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Departure and Destination SONEB - ROLIS

Entire Route SONEB - ROLIS

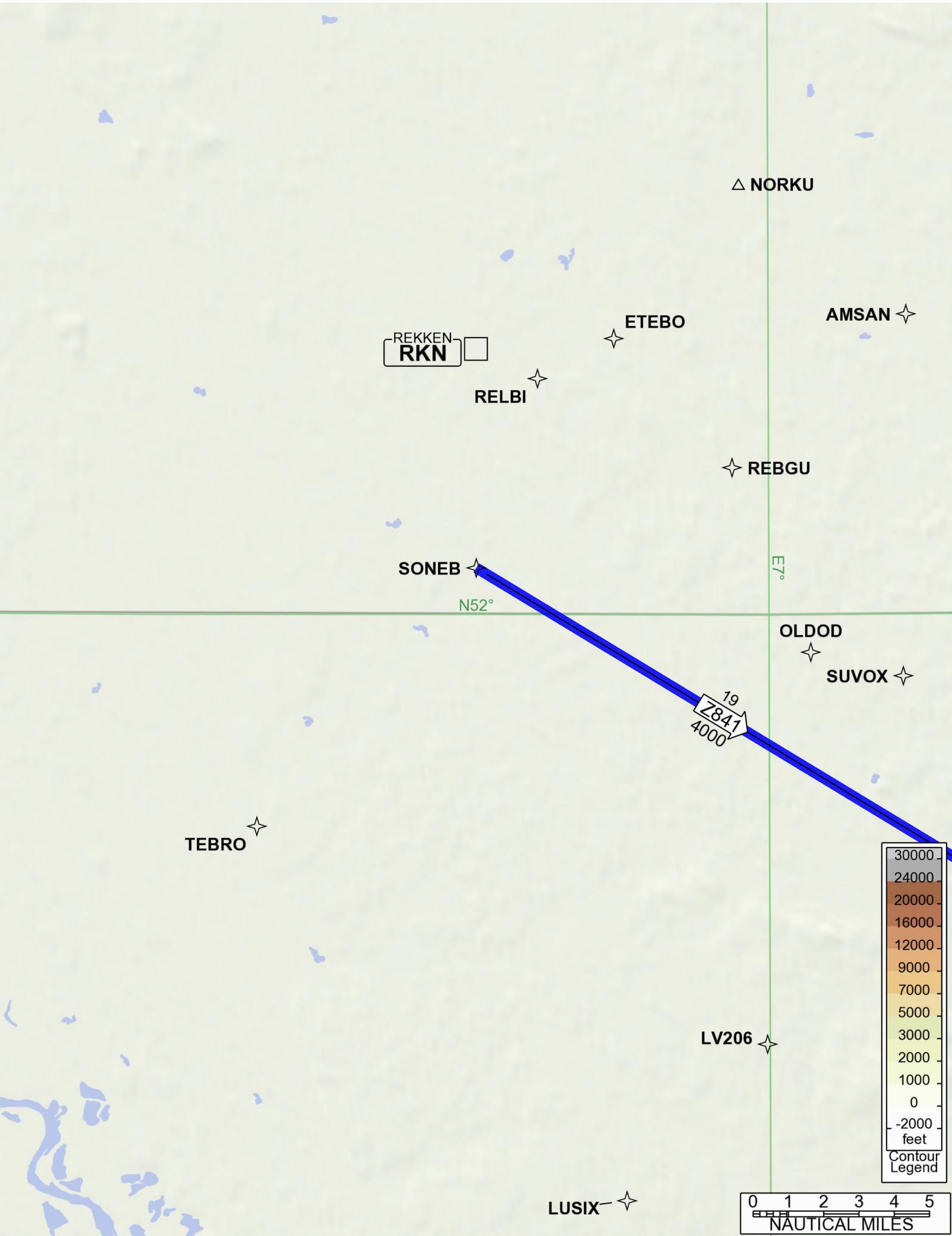
Strip Charts SONEB - ROLIS

Airport Information For EHGG

Terminal Charts For EHGG

Airport Information For EDDF

Terminal Charts For EDDF



30000
24000
20000
16000
12000
9000
7000
5000
3000
2000
1000
0
-2000
feet

0 1 2 3 4 5
NAUTICAL MILES

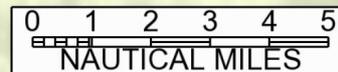
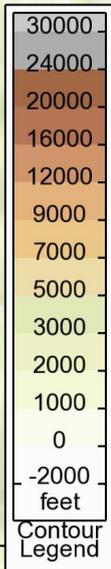


PETOM Δ

DODEN \star

ROLIS Δ

E8°





General Information

Location: GRONINGEN NLD
ICAO/IATA: EHGG / GRQ
Lat/Long: N53° 07.5', E006° 35.0'
Elevation: 18 ft

Airport Use: Public
Daylight Savings: Observed
UTC Conversion: -1:00 = UTC
Magnetic Variation: 2.0° E

Fuel Types: 100 Octane (LL), Jet A-1
Repair Types: Minor Airframe, Minor Engine
Customs: Yes
Airport Type: IFR
Landing Fee: Yes
Control Tower: Yes
Jet Start Unit: No
LLWS Alert: No
Beacon: No
Traffic Pattern Altitude: 1000 ft (982 ft AGL)

Sunrise: 0744 Z
Sunset: 1539 Z

Runway Information

Runway: 05
Length x Width: 8202 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 13 ft
Lighting: Edge, ALS, Centerline

Runway: 23
Length x Width: 8202 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 18 ft
Lighting: Edge, ALS, Centerline

Communication Information

ATIS: 133.555
Eelde Tower: 118.705 VHF-DF
Eelde Tower: 119.705 VHF-DF
Eelde Clearance Delivery: 121.705 VHF-DF
Eelde Approach: 119.705 VHF-DF
Eelde Approach: 120.305 VHF-DF
Dutch Mil Information: 132.350 Flight Info Service Military

EHGG/GRO

+ JEPPESEN

GRONINGEN, NETHERLANDS

EELDE

29 JUL 22

10-1P

.Eff.11.Aug.

.AIRPORT.BRIEFING.

1. GENERAL

1.1. ATIS

*ATIS 133.555

1.2. NOISE ABATEMENT PROCEDURES

ACFT executing a visual approach shall intercept the final approach leg at an altitude of at least 1000' MSL, unless residential areas can be avoided.

1.3. LOW VISIBILITY PROCEDURES (LVP)

LVP become effective when the general visibility equals or drops below 2000m, or the lowest RVR of the landing RWY in use equals or drops below 1500m.

The minimum separation for arriving ACFT and the departure interval will be increased and RWY use will be restricted.

Phase A: 550m less or equal VIS less or equal 2000m
(or 550m less or equal RVR* less or equal 1500m).

Phase B: 350m less or equal RVR* less 550m and/or cloud base less 200'.

Phase C: 200m less or equal RVR* less 350m.

Phase D: RVR* less 200m.

RVR* = Lowest RVR of landing RWY in use.

1.4. OTHER INFORMATION

Monitoring the EELDE Tower channel is mandatory for all ACFT on the ground that have an engine running.

Parachuting.

RWY 05 right-hand circuit.

2. ARRIVAL

2.1. LOST COMMUNICATIONS

2.1.1. INBOUND CLEARANCE NOT RECEIVED

Proceed according to the current flight plan route to the holding fix HECTI. Non-RNAV traffic proceed to HECTI via DCT EEL and EEL R-052.

Maintain last cleared and acknowledged flight level.

After arrival over HECTI, intercept the holding pattern.

Commence descent to 2000' at or as near as possible to the ETO over HECTI.

After reaching 2000' leave HECTI and carry out an instrument approach procedure to the most convenient RWY.

2.1.2. INBOUND CLEARANCE RECEIVED

2.1.2.1. TRAFFIC VIA STANDARD ARRIVAL ROUTE, OUTSIDE STANDARD ARRIVAL ROUTE OR VECTORED TO FINAL APPROACH

Proceed according the current flight plan route to the holding fix HECTI or OMFAR, if specified in the inbound clearance. Non-RNAV traffic proceed to HECTI via DCT EEL and EEL R-052 and OMFAR via DCT EEL and EEL R-229.

Maintain the last cleared and acknowledged flight level.

After arrival over the fix, intercept the holding pattern.

Commence descent to 2000' at the EAT last received and acknowledged.

When no EAT has been received and acknowledged, commence descent to 2000' at or as near as possible to the ETO over holding fix.

After reaching 2000' leave the holding fix and carry out an instrument approach procedure to the appropriate RWY.

EHGG/GRO

+ JEPPESEN

GRONINGEN, NETHERLANDS

EELDE

29 JUL 22

10-1P1

.Eff.11.Aug.

.AIRPORT.BRIEFING.

2. ARRIVAL

2.1.2.2. TRAFFIC INBOUND TOLKO OR ON RNAV TO ILS APPROACH

Traffic inbound TOLKO or with clearance for the RNAV approach via TOLKO shall proceed to TOLKO and execute the RNAV to ILS approach procedure.

2.1.2.3. TRAFFIC INBOUND AMREG, IDAKA, SIPLO, TUVOX, VEXAR, XOMBI OR ON RNP APPROACH

Traffic inbound an IAF or IF, or with clearance for the RNP approach to RWY 05 or RWY 23, shall proceed to this IAF or IF and execute the RNP approach procedure in accordance with the applicable instrument approach chart.

2.1.3. MISSED APPROACH PROCEDURE IN CASE OF COMMUNICATION FAILURE

2.1.3.1. GENERAL

All turns shall be the shortest and in case of a 180° turn, that turn shall be to the left, unless otherwise specified below or instructed by ATC.

2.1.3.2. MISSED APPROACH DURING VISUAL APPROACH

Turn to the intended landing RWY, intercept RWY track of that RWY while:

- When visual remain visual and execute another circuit for that RWY.
- When unable to remain visual:
 - Climb to 3000'.
 - In case visual approach was made to RWY 05: when reaching 2000' turn LEFT to intercept EEL R-229 and proceed to OMFAR.
 - In case visual approach was made to RWY 23: when reaching 2000' turn RIGHT to EEL VOR. After passing EEL VOR proceed to HECTI via EEL R-052.
 - After arriving over the fix for the approach RWY (OMFAR for RWY 05, HECTI for RWY 23) hold or descend to 2000' in an outbound turn, intercept final approach and execute the instrument approach procedure.

2.1.3.3. MISSED APPROACH WHILE CIRCLING TO LAND (DIFFERENT FROM ICAO DOC. 8168, PANS-OPS)

- Start climbing and complete the turn to the intended landing RWY.
- Intercept the MAG track of that RWY while climbing to 3000'.
- In case a circling was made to RWY 05: when reaching 3000' turn LEFT to intercept EEL R-229 and proceed to OMFAR, hold or descend to 2000' in an outbound turn, intercept final approach and execute instrument approach procedure again.
- In case a circling was made to RWY 23: when reaching 3000' turn RIGHT to EEL VOR. After passing EEL VOR proceed to HECTI via EEL R-052, hold or descend to 2000' in an outbound turn, intercept final approach and execute instrument approach procedure again.

2.2. RWY OPERATIONS

2.2.1. REDUCED RWY SEPARATION

Minimum separation applicable for RWY 05 and RWY 23:

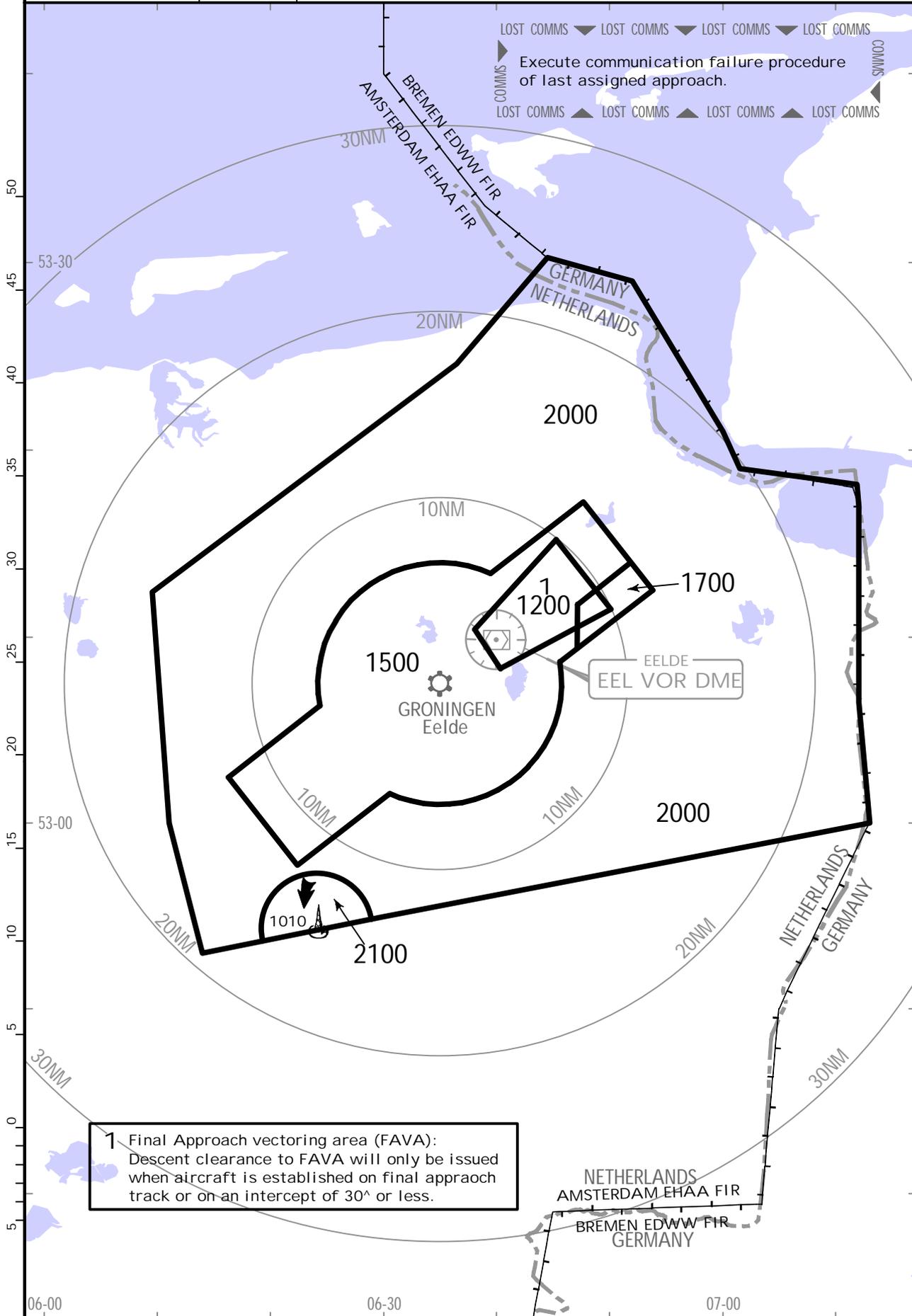
- between a landing/departing CAT I ACFT and a preceding CAT I or CAT II ACFT: 600m;
- between a landing/departing CAT II ACFT and a preceding CAT I or CAT II ACFT: 1500m.

EHGG/GRO
EELDE

JEPPESEN
12 MAR 21 (10-1R) .Eff.25.Mar.

GRONINGEN, NETHERLANDS
.RADAR.MINIMUM.ALTITUDES.

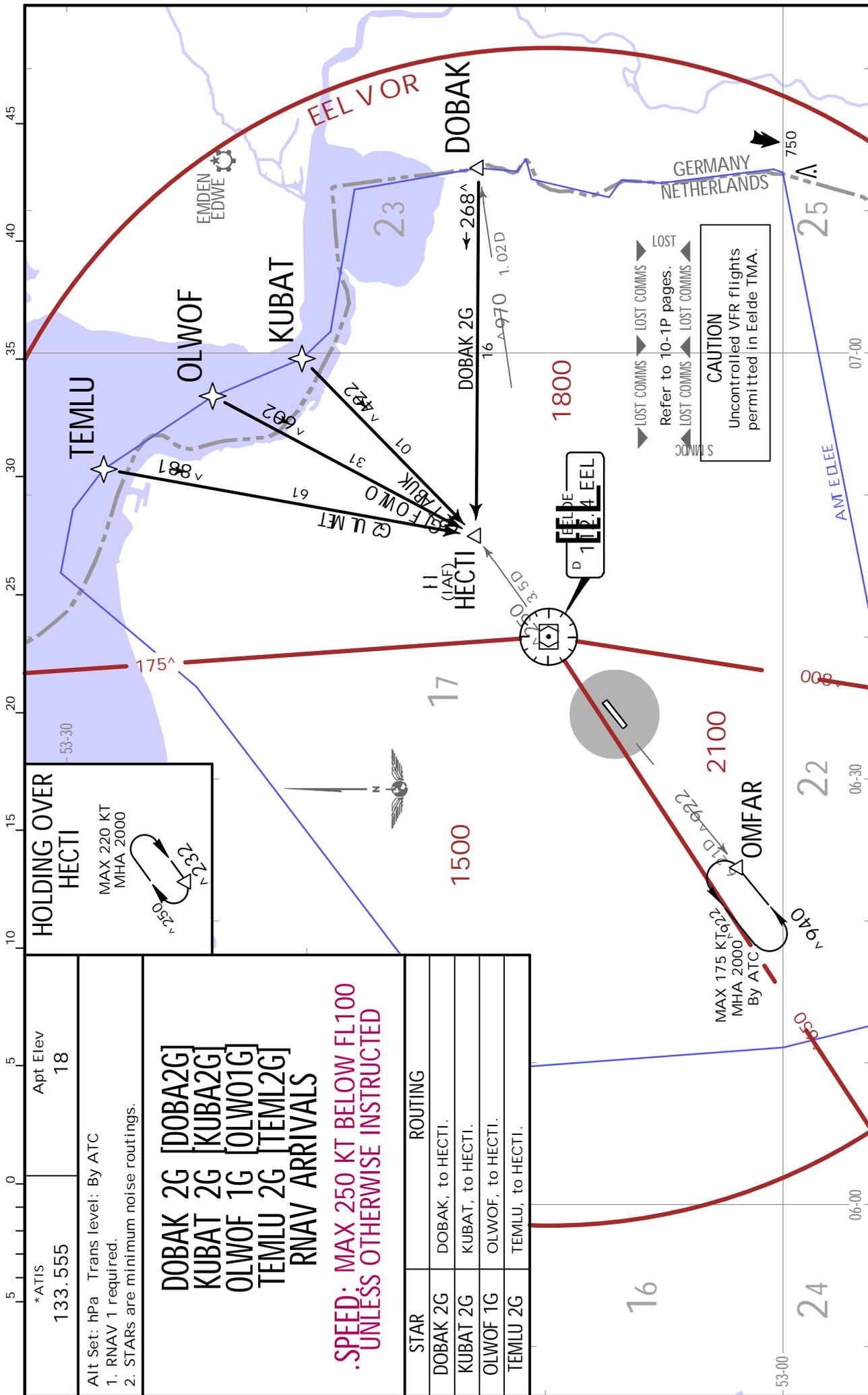
<p>*EELDE Approach (R) 120.305 119.705G</p>	<p>Apt Elev 18</p>	<p>Alt Set: hPa Trans level: By ATC Trans alt: 3000 1. Chart only to be used for cross-checking altitudes while under RADAR control. 2. Aeronautical data and minimum vectoring altitudes only within relevant CTR and TMA. 3. Temperature correction: when below -10°C add 200, below -19°C add 300 to published altitudes.</p>
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EHGG/GRO

EELDE

JEPPESSEN GRONINGEN, NETHERLANDS
 6 MAY 22 (10-2) .Eff.19.May. .RNAV.STAR.



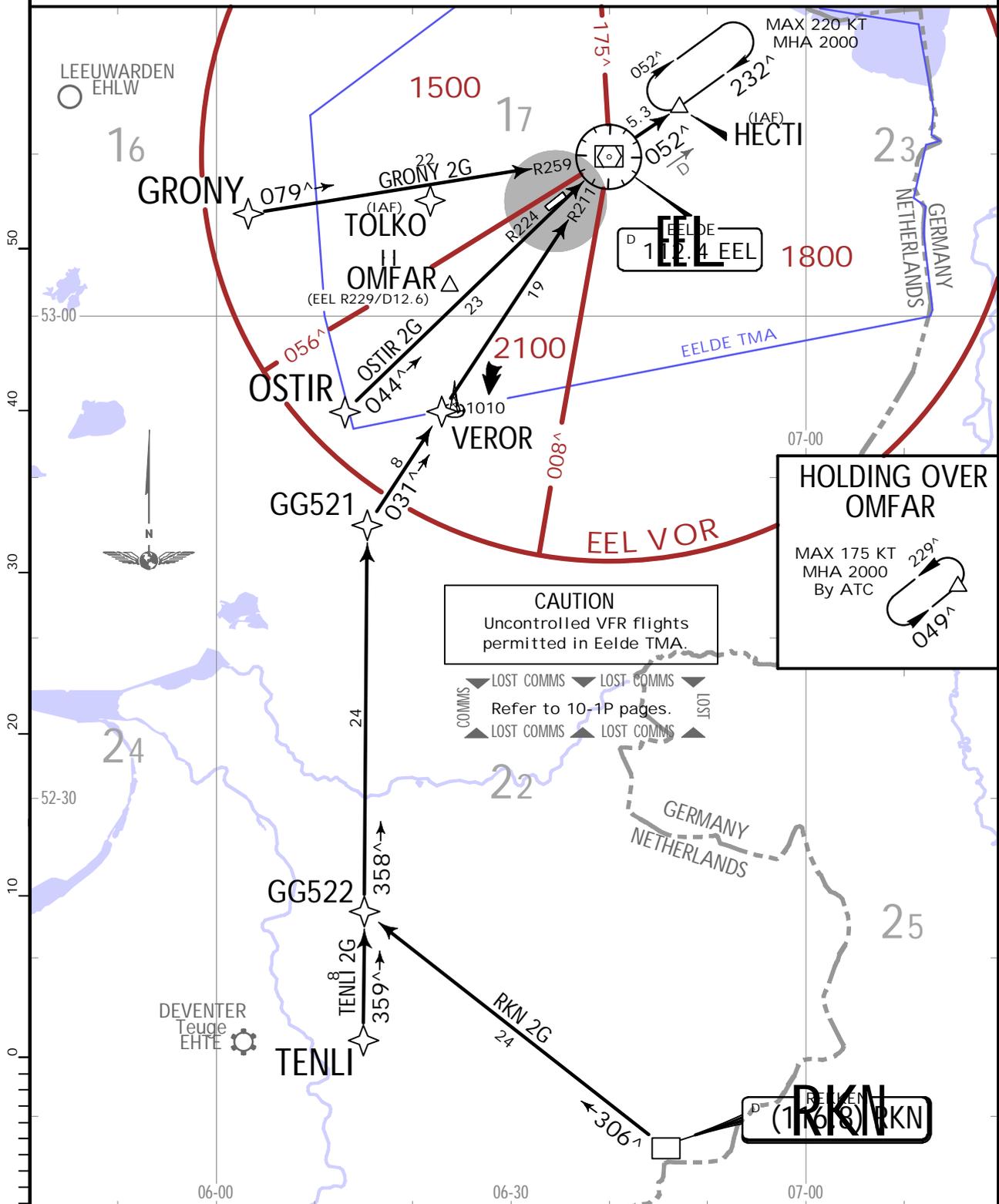
EHGG/GRO
EELDE

JEPPESEN GRONINGEN, NETHERLANDS
6 MAY 22 (10-2A). Eff. 19. May. .RNAV. STAR.

*ATIS 133.555	Apt Elev 18	Alt Set: hPa Trans level: By ATC 1. RNAV 1 required. 2. STARs are minimum noise routings. 3. When TOLKO 2G ILS RWY 23 Approach is used, EXPECT direct TOLKO.
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**GRONY 2G [GRON2G], OSTIR 2G [OSTI2G]
RKN 2G [RKN2G], TENLI 2G [TENL2G]
RNAV ARRIVALS**

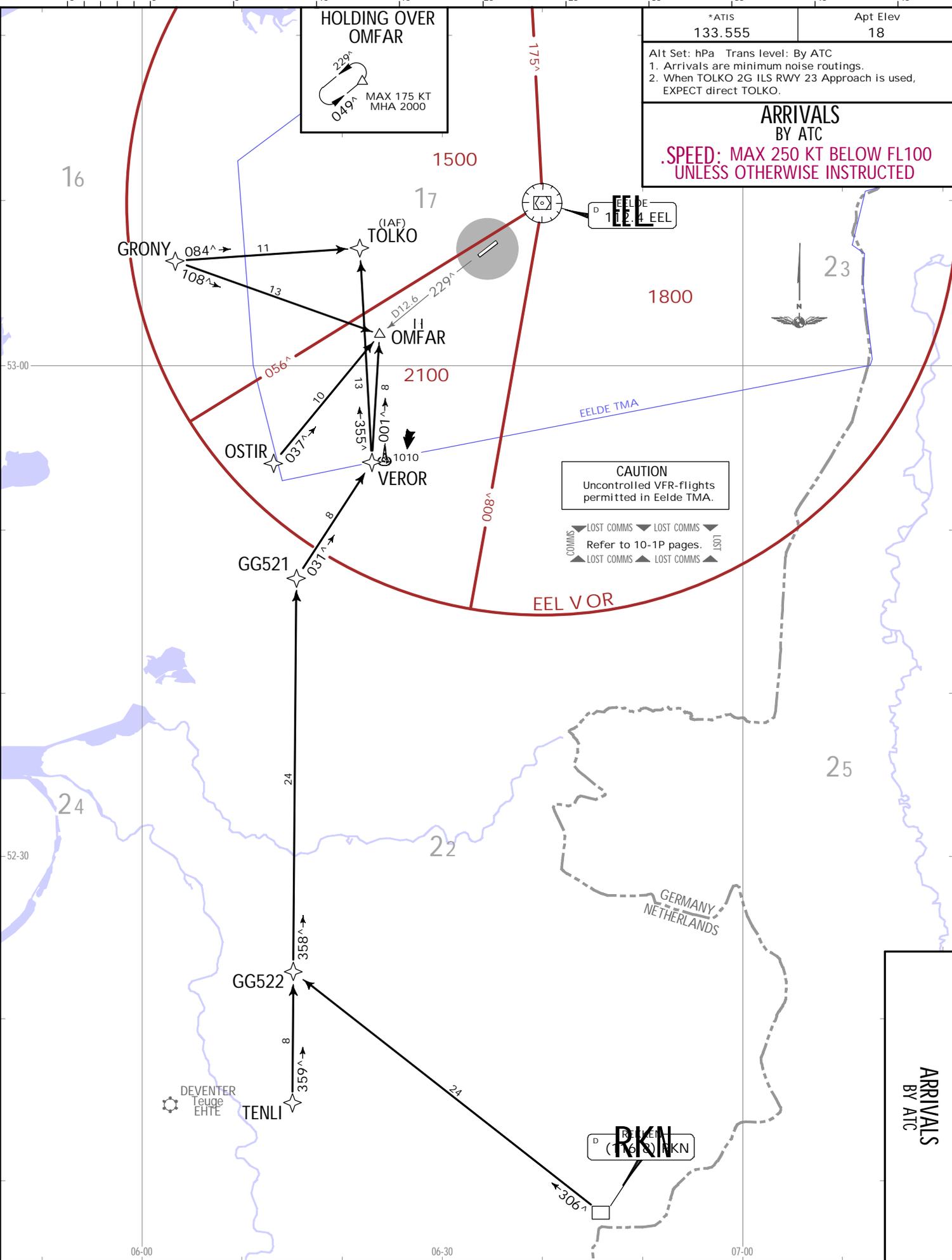
.SPEED: MAX 250 KT BELOW FL100 UNLESS OTHERWISE INSTRUCTED



STAR	ROUTING
GRONY 2G	GRONY, to EEL VOR, to HECTI.
OSTIR 2G	OSTIR, to EEL VOR, to HECTI.
RKN 2G	RKN DME, to GG522, to GG521, to VEROR, to EEL VOR, to HECTI.
TENLI 2G	TENLI, to GG522, to GG521, to VEROR, to EEL VOR, to HECTI.

CHANGES: Routes to TOLKO added: EH521 and EH522 renamed GG521 and GG522 respectively; VZ NDB replaced by OMFAR; track update: new format.

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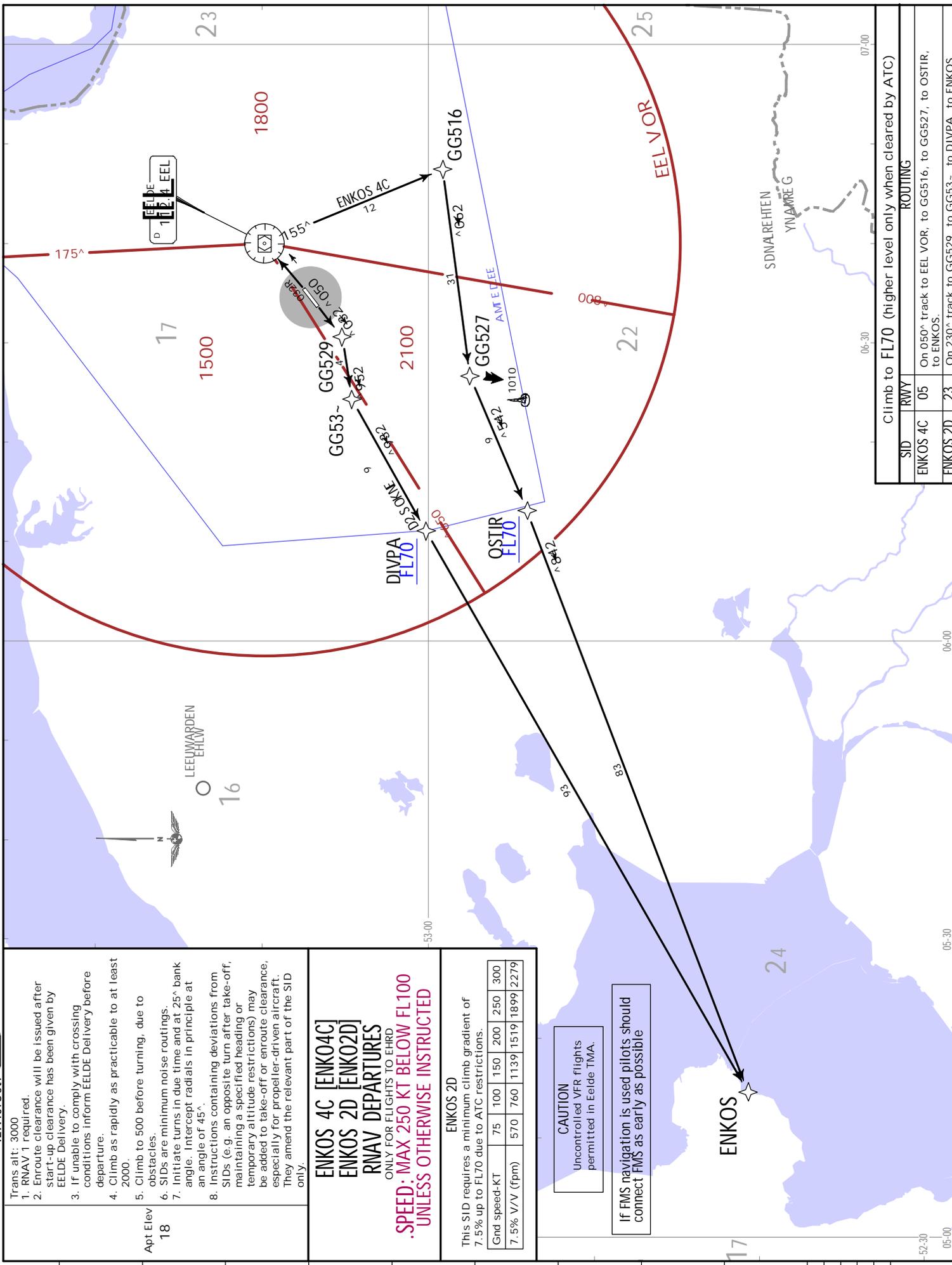


EHGG/GRO
 2 OCT 20
 FF 8 Oct 10-2B
 JEPPESSEN

GRONINGEN, NETHERLANDS
 ARRIVAL

GRONINGEN, NETHERLANDS
 .RNAV.SID.

EHGG/GRO
 EELDE
 2 OCT 20
 Eff. 8 Oct. 10-3
 JEPPESEN



Trans alt: 3000
 1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
 18

**ENKOS 4C [ENK04C]
 ENKOS 2D [ENK02D]
 RWAV DEPARTURES**
 ONLY FOR FLIGHTS TO EHRD
**.SPEED: MAX 250 KT BELOW FL100
 UNLESS OTHERWISE INSTRUCTED**

ENKOS 2D

This SID requires a minimum climb gradient of 7.5% up to FL70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
7.5% V/V (fpm)	570	760	1139	1519	1899	2279

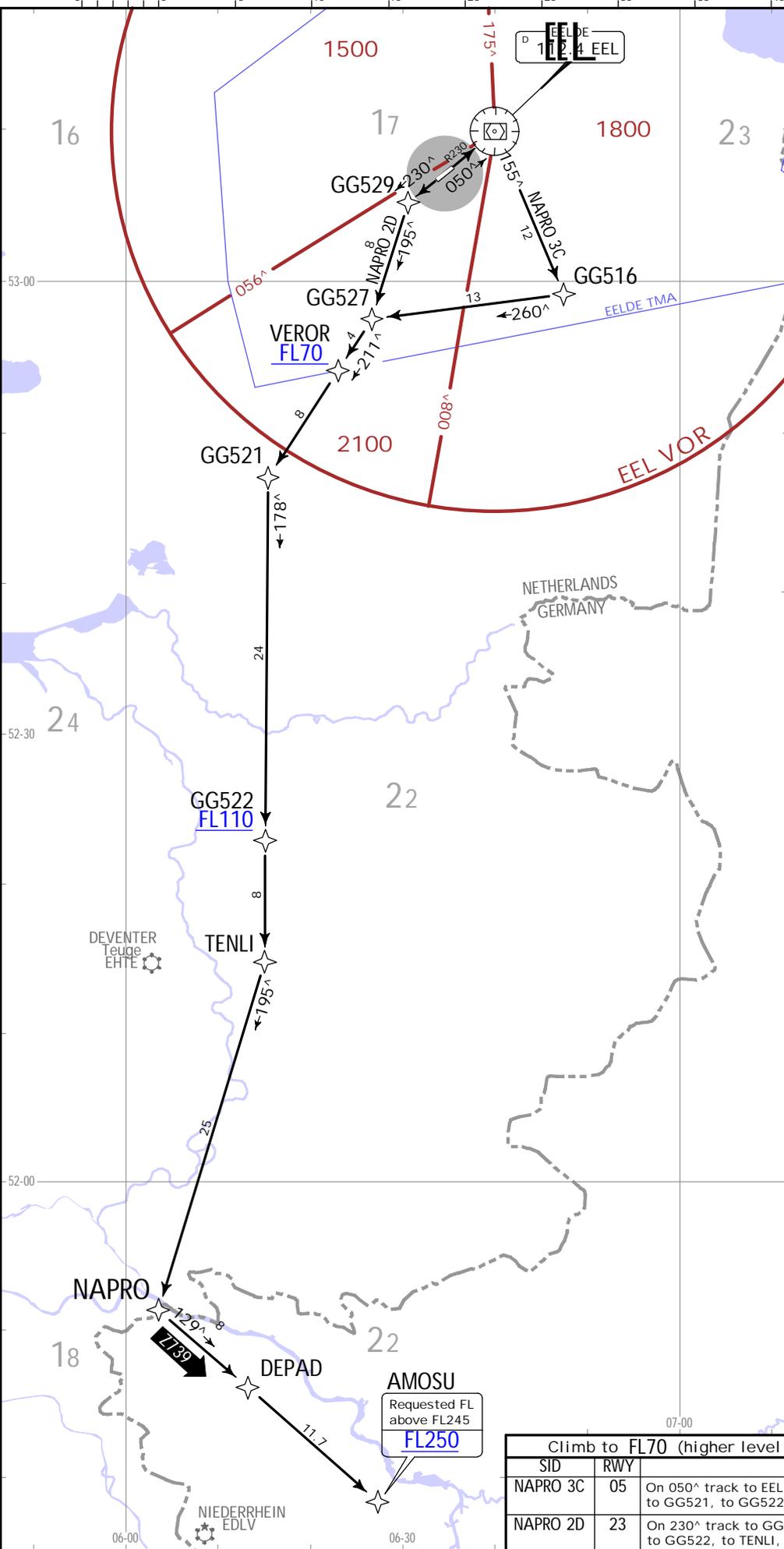
CAUTION
 Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible

Climb to FL70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
ENKOS 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to OSTIR, to ENKOS.
ENKOS 2D	23	On 230° track to GG529, to GG53-, to DIVPA, to ENKOS.

CHANGES: SIDs revised & renumbered chart reindexed, new format.



- Trans alt: 3000
1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

**NAPRO 3C [NAPR3C]
NAPRO 2D [NAPR2D]
RNAV DEPARTURES**
**.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

NAPRO 2D
This SID requires a minimum climb gradient of 8.0% up to FL70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
8.0% V/V (fpm)	608	810	1215	1620	2025	2430

CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible.



Climb to FL70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
NAPRO 3C	05	On 050° track to EEL VOR, to GG516, to GG527, to VEROR, to GG521, to GG522, to TENLI, to NAPRO.
NAPRO 2D	23	On 230° track to GG529, to GG527, to VEROR, to GG521, to GG522, to TENLI, to NAPRO.

**NAPRO 3C [NAPR3C]
NAPRO 2D [NAPR2D]
RNAV DEPARTURES**

EHG/G/RO
 EELDE
 JEPPESSEN GRONINGEN, NETHERLANDS
 2 OCT 20 (10-3A) .Eff. 8.Oct.
 RNAV SID

GRONINGEN, NETHERLANDS ·RNAV·SID·

Trans alt: 3000

- RNAV 1 required.
- Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
- If unable to comply with crossing conditions inform EELDE Delivery before departure.
- Climb as rapidly as practicable to at least 2000.
- Climb to 500 before turning, due to obstacles.
- SIDs are minimum noise routings.
- Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
- Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
18

**NOVEN 3C [NOVE3C]
NOVEN 2D [NOVE2D]
RNAV DEPARTURES
(ALL RWYS)
FOR FLIGHTS ABOVE FLO70
WITH DESTINATION EHAM**

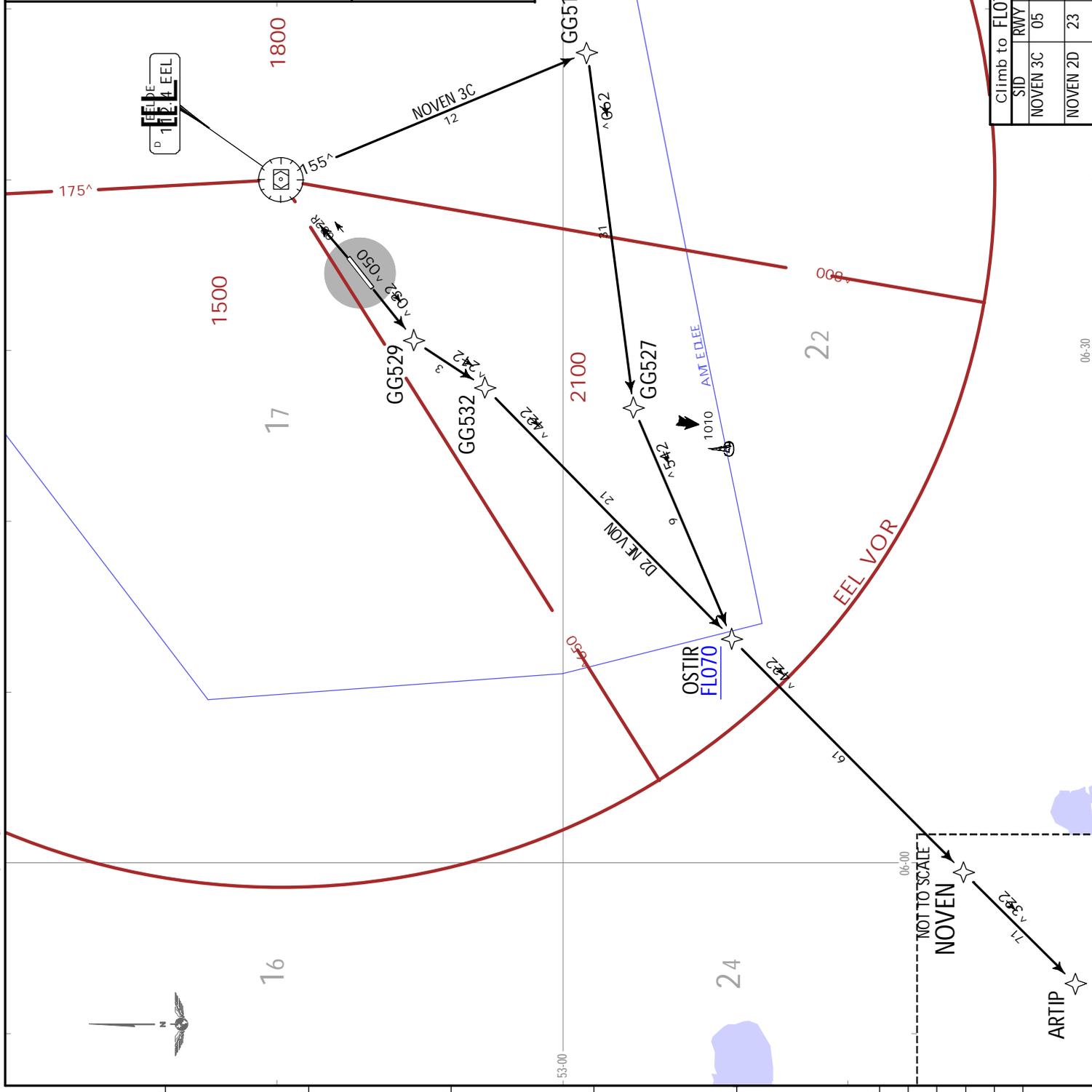
**·SPEED: MAX 250 KT BELOW FL100
·UNLESS OTHERWISE INSTRUCTED**

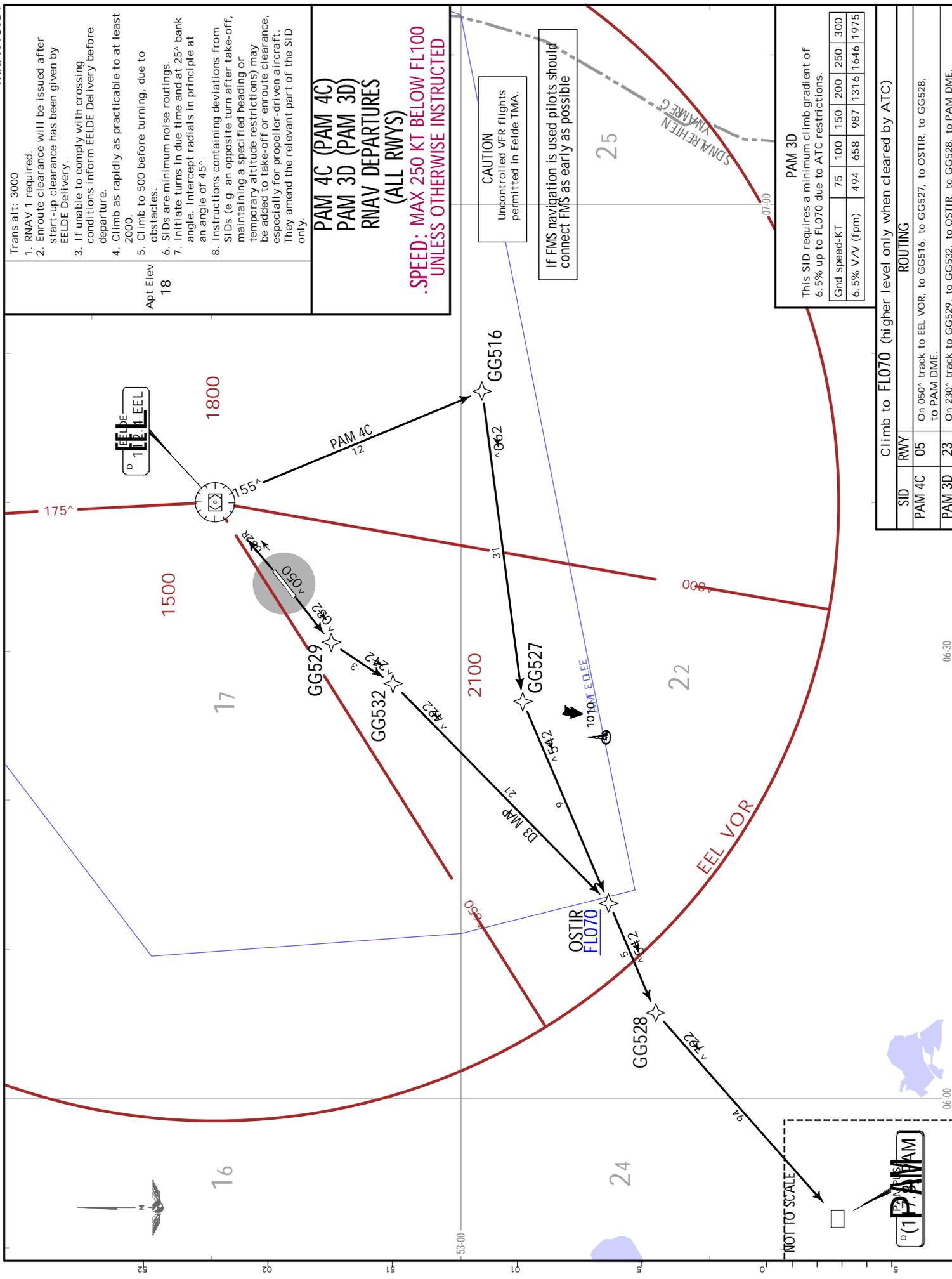
CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible

NOVEN 2D						
This SID requires a minimum climb gradient of 6.5% up to FLO70 due to ATC restrictions.						
Gnd speed-KT	75	100	150	200	250	300
6.5% V/V (fpm)	494	658	987	1316	1646	1975

Climb to FLO70 (higher level only when cleared by ATC)	
SID	ROUTING
NOVEN 3C	05 On 050° track to EEL VOR, to GG516, to GG527, to OSTIR, to NOVEN, to ARTIP.
NOVEN 2D	23 On 230° track to GG529, to GG532, to OSTIR, to NOVEN, to ARTIP.





Trans alt: 3000

- RNAV 1 required.
- Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
- If unable to comply with crossing conditions inform EELDE Delivery before departure.
- Climb as rapidly as practicable to at least 2000.
- Climb to 500 before turning, due to obstacles.
- SIDs are minimum noise routings.
- Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
- Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
18

**PAM 4C (PAM 4C)
PAM 3D (PAM 3D)
RNAV DEPARTURES
(ALL RWYS)**

**.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible

PAM 3D
This SID requires a minimum climb gradient of 6.5% up to FLO70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
6.5% V/V (fpm)	494	658	987	1316	1646	1975

Climb to FLO70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
PAM 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to OSTIR, to GG528, to PAM DME.
PAM 3D	23	On 230° track to GG529, to GG532, to OSTIR, to GG528, to PAM DME.

GRONINGEN, NETHERLANDS .RNAV.SID.

EHGG/GRO
EELDE
2 OCT 20
Eff. 8 Oct. (10-3D)
JEPPesen

Trans alt: 3000
1. RNAV 1 required.
2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
4. Climb as rapidly as practicable to at least 2000.
5. Climb to 500 before turning, due to obstacles.
6. SIDs are minimum noise routings.
7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
18

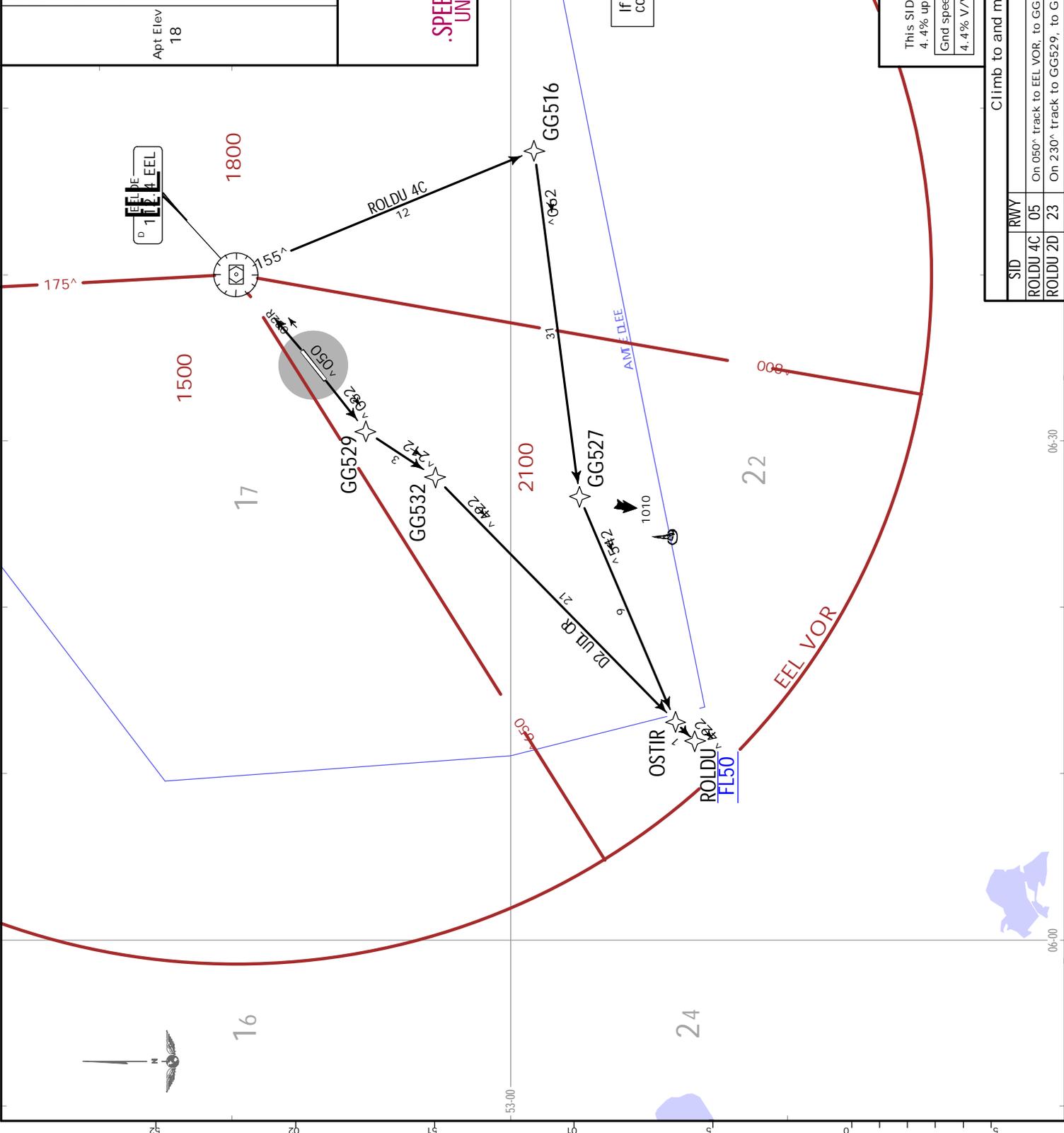
**ROLDU 4C [ROLD4C]
ROLDU 2D [ROLD2D]
RNAV DEPARTURES
ONLY FOR FLIGHTS TO EHL
.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

ROLDU 2D
This SID requires a minimum climb gradient of 4.4% up to FL50 due to ATC restrictions.

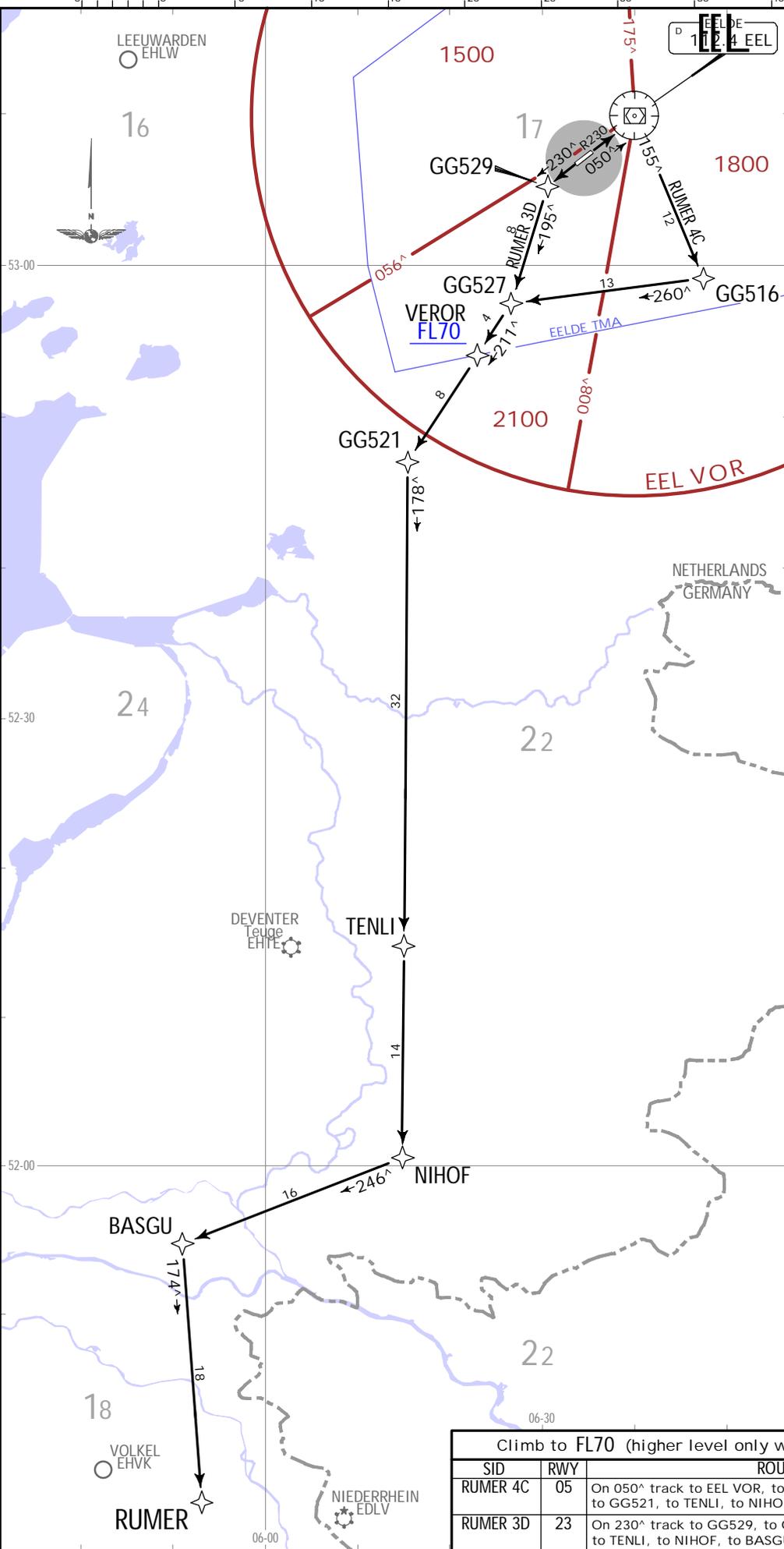
Grnd speed-KT	75	100	150	200	250	300
4.4% V/V (fpm)	334	446	668	891	1114	1337

Climb to and maintain FL50

SID	RWY	ROUTING
ROLDU 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to OSTIR, to ROLDU.
ROLDU 2D	23	On 230° track to GG529, to GG532, to OSTIR, to ROLDU.



CHANGES: SIDs revised and renumbered; chart reindexed; new format.



- Trans alt: 3000
1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.
- Apt Elev 18

**RUMER 4C [RUME4C]
RUMER 3D [RUME3D]
RNAV DEPARTURES
ONLY FOR FLIGHTS TO EHB, EHBK & EHEH AT OR BELOW FL95
.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

RUMER 3D
This SID requires a minimum climb gradient of 8.0% up to FL70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
8.0% V/V (fpm)	608	810	1215	1620	2025	2430

CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible

1122

Climb to FL70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
RUMER 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to VEROR, to GG521, to TENLI, to NIHOF, to BASGU, to RUMER.
RUMER 3D	23	On 230° track to GG529, to GG527, to VEROR, to GG521, to TENLI, to NIHOF, to BASGU, to RUMER.

**RUMER 4C [RUME4C]
RUMER 3D [RUME3D]
RNAV DEPARTURES**

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EHG/GRO
 EELDE
 JEPPESSEN GRONINGEN, NETHERLANDS
 RNAV SID
 2 OCT 20 (10-3E) EFF: 8 Oct.

GRONINGEN, NETHERLANDS
.RNAV .SID.

Trans alt: 3000
 1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
 18

**OLWOF 1C [OLW01C]
 OLWOF 1D [OLW01D]
 RNAV DEPARTURES**

**.SPEED: MAX 250 KT BELOW FL100
 UNLESS OTHERWISE INSTRUCTED**

CAUTION
 Uncontrolled VFR flights permitted in Eelde TMA.

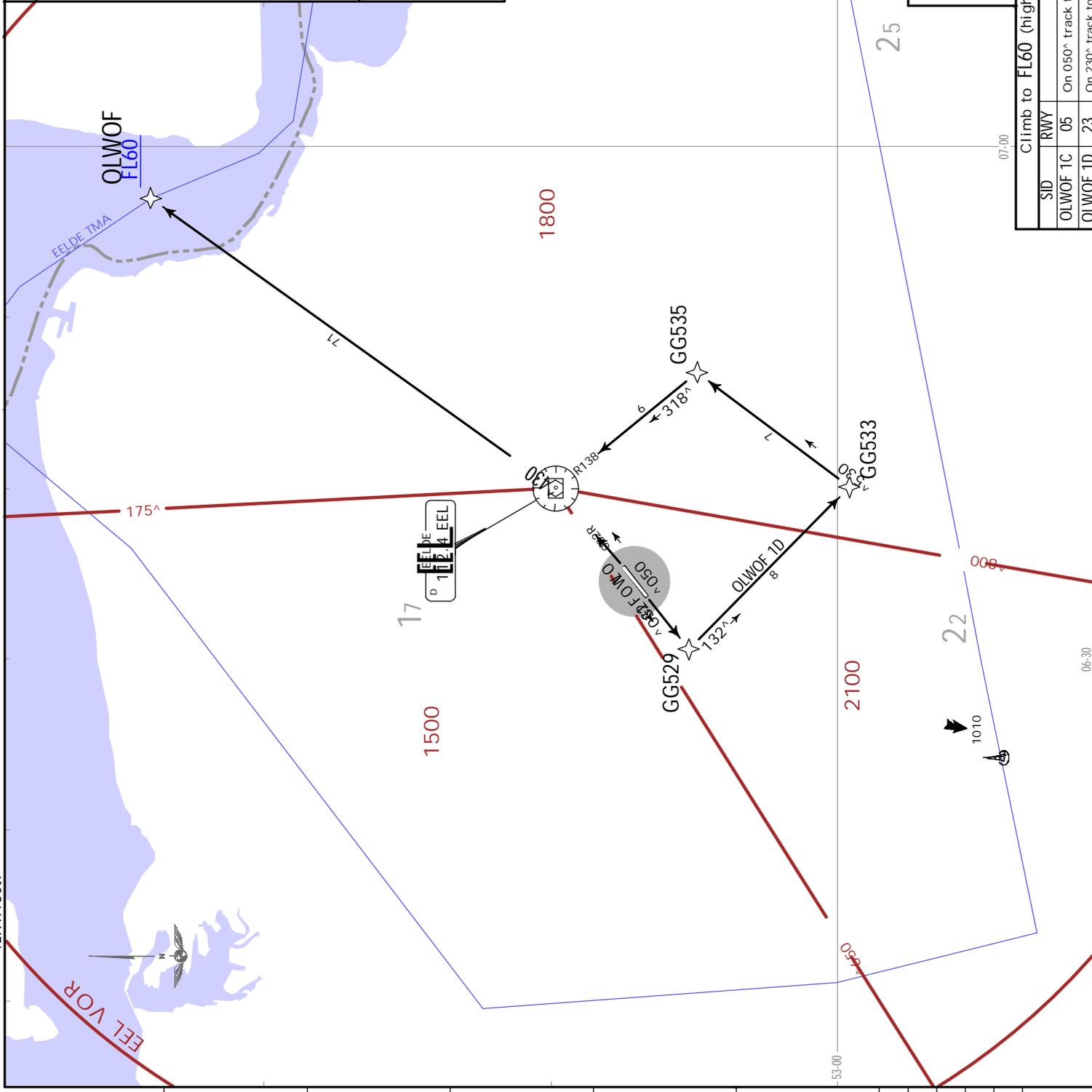
If/FMS navigation is used pilots should connect FMS as early as possible

OLWOF 1C
 This SID requires a minimum climb gradient of 4.3% up to FL60 due to ATC restrictions.

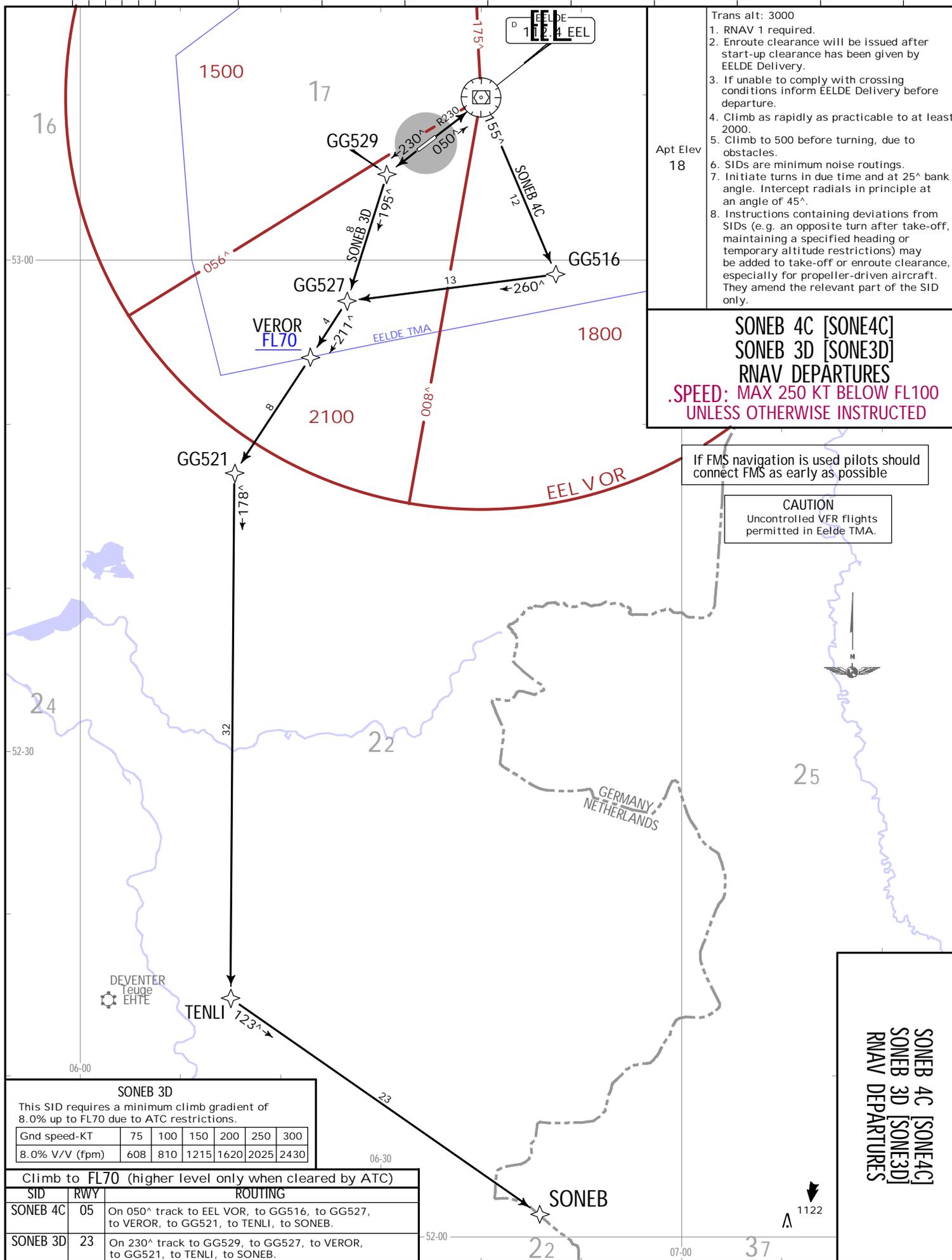
Gnd speed-KT	75	100	150	200	250	300
4.3% V/V (fpm)	327	435	653	871	1089	1306

ROUTING

SID	RWY	05
OLWOF 1C	05	On 050° track to EEL VOR, to OLWOF.
OLWOF 1D	23	On 230° track to GG529, to GG533, to EEL VOR, to OLWOF.



CHANGES: None



- Trans alt: 3000
1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.
- Apt Elev 18

**SONEB 4C [SONE4C]
SONEB 3D [SONE3D]
RNAV DEPARTURES**
**.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

If FMS navigation is used pilots should connect FMS as early as possible

CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

SONEB 3D

This SID requires a minimum climb gradient of 8.0% up to FL70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
8.0% V/V (fpm)	608	810	1215	1620	2025	2430

Climb to FL70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
SONEB 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to VEROR, to GG521, to TENLI, to SONEB.
SONEB 3D	23	On 230° track to GG529, to GG527, to VEROR, to GG521, to TENLI, to SONEB.

**SONEB 4C [SONE4C]
SONEB 3D [SONE3D]
RNAV DEPARTURES**



Trans alt: 3000

1. RNAV 1 required.
2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
4. Climb as rapidly as practicable to at least 2000.
5. Climb to 500 before turning, due to obstacles.
6. SIDs are minimum noise routings.
7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
 18

**SPY 4C (SPY 4C)
 SPY 2D (SPY 2D)
 RNAV DEPARTURES
 (ALL RWYS)**

**SPEED: MAX 250 KT BELOW FL100
 UNLESS OTHERWISE INSTRUCTED**

CAUTION
 Uncontrolled VFR flights permitted in Eelde TMA.

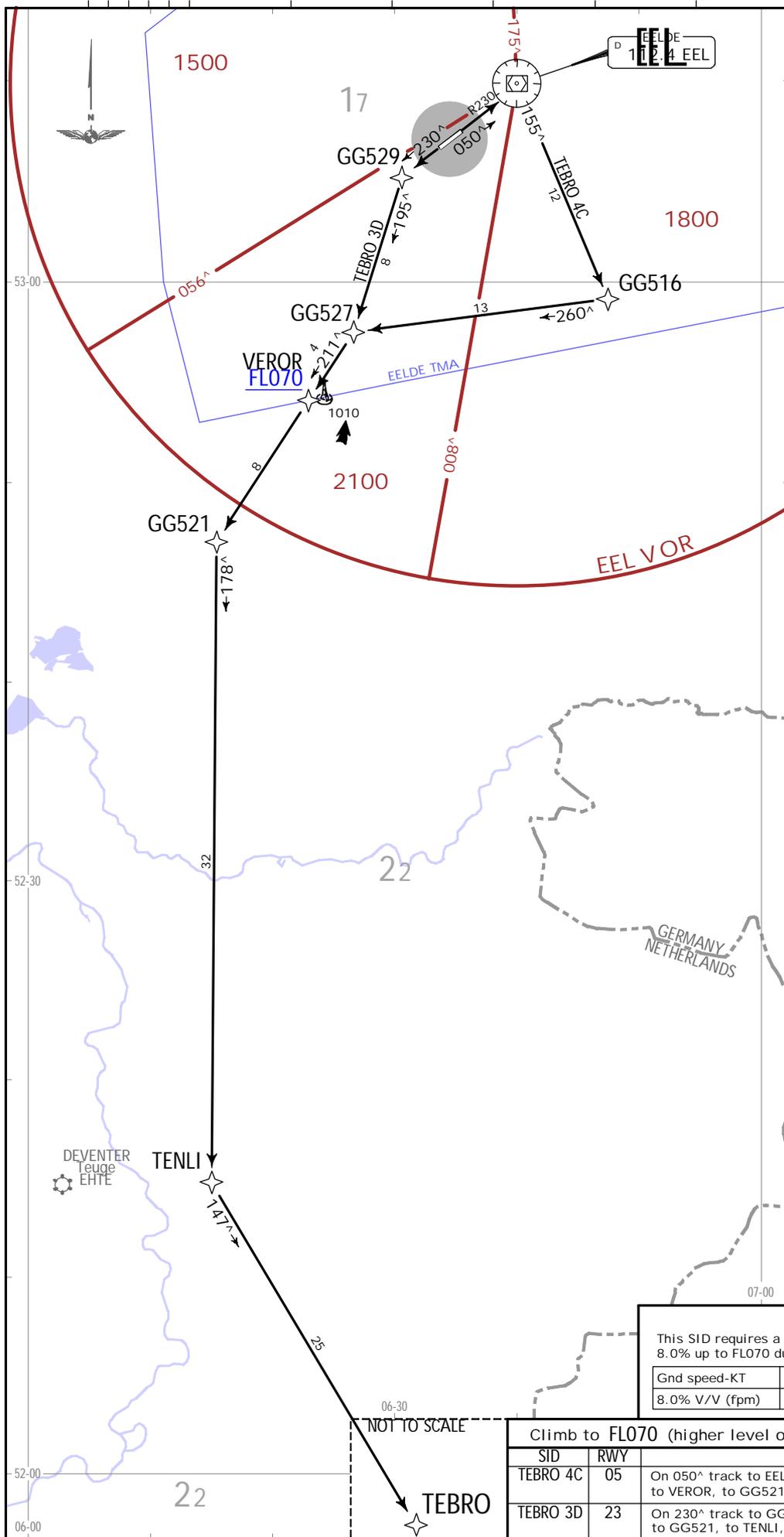
If FMS navigation is used pilots should connect FMS as early as possible

SPY 2D MINIMUM CLIMB GRADIENT OF 7.5% UP TO FL070 DUE TO ATC RESTRICTIONS.

Grnd speed-KT	75	100	150	200	250	300
7.5% V/V (fpm)	570	760	1139	1519	1899	2279

Climb to FL070 (higher level only when cleared by ATC)	
SID	ROUTING
SPY 4C	On 050° track to EEL VOR, to GG516, to GG527, to OSTIR, to SPY DME.
SPY 2D	On 230° track to GG529, to GG53-, to DIVPA, to SPY DME.

CHANGES: None



- Trans alt: 3000
1. RNAV 1 required.
 2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
 3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
 4. Climb as rapidly as practicable to at least 2000.
 5. Climb to 500 before turning, due to obstacles.
 6. SIDs are minimum noise routings.
 7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
 8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.
- Apt Elev 18

**TEBRO 4C [TEBR4C]
TEBRO 3D [TEBR3D]
RNAV DEPARTURES
(ALL RWYS)**
ONLY FOR FLIGHTS TO EDDL, EDLN & EDLV
**.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**

CAUTION
Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible.

TEBRO 3D
This SID requires a minimum climb gradient of 8.0% up to FLO70 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
8.0% V/V (fpm)	608	810	1215	1620	2025	2430

Climb to FLO70 (higher level only when cleared by ATC)

SID	RWY	ROUTING
TEBRO 4C	05	On 050° track to EEL VOR, to GG516, to GG527, to VEROR, to GG521, to TENLI, to TEBRO.
TEBRO 3D	23	On 230° track to GG529, to GG527, to VEROR, to GG521, to TENLI, to TEBRO.

**TEBRO 4C [TEBR4C]
TEBRO 3D [TEBR3D]
RNAV DEPARTURES
(ALL RWYS)**

GRONINGEN, NETHERLANDS
.RNAV.SID.

EHGG/GRO
EELDE
JEPPESEN
 2 OCT 20 (10-3K)
 Eff. 8 Oct.

Trans alt: 3000

1. RNAV 1 required.
2. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
3. If unable to comply with crossing conditions inform EELDE Delivery before departure.
4. Climb as rapidly as practicable to at least 2000.
5. Climb to 500 before turning, due to obstacles.
6. SIDs are minimum noise routings.
7. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
8. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
 18

TEMU 2C [TEMU2C]
TEMU 3D [TEMU3D]
RNAV DEPARTURES
.SPEED: MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED

CAUTION
 Uncontrolled VFR flights permitted in Eelde TMA.

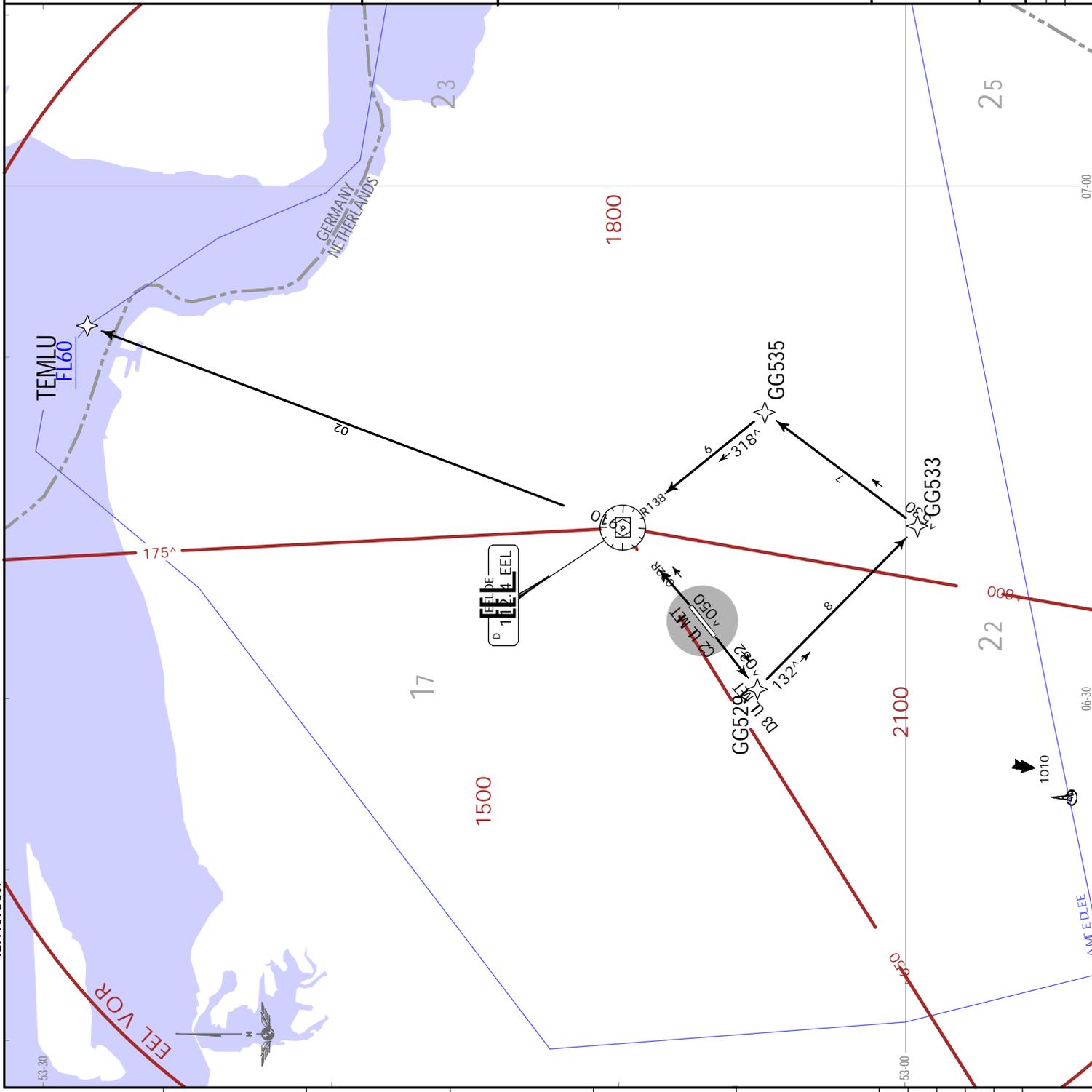
If FMS navigation is used pilots should connect FMS as early as possible

TEMU 2C
 This SID requires a minimum climb gradient of 4.0% up to FL60 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
4.0% VAV (fpm)	304	405	608	810	1013	1215

Climb to FL60
 (higher level only when cleared by ATC)

SID	RVWY	ROUTING
TEMU 2C	05	On 050° track to EEL VOR, to TEMU.
TEMU 3D	23	On 230° track to GG529, to GG533, to GG535, to EEL VOR, to TEMU.



JEJPESEN GRONINGEN, NETHERLANDS
.SID.
 2 OCT 20 (10-3L) .Eff. 8.Oct.

EHGG/GRO
 EELDE

Trans alt: 3000

1. Enroute clearance will be issued after start-up clearance has been given by EELDE Delivery.
2. If unable to comply with crossing conditions inform EELDE Delivery before departure.
3. Climb as rapidly as practicable to at least 2000.
4. Climb to 500 before turning, due to obstacles.
5. SIDs are minimum noise routings.
6. Initiate turns in due time and at 25° bank angle. Intercept radials in principle at an angle of 45°.
7. Instructions containing deviations from SIDs (e.g. an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions) may be added to take-off or enroute clearance, especially for propeller-driven aircraft. They amend the relevant part of the SID only.

Apt Elev
18

DOBAK 2C [DOBA2C]
DOBAK 3D [DOBA3D]
DEPARTURES
.SPEED: MAX 250 KT BELOW FL100
.UNLESS OTHERWISE INSTRUCTED

CAUTION
 Uncontrolled VFR flights permitted in Eelde TMA.

If FMS navigation is used pilots should connect FMS as early as possible

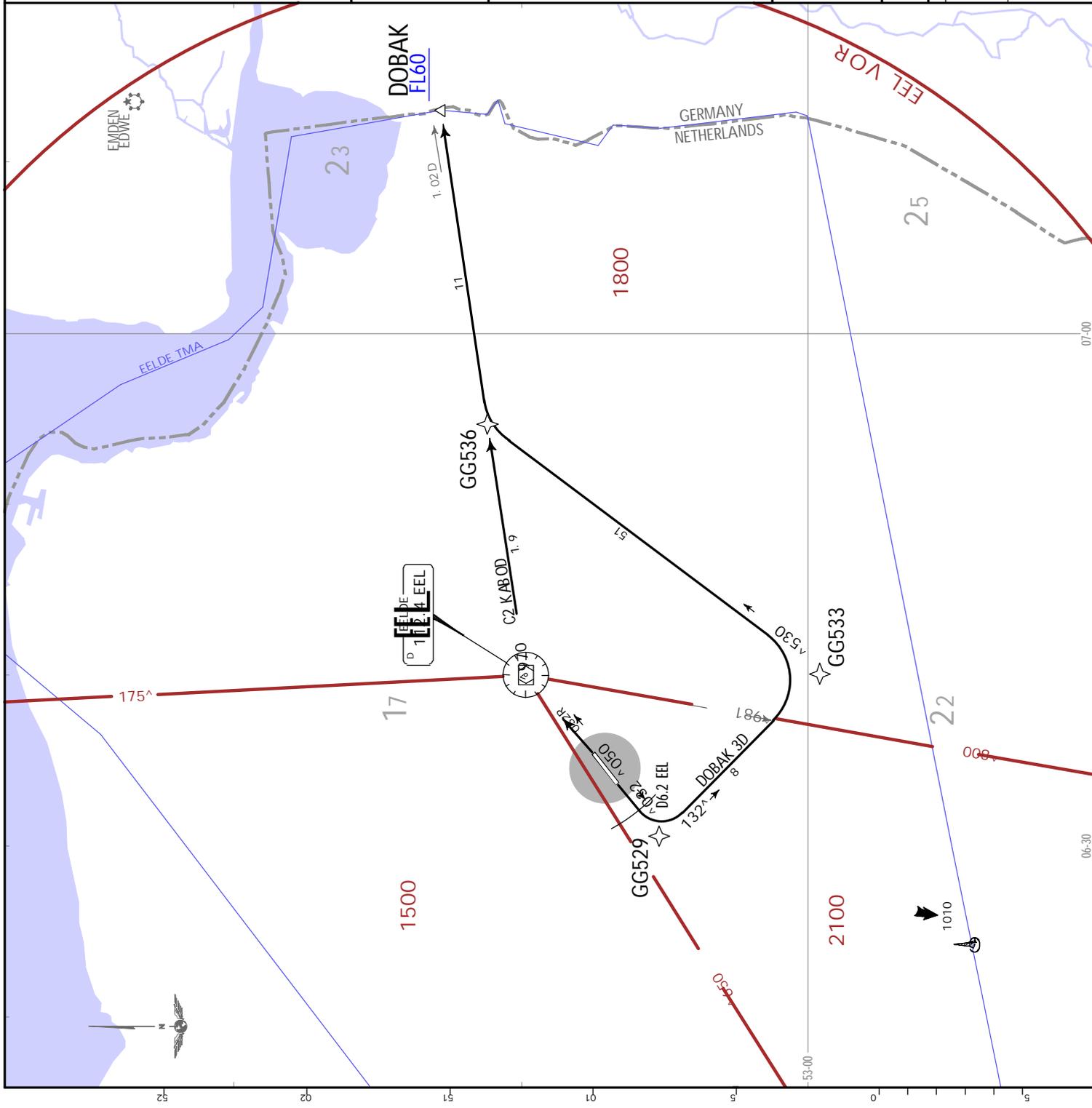
DOBAK 2C

This SID requires a minimum climb gradient of 4.0% up to FL60 due to ATC restrictions.

Gnd speed-KT	75	100	150	200	250	300
4.0% V/V (fpm)	304	405	608	810	1013	1215

Climb to FL60
(higher level only when cleared by ATC)

SID	RWY	ROUTING
DOBAK 2C	05	To EEL VOR; intercept EEL R079 to DOBAK. RNAV: On 050° track to EEL VOR, to DOBAK.
DOBAK 3D	23	On 230° track to D6.2 EEL, turn LEFT, 132° track, when passing EEL R189 turn LEFT, 035° track, intercept EEL R079 to DOBAK. RNAV: On 230° track to GG529, to GG533, to DOBAK.



EHGG/GRQ

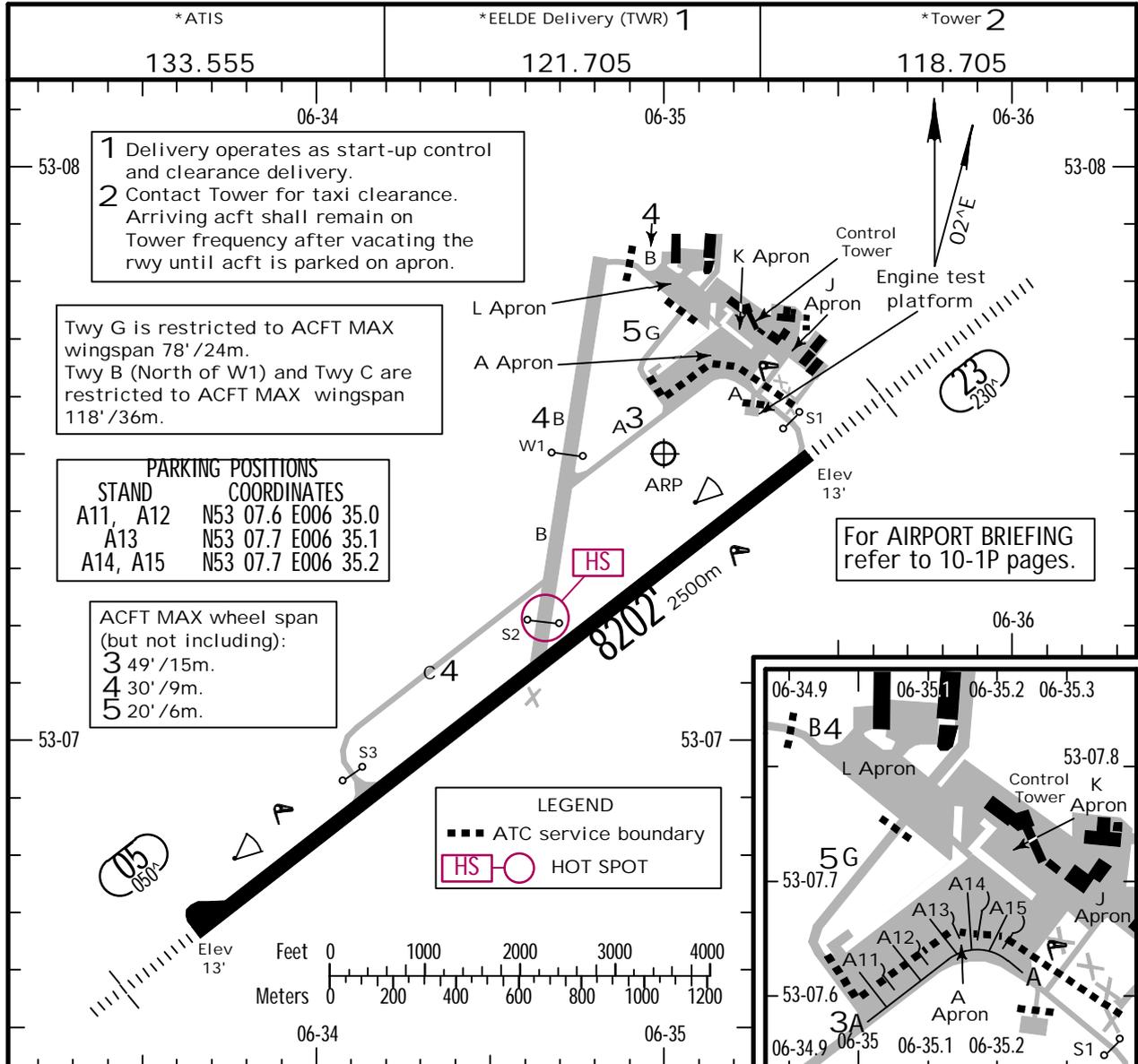


JEPPESEN GRONINGEN, NETHERLANDS

Apt Elev 18'
N53 07.5 E006 35.0

15 JUL 22 (10-9)

EELDE



1 Delivery operates as start-up control and clearance delivery.
2 Contact Tower for taxi clearance. Arriving acft shall remain on Tower frequency after vacating the rwy until acft is parked on apron.

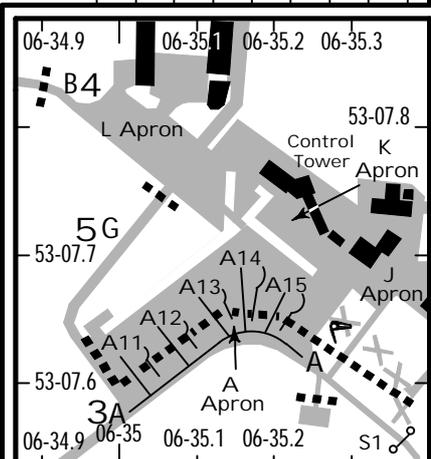
Twy G is restricted to ACFT MAX wingspan 78' /24m.
Twy B (North of W1) and Twy C are restricted to ACFT MAX wingspan 118' /36m.

PARKING POSITIONS	
STAND	COORDINATES
A11, A12	N53 07.6 E006 35.0
A13	N53 07.7 E006 35.1
A14, A15	N53 07.7 E006 35.2

ACFT MAX wheel span (but not including):
3 49' /15m.
4 30' /9m.
5 20' /6m.

LEGEND
 - - - - - ATC service boundary
 HS HOT SPOT

For AIRPORT BRIEFING refer to 10-1P pages.



ADDITIONAL RUNWAY INFORMATION					
RWY	USABLE LENGTHS				
	LANDING BEYOND		TAKE-OFF	WIDTH	
	Threshold	Glide Slope			
05 23	HIRL (60m) CL(30m) HIALS PAPI-L (3.0°)	RVR	7108' 2167m	6	148' 45m

6 TAKE-OFF RUN AVAILABLE					
RWY 05:			RWY 23:		
From rwy head	8202' (2500m)		From rwy head	8202' (2500m)	
twy C int	5899' (1798m)		twy B int	4879' (1487m)	
twy B int	3671' (1119m)				

HOT SPOT
 (For information only, not to be construed as ATC instructions.)
HS CAUTION: Do not cross the holding position marking without a clearance.

.Std/State. TAKE-OFF							
Low Visibility Take-off				RL or RCLM	RL or CL	Adequate Vis Ref	
RL & CL & relevant RVR	RL & CL	RL & RCLM	RL or CL			DAY	NIGHT
TDZ R150m	R200m	R300m	R/V400m	R/V500m	NA		
Mid R150m							
Rollout R150m							

EHGG/GRO



EASA AIR OPS
GRONINGEN, NETHERLANDS
EELDE

COPTER

STRAIGHT-IN RWY	DA(H) / MDA(H)	RVR (ALS/ALS out)
05	LPV	R700m / R1000m
	LNAV/VNAV	R800m / R1000m
	LNAV	R1000m / R1000m
	VOR	R1000m / R1000m
23	ILS	R500m / R1000m
	LOC	R800m / R1000m
	LPV	R600m / R1000m
	LNAV/VNAV	R600m / R1000m
	LNAV	R800m / R1000m
	VOR	R800m / R1000m

CIRCLE-TO-LAND 1	MDA(H)	VIS
	450' (432')	V1000m
After VOR 23	460' (442')	V1000m

1 Not authorized NW of airport.

TAKE-OFF RWY 05, 23

2 LVP must be in Force				
RL/FATO LTS, RCLM & RVR info	RL/FATO LTS & RCLM	Unlit/unmarked defined RWY/FATO	Nil Facilities DAY	Nil Facilities NIGHT
R150m	R200m	R200m	3 R250m	R/V800m

2 Without LVP R/V 400m are stipulated.

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

EHGG/GRO

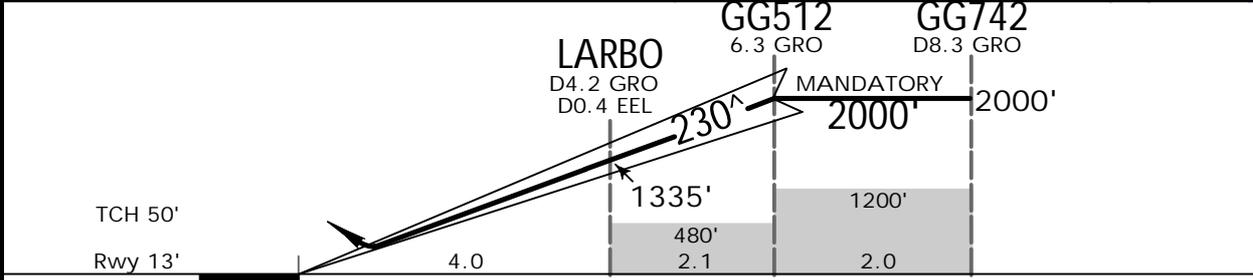
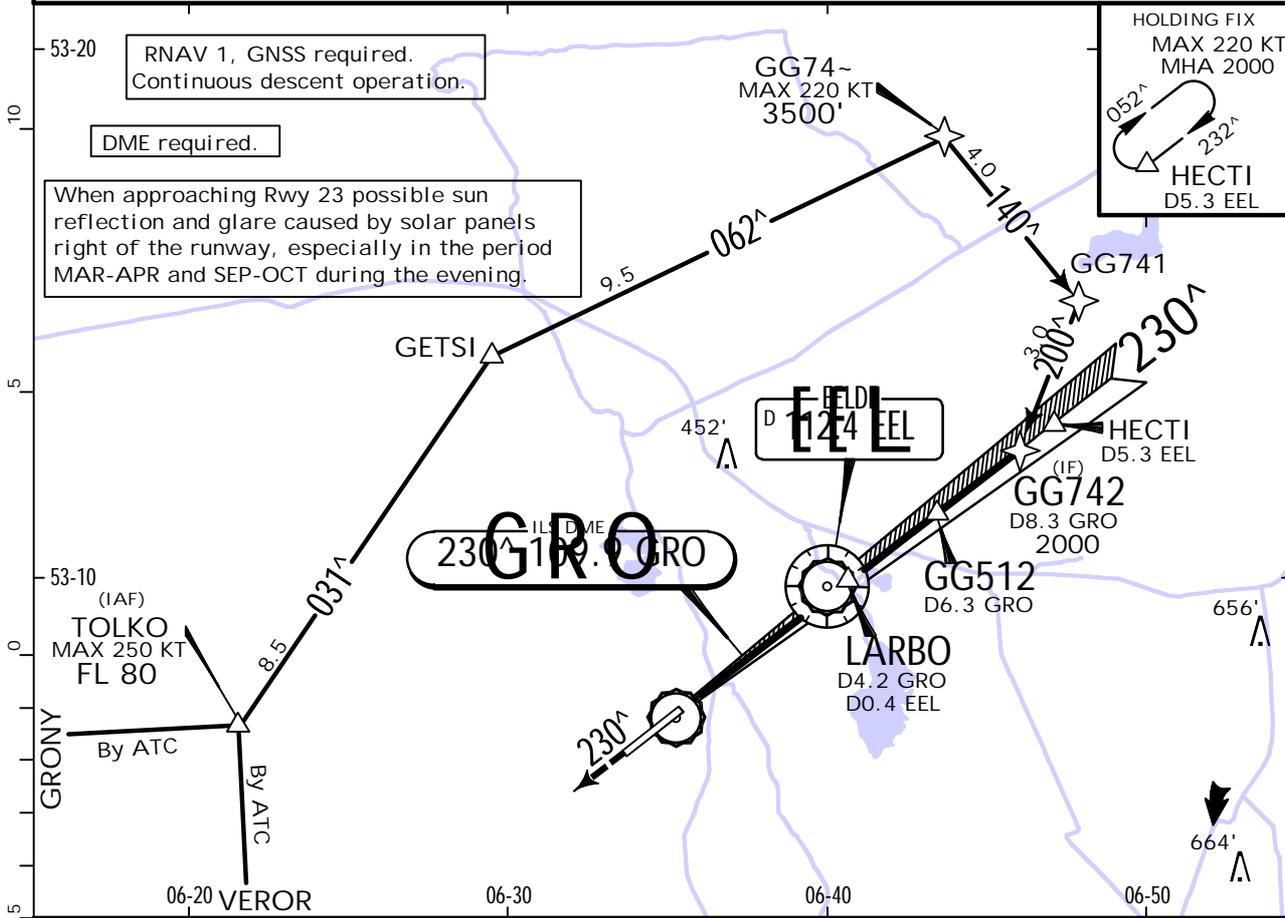
EELDE

JEPPESSEN GRONINGEN, NETHERLANDS

15 JUL 22 (11-1) TOLKO 2G ILS Rwy 23

* ATIS 133.555		* EELDE Approach (R) 120.305 119.705G		* EELDE Tower 118.705 119.705G	
LOC GRO 109.9	Final Apch Crs 230 [^]	GG512 MANDATORY 2000' (1987')	ILS DA(H) 213' (200')	Apt Elev 18'	Rwy 13'
MISSED APCH: Climb on track 230 [^] to 2000'. Contact ATC. MISSED APCH WITH COMM FAILURE: Climb on track 230 [^] to 3000'. Reaching 3000' turn RIGHT to VOR. After passing VOR proceed to HECTI via R-052 EEL. After arriving over HECTI hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.					<p>MSA EEL VOR</p>

Alt Set: hPa Rwy Elev: 0 hPa Trans level: By ATC Trans alt: 3000'



Gnd speed-Kts	70	90	100	120	140	160
GS	3.00 [^]	372	478	531	637	743

Refer to Missed Apch above

Std/State.	STRAIGHT-IN LANDING		CIRCLE-TO-LAND Not authorized NW of airport
	ILS DA(H) 213' (200')		
	FULL	ALS out	Max Kts
A			100
B	R550m 1	R1200m	135
C			180
D			205
			MDA(H)
			450' (432') V1500m
			520' (502') V1600m
			620' (602') V2400m
			850' (832') V3600m

1 RVR 750m when a Flight Director or Autopilot or HUD to DA is not used.

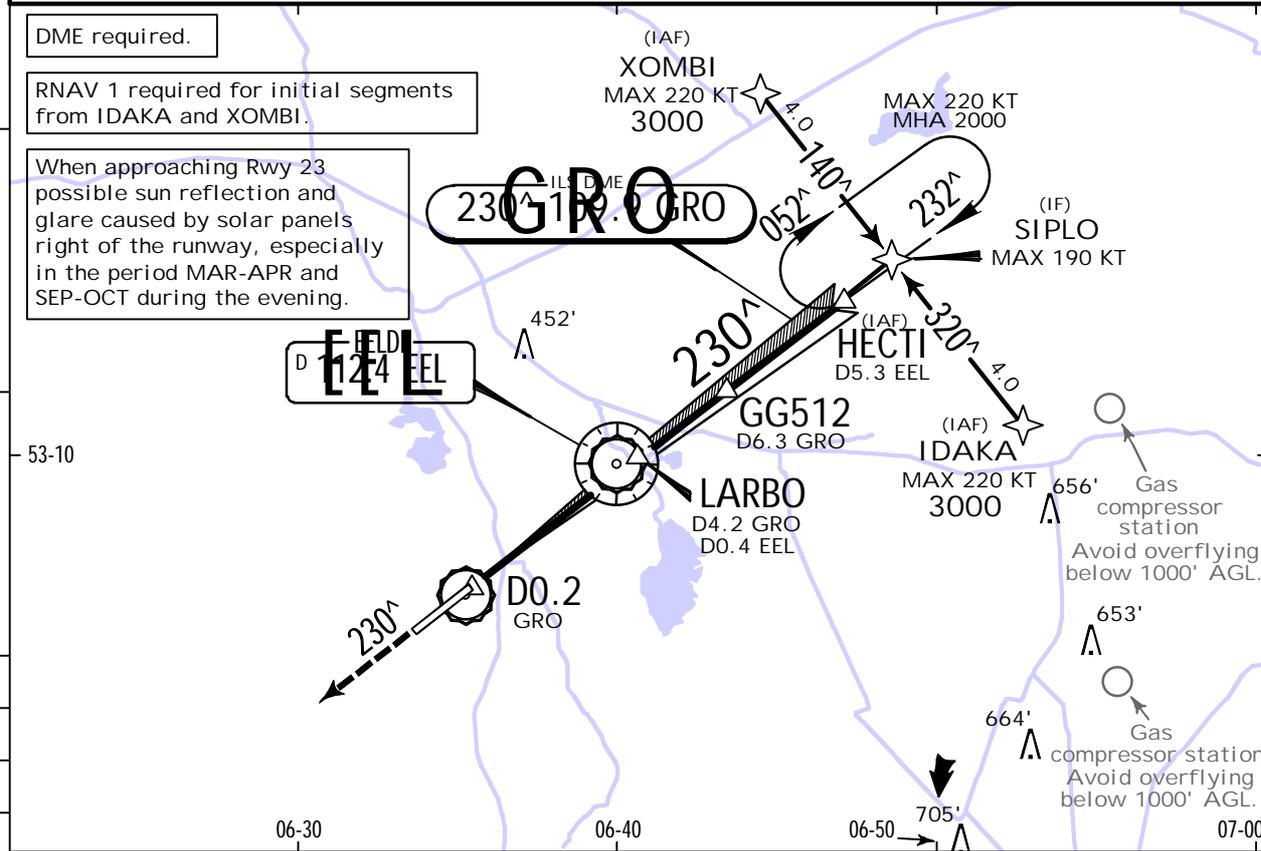
EHGG/GRO

EELDE

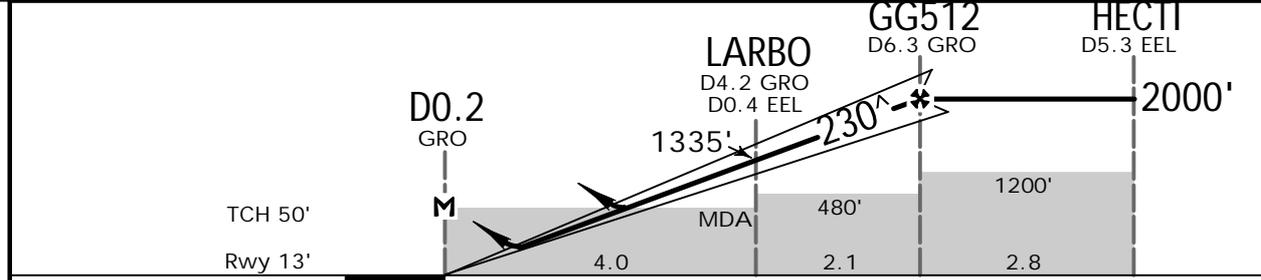
JEPPESSEN GRONINGEN, NETHERLANDS

23 SEP 22 (11-2). Eff. 6. Oct. ILS or LOC Rwy 23

* ATIS 133.555		* EELDE Approach (R) 120.305 119.705G		* EELDE Tower 118.705 119.705G	
LOC GRO 109.9	Final Apch Crs 230 [^]	GG512 2000' (1987')	ILS DA(H) 213' (200')	Apt Elev 18'	Rwy 13'
MISSED APCH: Climb on track 230 [^] to 2000'. Contact ATC. MISSED APCH WITH COMM FAILURE: Climb on track 230 [^] to 3000'. Reaching 3000' turn RIGHT to VOR. After passing VOR proceed to HECTI via R-052 EEL. After arriving over HECTI hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.					<p>MSA EEL VOR</p>
Alt Set: hPa		Rwy Elev: 0 hPa		Trans level: By ATC	



LOC (GS out)	GRO DME	2.0	3.0	5.0	6.0
	Altitude	640'	960'	1600'	1920'



Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI	Refer to Missed Apch above
GS 3.00 [^]	372	478	531	637	743	849		

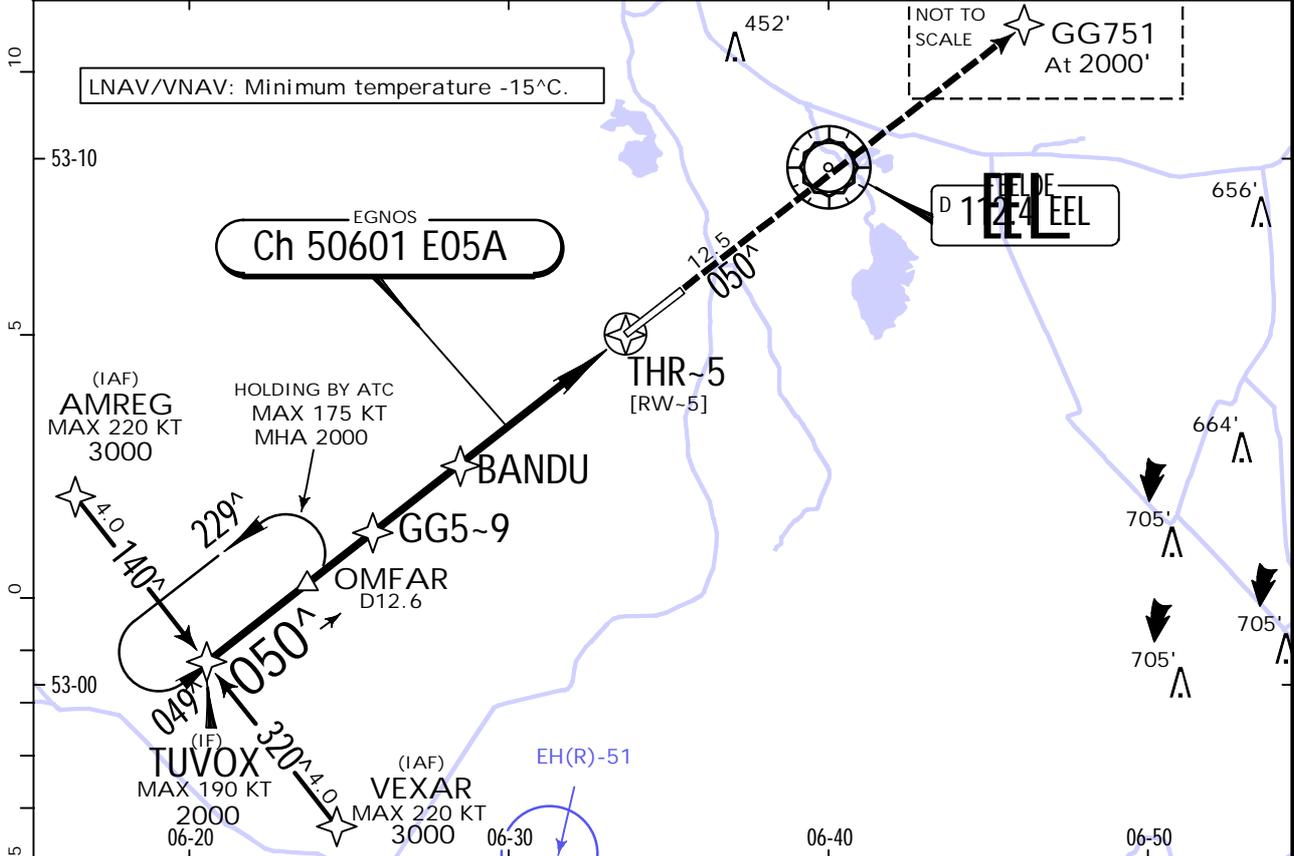
.Std/State.	ILS STRAIGHT-IN LANDING		LOC (GS out)		CIRCLE-TO-LAND Not authorized NW of airport
	DA(H) 213' (200')		CDFA 460' (447')		
	FULL	ALS out	2 DA/MDA(H)	ALS out	Max Kts
A					100
B	R550m 1	R1200m	R1400m	R1500m	135
C					180
D				R2100m	205
					MDA(H)
					450' (432')
					3V1500m
					520' (502')
					V1600m
					620' (602')
					V2400m
					850' (832')
					V3600m

1 RVR 750m when a Flight Director or Autopilot or HUD to DA is not used.
 2 VNAV DA(H) in lieu of MDA(H) depends on operator policy. 3 or higher straight-in minimums.

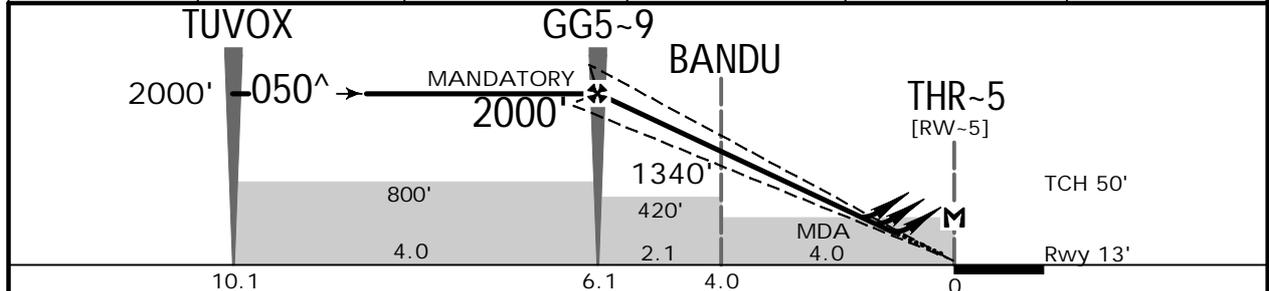
EHGG/GRO EELDE

JEPPESSEN GRONINGEN, NETHERLANDS
23 SEP 22 (12-1) .Eff.6.Oct.
RNP Rwy 05

* ATIS 133.555		* EELDE Approach (R) 120.305 119.705G		* EELDE Tower 118.705 119.705G	
EGNOS Ch 50601 E05A	Final Apch Crs 050 [^]	GG5-9 MANDATORY 2000' (1987')	LPV DA(H) 313' (300')	Apt Elev 18'	Rwy 13'
MISSED APCH: Climb on 050 [^] to 2000'. Contact ATC. MISSED APCH WITH COMM FAILURE: Climb on 050 [^] to 3000'. Reaching 3000' turn LEFT to intercept R-229 EEL and proceed to OMFAR. After arriving over OMFAR hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.					<p>MSA EEL VOR</p>
RNP Apch	Alt Set: hPa	Rwy Elev: 0 hPa	Trans level: By ATC	Trans alt: 3000'	



DIST to THR-5	5.0	4.0	3.0	2.0	1.0
ALTITUDE	1660'	1340'	1020'	700'	380'



Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI Refer to Missed Apch above
Glide Path Angle	3.00 [^]	372	478	531	637	849	

Std/State LPV		STRAIGHT-IN LANDING LNAV/VNAV				LNAV CDFA		CIRCLE-TO-LAND	
DA(H) 313' (300')		DA(H) 320' (307')				1 DA/ MDA(H) 440' (427')		Not authorized NW of airport	
ALS out		ALS out		ALS out		ALS out		Max Kts	MDA(H)
A				R1500m		100	450' (432')	V1500m	
B	R900m	R1400m	R1000m	R1400m			135	520' (502')	V1600m
C					R1600m	R2000m	180	620' (602')	V2400m
D							205	850' (832')	V3600m

1 VNAV DA(H) in lieu of MDA(H) depends on operator policy.
 CHANGES: None. | JEPPESSEN, 2014, 2021. ALL RIGHTS RESERVED.

EHGG/GRO

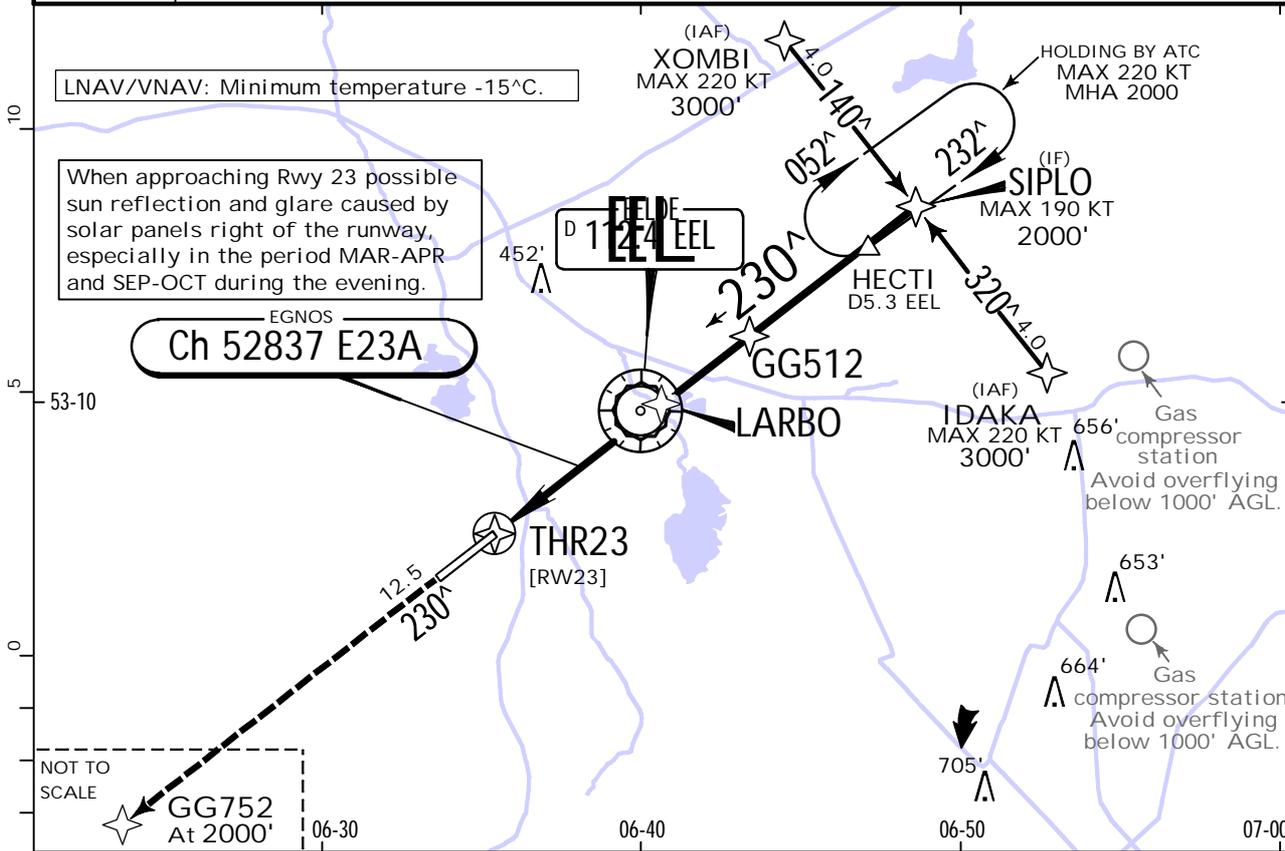
EELDE

JEPPESSEN GRONINGEN, NETHERLANDS

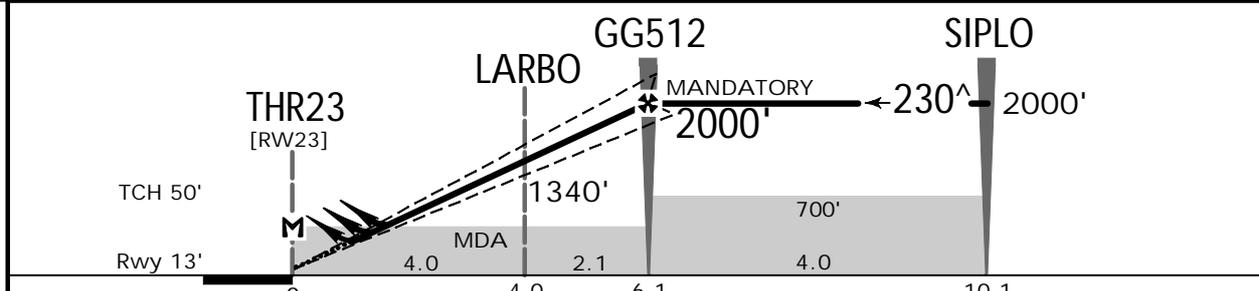
12 MAR 21 (12-2) .Eff.25.Mar. RNP Rwy 23

* ATIS 133.555		* EELDE Approach (R) 120.305 119.705G		* EELDE Tower 118.705 119.705G	
EGNOS Ch 52837 E23A	Final Apch Crs 230 [^]	GG512 MANDATORY 2000' (1987')	LPV DA(H) 264' (251')	Apt Elev 18'	Rwy 13'
MISSED APCH: Climb on 230 [^] to 2000'. Contact ATC. MISSED APCH WITH COMM FAILURE: Climb on 230 [^] to 3000'. Reaching 3000' turn RIGHT to VOR. After passing VOR proceed to HECTI via R-052 EEL. After arriving over HECTI hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.					<p>MSA EEL VOR</p>

RNP Apch | Alt Set: hPa | Rwy Elev: 0 hPa | Trans level: By ATC | Trans alt: 3000'



DIST to THR23	1.0	2.0	3.0	4.0	5.0
ALTITUDE	380'	700'	1020'	1340'	1660'



Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI Refer to Missed Apch above
Glide Path Angle	3.00 [^]	372	478	531	637	849	
LPV and LNAV/VNAV: MAP at DA							
LNAV: MAP at THR23							

Std/State.		STRAIGHT-IN LANDING			CIRCLE-TO-LAND	
LPV		LNAV/VNAV			Not authorized NW of airport	
DA(H) 264' (251')		A: 281' (268') C: 301' (288') B: 291' (278') D: 311' (298')			1 DA/MDA(H) 440' (427')	
ALS out		ALS out			Max Kts	
A		R1300m			R1500m	100 450' (432') V1500m
B	R750m R1300m	R750m			R1300m	135 520' (502') V1600m
C		R1400m			R2000m	180 620' (602') V2400m
D						205 850' (832') V3600m

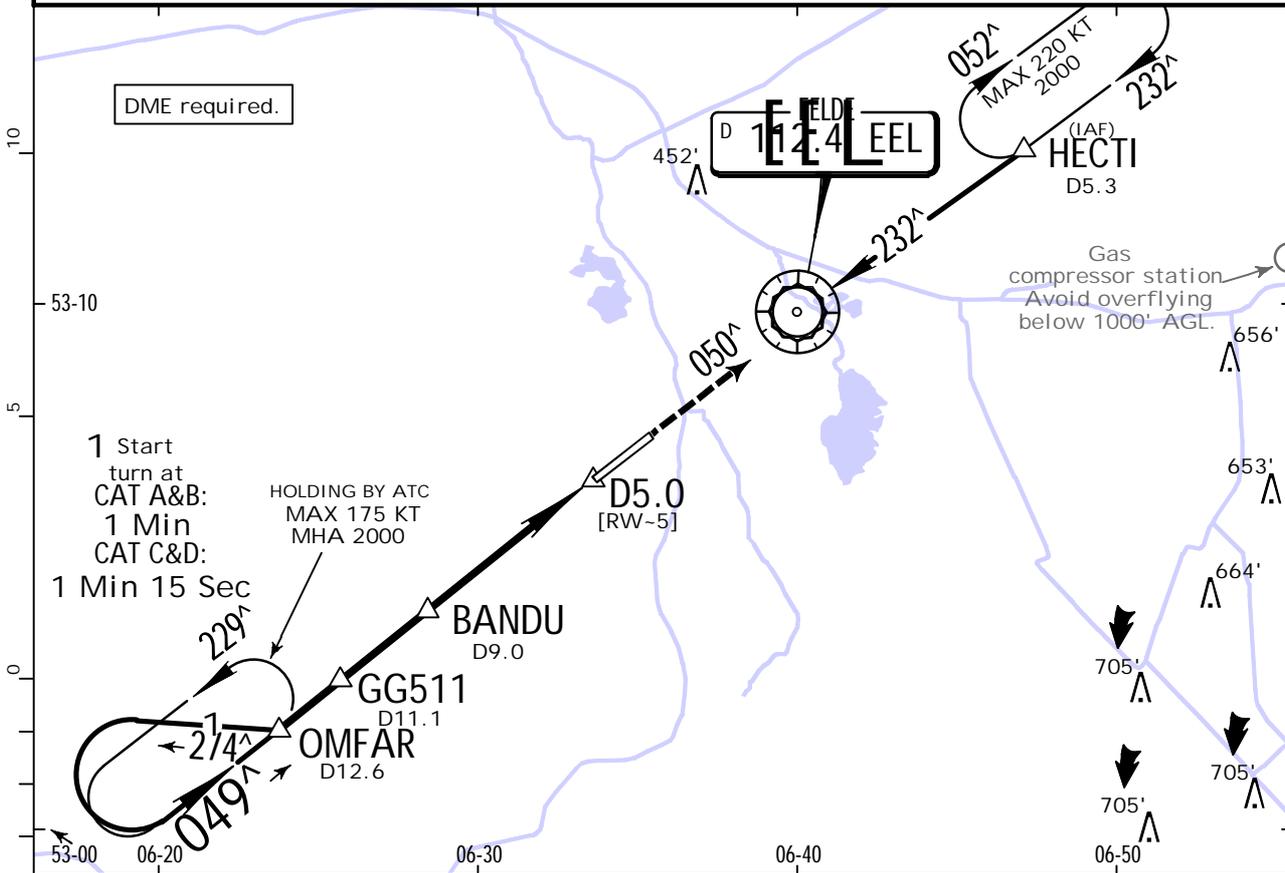
1 VNAV DA(H) in lieu of MDA(H) depends on operator policy.
 CHANGES: Note withdrawn. SMA added. Minimums. New AOM concept. | JEPPESSEN, 2014, 2021. ALL RIGHTS RESERVED.

EHGG/GRO

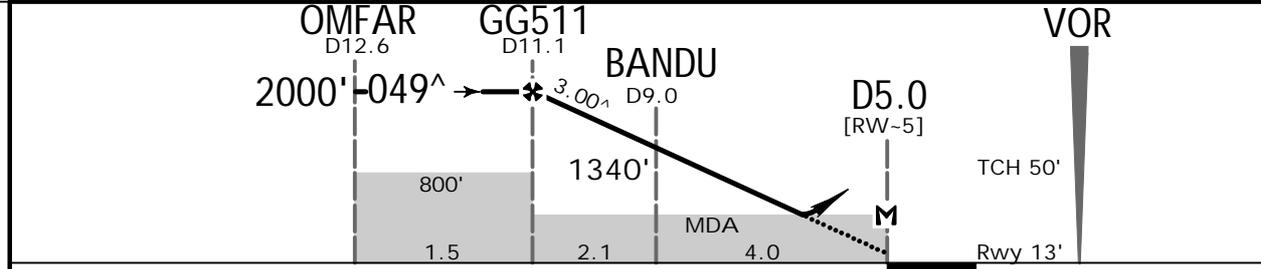
EELDE

JEPPESSEN GRONINGEN, NETHERLANDS
 12 MAR 21 (13-1) .Eff.25.Mar.
VOR Rwy 05

*ATIS 133.555		*EELDE Approach (R) 120.305 119.705G		*EELDE Tower 118.705 119.705G	
VOR EEL 112.4	Final Apch Crs 049 [^]	GG511 2000' (1987')	DA/MDA(H) 440' (427')	Apt Elev 18' Rwy 13'	<p>MSA EEL VOR</p>
<p>MISSED APCH: Climb on track 050[^] to 2000'. Contact ATC.</p> <p>MISSED APCH WITH COMM FAILURE: Climb on track 050[^] to 3000'. Reaching 3000' turn LEFT to intercept R-229 EEL and proceed to OMFAR. After arriving over OMFAR hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.</p>					
Alt Set: hPa		Rwy Elev: 0 hPa		Trans level: By ATC	
				Trans alt: 3000'	



EEL DME	10.0	9.0	8.0	7.0
ALTITUDE	1670'	1340'	1030'	710'



Gnd speed-Kts	70	90	100	120	140	160	<p>Refer to Missed Apch above</p>
Descent angle	3.00 [^]	372	478	531	637	743	
MAP at D5.0							

PANS OPS	Std/State.			STRAIGHT-IN LANDING		CIRCLE-TO-LAND	
				1 DA/MDA(H) 440' (427')		Not authorized NW of airport	
				ALS out		Max Kts	MDA(H)
	A	R1500m		100	450' (432')	V1500m	
	B	R1500m		135	520' (502')	V1600m	
C	R1600m		180	620' (602')	V2400m		
D	R2000m		205	850' (832')	V3600m		

1 VNAV DA(H) in lieu of MDA(H) depends on operator policy.

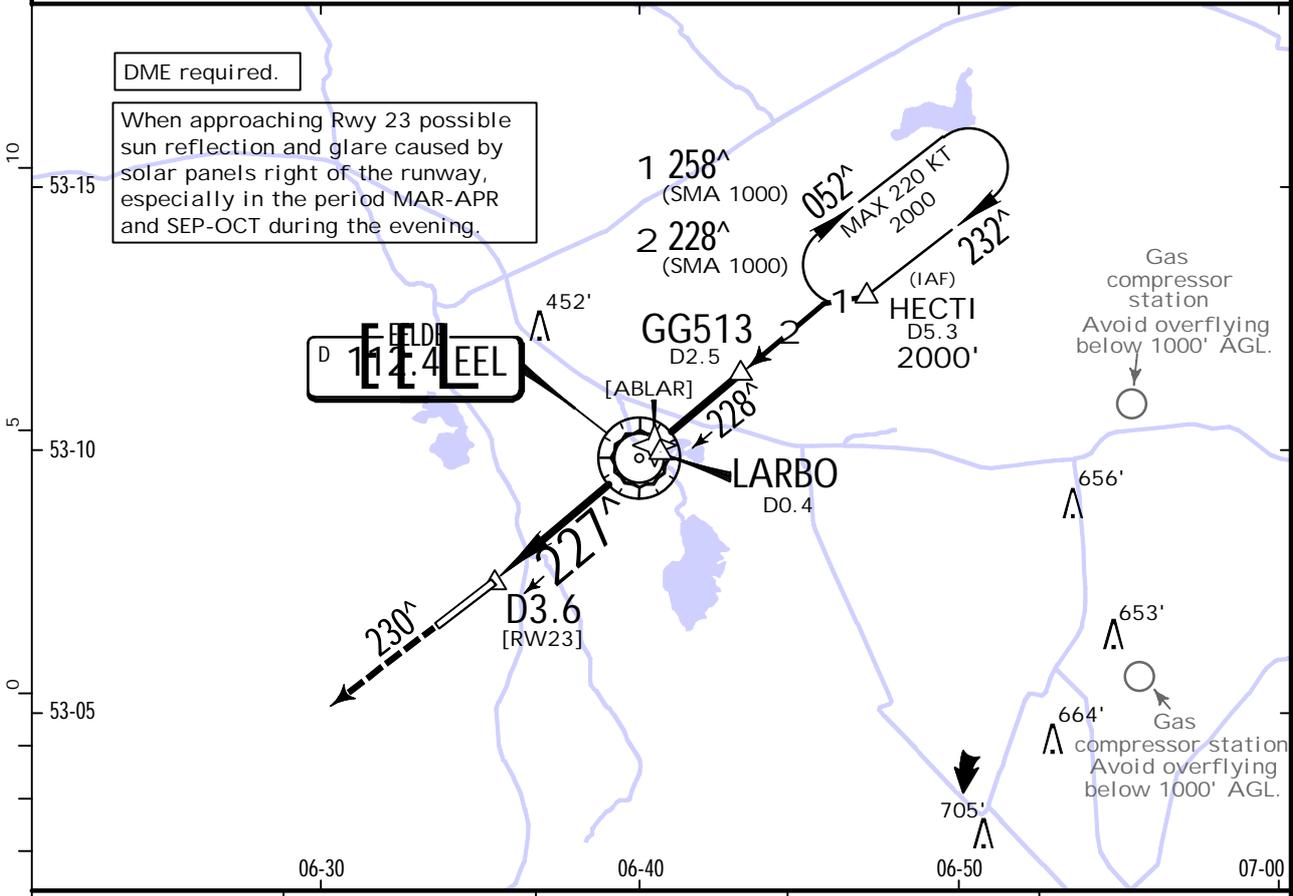
CHANGES: Note withdrawn. SMA added. Circling minimums. New AOM concept. | JEPPESSEN, 2001, 2021. ALL RIGHTS RESERVED.

EHGG/GRO EELDE

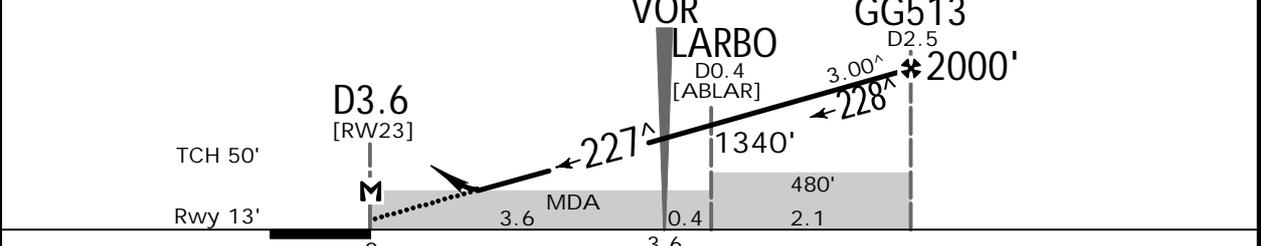
JEPPESSEN 12 MAR 21 (13-2) .Eff.25.Mar.

GRONINGEN, NETHERLANDS VOR Rwy 23

*ATIS 133.555		*EELDE Approach (R) 120.305 119.705G		*EELDE Tower 118.705 119.705G	
VOR EEL 112.4	Final Apch Crs 227 [^]	GG513 2000' (1987')	DA/MDA(H) 460' (447')	Apt Elev 18'	Rwy 13'
MISSED APCH: Climb on track 230 [^] to 2000'. Contact ATC. MISSED APCH WITH COMM FAILURE: Climb on track 230 [^] to 3000'. Reaching 3000' turn RIGHT to VOR. After passing VOR proceed to HECTI via R-052 EEL. After arriving over HECTI hold or descend to 2000' in an outbound turn, intercept final and execute procedure again.					
Alt Set: hPa		Rwy Elev: 0 hPa		Trans level: By ATC	
				Trans alt: 3000'	



EEL DME	2.0 after EEL	1.0 after EEL	1.0 before EEL	2.0 before EEL
ALTITUDE	580'	900'	1530'	1850'



Gnd speed-Kts	70	90	100	120	140	160		Refer to Missed Apch above
Descent angle	3.00 [^]	372	478	531	637	743		

Std/State.		STRAIGHT-IN LANDING		CIRCLE-TO-LAND Not authorized NW of airport	
		CDFA 1 DA/MDA(H) 460' (447')			
		ALS out		Max Kts	MDA(H)
A	R1400m	R1500m		100	460' (442')
B				135	520' (502')
C				180	620' (602')
D				205	850' (832')

1 VNAV DA(H) in lieu of MDA(H) depends on operator policy.
 CHANGES: Note withdrawn. Profile. Minimums. New AOM concept. | JEPPESSEN, 2001, 2021. ALL RIGHTS RESERVED.

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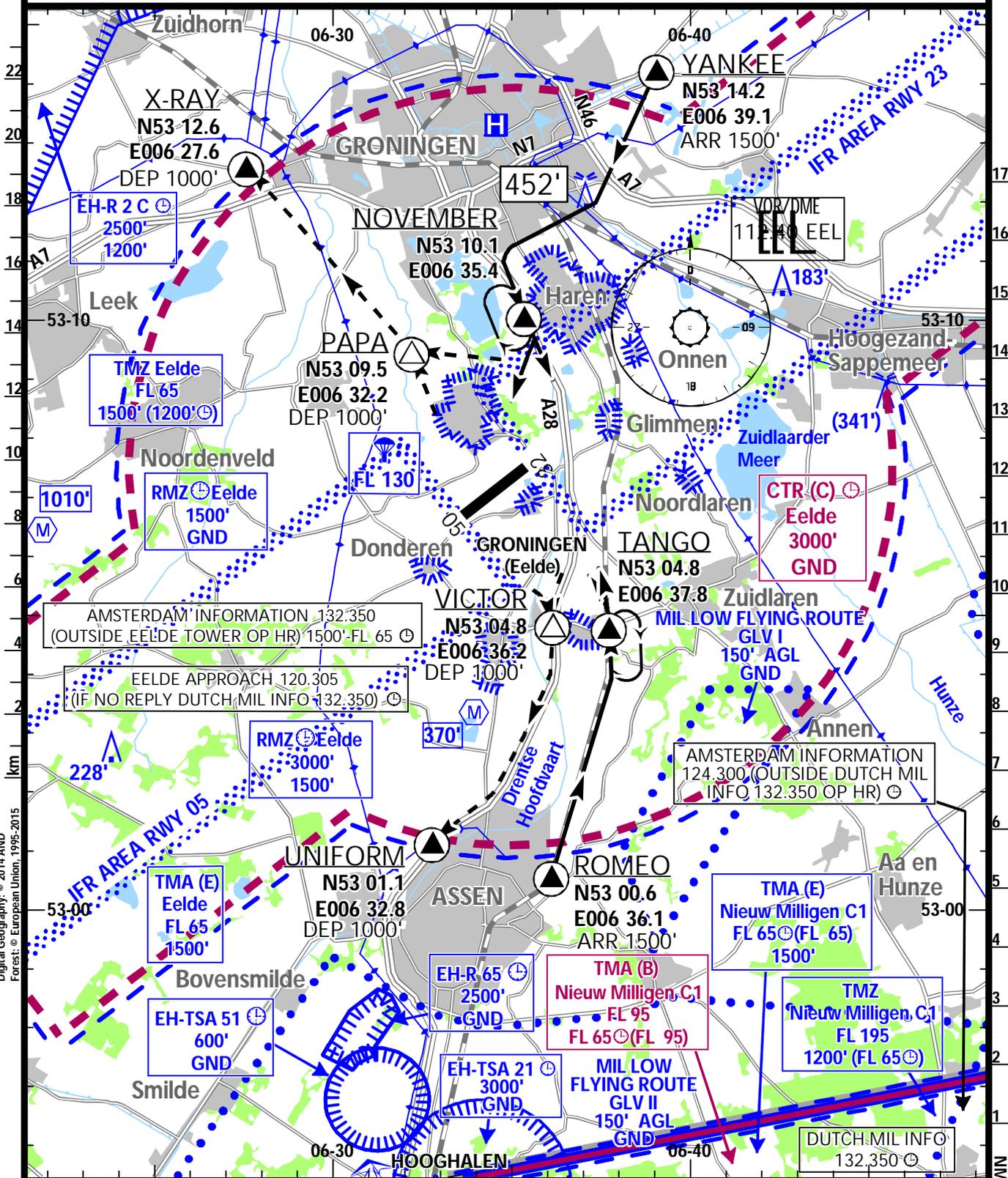
EELDE

24 JUN 22 **(19-1)**

NETHERLANDS

BRIEFING STRIP™	LOCATION	FIS	ATIS
	Elev 18' /5m N53 07.5 E006 35.0	AMSTERDAM INFORMATION 132.350 ⁽²⁾ EELDE APPROACH 120.305 ⁽³⁾	ATIS 133.555
AIRSPACE	APPROACH		VAR 2°E
DUTCH MIL INFO 132.350 ^{(4) (5) (6) (7)}	EELDE APPROACH 120.305 ⁽¹⁾ 119.705 ^{(1) (8)} (en)		
TOWER			
EELDE TOWER 118.705 ⁽¹⁾ (en) 119.705 ^{(1) (8)} (en)			

- (1) VDF (2) outside EELDE TOWER op hr 1500' - FL 65 (3) if no reply DUTCH MIL INFO 132.350
 (4) Eelde CTR (5) BTN 2200-0530LT: AMSTERDAM INFORMATION 132.350 (6) Eelde RMZ
 (7) BTN 2200-0530LT AMSTERDAM INFORMATION 132.350 (8) O/R or by ATC



Digital Geography: © 2014 AND
Forest: © European Union, 1995-2015

EHGG TRAFFIC.CIRCUIT

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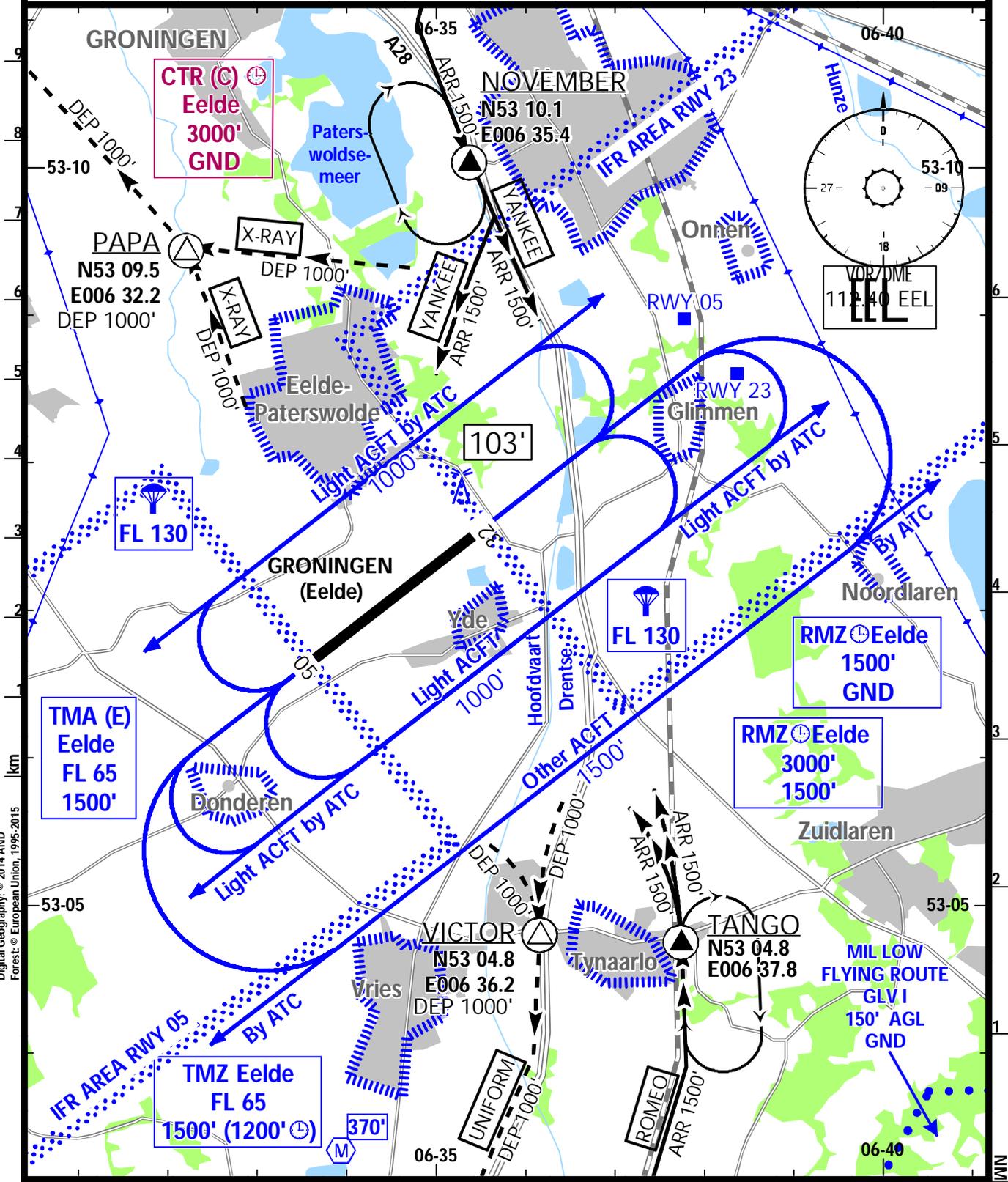
24 JUN 22

19-1A

NETHERLANDS

BRIEFING STRIP™	LOCATION Elev 18' /5m N53 07.5 E006 35.0	FIS AMSTERDAM INFORMATION 132.350 ⁽²⁾ EELDE APPROACH 120.305 ⁽³⁾	ATIS ATIS 133.555	VAR 2°E
	AIRSPACE DUTCH MIL INFO 132.350 ^{(4) (5) (6) (7)}	APPROACH EELDE APPROACH 120.305 ⁽¹⁾ 119.705 ^{(1) (8)} (en)		
TOWER EELDE TOWER 118.705 ⁽¹⁾ (en) 119.705 ^{(1) (8)} (en)				

- (1) VDF (2) outside EELDE TOWER op hr 1500' - FL 65 (3) if no reply DUTCH MIL INFO 132.350
- (4) Eelde CTR (5) BTN 2200-0530LT: AMSTERDAM INFORMATION 132.350 (6) Eelde RMZ
- (7) BTN 2200-0530LT AMSTERDAM INFORMATION 132.350 (8) O/R or by ATC



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GRONINGEN

EELDE

24 JUN 22

19-2

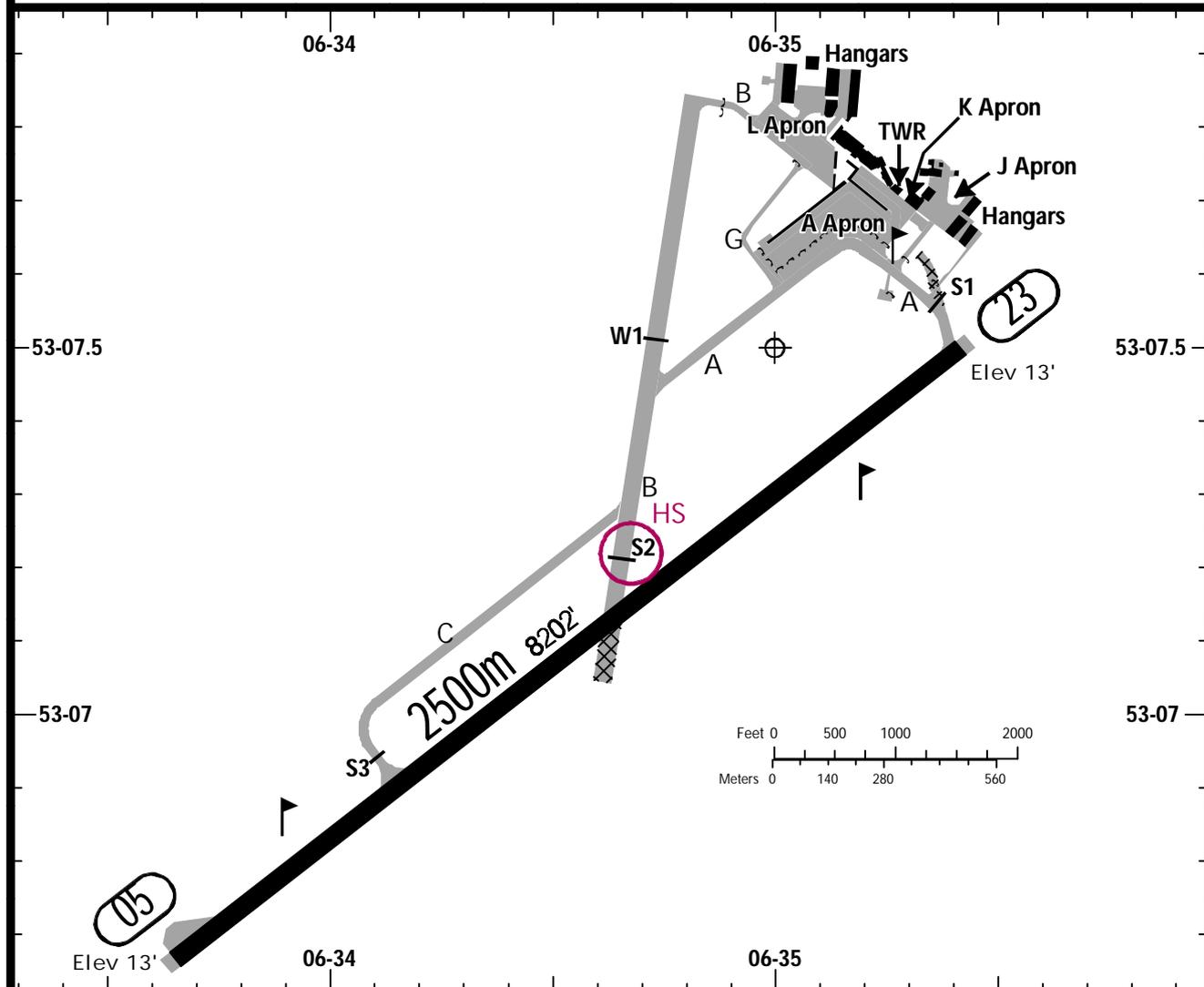
NETHERLANDS

BRIEFING STRIP™

LOCATION Elev 18' /5m N53 07.5 E006 35.0	ATIS ATIS 133.555	TOWER EELDE DELIVERY 121.705 ^{(1) (2)} EELDE TOWER 118.705 ⁽¹⁾ (en) 119.705 ^{(1) (3)} (en)
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ADMITTED AIRCRAFT

⁽¹⁾ VDF ⁽²⁾ Start-up Control, Clearance Delivery & Preflight Info ⁽³⁾ O/R or by ATC



ALS - PAPI 05 (3.0°), 23 (3.0°) - THRL - RL - RENL - RCLL - TWYL - APRON - OBSTL.

RWY No	Dimension (m) - Surface	TORA (m)	LDA (m)	Strength	Lights
05 (050°) 23 (230°)	2500 x 45 Asphalt	2500	2500	PCN 62/F/B/W/T	☯

Intersection TKOF

RWY	TWY	TORA (m)
05	S3	1798
	S2	1119
23	S2	1487

CAUTION: When approaching RWY 23 possible sun reflection and glare caused by solar panels right of the RWY; especially in the period MAR-APR and SEP-OCT during the evening.

NOTE: Parachute jumping may take place.

Avoid overflying of built-up areas as much as possible.

Grass cutting at irregular times.

Training and test flights including missed approach PPR

from AD manager.

All VFR flights within Eelde CTR (C) are subject to PPR by Eelde TWR and shall submit a flight plan.

Flights within Eelde CTR (C) should maintain two-way RDO COM with Eelde TWR unless exempted by ATIS. Such exemption will only be given in extraordinary cases.

VFR flights within Eelde CTR (C) may be instructed to stay clear of the IFR Area as depicted.

All VFR flights within the CTR (C) must show their landing lights.

Monitoring EELDE TOWER freq is mandatory for all ACFT on the ground that have an engine running.

K Apron: MAX wingspan 15m.

EHGG
EELDE

24 JUN 22

19-3

GRONINGEN
NETHERLANDS

RWY Inursion Hot Spots

HS - **CAUTION: Do not cross the holding position marking without a clearance.**

Approach Procedures

Contact EELDE TOWER 2 MIN prior to reaching the CTR (C) boundary for permission to enter the CTR (C).

Unless otherwise instructed, enter the CTR (C) at 1500' and maintain this ALT. VFR flights within the CTR (C) at MAX 1500'.

Descend to circuit ALT and join the circuit as instructed by ATC.

NOTE: Unless otherwise instructed, TFC circuit ALT is 1000' for light propeller ACFT (no turboprop) up to 6t AUW, and 1500' for jet, turboprop and other ACFT (with AUW > 6t).

In case of missed APCH climb straight ahead to MAX 1000' and inform ATC.

Traffic Circuits

NOTE: The circuit may be extended at ATC discretion and/or ALT of 500' or 1500' may be issued.

- Report downwind and intentions (e.g. 'touch-and-go', 'full-stop' or 'practice go-around').
- ATC will issue a sequence number and TFC to follow. Do not turn base before the TFC to follow or before receiving a sequence number.
- After receiving your sequence number, turn base and final at own discretion.
- Reporting final is compulsory when no LDG CLR is received.
- In case of missed APCH: inform ATC immediately while climbing to the published circuit ALT.

RWY 05

Light propeller ACFT (no turboprop, MAX AUW 6t):

- RH circuit at 1000'.
- Aim for LDG abeam or beyond intersection S3, unless an extended downwind is flown.
- Pilots should not vacate via TWY C.

For other ACFT:

- RH circuit at 1500'.
- At 500' turn left to track 048°.
- When abeam orange circuitmarker turn right to join the circuit.

TFC inbound via Y and N should expect a LH circuit.

RWY 23

Light propeller ACFT (no turboprop, MAX AUW 6t):

- LH circuit at 1000'.

For other ACFT:

- LH circuit at 1500'.
- Turn to final beyond the orange circuitmarker.

TFC shall not execute a THR baseleg for the RH circuit.

Departure Procedures

- Start-up clearance from ATC is compulsory. A request shall be made to EELDE DELIVERY.

Clearance will either be issued immediately or at a specified time, depending on TFC.

A request for start-up includes: ACFT identification and type, PSN, flight rules, destination, ATIS information, request start-up.

- Pilots intending to taxi on TWYs shall obtain a clearance from EELDE TOWER.
- Unless otherwise instructed or approved climb after TKOF to 1000'.
- Make the shortest turn to join the instructed DEP at or before PAPA or VICTOR.
- Cross PAPA or VICTOR at 1000' and maintain this ALT until outside CTR (C).
- Report PAPA and VICTOR on ATC request.
- Report leaving the CTR (C) over the designated reporting point.

NOTE: When joining UNIFORM DEP the railway Groningen-Assen via Haren, Glimmen and Tynaarlo shall not be crossed.

Transit

All flights which transit the Eelde TMA (E) are urgently requested to contact EELDE APPROACH (Mon-Fri) or EELDE TOWER (Sat/Sun).

COM Failure

Select transponder code 7600.

VFR Outbound/VFR Crossing the CTR (C)

In case of COM failure adhere to the DEP instructions. If the DEP instructions contain a clearance limit in the CTR (C), leave the CTR (C) via the shortest route, maintain ALT until outside the CTR (C), and do not cross the RCL or the IFR area and proceed to an appropriate AD.

Arrival via ROMEO

In case of COM failure before joining the circuit, leave the CTR (C) according to the UNIFORM DEP and divert to an appropriate AD.

Over or after a PSN from where to join the circuit (this is past reporting point TANGO or OVERHEAD) execute a circuit for the last received and acknowledged RWY as short as practicable, make a full stop LDG and vacate as soon as possible. In case of go around execute a similar circuit.

NOTE: Be aware of the fact that your flightpath could interfere with the flightpath of other AD TFC.

Arrival via YANKEE

In case of COM failure before joining the circuit, leave the CTR (C) according to the X-RAY departure and divert to an appropriate AD.

Over or after a PSN from where to join the circuit (this is past reporting point NOVEMBER or OVERHEAD) act as described in "Arrival via ROMEO".

Arrival via a different Route

In case of COM failure before joining the circuit, act as described in "VFR Outbound/VFR Crossing the CTR (C)".

Over or after a PSN where to join the circuit act as described in "Arrival via ROMEO".

General Information

Location: FRANKFURT/MAIN DEU

ICAO/IATA: EDDF / FRA

Lat/Long: N50° 02.0', E008° 34.2'

Elevation: 364 ft

Airport Use: Public

Daylight Savings: Observed

UTC Conversion: -1:00 = UTC

Magnetic Variation: 3.0° 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: 0722 Z

Sunset: 1546 Z

Runway Information

Runway: 07C

Length x Width: 13123 ft x 197 ft

Surface Type: asphalt

TDZ-Elev: 329 ft

Lighting: Edge, ALS, Centerline, TDZ

Runway: 07L

Length x Width: 9186 ft x 148 ft

Surface Type: concrete

TDZ-Elev: 305 ft

Lighting: Edge, ALS, Centerline, TDZ

Runway: 07R

Length x Width: 13123 ft x 148 ft

Surface Type: asphalt

TDZ-Elev: 328 ft

Lighting: Edge, ALS, Centerline, 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, TDZ

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

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

Communication Information

ATIS: 118.030 Arrival Service
ATIS: 118.730 Departure Service
Frankfurt Tower: 124.855
Frankfurt Tower: 119.905
Frankfurt Tower: 118.780
Frankfurt Tower: 127.330 Secondary
Frankfurt Tower: 136.500
Frankfurt Ground: 121.805
Frankfurt Apron Ramp/Taxi: 121.965
Frankfurt Apron Ramp/Taxi: 121.955
Frankfurt Apron Ramp/Taxi: 121.855
Frankfurt Apron Ramp/Taxi: 121.755
Frankfurt Apron Ramp/Taxi: 121.705
Frankfurt Apron Ramp/Taxi: 121.655
Frankfurt Delivery Clearance Delivery: 121.905
Langen Radar Approach: 126.555 RCO
Langen Radar Approach: 119.030 Secondary RCO
Langen Radar Approach: 120.155 RCO
Langen Radar Approach: 120.805 RCO
Langen Radar Approach: 125.355 RCO
Langen Radar Approach: 136.130 RCO
Frankfurt Direct (Approach Control Radar): 127.280
Frankfurt Deicing Operations: 121.985
Frankfurt Direct (Approach Control Radar): 118.505

EDDF/FRA

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FRANKFURT/MAIN, GERMANY

FRANKFURT/MAIN

16 SEP 22

10-1P

.AIRPORT.BRIEFING.

1. GENERAL

1.1. ATIS

*D-ATIS Arrival 118.030
*D-ATIS Departure 118.730

1.2. NOISE ABATEMENT PROCEDURES

1.2.1. RWY USAGE

1.2.1.1. ARRIVALS/DEPARTURES

RWY 25 will preferably be assigned to landing ACFT, provided the tailwind component does not exceed 5 KT. However, the take-off and landing direction will be changed from RWY 25 to RWY 07 if the braking action on the RWYs is impaired by water, snow, slush, ice, or frost, etc., even if the tailwind component is less than 5 KT. The take-off and landing direction also depends on the availability of navigation aids or significant weather in the approach and departure area.

1.2.1.2. DEPARTURES

Preferred take-off direction for landing direction 25/18:

For departures to the Northwest (OBOKA), North (MARUN) and Northeast (TOBAK), RWY 25C is preferred.

For departures to the Southwest (SOBRA, ULKIG), South (ANEKI), Southeast (CINDY) and East (SULUS), RWY 18 is preferred, provided the tailwind component for RWY 18 is not greater than 15 KT.

Preferred take-off direction for landing direction 07/18:

For departures to the Northwest (OBOKA), North (MARUN), Northeast (TOBAK) and East (KOMIB, SULUS), RWY 07C is preferred.

For departures to the Southwest (SOBRA, ULKIG), South (ANEKI) and Southeast (CINDY), RWY 18 is preferred, provided the tailwind component for RWY 18 is not greater than 15 KT.

Exceptions are possible if required due to traffic safety, the availability of navigation aids, significant weather in the approach and departure area or noise abatement measures or if Aerodrome Control deems that the traffic situation permits.

Tailwind component RWY 18:

If the tailwind component for RWY 18 exceeds 10 KT, this will be broadcast by ATIS.

Pilots unable to accept the greater tailwind component are requested to advise ATC as early as possible - at the latest when they request start-up approval.

Warning: In cases of strong winds, wind shear and increased turbulence must be expected on RWY 18.

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 ACFT 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 certification in accordance with ICAO Annex 16 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.

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FRANKFURT/MAIN, GERMANY

FRANKFURT/MAIN

16 SEP 22

10-1P1

.AIRPORT.BRIEFING.

1. GENERAL

- 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 11c, 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):

Take-offs and landings are not permitted on all days of the week between 2000-0800LT, unless an exemption in accordance with Article 48f, 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 48f, 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 RWY 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 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.

Between 2300-0500LT scheduled ACFT movements are not permitted.

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 48a of the LuftVZO, and ACFT fulfilling the provisions of ICAO Annex 16, Volume 1, 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).

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FRANKFURT/MAIN, GERMANY

FRANKFURT/MAIN

25 JUN 21

10-1P2

.AIRPORT.BRIEFING.

1. GENERAL

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 9,000kg 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 fulfill 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.

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 - in urgent cases also via telephone - to:

Hessisches Ministerium fuer Wirtschaft, Energie,
Verkehr und Wohnen
Oertliche Luftaufsichtsstelle/Local Aviation Supervision Office
Gebaeude (building) 514
60547 Frankfurt am Main/Germany
Tel.: 069/690-71717
Fax: 069/690-66150

The application shall contain:

- Applicant's name and, if necessary, name of the handling partner;
- Applicant's telephone and fax numbers;
- Name and address of the air carrier;
- E-mail address of the applicant for the invoice;
- Flight number;
- Registration and type of ACFT;
- Classification of the ACFT according to noise certification level (noise certificate of the ACFT according to Section 11c LuftVO);
- Planned time of departure for which the exemption is requested;
- Number of passengers;
- Weight of cargo in tonnes.

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FRANKFURT/MAIN, GERMANY

FRANKFURT/MAIN

25 JUN 21

10-1P3

.AIRPORT.BRIEFING.

1. GENERAL

The reasons for the application shall be specified; the applicant shall state, in particular, to what extent the take-off delay is due to reasons beyond the control of the airline and/or 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 any landing conducted during a period of restricted operations by an ACFT subject to the restriction which does not meet any of the grounds for exemption according to the provisions to the local aviation supervision office immediately after landing and specify the reasons (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.

1.2.4. 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

Whenever the operation of CAT III low visibility procedures is announced, taxiing is restricted for all ACFT to TWYs with operating centerline lights, unless otherwise instructed.

The TWY centerline lights within the ILS-critical/sensitive area are color-coded (yellow/green) from RWY 07C/25C to TWYs L and M, from RWY 07R/25L to TWYs M and R, from RWY 07L/25R to TWY P, from RWY 18 from the North to TWY Y5 and from RWY 18 from the South to TWYs L and N. Landing ACFT are requested to report when they are clear of the color-coded TWY centerline lights to indicate that they have vacated the ILS-critical/sensitive area.

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

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FRANKFURT/MAIN+ JEPPESEN
29 JUL 22

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FRANKFURT/MAIN, GERMANY
.AIRPORT.BRIEFING.

1. GENERAL

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 MODE S TRANSPONDERS

1.4.1.1. GENERAL

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

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.

- 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 (through the FMS or the transponder control panel), ACFT ident shall also be entered from request for push-back or taxi, whichever is earlier. 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 is not compromised, TCAS shall not be activated before reaching the RWY holding position. 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 maneuvering area between RWY 07C/25C and TWY L only with the minimum engine revolutions absolutely required.

TWYs N blue, N orange, N7 blue, N7 orange, N8 blue, N8 orange and western link between TWYs S33 and S MAX wingspan 118'/36m.

TWY N South MAX wingspan 171'/52m.

Taxi connection between TWY S33 and TWY S (direction West) MAX wingspan 118'/36m.

On the entire operating area including ACFT hangars and their aprons, taxi maneuvers which do not take place prior to take-off or after landing of an ACFT must be carried out by means of ACFT tractors and not by means of engine power.

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1. GENERAL

1.5.2. TAXIING ON APRON

ACFT stand taxilanes on aprons have been classified as follows:

- L (East of U): EASA code C;
- N (between N3 and N-East): EASA code F;
- N-Blue (between N3 and N-East): EASA code C;
- N-Orange (between N3 and N-East): EASA code C;
- N3 (North of N): EASA code E;
- N5 (North of N): code E/code F (until A23);
- N7 (North of N): EASA code E;
- N8 (North of N): EASA code F;
- N13 (North of N): EASA code E;
- N14 (North of N): EASA code E;
- S4 (South of S): EASA code F;
- S5 (South of S): EASA code F;
- S6 (South of S): EASA code F;
- S7 (South of S): EASA code F;
- S8 (South of S): EASA code F;
- S9 (South of S): EASA code F;
- S11 (South of S): EASA code F;
- S13 (East of S15): EASA code E (up to K4)
- S15: EASA code F (up to K6)
- S16 (South of R): EASA code E;
- S21 (South of R): EASA code E;
- S23 (South of R): EASA code D;
- S23 (GAT): EASA code B.

Reduced wing-tip clearance for ACFT of EASA code A, B and C on ACFT stand taxilanes is minimum 15'/4.5m from obstacles.

Reduced wing-tip clearance for ACFT of EASA code D, E and F on ACFT stand taxilanes is minimum 25'/7.5m from obstacles and is minimum 8'/2.5m from parallel apron roadways or height restricted objects.

ACFT type A380-800 will be towed with reduced obstacle clearance of 16'/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.

In the General Aviation area the wing-tip clearance is minimum 15'/4.5m.

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

1.5.3. TAXIING IN CASES OF LOW VISIBILITY

When leaving stands S401, S402, S404, S406, S408, S410, S412, S414, S416, S418, S420 and V173B at night and in other low visibility situations, nose gear lights shall generally be switched on. This shall not apply if ACFT is guided by Follow-me car and if the lights dazzle the pilot. In these situations, it is permitted to keep nose gear lights switched off even in cases of low visibility.

1.5.4. FAILURE OF AN ACFT's ANTI-COLLISION LIGHT (BEACON)

Before push-back or entering the apron, the red anti-collision lights (beacon) of an ACFT shall be switched on. If one anti-collision light (beacon) on the ACFT is inoperative, the pilot shall inform apron control and, additionally, switch on the white wing-tip strobe lights.

1.5.5. SEPARATE CENTERLINES FOR ACFT TYPE A380

Stands C15 and C16 have separate centerlines only available for ACFT type A380 designated with C15S and C16S. To park other ACFT types, the centerlines C15 and C16 shall be used. The separate centerlines C15S and C16S are parallel to centerlines C15 and C16. Due to the short distance between the centerlines C15 and C15S as well as between C16 and C16S, the pilot shall pay special attention when taxiing onto the stand.

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1. GENERAL

1.5.6. DEVIATIONS TO EASA REGULATIONS

1.5.6.1. TWYs

Fillets

At numerous TWYs, the distances from the taxi guideline to the TWY side strip marking are up to 1.6' / 0.5m less than required in curves. Therefore, taxiing in TWY curves always has to be performed with great accuracy at Frankfurt APT.

Rapid exit TWYs: TWY L7, L8, L10, L15

The radius of the turn-off curve is significantly less than the required minimum of 550m on rapid exit TWYs.

RWY holding positions: TWY L, L1, L21, M, M29, T, U, W, W9, Y, Y1, Y3, S33

At the following holding positions, approach surface 07C and/or take-off climb surface 25C are penetrated by holding ACFT:

- TWY L: CAT I RWY holding position before RWY 18,
- TWY M: CAT I RWY holding position before RWY 18 and RWY holding position M2,
- TWY L21: CAT I RWY holding position before RWY 07C/25C,
- TWY W: RWY holding positions W4, W6 and W8,
- TWY Y: RWY holding position Y2,
- TWY Y1: RWY holding position Y10.

At the following holding positions, approach surface 25C and/or take-off climb surface 07C are penetrated by holding ACFT:

- TWY L1: CAT I RWY holding position before RWY 07C/25C,
- TWY T: RWY holding positions T2 and T4,
- TWY U: RWY holding positions U2 and U4.

At the following holding positions, approach surface 07R is penetrated by holding ACFT:

- TWY M29: CAT I RWY holding position before RWY 07R/25L,
- TWY S33: RWY holding position S40,
- TWY W: RWY holding positions W6, W8 and W10,
- TWY W9: RWY holding position W9,
- TWY Y: RWY holding position Y6,
- TWY Y3: RWY holding position Y12.

At the following holding positions, approach surface 25L and/or take-off climb surface 07R are penetrated by holding ACFT:

- TWY T: RWY holding position T6 and T8,
- TWY U: RWY holding positions U6 and U8.

TWY width: TWY Y5

The TWY width is slightly less than the required 75' / 23m for ACFT with an outer main gear wheel span 30' / 9m to 49' / 15m.

1.5.6.2. Clearance distances

At a majority of the ACFT stands, the clearance distances to neighbouring objects are less than required.

Especially for ACFT stands A26-A40, safe horizontal distances of at least 3.6' / 0.8m to height-restricted objects are to be expected in the area of the wings.

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1. GENERAL

1.6. PARKING INFORMATION

On stands A11 thru A40, A50 thru A69, B20 thru B48, C4 thru C16, D1 thru D4A, D5 thru D8A, E2, E2A, E5, E5A, E6 thru E9A, F211 thru F232, F233, F234 thru F238, G1 thru G16, H2 thru H6, H14, J2 thru J8, K2 thru K10, S501 thru S604, V94 thru V130, V143, V144, V266 thru V270, V322 thru V328 and V702 thru V721 push-back required.

On stands A11, A13 thru A26, A28, A30, A34, A36, A38, A40, A50, A52, A54 thru A54B, A58 thru A58B, A62 thru A62B, A66 thru A66B, A69, B20, B22 thru B28, B42 thru B48, C4, C5, C6, C8, C11, C13, C14, C15, C15A, C15S, C16, C16A, C16S, D1, D1A, D4, D4A, D5, D5A, D8, D8A, E2, E2A, E5, E5A, E6, E6A, E9, E9A, F211, F213, F214, F215, F231, F232, F233, F237, F238, G1 thru G6, G8, H2 thru H6, K2 thru K10, S501, S503, S504, V106 thru V130 and V266 thru V270 Visual Docking Guidance System (A-VDGS) available.

1.7. OTHER INFORMATION

Glider areas in vicinity of APT.

Warning: 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.

For APT Collaborative Decision Making (ACDM) see ATC pages Germany.

2. ARRIVAL

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 18NM (RWYs 25C/L); and
- approximately 19NM (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 FL070 only 6NM prior to reaching the above mentioned points. Pilots should adjust their speed accordingly (approximately 200-220 KT when leaving FL070) and are urgently requested to perform their descent from FL070 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 ACFT shall wait for clearances with the information that the final approach tracks can only be reached at a distance of 5.0NM (RWY 25C/25L) and 5.1NM (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 FL070 until 6NM prior to reaching KUGUK and/or ORVIV (25C/25L) and 6NM prior to reaching ULNOK and/or IBLUS (07C/07R). Pilots shall adjust their speed accordingly (approx. 200-220 KT when leaving FL070) and are urgently requested to conduct the descent from FL070 as continuous descent, whenever possible.

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2. ARRIVAL

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.

2.3. RWY OPERATIONS

2.3.1. HIGH INTENSITY RWY OPERATIONS (HIRO)

ACFT of CAT SUPER will not be included in high intensity RWY operations, but should also vacate the RWY as quickly as possible.

At night, the use of HIRO is restricted to RWY 07L/25R and RWY 07R/25L.

2.3.1.1. APPROACH

Irrespective of the arrival route, approaching ACFT that have been assigned an ACFT stand in the southern area of the APT (Cargo City South, GAT, Terminal 3) will be guided by Approach Control preferably to RWY 07R/25L. As a rule, this RWY will also be assigned to ACFT to be parked on the Eastern section of the Northern apron.

When changing frequencies from LANGEN Radar to FRANKFURT Director initial call shall be restricted to

FRANKFURT DIRECTOR + CALLSIGN

to avoid frequency congestion. When being transferred from approach control to aerodrome control the initial call shall consist of

FRANKFURT TOWER, CALL SIGN, TYPE OF APPROACH + RWY

2.3.1.2. APPROACHES AT A GLIDE ANGLE OF 3.2^

RWY 07L/25R is equipped with two ILS systems for each landing direction.

One ILS per landing direction radiates signals for a glide angle of 3.2^, the other one for a glide angle of 3.0^.

The PAPI systems indicate the correct path down to a height of 200' for 3.0^ and 3.2^.

Regular operations will be conducted under CAT I conditions only. The approach procedure will only be assigned if no long-lasting tail wind (more than 30 minutes) is expected. If tail wind prevails or is to be expected, the provisions of Item 1.2.1.1. will be applied and an ILS approach procedure at 3.0^ will be assigned for RWY 07L/25R.

If it is not possible to conduct an approach at 3.2^ for safety reasons, the pilot shall mention this in the initial call to LANGEN RADAR. Such ACFT will be assigned another RWY.

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2. ARRIVAL

2.3.1.3. ARRIVALS

Pilots are reminded:

- to plan and to name the expected rapid exit TWY during the APCH briefing;
- to vacate the RWY as quickly as possible;
- to adjust taxi speed after touchdown when it is evident that the ACFT will miss the planned rapid exit TWY. Low taxi speeds shall be avoided on the RWY.

Whenever RWY conditions permit, the following rapid exit TWYs shall be considered for planning:

RWY	ACFT	Preferred Turnoffs	Dist from THR ft (m)
07L	HEAVY (except SUPER)	P6	7382' (2250m)
	MEDIUM (JET)	P8	5741' (1750m)
	MEDIUM (PROP)/LIGHT	P10	4429' (1350m)
07C DAY only	HEAVY (except SUPER)	L9	8202' (2500m)
	MEDIUM/LIGHT	L11	5906' (1800m)
07R	HEAVY (except SUPER)	M13	7054' (2150m)
	MEDIUM/LIGHT	M15	5659' (1725m)
25L	HEAVY (except SUPER)	M21	7464' (2275m)
	MEDIUM (JET)	M17	6135' (1870m)
	MEDIUM (PROP)/LIGHT	M11	3560' (1085m)
25C DAY only	HEAVY (except SUPER)	L13	6742' (2055m)
	MEDIUM (JET)	L10	5577' (1700m)
	MEDIUM (PROP)/LIGHT	L8	3691' (1125m)
25R	HEAVY (except SUPER)	P20	7382' (2250m)
	MEDIUM (JET)	P16	5741' (1750m)
	MEDIUM (PROP)/LIGHT	P14	4429' (1350m)

Aerodrome Control may apply reduced separation on RWYs. Any changes in separation by Aerodrome Control shall be observed.

Pilots may only change the frequency after landing if instructed to do so by Aerodrome Control.

If pilots do not receive further taxi clearance, they shall stop in front of a RWY and the corresponding landing and take-off climb surfaces and TWYs L and 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.

Exiting RWY 25C out of exit TWY L8 up to code C only.

2.5. OTHER INFORMATION

Parallel independent operation may be in force.

2.5.1. FLIGHT AND DESCENT PLANNING

For flight and descent planning purposes expect the following levels at the transfer points from Langen ACC to Frankfurt APP:

- KERAX between FL130 and FL110;
- SPESA between FL120 and FL100;
- ROLIS at FL150;
- UNOKO between FL130 and FL110 (at RAMOB).

These levels shall only be used for planning purposes. The actual transfer level will be cleared by ATC individually.

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3. DEPARTURE

3.1. DE-ICING

3.1.1. GENERAL

Notification of ACFT de-icing may be sent on frequency 121.985 or via phone 069/690-30560 by the ACFT operator or his representative. In the period of 1 May up to and including 14 October, requests for ACFT de-icing can only be made by phone: 069/690-30560.

3.1.2. ACFT STANDS

The de-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 Pad West (DPW) falls within the responsibility of Aerodrome Control and includes de-icing pads DP1 and DP2. When carrying out de-icing procedure, responsibility will temporarily be transferred to FRANKFURT Apron.

If necessary for operations, the ADC will assign ACFT to be de-iced at additional locations (TWY N7, positions V159, V161 and G16A). Instructions for taxiing to and onto these positions will be issued by FRANKFURT Apron. ACFT will be guided by a marshaller to the de-icing position. The marshaller's instructions must be followed. When requested by FRANKFURT Apron, radiotelephony communication shall be established with the de-icing crew on the frequency assigned. ACFT parked on positions East of TWY N3 which intend to depart from RWY 18 can be de-iced at position G16A with running engines.

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.

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 or with hot air, de-icing of undercarriage or de-icing with special viscosities, the control of the central engines (e.g. DC10, MD11), 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.

3. DEPARTURE

3.2. START-UP AND TAXI PROCEDURES

3.2.1. GENERAL

At TOBT, the ACFT must be ready for start-up or on-stand de-icing, and the pilot shall maintain continuous air-ground voice communication watch on the frequency of FRANKFURT Delivery.

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

3.2.2. FROM 0600-2200LT

All ACFT parked at positions East of TWY N3 and planned for departure from RWY 18 have to expect to taxi via TWYs U, T, 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.

3.2.3. STANDARD TAXI ROUTE (STR)

Name	Handover from Apron to DFS	Taxi Instructions	Holding Point
TRANSITION 1	STOP U2	U-S-S11-R-S28-S	S-RWY18

If the flight crew is unable to follow the standard taxi route TRANSITION 1, they shall inform during the initial call.

If the flight crew becomes unsure about TRANSITION 1, they shall request an individual clearance.

3.2.3.1. VOICE COMMUNICATION

Standard taxi route TRANSITION 1.

ACFT CALL SIGN.

Taxi to holding point RWY 18, intersection Sierra, via TRANSITION 1.

3.3. NOISE ABATEMENT PROCEDURES

3.3.1. OPERATIONAL RWY USE AND SID CONCEPT - STANDARD OPS

In general, pilots have to expect en-route clearance according to this concept. OPR are requested to file SID in FPL according to this guideline. Different SID in FPL will be changed automatically. Route details and further non-standard SIDs see 10-3 pages. Non-standards on pilot's request only.
Non-standard operation temporarily possible, if considered necessary by ATC. If unable to comply with restrictions, advise EDDF Delivery prior to start-up.

RWY-in-use	RWY (C)enter (L)eft (R)ight	SID Route Designator	Direction/ACFT CAT	NAV Spec
25/18			RWY 25C for DEP to the NW (OBOKA), N (MARUN), NE (TOBAK). RWY 25L with special authorization by TWR only . RWY 18 for DEP to the SW (SOBRA, ULKIG), S (ANEKI), SE (CINDY), E (SULUS).	

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In general, pilots have to expect en-route clearance according to this concept. OPR are requested to file SID in FPL according to this guide-line. Different SID in FPL will be changed automatically. Route details and further non-standard SIDs see 10-3 pages. Non-standards on pilot's request only. Non-standard operation temporarily possible, if considered necessary by ATC. If unable to comply with restrictions, advise EDDF Delivery prior to start-up.

RWY-in-use	RWY (C)enter (L)eft (R)ight	SID Route Designator	Direction/ACFT CAT	NAV Spec
07/18			RWY 07C for DEP to the NW (OBOKA), N (MARUN), NE (TOBAK), E (SULUS) and EDDN Area (KOMIB). RWY 07R with special authorization by TWR only. RWY 18 for DEP to the SW (SOBRA, ULKIG), S (ANEKI), SE (CINDY).	
25	C + L	FOXTROT	2-engined HEAVY ACFT to the N, NE.	BRNAV
	C + L	GOLF	2-engined HEAVY ACFT to the NW, N, NE.	BRNAV
			All ACFT to the NW, N, NE unable to comply with restrictions on SIDs northbound.	
	C	MIKE	All ACFT, except 2-engined HEAVY ACFT, to the NW, N, NE unable WHISKEY.	BRNAV
	C	WHISKEY	Shall be used by all ACFT, except 2-engined HEAVY ACFT, to the NW, N, NE complying with RNP-1 and RF-leg requirements instead of MIKE.	RNP-1*
	L	HOTEL	All ACFT RWY 25L (with special authorization by TWR only), except 2-engined HEAVY ACFT, to the NW, N, NE.	BRNAV
	L	KILO		RNP-1*
	C + L	NOVEMBER	Between 2200-0700LT: All 3- and 4-engined HEAVY and SUPER ACFT, B727 and YK42 due to noise abatement.	BRNAV
	C + L	PAPA	Single- and Twin-Props and DASH 7 may use PAPA instead of RWY18 to the SW.	BRNAV
C + L	QUEBEC	NON-RNAV equipped ACFT.		

* Check SID description for required NAV-specification/sensor restriction.

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3. DEPARTURE

In general, pilots have to expect en-route clearance according to this concept. OPR are requested to file SID in FPL according to this guide-line. Different SID in FPL will be changed automatically. Route details and further non-standard SIDs see 10-3 pages. Non-standards on pilot's request only. Non-standard operation temporarily possible, if considered necessary by ATC. If unable to comply with restrictions, advise EDDF Delivery prior to start-up.

RWY-in-use	RWY (C)enter (L)eft (R)ight	SID Route Designator	Direction/ACFT CAT	NAV Spec
07	C + R	CHARLIE	NON-RNAV equipped ACFT.	
	C + R	DELTA	All HEAVY and SUPER ACFT to the NW, N, NE, E.	BRNAV
			All MEDIUM and LIGHT ACFT to the NE, E or if considered necessary by ATC.	
			All MEDIUM and LIGHT ACFT to the NW, N if considered necessary by ATC.	
	Between 2200-0700LT: All ACFT to the NW, N, NE, E due to noise abatement.			
C + R	ECHO	Between 0700-2200LT: All MEDIUM and LIGHT ACFT to the NW, N.	BRNAV	
18		ALPHA	All ACFT to the S, SE (by ATC only).	RNAV-1*
		LIMA	All ACFT to the SW, S, SE.	BRNAV or RNAV-1*
		UNIFORM	Shall be used by all ACFT to the SW complying with the restrictions and RNP-1 and RF-leg requirements.	RNP-1
		SIERRA	All ACFT to the SE. All ACFT to the SW, NW, N, NE (by ATC only).	BRNAV
		ROMEO	Between 2300-0600LT: All ACFT to the NW, N, NE (by ATC only).	BRNAV
		TANGO	Contingency SID under special circumstances, e.g. closure RWY 07 (by ATC only).	BRNAV

* Check SID description for required NAV-specification/sensor restriction.

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3. DEPARTURE

3.3.2. ADDITIONAL NOISE ABATEMENT MEASURES

3.3.2.1. OPERATIONAL CONCEPT "NOISE RESPITE PERIODS"

At APT, noise respite periods for operating direction 25 will be implemented in accordance with the following plan.

As a rule, the following RWY shall always be used during the times shown:

Between 0500-0600LT

- RWYs 25C/R shall be used for landing;
- RWY 25L shall be used for departing.

Between 2200-2300LT

- RWY 25L shall be used for landing;
- RWYs 18 and 25C shall be used for departing.

GENERAL

As a rule, noise respite periods will always be implemented in the time periods between 0500-0600LT and between 2200-2300LT, provided the conditions required by air traffic control are met.

In the provision of air traffic control, the following flights, among others, will be exempt from the regulations of the noise respite periods:

- Flights for which the pilot has declared an emergency or which are apparently in an emergency situation, including flights affected or threatened by unlawful interference;
- Security flights of air defense;
- Flights on search and rescue missions;
- Flights transporting sick or injured persons requiring immediate medical assistance (including flights designated as LHO (Live Human Organ));
- Government flights, including flights with Head of State status in accordance with the regulations laid down by the Federal Ministry of Transport and Digital Infrastructure (BMVI);
- Flights where a pilot requests the use of a certain RWY for safety reasons;
- Particularly endangered flights;
- Calibration flights.

In addition, noise respite periods will not be implemented when restricted by infrastructure or poor weather conditions (e.g. construction work, snow clearing).

Further information can be found in the "alliance paper" which is the basis for the respite periods (www.wirtschaft.hessen.de).

PROCEDURES

The provisions concerning delayed take-offs and landings of ACFT described in Para 1.2.2. remain unchanged.

If the APT operator Fraport or an airline using the APT thinks that the implementation of the noise respite period in the morning or evening is very likely to lead to operational disruptions, they shall inform the aviation supervision office (Luftaufsicht) about this. The aviation supervision office will then suspend the noise respite period without further formalities or verification processes.

The aviation supervision office (Luftaufsicht) will inform Fraport about the suspension of the noise respite period. Fraport will in turn inform the air navigation services and airlines using its communication channels.

EDDF/FRA
FRANKFURT/MAIN+ JEPPESEN
16 SEP 22

(10-1P15)

FRANKFURT/MAIN, GERMANY
.AIRPORT.BRIEFING.

3. DEPARTURE

3.3.3. DEDICATED RWY OPERATIONS (DROPS)

When RWY 07 is in use, between 0500-0600LT RWY utilization will be arranged on odd calendar days:

All take-offs will be handled via RWY 18, thus avoiding the utilisation of the RWYs 07C/07R for take-offs.

When using the DROps procedures and operating direction 07 for departures to the North, only SIDs with the designation "R" will be allocated by the AD control tower. ACFT unable to adhere to "Cross FFM R-200 at or above 2500'" on the SIDs with the designation "R" will only be granted start-up approval and enroute clearance after coordination has taken place with the approach control unit.

Special Features

If meteorological conditions and/or other operational conditions do not allow the use of RWY 18, another RWY will be allocated after coordination has taken place with the approach control unit. This also applies to ambulance flights and/or flights with corresponding priority of service.

On even weekdays, the current procedures employed and published shall apply.

3.4. RWY OPERATIONS

3.4.1. CALCULATED TAKE-OFF TIME (CTOT) AND SLOT PROCEDURES

Departing ACFT shall be ready for take-off at the RWY 5 minutes prior to CTOT at the earliest, and at CTOT at the latest.

3.4.2. HIGH INTENSITY RWY OPERATIONS (HIRO)

ACFT that are not ready for departure will not receive clearance to line up.

Pilots are requested to report to Aerodrome Control if they are not ready to depart without being asked.

Pilots shall advise Aerodrome Control on initial call of the earliest possible intersection take-off.

When using RWYs 07 and 18, pilots of ACFT of wake turbulence categories light and medium which are taxiing to RWY 18 via TWY N or L due to their ACFT stand shall calculate the take-off run from the intersection to TWY M in order to avoid a departure delay due to required separation from arriving ACFT on RWY 07R.

Pilots who cannot accept a take-off run from the intersection of TWY M are requested to advise ATC at the same time they request start-up approval.

The entire RWY system is characterized by interdependencies. Pilots are thus expected to begin their take-off runs immediately after receiving their take-off clearance.

After take-off, ACFT should rapidly accelerate to the published maximum speed for the initial segment of the cleared SID. Afterwards, or if there is no published MAX speed, ACFT below FL100 should rapidly accelerate to 250 KT.

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.

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FRANKFURT/MAIN

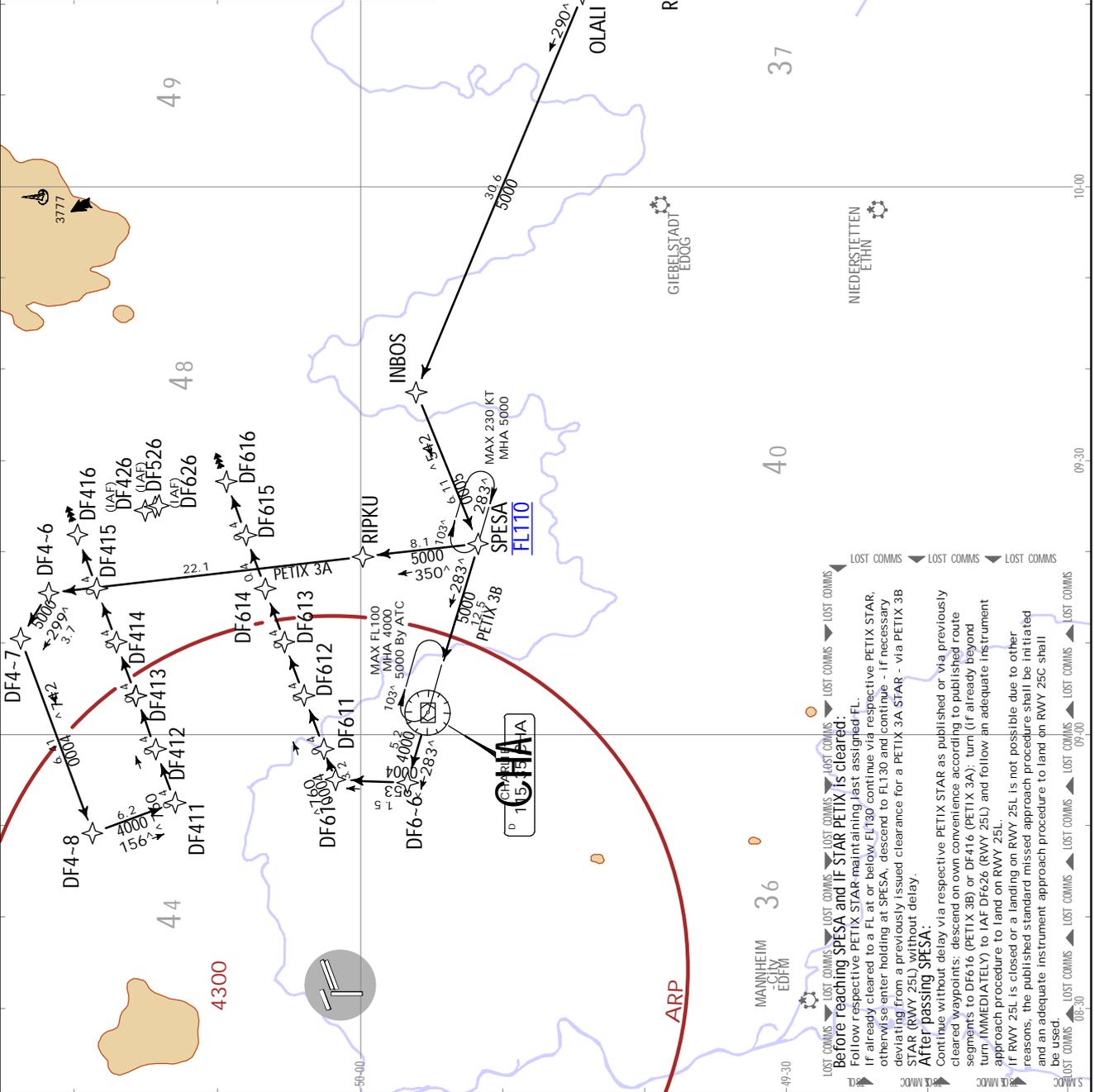
JEPPESEN FRANKFURT/MAIN, GERMANY
RNAV STAR

29 OCT 21 (10-2A) Eff. 4.NOV.

Alt. Elev	364
Trans level: By ATC	
RNAV (GPS, DME/DME, DME/DME/IRU)	
RNAV 1 required	
RADAR required	
MAINTAIN downwind track beyond end point if no succeeding instruction (vector/clearance for approach) is received.	

PETIX 3A [PET13A], PETIX 3B [PET13B]
RNAV ARRIVALS
(RWYS 25L/C/R)
BY ATC
.SPEED: MAX 250 KT BELOW FL100
OR AS BY ATC
NOT APPLICABLE WITHIN AIRSPACE C

STAR	ROUTING
PETIX 3A	PETIX - ODEGU - KEPIT - SUKAD - REKDI - OLALI - INBOS - SPESA (FL110) - RIPKU - DF4-6 - DF4-7 - DF4-8 - DF411 - DF412 - DF413 - DF414 - DF415 - DF416.
PETIX 3B	PETIX - ODEGU - KEPIT - SUKAD - REKDI - OLALI - INBOS - SPESA (FL110) - CHA - DF6-6 - DF611 - DF612 - DF613 - DF614 - DF615 - DF616.



Before reaching SPESA and if STAR PETIX is cleared:
Follow respective PETIX STAR maintaining last assigned FL.
If already cleared to a FL at or below FL130 continue via respective PETIX STAR, otherwise enter holding at SPESA, descend to FL130 and continue - if necessary, deviating from a previously issued clearance for a PETIX 3A STAR - via PETIX 3B STAR (RWY 25L) without delay.

After passing SPESA:
Continue without delay via respective PETIX STAR as published or via previously cleared waypoints; descend on own convenience according to published route segments to DF616 (PETIX 3B) or DF416 (PETIX 3A); turn (if already beyond turn IMMEDIATELY) to IAF DF626 (RWY 25L) and follow an adequate instrument approach procedure to land on RWY 25L.
If RWY 25L is closed or a landing on RWY 25L is not possible due to other reasons, the published standard missed approach procedure shall be initiated and an adequate instrument approach procedure to land on RWY 25C shall be used.

JEPPesen
 9 JUL 21 (10-2B) .Eff. 15. Jul.
FRANKFURT/MAIN GERMANY
 .RNAV .STAR.

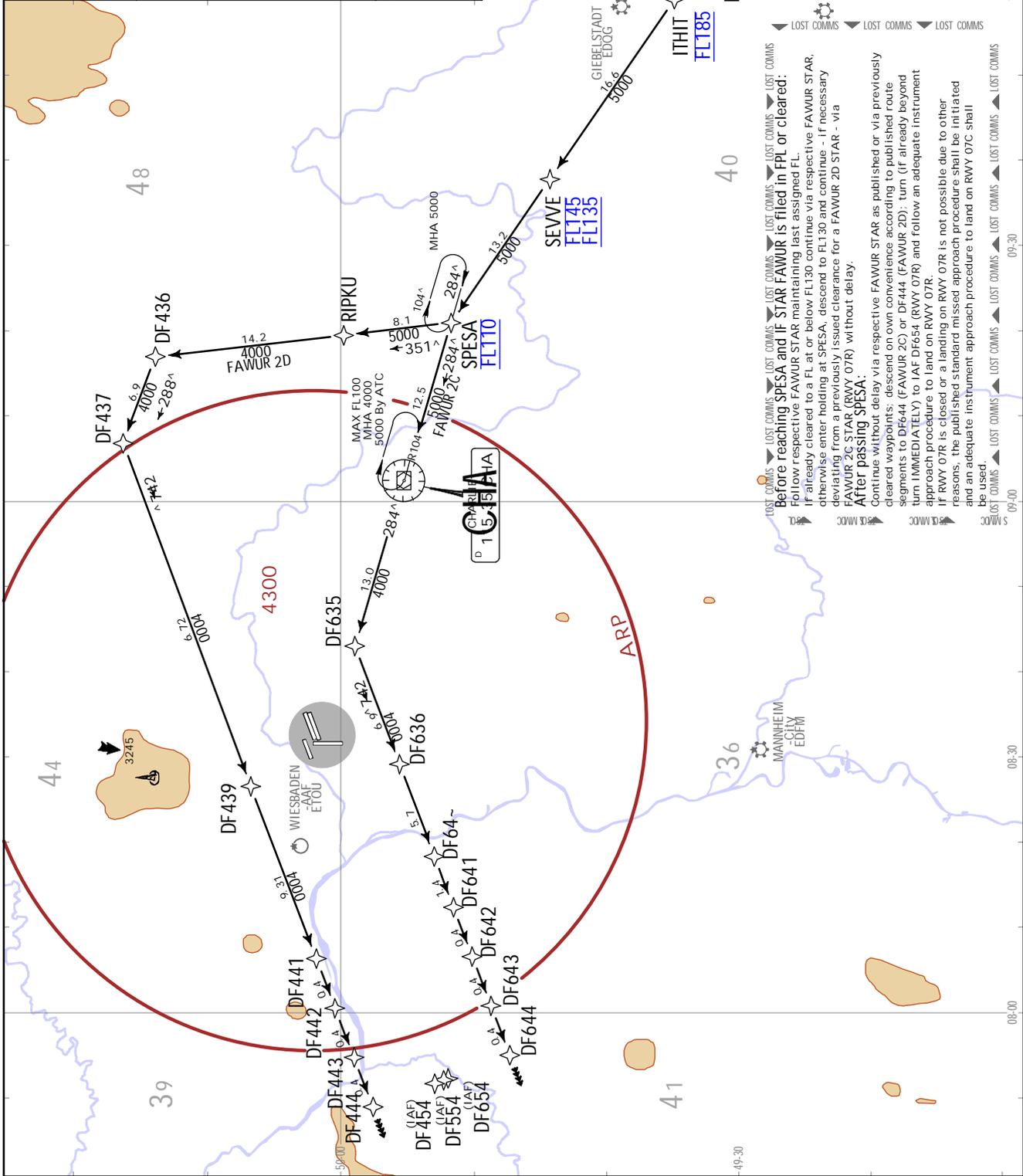
Alt Set: RPA (IN on request)
 Trans level: By ATC
 1. RNAV (GPS, DME/DME, DME/DME/IRU).
 2. RNAV 1 required.
 3. RADAR required.
 4. Maintain downwind track beyond end point if no succeeding instruction (vector/clearance for approach) is received.
 5. If unable to comply with level restrictions advise ATC.

**FAWUR 2C [FAWU2C]
 FAWUR 2D [FAWU2D]**
RWYS 07L/C/R RNAV ARRIVALS
.SPEED: MAX 250 KT BELOW FL100
OR AS BY ATC
NOT APPLICABLE WITH AIRSPACE C

STAR	ROUTING
FAWUR 2C	FAWUR (FL240) - BOWEK - ITHIT (FL185) - SEVVE (FL145) - FL135+ - SPESA (FL110) - CHA - DF635 - DF636 - DF640 - DF641 - DF642 - DF643 - DF644.
FAWUR 2D By ATC	FAWUR (FL240) - BOWEK - ITHIT (FL185) - SEVVE (FL145) - FL135+ - SPESA (FL110) - RIPKU - DF436 - DF437 - DF439 - DF441 - DF442 - DF443 - DF444.

SPEED RESTRICTION
 Initiate descent with last MACH number, on speed transition MAINTAIN 280 KT +/- 20 KT until SPESA or unless otherwise instructed by ATC.

A clearance for a STAR with level and/or speed restrictions consists of a lateral and a vertical part:
 Lateral part: 'Cleared (designator) arrival.'
 Vertical part: 'Descend via STAR FL (figures).'
 Adherence to waypoint restrictions is mandatory after a 'Descend via STAR FL (figures)'. clearance.
 Non-adherence may lead to separation infringement.
 Do not descend below the FL cleared by ATC.

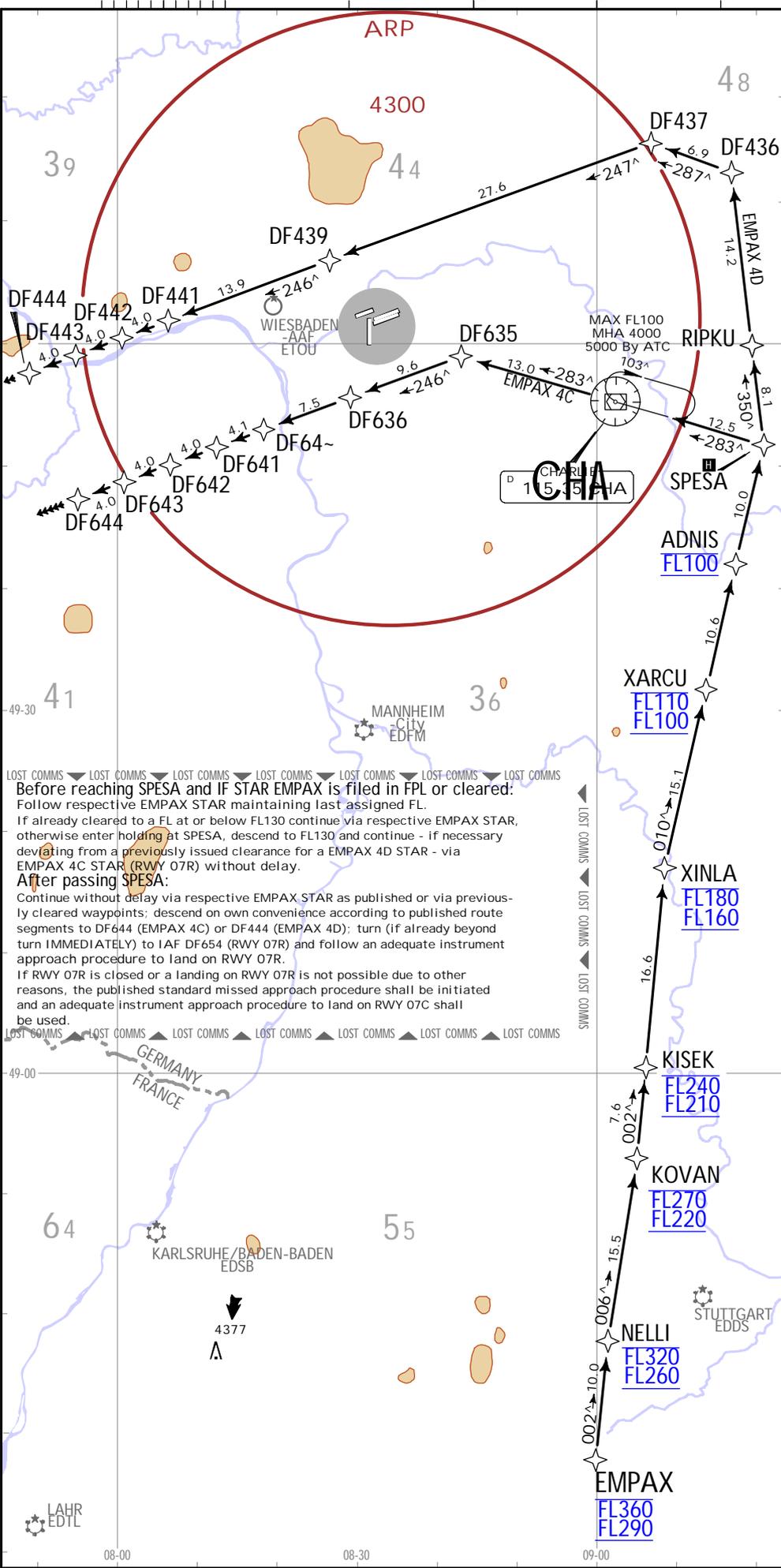


LOST COMMS
 Before reaching SPESA and if STAR FAWUR is filed in FPL or cleared:
 Follow respective FAWUR STAR maintaining last assigned FL.
 If already cleared to a FL at or below FL130 continue via respective FAWUR STAR, otherwise enter holding at SPESA, descend to FL130 and continue - if necessary FAWUR 2C STAR (RWY 07R) without delay.
After passing SPESA:
 Continue without delay via respective FAWUR STAR as published or via previously cleared waypoints; descend on own convenience according to published route segments to DF644 (FAWUR 2C) or DF444 (FAWUR 2D); turn (if already beyond approach procedure) to land on RWY 07R.
 If RWY 07R is closed or a landing on RWY 07R is not possible due to other reasons, the published standard missed approach procedure shall be initiated and an adequate instrument approach procedure to land on RWY 07C shall be used.

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CHANGES: RNAV STARs renumbered & revised

EDDF/FRA
FRANKFURT/MAIN



*D-ATIS 118.030	Apt Elev 364
Alt Set: hPa (IN on request) Trans level: By ATC	
RNAV (GPS, DME/DME, DME/DME/IRU). RNAV 1 required. RADAR required.	
1. MAINTAIN downwind track beyond end point if no succeeding instruction (vector/clearance for approach) is received. 2. If unable to comply with level restrictions advise ATC.	
EMPAX 4C [EMPA4C] EMPAX 4D [EMPA4D] RNAV ARRIVALS (RWYS 07L/C/R) .SPEED: MAX 250 KT BELOW FL100 OR AS BY ATC NOT APPLICABLE WITHIN AIRSPACE C	
SPEED RESTRICTION Initiate descent with last MACH number, on speed transition MAINTAIN 280 KT +/- 20 KT until SPESA or unless otherwise instructed by ATC.	
STAR	ROUTING
EMPAX 4C	EMPAX (FL360-; FL290+) - NELLI (FL320-; FL260+) - KOVAN (FL270-; FL220+) - KISEK (FL240-; FL210+) - XINLA (FL180-; FL160+) - XARCU (FL110-; FL100+) - ADNIS (FL100) - SPESA - CHA - DF635 - DF636 - DF64- - DF641 - DF642 - DF643 - DF644.
EMPAX 4D By ATC	EMPAX (FL360-; FL290+) - NELLI (FL320-; FL260+) - KOVAN (FL270-; FL220+) - KISEK (FL240-; FL210+) - XINLA (FL180-; FL160+) - XARCU (FL110-; FL100+) - ADNIS (FL100) - SPESA - RIPKU - DF436 - DF437 - DF439 - DF441 - DF442 - DF443 - DF444.

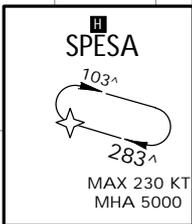
LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

Before reaching SPESA and IF STAR EMPAX is filed in FPL or cleared:
Follow respective EMPAX STAR maintaining last assigned FL.
If already cleared to a FL at or below FL130 continue via respective EMPAX STAR, otherwise enter holding at SPESA, descend to FL130 and continue - if necessary deviating from a previously issued clearance for a EMPAX 4D STAR - via EMPAX 4C STAR (RWY 07R) without delay.

After passing SPESA:
Continue without delay via respective EMPAX STAR as published or via previously cleared waypoints: descend on own convenience according to published route segments to DF644 (EMPAX 4C) or DF444 (EMPAX 4D); turn (if already beyond turn IMMEDIATELY) to IAF DF654 (RWY 07R) and follow an adequate instrument approach procedure to land on RWY 07R.
If RWY 07R is closed or a landing on RWY 07R is not possible due to other reasons, the published standard missed approach procedure shall be initiated and an adequate instrument approach procedure to land on RWY 07C shall be used.

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

A clearance for a STAR with level and/or speed restrictions consists of a lateral and a vertical part:
Lateral part: 'Cleared (designator) arrival.'
Vertical part: 'Descend via STAR FL (figures)'.
Adherence to waypoint restrictions is mandatory after a 'Descend via STAR FL (figures)'. clearance.
Non-adherence may lead to separation infringement.
Do not descend below the FL cleared by ATC.



EMPAX 4C [EMPA4C]
EMPAX 4D [EMPA4D]
RNAV ARRIVALS
(RWYS 07L/C/R)

28 OCT 22 (10-2D) Eff. 3. Nov.
JEPPesen FRANKFURT/MAIN, GERMANY
RNAV STAR.

JEPPesen 2020, 2022. ALL RIGHTS RESERVED.

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JEPPESEN FRANKFURT/MAIN, GERMANY
R.NAV.STAR

29 OCT 21 (10-2G) Eff. 4.Nov.

*D-ATIS
118.030
Apt Elev 364

Alt Set: hPa (IN on request)
Trans level: By ATIS

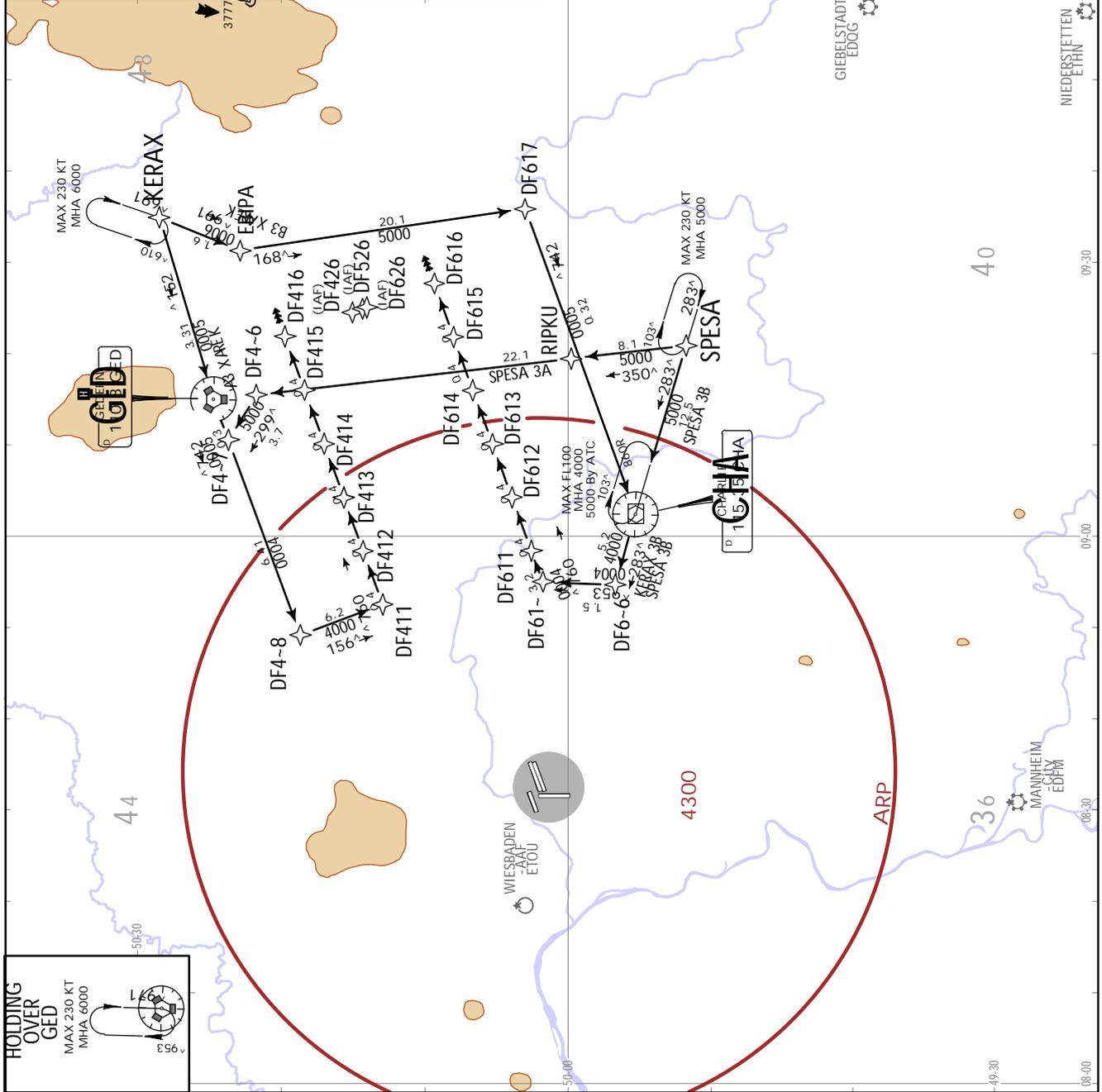
RNAV (GPS, DME/DME, DME/DME/IRU).
RNAV 1 required.
RADAR required.

MAINTAIN downwind track beyond end point if no succeeding instruction (vector/clearance for approach) is received.

**KERAX 3A [KERA3A]
KERAX 3B [KERA3B]
SPESA 3A [SPES3A]
SPESA 3B [SPES3B]**

**RNAV ARRIVALS
(RWYS 25L/C/R)
.SPEED: MAX 250 KT BELOW FL100
OR AS BY ATC
NOT APPLICABLE WITHIN AIRSPACE C**

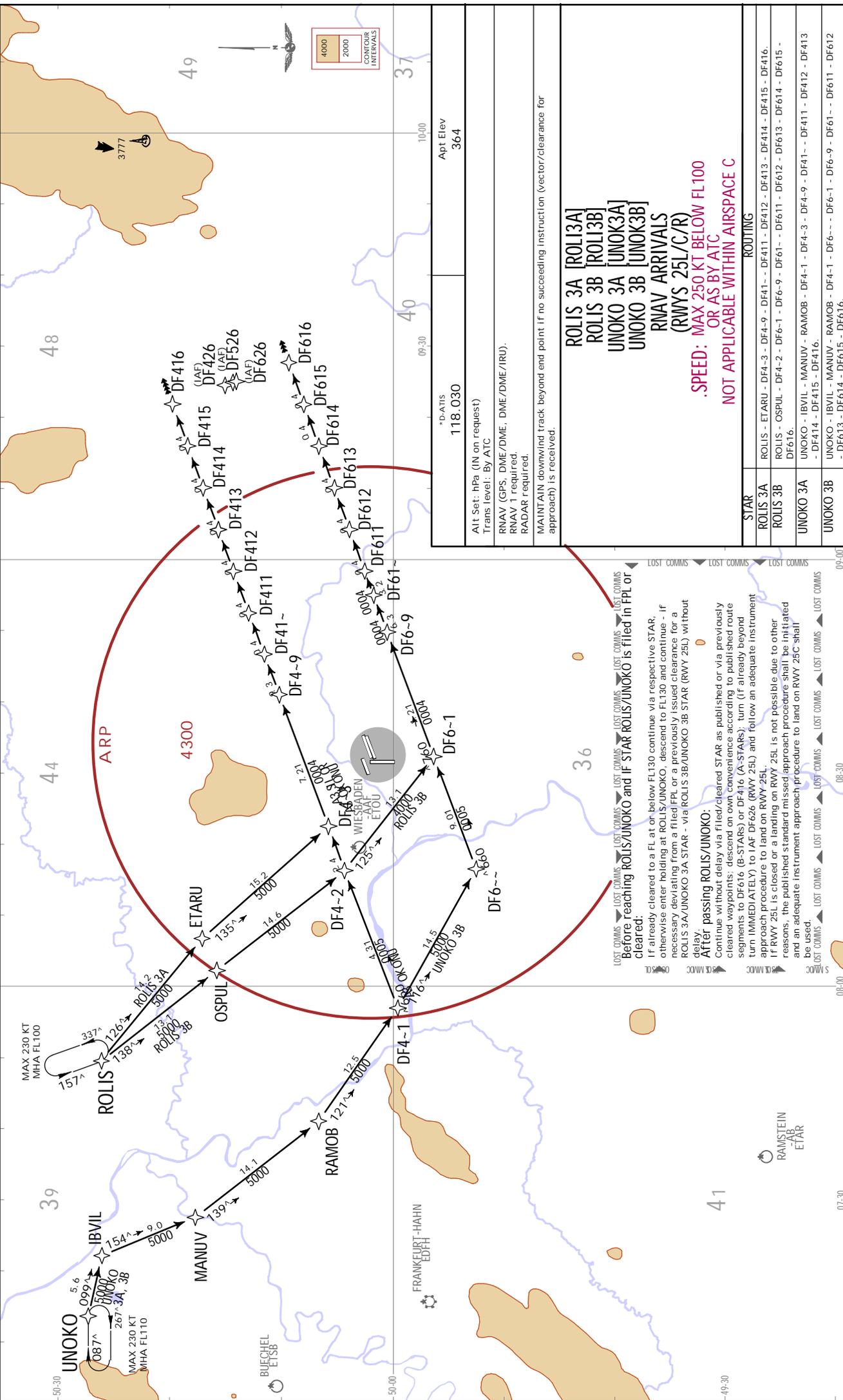
STAR	ROUTING
KERAX 3A	KERAX - GED - DF4-7 - DF4-8 - DF411 - DF412 - DF413 - DF414 - DF415 - DF416.
KERAX 3B	KERAX - EBIPA - DF617 - CHA - DF6-6 - DF61- - DF611 - DF612 - DF613 - DF614 - DF615 - DF616.
SPESA 3A By ATC	SPESA - RIPKU - DF4-6 - DF4-7 - DF4-8 - DF411 - DF412 - DF413 - DF414 - DF415 - DF416.
SPESA 3B	SPESA - CHA - DF6-6 - DF61- - DF611 - DF612 - DF613 - DF614 - DF615 - DF616.



LOST COMMS
Before reaching KERAX/SPESA and if STAR KERAX/SPESA is filed in FPL or cleared:
If already cleared to a FL at or below FL130 continue via respective STAR, otherwise enter holding at KERAX/SPESA, descend to FL130 and continue. If necessary deviating from a previously issued clearance for a KERAX 3A/SPESA 3A STAR - via KERAX 3B/SPESA 3B STAR (RWY 25L) without delay.
After passing KERAX/SPESA:
Continue without delay via filed/cleared STAR as published or via previously cleared waypoints; descend on own convenience according to published route segments to DF616 (B-STARS) or DF416 (A-STARS); turn (if already beyond approach procedure) to IAF DF626 (RWY 25L) and follow an adequate instrument approach procedure to land on RWY 25L.
If RWY 25L is closed or a landing on RWY 25L is not possible due to other reasons, the published standard missed approach procedure shall be initiated and an adequate instrument approach procedure to land on RWY 25C shall be used.

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JEPPESEN
FRANKFURT/MAIN, GERMANY
RVAV STAR.
29 OCT 21 (10-2J) Eff. 4 Nov.



STAR	ROUTING
ROLIS 3A	ROLIS 3A [ROLIS3A]
ROLIS 3B	ROLIS 3B [ROLIS3B]
UNOKO 3A	UNOKO 3A [UNOK3A]
UNOKO 3B	UNOKO 3B [UNOK3B]
RVAV ARRIVALS	(RWYS 25L/C/R) OR AS BY ATC NOT APPLICABLE WITHIN AIRSPACE C

APT ELEV 364
118.030 *D-ATIS
Alt Set: hPa (IN on request)
Trans level: By ATC
RVAV (GPS, DME/DME, DME/DME/IRU).
RVAV 1 required.
RADAR required.
MAINTAIN downwind track beyond end point if no succeeding instruction (vector/clearance for approach) is received.

LOST COMMIS Before reaching ROLIS/UNOKO and if STAR ROLIS/UNOKO is filed in FPL or cleared.
If already cleared to a FL at or below FL130 continue via respective STAR, otherwise enter holding at ROLIS/UNOKO, descend to FL130 and continue - if necessary deviating from a filed FPL or a previously issued clearance for a ROLIS 3A/UNOKO 3A STAR - via ROLIS 3B/UNOKO 3B STAR (RWY 25L) without delay.
After passing ROLIS/UNOKO: Continue without delay via filed/cleared STAR as published or via previously cleared waypoints; descend on own convenience according to published route segments to DF616 (B-STARS) or DF416 (A-STARS), turn (if already beyond approach procedure to land on RWY 25L.
If RWY 25L is closed or a landing on RWY 25L is not possible due to other reasons, the published standard missed approach procedure shall be initiated and an adequate instrument approach procedure to land on RWY 25C shall be used.

CHANGES: RVAV STARS renumbered; track updates; general notes.

EDDF/FRA

FRANKFURT/MAIN

28 OCT 22

10-2K

.Eff.3.Nov.

JEPPESSEN FRANKFURT/MAIN, GERMANY

.RNAV.STAR.

