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Airport Information For ENGM

Terminal Charts For ENGM

Revision Letter For Cycle 01-2015

Change Notices

Notebook

General Information

Location: Oslo Nor
IATA Code: OSL
Lat/Long: N60° 12.2' E011° 05.0'
Elevation: 681 ft

Airport Use: Public
Magnetic Variation: 2.7°E

Fuel Types: 100 Octane (LL), Jet A-1, Jet 4
Customs: Yes
Airport Type: IFR
Landing Fee: No
Control Tower: Yes
Jet Start Unit: No
LLWS Alert: No
Beacon: Yes
Pattern Altitude: 1028 ft AGL

Sunrise: 0817 Z
Sunset: 1426 Z,

Runway Information

Runway: 01L
Length x Width: 11811 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 655 ft
Lighting: Edge, ALS, Centerline

Runway: 01R
Length x Width: 9678 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 670 ft
Lighting: Edge, ALS, Centerline, TDZ

Runway: 19L
Length x Width: 9678 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 681 ft
Lighting: Edge, ALS, Centerline

Runway: 19R
Length x Width: 11811 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 675 ft
Lighting: Edge, ALS, Centerline, TDZ

Communication Information

- ATIS 127.15 Departure Service
- ATIS 126.125 Arrival Service
- Gardermoen Tower 123.325
- Gardermoen Tower 118.7
- Gardermoen Tower 120.1
- Gardermoen Tower 118.3
- Gardermoen Tower 25.78 Military
- Gardermoen Ground Control 121.725
- Gardermoen Ground Control 121.9
- Gardermoen Ground Control 121.6
- Gardermoen De-Icing Ramp/Taxi Control 121.85
- Gardermoen Clearance Delivery 121.925
- Gardermoen Clearance Delivery 121.675
- Oslo (Sector West) Approach Control 120.45
- Oslo (Sector East) Approach Control 118.475
- Oslo Final Radar 128.9
- Oslo Director (Approach Control Radar) 136.4
- Oslo Director (Approach Control Radar) 119.975

1. GENERAL

1.1. ATIS

D-ATIS Arrival 126.12

D-ATIS Departure 127.15

1.2. NOISE ABATEMENT PROCEDURES

1.2.1. GENERAL

This regulation applies at Oslo Gardermoen APT and in the airspace within Gardermoen CTR as well as within the outer limits of the Oslo TMA from ground level up to 10000' when departing from or landing at APT.

Exceptions:

- Propeller ACFT with MTOW less than or equal to 5700kg;
- Helicopters operated according to visual flight rules (VFR);
- Calibration flights;
- Ambulance flights and in-flight emergencies;
- Flights related to fire fighting or search and rescue;
- Military flights with fighter jets;
- Military flights related to test or training activities in the period 0700-2230LT, including touch-and-go circuits.

These noise restrictions do not apply to military flights:

Departures with ACFT not complying with noise regulations of ICAO Annex 16, Vol 1.5, edition July 2008 chapter 3 are not permitted in the period 1600-0800LT. Departures with ACFT having a noise certification exceeding 88 EPNdB at departure are not permitted between 2400-0630LT.

Approach and landing with JET ACFT shall be carried out in a way that reduces noise as much as possible by using procedures for continuous descent, low power and low drag.

1.2.2. PREFERENTIAL RWY SYSTEM

Between 2230-2400LT, the following rules apply:

- For jets and propeller ACFT with MTOW exceeding 5700kg and four engines or more, RWY 01R and RWY 19R are to be used for landing and RWY 01L and 19L for departure (segregated RWY operations).
- For other traffic, RWY 01L and 19R must be used (single RWY operation), except in cases of RWY closure.

Between 2400-0630LT RWY 01L or 19R are to be used (single RWY operation). In special situations segregated RWY operation may be used when this is required for efficient traffic regulation. When weather conditions require the use of ILS CAT II/III, RWY 01R may be used for arrivals.

1.2.3. REVERSE THRUST

Between 2230-0630LT jet engine reversal beyond idle reverse is not permitted after landing.

1.2.4. RUN-UP TESTS

All engine testing beyond idle power shall be done at the APT engine testing site. Time booking for use of the test site should be addressed to OSL Gate Allocation Office, Tel.: +47 6481 30 50.

1.2.5. AUXILIARY POWER UNIT (APU)

Between 2230-0630LT the use of APU after arrival at or before departure from a parking stand supplied with a ground power unit and air conditioning, must not exceed five minutes. This limitation does not apply when ambient air temperature at the parking stands is below 15° Celsius or above +20° Celsius.

1. GENERAL

1.3. LOW VISIBILITY PROCEDURES

Pilots will be informed when low visibility procedures are in operation via ATIS or RTF. Pilots will be informed when low visibility procedures are cancelled via RTF.

Low visibility procedures are prompted by ATC, normally when RVR is less than 1000m or ceiling is less than 300'. Low visibility procedure will normally be in operation when RVR is less than 550m and ceiling less than 200'.

Surface movement radar is normally available to ATC.

Pilots are to delay the call "RWY vacated" until the ACFT has completely passed the end of the green/yellow colour coded TWY centerline lights.

During visibility condition when RVR is less than 350m, RWY entries/exits are available as follows:

RWY	01L	01R	19L	19R
RWY entry	A1, A2, A4, A5, C1	B1, B2	B6, B7, B8, B9	A9, C3, C1
RWY exit	A9, C1, C3	B6, B7, B8, B9	B1, B2	A5, A4, A2, A1, C3, C1
RWY crossing points	A7 to C3 and vice versa (TWY C3 code letter C). C1 to A4 and vice versa (published Hot Spot).	Not applicable	Not applicable	A7 to C3 and vice versa (TWY C3 code letter C). C1 to A4 and vice versa (published Hot Spot).

TWY lights on other entries/exits will be switched off.

In visibility condition 3 (RVR less than 350m) selected stopbars are operated at intermediate holding positions.

In visibility conditions at or above RVR 400m, intersection entries are available.

1.4. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM

1.4.1. OPERATION OF MODE S TRANSPONDERS WHEN ACFT IS ON THE GROUND

ACFT operators shall ensure that Mode S transponders are able to operate when the 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 the request for push-back or taxi, whichever is earlier;
- After landing, continuously until the ACFT is parked on stand;
- When parked on stand, select STBY.

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

To ensure that the performance of systems based on SSR frequencies (including airborne TCAS units and SSR radars) is not comprised, TCAS should not be selected before receiving the clearance to line-up. It should then be deselected after vacating the RWY.

For ACFT taxiing without flight plan, Mode A code 2000 shall be selected.

ACFT not equipped with Mode S transponder shall select STBY during ground operations.

1.5. TAXI PROCEDURES

Stop bars at CAT III holding points may be in operation during all visibility conditions.

1. GENERAL

1.6. PARKING INFORMATION

On stands 11 and 13 thru 53 SAFEGATE available.

1.7. OTHER INFORMATION

Birds.

2. ARRIVAL

2.1. CAT II/III OPERATIONS

RWYs 01R and 19R approved for CAT II/III operations, special aircrew and ACFT certification required.

2.2. TAXI PROCEDURES

Allowances shall be made for 10 min taxiing time.

When exiting at A4, A5, A6, B3, B4, B6 or B7, exit speed must be adjusted to allow for a gradually increasing curvature. Excessive speed through the curve may incur a risk of TWY excursion under low friction conditions.

2.3. OTHER INFORMATION

2.3.1. POINT MERGE SYSTEM (PMS)

STARs are based on PMS and accommodate Basic Continuous Descent Operations. ACFT on STARs can expect clearance to the Merge Point (MP) when traffic permits, allowing for a precise sequencing whilst the ACFT maintains own lateral navigation.

When cleared direct to MP and also having received an instrument approach clearance, follow the transition from MP to final as stated in the relevant IAP.

Between 0030-0600LT the shortest distance from STAR starting point to MP may be seen as the expected track to the start of the IAP. Deviation from the track may be regarded as a delaying action.

3. DEPARTURE

3.1. NOISE ABATEMENT PROCEDURES

3.1.1. GENERAL

SIDs RWY 01L, 19R/L: NADP2 to be used during climb-out with jet ACFT.

SIDs RWY 01R: NADP1 to be used during climb-out with jet ACFT.

3.2. DE-ICING

De-icing of ACFT may only be performed on the dedicated platforms.

On first contact report to Delivery, if the ACFT needs de-icing. ATC will forward the request to the de-icing coordinator. No call shall be made to the de-icing coordinator unless instructed by GARDERMOEN Ground when ACFT is approaching the de-icing platform.

ACFT equipped for Datalink Departure Clearance (DCL) and requiring de-icing, must enter REQ DEICE into the REMARKS/free text field, when requesting DEP clearance via DCL.

De-icing stand is assigned by the de-ice coordinator. Use full call sign when in contact with the de-icing coordinator.

De-icing is completed when a message including the ACFT callsign, details about the de-icing and the phrase "Equipment removed" is received from the de-ice coordinator via RTF. Do not move the ACFT until "all clear signal" (thumbs up) is given from ground crew and taxi instructions are received from ATC.

3. DEPARTURE

Listening watch on last assigned ATC frequency is to be maintained during de-icing. Pilots are requested to maintain listening watch on the de-ice coordinator frequency until the ACFT is leaving the de-icing platform. Request for taxi instructions shall be forwarded to ATC. Specify RTF callsign and de-ice stand on which the ACFT is parked.

3.3. START-UP & PUSH-BACK

3.3.1. START-UP & PUSH-BACK

Request for start-up shall be made to GARDERMOEN Delivery when ACFT is ready for start-up/push-back (doors closed and tug connected) within TOBT +/- 5 MIN. Listening watch shall thereafter be maintained on GARDERMOEN Delivery.

GARDERMOEN Delivery sequences departing ACFT and will advise TSAT in case of delay.

GARDERMOEN Delivery will transfer ACFT is ready for start-up/push-back to GARDERMOEN Ground according to TSAT.

GARDERMOEN Ground will issue push-back clearance.

If ACFT is not ready for push-back/start-up within TOBT +/- 5 MIN, TOBT must be updated by the ground handling agent and ATC will set a new TSAT.

ACFT parked at the following stands will be pushed as follows:

- Stand 15, ACFT will be pushed to start-up position 2.
- Stand 39, ACFT will be pushed to start-up position 4.
- Stand 49, code A, B and C ACFT will be pushed to start-up position 10, facing East and code D and E ACFT will be pushed to start-up position 9 between TWYs L1 and L2, facing East.
- Stand 50, code D and E ACFT will be pushed to start-up position 8, facing North on TWY F.
- Stands 46R and 48, code E ACFT will be pushed to start-up position 16 facing West or start-up position 17 or 18 facing East, instructed by Ground control.
- Stand 51, ACFT will be pushed to start-up position 7, facing South.
- Stand 53, code D and E ACFT will be pushed to start-up position 8, except B757-200/300.
- Stand 171L, ACFT will be pushed to start-up position 3.
- Stands 186 and 188, ACFT will be pushed to start-up position 7 facing South.
- Stands 201L and 203L, code D, E and F ACFT will be pushed to start-up position 12 facing North and to start-up position 13 facing South.
- Stands 205 and 206, ACFT will be pushed to start-up position 14 facing South or North, instructed by Ground control.
- Stands 207 thru 208R, ACFT will be pushed to start-up position 15 facing South or North, instructed by Ground control.

Optional push-back available after coordination with GARDERMOEN Ground:

- Stand 41, ACFT will be pushed to start-up position 4.
- Stands 171 and 172, ACFT will be pushed to start-up position 3.
- Stands 173 thru 176, ACFT will be pushed to start-up position 1.
- Stands 177 and 178, ACFT will be pushed to start-up position 2, facing East.
- Stands 181 and 182, ACFT will be pushed to start-up position 5, facing East.
- Stands 183 thru 185 and 187, ACFT will be pushed to start-up position 6, facing East.
- Stands 38, 76, 89, 181 and 201, initial turn left after push-back.
- Stands 26, 81, 178 and 204, initial turn right after push-back.

Note: Push-back from stand 2, 3, 7, 93, 95 and 96 only available after incorrect positioning of ACFT during towing/parking in coordination with ATC.

To avoid blast at stands when turning out from start-up position to TWY, as little power as possible shall be used.

3. DEPARTURE

3.3.2. DATALINK DEPARTURE CLEARANCE (DCL)

Datalink Departure Clearance is available by SITA or ARINC.

DCL is not available for NON-P-RNAV equipped ACFT.

Departing IFR flights are urged to use DCL when asking for clearances.

DCL is available 30 MIN before TOBT until TOBT. For flights not assigned TOBT, DCL is available 30 MIN before EOBT.

Jet ACFT receiving a PROP-SID shall verify this at first call to GARDERMOEN Ground.

Pilots shall ensure that SID and RWY for departure are in accordance with received clearance.

"Revert to voice" should be expected:

- if clearance via DCL is not accepted within 5 MIN;
- in case of major delay;
- in case of technical failure;
- in case ATC, for some reason, decide to use VHF communication for clearance delivery.

When receiving "Revert to voice", clearance shall be obtained by GARDERMOEN Delivery.

A clearance received by VHF communication always overrides a clearance received by DCL.

3.3.3. ATC CLEARANCE

Departing IFR flights unable to utilize DCL shall contact GARDERMOEN Delivery to obtain ATC clearance. Calls shall be addressed to CLR East or CLR West according to stand. CLR East is operating on the responsibility area of GND East, and CLR West is operating on the responsibility area of GND West. Specify stand number at first call. ATC clearance may be requested at the earliest 30 MIN prior anticipated engine startup (TOBT). Listening watch shall be maintained on current delivery frequency, if no instruction of frequency change has been given by GARDERMOEN Delivery.

3.4. APT COLLABORATIVE DECISION MAKING

3.4.1. TARGET OFF BLOCK TIME (TOBT)

Verified by Ground handling company at the latest 30 MIN before planned TOBT, and indicates the time when the completion of all ground handling activities (except de-icing) is expected and ACFT will be ready for start-up/push-back. TOBT updates are necessary to ensure foreseeable departure times, and as means for ATC to issue the correct TSAT.

3.4.2. TARGET START-UP APPROVAL TIME (TSAT)

Set by ATC and indicates the time when clearance for start-up/push-back may be expected, to ensure correct departure sequence according to AD departure capacity. TSAT takes into account variable taxi time, de-icing (if necessary) and CTOT. TSAT is normally close to TOBT, but delays may occur when AD departure capacity is exceeded. The departure capacity is determined by MET conditions, de-icing capacity, RWY capacity and airspace capacity.

3. DEPARTURE

3.5. OTHER INFORMATION

3.5.1. CALCULATED TAKE-OFF TIME (CTOT)

ACFT shall be ready for take-off at the RWY holding point not later than the CTOT.

ACFT must be ready for engine start on TSAT.

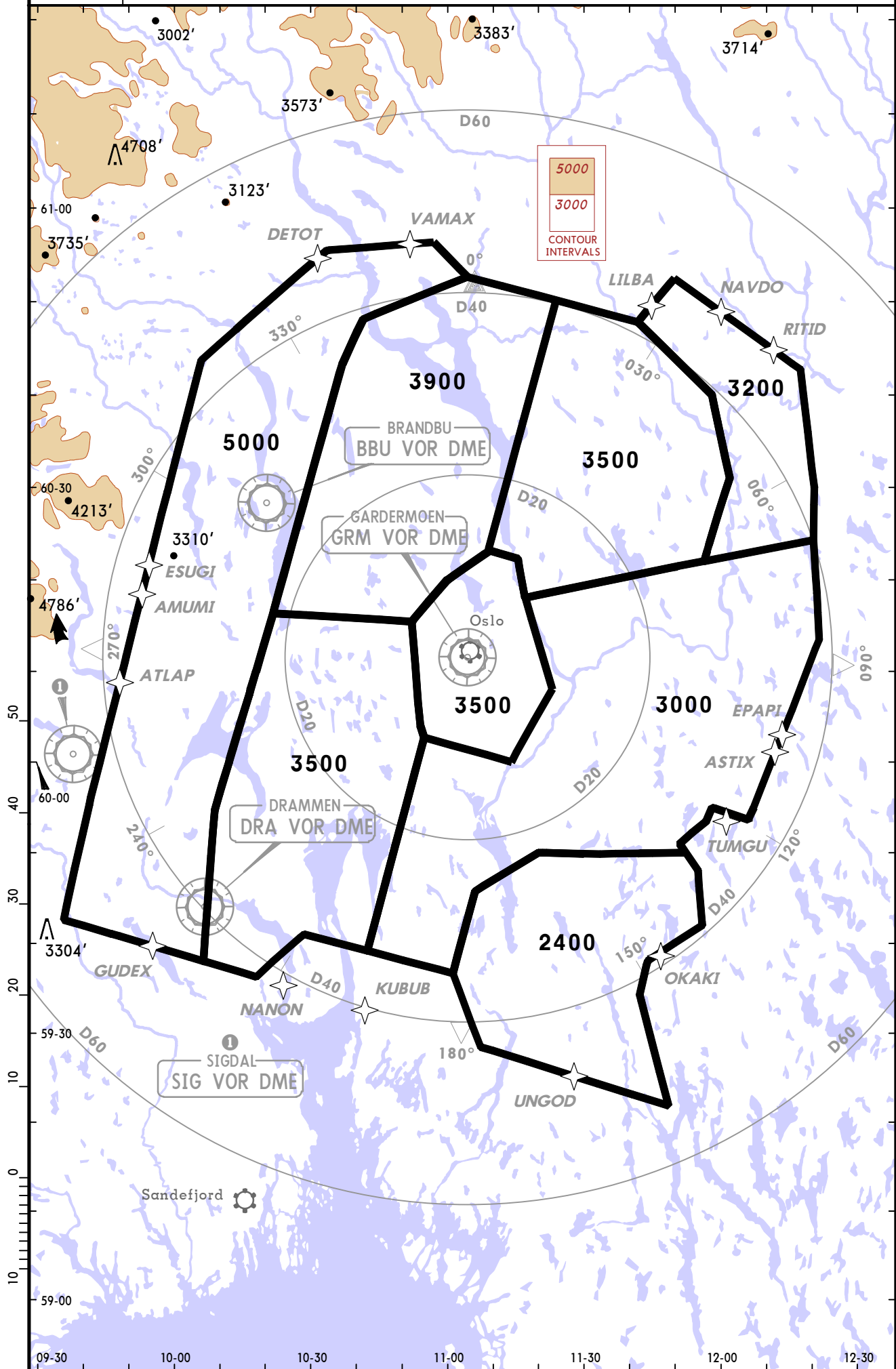
TSAT accounts for time for taxiing and de-icing as necessary, so the CTOT can be met.

Pilots must inform GARDERMOEN Delivery if start-up according to TSAT is not possible. Request for a new CTOT shall be made via the airline operator or the handling agent.

ACFT waiting for CTOT, with a wish to leave the parking stand, may request "Push and hold" to GARDERMOEN Delivery. "Push and hold" implies waiting at a different location at the AD, and is subject to approval from ATC based on availability.

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Minimum safe altitudes are temperature corrected down to 0° Celsius.
2. This chart may only be used for cross checking of assigned altitudes.



D-ATIS
126.125

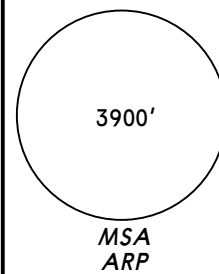
Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'

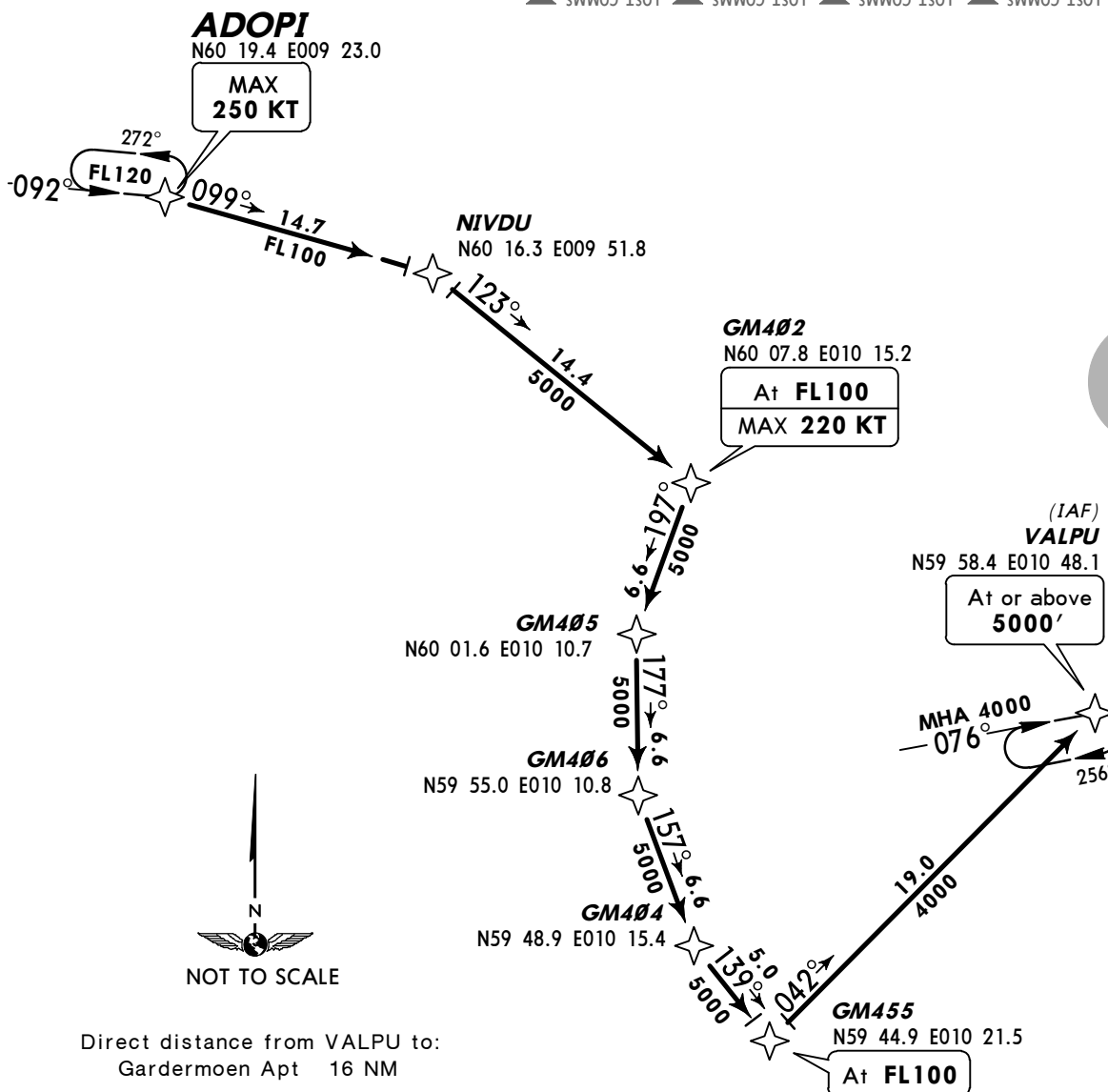
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

ADOPI THREE LIMA
(ADOPI 3L) [ADOP3L]
RWYS 01L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 01R without delay.
▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC



Clearance limit is VALPU holding.

Merging point is VALPU.

ROUTING

ADOPI (K250-) - NIVDU - GM402 (FL100; K220-) - GM405 - GM406 - GM404 - GM455 (FL100) - VALPU (5000'+).

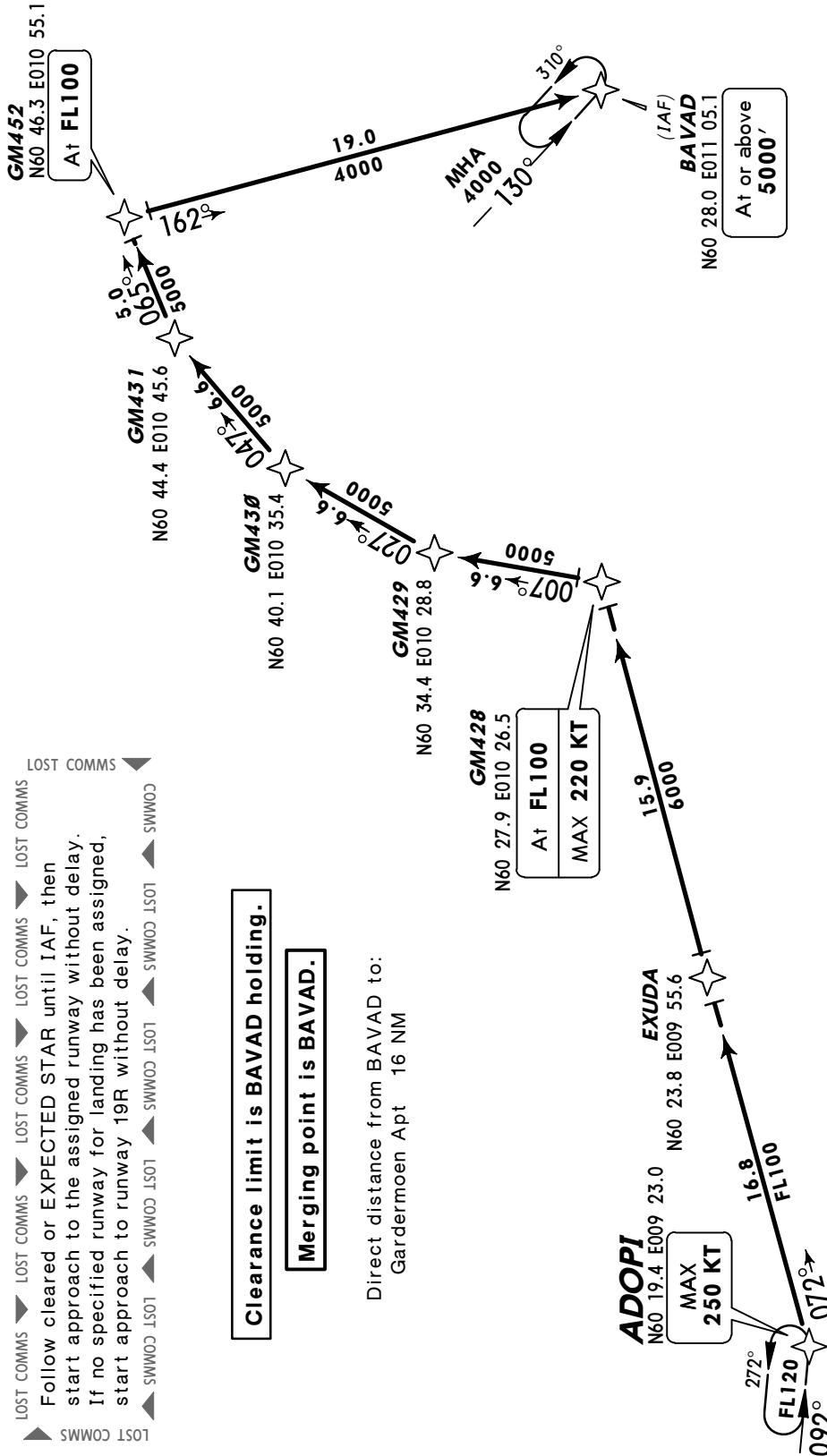
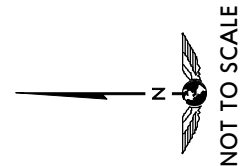
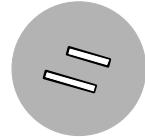
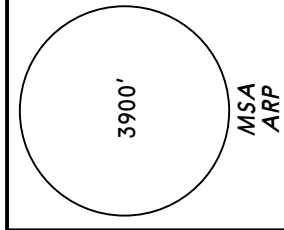
D-ATIS
126.125

Apt Elev
681'

- Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
 2. RADAR service shall be available.
 3. Loss of RNAV capability, request vectoring.
 4. Vectoring may be used when necessary.
 5. Descend as cleared by ATC.

ADOPI THREE MIKE
(ADOPI 3M) [ADOP3M]
RWYS 19L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED



LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 19R without delay.

Clearance limit is BAVAD holding.
Merging point is BAVAD.

Direct distance from BAVAD to:
Gardermoen Apt 16 NM

ROUTING

ADOPI (K250-) - EXUDA - GM428 (FL100; K220-) - GM429 - GM430 - GM431 - GM452 (FL100) - BAVAD (5000'+).

D-ATIS
126.125

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

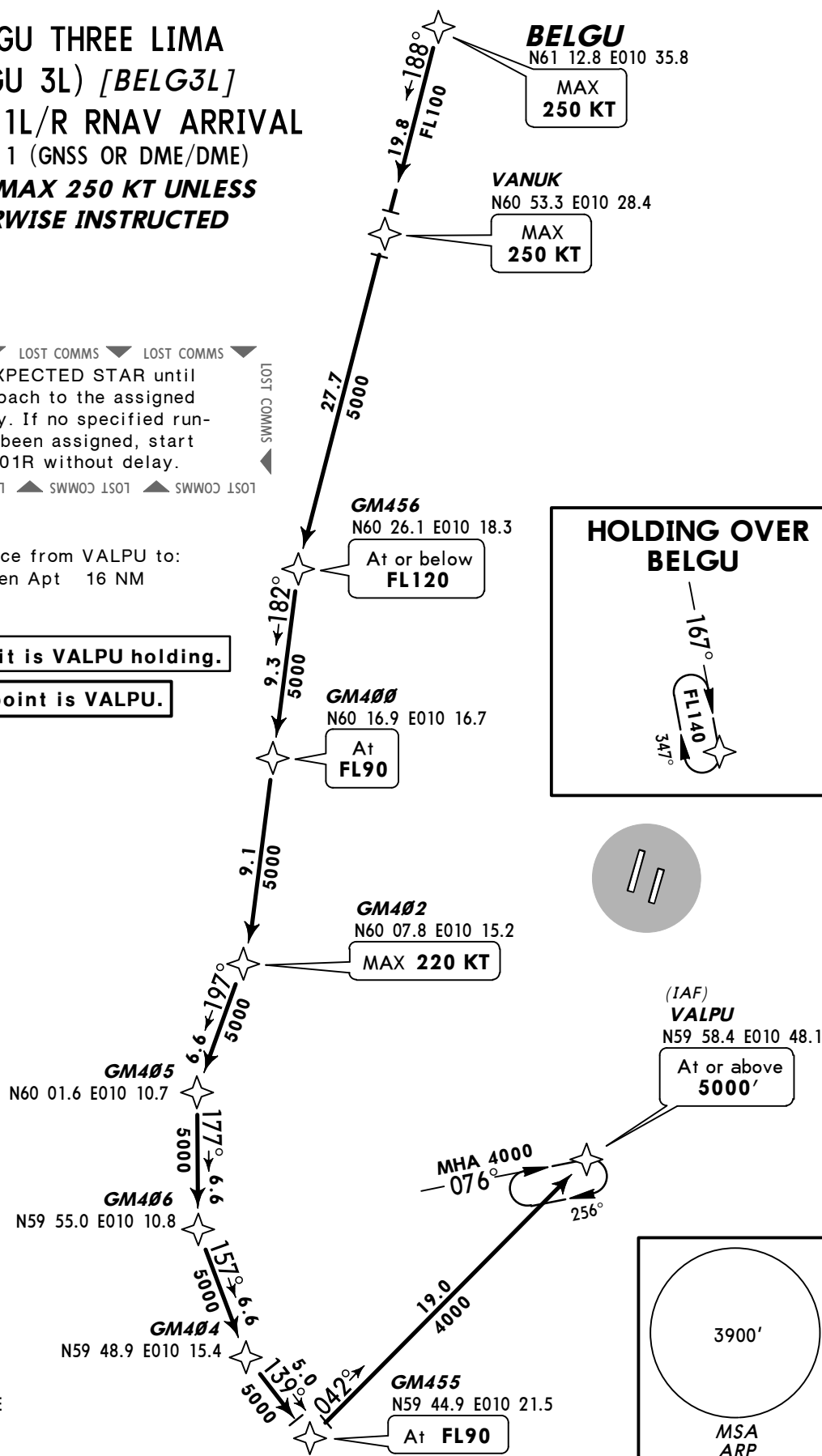
BELGU THREE LIMA
(BELGU 3L) [BELG3L]
RWYS 01L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT UNLESS
OTHERWISE INSTRUCTED

COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Follow cleared or EXPECTED STAR until
IAF, then start approach to the assigned
runway without delay. If no specified run-
way for landing has been assigned, start
approach to runway 01R without delay.
SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT

Direct distance from VALPU to:
Gardermoen Apt 16 NM

Clearance limit is VALPU holding.

Merging point is VALPU.



ROUTING

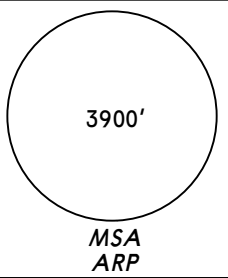
BELGU (K250-) - VANUK (K250-) - GM456 (FL120-) - GM400 (FL90) - GM402 (K220-) -
GM405 - GM406 - GM404 - GM455 (FL90) - VALPU (5000'+).

D-ATIS
126.125

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

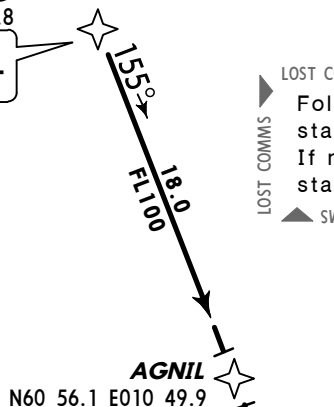


BELGU THREE MIKE (BELGU 3M) [BELG3M] RWYS 19L/R RNAV ARRIVAL RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

BELGU
N61 12.8 E010 35.8

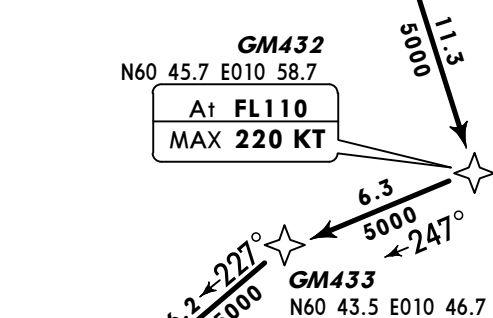
MAX
250 KT



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 19R without delay.
▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC

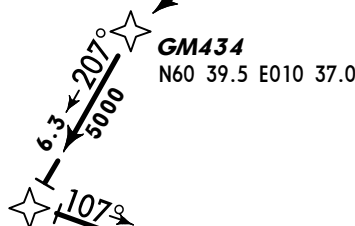
GM432
N60 45.7 E010 58.7

At FL110
MAX 220 KT



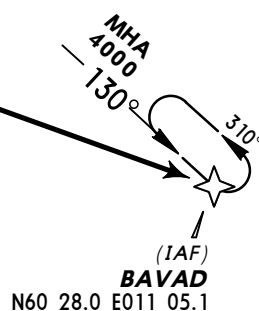
GM433
N60 43.5 E010 46.7

GM434
N60 39.5 E010 37.0



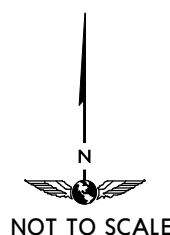
GM435
N60 34.0 E010 30.6

At
FL110



(IAF)
BAVAD
N60 28.0 E011 05.1

At or above
5000'



NOT TO SCALE

Clearance limit is BAVAD holding.

Merging point is BAVAD.

Direct distance from BAVAD to:
Gardermoen Apt 16 NM

HOLDING OVER BELGU



ROUTING

BELGU (K250-) - AGNIL - GM432 (FL110; K220-) - GM433 - GM434 - GM435 (FL110) - BAVAD (5000'+).

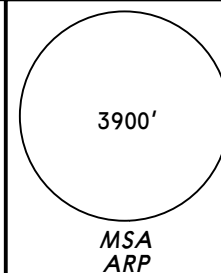
D-ATIS
126.125

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

ESEBA FOUR LIMA
(ESEBA 4L) [ESEB4L]
RWYS 01L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED



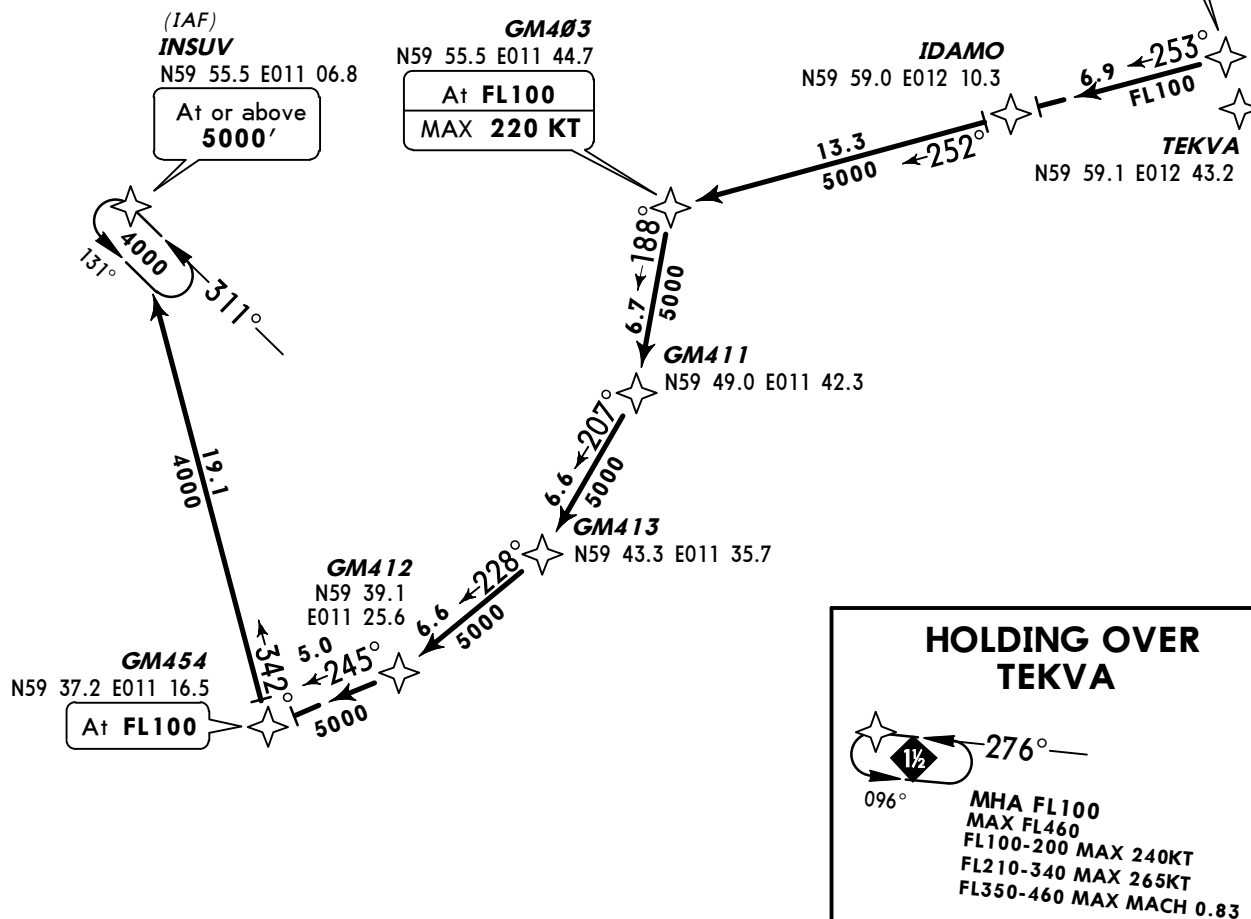
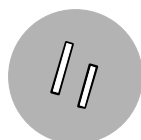
LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay.
If no specified runway for landing has been assigned, start approach to runway 01R without delay.
▲ SSWWOC LSOT ▲ SSWWOC LSOT ▲ SSWWOC LSOT ▲ SSWWOC LSOT ▲ SSWWOC



Direct distance from INSUV to:
Gardermoen Apt 17 NM

Clearance limit is INSUV holding.

Merging point is INSUV.



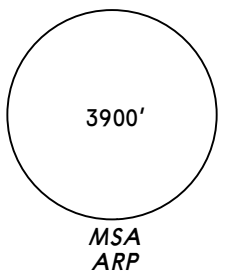
ROUTING

ESEBA (K250-) - IDAMO - GM403 (FL100; K220-) - GM411 - GM413 - GM412 - GM454 (FL100) - INSUV (5000'+).

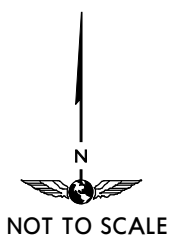
D-ATIS
126.125Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'

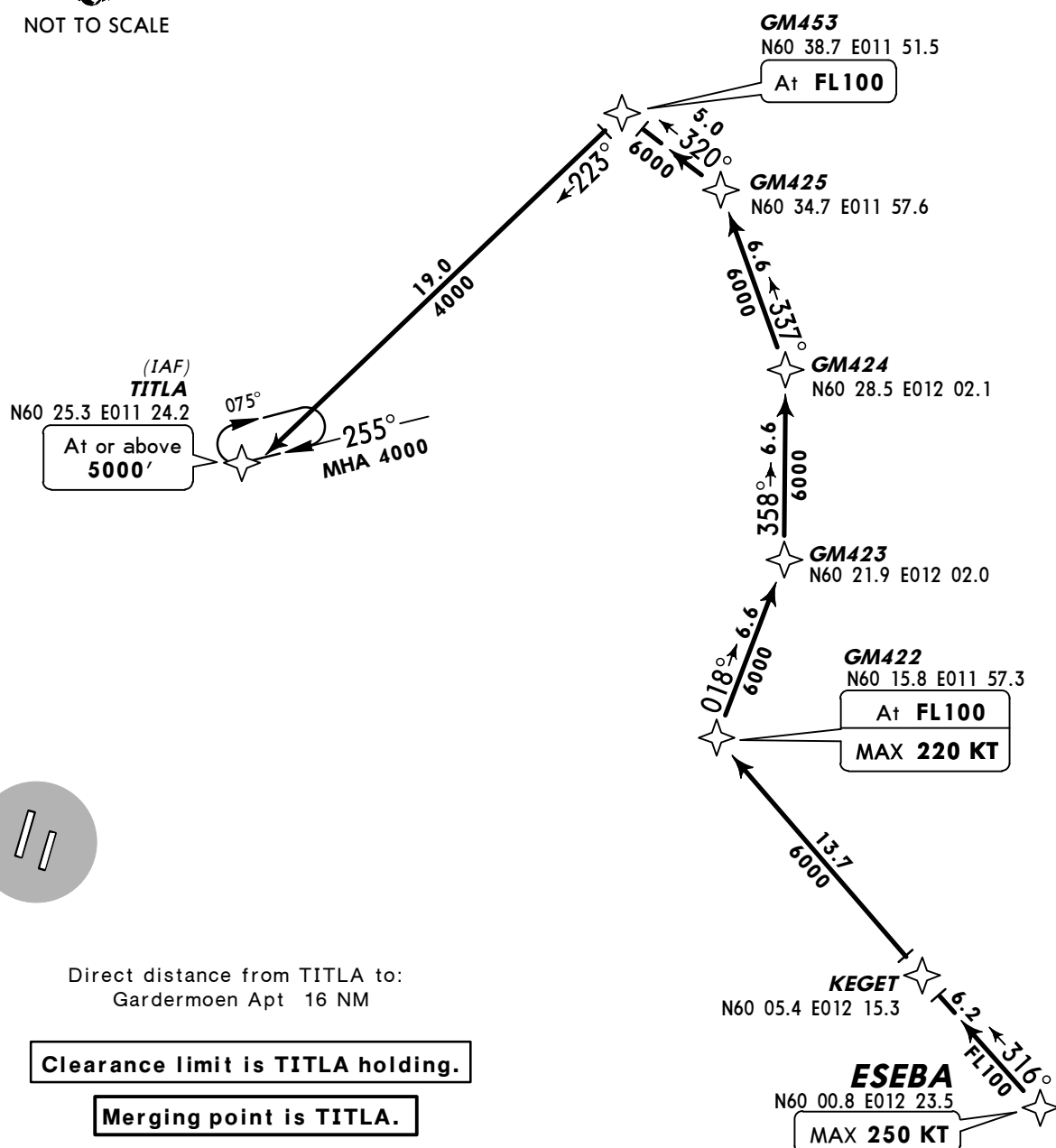
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.



ESEBA FOUR MIKE
(ESEBA 4M) [ESEB4M]
RWYS 19L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then
start approach to the assigned runway without delay.
If no specified runway for landing has been assigned,
start approach to runway 19R without delay.
▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC LSOT ▲ SWWOC



Direct distance from TITLA to:
Gardermoen Apt 16 NM

Clearance limit is TITLA holding.**Merging point is TITLA.****ROUTING**

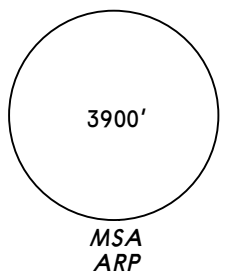
ESEBA (K250-) - KEGET - GM422 (FL100; K220-) - GM423 - GM424 - GM425 - GM453 (FL100) - TITLA (5000'+).

ROUTING	
INREX (K250-) - SUSIB (FL250-) - GM457 (FL120-) - GM401 (FL90) - GM403 (K220-) - GM411 - GM413 - GM412 - GM454 (FL90) - INSUV (5000'+).	

D-ATIS
126.125

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.



INREX FOUR MIKE
(INREX 4M) [INRE4M]
RWYS 19L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

INREX
N61 00.8 E012 13.0

MAX
250 KT

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Follow cleared or EXPECTED STAR until IAF, then
start approach to the assigned runway without delay.
If no specified runway for landing has been assigned,
start approach to runway 19R without delay.
▲ SWW00 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01

**HOLDING OVER
INREX**



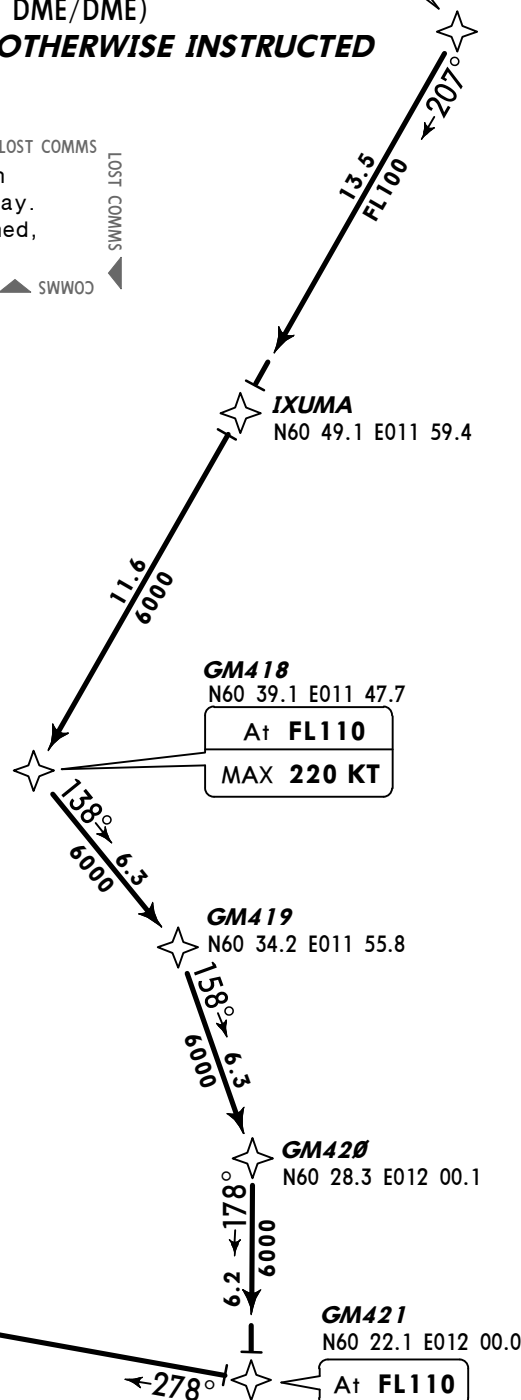
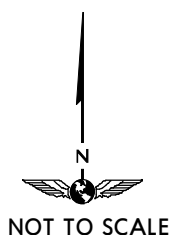
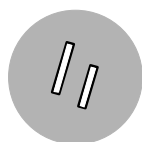
Direct distance from TITLA to:
Gardermoen Apt 16 NM

Clearance limit is TITLA holding.

Merging point is TITLA.

(IAF)
TITLA
N60 25.3 E011 24.2
At or above
5000'

MHA 4000
255°



ROUTING

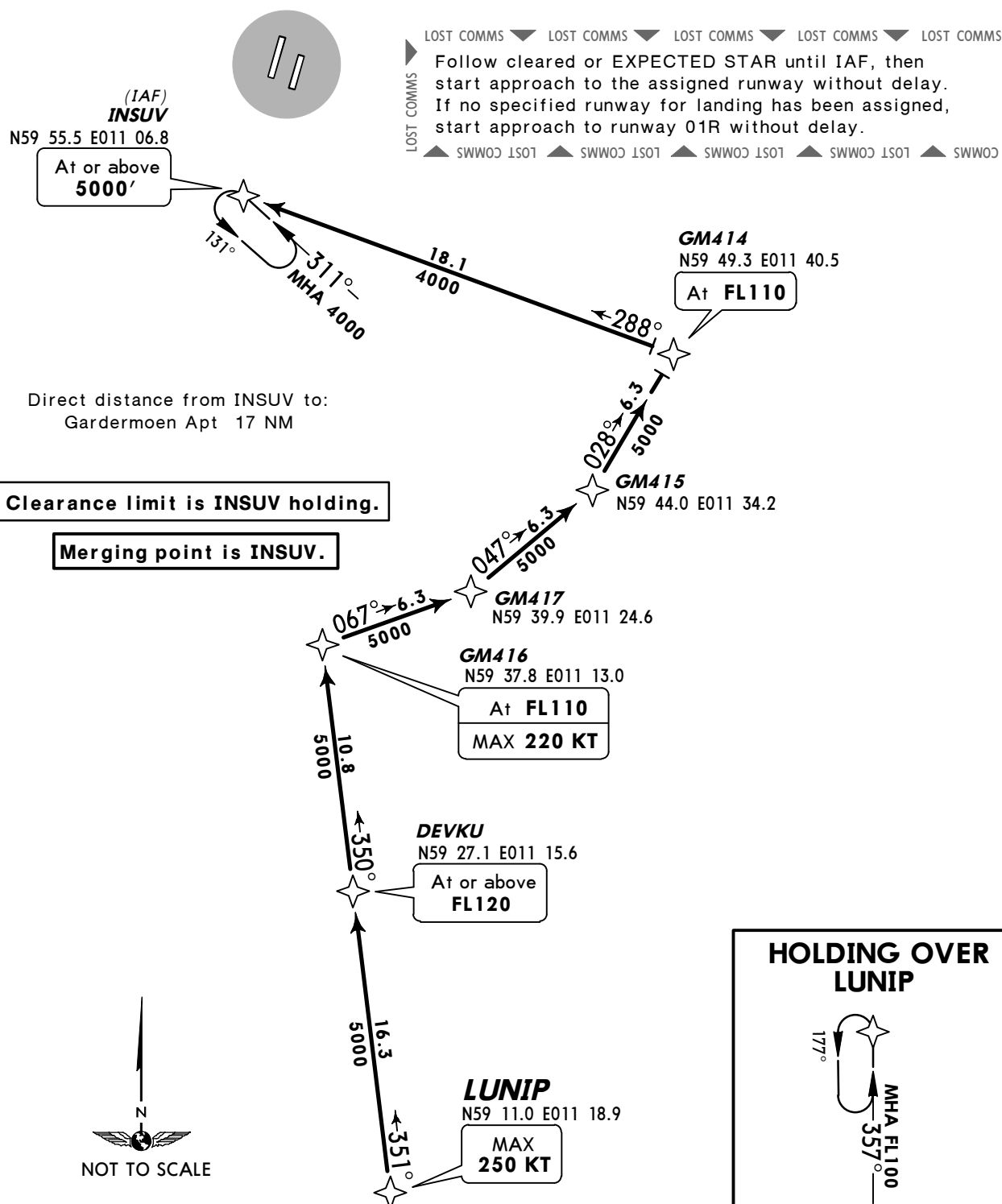
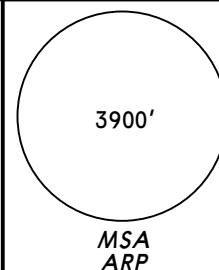
INREX (K250-) - IXUMA - GM418 (FL110; K220-) - GM419 - GM420 - GM421 (FL110) -
TITLA (5000'+).

D-ATIS
126.125Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

LUNIP FOUR LIMA
(LUNIP 4L) [LUN14L]
RWYS 01L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED**ROUTING**

LUNIP (K250-) - DEVKU (FL120+) - GM416 (FL110; K220-) - GM417 - GM415 - GM414 (FL110) - INSUV (5000+).

LUNIP FOUR MIKE (LUNIP 4M) [LUNI4M]
RWYS 19L/R RNAV ARRIVAL
 RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

HOLDING OVER LUNIP

075° 255°
 MHA 4000
 (IAF)
TITLA
 N60 25.3 E011 24.2
 At or above 5000'

Direct distance from TITLA to:
 Gardermoen Apt 16 NM

Clearance limit is TITLA holding.

Merging point is TITLA.

Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay.
 If no specified runway for landing has been assigned, start approach to runway 19R without delay.

ROUTING

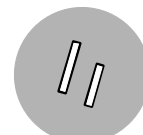
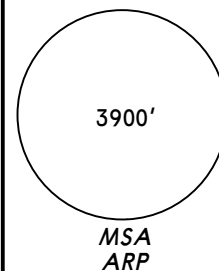
LUNIP (K250-) - DIDAX (K250-) - GM447 (FL120-) - GM426 (FL90) - GM422 (K220-) - GM423 - GM424 - GM425 - GM453 (FL90) - TITLA (5000'+).

D-ATIS
126.125Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'

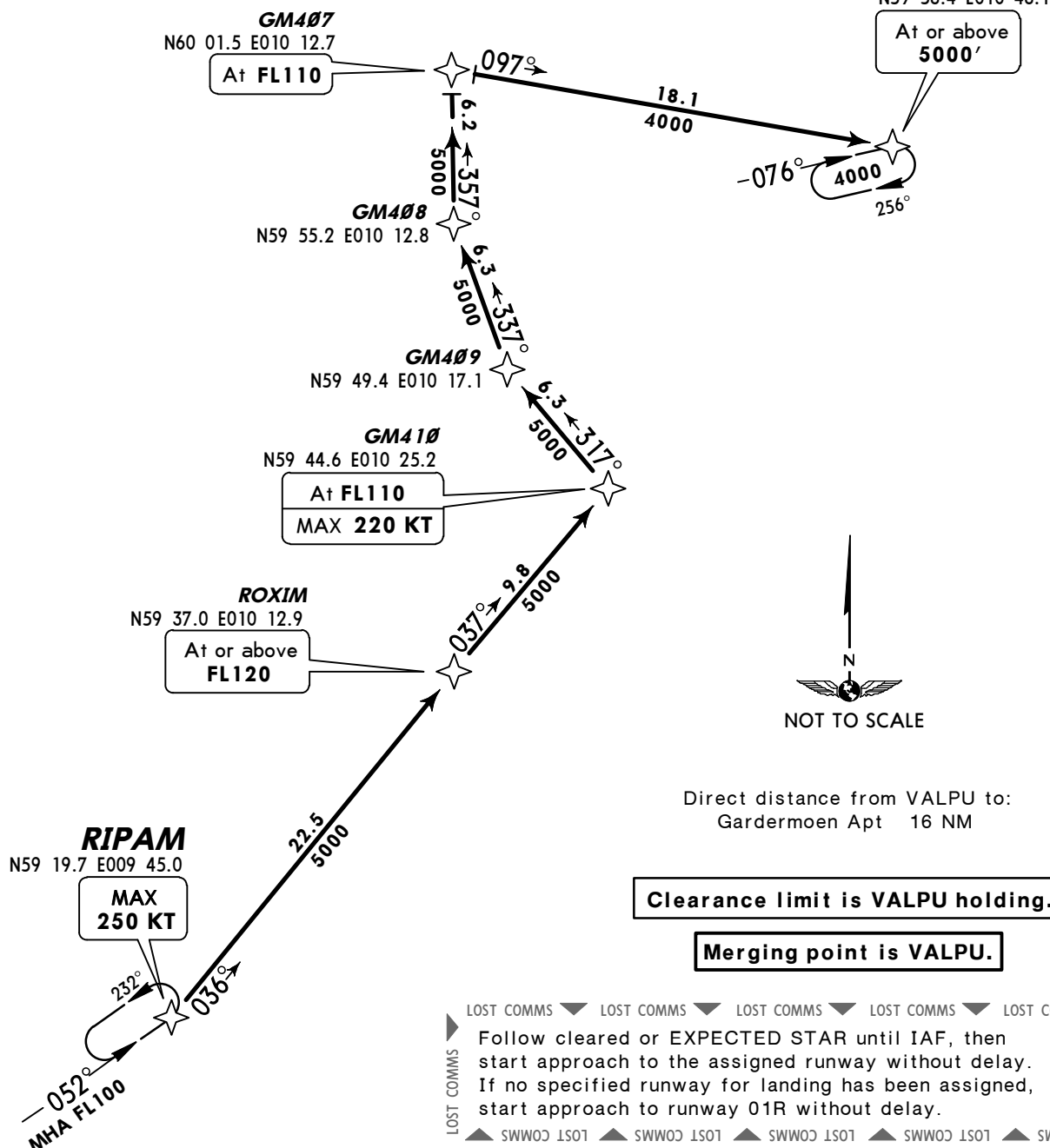
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

RIPAM THREE LIMA
(RIPAM 3L) [RIPA3L]
RWYS 01L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

(IAF)
VALPU
N59 58.4 E010 48.1

At or above
5000'

**Clearance limit is VALPU holding.****Merging point is VALPU.**

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

Follow cleared or EXPECTED STAR until IAF, then start approach to the assigned runway without delay.
If no specified runway for landing has been assigned, start approach to runway 01R without delay.

LOST COMMS ▲ SWW00 LOST COMMS ▲ SWW00 LOST COMMS ▲ SWW00 LOST COMMS ▲ SWW00

ROUTING

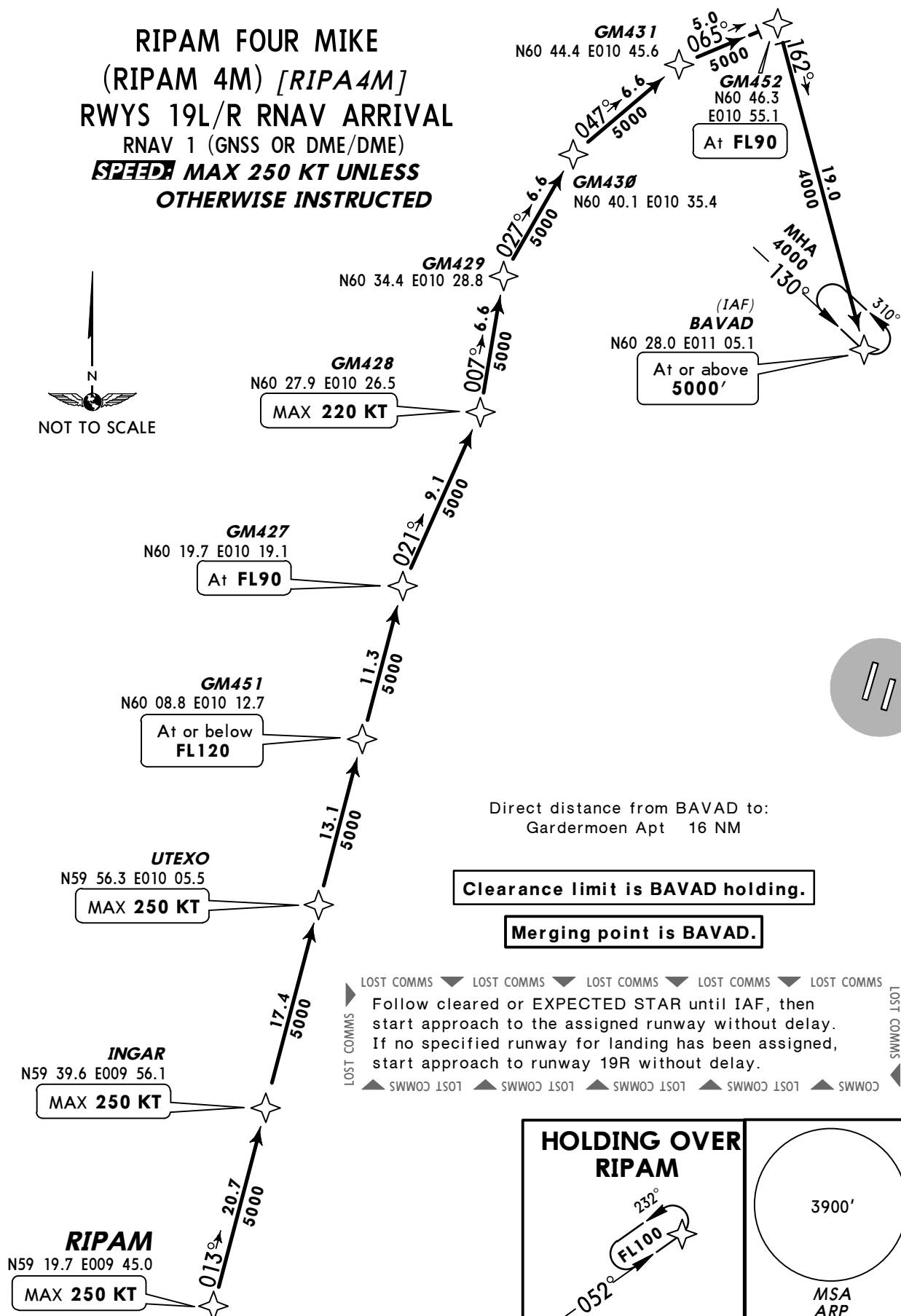
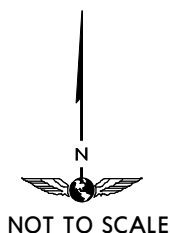
RIPAM (K250-) - ROXIM (FL120+) - GM410 (FL110; K220-) - GM409 - GM408 - GM407 (FL110) - VALPU (5000+).

D-ATIS
126.125

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Loss of RNAV capability, request vectoring.
4. Vectoring may be used when necessary.
5. Descend as cleared by ATC.

RIPAM FOUR MIKE
(RIPAM 4M) [RIPA4M]
RWYS 19L/R RNAV ARRIVAL
RNAV 1 (GNSS OR DME/DME)
**~~SPEED~~ MAX 250 KT UNLESS
OTHERWISE INSTRUCTED**



ROUTING

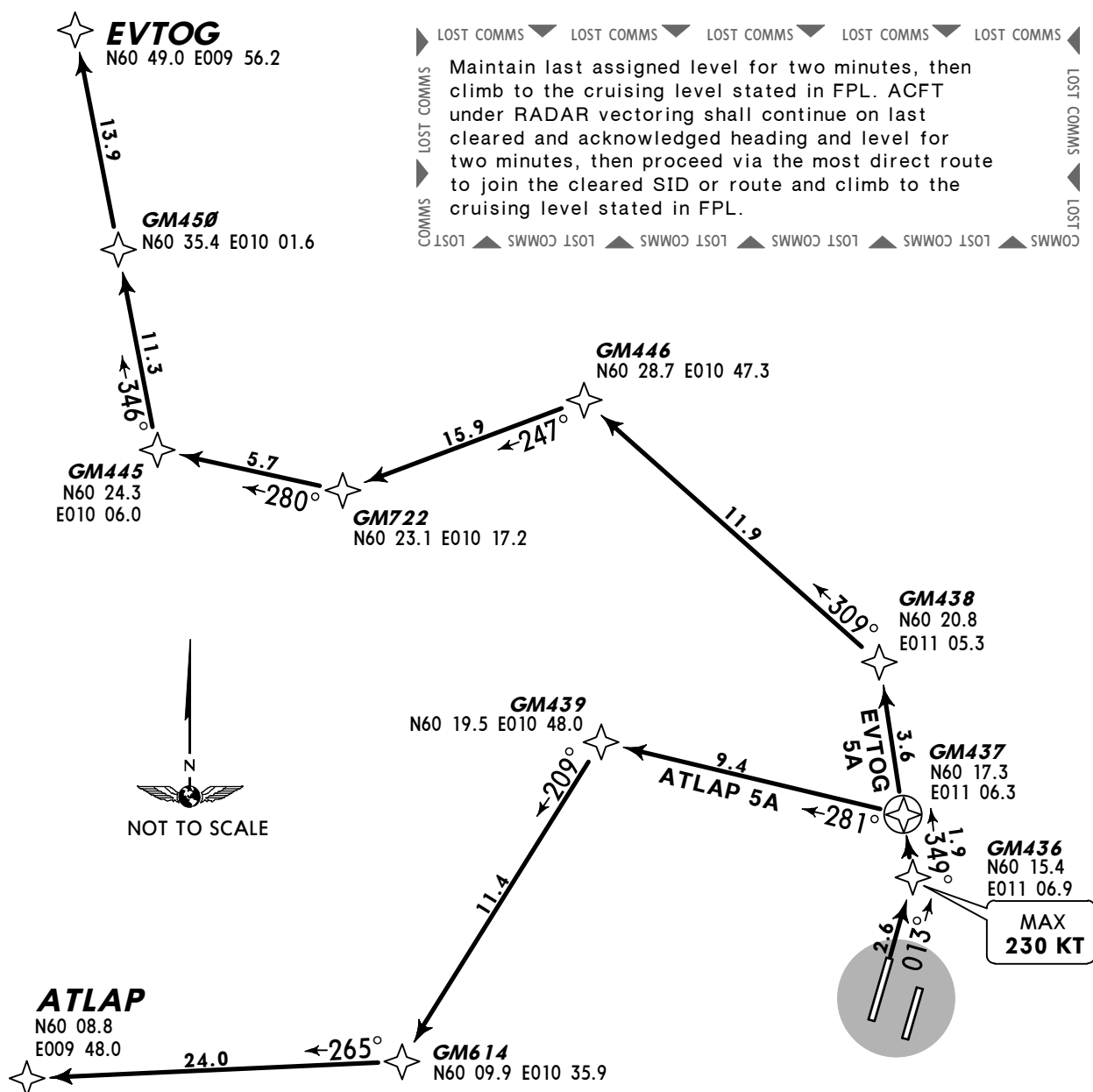
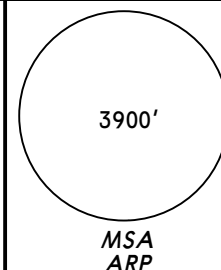
RIPAM (K250-) - INGAR (K250-) - UTEXO (K250-) - GM451 (FL120-) - GM427 (FL90) - GM428 (K220-) - GM429 - GM430 - GM431 - GM452 (FL90) - BAVAD (5000'+).

OSLO Approach
120.450

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

**ATLAP FIVE ALFA (ATLAP 5A) [ATLA5A]
EVT OG FIVE ALFA (EVT OG 5A) [EVTO5A]
RWY 01L RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
**~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED****



These SIDs require a minimum climb gradient of 316' per NM (5.2%) up to 5000'.

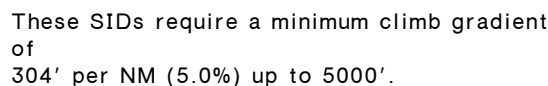
Gnd speed-KT	75	100	150	200	250	300
316' per NM	395	527	790	1053	1317	1580

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
ATLAP 5A	On 013° track to GM436 (K230-) - GM437 - GM439 - GM614 - ATLAP.
EVT OG 5A	On 013° track to GM436 (K230-) - GM437 - GM438 - GM446 - GM722 - GM445 - GM450 - EVT OG.

ATLAP EIGHT BRAVO (ATLAP 8B) <i>[ATLA8B]</i> EVTOG EIGHT BRAVO (EVTOG 8B) <i>[EVTO8B]</i> RWY 01R RNAV DEPARTURES RNAV 1 (GNSS OR DME/DME) <i>SPEED MAX 250 KT BELOW FL100</i> <i>UNLESS OTHERWISE INSTRUCTED</i>	 3900' MSA ARP
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If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

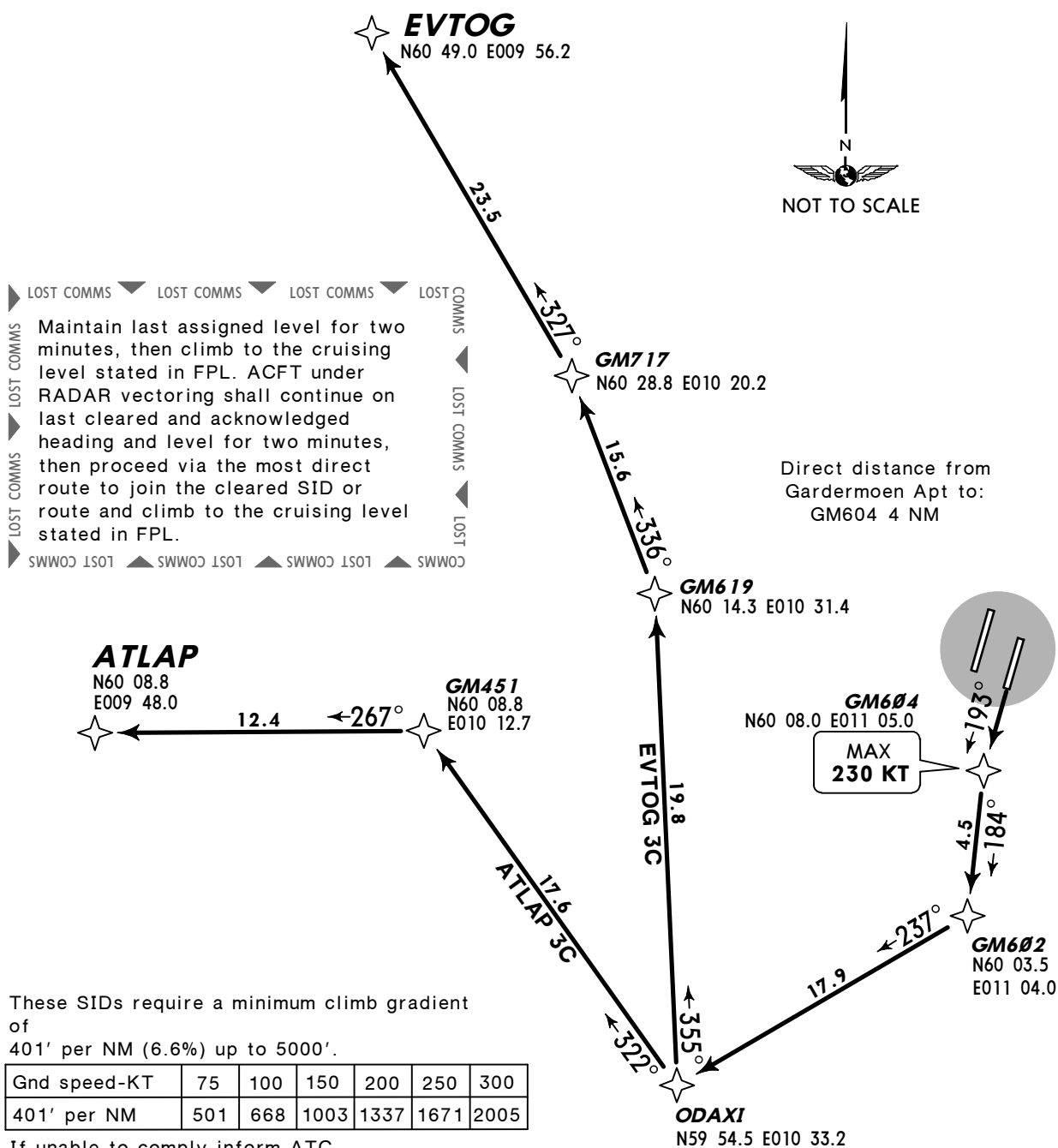
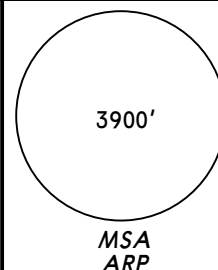
CHANGES: RNAV SIDs renumbered & revised.

OSLO Approach
120.450Apt Elev
681'

Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

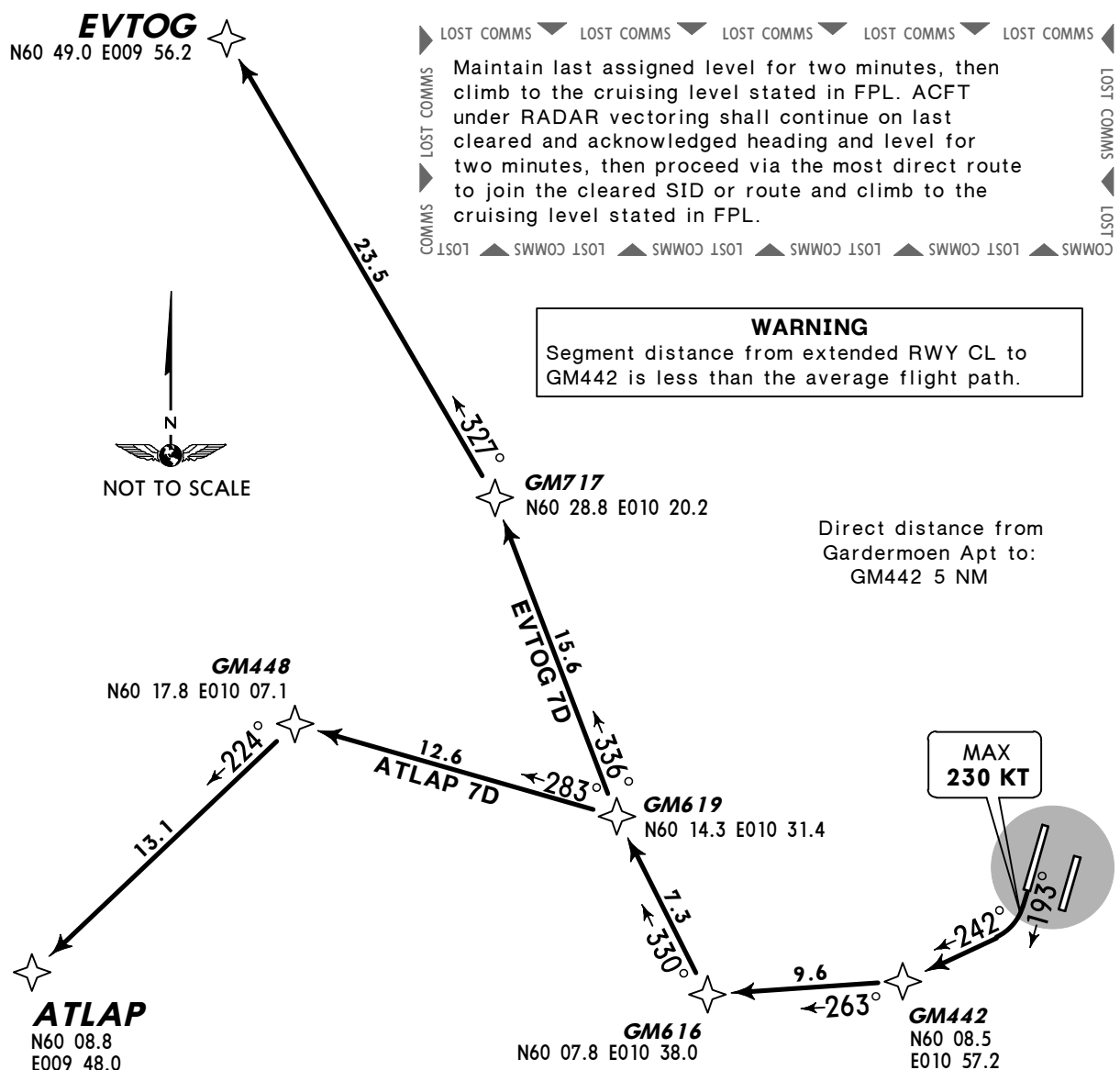
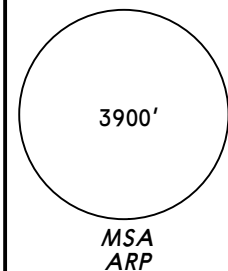
ATLAP THREE CHARLIE (ATLAP 3C)[ATLA3C]
EVT OG THREE CHARLIE (EVT OG 3C)[EVTO3C]
RWY 19L RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
ATLAP 3C	On 193° track to GM604 (K230-) - GM602 - ODAXI - GM451 - ATLAP.
EVT OG 3C	On 193° track to GM604 (K230-) - GM602 - ODAXI - turn RIGHT to GM619 - GM717 - EVT OG.

OSLO Approach 120.450	Apt Elev 681'	Trans level: By ATC Trans alt: 7000' 1. Class A GNSS shall not be used. 2. RADAR service shall be available. 3. Contact OSLO Approach when instructed by GARDERMOEN Tower. 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available. 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.
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**ATLAP SEVEN DELTA (ATLAP 7D)[ATLA7D]
EVT OG SEVEN DELTA (EVT OG 7D)[EVTO7D]
RWY 19R RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**



These SIDs require a minimum climb gradient of 401' per NM (6.6%) up to 5000'.

Gnd speed-KT	75	100	150	200	250	300
401' per NM	501	668	1003	1337	1671	2005

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

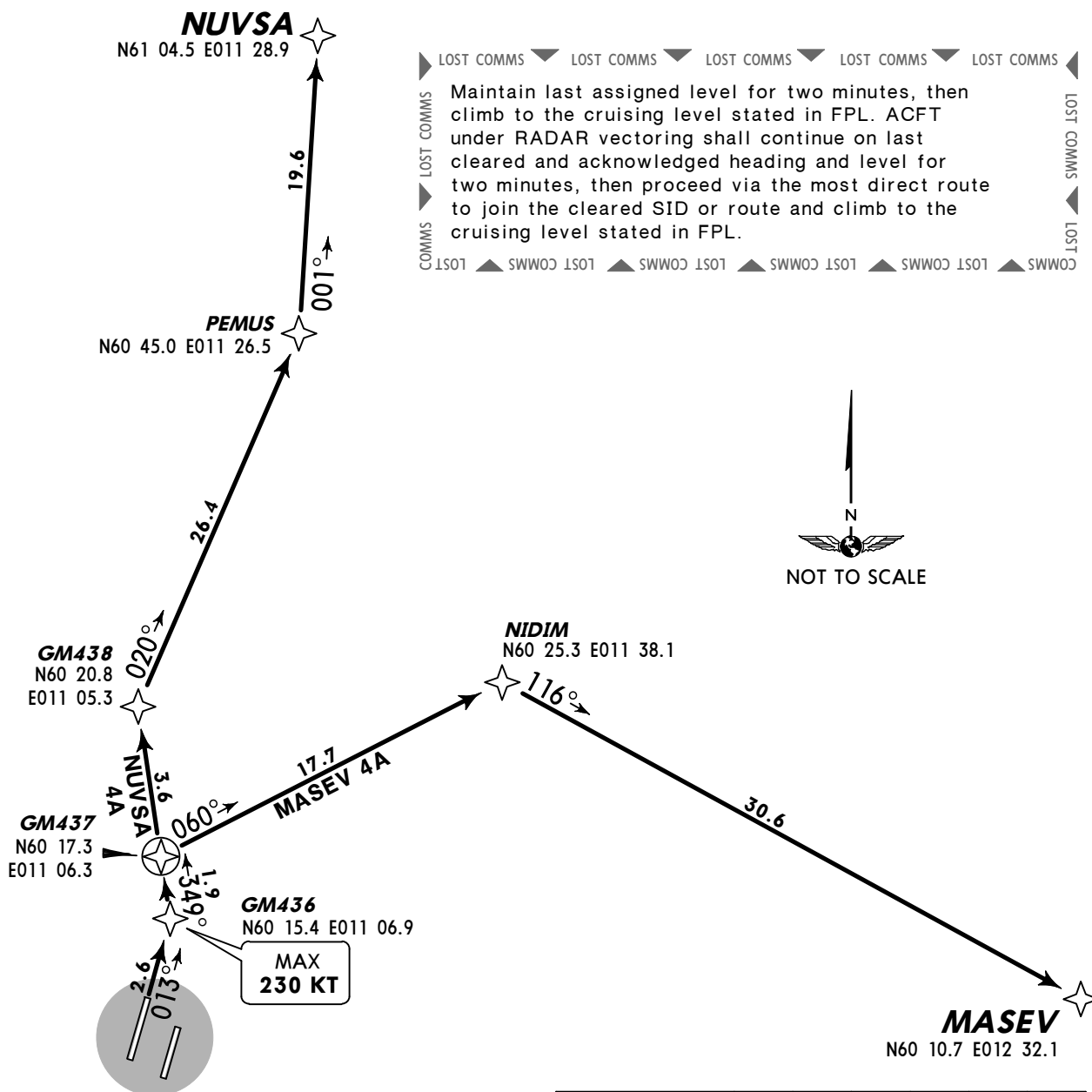
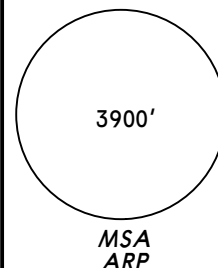
SID	ROUTING
ATLAP 7D	Climb on 193° track, 242° track to GM442 - GM616 - GM619 - GM448 - ATLAP.
EVT OG 7D	Climb on 193° track, 242° track to GM442 - GM616 - GM619 - GM717 - EVT OG.

OSLO Approach
118.475

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

**MASEV FOUR ALFA (MASEV 4A) [MASE4A]
NUVSA FOUR ALFA (NUVSA 4A) [NUVS4A]
RWY 01L RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**



These SIDs require a minimum climb gradient of 316' per NM (5.2%) up to 5000'.

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

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

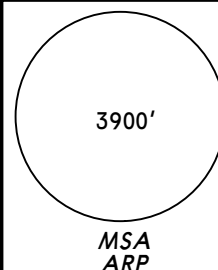
SID	ROUTING
MASEV 4A	On 013° track to GM436 (K230-) - GM437 - NIDIM - MASEV.
NUVSA 4A	On 013° track to GM436 (K230-) - GM437 - GM438 - PEMUS - NUVSA.

OSLO Approach
118.475Apt Elev
681'

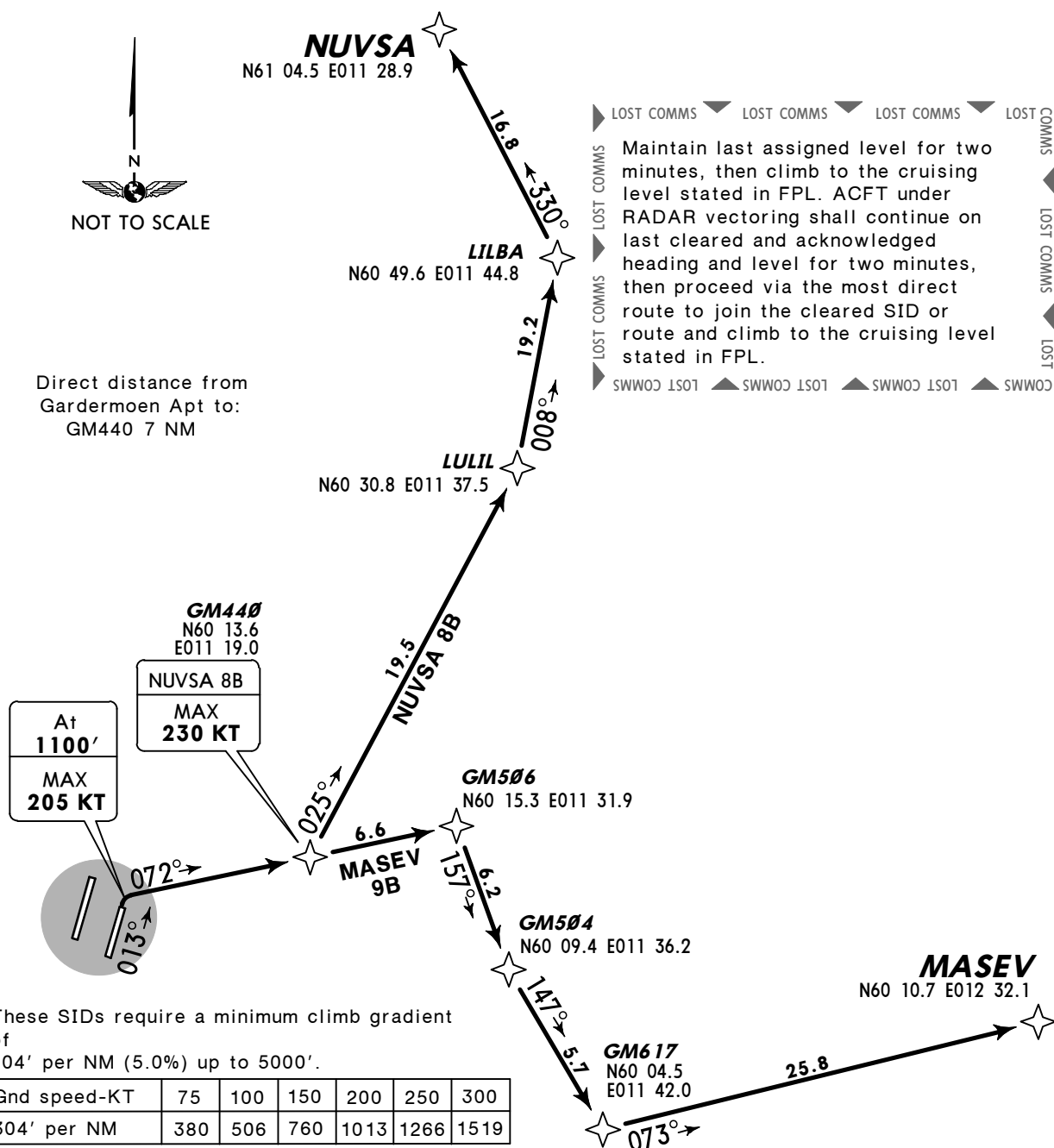
Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

**MASEV NINE BRAVO (MASEV 9B) [MASE9B]
NUVSA EIGHT BRAVO (NUVSA 8B) [NUVS8B]
RWY 01R RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ **MAX 250 KT BELOW FL100**
UNLESS OTHERWISE INSTRUCTED**



Direct distance from
Gardermoen Apt to:
GM440 7 NM



These SIDs require a minimum climb gradient
of
304' per NM (5.0%) up to 5000'.

Gnd speed-KT	75	100	150	200	250	300
304' per NM	380	506	760	1013	1266	1519

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
MASEV 9B	Climb on 013° track to 1100', turn RIGHT (K205-), 072° track to GM506 - GM504 - GM617 - MASEV.
NUVSA 8B	Climb on 013° track to 1100', turn RIGHT (K205-), 072° track to GM440 (K230-) - LULIL - LILBA - NUVSA.

OSLO Approach
118.475Apt Elev
681'

Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

MASEV FIVE CHARLIE (MASEV 5C) [MASE5C]
NUVSA FOUR CHARLIE (NUVSA 4C) [NUVS4C]
RWY 19L RNAV DEPARTURES
RNAV 1 (GNSS OR (DME/DME))
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED

3900'

MSA
ARP

NUVSA ☆
N61 04.5 E011 28.9

16.8 → 330°

LILBA ☆
N60 49.6 E011 44.8

**WARNING**

Do not comply with PANS-OPS criteria for minimum distance to first waypoint (GM604). The crew must monitor the first turn to ensure it is not initiated below 1100'.

Direct distance from
Gardermoen Apt to:
GM604 4 NM

▶ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Maintain last assigned level for two minutes, then climb to the cruising level stated in FPL. ACFT under RADAR vectoring shall continue on last cleared and acknowledged heading and level for two minutes, then proceed via the most direct route to join the cleared SID or route and climb to the cruising level stated in FPL.

▶ SWW0C 1S01 ▲ SWW0C 1S01 ▲ SWW0C 1S01 ▲ SWW0C 1S01

GM604 ☆
N60 08.0 E011 05.0

193° → 6.5

MAX 230 KT

131° → 9.0

GM444 ☆
N60 03.6 E011 14.4

NIDIM ☆
N60 25.3 E011 38.1

005° → 24.5

16.3 → 017°

NUVSA 4C ☆

10.6 → 048°

MASEV 5C ☆

VIBUK ☆
N60 10.0 E011 26.9

GM508 ☆
N60 16.7 E011 43.4

GM422 ☆
N60 15.8 E011 57.3

MASEV ☆
N60 10.7 E012 32.1

These SIDs require a minimum climb gradient of 401' per NM (6.6%) up to 5000'.

Gnd speed-KT	75	100	150	200	250	300
401' per NM	501	668	1003	1337	1671	2005

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID**ROUTING****MASEV 5C**

On 193° track to GM604 (K230-) - GM444 - turn LEFT to VIBUK - GM508 - GM422 - MASEV.

NUVSA 4C

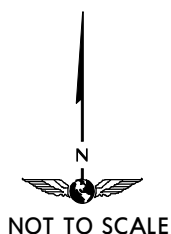
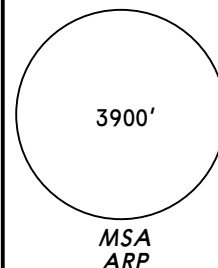
On 193° track to GM604 (K230-) - GM444 - turn LEFT to VIBUK - NIDIM - LILBA - NUVSA.

OSLO Approach
120.450

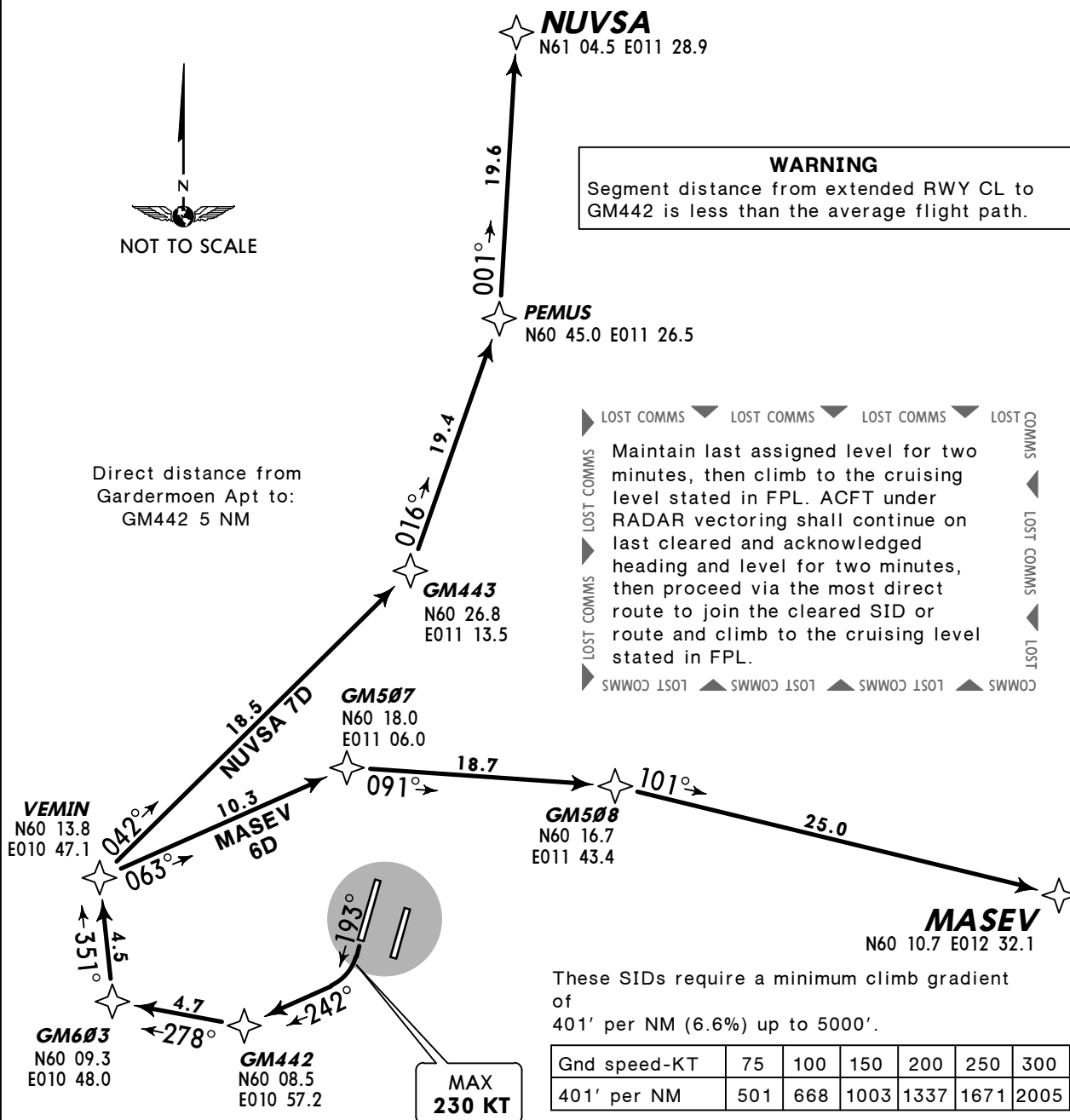
Apt Elev
681'

- Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
 2. RADAR service shall be available.
 3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

**MASEV SIX DELTA (MASEV 6D) [MASE6D]
NUVSA SEVEN DELTA (NUVSA 7D) [NUVS7D]
RWY 19R RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**



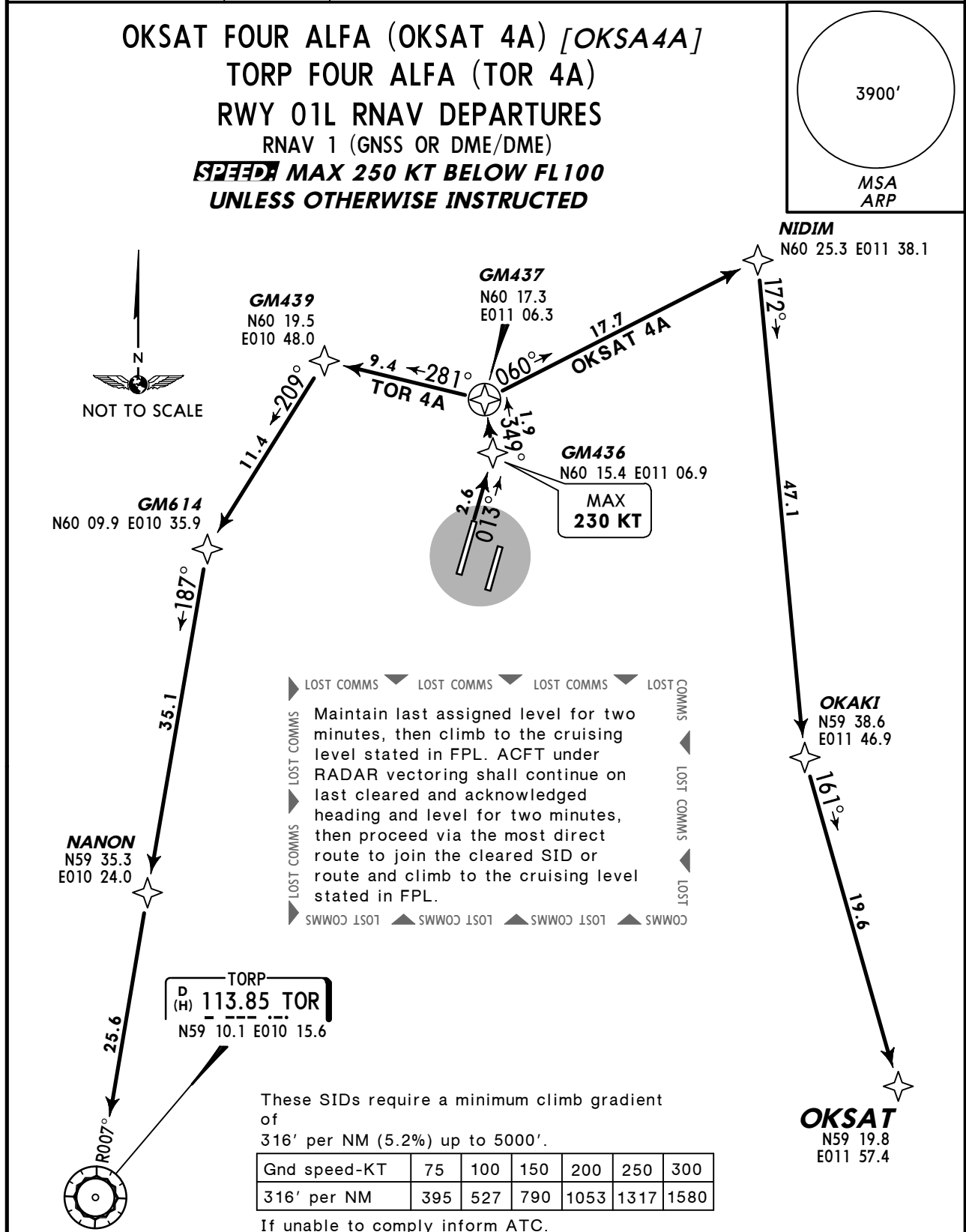
Direct distance from
Gardermoen Apt to:
GM442 5 NM



Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

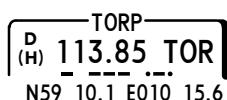
SID	ROUTING
MASEV 6D	Climb on 193° track, 242° track to GM442 - GM603 - VEMIN - GM507 - GM508 - MASEV.
NUVSA 7D	Climb on 193° track, 242° track to GM442 - GM603 - VEMIN - GM443 - PEMUS - NUVSA.

OSLO Approach (OKSAT 4A) 118.475 (TOR 4A) 120.450	Apt Elev 681'	Trans level: By ATC Trans alt: 7000' 1. Class A GNSS shall not be used. 2. RADAR service shall be available. 3. Contact OSLO Approach when instructed by GARDERMOEN Tower. 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available. 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.
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Initial climb clearance 7000' , EXPECT further climb by OSLO Approach.	
SID	ROUTING
OKSAT 4A	On 013° track to GM436 (K230-) - GM437 - NIDIM - turn RIGHT to OKAKI - OKSAT.
TOR 4A	On 013° track to GM436 (K230-) - GM437 - GM439 - GM614 - NANON - TOR.

OKSAT NINE BRAVO (OKSAT 9B) [OKSA9B]
TORP EIGHT BRAVO (TOR 8B)
RWY 01R RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
SPEED MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED



Gnd speed-KT	75	100	150	200	250	300
304' per NM	380	506	760	1013	1266	1519

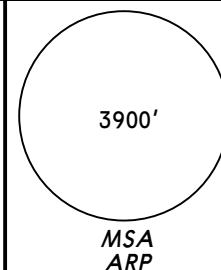
If unable to comply inform ATC.

SID	ROUTING
OXSAT 9B	Climb on 013° track to 1100', turn RIGHT (K205-), 072° track to GM506 - GM504 - GM503 - OKAKI - OXSAT.
TOR 8B	Climb on 013° track to 1100', turn RIGHT (K205-), 072° track to GM440 (K230-), turn RIGHT to GM441 - KUBUB - TOR.

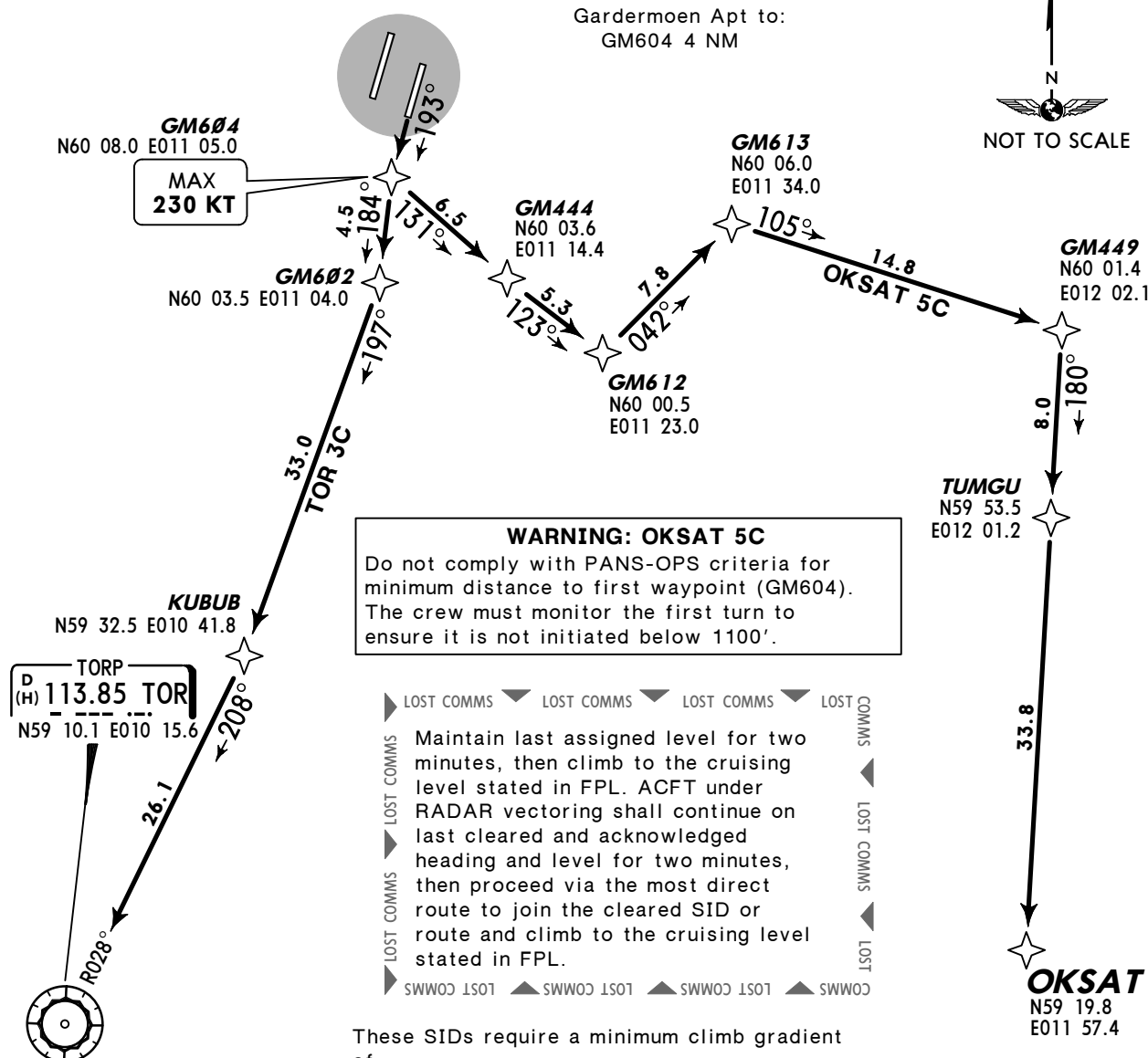
OSLO Approach
118.475Apt Elev
681'

- Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
 2. RADAR service shall be available.
 3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

OKSAT FIVE CHARLIE (OKSAT 5C)[OKSA5C]
TORP THREE CHARLIE (TOR 3C)
RWY 19L RNAV DEPARTURES
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED



Direct distance from
Gardermoen Apt to:
GM604 4 NM



These SIDs require a minimum climb gradient
of
401' per NM (6.6%) up to 5000'.

Gnd speed-KT	75	100	150	200	250	300
401' per NM	501	668	1003	1337	1671	2005

If unable to comply inform ATC.

Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
OKSAT 5C	On 193° track to GM604 (K230-) - GM444 - GM612 - GM613 - GM449 - TUMGU - OKSAT.
TORP 3C	On 193° track to GM604 (K230-) - GM602 - KUBUB - TORP.

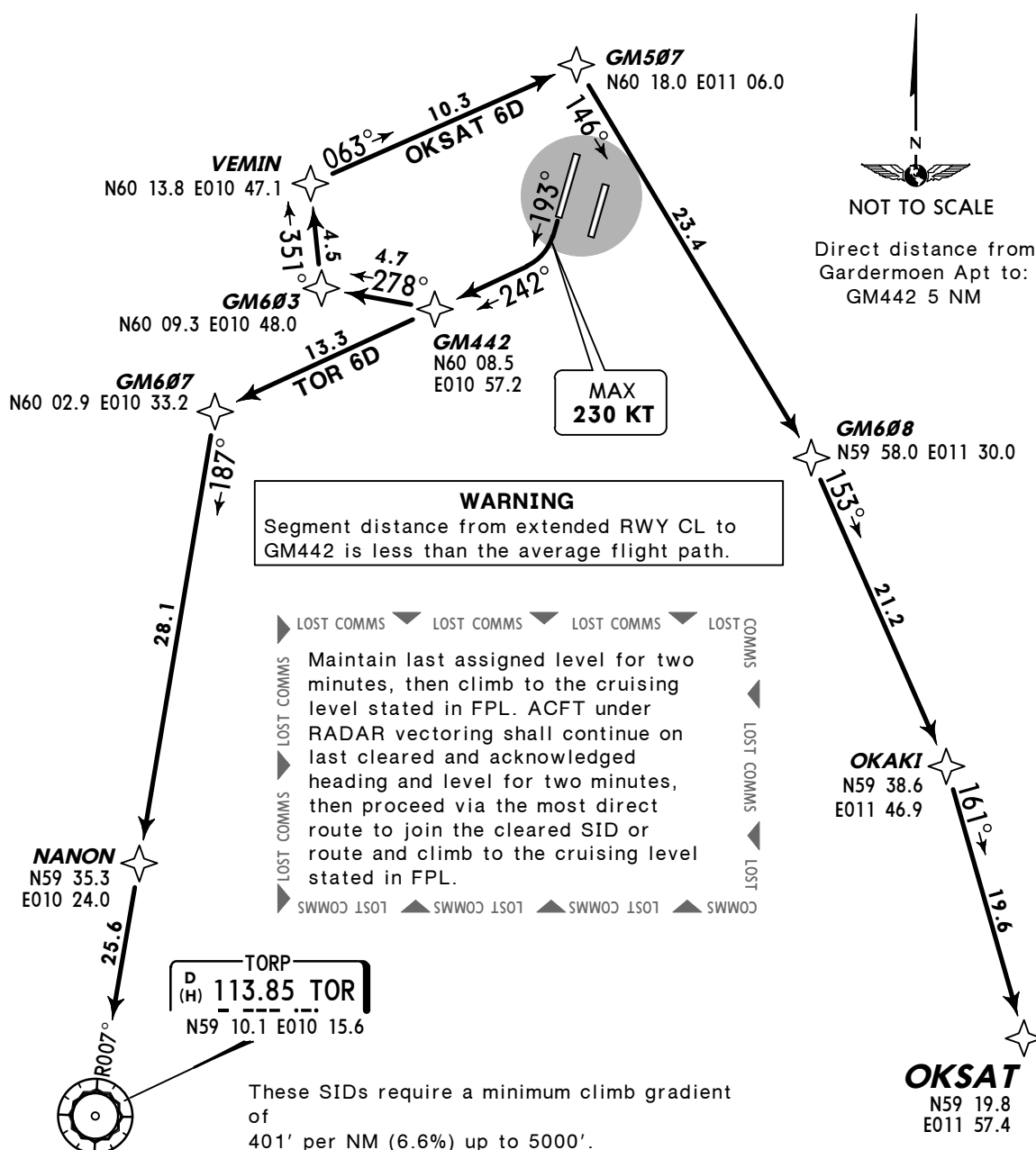
Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.



3900'

MSA
ARP



Gnd speed-KT	75	100	150	200	250	300
401' per NM	501	668	1003	1337	1671	2005

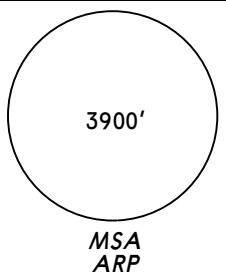
Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
OKSAT 6D	Climb on 193° track, 242° track to GM442 - GM603 - VEMIN - GM507 - GM608 - OKAKI - OKSAT.
TOR 6D	Climb on 193° track, 242° track to GM442 - GM607 - NANON - TOR.

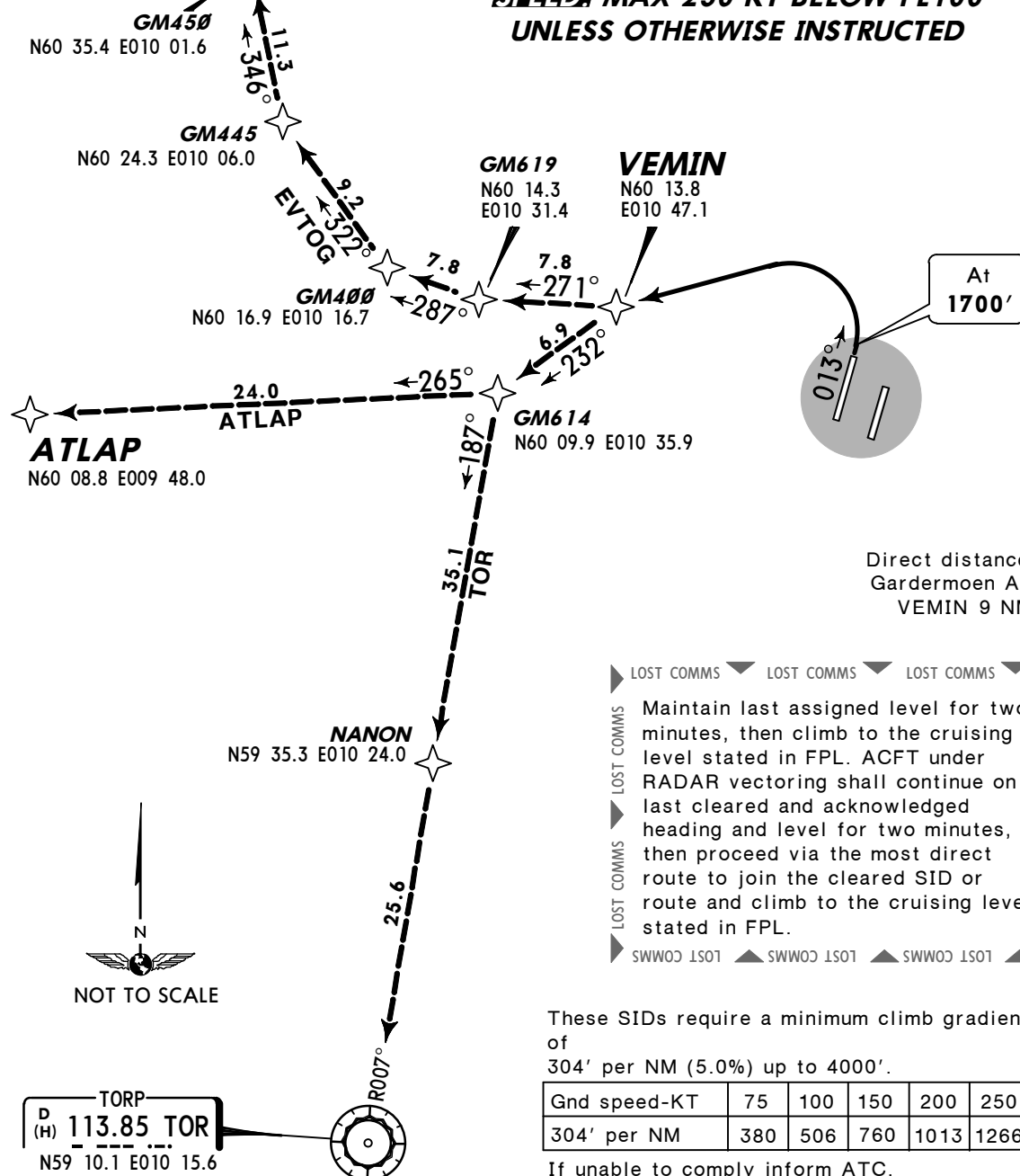
OSLO Approach
120.450Apt Elev
681'

Trans level: By ATC Trans alt: 7000'

1. Class A GNSS shall not be used.
2. RADAR service shall be available.
3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

**EVTOG**N60 49.0
E009 56.2**VEMIN FOUR ALFA (VEMIN 4A) [VEMI4A]****RWY 01L RNAV PROP DEPARTURE****ATLAP, EVTOG, TOR****RNAV TRANSITIONS**

RNAV 1 (GNSS OR DME/DME)

~~SPEED~~ MAX 250 KT BELOW FL100**UNLESS OTHERWISE INSTRUCTED**Initial climb clearance **4000'**, EXPECT further climb by OSLO Approach.**ROUTING**

Climb on 013° track to 1700', turn LEFT to VEMIN.

TRANSITION**ROUTING****ATLAP**

VEMIN - GM614 - ATLAP.

EVTOG

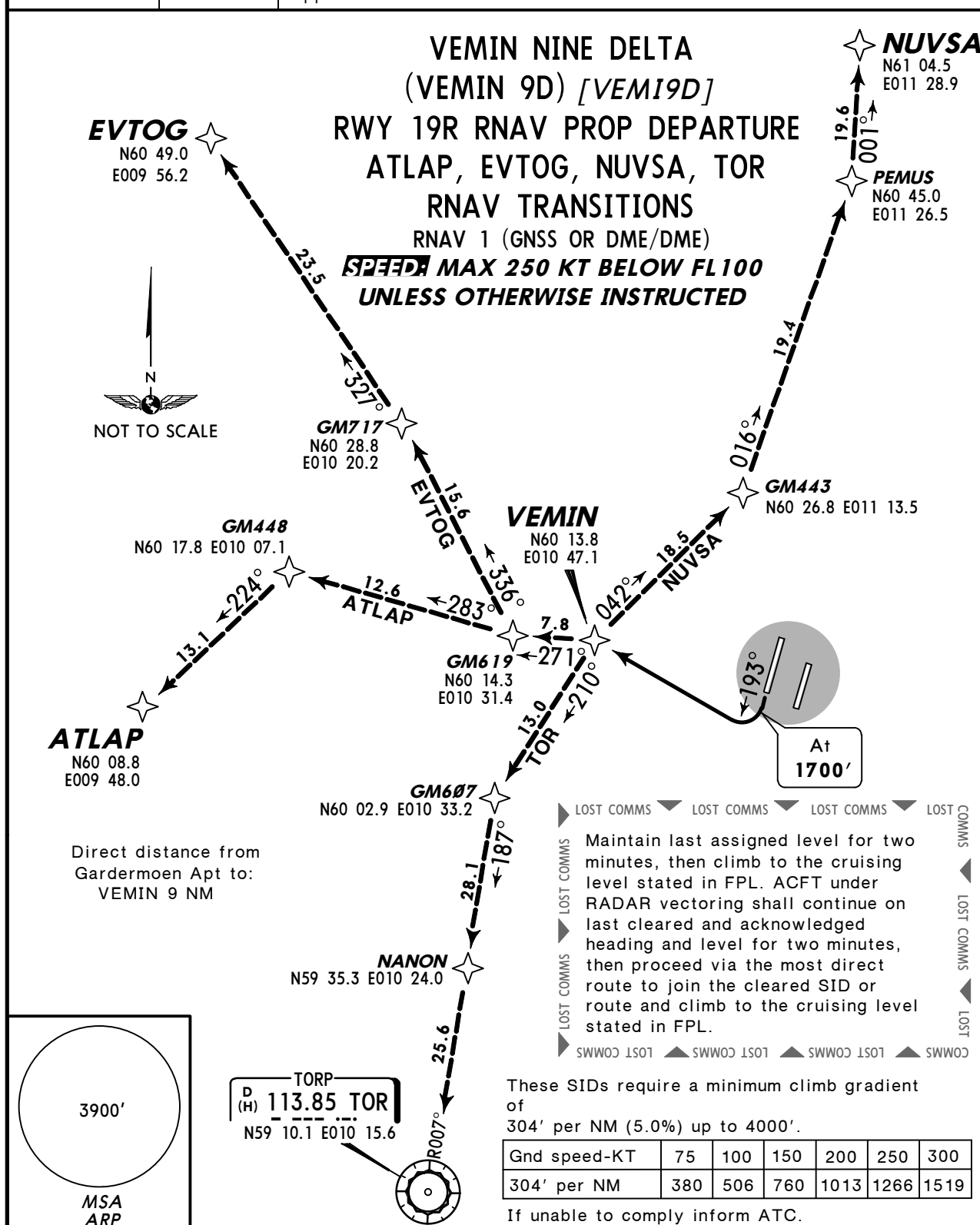
VEMIN - GM619 - GM400 - GM445 - GM450 - EVTOG.

TOR

VEMIN - GM614 - NANON - TOR.

OSLO Approach
120.450Apt Elev
681'

- Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
 2. RADAR service shall be available.
 3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

Initial climb clearance **4000'**, EXPECT further climb by OSLO Approach.**ROUTING**

Climb on 193° track to 1700', turn RIGHT to VEMIN.

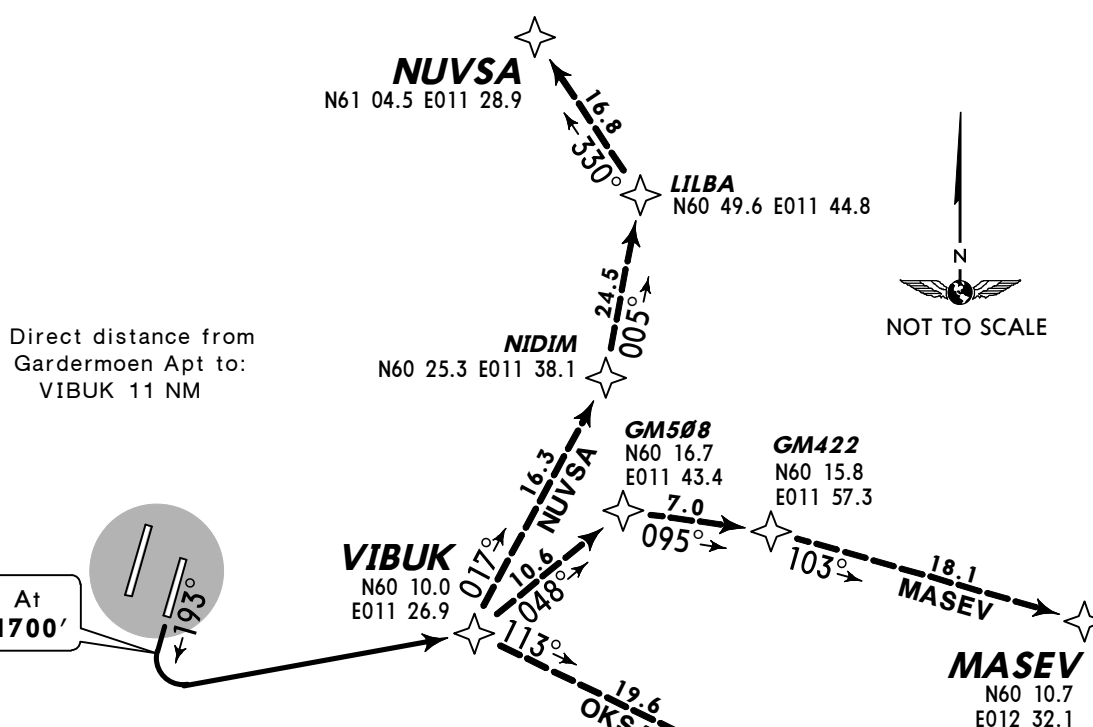
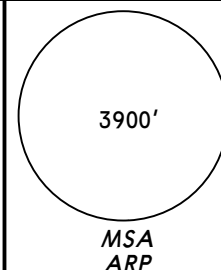
TRANSITION**ROUTING**

ATLAP	VEMIN - GM619 - GM448 - ATLAP.
EVTOG	VEMIN - GM619 - GM717 - EVTOG.
NUVSA	VEMIN - GM443 - PEMUS - NUVSA.
TOR	VEMIN - GM607 - NANON - TOR.

OSLO Approach
118.475Apt Elev
681'

- Trans level: By ATC Trans alt: 7000'
1. Class A GNSS shall not be used.
 2. RADAR service shall be available.
 3. Contact OSLO Approach when instructed by GARDERMOEN Tower.
 4. Non RNAV 1 equipped ACFT: at first contact with GARDERMOEN Delivery state 'Unable RNAV 1'. Omnidirectional departure available.
 5. Enroute cruising level will be issued after take-off by OSLO Approach or OSLO Control.

VIBUK FOUR CHARLIE (VIBUK 4C) [VIBU4C]
RWY 19L RNAV PROP DEPARTURE
MASEV, NUVSA, OKSAT
RNAV TRANSITIONS
RNAV 1 (GNSS OR DME/DME)
~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED



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

LOST COMMS
Maintain last assigned level for two minutes, then climb to the cruising level stated in FPL. ACFT under RADAR vectoring shall continue on last cleared and acknowledged heading and level for two minutes, then proceed via the most direct route to join the cleared SID or route and climb to the cruising level stated in FPL.

COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲ SWWOC LOST COMMS ▲

These SIDs require a minimum climb gradient of 304' per NM (5.0%) up to 4000'.

Gnd speed-KT	75	100	150	200	250	300
304' per NM	380	506	760	1013	1266	1519

If unable to comply inform ATC.

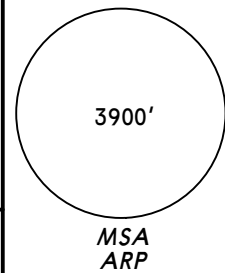
Initial climb clearance **4000'**, EXPECT further climb by OSLO Approach.**ROUTING**

Climb on 193° track to 1700', turn LEFT to VIBUK.

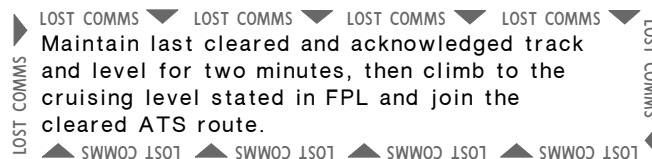
TRANSITION	ROUTING
MASEV	VIBUK - GM508 - GM422 - MASEV.
NUVSA	VIBUK - NIDIM - LILBA - NUVSA.
OKSAT	VIBUK - GM449 - TUMGU - OKSAT.

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. When instructed by GARDERMOEN TWR contact OSLO Approach.
2. EXPECT RADAR vectoring by OSLO Approach to join the cleared ATS route.
3. Enroute cruising levels will be issued after take-off by OSLO Approach or OSLO Control.



RWYS 01L/R, 19L/R OMNIDIRECTIONAL DEPARTURES



These departures require minimum climb gradients of

Rwys 01L/R

304' per NM (5.0%) up to 4000'.

Rwys 19L/R

Sector 207°-337°: 425' per NM (7.0%) in order to stay within controlled airspace.

Sector 337°-207°: 304' per NM (5.0%) up to 4000'.

Gnd speed-KT	75	100	150	200	250	300
425' per NM	532	709	1063	1418	1772	2127
304' per NM	380	506	760	1013	1266	1519

If unable to comply inform ATC.

Initial climb clearance **4000'**, EXPECT further climb by OSLO Approach.

ROUTING

Climb on runway track to 2000', then start turn according to ATC clearance.

RWYS 01L, 19L/R OMNIDIRECTIONAL PROP DEPARTURES

These departures require minimum climb gradients of

Sector 207°-337°: 425' per NM (7.0%) in order to stay within controlled airspace.

Sector 337°-207°: 304' per NM (5.0%) up to 4000'.

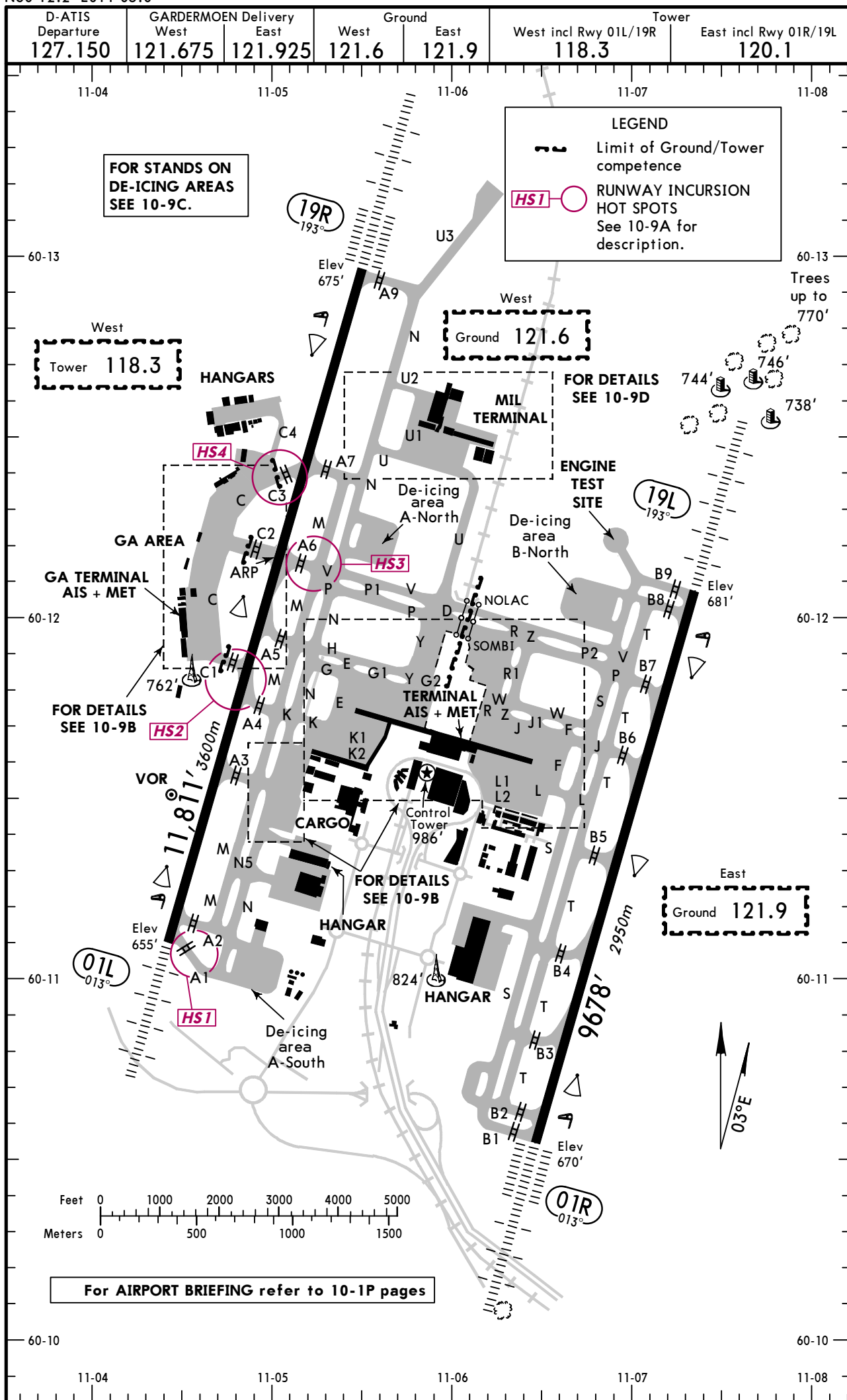
Gnd speed-KT	75	100	150	200	250	300
425' per NM	532	709	1063	1418	1772	2127
304' per NM	380	506	760	1013	1266	1519

If unable to comply inform ATC.

Initial climb clearance **4000'**, EXPECT further climb by OSLO Approach.

ROUTING

Climb on runway track to 1700', then start turn according to ATC clearance.



ADDITIONAL RUNWAY INFORMATION

				USABLE LENGTHS			
RWY				LANDING BEYOND		TAKE-OFF	WIDTH
				Threshold	Glide Slope		
01L	HIRL (60m)	HIALS CL (15m)	SFL PAPI-L(3.0°)	RVR	10,819' 3298m	3	148' 45m
19R	HIRL (60m)	HIALS-II CL (15m)	SFL TDZ 2	RVR	10,737' 3273m		

1 Rwy grooved.

2 PAPI-L(3.0°)

3 TAKE-OFF RUN AVAILABLE (Advise ATC once transferred to Tower, if intersection dep is acceptable/requested.)

<u>RWY 01L:</u> From rwy head	11,811' (3600m)	<u>RWY 19R:</u> From rwy head	11,811' (3600m)
twy A2 int	11,381' (3469m)	twy A7 int	8294' (2528m)
twy A3 int	8845' (2696m)	twy C3 int	8294' (2528m)
twy A4 int	7536' (2297m)	twy A6 int	6808' (2075m)
twy C1 int	7034' (2144m)	twy C2 int	6808' (2075m)
twy A5 int	6325' (1928m)		
twy A6 int	5079' (1548m)		
twy C2 int	5079' (1548m)		

01R	HIRL (60m) HIALS-II CL (15m) SFL TDZ 4	RVR		8706' 2654m	5 6	148' 45m
19L	HIRL (60m) HIALS CL (15m) SFL PAPI-L(3.0°)	RVR		8625' 2629m		

4 PAPI-L(3.0°)

5 TAKE-OFF RUN AVAILABLE (Advise ATC once transferred to Tower, if intersection dep is acceptable/requested.)

<u>RWY 01R:</u> From rwy head	9678' (2950m)	<u>RWY 19L:</u> From rwy head	9678' (2950m)
twy B2 int	9350' (2850m)	twy B8 int	9265' (2824m)
twy B3 int	7982' (2433m)	twy B7 int	7907' (2410m)
twy B4 int	6463' (1970m)	twy B6 int	6644' (2025m)
twy B5 int	4797' (1462m)		

6 Jet ACFT only: Intersection dep RWY 01R not permitted from twy B3 and North of twy B3.
Intersection dep RWY 19L not permitted from twy B6 and South of twy B6.

RUNWAY INCURSION HOT SPOTS

(For information only, not to be construed as ATC instructions.)

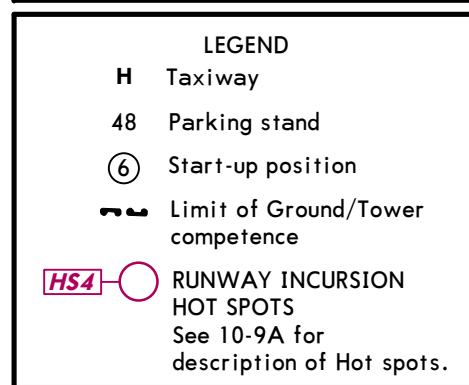
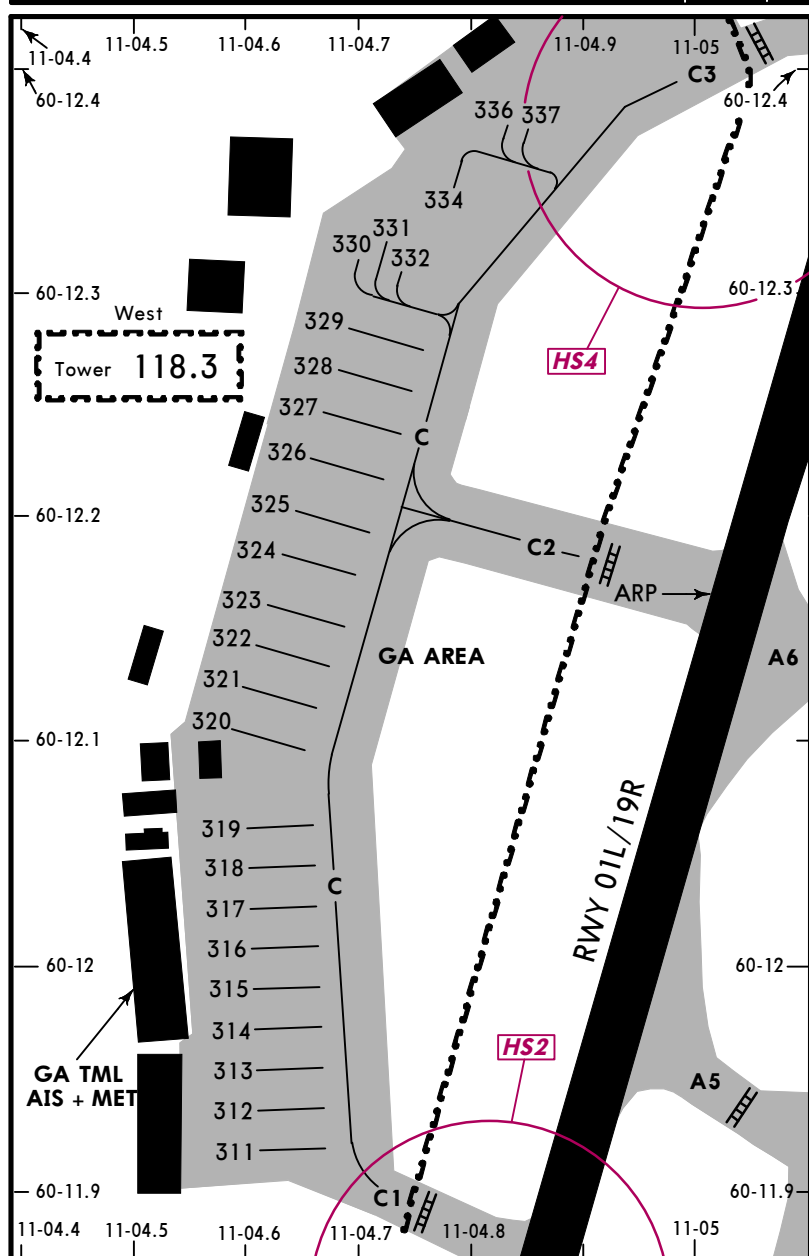
HS1 Angled Twy. Difficult to see traffic on final.**HS2** Installed Twy CL lights on C1 and A4 will indicate direction to the Rwy CL. Caution must be exercised when instructed to cross Rwy from Twy C1 to Twy A4 and vice versa due lack of visual aids.**HS3** Twy V leading directly to a Rwy intersection. Caution must be exercised when approaching the holding point A6.**HS4** Angled Twy. Difficult to see traffic on Rwy 01L.

Standard

TAKE-OFF 1

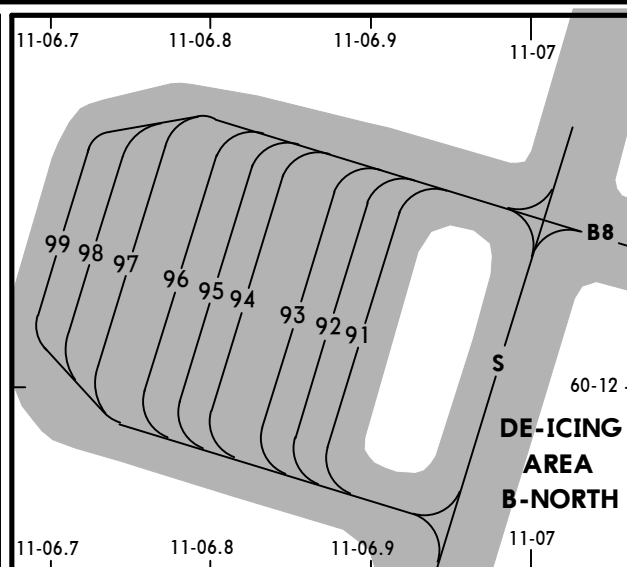
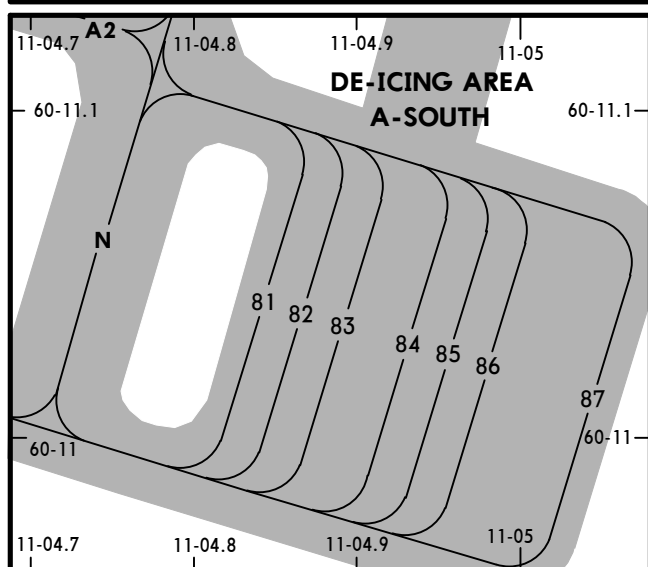
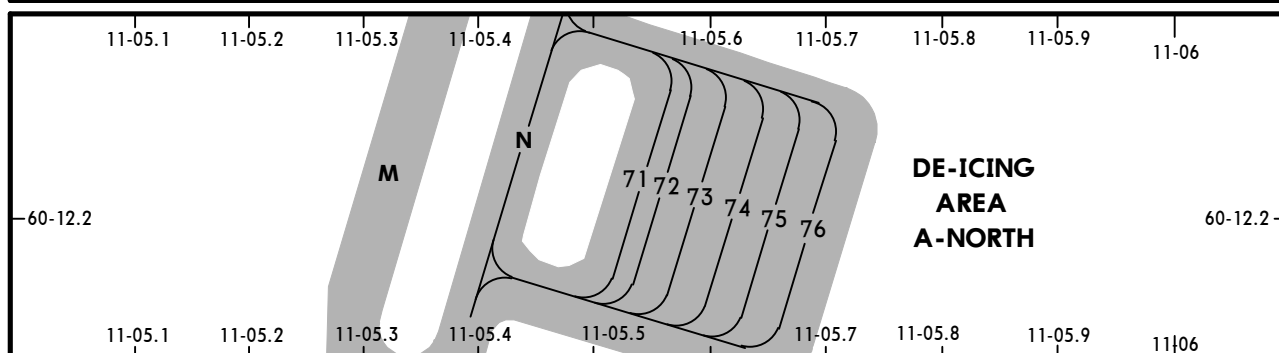
	LVP must be in Force				RCLM (DAY only) or RL	NIL (DAY only)
	Approved Operators HIRL, CL & mult. RVR req	RL, CL & mult. RVR req	RL & CL	RCLM (DAY only) or RL		
A					400m	500m
B	125m	150m	200m	250m		
C						
D	150m	200m	250m	300m		

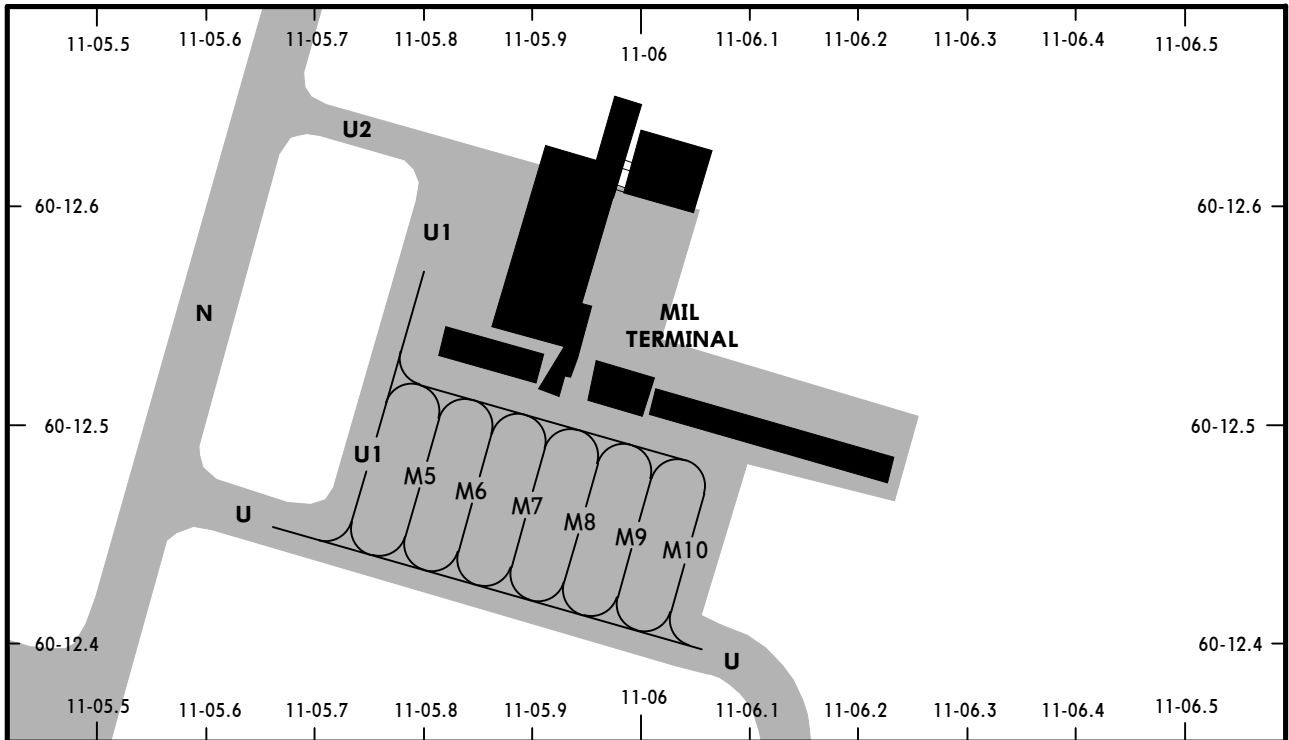
1 Operators applying U.S. Ops Specs: CL required below 300m; approved HUD required below 150m.



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INS COORDINATES							
STAND No.	COORDINATES		ELEV	STAND No.	COORDINATES		ELEV
2 thru 7	N60 11.7	E011 05.4	672	174	N60 11.6	E011 05.3	670
9	N60 11.7	E011 05.5	674	175	N60 11.6	E011 05.4	670
10	N60 11.8	E011 05.4	673	176	N60 11.6	E011 05.4	671
11	N60 11.7	E011 05.5	673	177, 178	N60 11.6	E011 05.5	670
12	N60 11.8	E011 05.5	673	181	N60 11.5	E011 06.2	670
13 thru 16	N60 11.7	E011 05.6	673	182, 183	N60 11.5	E011 06.3	670
18 thru 22	N60 11.7	E011 05.7	673	184, 185	N60 11.5	E011 06.4	670
24, 26	N60 11.7	E011 05.8	673	186 thru 188	N60 11.5	E011 06.5	669
38	N60 11.7	E011 06.1	673	201 thru 202	N60 11.4	E011 05.1	664
39	N60 11.6	E011 06.2	673	203 thru 204	N60 11.5	E011 05.1	664
40	N60 11.7	E011 06.2	673	205	N60 11.5	E011 05.1	666
41, 42	N60 11.6	E011 06.2	673	206, 207	N60 11.6	E011 05.2	666
43 thru 47	N60 11.6	E011 06.3	673	208	N60 11.6	E011 05.2	668
48, 49	N60 11.6	E011 06.4	673	208R	N60 11.6	E011 05.2	667
50	N60 11.6	E011 06.4	672	311	N60 11.9	E011 04.6	662
51	N60 11.6	E011 06.5	672	312 thru 314	N60 11.9	E011 04.6	663
53	N60 11.6	E011 06.5	673	315	N60 12.0	E011 04.6	663
76	N60 11.9	E011 05.9	671	316	N60 12.0	E011 04.6	664
80	N60 11.9	E011 05.9	671	317 thru 319	N60 12.0	E011 04.6	663
81	N60 11.8	E011 06.2	-	320	N60 12.1	E011 04.6	664
84	N60 11.9	E011 05.9	671	321, 322	N60 12.1	E011 04.6	665
85	N60 11.9	E011 06.2	673	323, 324	N60 12.2	E011 04.6	664
88	N60 11.9	E011 06.0	671	325	N60 12.2	E011 04.6	665
89	N60 11.9	E011 06.2	673	326	N60 12.2	E011 04.7	665
92	N60 11.9	E011 06.0	672	327	N60 12.3	E011 04.7	665
93	N60 11.9	E011 06.2	672	328 thru 330	N60 12.3	E011 04.7	666
95	N60 11.9	E011 06.2	674	331, 332	N60 12.3	E011 04.7	665
96	N60 11.9	E011 06.1	675	334	N60 12.4	E011 04.8	666
171 thru 172	N60 11.6	E011 05.2	668	336, 337	N60 12.4	E011 04.8	-
173	N60 11.6	E011 05.3	668				





INS COORDINATES	
STAND No.	COORDINATES
M5, M6	N60 12.5 E011 05.8
M7, M8	N60 12.5 E011 05.9
M9	N60 12.5 E011 06.0
M10	N60 12.4 E011 06.0

STRAIGHT-IN RWY		DA(H) / MDA(H)	RVR (ALS/ALS out)
01L	ILS	855' (200')	500m / 1000m
	LOC	960' (305')	800m / 1000m
	RNAV (LPV)	905' (250')	600m / 1000m
	RNAV (LNAV/VNAV)	1000' (345')	800m / 1000m
	RNAV (LNAV)	1240' (585')	1000m / 1000m
	VOR	1000' (345')	800m / 1000m
01R	CAT 2 ILS	770' (100')	RA 102' - 300m
	ILS	870' (200')	500m / 1000m
	LOC	970' (300')	800m / 1000m
	RNAV (LPV)	920' (250')	600m / 1000m
	RNAV (LNAV/VNAV)	970' (300')	800m / 1000m
	RNAV (LNAV)	1230' (560')	1000m / 1000m
19L	ILS	881' (200')	500m / 1000m
	LOC	1030' (349')	800m / 1000m
	RNAV (LPV)	931' (250')	600m / 1000m
	RNAV (LNAV/VNAV)	1000' (319')	800m / 1000m
	RNAV (LNAV)	1230' (549')	1000m / 1000m
19R	CAT 2 ILS	775' (100')	RA 100' - 300m
	ILS	875' (200')	500m / 1000m
	LOC	1020' (345')	800m / 1000m
	RNAV (LPV) ❶	930' (255')	600m / 1000m
	RNAV (LPV) ❷	1020' (345')	800m / 1000m
	RNAV (LNAV/VNAV) ❷	970' (295')	600m / 1000m
	RNAV (LNAV) ❷	1040' (365')	800m / 1000m
	VOR	1060' (385')	800m / 1000m

❶ Missed apch climb gradient mim 3.1%.

❷ Missed apch climb gradient mim 2.5%.

CIRCLE-TO-LAND ❷	MDA(H)	VIS
	1280' (599')	1000m

❷ Rwy 01L/19R: Not authorized East of rwy 01L/19R.
 Rwy 01R/19L: Not authorized West of rwy 01R/19L.

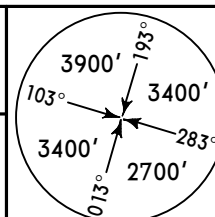
TAKE-OFF RWY 01L, 01R, 19L, 19R

LVP must be in Force ❷				
RL, FATO LTS, CL & RVR info	RL, FATO LTS & RCLM	Unlit/unmarked defined RWY/FATO	Nil Facilities DAY	Nil Facilities NIGHT
150m	200m	200m	250m ❸	800m

❷ Without LVP 400m are stipulated.

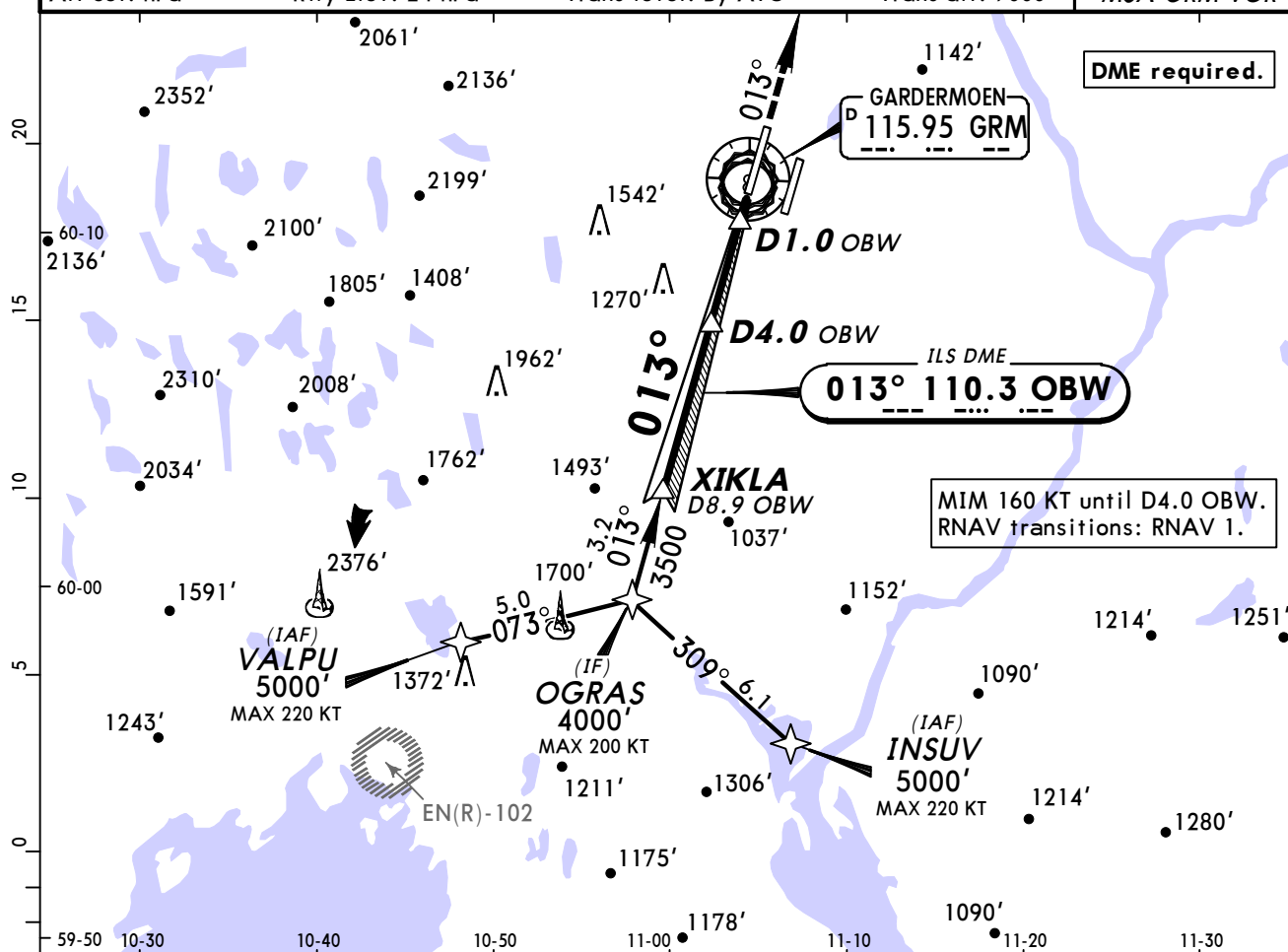
❸ Or rejected take-off distance whichever is the greater.

BRIEFING STRIP™



At D20.0 OBW turn LEFT direct to VOR for a new apch.

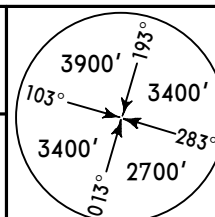
MSA GRM VOR

5

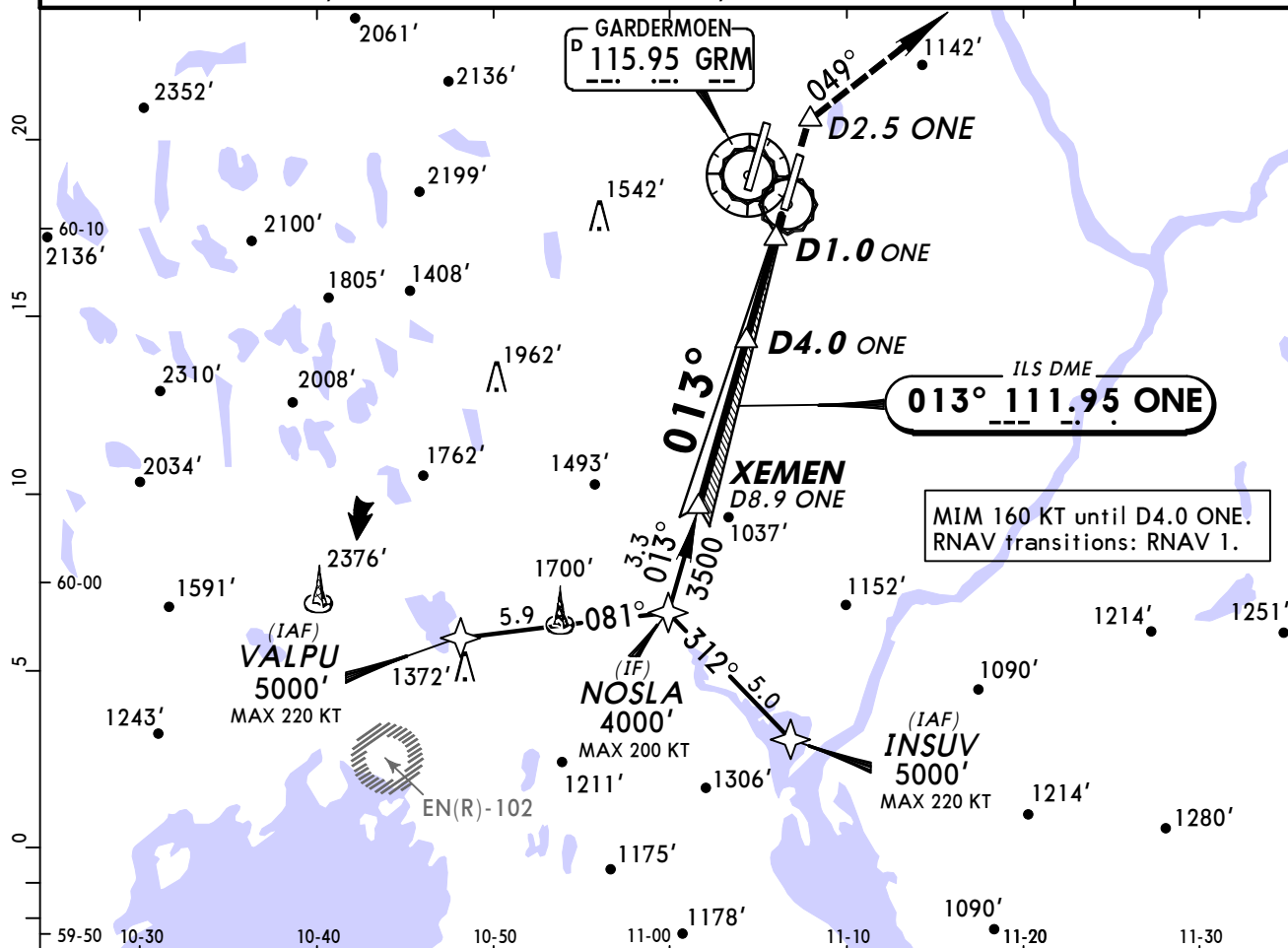
HIALS
PAPI

Standard		STRAIGHT-IN LANDING RWY 01L				CIRCLE-TO-LAND	
		ILS		LOC (GS out)			
		DA(H) 855' (200')		DA(H) 960' (305')			
		FULL	Limited	ALS out		ALS out	
A	RVR 550m	RVR 750m	RVR 1200m	RVR 750m	RVR 1400m	Max Kts.	Not authorized East of rwy 01L/19R MDA(H) _____ VIS _____
B						100	1280' (599') 1500m
C						135	1280' (599') 1600m
D						180	2040' (1359') 2400m
						205	2250' (1569') 3600m

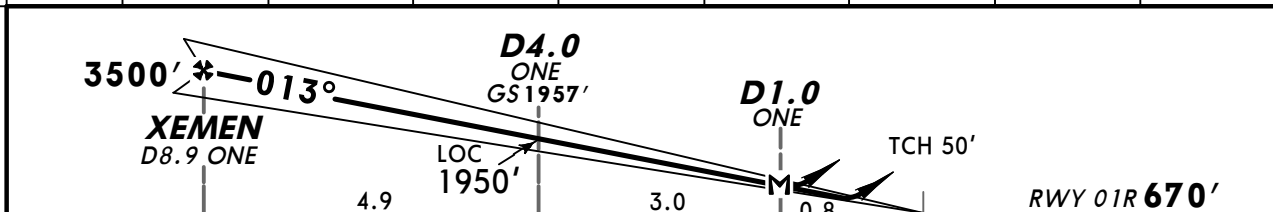
D-ATIS Arrival 126.125		*OSLO Approach East 118.475 West 120.450	
West incl Rwy 01L/19R 118.3	East incl Rwy 01R/19L 120.1	West 121.6	East 121.9
LOC ONE 111.95	Final Aptch Crs 013°	GS D4.0 ONE 1957' (1287')	ILS DA(H) Refer to Minimums
		Apt Elev 681' RWY 670'	
MISSED APCH: Climb on 013° to D2.5 ONE, then turn RIGHT and proceed onto 049° to 4000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Climb on 049° to 4000'. At D20.0 ONE turn RIGHT direct to VOR for a new apch.			
Alt Set: hPa	Rwy Elev: 24 hPa	Trans level: By ATC	Trans alt: 7000'



MSA GRM VOR



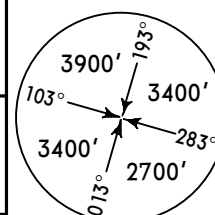
LOC (GS out)	ONE DME	8.0	7.0	6.0	5.0	4.0	3.0	2.0
	ALTITUDE	3220'	2900'	2590'	2270'	1950'	1630'	1310'



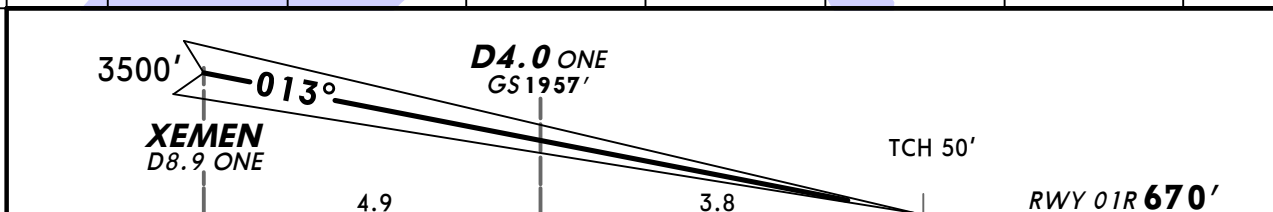
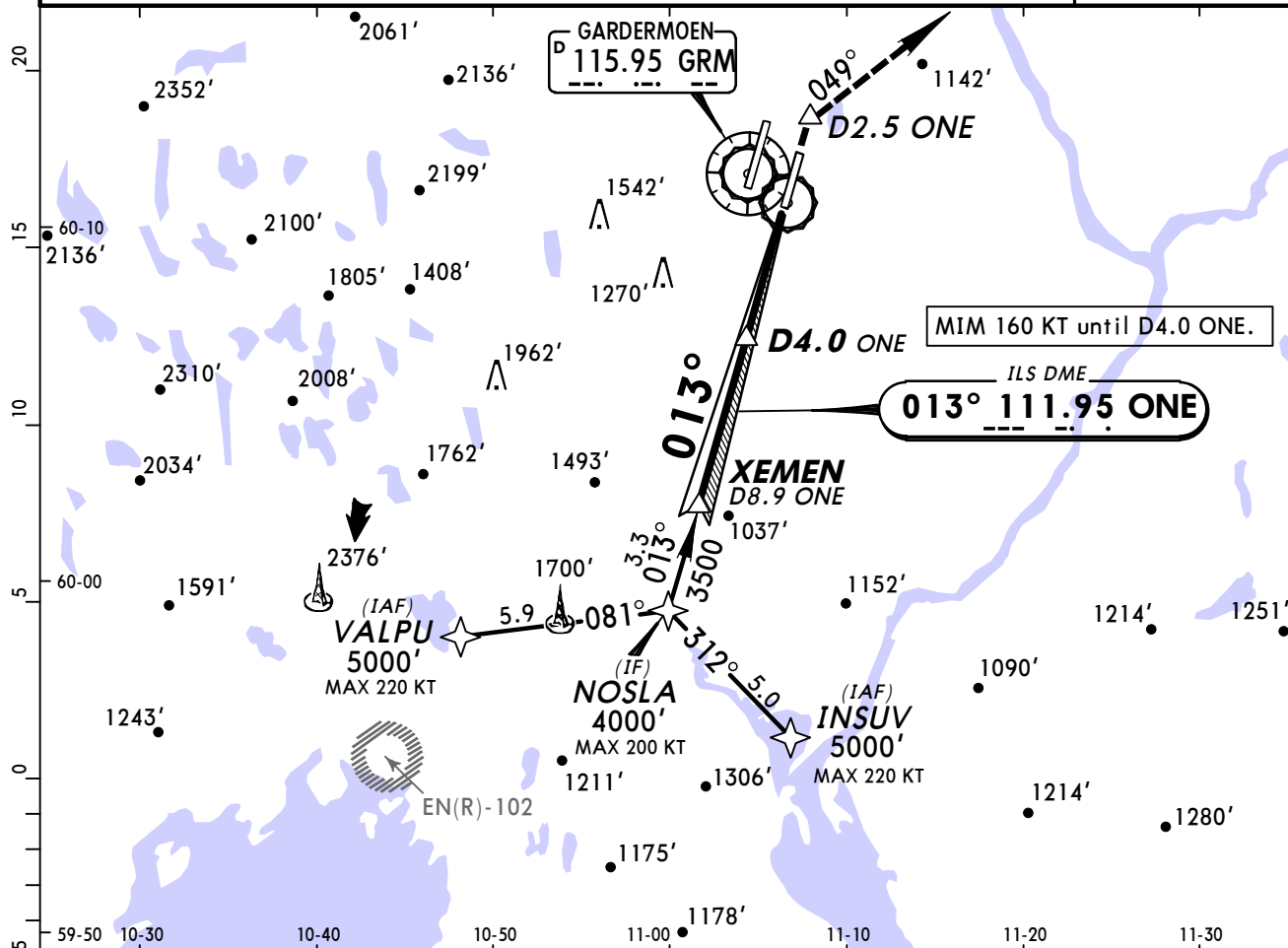
Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	
ILS GS or LOC Desc Angle 3.00°	372	478	531	637	743	849	PAPI	
MAP at D1.0 ONE							Refer to Missed Apch above	

STRAIGHT-IN LANDING RWY 01R					CIRCLE-TO-LAND	
ILS DA(H) ABC: 870' (200') D: 880' (210')			LOC (GS out) DA(H) 970' (300')		Not authorized West of rwy 01R/19L	
FULL	Limited	ALS out		ALS out	Max Kts	MDA(H) VIS
A					100	1280' (599') 1500m
B					135	1280' (599') 1600m
C	RVR 550m	RVR 750m	RVR 1200m	RVR 750m	180	1570' (889') 2400m
D				RVR 1400m	205	1630' (949') 3600m

D-ATIS Arrival 126.125		*OSLO Approach East 118.475 West 120.450	
West incl Rwy 01L/19R 118.3	East incl Rwy 01R/19L 120.1	West 121.6	Ground East 121.9
LOC ONE 111.95	Final Aptch Crs 013°	GS D4.0 ONE 1957' (1287')	CAT II & IIIA ILS Refer to Minimums Apt Elev 681' RWY 670'
MISSED APCH: Climb on 013° to D2.5 ONE, then turn RIGHT and proceed onto 049° to 4000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Climb on 049° to 4000'. At D20.0 ONE turn RIGHT direct to VOR for a new apch.			
Alt Set: hPa Rwy Elev: 24 hPa Trans level: By ATC Trans alt: 7000' 1. Special Aircrew & Aircraft Certification Required. 2. RNAV transitions: RNAV 1.			



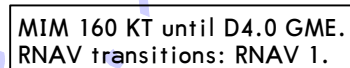
MSA
GRM VOR



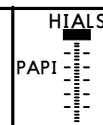
Gnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI	Refer to Missed Apch above
GS	3.00°	372	478	531	637	743		

Standard		STRAIGHT-IN LANDING RWY 01R	
CAT IIIA ILS		CAT II ILS	
DH 50'		RA 102' DA(H) 770' (100')	
RVR 200m		RVR 300m I	

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

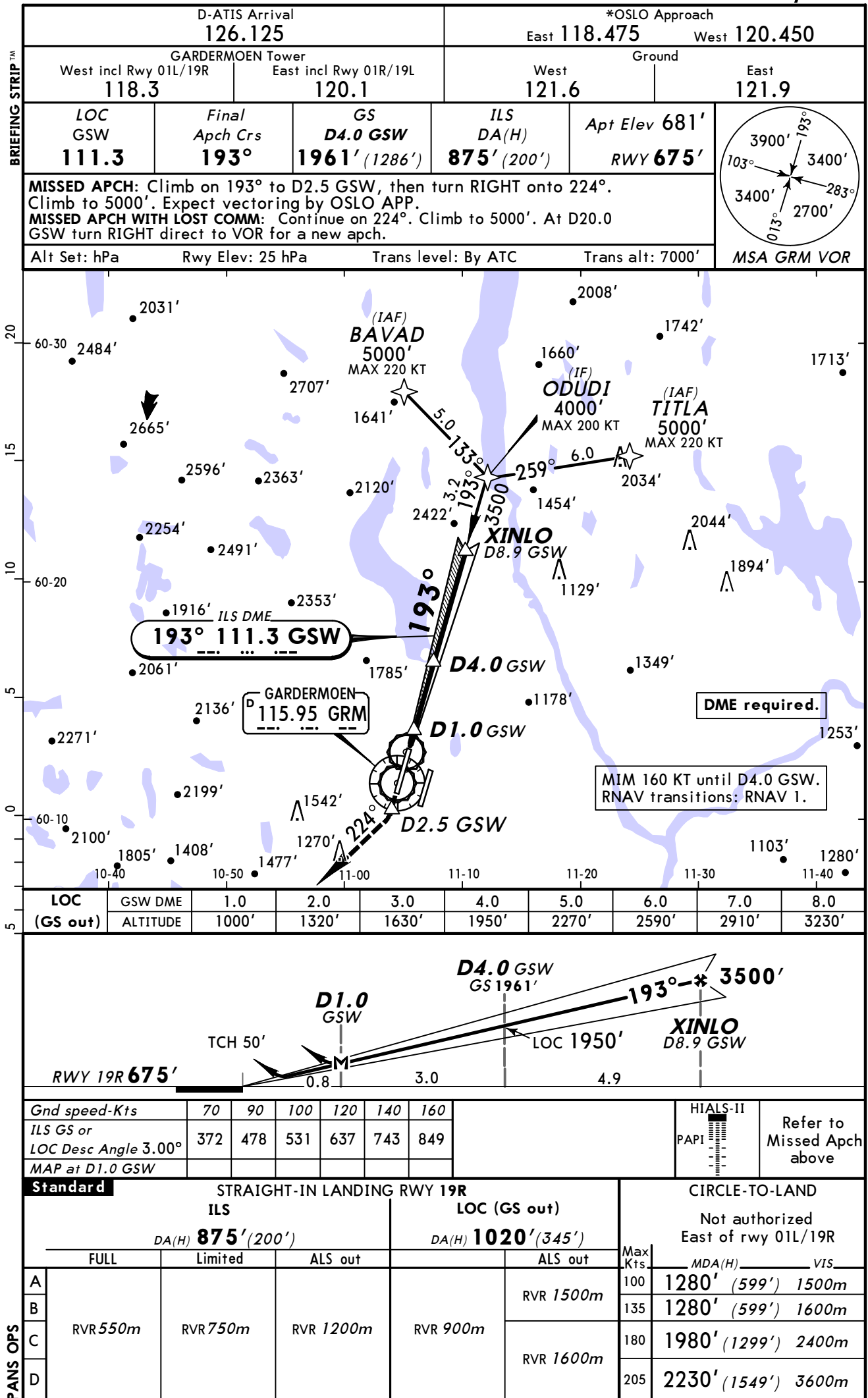


DME required.

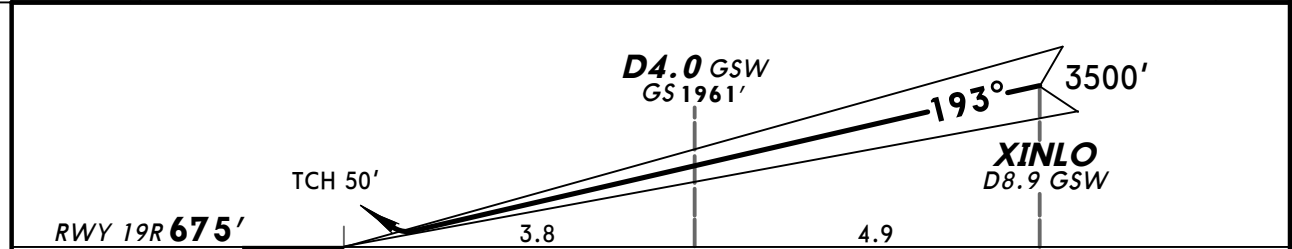
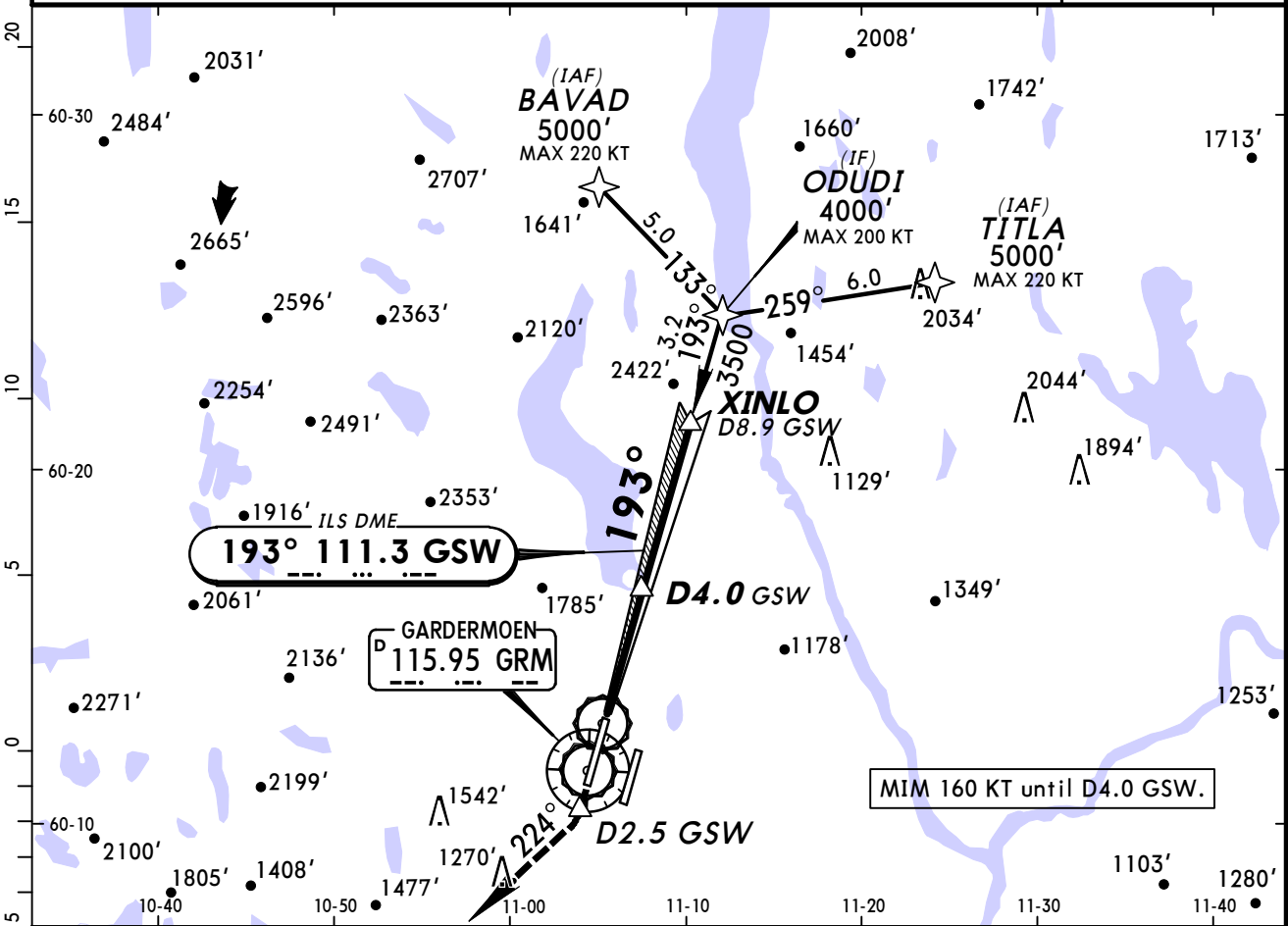


Refer to
Missed Apch
above

PANS OPS



D-ATIS Arrival 126.125		*OSLO Approach East 118.475 West 120.450	
GARDERMOEN Tower West incl Rwy 01L/19R 118.3		Ground West 121.6 East 121.9	
LOC GSW 111.3	Final Apch Crs 193°	GS D4.0 GSW 1961' (1286')	CAT II & IIIA ILS Refer to Minimums Apt Elev 681' RWY 675'
MISSED APCH: Climb on 193° to D2.5 GSW, then turn RIGHT onto 224°. Climb to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Continue on 224°. Climb to 5000'. At D20.0 GSW turn RIGHT direct to VOR for a new apch.			
Alt Set: hPa Rwy Elev: 25 hPa Trans level: By ATC Trans alt: 7000' 1. DME required. 2. Special Aircrew & Aircraft Certification Required. 3. RNAV transitions: RNAV 1.			MSA GRM VOR

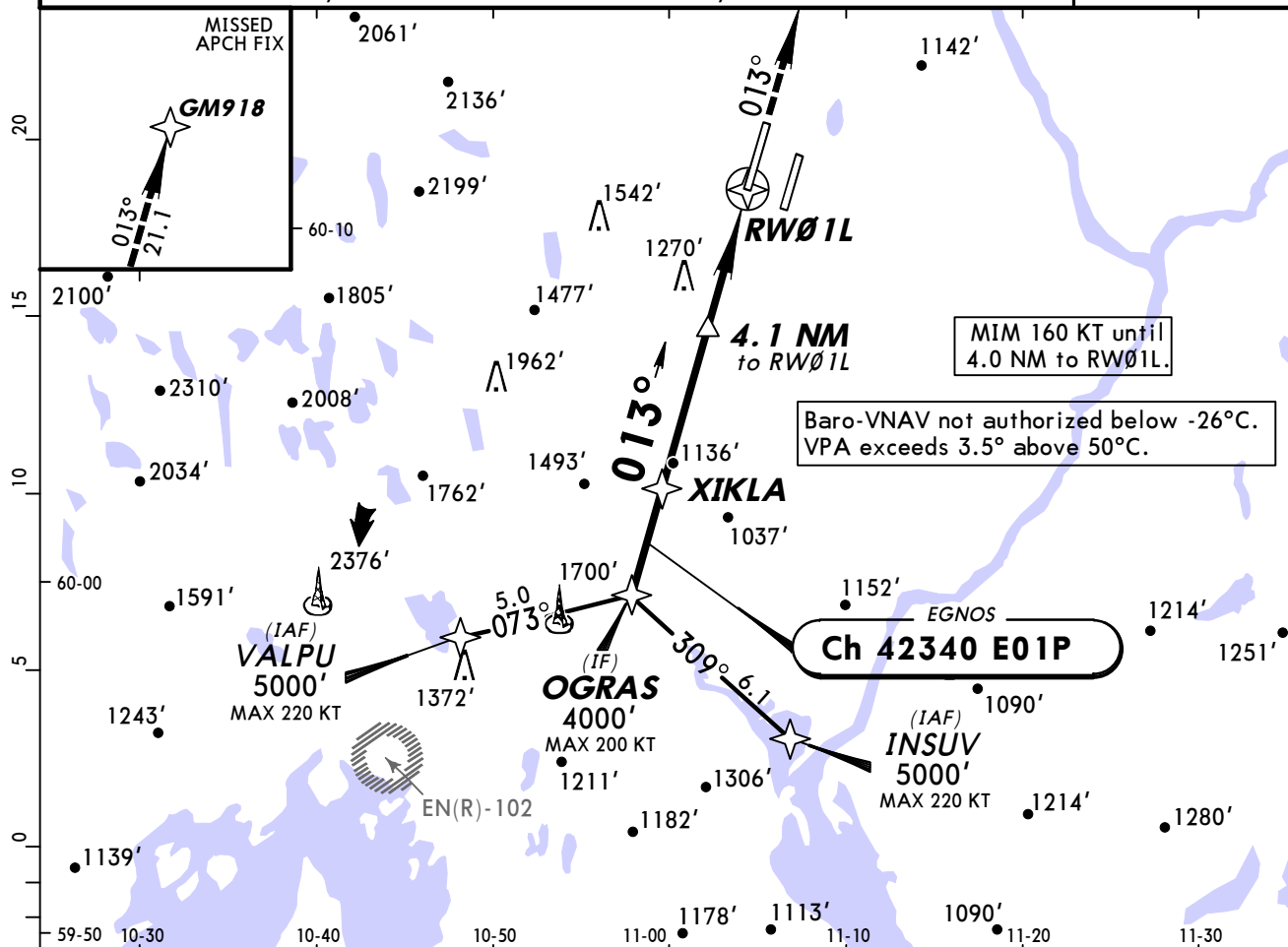


Gnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI	Refer to Missed Apch above
GS 3.00°	372	478	531	637	743	849		

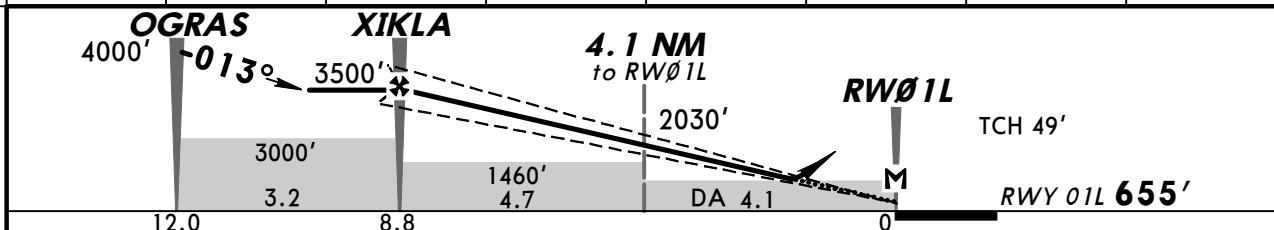
PANS OPS	Standard		STRAIGHT-IN LANDING RWY 19R	
	CAT IIIA ILS		CAT II ILS	
	DH 50'		RA 100'	
			DA(H) 775'(100')	
RVR 200m		RVR 300m I		
I Operators applying U.S. Ops Specs: Autoland or HUD required below RVR 350m.				

BRIEFING STRIP™

D-ATIS Arrival 126.125				*OSLO Approach East 118.475 West 120.450					
GARDERMOEN Tower West incl Rwy 01L/19R 118.3				East incl Rwy 01R/19L 120.1		Ground West 121.6		East 121.9	
<i>EGNOS</i> Ch 42340 E01P		<i>Final</i> <i>Apch Crs</i> 013°		<i>Procedure Alt</i> XIKLA 3500' (2845')		<i>LPV</i> <i>DA(H)</i> 905' (250')		<i>Apt Elev</i> 681' <i>RWY</i> 655'	
MISSED APCH: Climb to 5000' to GM918. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: At GM918 turn LEFT direct to VOR for a new apch.								3900' MSA ARP	
Alt Set: hPa		Rwy Elev: 24 hPa		Trans level: By ATC		Trans alt: 7000'			



DIST to RW01L	8.0	7.0	6.0	5.0	4.0	3.0	2.0
ALTITUDE	3260'	2940'	2620'	2300'	1980'	1670'	1350'

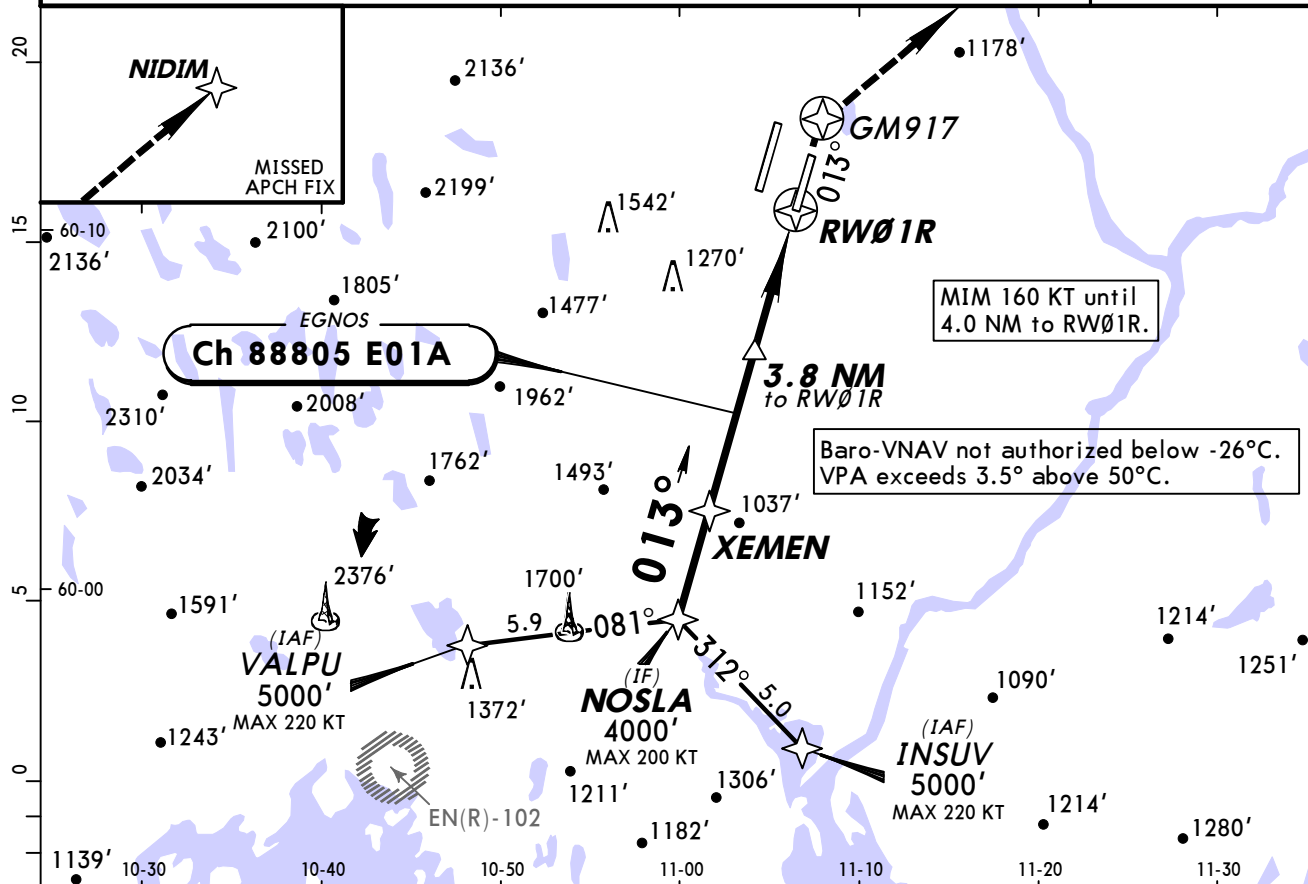


Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI GM918 on 013°
Glide Path Angle 3.00°	372	478	531	637	743	849	
MAP at RW01L							

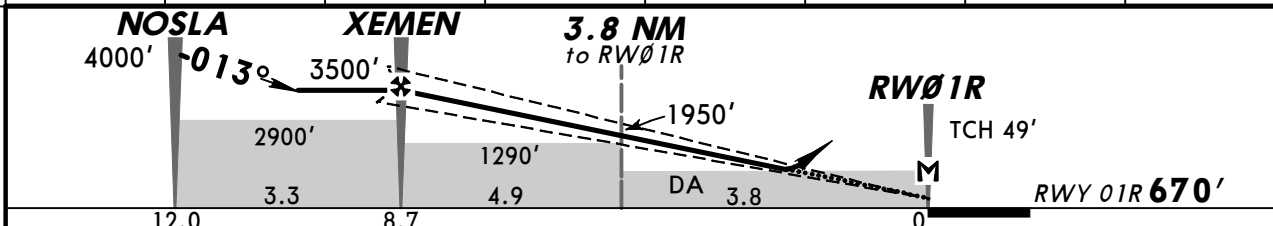
STRAIGHT-IN LANDING RWY 01L					CIRCLE-TO-LAND	
LPV DA(H) 905' (250')		LNAV/VNAV A: 1000' (345') C: 1030' (375') B: 1010' (355') D: 1150' (495')		LNAV DA(H) 1240' (585')	Not authorized East of rwy 01L/19R	
ALS out		ALS out		ALS out	Max Kts	MDA(H) VIS
A					100	1280' (599') 1500m
B	RVR 750m	RVR 1300m	RVR 900m	RVR 1500m	135	1280' (599') 1600m
C			RVR 1000m	RVR 1700m	180	1920' (1239') 2400m
D			RVR 1500m	CMV 2300m	205	2230' (1549') 3600m

BRIEFING STRIP™

D-ATIS Arrival 126.125				*OSLO Approach East 118.475 West 120.450	
GARDERMOEN Tower West incl Rwy 01L/19R 118.3		East incl Rwy 01R/19L 120.1		Ground West 121.6 East 121.9	
EGNOS Ch 88805 E01A	Final Apch Crs 013°	Procedure Alt XEMEN 3500' (2830')	LPV DA(H) 920' (250')	Apt Elev 681' RWY 670'	3900' MSA ARP
MISSED APCH: Climb to GM917. Turn RIGHT direct to NIDIM climbing to 4000'. Expect vectoring by OSLO APP.					
MISSED APCH WITH LOST COMM: At NIDIM turn RIGHT direct to VOR for a new apch.					
Alt Set: hPa		Rwy Elev: 24 hPa		Trans level: By ATC	
Trans alt: 7000'					



DIST to RW01R	8.0	7.0	6.0	5.0	4.0	3.0	2.0
ALTITUDE	3270'	2950'	2640'	2320'	2000'	1680'	1360'



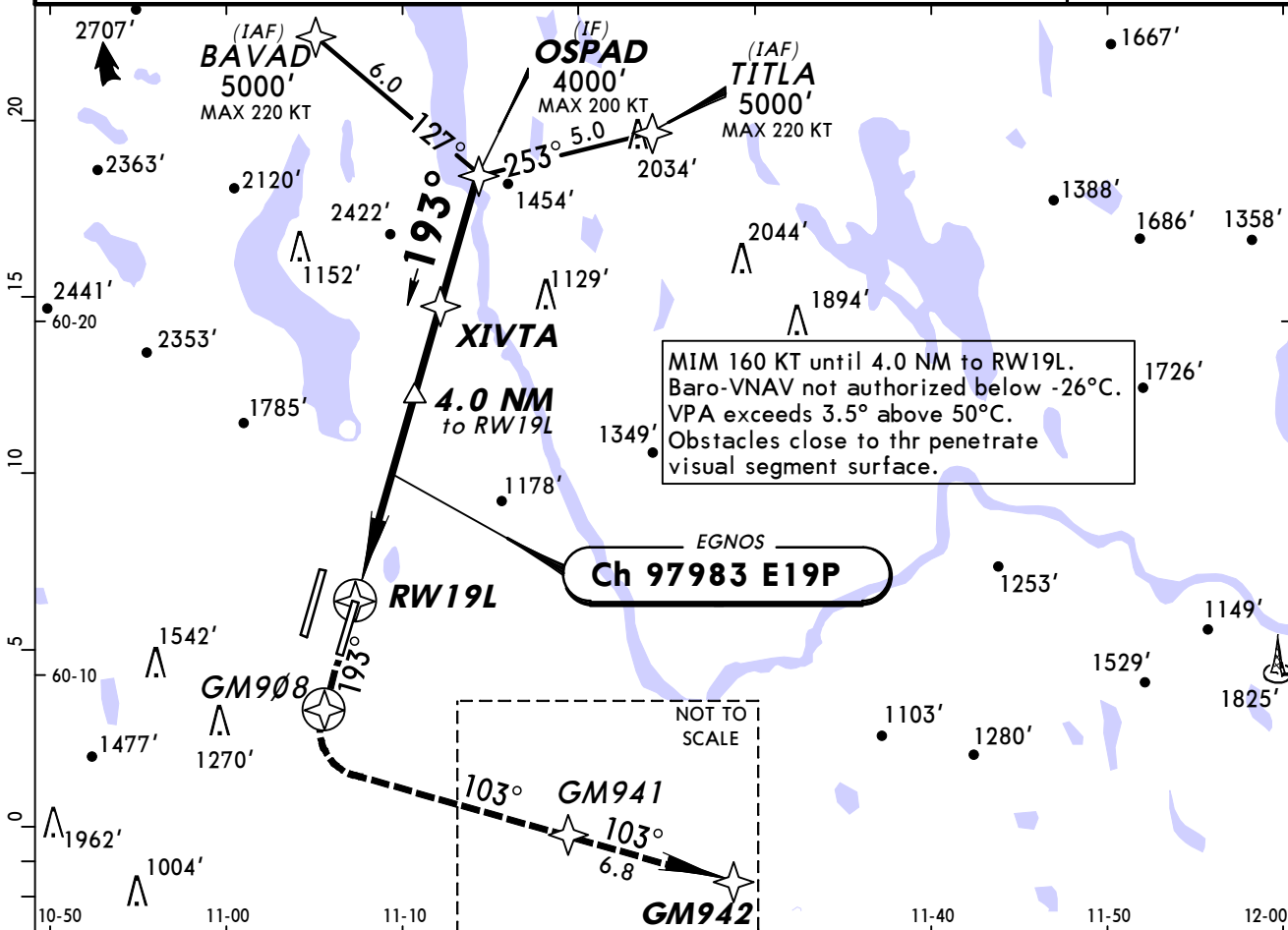
Gnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI 	GM917
Glide Path Angle 3.00°	372	478	531	637	743	849		
MAP at RW01R								

STRAIGHT-IN LANDING RWY 01R				CIRCLE-TO-LAND	
LPV		DA(H) LNAV/VNAV		LNAV	
DA(H) 920' (250')		A: 970' (300') C: 1010' (340') B: 990' (320') D: 1030' (360')		DA(H) 1230' (560')	
ALS out		ALS out		ALS out	
A		RVR 750m 2		RVR 1800m	Max Kts 100
B	RVR 750m 1	RVR 750m 3	RVR 1400m		135
C	RVR 1300m	RVR 800m	RVR 1500m		180
D		RVR 900m	RVR 1600m	CMV 2500m	205
				MDA(H)	VIS
				1280' (599')	1500m
				1280' (599')	1600m
				1530' (849')	2400m
				1630' (949')	3600m

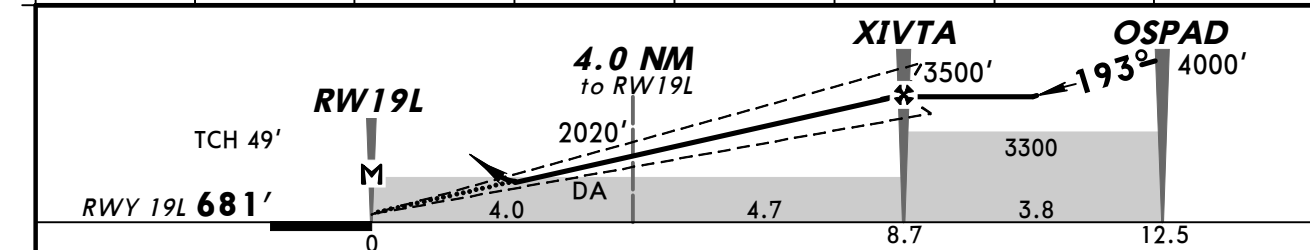
1 With TDZ, CL and HUD: RVR 600m. 2 With TDZ, CL and HUD: RVR 650m.
3 With TDZ, CL and HUD: RVR 700m.

BRIEFING STRIP™

D-ATIS Arrival 126.125				*OSLO Approach East 118.475 West 120.450						
GARDERMOEN Tower West incl Rwy 01L/19R 118.3				Ground East incl Rwy 01R/19L 120.1						
West 121.6				East 121.9						
EGNOS Ch 97983 E19P		Final Apch Crs 193°		Procedure Alt XIVTA 3500' (2819')		LPV DA(H) Refer to Minimums		Apt Elev 681' RWY 681'		3900'
MISSED APCH: Climb to GM908. Turn LEFT to GM941 on course 103°, climbing to 3000', then climb to 5000' to GM942. Expect vectoring by OSLO APP.										
MISSED APCH WITH LOST COMM: At GM942 turn LEFT direct to VOR for new apch.										
Alt Set: hPa Rwy Elev: 25 hPa Trans level: By ATC Trans alt: 7000'										
MSA ARP										



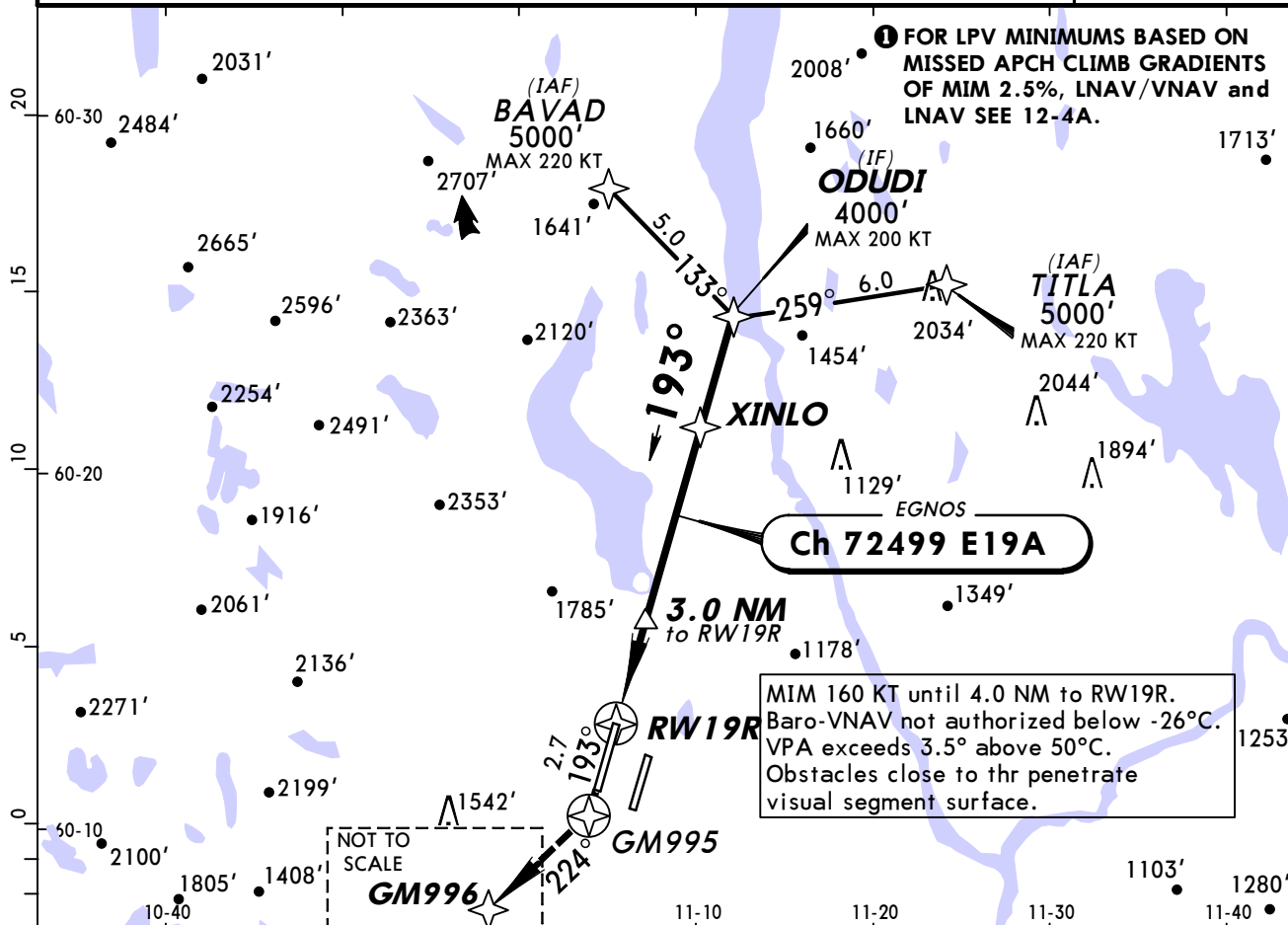
DIST to RW19L	2.0	3.0	4.0	5.0	6.0	7.0	8.0
ALTITUDE	1370'	1690'	2010'	2330'	2650'	2970'	3280'



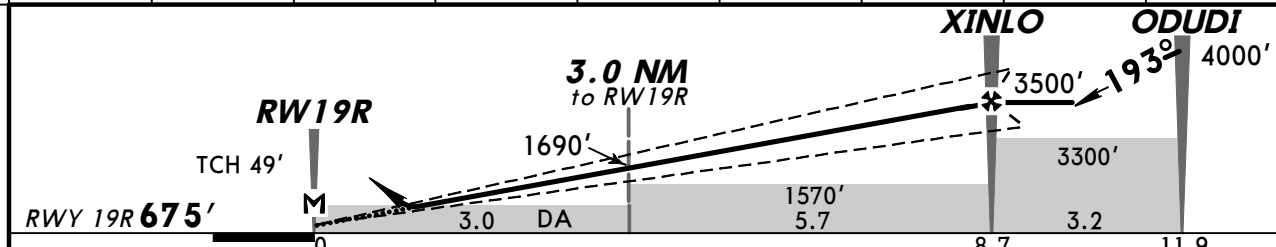
Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI ↑ GM908
Glide Path Angle 3.00°	372	478	531	637	743	849	
MAP at RW19L							

Standard			STRAIGHT-IN LANDING RWY 19L				CIRCLE-TO-LAND		
LPV			DA(H) LNAV/VNAV		LNAV		Not authorized West of rwy 01R/19L		
DA(H) 931' C: 940' (259') AB: (250') D: 950' (269')			DA(H) A: 1000' (319') C: 1030' (349') B: 1010' (329') D: 1150' (469')		DA(H) 1230' (549')				
		ALS out			ALS out				Max Kts.
A	RVR 750m	RVR 1300m	RVR 750m		RVR 1400m		RVR 1800m	100	MDA(H) 1280' (599') VIS 1500m
B			RVR 800m		RVR 1500m			135	1280' (599') 1600m
C			RVR 900m		RVR 1600m		CMV 2500m	180	1530' (849') 2400m
D			RVR 1500m		CMV 2200m			205	1630' (949') 3600m

D-ATIS Arrival 126.125		*OSLO Approach East 118.475 West 120.450	
West incl Rwy 01L/19R 118.3	East incl Rwy 01R/19L 120.1	West 121.6	East 121.9
EGNOS Ch 72499 E19A	Final Apch Crs 193°	Procedure Alt XINLO 3500' (2825')	LPV DA(H) Refer to Minimums Apt Elev 681' RWY 675'
MISSED APCH: Climb to GM995. Turn RIGHT to GM996 on course 224°, climbing to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: At GM996 turn RIGHT direct to VOR for new apch.			3900'
Alt Set: hPa	Rwy Elev: 25 hPa	Trans level: By ATC	Trans alt: 7000'
			MSA ARP



DIST to RW19R	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
ALTITUDE	1050'	1370'	1680'	2000'	2320'	2640'	2960'	3280'



Gnd speed-Kts	70	90	100	120	140	160
Glide Patch Angle 3.00°	372	478	531	637	743	849
MAP at RW19R						

Standard STRAIGHT-IN LANDING RWY 19R LPV Missed apch climb gradient mim 3.1% A: 930' (255') C: 950' (275') B: 940' (265') D: 960' (285')		CIRCLE-TO-LAND Not authorized East of rwy 01L/19R	
DA(H)		ALS out	

A	B	C	D	Max Kts	MDA(H)	VIS
				100	1280' (599')	1500m
				135	1280' (599')	1600m
				180	1920' (1239')	2400m
				205	2230' (1549')	3600m

1 With TDZ, CL and HUD: RVR 600m. 2 With TDZ, CL and HUD: RVR 650m.

RNAV (GNSS) Rwy 19R MINIMUMS

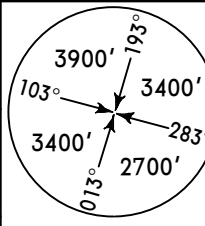
MISSED APCH CLIMB GRADIENT MIM 2.5%

Standard STRAIGHT-IN LANDING RWY 19R LPV		
DA(H)	A: 1020' (345')	C: 1040' (365')
	B: 1030' (355')	D: 1050' (375')
	FULL	ALS out
A	RVR 900m	RVR 1500m
B		
C	RVR 1000m	RVR 1700m
D		

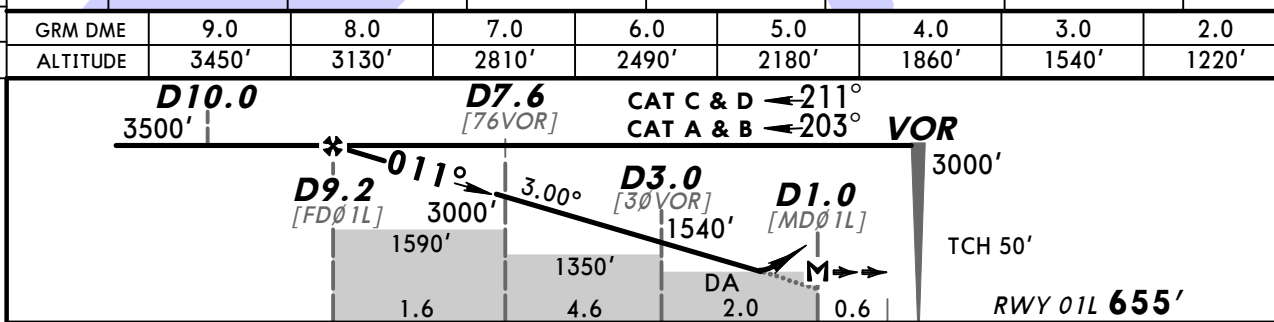
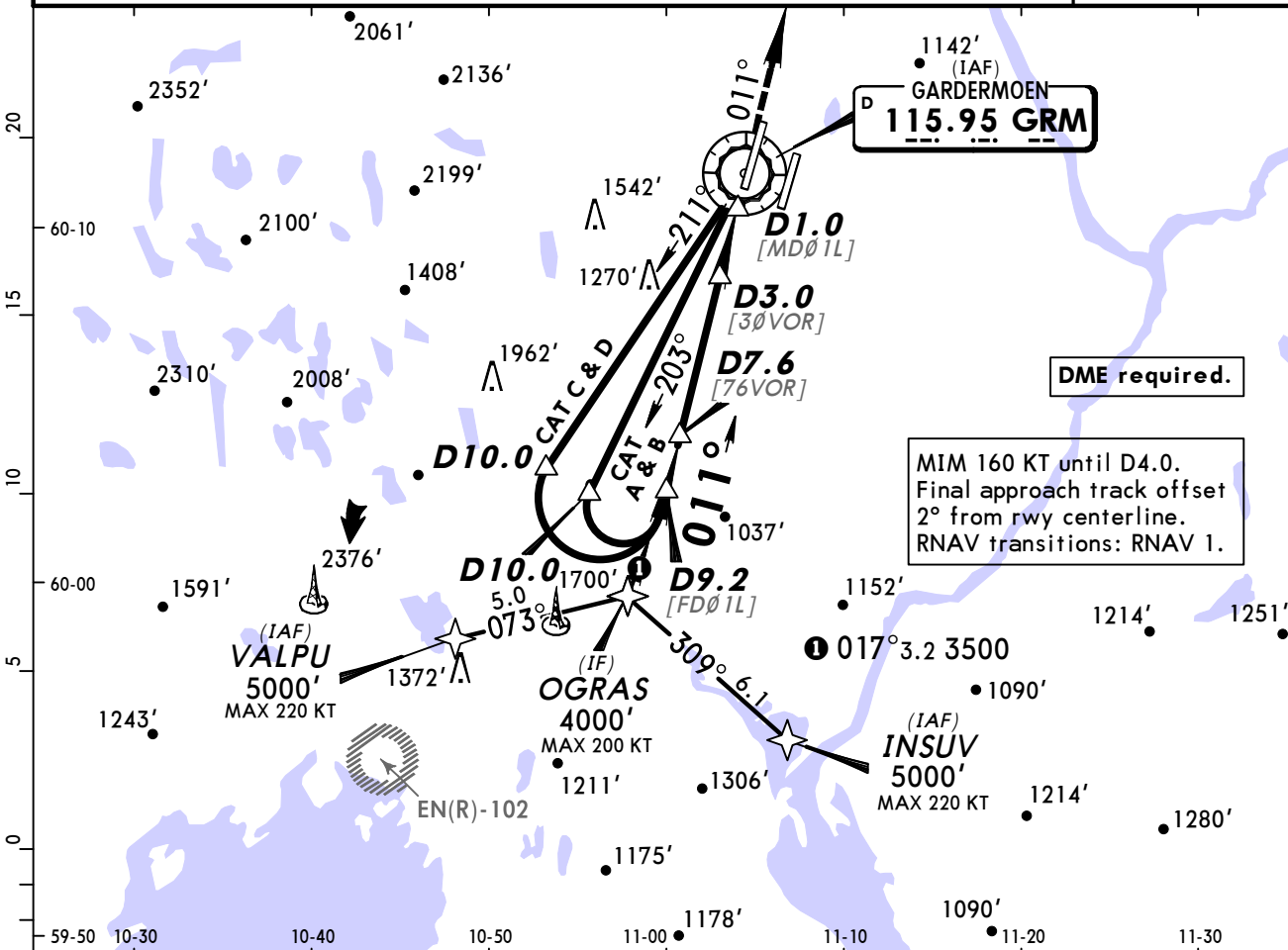
Standard STRAIGHT-IN LANDING RWY 19R LNAV/VNAV		
DA(H)	A: 970' (295')	C: 1000' (325')
	B: 980' (305')	D: 1030' (355')
	FULL	ALS out
A	RVR 750m 1	RVR 1400m
B	RVR 750m 2	
C	RVR 800m	RVR 1500m
D	RVR 900m	RVR 1600m
1 With TDZ, CL and HUD: RVR 650m.		
2 With TDZ, CL and HUD: RVR 700m.		

Standard STRAIGHT-IN LANDING RWY 19R LNAV		
DA(H)	C: 1060' (385')	
	AB: 1040' (365')	D: 1080' (405')
	FULL	ALS out
A	RVR 1000m	RVR 1700m
B		
C	RVR 1200m	RVR 1800m
D	RVR 1200m	RVR 1900m

BRIEFING STRIP™

D-ATIS Arrival 126.125				*OSLO Approach East 118.475 West 120.450			
GARDERMOEN Tower West incl Rwy 01L/19R 118.3		East incl Rwy 01R/19L 120.1		Ground West 121.6		East 121.9	
VOR GRM 115.95	Final Apch Crs 011°	Procedure Alt D9.2 3500' (2845')	DA(H) Refer to Minimums	Apt Elev 681' RWY 655'			
MISSED APCH: Climb to VOR, then continue on R-011 to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Climb on R-011 to 5000'. At D20.0 turn LEFT direct to VOR for new instrument apch.							
Alt Set: hPa		Rwy Elev: 24 hPa		Trans level: By ATC			

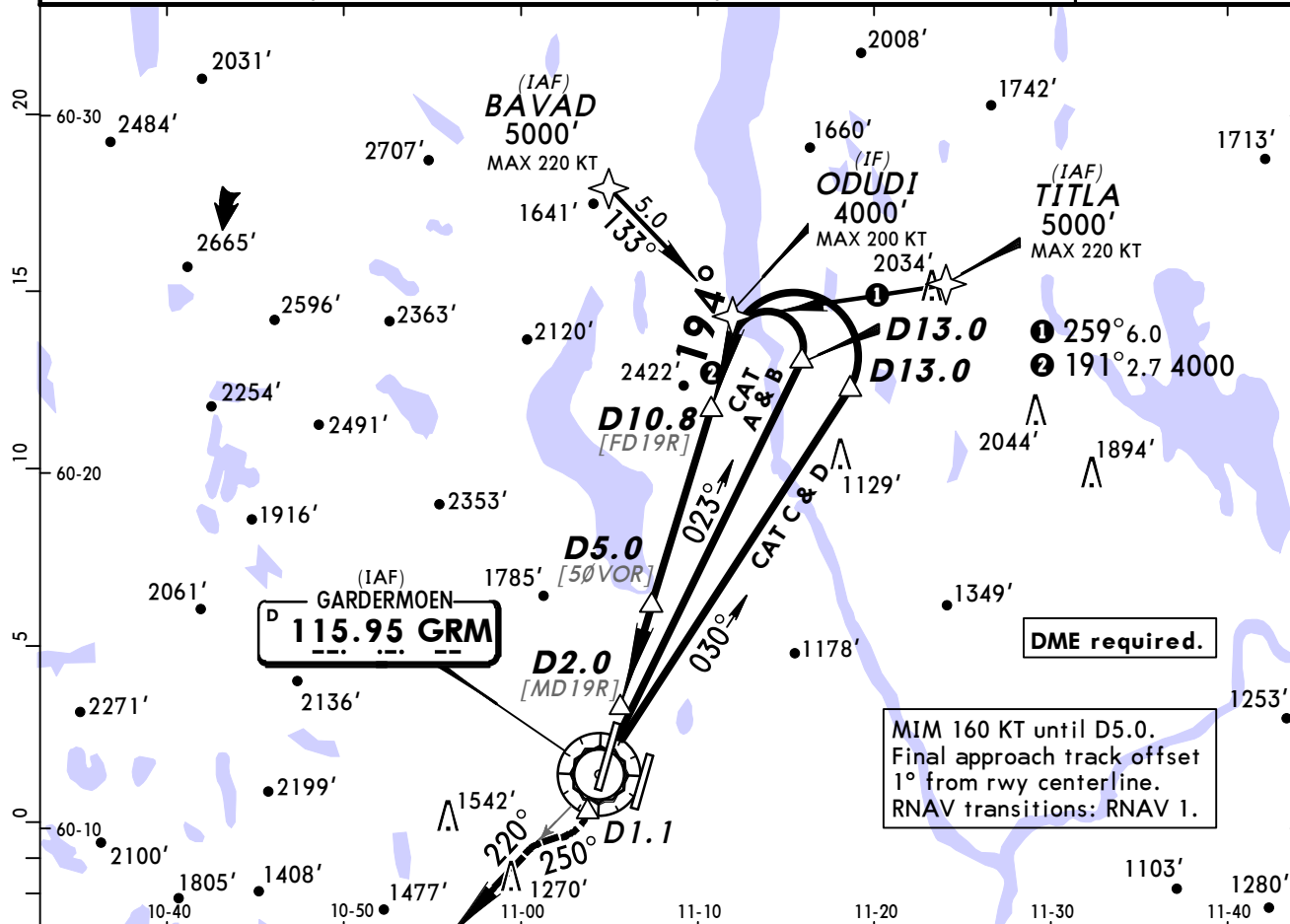
MSA GRM VOR



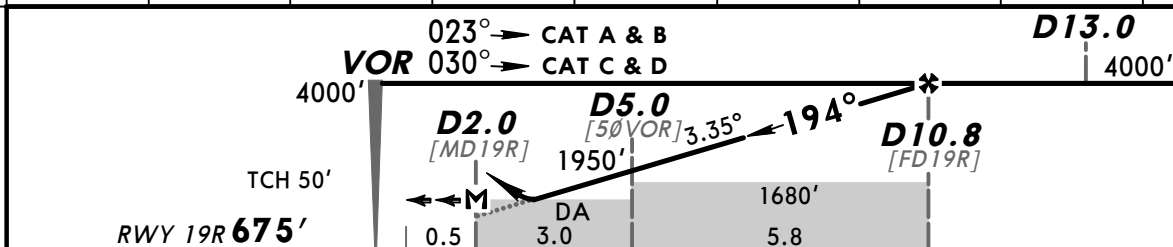
Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI 5000' on GRM 115.95 R-011
Descent Angle 3.00°	372	478	531	637	743	849	
MAP at D1.0							

Standard STRAIGHT-IN LANDING RWY 01L				CIRCLE-TO-LAND	
DA(H) A: 1000' (345') C: 1040' (385') B: 1020' (365') D: 1060' (405')				Not authorized East of rwy 01L/19R	
ALS out				Max Kts	MDA(H) VIS
A	RVR 1000m	RVR 1600m		100	1280' (599') 1500m
		RVR 1700m		135	1280' (599') 1600m
C	RVR 1200m	RVR 1800m		180	2040' (1359') 2400m
		RVR 1900m		205	2250' (1569') 3600m

D-ATIS Arrival 126.125			*OSLO Approach East 118.475 West 120.45		
GARDERMOEN Tower West incl Rwy 01L/19R 118.3		East incl Rwy 01R/19L 120.1		Ground West 121.6	East 121.9
VOR GRM 115.95	Final Apch Crs 194°	Procedure Alt D10.8 4000' (3325')	DA(H) 1060' (385')	Apt Elev 681' RWY 675'	
MISSED APCH: Climb on R-014 inbound to VOR. Continue climb on R-194 to D1.1, then turn RIGHT to 250°, intercept and proceed R-220. Climb to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Continue climb on R-220 to 5000'. At D20.0 turn RIGHT direct to VOR for new instrument apch.					
Alt Set: hPa	Rwy Elev: 25 hPa	Trans level: By ATC	Trans alt: 7000'	MSA GRM VOR	



GRM DME	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
ALTITUDE	1240'	1600'	1950'	2310'	2660'	3010'	3370'	3720'



Gnd speed-Kts	70	90	100	120	140	160
Descent Angle 3.35°	415	534	593	711	830	948
MAP at D2.0						

D1.1 on **115.95**
R-194

PANS OPS	Standard		STRAIGHT-IN LANDING RWY 19R		CIRCLE-TO-LAND		
			DA(H) 1060' (385')		Not authorized East of rwy 01L/19R		
			ALS out		Max Kts	MDA(H)	VIS
	A	RVR 1100m	RVR 1800m		100	1280' (599')	1500m
	B				135	1280' (599')	1600m
	C	RVR 1200m			180	2040' (1359')	2400m
	D				205	2250' (1569')	3600m

Not authorized for Jet Acft.

ILS DME 111.3 GSW

GARDERMOEN 115.95 GRM

ILS DME 110.3 OBW

ILS DME 110.55 GME

ILS DME 111.95 ONE

Descent from 2500' at or above ILS GS/PAPI onslope signal. Acft shall be established on final approach track at MIM 2500', unless otherwise instructed by ATC.

EN(R)-102

Chart changes since cycle 26-2014

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

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
OSLO, (GARDERMOEN - ENGM)				
REV	AIRPORT BRIEFING (GEN CON...	10-1P2	05 Dec 2014	11 Dec 2014
REV	AIRPORT BRIEFING (DEP CON...	10-1P3	05 Dec 2014	11 Dec 2014
DEL	ADOPI 2L P-RNAV ARR	10-2	05 Dec 2014	11 Dec 2014
ADD	ADOPI 3L RNAV ARR	10-2	05 Dec 2014	11 Dec 2014
DEL	ADOPI 2M P-RNAV ARR	10-2A	05 Dec 2014	11 Dec 2014
ADD	ADOPI 3M RNAV ARR	10-2A	05 Dec 2014	11 Dec 2014
DEL	BELGU 2L P-RNAV ARR	10-2B	05 Dec 2014	11 Dec 2014
ADD	BELGU 3L RNAV ARR	10-2B	05 Dec 2014	11 Dec 2014
DEL	BELGU 2M P-RNAV ARR	10-2C	05 Dec 2014	11 Dec 2014
ADD	BELGU 3M RNAV ARR	10-2C	05 Dec 2014	11 Dec 2014
DEL	ESEBA 3L P-RNAV ARR	10-2D	05 Dec 2014	11 Dec 2014
ADD	ESEBA 4L RNAV ARR	10-2D	05 Dec 2014	11 Dec 2014
DEL	ESEBA 3M P-RNAV ARR	10-2E	05 Dec 2014	11 Dec 2014
ADD	ESEBA 4M RNAV ARR	10-2E	05 Dec 2014	11 Dec 2014
DEL	INREX 3L P-RNAV ARR	10-2F	05 Dec 2014	11 Dec 2014
ADD	INREX 4L RNAV ARR	10-2F	05 Dec 2014	11 Dec 2014
DEL	INREX 3M P-RNAV ARR	10-2G	05 Dec 2014	11 Dec 2014
ADD	INREX 4M RNAV ARR	10-2G	05 Dec 2014	11 Dec 2014
DEL	LUNIP 3L P-RNAV ARR	10-2H	05 Dec 2014	11 Dec 2014
ADD	LUNIP 4L RNAV ARR	10-2H	05 Dec 2014	11 Dec 2014
DEL	LUNIP 3M P-RNAV ARR	10-2J	05 Dec 2014	11 Dec 2014
ADD	LUNIP 4M RNAV ARR	10-2J	05 Dec 2014	11 Dec 2014
DEL	RIPAM 2L P-RNAV ARR	10-2K	05 Dec 2014	11 Dec 2014
ADD	RIPAM 3L RNAV ARR	10-2K	05 Dec 2014	11 Dec 2014
DEL	RIPAM 3M P-RNAV ARR	10-2L	05 Dec 2014	11 Dec 2014
ADD	RIPAM 4M RNAV ARR	10-2L	05 Dec 2014	11 Dec 2014
DEL	ATLAP & EVTOG 4A P-RNAV D...	10-3	05 Dec 2014	11 Dec 2014
ADD	ATLAP & EVTOG 5A RNAV DEP...	10-3	05 Dec 2014	11 Dec 2014
DEL	ATLAP & EVTOG 7B P-RNAV D...	10-3A	05 Dec 2014	11 Dec 2014
ADD	ATLAP & EVTOG 8B RNAV DEP...	10-3A	05 Dec 2014	11 Dec 2014
DEL	ATLAP & EVTOG 2C P-RNAV D...	10-3B	05 Dec 2014	11 Dec 2014
ADD	ATLAP & EVTOG 3C RNAV DEP...	10-3B	05 Dec 2014	11 Dec 2014
DEL	ATLAP & EVTOG 6D P-RNAV D...	10-3C	05 Dec 2014	11 Dec 2014
ADD	ATLAP & EVTOG 7D RNAV DEP...	10-3C	05 Dec 2014	11 Dec 2014
DEL	MASEV & NUVSA 3A P-RNAV D...	10-3D	05 Dec 2014	11 Dec 2014
ADD	MASEV & NUVSA 4A RNAV DEP...	10-3D	05 Dec 2014	11 Dec 2014
DEL	MASEV 8B, NUVSA 7B P-RNAV...	10-3E	05 Dec 2014	11 Dec 2014
ADD	MASEV 9B, NUVSA 8B RNAV D...	10-3E	05 Dec 2014	11 Dec 2014
DEL	MASEV 4C, NUVSA 3C P-RNAV...	10-3F	05 Dec 2014	11 Dec 2014
ADD	MASEV 5C, NUVSA 4C RNAV D...	10-3F	05 Dec 2014	11 Dec 2014
ADD	MASEV 6D, NUVSA 7D RNAV D...	10-3G	05 Dec 2014	11 Dec 2014
DEL	MASEV 9D, NUVSA 6D P-RNAV...	10-3G	05 Dec 2014	11 Dec 2014
DEL	OKSAT & TORP 3A P-RNAV DE...	10-3H	05 Dec 2014	11 Dec 2014
ADD	OKSAT & TORP 4A RNAV DEPS	10-3H	05 Dec 2014	11 Dec 2014
DEL	OKSAT 8B, TORP 7B P-RNAV ...	10-3J	05 Dec 2014	11 Dec 2014
ADD	OKSAT 9B, TORP 8B RNAV DE...	10-3J	05 Dec 2014	11 Dec 2014
DEL	OKSAT 4C & TORP 2C P-RNAV...	10-3K	05 Dec 2014	11 Dec 2014
ADD	OKSAT 5C & TORP 3C RNAV D...	10-3K	05 Dec 2014	11 Dec 2014
ADD	OKSAT & TORP 6D RNAV DEPS	10-3L	05 Dec 2014	11 Dec 2014
DEL	OKSAT & TORP 9D P-RNAV DE...	10-3L	05 Dec 2014	11 Dec 2014
DEL	VEMIN 3A P-RNAV DEP, ATLA...	10-3M	05 Dec 2014	11 Dec 2014
ADD	VEMIN 4A RNAV DEP, ATLAP,...	10-3M	05 Dec 2014	11 Dec 2014
DEL	VEMIN 8D RNAV DEP, ATLAP,...	10-3N	05 Dec 2014	11 Dec 2014

ADD	VEMIN 9D RNAV DEP, AT LAP,...	10-3N	05 Dec 2014	11 Dec 2014
DEL	VIBUK 3C P-RNAV DEP, MASE...	10-3P	05 Dec 2014	11 Dec 2014
ADD	VIBUK 4C RNAV DEP, MASEV,...	10-3P	05 Dec 2014	11 Dec 2014
REV	OMNIDIRECTIONAL DEPS	10-3Q	05 Dec 2014	11 Dec 2014
REV	AIRPORT	10-9	05 Dec 2014	11 Dec 2014
REV	AIRPORT INFO, TAKE-OFF MN...	10-9A	05 Dec 2014	11 Dec 2014
REV	JAA COPTER MNMS	10-9Y	05 Dec 2014	11 Dec 2014
REV	ILS OR LOC RWY 01L	11-1	05 Dec 2014	11 Dec 2014
REV	ILS OR LOC RWY 01R	11-2	05 Dec 2014	11 Dec 2014
REV	CAT II/III ILS RWY 01R	11-2A	05 Dec 2014	11 Dec 2014
REV	ILS OR LOC RWY 19L	11-3	05 Dec 2014	11 Dec 2014
REV	ILS OR LOC RWY 19R	11-4	05 Dec 2014	11 Dec 2014
REV	CAT II/III ILS RWY 19R	11-4A	05 Dec 2014	11 Dec 2014
REV	RNAV (GNSS) RWY 01L	12-1	05 Dec 2014	11 Dec 2014
REV	RNAV (GNSS) RWY 01R	12-2	05 Dec 2014	11 Dec 2014
REV	RNAV (GNSS) RWY 19L	12-3	05 Dec 2014	11 Dec 2014
REV	RNAV (GNSS) RWY 19R	12-4	05 Dec 2014	11 Dec 2014
ADD	RNAV (GNSS) RWY 19R MNMS	12-4A	05 Dec 2014	11 Dec 2014
REV	VOR RWY 01L	13-1	05 Dec 2014	11 Dec 2014
REV	VOR RWY 19R	13-2	05 Dec 2014	11 Dec 2014

TERMINAL CHART CHANGE NOTICES

Chart Change Notices for Airport ENGM

Type: Terminal

Effectivity: Temporary

Begin Date: Immediately

End Date: 20141211

(11-1, 11-2, 11-2A, 11-3, 11-4, 11-4A, 13-1,13-2); Note RNAV transitions: RNAV 1 (GNSS required), should read RNAV transitions: RNAV 1.