RWY	ROUTING/ALTITUDE
LISTO 2R	23R	Climb straight ahead, at MCT 2 DME turn LEFT, 163° track, cross MCT 7 DME at or above 3000' (MAX 5000'), intercept HON R-340 inbound to LISTO at 5000'.
LISTO 2Y	23L	Climb straight ahead, at MCT 3.2 DME turn LEFT, 156° track, cross MCT 7 DME at or above 3000' (MAX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

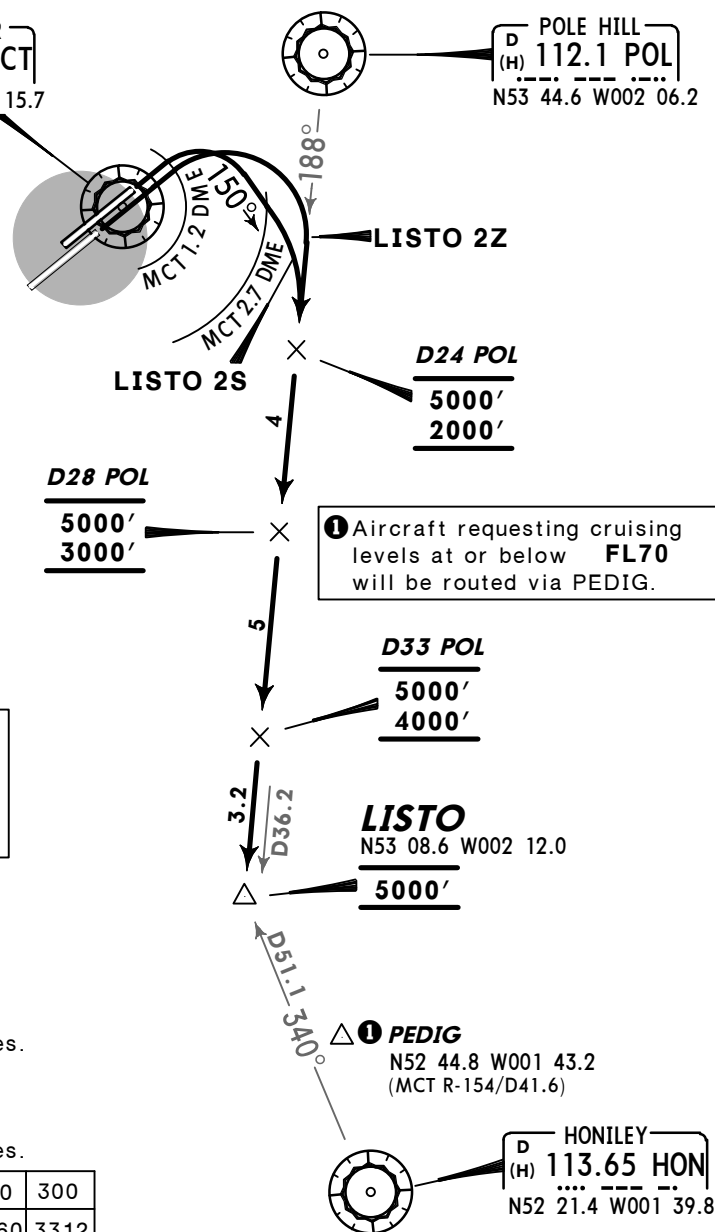
LISTO 2S

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

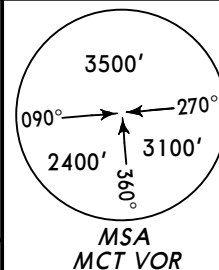


AVERAGE TRACK MILEAGE
18 NM to LISO

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 LISO 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 LISO 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.



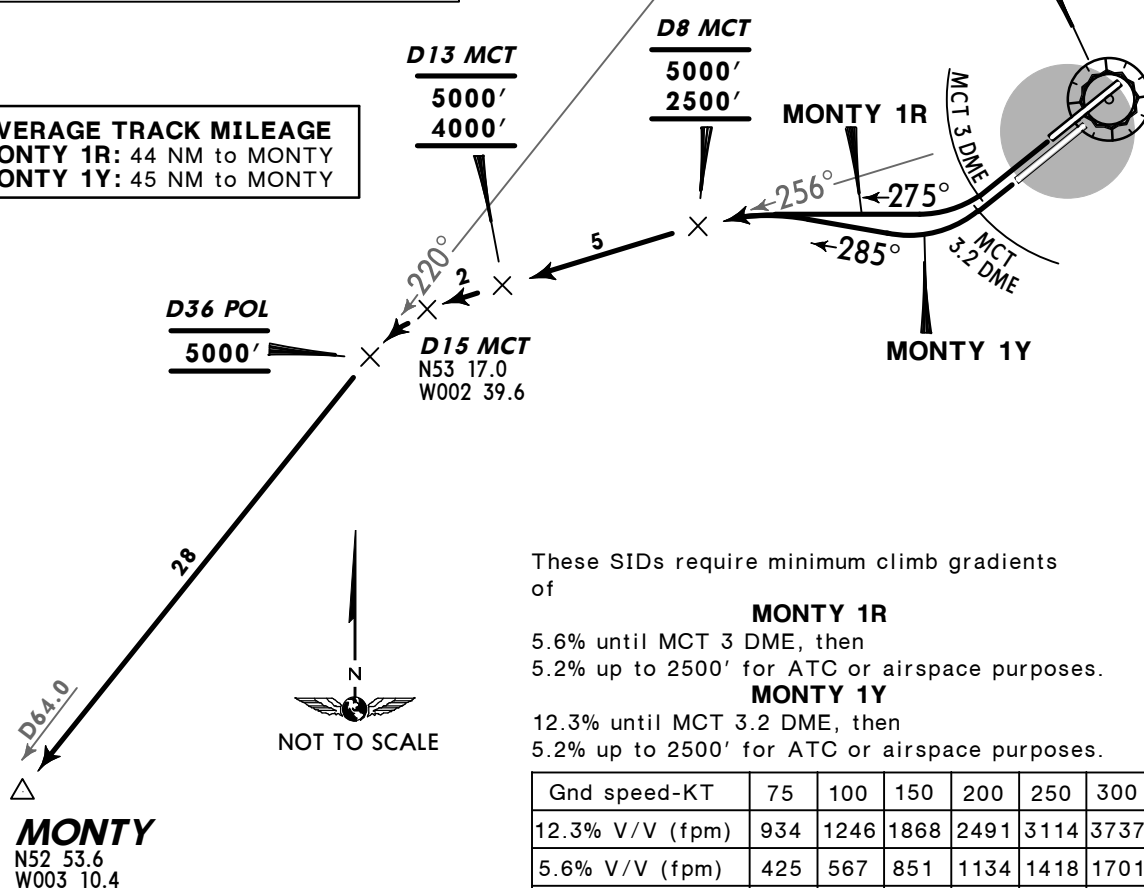
**MONTY ONE ROMEO (MONTY 1R) [MONT1R]
MONTY ONE YANKEE (MONTY 1Y) [MONT1Y]
RWYS 23L/R DEPARTURES
FOR AIRCRAFT LEAVING CONTROLLED AIRSPACE AT MONTY**

**~~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.

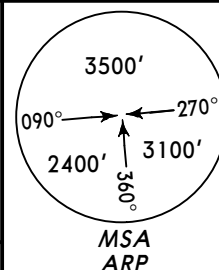
Gnd speed-KT	75	100	150	200	250	300
12.3% V/V (fpm)	934	1246	1868	2491	3114	3737
5.6% V/V (fpm)	425	567	851	1134	1418	1701
5.2% V/V (fpm)	395	527	790	1053	1317	1580

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.



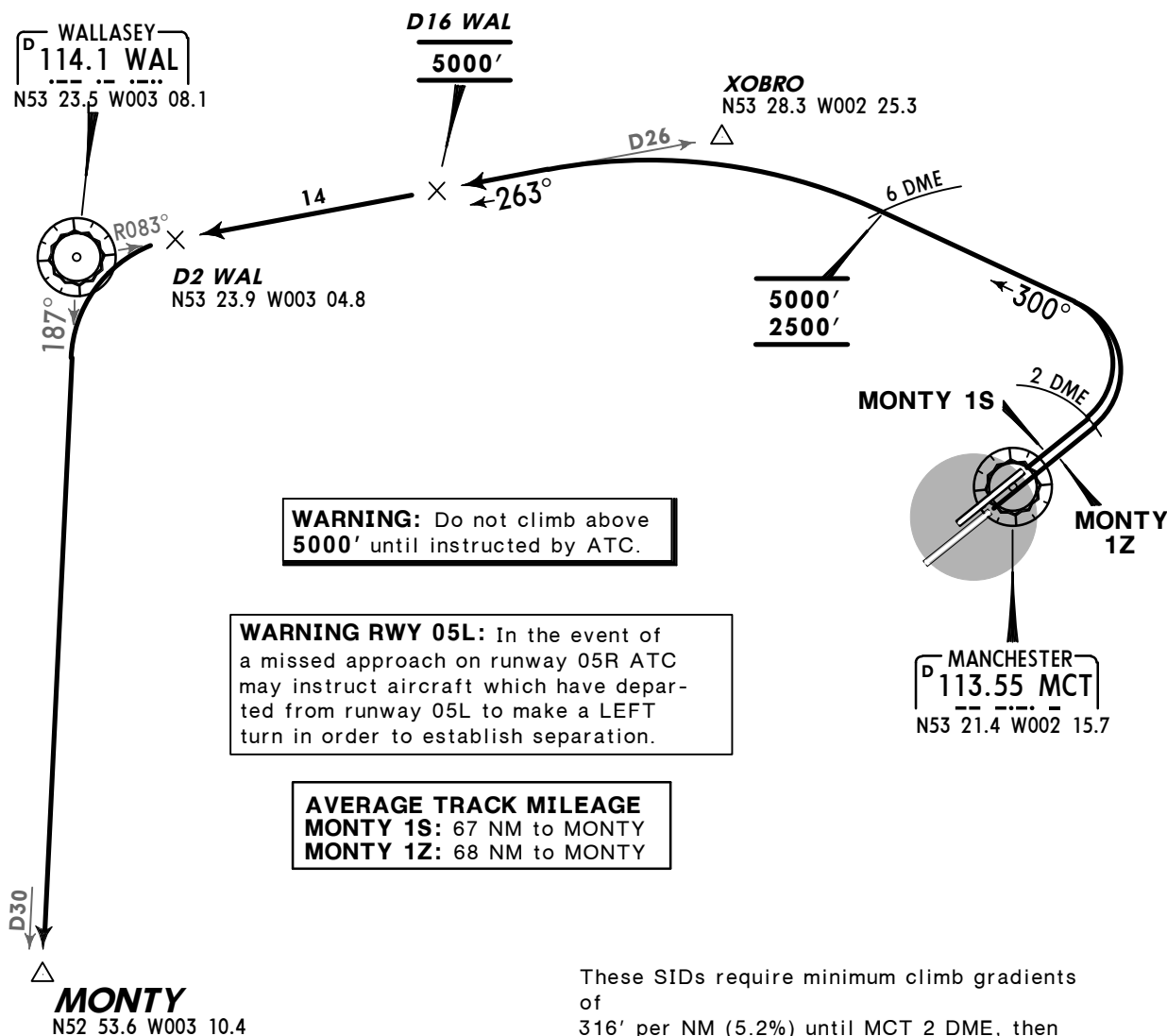
MONTY ONE SIERRA (MONTY 1S) [MONT1S]

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.

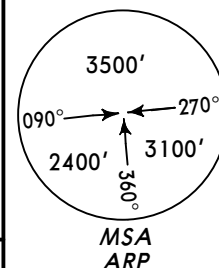
Gnd speed-KT	75	100	150	200	250	300
316' per NM	395	527	790	1053	1317	1580
243' per NM	304	405	608	810	1013	1215

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
MONTY 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 D2 WAL, turn LEFT, intercept WAL R-187 to MONTY.
MONTY 1Z	05R	

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.

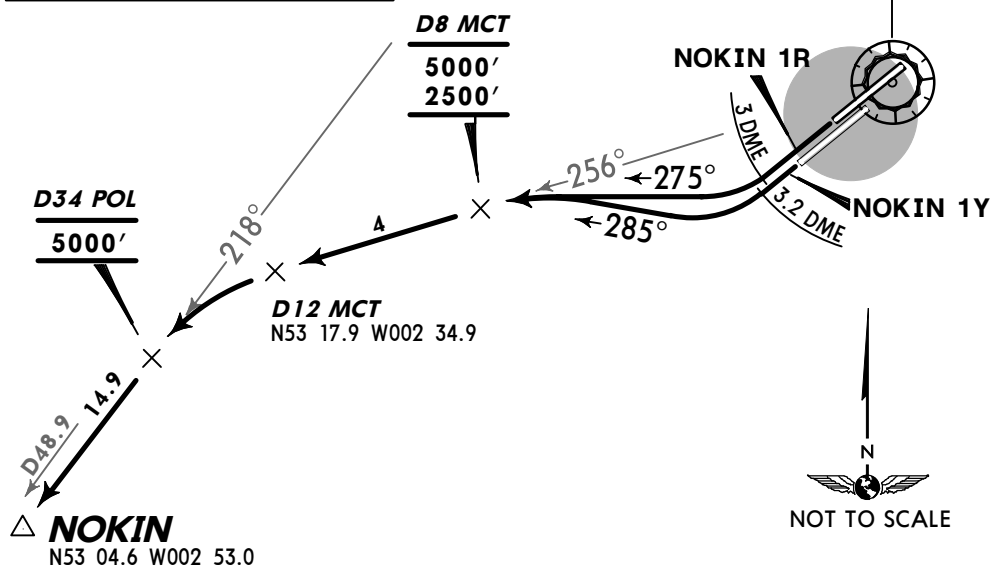


NOKIN ONE ROMEO (NOKIN 1R) [NOKI1R]
NOKIN ONE YANKEE (NOKIN 1Y) [NOKI1Y]
RWYS 23R/L DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE AUTHORIZED

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

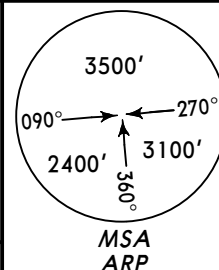
747' per NM (12.3%) until MCT 3.2 DME, then 316' per NM (5.2%) up to **2500'** for ATC or airspace purposes.

SID	RWY	ROUTING/ALTITUDE
NOKIN 1R ①	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'), at D12 MCT turn LEFT, intercept POL R-218, cross D34 POL at 5000' to NOKIN.
NOKIN 1Y ①	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'), 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**.

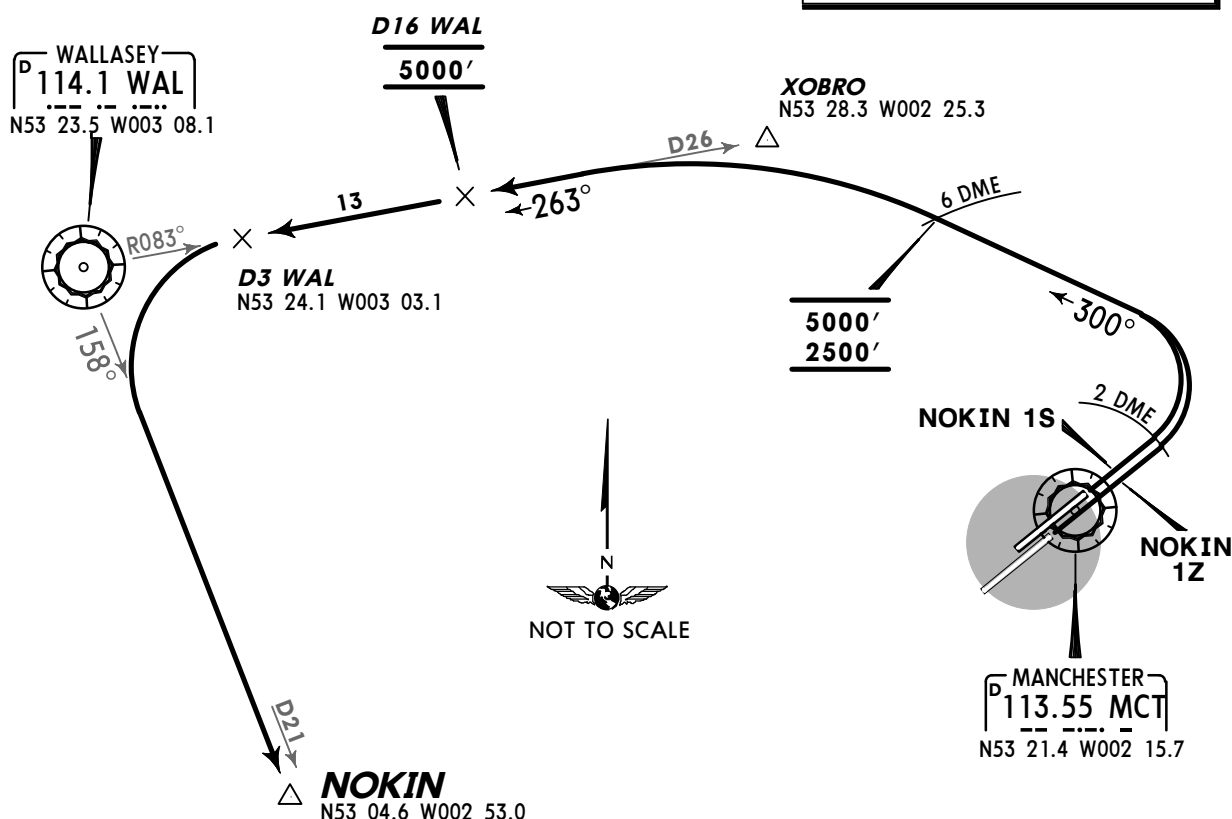
MANCHESTER
Control
128.05Apt Elev
257'

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.

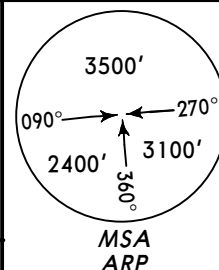
AVERAGE TRACK MILEAGE
NOKIN 1S: 58 NM to NOKIN
NOKIN 1Z: 59 NM to NOKIN

SID	RWY	ROUTING/ALTITUDE
NOKIN 1S 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 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'

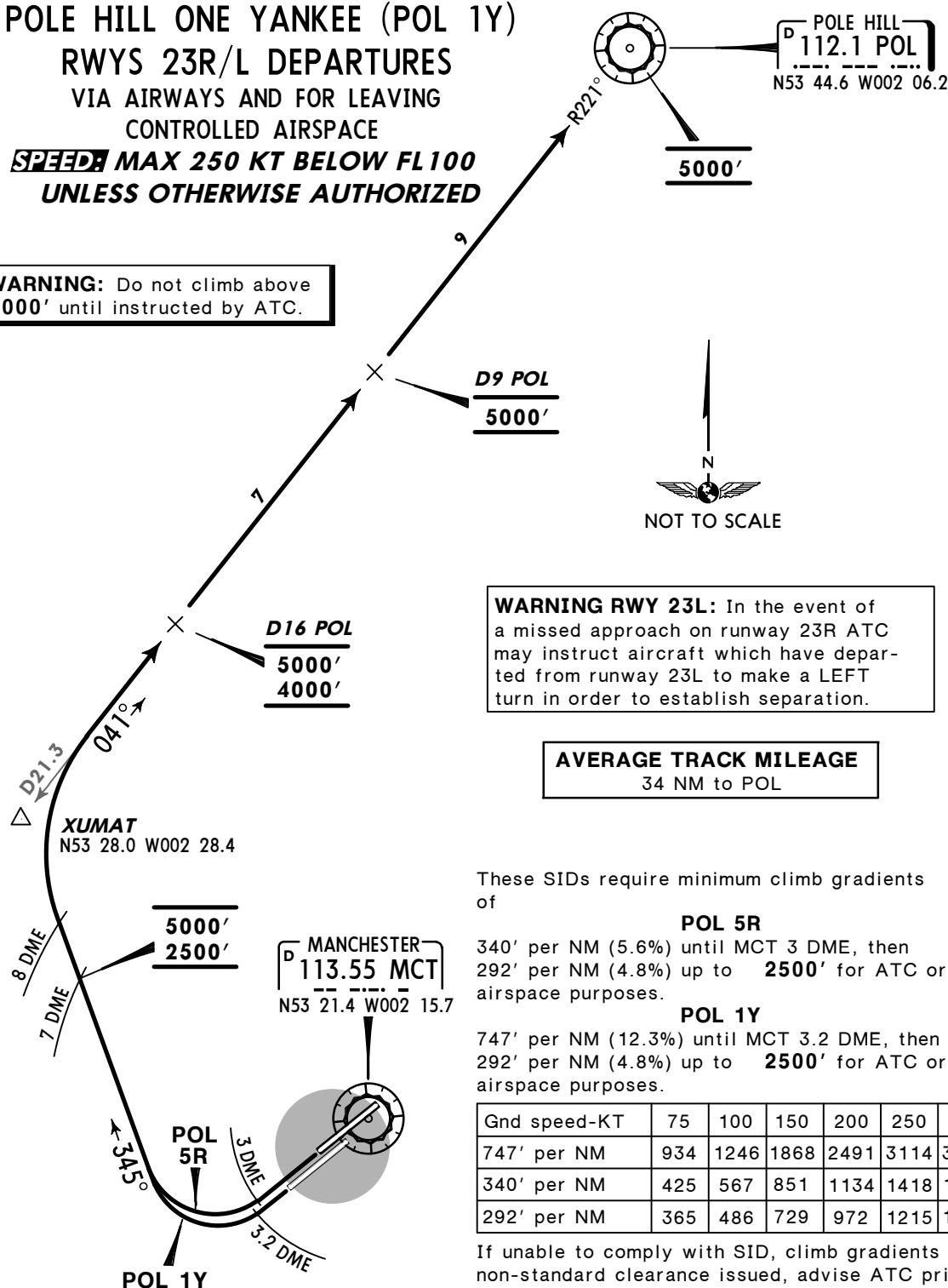
Trans level: By ATC Trans alt: 5000'
1. When instructed contact MANCHESTER Control after take-off. 2. SIDs include noise preferential routes (refer to 10-4). 3. No turns below 760'. 4. Cruising levels will be allocated enroute by MANCHESTER Control (at or below FL270) or SCOTTISH Control (above FL270). 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 5R340' 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.

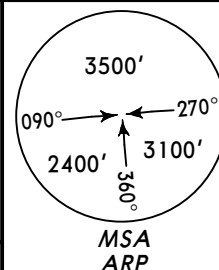
Gnd speed-KT	75	100	150	200	250	300
747' per NM	934	1246	1868	2491	3114	3737
340' per NM	425	567	851	1134	1418	1701
292' per NM	365	486	729	972	1215	1458

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

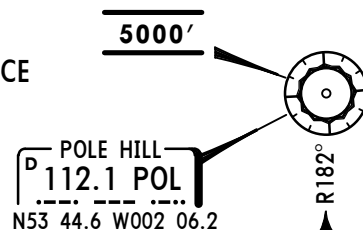
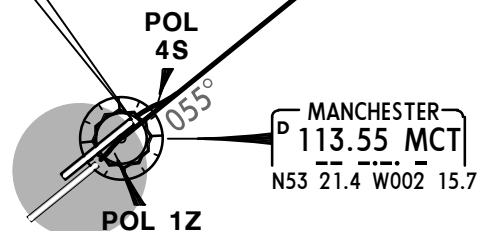
**WARNING:** Do not climb above
5000' until instructed by ATC.**WARNING RWY 05L:** In the event of
a missed approach on runway 05R ATC
may instruct aircraft which have departed
from runway 05L to make a LEFT
turn in order to establish separation.

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

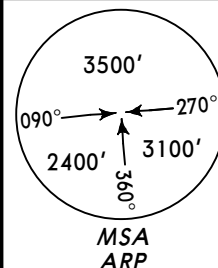
If unable to comply with SID, climb gradients or
non-standard clearance issued, advise ATC prior
to take-off and request alternative clearance.

SID	RWY	ROUTING/ALTITUDE
POL 4S	05L	Climb straight ahead, at or above 760', 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'.
POL 1Z	05R	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'.

D8 POL
5000'D12 POL
5000'
4000'D7 MCT
N53 25.7 W002 06.5At or above 760'
but not before DER

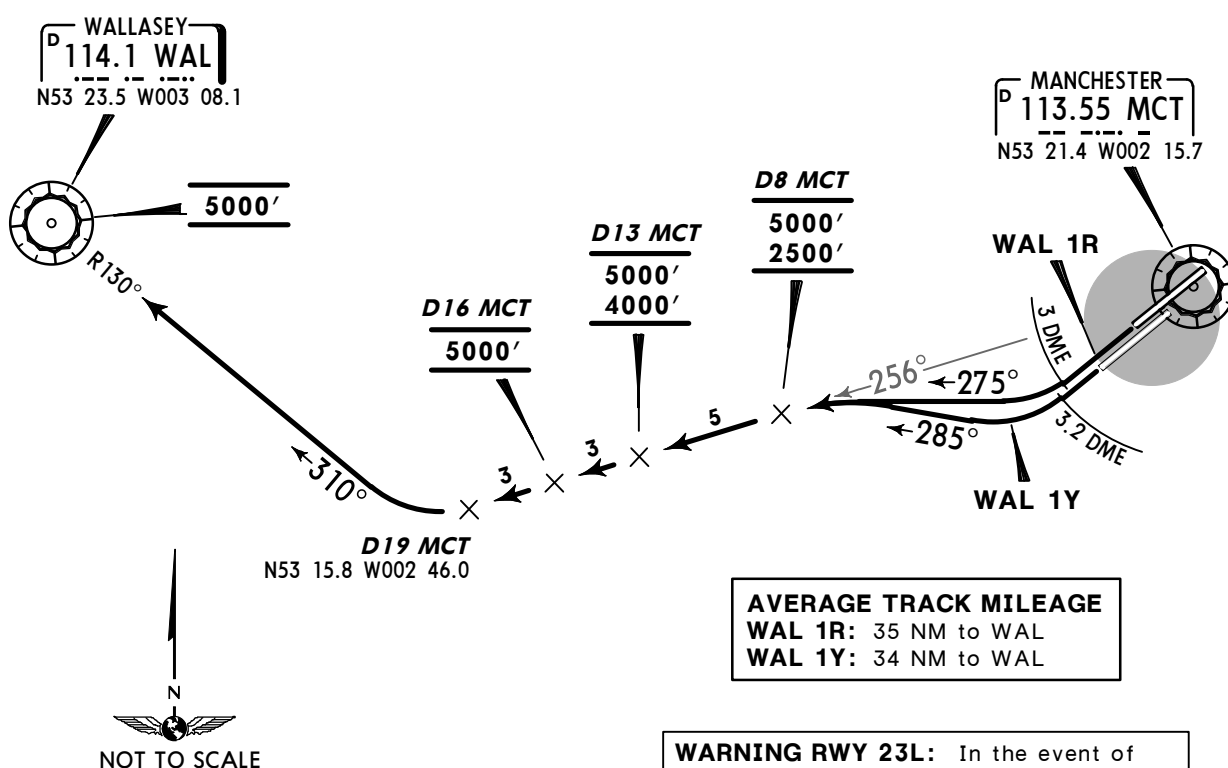
MANCHESTER
Control
128.05Apt Elev
257'

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

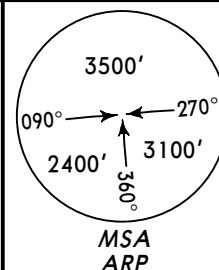
If unable to comply with SID, climb gradients or non-standard clearance issued, advise ATC prior to take-off and request alternative clearance.

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

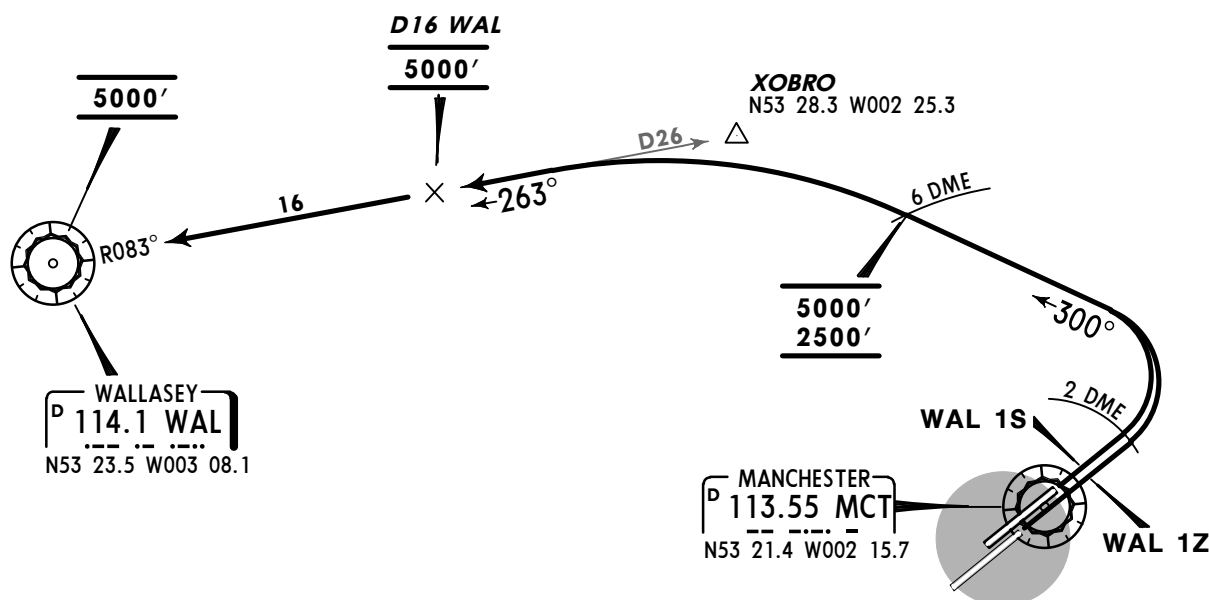
Apt Elev
257'

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	

Apt Elev
257'

NOISE ABATEMENT

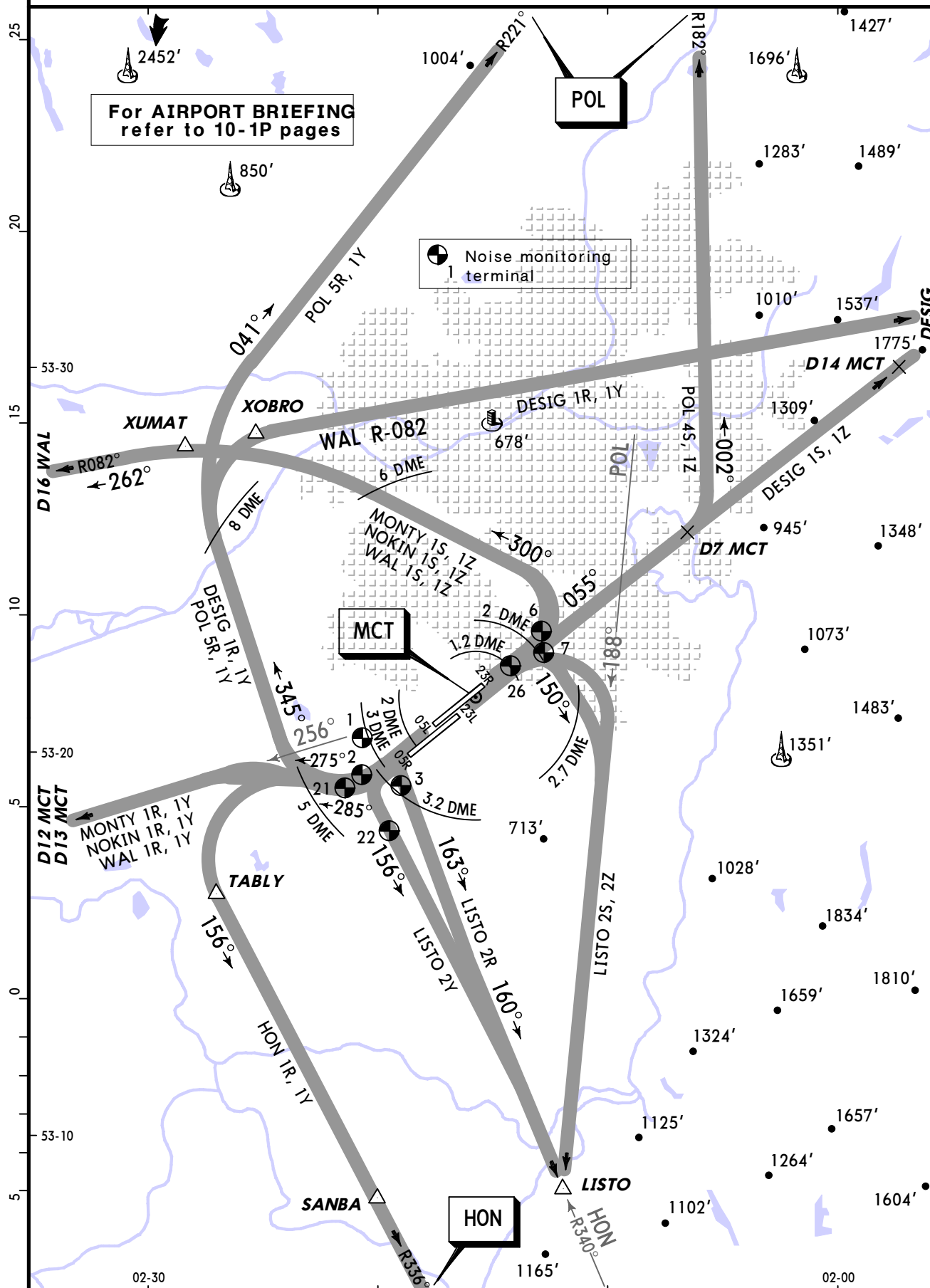
Distance to run to the appropriate Noise Monitoring Terminal (NMT) is in NM from take-off position which gives max TORA.

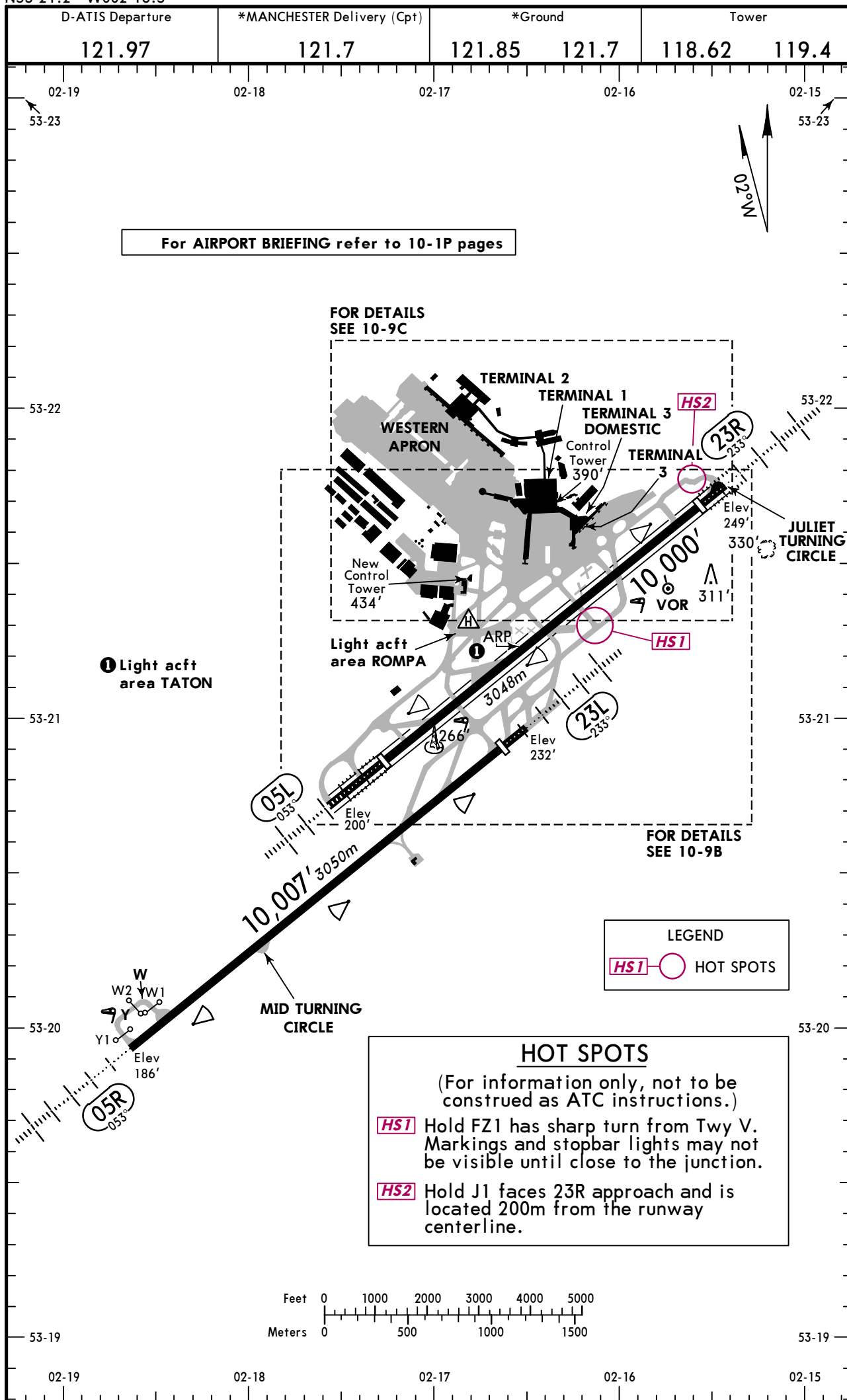
Rwy	NMT	NM
23R	1	3.4
	3	3.4
	2	3.8

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





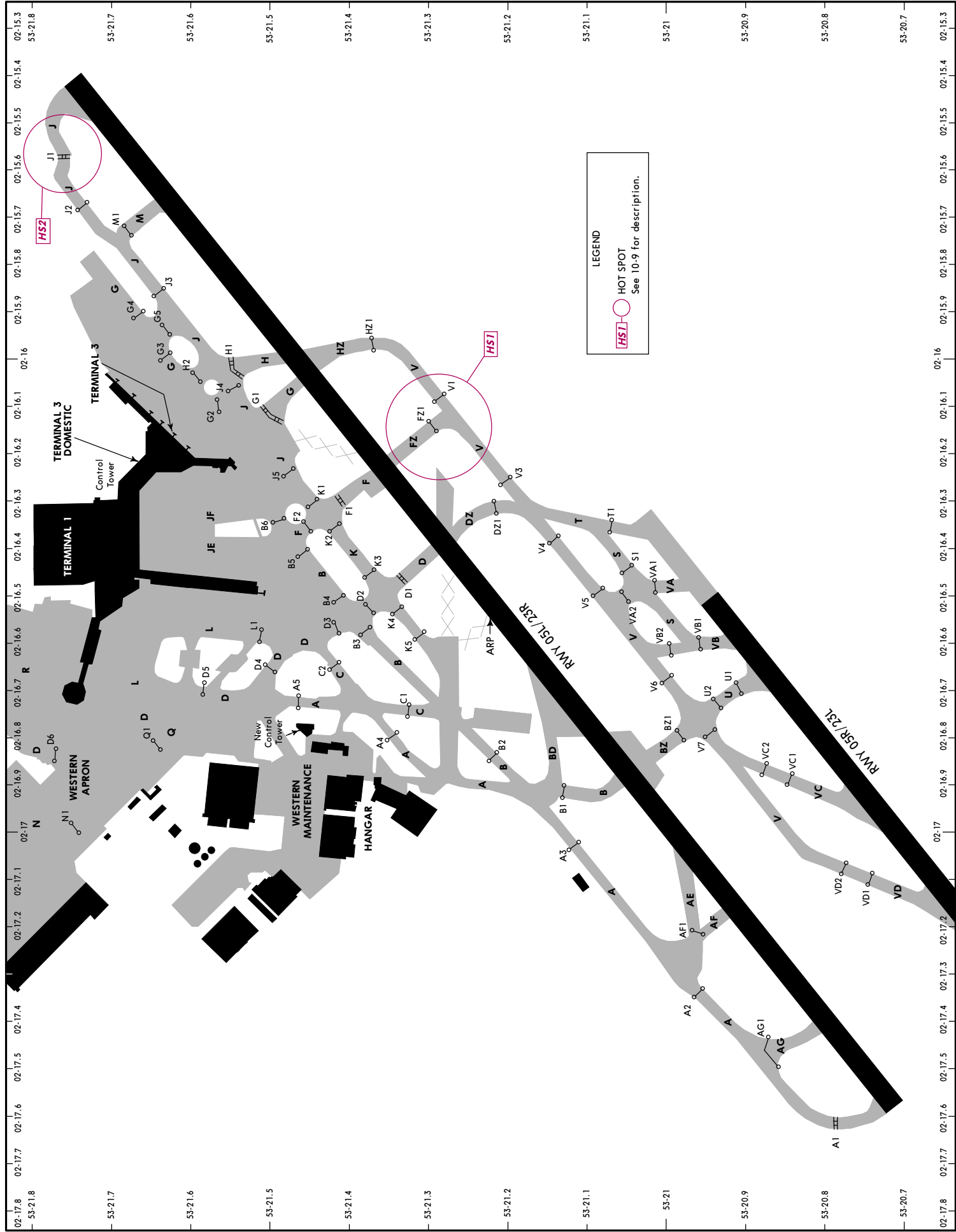
USABLE LENGTHS

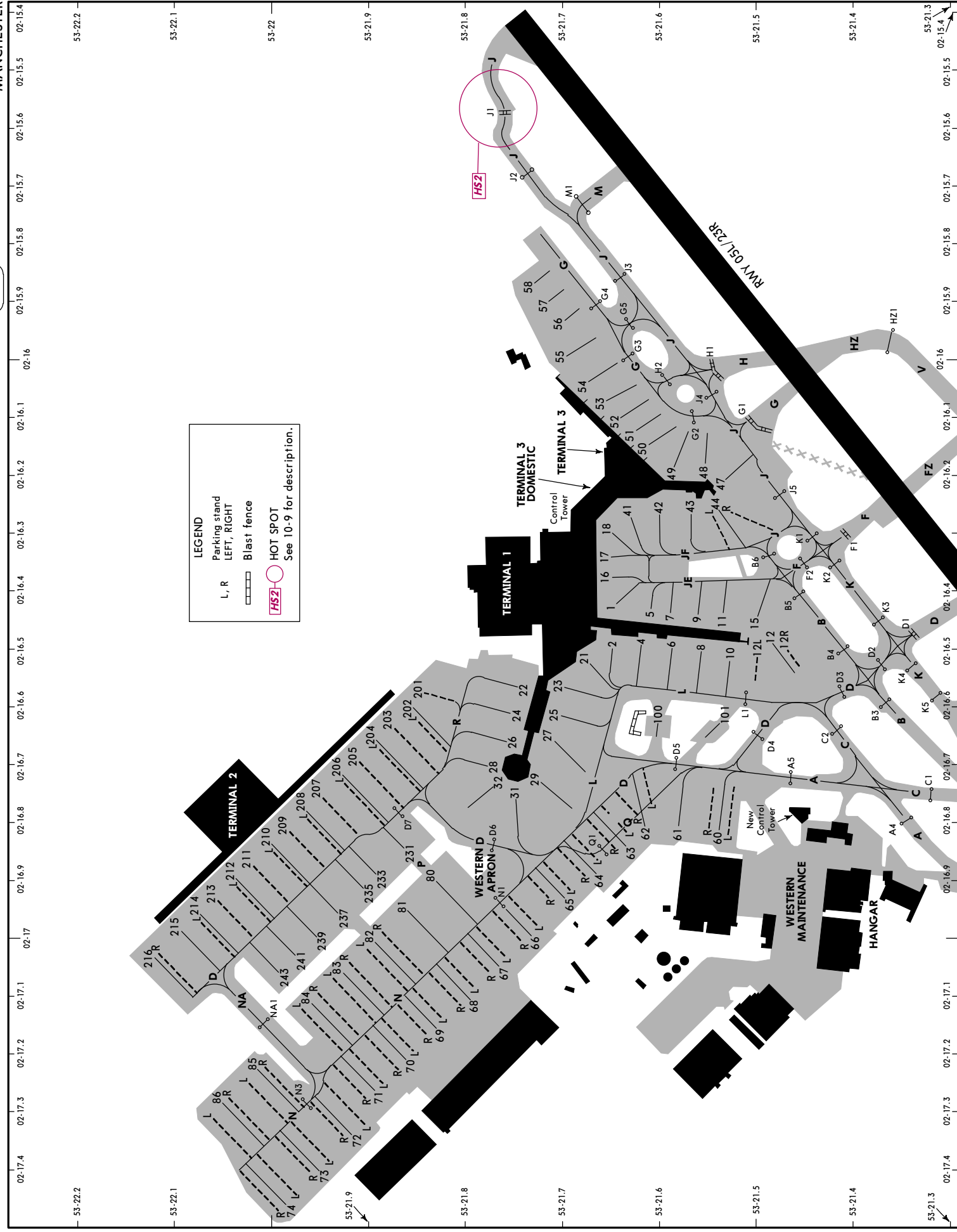
twy G int 6719' (2048m)

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	83R	N53 21.9	W002 17.0
2, 4	N53 21.6	W002 16.5	84, 84L	N53 22.0	W002 17.1
5	N53 21.6	W002 16.4	84R	N53 21.9	W002 17.1
6 thru 9	N53 21.6	W002 16.5	85, 85L, 85R	N53 22.0	W002 17.2
10 thru 15	N53 21.5	W002 16.5	86	N53 22.0	W002 17.3
16	N53 21.7	W002 16.4	86L	N53 22.1	W002 17.3
17, 18	N53 21.7	W002 16.3	86R	N53 22.0	W002 17.3
21	N53 21.7	W002 16.5	100	N53 21.6	W002 16.6
22 thru 25	N53 21.7	W002 16.6	101	N53 21.5	W002 16.6
26	N53 21.7	W002 16.7	201	N53 21.8	W002 16.6
27	N53 21.7	W002 16.6	202 thru 203	N53 21.9	W002 16.6
28	N53 21.8	W002 16.7	204L	N53 21.9	W002 16.7
29, 31	N53 21.7	W002 16.7	204	N53 21.9	W002 16.6
32	N53 21.8	W002 16.7	205 thru 206L	N53 21.9	W002 16.7
41 thru 44L	N53 21.6	W002 16.3	207	N53 21.9	W002 16.8
44R	N53 21.5	W002 16.3	208 thru 210L	N53 22.0	W002 16.8
47	N53 21.5	W002 16.2	211 thru 213	N53 22.0	W002 16.9
48 thru 50	N53 21.6	W002 16.2	214	N53 22.1	W002 16.9
51, 52	N53 21.6	W002 16.1	214L	N53 22.1	W002 17.0
53, 54	N53 21.7	W002 16.1	215, 216, 216R	N53 22.1	W002 17.0
55 thru 57	N53 21.7	W002 16.0	231	N53 21.8	W002 16.8
58	N53 21.7	W002 15.9	233, 235	N53 21.9	W002 16.9
60, 60L, 60R	N53 21.5	W002 16.8	237, 239	N53 21.9	W002 17.0
61 thru 63R	N53 21.6	W002 16.8	241	N53 22.0	W002 17.0
64 thru 65R	N53 21.7	W002 16.9	243	N53 22.0	W002 17.1
66, 66L, 66R	N53 21.7	W002 17.0			
67	N53 21.8	W002 17.0			
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	N53 21.8	W002 16.9			
81	N53 21.9	W002 16.9			
82 thru 83	N53 21.9	W002 17.0			
83L	N53 21.9	W002 17.1			

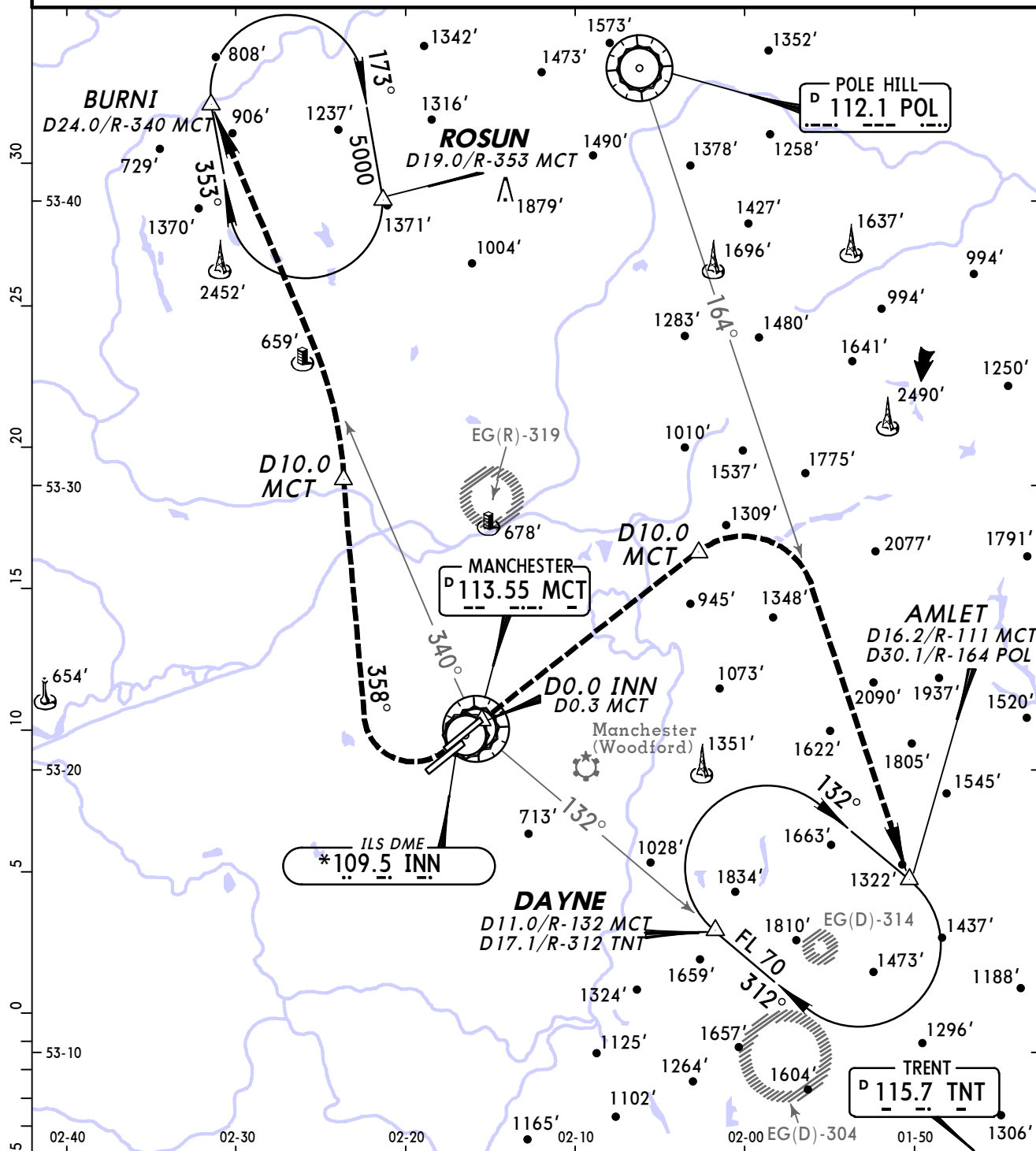
STRAIGHT-IN RWY		DA(H) / MDA(H)	RVR (ALS/ALS out)
05L	CAT 2 ILS DME	312' (100')	RA 107' - 300m
	ILS DME	412' (200')	500m / 1000m
	LOC	640' (428')	800m / 1000m
	VOR DME	690' (478')	1000m / 1000m
05R	ILS DME	386' (200')	500m / 1000m
	LOC	530' (344')	800m / 1000m
	VOR DME	630' (444')	800m / 1000m
23L	RNAV	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 LTS, CL & RVR info	RL, FATO LTS & RCLM	Unlit/unmarked defined RWY/FATO	Nil Facilities DAY	Nil Facilities 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.

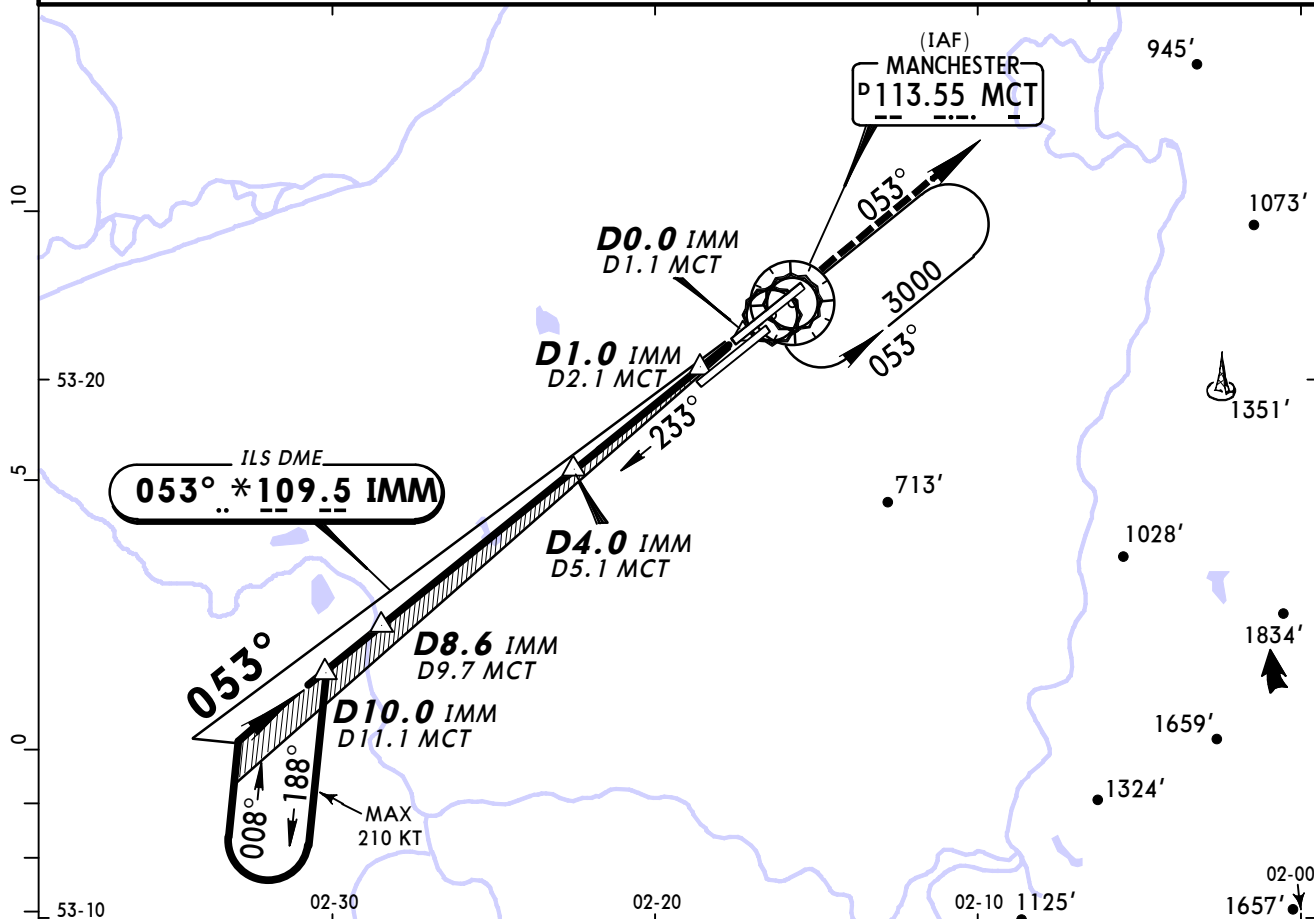
Rwy 23R: Climb to 3500'. STRAIGHT AHEAD until passing 750' or D0.0 INN (D0.3 MCT) inbound, whichever is the later, then turn RIGHT onto track 358°. At D10.0 MCT turn direct to BURNI (D24.0/R-340 MCT) climbing to 5000' to enter ROSUN holding.

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.

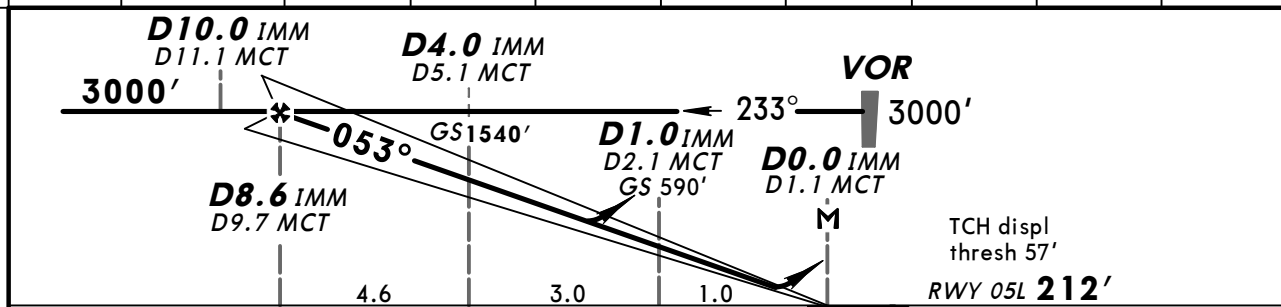
PANS OPS

BRIEFING STRIP™

D-ATIS Arrival		MANCHESTER Radar (APP)		MANCHESTER Tower		*Ground	
128.17 113.55		118.57		118.62 119.4		121.85 121.7	
LOC IMM *109.5	Final Apch Crs 053°	GS D4.0 IMM 1540' (1328')	ILS DA(H) 412' (200')	Apt Elev 257' RWY 212'		3500' 090°→←270° 2400'↑360° 3100' MSA MCT VOR	
MISSED APCH: Climb STRAIGHT AHEAD to 3500', then as directed.							
In case of complete radio failure see 11-01.							
Alt Set: hPa		Rwy Elev: 8 hPa		Trans level: By ATC			
1. ILS DME reads zero at rwy 05L displaced threshold.							
2. WARNING: RA fluctuations may occur due to Bollin Valley.							

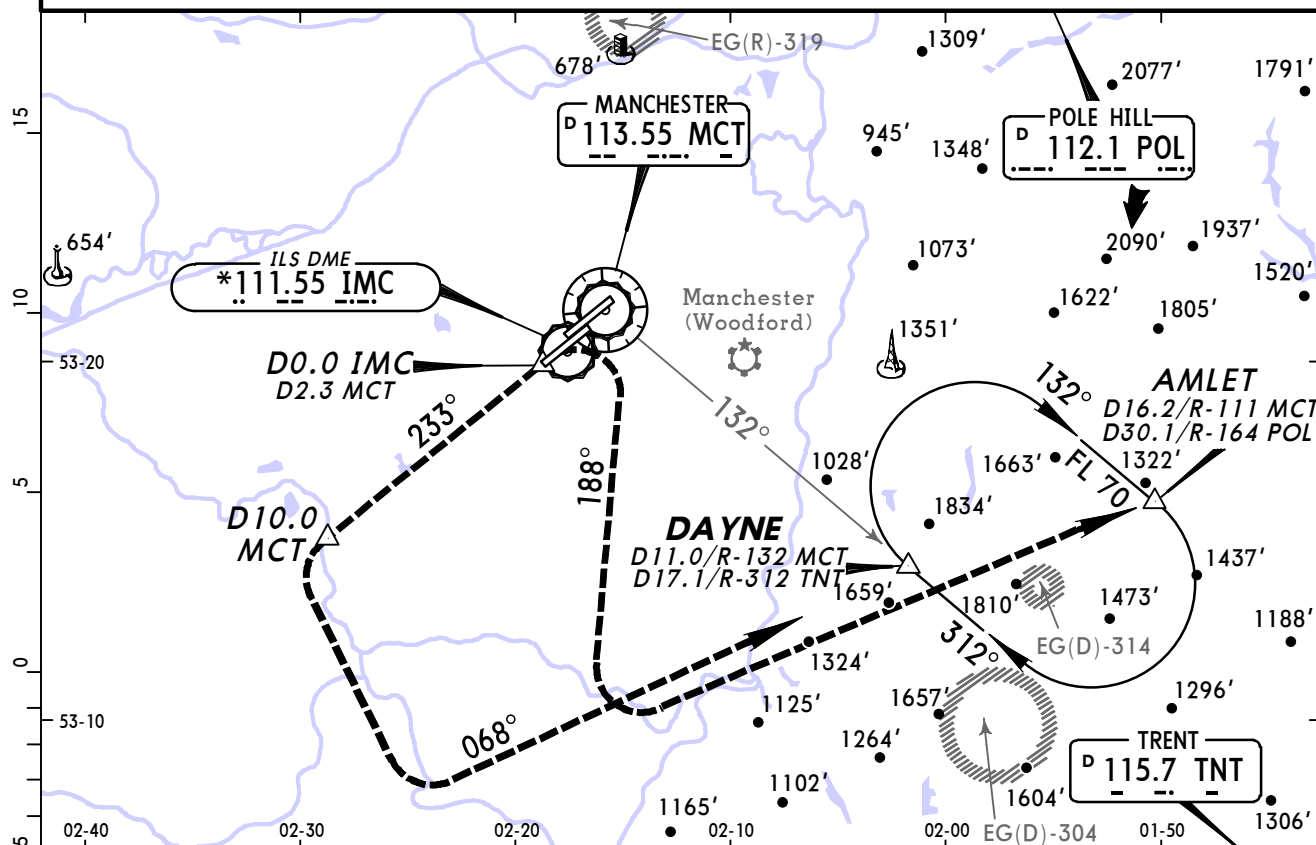


LOC (GS out)	IMM DME	8.0	7.0	6.0	5.0	4.0	3.0	2.0	1.0
	MCT DME	9.1	8.1	7.1	6.1	5.1	4.1	3.1	2.1
	ALTITUDE	2810'	2490'	2170'	1860'	1540'	1220'	900'	590'



Gnd speed-Kts	70	90	100	120	140	160		3500'
ILS GS or								
LOC Descent Angle 3.00°	372	478	531	637	743	849		
MAP at D0.0 IMM/D1.1 MCT								

PANS OPS	STRAIGHT-IN LANDING RWY 05L				CIRCLE-TO-LAND			
	ILS			LOC (GS out)	CDFA			
	DA(H) 412' (200')				DA/MDA(H) 640' (428')			
	FULL	Limited	ALS out		ALS out			
	A						Max Kts	
B	RVR 550m	RVR 750m	RVR 1200m	RVR 1300m	RVR 1500m		100	750' (493')
C							135	820' (563')
D							180	1110' (853')
							205	1110' (853')

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

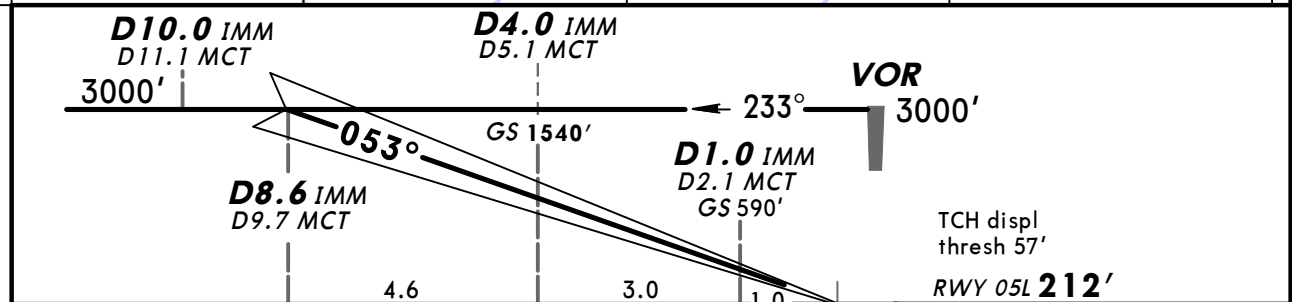
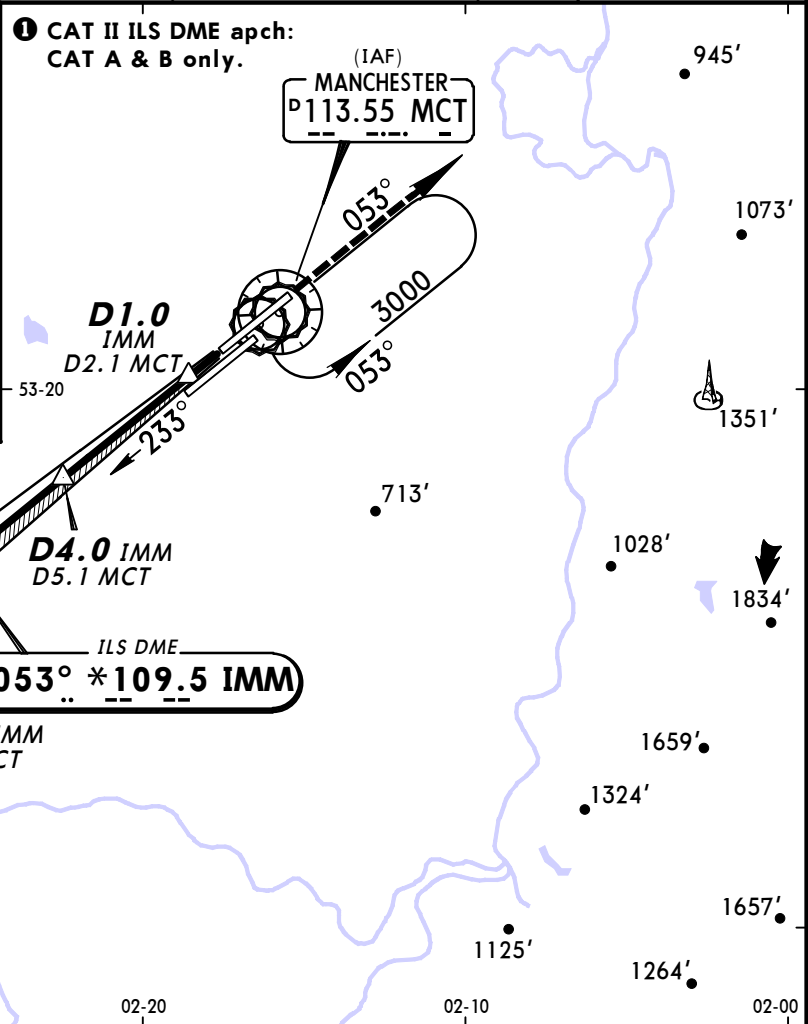
Rwy 05R: Climb to 3500'. **ILS & LOC:** STRAIGHT AHEAD to 700' or D0.0 IMC (D2.3 MCT) inbound, whichever is the later, (**VOR DME:** STRAIGHT AHEAD to 700'), then turn RIGHT onto track 188° climbing to FL 70. When established on track 188° and above 3500' turn LEFT direct to AMLET to join DAYNE holding.

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 IMM *109.5	Final Apch Crs 053°	GS D4.0 IMM 1540' (1328')	CAT II & IIIA ILS Refer to Minimums		Apt Elev 257' RWY 212'		
MISSED APCH: Climb STRAIGHT AHEAD to 3500', then as directed. 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 PAPI 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 RA 107' DA(H) 312' (100')			
RVR 200m		RVR 300m		NOT AUTHORIZED	

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

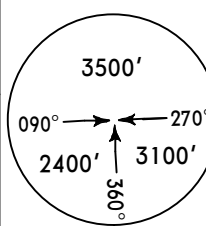
BRIEFING STRIP™

5

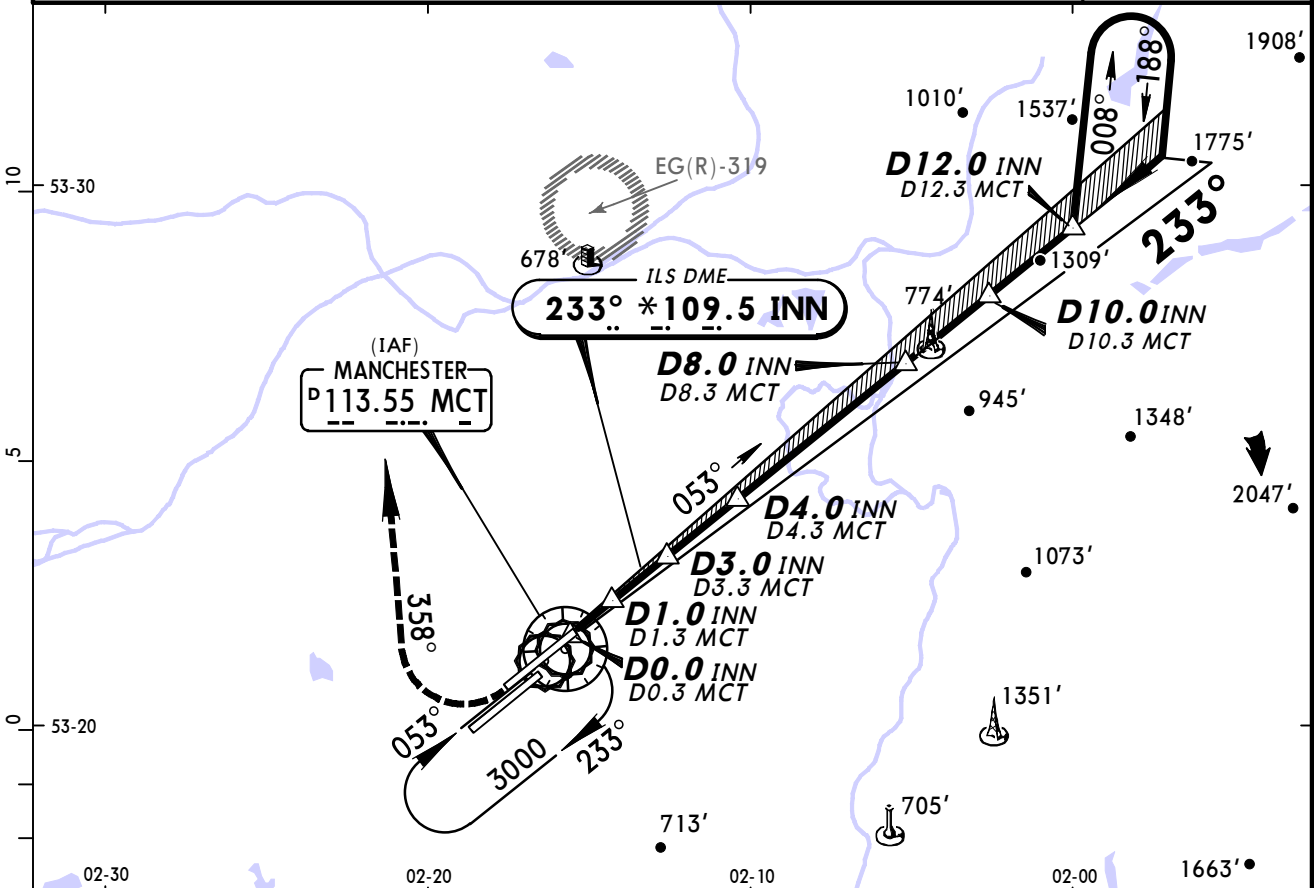
M

PANS OPS

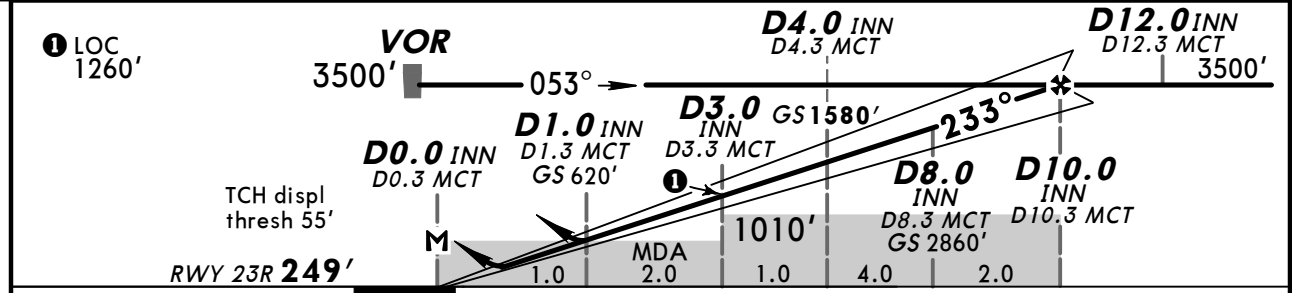
BRIEFING STRIP

D-ATIS Arrival 128.17 113.55		MANCHESTER Radar (APP) 118.57		MANCHESTER Tower 118.62 119.4		*Ground 121.85 121.7	
LOC INN *109.5	Final Apch Crs 233°	GS D4.0 INN 1580' (1331')	ILS DA(H) 449' (200')	Apt Elev 257' RWY 249'			
MISSED APCH: 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 Trans alt: 5000' ILS DME reads zero at rwy 23R displaced threshold.							

MSA
MCT VOR



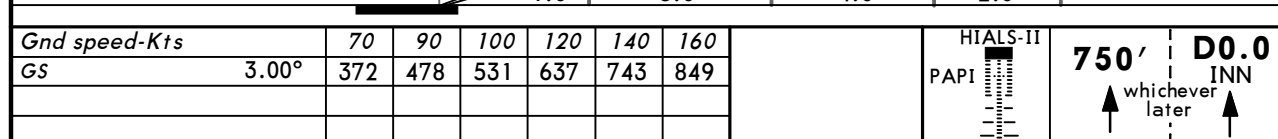
LOC (GS out)	INN DME	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
	MCT DME	1.3	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3
	ALTITUDE	620'	940'	1260'	1580'	1900'	2220'	2540'	2860'	3180'



Gnd speed-Kts	70	90	100	120	140	160		750' D0.0 INN ↑ whichever later ↑
ILS GS or	372	478	531	637	743	849		
LOC Descent Angle	3.00°							
MAP at D0.0 INN/D0.3 MCT								

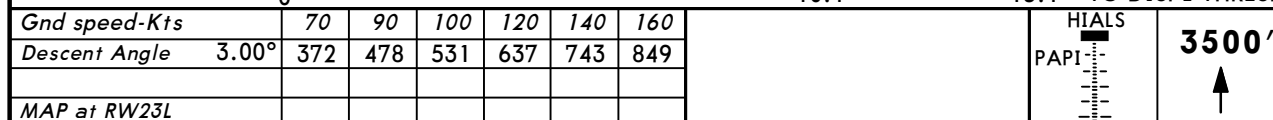
Standard				STRAIGHT-IN LANDING RWY 23R		CIRCLE-TO-LAND	
ILS				LOC (GS out)		CDFA	
DA(H) 449' (200')				DA/MDA(H) 640' (391')			
FULL Limited ALS out				ALS out		Max Kts	
A						100	750' (493') 1500m
B	RVR 550m	RVR 750m	RVR 1200m	RVR 1100m	RVR 1500m	135	820' (563') 1600m
C					RVR 1800m	180	1110' (853')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

BRIEFING STRIP TM

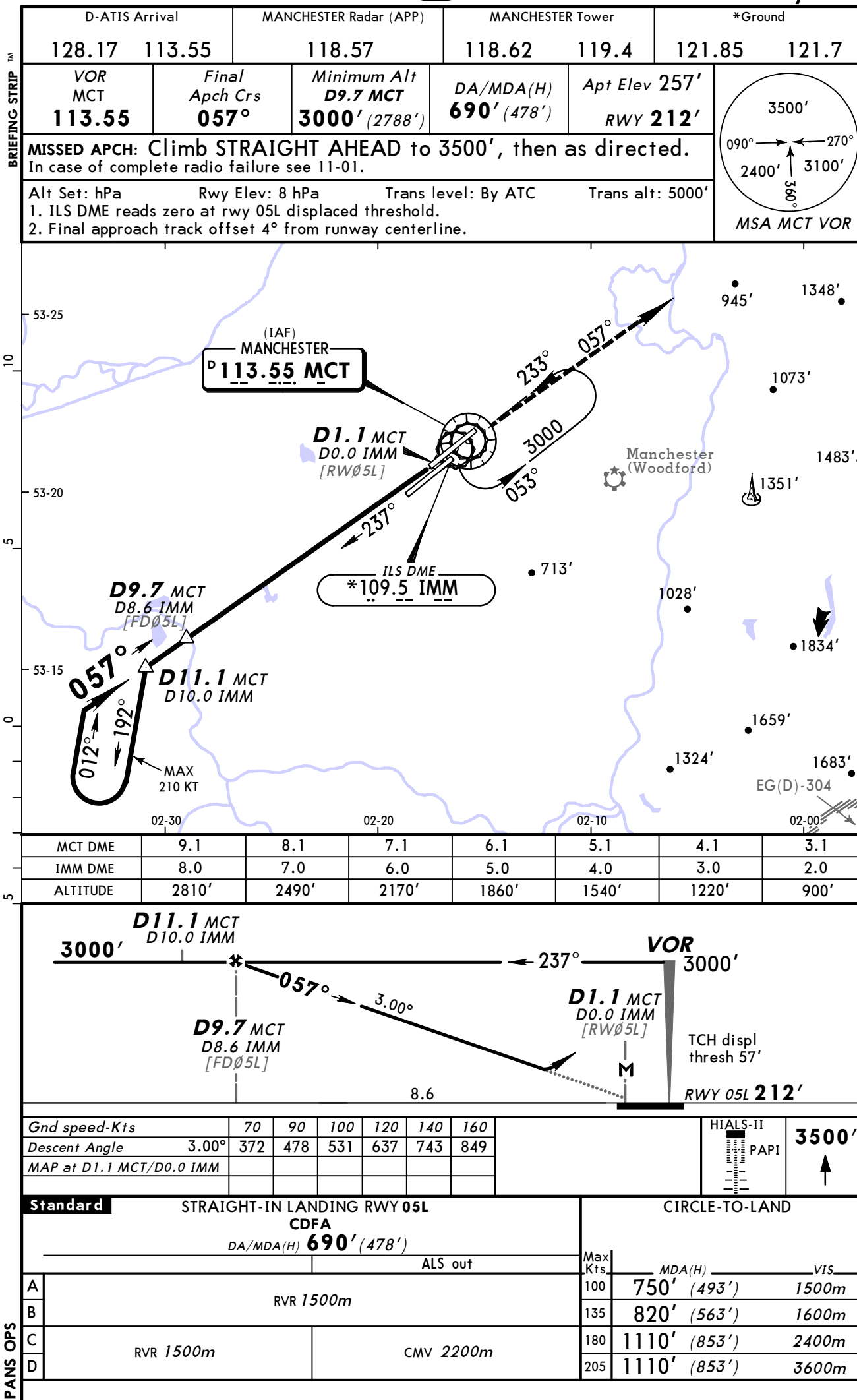
RVR **300m** **I**

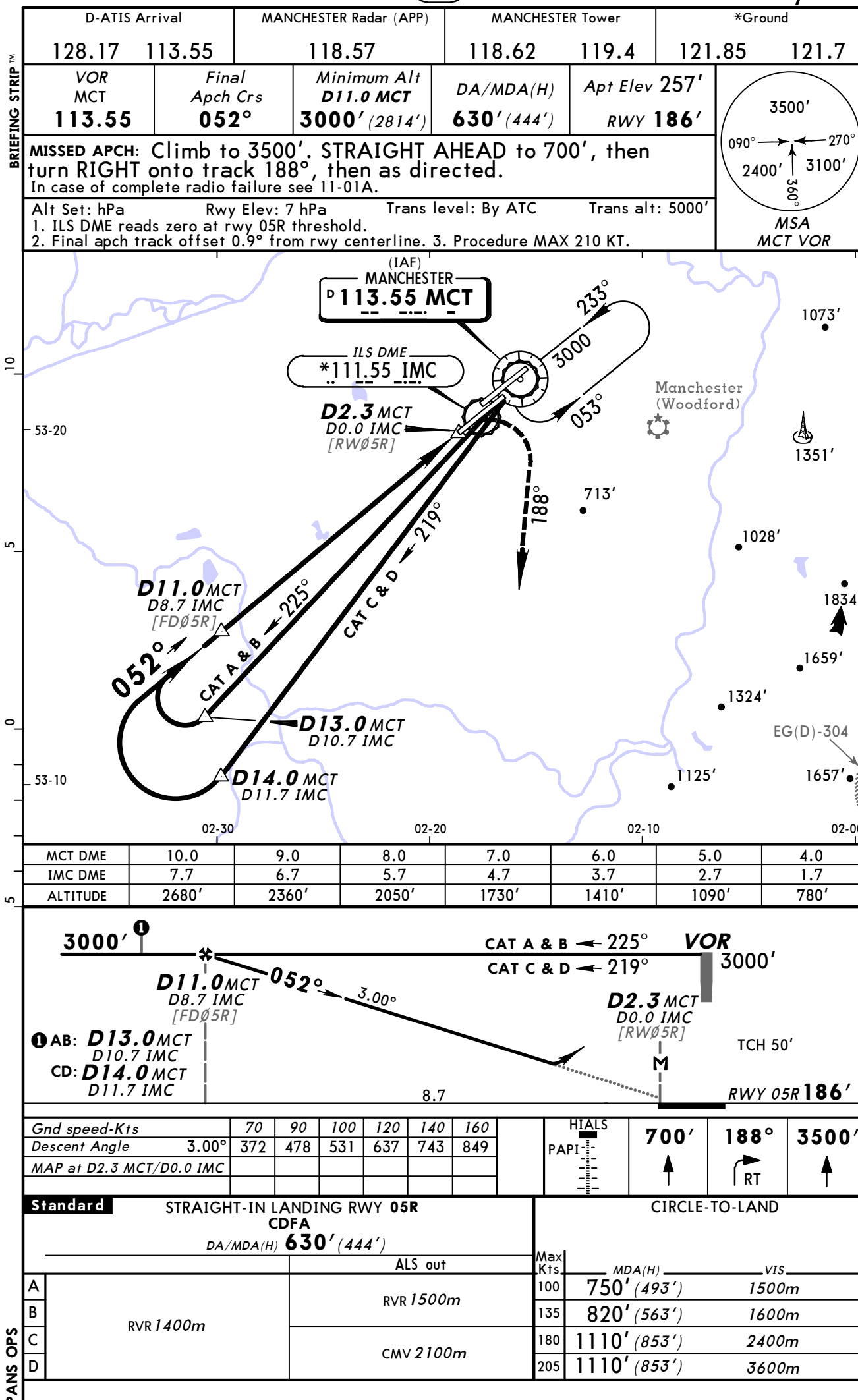
PANS OPS

BRIEFING STRIP™

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PANS OPS





BRIEFING STRIP TM



PANS OPS

Standard		STRAIGHT-IN LANDING RWY 23L		CIRCLE-TO-LAND		
		CDFA				
		DA/MDA(H) 690' (463')				
		ALS out		Max 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	

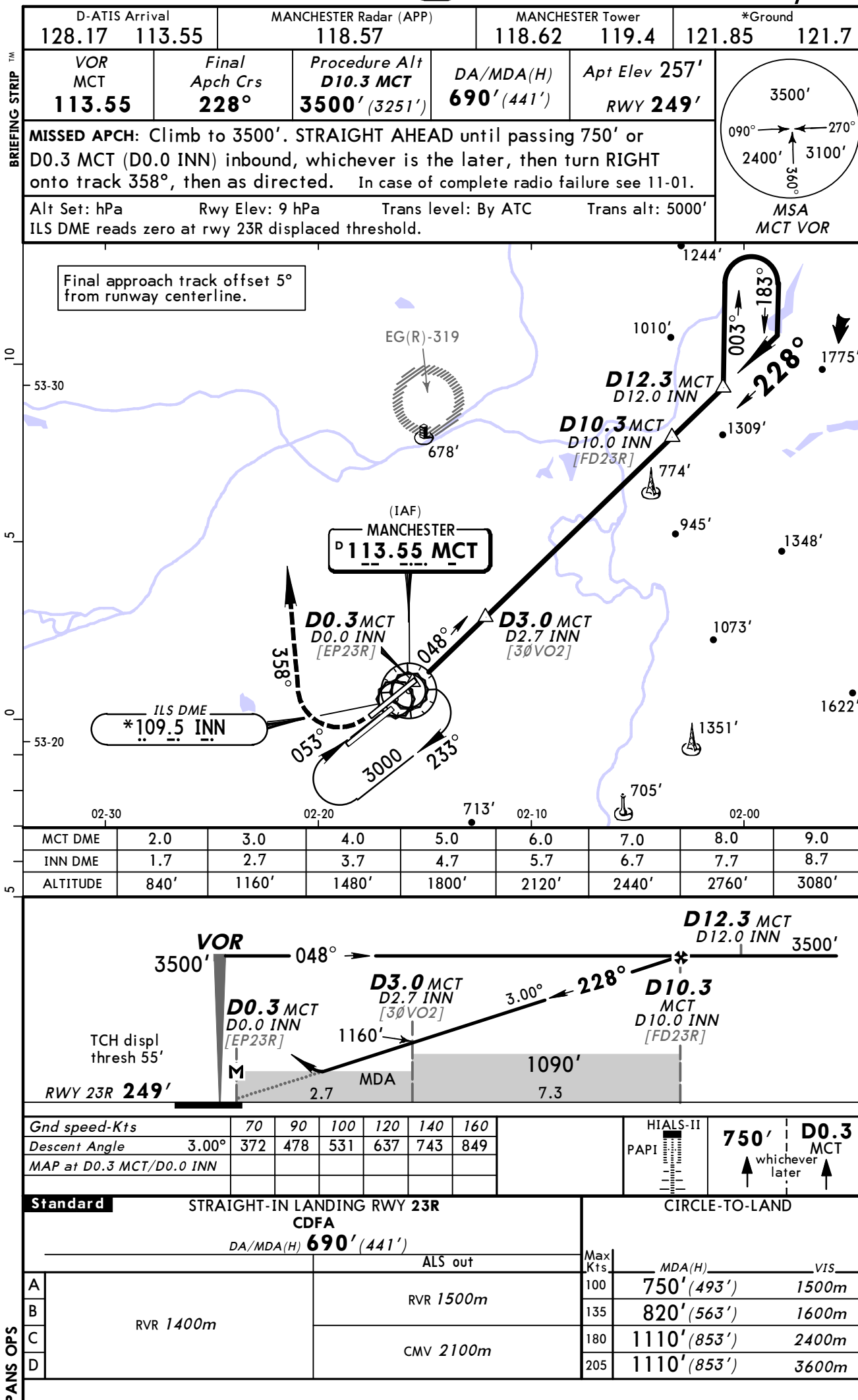


Chart changes since cycle 14-2013

ADD = added chart, REV = revised chart, DEL = deleted chart.

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
MANCHESTER, (MANCHESTER - EGCC)				
REV	DAYNE 2A & 1B ARRS	10-2B	21 Jun 2013	
REV	MIRSI 1A, 1B, 1C & 1D ARR...	10-2C	21 Jun 2013	

TERMINAL CHART CHANGE NOTICES

Chart Change Notices for Airport EGCC

Type: Terminal

Effectivity: Permanent

Begin Date: 20130530

End Date: No end date

Expect first CPDLC (Controller to pilot data link) Authority to be London ACC (10-3/3A, 3B/3C, 3D/3E, 3F/3G, 10-3H), Scottish ACC (10-3J, 3K); after WAL SIDs when following away L10 expect Scottish ACC, when following away L70 expect Shannon ACC (10-3L/3M).

Type: Terminal

Effectivity: Temporary

Begin Date: Immediately

End Date: Until Further Notice

(10-3/3A, 10-3F/3G, 10-3H/3J, 10-3K/3L, 10-3M) MANCHESTER Control replaced by SCOTTISH Control.