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Revision Letter For Cycle 13-2014

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General Information

Location: Frankfurt/Main Deu  
IATA Code: FRA  
Lat/Long: N50° 02.0' E008° 34.2'  
Elevation: 364 ft

Airport Use: Public  
Magnetic Variation: 1.8°E

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

Sunrise: 0317 Z  
Sunset: 1939 Z,

Runway Information

Runway: 07C  
Length x Width: 13123 ft x 197 ft  
Surface Type: asphalt  
TDZ-Elev: 329 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Runway: 07L  
Length x Width: 9186 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 305 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Runway: 07R  
Length x Width: 13123 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 328 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Runway: 18  
Length x Width: 13123 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 326 ft  
Lighting: Edge, Centerline

Runway: 25C  
Length x Width: 13123 ft x 197 ft  
Surface Type: asphalt  
TDZ-Elev: 364 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Runway: 25L  
Length x Width: 13123 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 362 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Runway: 25R  
Length x Width: 9186 ft x 148 ft  
Surface Type: concrete  
TDZ-Elev: 353 ft  
Lighting: Edge, ALS, Centerline, REIL, TDZ

Communication Information

ATIS 118.725 Departure Service  
ATIS 118.025 Arrival Service  
Frankfurt Ground Tower 121.8  
Frankfurt Delivery Tower 121.9  
Frankfurt Tower 136.5  
Frankfurt Tower 127.325 At or below 4000 ft  
Frankfurt Tower 124.85 At or below 4000 ft  
Frankfurt Tower 119.9 At or below 4000 ft  
Frankfurt Tower 118.775  
Frankfurt Tower 37.835 At or below 4000 ft Military  
Frankfurt De-Icing Centre Ramp/Taxi Control 135.225  
Frankfurt Apron Ramp/Taxi Control 121.95  
Frankfurt Apron Ramp/Taxi Control 121.85  
Frankfurt Apron Ramp/Taxi Control 121.75  
Frankfurt Apron Ramp/Taxi Control 121.7  
Frankfurt Apron Ramp/Taxi Control 121.65  
Frankfurt Apron Ramp/Taxi Control 121.55  
Langen Radar Approach Control 136.125  
Langen Radar Approach Control 126.55 Departure Service  
Langen Radar Approach Control 125.35  
Langen Radar Approach Control 120.8  
Langen Radar Approach Control 120.15  
Langen Radar Approach Control 119.025 Arrival Service  
Langen Radar Approach Control 37.285 Military  
Langen Radar Approach Control 27.78 Military  
Frankfurt Director Approach Control 127.275 At or below 15000 ft Out to 40 mi.  
Frankfurt Director Approach Control 37.545 At or below 10000 ft Military  
Frankfurt Arrival Approach Control 118.5

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## 1. GENERAL

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### 1.1. ATIS

\*D-ATIS Arrival        118.02  
\*D-ATIS Departure    118.72

### 1.2. NOISE ABATEMENT PROCEDURES

#### 1.2.1. RUNWAY USAGE

##### 1.2.1.1. ARRIVALS

RWYs 25C/L will preferably be assigned to landing ACFT, provided the tailwind component does not exceed 5 KT. The landing direction will be changed, however, even if the tailwind component is less than 5 KT when braking action on the RWYs is impaired by ice, snow, slush, etc.

##### 1.2.1.2. DEPARTURES

**In case of landing direction 07:**

RWY 07C will preferably be assigned to departures into northern and eastern directions.

**In case of landing direction 25:**

RWY 25C will preferably be assigned to departures into northern directions.

**In case of landing direction 07 or 25:**

RWY 18 will generally be assigned to departures into south-eastern, southern and western directions, provided the tailwind component does not exceed 15 KT.

If the tailwind component for RWY 18 is more than 10 KT this will be announced by ATIS. Pilots-in-command who cannot accept the higher tailwind component are requested to advise ATC at the same time as the request for the start-up clearance.

**Exceptions** are possible if the traffic situation permits or for reasons of traffic safety.

#### 1.2.2. NIGHT FLYING RESTRICTIONS AND OPERATIONAL RESTRICTIONS

##### OUTSIDE NIGHTTIME HOURS FOR CIVIL AVIATION

- a) Landing RWY northwest (07L/25R) may only be used by airplanes up to and including code letter E in compliance with ICAO categorization. Airplanes with code letter F in compliance with categorization according to ICAO Attachment 14, jet airplanes, which cannot be classified into the airplane groups up to and including S 6.3 in compliance with the instructions for calculating noise protection zones as well as airplanes of the type MD11 may not use landing RWY northwest (07L/25R). Take-offs of ACFT are not permitted from landing RWY northwest (07L/25R).
- b) ACFT without a noise certificate in accordance with ICAO Annex 16 are not permitted to take-off from or land on the whole runway system of Frankfurt/Main APT during the entire hours of operation of Frankfurt/Main APT.
- c) ACFT that merely meet the noise certification values in accordance with ICAO Annex 16, Volume I, Part II, Chapter 2 are not permitted to take-off from or land on the whole RWY system of Frankfurt/Main APT during the entire hours of operation of Frankfurt/Main APT unless - documented by a certificate according to Article 11c, paragraph 7 of the German Aviation Regulation (LuftVO) - the Federal Aviation Office (LBA) has granted an exemption for the ACFT concerned according to Article 11 c, paragraphs 4 - 6 of the LuftVO or a Member State of the European Union has granted an exemption in accordance with Article 11c, paragraph 8 of the LuftVO.
- d) The following operational provisions apply to ACFT that are marginally compliant with ICAO Annex 16, Volume 1, Part II, Chapter 3 within the meaning of Article 48a no. 4 of the Regulation on the Certification and Licensing in Aviation (LuftVZO):

## 1. GENERAL

Take-offs and landings are not permitted on all days of the week between 2000-0800LT, unless an exemption in accordance with Article 48 f, paragraph 1 of the LuftVZO or an individual exemption in accordance with paragraph 2 of the regulation has been granted.

From the beginning of the winter 2011/2012 scheduling period, take-offs and landings are not permitted between Friday, 2000LT and Monday, 0800LT, unless they have been granted an exemption in accordance with Article 48 f, paragraph 1 of the LuftVZO or an individual exemption in accordance with paragraph 2 of the regulation.

ACFT arriving late or early whose landing is planned by the APT coordinator for a slot outside the operational restrictions up to 2000LT or from 0800LT may land until 2200LT and from 0600LT, provided that the late or early arrival was not envisaged as such in the flight plan (Article 25 LuftVO).

- e) Following the opening of the landing RWY northwest, from the first day of the new scheduling period, which - because of the added capacity of the landing RWY northwest - provides an increase in the coordinated hourly runway capacity, take-offs and landings are not permitted on the whole RWY system of Frankfurt/Main APT between 2200-0600LT on all days of the week, unless otherwise provided.

Between 2200-2300LT as well as between 0500-0600LT, only such ACFT are permitted to take off and land that - have a noise certificate or a noise certification value in accordance with ICAO Annex 16, Volume I, Part II, Chapter 4 and whose take-off or landing has been coordinated by the APT coordinator of the Federal Republic of Germany at least one day in advance.

The following regulations apply to ACFT arriving late or early:

- ACFT that are not only marginally compliant with ICAO Annex 16, Volume I, Part III, Chapter 3 within the meaning of Article 48 a of the LuftVZO, and ACFT fulfilling the provisions of ICAO Annex 16, Volume I, Part II, Chapter 4 and whose landing is planned by the APT coordinator for a slot up to 2200LT or from 0600LT, are permitted to land until 2400LT and/or from 0500LT without being counted against the quota as well as the maximum limit, provided that the late or early arrival was not envisaged as such in the flight plan (Article 25 of the LuftVO).
- ACFT fulfilling the provisions of ICAO Annex 16, Volume I, Part II, Chapter 4 and whose landing is planned by the APT coordinator for a slot between 2200-2300LT and between 0500-0600LT under the conditions set out, are permitted to land until 2400LT without being counted against the maximum limit provided that the late arrival was not envisaged as such in the flight plan (Article 25 of the LuftVO).

Early arrivals before 0500LT are not permitted.

ACFT are not permitted to use the landing RWY northwest between 2300-0500LT. At Frankfurt/Main APT, take-offs and landings of ACFT conducting flight checks of radio, radar or APT facilities are permitted between 2200-0600LT only if the ACFT meet the provisions of ICAO Annex 16, Volume I, Part II, Chapter 4 and if it is absolutely necessary to conduct these checks during this period of time.

Propeller ACFT with a maximum take-off mass of less than 9,000 kg may take-off and land between 2200-0600LT only under the restrictions outlined in sections above; instead of the mentioned noise certification values they must at least fulfil the higher sound-proofing requirements defined in Article 4 of the Airfield Noise Abatement Ordinance (Landeplatz-LaermschutzV) of 5 January 1999 (Federal Law Gazette I, page 35; German-language publication Nfl I 134/99).

- f) Delayed take-offs to be conducted in a period of restricted operations by an ACFT subject to the restrictions require individual permission by the local aviation supervision office. Permission may only be granted if the delay is due to reasons beyond the control of the air carrier concerned. Delayed take-offs are not permitted between 2400-0500LT unless they meet the approval requirements above.

## 1. GENERAL

### EXCEPTIONS

Excluded from the restrictions mentioned above are:

- Landings of ACFT approaching Frankfurt Main APT as an alternate aerodrome for meteorological, technical or other safety reasons as well as take-offs and landings of ACFT rendering medical assistance or on missions in disasters, as well as evacuation flights;
- Flights conducted particularly in the public interest.

Apart from this, the approving authority may grant exemptions from the operational restrictions only upon application in cases of particular hardship. It is not a case of particular hardship if the operational restriction makes the air carrier's ACFT turn-around planning more difficult or requires arrangements for passenger transfer or accommodation. Processing of applications is subject to charges.

As a rule, the application shall be submitted in writing to:

Hessisches Ministerium fuer Wirtschaft, Verkehr  
und Landesentwicklung  
- Referat V4 -  
Kaiser-Friedrich-Ring 75  
65185 Wiesbaden/Germany  
Fax: 0611/815-2223

In urgent cases, the application shall be submitted in writing or verbally to:

Oertliche Luftaufsichtsstelle/local Aviation Supervision Office  
Verkehrsflughafen Frankfurt/Main  
Gebaeude (building) 514  
60547 Frankfurt am Main/Germany  
Tel.: 069/690-71717  
Fax: 069/690-66150

The application shall contain:

- Name and address of ACFT operating agency and ACFT operator,
- aerodrome of departure or destination,
- radio call sign of the ACFT,
- type, year of construction, and noise certificate according to Article 11c of the LuftVO,
- confirmation that the ACFT will be flown by a pilot who is familiar with the noise abatement procedures at Frankfurt/Main APT,
- time of departure or landing for which the exemption is requested,
- number of passengers,
- weight of cargo in tonnes.

The reasons for the application shall be specified; the applicant shall state, in particular, where the hardship lies.

Take-off or landing clearances granted by ATC as well as other clearances do not automatically include the necessary exemption by the approval authority. ATC will not grant exemptions via radiotelephony.

The pilot-in-command (PIC) shall report the landing of an ACFT outside the times permitted, which has not previously been approved, and justify it in writing to the local aviation supervision office after landing (Declaration of PIC).

### 1.2.3. REVERSE THRUST

Reverse thrust must not be used on the entire RWY system of Frankfurt Main APT - except for safety reasons in unavoidable cases. This does not apply to idle reverse thrust.

## 1. GENERAL

### 1.2.4. RUN-UP TESTS

Engine run-ups with thrust settings above an idle power setting may only be conducted at the following positions:

- on the apron of hangar 5 and in the run-up enclosure in the time between 0600-2200LT,
- in the time between 2200-0600LT, engine run-ups with the thrust setting on part-load on the apron of hangar 5, whereby on the position hangar 5 west the maximum power setting may only be taken to part-load low (up to 50% N1), as well as in the run-up enclosure; engine run-ups with the thrust setting on full-load may only be conducted in the run-up enclosure.

Engine run-ups shall be conducted in such a way that their duration of exposure on the next built-up area shall not, on average, result in a continuous sound level higher than 57 dB(A) during the day and 50 dB(A) during the night.

Engine run-ups in the time between 2200-0600LT with a thrust setting above an idle power setting shall be notified to the local aviation supervision office.

Engine test runs and run-ups as well as extensive maintenance work on ACFT at the positions are not permitted. Apron control may grant exceptions in justified cases.

## 1.3. LOW VISIBILITY PROCEDURES

### 1.3.1. CAT III OPERATIONS

#### 1.3.1.1. GENERAL

RWYs 07R/25L & 07C/25C will be announced via ATIS. Taxiing for all ACFT is restricted to TWYs with operating centerline lights. The TWY centerline lights within the ILS sensitive area from RWY 07C/25C towards TWY L and from RWY 07R/25L towards TWY M are colorcoded (yellow/green). Landing ACFT are requested to report RWY vacated at the end of the colorcoded TWY centerline lights to indicate that the ACFT has vacated the ILS sensitive area.

In order to facilitate ground movement several clearance bars and stop bars are installed.

#### 1.3.1.2. CLEARANCE BARS

Clearance bars are operated together with the centerline lighting and consist of three unidirectional surface lights showing YELLOW in the direction of approach to the intersection, arranged at 90° to the TWY centerline and partly displaced laterally to centerline.

If the traffic situation requires, ACFT may be instructed to hold at a specific clearance bar. If no such instruction is given, ACFT may taxi across the clearance bar without a specific clearance.

#### 1.3.1.3. STOP BARS

Stop bars are operated independently of the centerline lighting and consist of unidirectional surface lights showing red in the direction of approach to a taxi-holding position/an intersection, spaced at intervals of 10' / 3m across the overall width of a TWY at 90° to the TWY centerline.

Taxiing across an operating stop bar is strictly prohibited.

## 1.4. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM

### 1.4.1. OPERATION OF SSR-MODE S TRANSPONDERS

#### 1.4.1.1. GENERAL

An Advanced Surface Movement Guidance and Control System, using Mode-S multilateration, is in operation.

## 1. GENERAL

### 1.4.1.2. OPERATION OF MODE S TRANSPONDERS WHEN ACFT IS ON GROUND

ACFT operators shall ensure that Mode S transponders are able to operate when ACFT is on the ground.

Pilots shall:

Select AUTO mode and assigned Mode A code. If AUTO mode is not available, select ON (e.g. XPDR) and assigned Mode A code (e.g. Mode A code = 1000 using callsign in flight).

- From request for push-back or taxi, whichever is earlier;
- After landing, continuously until ACFT is fully parked on stand;
- When fully parked on stand, select STBY.

Whenever ACFT is capable of reporting ACFT ident (i.e. callsign used in flight), ACFT ident shall also be entered from request for push-back or taxi, whichever is earlier (through FMS or transponder control panel). Aircrew must use ICAO defined format for entry of ACFT ident (e.g. DLH5MC, AFR6380, SAS589, BAW68PG).

To ensure that performance of systems based on SSR frequencies (including airborne TCAS units and SSR radars) is not compromised, TCAS shall not be activated before approaching holding point. After landing, it shall be deselected after vacating RWY. ACFT taxiing without flight plan shall select STBY.

## 1.5. TAXI PROCEDURES

### 1.5.1. GENERAL

ACFT are permitted to taxi on the manoeuvring area between RWY 07C/25C and TWYL only with the minimum engine revolutions absolutely required.

Turns from TWY M17 to M15 and conversely not authorized.

TWYs N blue and N orange MAX wingspan 118' / 36m.

TWYs N South and S20 MAX wingspan 171' / 52m.

TWY N8 starting ABEAM stand A94 MAX wingspan 200' / 61m.

### 1.5.2. TAXIING ON APRON

Wing-tip clearance for B747-400 on ACFT stand taxilanes to objects is MIM 25' / 7.5m, to parallel height-limited service roads is MIM 16' / 5m.

Wing-tip clearance for A380 on ACFT stand taxilanes to objects is MIM 25' / 7.5m, to parallel height-limited service roads is MIM 8' / 2.5m.

ACFT type A380-800 will be towed with reduced obstacle clearance of 5m on TWY N11.

Heavy ACFT taxiing on apron shall apply minimum thrust only. When taxiing into parking stands, ACFT shall not stop in turns. If an ACFT comes to a stop, notify Apron Control prior to increasing engine power.

Push-backs to TWY N have to be executed facing West.

In the General Aviation Area the wing-tip clearance is MIM 15' / 4.5m.

Adhere strictly to the yellow, blue and orange taxi guidance lines.

## 1.6. PARKING INFORMATION

On stands A11 thru A40, A50 thru A69, B20 thru B48, C4 thru C16, D1 thru D8A, E2 thru E9A, F211 thru F238, G1 thru G16, S501 thru S705, V92 thru V130 and V266 thru V323 push-back required.

Enter remote waiting area V135 by guidance with marshaller only.

## 1.7. OTHER INFORMATION

Glider areas in vicinity of APT.

CAUTION: In cases of strong winds, wind shears and increased turbulence can be expected on RWY 18.

Bird strike warning system for rwy 07L apch available.

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## 2. ARRIVAL

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### 2.1. NOISE ABATEMENT PROCEDURES

Between 2300-0500LT all inbound ACFT should expect clearances whereby final will be reached not closer to the APT than:

- approximately 18 NM (RWYs 25C/L) and
- approximately 19 NM (RWYs 07C/R) from THR.

These "final-interception points" correspond to the GPS/FMS waypoints DF622 (RWYs 25C/L) and DF652 (RWYs 07C/R). The fly-by function of these waypoints is not affected.

Pilots should subsequently expect a clearance for an ILS approach with GP interception at 5000'.

In addition pilots should expect a clearance to descend below FL70 only 6 NM prior to reaching the above mentioned points. Pilots should adjust their speed accordingly (approximately 200-220 KT when leaving FL70) and are urgently requested to perform their descent from FL70 as a continuous descent whenever possible.

In the event of technical failure of the ILS equipment, i.e. the need to fly non-precision approaches, descent clearances to 4000' will be issued.

Requests for non-precision approaches for training purposes will be denied.

The above procedures will not be applied to:

- flights with STS/HOSP
- flights in adverse weather conditions and
- flights in emergency situations.

Between 2300-0500LT approaching aircraft shall wait for clearances with the information that the final approach tracks can only be reached at a distance of 5.0 NM (RWY 25C/25L) and 5.1 NM (RWY 07C/07R) in front of the THR.

These "final approach points" correspond to the GPS/FMS waypoints RATRU (25C), TITUT (25L) as well as TIXAK (07C) and BOGVO (07R).

In addition, pilots should be prepared not to expect a descent clearance below FL 70 until 6 NM prior to reaching KUGUV and/or ORVIV (25C/25L) and 6 NM prior to reaching ULNOK and/or IBLUS (07C/07R). Pilots shall adjust their speed accordingly (approx. 200 - 220 kt when leaving FL 70) and are urgently requested to conduct the descent from FL 70 as continuous descent, whenever possible.

These procedures may not be applied to:

- flights with STS/HOSP
- flights in meteorological conditions such as CB, TS
- flights in emergencies.

In the case that R-NAV (GPS) approach procedures cannot be applied due to the absence of RNAV (GPS) equipment, pilots will be issued with a clearance for an ILS approach (in compliance with the night approach procedure above).

In the case of the ILS not being available, i.e. for clearances for non-precision approaches, approach control will issue descent clearances after 4000'.

### 2.2. CAT II/III OPERATIONS

RWYs 07L, 07C, 07R, 25L, 25C and 25R approved for CAT II/III operations, special aircrew and ACFT certification required.

## 2. ARRIVAL

### 2.3. RWY OPERATIONS

#### 2.3.1. HIGH INTENSITY RWY OPERATIONS

##### 2.3.1.1. APPROACH

Approaching ACFT for which a parking position is designated on the Southern airport area shall advise LANGEN Radar on 120.8, 125.35

These ACFT and propeller-driven ACFT which park in the Eastern part of the Northern apron will preferably be assigned to RWY 07R/25L.

When changing frequency from LANGEN Radar to FRANKFURT Director initial contact shall be restricted to

**FRANKFURT DIRECTOR & CALLSIGN**

in order to avoid frequency congestion.

When being transferred to FRANKFURT Tower initial contact shall consist of

**FRANKFURT TOWER, CALLSIGN, TYPE OF APCH & RWY**

##### 2.3.1.2. LANDINGS

Pilots are reminded that by leaving the RWY quickly, ATC will be able to guide ACFT on final using minimum radar separation.

In order to reduce RWY occupancy times, pilots shall apply the following procedures:

The RWYs shall, as a rule, be left via the existing high-speed turn-offs.

When RWY conditions permit, pilots should prepare their landings in order to leave the RWYs via the high-speed turn-offs listed below:

| RWY | ACFT                  | Turn off Intersections | Dist from THR ft (m) |
|-----|-----------------------|------------------------|----------------------|
| 07C | heavy                 | L9                     | 8202' (2500m)        |
|     | medium / light        | L11                    | 5906' (1800m)        |
| 07R | heavy                 | M13                    | 7054' (2150m)        |
|     | medium / light        | M15                    | 5577' (1700m)        |
| 25L | heavy                 | M21 (except A380)      | 7546' (2300m)        |
|     | medium (JET)          | M17                    | 6070' (1850m)        |
|     | medium (PROP) / light | M11                    | 3609' (1100m)        |
| 25C | heavy                 | L13                    | 6890' (2100m)        |
|     | medium (JET)          | L10                    | 6070' (1850m)        |
|     | medium (PROP) / light | L8                     | 3773' (1150m)        |

Name the expected high-speed turn-off during the approach briefing to ensure a minimum RWY occupancy time.

The possibility of FRANKFURT Tower applying reduced RWY separation remains unaffected and shall continue to be observed.

The frequency change after landing from FRANKFURT Tower to FRANKFURT Apron shall only be carried out on request.

If the pilot-in-command does not receive further taxi clearance, he should stop in front of TWY L and/or N11.

### 2.4. TAXI PROCEDURES

To maintain smooth taxiing traffic, ACFT having landed on RWY 07R/25L will be guided, if possible, to defined change-over points, depending on the assigned parking position, to cross RWY 07C/25C.

This procedure will be withdrawn during adverse weather conditions, at the latest when CAT III operation is in force.

### 2.5. OTHER INFORMATION

Parallel independent operation may be in force.

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### 3. DEPARTURE

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#### 3.1. DE-ICING

##### 3.1.1. GENERAL

De-icing notification shall be directed to FRANKFURT De-icing **135.22** or via phone 069/690-73891.

ACFT shall be ready at the estimated de-icing time. If this is impossible, the APT De-icing Center (ADC) shall be informed and the new "ready for de-icing time" be transmitted to the ADC.

**Caution:** If the ACFT is not ready at the estimated de-icing time (i.e. doors not closed) the de-icing vehicles will be directed to the next ACFT waiting and subject flight will have to wait until other vehicles become available for disposition.

##### 3.1.2. ACFT STANDS

The de-icing/anti-icing of ACFT at the respective ACFT stands will take place with engines switched off, passenger bridges cast off, and the ACFT clear of handling equipment.

##### 3.1.3. REMOTE DE-ICING PADS (DPs)

The remote de-icing pads are located West of the head of RWY 18 and fall within the responsibility of FRANKFURT Tower. When carrying out de-icing procedure, responsibility will temporarily be transferred to FRANKFURT Apron.

De-icing on DP1 and DP2 Center MAX wingspan less than 262'/80m.

De-icing on DP2 East and DP2 West MAX wingspan less than 118'/36m.

Pilot stop ACFT when LEFT Pilot position is ABEAM yellow stop line markings/ lights LEFT of centerline.

ACFT which were de-iced on DP1 will be guided to TWY W1 by Apron Control before handed over to ATC.

After de-icing on DP2 intersection take-off out of TWY W3 from RWY 18 required.

On the remote de-icing pads, only jet ACFT with running engines will be de-iced. Propeller ACFT will not be de-iced for safety reasons.

Underwing de-icing, de-icing of undercarriage or with hot air, the control of the central engines (e.g. DC10), as well as special examinations of individual ACFT parts (e.g. hands on checks) cannot be carried out on the remote de-icing pads.

ACFT will be positioned on de-icing pad DP1 by an eyeline to the LEFT of centerline, which depicts the exact holding position to the pilot optically. This taxiing-aid is made up of 5 amber surface lights with single-sided beams. If the surface lighting or the eyeline is out of order, ACFT will be guided by a marshaller.

ACFT will be positioned on de-icing pad DP2 by an eyeline to the LEFT of the respective centerline, which enables the pilot to visualize the exact holding position. This eyeline is made up to 5 yellow surface lights which shine on one side. If centerline lighting or eyeline is out of operation, ACFT will be guided by a marshaller.

During the de-icing proceedings, the pilot-in-command shall ensure continuous listening watch on the respective frequency of FRANKFURT Apron. After de-icing proceedings have been concluded, the pilot-in-command shall report to FRANKFURT Apron that he is ready to taxi.

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### 3. DEPARTURE

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#### 3.2. START-UP & TAXI PROCEDURES

##### 3.2.1. AIRPORT COLLABORATIVE DECISION MAKING

###### 3.2.1.1. START-UP AND PUSH-BACK

Start-up approvals and push-back clearances are issued taking into account the TOBT and TSAT only. The sequence of the start-up request is no longer a factor. The following rules apply:

- The ACFT has to be ready for start-up and/or remote de-icing at TOBT.
- The pilot shall request start-up approval and en-route clearance within the time period of TSAT +/- 5 minutes (not DCL).
- The push-back/taxi clearance has to be requested no later than five minutes after the start-up approval has been issued.

In the case of delays, Clearance Delivery has to be informed accordingly.

Otherwise the TOBT will be deleted and has to be re-entered.

###### 3.2.1.2. REMOTE HOLDING

In case an ACFT cannot leave its parking position due to a late TSAT and the parking position is required for an incoming flight, the remote holding procedure can be applied.

When the ACFT is ready to taxi, the pilot will request start-up/pushback for remote holding from apron control.

Note: This request does not refer to start-up approval or en-route clearance. These shall be obtained from the tower after reaching the remote position.

###### 3.2.1.3. DATALINK CLEARANCE - DCL

For data link departure clearances (DCL), the published procedures and time parameters will remain valid. The TSAT is transmitted via CLD (departure clearance uplink message - issue of the start-up approval and en-route clearance by Clearance Delivery) ("start-up approved at TSAT -hh:mm-"). The push-back/taxi clearance shall be requested at TSAT +/- 5 minutes.

###### 3.2.1.4. TERMS AND DEFINITIONS

TOBT (Target off-block time): The time that an ACFT operator or ground handler estimates that an ACFT will be ready, all doors closed, boarding bridge removed, push-back vehicle available and ready to start-up/ push-back immediately upon reception of clearance from the Tower.

TSAT (Target start-up approval time): Target time for start-up approval according to the A-CDM procedure taking into account TOBT, CTOT and/or the traffic situation.

###### 3.2.1.5. CONTACT

Detailed information on Airport CDM can be found at:  
[www.cdm.frankfurt-airport.com](http://www.cdm.frankfurt-airport.com)

##### 3.2.2. GENERAL

Departures from the Southern APT area shall state their position when request start-up clearance.

ACFT parking on stand B10 have to contact FRANKFURT Apron, prior actual engine start-up.

##### 3.2.3. FROM 0600 - 2200LT

All ACFT up to A321 parked at positions East of TWY N3 and planned for departure from RWY 18 have to expect to taxi via TWYs S East, R East, R and S. Departure will take place basically from position S. Pilots unable to comply with these conditions shall advise Frankfurt Apron upon initial contact.

### 3. DEPARTURE

#### 3.3. NOISE ABATEMENT

For additional depiction refer to 10-4.

##### 3.3.1. DEPARTURE DESIGNATION

**RWYs 07C/R:**

**a) Between 0700-2200LT:**

- SIDs with designator **ECHO** may be used by all **MEDIUM** and **LIGHT** ACFT able to comply with the climb restrictions;
- SIDs with designator **DELTA** shall be used by all **HEAVY** and **SUPER** ACFT and by all ACFT unable to comply with the climb restrictions in SIDs with designator **ECHO**.

**b) Between 2200-0700LT ALL ACFT** shall use SIDs with designator **DELTA**.

**c) NON RNAV** (enroute only) equipped ACFT shall use SIDs with designator **CHARLIE**.

**RWYs 25L/C:**

**a) Between 0700-2200LT:**

- aa) ACFT via **BIBTI, MARUN, TOBAK** shall use SIDs with designators:
  - **MIKE** for **3- and 4-engined HEAVY and SUPER** ACFT and all **MEDIUM** and **LIGHT** ACFT **able to comply** with the climb restrictions;
  - **JULIETT** for **2-engined HEAVY** ACFT **able to comply** with the climb restrictions, if unable file **GOLF**;
  - **FOXTROT** (by ATC only) for **MEDIUM** and **LIGHT** ACFT **able to comply** with the climb restrictions;
  - **GOLF** for all ACFT **unable to comply** with climb restrictions.
- ab) Traffic to all other directions shall use SIDs with designators:
  - **FOXTROT** for all **MEDIUM** and **LIGHT** ACFT;
  - **GOLF** for all **HEAVY** and **SUPER** ACFT.

**b) Between 2200-0700LT:**

- All 3- and 4-engined jet ACFT, except Avroliner, BAe 146, FA50 and FA90 via **BIBTI, MARUN, SOBRA** and **TOBAK**, shall use SIDs with designator **NOVEMBER**;
- Single- and twin-engined ACFT shall use SIDs according to paragraphs a) & c) respectively.

**c) SIDs with designator PAPA** may be used by single and twin-engined propeller-driven ACFT and DASH 7 only.

**d) NON RNAV** (enroute only) equipped ACFT shall use SIDs with designator **QUEBEC**.

**RWY 18:**

**NON RNAV** (enroute only) equipped ACFT shall use SIDs with designator **CHARLIE** and **QUEBEC** respectively.

##### 3.3.2. TRIAL OPERATIONS TO IMPLEMENT THE FIRST PACKAGE OF MEASURES FOR NOISE ABATEMENT

###### 3.3.2.1. Vertical Optimisation of Departure Procedures

In order to achieve greater height on the first miles after take-off (thrust for the climb, not for acceleration purposes) and improved lateral precision, a speed restriction of 220 KT will be introduced - in addition to the speed restrictions already existing on some SIDs - for departures on the

"D" SIDs: **BIBTI, MARUN, OSBIT, SULUS** and **TOBAK**

"S" SIDs: **BIBTI, MARUN, SOBRA** and **TOBAK**.

###### 3.3.2.2. Dedicated Runway Operations (DROps)

In order to create noise pauses, utilisation of the RWYs for departures between 0500-0600LT will generally be arranged on the odd calendar days as follows (the date for the commencement of the "DROps night" is significant for the respective night period):

---

### 3. DEPARTURE

---

#### 3.3.2.2.1. DROps RWY in use 25

All take-offs will be cleared via RWYs 25L/C. No utilization of RWY 18.  
Allocation of SIDs in compliance with published SIDs.

#### 3.3.2.2.2. DROps RWY in use 07

All take-offs will be handled via RWY 18, thus avoiding the utilization of the RWYs 07C/R for take-offs. SIDs with designation "S", "L", "U" and "R" (new) will be allocated. SIDs with designation "R" will be allocated by the aerodrome control tower exclusively, when using the DROps procedures and landing

direction 07 for departures in a northern direction.

Aircraft unable to adhere to the altitude restriction "Cross FFM R-201 2500'+'' on the "R" SID, will only be granted start-up approval and en-route clearance after coordination has taken place with the approach control facility.

#### 3.3.2.2.3. Special Features

If meteorological conditions and/or other operational conditions (on the part of the airport and/or the pilot-in-command) do not allow utilization of RWY 18 and/or 25, the appropriate RWY will be allocated

after coordination has taken place with the approach control facility. This applies also to ambulance flights and/or flights with corresponding priority treatment. On the even week days, the procedures so far employed and published apply.

### 3.4. RWY OPERATIONS

#### 3.4.1. HIGH INTENSITY RWY OPERATIONS

Cockpit checks should be completed prior to line-up and any checks requiring completion on the RWY should be kept to a minimum.

ACFT ready for departure should be in a position to taxi directly from hold upon receiving take-off clearance from Tower.

When using landing direction 07, the pilot shall advise Tower on initial contact of the earliest possible take-off intersection.

### 3.5. OTHER INFORMATION

#### 3.5.1. GENERAL

When glider areas in vicinity of APT activated, expect higher crossing altitude by ATC for SIDs which require higher climb gradient than standard.

Winds between 200° and 160° in a clockwise direction and speeds of 15 KT and more shall be expected on RWY 18. Gusts and strong windshifts up to tail wind components may occur.

#### 3.5.2. DATALINK DEPARTURE CLEARANCE (DCL)

DFS (Deutsche Flugsicherung GmbH) is offering start-up and enroute clearances using Datalink. The procedures have been described in an AIC.

Deviations from this, in special situations (e.g. snow), enroute clearance may be transmitted via Datalink in advance after receiving a RCD, while at the appropriate time, start-up approval will be granted on the frequency specified in the CLD.

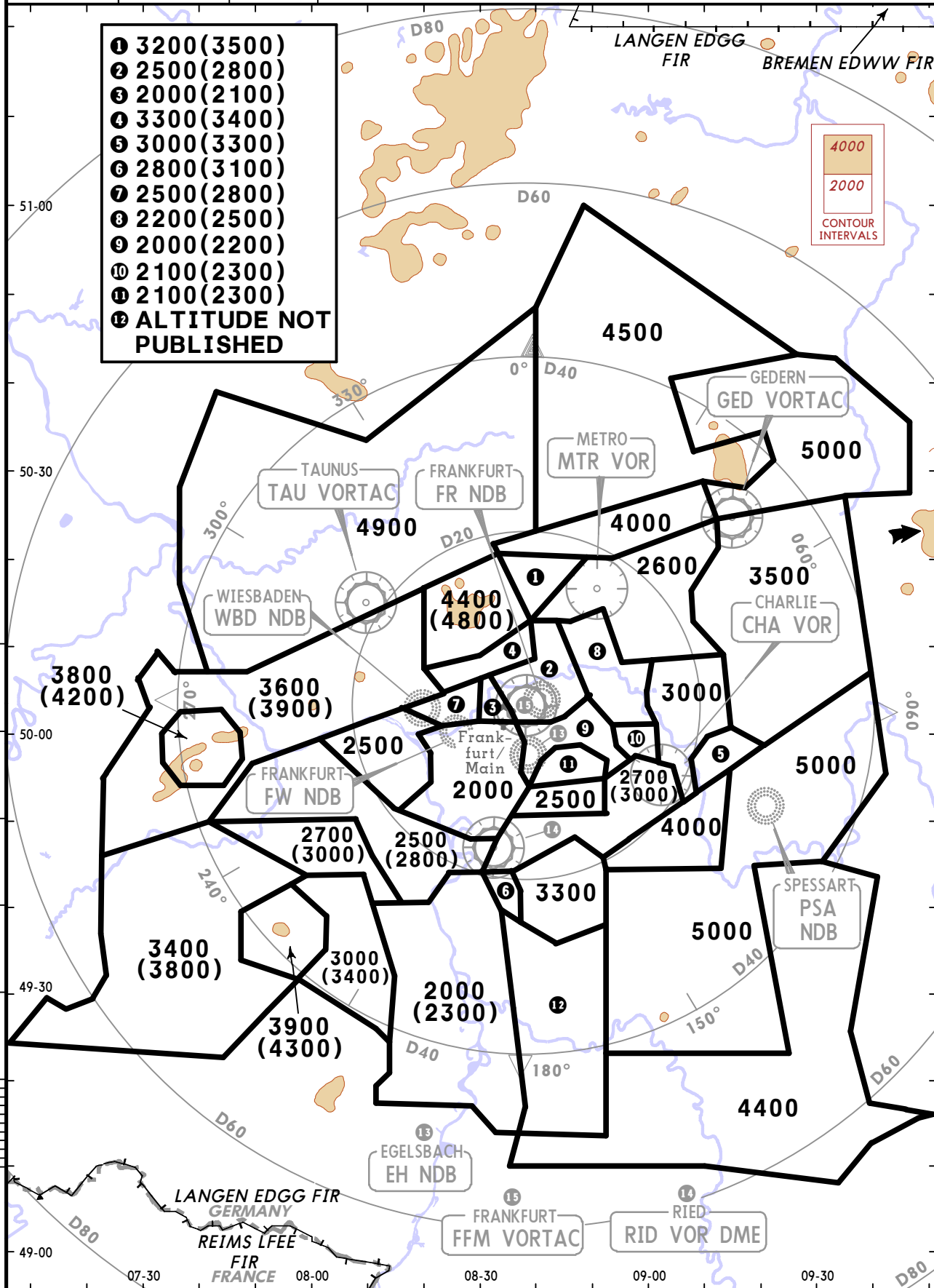
Pilots shall maintain listening watch on this frequency and shall refrain from making enquiries about the start-up approval.

The following time parameters apply:

|       |                                                  |
|-------|--------------------------------------------------|
| $t_i$ | 15 min prior to EOBT for unregulated flights.    |
|       | 25 min prior to CTOT for ATFM regulated flights. |
| $t_f$ | 6 min prior to EOBT for unregulated flights.     |
|       | 16 min prior to CTOT for ATFM regulated flights. |
| $t_1$ | 5 min                                            |

The start-up clearance shall not be requested before it has been ascertained that ACFT engines can be started within 5 min after clearance has been issued.

| LANGEN Radar (APP) |           | Apt Elev<br>364' | <p>Alt Set: hPa (IN on request)<br/> Trans level: By ATC Trans alt: 5000'<br/> The MRVA (Minimum Radar Vectoring Altitude) is the lowest altitude which may be used for RADAR vectors for IFR flights taking into account the minimum safe height (1000' above the highest obstacle within a radius of 8 km) and airspace structure (lower limit of the controlled airspace plus a buffer of 500'). Below the MRVA, IFR flights will normally be cleared on published IFR procedures only.<br/> Altitudes in brackets apply for the period from AIRAC date in November until AIRAC date in March in order to meet required obstacle clearance at cold temperatures.</p> |
|--------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARRIVAL            | DEPARTURE |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| *119.02            | *120.15   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| North<br>120.8     | *126.55   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| South<br>*125.35   |           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



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\*D-ATIS  
118.02

Apt Elev  
364'

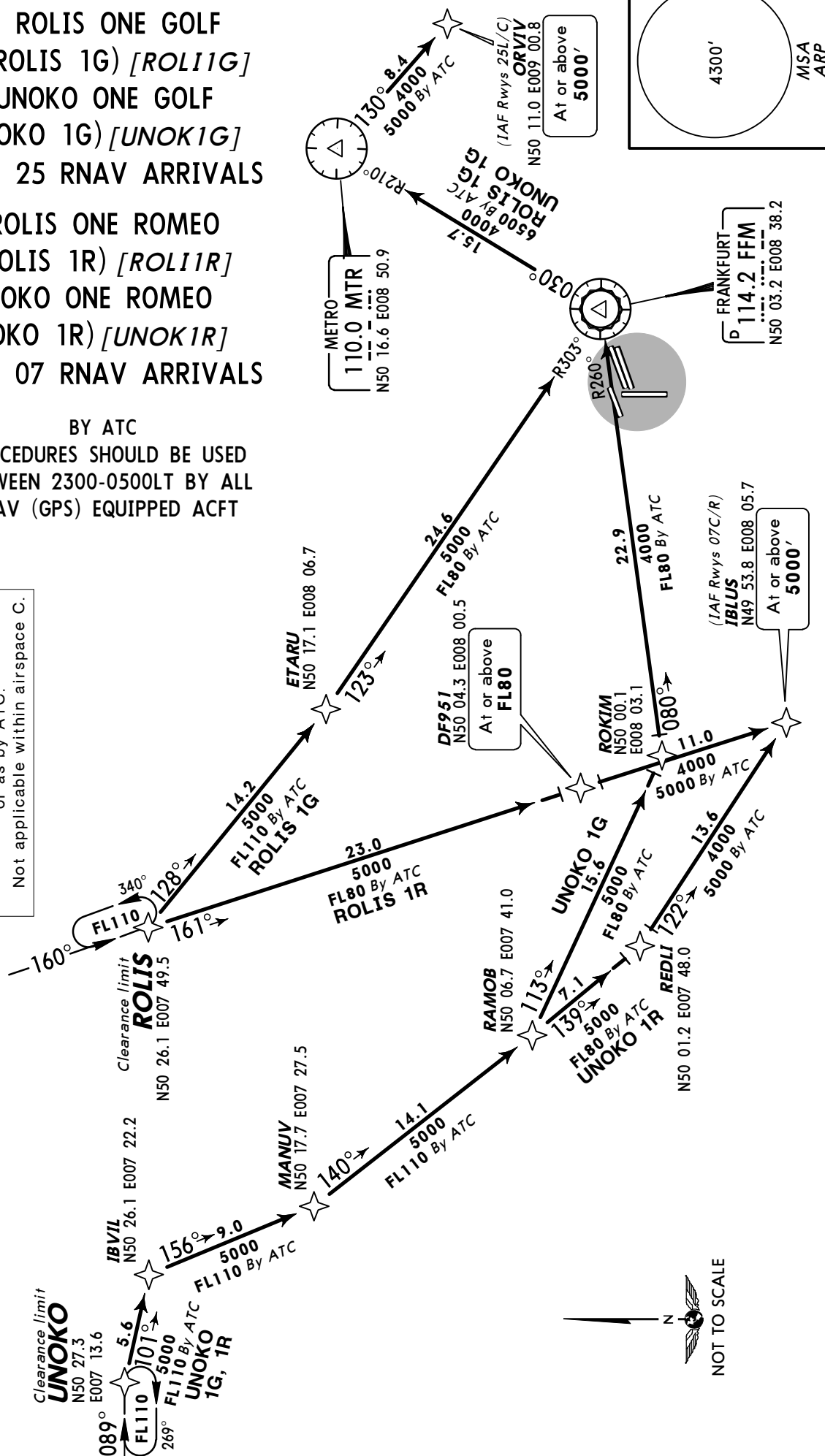
Alt Set: hPa (IN on request)  
Trans level: By ATC Trans alt: 5000'

ROLIS ONE GOLF  
(ROLIS 1G) [ROLI1G]  
UNOKO ONE GOLF  
(UNOKO 1G) [UNOK1G]  
RWY 25 RNAV ARRIVALS

ROLIS ONE ROMEO  
(ROLIS 1R) [ROLI1R]  
UNOKO ONE ROMEO  
(UNOKO 1R) [UNOK1R]  
RWY 07 RNAV ARRIVALS

BY ATC  
PROCEDURES SHOULD BE USED  
BETWEEN 2300-0500LT BY ALL  
RNAV (GPS) EQUIPPED ACFT

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



[illegible]

METRO  
(H) 110.0 MTR  
N50 16.6 E008 50.9

FRANKFURT  
D 114.2 FFM  
(H) .... ..  
N50 03 2 F008 38 2

5000  
FL80 BY ATC  
KERAX 1B, 7

- 1 Only for a MD11, AN
- 2 Not to be l-1011 M

5/0

3/70 PSA  
N49 51.7 E009 20.9

D25.0  
8 FEM

5  
205°

10°

5000  
FL80B7, ATC  
KEPAK 1B, 1H  
PSA 1B, 1H, 1L, 1M  
290°

CHARLIE  
(H) 115.5 CHA  
N49 55.3 E009 02.4

④ (IAF Rwy 07L/C/R)

112.2 RID  
... ..  
N49 46.9 E008 32.5

MHA 4000  
5000 A/C  
6442  
660  
R<sub>0</sub>

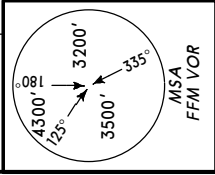
**⑦ KERAX 1B, PSA 1B, 1L:**  
4000  
FL80 *B<sub>y</sub> ATC*

**KERAX 1H, PSA 1H, 1M:**  
5000  
FL80 *B<sub>y</sub> ATC*

- 1 Only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
- 2 Not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35. Those aircraft have to file KERAX 1B/PSA 1B instead.
- 3 Not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35. Those aircraft have to file KERAX 1H/PSA 1H instead.
- 4 BRNAV and NON-RNAV equipped aircraft EXPECT RADAR vectors to final approach.
- 5 GPS/FMS equipped aircraft EXPECT KERAX 07N (10-2D)/KERAX 07S (10-2E)/KERAX 25N (10-2F)/KERAX 25S (10-2G) Transition.
- 6 GPS/FMS equipped aircraft EXPECT PSA 07S (10-2E)/PSA 25S (10-2G) Transition.

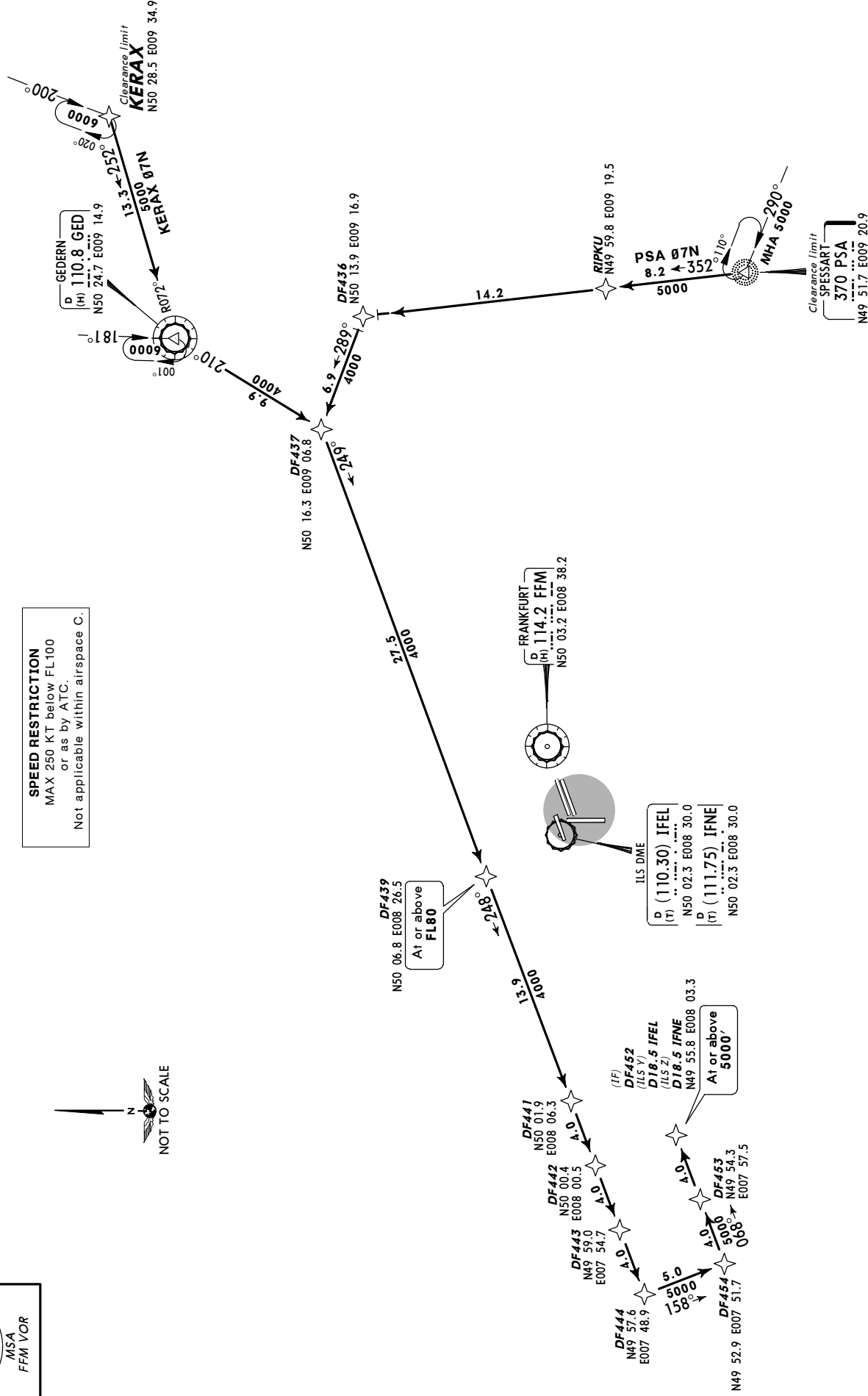
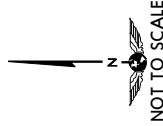


|                   |                                                                                 |                                         |
|-------------------|---------------------------------------------------------------------------------|-----------------------------------------|
| *D-ATIS<br>118.02 | Alt Set: hPa (IN on request)<br>On downwind transition EXPECT vectors to final. | Trans level: By ATC<br>Trans alt: 5000' |
| ROUTING           |                                                                                 |                                         |
| TRANSITION        |                                                                                 |                                         |
| KERAX 07N         | KERAX - GED - DF437 - DF439 (FL80+) - DF444 - DF454 - DF452 (5000'+).           |                                         |
| PSA 07N           | PSA - DF436 - DF437 - DF439 (FL80+) - DF444 - DF454 - DF452 (5000'+).           |                                         |

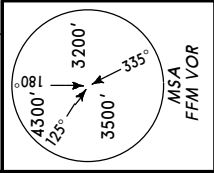


KERAX 07N [KER07N]  
PSA 07N  
RWY 07L RNAV TRANSITIONS  
GPS- OR FMS-EQUIPPED AIRCRAFT  
USE OF RNAV TRANSITION  
ONLY WHEN CLEARED BY ATC

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

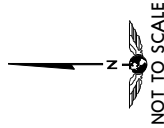


|                   |                                                                                       |                                                                        |                  |
|-------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------|
| *D-ATIS<br>118.02 | Alt Set: hPa (IN on request)<br>364'                                                  | Trans level: By ATC<br>On downwind transition EXPECT vectors to final. | Trans alt: 5000' |
| ROUTING           |                                                                                       |                                                                        |                  |
| TRANSITION        |                                                                                       |                                                                        |                  |
| KERAX 07S         | KERAX - EBIPA - INBOS - PSA - DF635 - DF636 (FL80+) - DF644 - DF654 - ROBSA (4000'+). |                                                                        |                  |
| PSA 07S           | PSA - DF635 - DF636 (FL80+) - DF644 - DF654 - ROBSA (4000'+).                         |                                                                        |                  |



KERAX 07S [KER07S]  
PSA 07S  
RWYS 07C/R RNAV TRANSITIONS  
GPS- OR FMS-EQUIPPED AIRCRAFT  
USE OF RNAV TRANSITION  
ONLY WHEN CLEARED BY ATC

SPEED RESTRICTION  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Direct distance to  
Frankfurt/Main Apt from:  
LOMPO 13NM  
ROBSA 13NM

FRANKFURT  
(H) 114.2 FFM  
N50 03.2 E008 38.2

(RWY 07C)  
LOMPO  
N49 58.0 E008 15.6

At or above  
4000'

(RWY 07R)  
ROBSA  
N49 57.7 E008 15.6

At or above  
4000'

DF651  
N49 56.2 E008 09.6

DF652  
N49 54.8 E008 03.8

DF653  
N49 53.4 E007 58.1

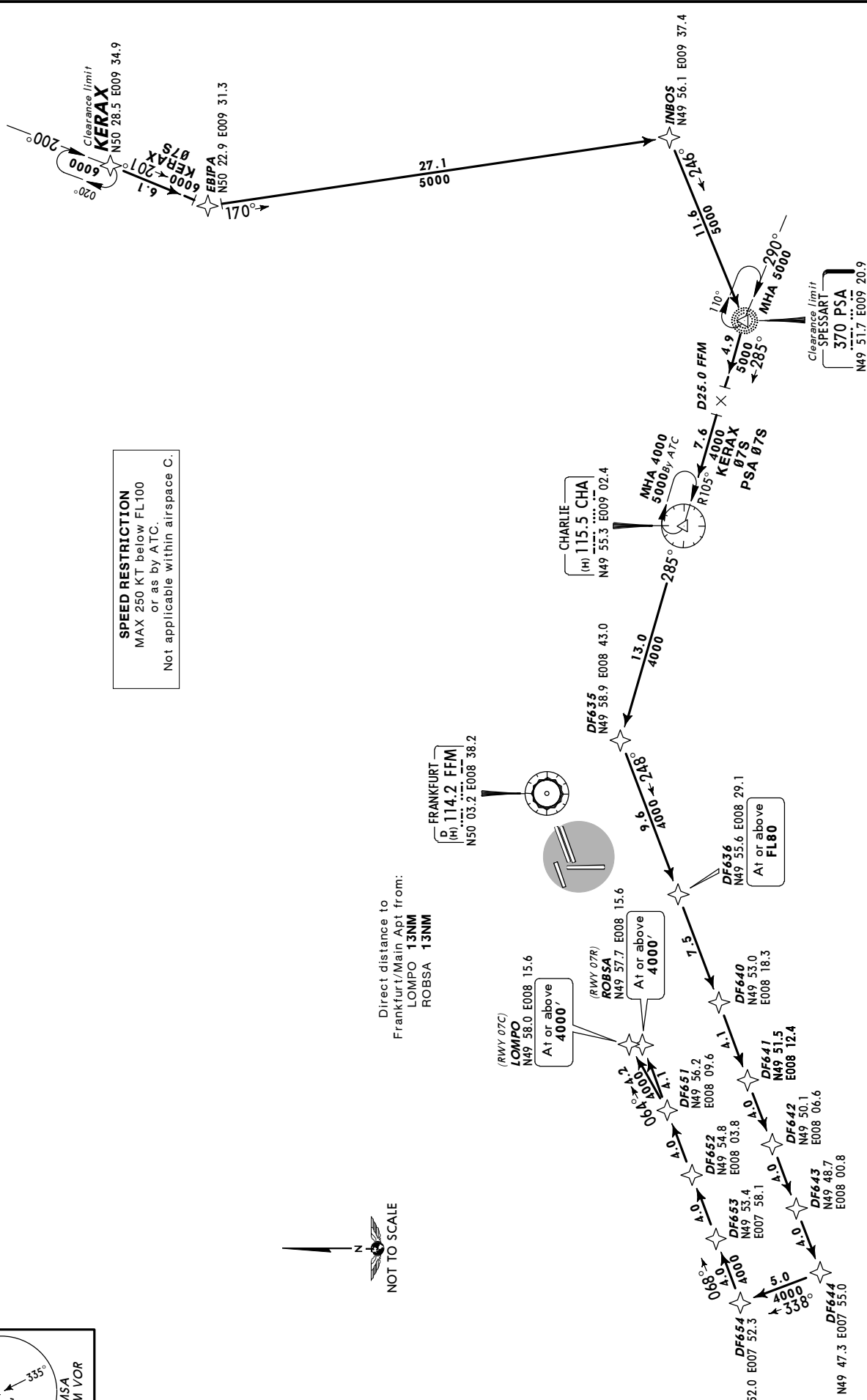
DF654  
N49 52.0 E007 52.3

DF655  
N49 50.1 E008 06.6

DF656  
N49 48.7 E008 00.8

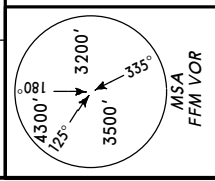
DF657  
N49 47.3 E007 55.0

CHANGES: DF640 established.



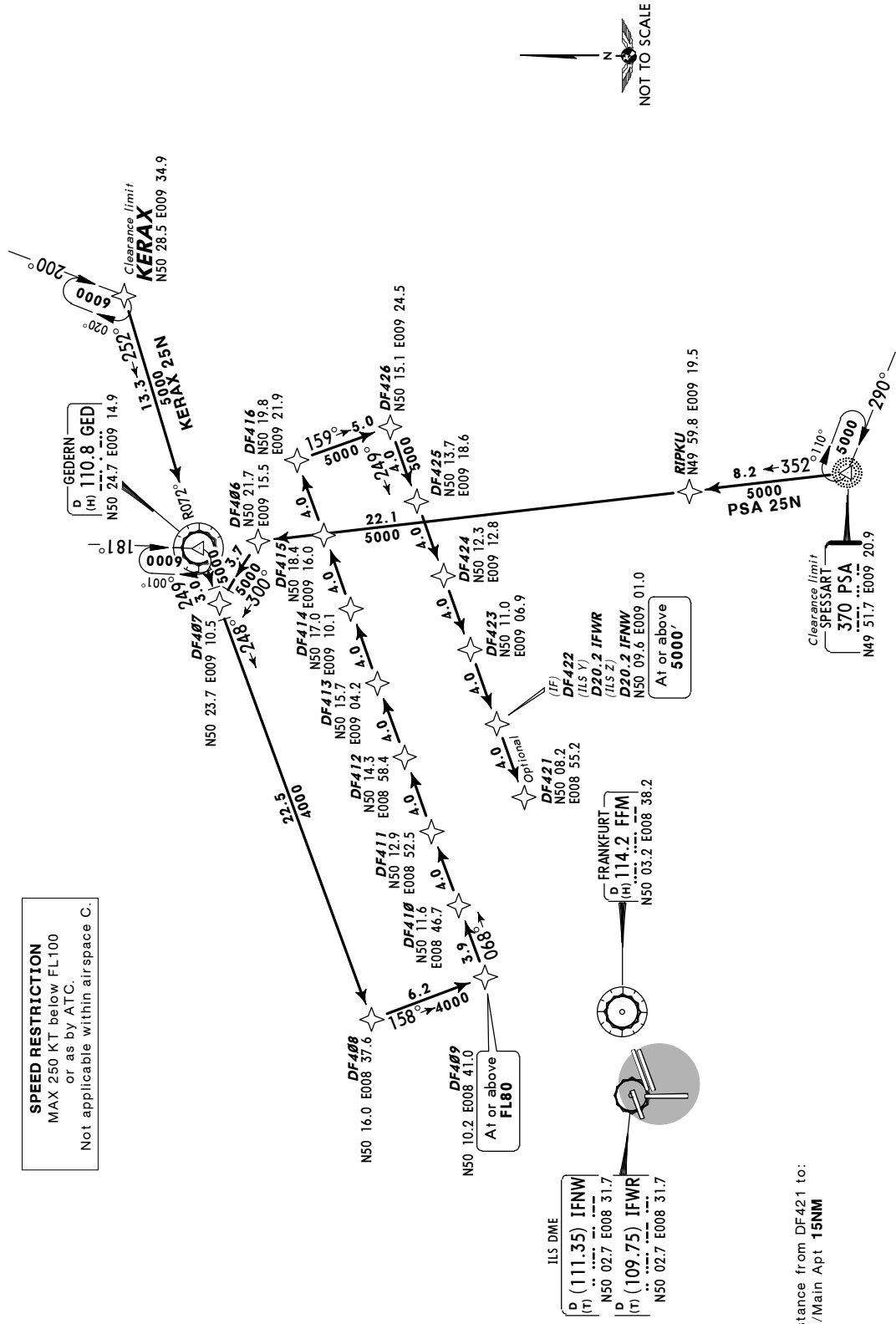
CHANGES: DF640 established.

|            |                                                                               |                                                 |                     |                  |
|------------|-------------------------------------------------------------------------------|-------------------------------------------------|---------------------|------------------|
| *D-ATIS    | Alt Elev                                                                      | Alt Set: hPa (IN on request)                    | Trans level: By ATC | Trans alt: 5000' |
| 118.02     | 364'                                                                          | On downwind transition EXPECT vectors to final. |                     |                  |
| ROUTING    |                                                                               |                                                 |                     |                  |
| TRANSITION |                                                                               |                                                 |                     |                  |
| KERAX 25N  | KERAX - GED - DF407 - DF408 - DF409 (FL80+) - DF416 - DF426 - DF422 (5000'+). |                                                 |                     |                  |
| PSA 25N    | PSA - DF406 - DF407 - DF408 - DF409 (FL80+) - DF416 - DF426 - DF422 (5000'+). |                                                 |                     |                  |



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

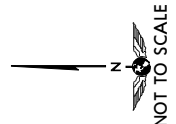
KERAX 25N [KER25N]  
PSA 25N  
RWY 25R RNAV TRANSITIONS  
GPS- OR FMS-EQUIPPED AIRCRAFT  
USE OF RNAV TRANSITION  
ONLY WHEN CLEARED BY ATC



ILS DME  
D (111.35) IFNW  
(T) N50 02.7 E008 31.7  
D (109.75) IFWR  
(T) N50 02.7 E008 31.7

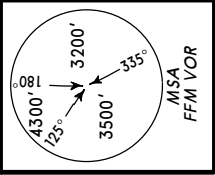


Direct distance from DF421 to:  
Frankfurt/Main Apt 15NM

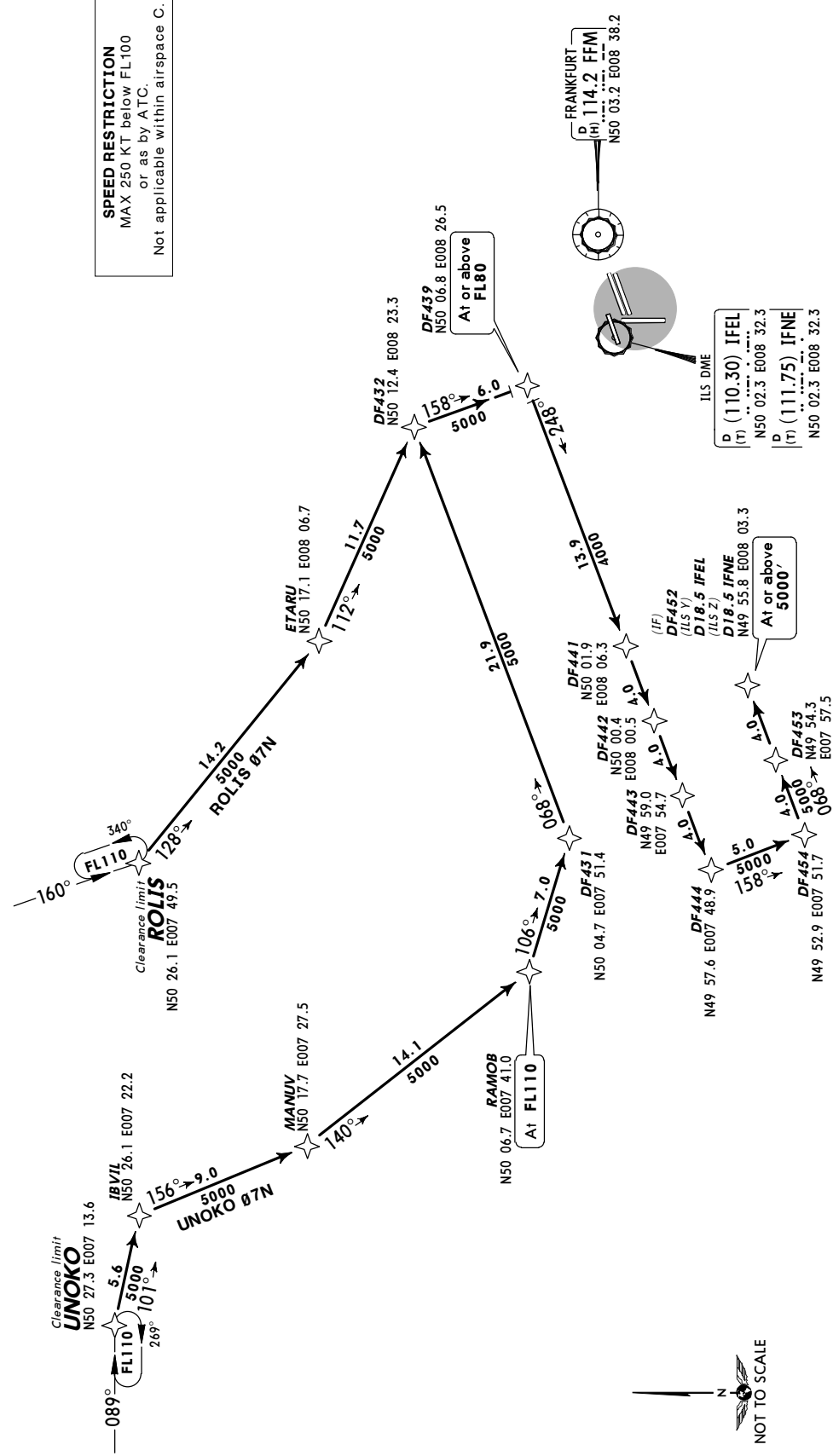




|                   |                                                                         |                                                                                 |                                         |
|-------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------|
| *D-ATIS<br>118.02 | Apf Elev<br>364'                                                        | Alt Set: hPa (IN on request)<br>On downwind transition EXPECT vectors to final. | Trans level: By ATC<br>Trans alt: 5000' |
| ROUTING           |                                                                         |                                                                                 |                                         |
| TRANSITION        | ROLIS - ETARU - DF432 - DF439 (FL80+) - DF444 - DF454 - DF452 (5000+).  |                                                                                 |                                         |
| ROLIS 07N         | UNOKO - IBVIL - MANUV - RAMOB (FL110) - DF431 - DF432 - DF439 (FL80+) - |                                                                                 |                                         |
| UNOKO 07N         | DF444 - DF454 - DF452 (5000+).                                          |                                                                                 |                                         |



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

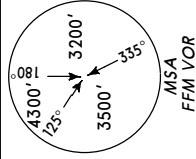


\*D-ATIS 118.02 Alt Set: hPa (IN on request) Trans level: By ATC Trans alt: 5000' On downwind transition EXPECT vectors to final.

ROUTING

ROLIS 07S ROLIS - DF632 - FFM - DF623 - DF613 - DF636 (FL80+) - DF654 - DF654 - ROBSA (4000'+).

UNOKO 07S UNOKO - IBVIL - MANUV - RAMOB (FL130) - DF631 - FFM - DF623 - DF613 - DF636 (FL80+) - DF644 - DF644 - ROBSA (4000'+).



CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

N50 06.7 E007 41.0

RAMOB

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N50 04.7 E007 51.4

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106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

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RAMOB

N50 04.7 E007 51.4

DF431

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106°

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14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

CLEARANCE LIMIT UNOKO

N50 27.3 E007 13.6

IBVIL

N50 26.1 E007 22.2

UNOKO 07S

N50 26.1 E007 49.5

ROLIS 07S

N50 15.8 E008 02.2

OSPILL

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

140°

MANUV

N50 17.7 E007 27.5

UNOKO 07S

N50 06.7 E007 41.0

RAMOB

N50 04.7 E007 51.4

DF431

N50 04.7 E007 51.4

106°

7.0

5000

14.1

5000

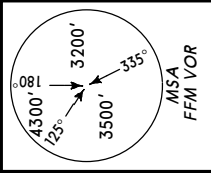
140°

MANUV

N50 17.7 E007 27.5



|                   |                                                                                                 |                                         |
|-------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------|
| *D-ATIS<br>118.02 | Alt Set: hPa (IN on request)<br>On downwind transition EXPECT vectors to final.                 | Trans level: By ATC<br>Trans alt: 5000' |
| ROUTING           |                                                                                                 |                                         |
| TRANSITION        |                                                                                                 |                                         |
| ROLIS 25S         | ROLIS - DF402 - DF601 - DF609 (FL80+) - DF616 - DF626 - LEDK1 (4000'+).                         |                                         |
| UNOKO 25S         | UNOKO - IBVIL - MANUV - RAMOB (FL130) - DF601 - DF609 (FL80+) - DF616 - DF626 - LEDK1 (4000'+). |                                         |

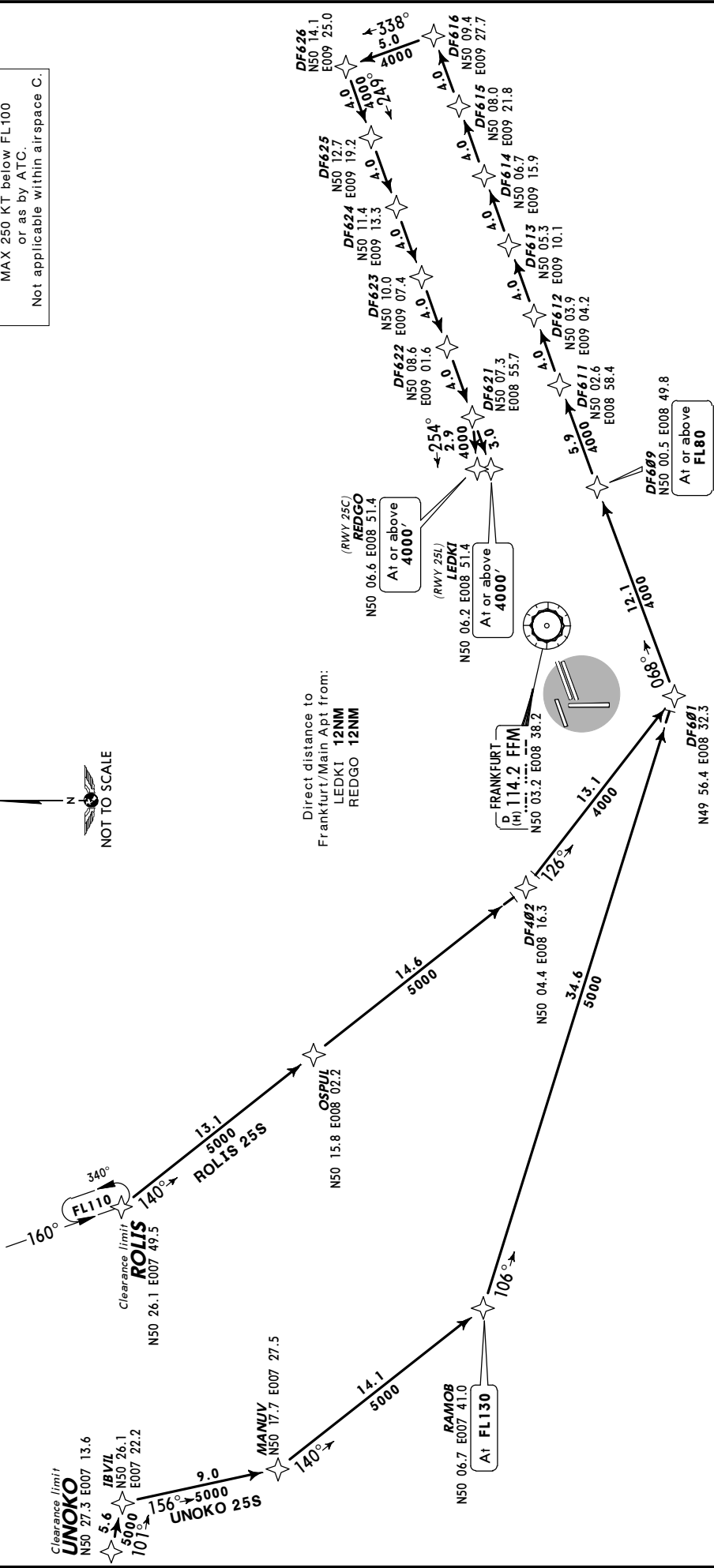
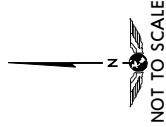


**HOLDING OVER UNOKO**

—089°—  
FL110  
269°

ROLIS 25S [ROL25S]  
UNOKO 25S [UNO25S]  
RWYS 25L/C RNAV TRANSITIONS  
GPS- OR FMS-EQUIPPED AIRCRAFT  
USE OF RNAV TRANSITION  
ONLY WHEN CLEARED BY ATC

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



| SID DESIGNATION      | REFER TO CHART |
|----------------------|----------------|
| ANEKI 9D, 2E         | 10-3B          |
| ANEKI 8F, 8G, 6L     | 10-3C          |
| BIBTI 4D, 3E         | 10-3D          |
| BIBTI 3F, 3G         | 10-3E          |
| BIBTI 2M             | 10-3E1         |
| BIBTI 4N             | 10-3E2         |
| BIBTI 2L, 4S         | 10-3E3         |
| BIBTI 2R             | 10-3E4         |
| BIBTI 2T             | 10-3E5         |
| DINKELSBUHL 9D, 7E   | 10-3E6         |
| DINKELSBUHL 6F, 7G   | 10-3E7         |
| DINKELSBUHL 5L, 7S   | 10-3E8         |
| KOMIB 1D, 1E         | 10-3F          |
| MARUN 8D, 4E         | 10-3G          |
| MARUN 3F, 4G, 3J     | 10-3G1         |
| MARUN 2M             | 10-3G2         |
| MARUN 5N             | 10-3G3         |
| MARUN 2R             | 10-3G4         |
| MARUN 4S             | 10-3G5         |
| MARUN 2T             | 10-3G6         |
| METRO 4C             | 10-3G7         |
| NOMBO 9D, 8E         | 10-3G8         |
| NOMBO 7F, 8G         | 10-3H          |
| NOMBO 7L, 7S         | 10-3J          |
| RATIM 5D, 5E         | 10-3J1         |
| RATIM 5F, 5G         | 10-3J2         |
| RATIM 4S             | 10-3J3         |
| RIED 6C, 3Q          | 10-3J4         |
| ROTEN 6F, 5G         | 10-3J5         |
| ROTEN 4L, 6S         | 10-3J6         |
| SOBRA 4D             | 10-3J7         |
| SOBRA 4E             | 10-3K          |
| SOBRA 4F, 4G, 5N, 3P | 10-3L          |

FOR FURTHER SID DESIGNATION REFER TO PAGE 10-3A

| SID DESIGNATION  | REFER TO CHART |
|------------------|----------------|
| SOBRA 4L, 4U     | 10-3L1         |
| SULUS 8D, 6E     | 10-3L2         |
| SULUS 7F, 8G     | 10-3L3         |
| SULUS 7L, 7S     | 10-3L4         |
| TAUNUS 4Q        | 10-3L5         |
| TOBAK 8D, 7E     | 10-3L6         |
| TOBAK 4F, 5G, 4J | 10-3L7         |
| TOBAK 2M         | 10-3L8         |
| TOBAK 7N         | 10-3M          |
| TOBAK 2R         | 10-3N          |
| TOBAK 6S         | 10-3N1         |
| TOBAK 4T         | 10-3N2         |
| ULKIG 1S, 5U     | 10-3N3         |

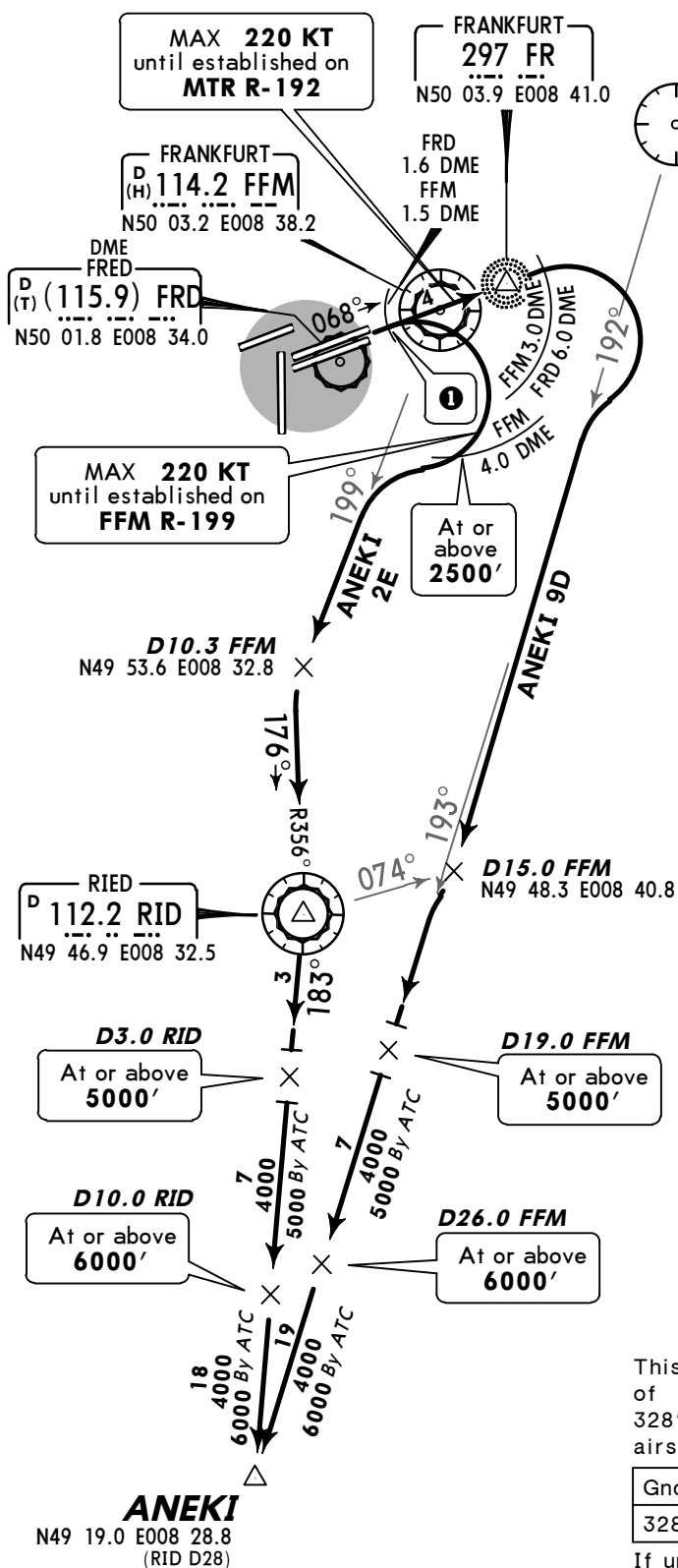
|  |
|--|
|  |
|--|

| RNAV SID DESIGNATION | REFER TO CHART |
|----------------------|----------------|
| ANEKI 9D, 2E         | 10-3N4         |
| ANEKI 8F, 8G, 6L     | 10-3N5         |
| BIBTI 4D, 3E         | 10-3N6         |
| BIBTI 3F, 3G         | 10-3N7         |
| BIBTI 2M             | 10-3N8         |
| BIBTI 4N             | 10-3P          |
| BIBTI 2L, 4S         | 10-3Q          |
| BIBTI 2R             | 10-3Q1         |
| BIBTI 2T             | 10-3Q2         |
| DINKELBUHL 9D, 7E    | 10-3Q3         |
| DINKELBUHL 6F, 7G    | 10-3Q4         |
| DINKELBUHL 5L, 7S    | 10-3Q5         |
| KOMIB 1D, 1E         | 10-3Q6         |
| MARUN 8D, 4E         | 10-3Q7         |
| MARUN 3F, 4G, 3J     | 10-3Q8         |
| MARUN 2M             | 10-3Q9         |
| MARUN 5N             | 10-3S          |
| MARUN 2R             | 10-3T          |
| MARUN 4S             | 10-3T1         |
| MARUN 2T             | 10-3T2         |
| NOMBO 9D, 8E         | 10-3T3         |
| NOMBO 7F, 8G         | 10-3T4         |
| NOMBO 7L, 7S         | 10-3T5         |
| RATIM 5D, 5E         | 10-3T6         |
| RATIM 5F, 5G         | 10-3T7         |
| RATIM 4S             | 10-3U          |
| ROTEN 6F, 5G         | 10-3V          |
| ROTEN 4L, 6S         | 10-3V1         |
| SOBRA 4D             | 10-3V2         |
| SOBRA 4E             | 10-3V3         |
| SOBRA 4F, 4G, 5N, 3P | 10-3V4         |
| SOBRA 4L, 4U         | 10-3V5         |
| SULUS 8D, 6E         | 10-3V6         |
| SULUS 7F, 8G         | 10-3V7         |
| SULUS 7L, 7S         | 10-3V8         |
| TOBAK 8D, 7E         | 10-3W          |
| TOBAK 4F, 5G, 4J     | 10-3X          |
| TOBAK 2M             | 10-3X1         |
| TOBAK 7N             | 10-3X2         |
| TOBAK 2R             | 10-3X3         |
| TOBAK 6S             | 10-3X4         |
| TOBAK 4T             | 10-3X5         |
| ULKIG 1S, 5U         | 10-3X6         |

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.



## ANeki NINE DELTA (ANeki 9D) ANeki TWO ECHO (ANeki 2E) RWYS 07C/R DEPARTURES

**ANeki 2E**  
Turn at **FRD 1.6 DME**  
(**FFM 1.5 DME inbound**)  
or **800'** whichever is later



**ANeki 2E**  
This SID requires a minimum climb gradient of 328' per NM (5.4%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 328' per NM  | 410 | 547 | 820 | 1094 | 1367 | 1641 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

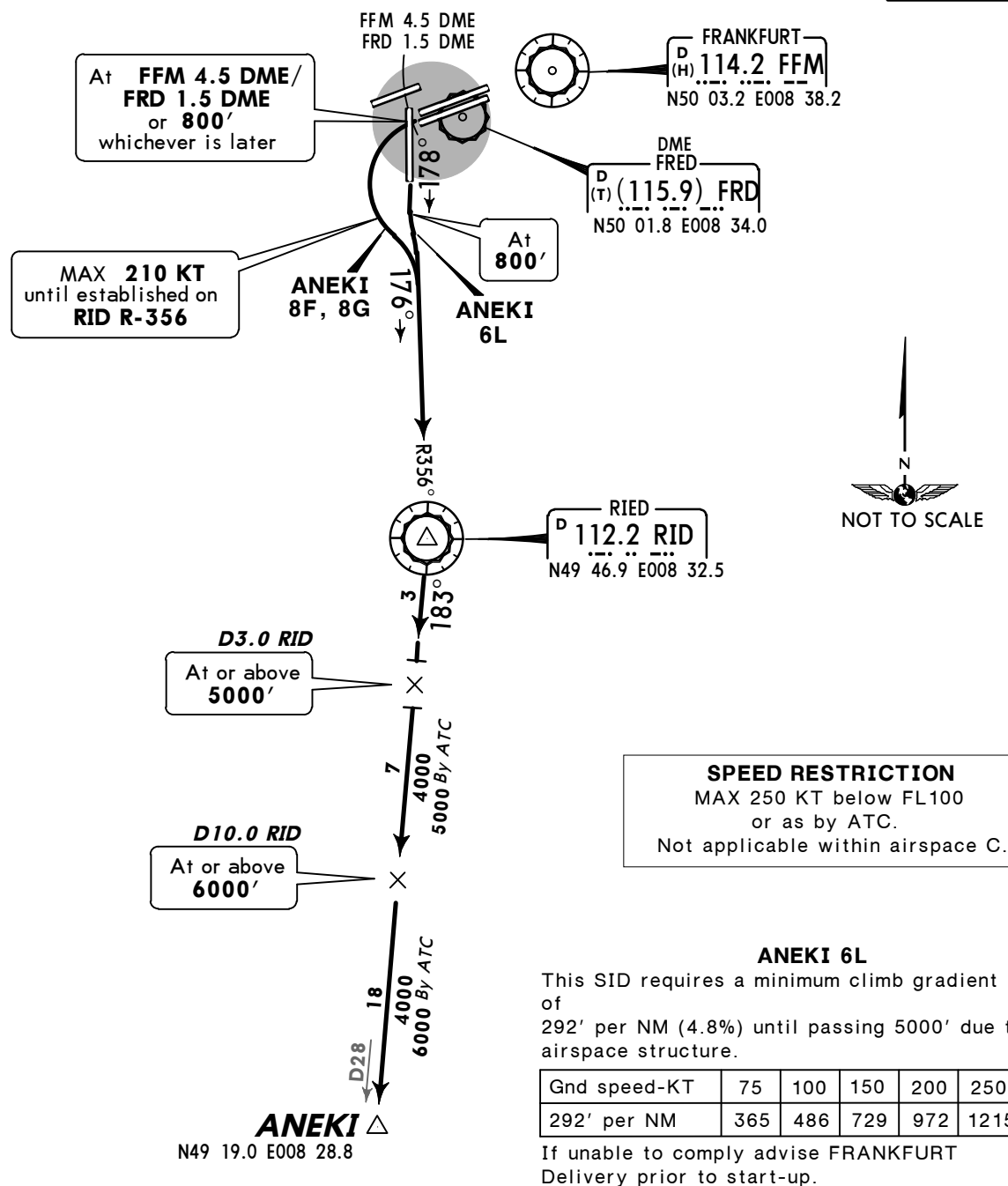
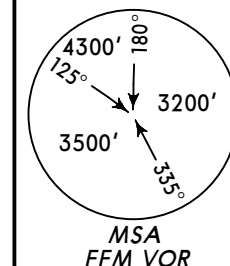
| SID             | ROUTING                                                                                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ANeki 9D</b> | Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, intercept MTR R-192 to D15.0 FFM/RID R-074, turn RIGHT, intercept MTR R-193 to ANEKI.                                       |
| <b>ANeki 2E</b> | Climb on runway track to FRD 1.6 DME (FFM 1.5 DME inbound) or 800', whichever is later, turn RIGHT, intercept FFM R-199, at D10.3 FFM turn LEFT, intercept RID R-356 inbound to RID, turn RIGHT, RID R-183 to ANEKI. |

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. RWY 18: EXPECT close-in obstacles.
4. RWY 18: Wind shears and increased turbulences must be expected when winds heavy.
5. For departure designation refer to 10-1P pages.

**ANEKI EIGHT FOXTROT (ANEKI 8F)**  
**ANEKI EIGHT GOLF (ANEKI 8G)**  
**ANEKI SIX LIMA (ANEKI 6L)**  
**RWYS 25L/C, 18 DEPARTURES**



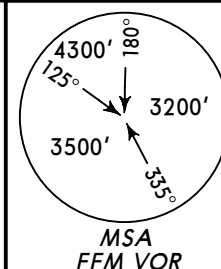
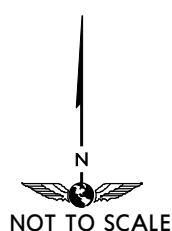
**ANEKI 8F, 8G: Initial climb clearance 5000'**  
**ANEKI 6L: Initial climb clearance 4000'**

| SID          | RWY   | ROUTING                                                                                                                                          |
|--------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| ANEKI 8F, 8G | 25L/C | Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, intercept RID R-356 inbound to RID, RID R-183 to ANEKI. |
| ANEKI 6L     | 18    | Climb on runway track to 800', intercept RID R-356 inbound to RID, turn RIGHT, RID R-183 to ANEKI.                                               |

\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**BIBTI FOUR DELTA (BIBTI 4D)  
BIBTI THREE ECHO (BIBTI 3E)  
RWYS 07C/R DEPARTURES****BIBTI**  
N50 58.0 E007 06.515.9  
5000  
**OBOKA**  
N50 44.7 E007 20.313.4  
5000  
326°  
**DITAM**  
N50 33.5  
E007 31.812.9  
5000  
335°  
**RAVKI**  
N50 21.7 E007 39.9**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable  
within airspace C.N50 22.9 E008 22.0  
**KUSOM**  
18.3  
5000  
251°  
**GUBAX**  
N50 17.4  
E007 54.7N50 19.6 E008 37.1  
**ODAGA**  
10.3  
5000**METRO**  
(H) 110.0 MTR  
N50 16.6 E008 50.9**D2.8 FFM**  
At or above  
2000'**FRANKFURT**  
(D) 114.2 FFM  
(H) N50 03.2 E008 38.2**BIBTI 3E**  
Turn at **FRD 1.6 DME**  
(FFM 1.5 DME inbound)  
or **800'** whichever is later**DME**  
**FRED**  
(D) (T) 115.9 FRD  
N50 01.8 E008 34.0FRD 1.6 DME/  
FFM 1.5 DMEFRD 5.0 DME/  
FFM 2.0 DME**MAX**  
**220 KT****FRANKFURT**  
**297 FR**  
N50 03.9 E008 41.0

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 383' per NM  | 479 | 638 | 957 | 1276 | 1595 | 1914 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.Initial climb clearance **5000'**

| SID             | ROUTING                                                                                                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BIBTI 4D</b> | Climb on runway track to 800', to FR (FRD 5.0 DME/FFM 2.0 DME outbound), turn LEFT <b>immediately</b> , intercept MTR R-287 inbound to D13.1 FFM, turn LEFT, intercept MTR R-287 via ODAGA ① to KUSOM, turn LEFT, 251° track to GUBAX, turn RIGHT, 293° track to RAVKI, turn RIGHT, 335° track to DITAM, turn LEFT, 326° track via OBOKA to BIBTI. |
| <b>BIBTI 3E</b> | Climb on runway track to FRD 1.6 DME (FFM 1.5 DME inbound) or 800', whichever is later, turn LEFT, intercept FFM R-356 to ODAGA ①, turn LEFT, 287° track to KUSOM, turn LEFT, 251° track to GUBAX, turn RIGHT, 293° track to RAVKI, turn RIGHT, 335° track to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.                                     |

① After ODAGA BRNAV equipment necessary.

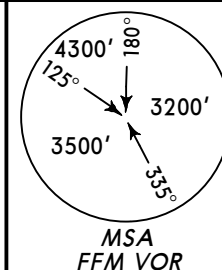
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

# BIBTI THREE FOXTROT (BIBTI 3F) BIBTI THREE GOLF (BIBTI 3G) RWYS 25L/C DEPARTURES

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



**BIBTI**  
N50 58.0 E007 06.5

**OBOKA**  
N50 44.7  
E007 20.3

**DITAM**  
N50 33.5  
E007 31.8

**RAVKI**  
N50 21.7 E007 39.9

**MASIR**  
N50 15.3 E007 44.3

**D13.7 FFM**  
N50 00.6 E008 17.4  
At or above  
3600'

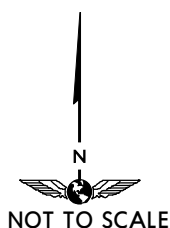
**ESUPI**  
N50 03.5 E008 07.3

At FFM 5.0 DME/  
FRD 2.0 DME or 800'  
whichever is later

FRANKFURT  
(H) 114.2 FFM  
N50 03.2 E008 38.2

FFM 5.0 DME  
FRD 2.0 DME

DME  
FRD  
(115.9) FRD  
N50 01.8 E008 34.0



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed SID BIBTI 3F: OBOKA-COL or OBOKA-WYP, SID BIBTI 3G: BIBTI-COL or BIBTI-WYP depending on runway in use.

These SIDs require a minimum climb gradient of 352' per NM (5.8%) until passing 3600', due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 352' per NM  | 441 | 587 | 881 | 1175 | 1468 | 1762 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance 5000'

## ROUTING

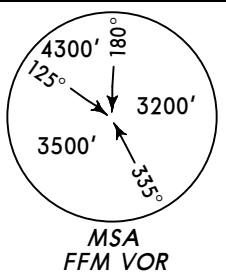
Climb on runway track to FFM 5.0 DME/FRD 2.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track), intercept FFM R-258 to D13.7 FFM ①, turn RIGHT, 293° track to ESUPI, turn RIGHT, 307° track to MASIR, turn RIGHT, 335° track via RAVKI to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.

① After D13.7 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



## BIBTI TWO MIKE (BIBTI 2M) RWYS 25L/C DEPARTURE

- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.

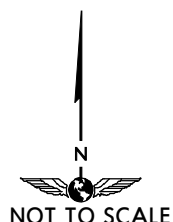
**BIBTI**  
N50 58.0 E007 06.5

OBOKA  
N50 44.7  
E007 20.3

DITAM  
N50 33.5  
E007 31.8

RAVKI  
N50 21.7 E007 39.9

MASIR  
N50 15.3 E007 44.3



| RWY 25C |                                                       |
|---------|-------------------------------------------------------|
| At      | FFM 5.0 DME/FRD 2.0 DME<br>or 800' whichever is later |
| RWY 25L |                                                       |
| At      | FFM 5.1 DME/FRD 2.1 DME<br>or 800' whichever is later |

MAX 185 KT until established  
on VFM R-015 inbound

FRANKFURT  
D (H) 114.2 FFM  
N50 03.2 E008 38.2

(RWY 25C)  
FFM 5.0 DME  
FRD 2.0 DME  
(RWY 25L)  
FFM 5.1 DME  
FRD 2.1 DME

NAUHEIM  
(L) 113.75 VFM  
N49 57.7 E008 28.3

DME  
FRED  
D (T) 115.9 FRD  
N50 01.8 E008 34.0

### SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

This SID requires a minimum climb gradient of 249' per NM (4.1%) until passing 2500' due to airspace structure

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT Delivery prior to start-up.

### CAUTION RWY 25C:

Avoid to operate SOUTH of FFM R-248 before FFM 5.0 DME/FRD 2.0 DME and avoid to operate EAST of VFM R-015 inbound after turning direct VFM.

Initial climb clearance **5000'**

### ROUTING

Climb on runway track to FFM 5.0 DME/FRD 2.0 DME (Rwy 25C)/FFM 5.1 DME/FRD 2.1 DME (Rwy 25L) or 800', whichever is later, turn LEFT, intercept VFM R-015 inbound via VFM to D10.1 FFM ①, turn RIGHT, 238° track to PABVI, turn RIGHT, 273° track to SIVDO, turn RIGHT, 305° track to KUPIP, turn RIGHT, 318° track to MASIR, turn RIGHT, 335° track via RAVKI to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.

① After D10.1 FFM BRNAV equipment necessary.

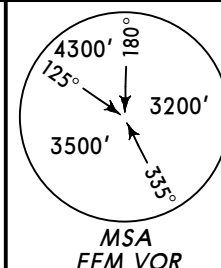
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

# BIBTI FOUR NOVEMBER (BIBTI 4N) RWYS 25L/C DEPARTURE

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.

**BIBTI**  
N50 58.0 E007 06.5

**OBOKA**  
N50 44.7  
E007 20.3

**DITAM**  
N50 33.5  
E007 31.8

**RAVKI**  
N50 21.7 E007 39.9

**MASIR**  
N50 15.3 E007 44.3

FRANKFURT  
D (H) 114.2 FFM  
N50 03.2 E008 38.2

At  
FFM 4.5 DME/  
FRD 1.5 DME  
or 800'  
whichever is later

MAX 220 KT  
until established  
on 184° track

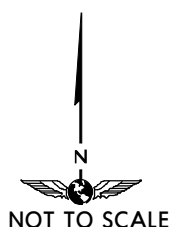
FFM 4.5 DME  
FRD 1.5 DME

DME  
FRED  
D (T) (115.9) FRD  
N50 01.8 E008 34.0

**D16.0 RID**  
N49 55.3 E008 11.5

**D14.0 FFM**  
N49 53.1  
E008 23.2

RIED  
D (L) 112.2 RID  
N49 46.9 E008 32.5



Initial climb clearance 5000'

## ROUTING

Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 184° track, intercept FFM R-223 to D14.0 FFM, turn RIGHT, intercept RID R-301 to D16.0 RID ①, turn RIGHT, 318° track to MASIR, turn RIGHT, 335° track via RAVKI to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.

① After D16.0 RID BRNAV equipment necessary.

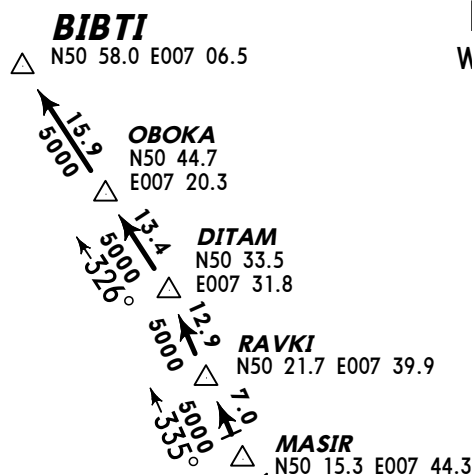
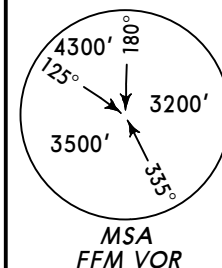
\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

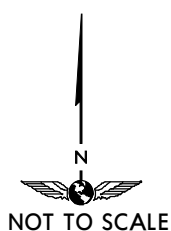
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**BIBTI TWO LIMA (BIBTI 2L)**  
**BIBTI FOUR SIERRA (BIBTI 4S)**  
BY ATC

**RWY 18 DEPARTURES**  
WILL ONLY BE ASSIGNED WHEN  
LANDING DIRECTION IS 25



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.



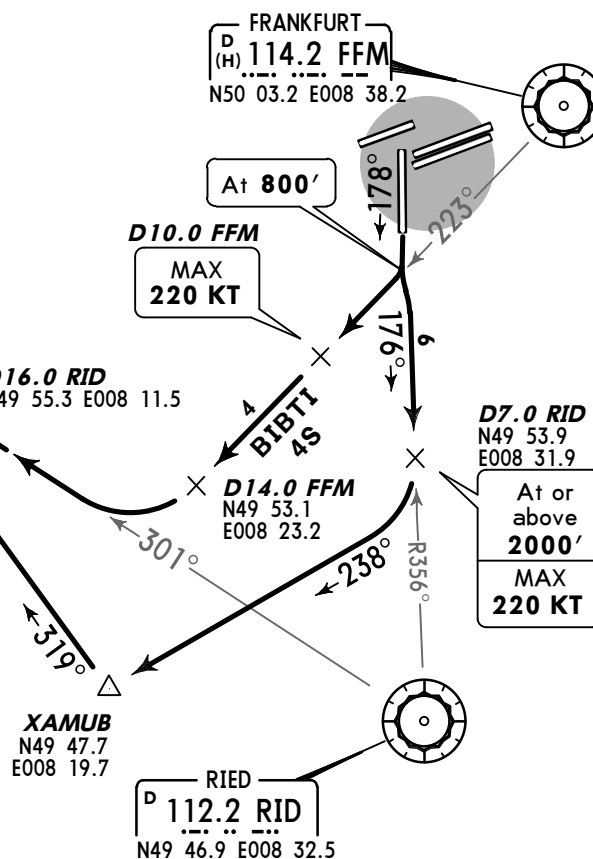
**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

**BIBTI 2L**

This SID requires a minimum climb gradient of 280' per NM (4.6%) until passing 2000' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 280' per NM  | 349 | 466 | 699 | 932 | 1165 | 1398 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.



Initial climb clearance **4000'**

| SID             | ROUTING                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BIBTI 2L</b> | Climb on runway track to 800', intercept RID R-356 inbound to D7.0 RID ①, turn RIGHT, 238° track to XAMUB, turn RIGHT, 319° track to MASIR, turn RIGHT, 335° track via RAVKI to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.                   |
| <b>BIBTI 4S</b> | Climb on runway track to 800', turn RIGHT, intercept FFM R-223 to D14.0 FFM, turn RIGHT, intercept RID R-301 to D16.0 RID ②, turn RIGHT, 318° track to MASIR, turn RIGHT, 335° track via RAVKI to DITAM, turn LEFT, 326° track via OBOKA to BIBTI. |

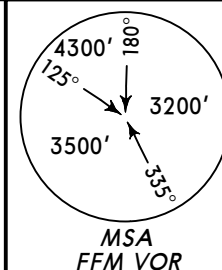
BRNAV equipment necessary after: ① D7.0 RID/ ② D16.0 RID.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also  
noise abatement procedures (refer to 10-4). Strict adherence within  
the limits of aircraft performance is mandatory. 3. EXPECT close-in  
obstacles. 4. Wind shears and increased turbulences must be expected  
when winds heavy. 5. For departure designation refer to 10-1P pages.

**BIBTI TWO ROMEO (BIBTI 2R)**  
**RWY 18 DEPARTURE**  
**BY ATC**  
**WILL ONLY BE ASSIGNED BETWEEN 2300-0500LT**



**BIBTI**  
N50 58.0 E007 06.5

**OBOKA**  
N50 44.7 E007 20.3

**DITAM**  
N50 33.5 E007 31.8

**RAVKI**  
N50 21.7 E007 39.9

**GUBAX**  
N50 17.4  
E007 54.7

**KUSOM**  
N50 22.9 E008 22.0

**ODAGA**  
N50 19.6  
E008 37.1

**METRO**  
(H) 110.0 MTR  
N50 16.6 E008 50.9

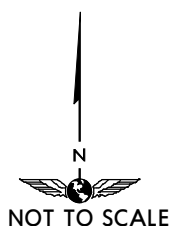
**FRANKFURT**  
(D) 114.2 FFM  
(H) N50 03.2 E008 38.2

**TUKRU**  
N49 56.4  
E008 43.3

**RIED**  
(D) 112.2 RID  
N49 46.9 E008 32.5

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. In case of radio communication failure flights with destination EDDK shall proceed BIBTI-COL or BIBTI-WYP depending on runway in use.



At 800' or RID 12.0 DME  
whichever is later

MAX 220 KT  
until established  
on 118° brg

N49 56.2 E008 34.0

At or above  
2500'

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

**ROUTING**

Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, intercept 118° bearing towards KNG, when passing FFM R-200 ① turn LEFT, 088° track to TUKRU, turn LEFT, intercept MTR R-192 inbound to MTR, turn LEFT, MTR R-287 via ODAGA to KUSOM, turn LEFT, 251° track to GUBAX, turn RIGHT, 293° track to RAVKI, turn RIGHT, 335° track to DITAM, turn LEFT, 326° track via OBOKA to BIBTI.

① After FFM R-200 BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also  
noise abatement procedures (refer to 10-4). Strict adherence within  
the limits of aircraft performance is mandatory. 3. EXPECT close-in  
obstacles. 4. Wind shears and increased turbulences must be expected  
when winds heavy. 5. For departure designation refer to 10-1P pages.

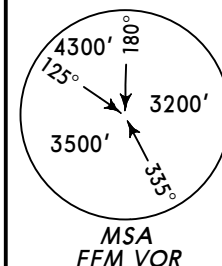
# BIBTI TWO TANGO (BIBTI 2T) RWY 18 DEPARTURE BY ATC

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

- Flights via BIBTI and UZ-29 to UK or beyond  
have to cross BIBTI at or above FL250, except  
for flights terminating within London TMA.  
If unable to comply, request routing via UZ-28  
and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing  
VFR after OBOKA/BIBTI. In case of radio com-  
munication failure flights with destination EDDK  
shall proceed BIBTI-COL or BIBTI-WYP depen-  
ding on runway in use.



**BIBTI**  
N50 58.0 E007 06.5

**OBOKA**  
N50 44.7  
E007 20.3

**DITAM**  
N50 33.5 E007 31.8

**RAVKI**  
N50 21.7 E007 39.9

**MASIR**  
N50 15.3 E007 44.3

**RUDUS**  
N50 02.9 E008 04.7

FRANKFURT  
D(H) 114.2 FFM  
N50 03.2 E008 38.2

**D6.4 RID**  
N49 53.3 E008 32.0

At or below  
4000'  
MAX  
220 KT

**PIPIX**  
N49 42.4 E008 13.4  
MAX 250 KT

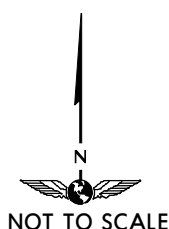
**D19.4 FFM**  
N49 45.0  
E008 28.0

**RIED**  
P 112.2 RID  
N49 46.9 E008 32.5

**OBOXO**  
N49 55.4  
E007 22.2

**ULKIG**  
N49 52.2 E007 43.2

**GISNO**  
N49 45.9 E007 51.4  
MAX 250 KT



Initial climb clearance 4000'

## ROUTING

Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, inter-  
cept FFM R-199 to D19.4 FFM ①, turn RIGHT, 264° track to PIPIX, turn RIGHT, 283° track to  
GISNO, turn RIGHT, 318° track to ULKIG, turn LEFT, 282° track to OBOXO, turn RIGHT, 073°  
track to RUDUS, turn LEFT, 312° track to MASIR, turn RIGHT, 335° track via RAVKI to  
DITAM, turn LEFT, 326° track via OBOKA to BIBTI.

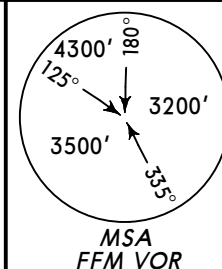
① After D19.4 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

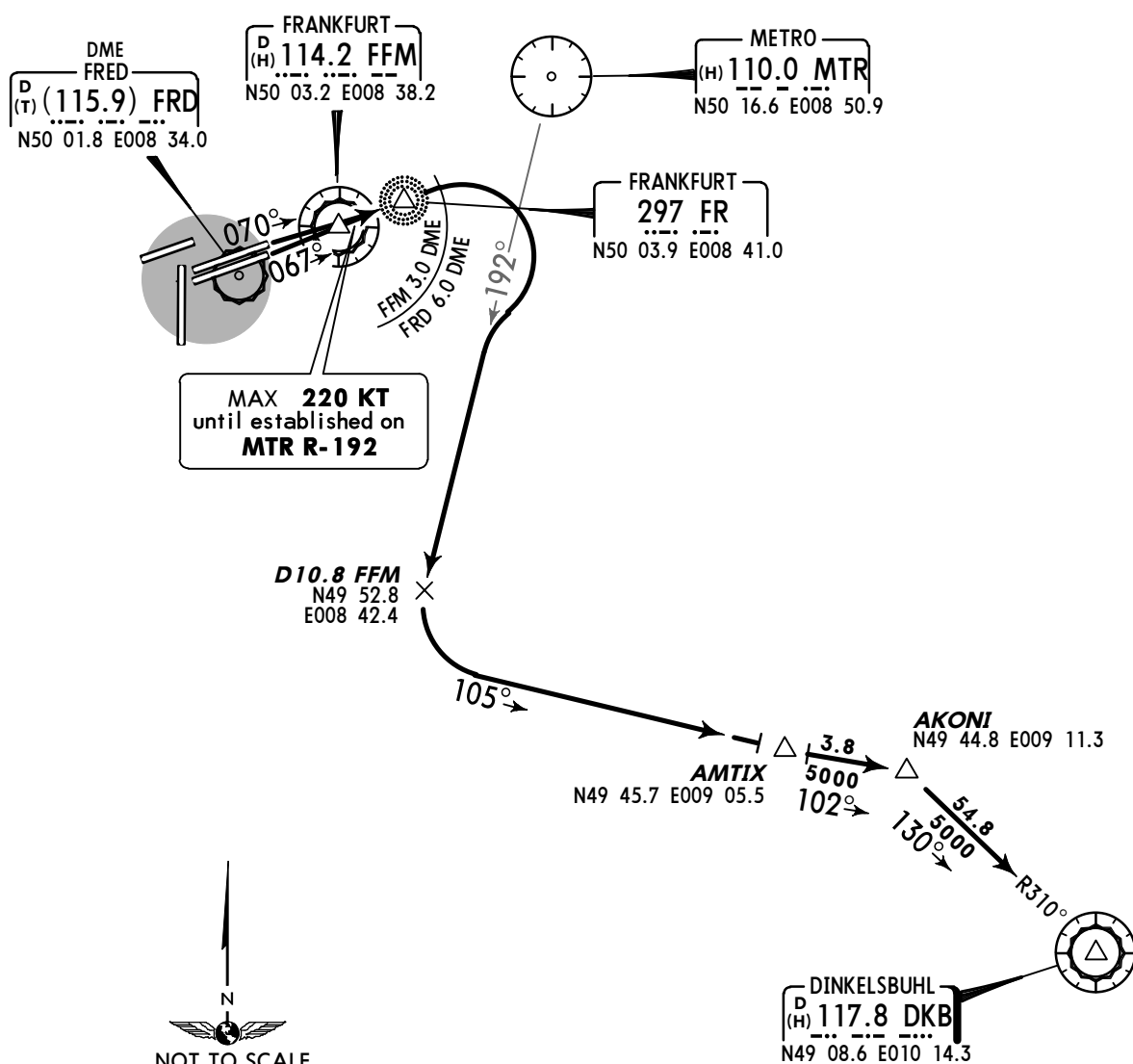
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**DINKELSBUHL NINE DELTA (DKB 9D)  
DINKELSBUHL SEVEN ECHO (DKB 7E)  
RWYS 07C/R DEPARTURES**  
ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **4000'**

**ROUTING**

Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, intercept MTR R-192, at D10.8 FFM ① turn LEFT, 105° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, intercept DKB R-310 inbound to DKB.

① After D10.8 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

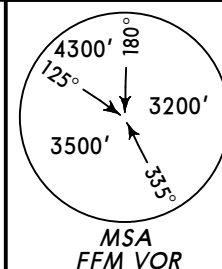
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

DINKELSBUHL SIX FOXTROT (DKB 6F)

DINKELSBUHL SEVEN GOLF (DKB 7G)

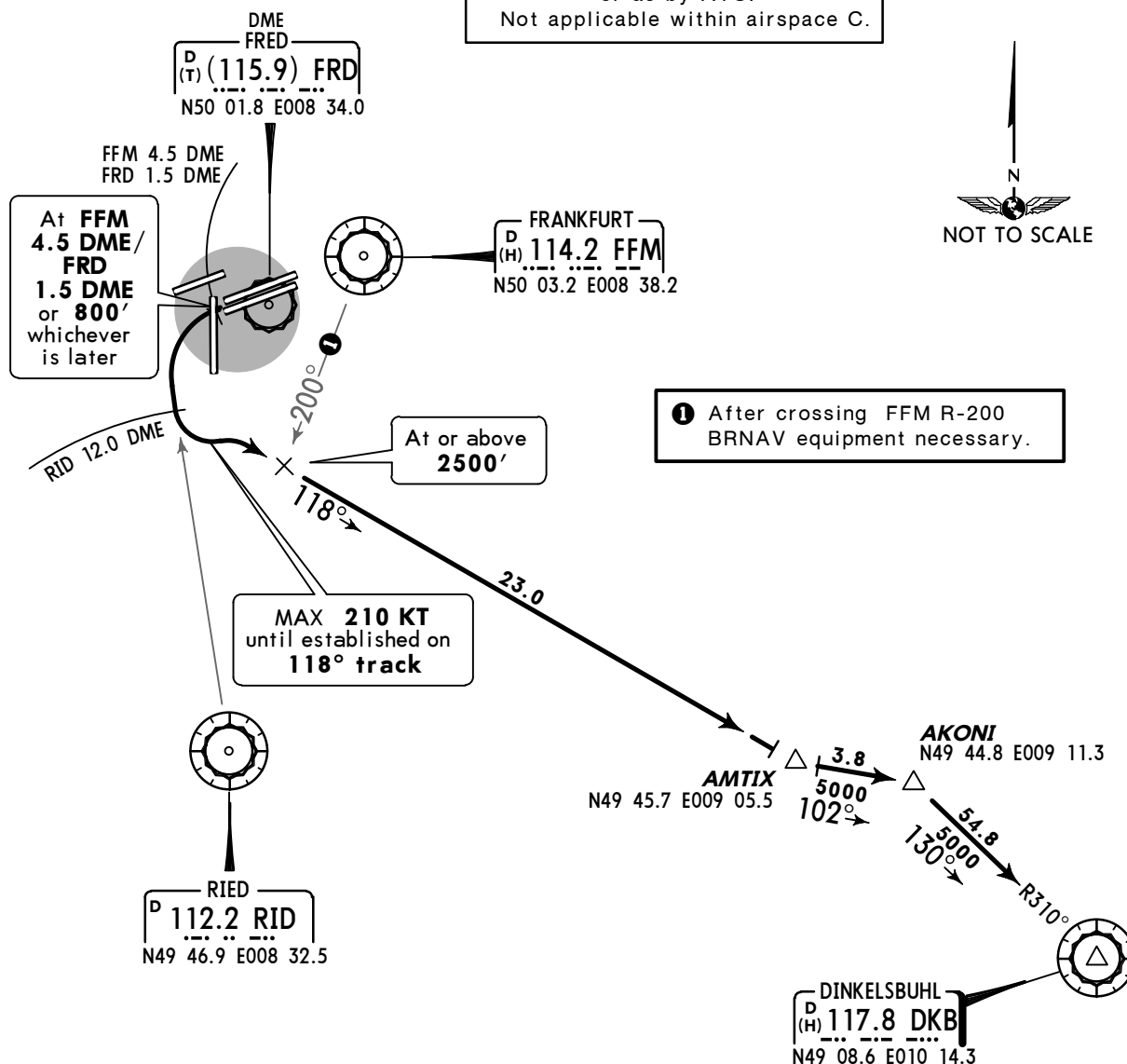
RWYS 25L/C DEPARTURES

ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR



**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

**ROUTING**

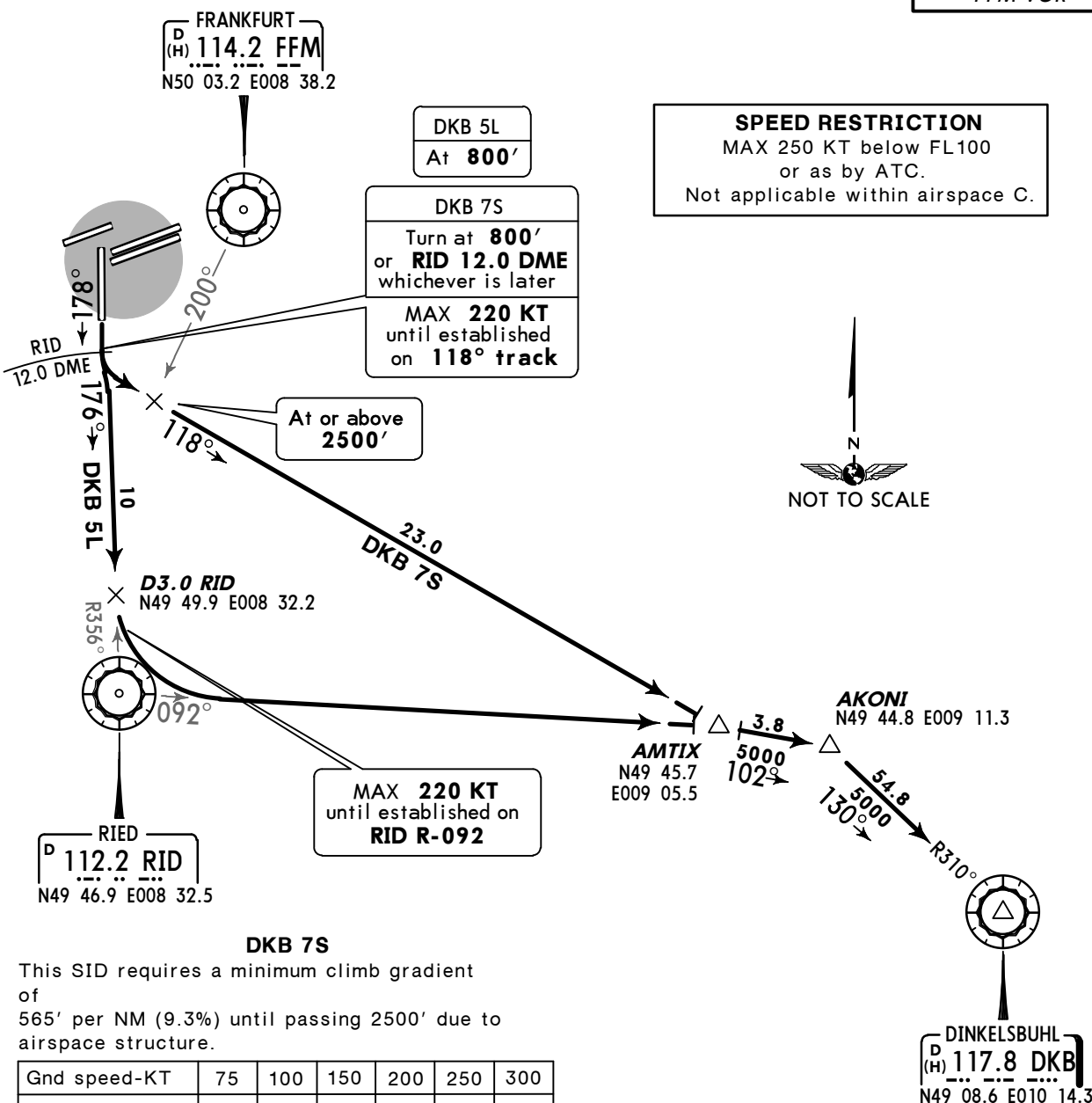
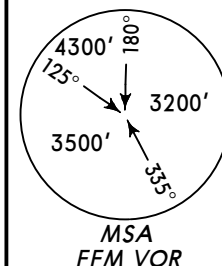
Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT towards RID, at RID 12.0 DME turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, intercept DKB R-310 inbound to DKB.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**DINKELSBUHL FIVE LIMA (DKB 5L)**  
**DINKELSBUHL SEVEN SIERRA (DKB 7S)**  
**RWY 18 DEPARTURES**  
**ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR**

**DKB 7S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT routing  
via DKB 5L.

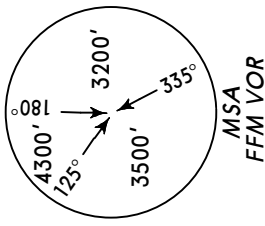
**Initial climb clearance 4000'**

| SID                                                           | ROUTING                                                                                                                                                                                             |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DKB 5L</b>                                                 | Climb on runway track to 800', intercept RID R-356 inbound to D3.0 RID, turn LEFT, intercept RID R-092 to AMTIX ①, turn RIGHT, 102° track to AKONI, turn RIGHT, intercept DKB R-310 inbound to DKB. |
| <b>DKB 7S</b><br>②                                            | Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, intercept DKB R-310 inbound to DKB.                  |
| After AMTIX ① /passing FFM R-200 ② BRNAV equipment necessary. |                                                                                                                                                                                                     |

\*LANGEN  
Radar  
120.15

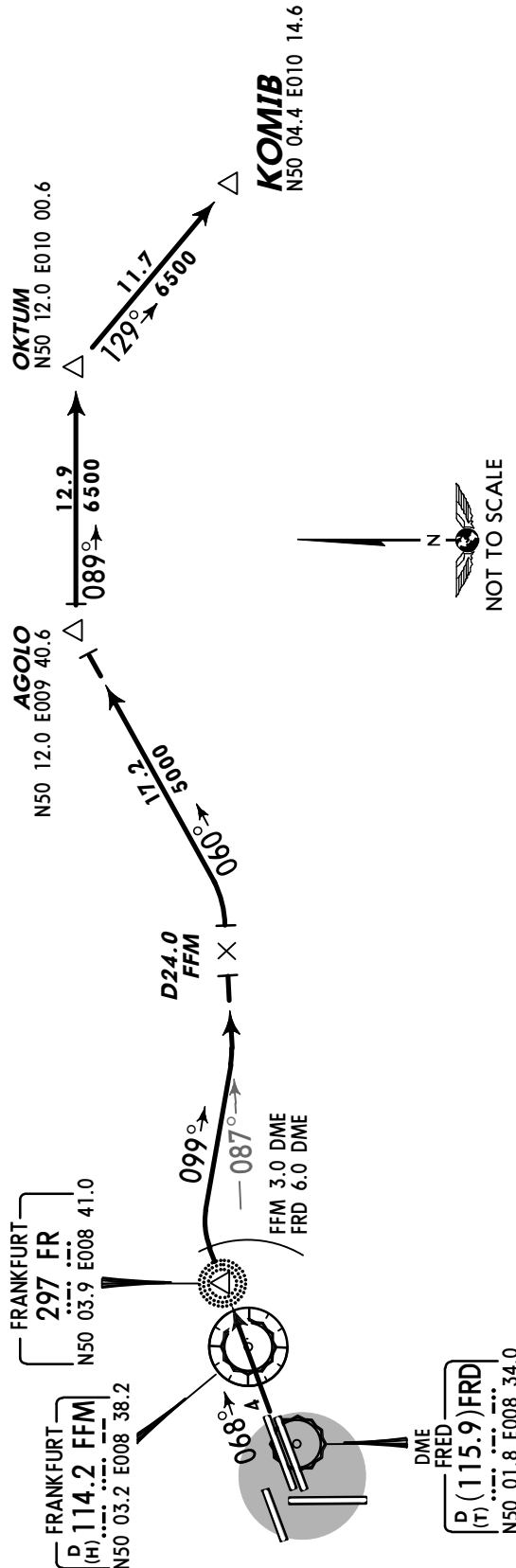
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



KOMIB ONE DELTA (KOMIB 1D)  
KOMIB ONE ECHO (KOMIB 1E)  
RWYS 07C/R DEPARTURES  
ONLY FOR FLIGHTS TERMINATING WITHIN EDDN AREA

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **4000'**

**ROUTING**

Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, 099° track, turn LEFT, intercept FFM R-087 to D24.0 FFM **1**, turn LEFT, 060° track to AGOLO, turn RIGHT, 089° track to OKTUM, turn RIGHT, 129° track to KOMIB.

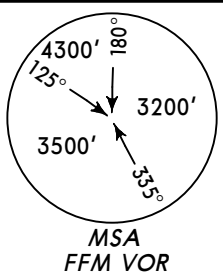
**1** After D24.0 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

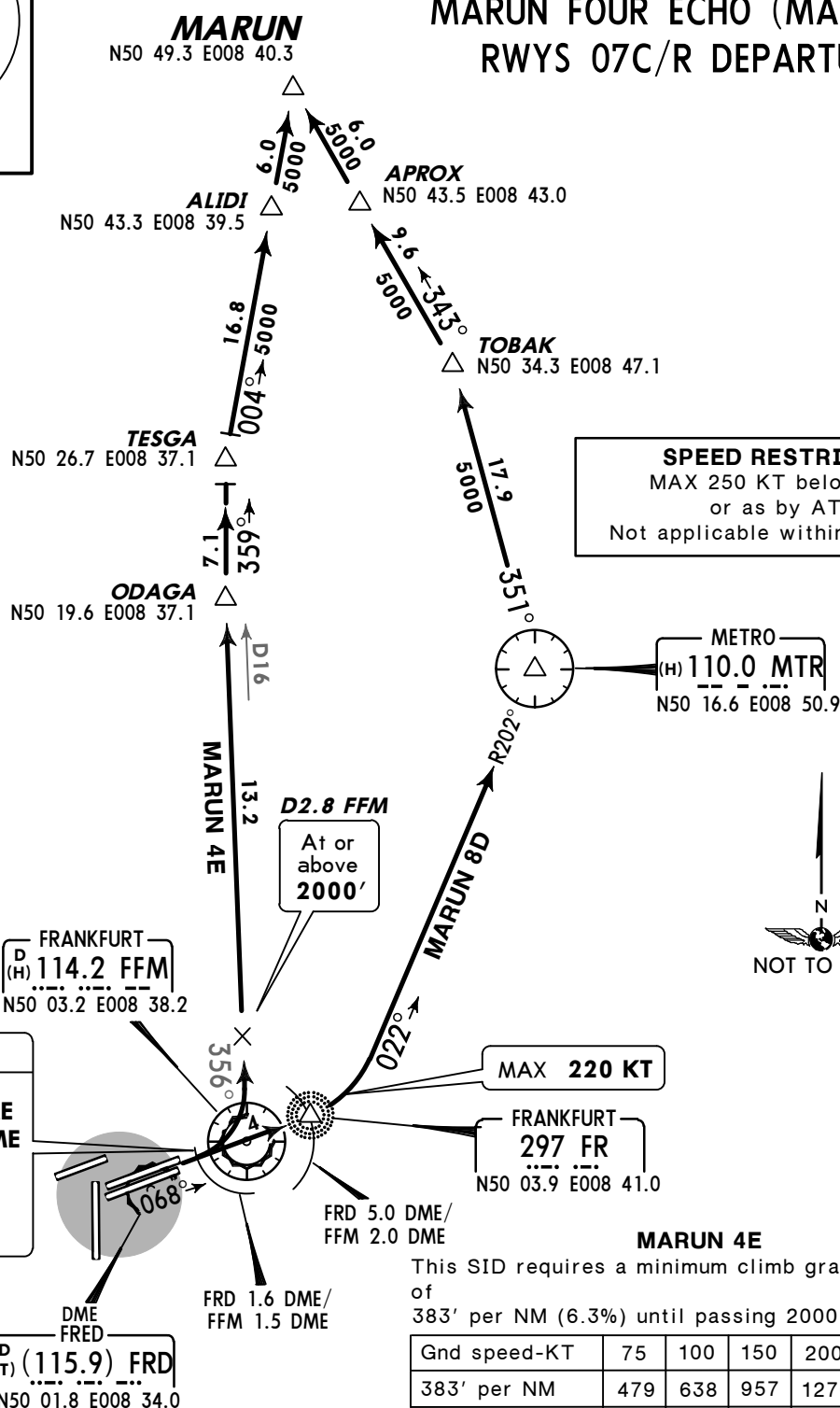
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.



# MARUN EIGHT DELTA (MARUN 8D) MARUN FOUR ECHO (MARUN 4E) RWYS 07C/R DEPARTURES



Initial climb clearance **5000'**

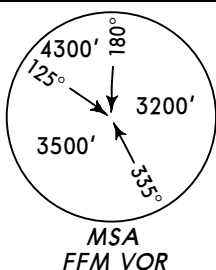
| SID             | ROUTING                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MARUN 8D</b> | Climb on runway track to 800', to FR (FRD 5.0 DME/FFM 2.0 DME outbound), turn LEFT <b>immediately</b> , intercept MTR R-202 inbound to MTR ①, turn LEFT, MTR R-351 to TOBAK, turn LEFT, 343° track via APROX to MARUN. |
| <b>MARUN 4E</b> | Climb on runway track to FRD 1.6 DME (FFM 1.5 DME inbound) or 800', whichever is later, turn LEFT, intercept FFM R-356 to ODAGA ②, turn RIGHT, 359° track to TESGA, turn RIGHT, 004° track via ALIDI to MARUN.         |

BRNAV equipment necessary after: ① MTR/ ② ODAGA.

\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**MARUN**  
N50 49.3 E008 40.3 △**LORPA**  
N50 43.5 E008 37.5 △**LIKSI**  
N50 28.4 E008 30.3 △**TABUM**  
N50 17.5 E008 24.3**D11.4 TAU**  
N50 06.0 E008 20.7**D9.6 TAU**  
N50 06.6 E008 17.0**D9.7 FFM**  
N50 01.4 E008 23.5**FRANKFURT**  
D (H) 114.2 FFM  
N50 03.2 E008 38.2**DME FRED**  
D (T) 115.9 FRD  
N50 01.8 E008 34.0**SPEED RESTRICTION**MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

③ FFM 5.0 DME/  
FRD 2.0 DMEInitial climb clearance **5000'**

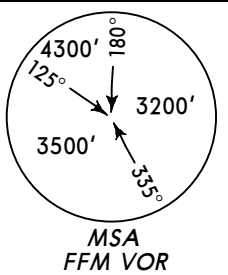
| SID                 | ROUTING                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MARUN 3F, 3J</b> | Climb on runway track to FFM 5.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track) to FFM 8.4 DME, turn RIGHT, intercept TAU R-141 inbound to D11.4 TAU ①, turn RIGHT, 016° track to TABUM, turn RIGHT, 018° track to LIKSI, turn LEFT, 016° track via LORPA to MARUN.                                                          |
| <b>MARUN 4G</b>     | Climb on runway track to FFM 5.0 DME/FRD 2.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track), intercept FFM R-258 to D9.7 FFM or 3500', whichever is later, turn RIGHT, intercept TAU R-150 inbound to D9.6 TAU ②, turn RIGHT, 027° track to TABUM, turn LEFT, 018° track to LIKSI, turn LEFT, 016° track via LORPA to MARUN. |

BRNAV equipment necessary after: ① D11.4 TAU/ ② D9.6 TAU.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



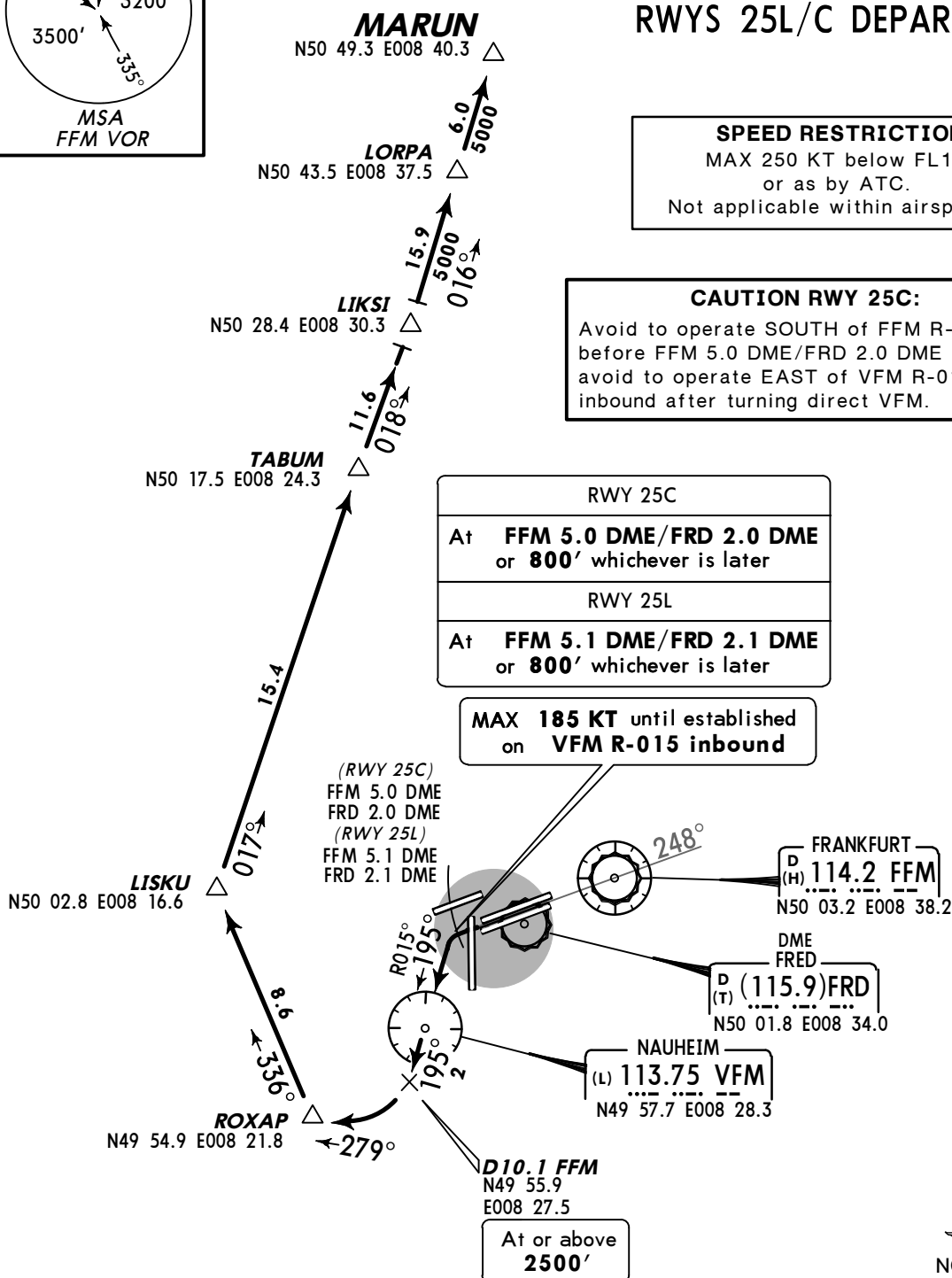
## MARUN TWO MIKE (MARUN 2M) RWYS 25L/C DEPARTURE

### SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

### CAUTION RWY 25C:

Avoid to operate SOUTH of FFM R-248 before FFM 5.0 DME/FRD 2.0 DME and avoid to operate EAST of VFM R-015 inbound after turning direct VFM.



This SID requires a minimum climb gradient of 249' per NM (4.1%) until passing 2500' due to airspace structure

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT Delivery prior to start-up.

Initial climb clearance **5000'**

### ROUTING

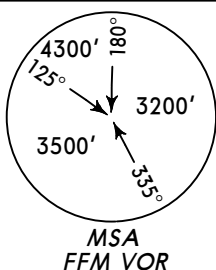
Climb on runway track to FFM 5.0 DME/FRD 2.0 DME (Rwy 25C)/FFM 5.1 DME/FRD 2.1 DME (Rwy 25L) or 800', whichever is later, turn LEFT, intercept VFM R-015 inbound via VFM to D10.1 FFM ① turn RIGHT, 279° track to ROXAP, turn RIGHT, 336° track to LISKU, turn RIGHT, 017° track to TABUM, turn RIGHT, 018° track to LIKSI, turn LEFT, 016° track via LORPA to MARUN.

① After D10.1 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



# MARUN FIVE NOVEMBER (MARUN 5N) RWYS 25L/C DEPARTURE

**MARUN**  
N50 49.3 E008 40.3 △

**LORPA**  
N50 43.5 E008 37.5 △

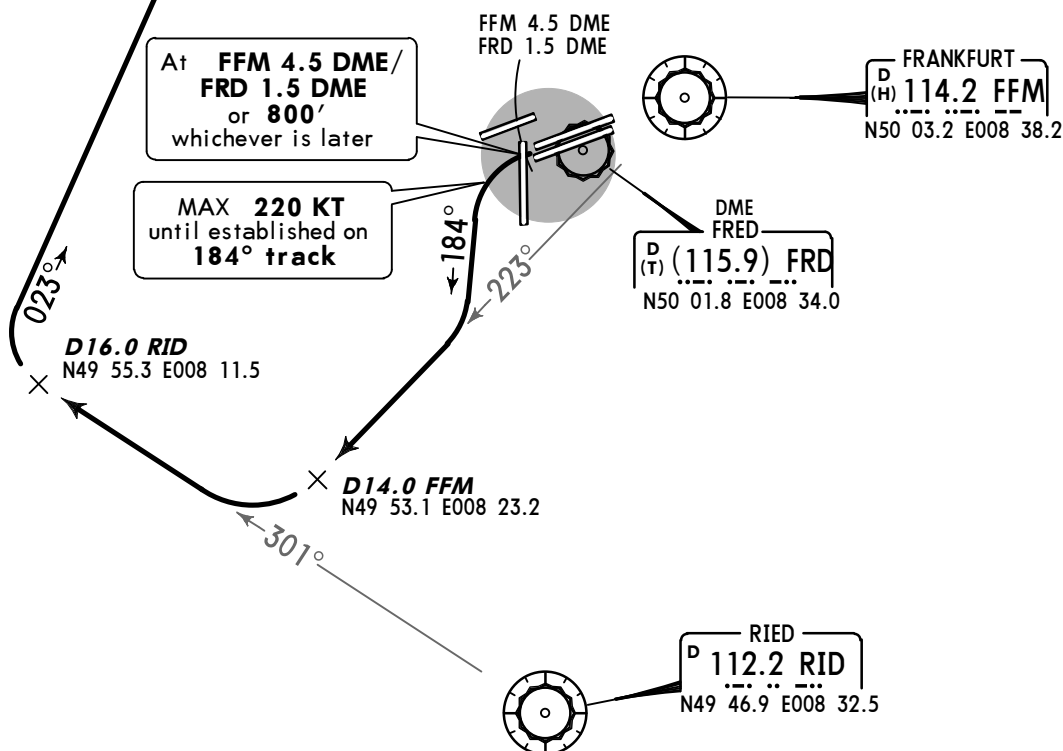
**LIKSI**  
N50 28.4 E008 30.3 △

**TABUM**  
N50 17.5 E008 24.3 △

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



Initial climb clearance **5000'**

## ROUTING

Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 184° track, intercept FFM R-223 to D14.0 FFM, turn RIGHT, intercept RID R-301 to D16.0 RID, turn RIGHT, 023° track to TABUM, turn LEFT, 018° track to LIKSI, turn LEFT, 016° track via LORPA to MARUN.

① After D16.0 RID BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

# MARUN TWO ROMEO (MARUN 2R) RWY 18 DEPARTURE

BY ATC  
WILL ONLY BE ASSIGNED BETWEEN  
2300-0500LT

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



**MARUN**  
N50 49.3 E008 40.3

**APROX**  
N50 43.5 E008 43.0

**TOBAK**  
N50 34.3 E008 47.1

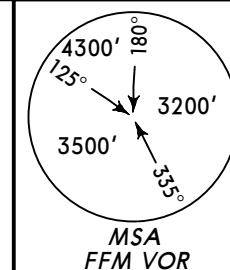
**METRO**  
(H) 110.0 MTR  
N50 16.6 E008 50.9

**FRANKFURT**  
D (H) 114.2 FFM  
N50 03.2 E008 38.2

N49 56.2 E008 34.0

**TUKRU**  
N49 56.4  
E008 43.3

**RIED**  
P 112.2 RID  
N49 46.9 E008 32.5



At 800' or RID 12.0 DME  
whichever is later

MAX 220 KT  
until established  
on 118° brg

At or above  
2500'

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

## ROUTING

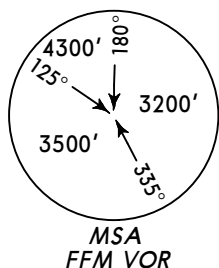
Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, intercept 118° bearing towards KNG, when passing FFM R-200 ① turn LEFT, 088° track to TUKRU, turn LEFT, intercept MTR R-192 inbound to MTR, turn LEFT, MTR R-351 to TOBAK, turn LEFT, 342° track via APROX to MARUN.

① After FFM R-200 BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.



# MARUN FOUR SIERRA (MARUN 4S) RWY 18 DEPARTURE BY ATC

WILL ONLY BE ASSIGNED WHEN  
LANDING DIRECTION IS RWY 25



## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



FRANKFURT  
D (H) 114.2 FFM  
N50 03.2 E008 38.2

RIED  
D 112.2 RID  
N49 46.9 E008 32.5

Initial climb clearance **4000'**

## ROUTING

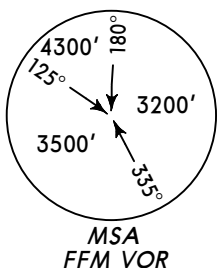
Climb on runway track to 800', turn RIGHT, intercept FFM R-223 to D14.0 FFM, turn RIGHT, intercept RID R-301 to D16.0 RID ①, turn RIGHT, 023° track to TABUM, turn LEFT, 018° track to LIKSI, turn LEFT, 016° track via LORPA to MARUN.

① After D16.0 RID BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

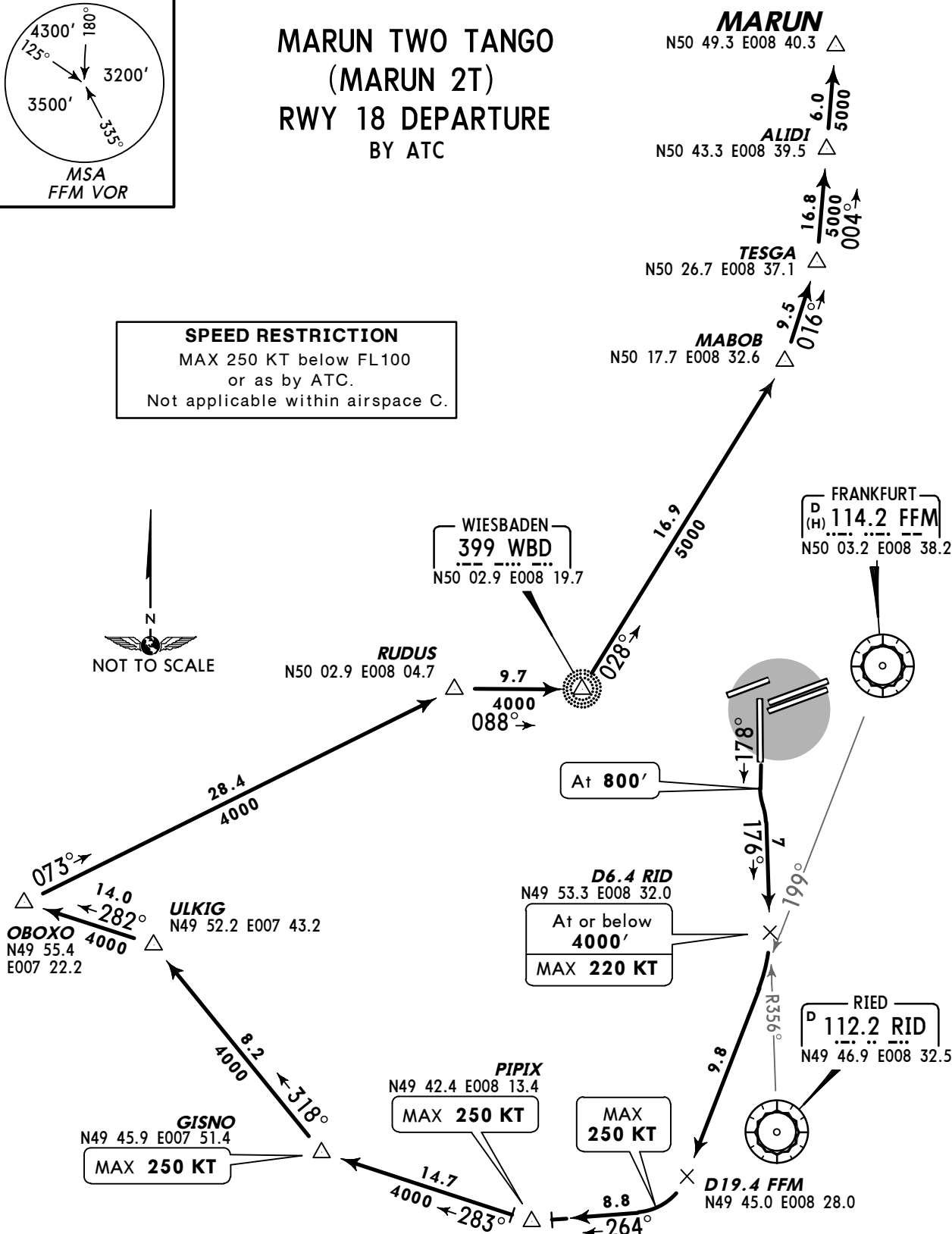
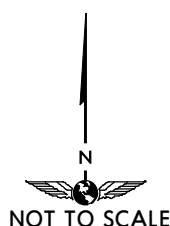
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.



# MARUN TWO TANGO (MARUN 2T) RWY 18 DEPARTURE BY ATC

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **4000'**

## ROUTING

Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, intercept FFM R-199 to D19.4 FFM ①, turn RIGHT, 264° track to PIPIX, turn RIGHT, 283° track to GISNO, turn RIGHT, 318° track to ULKIG, turn LEFT, 282° track to OBO XO, turn RIGHT, 073° track to RUDUS, turn RIGHT, intercept 088° bearing to WBD, turn LEFT, 028° bearing to MABOB, turn LEFT, 016° track to TESGA, turn LEFT, 004° track via ALIDI to MARUN.

① After D19.4 FFM BRNAV equipment necessary.

|                                                                                                                                             |              |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Initial climb clearance                                                                                                                     | <b>5000'</b> |
| <b>ROUTING</b>                                                                                                                              |              |
| Climb on runway track to 800', to FR (FRD 5.0 DME/FFM 2.0 DME outbound), turn LEFT <b>immediately</b> , intercept MTR R-202 inbound to MTR. |              |

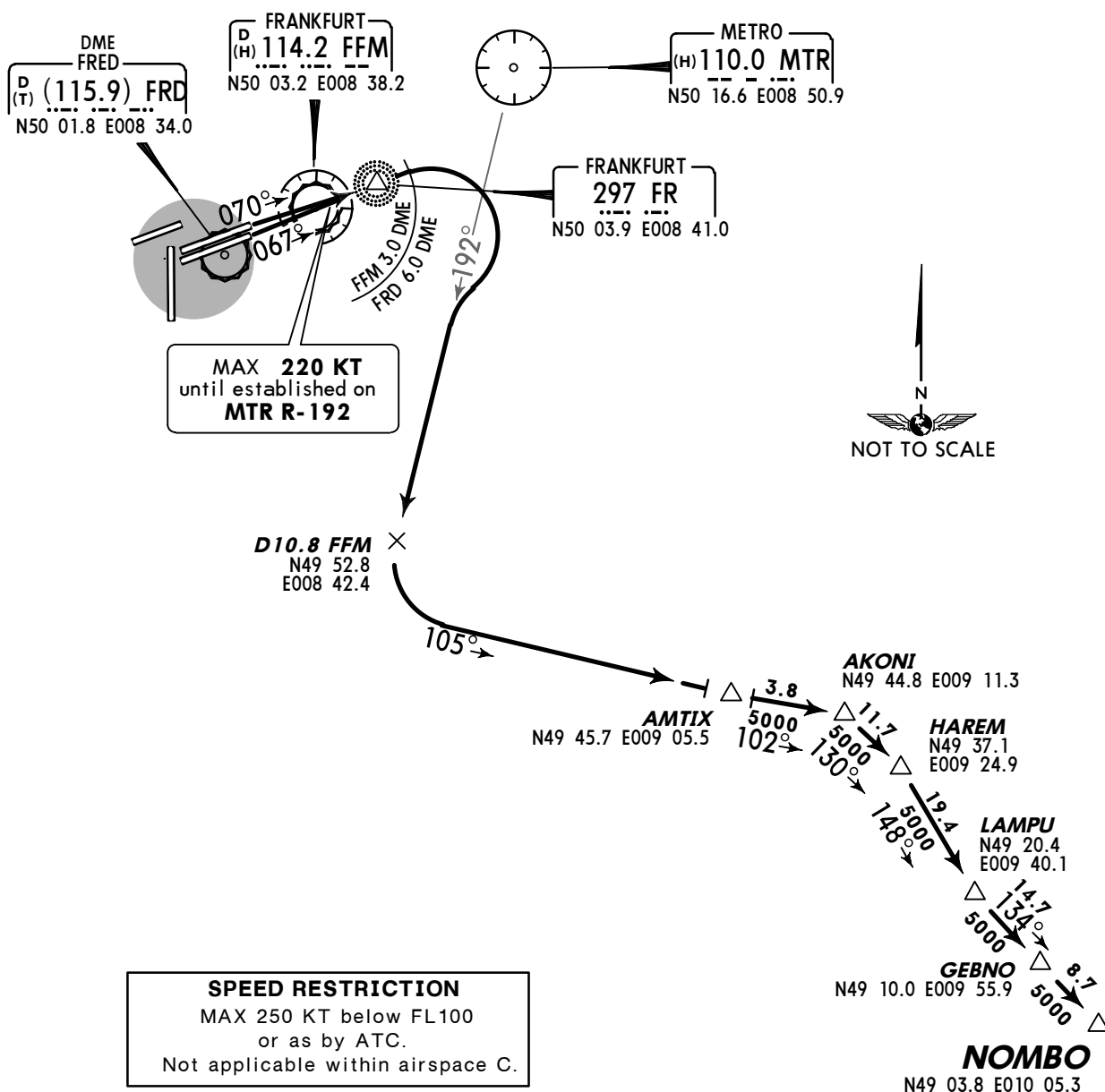
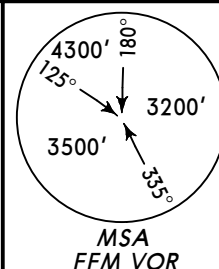
\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**NOMBO NINE DELTA (NOMBO 9D)**  
**NOMBO EIGHT ECHO (NOMBO 8E)**  
**RWYS 07C/R DEPARTURES**

NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



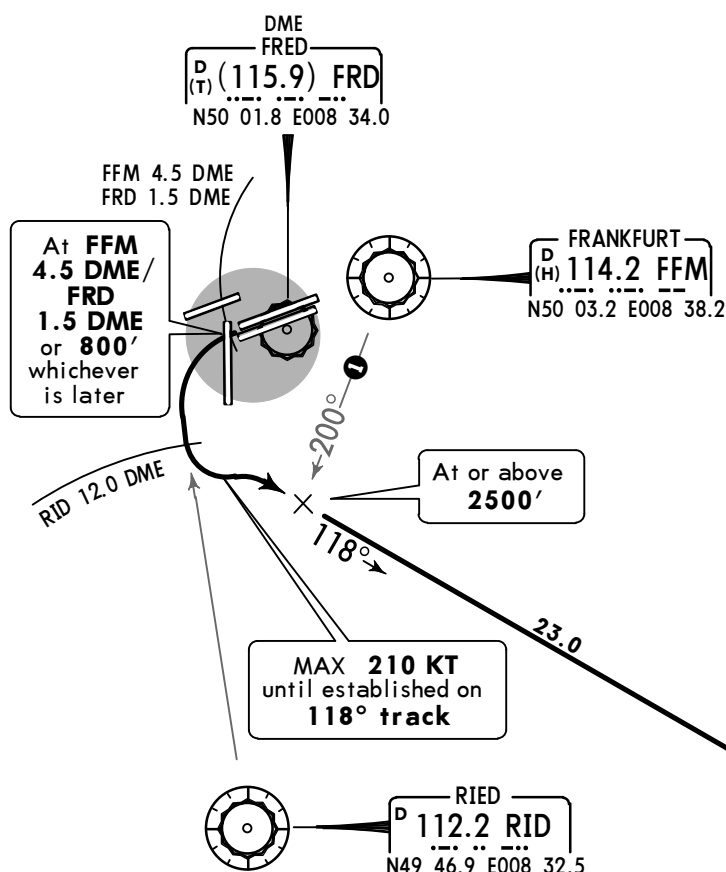
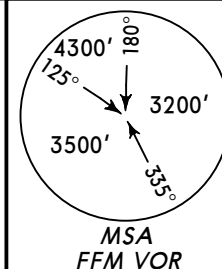
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**NOMBO SEVEN FOXTROT (NOMBO 7F)  
NOMBO EIGHT GOLF (NOMBO 8G)  
RWYS 25L/C DEPARTURES**

NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

① After passing FFM R-200  
BRNAV equipment necessary.

These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

**ROUTING**

Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT towards RID, at RID 12.0 DME turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, 130° track to HAREM, turn RIGHT, 148° track to LAMPU, turn LEFT, 134° track via GEBNO to NOMBO.

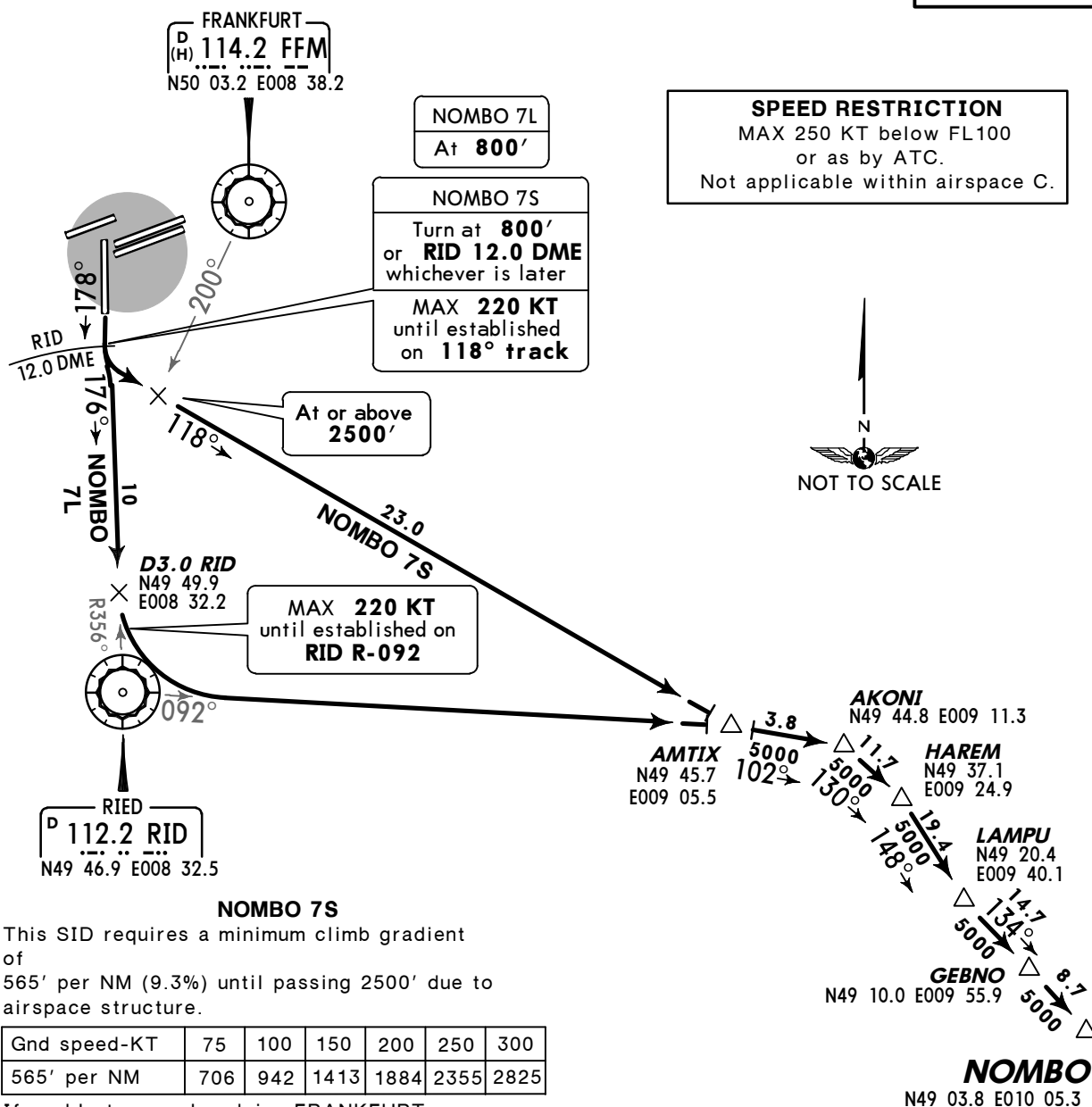
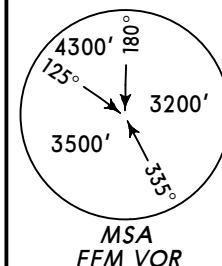
\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**NOMBO SEVEN LIMA (NOMBO 7L)  
NOMBO SEVEN SIERRA (NOMBO 7S)  
RWY 18 DEPARTURES**

NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR

Initial climb clearance **4000'**

| SID           | ROUTING                                                                                                                                                                                                                                                         |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NOMBO 7L      | Climb on runway track to 800', intercept RID R-356 inbound to D3.0 RID, turn LEFT, intercept RID R-092 to AMTIX ①, turn RIGHT, 102° track to AKONI, turn RIGHT, 130° track to HAREM, turn RIGHT, 148° track to LAMPU, turn LEFT, 134° track via GEBNO to NOMBO. |
| NOMBO 7S<br>② | Climb on runway track to 800', or RID 12.0 DME, whichever is later, turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, 130° track to HAREM, turn RIGHT, 148° track to LAMPU, turn LEFT, 134° via GEBNO to NOMBO.                       |

After AMTIX ① /passing FFM R-200 ② BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

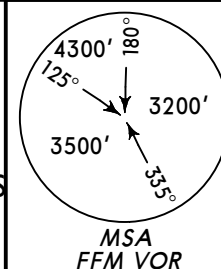
Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

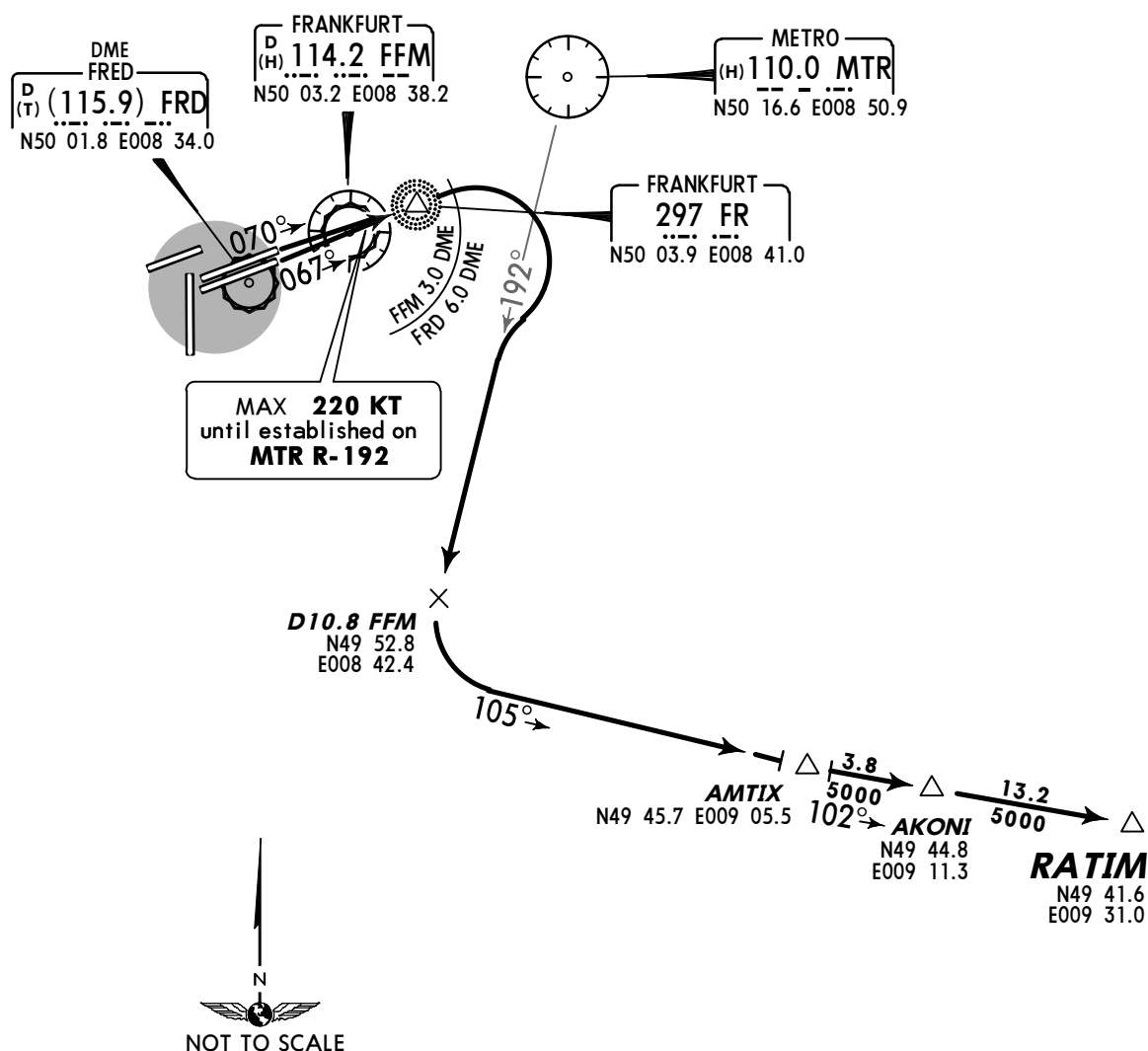
RATIM FIVE DELTA (RATIM 5D)

RATIM FIVE ECHO (RATIM 5E)

RWYS 07C/R DEPARTURES

ONLY PROP ACFT WITH MAX FL230 REQUESTED INSTEAD OF NOMBO SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR**SPEED RESTRICTION**MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

Initial climb clearance **4000'****ROUTING**

Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, intercept MTR R-192, at D10.8 FFM ① turn LEFT, 105° track to AMTIX, turn LEFT, 102° track via AKONI to RATIM.

① After D10.8 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

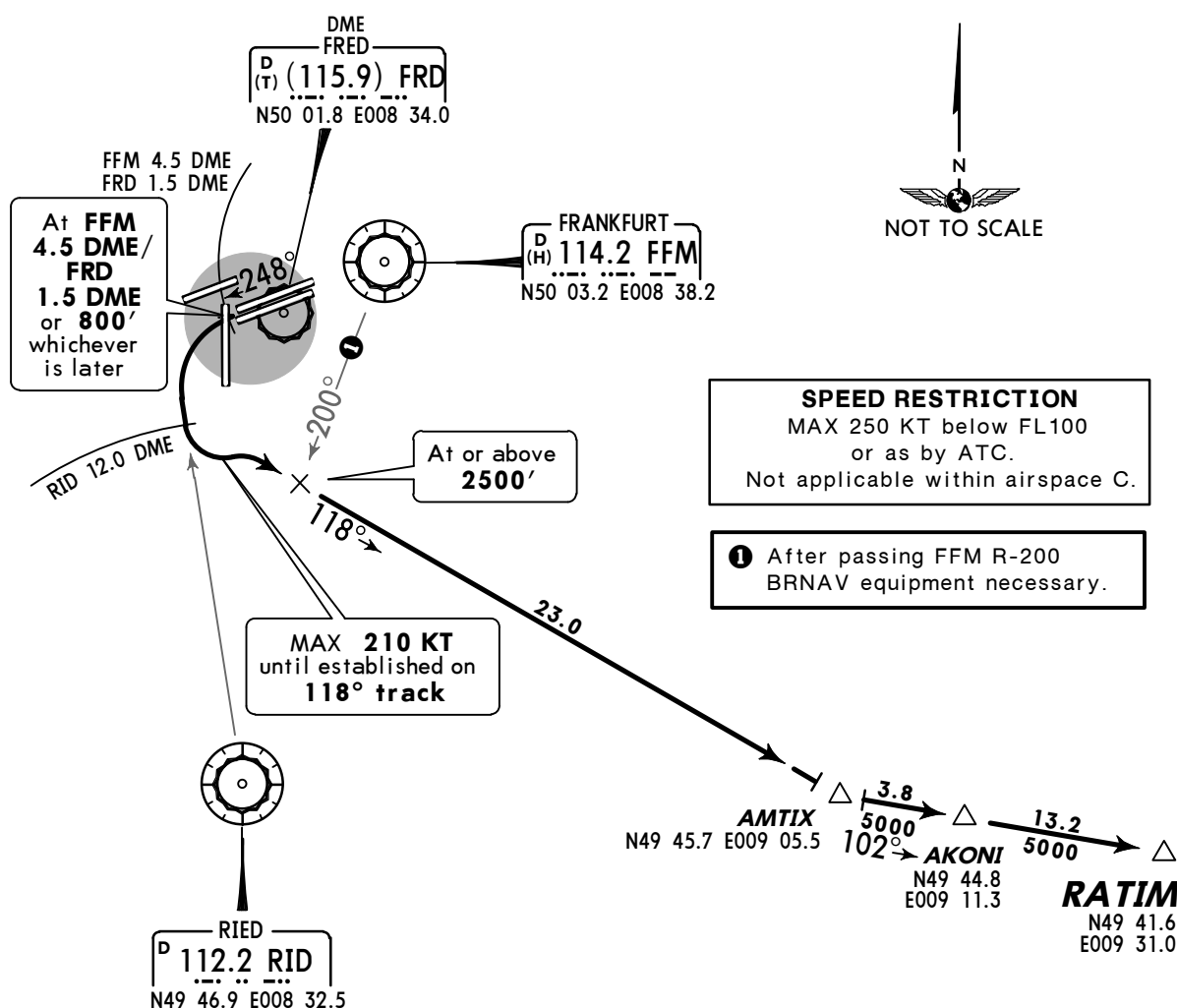
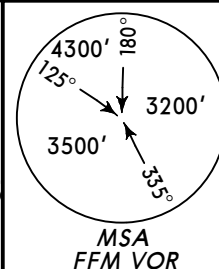
Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

RATIM FIVE FOXTROT (RATIM 5F)

RATIM FIVE GOLF (RATIM 5G)

RWYS 25L/C DEPARTURES

ONLY PROP ACFT WITH MAX FL230 REQUESTED INSTEAD OF NOMBO SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR

These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

## ROUTING

Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT towards RID, at RID 12.0 DME turn LEFT, 118° track to AMTIX, turn LEFT, 102° track via AKONI to RATIM.

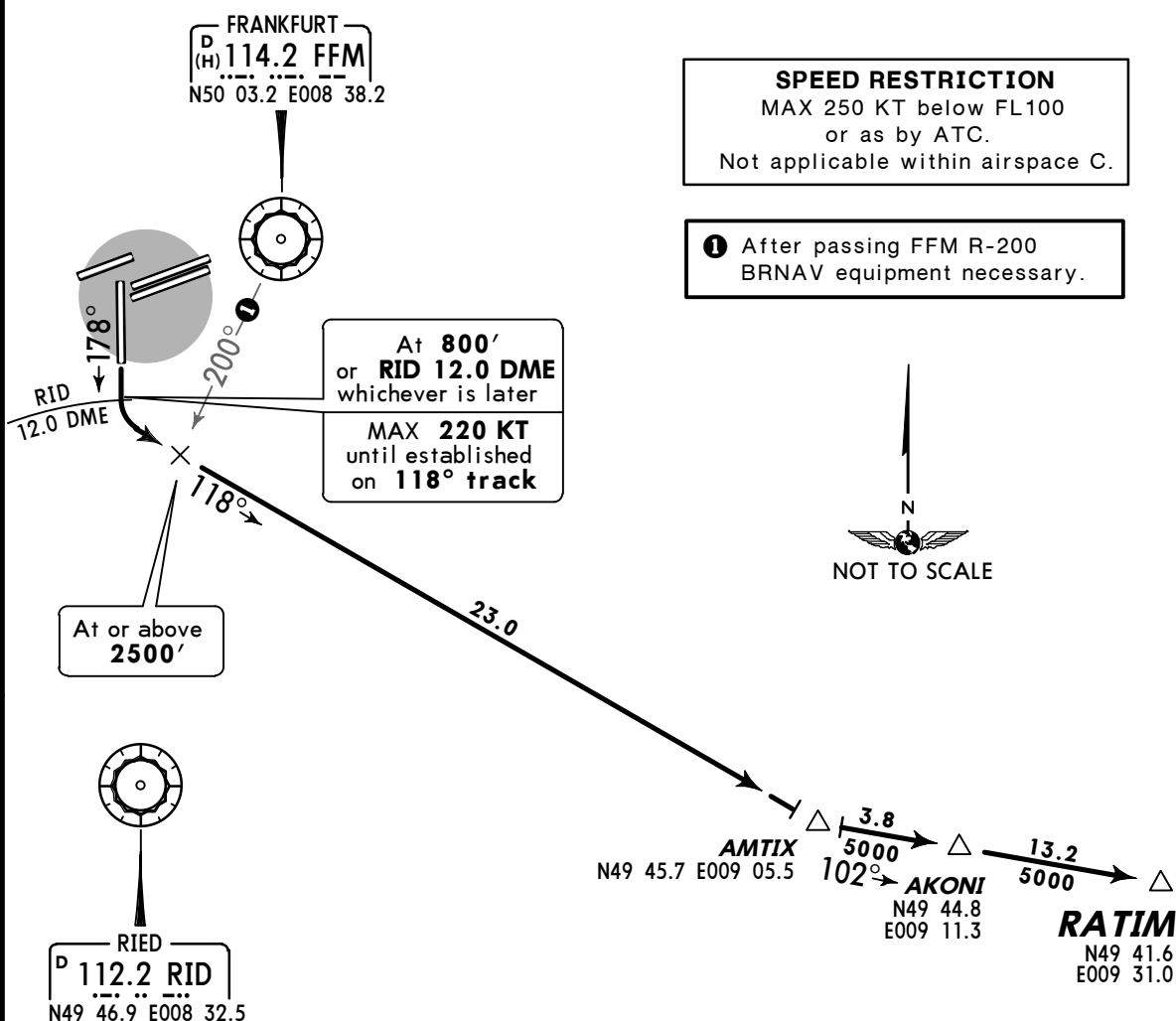
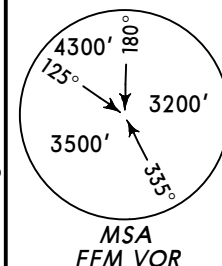
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

## RATIM FOUR SIERRA (RATIM 4S) RWY 18 DEPARTURE

ONLY PROP ACFT WITH MAX FL230 REQUESTED INSTEAD OF NOMBO SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

① After passing FFM R-200  
BRNAV equipment necessary.

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT Delivery prior to start-up and EXPECT alternate routing by ATC.

Initial climb clearance **4000'**

### ROUTING

Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, 118° track to AMTIX, turn LEFT, 102° track via AKONI to RATIM.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**RIED SIX CHARLIE (RID 6C)**

**RIED THREE QUEBEC (RID 3Q)**

**RWYS 07C/R, 25L/C DEPARTURES**

**NON RNAV (ENROUTE ONLY) EQUIPPED AIRCRAFT ONLY**

**DELAY HAS TO BE EXPECTED**

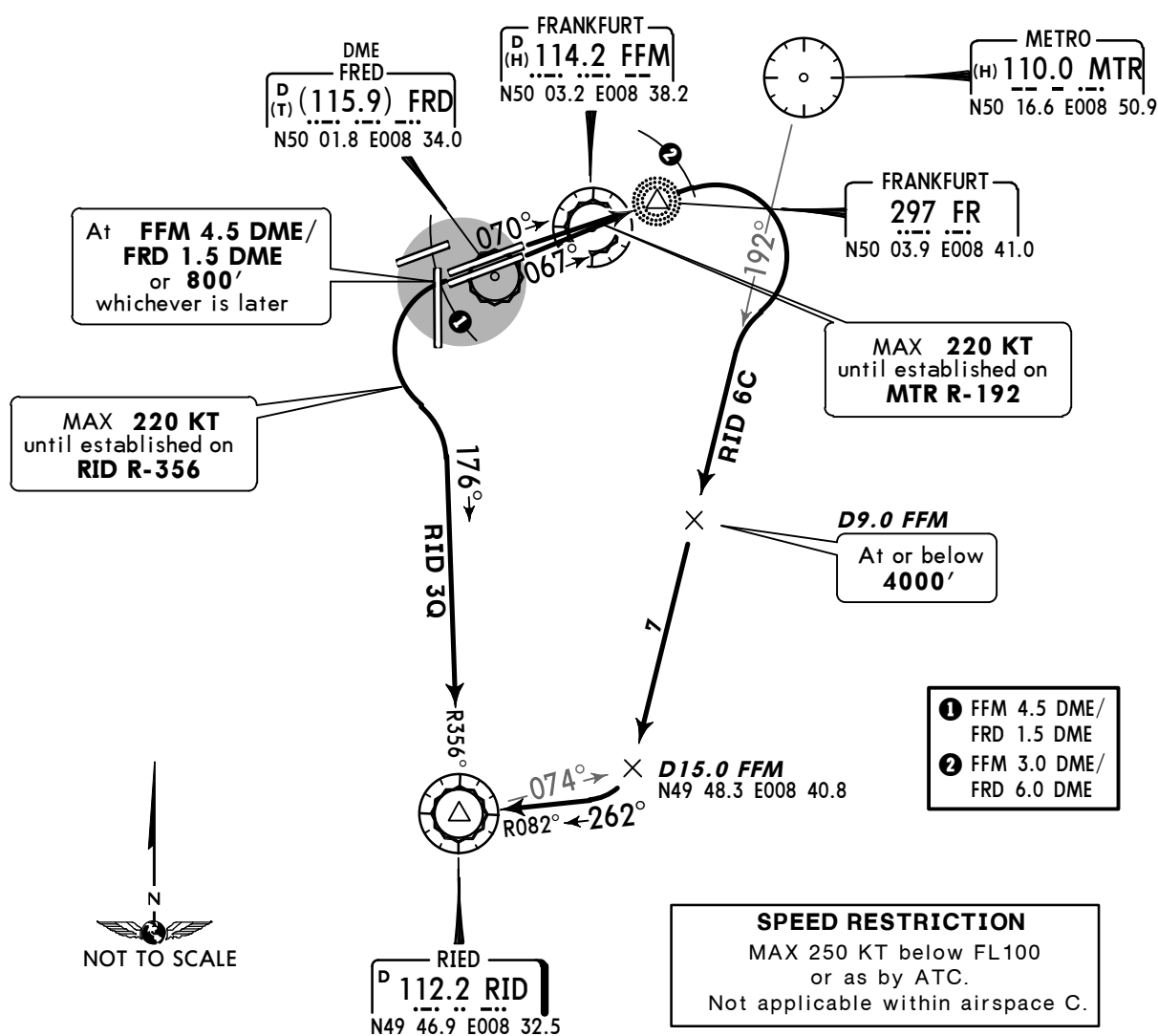
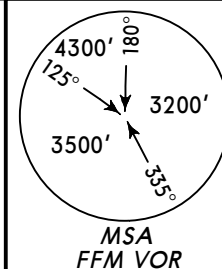
**FURTHER ROUTING TO DESTINATION SHALL BE BASED ON VOR AND**

**HAS TO BE COORDINATED WITH ATC PRIOR TO START-UP**

**NO RNAV OVERLAY EXISTING**

**MAX FL90**

**SPECIAL PERMISSION NEEDED PRIOR TO FLIGHT**



**RID 6C: Initial climb clearance 4000'**  
**RID 3Q: Initial climb clearance 5000'**

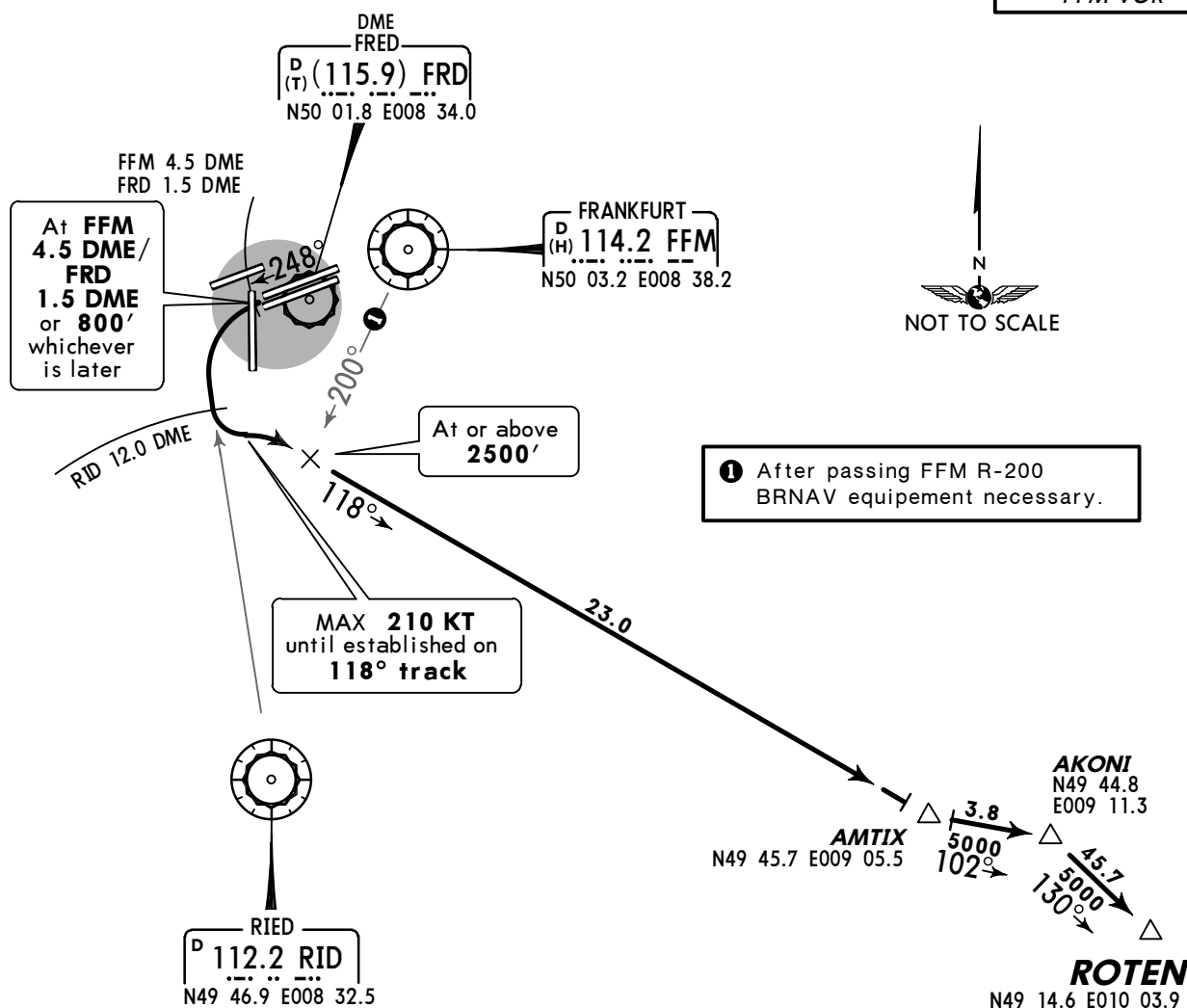
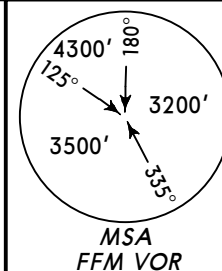
| SID    | RWY   | ROUTING                                                                                                                                                                    |
|--------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RID 6C | 07C/R | Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, intercept MTR R-192, at D15.0 FFM turn RIGHT, intercept RID R-082 inbound to RID. |
| RID 3Q | 25L/C | Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, intercept RID R-356 inbound to RID.                                               |

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**ROTEN SIX FOXTROT (ROTEN 6F)  
ROTEN FIVE GOLF (ROTEN 5G)  
RWYS 25L/C DEPARTURES**  
ONLY FOR FLIGHTS TERMINATING WITHIN EDDN AREA



These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **5000'**

**ROUTING**

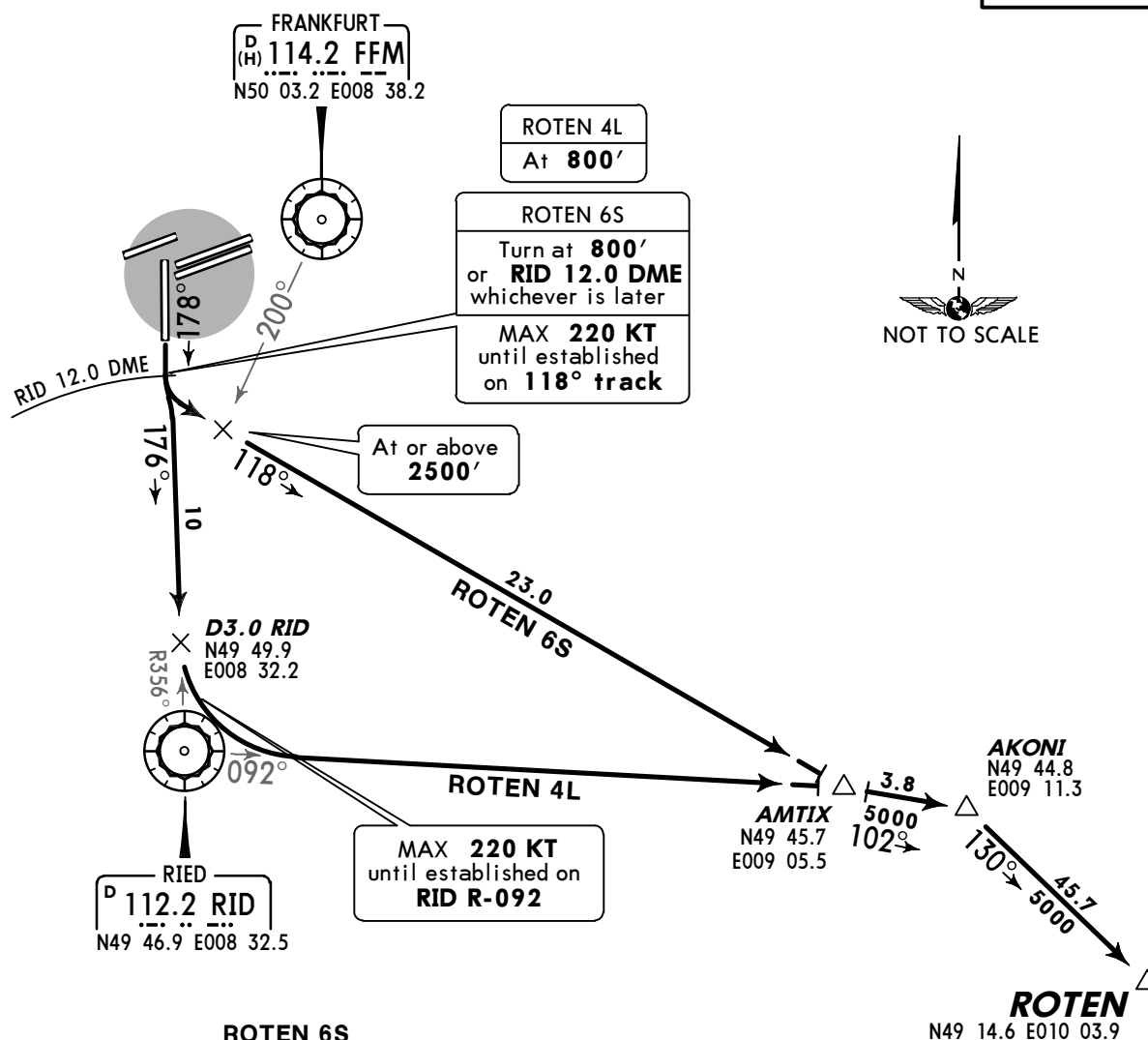
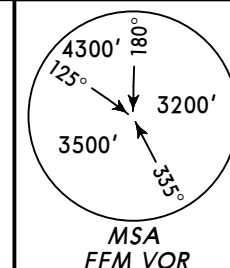
Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT towards RID, at RID 12.0 DME turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, 130° track to ROTEN.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**ROTEN FOUR LIMA (ROTEN 4L)**  
**ROTEN SIX SIERRA (ROTEN 6S)**  
**RWY 18 DEPARTURES**  
ONLY FOR FLIGHTS TERMINATING WITHIN EDDN AREA

**ROTEN 6S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT routing  
via ROTEN 4L.

**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'**

| SID                  | ROUTING                                                                                                                                                                              |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ROTEN 4L</b>      | Climb on runway track to 800', intercept RID R-356 inbound to D3.0 RID, turn LEFT, intercept RID R-092 to AMTIX ①, turn RIGHT, 102° track to AKONI, turn RIGHT, 130° track to ROTEN. |
| <b>ROTEN 6S</b><br>② | Climb on runway track to 800', or RID 12.0 DME, whichever is later, turn LEFT, 118° track to AMTIX, turn LEFT, 102° track to AKONI, turn RIGHT, 130° track to ROTEN.                 |

After AMTIX ① /passing FFM R-200 ② BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

## SOBRA FOUR DELTA (SOBRA 4D)

### RWYS 07C/R DEPARTURE

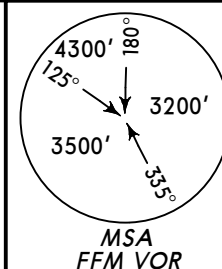
FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250

VIA AIRWAYS Y-180/Y-181

FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240

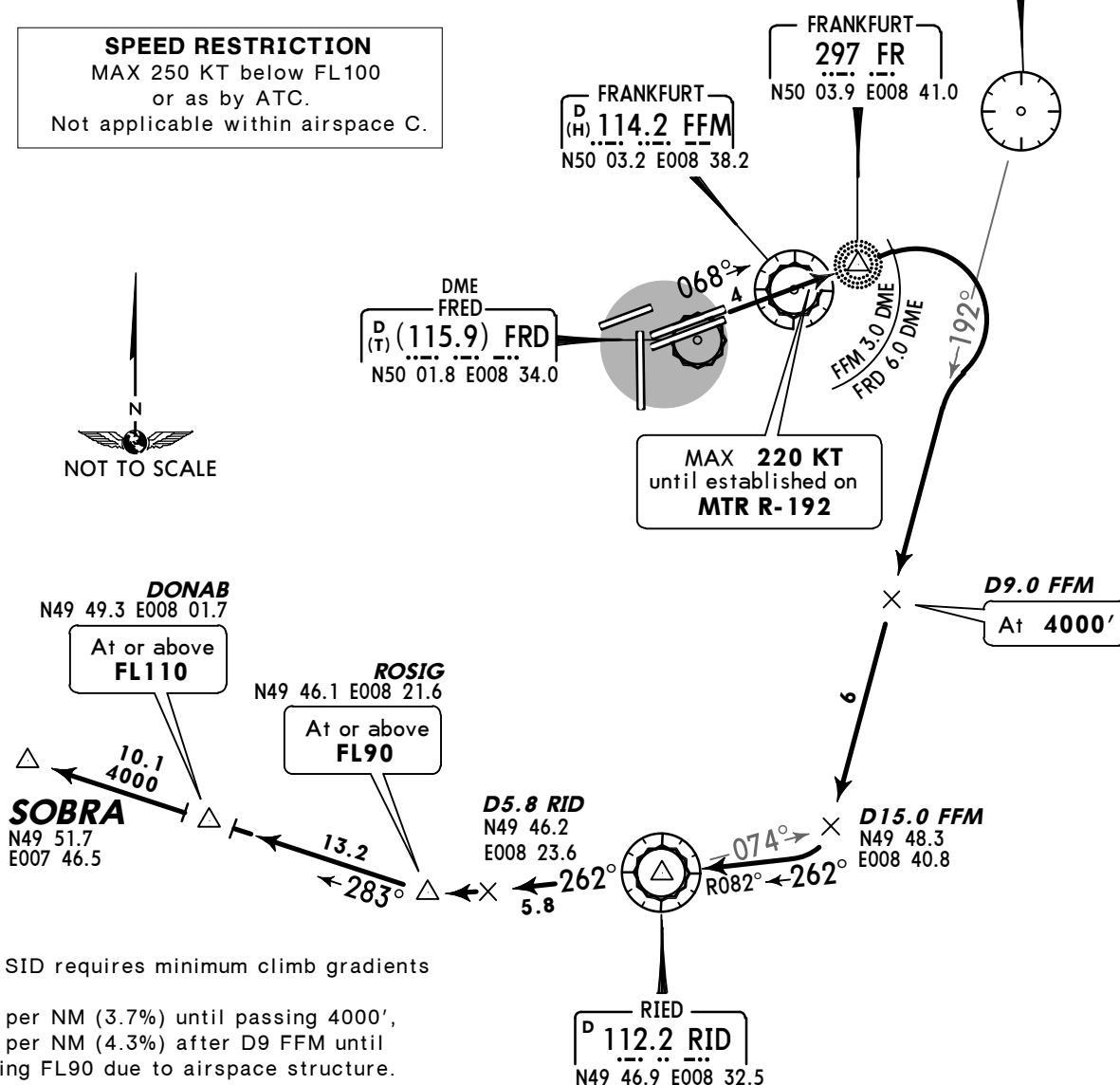
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:

RUDOT FL220 - Y-180 - DIK RFL



METRO  
(H) 110.0 MTR  
N50 16.6 E008 50.9

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



This SID requires minimum climb gradients of  
225' per NM (3.7%) until passing 4000',  
261' per NM (4.3%) after D9 FFM until  
passing FL90 due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 261' per NM  | 327 | 435 | 653 | 871 | 1089 | 1306 |
| 225' per NM  | 281 | 375 | 562 | 749 | 937  | 1124 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

#### ROUTING

Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, intercept MTR R-192 to D15.0 FFM, turn RIGHT, intercept RID R-082 inbound to RID, RID R-262 to D5.8 RID ①, turn RIGHT, 283° track via ROSIG and DONAB to SOBRA.

① After D5.8 RID BRNAV equipment necessary.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

## SOBRA FOUR ECHO (SOBRA 4E)

### RWYS 07C/R DEPARTURE

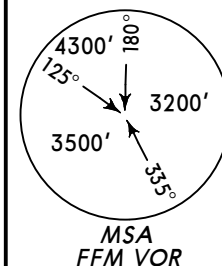
FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250

VIA AIRWAYS Y-180/Y-181

FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240

IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:

RUDOT FL220 - Y-180 - DIK RFL



#### SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

At FRD 1.6 DME  
(FFM 1.5 DME inbound)  
or 800' whichever is later

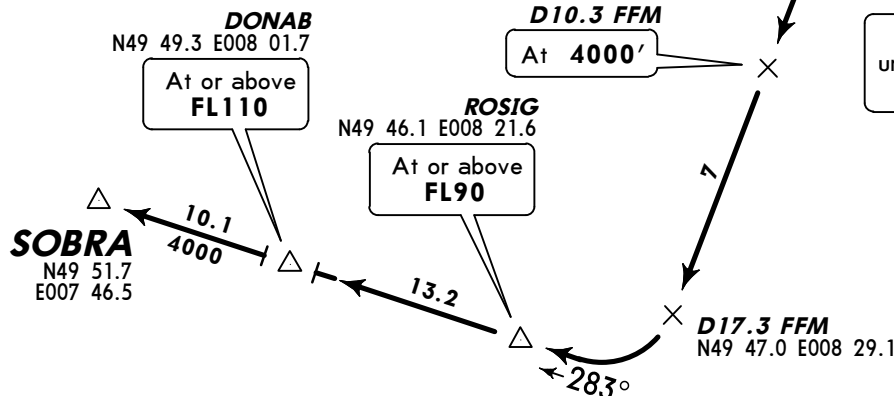
② FFM 1.5 DME/  
FRD 1.6 DME

DME FRED  
D (T) (115.9) FRD  
N50 01.8 E008 34.0

FRANKFURT  
D (H) 114.2 FFM  
N50 03.2 E008 38.2

At or above  
2500'

MAX 220 KT  
until established on  
FFM R-199



This SID requires minimum climb gradients of  
383' per NM (6.3%) until passing 2500',  
401' per NM (6.6%) after D10.3 FFM until  
passing FL90 due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 401' per NM  | 501 | 668 | 1003 | 1337 | 1671 | 2005 |
| 383' per NM  | 479 | 638 | 957  | 1276 | 1595 | 1914 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.



Initial climb clearance 4000'

#### ROUTING

Climb on runway track to FRD 1.6 DME (FFM 1.5 DME inbound) or 800', whichever is later, turn RIGHT, intercept FFM R-199, at D17.3 FFM ①, turn RIGHT, 283° track via ROSIG and DONAB to SOBRA.

① After D17.3 FFM BRNAV equipment necessary.

\*LANGEN Radar  
120.15Apt Elev  
364'

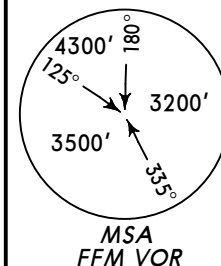
Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**SOBRA FOUR FOXTROT (SOBRA 4F)**  
**SOBRA FOUR GOLF (SOBRA 4G)**  
**SOBRA FIVE NOVEMBER (SOBRA 5N)**  
**SOBRA THREE PAPA (SOBRA 3P)**  
**RWYS 25L/C DEPARTURES**

FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
VIA AIRWAYS Y-180/Y-181

FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
RUDOT FL220 - Y-180 - DIK RFL



- ① ← 198°  
SOBRA 4F, 4G  
② ← 184°  
SOBRA 5N

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

At FFM 4.5 DME/  
FRD 1.5 DME  
or 800'  
whichever is later

FFM 4.5 DME  
FRD 1.5 DME

FRANKFURT  
D (H) 114.2 FFM  
N50 03.2 E008 38.2



DME FRED  
D (T) (115.9) FRD  
N50 01.8 E008 34.0

SOBRA 5N  
**MAX 220 KT**  
until established on  
**184° track**

**SOBRA**

N49 51.7  
E007 46.5

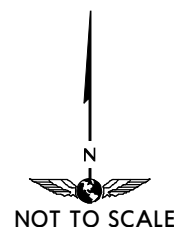
D26.0 FFM  
N49 49.8  
E008 03.8

4000  
10.1  
DONAB  
N49 49.3 E008 01.7

SOBRA 3P

SOBRA 4F, 4G, 5N

D20.6 FFM  
N49 48.4 E008 16.1



Initial climb clearance **5000'**

| SID          | ROUTING                                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SOBRA 4F, 4G | Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 198° track, turn RIGHT, intercept FFM R-223, at D20.6 FFM ③ turn RIGHT, 283° track via DONAB to SOBRA. |
| SOBRA 5N     | Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 184° track, intercept FFM R-223, at D20.6 FFM ③ turn RIGHT, 283° track via DONAB to SOBRA.             |
| SOBRA 3P     | Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 225° track (RWY 25L: 228° track), intercept FFM R-238, at D26.0 FFM ④ turn RIGHT, 283° track to SOBRA. |

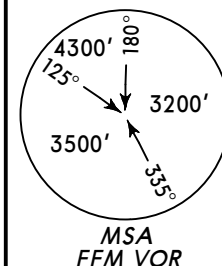
BRNAV equipment necessary after: ③ D20.6 FFM/ ④ D26.0 FFM.

\*LANGEN Radar  
136.12Apt Elev  
364'

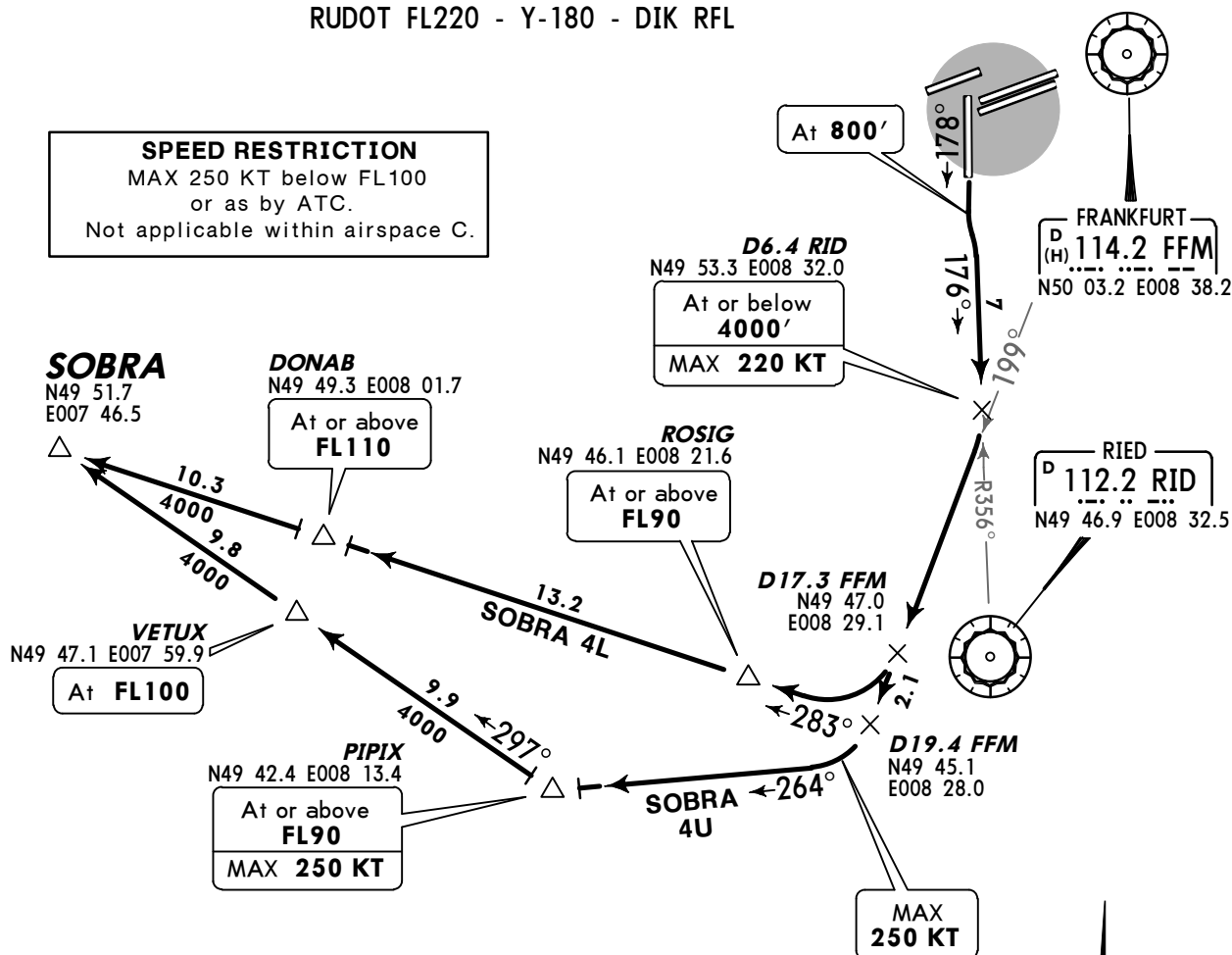
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also  
noise abatement procedures (refer to 10-4). Strict adherence within  
the limits of aircraft performance is mandatory. 3. EXPECT close-in  
obstacles. 4. Wind shears and increased turbulences must be expected  
when winds heavy. 5. For departure designation refer to 10-1P pages.

## SOBRA FOUR LIMA (SOBRA 4L) SOBRA FOUR UNIFORM (SOBRA 4U) RWY 18 DEPARTURES

FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
VIA AIRWAYS Y-180/Y-181  
FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
RUDOT FL220 - Y-180 - DIK RFL



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



These SIDs require minimum climb gradients of  
**SOBRA 4L**  
456' per NM (7.5%) until passing FL90 due to  
airspace structure. If unable to comply advise  
FRANKFURT Delivery prior to start-up and  
EXPECT routing via SOBRA 4U.

**SOBRA 4U**  
328' per NM (5.4%) until passing FL90 due to  
airspace structure. If unable to comply advise  
FRANKFURT Delivery prior to start-up and  
EXPECT routing via ULKIG 5U.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 456' per NM  | 570 | 760 | 1139 | 1519 | 1899 | 2279 |
| 328' per NM  | 410 | 547 | 820  | 1094 | 1367 | 1641 |

Initial climb clearance **4000'**

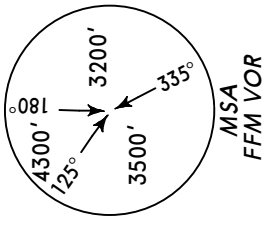
| SID             | ROUTING                                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SOBRA 4L</b> | Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, intercept FFM R-199, at D17.3 FFM ① turn RIGHT, 283° track via ROSIG and DONAB to SOBRA.                        |
| <b>SOBRA 4U</b> | Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, intercept FFM R-199, at D19.4 FFM ② turn RIGHT, 264° track to PIPIX, turn RIGHT, 297° track via VETUX to SOBRA. |

BRNAV equipment necessary after: ① D17.3 FFM/ ② D19.4 FFM.

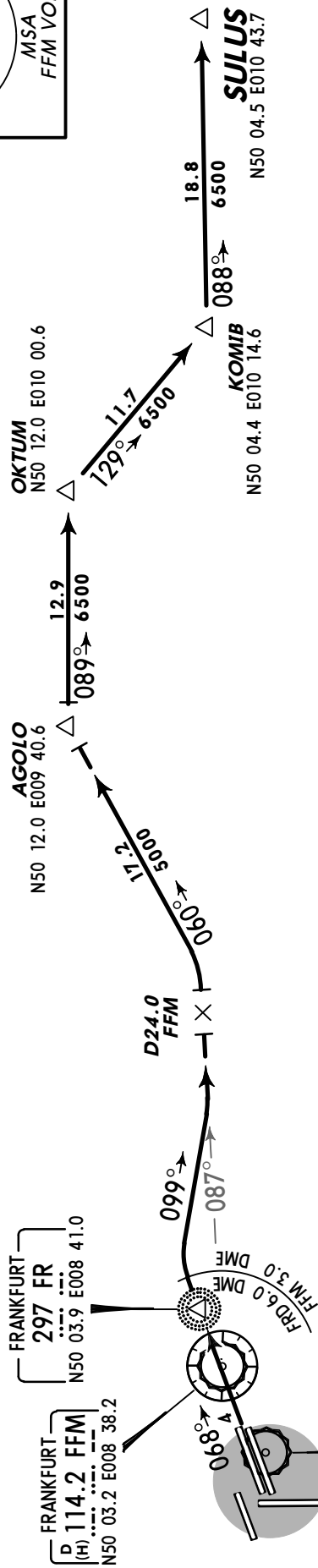
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

- Trans level: By ATC Trans alt: 5000'
1. Contact LANGEN Radar when advised by Tower.
  2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
  3. For departure designation refer to 10-1P pages.



**SULUS EIGHT DELTA (SULUS 8D)  
SULUS SIX ECHO (SULUS 6E)  
RWYS 07C/R DEPARTURES  
NOT FOR FLIGHTS DESTINATION EDDN**



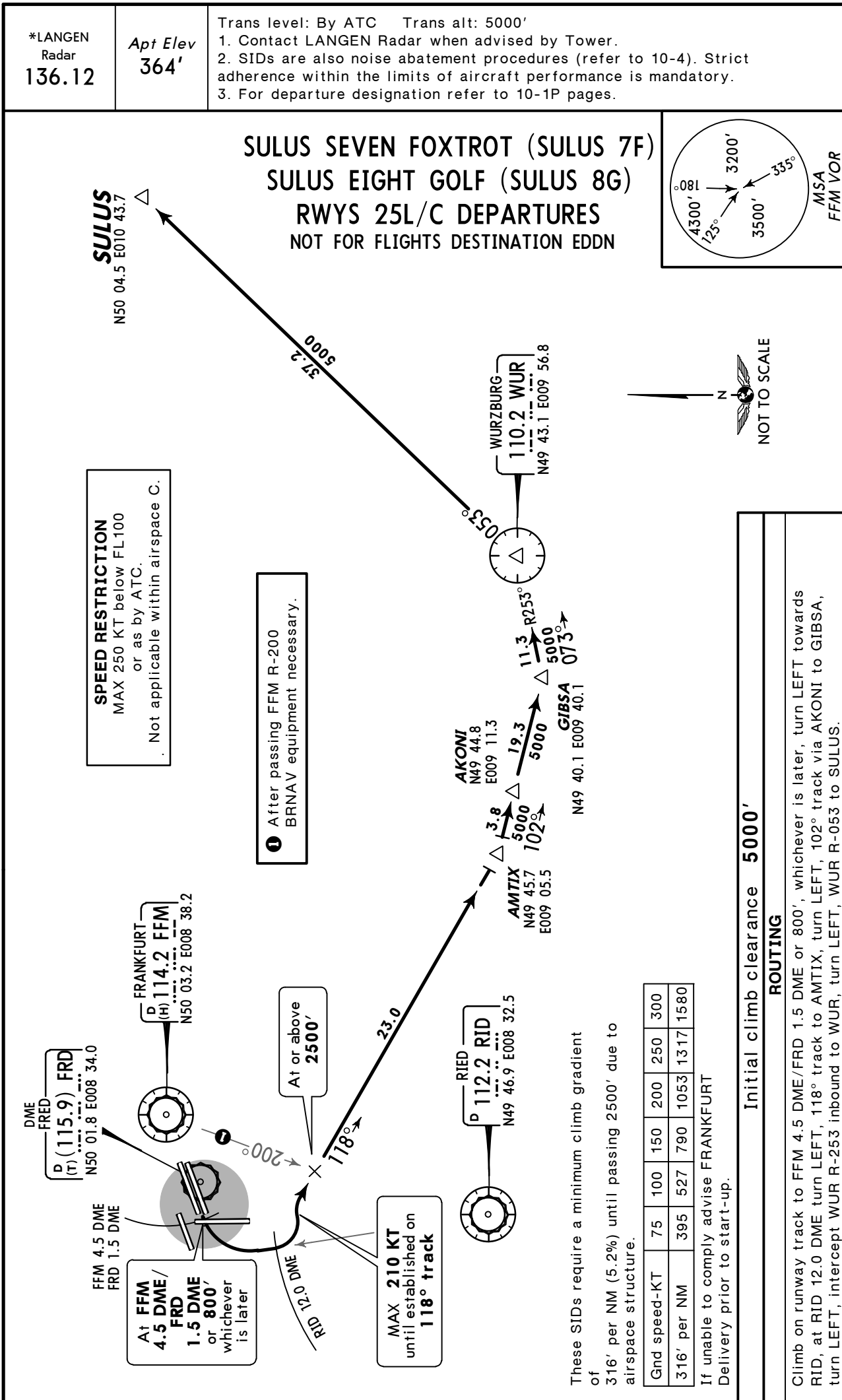
**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'**

**ROUTING**

Climb on runway track to 800', via FR to FRD 6.0 DME (FFM 3.0 DME outbound), turn RIGHT, 099° track, turn LEFT, intercept FFM R-087 to D24.0 FFM ①, turn LEFT, 060° track to AGOLO, turn RIGHT, 089° track to OKTUM, turn RIGHT, 129° track to KOMIB, turn LEFT, 088° track to SULUS.

① After D24.0 FFM BRNAV equipment necessary.



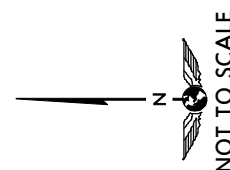
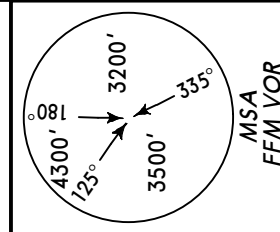
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**SULUS**  
N50 04.5 E010 43.7

**SULUS SEVEN LIMA (SULUS 7L)  
SULUS SEVEN SIERRA (SULUS 7S)  
RWY 18 DEPARTURES  
NOT FOR FLIGHTS DESTINATION EDDN**



**SULUS 7S**

This SID requires a minimum climb gradient of 565' per NM (9.3 %) until passing 2500' due to airspace structure.

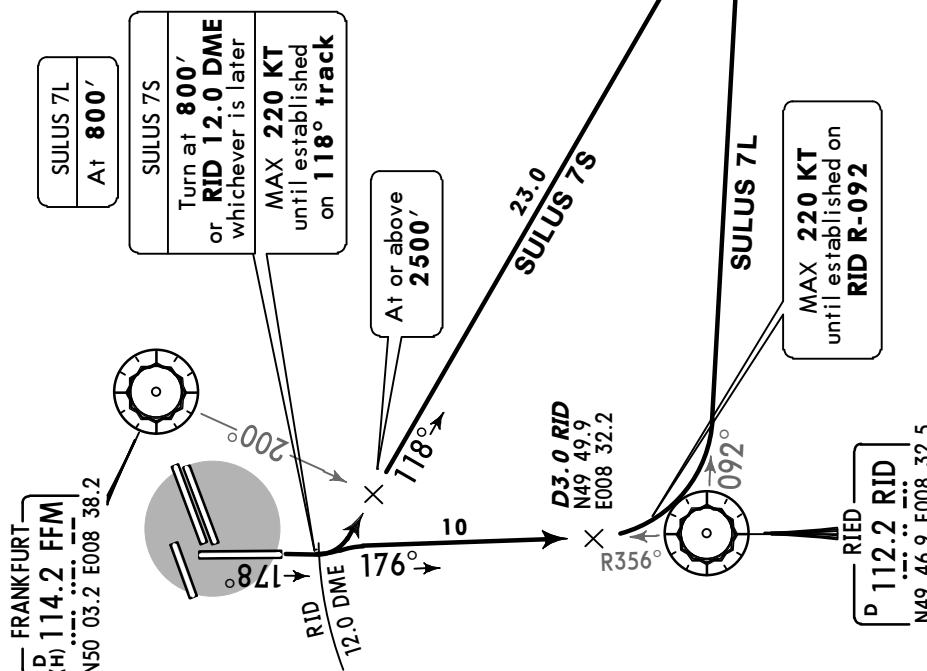
| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT Delivery prior to start-up and EXPECT routing via SULUS 7L.

**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



Initial climb clearance **4000'**

**ROUTING**

**SULUS 7L** Climb on runway track to 800', intercept RID R-356 inbound to D3.0 RID, turn LEFT, intercept RID R-092 to AMTIX ①, turn RIGHT, 102° track via AKONI to GIBSA, turn LEFT, intercept WUR R-253 inbound to WUR, turn LEFT, WUR R-053 to SULUS.

**SULUS 7S** Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, 118° track to AMTIX, turn LEFT, 102° track via AKONI to GIBSA, turn LEFT, intercept WUR R-253 inbound to WUR, turn LEFT, WUR R-053 to SULUS.

After AMTIX ① /passing FFM R-200 ② BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

## TAUNUS FOUR QUEBEC (TAU 4Q)

## RWYS 25L/C DEPARTURE

NON RNAV (ENROUTE ONLY) EQUIPPED AIRCRAFT ONLY

DELAY HAS TO BE EXPECTED

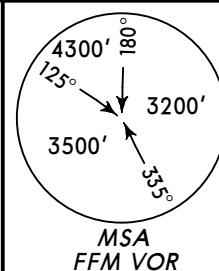
FURTHER ROUTING TO DESTINATION SHALL BE BASED ON VOR AND

HAS TO BE COORDINATED WITH ATC PRIOR TO START-UP

NO RNAV OVERLAY EXISTING

MAX FL90

SPECIAL PERMISSION NEEDED PRIOR TO FLIGHT

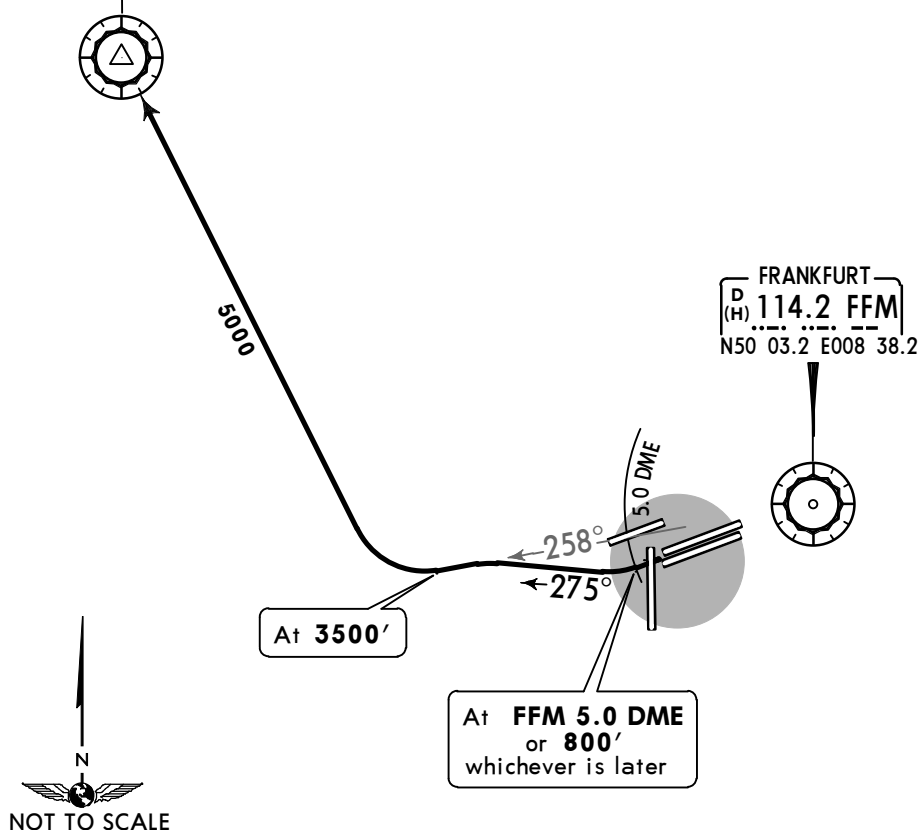


TAUNUS  
D (L) 116.7 TAU  
N50 15.0 E008 09.8

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

Initial climb clearance **5000'**

## ROUTING

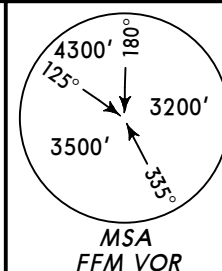
Climb on runway track to FFM 5.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track), intercept FFM R-258, at 3500' turn RIGHT to TAU, but not before reaching FFM R-258.

\*LANGEN  
Radar  
120.15

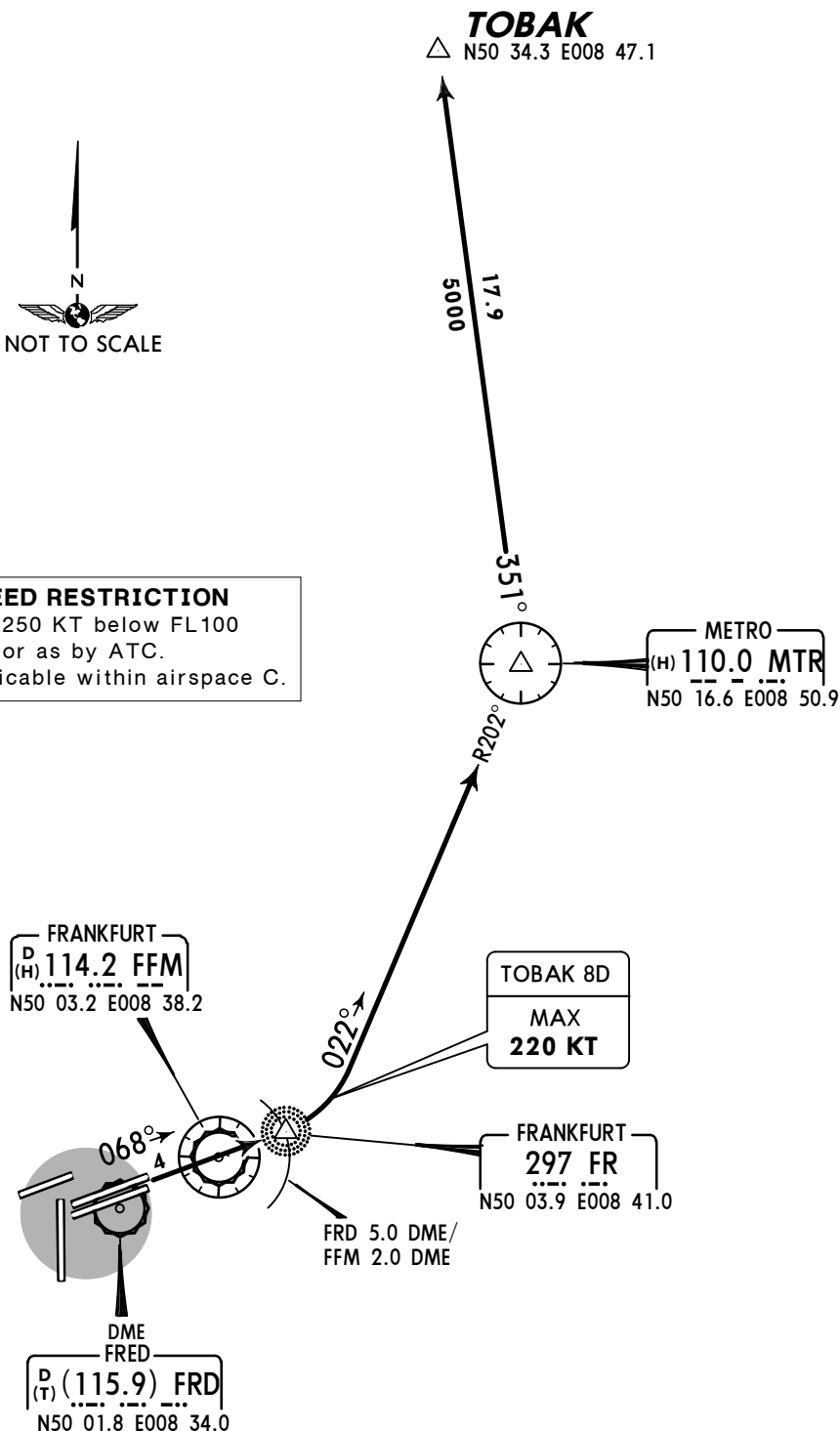
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**TOBAK EIGHT DELTA (TOBAK 8D)  
TOBAK SEVEN ECHO (TOBAK 7E)  
RWYS 07C/R DEPARTURES  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10**



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **5000'**

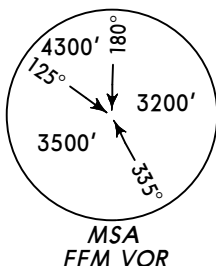
**ROUTING**

Climb on runway track to 800', to FR (FRD 5.0 DME/FFM 2.0 DME outbound), turn **LEFT immediately**, intercept MTR R-202 inbound to MTR ①, turn **LEFT**, MTR R-351 to TOBAK.

① After MTR BRNAV equipment necessary.

Trans level: By ATC    Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.



TOBAK FOUR FOXTROT (TOBAK 4F)  
TOBAK FIVE GOLF (TOBAK 5G)  
TOBAK FOUR JULIETT (TOBAK 4J)  
RWYS 25L/C DEPARTURES  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10

 **TOBAK**  
N50 34.3  
E008 47.1

**TESGA**  
N50 26.7 E008 37.1

**TABUM**  
N50 17.5 E008 24.3

TAUNUS  
D 116.7 TAU  
(L) N50 15.0 E008 09.8

NOT TO SCALE

③ FFM 5.0 DME/  
FRD 2.0 DME

**D11.4 TAU**  
N50 06.0 E008 20.7

**D9.6 TAU**  
N50 06.6 E008 17.0

At or above  
4400'

### D9.7 FFM

N50 01.4 E008 23.5  
At **D9.7 FFM**  
or **3500'**  
whichever is later

FRANKFURT  
D  
(H) 114.2 FFM  
N50 03.2 E008 38.2

DME  
FRED  
D (115.9) FRD  
(T) ... ..  
N50 01.8 E008 34.0

**TOBAK 4F, 4J**

These SIDs require a minimum climb gradient of 729' per NM (12%) until FFM 8.4 DME (4.5 NM after DER) due to airspace structure.

|              |     |      |      |      |      |      |
|--------------|-----|------|------|------|------|------|
| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
| 729' per NM  | 911 | 1215 | 1823 | 2430 | 3038 | 3646 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up

**TOBAK 4J:** and EXPECT routing via TOBAK 5G.

Initial climb clearance **5000'**

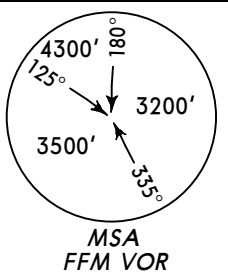
| SID                 | ROUTING                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TOBAK 4F, 4J</b> | Climb on runway track to FFM 5.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track) to FFM 8.4 DME, turn RIGHT, intercept TAU R-141 inbound to D11.4 TAU <b>①</b> , turn RIGHT, 016° track to TABUM, turn RIGHT, 040° track to TESGA, turn LEFT, 038° track to TOBAK.                                             |
| <b>TOBAK 5G</b>     | Climb on runway track to FFM 5.0 DME/FRD 2.0 DME or 800', whichever is later, turn RIGHT, 275° track (RWY 25L: 278° track), intercept FFM R-258 to D9.7 FFM or 3500', whichever is later, turn RIGHT, intercept TAU R-150 inbound to D9.6 TAU turn RIGHT, 027° track to TABUM, 040° track to TESGA, turn LEFT, 038° track to TOBAK. <b>②</b> |

BRNAV equipment necessary after: ❶ D11.4 TAU/ ❷ D9.6 TAU.

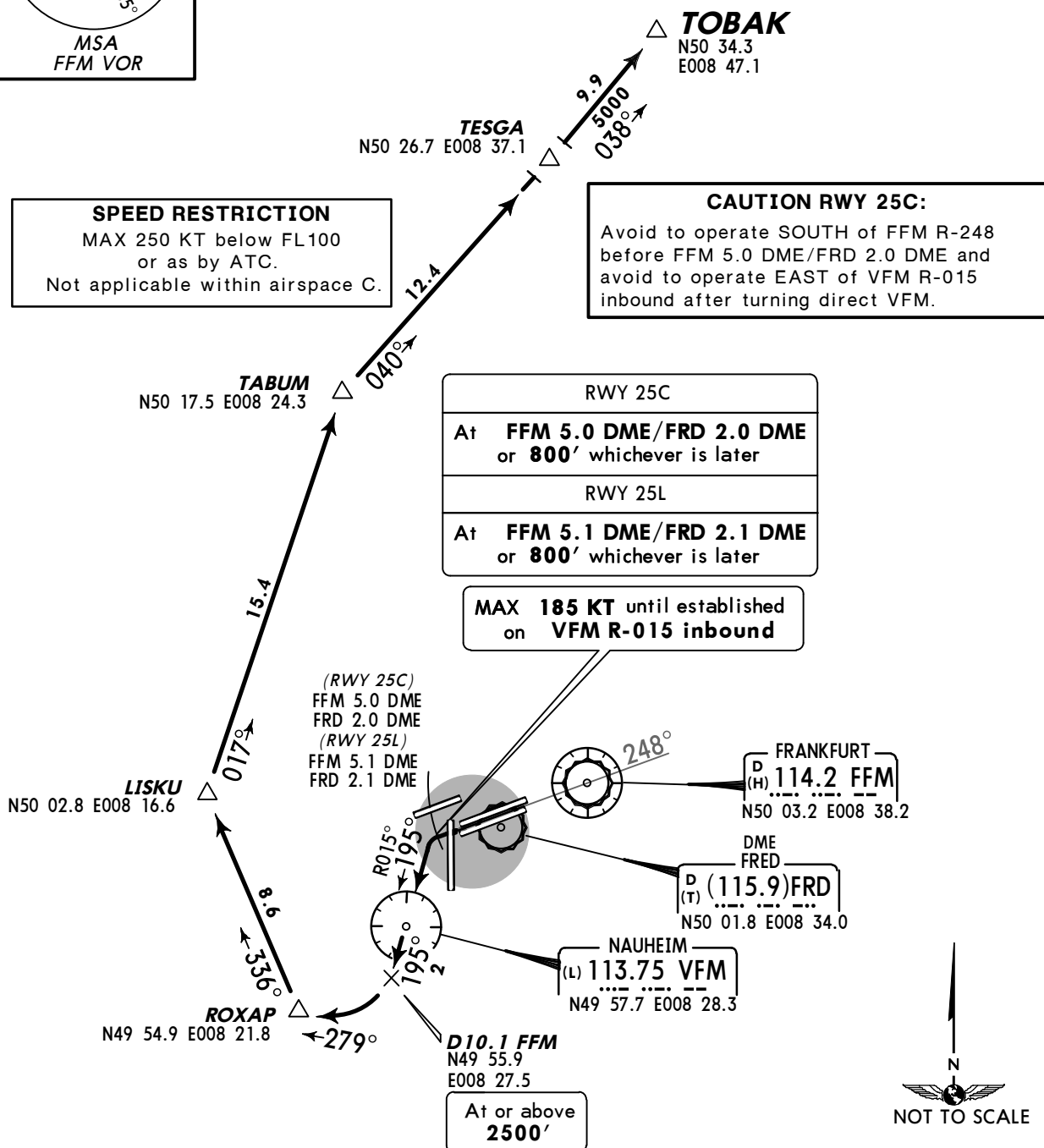
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



## TOBAK TWO MIKE (TOBAK 2M) RWYS 25L/C DEPARTURE



This SID requires a minimum climb gradient  
of  
249' per NM (4.1%) until passing 2500' due  
to airspace structure

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance 5000'

### ROUTING

Climb on runway track to FFM 5.0 DME/FRD 2.0 DME (Rwy 25C)/FFM 5.1 DME/FRD 2.1 DME (Rwy 25L) or 800', whichever is later, turn LEFT, intercept VFM R-015 inbound via VFM to D10.1 FFM ① turn RIGHT, 279° track to ROXAP, turn RIGHT, 336° track to LISKU, turn RIGHT, 017° track to TABUM, turn RIGHT, 040° track to TESGA, turn LEFT, 038° track to TOBAK.

① After D10.1 FFM BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

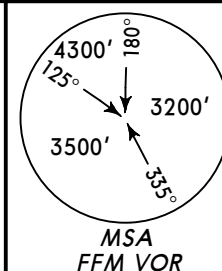
# TOBAK SEVEN NOVEMBER (TOBAK 7N)

## RWYS 25L/C DEPARTURE

NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10

**TOBAK**

N50 34.3  
E008 47.1



### SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.

**TESGA**

N50 26.7 E008 37.1

**TABUM**  
N50 17.5 E008 24.3



FRANKFURT  
D(H) 114.2 FFM  
N50 03.2 E008 38.2

At FFM 4.5 DME/  
FRD 1.5 DME  
or 800'  
whichever is later

MAX 220 KT  
until established on  
184° track

FRANKFURT  
D(T) 115.9 FRD  
N50 01.8 E008 34.0

D16.0 RID  
N49 55.3 E008 11.5

D14.0 FFM  
N49 53.1 E008 23.2

RIED  
D 112.2 RID  
N49 46.9 E008 32.5

Initial climb clearance 5000'

### ROUTING

Climb on runway track to FFM 4.5 DME/FRD 1.5 DME or 800', whichever is later, turn LEFT, 184° track, intercept FFM R-223 to D14.0 FFM, turn RIGHT, intercept RID R-301 to D16.0 RID ①, turn RIGHT, 023° track to TABUM, turn RIGHT, 040° track to TESGA, turn LEFT, 038° track to TOBAK.

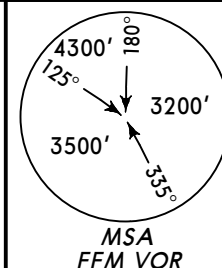
① After D16.0 RID BRNAV equipment necessary.

\*LANGEN  
Radar  
120.15

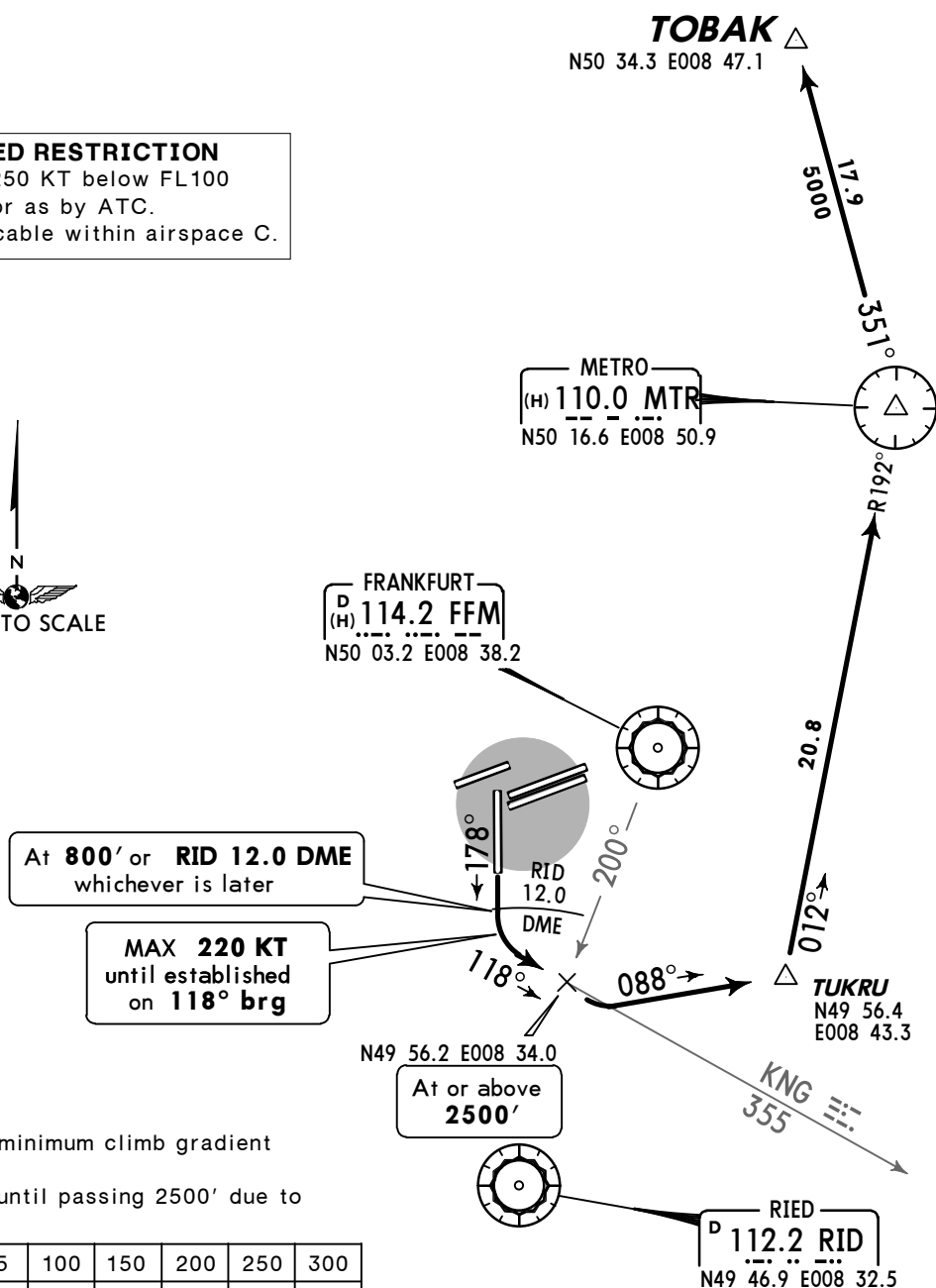
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**TOBAK TWO ROMEO (TOBAK 2R)**  
**RWY 18 DEPARTURE**  
**BY ATC**  
**WILL ONLY BE ASSIGNED BETWEEN 2300-0500LT**  
**NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10**



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

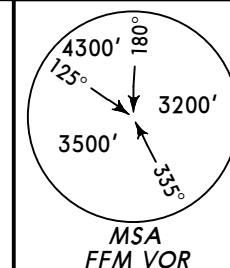
Initial climb clearance **4000'**

**ROUTING**

Climb on runway track to 800' or RID 12.0 DME, whichever is later, turn LEFT, intercept 118° bearing towards KNG, when passing FFM R-200 turn LEFT, 088° track to TUKRU, turn LEFT, intercept MTR R-192 inbound to MTR, turn LEFT, MTR R-351 to TOBAK.

① After FFM R-200 BRNAV equipment necessary.

**TOBAK SIX SIERRA (TOBAK 6S)  
RWY 18 DEPARTURE  
BY ATC  
WILL ONLY BE ASSIGNED  
WHEN LANDING DIRECTION IS RWY 25  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10**



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

**TOBAK**  
N50 34.3 E008 47.1

**TESGA**  
N50 26.7 E008 37.1

**TABUM**  
N50 17.5 E008 24.3

**D16.0 RID**  
N49 55.3 E008 11.5

**D14.0 FFM**  
N49 53.1 E008 23.2

**D10.0 FFM**  
N49 53.1 E008 23.2

**FRANK**  
N50 03.2 E008 114.2

**RIED**  
N49 46.9 E008 32.5

**At 800'**

**MAX 220 KT**

**NOT TO SCALE**

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*Apt Elev*  
**364'**

Trans level: By ATC    Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**TOBAK**  
N50 34.3 E008 47.1 

**TESGA**  
N50 26.7 E008 37.1

**MABOB**  
N50 17.7 E008 32.6 ▲

FRANKFURT  
D  
(H) 114.2 FFM  
N50 03.2 E008 38.2

WIESBADEN  
399 WBD  
... ..  
N50 02.9 E008 19.7

**RUDUS**  
N50 02 9 E008 04 7

### SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



**OBOXO**  
N49 55.4  
E007 22.2

**ULKIG**  
N49 52.2  
E007 43.2

**GISNO**  
N49 45.9  
E007 51.4

MAX  
250 KT

**PIPIX**  
N49 42.4  
E008 13.4

MAX  
250 KT

**D6.4 RID**  
N49 53.3 E008 32.0

MAX  
220 KT

**D19.4 FFM**  
N49 45.0  
E008 28.0

RIED  
D 112.2 RID  
N49 46.9 E008 32

MSA  
FFM VOR

Initial climb clearance **4000'**

## ROUTING

Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, intercept FFM R-199 to D19.4 FFM **①**, turn RIGHT, 264° track to PIPX, turn RIGHT, 283° track to GISNO, turn RIGHT, 318° track to ULKIG, turn LEFT, 282° track to OBOXO, turn RIGHT, 073° track to RUDUS, turn RIGHT, intercept 088° bearing to WBD, turn LEFT, 028° bearing to MABOB, turn LEFT, 016° track to TEGA, turn RIGHT, 038° track to TOBAK.

➊ After D19.4 FFM BRNAV equipment necessary.

\*LANGEN Radar  
ULKIG 1S  
120.15  
ULKIG 5U  
136.12

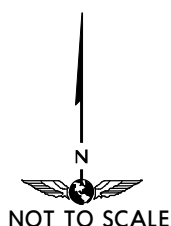
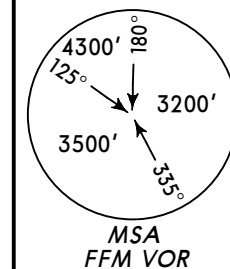
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

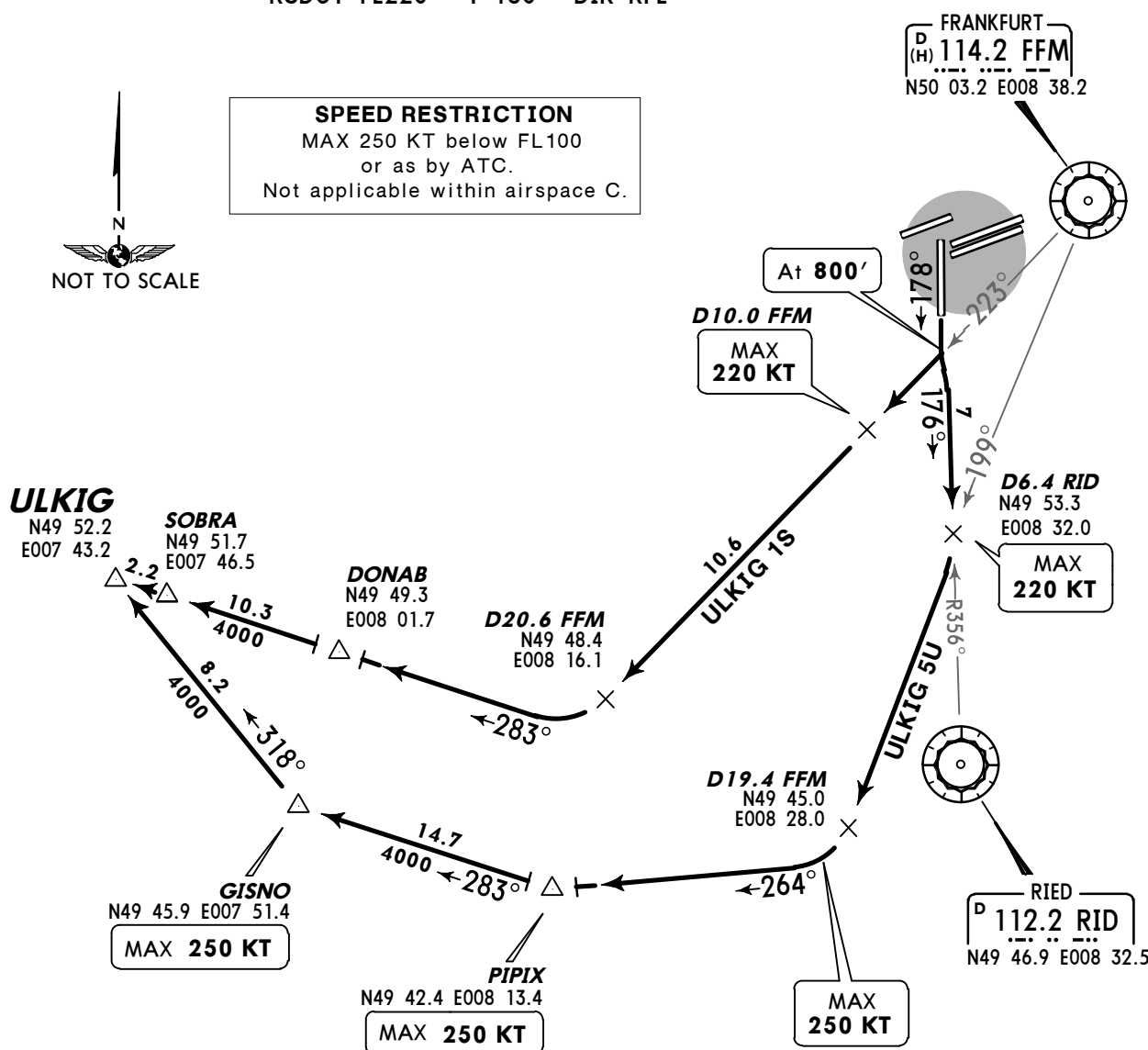
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**ULKIG ONE SIERRA (ULKIG 1S)  
ULKIG FIVE UNIFORM (ULKIG 5U)  
RWY 18 DEPARTURES**

FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
VIA AIRWAYS Y-180/Y-181  
FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
RUDOT FL220 - Y-180 - DIK RFL



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **4000'**

| SID                                                                   | ROUTING                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ULKIG 1S</b><br>Only to be used<br>when landing<br>direction is 25 | Climb on runway track to 800', turn RIGHT, intercept FFM R-223, at D20.6 FFM ① turn RIGHT, 283° track via DONAB and SOBRA to ULKIG.                                                                                        |
| <b>ULKIG 5U</b>                                                       | Climb on runway track to 800', intercept RID R-356 inbound to D6.4 RID, turn RIGHT, intercept FFM R-199, at D19.4 FFM ② turn RIGHT, 264° track to PIPIX, turn RIGHT, 283° track to GISNO, turn RIGHT, 318° track to ULKIG. |

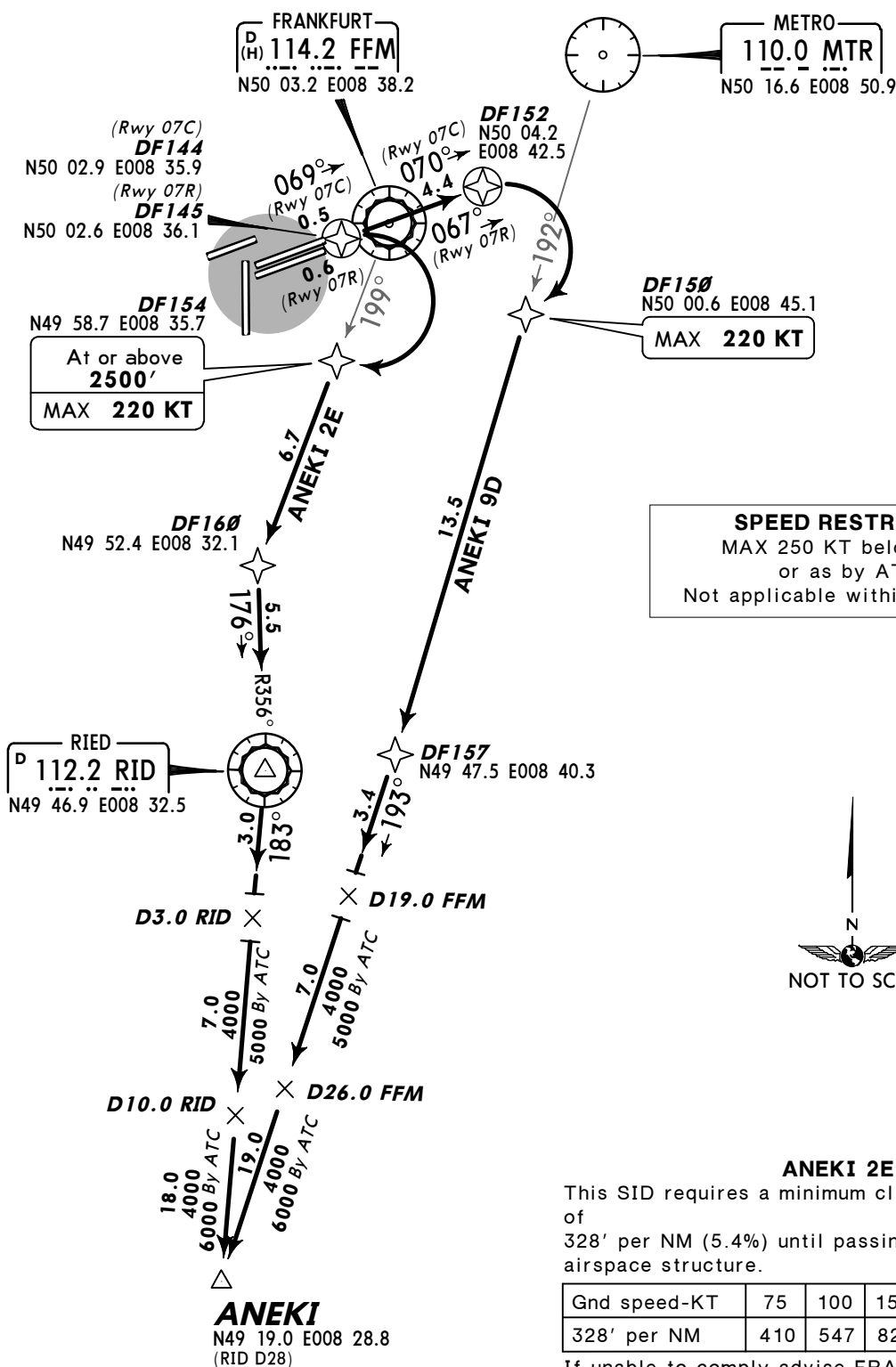
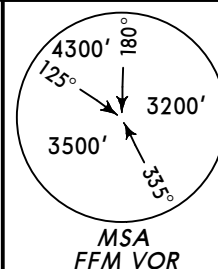
BRNAV equipment necessary after: ① D20.6 FFM/ ② D19.4 FFM.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**ANEKI NINE DELTA (ANEKI 9D) [ANEK9D]**  
**ANEKI TWO ECHO (ANEKI 2E) [ANEK2E]**  
**RWYS 07C/R RNAV DEPARTURES (OVERLAY 10-3B)**

**ANEKI 2E**

This SID requires a minimum climb gradient of 328' per NM (5.4%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 328' per NM  | 410 | 547 | 820 | 1094 | 1367 | 1641 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

| SID             | ROUTING                                                                          |
|-----------------|----------------------------------------------------------------------------------|
| <b>ANEKI 9D</b> | (800'+) - DF152 - DF150 (K220-) - DF157 - ANEKI.                                 |
| <b>ANEKI 2E</b> | (800'+) - DF144 (07C)/DF145 (07R) - DF154 (2500'+; K220-) - DF160 - RID - ANEKI. |

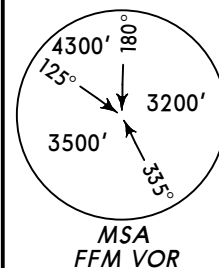
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\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

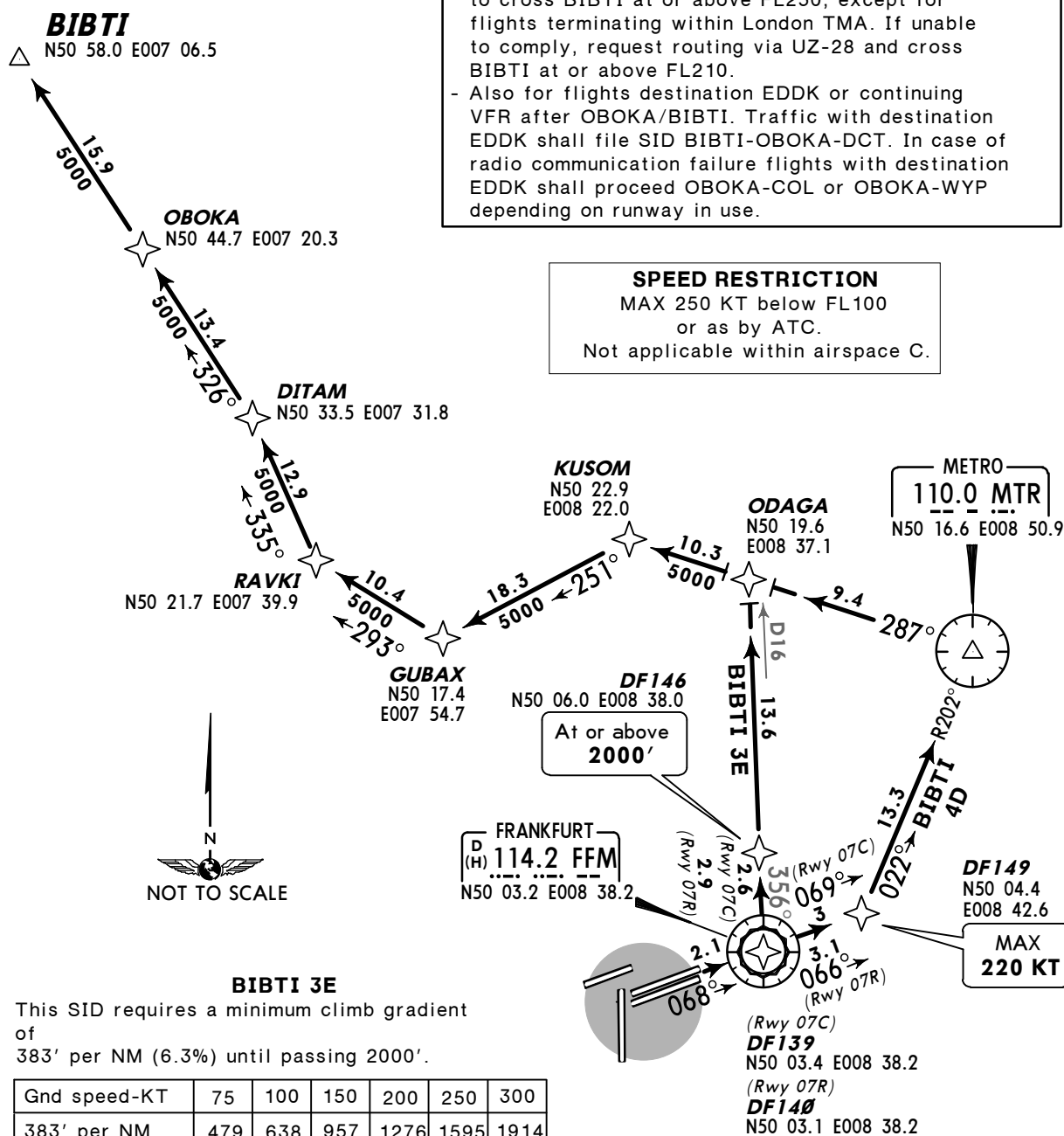
1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**BIBTI FOUR DELTA (BIBTI 4D) [BIBT4D]  
BIBTI THREE ECHO (BIBTI 3E) [BIBT3E]  
RWYS 07C/R RNAV DEPARTURES (OVERLAY 10-3D)**



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

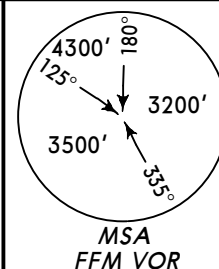
| SID             | ROUTING                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>BIBTI 4D</b> | (800'+) - DF149 (K220-) - MTR - ODAGA - KUSOM - GUBAX - RAVKI - DITAM - OBOKA - BIBTI.                      |
| <b>BIBTI 3E</b> | (800'+) - DF139 (07C)/DF140 (07R) - DF146 (2000'+) - ODAGA - KUSOM - GUBAX - RAVKI - DITAM - OBOKA - BIBTI. |

\*LANGEN  
Radar  
120.15

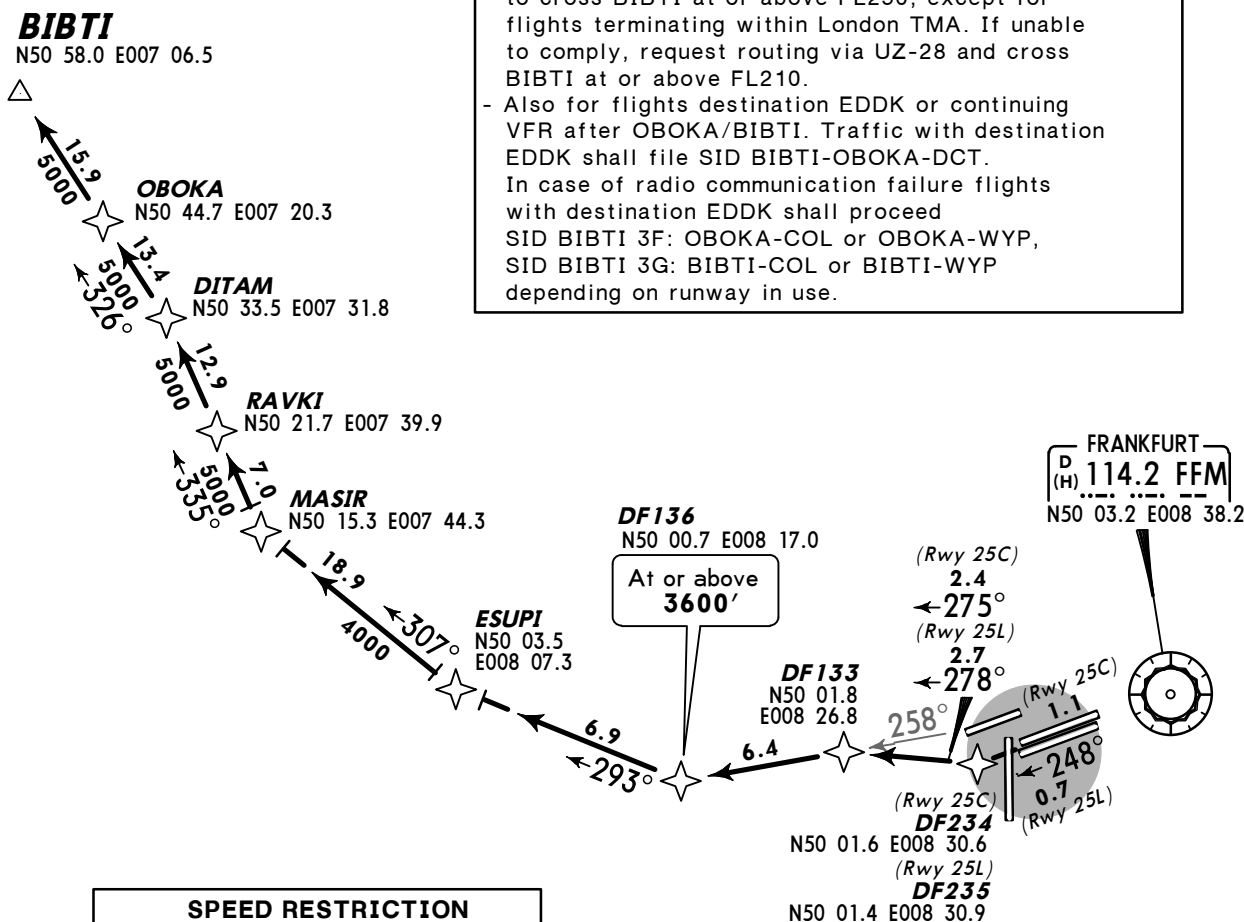
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**BIBTI THREE FOXTROT (BIBTI 3F)[BIBT3F]  
BIBTI THREE GOLF (BIBTI 3G)[BIBT3G]  
RWYS 25L/C RNAV DEPARTURES (OVERLAY 10-3E)**



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed SID BIBTI 3F: OBOKA-COL or OBOKA-WYP, SID BIBTI 3G: BIBTI-COL or BIBTI-WYP depending on runway in use.



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

These SIDs require a minimum climb gradient of 352' per NM (5.8%) until passing 3600', due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 352' per NM  | 441 | 587 | 881 | 1175 | 1468 | 1762 |

If unable to comply advise FRANKFURT Delivery prior to start-up.



Initial climb clearance **5000'**

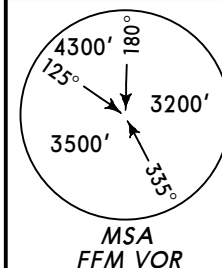
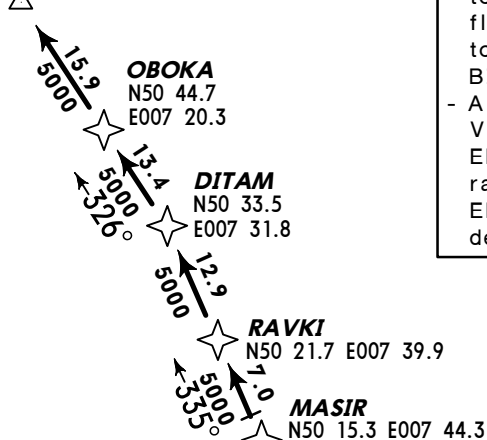
**ROUTING**

(800'+) - DF234 (25C)/DF235 (25L) - DF133 - DF136 (3600'+) - ESUPI - MASIR - RAVKI - DITAM - OBOKA - BIBTI.

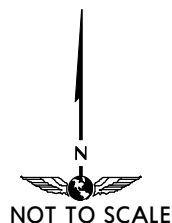
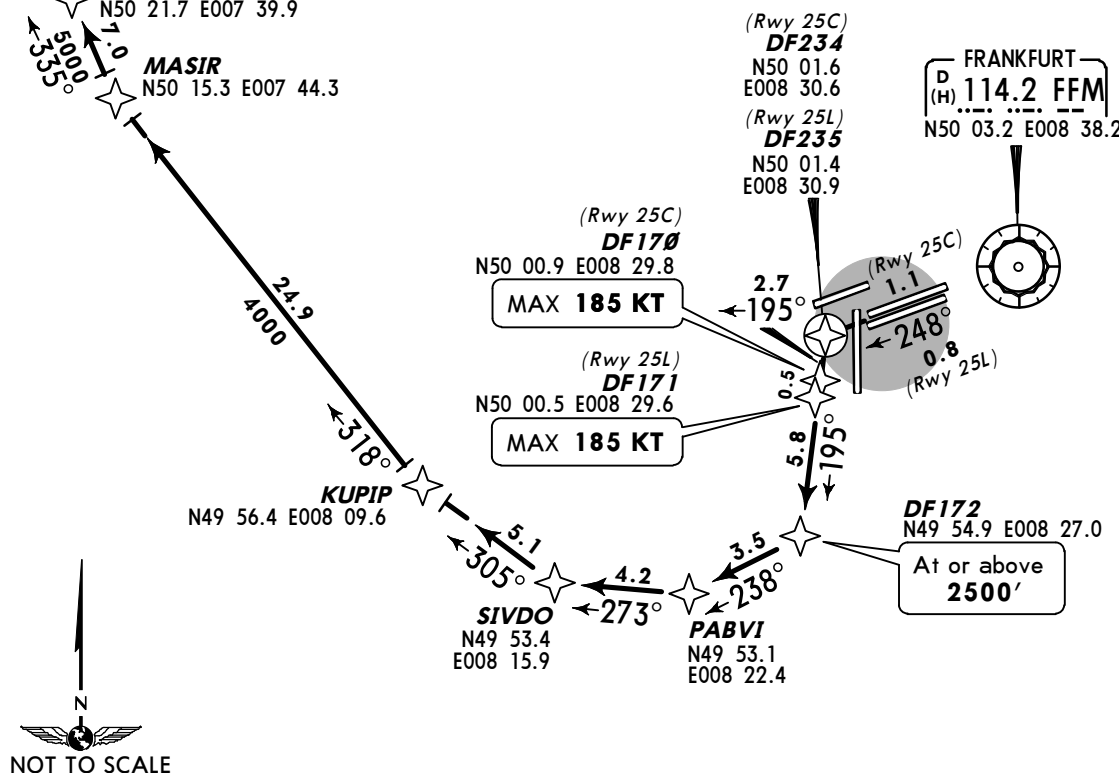
\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**BIBTI TWO MIKE (BIBTI 2M) [BIBT2M]  
RWYS 25L/C RNAV DEPARTURE (OVERLAY 10-3E1)****SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.**BIBTI**  
N50 58.0 E007 06.5

- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.



This SID requires a minimum climb gradient of 249' per NM (4.1%) until passing 2500' due to airspace structure

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

**Initial climb clearance 5000'****ROUTING**

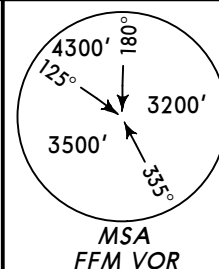
(800+) - DF234 (25C)/DF235 (25L) - DF170 (25C; K185-)/DF171 (25L; K185-) - DF172 (2500'+) - PABVI - SIVDO - KUIP - MASIR - RAVKI - DITAM - OBOKA - BIBTI.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

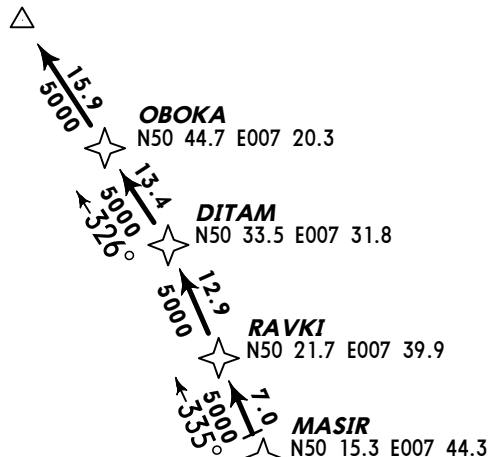
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**BIBTI FOUR NOVEMBER (BIBTI 4N) [BIBT4N]  
RWYS 25L/C RNAV DEPARTURE (OVERLAY 10-3E2)**

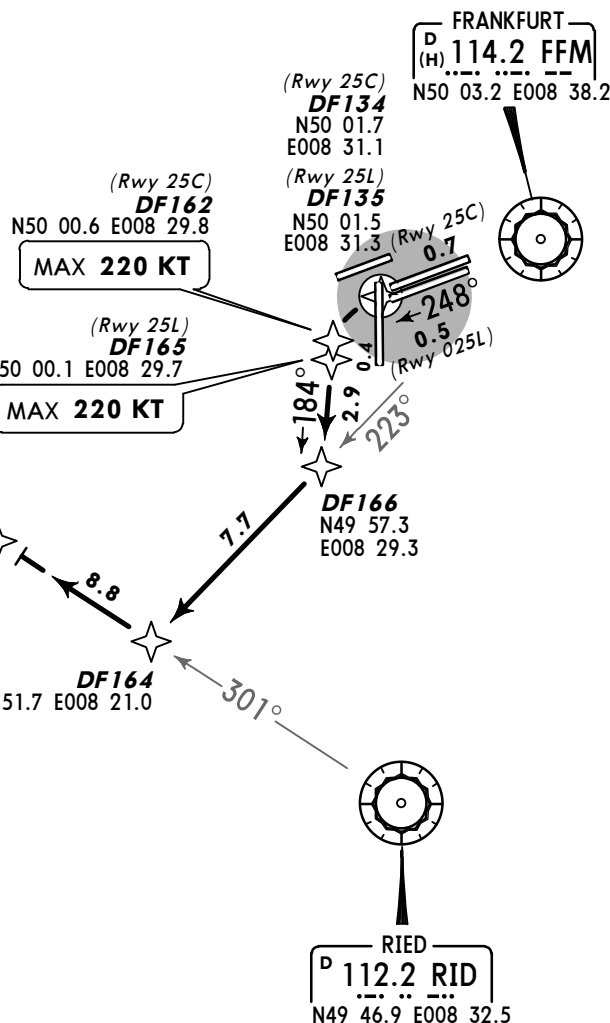
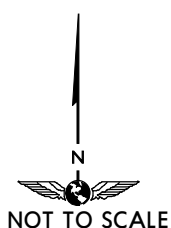


**BIBTI**

N50 58.0 E007 06.5



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **5000'**

**ROUTING**

(800'+) - DF134 (25C)/DF135 (25L) - DF162 (25C; K220-)/DF165 (25L; K220-) - DF166 - DF164 - KUPIP - MASIR - RAVKI - DITAM - OBOKA - BIBTI.

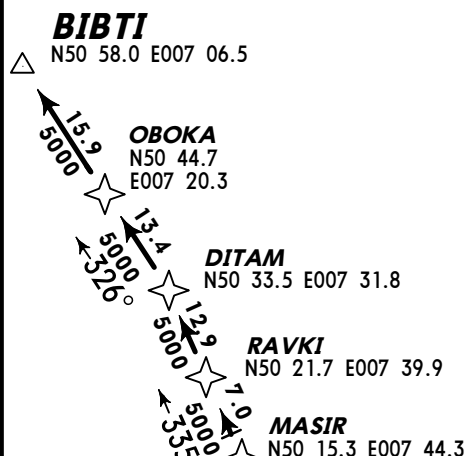
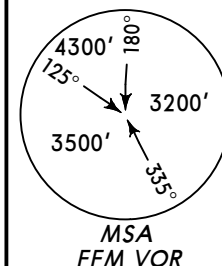
\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**BIBTI TWO LIMA (BIBTI 2L)[BIBT2L]**  
**BIBTI FOUR SIERRA (BIBTI 4S)[BIBT4S]**  
BY ATC

**RWY 18 RNAV DEPARTURES (OVERLAY 10-3E3)**  
WILL ONLY BE ASSIGNED WHEN LANDING DIRECTION IS 25



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. Traffic with destination EDDK shall file SID BIBTI-OBOKA-DCT. In case of radio communication failure flights with destination EDDK shall proceed OBOKA-COL or OBOKA-WYP depending on runway in use.

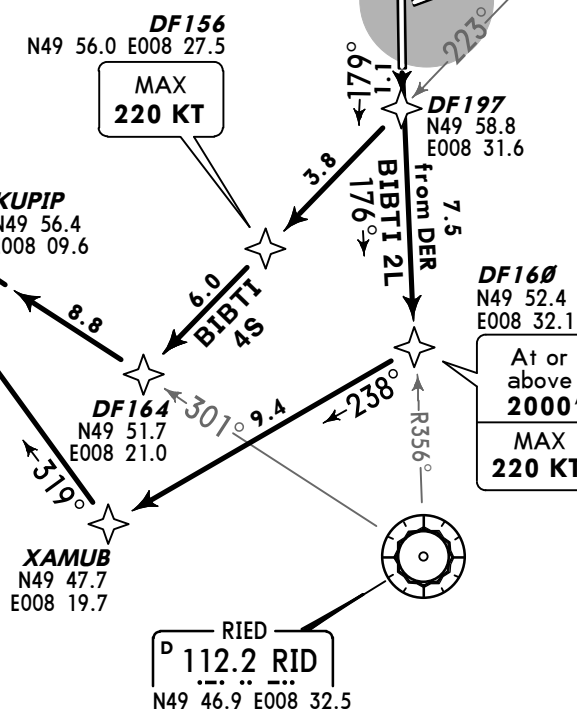
**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

**BIBTI 2L**

This SID requires a minimum climb gradient of 280' per NM (4.6%) until passing 2000' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 280' per NM  | 349 | 466 | 699 | 932 | 1165 | 1398 |

If unable to comply advise FRANKFURT Delivery prior to start-up.



Initial climb clearance **4000'**

| SID             | ROUTING                                                                                  |
|-----------------|------------------------------------------------------------------------------------------|
| <b>BIBTI 2L</b> | (800'+) - DF160 (2000'+; K220-) - XAMUB - MASIR - RAVKI - DITAM - OBOKA - BIBTI.         |
| <b>BIBTI 4S</b> | (800'+) - DF197 - DF156 (K220-) - DF164 - KUPIP - MASIR - RAVKI - DITAM - OBOKA - BIBTI. |

\*LANGEN  
Radar  
120.15

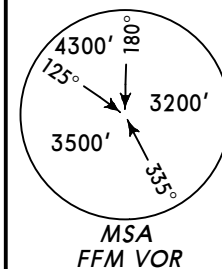
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

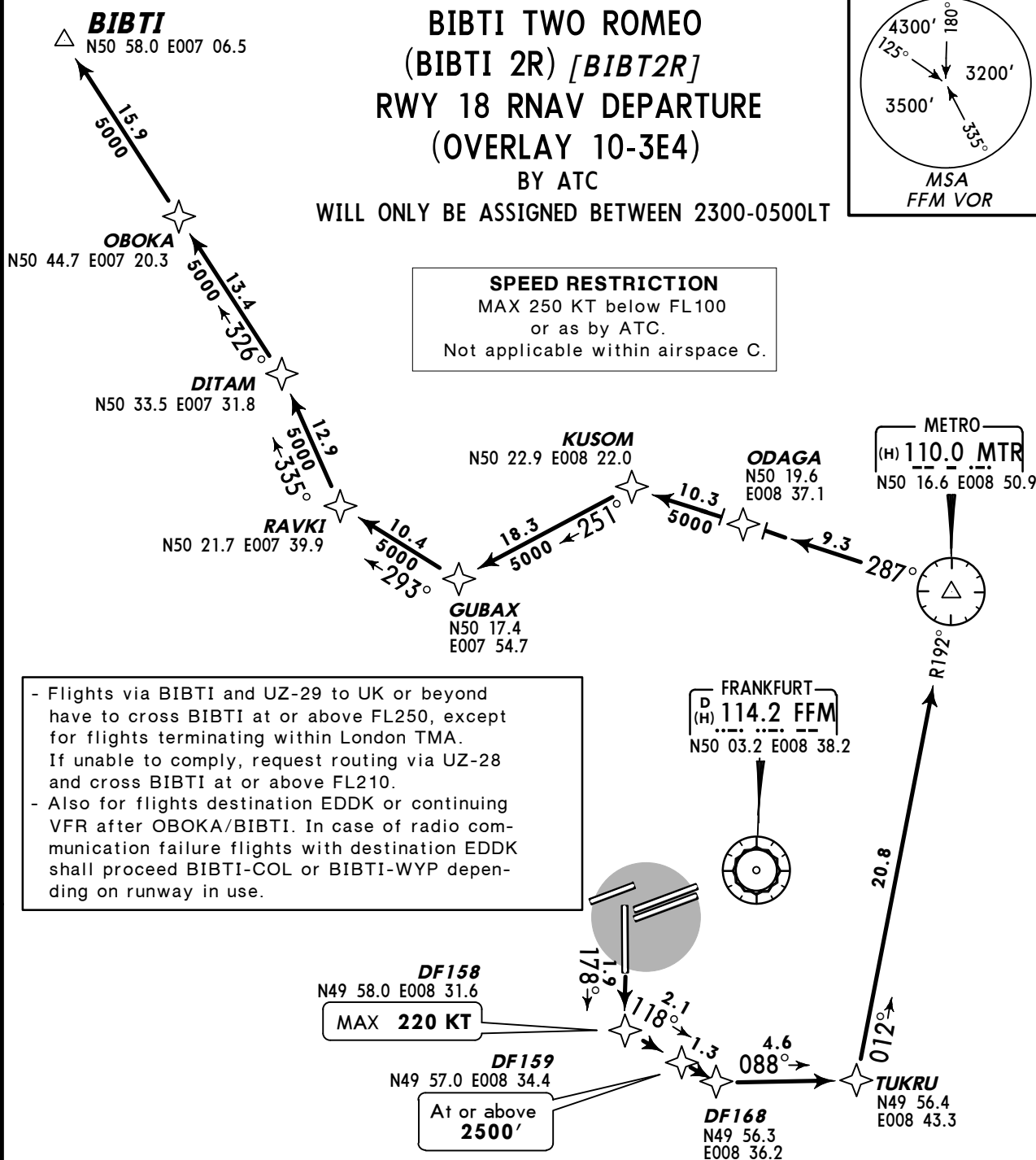
**BIBTI TWO ROMEO  
(BIBTI 2R) [BIBT2R]  
RWY 18 RNAV DEPARTURE  
(OVERLAY 10-3E4)**

BY ATC

WILL ONLY BE ASSIGNED BETWEEN 2300-0500LT



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. In case of radio communication failure flights with destination EDDK shall proceed BIBTI-COL or BIBTI-WYP depending on runway in use.

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

**ROUTING**

(800+) - DF158 (K220-) - DF159 (2500'+) - DF168 - TUKRU - MTR - ODAGA - KUSOM - GUBAX - RAVKI - DITAM - OBOKA - BIBTI.

*Apt Elev*  
364'

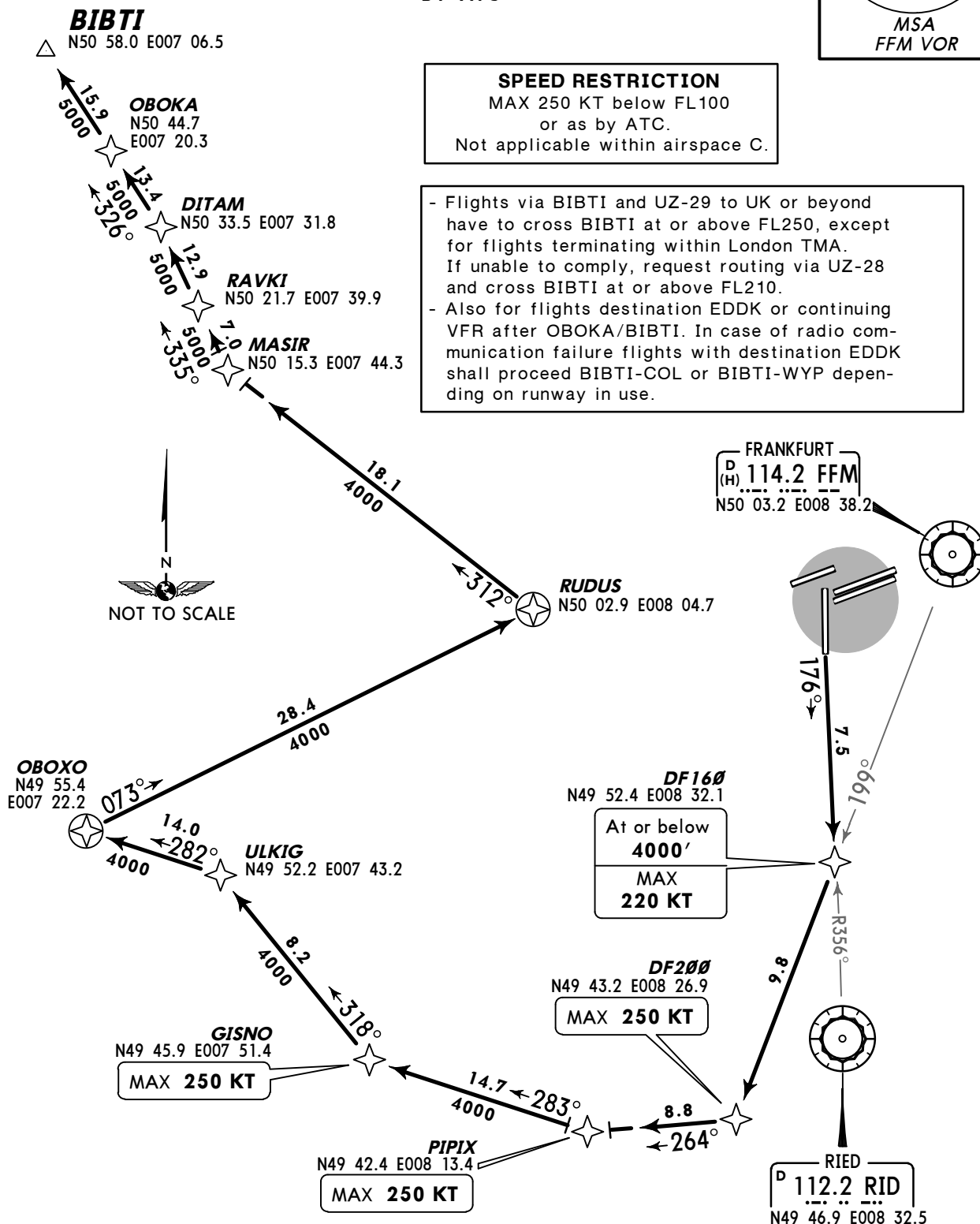
Trans level: By ATC    Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.                      2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.                      3. EXPECT close-in obstacles.    4. Wind shears and increased turbulences must be expected when winds heavy.    5. For departure designation refer to 10-1P pages.

MSA  
FFM VOR

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

- Flights via BIBTI and UZ-29 to UK or beyond have to cross BIBTI at or above FL250, except for flights terminating within London TMA. If unable to comply, request routing via UZ-28 and cross BIBTI at or above FL210.
- Also for flights destination EDDK or continuing VFR after OBOKA/BIBTI. In case of radio communication failure flights with destination EDDK shall proceed BIBTI-COL or BIBTI-WYP depending on runway in use.



## ROUTING

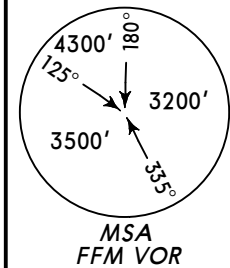
(800'+) - DF160 (4000'-; K220-) - DF200 (K250-) - PIPIX (K250-) - GISNO (K250-) - ULKIG - OBOXO - RUDUS - MASIR - RAVKI - DITAM - OBOKA - BIBTI.

\*LANGEN  
Radar  
136.12

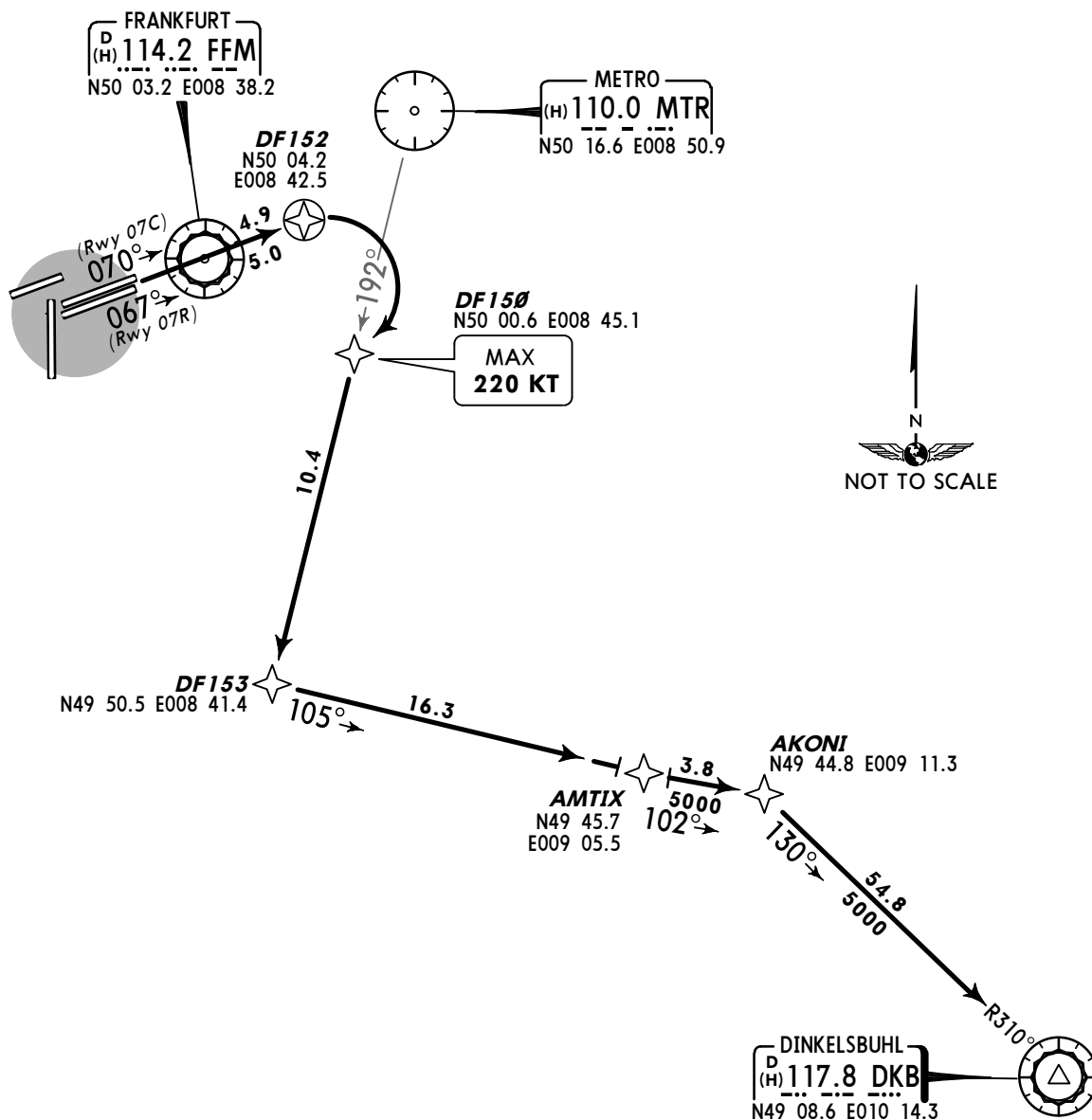
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

DINKELSBUHL NINE DELTA (DKB 9D)  
DINKELSBUHL SEVEN ECHO (DKB 7E)  
RWYS 07C/R RNAV DEPARTURES (OVERLAY 10-3E6)  
ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance 4000'

**ROUTING**

(800'+) - DF152 - DF150 (K220-) - DF153 - AMTIX - AKONI - DKB.

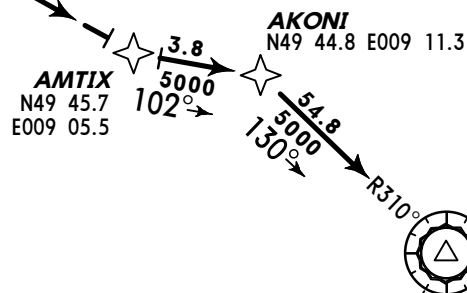
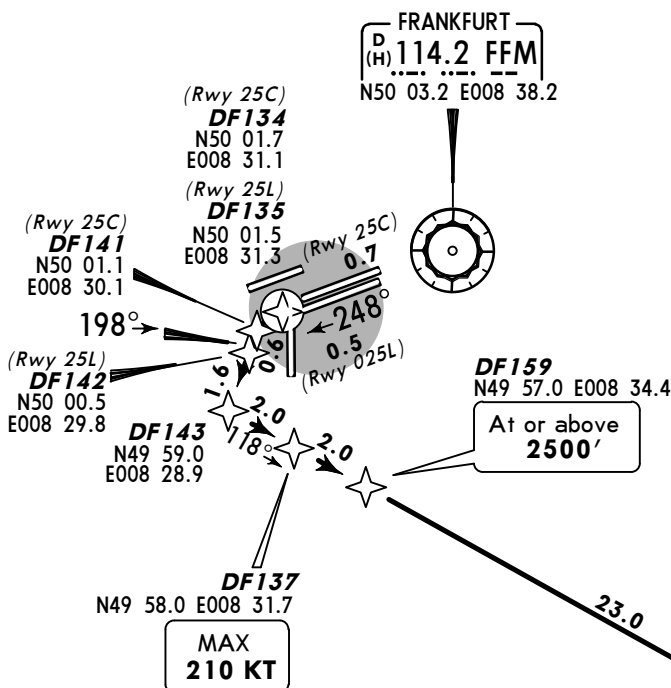
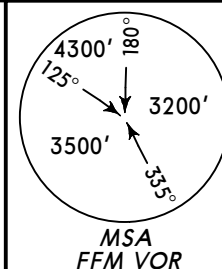
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**DINKELBUHL SIX FOXTROT (DKB 6F)**  
**DINKELBUHL SEVEN GOLF (DKB 7G)**  
**RWYS 25L/C RNAV DEPARTURES (OVERLAY 10-3E7)**  
ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR



DINKELBUHL  
D (H) 117.8 DKB  
N49 08.6 E010 14.3

These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

**ROUTING**

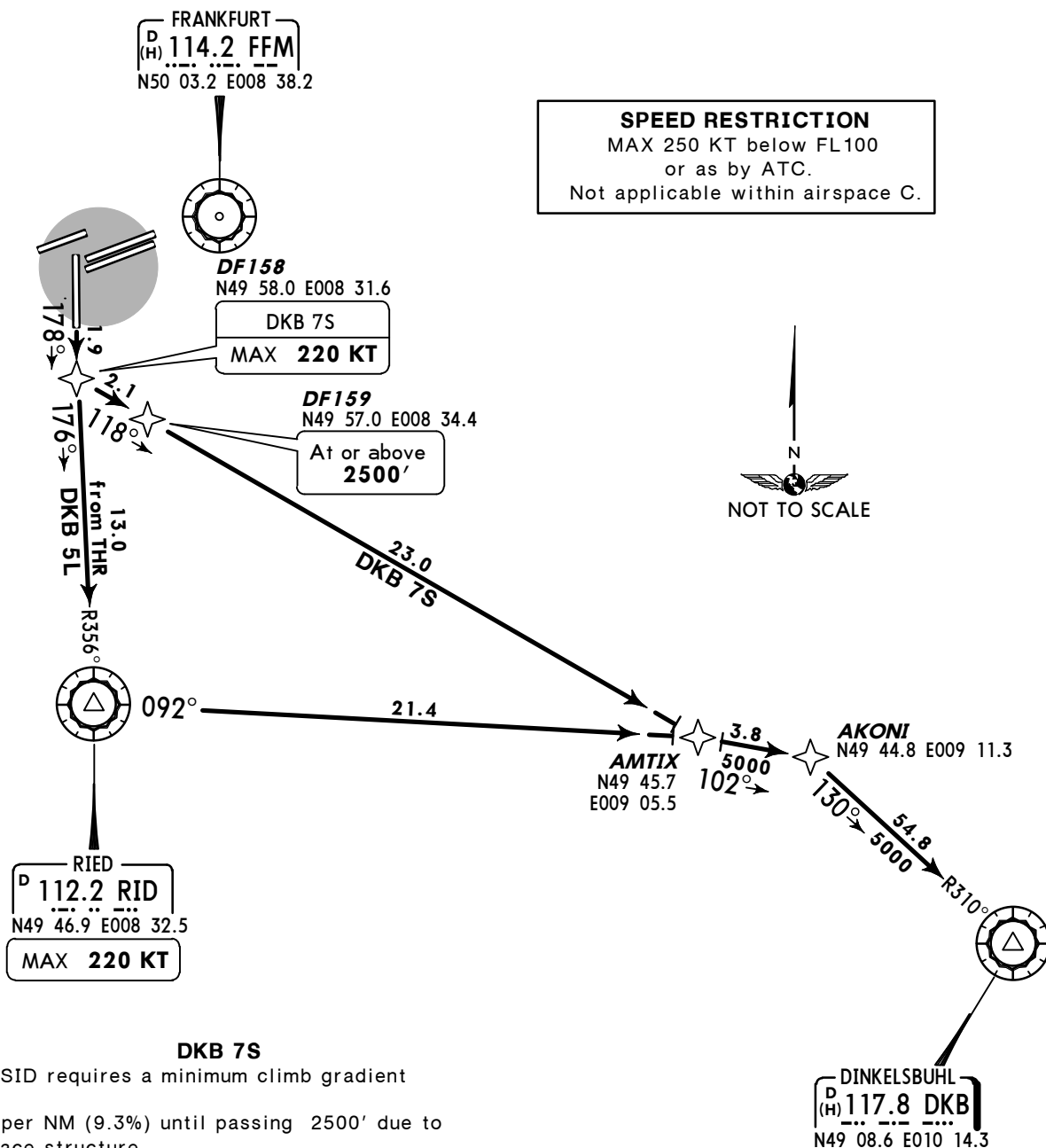
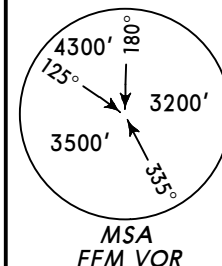
(800'+) - DF134 (25C)/DF135 (25L) - DF141 (25C)/DF142 (25L) - DF143 - DF137 (K210-) - DF159 (2500'+) - AMTIX - AKONI - DKB.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**DINKELSBUHL FIVE LIMA (DKB 5L)**  
**DINKELSBUHL SEVEN SIERRA (DKB 7S)**  
**RWY 18 RNAV DEPARTURES (OVERLAY 10-3E8)**  
**ONLY FOR FLIGHTS TERMINATING WITHIN EDMM FIR**



**DKB 7S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT routing via DKB 5L.

Initial climb clearance **4000'**

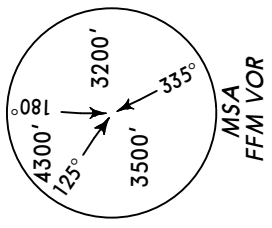
| SID           | ROUTING                                                         |
|---------------|-----------------------------------------------------------------|
| <b>DKB 5L</b> | (800'+) - RID (K220-) - AMTIX - AKONI - DKB.                    |
| <b>DKB 7S</b> | (800'+) - DF158 (K220-) - DF159 (2500'+) - AMTIX - AKONI - DKB. |

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

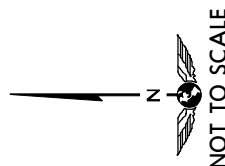
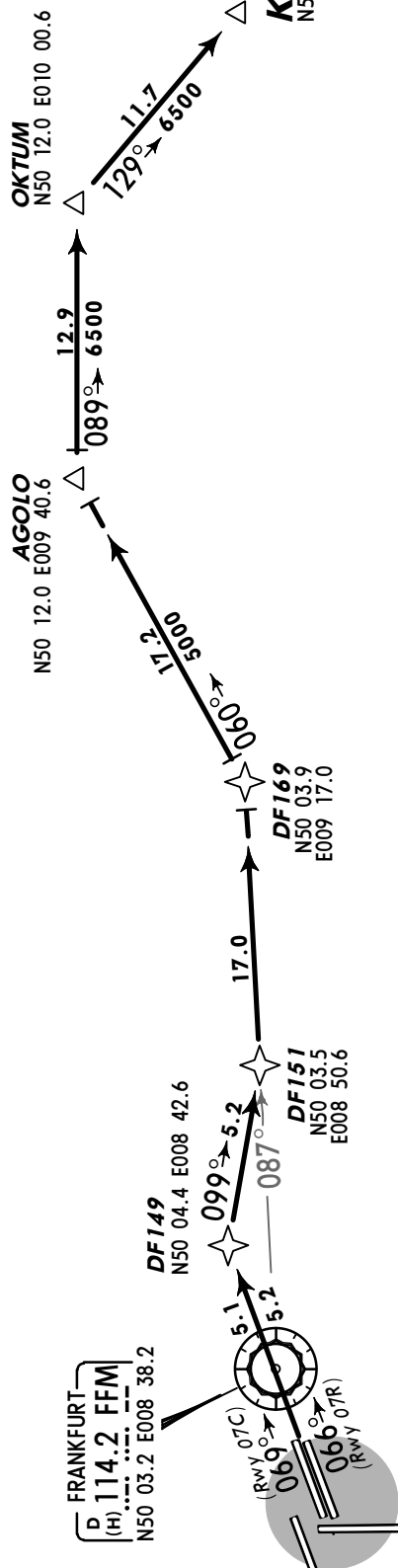
Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.



**KOMIB ONE DELTA (KOMIB 1D) [KOMI1D]  
KOMIB ONE ECHO (KOMIB 1E) [KOMI1E]  
RWYS 07C/R RNAV DEPARTURES  
(OVERLAY 10-3F)**

NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'**

**ROUTING**

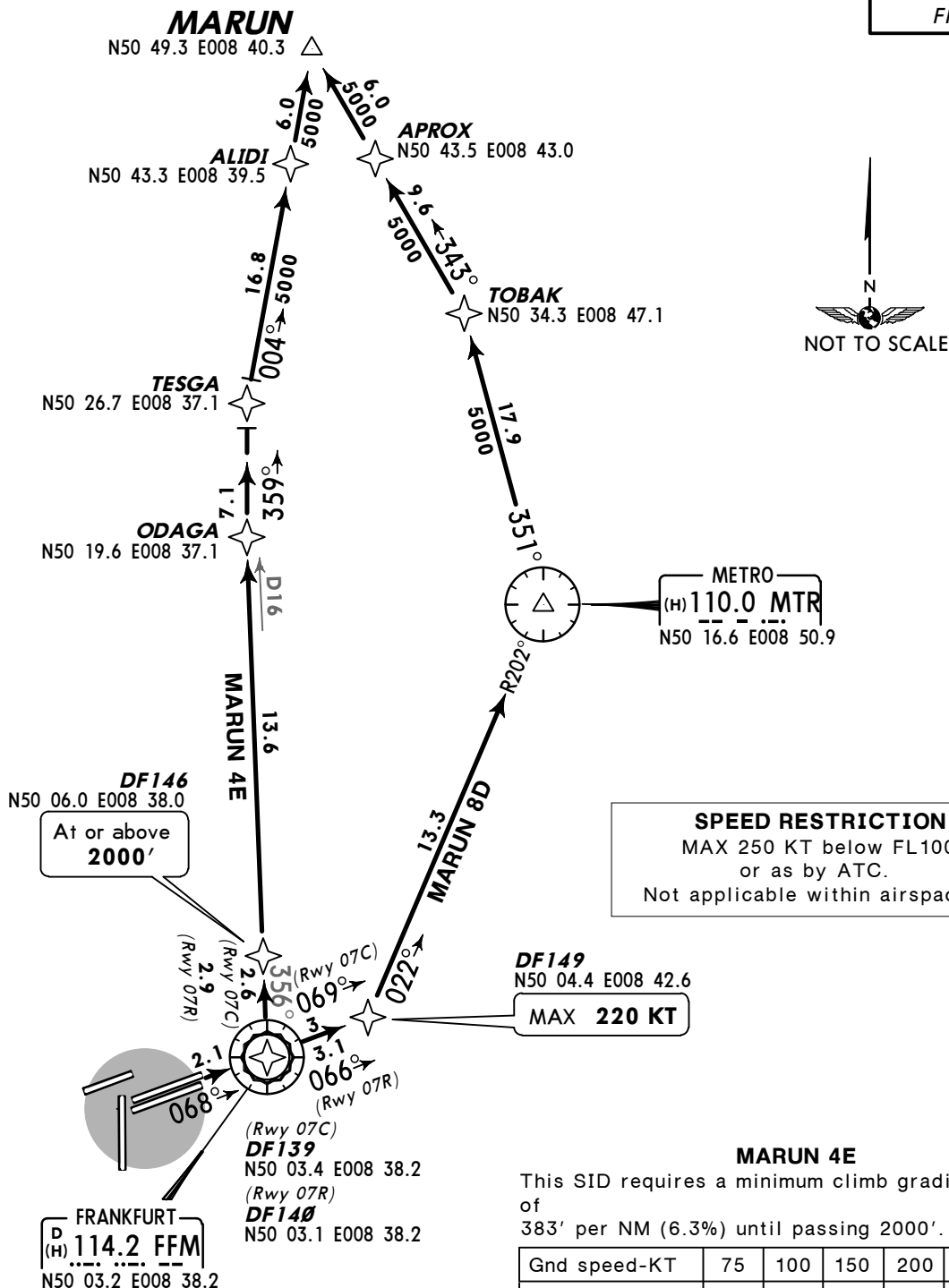
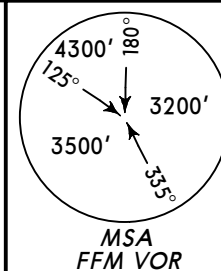
(800'+) - DF149 - DF151 - DF169 - AGOLO - OKTUM - KOMIB.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

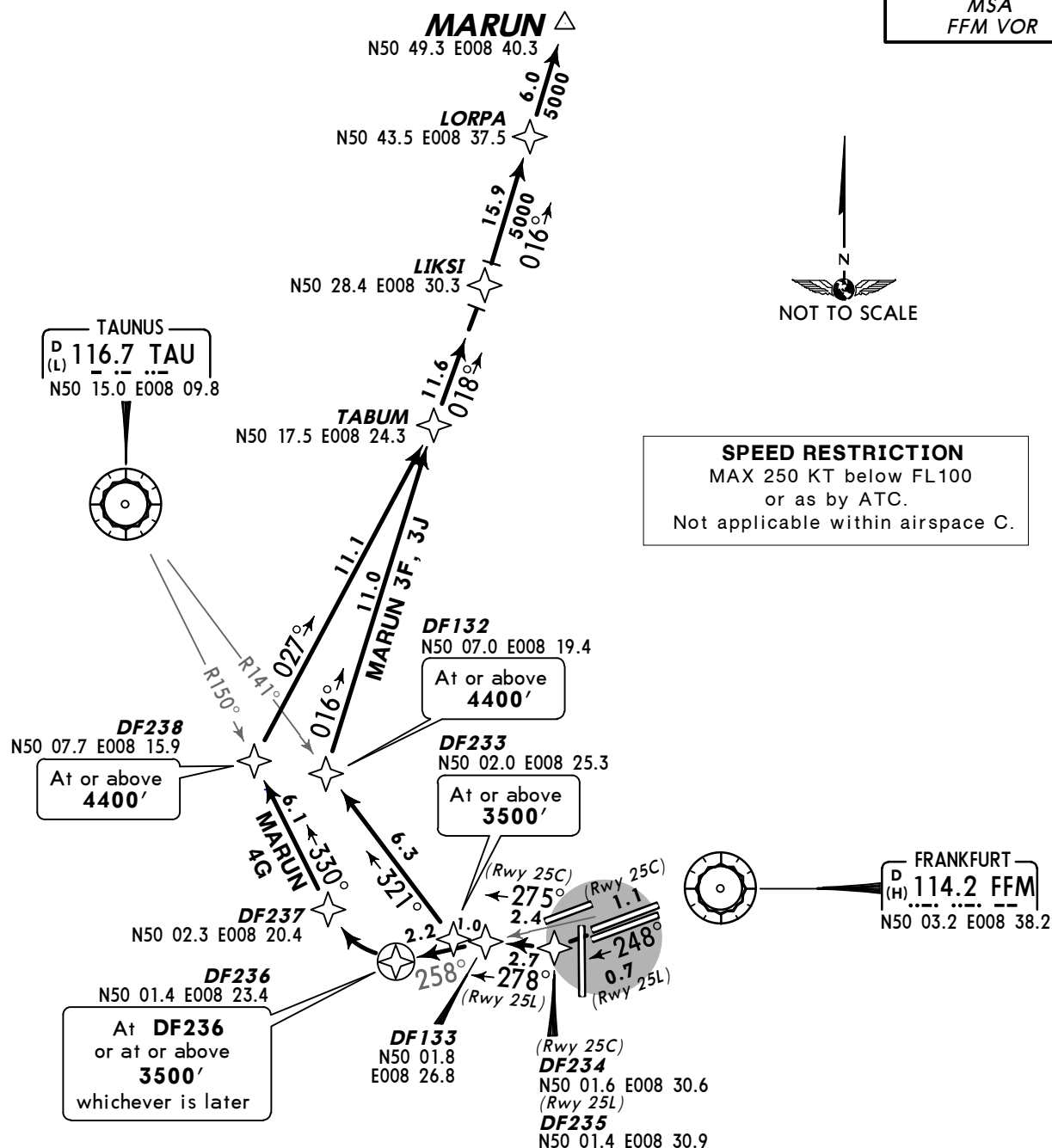
- Trans level: By ATC    Trans alt: 5000'
1. Contact LANGEN Radar when advised by Tower.
  2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
  3. For departure designation refer to 10-1P pages.

MARUN EIGHT DELTA (MARUN 8D) [MARU8D]  
MARUN FOUR ECHO (MARUN 4E) [MARU4E]  
RWYS 07C/R RNAV DEPARTURES (OVERLAY 10-3G)



| Initial climb clearance 5000' |                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------|
| SID                           | ROUTING                                                                             |
| MARUN 8D                      | (800'+) - DF149 (K220-) - MTR - TOBAK - APROX - MARUN.                              |
| MARUN 4E                      | (800'+) - DF139 (07C)/DF140 (07R) - DF146 (2000'+) - ODAGA - TESGA - ALIDI - MARUN. |

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.



These SIDs require a minimum climb gradient of 729' per NM (12%) until DF233 due to airspace structure.

|              |     |      |      |      |      |      |
|--------------|-----|------|------|------|------|------|
| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
| 729' per NM  | 911 | 1215 | 1823 | 2430 | 3038 | 3646 |

**MARUN 3J:** and EXPECT routing via MARUN 4G.

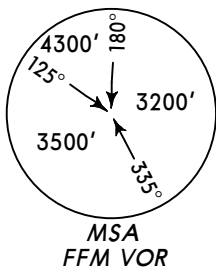
Initial climb clearance **5000'**

| SID                     | ROUTING                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>MARUN<br/>3F, 3J</b> | (800'+) - DF234 (25C)/DF235 (25L) - DF233 (3500'+) - DF132 (4400'+) - TABUM - LIKSI - LORPA - MARUN.                   |
| <b>MARUN<br/>4G</b>     | (800'+) - DF234 (25C)/DF235 (25L) - DF133 - DF236 - (3500'+) - DF237 - DF238 (4400'+) - TABUM - LIKSI - LORPA - MARUN. |

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

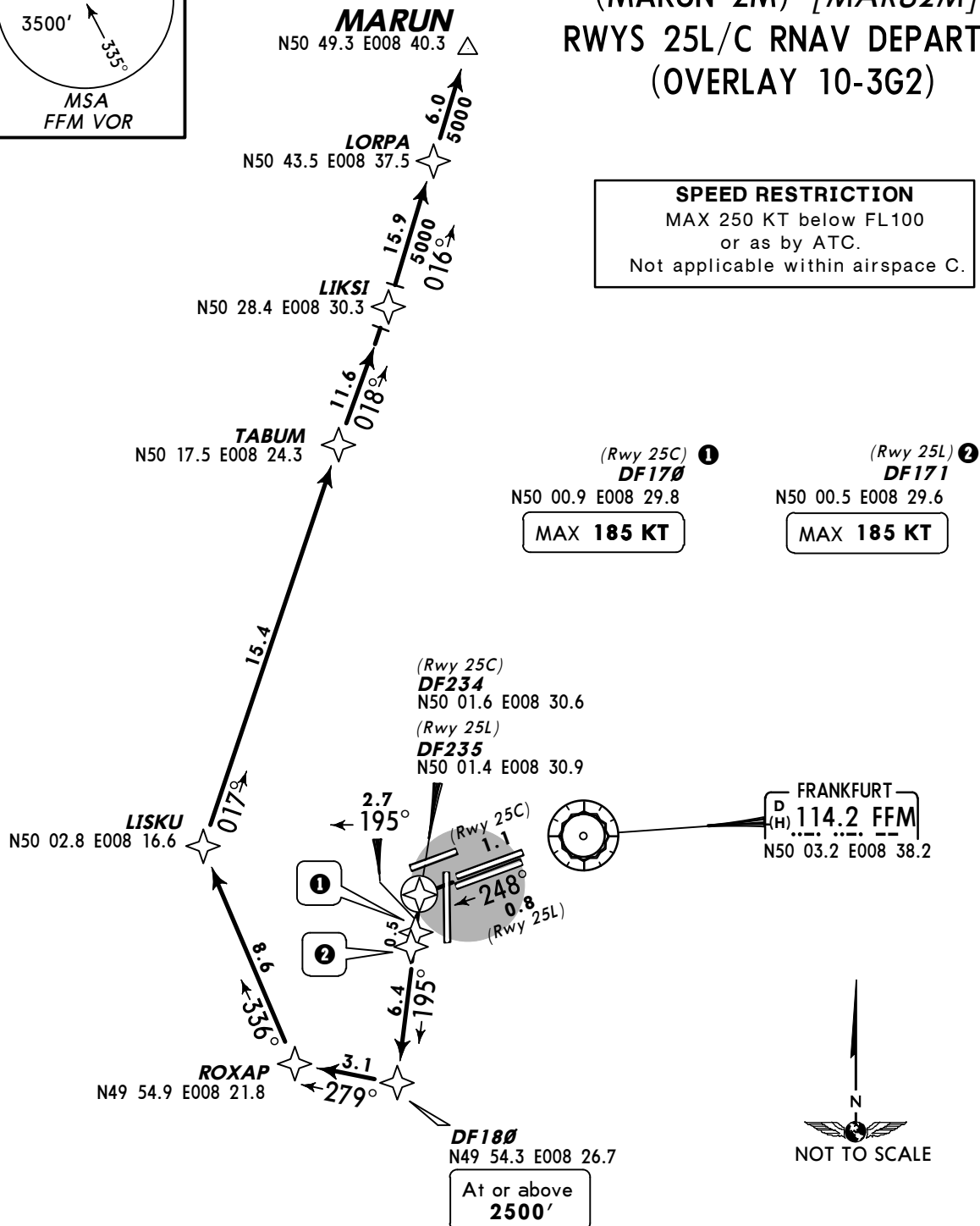
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



# MARUN TWO MIKE (MARUN 2M) [MARU2M] RWYS 25L/C RNAV DEPARTURE (OVERLAY 10-3G2)

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



This SID requires a minimum climb gradient of 249' per NM (4.1%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

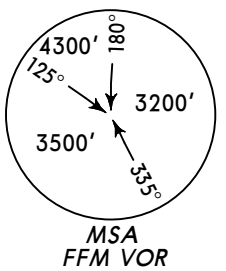
## ROUTING

(800+) - DF234 (25C)/DF235 (25L) - DF170 (25C; K185-)/DF171 (25L; K185-) - DF180 (2500'+) - ROXAP - LISKU - TABUM - LIKSI - LORPA - MARUN.

\*LANGEN  
Radar  
120.15

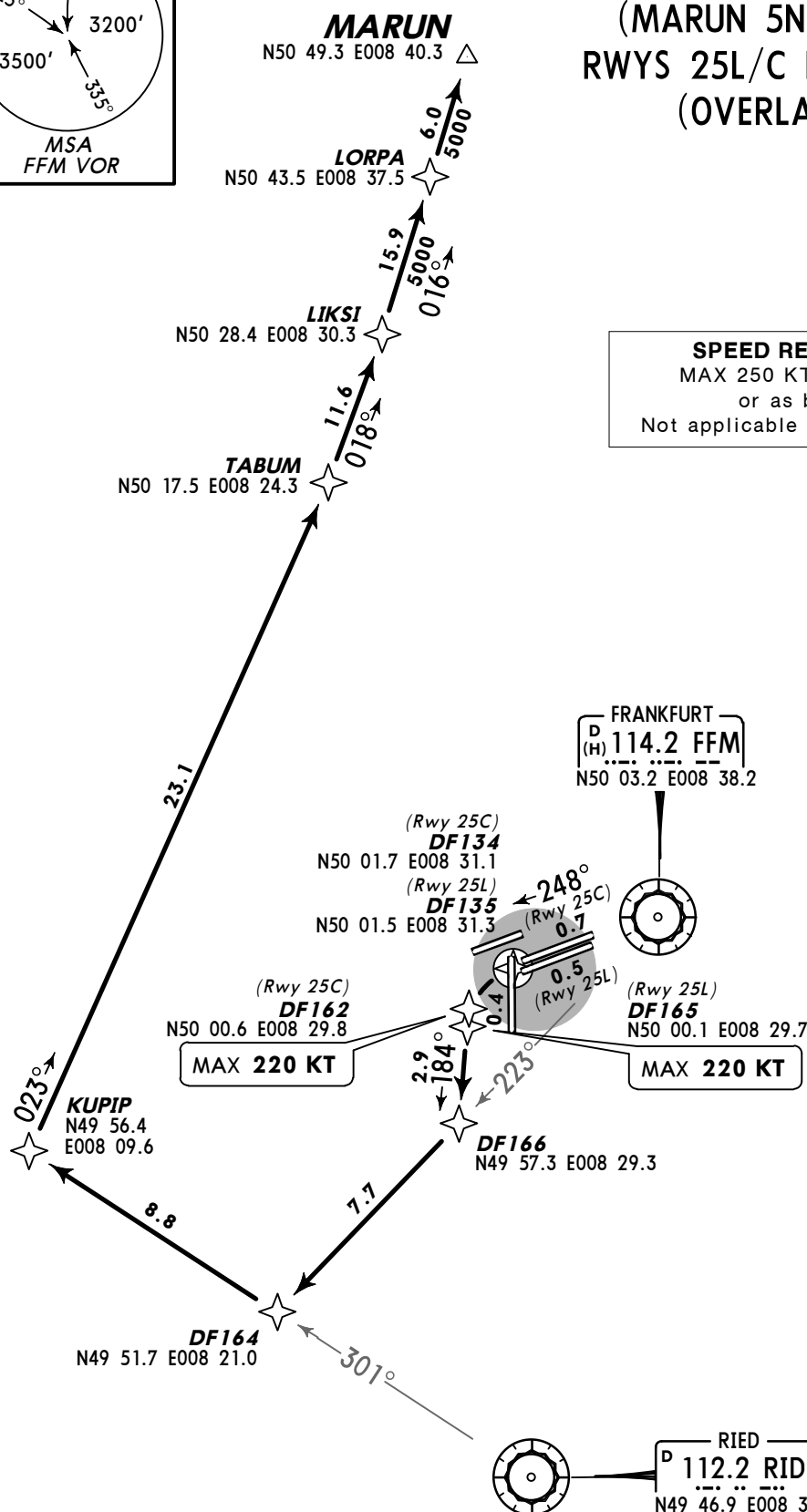
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



**MARUN FIVE NOVEMBER**  
**(MARUN 5N) [MARU5N]**  
**RWYS 25L/C RNAV DEPARTURE**  
**(OVERLAY 10-3G3)**

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **5000'**

**ROUTING**

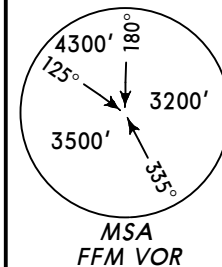
(800'+) - DF134 (25C)/DF135 (25L) - DF162 (25C; K220-)/DF165 (25L; K220-) - DF166 -  
DF164 - KUPIP - TABUM - LIKSI - LORPA - MARUN.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC    Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.    2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.    3. EXPECT close-in obstacles.    4. Wind shears and increased turbulences must be expected when winds heavy.    5. For departure designation refer to 10-1P pages.

MARUN TWO ROMEO (MARUN 2R)[MARU2R]  
RWY 18 RNAV DEPARTURE (OVERLAY 10-3G4)  
BY ATC  
WILL ONLY BE ASSIGNED BETWEEN 2300-0500LT



**MARUN**  
N50 49.3 E008 40.3

**APROX**  
N50 43.5 E008 43.0

**TOBAK**  
N50 34.3 E008 47.1

**METRO**  
(H) 110.0 MTR  
N50 16.6 E008 50.9

**FRANKFURT**  
(D) 114.2 FFM  
(H) 114.2 FFM  
N50 03.2 E008 38.2

**DF158**  
N49 58.0 E008 31.6

MAX 220 KT

**DF159**  
N49 57.0 E008 34.4

At or above  
2500'

**DF168**  
N49 56.3 E008 36.2

**TUKRU**  
N49 56.4 E008 43.3

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

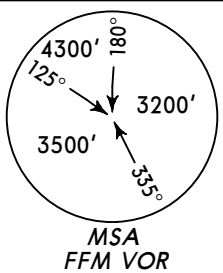
**ROUTING**

(800+) - DF158 (K220-) - DF159 (2500'+) - DF168 - TUKRU - MTR - TOBAK - APROX - MARUN.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.



# MARUN FOUR SIERRA (MARUN 4S) [MARU4S] RWY 18 RNAV DEPARTURE (OVERLAY 10-3G5)

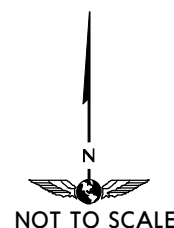
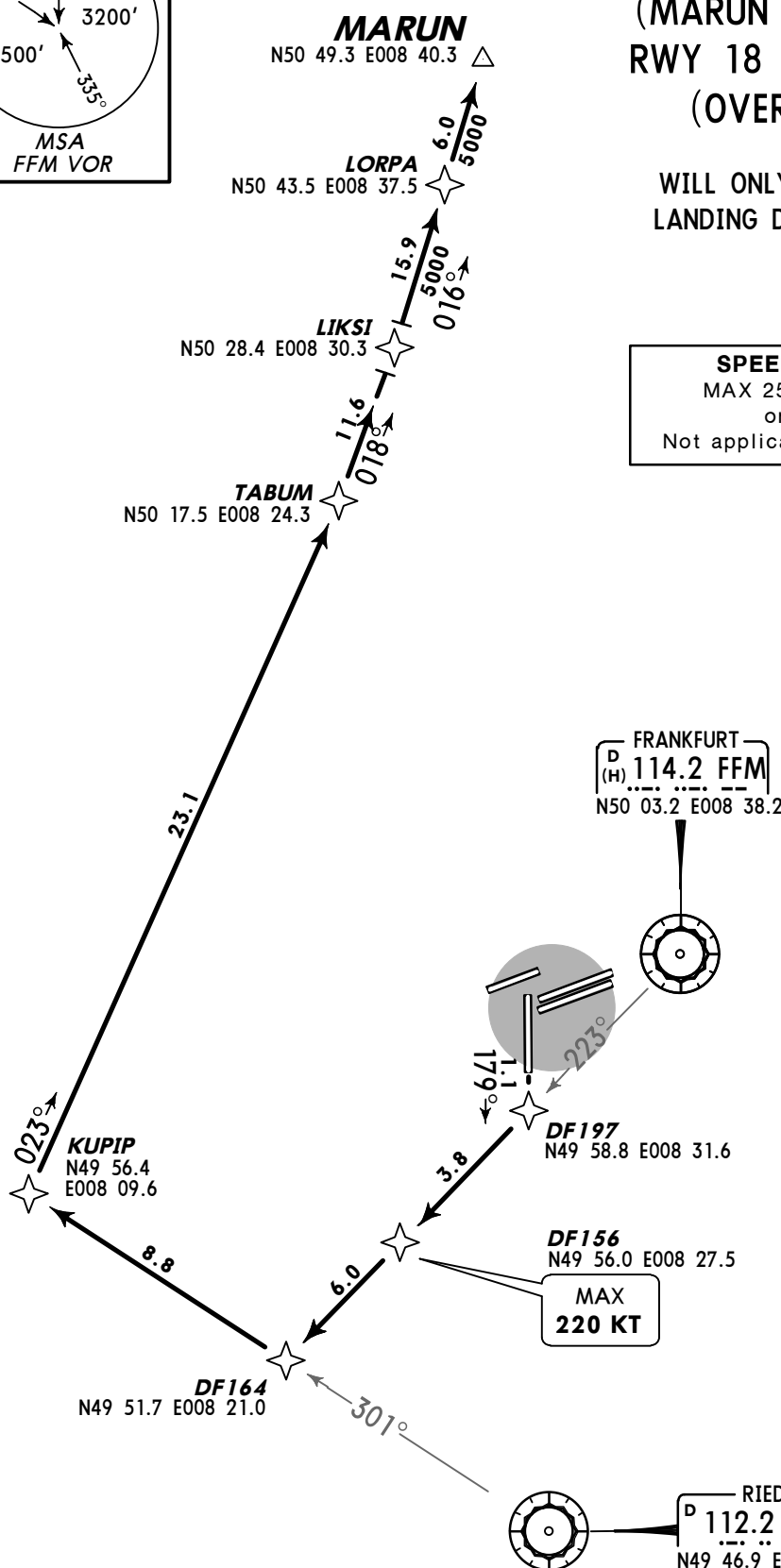
BY ATC

WILL ONLY BE ASSIGNED WHEN  
LANDING DIRECTION IS RWY 25

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



Initial climb clearance **4000'**

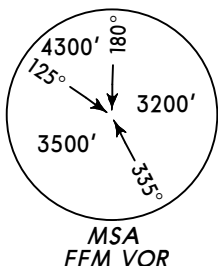
## ROUTING

(800'+) - DF197 - DF156 (K220-) - DF164 - KUPIP - TABUM - LIKSI - LORPA - MARUN.

\*LANGEN  
Radar  
136.12

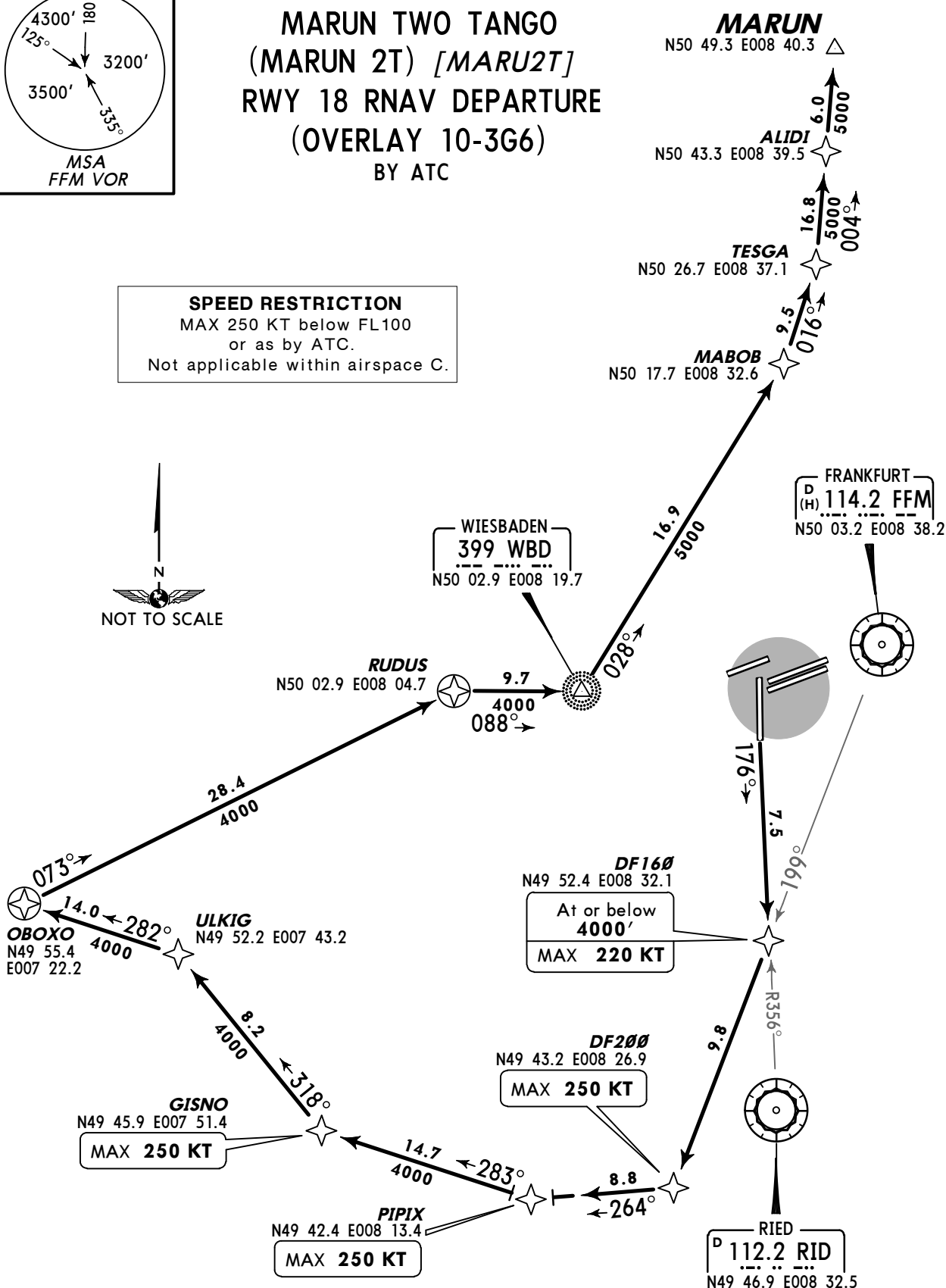
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.



# MARUN TWO TANGO (MARUN 2T) [MARU2T] RWY 18 RNAV DEPARTURE (OVERLAY 10-3G6) BY ATC

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



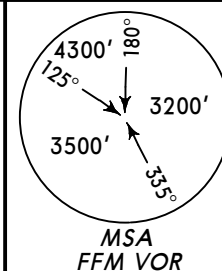
\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

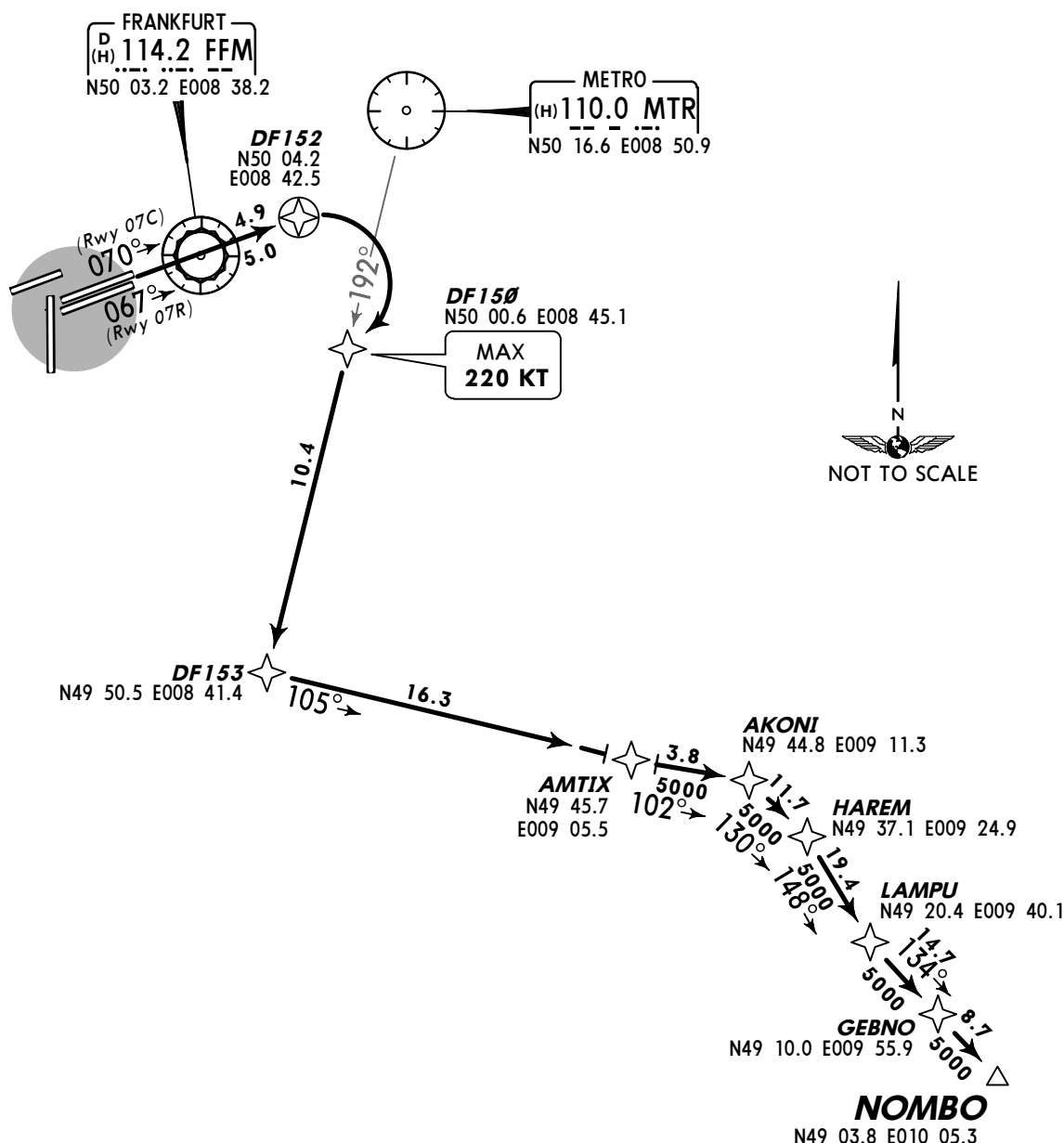
**NOMBO NINE DELTA (NOMBO 9D) [NOMB9D]  
NOMBO EIGHT ECHO (NOMBO 8E) [NOMB8E]  
RWYS 07C/R RNAV DEPARTURES  
(OVERLAY 10-3G8)**

NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM RNAV SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR

**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



Initial climb clearance **4000'**

**ROUTING**

(800'+) - DF152 - DF150 (K220-) - DF153 - AMTIX - AKONI - HAREM - LAMPU - GEBNO - NOMBO.

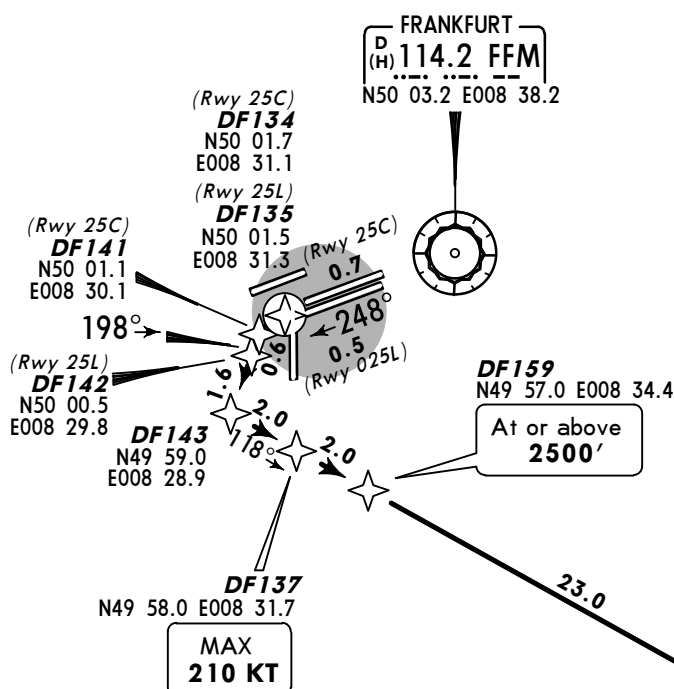
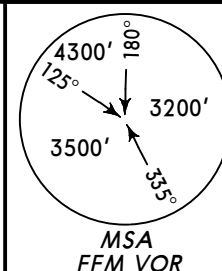
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

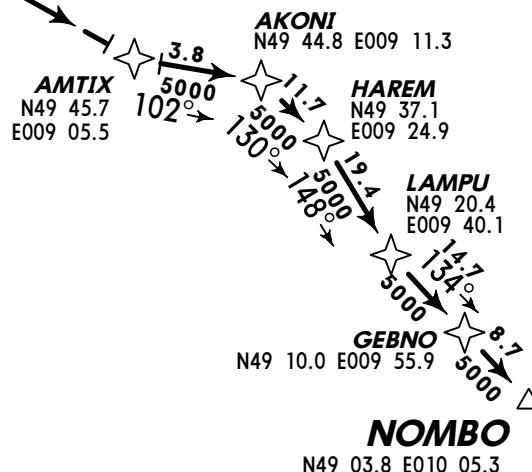
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**NOMBO SEVEN FOXTROT (NOMBO 7F) [NOMB7F]  
NOMBO EIGHT GOLF (NOMBO 8G) [NOMB8G]  
RWYS 25L/C RNAV DEPARTURES  
(OVERLAY 10-3H)**

NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM RNAV SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

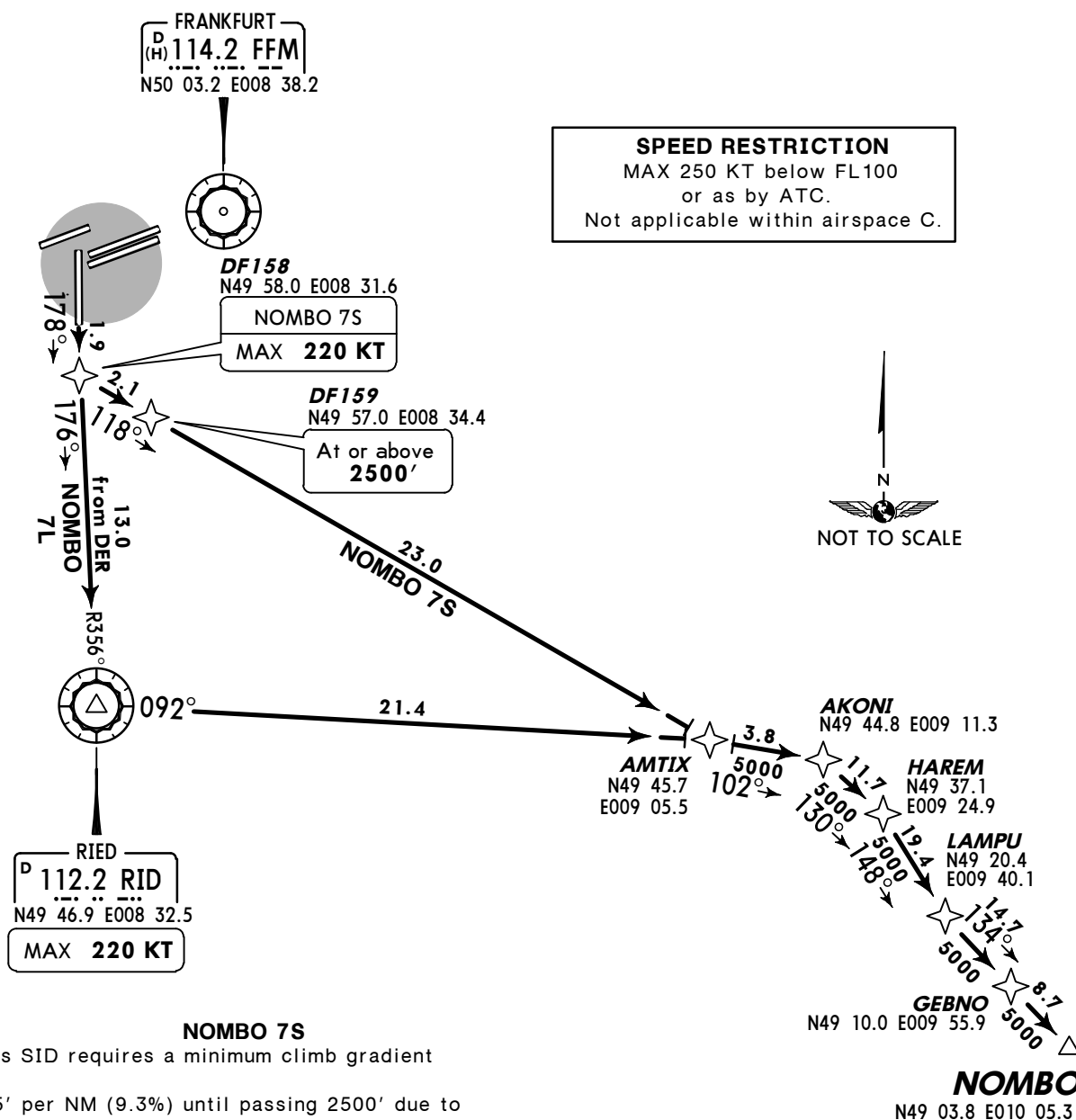
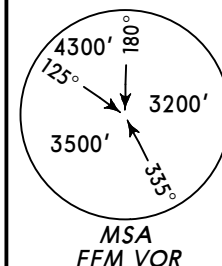
**ROUTING**

(800'+) - DF134 (25C)/DF135 (25L) - DF141 (25C)/DF142 (25L) - DF143 - DF137 (K210-) - DF159 (2500'+) - AMTIX - AKONI - HAREM - LAMPU - GEBNO - NOMBO.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**NOMBO SEVEN LIMA (NOMBO 7L) [NOMB7L]**  
**NOMBO SEVEN SIERRA (NOMBO 7S) [NOMB7S]**  
**RWY 18 RNAV DEPARTURES (OVERLAY 10-3J)**  
NOT FOR PROP ACFT, THESE FLIGHTS SHALL FILE RATIM RNAV SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR

**NOMBO 7S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT routing  
via NOMBO 7L.

Initial climb clearance **4000'**

| SID             | ROUTING                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------|
| <b>NOMBO 7L</b> | (800'+) - RID (K220-) - AMTIX - AKONI - HAREM - LAMPU - GEBNO - NOMBO.                    |
| <b>NOMBO 7S</b> | (800'+) - DF158 (K220-) - DF159 (2500'+) - AMTIX - AKONI - HAREM - LAMPU - GEBNO - NOMBO. |

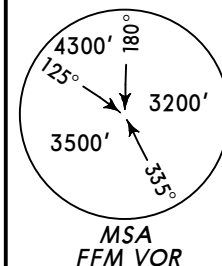
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

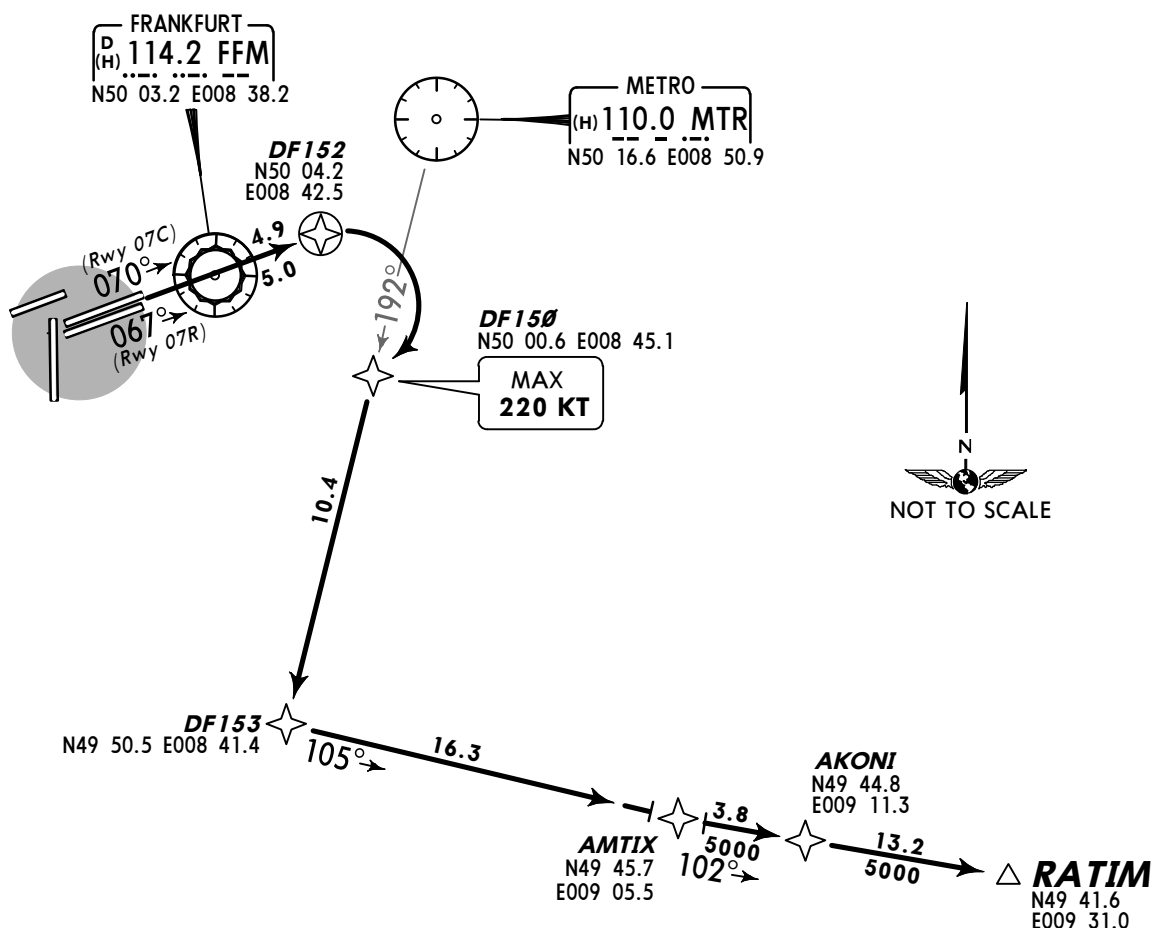
**RATIM FIVE DELTA (RATIM 5D) [RATI5D]  
RATIM FIVE ECHO (RATIM 5E) [RATI5E]  
RWYS 07C/R RNAV DEPARTURES  
(OVERLAY 10-3J1)**

ONLY PROP ACFT WITH MAX FL230 REQUESTED  
INSTEAD OF NOMBO RNAV SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Initial climb clearance **4000'**

**ROUTING**

(800'+) - DF152 - DF150 (K220-) - DF153 - AMTIX - AKONI - RATIM.

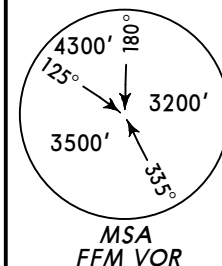
\*LANGEN  
Radar  
136.12

Apt Elev  
364'

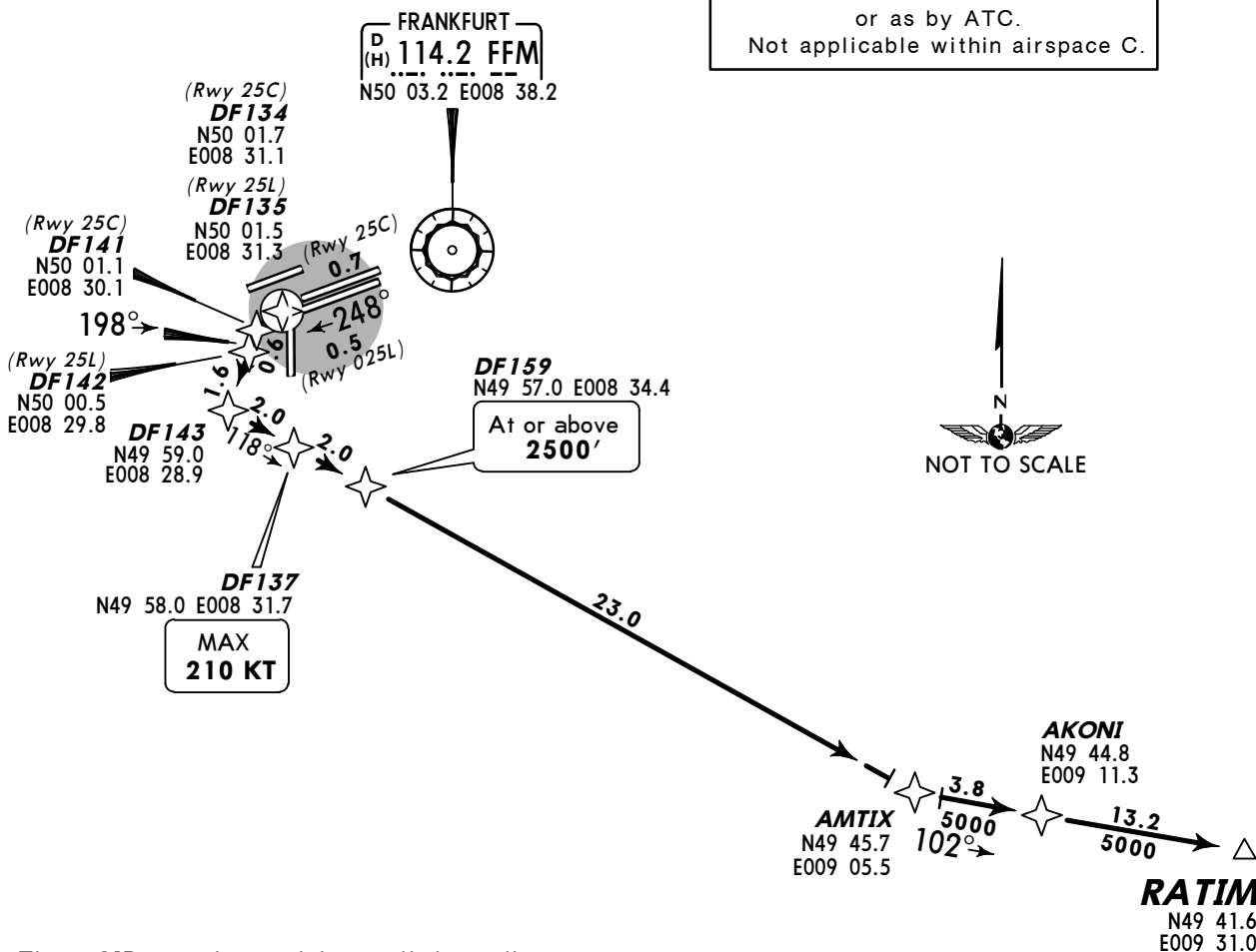
- Trans level: By ATC    Trans alt: 5000'
1. Contact LANGEN Radar when advised by Tower.
  2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
  3. For departure designation refer to 10-1P pages.

**RATIM FIVE FOXTROT (RATIM 5F) [RATI5F]  
RATIM FIVE GOLF (RATIM 5G) [RATI5G]  
RWYS 25L/C RNAV DEPARTURES  
(OVERLAY 10-3J2)**

ONLY PROP ACFT WITH MAX FL230 REQUESTED  
INSTEAD OF NOMBO RNAV SIDS  
NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

**ROUTING**

(800'+) - DF134 (25C)/DF135 (25L) - DF141 (25C)/DF142 (25L) - DF143 - DF137 (K210-) - DF159 (2500'+) - AMTIX - AKONI - RATIM.

\*LANGEN  
Radar  
136.12

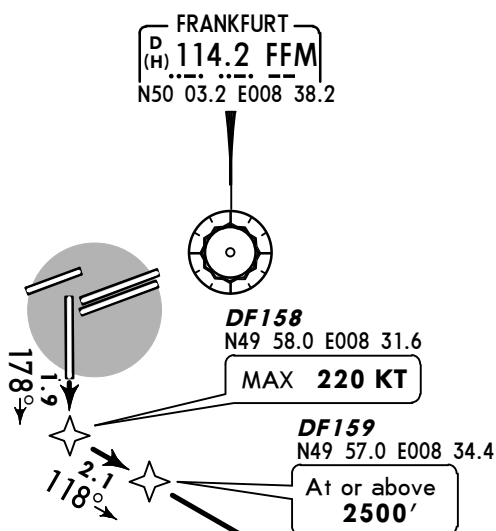
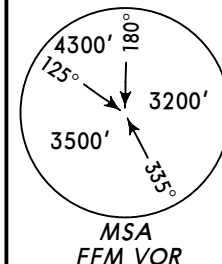
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also  
noise abatement procedures (refer to 10-4). Strict adherence within  
the limits of aircraft performance is mandatory. 3. EXPECT close-in  
obstacles. 4. Wind shears and increased turbulences must be expected  
when winds heavy. 5. For departure designation refer to 10-1P pages.

**RATIM FOUR SIERRA (RATIM 4S) [RATI4S]  
RWY 18 RNAV DEPARTURE (OVERLAY 10-3J3)**

ONLY PROP ACFT WITH MAX FL230 REQUESTED  
INSTEAD OF NOMBO RNAV SIDS

NOT FOR FLIGHTS TERMINATING WITHIN EDDN AREA OR EDMM FIR



**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



This SID requires a minimum climb gradient  
of  
565' per NM (9.3%) until passing 2500' due to  
airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT alternate  
routing by ATC.

Initial climb clearance **4000'**

**ROUTING**

(800'+) - DF158 (K220-) - DF159 (2500'+) - AMTIX - AKONI - RATIM.



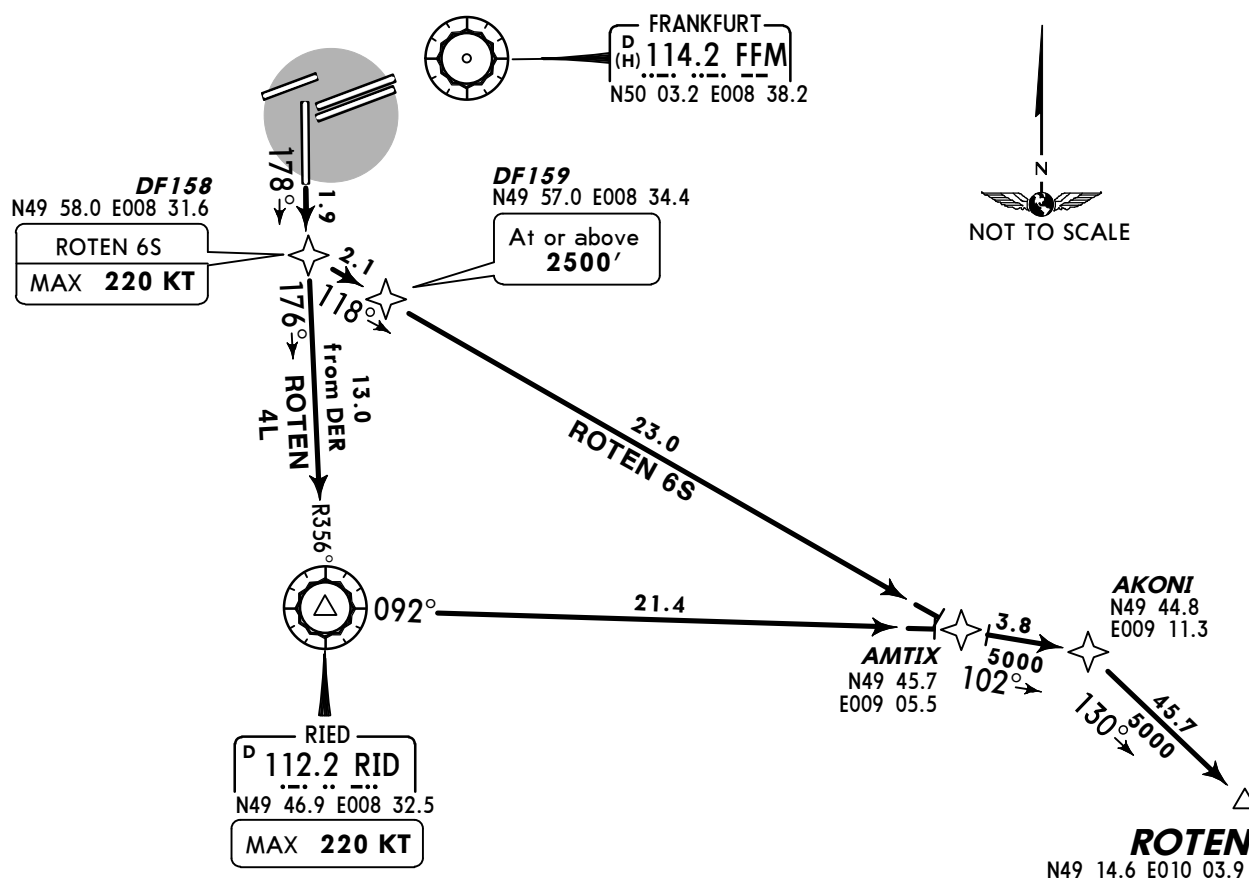
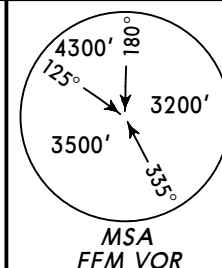
\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy.
5. For departure designation refer to 10-1P pages.

ROTEN FOUR LIMA (ROTEN 4L) [ROTE4L]  
ROTEN SIX SIERRA (ROTEN 6S) [ROTE6S]  
RWY 18 RNAV DEPARTURES  
(OVERLAY 10-3J6)

ONLY FOR FLIGHTS TERMINATING WITHIN EDDN AREA

**ROTEN 6S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery and EXPECT routing via ROTEN 4L.

**SPEED RESTRICTION**

MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'**

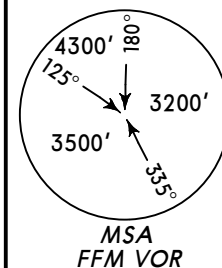
| SID      | ROUTING                                                           |
|----------|-------------------------------------------------------------------|
| ROTEN 4L | (800'+) - RID (K220-) - AMTIX - AKONI - ROTEN.                    |
| ROTEN 6S | (800'+) - DF158 (K220-) - DF159 (2500'+) - AMTIX - AKONI - ROTEN. |

\*LANGEN  
Radar  
136.12

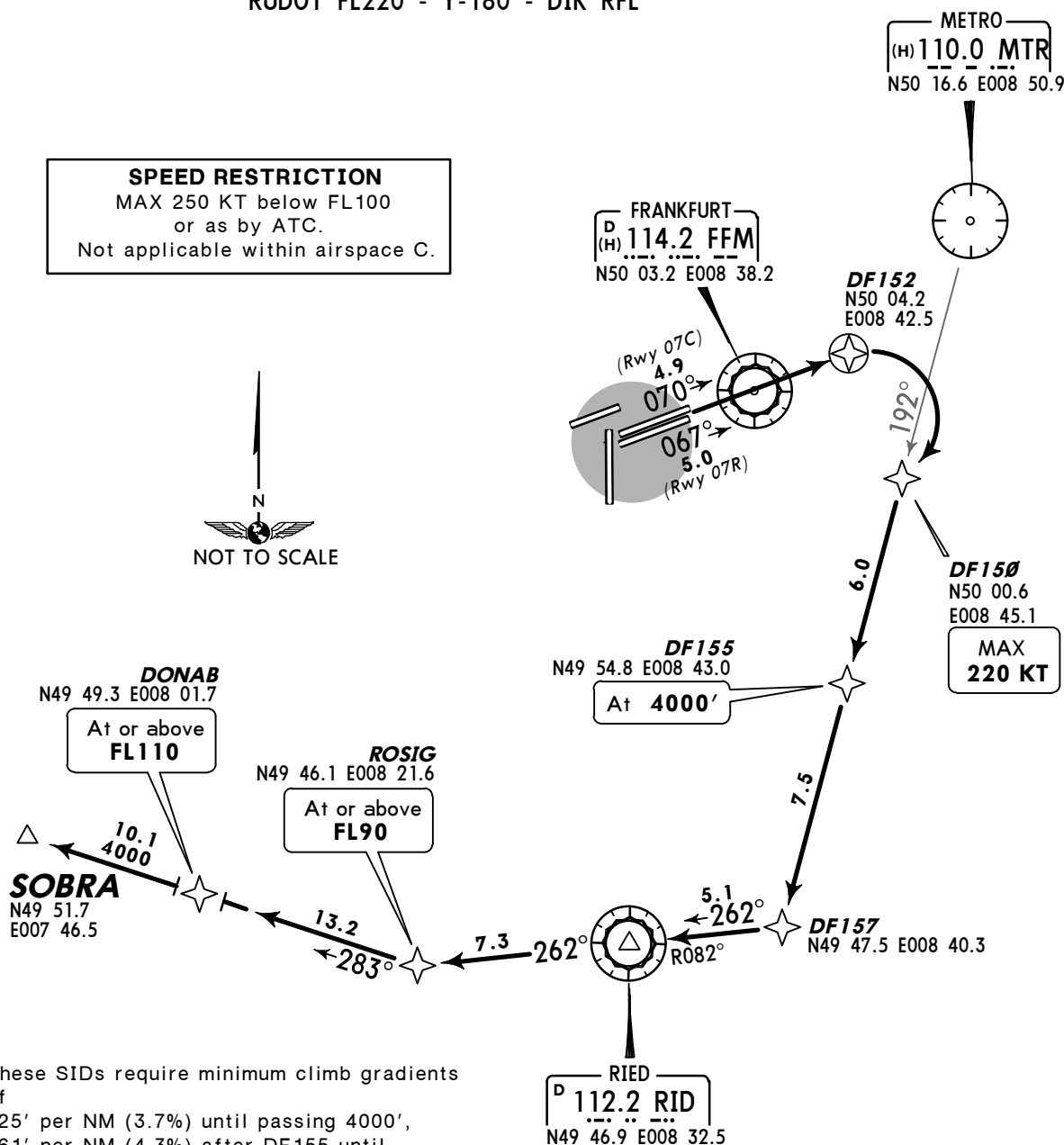
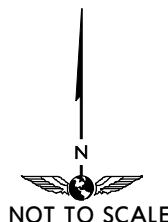
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**SOBRA FOUR DELTA (SOBRA 4D) [SOBR4D]**  
**RWYS 07C/R RNAV DEPARTURE (OVERLAY 10-3J7)**  
FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
VIA AIRWAYS Y-180/Y-181  
FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
RUDOT FL220 - Y-180 - DIK RFL



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



These SIDs require minimum climb gradients of  
225' per NM (3.7%) until passing 4000',  
261' per NM (4.3%) after DF155 until  
passing FL90 due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 261' per NM  | 327 | 435 | 653 | 871 | 1089 | 1306 |
| 225' per NM  | 281 | 375 | 562 | 749 | 937  | 1124 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

**ROUTING**

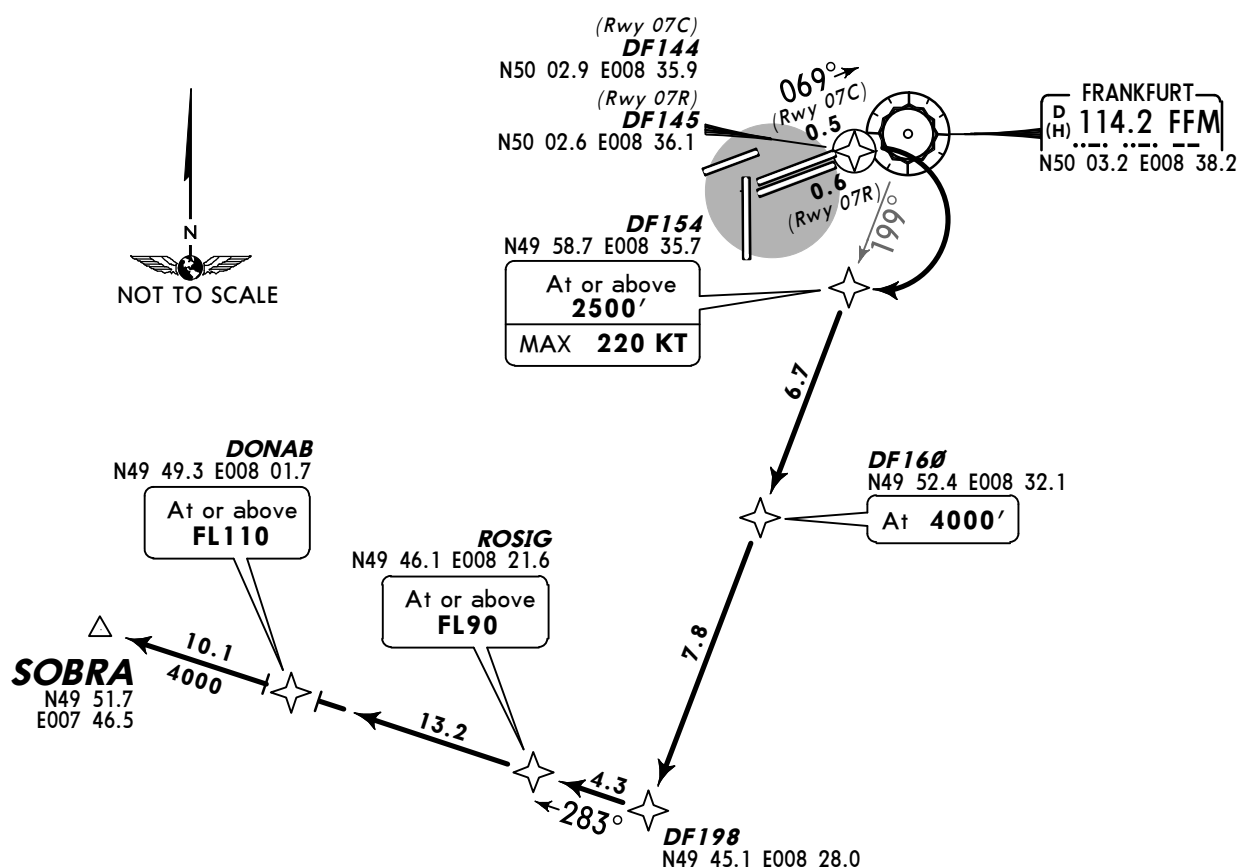
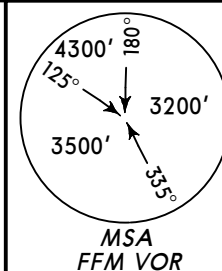
(800'+) - DF152 - DF150 (K220-) - DF155 (4000') - DF157 - RID - ROSIG (FL90+) - DONAB  
(FL110+) - SOBRA.

\*LANGEN  
Radar  
136.12Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

**SOBRA FOUR ECHO (SOBRA 4E) [SOBR4E]**  
**RWYS 07C/R RNAV DEPARTURE (OVERLAY 10-3K)**  
FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
VIA AIRWAYS Y-180/Y-181  
FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
RUDOT FL220 - Y-180 - DIK RFL



This SID requires minimum climb gradients of  
383' per NM (6.3%) until passing 2500',  
401' per NM (6.6%) after DF160 until  
passing FL90 due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 401' per NM  | 501 | 668 | 1003 | 1337 | 1671 | 2005 |
| 383' per NM  | 479 | 638 | 957  | 1276 | 1595 | 1914 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

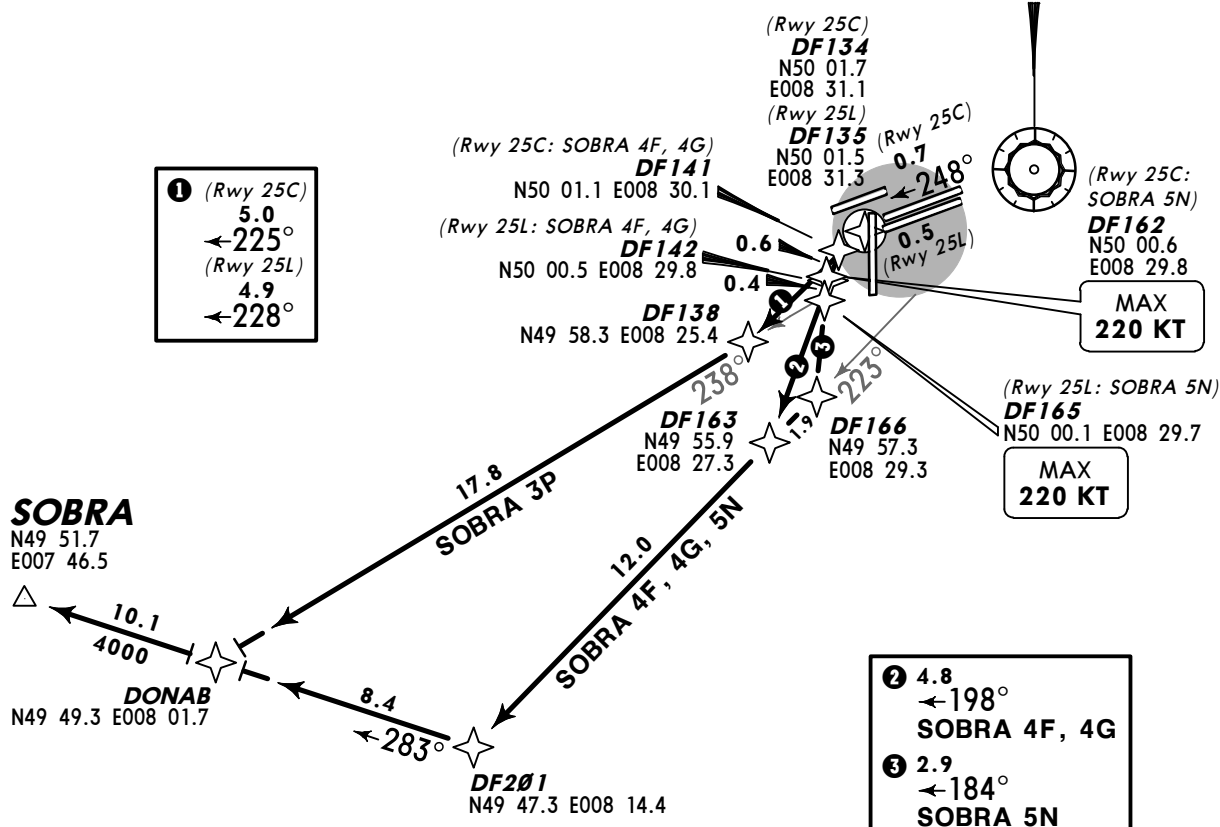
Initial climb clearance **4000'**

**ROUTING**

(800'+) - DF144 (07C)/DF145 (07R) - DF154 (2500'+; K220-) - DF160 (4000') - DF198 - ROSIG  
(FL90+) - DONAB (FL110+) - SOBRA.

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

FRANKFURT  
D  
(H) 114.2 FFM  
... ..  
N50 03.2 E008 38.2



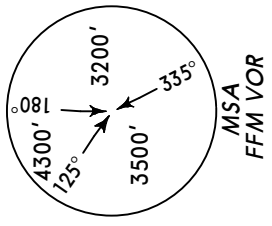
| SID                 | ROUTING                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------|
| <b>SOBRA 4F, 4G</b> | (800'+) - DF134 (25C)/DF135 (25L) - DF141 (25C)/DF142 (25L) - DF163 - DF201 - DONAB - SOBRA.               |
| <b>SOBRA 5N</b>     | (800'+) - DF134 (25C)/DF135 (25L) - DF162 (25C; K220-)/DF165 (25L; K220-) - DF166 - DF201 - DONAB - SOBRA. |
| <b>SOBRA 3P</b>     | (800'+) - DF134 (25C)/DF135 (25L) - DF138 - DONAB - SOBRA.                                                 |



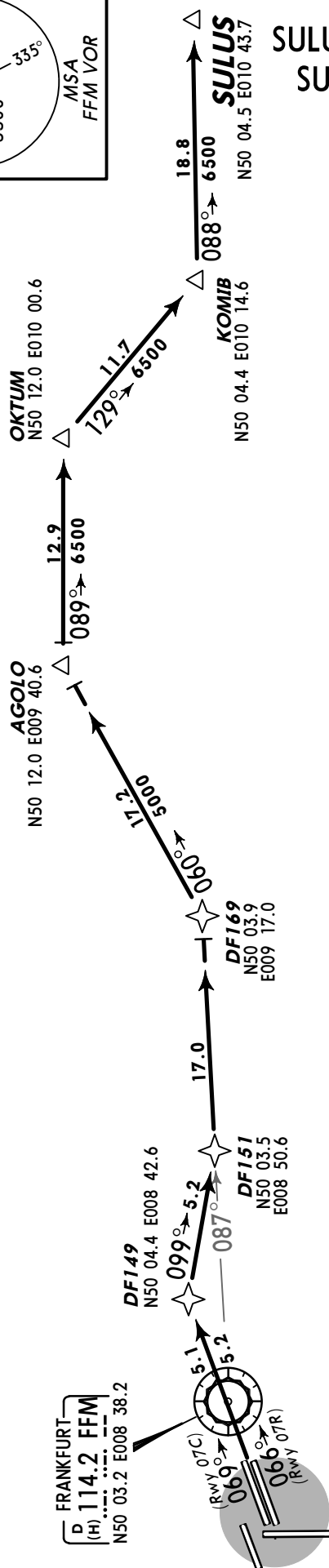
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



**SULUS EIGHT DELTA (SULUS 8D) [SULU8D]  
SULUS SIX ECHO (SULUS 6E) [SULU6E]  
RWYS 07C/R RNAV DEPARTURES  
(OVERLAY 10-3L2)  
NOT FOR FLIGHTS DESTINATION EDDN**



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'**

**ROUTING**

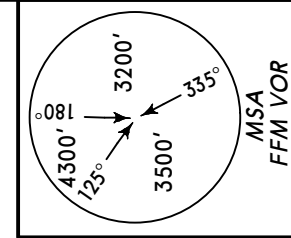
(800'+) - DF149 - DF151 - DF169 - AGOLO - OKTUM - KOMIB - SULUS.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

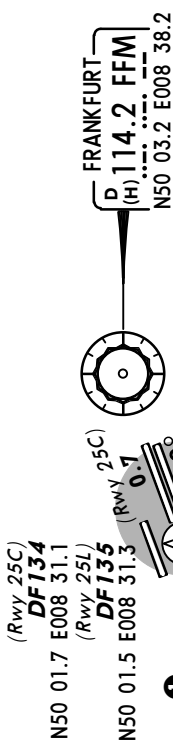
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**SULUS SEVEN FOXTROT (SULUS 7F) [SULU7F]**  
**SULUS EIGHT GOLF (SULUS 8G) [SULU8G]**  
**RWYS 25L/C RNAV DEPARTURES**  
**(OVERLAY 10-3L3)**  
**NOT FOR FLIGHTS DESTINATION EDDN**



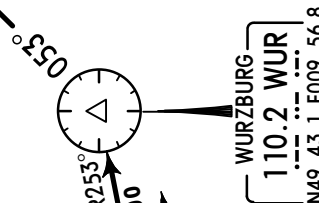
**SULUS**  
N50 04.5 E010 43.7

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



Not applicable within airspace C.

5000  
37.2



① (Rwy 25C)  
**DF141**  
N50 01.1  
E008 30.1  
E008 29.8

② (Rwy 25L)  
**DF142**  
N50 00.5  
E008 29.8

These SIDs require a minimum climb gradient of 316' per NM (5.2%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200  | 250  | 300  |
|--------------|-----|-----|-----|------|------|------|
| 316' per NM  | 395 | 527 | 790 | 1053 | 1317 | 1580 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

| Initial climb clearance 5000'                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| ROUTING                                                                                                                                     |
| (800'+) - DF134 (25C)/DF135 (25L) - DF141 (25C)/DF142 (25L) - DF143 - DF137 (K210-) - DF159 (2500'+) - AMTIX - AKONI - GIBSA - WUR - SULUS. |



\*LANGEN  
Radar  
136.12

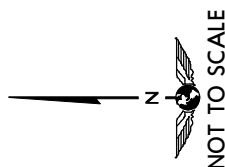
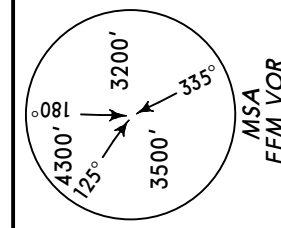
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

**SULUS**  
N50 04.5 E010 43.7

**SULUS SEVEN LIMA**  
(SULUS 7L) [SULU7L]  
**SULUS SEVEN SIERRA**  
(SULUS 7S) [SULU7S]

**RWY 18 RNAV DEPARTURES**  
(OVERLAY 10-3L4)  
NOT FOR FLIGHTS  
DESTINATION EDDN



**SULUS 7S**

This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up and EXPECT routing  
via SULUS 7L.

**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



**DF158**  
N49 58.0 E008 31.6  
**SULUS 7S**  
MAX 220 KT

**DF159**  
N49 57.0 E008 34.4  
At or above  
2500'



**SULUS 7L**

**SULUS 7S**

21.4

**AMTIX**  
N49 45.7 E009 05.5

**AKONI**  
N49 44.8 E009 11.3

**GIBSA**  
N49 40.1 E009 40.1

**WURZBURG**  
110.2 WUR  
N49 43.1 E009 56.8

053°

37.2

5000'

081°

123°

3200'

335°

3500'

MSA  
FFM VOR

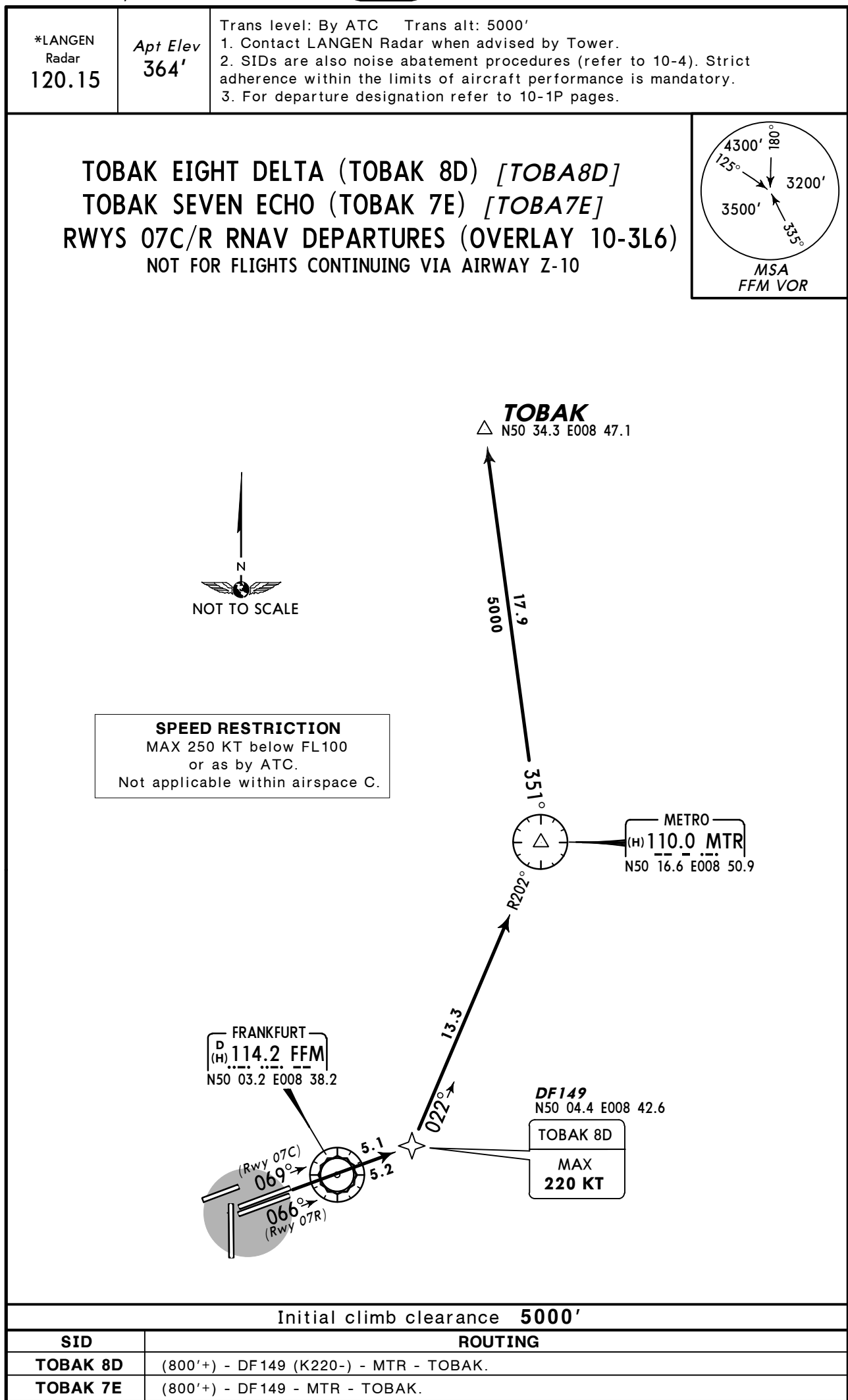
Initial climb clearance 4000'

**ROUTING**

**SID**

**SULUS 7L** (800'+) - RID (K220-) - AMTIX - AKONI - GIBSA - WUR - SULUS.

**SULUS 7S** (800'+) - DF158 (K220-) - DF159 (2500'+) - AMTIX - AKONI - GIBSA - WUR - SULUS.

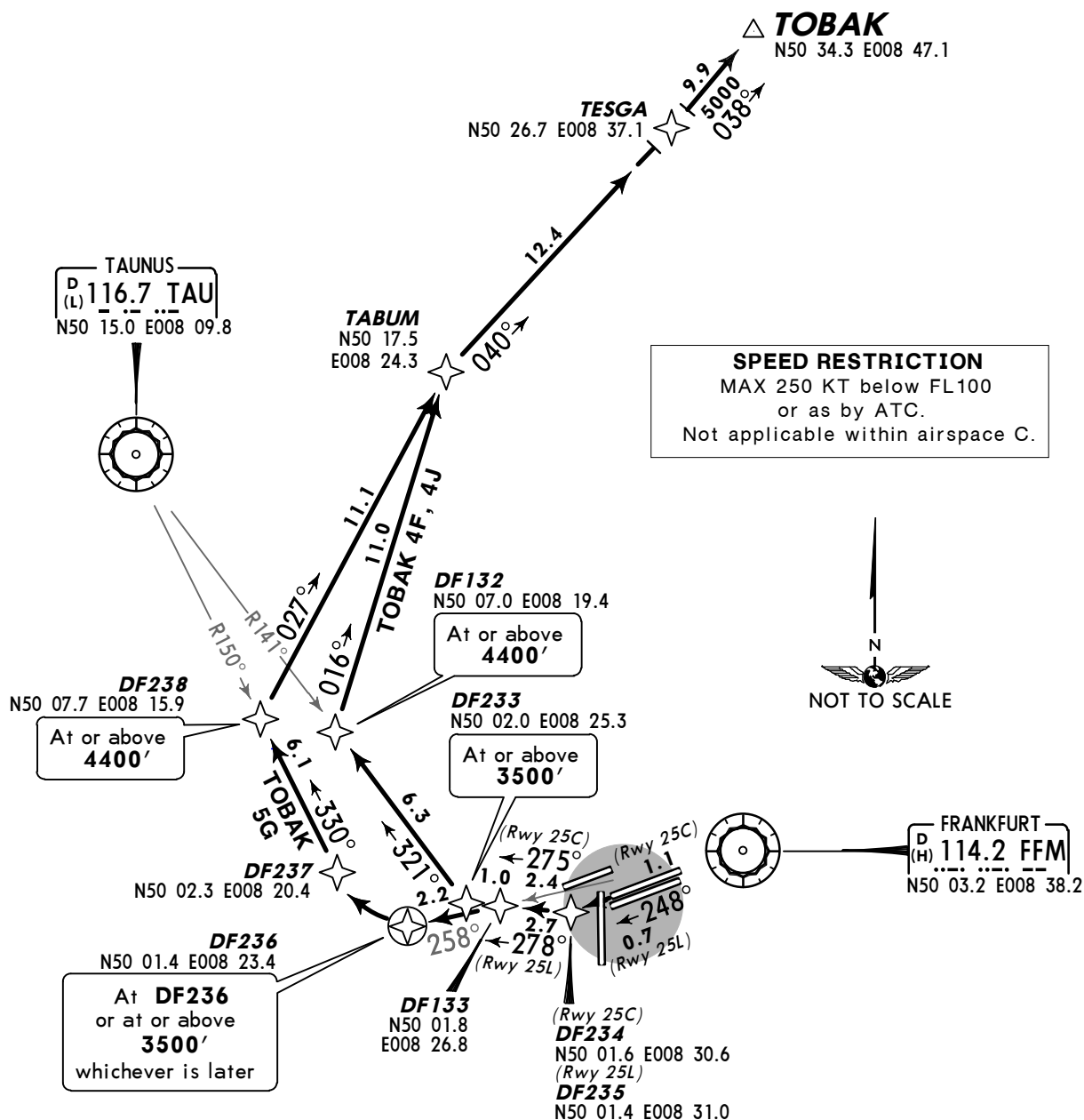
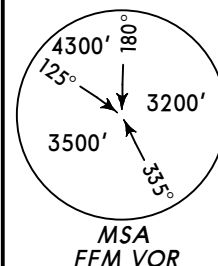


\*LANGEN  
Radar  
120.15Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower.
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.
3. For departure designation refer to 10-1P pages.

TOBAK FOUR FOXTROT (TOBAK 4F) [TOBA4F]  
TOBAK FIVE GOLF (TOBAK 5G) [TOBA5G]  
TOBAK FOUR JULIETT (TOBAK 4J) [TOBA4J]  
RWYS 25L/C RNAV DEPARTURES (OVERLAY 10-3L7)  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10



These SIDs require a minimum climb gradient of 729' per NM (12%) until DF233 due to airspace structure.

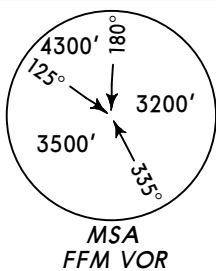
If unable to comply advise FRANKFURT  
Delivery prior to start-up  
**TOBAK 4J:** and EXPECT routing via TOBAK 5G.

| Gnd speed-KT | 75  | 100  | 150  | 200  | 250  | 300  |
|--------------|-----|------|------|------|------|------|
| 729' per NM  | 911 | 1215 | 1823 | 2430 | 3038 | 3646 |

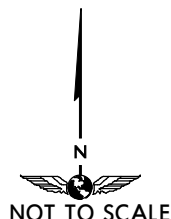
\*LANGEN  
Radar  
120.15

Apt Elev  
364'

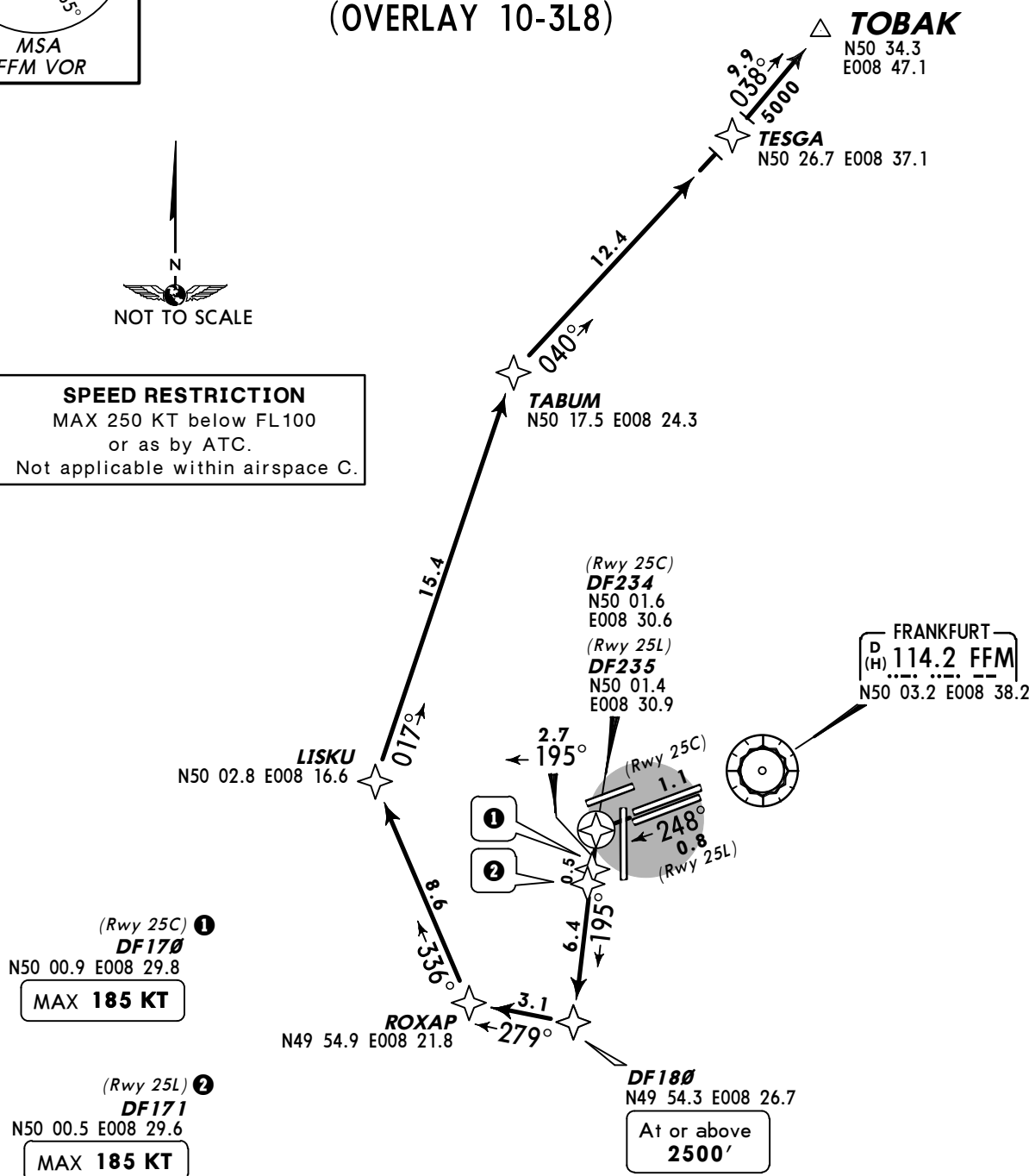
Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.



# TOBAK TWO MIKE (TOBAK 2M) [TOBA2M] RWYS 25L/C RNAV DEPARTURE (OVERLAY 10-3L8)



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



This SID requires a minimum climb gradient of 249' per NM (4.1%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150 | 200 | 250  | 300  |
|--------------|-----|-----|-----|-----|------|------|
| 249' per NM  | 311 | 415 | 623 | 830 | 1038 | 1246 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **5000'**

## ROUTING

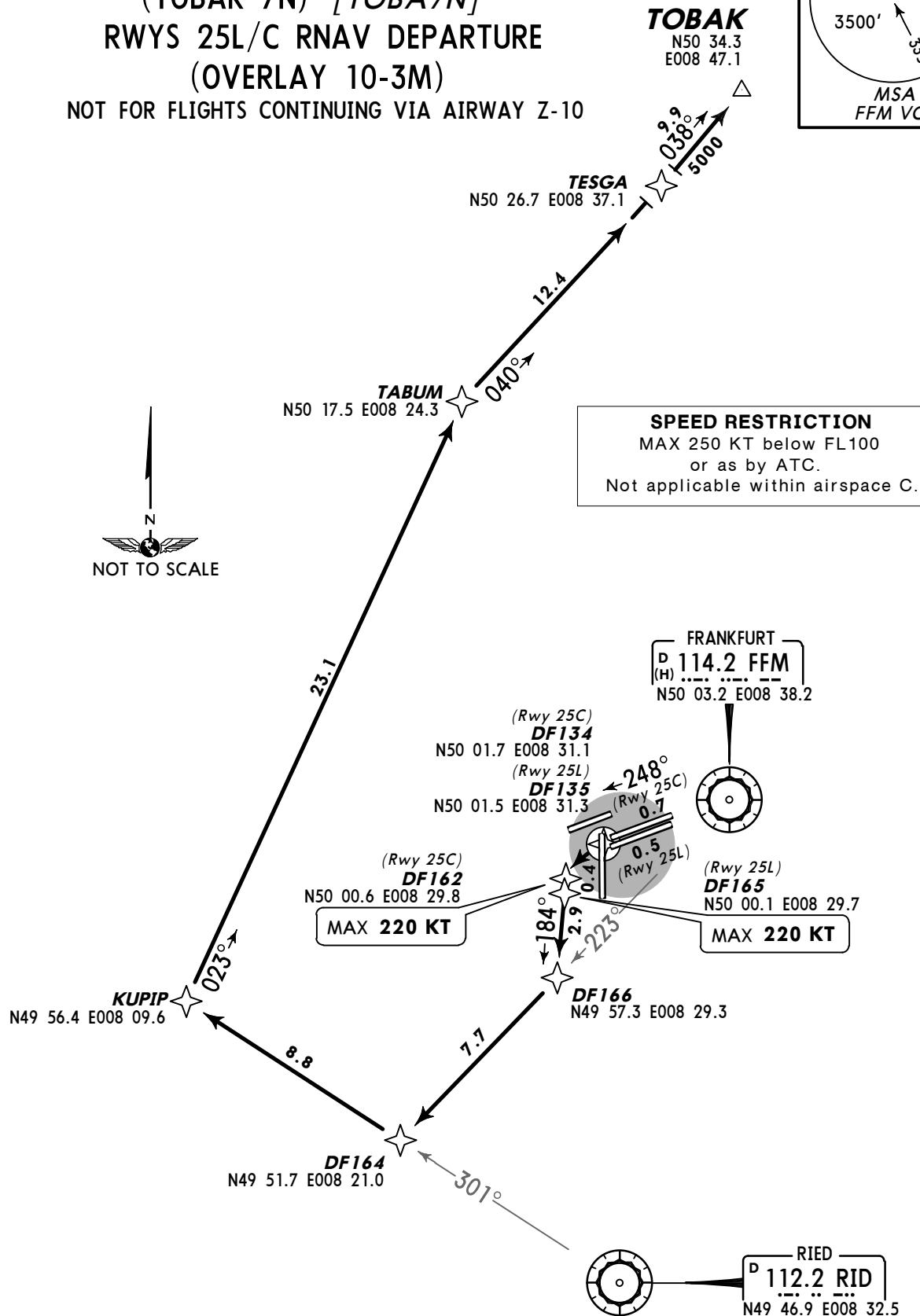
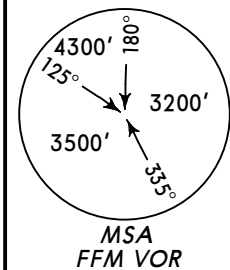
(800+) - DF234 (25C)/DF235 (25L) - DF170 (25C; K185-)/DF171 (25L; K185-) - DF180 (2500'+) - ROXAP - LISKU - TABUM - TESGA - TOBAK.

\*LANGEN  
Radar  
120.15

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower.  
2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory.  
3. For departure designation refer to 10-1P pages.

**TOBAK SEVEN NOVEMBER**  
**(TOBAK 7N) [TOBA7N]**  
**RWYS 25L/C RNAV DEPARTURE**  
**(OVERLAY 10-3M)**  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10



Initial climb clearance **5000'**

**ROUTING**

(800'+) - DF134 (25C)/DF135 (25L) - DF162 (25C; K220-)/DF165 (25L; K220-) - DF166 -  
DF164 - KUPIP - TABUM - TESGA - TOBAK.

\*LANGEN  
Radar  
120.15

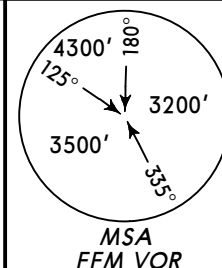
Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

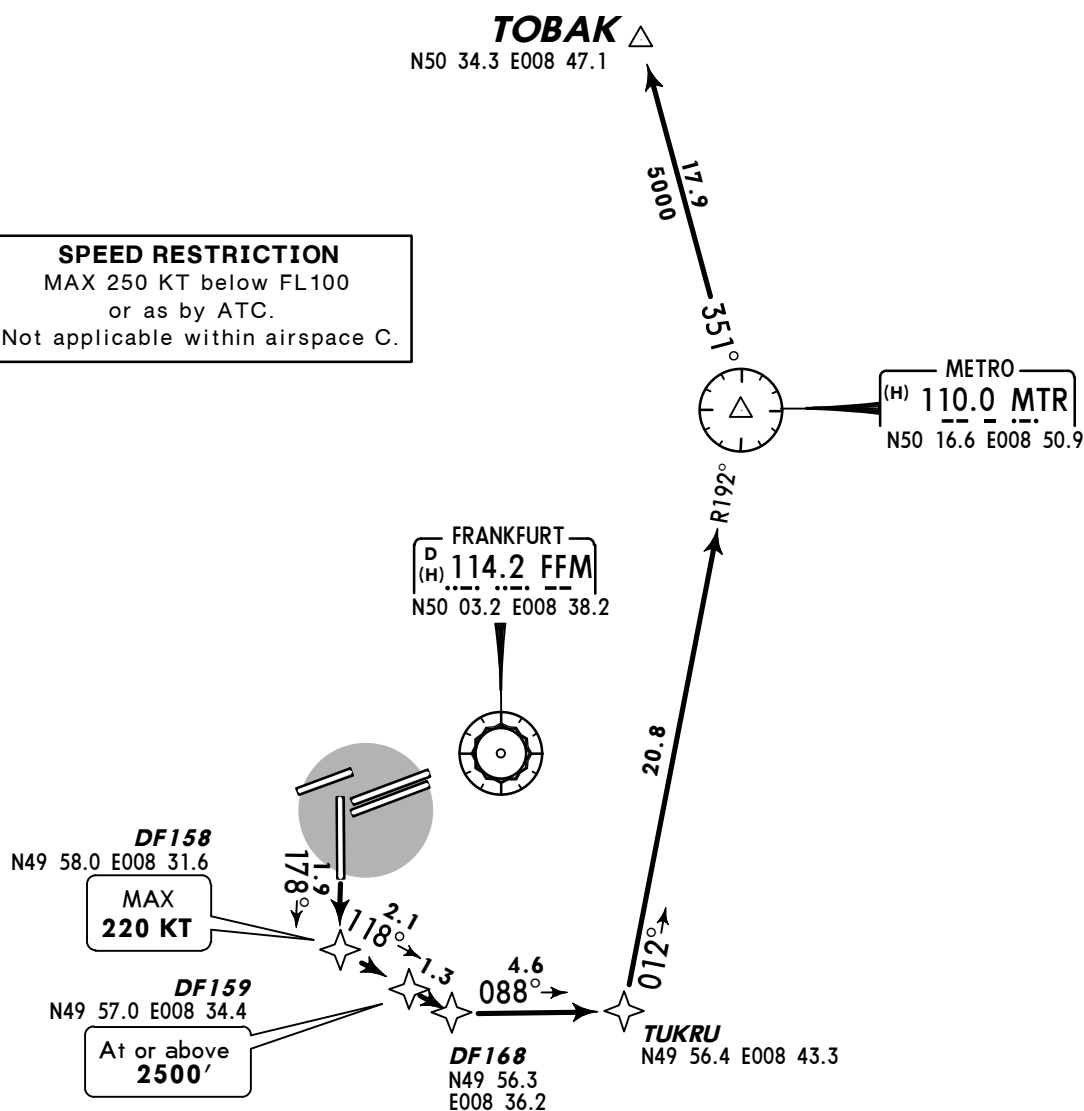
# TOBAK TWO ROMEO (TOBAK 2R) [TOBA2R] RWY 18 RNAV DEPARTURE (OVERLAY 10-3N)

BY ATC

WILL ONLY BE ASSIGNED BETWEEN 2300-0500LT  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.



This SID requires a minimum climb gradient of 565' per NM (9.3%) until passing 2500' due to airspace structure.

| Gnd speed-KT | 75  | 100 | 150  | 200  | 250  | 300  |
|--------------|-----|-----|------|------|------|------|
| 565' per NM  | 706 | 942 | 1413 | 1884 | 2355 | 2825 |

If unable to comply advise FRANKFURT  
Delivery prior to start-up.

Initial climb clearance **4000'**

## ROUTING

(800+) - DF158 (K220-) - DF159 (2500'+) - DF168 - TUKRU - MTR - TOBAK.



\*LANGEN  
Radar  
120.15Apt Elev  
364'

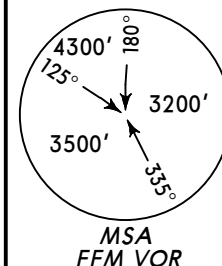
Trans level: By ATC Trans alt: 5000'

1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

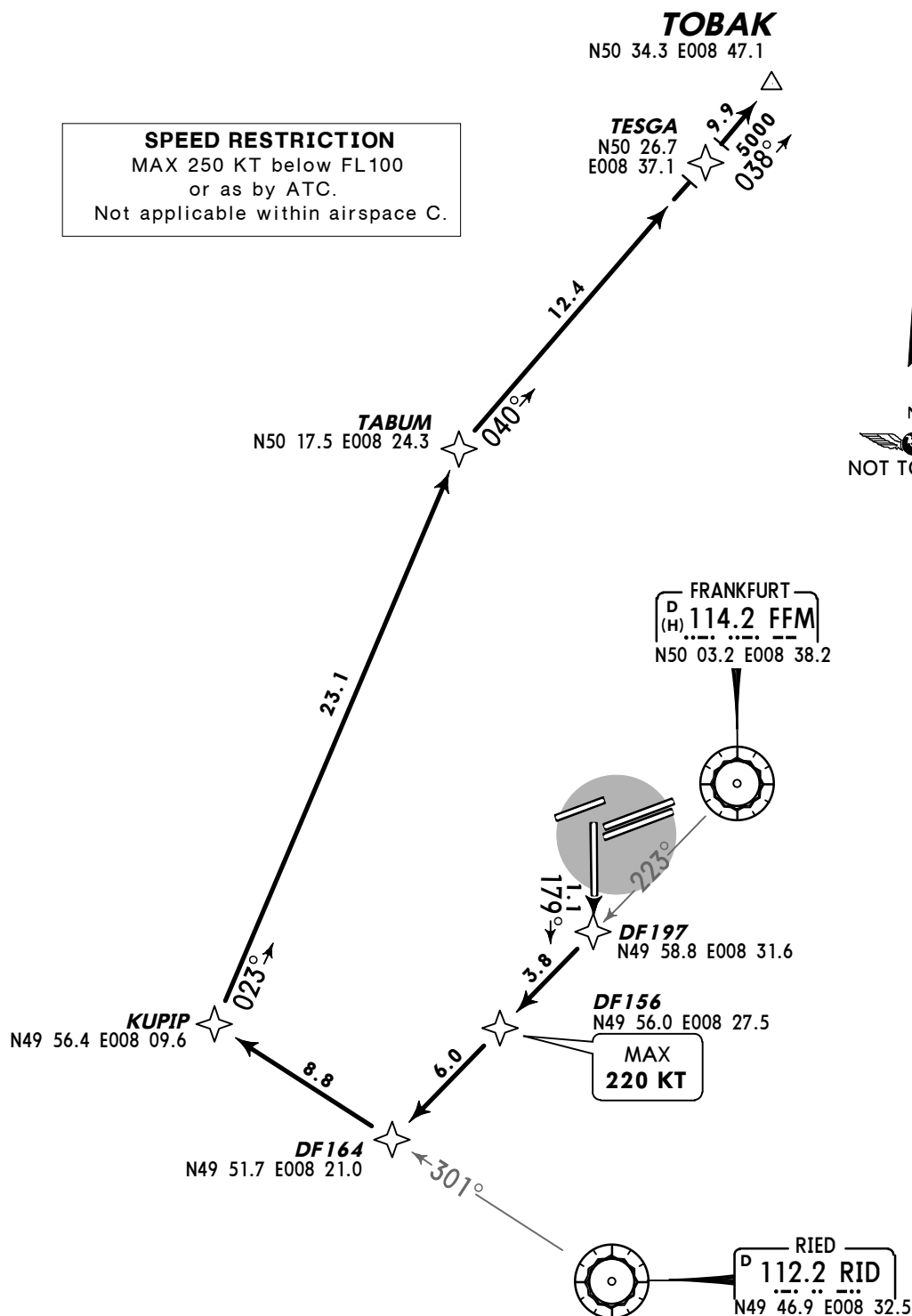
**TOBAK SIX SIERRA (TOBAK 6S) [TOBA6S]  
RWY 18 RNAV DEPARTURE (OVERLAY 10-3N1)**

BY ATC

WILL ONLY BE ASSIGNED WHEN LANDING DIRECTION IS RWY 25  
NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10



**SPEED RESTRICTION**  
MAX 250 KT below FL100  
or as by ATC.  
Not applicable within airspace C.

Initial climb clearance **4000'****ROUTING**

(800'+) - DF197 - DF156 (K220-) - DF164 - KUPIP - TABUM - TESGA - TOBAK.

\*LANGEN  
Radar  
136.12

Apt Elev  
364'

Trans level: By ATC Trans alt: 5000'  
1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages.

# TOBAK FOUR TANGO (TOBAK 4T) [TOBA4T] RWY 18 RNAV DEPARTURE (OVERLAY 10-3N2)

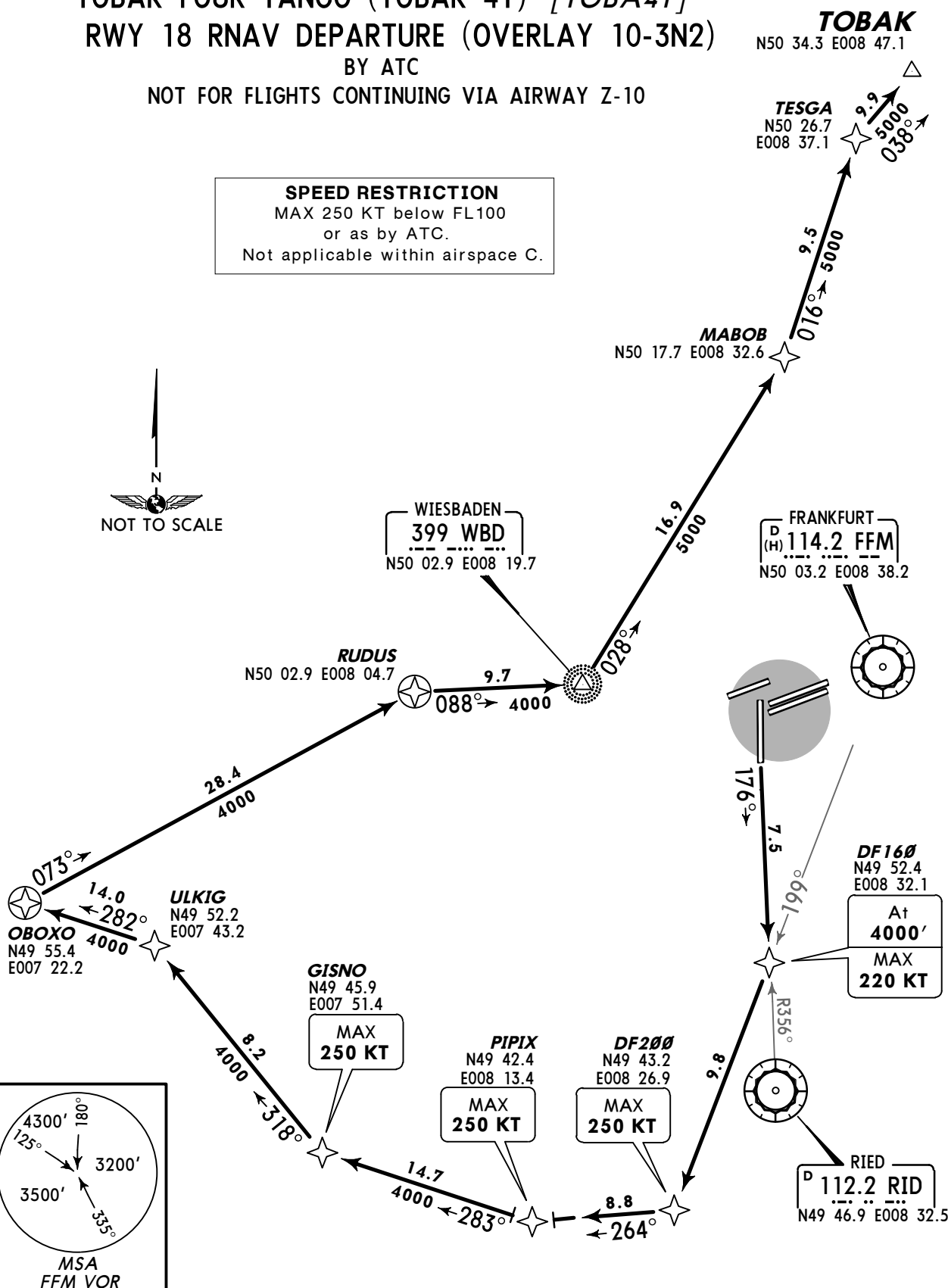
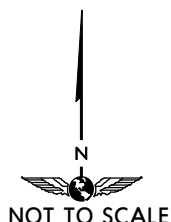
BY ATC

NOT FOR FLIGHTS CONTINUING VIA AIRWAY Z-10

## SPEED RESTRICTION

MAX 250 KT below FL100  
or as by ATC.

Not applicable within airspace C.



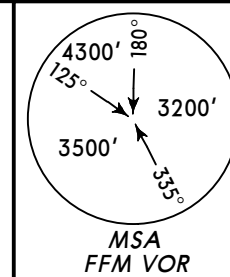
Initial climb clearance 4000'

## ROUTING

(800'+) - DF160 (4000'; K220-) - DF200 (K250-) - PIPIX (K250-) - GISNO (K250-) - ULKIG - OBO XO - RUDUS - WBD - MABOB - TESGA - TOBAK.

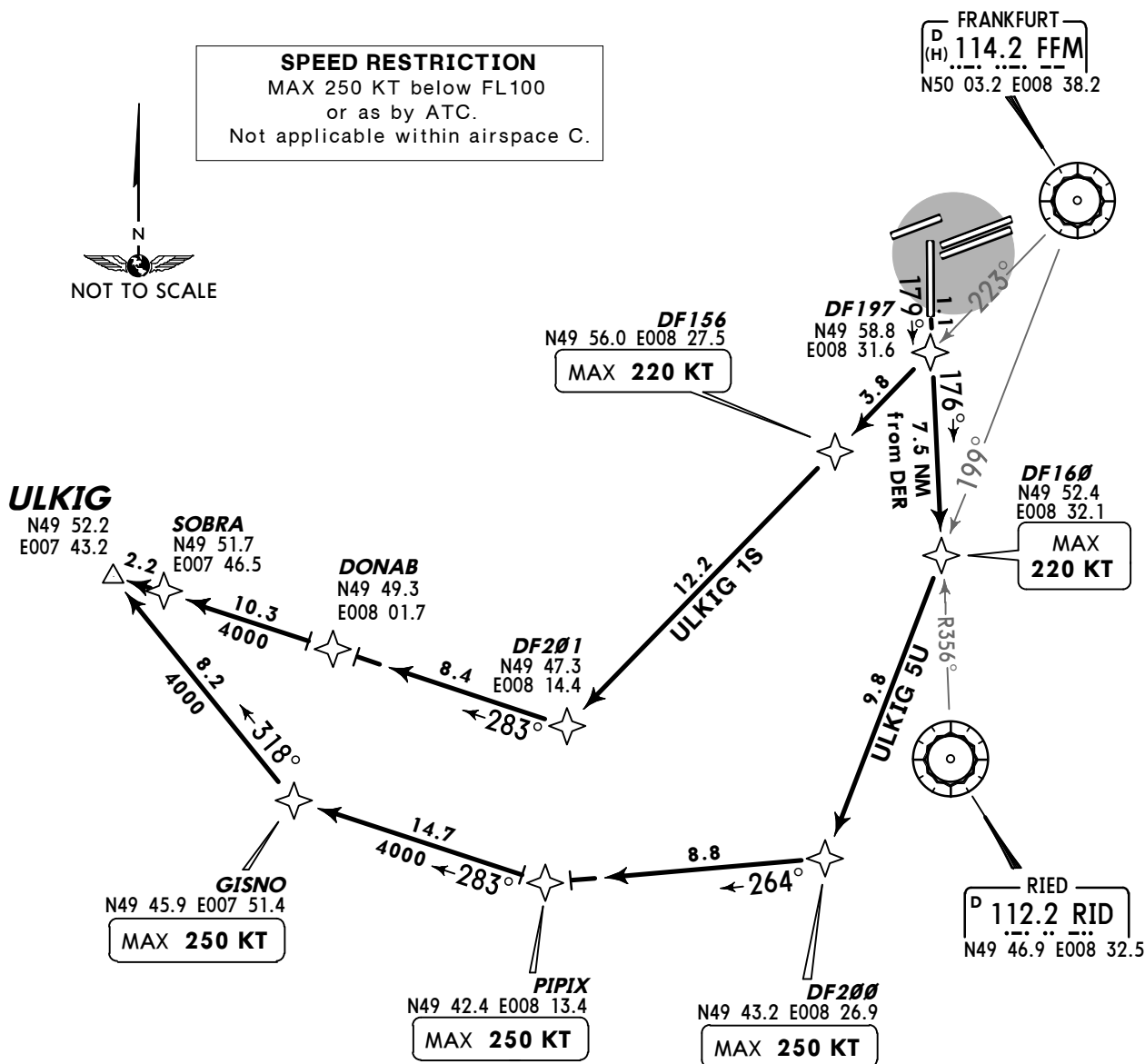
|                                                           |                  |                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *LANGEN Radar<br>ULKIG 1S<br>120.15<br>ULKIG 5U<br>136.12 | Apt Elev<br>364' | Trans level: By ATC    Trans alt: 5000'<br>1. Contact LANGEN Radar when advised by Tower. 2. SIDs are also noise abatement procedures (refer to 10-4). Strict adherence within the limits of aircraft performance is mandatory. 3. EXPECT close-in obstacles. 4. Wind shears and increased turbulences must be expected when winds heavy. 5. For departure designation refer to 10-1P pages. |
|-----------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**ULKIG ONE SIERRA (ULKIG 1S) [ULK11S]**  
**ULKIG FIVE UNIFORM (ULKIG 5U) [ULK15U]**  
**RWY 18 RNAV DEPARTURES (OVERLAY 10-3N3)**  
 FOR FLIGHTS INTENDING TO PROCEED AT OR ABOVE FL250  
 VIA AIRWAYS Y-180/Y-181  
 FLIGHTS HAVE TO BE ABLE TO CROSS RUDOT AT OR ABOVE FL240  
 IF UNABLE TO COMPLY, FLIGHT PLAN SHALL READ:  
 RUDOT FL220 - Y-180 - DIK RFL

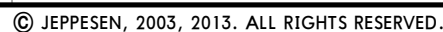


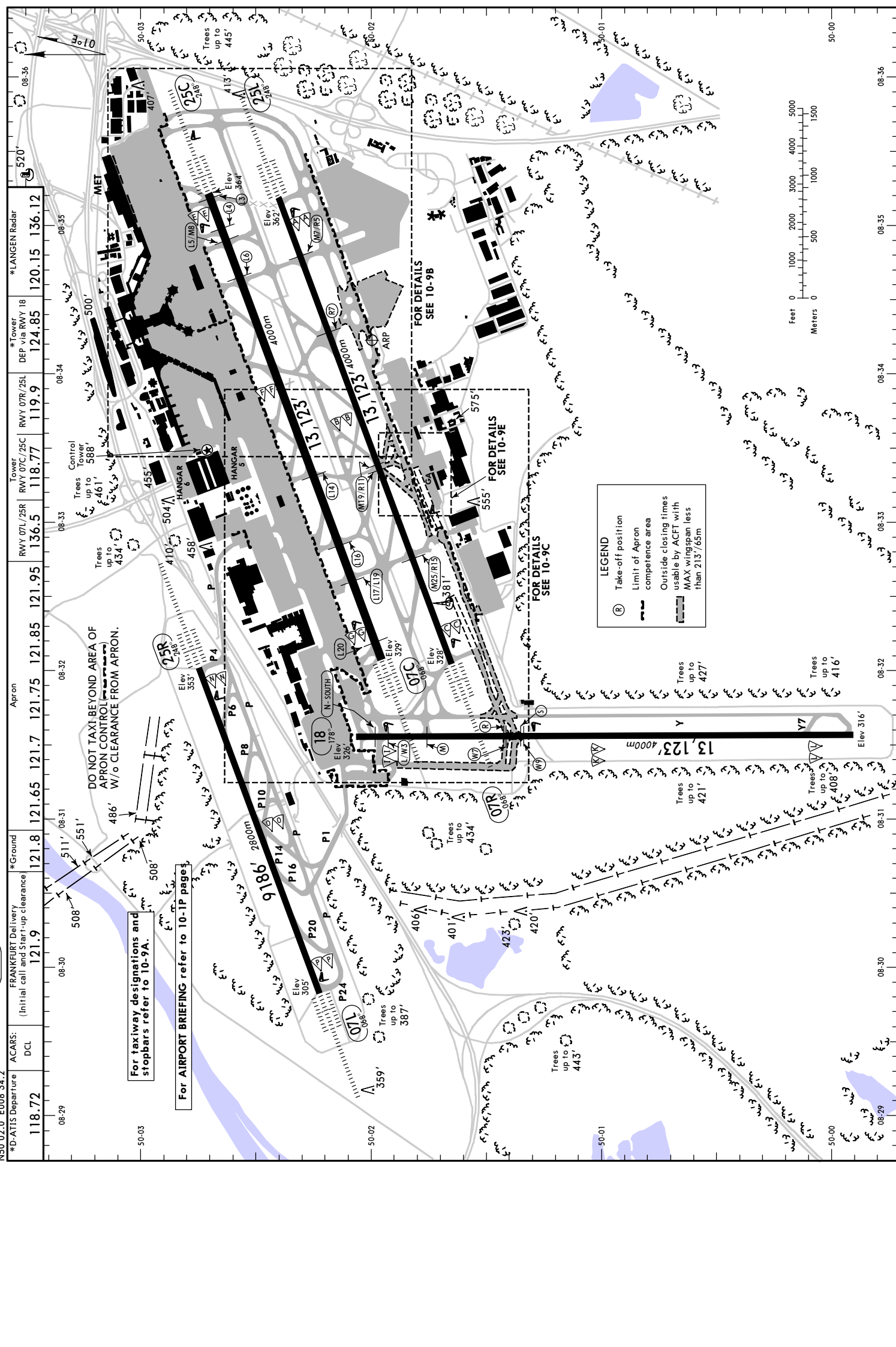
NOT TO SCALE

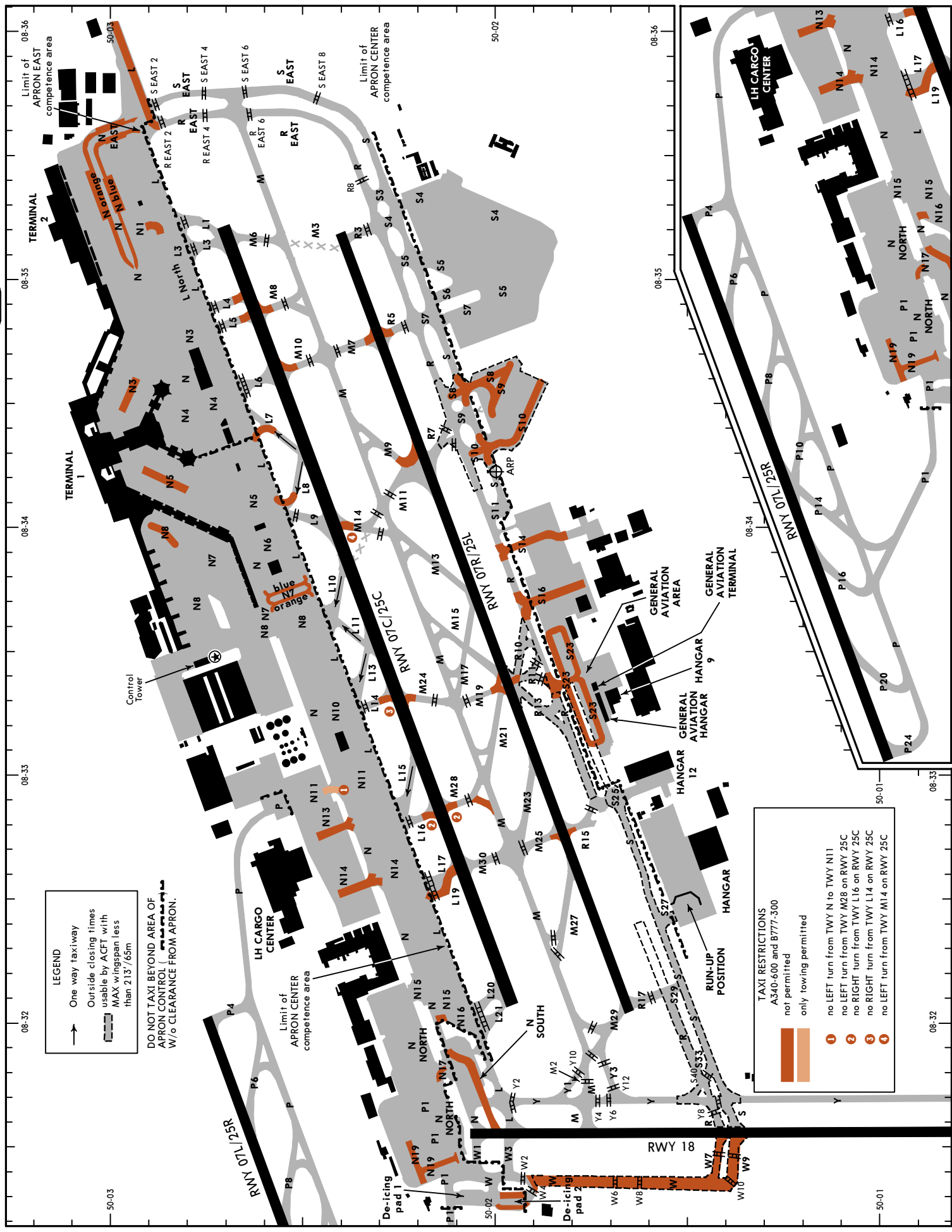
**SPEED RESTRICTION**  
 MAX 250 KT below FL100  
 or as by ATC.  
 Not applicable within airspace C.



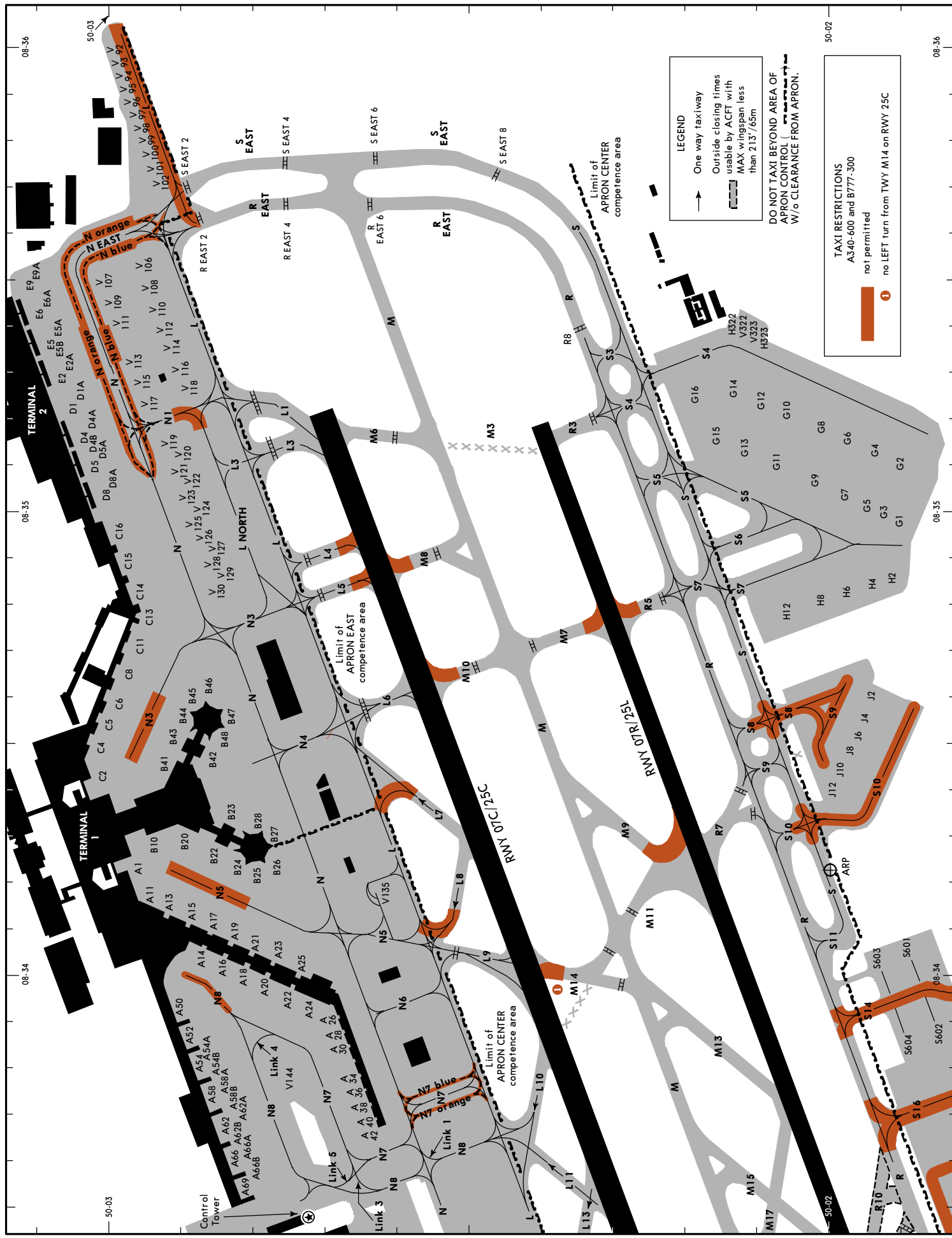
| Initial climb clearance 4000'                                   |                                                                                  |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------|
| SID                                                             | ROUTING                                                                          |
| <b>ULKIG 1S</b><br>Only to be used when landing direction is 25 | (800'+) - DF197 - DF156 (K220-) - DF201 - DONAB - SOBRA - ULKIG.                 |
| <b>ULKIG 5U</b>                                                 | (800'+) - DF160 (K220-) - DF200 (K250-) - PIPIX (K250-) - GISNO (K250-) - ULKIG. |

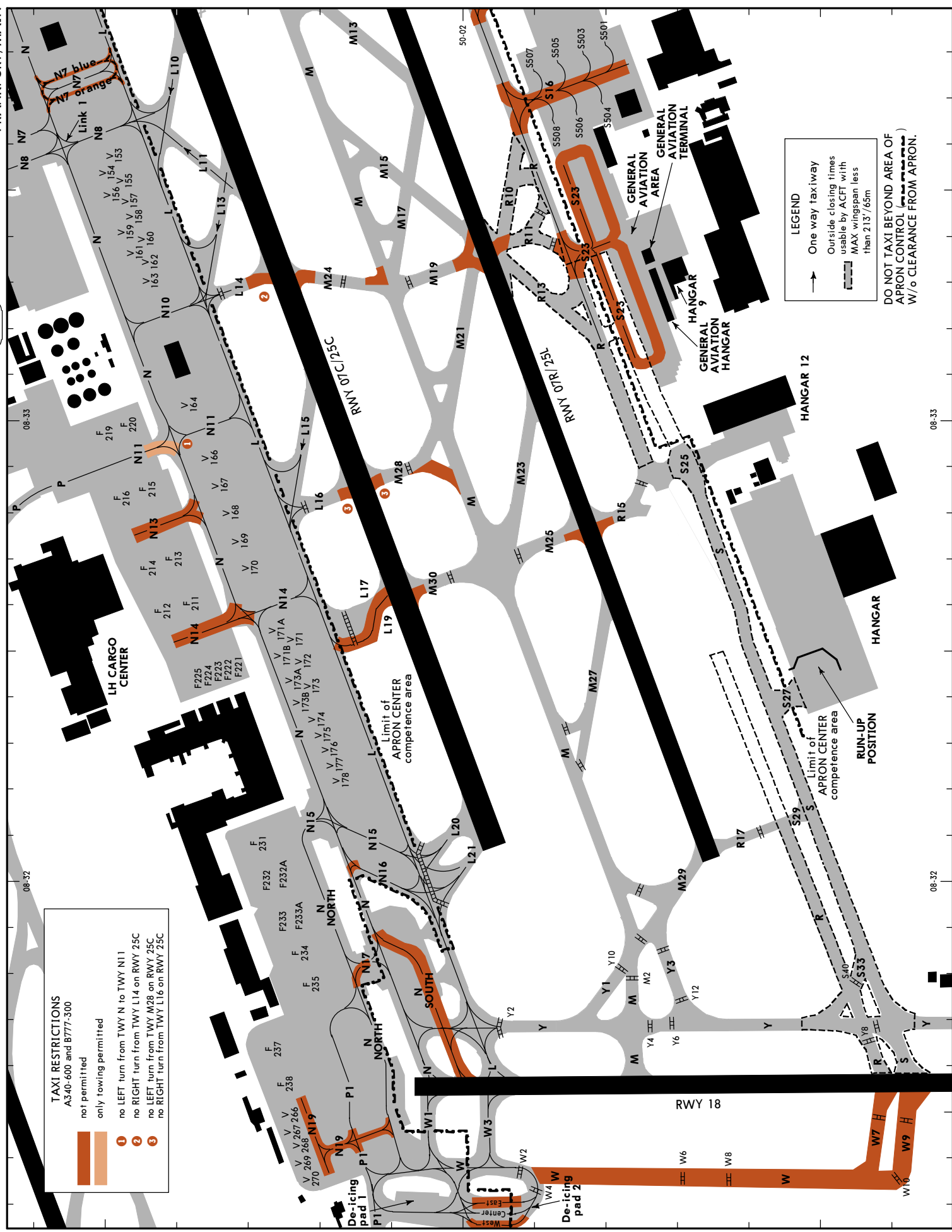






| ADDITIONAL RUNWAY INFORMATION                                                                                                        |                                                  |         |                          |                          |                   | USABLE LENGTHS |                               | TAKE-OFF | WIDTH    |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------|--------------------------|--------------------------|-------------------|----------------|-------------------------------|----------|----------|
| RWY                                                                                                                                  |                                                  |         |                          |                          |                   | Threshold      | LANDING BEYOND<br>Glide Slope |          |          |
| 07L                                                                                                                                  | HIRL ① CL ② ALSF-II TDZ REIL PAPI-L (3.0°) RVR   |         |                          |                          |                   |                | 8214' 2504m                   | NA       | 148' 45m |
| 25R                                                                                                                                  | HIRL ① CL ② ALSF-II TDZ REIL PAPI-R (3.2°) RVR   |         |                          |                          |                   |                | 7971' 2430m                   |          |          |
| PAPI systems: For all acft on ILS CAT I approaches PAPI is only usable up to a height of 200' referring to the respective threshold. |                                                  |         |                          |                          |                   |                |                               |          |          |
| ① spacing 60m. ② spacing 15m.                                                                                                        |                                                  |         |                          |                          |                   |                |                               |          |          |
| 07C                                                                                                                                  | HIRL ③ CL ④ ALSF-II TDZ REIL PAPI-L (3.0°) ⑤ RVR |         |                          |                          |                   |                | 11,968' 3648m                 | ⑦        | 197' 60m |
| 25C                                                                                                                                  | HIRL ③ CL ④ ALSF-II TDZ REIL PAPI-L (3.0°) ⑥ RVR |         |                          |                          |                   |                |                               |          |          |
| PAPI systems: For all acft on ILS CAT I approaches PAPI is only usable up to a height of 200' referring to the respective threshold. |                                                  |         |                          |                          |                   |                |                               |          |          |
| ③ spacing 60m. ④ spacing 15m.                                                                                                        |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑤ HST-L11 & L7                                                                                                                       |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑥ HST-L8, L10, L13 & L15                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑦ TAKE-OFF RUN AVAILABLE                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| RWY 07C:                                                                                                                             |                                                  |         |                          |                          | RWY 25C:          |                |                               |          |          |
| From rwy head                                                                                                                        |                                                  |         |                          |                          | From rwy head     |                |                               |          |          |
| position L20                                                                                                                         |                                                  |         |                          |                          | position L3       |                |                               |          |          |
| position L17/L19                                                                                                                     |                                                  |         |                          |                          | position L4       |                |                               |          |          |
| position L16                                                                                                                         |                                                  |         |                          |                          | position L5/M8    |                |                               |          |          |
| position L14                                                                                                                         |                                                  |         |                          |                          | position L6       |                |                               |          |          |
| 07R                                                                                                                                  | HIRL ⑧ CL ⑨ ALSF-II TDZ REIL PAPI-L (3.0°) ⑩ RVR |         |                          |                          |                   |                | 12,090' 3685m                 | ⑫        | 148' 45m |
| 25L                                                                                                                                  | HIRL ⑧ CL ⑨ ALSF-II TDZ REIL PAPI-L (3.0°) ⑪ RVR |         |                          |                          |                   |                | 11,909' 3630m                 |          |          |
| PAPI systems: For all acft on ILS CAT I approaches PAPI is only usable up to a height of 200' referring to the respective threshold. |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑧ spacing 60m. ⑨ spacing 15m.                                                                                                        |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑩ HST-M15, M13, M9 & R10                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑪ HST-M17, M21, M23, M27 & R13                                                                                                       |                                                  |         |                          |                          |                   |                |                               |          |          |
| ⑫ TAKE-OFF RUN AVAILABLE                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| RWY 07R:                                                                                                                             |                                                  |         |                          |                          | RWY 25L:          |                |                               |          |          |
| From rwy head                                                                                                                        |                                                  |         |                          |                          | From rwy head     |                |                               |          |          |
| position M25/R15                                                                                                                     |                                                  |         |                          |                          | position M7/R5    |                |                               |          |          |
| position M19/R11                                                                                                                     |                                                  |         |                          |                          | position R7       |                |                               |          |          |
|                                                                                                                                      |                                                  |         |                          |                          | position M19/R11  |                |                               |          |          |
| 18                                                                                                                                   | HIRL (60m) CL (15m) RVR                          |         |                          |                          |                   | NA             |                               | ⑬        | 148' 45m |
| ⑬ TAKE-OFF RUN AVAILABLE                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| RWY 18:                                                                                                                              |                                                  |         |                          |                          |                   |                |                               |          |          |
| From rwy head                                                                                                                        |                                                  |         |                          |                          |                   |                |                               |          |          |
| position N-SOUTH                                                                                                                     |                                                  |         |                          |                          |                   |                |                               |          |          |
| position L/W3                                                                                                                        |                                                  |         |                          |                          |                   |                |                               |          |          |
| position M                                                                                                                           |                                                  |         |                          |                          |                   |                |                               |          |          |
| position R                                                                                                                           |                                                  |         |                          |                          |                   |                |                               |          |          |
| position W7                                                                                                                          |                                                  |         |                          |                          |                   |                |                               |          |          |
| position S                                                                                                                           |                                                  |         |                          |                          |                   |                |                               |          |          |
| position W9                                                                                                                          |                                                  |         |                          |                          |                   |                |                               |          |          |
| Standard                                                                                                                             |                                                  |         |                          |                          |                   |                |                               |          |          |
| TAKE-OFF ①                                                                                                                           |                                                  |         |                          |                          |                   |                |                               |          |          |
| Rwys 07C/R, 18, 25L/C                                                                                                                |                                                  |         |                          |                          |                   |                |                               |          |          |
| LVP must be in Force                                                                                                                 |                                                  |         |                          |                          |                   |                |                               |          |          |
| Approved Operators<br>HIRL, CL<br>& mult. RVR req                                                                                    | RL, CL<br>& mult. RVR req                        | RL & CL | RCLM (DAY only)<br>or RL | RCLM (DAY only)<br>or RL | NIL<br>(DAY only) |                |                               |          |          |
| A                                                                                                                                    |                                                  |         |                          |                          |                   |                |                               |          |          |
| B                                                                                                                                    | 125m                                             | 150m    | 200m                     | 250m                     | 400m              |                | 500m                          |          |          |
| C                                                                                                                                    |                                                  |         |                          |                          |                   |                |                               |          |          |
| D                                                                                                                                    | 150m                                             | 200m    | 250m                     | 300m                     |                   |                |                               |          |          |
| ① Operators applying U.S. Ops Specs: CL required below 300m; approved HUD required below 150m.                                       |                                                  |         |                          |                          |                   |                |                               |          |          |

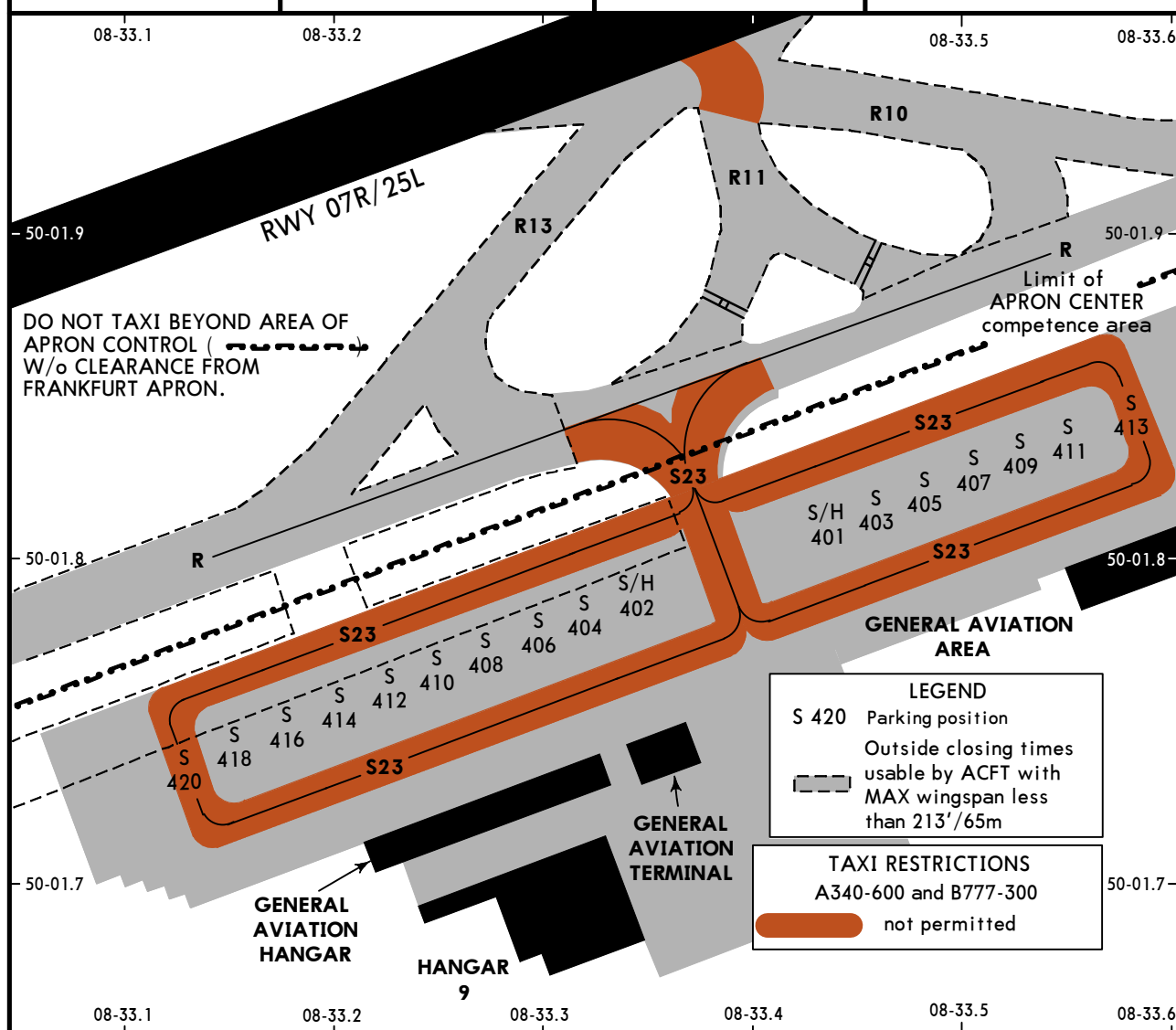




| INS COORDINATES   |                    |                |                    |
|-------------------|--------------------|----------------|--------------------|
| STAND No.         | COORDINATES        | STAND No.      | COORDINATES        |
| A1                | N50 03.0 E008 34.3 | G5             | N50 01.9 E008 35.0 |
| A11               | N50 03.0 E008 34.2 | G6, G7         | N50 02.0 E008 35.1 |
| A13               | N50 02.9 E008 34.2 | G8             | N50 02.0 E008 35.2 |
| A14, A15          | N50 02.9 E008 34.1 | G9             | N50 02.0 E008 35.1 |
| A16               | N50 02.8 E008 34.1 | G10 thru G13   | N50 02.1 E008 35.2 |
| A17               | N50 02.9 E008 34.1 | G14            | N50 02.1 E008 35.3 |
| A18, A19          | N50 02.8 E008 34.1 | G15, G16       | N50 02.2 E008 35.2 |
| A20               | N50 02.8 E008 34.0 | H2             | N50 01.9 E008 34.9 |
| A21               | N50 02.8 E008 34.1 | H4             | N50 01.9 E008 34.8 |
| A22               | N50 02.7 E008 34.0 | H6, H8         | N50 02.0 E008 34.8 |
| A23               | N50 02.8 E008 34.0 | H12            | N50 02.1 E008 34.8 |
| A24, A25          | N50 02.7 E008 34.0 | H322, H323     | N50 02.1 E008 35.4 |
| A26 thru A30      | N50 02.7 E008 33.9 | J2, J4         | N50 02.0 E008 34.6 |
| A34               | N50 02.7 E008 33.8 | J6 thru J10    | N50 02.0 E008 34.5 |
| A36               | N50 02.6 E008 33.8 | J12            | N50 02.0 E008 34.4 |
| A38 thru A42      | N50 02.6 E008 33.7 | S/H401, S/H402 | N50 01.8 E008 33.4 |
| A50, A52          | N50 02.9 E008 33.9 | S403           | N50 01.8 E008 33.5 |
| A54 thru A58B     | N50 02.9 E008 33.8 | S404           | N50 01.8 E008 33.4 |
| A62 thru A62B     | N50 02.8 E008 33.7 | S405           | N50 01.8 E008 33.5 |
| A66 thru A69      | N50 02.8 E008 33.6 | S406           | N50 01.8 E008 33.3 |
| B10, B20          | N50 02.9 E008 34.3 | S407           | N50 01.8 E008 33.5 |
| B22 thru B28      | N50 02.8 E008 34.3 | S408           | N50 01.8 E008 33.3 |
| B41 thru B43      | N50 02.9 E008 34.5 | S409           | N50 01.8 E008 33.6 |
| B44 thru B46      | N50 02.9 E008 34.6 | S410           | N50 01.8 E008 33.3 |
| B47               | N50 02.8 E008 34.6 | S411           | N50 01.8 E008 33.6 |
| B48               | N50 02.9 E008 34.5 | S412           | N50 01.8 E008 33.3 |
| C2, C4            | N50 03.0 E008 34.5 | S413           | N50 01.8 E008 33.6 |
| C5, C6            | N50 03.0 E008 34.6 | S414           | N50 01.8 E008 33.2 |
| C8, C11           | N50 03.0 E008 34.7 | S416 thru S420 | N50 01.7 E008 33.2 |
| C13, C14          | N50 03.0 E008 34.8 | S501, S503     | N50 01.8 E008 33.9 |
| C15               | N50 03.0 E008 34.9 | S504           | N50 01.8 E008 33.7 |
| C16               | N50 03.0 E008 35.0 | S505           | N50 01.9 E008 33.8 |
| D1 thru D4B       | N50 03.1 E008 35.2 | S506           | N50 01.8 E008 33.6 |
| D5 thru D8A       | N50 03.0 E008 35.1 | S507           | N50 01.9 E008 33.8 |
| E2, E2A           | N50 03.1 E008 35.3 | S508           | N50 01.9 E008 33.6 |
| E5 thru E6A       | N50 03.1 E008 35.4 | S601           | N50 01.9 E008 34.1 |
| E9, E9A           | N50 03.1 E008 35.5 | S602           | N50 01.9 E008 33.9 |
| F211              | N50 02.4 E008 32.7 | S603           | N50 01.9 E008 34.1 |
| F212              | N50 02.4 E008 32.6 | S604           | N50 01.9 E008 33.9 |
| F213, F214        | N50 02.4 E008 32.7 |                |                    |
| F215              | N50 02.4 E008 32.9 |                |                    |
| F216              | N50 02.5 E008 32.9 |                |                    |
| F219, F220        | N50 02.5 E008 33.0 |                |                    |
| F221 thru F223    | N50 02.3 E008 32.5 |                |                    |
| F224, F225        | N50 02.4 E008 32.4 |                |                    |
| F231              | N50 02.3 E008 32.1 |                |                    |
| F232, F232A       | N50 02.3 E008 32.0 |                |                    |
| F233, F233A, F234 | N50 02.3 E008 31.9 |                |                    |
| F235              | N50 02.2 E008 31.8 |                |                    |
| F237              | N50 02.3 E008 31.7 |                |                    |
| F238              | N50 02.2 E008 31.6 |                |                    |
| G1                | N50 01.9 E008 35.0 |                |                    |
| G2                | N50 01.9 E008 35.1 |                |                    |
| G3                | N50 01.9 E008 35.0 |                |                    |
| G4                | N50 01.9 E008 35.1 |                |                    |

## INS COORDINATES

| STAND No.      | COORDINATES        | STAND No.       | COORDINATES        |
|----------------|--------------------|-----------------|--------------------|
| V92 thru V94   | N50 03.0 E008 36.0 | V163            | N50 02.4 E008 33.3 |
| V95 thru V98   | N50 03.0 E008 35.9 | V164            | N50 02.4 E008 33.1 |
| V99 thru V101  | N50 03.0 E008 35.8 | V166, V167      | N50 02.3 E008 32.9 |
| V102           | N50 02.9 E008 35.7 | V168, V169      | N50 02.3 E008 32.8 |
| V106           | N50 03.0 E008 35.6 | V170            | N50 02.3 E008 32.7 |
| V107 thru V111 | N50 03.0 E008 35.5 | V171 thru V173B | N50 02.2 E008 32.5 |
| V112, V113     | N50 03.0 E008 35.4 | V174            | N50 02.2 E008 32.4 |
| V114           | N50 02.9 E008 35.4 | V175 thru V177  | N50 02.2 E008 32.3 |
| V115 thru V118 | N50 02.9 E008 35.3 | V178            | N50 02.1 E008 32.2 |
| V119, V120     | N50 02.9 E008 35.2 | V266, V267      | N50 02.3 E008 31.5 |
| V121 thru V123 | N50 02.9 E008 35.1 | V268 thru V270  | N50 02.2 E008 31.4 |
| V124, V125     | N50 02.9 E008 35.0 | V322            | N50 02.1 E008 35.5 |
| V126, V127     | N50 02.8 E008 35.0 | V323            | N50 02.1 E008 35.4 |
| V128 thru V130 | N50 02.8 E008 34.9 |                 |                    |
| V135           | N50 02.6 E008 34.2 |                 |                    |
| V144           | N50 02.8 E008 33.8 |                 |                    |
| V153 thru 155  | N50 02.5 E008 33.6 |                 |                    |
| V156, V157     | N50 02.5 E008 33.5 |                 |                    |
| V158, V159     | N50 02.4 E008 33.5 |                 |                    |
| V160 thru V162 | N50 02.4 E008 33.4 |                 |                    |



# ADVANCED VISUAL DOCKING GUIDANCE SYSTEM (A-VDGS)

## 1. GENERAL

The following procedures take place during taxi-in and are displayed on the position's panel:

### 1.1. Start of Docking

The system is started by activating the button with the scheduled aircraft type on the remote control unit. "Wait" is displayed until the docking surface is checked.

### 1.2. Capture

Aircraft type is displayed on the panel. An arrow pointing upwards shows the screening of the aircraft.

### 1.3. Tracking

As soon as the laser has captured the aircraft, the arrow is replaced by a vertical yellow line (centerline indicator). A flashing red arrow shows the required steering direction. The vertical yellow arrow shows the aircraft's position in comparison to the centerline and the azimuth guidance.

### 1.4. Closing Rate

During the closing rate the panel shows the remaining distance between the aircraft's current position and the stop position, commencing at a distance determined by the system (i. e. 98'/30m). The centerline indicator reduces digit by digit with the aircraft approaching the stop position. Having reached the final digit the panel will show "STOP".

### 1.5. Decrease Speed "SLOW"

If the aircraft is approaching faster than the acceptable speed, the panel will display "SLOW".

### 1.6. Azimuth Guidance

The aircraft is as far from stop position as displayed on the panel. The vertical yellow arrow shows the aircraft's position in comparison to the centerline, a flashing red arrow (deviation indicator) shows the required steering direction.

### 1.7. Stop-Position Reached

As soon as the aircraft has reached the correct stop position, the panel will display "STOP".

### 1.8. Docking Completed

As soon as the aircraft is parked the panel will display "OK".

### 1.9. Overshoot

If the aircraft has overshoot the stop position, the panel will display "TOO FAR".

### 1.10. Interruption of Guidance During Tracking

Should clear view to the aircraft be interrupted by any object or the detected aircraft lost during docking close to the stop position, the panel will display "WAIT". In that case pilots shall interrupt docking until display "WAIT" is extinguished.

## 2. FURTHER DISPLAYS

### 2.1. SLOW

Is displayed in bad weather conditions or poor view and when capture of aircraft is interrupted.

### 2.2. STOP and ID FAIL

Should capture of aircraft fail up to 39'/12m ahead of stop position, taxiing shall be aborted. In this case, aircraft may not continue taxiing without the aid of apron supervision.

### 2.3. WAIT and GATE BLOCK

If the panel displays this message, the aircraft may not continue taxiing without the aid of apron supervision.

### 2.4. WAIT and VIEW BLOCK

If the view to the approaching aircraft is hindered, for instance due to contaminated laser lens or other objects reaching into the position, the aircraft may not continue taxiing without the aid of apron supervision.

### 2.5. STOP

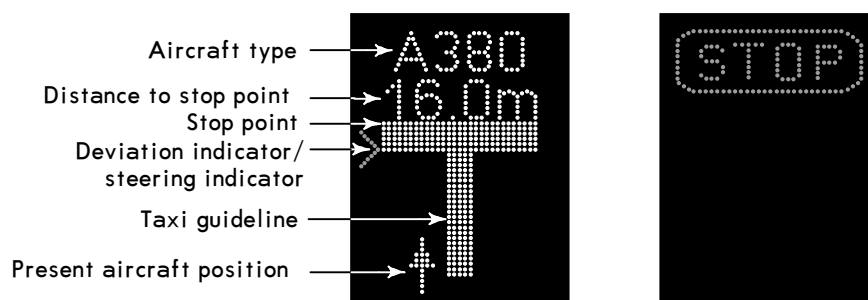
In case of emergency, an emergency button provided at the aircraft stand can be pushed by either apron supervision or any other authorized personnel. In this case "STOP" will be displayed on the panel and aircraft may not continue taxiing without the aid of apron supervision.

### 2.6. IRREGULARITIES

Should power outage or system shutdown or other irregularities occur, display will be extinguished or the panel will display figures determined by the system.

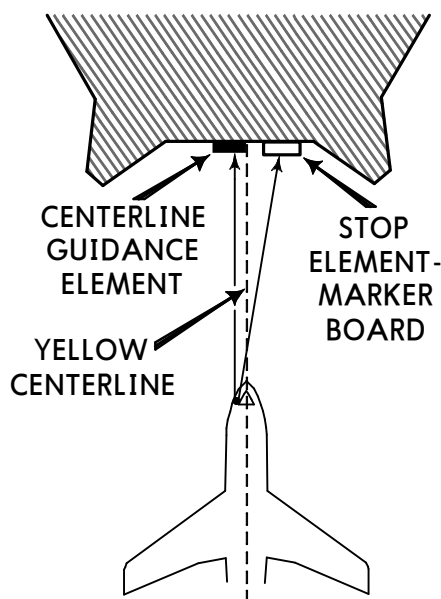
## 3. DISPLAY OF IMAGES AND FUNCTIONS ON THE PANEL

### 3.1. Examples:



Depending on the system type, displays can be slightly different or additional.

## AIRCRAFT GUIDANCE FOR NOSE-IN STANDS (AGNIS)



### GENERAL

The visual guidance system for nose-in parking positions AGNIS (Aircraft Guidance for Nose-In Stands) consists of the following elements:

1. CENTERLINE GUIDANCE ELEMENT
2. YELLOW CENTERLINE
3. STOP ELEMENT - MARKER BOARD

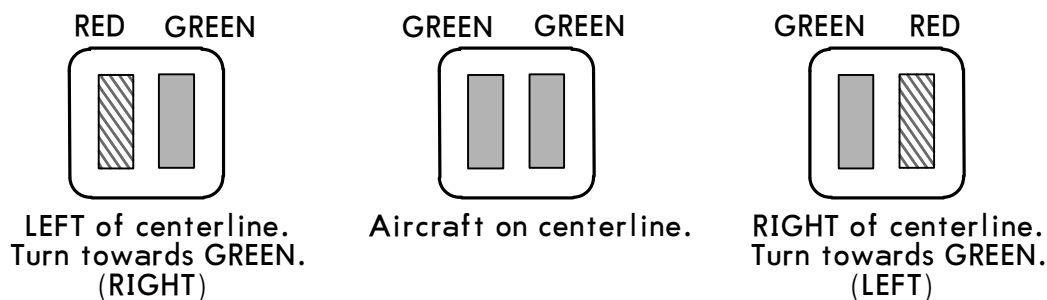
### CAUTION

The system is aligned with the LEFT hand pilot seat only. In case of AGNIS failure, nose-in positioning will be guided by marshaller.

NOTE: Nose-in parking aircraft (on push-back position) have to use towing truck when leaving parking position.

### CENTERLINE GUIDANCE ELEMENT

Approach the parking position along the yellow centerline so that both vertical slots in the Centerline Guidance Element show GREEN. Adjustments to the left or right shall always be made towards the GREEN.



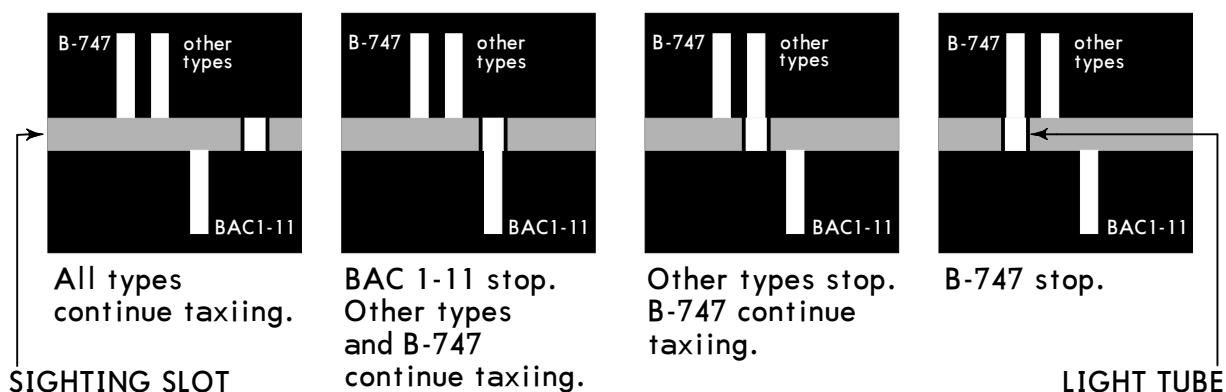
### STOP ELEMENT - MARKER BOARD

The aircraft is stopped at the correct position by means of the Stop Element. When the tubular light, visible through the horizontal slot in the marker board, registers in line with the appropriate vertical reference mark, the aircraft has reached the correct stopping position.

### CAUTION

Be sure to select the correct vertical reference mark corresponding to your type of aircraft. Marker board layouts are different for the various nose-in parking positions.

### AGNIS CENTRE LINE GUIDANCE STOP ELEMENT - MARKER BOARD



# EDDF/FRA FRANKFURT/MAIN

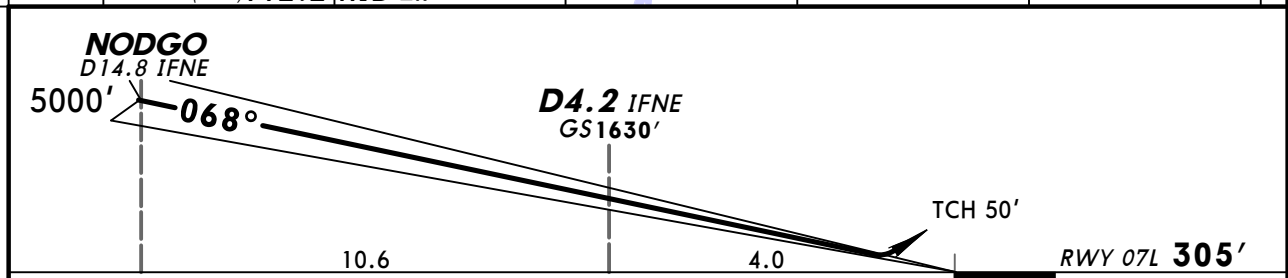
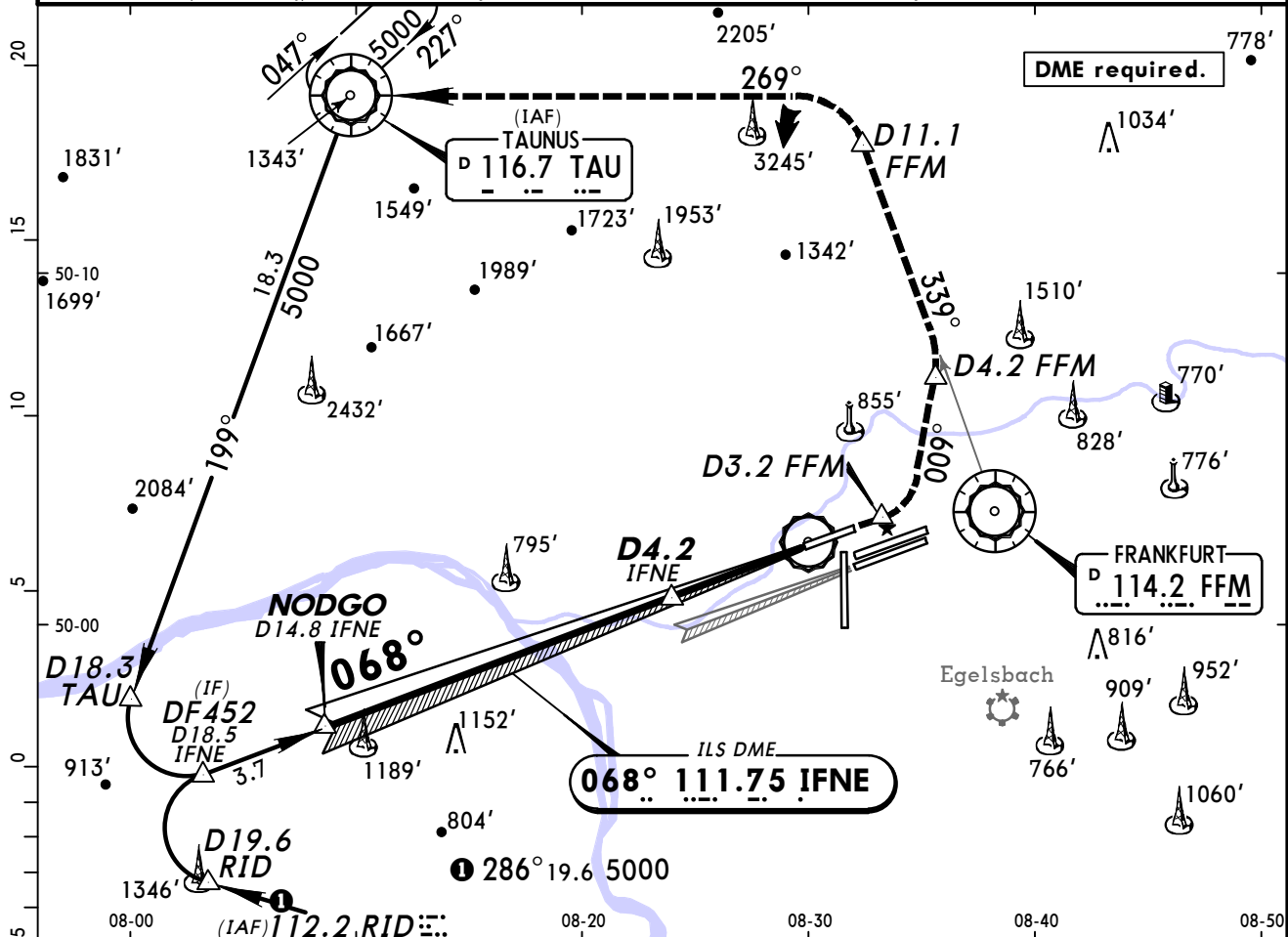
12 OCT 12  
Eff 18 Oct

11-1

JEPPSEN FRANKFURT/MAIN, GERMANY  
MISSED APCH CLIMB  
GRAD MIM 4.6% ILS Z Rwy 07L

|                                                                                                                                                                                                                                                                                    |                                   |                                  |                                      |                           |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|---------------------------|--------------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                                                    | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP)        | *FRANKFURT Arrival (APP)             | FRANKFURT Tower           | *Ground            |
| 118.02                                                                                                                                                                                                                                                                             | 120.8 125.35                      | 127.27                           | 118.5                                | 136.5                     | 121.8              |
| LOC<br>IFNE<br>111.75                                                                                                                                                                                                                                                              | Final<br>Apch Crs<br>068°         | GS<br>D4.2 IFNE<br>1630' (1325') | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 305' |                    |
| <b>MISSED APCH: Climb STRAIGHT AHEAD. At D3.2 FFM turn LEFT onto 009°.</b><br><b>At D4.2 FFM turn LEFT to intercept R-339 FFM. At D11.1 FFM turn LEFT</b><br><b>to intercept R-089 inbound TAU VOR climbing to 5000'.</b><br><b>In case of Missed apch inform ATC immediately.</b> |                                   |                                  |                                      |                           | <p>MSA FFM VOR</p> |

Alt Set: hPa(IN on req) Rwy Elev: 11 hPa Trans level: By ATC Trans alt: 5000'

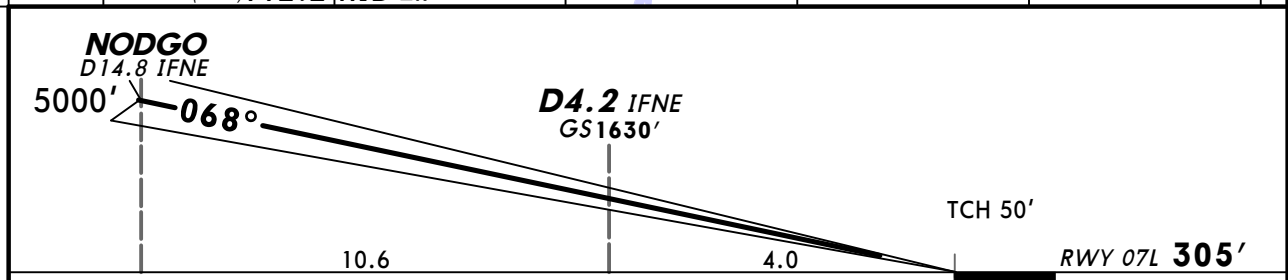
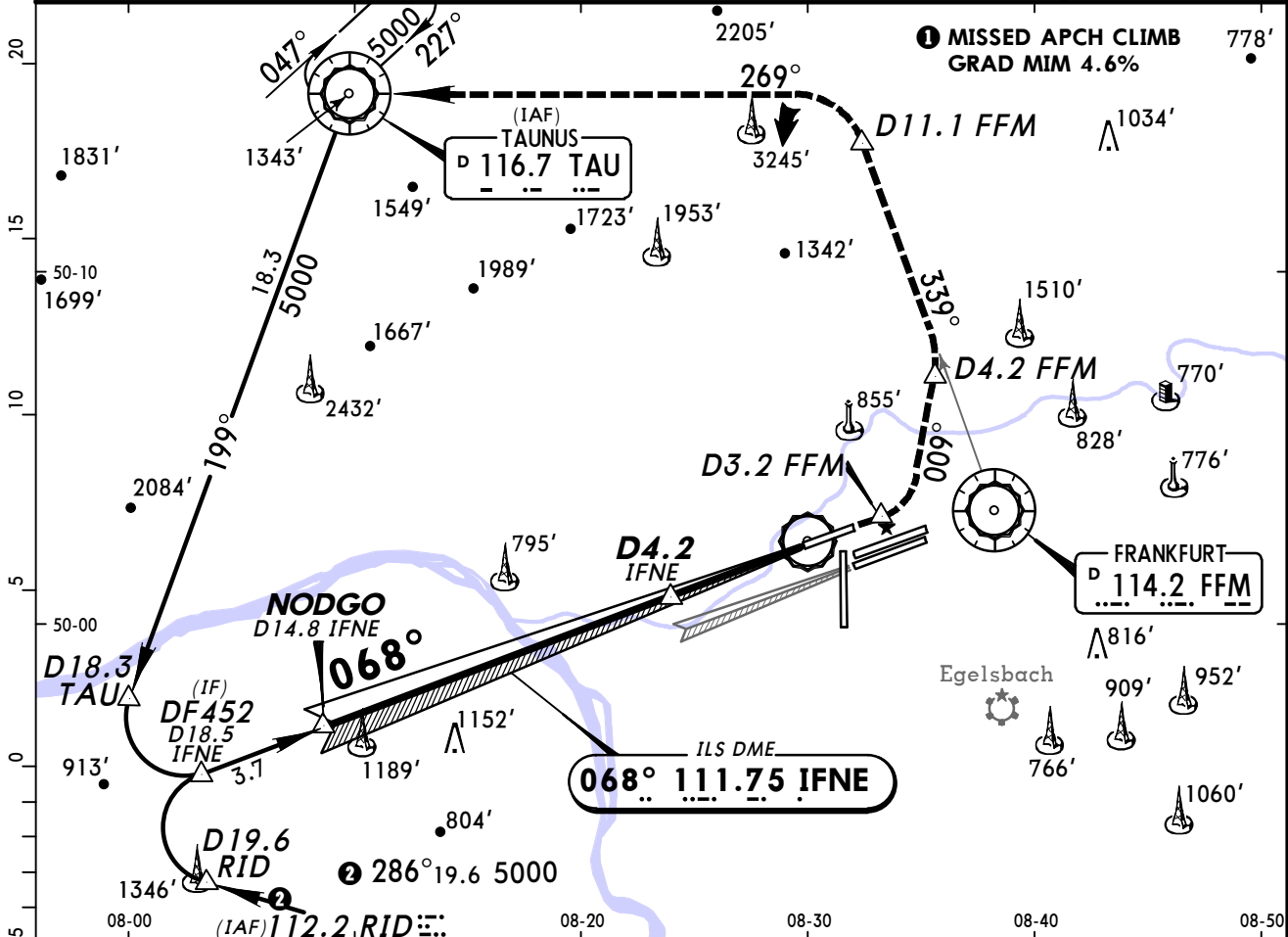


|               |       |     |     |     |     |     |           |        |          |      |          |
|---------------|-------|-----|-----|-----|-----|-----|-----------|--------|----------|------|----------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II   | Inform | D3.2 FFM | 009° | D4.2 FFM |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 755 | REIL PAPI | ATC    | ↑        | LT   |          |

|                                                 |          |                             |          |         |           |
|-------------------------------------------------|----------|-----------------------------|----------|---------|-----------|
| Standard                                        |          | STRAIGHT-IN LANDING RWY 07L |          |         |           |
| Missed apch climb gradient mim 4.6% up to 3500' |          |                             |          |         |           |
| ABC: 505' (200')                                |          |                             |          |         |           |
| DA(H) D: 513' (208')                            |          |                             |          |         |           |
| FULL                                            |          | Limited                     |          | ALS out |           |
| A                                               | RVR 550m |                             | RVR 750m |         | RVR 1200m |
| B                                               |          |                             |          |         |           |
| C                                               |          |                             |          |         |           |
| D                                               |          |                             |          |         |           |

# EDDF/FRA FRANKFURT/MAIN 12 OCT 12 11-1A CAT II/III ILS Z Rwy 07L

|                                                                                                                                                                                                                                                         |                                   |                                  |                                              |                           |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------|----------------------------------------------|---------------------------|-------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                         | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP)        | *FRANKFURT Arrival (APP)                     | FRANKFURT Tower           | *Ground     |
| 118.02                                                                                                                                                                                                                                                  | 120.8 125.35                      | 127.27                           | 118.5                                        | 136.5                     | 121.8       |
| LOC<br>IFNE<br>111.75                                                                                                                                                                                                                                   | Final<br>Aptch Crs<br>068°        | GS<br>D4.2 IFNE<br>1630' (1325') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 305' |             |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD. At D3.2 FFM turn LEFT onto 009°. At D4.2 FFM turn LEFT to intercept R-339 FFM. At D11.1 FFM turn LEFT to intercept R-089 inbound TAU VOR climbing to 5000'.<br>In case of Missed apch inform ATC immediately. |                                   |                                  |                                              |                           |             |
| Alt Set: hPa(IN on req) Rwy Elev: 11 hPa Trans level: By ATC Trans alt: 5000'<br>1. DME required. 2. Special Aircrew & Aircraft Certification Required.                                                                                                 |                                   |                                  |                                              |                           | MSA FFM VOR |



|               |       |     |     |     |     |     |           |            |          |      |          |
|---------------|-------|-----|-----|-----|-----|-----|-----------|------------|----------|------|----------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II   | Inform ATC | D3.2 FFM | 009° | D4.2 FFM |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 755 | REIL PAPI |            | ↑        | LT   |          |

|                                                       |  |  |                                                                                                                                                                                                                                          |  |  |          |
|-------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|----------|
| <b>Standard</b><br>CAT IIIA ILS<br>DH 50'<br>RVR 200m |  |  | STRAIGHT-IN LANDING RWY 07L<br>CAT II ILS<br>Missed apch climb gradient mim 4.6% up to 3500'<br>A: RA 100' DA(H) 405' (100')<br>B: RA 106' DA(H) 412' (107')<br>C: RA 119' DA(H) 425' (120')<br>D: RA 131' DA(H) 438' (133')<br>RVR 300m |  |  | RVR 400m |
|-------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|----------|

# EDDF/FRA FRANKFURT/MAIN

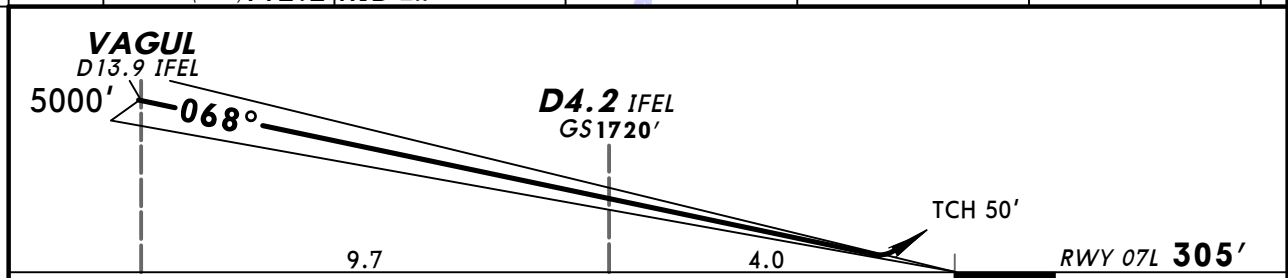
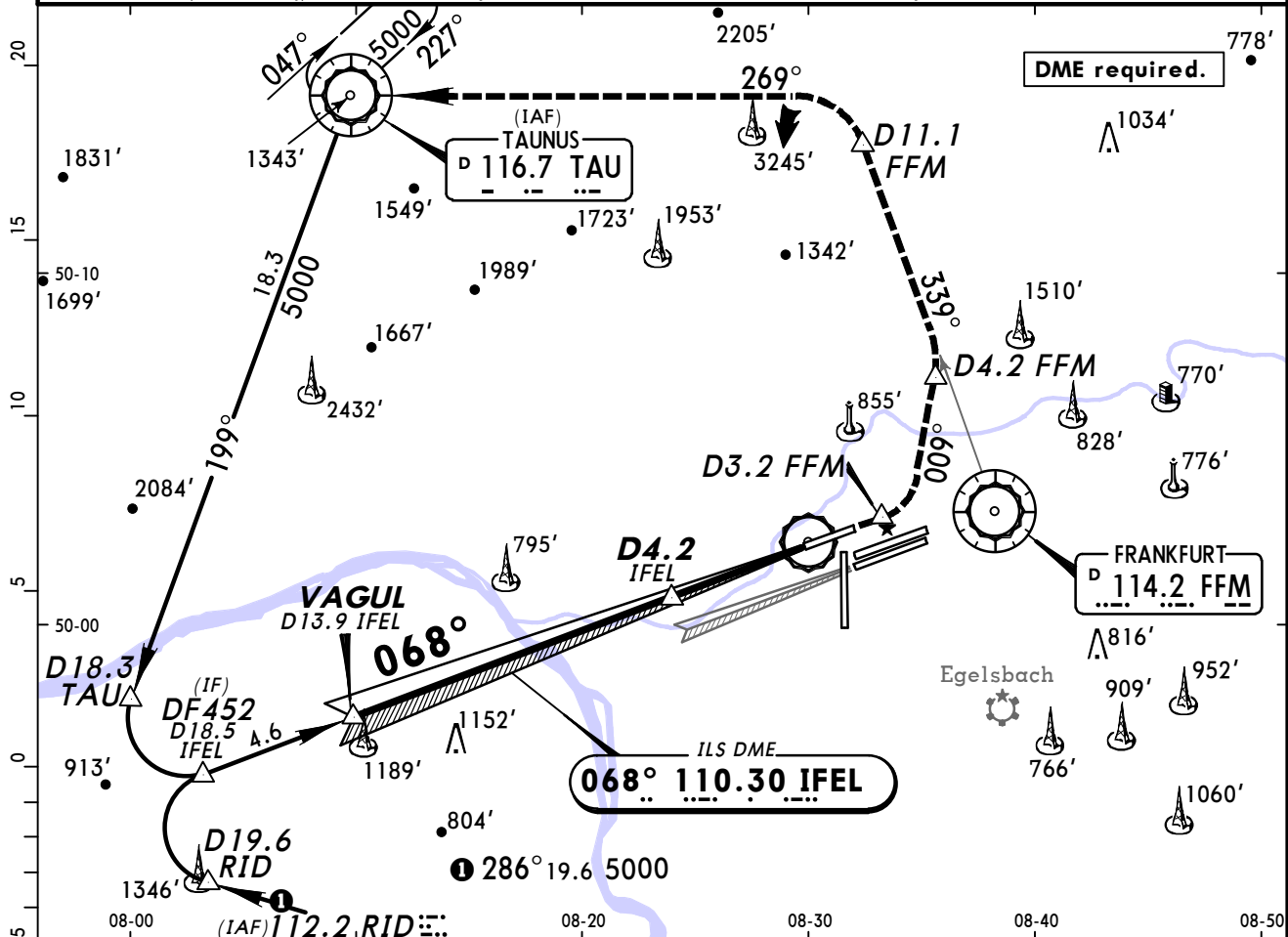
12 OCT 12  
Eff 18 Oct

(11-2)

JEPPesen FRANKFURT/MAIN, GERMANY  
MISSED APCH CLIMB  
GRAD MIM 4.6% ILS Y Rwy 07L

|                                                                                                                                                                                                                                                                                    |                                   |                                  |                                      |                           |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|---------------------------|--------------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                                                    | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP)        | *FRANKFURT Arrival (APP)             | FRANKFURT Tower           | *Ground            |
| 118.02                                                                                                                                                                                                                                                                             | 120.8 125.35                      | 127.27                           | 118.5                                | 136.5                     | 121.8              |
| LOC<br>IFEL<br>110.30                                                                                                                                                                                                                                                              | Final<br>Aptch Crs<br>068°        | GS<br>D4.2 IFEL<br>1720' (1415') | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 305' |                    |
| <b>MISSED APCH: Climb STRAIGHT AHEAD. At D3.2 FFM turn LEFT onto 009°.</b><br><b>At D4.2 FFM turn LEFT to intercept R-339 FFM. At D11.1 FFM turn LEFT</b><br><b>to intercept R-089 inbound TAU VOR climbing to 5000'.</b><br><b>In case of Missed apch inform ATC immediately.</b> |                                   |                                  |                                      |                           | <p>MSA FFM VOR</p> |

Alt Set: hPa(IN on req) Rwy Elev: 11 hPa Trans level: By ATC Trans alt: 5000'



|               |       |     |     |     |     |     |         |        |      |      |      |
|---------------|-------|-----|-----|-----|-----|-----|---------|--------|------|------|------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II | Inform | D3.2 | 009° | D4.2 |
| GS            | 3.20° | 396 | 510 | 566 | 679 | 793 | 906     | ATC    | FFM  | LT   | FFM  |

|                                                 |          |                             |           |  |
|-------------------------------------------------|----------|-----------------------------|-----------|--|
| Standard                                        |          | STRAIGHT-IN LANDING RWY 07L |           |  |
| Missed apch climb gradient mim 4.6% up to 3500' |          |                             |           |  |
|                                                 |          | ABC: 505' (200')            |           |  |
| DA(H)                                           |          | D: 513' (208')              |           |  |
| FULL                                            |          | Limited                     | ALS out   |  |
| A                                               | RVR 550m | RVR 750m                    | RVR 1200m |  |
| B                                               |          |                             |           |  |
| C                                               |          |                             |           |  |
| D                                               |          |                             |           |  |

CHANGES: New procedure.

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# EDDF/FRA FRANKFURT/MAIN, GERMANY

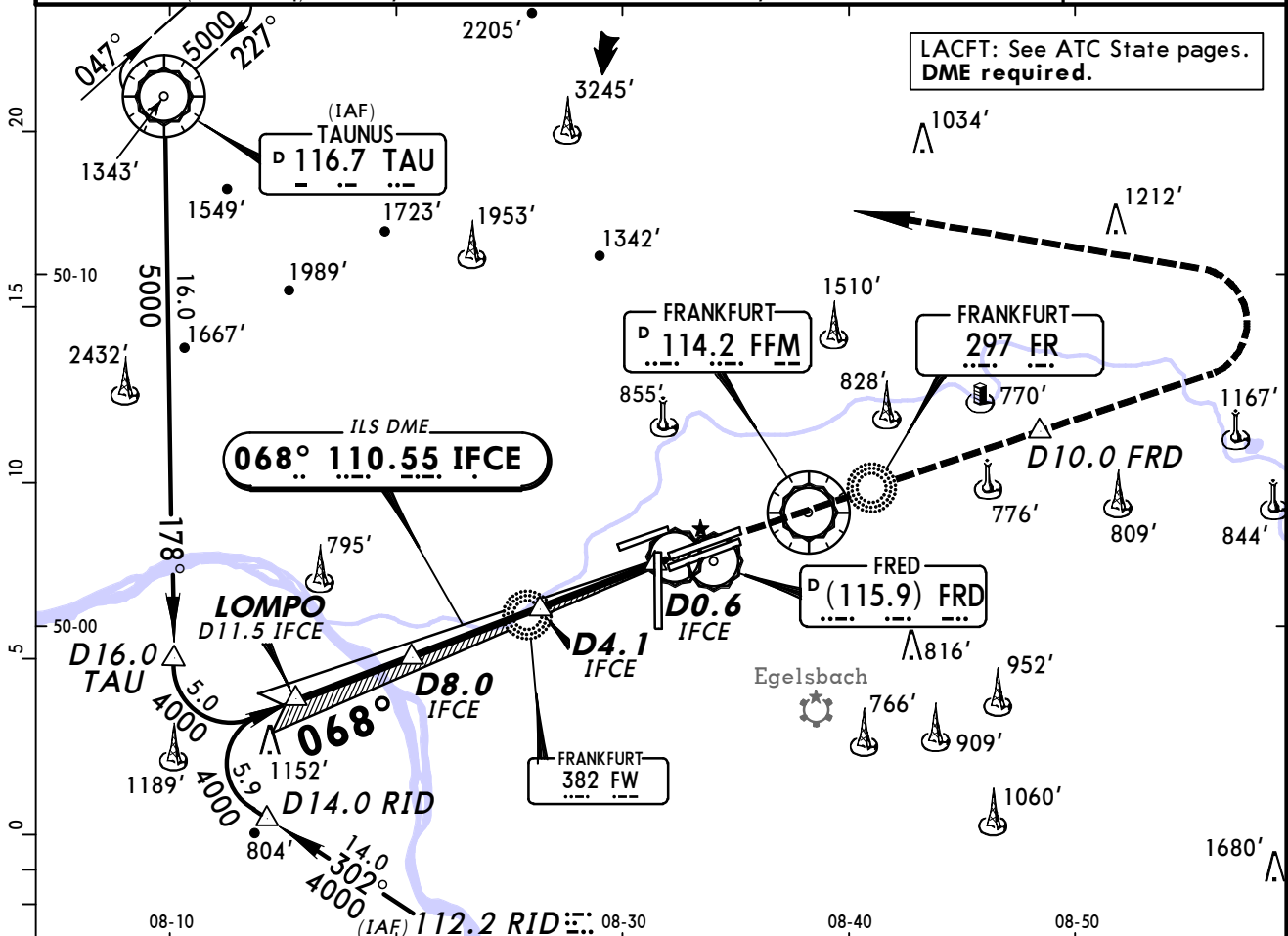
12 OCT 12

(11-3)

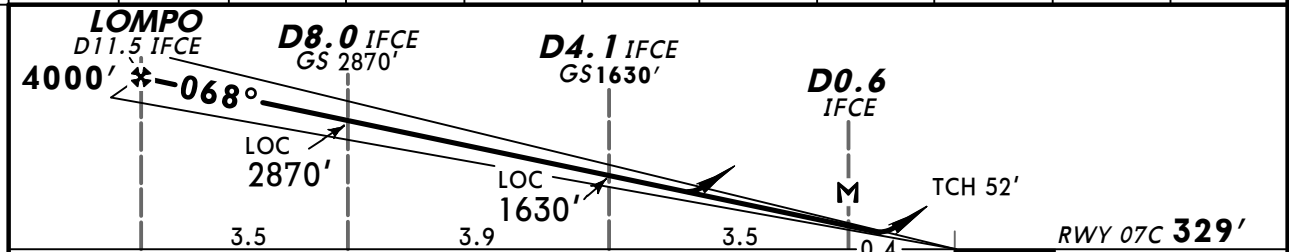
Eff 18 Oct

ILS or LOC Rwy 07C

|                                                                                                                                           |                                   |                                         |                                      |                                         |             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------|--------------------------------------|-----------------------------------------|-------------|
| *D-ATIS Arrival                                                                                                                           | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP)               | *FRANKFURT Arrival (APP)             | FRANKFURT Tower                         | *Ground     |
| 118.02                                                                                                                                    | 120.8 125.35                      | 127.27                                  | 118.5                                | 118.77                                  | 121.8       |
| LOC<br>IFCE<br><b>110.55</b>                                                                                                              | Final<br>Apch Crs<br><b>068°</b>  | GS<br><b>D4.1 IFCE</b><br>1630' (1301') | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev <b>364'</b><br>RWY <b>329'</b> |             |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD via FR Lctr to D10.0 FRD or 5000', whichever is later, then turn LEFT to TAU VOR maintain 5000'. |                                   |                                         |                                      |                                         |             |
| Alt Set: hPa(IN on req) Rwy Elev: 12 hPa Trans level: By ATC Trans alt: 5000'                                                             |                                   |                                         |                                      |                                         | MSA FFM VOR |



| LOC (GS out) | IFCE DME | 11.0  | 10.0  | 9.0   | 7.0   | 6.0   | 5.0   | 4.0   | 3.0   | 2.0  |
|--------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| ALTITUDE     |          | 3820' | 3510' | 3190' | 2550' | 2230' | 1910' | 1600' | 1280' | 960' |



|                                      |     |     |     |     |     |     |                         |                                                                          |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-------------------------|--------------------------------------------------------------------------|
| Gnd speed-Kts                        | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D10.0 5000'</b><br>FRD<br>↑ whichever is later ↑<br>via FR <b>297</b> |
| ILS GS or<br>LOC Descent Angle 3.00° | 377 | 485 | 539 | 647 | 755 | 862 |                         |                                                                          |
| MAP at D0.6 IFCE                     |     |     |     |     |     |     |                         |                                                                          |

| Standard                 |          |         |           | STRAIGHT-IN LANDING RWY 07C |  |
|--------------------------|----------|---------|-----------|-----------------------------|--|
| ILS I                    |          |         |           | LOC (GS out)                |  |
| DA(H) <b>529' (200')</b> |          |         |           | DA(H) <b>820' (491')</b>    |  |
| FULL                     |          | Limited | ALS out   | ALS out                     |  |
| A                        | RVR 550m |         | RVR 1200m | RVR 1500m                   |  |
| B                        |          |         |           | RVR 1500m CMV 2300m         |  |
| C                        |          |         |           |                             |  |
| D                        |          |         |           |                             |  |

LACFT: DA(H) 595' (266'), FULL: R600m, Limited: R750m, ALS out: R1300m.

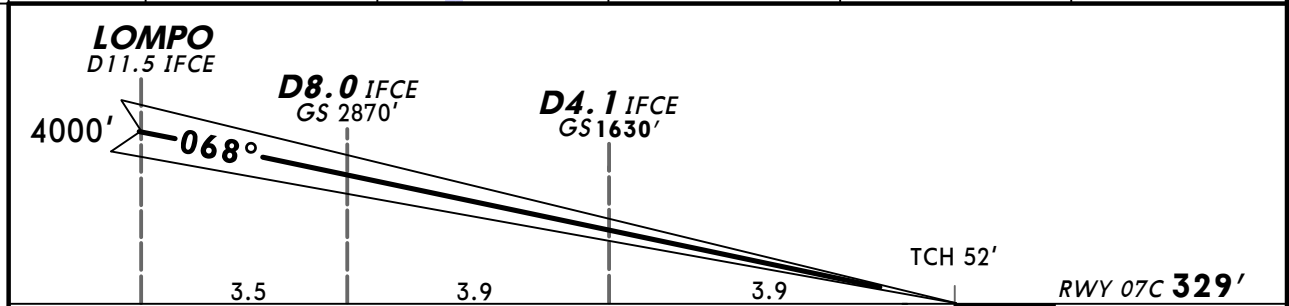
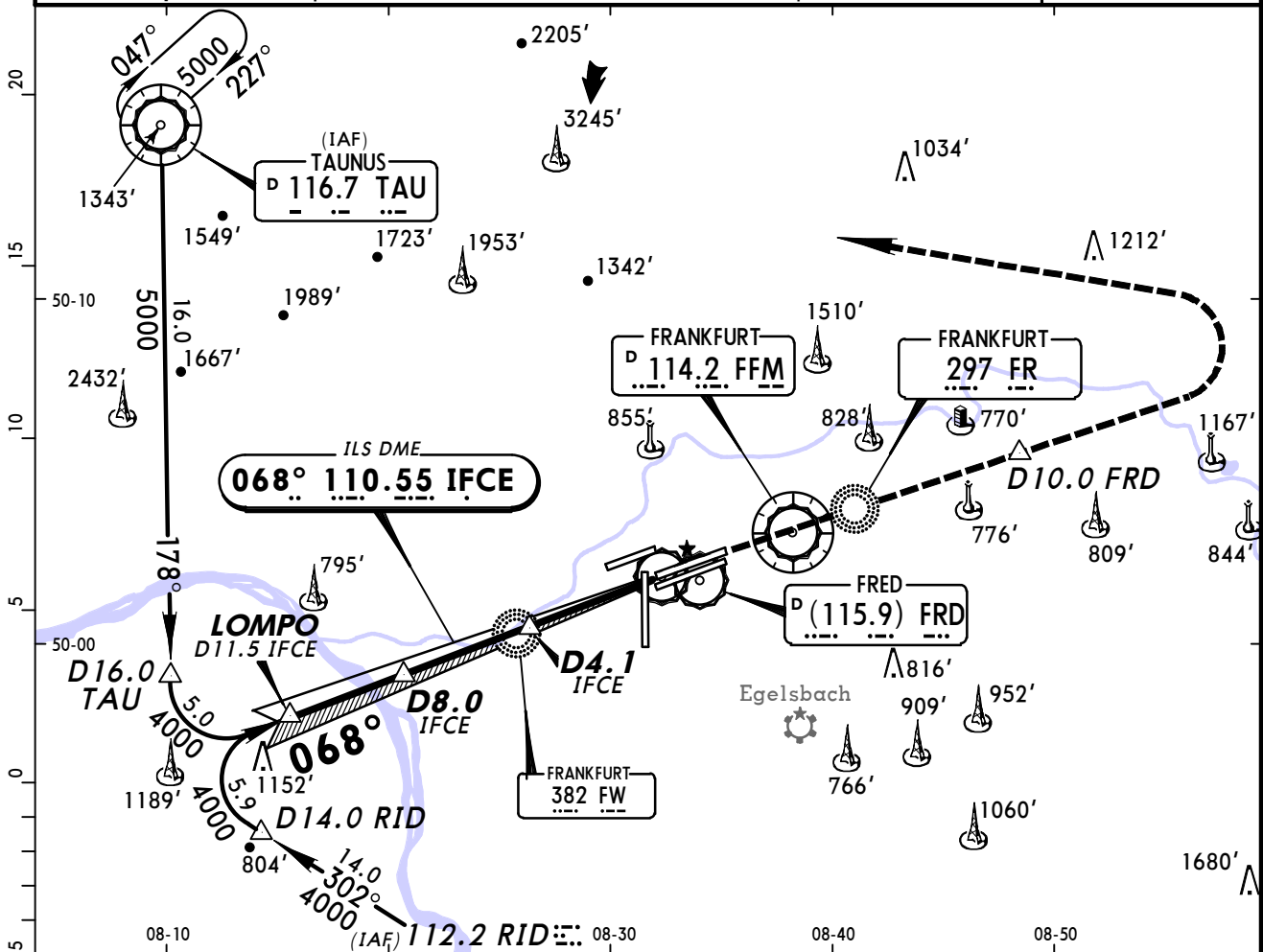
CHANGES: Chart reindexed. ILS DME IFCE. Procedure.

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# EDDF/FRA JEPPESEN FRANKFURT/MAIN, GERMANY

## FRANKFURT/MAIN 12 OCT 12 (11-3A) Eff 18 Oct CAT II/III ILS Rwy 07C

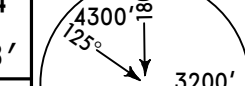
|                                                                                                                                                         |                           |                                  |                                              |                           |                 |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------|----------------------------------------------|---------------------------|-----------------|---------|
| *D-ATIS Arrival                                                                                                                                         | LANGEN Radar (APP)        |                                  | *FRANKFURT Director (APP)                    | *FRANKFURT Arrival (APP)  | FRANKFURT Tower | *Ground |
| 118.02                                                                                                                                                  | North<br>120.8            | South<br>125.35                  | 127.27                                       | 118.5                     | 118.77          | 121.8   |
| LOC<br>IFCE<br>110.55                                                                                                                                   | Final<br>Apch Crs<br>068° | GS<br>D4.1 IFCE<br>1630' (1301') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 329' | <br>MSA FFM VOR |         |
| MISSED APCH: Climb STRAIGHT AHEAD via FR Lctr to D10.0 FRD or 5000',<br>whichever is later, then turn LEFT to TAU VOR maintain 5000'.                   |                           |                                  |                                              |                           |                 |         |
| Alt Set: hPa(IN on req) Rwy Elev: 12 hPa Trans level: By ATC Trans alt: 5000'<br>1. DME required. 2. Special Aircrew & Aircraft Certification Required. |                           |                                  |                                              |                           |                 |         |

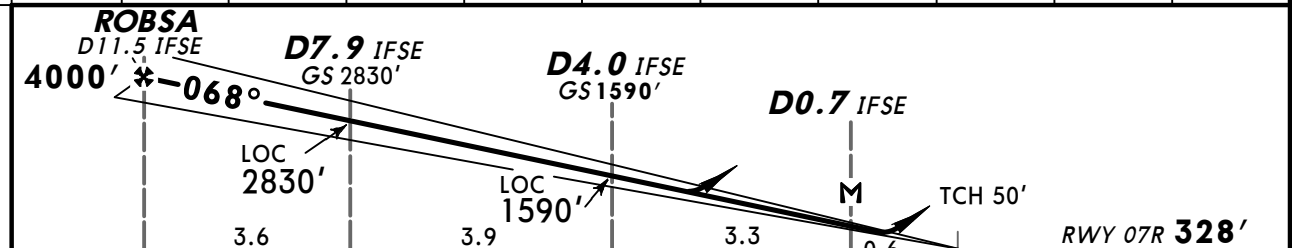
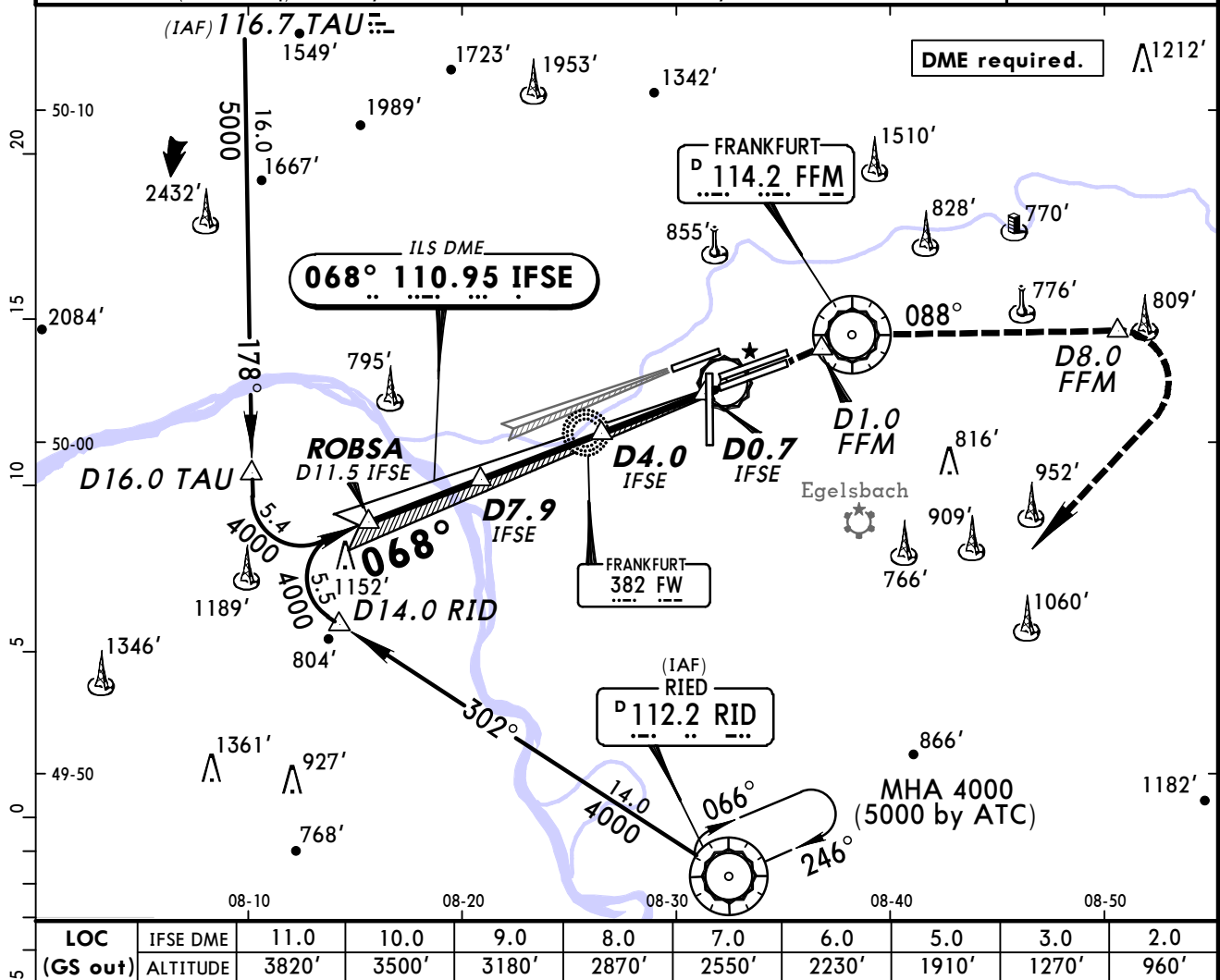


|               |       |     |     |     |     |     |                         |                                                                          |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|--------------------------------------------------------------------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D10.0 5000'</b><br>FRD<br>↑ whichever is later ↑<br>via FR <b>297</b> |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 755 |                         |                                                                          |
|               |       |     |     |     |     |     |                         |                                                                          |

|                     |  |                                            |  |
|---------------------|--|--------------------------------------------|--|
| <b>Standard</b>     |  | <b>STRAIGHT-IN LANDING RWY 07C</b>         |  |
| <b>CAT IIIA ILS</b> |  | <b>CAT II ILS</b>                          |  |
| <b>DH 50'</b>       |  | <b>RA 101'</b><br>DA(H) <b>429'</b> (100') |  |
| <b>RVR 200m</b>     |  | <b>RVR 300m</b>                            |  |

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

|                                                                                                                                                                                                 |                                      |                                  |                             |                           |                                                                                                    |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|-----------------------------|---------------------------|----------------------------------------------------------------------------------------------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                 | LANGEN Radar (APP)<br>North<br>South |                                  | *FRANKFURT Director (APP)   | *FRANKFURT Arrival (APP)  | FRANKFURT Tower                                                                                    | *Ground |
| 118.02                                                                                                                                                                                          | 120.8                                | 125.35                           | 127.27                      | 118.5                     | 119.9                                                                                              | 121.8   |
| LOC<br>IFSE<br>110.95                                                                                                                                                                           | Final<br>Apch Crs<br>068°            | GS<br>D4.0 IFSE<br>1590' (1262') | ILS<br>DA(H)<br>528' (200') | Apt Elev 364'<br>RWY 328' | <br>MSA FFM VOR |         |
| MISSED APCH: Climb STRAIGHT AHEAD to D1.0 inbound FFM, then turn RIGHT to intercept R-088 FFM outbound to D8.0 FFM or 5000', whichever is later, then turn RIGHT to RID VOR and maintain 5000'. |                                      |                                  |                             |                           |                                                                                                    |         |
| Alt Set: hPa(IN on req)                                                                                                                                                                         |                                      | Rwy Elev: 12 hPa                 | Trans level: By ATC         | Trans alt: 5000'          |                                                                                                    |         |

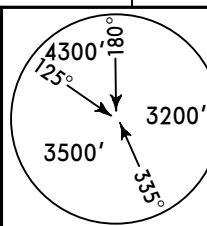


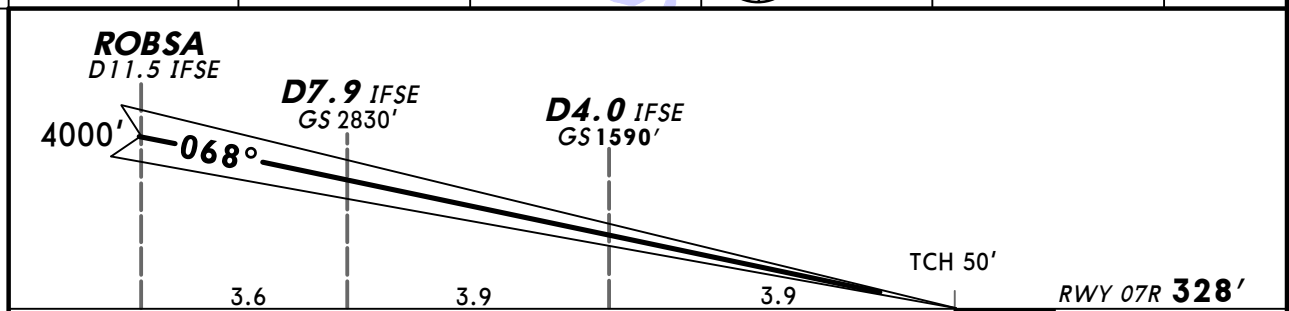
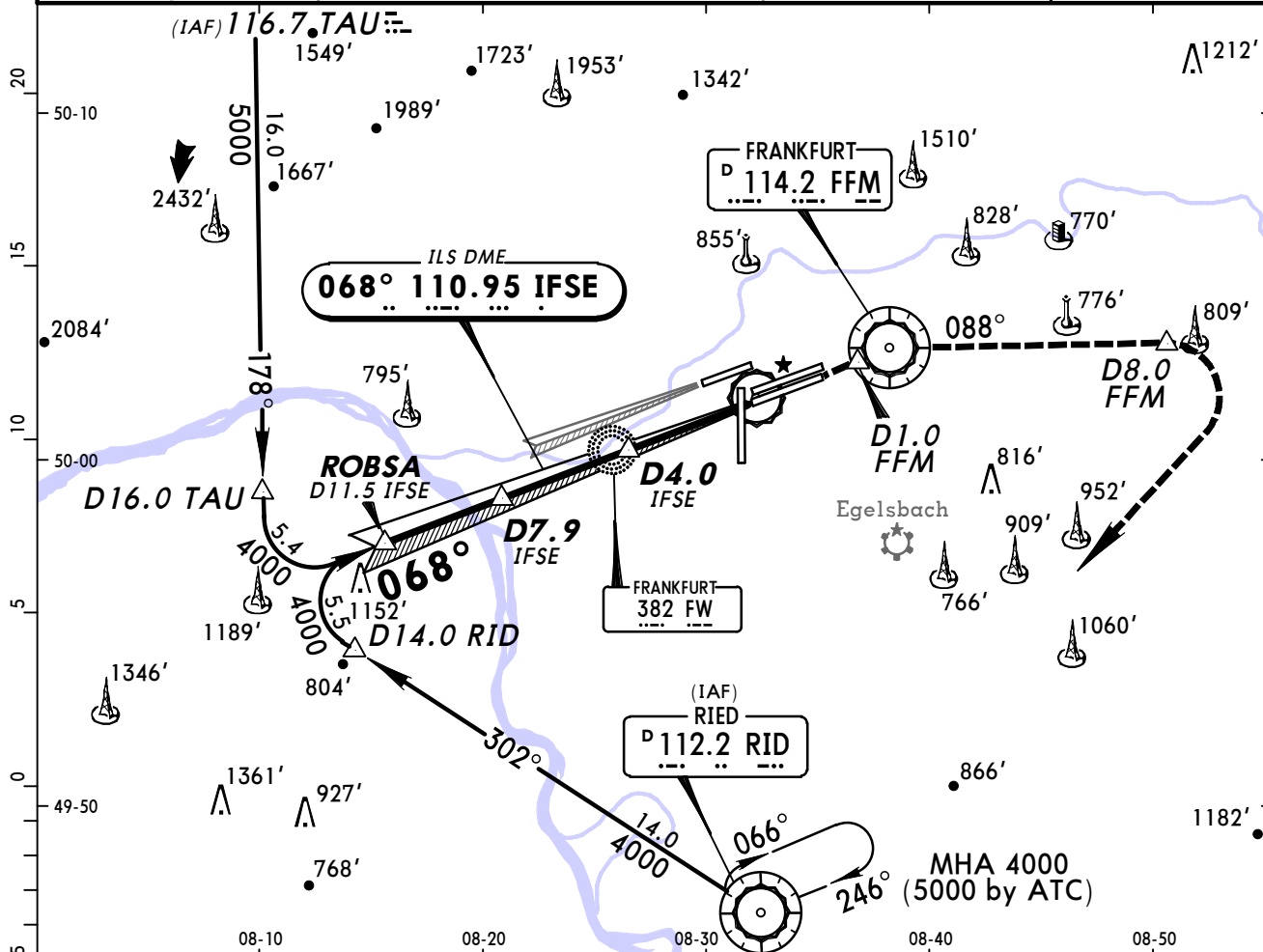
|                                      |     |     |     |     |     |     |                         |                                 |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-------------------------|---------------------------------|
| Gnd speed-Kts                        | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D1.0</b><br>inbound FFM<br>↑ |
| ILS GS or<br>LOC Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |                         |                                 |
| MAP at D0.7 IFSE                     |     |     |     |     |     |     |                         |                                 |

| Standard  |          | STRAIGHT-IN LANDING RWY 07R |           |           |                  |  |
|-----------|----------|-----------------------------|-----------|-----------|------------------|--|
|           |          | ILS                         |           |           | LOC (GS out)     |  |
|           |          | DA(H) 528'(200')            |           |           | DA(H) 810'(482') |  |
| FULL      |          | Limited                     | ALS out   |           | ALS out          |  |
| A         | RVR 550m | RVR 750m                    | RVR 1200m | RVR 1500m |                  |  |
| RVR 1500m |          |                             |           | CMV 2300m |                  |  |
|           |          |                             |           |           |                  |  |
|           |          |                             |           |           |                  |  |
|           |          |                             |           |           |                  |  |

# EDDF/FRA FRANKFURT/MAIN, GERMANY

## 12 OCT 12 11-4A Eff 18 Oct CAT II/III ILS Rwy 07R

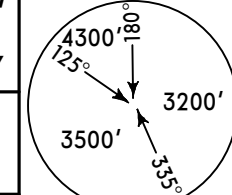
|                                                                                                                                                                                                 |                           |                                  |                                              |                           |                                                                                                    |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------|----------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                 | LANGEN Radar (APP)        |                                  | *FRANKFURT Director (APP)                    | *FRANKFURT Arrival (APP)  | FRANKFURT Tower                                                                                    | *Ground |
| 118.02                                                                                                                                                                                          | North<br>120.8            | South<br>125.35                  | 127.27                                       | 118.5                     | 119.9                                                                                              | 121.8   |
| LOC<br>IFSE<br>110.95                                                                                                                                                                           | Final<br>Apch Crs<br>068° | GS<br>D4.0 IFSE<br>1590' (1262') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 328' | <br>MSA FFM VOR |         |
| MISSED APCH: Climb STRAIGHT AHEAD to D1.0 inbound FFM, then turn RIGHT to intercept R-088 FFM outbound to D8.0 FFM or 5000', whichever is later, then turn RIGHT to RID VOR and maintain 5000'. |                           |                                  |                                              |                           |                                                                                                    |         |
| Alt Set: hPa(IN on req) Rwy Elev: 12 hPa Trans level: By ATC Trans alt: 5000'<br>1. DME required. 2. Special Aircrew & Acft Certification Required.                                             |                           |                                  |                                              |                           |                                                                                                    |         |

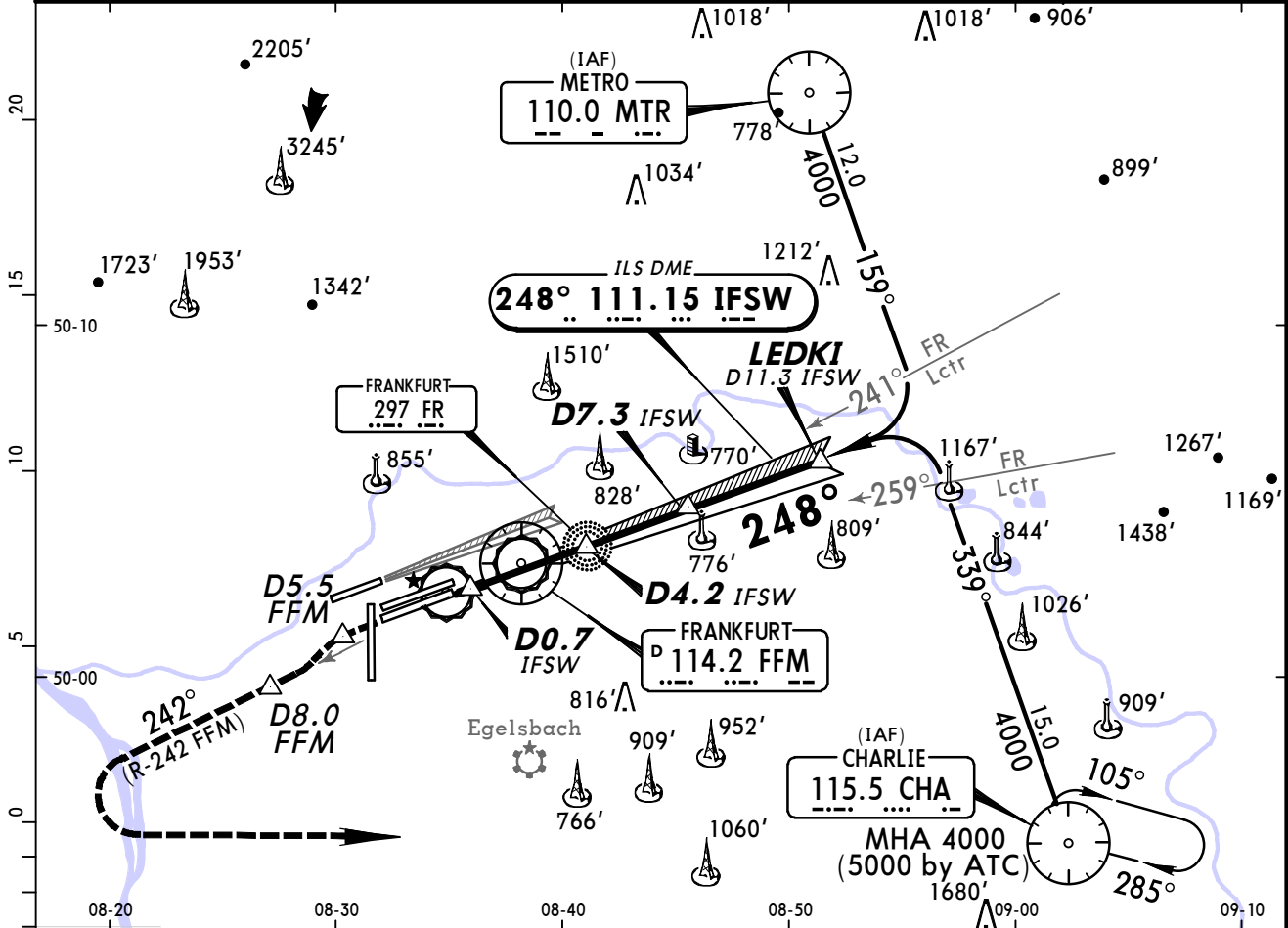


|               |       |     |     |     |     |     |                         |                                 |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|---------------------------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D1.0</b><br>inbound FFM<br>↑ |
| GS            | 3.00° | 372 | 478 | 531 | 637 | 743 |                         |                                 |
|               |       |     |     |     |     |     |                         |                                 |

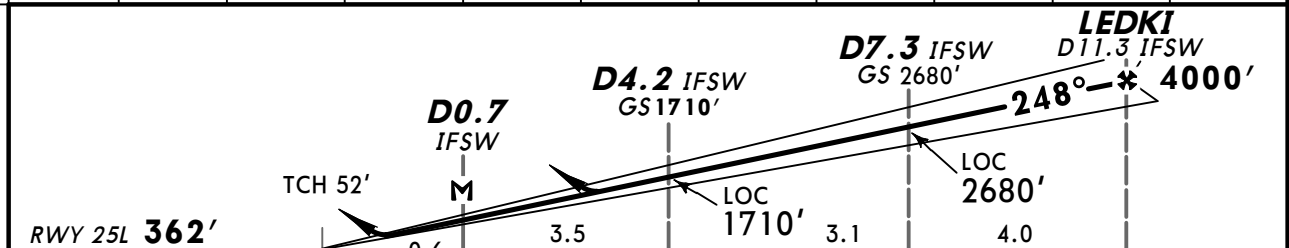
|                     |  |                                     |  |
|---------------------|--|-------------------------------------|--|
| <b>Standard</b>     |  | <b>STRAIGHT-IN LANDING RWY 07R</b>  |  |
| <b>CAT IIIA ILS</b> |  | <b>CAT II ILS</b>                   |  |
| <b>DH 50'</b>       |  | <b>RA 101'</b><br>DA(H) 428' (100') |  |
| <b>RVR 200m</b>     |  | <b>RVR 300m</b>                     |  |

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

|                                                                                                                                                                                                                                      |                                        |                                  |                                      |                           |                                                                                     |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------|--------------------------------------|---------------------------|-------------------------------------------------------------------------------------|-------------|
| *D-ATIS Arrival                                                                                                                                                                                                                      | LANGEN Radar (APP)<br>North      South |                                  | *FRANKFURT Director (APP)            | *FRANKFURT Arrival (APP)  | FRANKFURT Tower                                                                     | *Ground     |
| 118.02                                                                                                                                                                                                                               | 120.8                                  | 125.35                           | 127.27                               | 118.5                     | 119.9                                                                               | 121.8       |
| LOC<br>IFSW<br>111.15                                                                                                                                                                                                                | Final<br>Apch Crs<br>248°              | GS<br>D4.2 IFSW<br>1710' (1348') | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 362' |  |             |
| MISSED APCH: Climb STRAIGHT AHEAD to D5.5 FFM, then turn LEFT to intercept R-242 FFM. Then on R-242 FFM to D8.0 FFM or 5000', whichever is later, then turn LEFT to CHA VOR and maintain 5000'.                                      |                                        |                                  |                                      |                           |                                                                                     |             |
| Alt Set: hPa(IN on req)      Rwy Elev: 13 hPa      Trans level: By ATC      Trans alt: 5000'<br>1. DME required.    2. CAUTION: Independent taxiing acft on Twy R- and S-EAST underneath short final. 3. LACFT: See ATC State pages. |                                        |                                  |                                      |                           |                                                                                     | MSA FFM VOR |



| LOC (GS out) | IFSW DME | 2.0  | 3.0   | 4.0   | 5.0   | 6.0   | 7.0   | 8.0   | 9.0   | 10.0  |
|--------------|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | ALTITUDE | 990' | 1310' | 1630' | 1950' | 2270' | 2580' | 2900' | 3220' | 3540' |

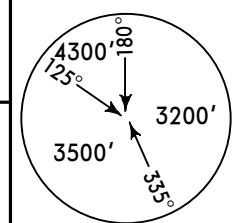


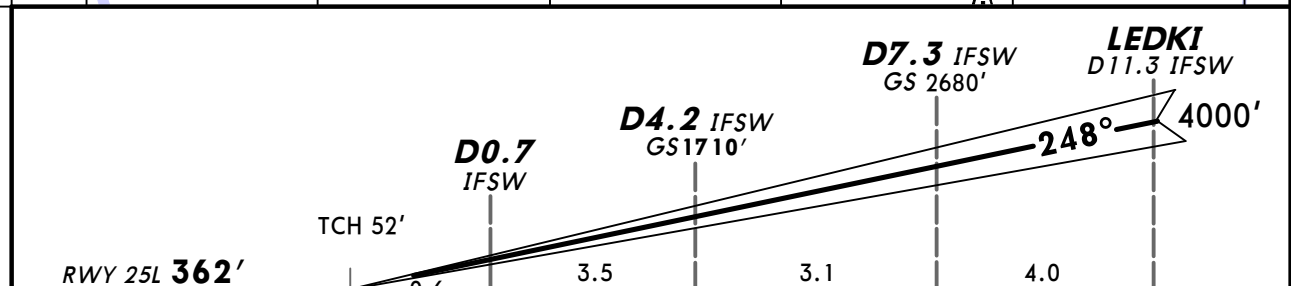
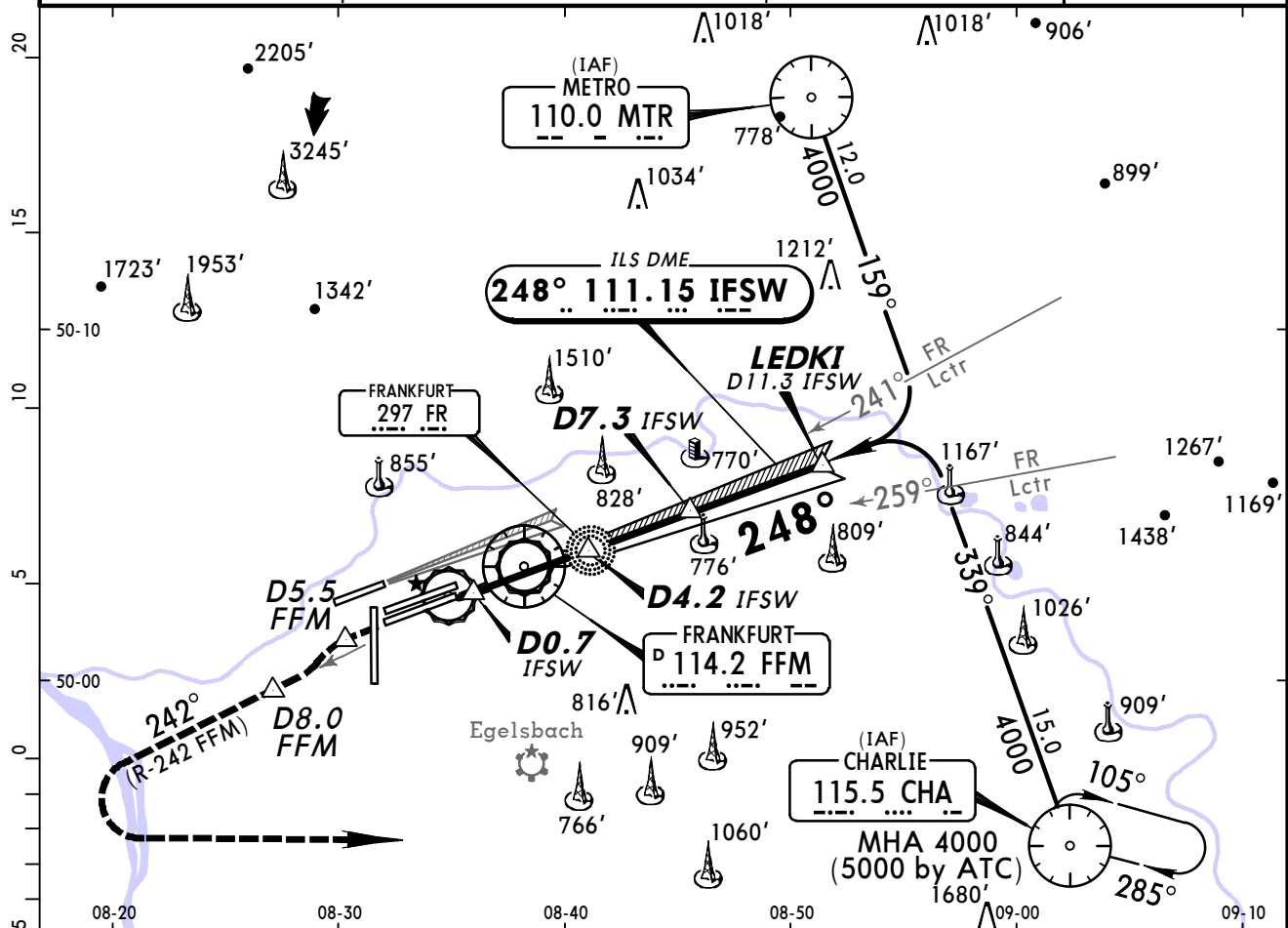
|                         |     |     |     |     |     |     |                         |                         |
|-------------------------|-----|-----|-----|-----|-----|-----|-------------------------|-------------------------|
| Gnd speed-Kts           | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D5.5</b><br>FFM<br>↑ |
| ILS GS or               | 372 | 478 | 531 | 637 | 743 | 849 |                         |                         |
| LOC Descent Angle 3.00° |     |     |     |     |     |     |                         |                         |
| MAP at D0.7 IFSW        |     |     |     |     |     |     |                         |                         |

| Standard                           |          | STRAIGHT-IN LANDING RWY 25L |           |                          |           |  |
|------------------------------------|----------|-----------------------------|-----------|--------------------------|-----------|--|
|                                    |          | ILS <b>I</b>                |           | LOC (GS out)             |           |  |
|                                    |          | DA(H) <b>562'</b> (200')    |           | DA(H) <b>830'</b> (468') |           |  |
| FULL                               |          | Limited                     | ALS out   |                          | ALS out   |  |
| A                                  | RVR 550m | RVR 750m                    | RVR 1200m | RVR 1500m                | RVR 1500m |  |
| B                                  |          |                             |           |                          |           |  |
| C                                  |          |                             |           |                          |           |  |
| D                                  |          |                             |           |                          | CMV 2200m |  |
| <b>I</b> LACFT: DA(H) 580' (218'). |          |                             |           |                          |           |  |

# EDDF/FRA JEPPESEN FRANKFURT/MAIN, GERMANY

## FRANKFURT/MAIN 12 OCT 12 11-5A Eff 18 Oct CAT II/III ILS Rwy 25L

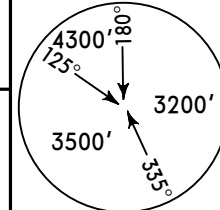
| *D-ATIS Arrival                                                                                                                                                                                                                       | LANGEN Radar (APP)        |                 | *FRANKFURT Director (APP)        | *FRANKFURT Arrival (APP)                     | FRANKFURT Tower           | *Ground                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------|----------------------------------|----------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------|
| 118.02                                                                                                                                                                                                                                | North<br>120.8            | South<br>125.35 | 127.27                           | 118.5                                        | 119.9                     | 121.8                                                                                                 |
| LOC<br>IFSW<br>111.15                                                                                                                                                                                                                 | Final<br>Apch Crs<br>248° |                 | GS<br>D4.2 IFSW<br>1710' (1348') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 362' | <br>MSA<br>FFM VOR |
| MISSED APCH: Climb STRAIGHT AHEAD to D5.5 FFM, then turn LEFT to intercept R-242 FFM. Then on R-242 FFM to D8.0 FFM or 5000', whichever is later, then turn LEFT to CHA VOR and maintain 5000'.                                       |                           |                 |                                  |                                              |                           |                                                                                                       |
| Alt Set: hPa(IN on req) Rwy Elev: 13 hPa Trans level: By ATC Trans alt: 5000'<br>1. DME required. 2. CAUTION: Independent taxiing acft on Twy R- and S-EAST underneath short final. 3. Special Aircrew & Acft Certification Required. |                           |                 |                                  |                                              |                           |                                                                                                       |

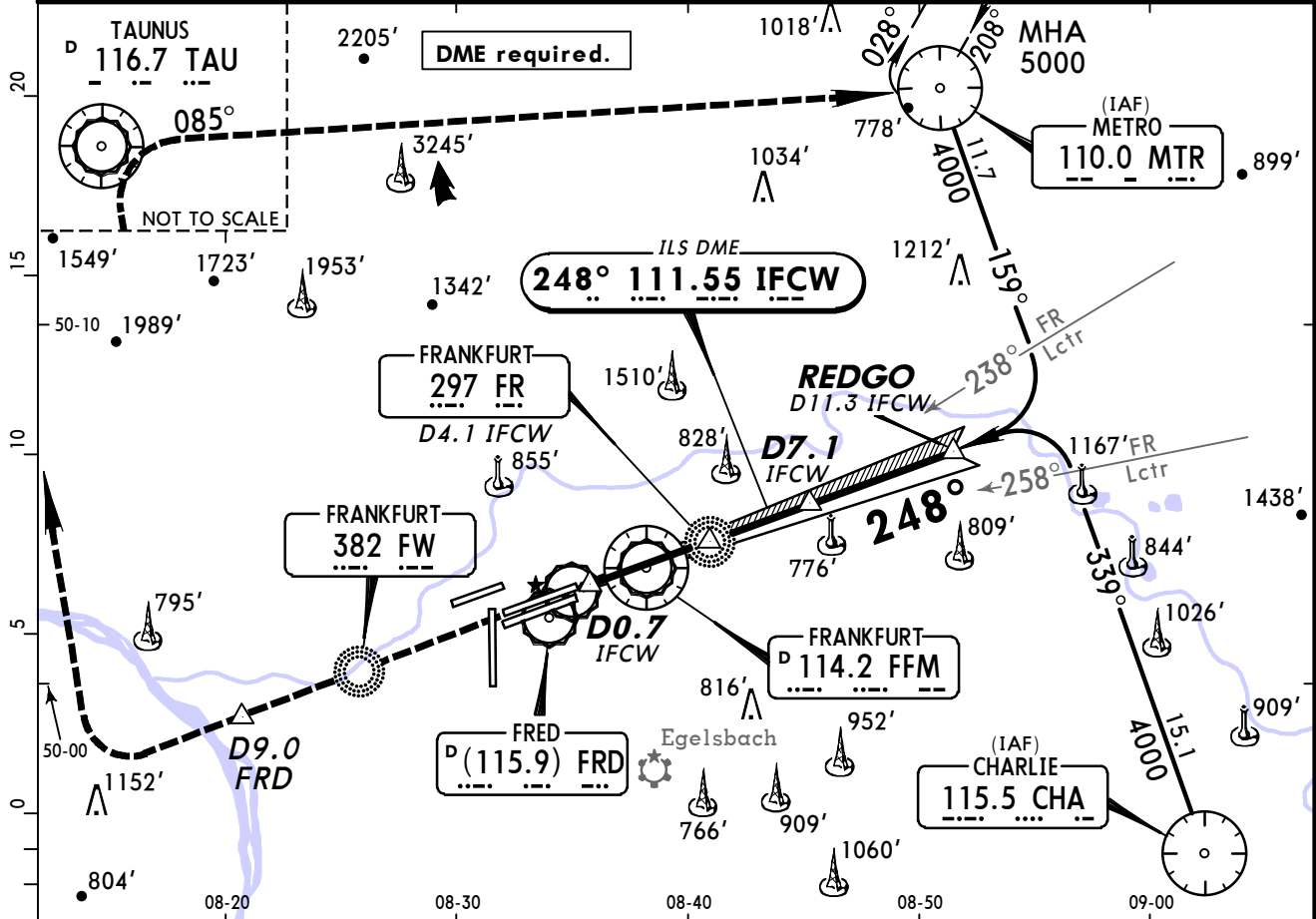


| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>D5.5</b><br>FFM<br>↑ |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|-------------------------|
| GS            | 3.00° | 372 | 478 | 531 | 637 | 743 |                         |                         |
|               |       |     |     |     |     |     |                         |                         |

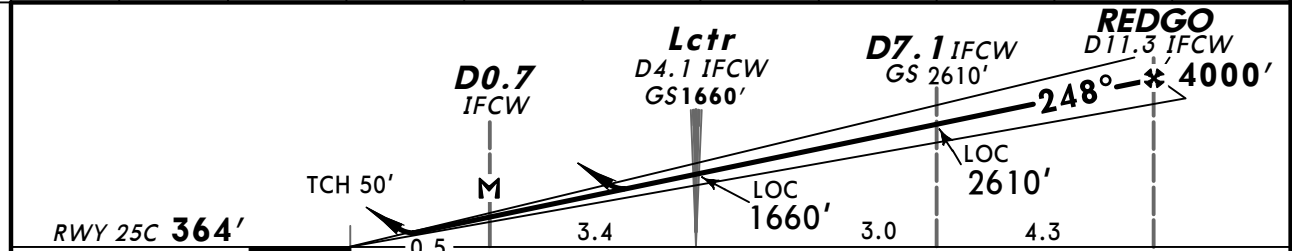
| Standard     |  | STRAIGHT-IN LANDING RWY 25L |  |
|--------------|--|-----------------------------|--|
| CAT IIIA ILS |  | CAT II ILS                  |  |
| DH 50'       |  | RA 95'<br>DA(H) 462' (100') |  |
| RVR 200m     |  | RVR 300m <b>I</b>           |  |

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

|                                                                                                                                                                                                                                                |                                        |                             |                             |                           |                                                                                                           |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                                                                | LANGEN Radar (APP)<br>North      South |                             | *FRANKFURT Director (APP)   | *FRANKFURT Arrival (APP)  | FRANKFURT Tower                                                                                           | *Ground |
| 118.02                                                                                                                                                                                                                                         | 120.8                                  | 125.35                      | 127.27                      | 118.5                     | 118.77                                                                                                    | 121.8   |
| LOC<br>IFCW<br>111.55                                                                                                                                                                                                                          | Final<br>Apch Crs<br>248°              | GS<br>Lctr<br>1660' (1296') | ILS<br>DA(H)<br>564' (200') | Apt Elev 364'<br>RWY 364' | <br><br>MSA<br>FFM VOR |         |
| MISSED APCH: Climb STRAIGHT AHEAD via FW Lctr to D9.0 FRD or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR VOR and maintain 5000'. In case of Missed apch inform ATC immediately. |                                        |                             |                             |                           |                                                                                                           |         |
| Alt Set: hPa (IN on req)      Rwy Elev: 13 hPa      Trans level: By ATC      Trans alt: 5000'<br>CAUTION: Independent taxiing acft on Twy R- and S-EAST underneath short final.                                                                |                                        |                             |                             |                           |                                                                                                           |         |



| LOC (GS out) | IFCW DME | 2.0  | 3.0   | 4.0   | 5.0   | 6.0   | 8.0   | 9.0   | 10.0  | 11.0  |
|--------------|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | ALTITUDE | 990' | 1310' | 1630' | 1950' | 2270' | 2900' | 3220' | 3540' | 3860' |

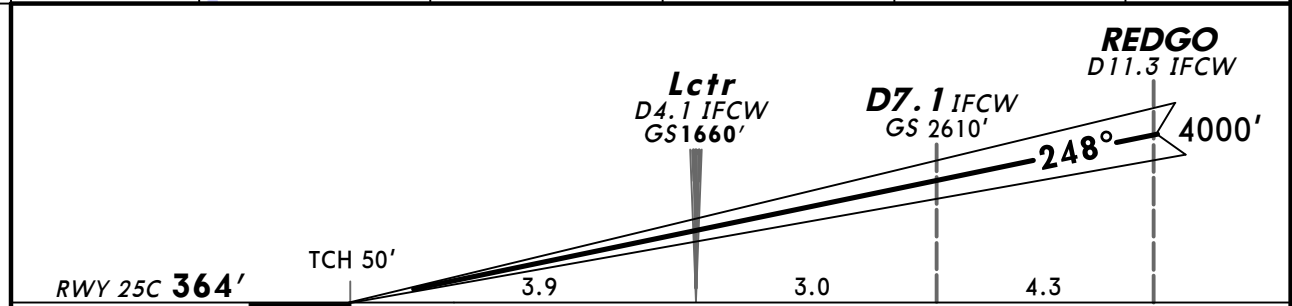
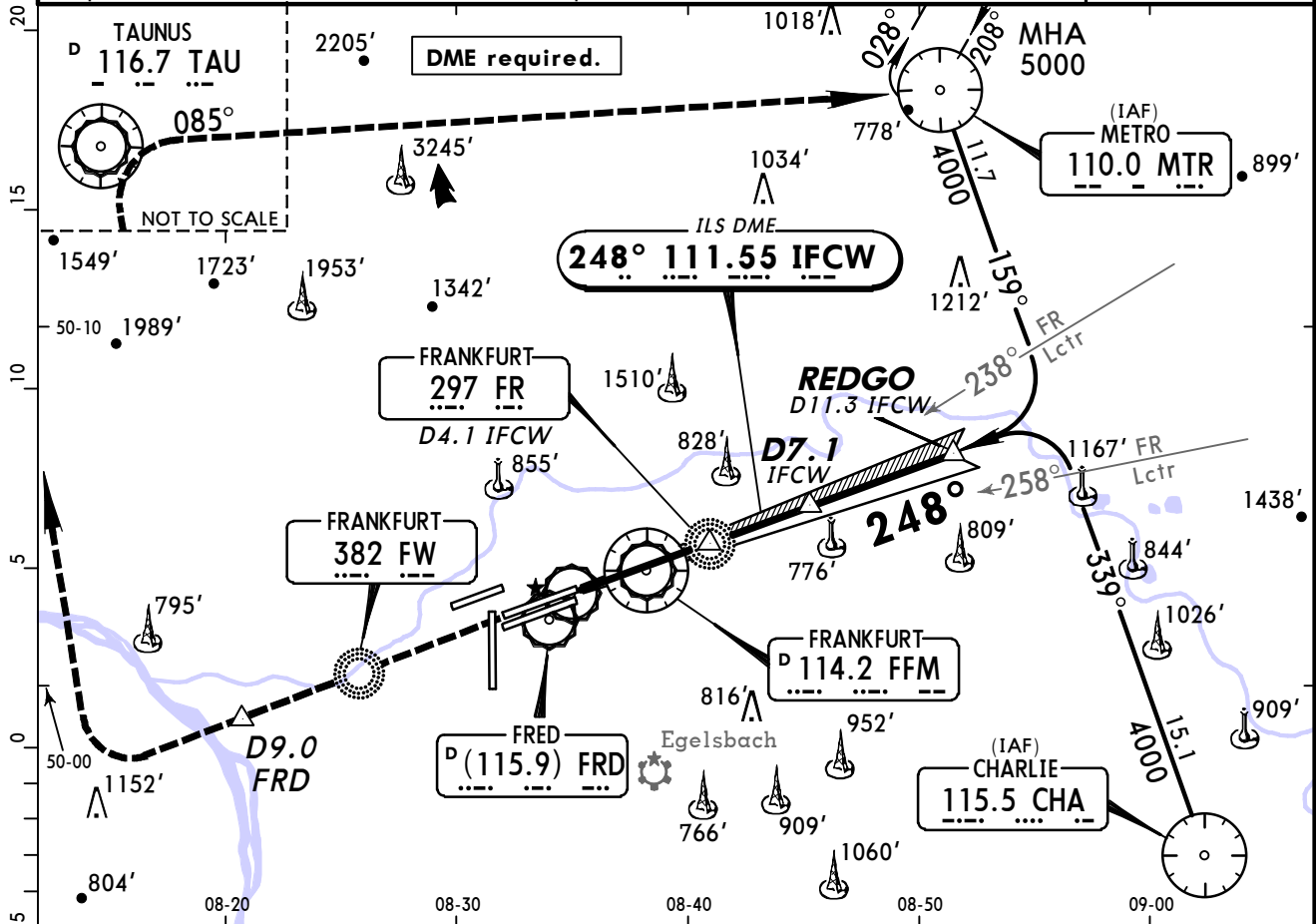


|                         |     |     |     |     |     |     |                         |            |                             |
|-------------------------|-----|-----|-----|-----|-----|-----|-------------------------|------------|-----------------------------|
| Gnd speed-Kts           | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | Inform ATC | D9.0 FRD<br>↑<br>5000'<br>↑ |
| ILS GS or               | 377 | 485 | 539 | 647 | 755 | 862 |                         |            |                             |
| LOC Descent Angle 3.00° |     |     |     |     |     |     |                         |            |                             |
| MAP at D0.7 IFCW        |     |     |     |     |     |     |                         |            |                             |

| Standard |          | STRAIGHT-IN LANDING RWY 25C |           |                  |  |           |
|----------|----------|-----------------------------|-----------|------------------|--|-----------|
|          |          | ILS                         |           | LOC (GS out)     |  |           |
|          |          | DA(H) 564'(200')            |           | DA(H) 810'(446') |  |           |
| FULL     |          | Limited                     | ALS out   |                  |  | ALS out   |
| A        | RVR 550m | RVR 750m                    | RVR 1200m | RVR 1400m        |  | RVR 1500m |
| B        |          |                             |           |                  |  |           |
| C        |          |                             |           |                  |  |           |
| D        |          |                             |           |                  |  |           |
|          |          |                             |           |                  |  | CMV 2100m |
|          |          |                             |           |                  |  |           |

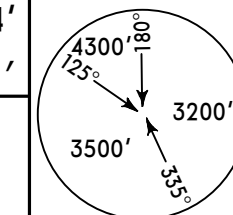
# EDDF/FRA FRANKFURT/MAIN 12 OCT 12 11-6A Eff 18 Oct CAT II/III ILS Rwy 25C JEPPESEN FRANKFURT/MAIN, GERMANY

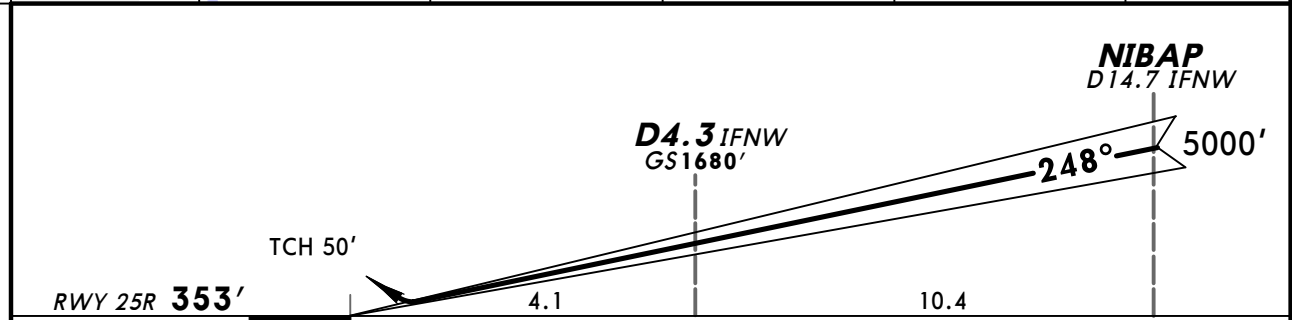
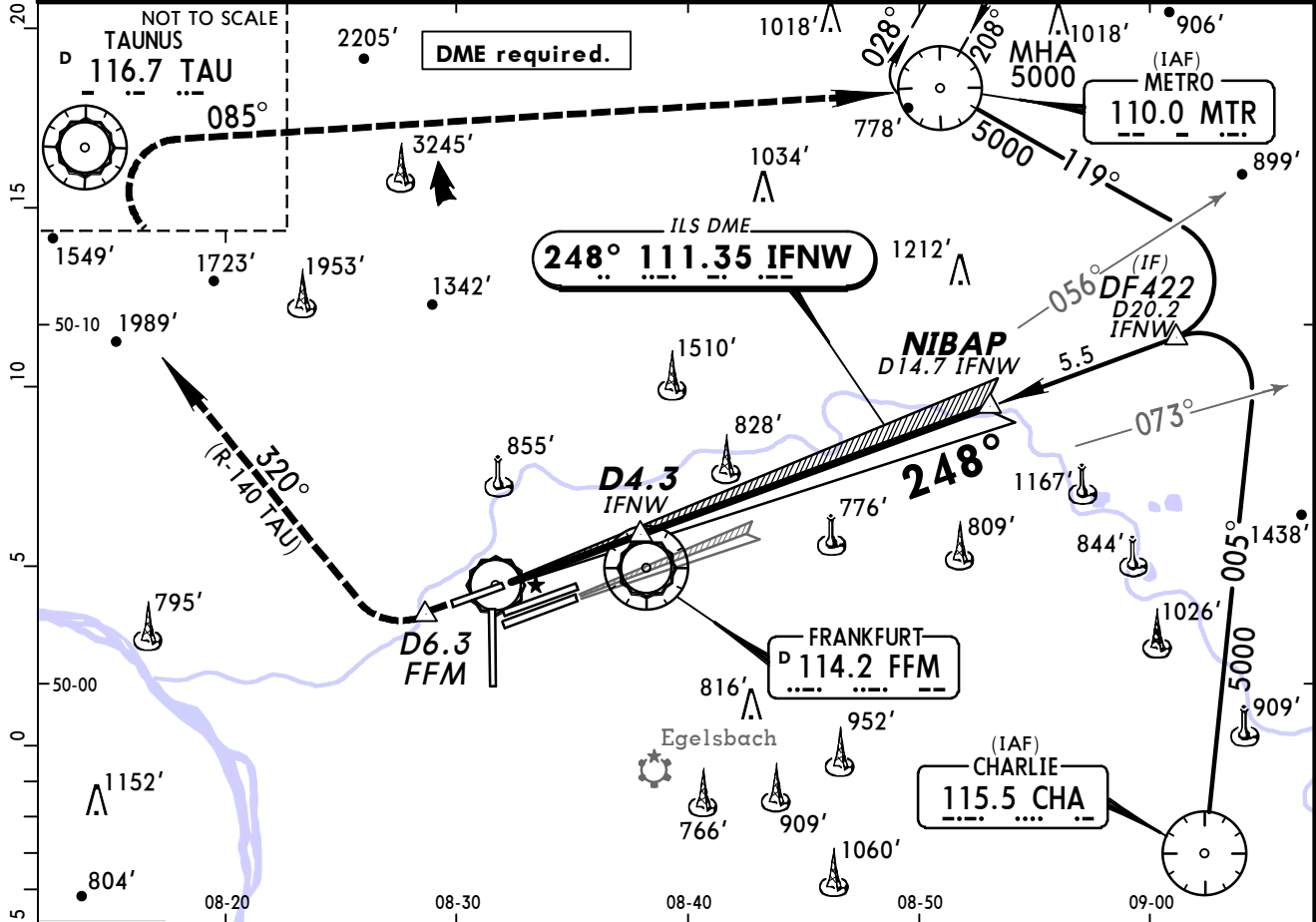
|                                                                                                                                                                                                                                                |                                        |        |                             |                                              |                           |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------|-----------------------------|----------------------------------------------|---------------------------|--------------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                | LANGEN Radar (APP)<br>North      South |        | *FRANKFURT Director (APP)   | *FRANKFURT Arrival (APP)                     | FRANKFURT Tower           | *Ground            |
| 118.02                                                                                                                                                                                                                                         | 120.8                                  | 125.35 | 127.27                      | 118.5                                        | 118.77                    | 121.8              |
| LOC<br>IFCW<br>111.55                                                                                                                                                                                                                          | Final<br>Apch Crs<br>248°              |        | GS<br>Lctr<br>1660' (1296') | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 364' | <br>MSA<br>FFM VOR |
| MISSED APCH: Climb STRAIGHT AHEAD via FW Lctr to D9.0 FRD or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR VOR and maintain 5000'. In case of Missed apch inform ATC immediately. |                                        |        |                             |                                              |                           |                    |
| Alt Set: hPa (IN on req)    Rwy Elev: 13 hPa    Trans level: By ATC    Trans alt: 5000'<br>1. CAUTION: Independent taxiing acft on Twy R- and S-EAST underneath short final.<br>2. Special Aircrew & Aircraft Certification Required.          |                                        |        |                             |                                              |                           |                    |



|               |       |     |     |     |     |     |                         |               |                  |            |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|---------------|------------------|------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | Inform<br>ATC | D9.0<br>FRD<br>↑ | 5000'<br>↑ |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 755 |                         |               |                  |            |
|               |       |     |     |     |     |     |                         |               |                  |            |

|                 |  |                                           |  |
|-----------------|--|-------------------------------------------|--|
| Standard        |  | STRAIGHT-IN LANDING RWY 25C               |  |
| CAT IIIA ILS    |  | CAT II ILS                                |  |
| DH <b>50'</b>   |  | RA <b>98'</b><br>DA(H) <b>464' (100')</b> |  |
| RVR <b>200m</b> |  | RVR <b>300m</b>                           |  |

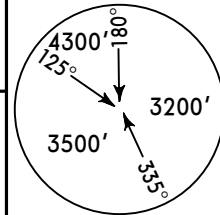
|                                                                                                                                                                                                                                                  |                                  |                                        |                                                |                                      |                                             |                 |                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------|---------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                  |                                  | LANGEN Radar (APP)<br>North      South |                                                | *FRANKFURT Director (APP)            | *FRANKFURT Arrival (APP)                    | FRANKFURT Tower | *Ground                                                                                                   |
| 118.02                                                                                                                                                                                                                                           |                                  | 120.8                                  | 125.35                                         | 127.27                               | 118.5                                       | 136.5           | 121.8                                                                                                     |
| LOC<br>IFNW<br><b>111.35</b>                                                                                                                                                                                                                     | Final<br>Apch Crs<br><b>248°</b> |                                        | GS<br><b>D4.3 IFNW</b><br><b>1680' (1327')</b> | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev <b>364'</b><br><br><b>RWY 353'</b> |                 | <br><br>MSA<br>FFM VOR |
| MISSED APCH: Climb STRAIGHT AHEAD to D6.3 FFM at 800' or above, then turn RIGHT to intercept R-140 inbound TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR VOR climbing to 5000'.<br>In case of Missed apch inform ATC immediately. |                                  |                                        |                                                |                                      |                                             |                 |                                                                                                           |
| Alt Set: hPa (IN on req)      Rwy Elev: 13 hPa      Trans level: By ATC      Trans alt: 5000'                                                                                                                                                    |                                  |                                        |                                                |                                      |                                             |                 |                                                                                                           |

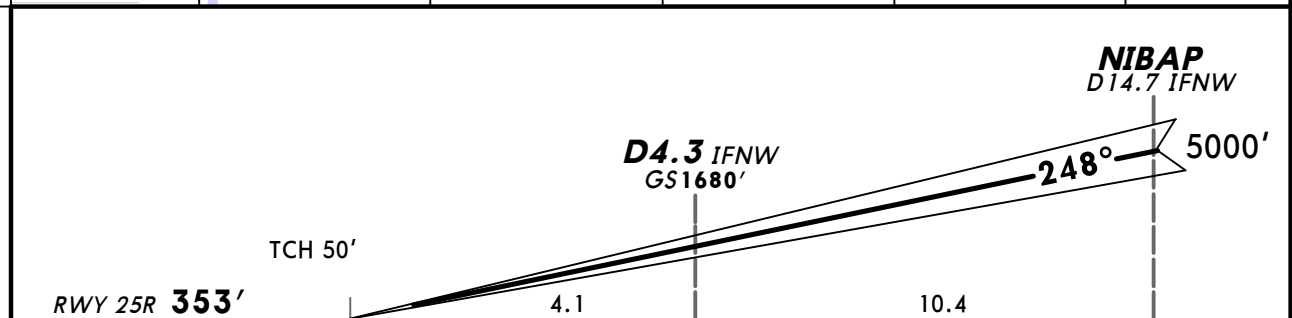
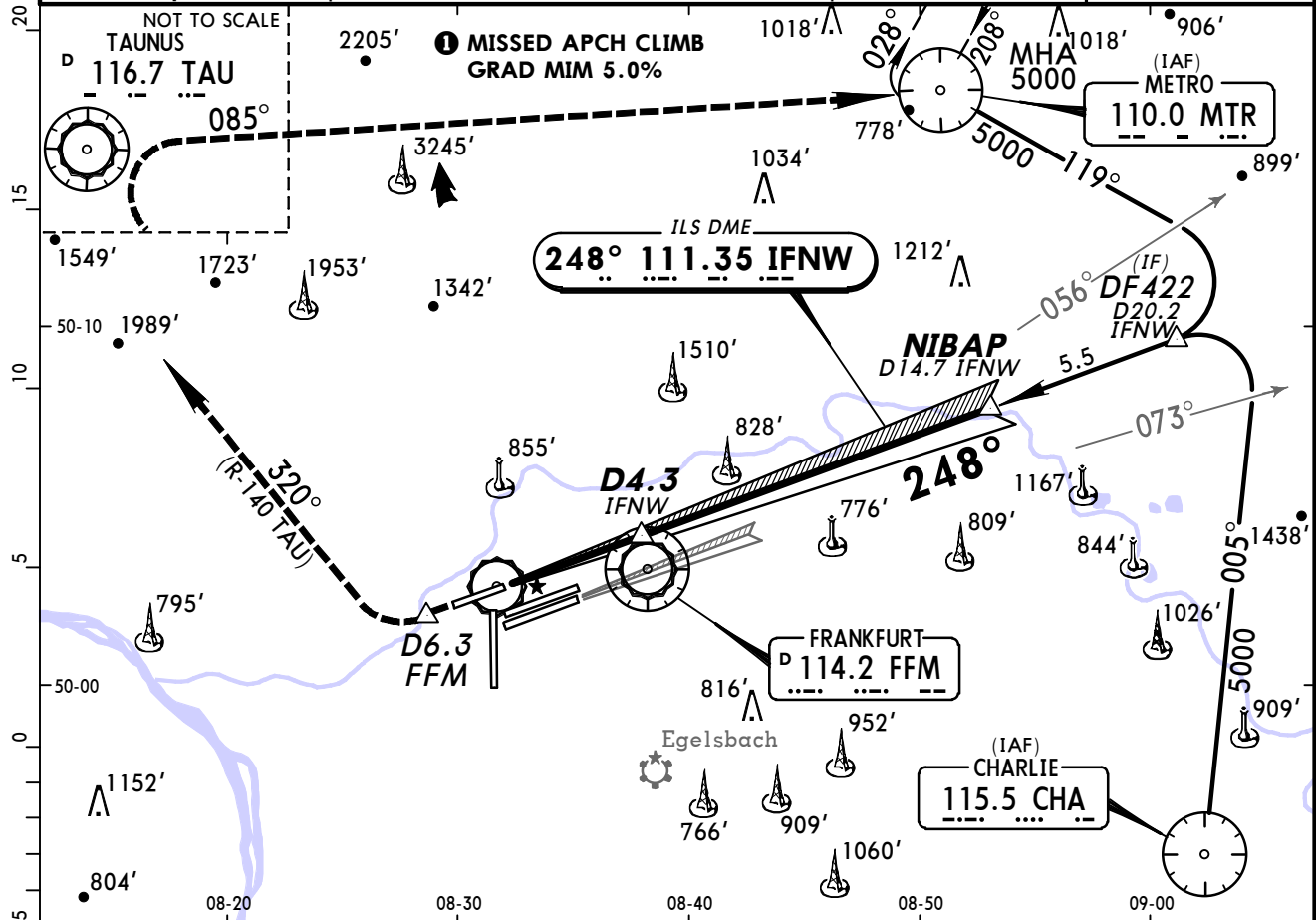


|               |       |     |     |     |     |     |                         |                      |                                                  |  |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|----------------------|--------------------------------------------------|--|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | Inform<br><b>ATC</b> | MIM<br><b>800'</b><br>↑<br>at<br><b>D6.3 FFM</b> |  |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 862 |                         |                      |                                                  |  |
|               |       |     |     |     |     |     |                         |                      |                                                  |  |

| Standard                                        |          | STRAIGHT-IN LANDING RWY 25R |           |  |
|-------------------------------------------------|----------|-----------------------------|-----------|--|
| Missed apch climb gradient mim 5.0% up to 2000' |          |                             |           |  |
| DA(H) ABC: 553'(200')                           |          |                             |           |  |
| D: 559'(206')                                   |          |                             |           |  |
| FULL                                            |          | Limited                     | ALS out   |  |
| A                                               | RVR 550m | RVR 750m                    | RVR 1200m |  |
| B                                               |          |                             |           |  |
| C                                               |          |                             |           |  |
| D                                               |          |                             |           |  |

# EDDF/FRA FRANKFURT/MAIN 12 OCT 12 Eff 18 Oct 11-7A FRANKFURT/MAIN, GERMANY CAT II/III ILS Z Rwy 25R

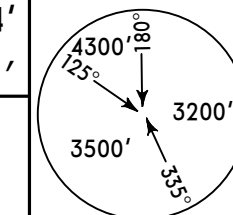
|                                                                                                                                                                                                                                               |                                        |                                                |                                              |                                             |                                                                                                           |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------|----------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                                                               | LANGEN Radar (APP)<br>North      South |                                                | *FRANKFURT Director (APP)                    | *FRANKFURT Arrival (APP)                    | FRANKFURT Tower                                                                                           | *Ground |
| 118.02                                                                                                                                                                                                                                        | 120.8                                  | 125.35                                         | 127.27                                       | 118.5                                       | 136.5                                                                                                     | 121.8   |
| LOC<br>IFNW<br><b>111.35</b>                                                                                                                                                                                                                  | Final<br>Apch Crs<br><b>248°</b>       | GS<br><b>D4.3 IFNW</b><br><b>1680' (1327')</b> | CAT II &<br>IIIA ILS<br>Refer to<br>Minimums | Apt Elev <b>364'</b><br><br>RWY <b>353'</b> | <br><br>MSA<br>FFM VOR |         |
| MISSED APCH: Climb STRAIGHT AHEAD to D6.3 FFM at 800' or above, then turn RIGHT to intercept R-140 inbound TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR VOR climbing to 5000'. In case of Missed apch inform ATC immediately. |                                        |                                                |                                              |                                             |                                                                                                           |         |
| Alt Set: hPa (IN on req)    Rwy Elev: 13 hPa    Trans level: By ATC    Trans alt: 5000'                                                                                                                                                       |                                        |                                                |                                              |                                             |                                                                                                           |         |
| 1. DME required.    2. Special Aircrew & Aircraft Certification Required.                                                                                                                                                                     |                                        |                                                |                                              |                                             |                                                                                                           |         |

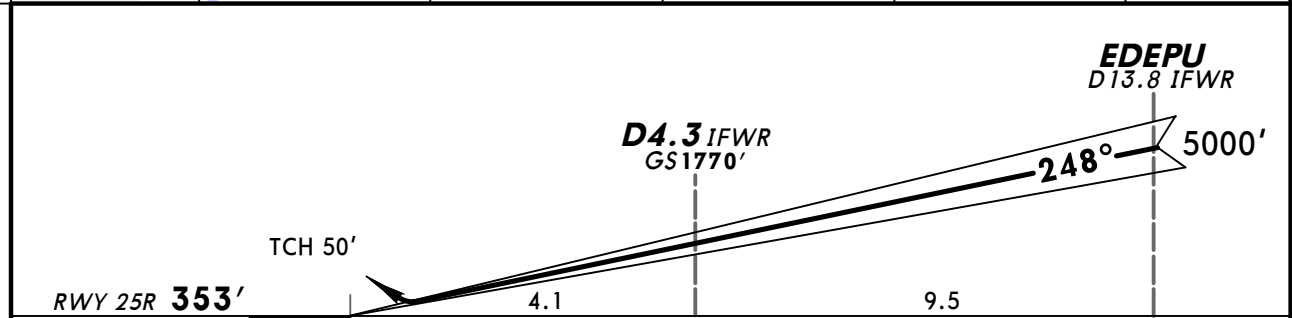
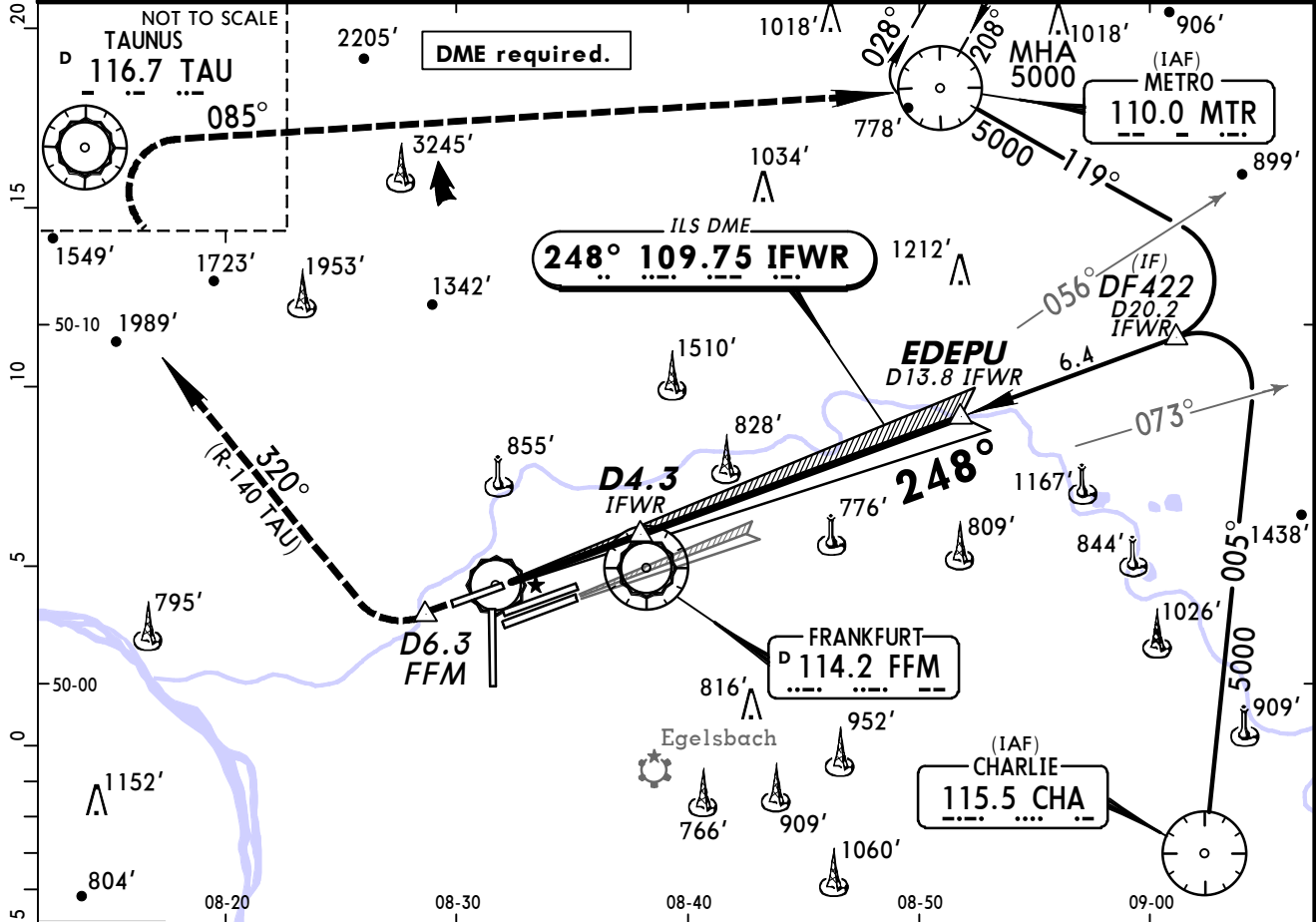


|               |       |     |     |     |     |     |                         |               |                         |                   |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|---------------|-------------------------|-------------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | Inform<br>ATC | MIM<br><b>800'</b><br>↑ | at<br>D6.3<br>FFM |
| GS            | 3.00° | 377 | 485 | 539 | 647 | 862 |                         |               |                         |                   |
|               |       |     |     |     |     |     |                         |               |                         |                   |

|              |  |                                                 |                  |
|--------------|--|-------------------------------------------------|------------------|
| Standard     |  | STRAIGHT-IN LANDING RWY 25R                     |                  |
| CAT IIIA ILS |  | CAT II ILS                                      |                  |
|              |  | Missed apch climb gradient mim 5.0% up to 2000' |                  |
| DH 50'       |  | A: RA 103' <sub>DA(H)</sub> 453'(100')          | D: RA 144'       |
|              |  | B: RA 107' <sub>DA(H)</sub> 457'(104')          | DA(H) 484'(131') |
|              |  | C: RA 122' <sub>DA(H)</sub> 471'(118')          |                  |
| RVR 200m     |  | RVR 300m I                                      | RVR 400m         |

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

|                                                                                                                                                                                                                                                  |                           |                    |                                  |                                      |                           |                 |                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------|----------------------------------|--------------------------------------|---------------------------|-----------------|-------------------------------------------------------------------------------------|
| *D-ATIS Arrival                                                                                                                                                                                                                                  |                           | LANGEN Radar (APP) |                                  | *FRANKFURT Director (APP)            | *FRANKFURT Arrival (APP)  | FRANKFURT Tower | *Ground                                                                             |
| 118.02                                                                                                                                                                                                                                           |                           | 120.8              | 125.35                           | 127.27                               | 118.5                     | 136.5           | 121.8                                                                               |
| LOC<br>IFWR<br>109.75                                                                                                                                                                                                                            | Final<br>Apch Crs<br>248° |                    | GS<br>D4.3 IFWR<br>1770' (1417') | ILS<br>DA(H)<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 353' |                 |  |
| MISSED APCH: Climb STRAIGHT AHEAD to D6.3 FFM at 800' or above, then turn RIGHT to intercept R-140 inbound TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR VOR climbing to 5000'.<br>In case of Missed apch inform ATC immediately. |                           |                    |                                  |                                      |                           |                 |                                                                                     |
| Alt Set: hPa (IN on req)      Rwy Elev: 13 hPa      Trans level: By ATC      Trans alt: 5000'                                                                                                                                                    |                           |                    |                                  |                                      |                           |                 |                                                                                     |



|               |       |     |     |     |     |     |                         |               |                |             |
|---------------|-------|-----|-----|-----|-----|-----|-------------------------|---------------|----------------|-------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | Inform<br>ATC | MIM<br>800' at | D6.3<br>FFM |
| GS            | 3.20° | 396 | 510 | 566 | 679 | 793 |                         |               |                |             |
|               |       |     |     |     |     |     |                         |               |                |             |

| Standard                                        |          | STRAIGHT-IN LANDING RWY 25R |           |  |
|-------------------------------------------------|----------|-----------------------------|-----------|--|
| Missed apch climb gradient mim 5.0% up to 2000' |          |                             |           |  |
|                                                 |          | DA(H) ABC: 553'(200')       |           |  |
|                                                 |          | D: 559'(206')               |           |  |
| FULL                                            |          | Limited                     | ALS out   |  |
| A                                               | RVR 550m | RVR 750m                    | RVR 1200m |  |
| B                                               |          |                             |           |  |
| C                                               |          |                             |           |  |
| D                                               |          |                             |           |  |



# EDDF/FRA FRANKFURT/MAIN, GERMANY

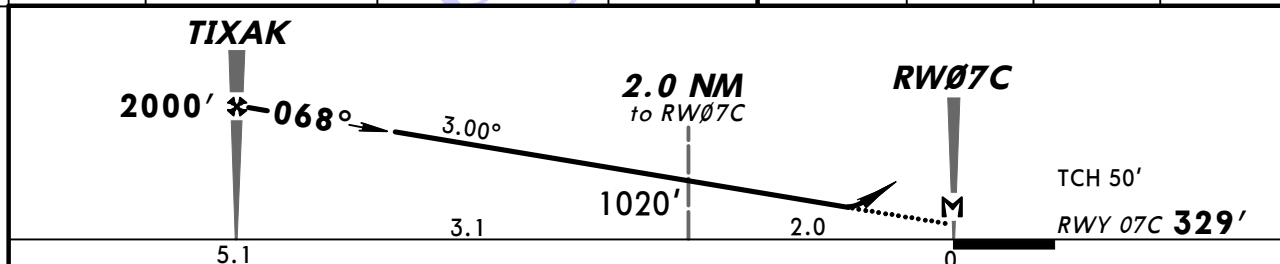
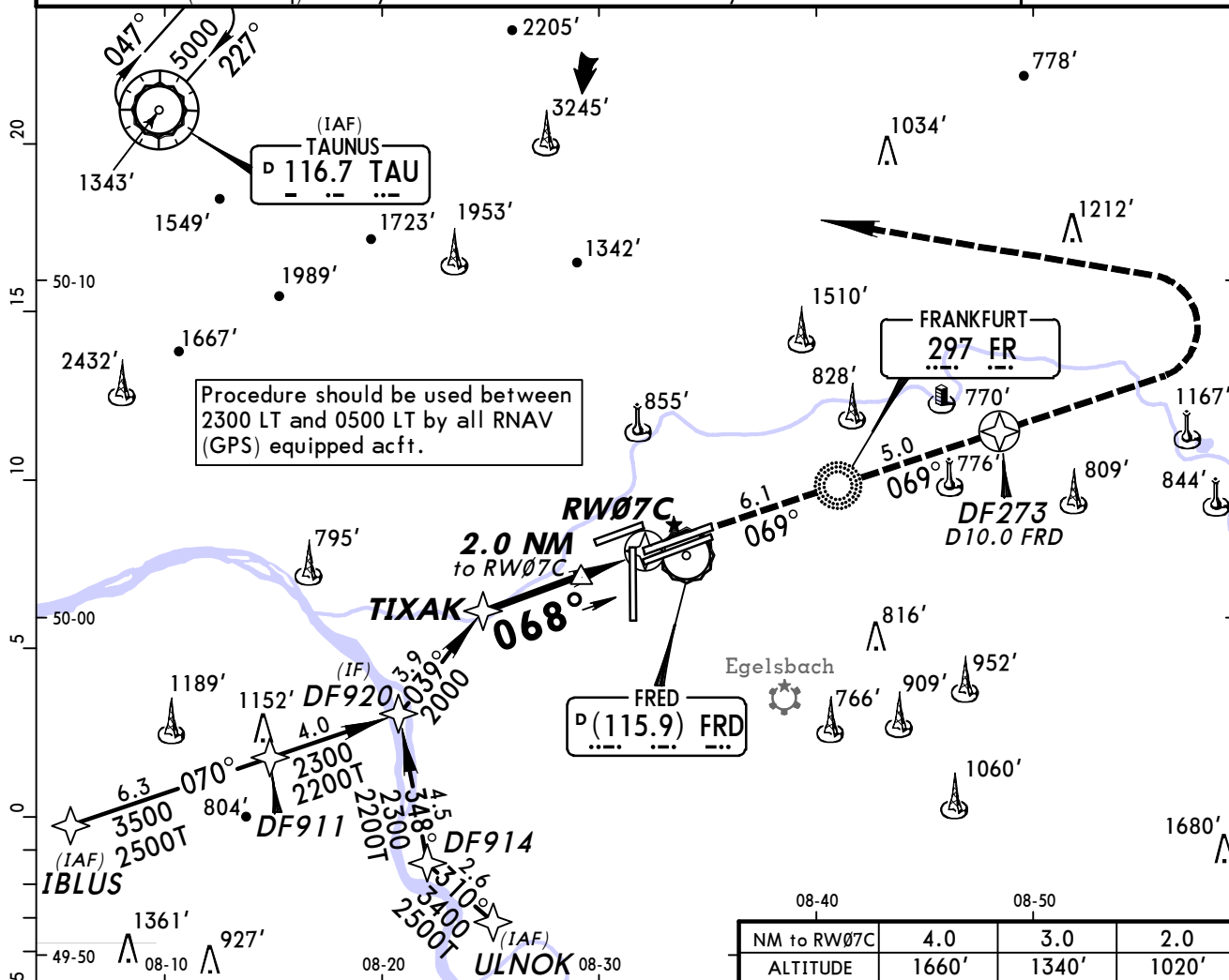
7 OCT 11

12-2

Eff 20 Oct

RNAV (GPS) Y Rwy 07C

|                                                                                                                                                                                                                                                                                     |                    |                      |                                        |                          |                 |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|----------------------------------------|--------------------------|-----------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                                                                                                     | LANGEN Radar (APP) |                      | *FRANKFURT Director (APP)              | *FRANKFURT Arrival (APP) | FRANKFURT Tower | *Ground |
| 118.02                                                                                                                                                                                                                                                                              | North              | South                | 127.27                                 | 118.5                    | 118.77          | 121.8   |
| RNAV                                                                                                                                                                                                                                                                                | Final<br>Aptch Crs | Minimum Alt<br>TIXAK | LNNAV<br>DA(H)<br>Refer to<br>Minimums | Apt Elev 364'            | 4300'           |         |
|                                                                                                                                                                                                                                                                                     | 068°               | 2000' (1671')        |                                        | RWY 329'                 |                 |         |
| <b>MISSED APCH RNAV:</b> Climb on track 069° via FR Lctr to DF273 or 5000', whichever is later, then turn LEFT to TAU VOR maintain 5000'.<br><b>NON-RNAV:</b> Climb STRAIGHT AHEAD via FR Lctr to D10.0 FRD or 5000', whichever is later, then turn LEFT to TAU VOR maintain 5000'. |                    |                      |                                        |                          |                 | MSA ARP |
| Alt Set: hPa (IN on req)                                                                                                                                                                                                                                                            |                    | Rwy Elev: 12 hPa     | Trans level: By ATC                    | Trans alt: 5000'         |                 |         |



|                     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|-----|-----|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RWY 07C      |     |     |     |     |     |     |

|          |  |                                |  |
|----------|--|--------------------------------|--|
| Standard |  | STRAIGHT-IN LANDING RWY 07C    |  |
|          |  | LNNAV                          |  |
|          |  | DA(H) B: 820' (491')           |  |
|          |  | A: 790' (461') CD: 840' (511') |  |
|          |  | ALS out                        |  |

|            |   |           |           |
|------------|---|-----------|-----------|
| PANS OPS 4 | A | RVR 1500m |           |
|            | B |           |           |
|            | C | RVR 1600m | CMV 2400m |
|            | D |           |           |

CHANGES: Tower frequency.

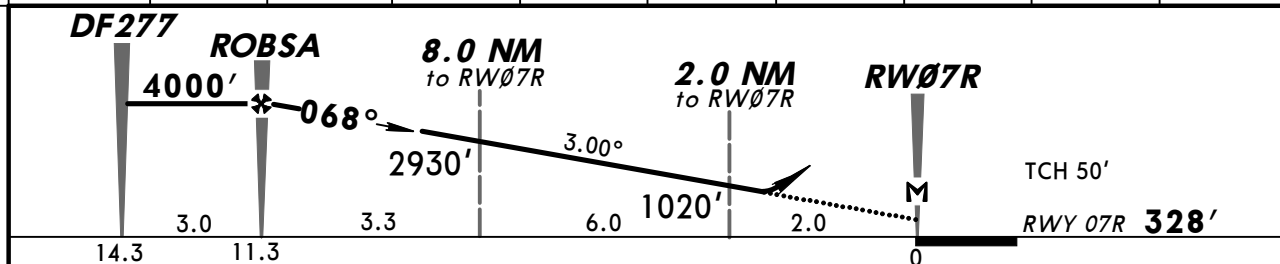
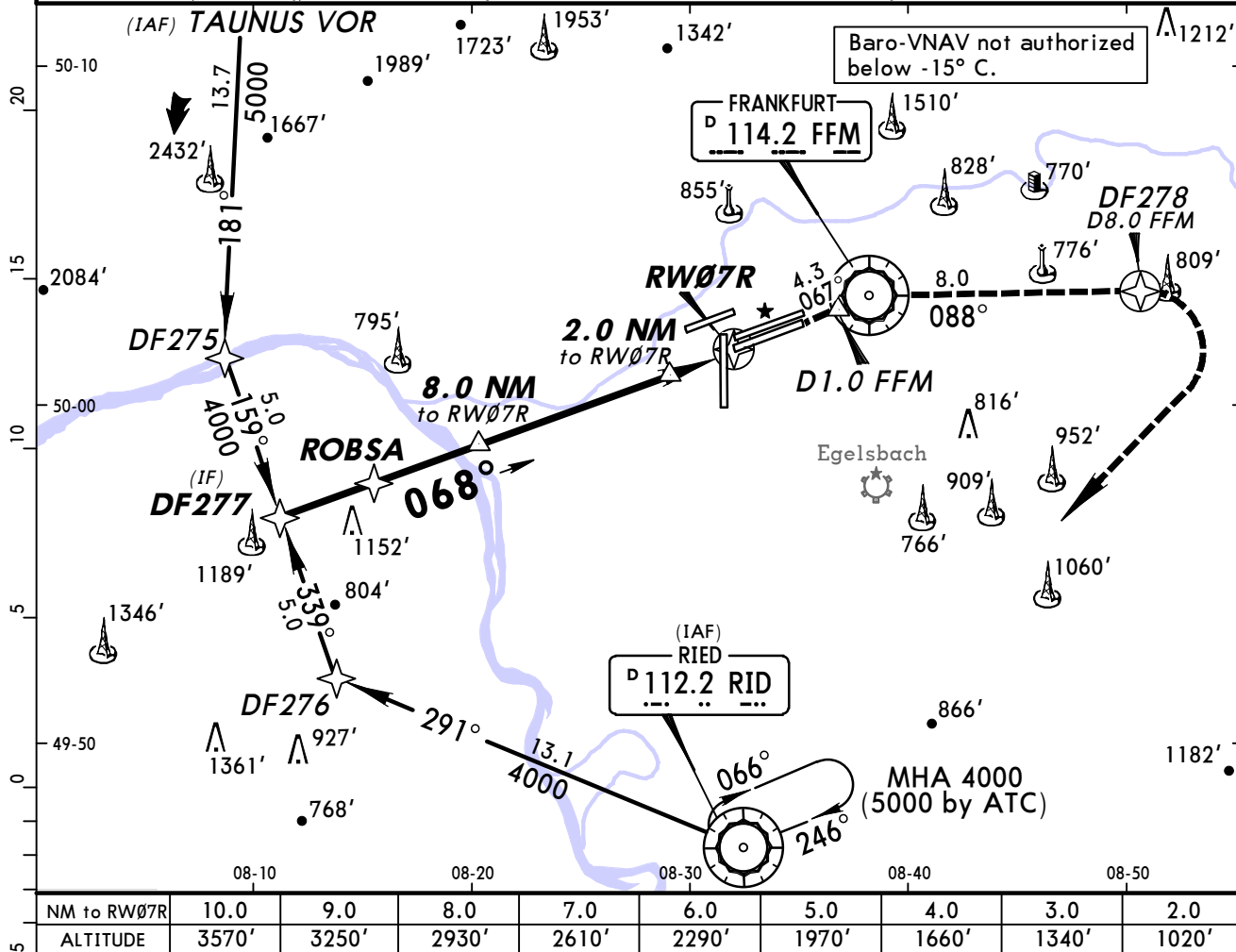
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|                 |                    |                 |                           |                          |                 |         |
|-----------------|--------------------|-----------------|---------------------------|--------------------------|-----------------|---------|
| *D-ATIS Arrival | LANGEN Radar (APP) |                 | *FRANKFURT Director (APP) | *FRANKFURT Arrival (APP) | FRANKFURT Tower | *Ground |
| 118.02          | North<br>120.8     | South<br>125.35 | 127.27                    | 118.5                    | 119.9           | 121.8   |

|      |                                  |                                                     |                                          |                                             |                                                                                     |
|------|----------------------------------|-----------------------------------------------------|------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------|
| RNAV | Final<br>Apch Crs<br><b>068°</b> | Minimum Alt<br><b>ROBSA</b><br><b>4000'</b> (3672') | LNAV/VNAV<br>DA(H)<br><b>680'</b> (352') | Apt Elev <b>364'</b><br><br>RWY <b>328'</b> |  |
|------|----------------------------------|-----------------------------------------------------|------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------|

MSA ARP

Trans alt: 5000'

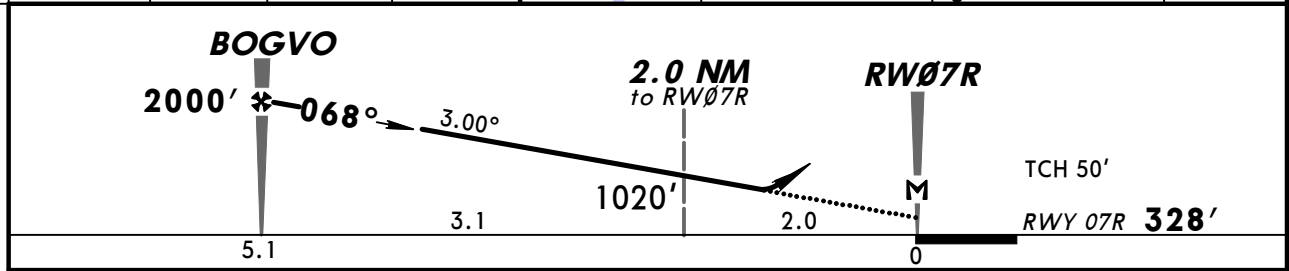
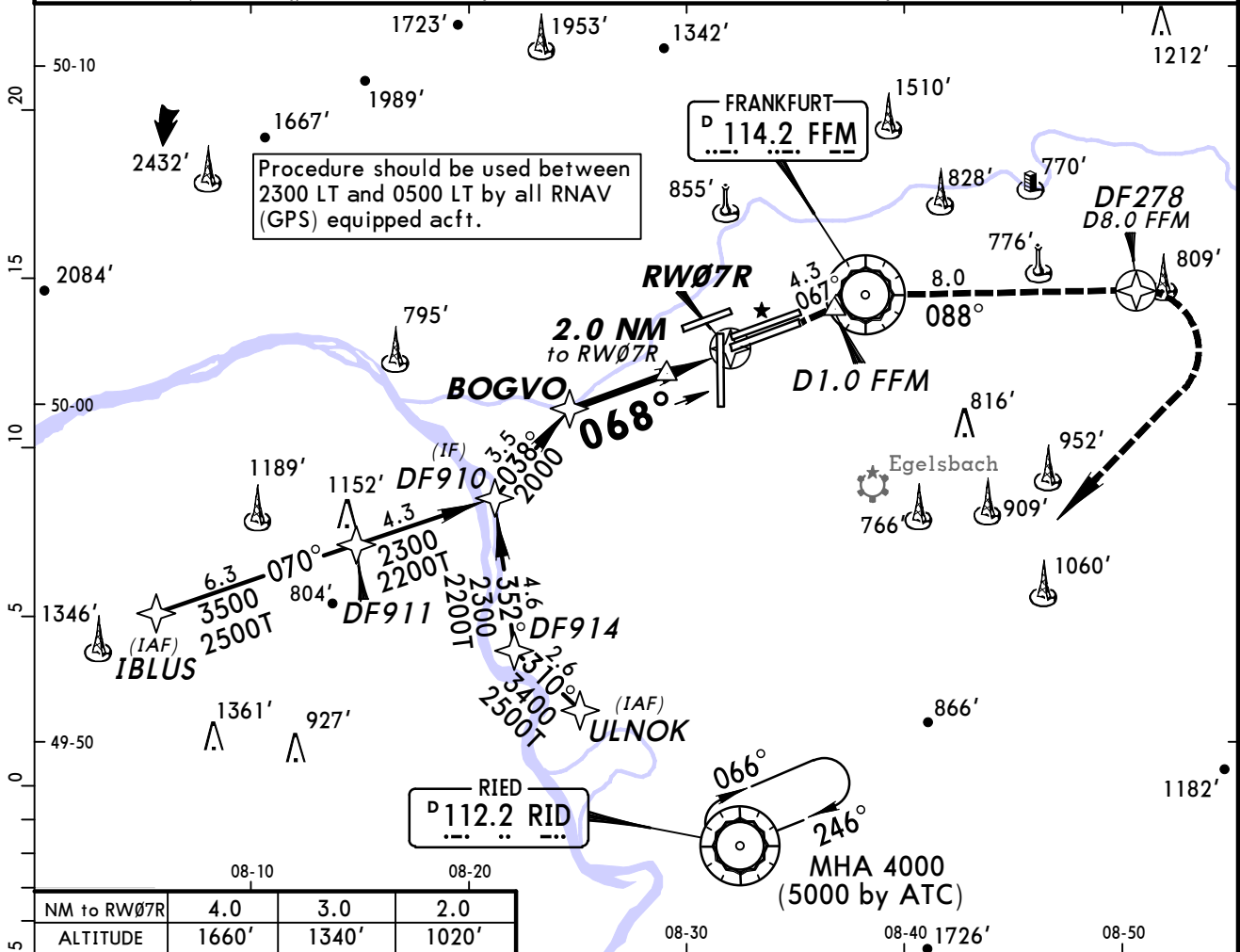


|                            |     |     |     |     |     |     |                                                                                       |                            |
|----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------|----------------------------|
| <i>Gnd speed-Kts</i>       | 70  | 90  | 100 | 120 | 140 | 160 |  | Refer to Missed apch above |
| <i>Descent Angle 3.00°</i> | 372 | 478 | 531 | 637 | 743 | 849 |                                                                                       |                            |
|                            |     |     |     |     |     |     |                                                                                       |                            |
| <i>MAP at RW07R</i>        |     |     |     |     |     |     |                                                                                       |                            |

STRAIGHT-IN LANDING RWY 07R

|   |          |                          |  |                                                                             |           |
|---|----------|--------------------------|--|-----------------------------------------------------------------------------|-----------|
|   |          | LNAV/VNAV                |  | LNAV                                                                        |           |
|   |          | DA(H) <b>680'</b> (352') |  | DA(H) C: <b>830'</b> (502')<br>AB: <b>810'</b> (482') D: <b>840'</b> (512') |           |
|   |          | ALS out                  |  | ALS out                                                                     |           |
| A | RVR 900m | RVR 1500m                |  | RVR 1500m                                                                   |           |
| B |          |                          |  |                                                                             |           |
| C |          |                          |  |                                                                             |           |
| D |          | RVR 1600m                |  | RVR 1600m                                                                   | CMV 2400m |

|                                                                                                                                                                                                                                                                                                                                                                        |                                        |                                                     |                                       |                                             |                                     |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------|---------------------------------------|---------------------------------------------|-------------------------------------|---------|
| *D-ATIS Arrival                                                                                                                                                                                                                                                                                                                                                        | LANGEN Radar (APP)<br>North      South |                                                     | *FRANKFURT Director (APP)             | *FRANKFURT Arrival (APP)                    | FRANKFURT Tower                     | *Ground |
| 118.02                                                                                                                                                                                                                                                                                                                                                                 | 120.8                                  | 125.35                                              | 127.27                                | 118.5                                       | 119.9                               | 121.8   |
| RNAV                                                                                                                                                                                                                                                                                                                                                                   | Final<br>Apch Crs<br><b>068°</b>       | Minimum Alt<br><b>BOGVO</b><br><b>2000'</b> (1672') | LNAV<br>DA(H)<br>Refer to<br>Minimums | Apt Elev <b>364'</b><br><br><b>RWY 328'</b> | <div>4300'</div> <div>MSA ARP</div> |         |
| <b>MISSED APCH RNAV:</b> Climb on track 067° to FFM VOR, then turn RIGHT on track 088° to DF278 or 5000', whichever is later, then turn RIGHT to RID VOR and maintain 5000'. <b>NON-RNAV:</b> Climb STRAIGHT AHEAD to D1.0 inbound FFM. Turn RIGHT to intercept R-088 FFM outbound to D8.0 FFM or 5000', whichever is later. Turn RIGHT to RID VOR and maintain 5000'. |                                        |                                                     |                                       |                                             |                                     |         |
| Alt Set: hPa (IN on req)      Rwy Elev: 12 hPa      Trans level: By ATC      Trans alt: 5000'                                                                                                                                                                                                                                                                          |                                        |                                                     |                                       |                                             |                                     |         |



|                     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|-----|-----|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RWY 07R      |     |     |     |     |     |     |

|                        |  |                             |  |
|------------------------|--|-----------------------------|--|
| <b>Standard</b>        |  | STRAIGHT-IN LANDING RWY 07R |  |
| LNAV                   |  | ALS out                     |  |
| DA(H)                  |  | C: <b>830'</b> (502')       |  |
| AB: <b>810'</b> (482') |  | D: <b>840'</b> (512')       |  |

|            |   |           |  |
|------------|---|-----------|--|
| PANS OPS 4 | A | RVR 1500m |  |
|            | B |           |  |
|            | C | RVR 1600m |  |
|            | D | CMV 2400m |  |

\*D-ATIS Arrival

118.02

LANGEN Radar (APP)

North

120.8

South

125.35

\*FRANKFURT Director (APP)

127.27

\*FRANKFURT Arrival (APP)

118.5

FRANKFURT Tower

119.9

\*Ground

121.8

RNAV

Final

Apch Crs

248°

Minimum Alt

LEDKI

4000' (3638')

LNAV/VNAV

DA(H)

770' (408')

Apt Elev

364'

RWY

362'

MISSED APCH RNAV: Climb on track 248° to DF290, then turn LEFT on track 230° to DF291. Then turn RIGHT on track 242° climb to 5000', then turn LEFT to CHA VOR and maintain 5000'. NON-RNAV: Climb STRAIGHT AHEAD to D5.5 FFM, then turn LEFT to intercept R-242 FFM. Then on R-242 FFM to D8.0 FFM or 5000', whichever is later, then turn LEFT to CHA VOR and maintain 5000'.

4300'

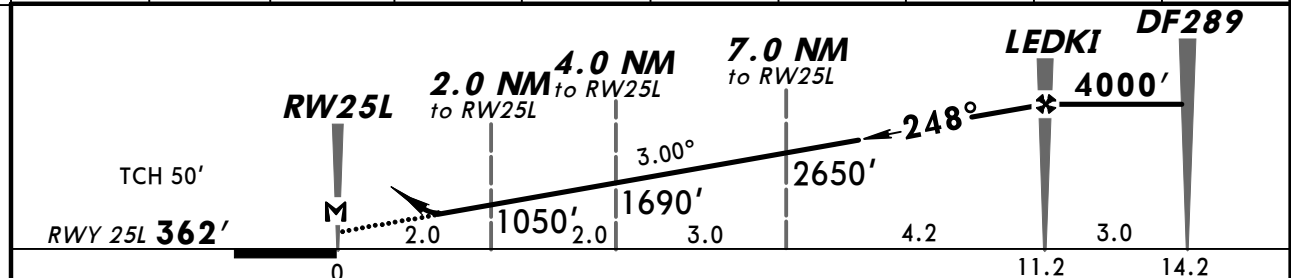
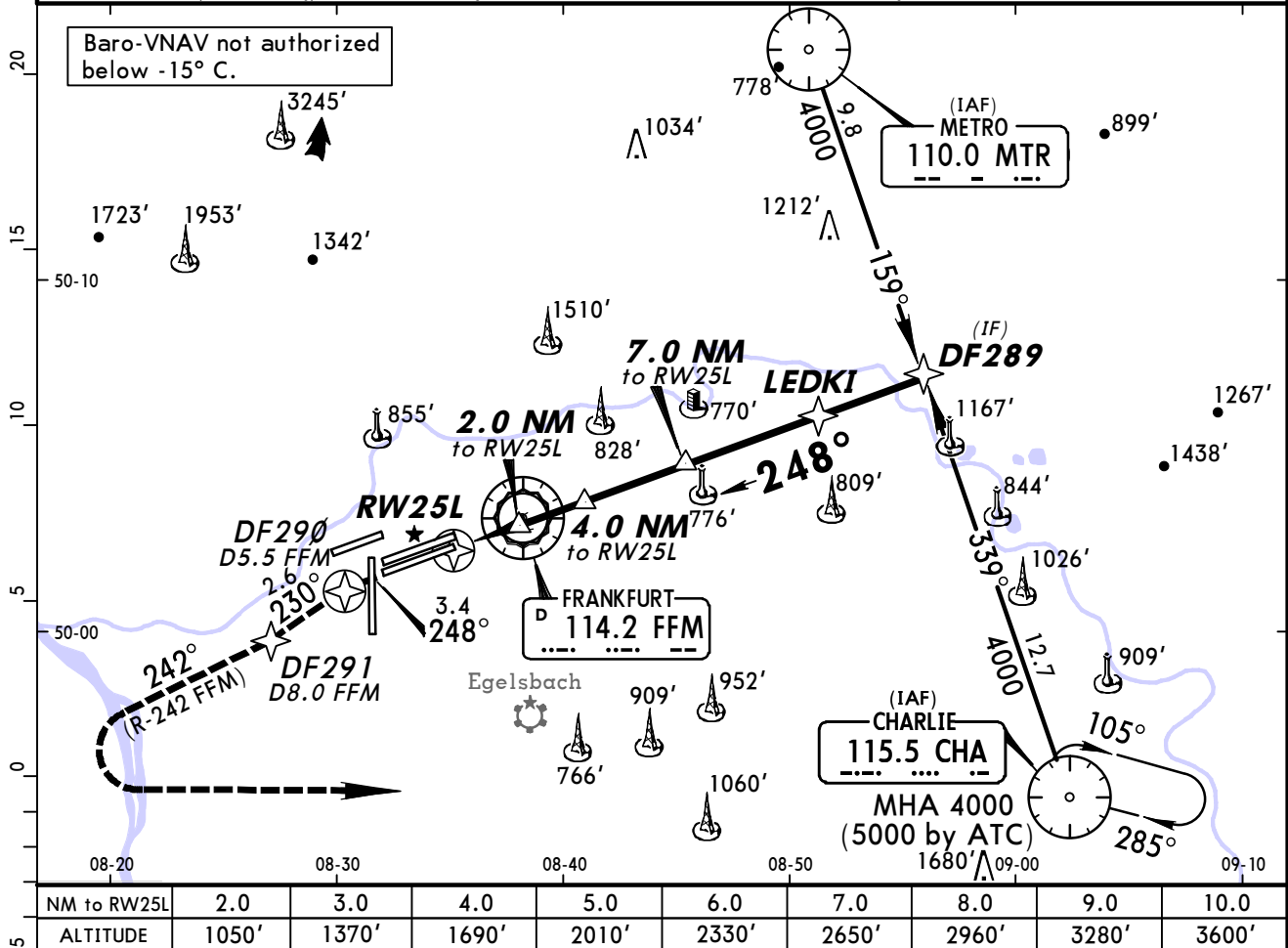
MSA ARP

Alt Set: hPa (IN on req)

Rwy Elev: 13 hPa

Trans level: By ATC

Trans alt: 5000'



|                     |     |     |     |     |     |     |                         |                          |
|---------------------|-----|-----|-----|-----|-----|-----|-------------------------|--------------------------|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>DF290</b><br>D5.5 FFM |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |                         |                          |
| MAP at RW25L        |     |     |     |     |     |     |                         |                          |

|                          |   |                          |  |                             |  |                       |  |
|--------------------------|---|--------------------------|--|-----------------------------|--|-----------------------|--|
| <b>Standard</b>          |   |                          |  | STRAIGHT-IN LANDING RWY 25L |  |                       |  |
| LNAV/VNAV                |   | LNAV                     |  | LNAV                        |  | LNAV                  |  |
| DA(H) <b>770'</b> (408') |   | DA(H) <b>770'</b> (408') |  | BC: <b>820'</b> (458')      |  | D: <b>830'</b> (468') |  |
| ALS out                  |   | ALS out                  |  | ALS out                     |  | ALS out               |  |
| PANS OPS 4               | A | RVR 1200m                |  | RVR 1200m                   |  | RVR 1500m             |  |
|                          | B | RVR 1500m                |  | RVR 1400m                   |  | RVR 1500m             |  |
|                          | C | RVR 1200m                |  | RVR 1500m                   |  | CMV 2100m             |  |
|                          | D | RVR 1900m                |  | RVR 1500m                   |  | CMV 2200m             |  |

\*D-ATIS Arrival

118.02

LANGEN Radar (APP)

North

120.8

South

125.35

\*FRANKFURT Director (APP)

127.27

\*FRANKFURT Arrival (APP)

118.5

FRANKFURT Tower

119.9

\*Ground

121.8

RNAV

Final

Apch Crs

248°

Minimum Alt

TITUT

2000' (1638')

LNAV

DA(H)

Refer to

Minimums

Apt Elev

364'

RWY

362'

MISSED APCH RNAV: Climb on track 248° to DF290, then turn LEFT on track 230° to DF291. Then turn RIGHT on track 242° climb to 5000', then turn LEFT to CHA VOR and maintain 5000'. NON-RNAV: Climb STRAIGHT AHEAD to D5.5 FFM, then turn LEFT to intercept R-242 FFM. Then on R-242 FFM to D8.0 FFM or 5000', whichever is later, then turn LEFT to CHA VOR and maintain 5000'.

4300'

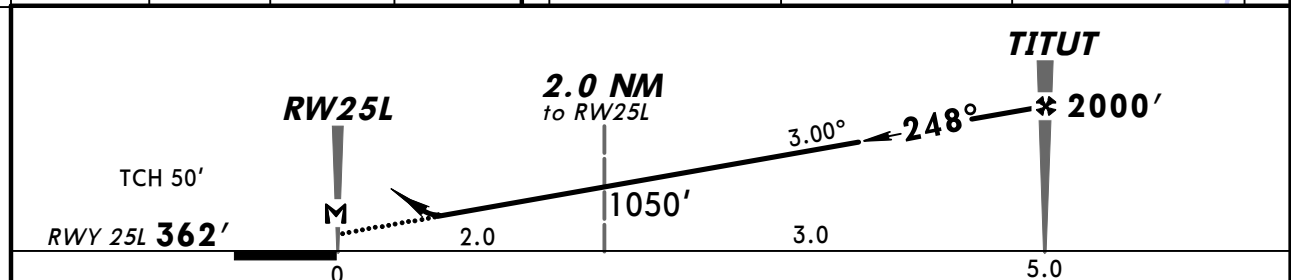
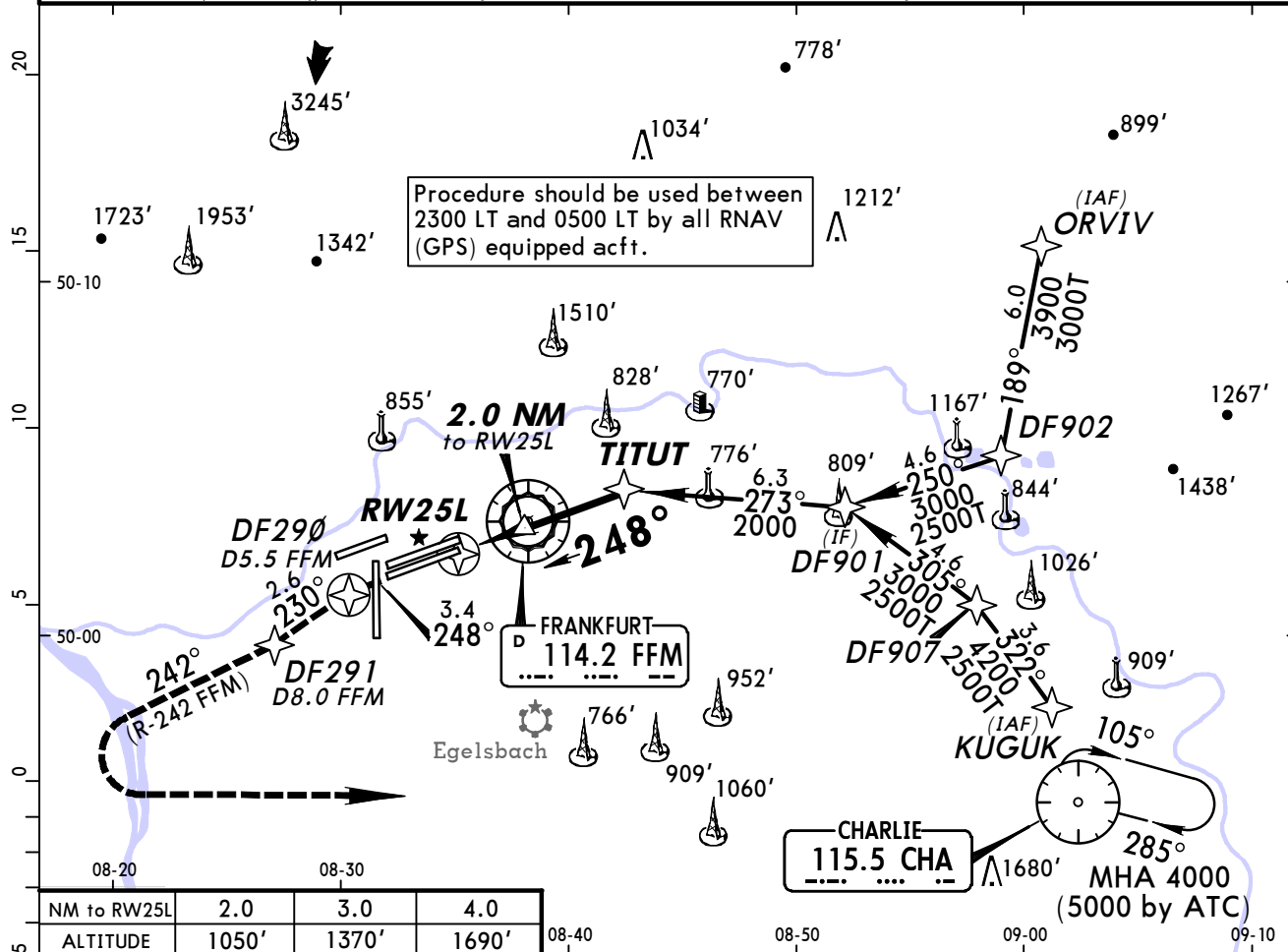
MSA ARP

Alt Set: hPa (IN on req)

Rwy Elev: 13 hPa

Trans level: By ATC

Trans alt: 5000'



|                     |     |     |     |     |     |     |                         |                               |
|---------------------|-----|-----|-----|-----|-----|-----|-------------------------|-------------------------------|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 | ALSF-II<br>REIL<br>PAPI | <b>DF290</b><br>D5.5 FFM<br>↑ |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |                         |                               |
| MAP at RW25L        |     |     |     |     |     |     |                         |                               |

|                 |           |                                                                                     |  |
|-----------------|-----------|-------------------------------------------------------------------------------------|--|
| <b>Standard</b> |           | STRAIGHT-IN LANDING RWY 25L                                                         |  |
|                 |           | LNAV<br>DA(H) BC: <b>820' (458')</b><br>A: <b>770' (408')</b> D: <b>830' (468')</b> |  |
|                 |           | ALS out                                                                             |  |
| A               | RVR 1200m | RVR 1500m                                                                           |  |
| B               | RVR 1400m | CMV 2100m                                                                           |  |
| C               | RVR 1500m | CMV 2200m                                                                           |  |
| D               | RVR 1500m |                                                                                     |  |

# EDDF/FRA FRANKFURT/MAIN, GERMANY RNAV (GPS) Z Rwy 25C

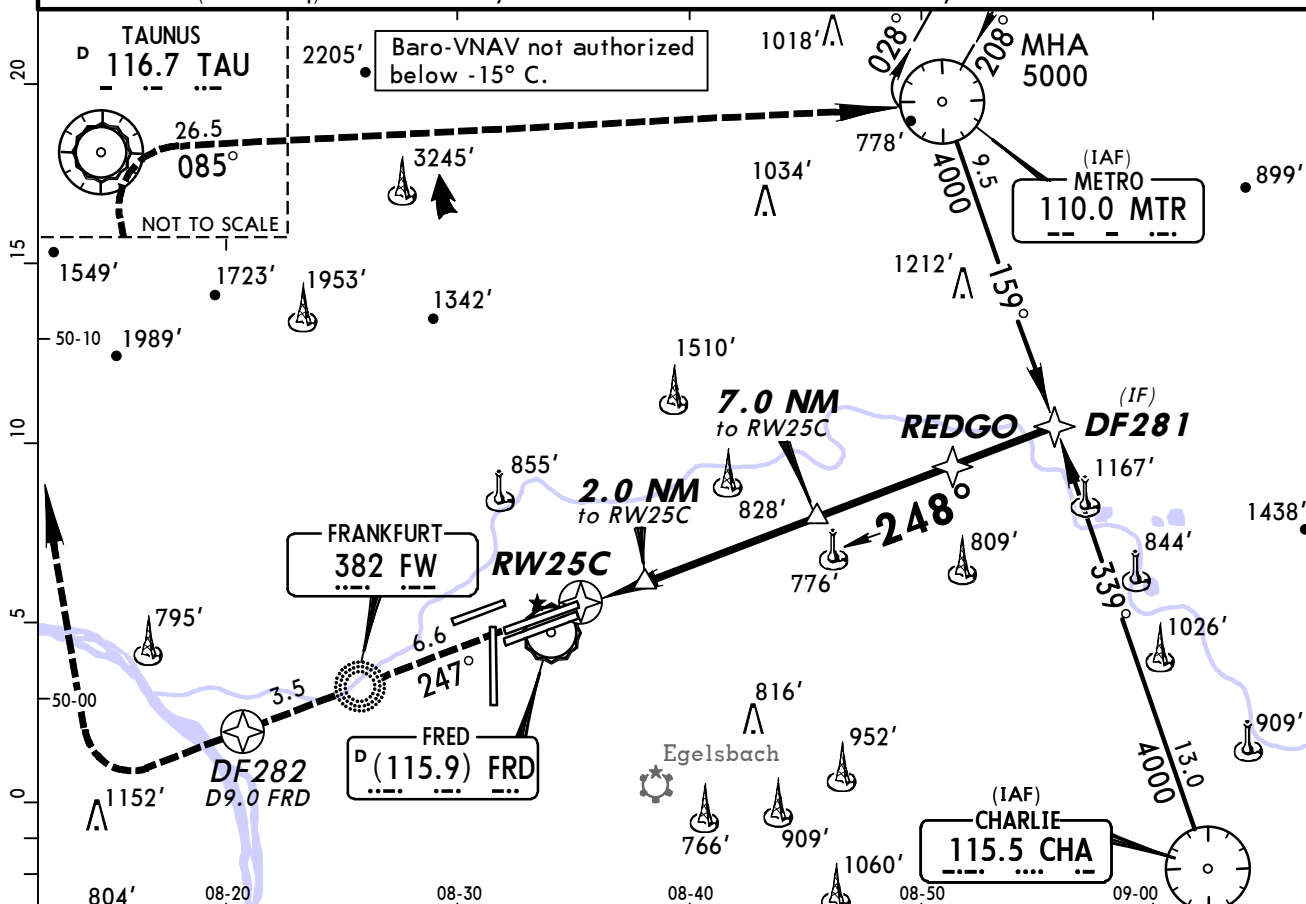
8 FEB 13 (12-7)

| *D-ATIS Arrival | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP) | *FRANKFURT Arrival (APP) | FRANKFURT Tower | *Ground |
|-----------------|-----------------------------------|---------------------------|--------------------------|-----------------|---------|
| 118.02          | 120.8 125.35                      | 127.27                    | 118.5                    | 118.77          | 121.8   |

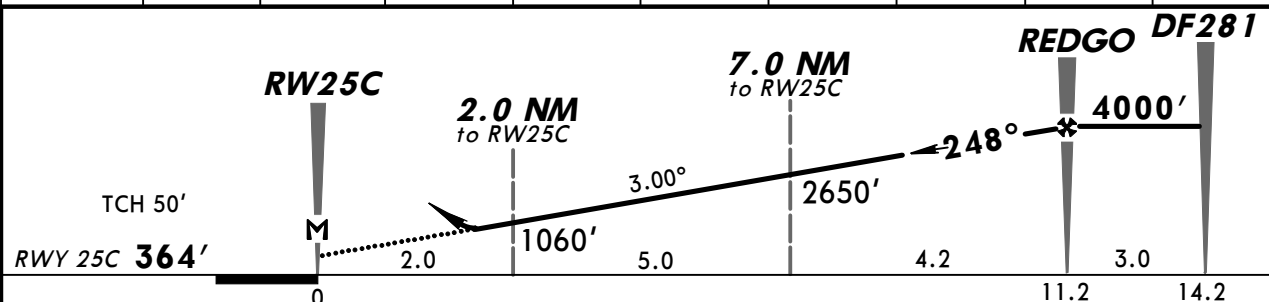
| RNAV | Final<br>Aptch Crs<br><b>248°</b> | Minimum Alt<br><b>REDGO</b><br><b>4000'</b> (3636') | LNAV/VNAV<br>DA(H)<br>Refer to<br>Minimums | Apt Elev <b>364'</b><br><b>RWY 364'</b> | 4300' |
|------|-----------------------------------|-----------------------------------------------------|--------------------------------------------|-----------------------------------------|-------|
|------|-----------------------------------|-----------------------------------------------------|--------------------------------------------|-----------------------------------------|-------|

**MISSED APCH RNAV:** Climb on track 247° via FW Lctr to DF282 or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT on 085° to MTR VOR and maintain 5000'. **NON-RNAV:** Climb STRAIGHT AHEAD via FW Lctr to D9.0 FRD or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR to MTR VOR and maintain 5000'.

Alt Set: hPa (IN on req) Rwy Elev: 13 hPa Trans level: By ATC Trans alt: 5000'



| NM to RW25C | 2.0   | 3.0   | 4.0   | 5.0   | 6.0   | 7.0   | 8.0   | 9.0   | 10.0  |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ALTITUDE    | 1060' | 1370' | 1690' | 2010' | 2330' | 2650' | 2970' | 3280' | 3600' |



| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
|---------------------|-----|-----|-----|-----|-----|-----|
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RW25C        |     |     |     |     |     |     |

**Standard** STRAIGHT-IN LANDING RWY 25C

| LNAV/VNAV               |  | LNAV                     |  |
|-------------------------|--|--------------------------|--|
| ABC: <b>760'</b> (396') |  | DA(H) <b>840'</b> (476') |  |
| D: <b>830'</b> (466')   |  |                          |  |
| ALS out                 |  | ALS out                  |  |
| RVR 1100m               |  | RVR 1500m                |  |
| RVR 1500m               |  | CMV 2200m                |  |

CHANGES: Minimums.

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# EDDF/FRA FRANKFURT/MAIN, GERMANY RNAV (GPS) Y Rwy 25C

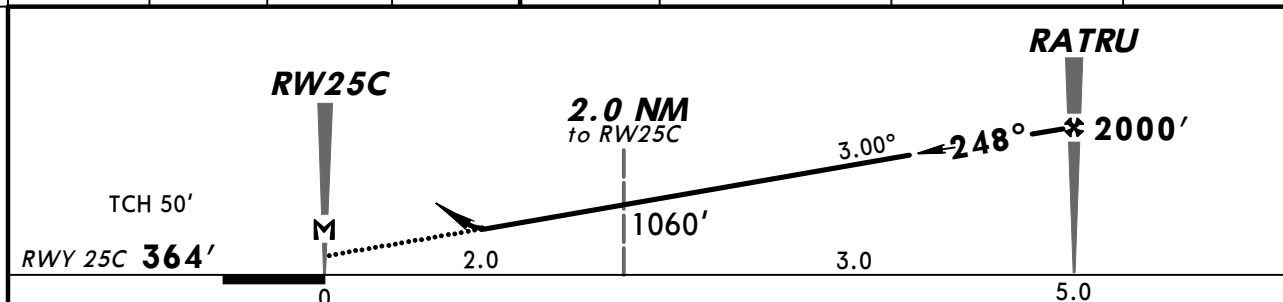
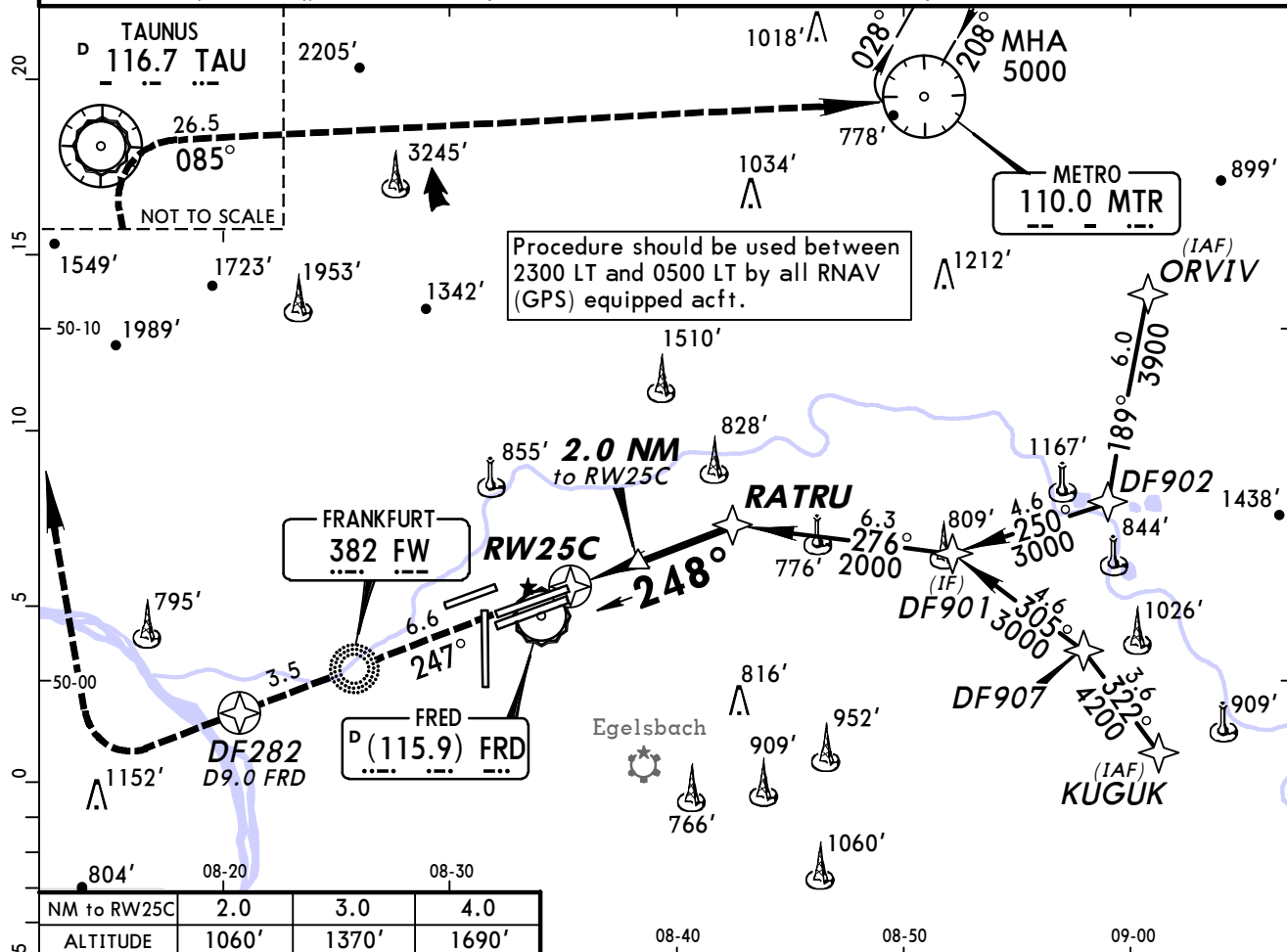
8 FEB 13 (12-8)

|                 |                                   |                           |                          |                 |         |
|-----------------|-----------------------------------|---------------------------|--------------------------|-----------------|---------|
| *D-ATIS Arrival | LANGEN Radar (APP)<br>North South | *FRANKFURT Director (APP) | *FRANKFURT Arrival (APP) | FRANKFURT Tower | *Ground |
| 118.02          | 120.8 125.35                      | 127.27                    | 118.5                    | 118.77          | 121.8   |

|      |                                   |                                                     |                                     |                                             |                                                                                    |
|------|-----------------------------------|-----------------------------------------------------|-------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------|
| RNAV | Final<br>Aptch Crs<br><b>248°</b> | Minimum Alt<br><b>RATRU</b><br><b>2000'</b> (1636') | LNAV<br>DA(H)<br><b>840'</b> (476') | Apt Elev <b>364'</b><br><br><b>RWY 364'</b> |  |
|------|-----------------------------------|-----------------------------------------------------|-------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------|

**MISSED APCH RNAV:** Climb on track 247° via FW Lctr to DF282 or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT on 085° to MTR VOR and maintain 5000'. **NON-RNAV:** Climb STRAIGHT AHEAD via FW Lctr to D9.0 FRD or 5000', whichever is later, then turn RIGHT to TAU VOR. Turn RIGHT to intercept R-085 TAU/R-265 inbound MTR to MTR VOR and maintain 5000'.

Alt Set: hPa (IN on req) Rwy Elev: 13 hPa Trans level: By ATC Trans alt: 5000'



|                     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|-----|-----|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RW25C        |     |     |     |     |     |     |

**Standard** STRAIGHT-IN LANDING RWY 25C

LNAV

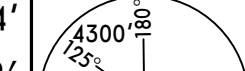
DA(H) **840'** (476')

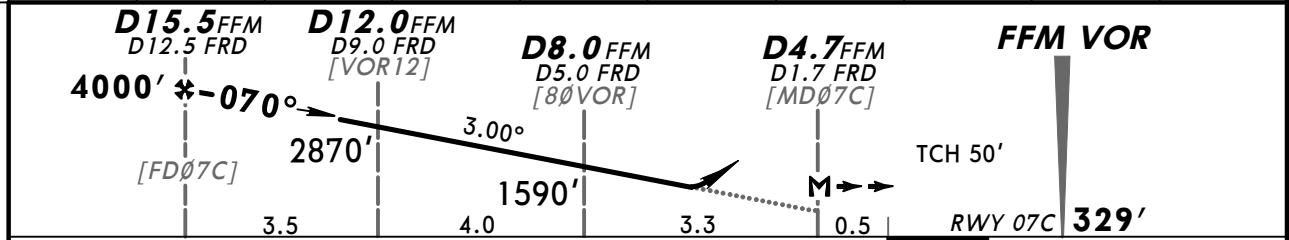
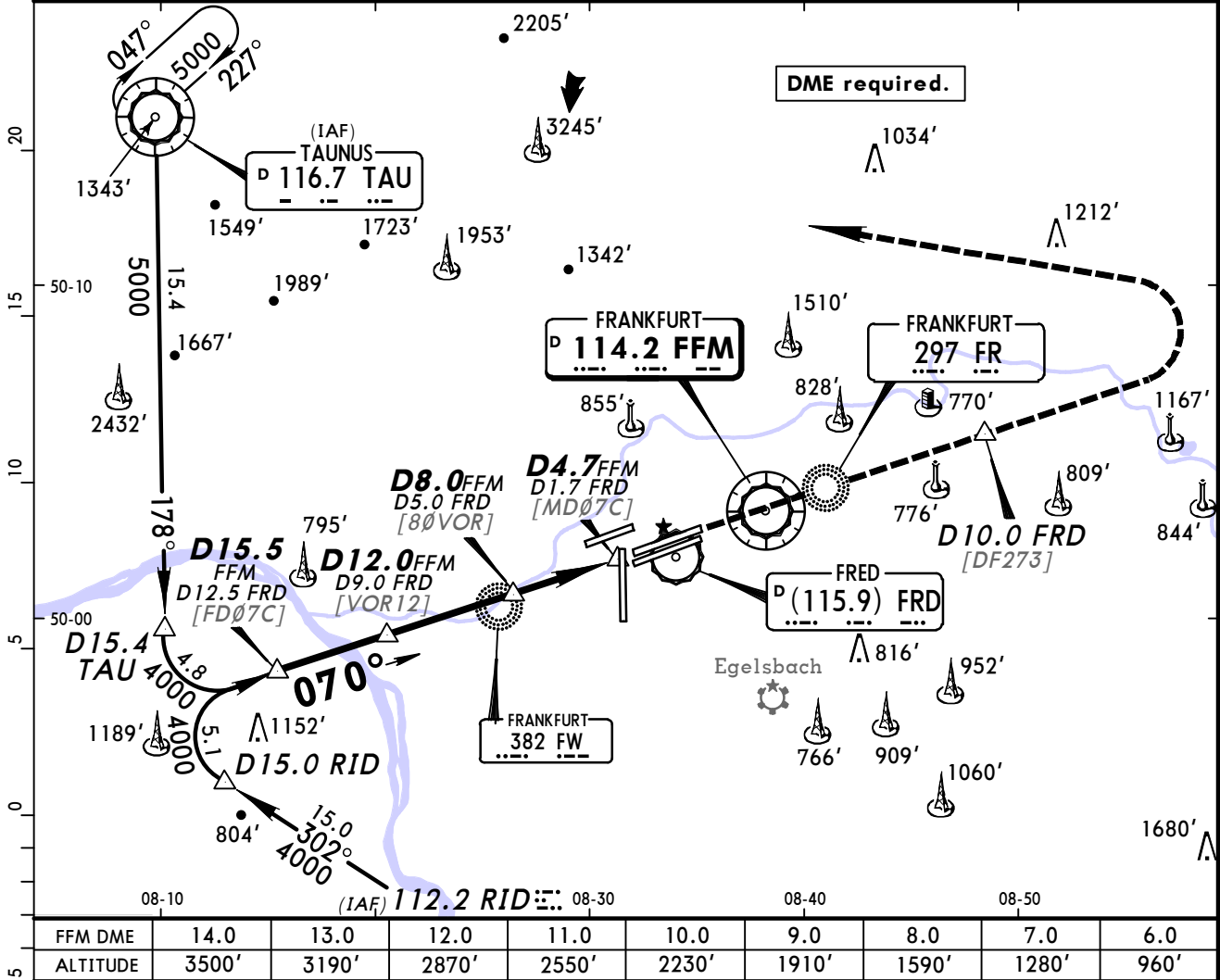
ALS out

|   |           |           |
|---|-----------|-----------|
| A | RVR 1500m | RVR 1500m |
| B |           |           |
| C |           |           |
| D |           | CMV 2200m |

CHANGES: Minimums.

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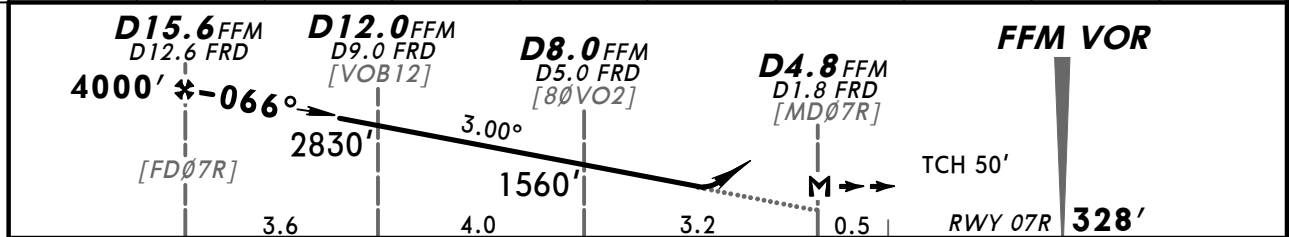
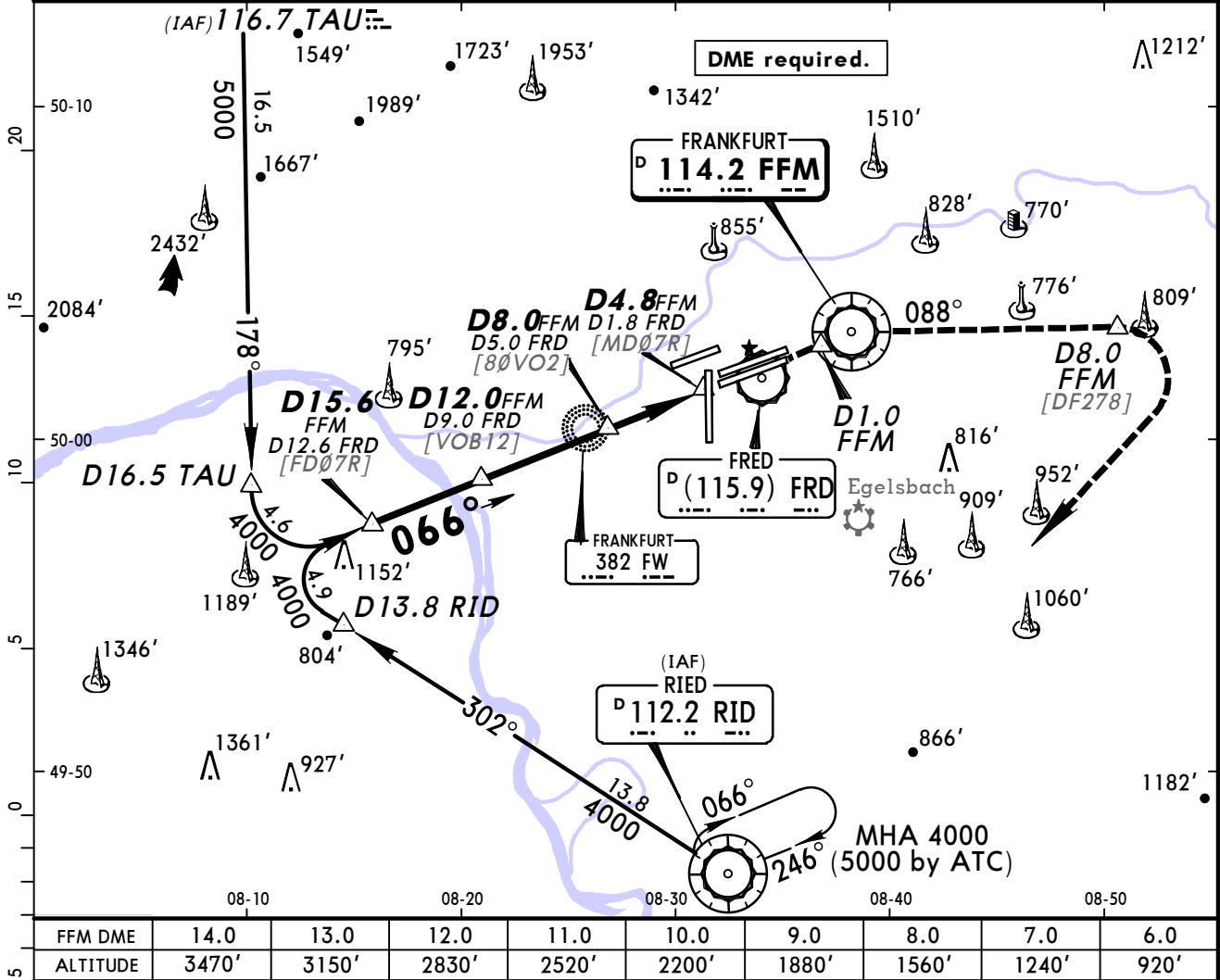
|                                                                                                                                    |                                        |                  |                                           |                          |                           |                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------|-------------------------------------------|--------------------------|---------------------------|----------------------------------------------------------------------------------------------------|
| *D-ATIS Arrival                                                                                                                    | LANGEN Radar (APP)<br>North      South |                  | *FRANKFURT Director (APP)                 | *FRANKFURT Arrival (APP) | FRANKFURT Tower           | *Ground                                                                                            |
| 118.02                                                                                                                             | 120.8                                  | 125.35           | 127.27                                    | 118.5                    | 118.77                    | 121.8                                                                                              |
| VOR<br>FFM<br>114.2                                                                                                                | Final<br>Apch Crs<br>070°              |                  | Minimum Alt<br>D15.5 FFM<br>4000' (3671') | DA(H)<br>910' (581')     | Apt Elev 364'<br>RWY 329' | <br>MSA FFM VOR |
| MISSED APCH: Climb STRAIGHT AHEAD via FR Lctr to D10.0 FRD or 5000', whichever is later, then turn LEFT to TAU VOR maintain 5000'. |                                        |                  |                                           |                          |                           |                                                                                                    |
| Alt Set: hPa (IN on req)                                                                                                           |                                        | Rwy Elev: 12 hPa | Trans level: By ATC                       | Trans alt: 5000'         |                           |                                                                                                    |



|                          |       |     |     |     |     |     |
|--------------------------|-------|-----|-----|-----|-----|-----|
| Gnd speed-Kts            | 70    | 90  | 100 | 120 | 140 | 160 |
| Descent Angle            | 3.00° | 372 | 478 | 531 | 637 | 849 |
| MAP at D4.7 FFM/D1.7 FRD |       |     |     |     |     |     |

|          |           |                             |  |
|----------|-----------|-----------------------------|--|
| Standard |           | STRAIGHT-IN LANDING RWY 07C |  |
|          |           | DA(H) 910' (581')           |  |
|          |           | ALS out                     |  |
| A        | RVR 1500m |                             |  |
| B        |           |                             |  |
| C        | RVR 2000m | CMV 2400m                   |  |
| D        |           |                             |  |

|                                                                                                                                                                                                 |                                        |                  |                                           |                               |                           |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------|-------------------------------------------|-------------------------------|---------------------------|-----------------|
| *D-ATIS Arrival                                                                                                                                                                                 | LANGEN Radar (APP)<br>North      South |                  | *FRANKFURT Director (APP)                 | *FRANKFURT Arrival (APP)      | FRANKFURT Tower           | *Ground         |
| 118.02                                                                                                                                                                                          | 120.8                                  | 125.35           | 127.27                                    | 118.5                         | 119.9                     | 121.8           |
| VOR<br>FFM<br>114.2                                                                                                                                                                             | Final<br>Apch Crs<br>066°              |                  | Minimum Alt<br>D15.6 FFM<br>4000' (3672') | DA(H)<br>Refer to<br>Minimums | Apt Elev 364'<br>RWY 328' | <br>MSA FFM VOR |
| MISSED APCH: Climb STRAIGHT AHEAD to D1.0 inbound FFM, then turn RIGHT to intercept R-088 FFM outbound to D8.0 FFM or 5000', whichever is later, then turn RIGHT to RID VOR and maintain 5000'. |                                        |                  |                                           |                               |                           |                 |
| Alt Set: hPa (IN on req)                                                                                                                                                                        |                                        | Rwy Elev: 12 hPa | Trans level: By ATC                       | Trans alt: 5000'              |                           |                 |



|                          |       |     |     |     |     |     |         |              |                          |
|--------------------------|-------|-----|-----|-----|-----|-----|---------|--------------|--------------------------|
| Gnd speed-Kts            | 70    | 90  | 100 | 120 | 140 | 160 | ALSF-II |              | D1.0<br>inbound FFM<br>↑ |
| Descent Angle            | 3.00° | 372 | 478 | 531 | 637 | 743 | 849     | REIL<br>PAPI |                          |
| MAP at D4.8 FFM/D1.8 FRD |       |     |     |     |     |     |         |              |                          |

|                 |   |                                       |  |           |  |
|-----------------|---|---------------------------------------|--|-----------|--|
| <b>Standard</b> |   | STRAIGHT-IN LANDING RWY 07R           |  |           |  |
|                 |   | DA(H) AB: 800' (472') CD: 810' (482') |  |           |  |
|                 |   | ALS out                               |  |           |  |
| PANS OPS 4      | A | RVR 1500m                             |  |           |  |
|                 | B |                                       |  |           |  |
|                 | C |                                       |  |           |  |
|                 | D | RVR 1500m                             |  | CMV 2300m |  |





**FRANKFURT/MAIN, (FRANKFURT/MAIN - EDDF)**

## TERMINAL CHART CHANGE NOTICES

### Chart Change Notices for Airport EDDF

**Type:** Terminal

**Effectivity:** Permanent

**Begin Date:** Immediately

**End Date:** No end date

(10-1P4) Twy S11 restricted to ACFT until Code letter E.

**Type:** Terminal

**Effectivity:** Temporary

**Begin Date:** Immediately

**End Date:** Until Further Notice

For CDO, report ATIS received when contacting arrival sector; ACFT will be vectored to reach the intermediate approach level on the LOC course with about 1 NM of level flight left until intercepting GS, the purpose of this intermediate approach segment is to reduce speed; assumed descent angle 3°; CDO avbl btn passing clearance limit KERAX, PSA, ROLIS and UNOKO until reaching final approach alt 5000' or 4000' at the latest; participants are invited to send regular feedback on CDO performance to [cdo-feedback@dfs.de](mailto:cdo-feedback@dfs.de).