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Airport Information For ENGM

Terminal Charts For ENGM

Revision Letter For Cycle 01-2014

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: 2.5°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 121.925
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 121.675
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.

1.2.2. PREFERENTIAL RUNWAY 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 runway operations).
- For other traffic, RWY 01L and 19R must be used (single runway operation), except in cases of runway closure.

Between 2400-0630LT RWY 01L or 19R are to be used (single runway operation). In special situations segregated runway 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. 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.

1.3. 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.

1. GENERAL

Pilots are to delay the call "runway 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 only	B6, B7, B8, B9	A7, A9, C3, C1
RWY exit	A9, C1, C3	B6, B7, B8, B9	B1 only	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.

1.6. 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

STAR is based on Point Merge System (PMS), and accommodates Basic Continuous Descent Operations (B-CDO). Arriving traffic established on the STAR may at any time be cleared direct to the Merge Point (MP), and must be prepared for this. Succeeding arriving ACFT can thus be turned direct to the MP when sufficient spacing to preceding traffic is achieved. By doing this, an accurate sequence can be attained while allowing the ACFT to maintain own navigation (LVAV). ACFT shall, unless another clearance is given by ATC, maintain level and speed assigned for the relevant STAR.

3. DEPARTURE

3.1. 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. 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.

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.

3.2. START-UP & PUSH-BACK

3.2.1. 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 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.
- Stand 185, code D ACFT will be pushed to start-up position 9 between TWYs L1 and L2 facing East.
- Stand 186, code D and E ACFT will be pushed to start-up position 7 facing South.
- Stand 187, code C 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.

3. DEPARTURE

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 and 184, ACFT will be pushed to start-up position 6, facing East.
- Stands 185 and 186, code C ACFT will be pushed to start-up position 6, facing East.
- Stand 201 initial turn left after push-back.
- Stand 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 aircraft 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.

3.2.2. ATC CLEARANCE

Departing flights shall contact GARDERMOEN Delivery to obtain ATC clearance. Specify stand number. Request for ATC clearance may take place at the earliest 30 minutes, and at the latest 10 minutes prior to anticipated engine start-up (TOBT). Listening watch shall thereafter be maintained on GARDERMOEN Delivery.

3.3. AIRPORT COLLABORATIVE DECISION MAKING

3.3.1. 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.

3.3.2. 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.

3.4. OTHER INFORMATION

3.4.1. 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.

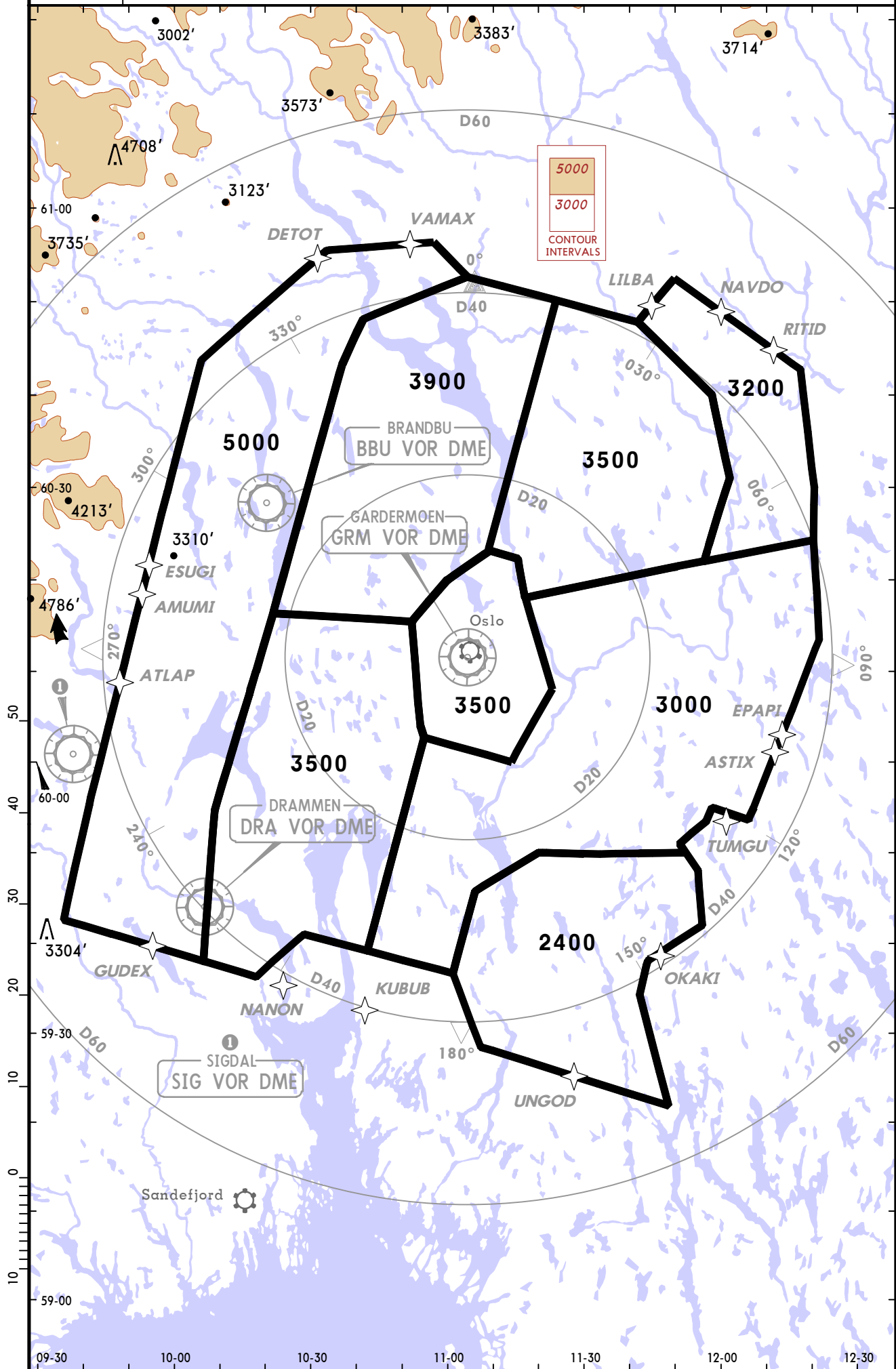
TSAT accounts for time for taxiing and de-icing as necessary, so the CTOT can be met.

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.



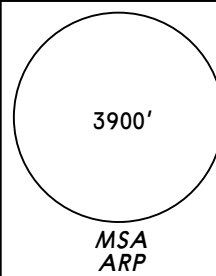
ATIS
126.12

Apt Elev
681'

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

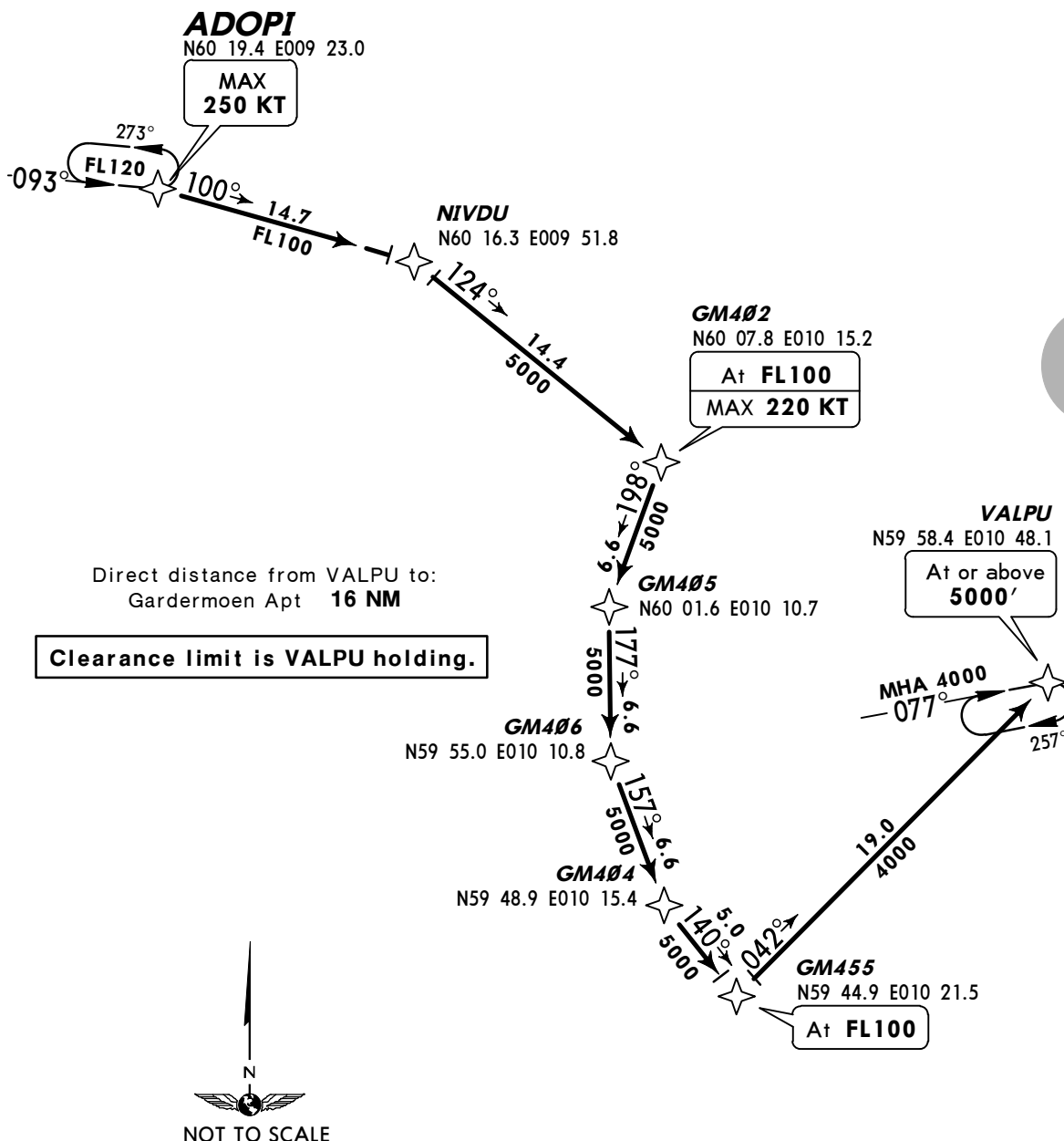
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

ADOPI TWO LIMA
(ADOPI 2L) [ADOP2L]
RWYS 01L/R P-RNAV ARRIVAL
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
P-RNAV APPROVAL REQUIRED
RNAV 1



~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
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 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01 ▲ SWW00 1S01



ROUTING

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

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

1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

3900' MSA
ARP



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

ATIS
126.12

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

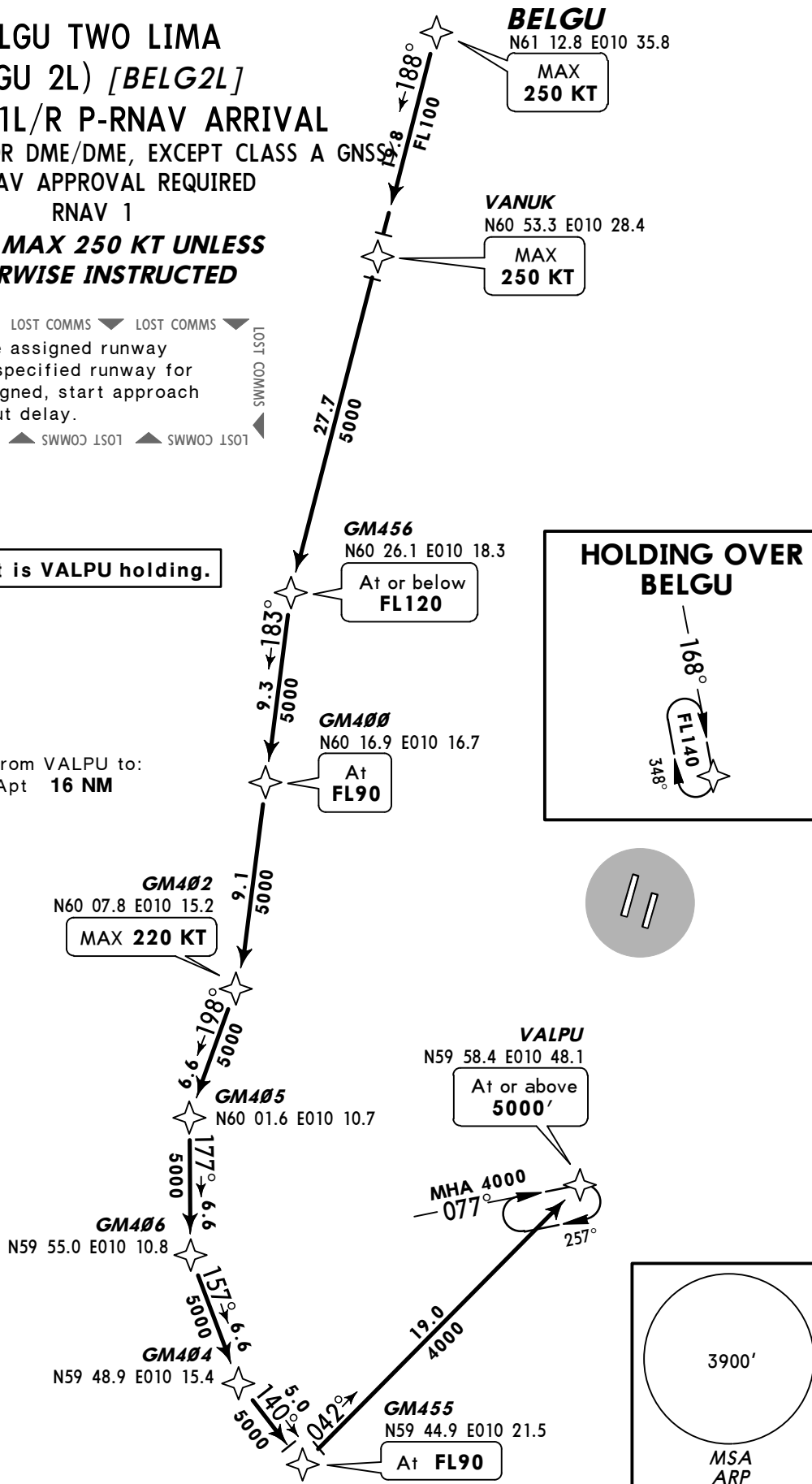
BELGU TWO LIMA
(BELGU 2L) [BELG2L]
RWYS 01L/R P-RNAV ARRIVAL
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
P-RNAV APPROVAL REQUIRED
RNAV 1

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

COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Start approach to the assigned runway
without delay. If no specified runway for
landing has been assigned, start approach
to runway 01R without delay.
SWW03 LS01 ▲ SWW03 LS01 ▲ SWW03 LS01 ▲ SWW03 LS01

Clearance limit is VALPU holding.

Direct distance from VALPU to:
Gardermoen Apt 16 NM



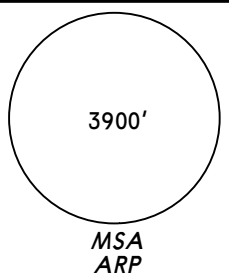
ROUTING

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

ATIS
126.12Apt Elev
681'

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

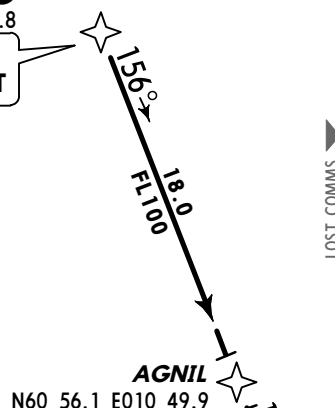
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

**BELGU TWO MIKE**
(BELGU 2M) [BELG2M]**RWYS 19L/R P-RNAV ARRIVAL**

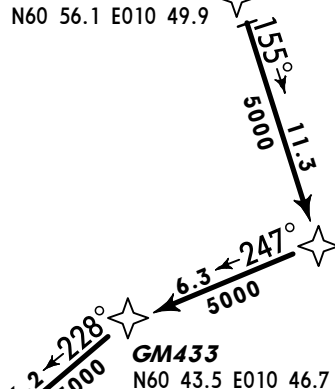
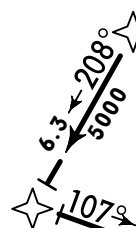
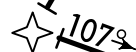
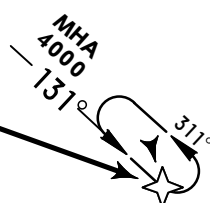
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED**BELGU**
N61 12.8 E010 35.8MAX
250 KT

Start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 19R without delay.

AGNIL
N60 56.1 E010 49.9**GM432**
N60 45.7 E010 58.7At FL110
MAX 220 KT**GM433**
N60 43.5 E010 46.7**GM434**
N60 39.5 E010 37.0**GM435**
N60 34.0 E010 30.6At
FL110**BAVAD**
N60 28.0 E011 05.1At or above
5000'**Clearance limit is BAVAD holding.**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
126.12

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

ESEBA THREE LIMA

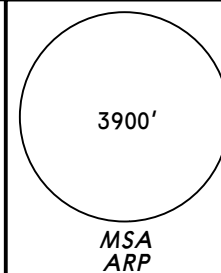
(ESEBA 3L) [ESEB3L]

RWYS 01L/R P-RNAV ARRIVAL

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

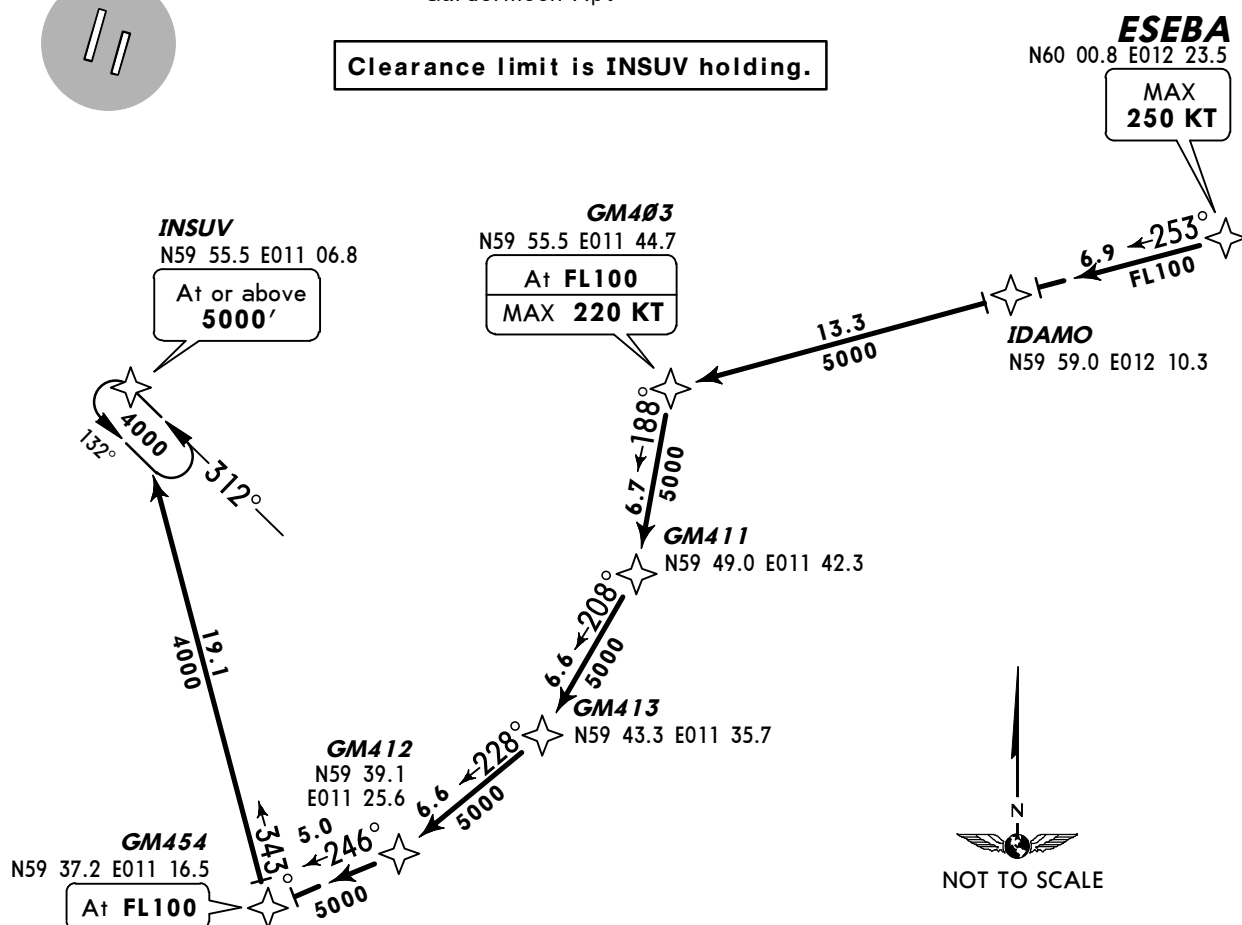


~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
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 ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

Direct distance from INSUV to:
Gardermoen Apt 17 NM

Clearance limit is INSUV holding.



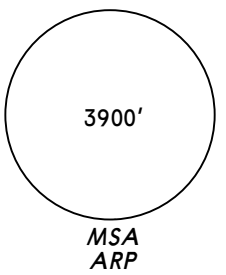
ROUTING

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

D-ATIS
126.12

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.



ESEBA THREE MIKE
(ESEBA 3M) [ESEB3M]
RWYS 19L/R P-RNAV ARRIVAL

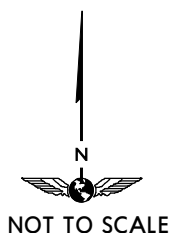
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

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



TITLA
N60 25.3 E011 24.2

At or above
5000'

076°

256°
MHA 4000

GM453

N60 38.7 E011 51.5

At FL100

223°
19.0
4000

5.9
321°
6000

GM425

N60 34.7 E011 57.6

6.6
338°
6000

GM424

N60 28.5 E012 02.1

6.6
358°
6000

GM423

N60 21.9 E012 02.0

6.6
019°
6000

GM422

N60 15.8 E011 57.3

At FL100

MAX 220 KT

13.7
317°
6000

KEGET

N60 05.4 E012 15.3

6.2
316°
FL100

ESEBA

N60 00.8 E012 23.5

MAX 250 KT

Direct distance from TITLA to:
Gardermoen Apt 16 NM

Clearance limit is TITLA holding.

ROUTING

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

D-ATIS
126.12

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

INREX THREE LIMA
(INREX 3L) [INRE3L]

RWYS 01L/R P-RNAV ARRIVAL

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

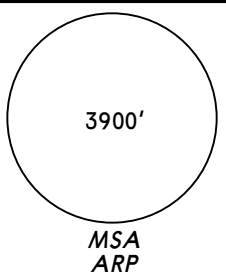
~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

**HOLDING OVER
INREX**

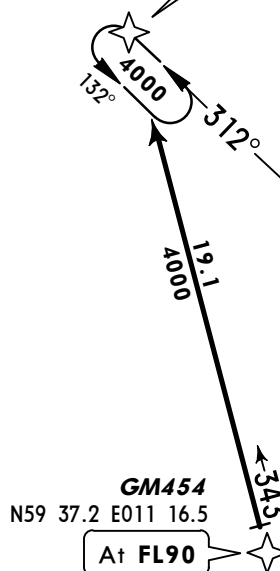


Direct distance from INSUV to:
Gardermoen Apt 17 NM

Clearance limit is INSUV holding.



INSUV
N59 55.5 E011 06.8
At or above
5000'



NOT TO SCALE

LOST COMMS Start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 01R without delay.

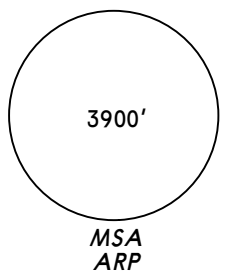
ROUTING

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

D-ATIS
126.12Apt Elev
681'

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

1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.



INREX THREE MIKE
(INREX 3M) [INRE3M]
RWYS 19L/R P-RNAV ARRIVAL
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
RNAV APPROVAL REQUIRED
RNAV 1

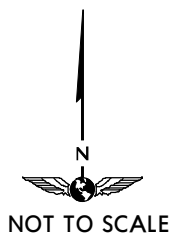
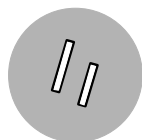
~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Start approach to the assigned runway without delay. If no specified runway for landing has been assigned, start approach to runway 19R without delay.
LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

HOLDING OVER INREX**GM418**
N60 39.1 E011 47.7

At FL110

MAX 220 KT

Direct distance from TITLA to:
Gardermoen Apt 16 NM**Clearance limit is TITLA holding.****TITLA**
N60 25.3 E011 24.2At or above
5000'**MHA 4000**
256°**INREX**
N61 00.8 E012 13.0MAX
250 KT

208°

13.5
FL100**IXUMA**
N60 49.1 E011 59.411.6
600013.9
6000**GM419**
N60 34.2 E011 55.815.8
6000**GM420**
N60 28.3 E012 00.16.2
6000**GM421**
N60 22.1 E012 00.0

At FL110

278°

18.1
4000**ROUTING**INREX (K250-) - IXUMA - GM418 (FL110; K220-) - GM419 - GM420 - GM421 (FL110) -
TITLA (5000'+).

D-ATIS
126.12

Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

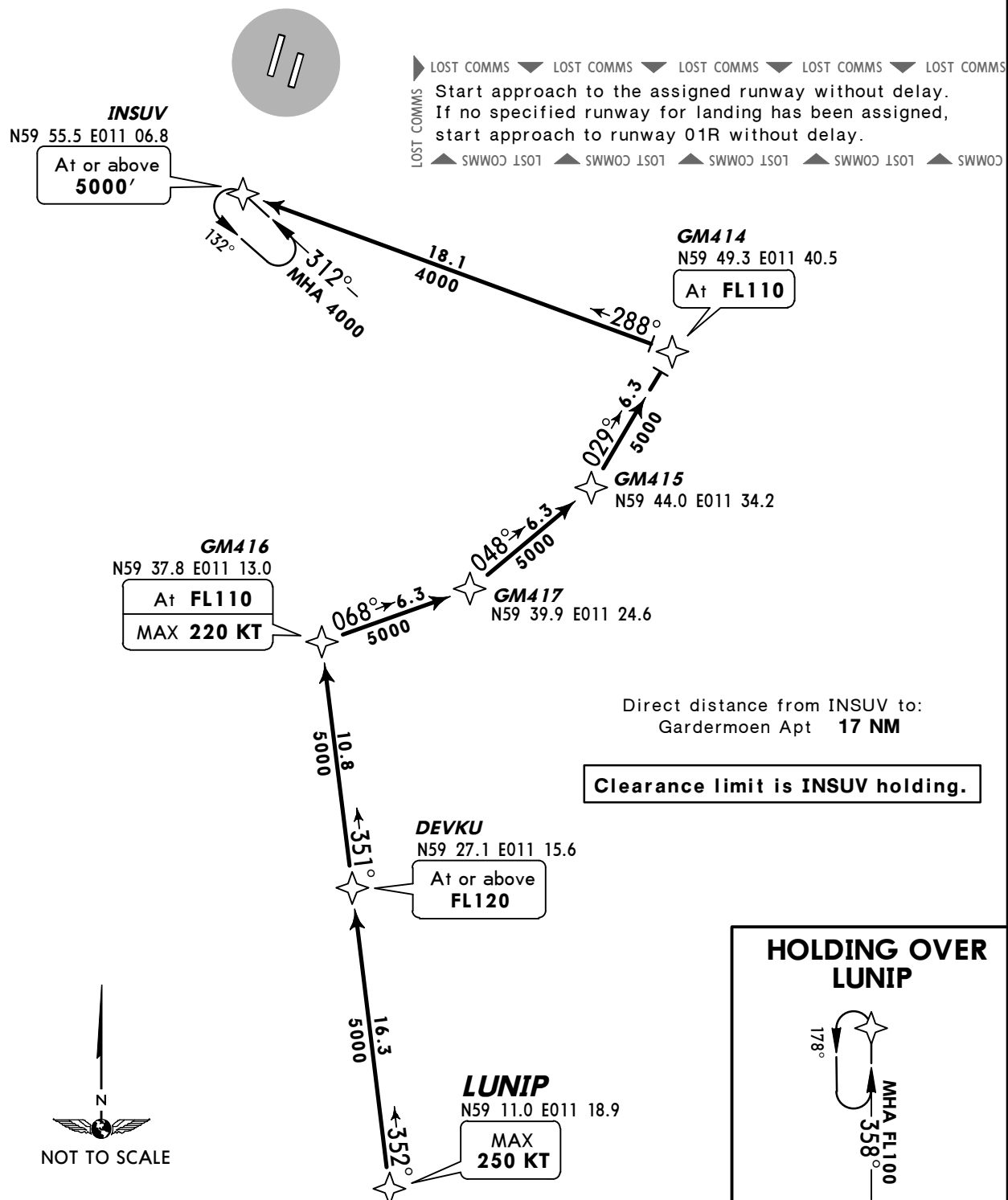
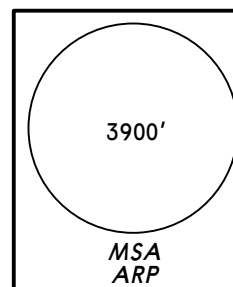
LUNIP THREE LIMA
(LUNIP 3L) [LUNIP3L]
RWYS 01L/R P-RNAV ARRIVAL

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED



ROUTING

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

D-ATIS
126.12

Apt Elev
681'

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

1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

LUNIP THREE MIKE (LUNIP 3M) [LUNI3M]

RWYS 19L/R P-RNAV ARRIVAL

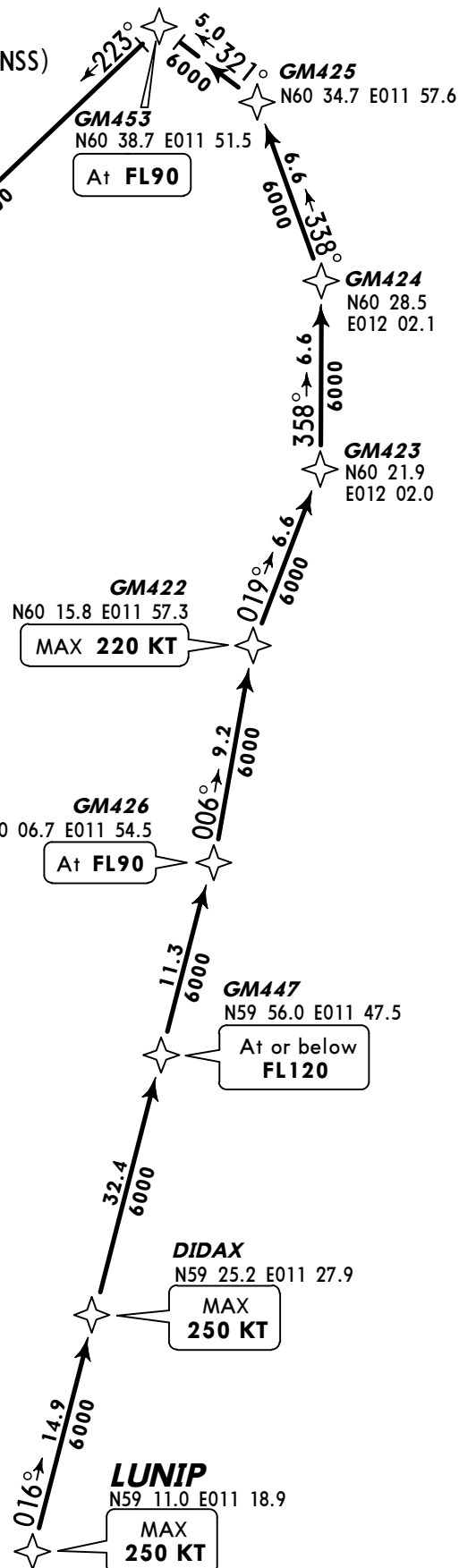
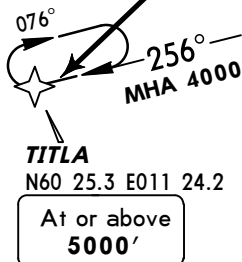
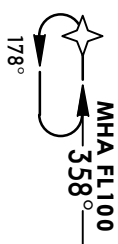
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

RNAV APPROVAL REQUIRED

RNAV 1

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

HOLDING OVER LUNIP

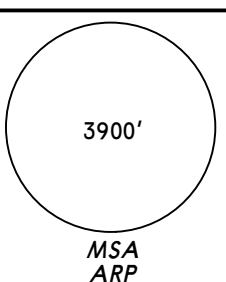


Direct distance from TITLA to:
Gardermoen Apt 16 NM

Clearance limit is TITLA holding.

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



ROUTING

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

D-ATIS
126.12

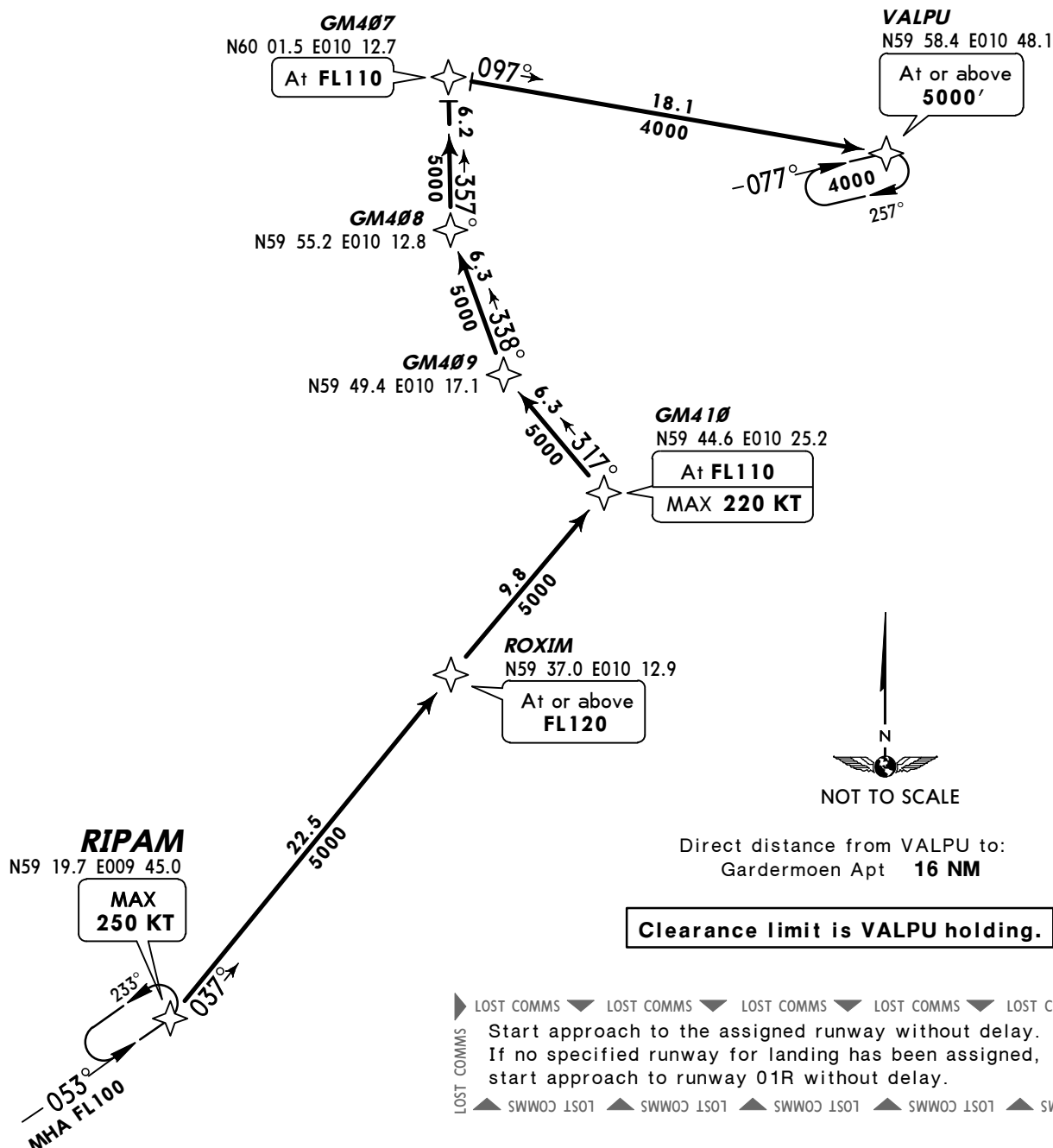
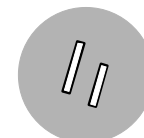
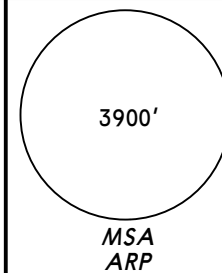
Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

RIPAM TWO LIMA
(RIPAM 2L) [RIPA2L]
RWYS 01L/R P-RNAV ARRIVAL
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
RNAV APPROVAL REQUIRED

RNAV 1

~~SPEED~~ MAX 250 KT UNLESS OTHERWISE INSTRUCTED



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Start approach to the assigned runway without delay.
If no specified runway for landing has been assigned,
start approach to runway 01R without delay.
▲ SWW0C ISOT ▲ SWW0C ISOT ▲ SWW0C ISOT ▲ SWW0C ISOT ▲ SWW0C

ROUTING

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

D-ATIS
126.12

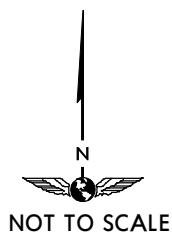
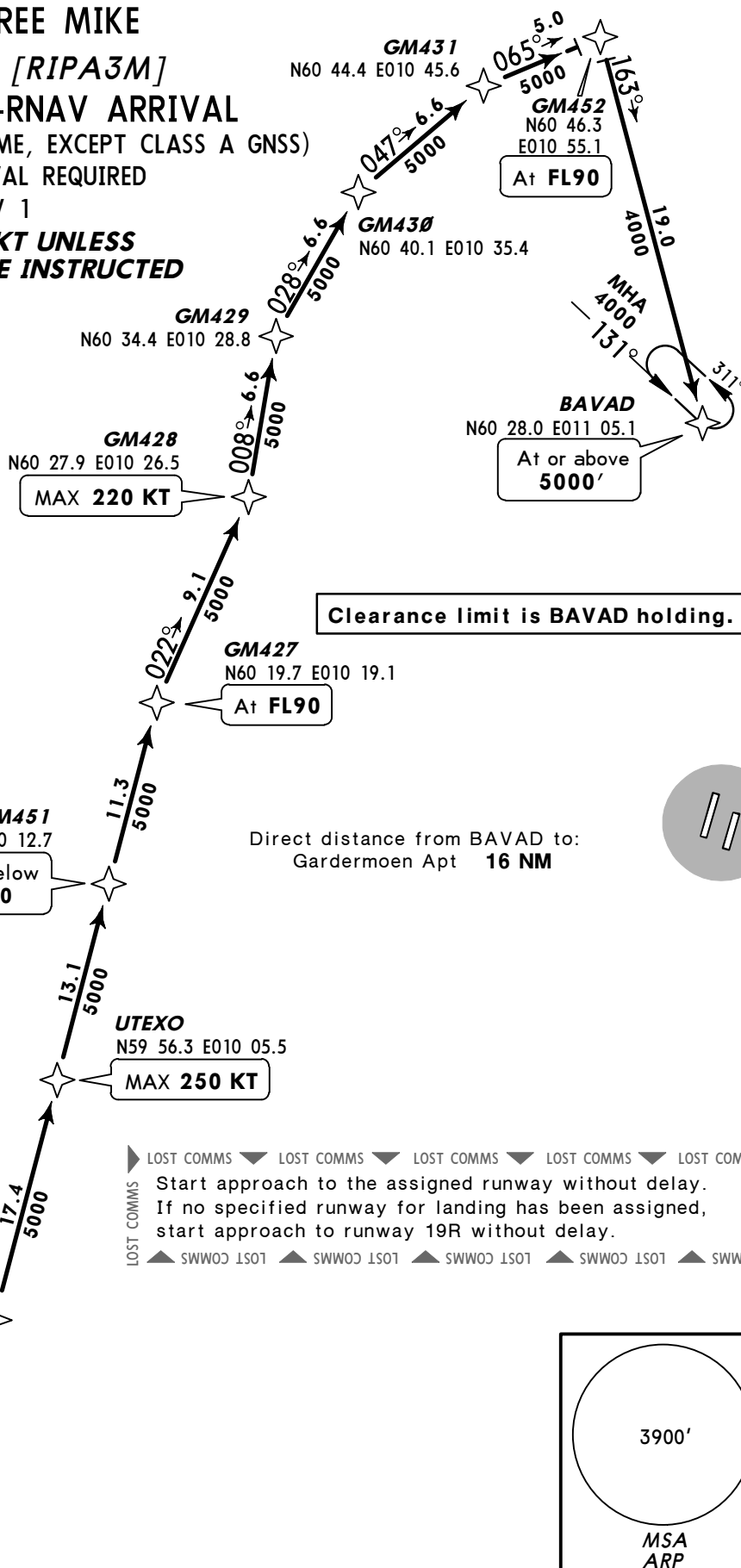
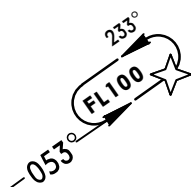
Apt Elev
681'

Alt Set: hPa Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Loss of RNAV capability, request vectoring.
3. Vectoring may be used when necessary.
4. Descend as cleared by ATC.

RIPAM THREE MIKE
(RIPAM 3M) [RIPA3M]
RWYS 19L/R P-RNAV ARRIVAL
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
RNAV APPROVAL REQUIRED
RNAV 1

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

**HOLDING OVER
RIPAM**



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
Start approach to the assigned runway without delay.
If no specified runway for landing has been assigned,
start approach to runway 19R without delay.
LOST COMMS ▲ SWWOC 1SOT ▲ SWWOC 1SOT ▲ SWWOC 1SOT ▲ SWWOC 1SOT ▲ SWWOC

ROUTING

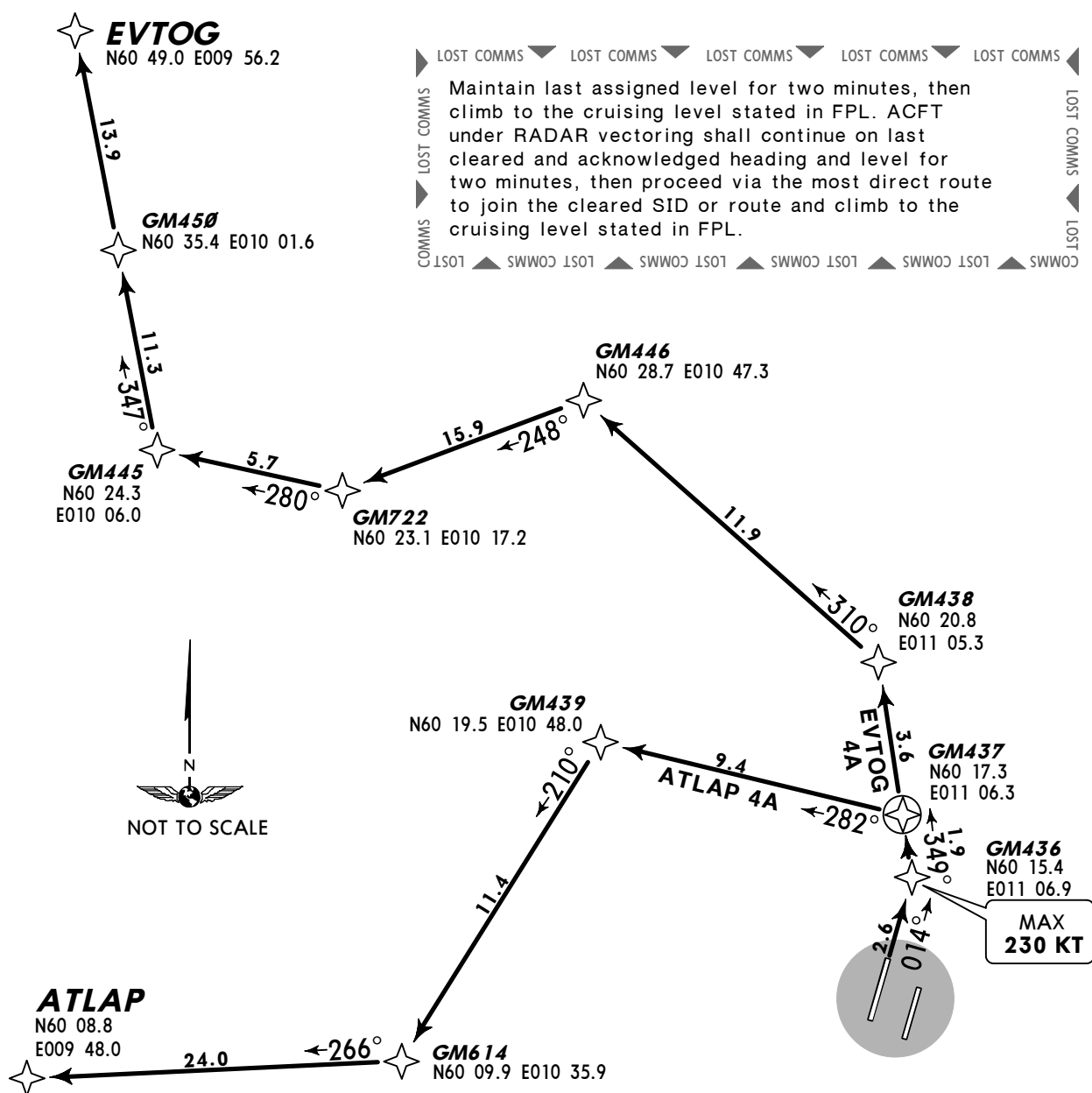
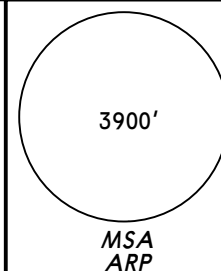
RIPAM (K250-) - INGAR (K250-) - UTEXO (K250-) - GM451 (FL120-) - GM427 (FL90) -
GM428 (K220-) - GM429 - GM430 - GM431 - GM452 (FL90) - BAVAD (5000'+).

*OSLO Approach
120.45

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

**ATLAP FOUR ALFA (ATLAP 4A)[ATLA4A]
EVT OG FOUR ALFA (EVT OG 4A)[EVTO4A]
RWY 01L P-RNAV DEPARTURES
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)
P-RNAV APPROVAL REQUIRED
RNAV 1
~~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.

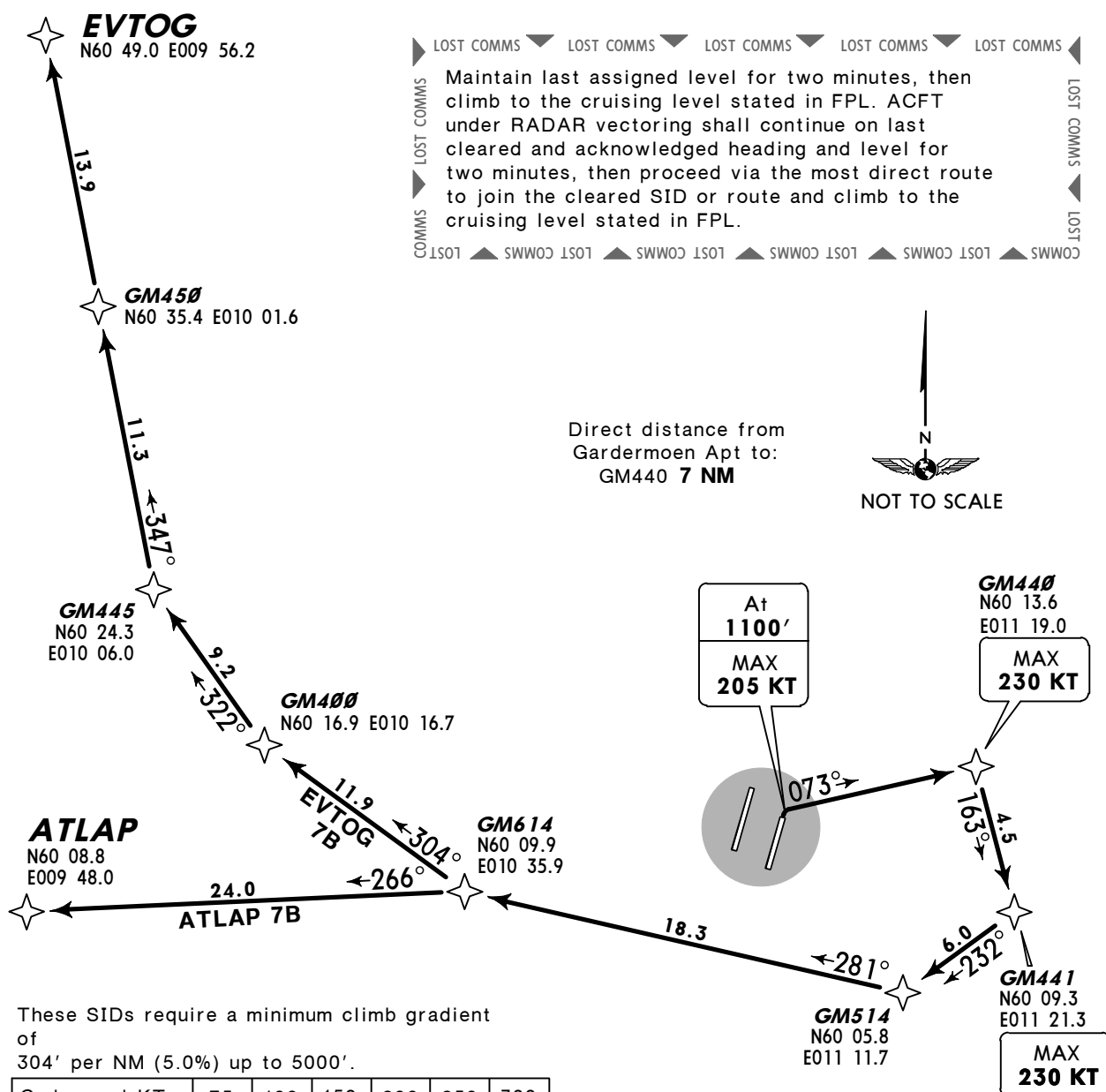
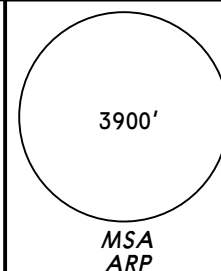
Initial climb clearance **7000'**, EXPECT further climb by OSLO Approach.

SID	ROUTING
ATLAP 4A	On 014° track to GM436 (K230-) - GM437 - GM439 - GM614 - ATLAP.
EVT OG 4A	On 014° track to GM436 (K230-) - GM437 - GM438 - GM446 - GM722 - GM445 - GM450 - EVT OG.

Trans level: By ATC Trans alt: 7000'

1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

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



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
ATLAP 7B	Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM440 (K230-), turn RIGHT to GM441 (K230-) - GM514 - GM 614 - ATLAP.
EVTOG 7B	Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM440 (K230-), turn RIGHT to GM441 (K230-) - GM514 - GM614 - GM400 - GM445 - GM450 - EVTOG.

*OSLO Approach
120.45

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

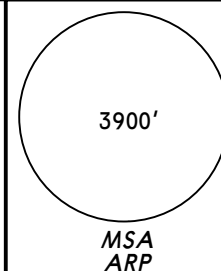
**ATLAP TWO CHARLIE (ATLAP 2C)[ATLA2C]
EVT OG TWO CHARLIE (EVT OG 2C)[EVTO2C]
RWY 19L P-RNAV DEPARTURES**

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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



EVT OG
N60 49.0 E009 56.2



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.
LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS

Direct distance from Gardermoen Apt to:
GM604 4 NM

ATLAP
N60 08.8
E009 48.0

GM451
N60 08.8 E010 12.7

GM619
N60 14.3 E010 31.4

GM604
N60 08.0 E011 05.0
MAX 230 KT

GM602
N60 03.5
E011 04.0

ODAXI
N59 54.5 E010 33.2

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 2C	On 194° track to GM604 (K230-) - GM602 - ODAXI - GM451 - ATLAP.
EVT OG 2C	On 194° track to GM604 (K230-) - GM602 - ODAXI - turn RIGHT to GM619 - GM717 - EVTOG.

*OSLO Approach
120.45

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

**ATLAP EIGHT DELTA (ATLAP 8D) [ATLA8D]
EVT OG EIGHT DELTA (EVT OG 8D) [EVTO8D]**

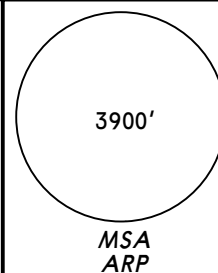
RWY 19R P-RNAV DEPARTURES

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

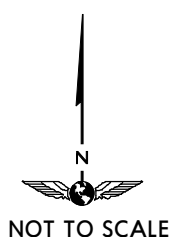
RNAV 1

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



EVT OG
N60 49.0 E009 56.2

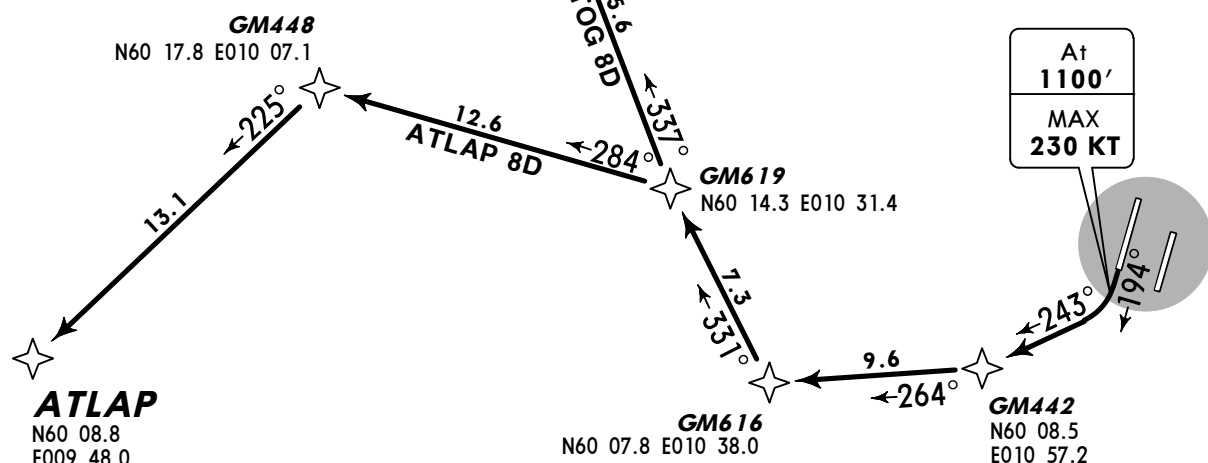
LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Maintain last assigned level for two minutes, then climb to the cruising level stated in FPL. ACFT under RADAR vectoring shall continue on last cleared and acknowledged heading and level for two minutes, then proceed via the most direct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



WARNING

Segment distance from 1100' to GM442 is less than the average flight path.

Direct distance from Gardermoen Apt to: GM442 **5 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
ATLAP 8D	Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM616 - GM619 - GM448 - ATLAP.
EVT OG 8D	Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM616 - GM619 - GM717 - EVT OG.

*OSLO Approach
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

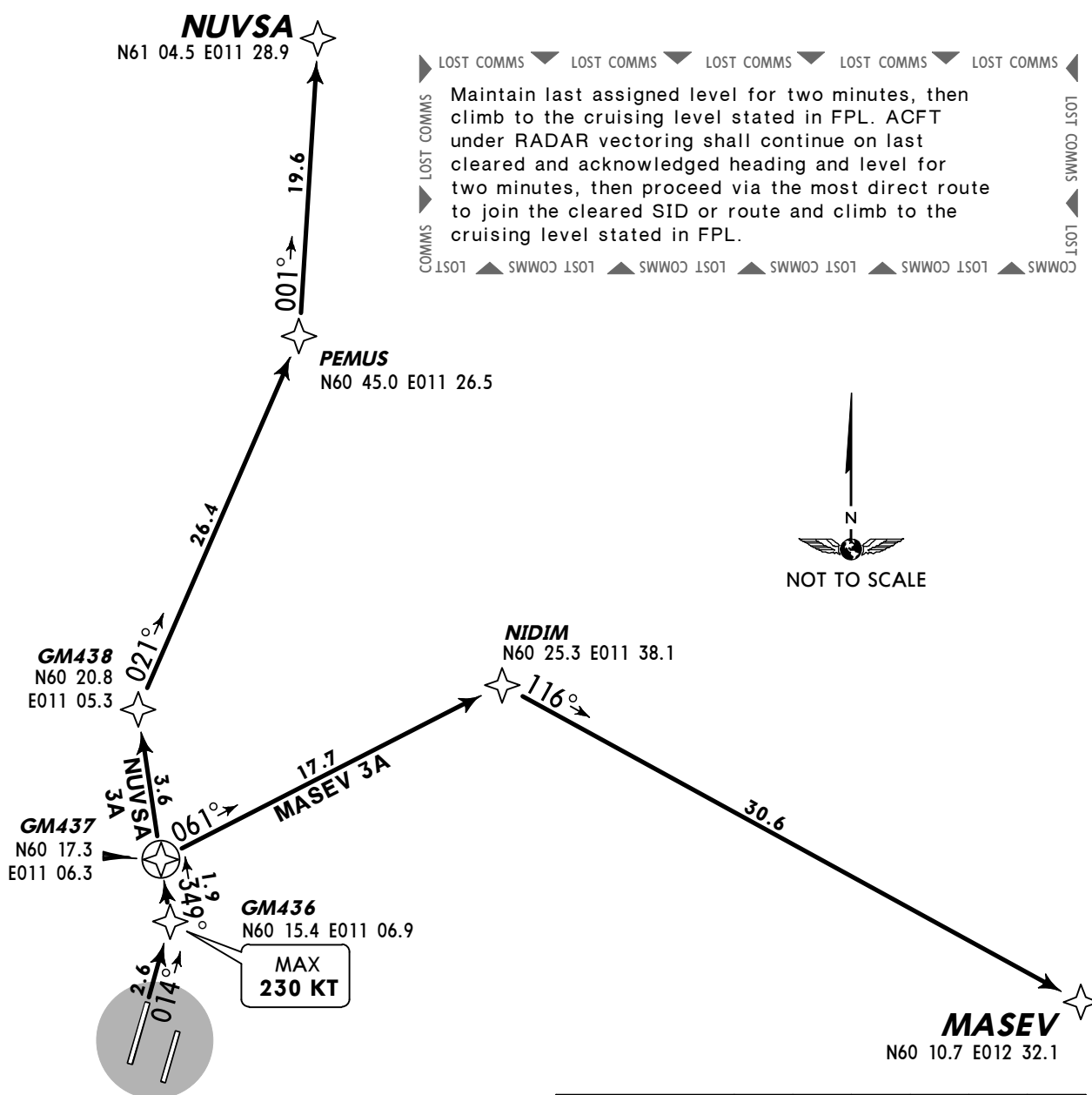
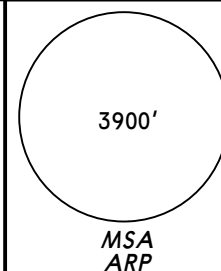
**MASEV THREE ALFA (MASEV 3A) [MASE3A]
NUVSA THREE ALFA (NUVSA 3A) [NUVS3A]
RWY 01L P-RNAV DEPARTURES**

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

**~~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 3A	On 014° track to GM436 (K230-) - GM437 - NIDIM - MASEV.
NUVSA 3A	On 014° track to GM436 (K230-) - GM437 - GM438 - PEMUS - NUVSA.

*OSLO Approach
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

MASEV EIGHT BRAVO (MASEV 8B)[MASE8B]

NUVSA SEVEN BRAVO (NUVSA 7B)[NUVS7B]

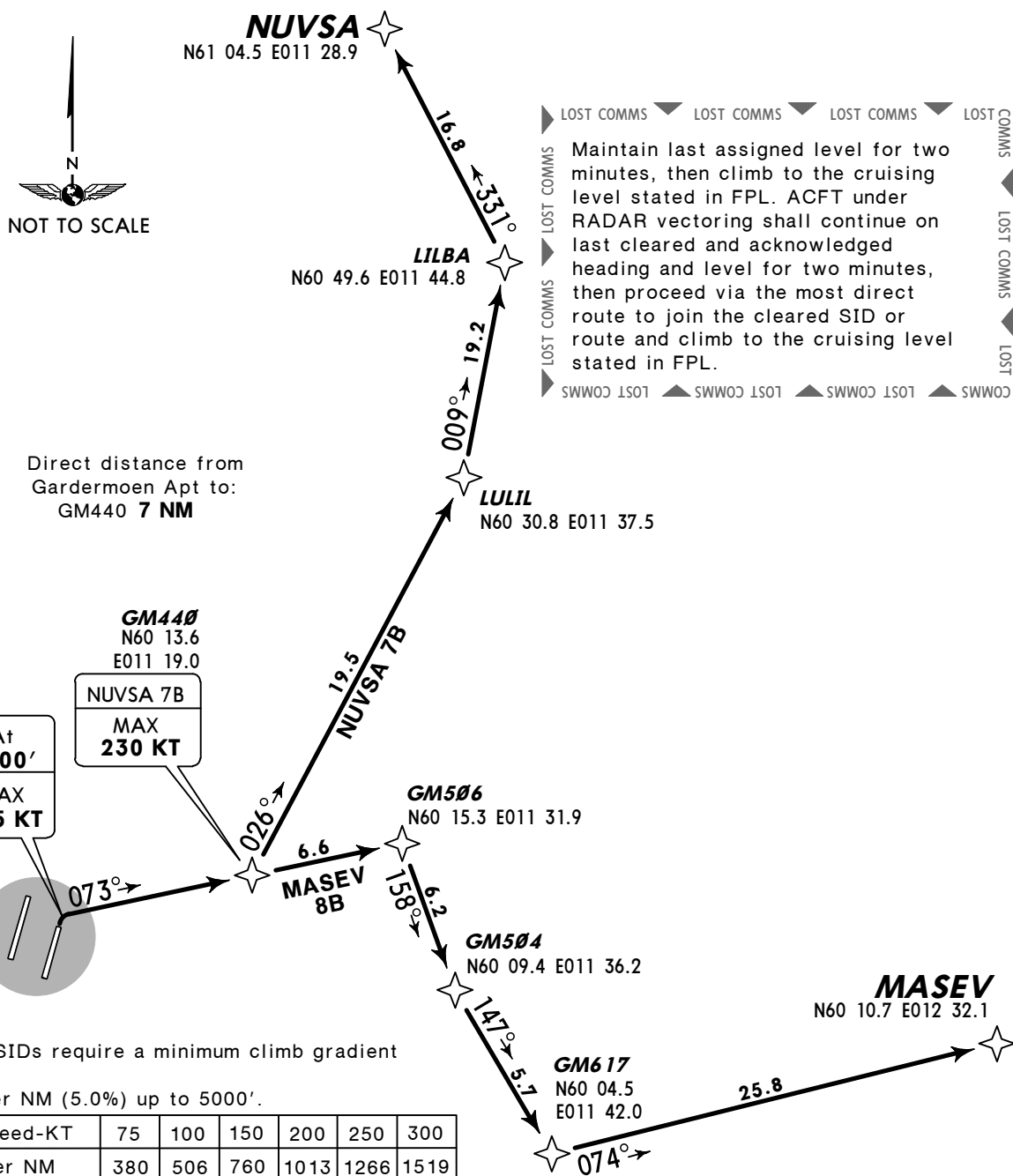
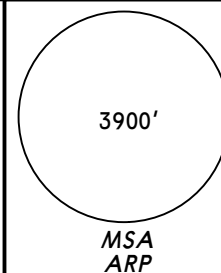
RWY 01R P-RNAV DEPARTURES

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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



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

SID

ROUTING

MASEV 8B

Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM506 - GM504 - GM617 - MASEV.

NUVSA 7B

Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM440 (K230-) - LULIL - LILBA - NUVSA.

*OSLO Approach
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

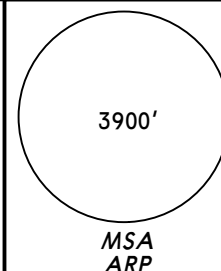
**MASEV FOUR CHARLIE (MASEV 4C)[MASE4C]
NUVSA THREE CHARLIE (NUVSA 3C)[NUVS3C]
RWY 19L P-RNAV DEPARTURES**

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

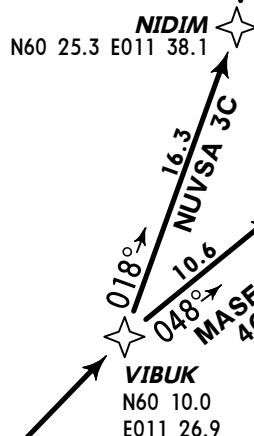
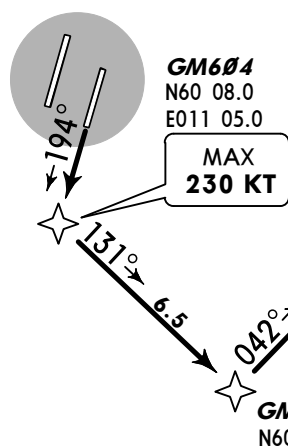
**~~SPEED~~ MAX 250 KT BELOW FL100
UNLESS OTHERWISE INSTRUCTED**



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.
LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS



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 4C	On 194° track to GM604 (K230-) - GM444 - turn LEFT to VIBUK - GM508 - GM422 - MASEV.
NUVSA 3C	On 194° track to GM604 (K230-) - GM444 - turn LEFT to VIBUK - NIDIM - LILBA - NUVSA.

*OSLO Approach
120.45

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

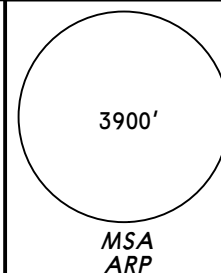
**MASEV SEVEN DELTA (MASEV 7D) [MASE7D]
NUVSA EIGHT DELTA (NUVSA 8D) [NUVS8D]
RWY 19R P-RNAV DEPARTURES**

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

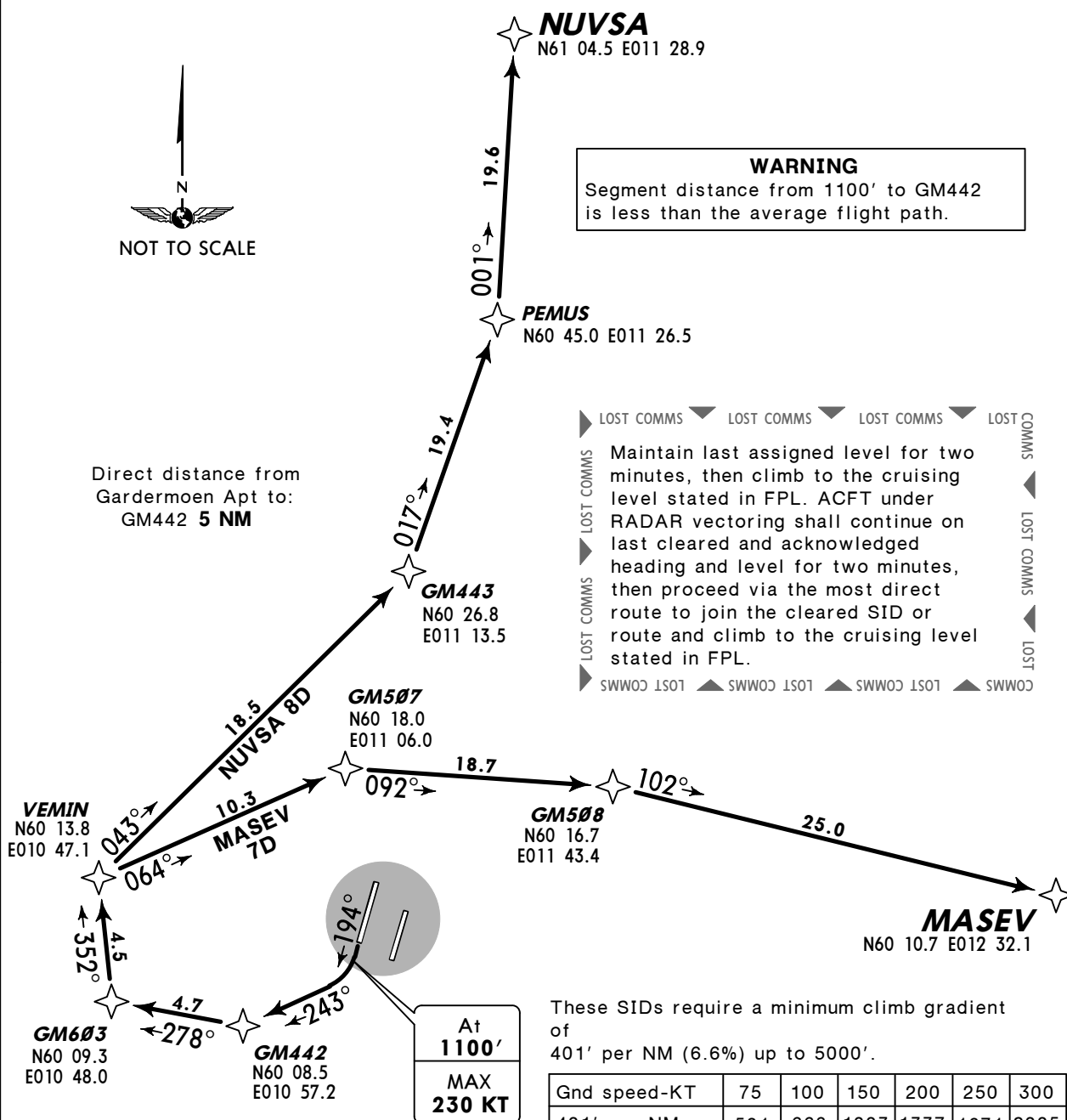
P-RNAV APPROVAL REQUIRED

RNAV 1

**~~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 7D	Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM603 - VEMIN - GM507 - GM508 - MASEV.
NUVSA 8D	Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM603 - VEMIN - GM442 - PEMUS - NUVSA.

*OSLO Approach		Apt Elev 681'	Trans level: By ATC Trans alt: 7000' 1. RADAR service shall be available. 2. Contact OSLO Approach when instructed by GARDERMOEN Tower. 3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.
(OKSAT 3A) 118.47	(TOR 3A) 120.45		

OKSAT THREE ALFA (OKSAT 3A) [OKSA3A]
TORP THREE ALFA (TOR 3A)

RWY 01L P-RNAV DEPARTURES

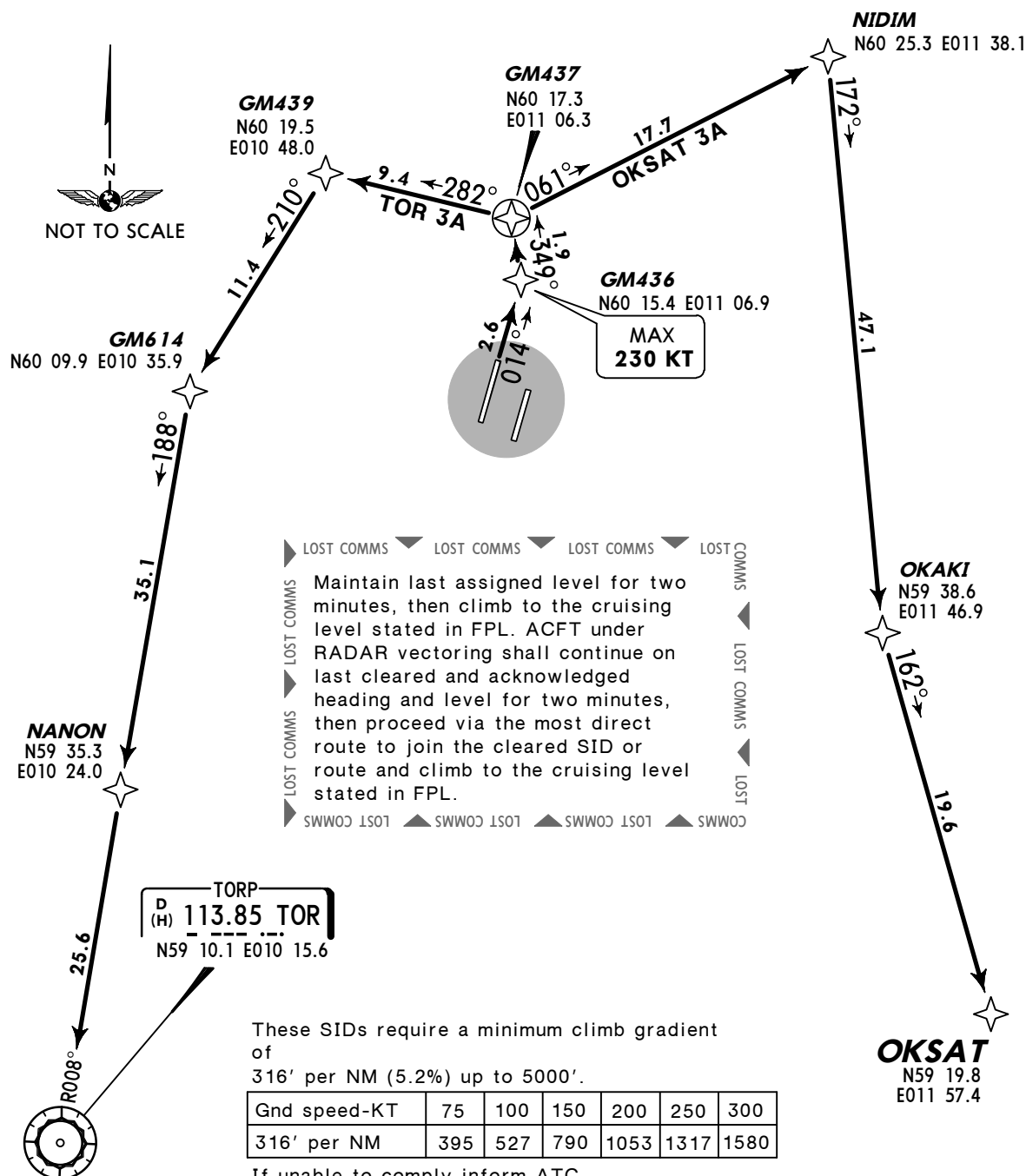
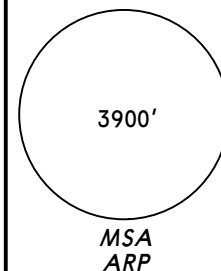
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

SPEED MAX 250 KT BELOW FL100

UNLESS OTHERWISE INSTRUCTED



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

SID	ROUTING
OKSAT 3A	On 014° track to GM436 (K230-) - GM437 - NIDIM - turn RIGHT to OKAKI - OKSAT.
TOR 3A	On 014° track to GM436 (K230-) - GM437 - GM439 - GM614 - NANON - TOR.

*OSLO Approach
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

OXSAT EIGHT BRAVO (OKSAT 8B) [OKSA8B]

TORP SEVEN BRAVO (TOR 7B)

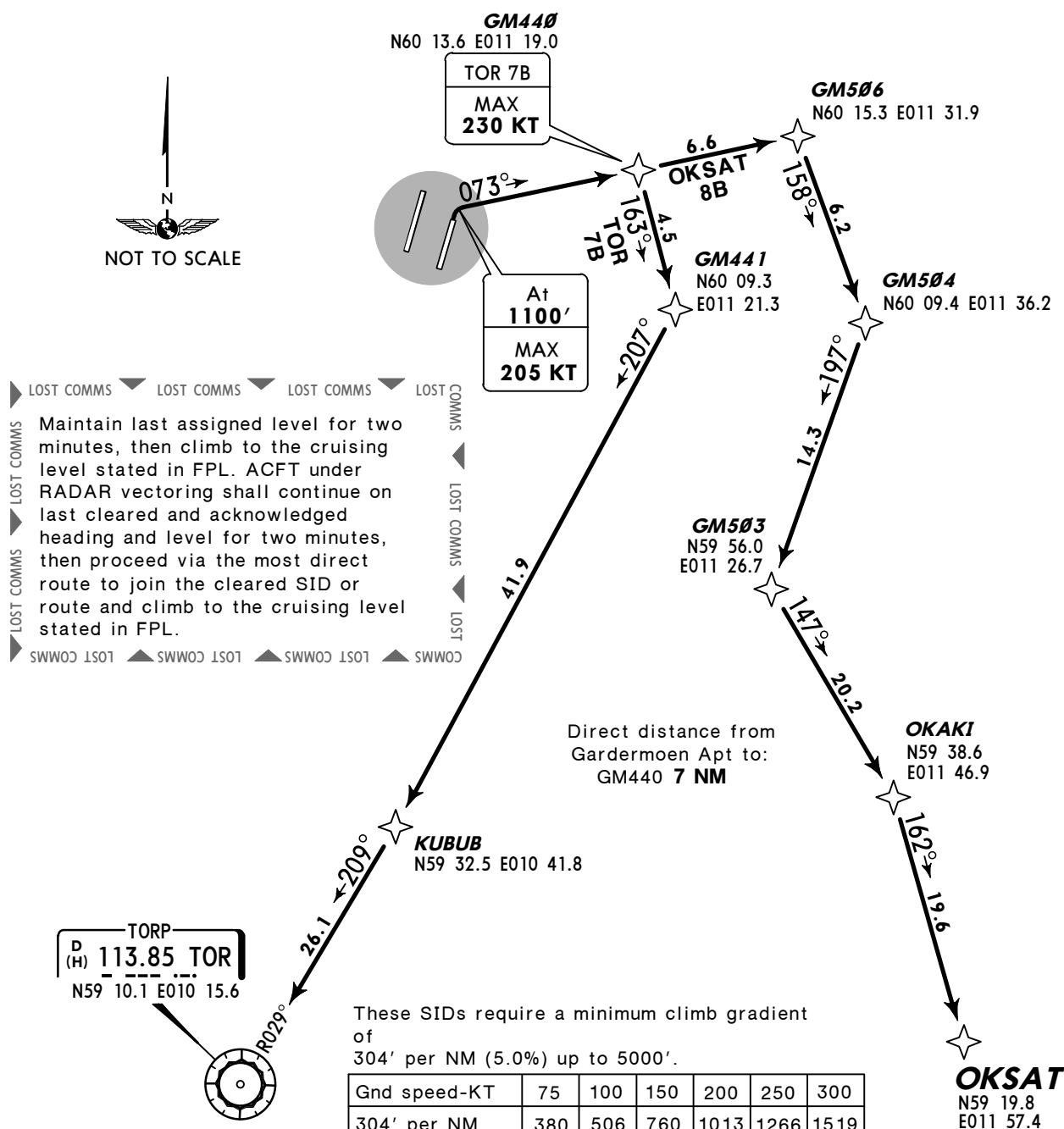
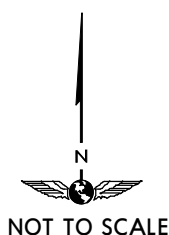
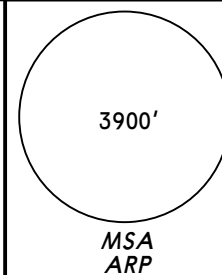
RWY 01R P-RNAV DEPARTURES

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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



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

SID	ROUTING
OXSAT 8B	Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM506 - GM504 - GM503 - OKAKI - OXSAT.
TOR 7B	Climb on 014° track to 1100', turn RIGHT (K205-), 073° track to GM440 (K230-), turn RIGHT to GM441 - KUBUB - TOR.

*OSLO Approach
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

OKSAT FOUR CHARLIE (OKSAT 4C)[OKSA4C]

TORP TWO CHARLIE (TOR 2C)

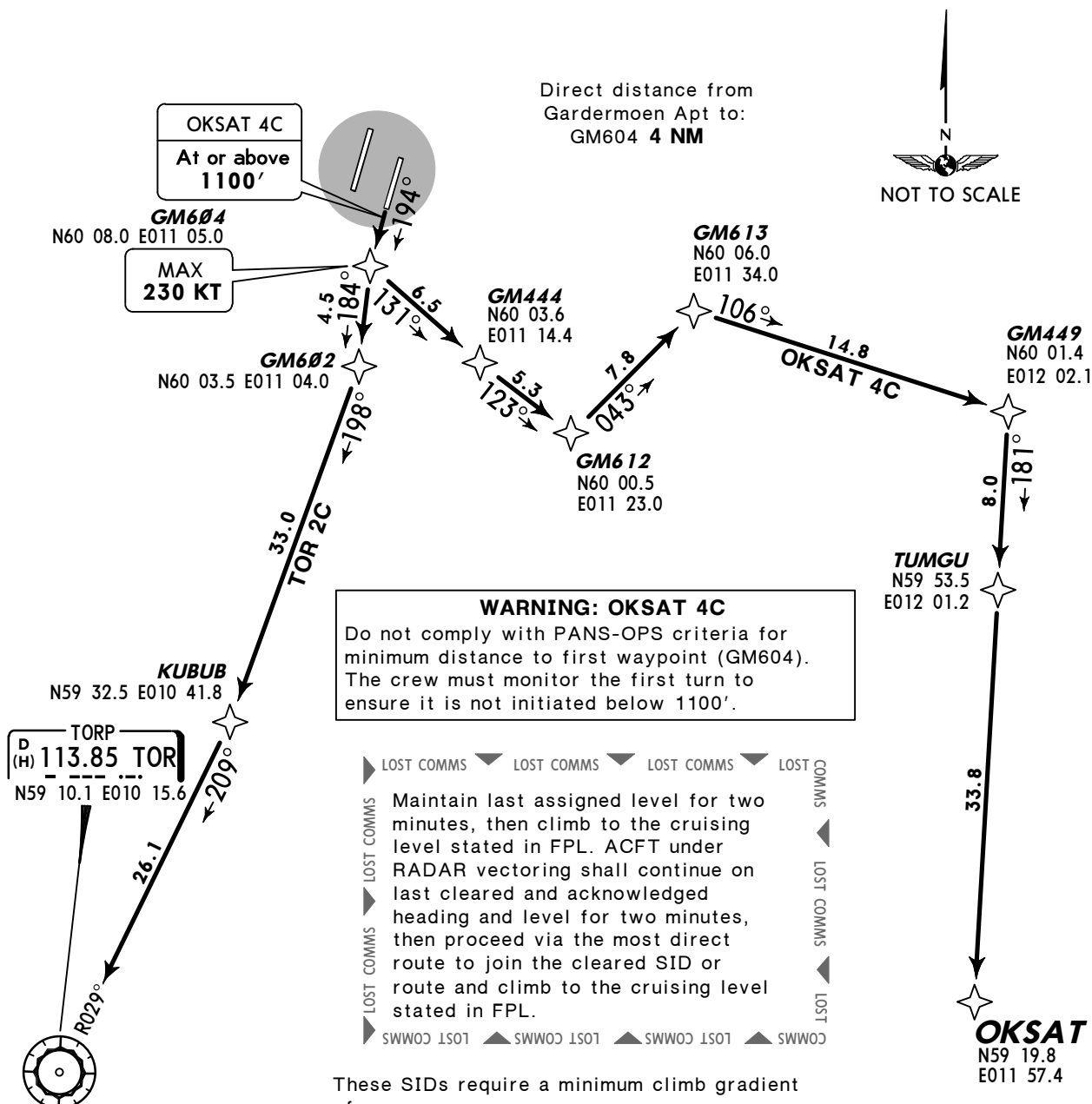
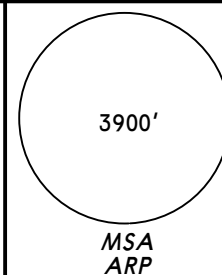
RWY 19L P-RNAV DEPARTURES

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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



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

SID	ROUTING
OKSAT 4C	On 194° track to GM604 (K230-) - GM444 - GM612 - GM613 - GM449 - TUMGU - OKSAT.
TORP 2C	On 194° track to GM604 (K230-) - GM602 - KUBUB - TOR.

*OSLO Approach
120.45

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

OXSAT SEVEN DELTA (OXSAT 7D)[OKSA7D]

TORP SEVEN DELTA (TOR 7D)

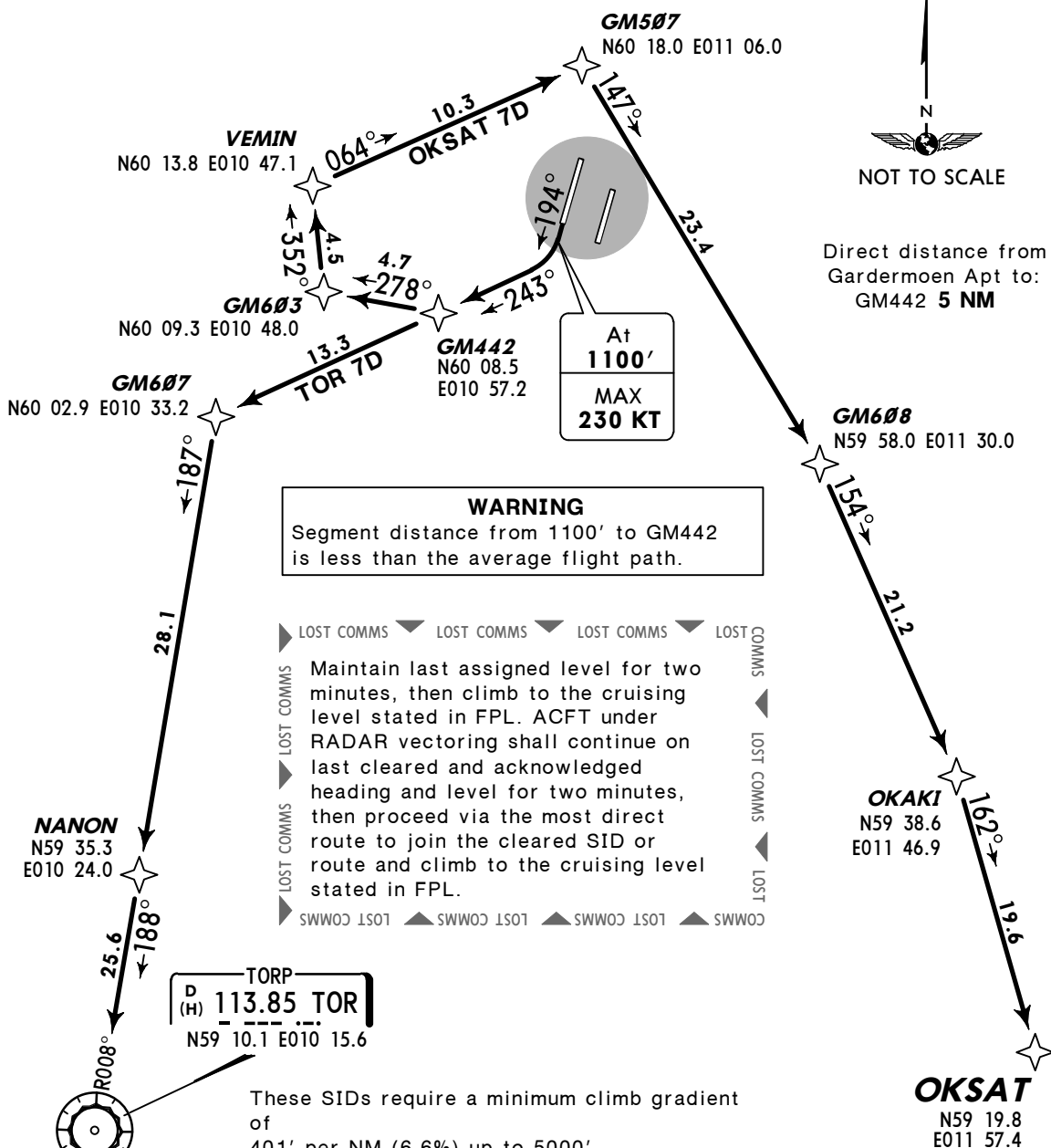
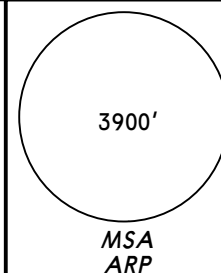
RWY 19R P-RNAV DEPARTURES

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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



Direct distance from Gardermoen Apt to: GM442 5 NM

NANON
N59 35.3
E010 24.0

TORP
D (H) 113.85 TOR
N59 10.1 E010 15.6

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

OKAKI
N59 38.6
E011 46.9

OXSAT
N59 19.8
E011 57.4

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

SID

ROUTING

OXSAT 7D

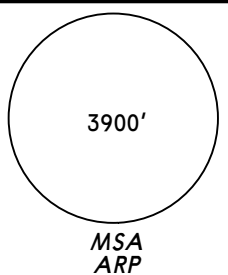
Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM603 - VEMIN - GM507 - GM608 - OKAKI - OXSAT.

TOR 7D

Climb on runway track to 1100', turn RIGHT (K230-), 243° track to GM442 - GM607 - NANON - TOR.

*OSLO Approach
120.45Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN
Delivery state 'Non P-RNAV'. Omnidirectional departure available.



VEMIN THREE ALFA (VEMIN 3A) [VEMI3A]

RWY 01L P-RNAV PROP DEPARTURE

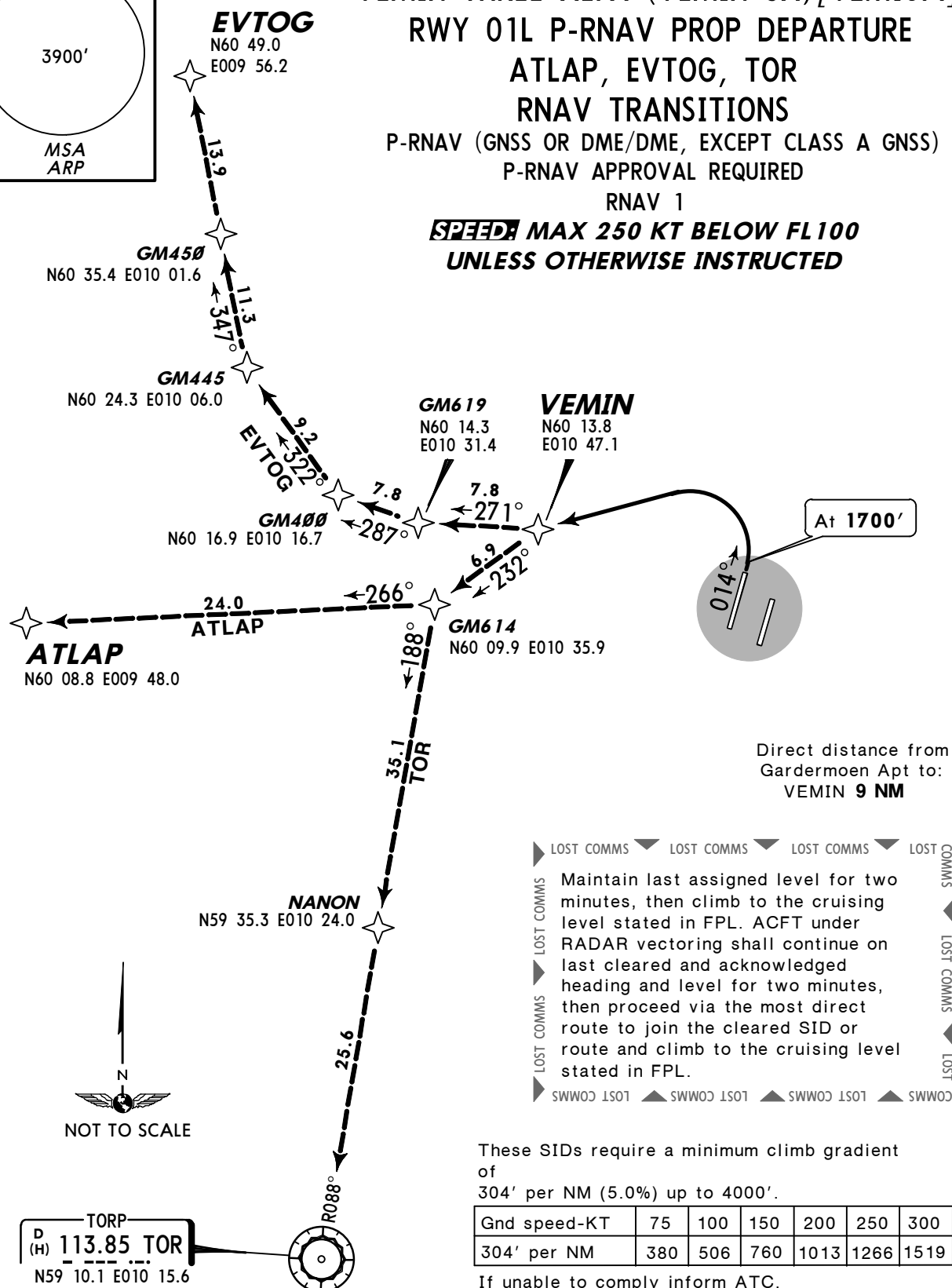
ATLAP, EVTOG, TOR

RNAV TRANSITIONS

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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

ROUTING

Climb on 014° 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
120.45Apt Elev
681'

Trans level: By ATC Trans alt: 7000'

1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

VEMIN EIGHT DELTA

(VEMIN 8D) [VEMI8D]

RWY 19R P-RNAV PROP DEPARTURE

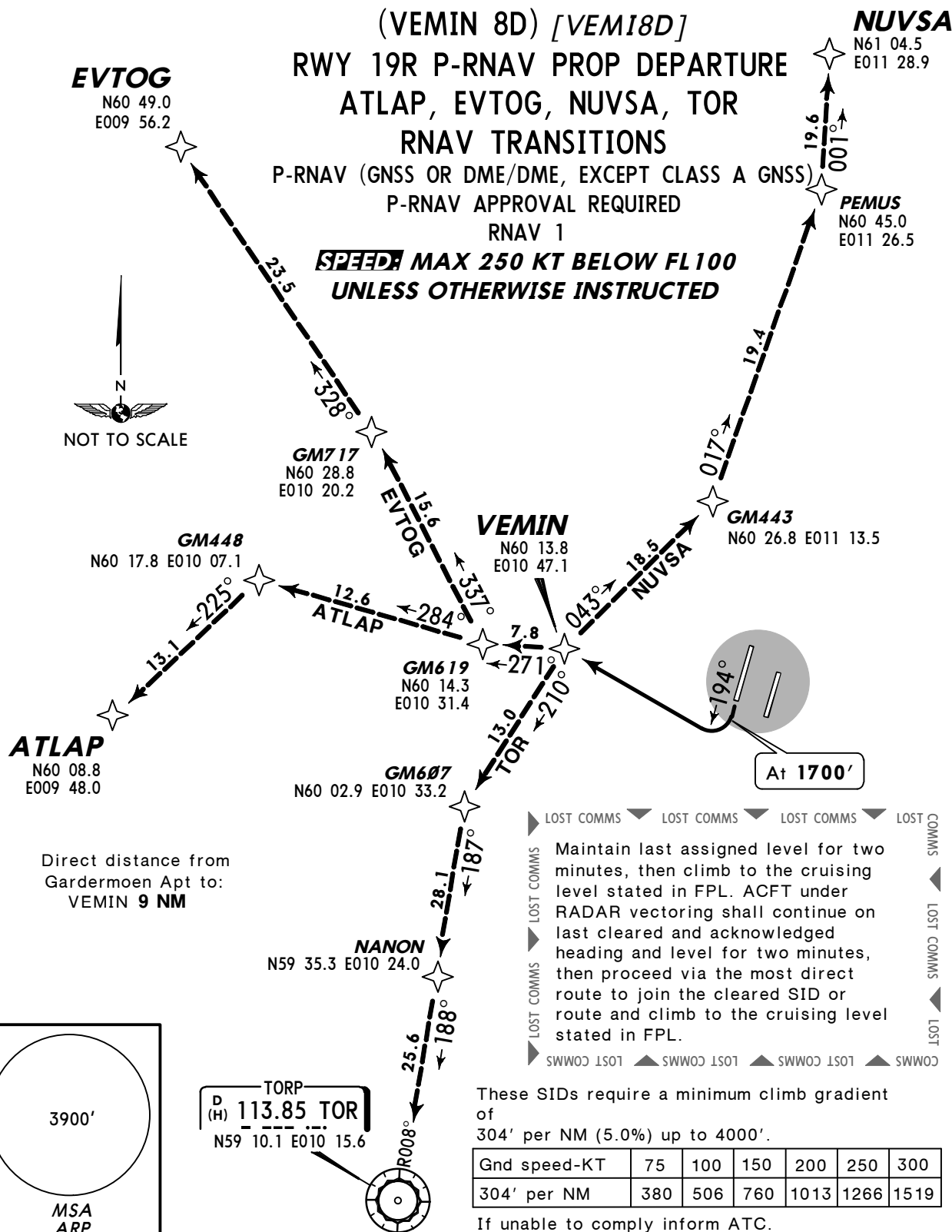
ATLAP, EVTOG, NUVSA, TOR

RNAV TRANSITIONS

P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

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

ROUTING

Climb on 194° 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
118.47

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'
1. RADAR service shall be available.
2. Contact OSLO Approach when instructed by GARDERMOEN Tower.
3. Non P-RNAV equipped ACFT: at first contact with GARDERMOEN Delivery state 'Non P-RNAV'. Omnidirectional departure available.

VIBUK THREE CHARLIE (VIBUK 3C)[VIBU3C]

RWY 19L P-RNAV PROP DEPARTURE

MASEV, NUVSA, OKSAT

RNAV TRANSITIONS

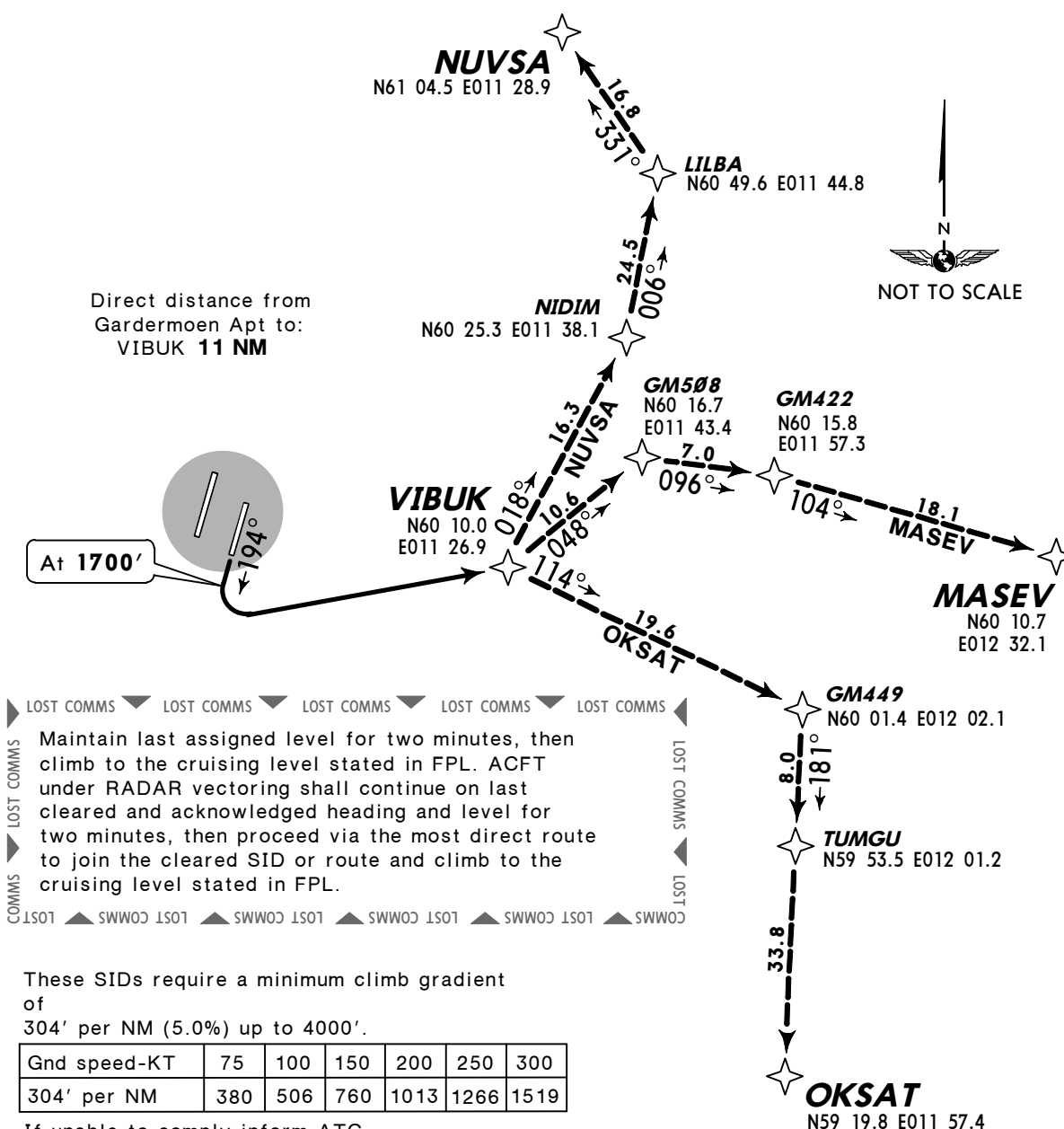
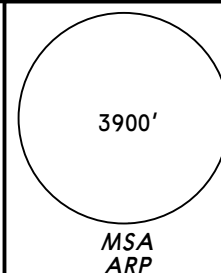
P-RNAV (GNSS OR DME/DME, EXCEPT CLASS A GNSS)

P-RNAV APPROVAL REQUIRED

RNAV 1

SPEED MAX 250 KT BELOW FL100

UNLESS OTHERWISE INSTRUCTED



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

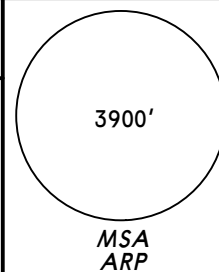
ROUTING

Climb on 194° track to 1700', turn LEFT to VIBUK.

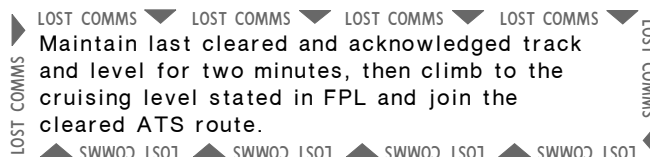
TRANSITION	ROUTING
MASEV	VIBUK - GM508 - GM422 - MASEV.
NUVSA	VIBUK - NIDIM - LILBA - NUVSA.
OKSAT	VIBUK - GM449 - TUMGU - OKSAT.

Apt Elev
681'

Trans level: By ATC Trans alt: 7000'



RWYS 01L/R, 19L/R OMNIDIRECTIONAL DEPARTURES
WHEN INSTRUCTED BY GARDERMOEN TWR CONTACT OSLO APPROACH
EXPECT RADAR VECTORED BY OSLO APPROACH TO JOIN THE CLEARED ATS ROUTE



These departures require minimum climb gradients of

Rwys 01L/R

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

Rwys 19L/R

Sector 208°-338°: 425' per NM (7.0%) in order to stay within controlled airspace.

Sector 338°-208°: 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
WHEN INSTRUCTED BY GARDERMOEN TWR CONTACT OSLO APPROACH
EXPECT RADAR VECTORED BY OSLO APPROACH TO JOIN THE CLEARED ATS ROUTE

These departures require minimum climb gradients of

Sector 208°-338°: 425' per NM (7.0%) in order to stay within controlled airspace.

Sector 338°-208°: 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.

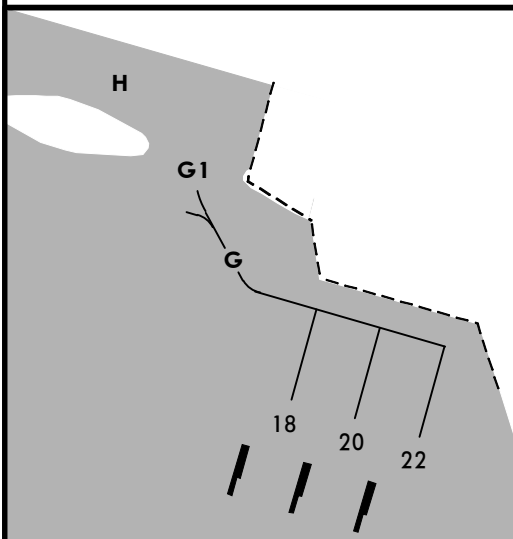
ROUTING

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

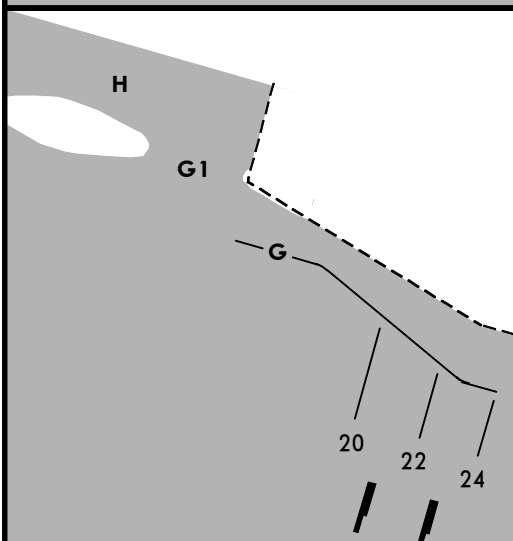
CONSTRUCTION WORKS

REFER ALSO TO LATEST NOTAMS

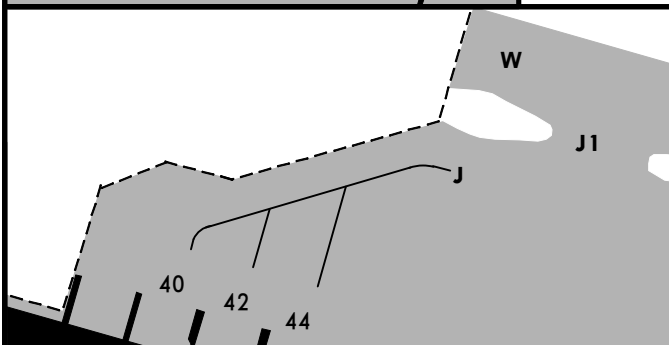
Construction work will take place in order to complete the TWY junctions G/H/Y/D and R/Z/J/W. The works prompt changes in the taxiing to and from stands on the NORTH side of the terminal. Temporary taxi lines will be painted on the surface in blue color. These lines will not have centreline lights. In low visibility conditions with RVR less than 350m, follow-me car will be made available for taxi guidance to and from the affected stands. TWY G1 has no centreline lights. Blue edge lights will be installed along TWY G1.



Phase from aprx 27 JUN to 14 JUL 2013.
Stands 18, 20 and 22 affected.



Phase from aprx 14 JUL to 17 OCT 2013.
Stands 20, 22 and 24 affected.



Phase from aprx 27 JUN to 18 SEP 2013.
Stands 40, 42 and 44 affected.

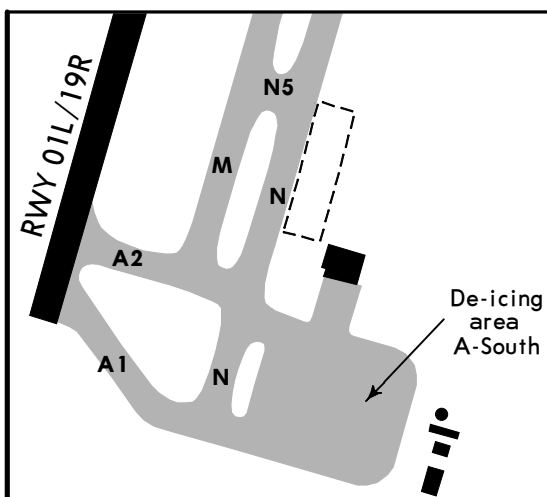
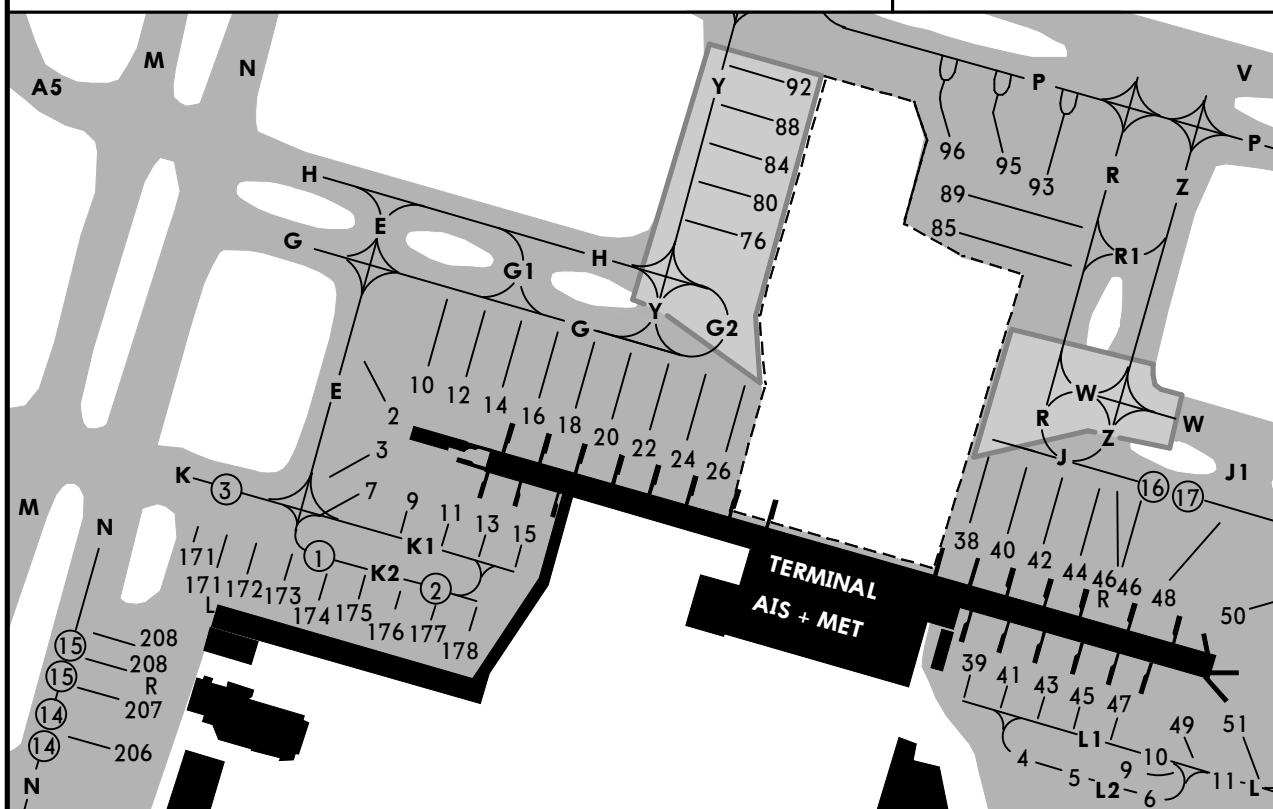
CONSTRUCTION WORKS

REFER ALSO TO LATEST NOTAMS

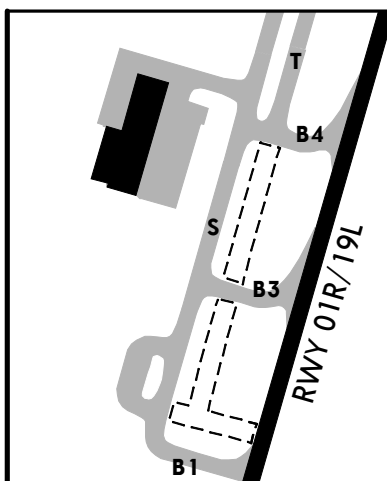
Construction of Twy Y, intersections of Twys H-Y-D and W-R-Z.
Construction of temporary stands 76, 80, 84, 88 and 92.

LEGEND

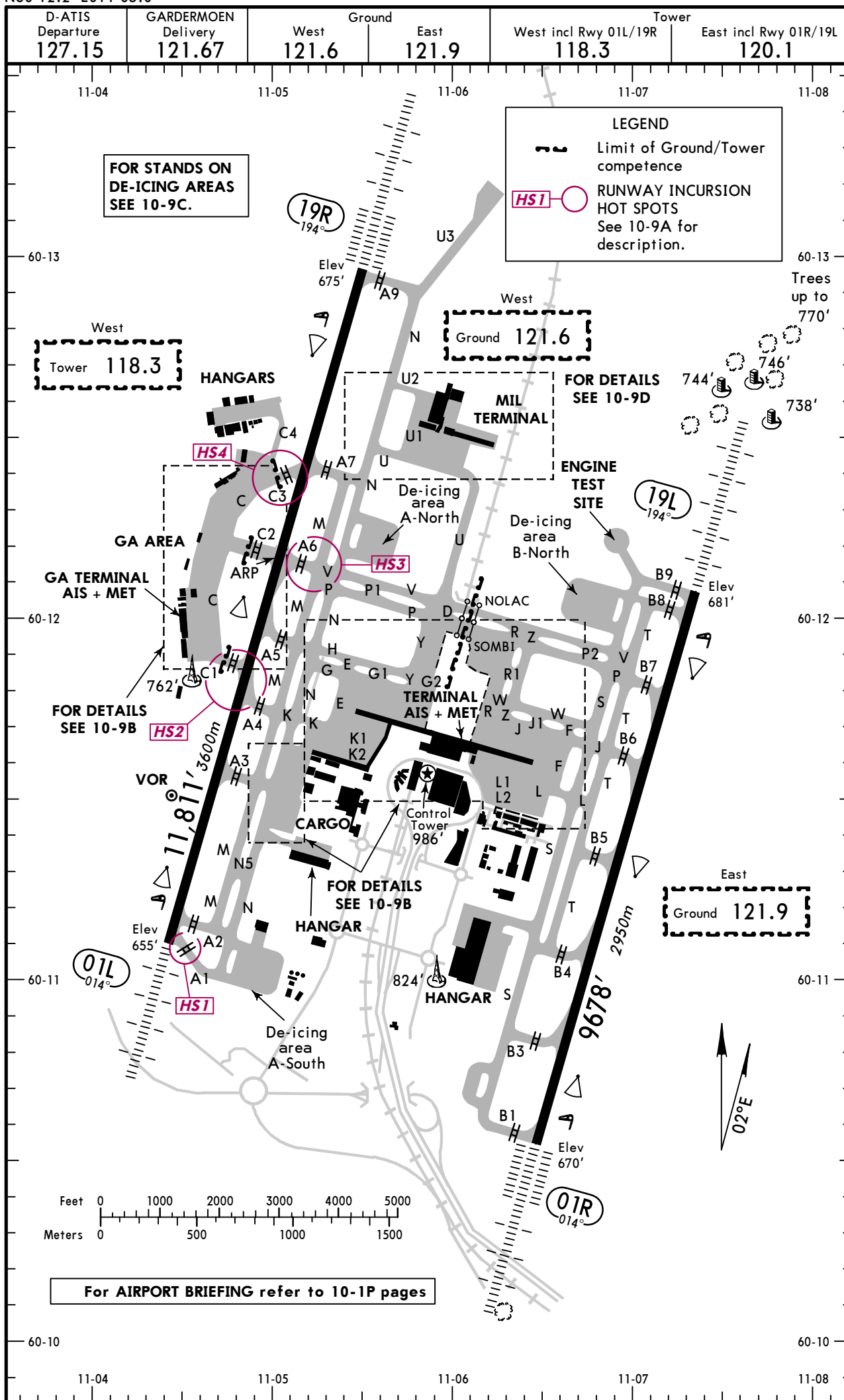
 Area with impact on ACFT operations



Twy N south to Twy N5 closed only at night.



Vehicles crossing Twy S south of Twy B3.



ADDITIONAL RUNWAY INFORMATION

ADDITIONAL RUNWAY INFORMATION						
RWY			USABLE LENGTHS		TAKE-OFF	WIDTH
			LANDING BEYOND			
			Threshold	Glide Slope		
01L	HIRL (60m) HIALS CL (15m) SFL PAPI-L(3.0°) RVR			10,819' 3298m	②	148' 45m
19R	HIRL (60m) HIALS-II CL (15m) SFL TDZ ① RVR			10,737' 3273m		
① PAPI-L(3.0°)						
② TAKE-OFF RUN AVAILABLE						
RWY 01L: From rwy head		11,811' (3600m)	RWY 19R: 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 ③ RVR			8734' 2662m	④	148' 45m
19L	HIRL (60m) HIALS CL (15m) SFL PAPI-L(3.0°) RVR			8625' 2629m		

① PAPI-L(3.0°)

② TAKE-OFF RUN AVAILABLE

<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 ③	RVR		8734' 2662m	④	148' 45m
19L	HIRL (60m) HIALS CL (15m) SFL PAPI-L(3.0°)	RVR		8625' 2629m		

③ PAPI-L(3.0°)

④ TAKE-OFF RUN AVAILABLE

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

RUNWAY INCURSION HOT SPOTS

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

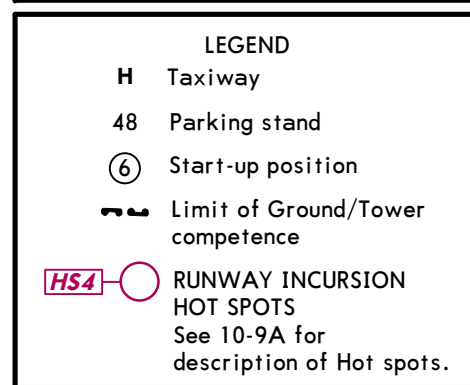
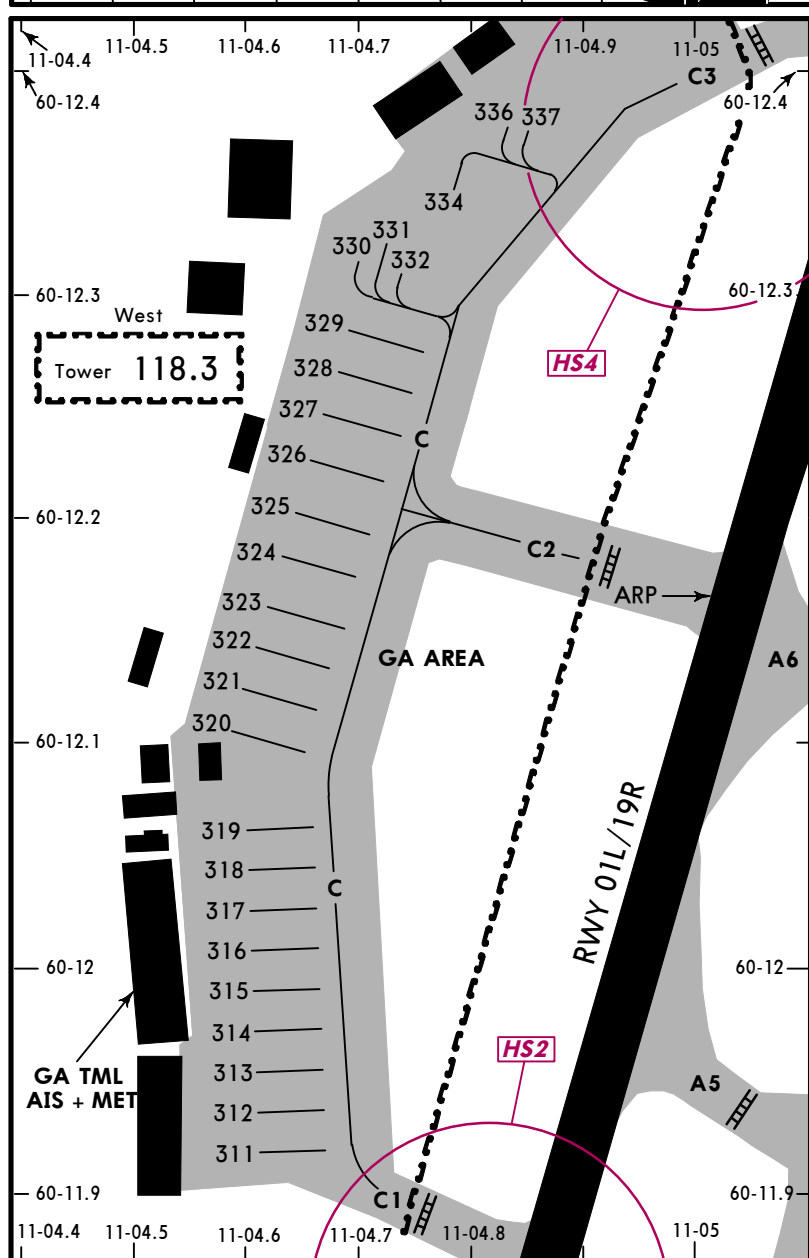
HS1 Angled Twy. Difficult to see traffic on final.**HS2** Installed Twy CL lights on C1 and A4 will indicate direction to the Rwy CL. Caution must be exercised when instructed to cross Rwy from Twy C1 to Twy A4 and vice versa due lack of visual aids.**HS3** Twy V leading directly to a Rwy intersection.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

Standard

TAKE-OFF ①

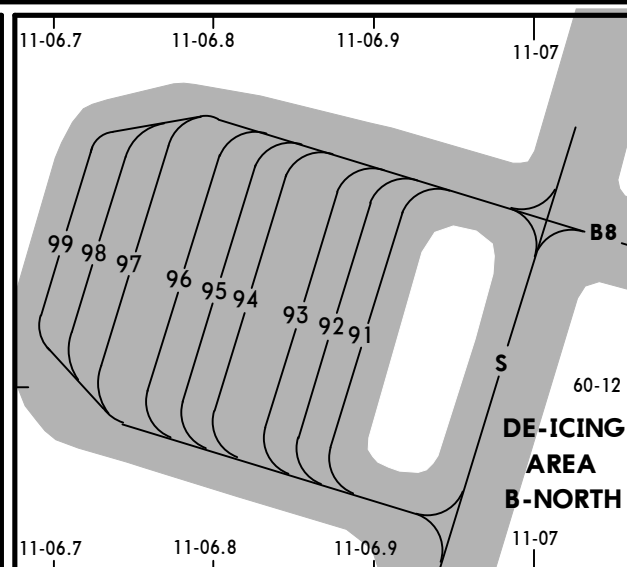
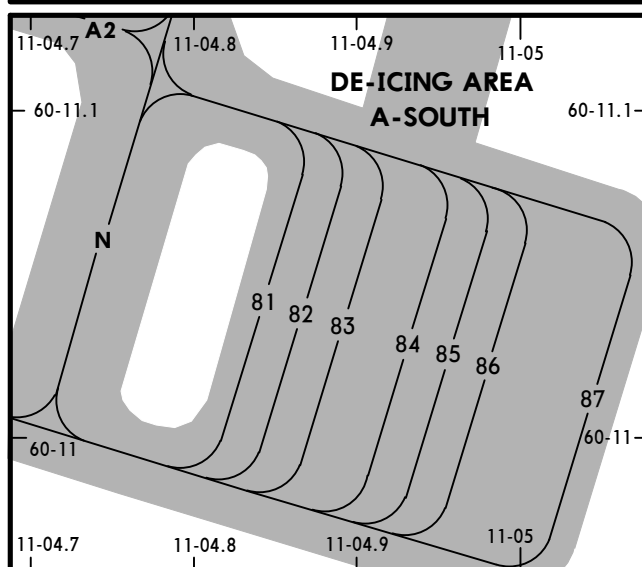
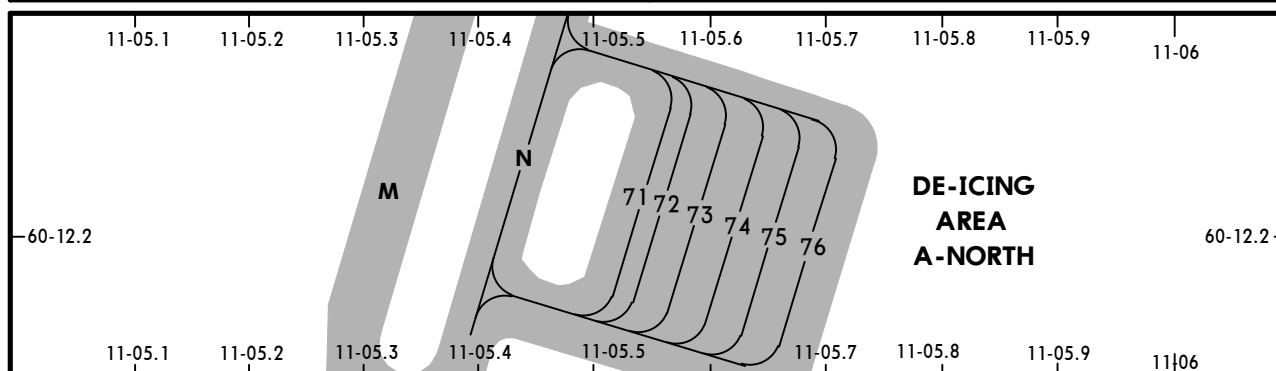
	LVP must be in Force					
	Approved Operators HIRL, CL & mult. RVR req	RL, CL & mult. RVR req	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL	NIL (DAY only)
A					400m	500m
B	125m	150m	200m	250m		
C						
D	150m	200m	250m	300m		

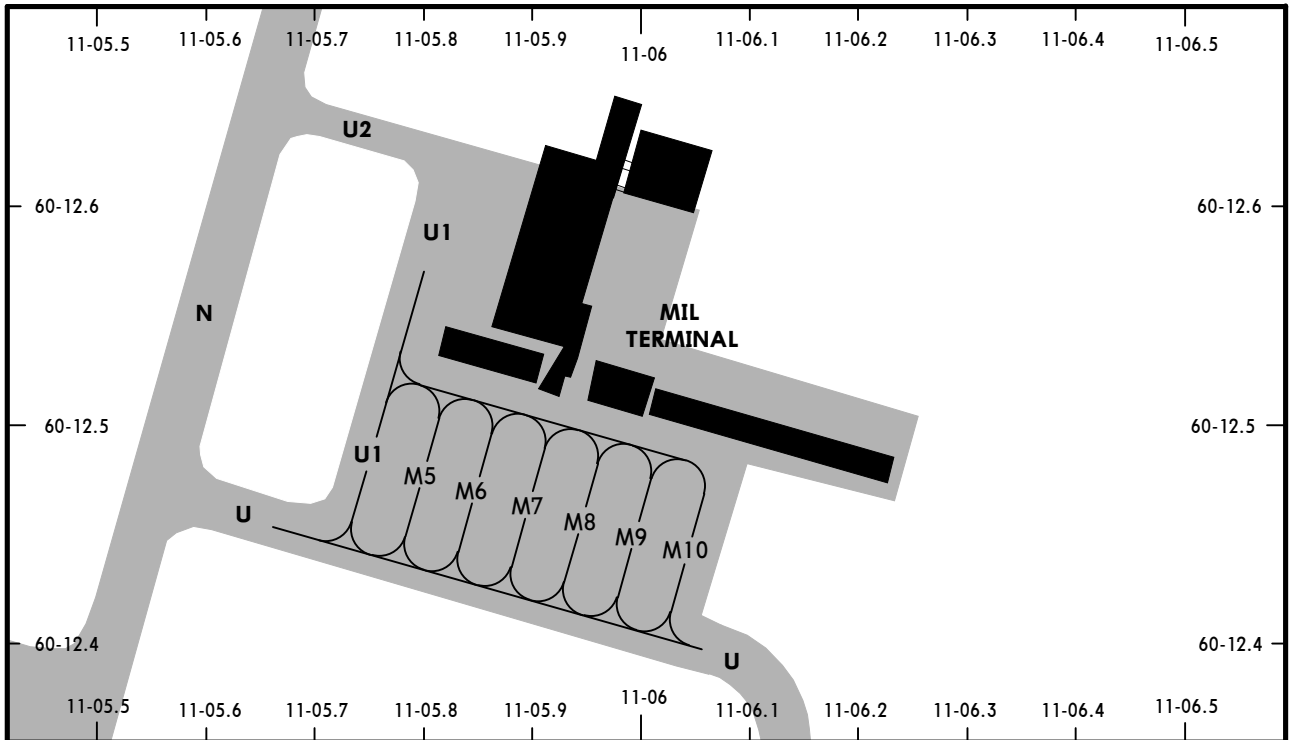
① Operators applying U.S. Ops Specs: CL required below 300m; approved HUD required below 150m.



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INS COORDINATES							
STAND No.	COORDINATES		ELEV	STAND No.	COORDINATES		ELEV
2 thru 7	N60 11.7	E011 05.4	672	175	N60 11.6	E011 05.4	670
9	N60 11.7	E011 05.5	674	176	N60 11.6	E011 05.4	671
10	N60 11.8	E011 05.4	673	177, 178	N60 11.6	E011 05.5	670
11	N60 11.7	E011 05.5	673	181	N60 11.5	E011 06.2	670
12	N60 11.8	E011 05.5	673	182, 183	N60 11.5	E011 06.3	670
13 thru 16	N60 11.7	E011 05.6	673	184, 185	N60 11.5	E011 06.4	670
18 thru 22	N60 11.7	E011 05.7	673	186	N60 11.5	E011 06.5	669
24, 26	N60 11.7	E011 05.8	673	187	N60 11.4	E011 06.6	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, 84	N60 11.9	E011 05.9	671	317 thru 319	N60 12.0	E011 04.6	663
85	N60 11.9	E011 06.2	673	320	N60 12.1	E011 04.6	664
88	N60 11.9	E011 06.0	671	321, 322	N60 12.1	E011 04.6	665
89	N60 11.9	E011 06.2	673	323, 324	N60 12.2	E011 04.6	664
92	N60 11.9	E011 06.0	672	325	N60 12.2	E011 04.6	665
93	N60 11.9	E011 06.2	672	326	N60 12.2	E011 04.7	665
95	N60 11.9	E011 06.2	674	327	N60 12.3	E011 04.7	665
96	N60 11.9	E011 06.1	675	328 thru 330	N60 12.3	E011 04.7	666
171 thru 172	N60 11.6	E011 05.2	668	331, 332	N60 12.3	E011 04.7	665
173	N60 11.6	E011 05.3	668	334	N60 12.4	E011 04.8	666
174	N60 11.6	E011 05.3	670	336, 337	N60 12.4	E011 04.8	-





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	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	1230' (560')	1000m / 1000m
19L	ILS	881' (200')	500m / 1000m
	LOC	1030' (349')	800m / 1000m
	RNAV	1230' (549')	1000m / 1000m
19R	CAT 2 ILS	775' (100')	RA 100' - 300m
	ILS	875' (200')	500m / 1000m
	LOC	1020' (345')	800m / 1000m
	RNAV	1040' (365')	800m / 1000m
	VOR	1060' (385')	800m / 1000m

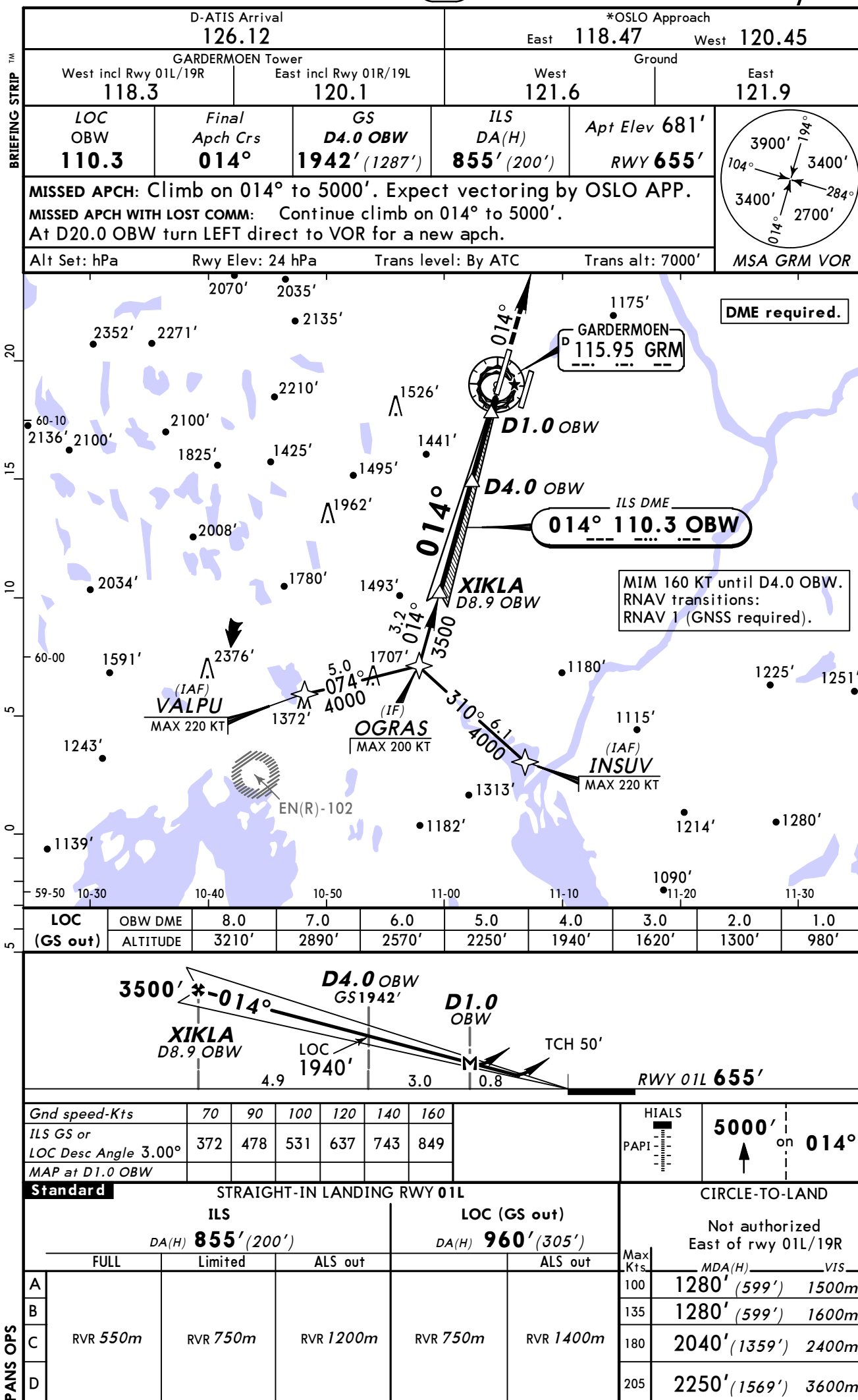
CIRCLE-TO-LAND ❶	MDA(H)	VIS
	1280' (599')	1000m

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

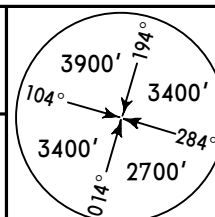
TAKE-OFF RWY 01L, 01R, 19L, 19R				
LVP must be in Force ❷				
RL, FATO LTS, CL & RVR info	RL, FATO LTS & RCLM	Unlit/unmarked defined RWY/FATO	Nil Facilities DAY	Nil Facilities NIGHT
150m	200m	200m	250m ❸	800m

- ❷ Without LVP 400m are stipulated.

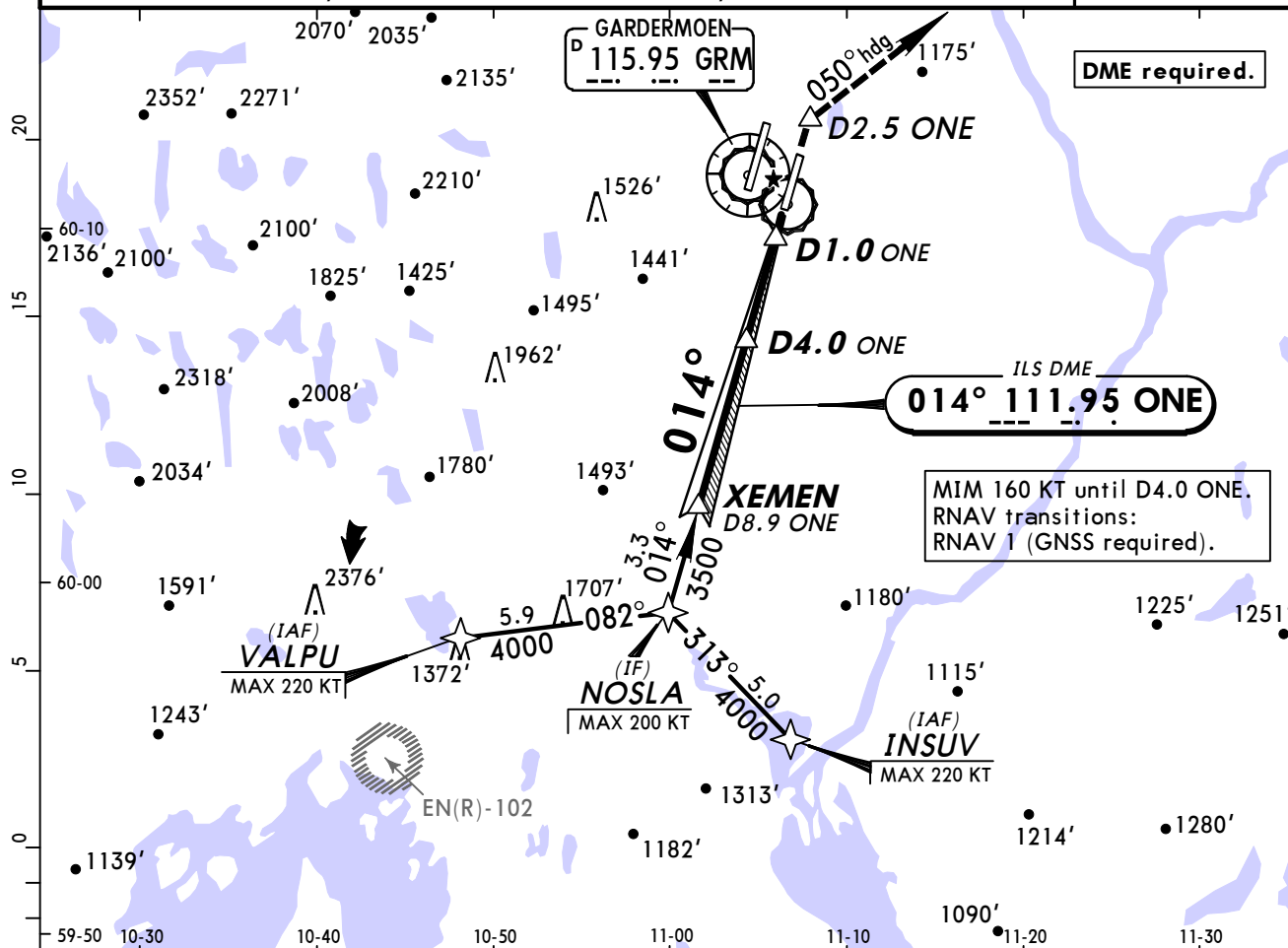
- ❸ Or rejected take-off distance whichever is the greater.



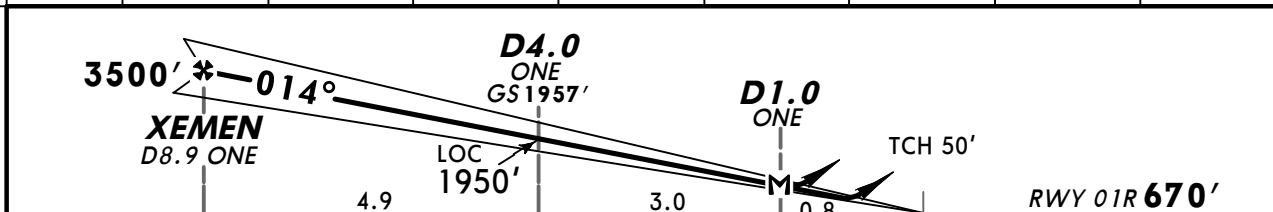
D-ATIS Arrival 126.12		*OSLO Approach East 118.47 West 120.45	
West incl Rwy 01L/19R 118.3	East incl Rwy 01R/19L 120.1	West 121.6	East 121.9
LOC ONE 111.95	Final Aptch Crs 014°	GS D4.0 ONE 1957' (1287')	ILS DA(H) Refer to Minimums
		Apt Elev 681' RWY 670'	
MISSED APCH: Climb on 014° to D2.5 ONE, then turn RIGHT and proceed on heading 050° to 4000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Climb on heading 050° 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

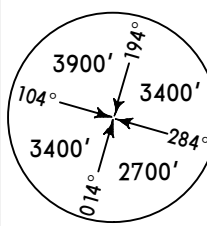


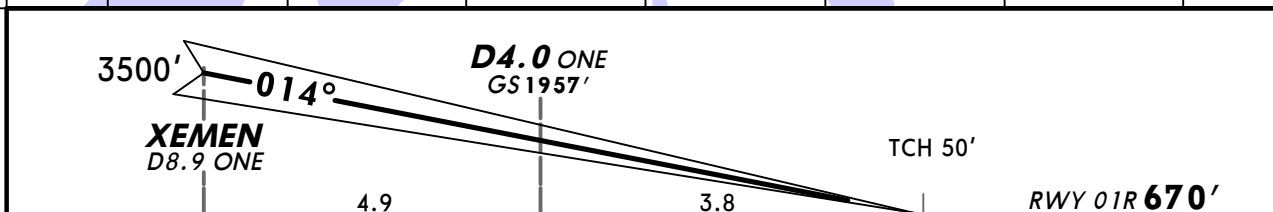
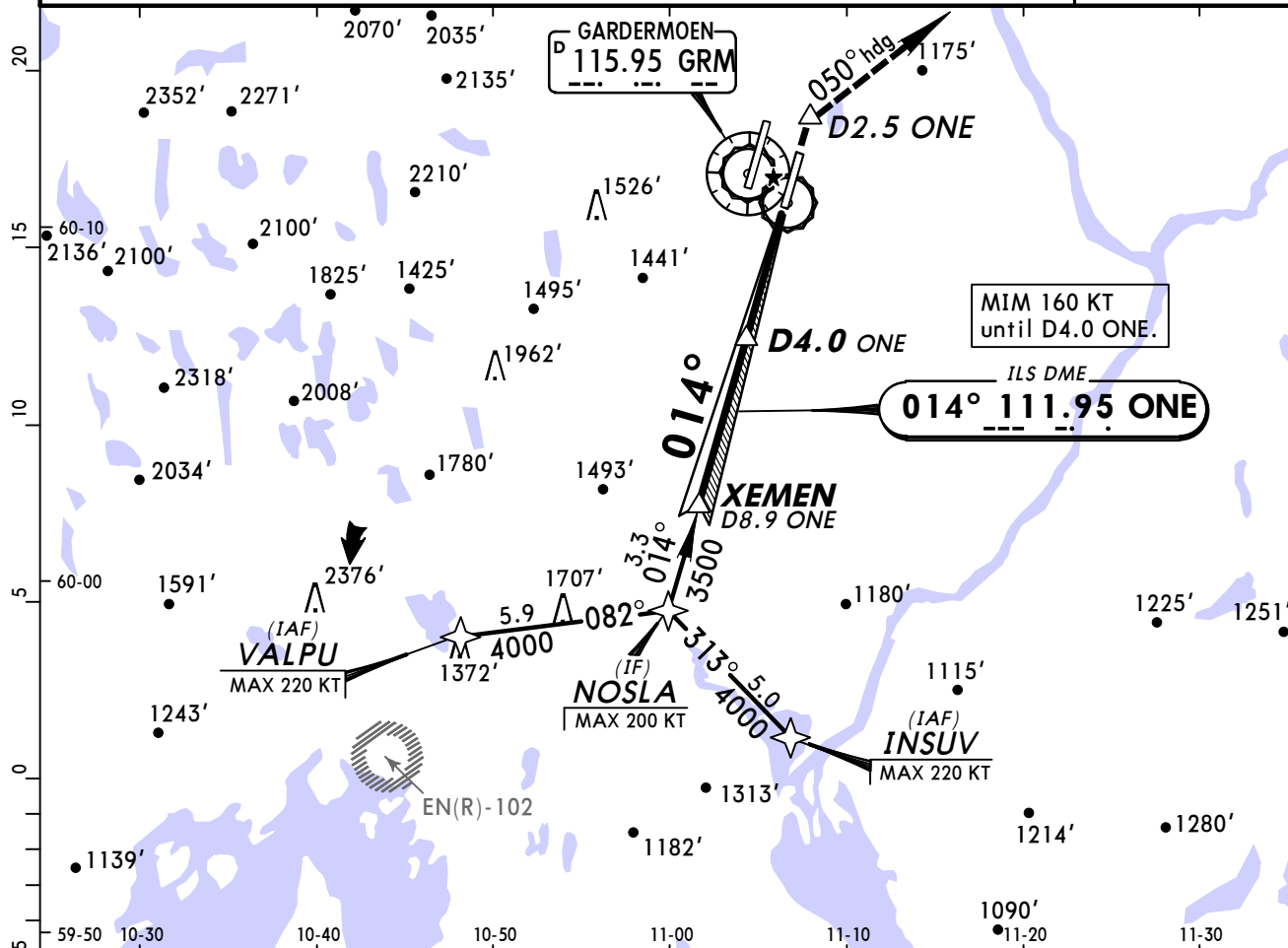
LOC (GS out)	ONE DME	8.0	7.0	6.0	5.0	4.0	3.0	2.0
	ALTITUDE	3220'	2900'	2590'	2270'	1950'	1630'	1310'



Gnd speed-Kts	70	90	100	120	140	160	
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STRAIGHT-IN LANDING RWY 01R					CIRCLE-TO-LAND	
ILS			LOC (GS out)		Not authorized West of rwy 01R/19L	
ABC: 870' (200') D: 880' (210')			DA(H) 970' (300')			
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 126.12		*OSLO Approach East 118.47 West 120.45	
West incl Rwy 01L/19R 118.3	GARDERMOEN Tower East incl Rwy 01R/19L 120.1	West 121.6	Ground East 121.9
LOC ONE 111.95	Final Aptch Crs 014°	GS D4.0 ONE 1957' (1287')	CAT II & IIIA ILS Refer to Minimums Apt Elev 681' RWY 670'
MISSED APCH: Climb on 014° to D2.5 ONE, then turn RIGHT and proceed on heading 050° to 4000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Climb on heading 050° 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. DME required. 2. Special Aircrew & Aircraft Certification Required. 3. RNAV transitions: RNAV 1 (GNSS required).			
 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	

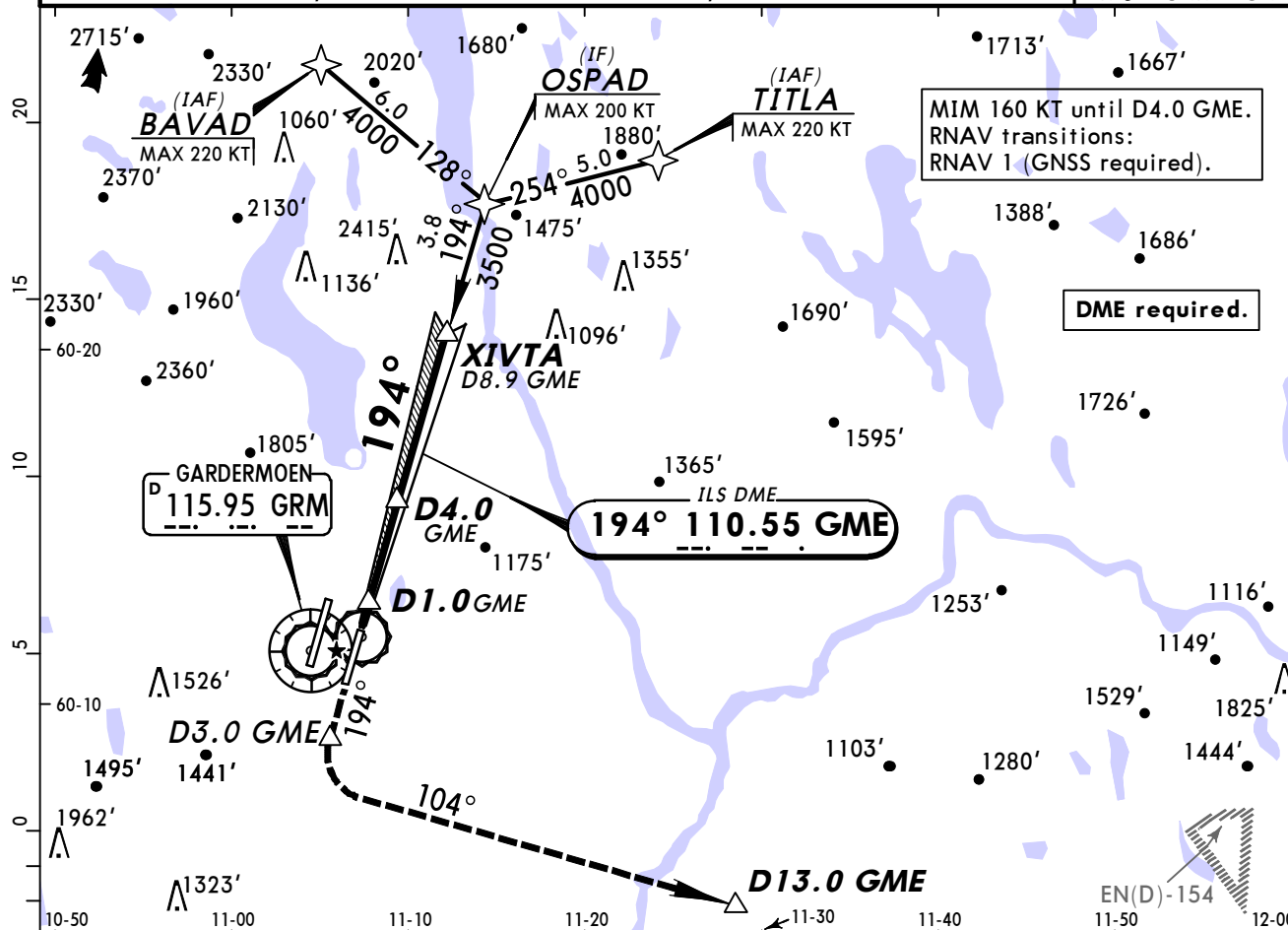
I Operators applying U.S. Specs: Autoland or HUD required below RVR 350m.

BRIEFING STRIP™

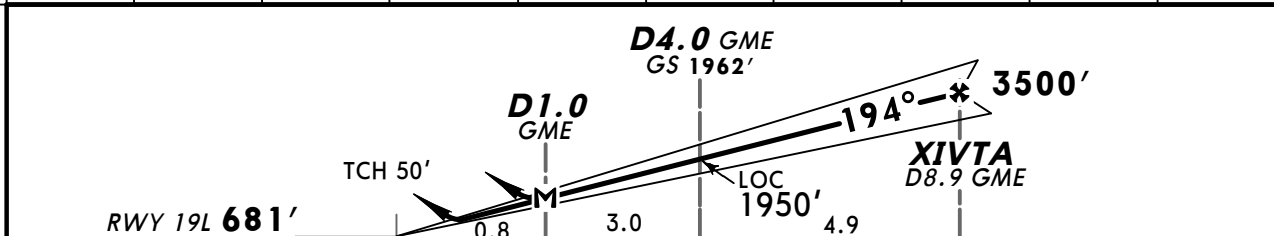
D-ATIS Arrival 126.12				*OSLO Approach East 118.47 West 120.45	
GARDERMOEN Tower West incl Rwy 01L/19R 118.3		East incl Rwy 01R/19L 120.1		Ground West 121.6 East 121.9	
LOC GME 110.55	Final Apch Crs 194°	GS D4.0 GME 1962' (1281')	ILS DA(H) 881' (200')	Apt Elev 681' RWY 681'	
MISSED APCH: Climb on 194° to D3.0 GME. Turn LEFT to 104°. Climb to 3000'. At D13.0 GME climb to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Continue on 104° to 5000'. At D20.0 GME turn LEFT direct to VOR for a new apch.					
Alt Set: hPa		Rwy Elev: 25 hPa		Trans level: By ATC	
				Trans alt: 7000'	

A circular diagram representing a compass rose. It shows two primary headings: 194° and 104°. The 194° heading is associated with an altitude of 3900'. The 104° heading is associated with an altitude of 3400'. Other altitudes shown include 3400' and 2700'.

MSA GRM VOR



LOC (GS out)	GME DME	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
	ALTITUDE	1000'	1320'	1640'	1950'	2270'	2590'	2910'	3230'



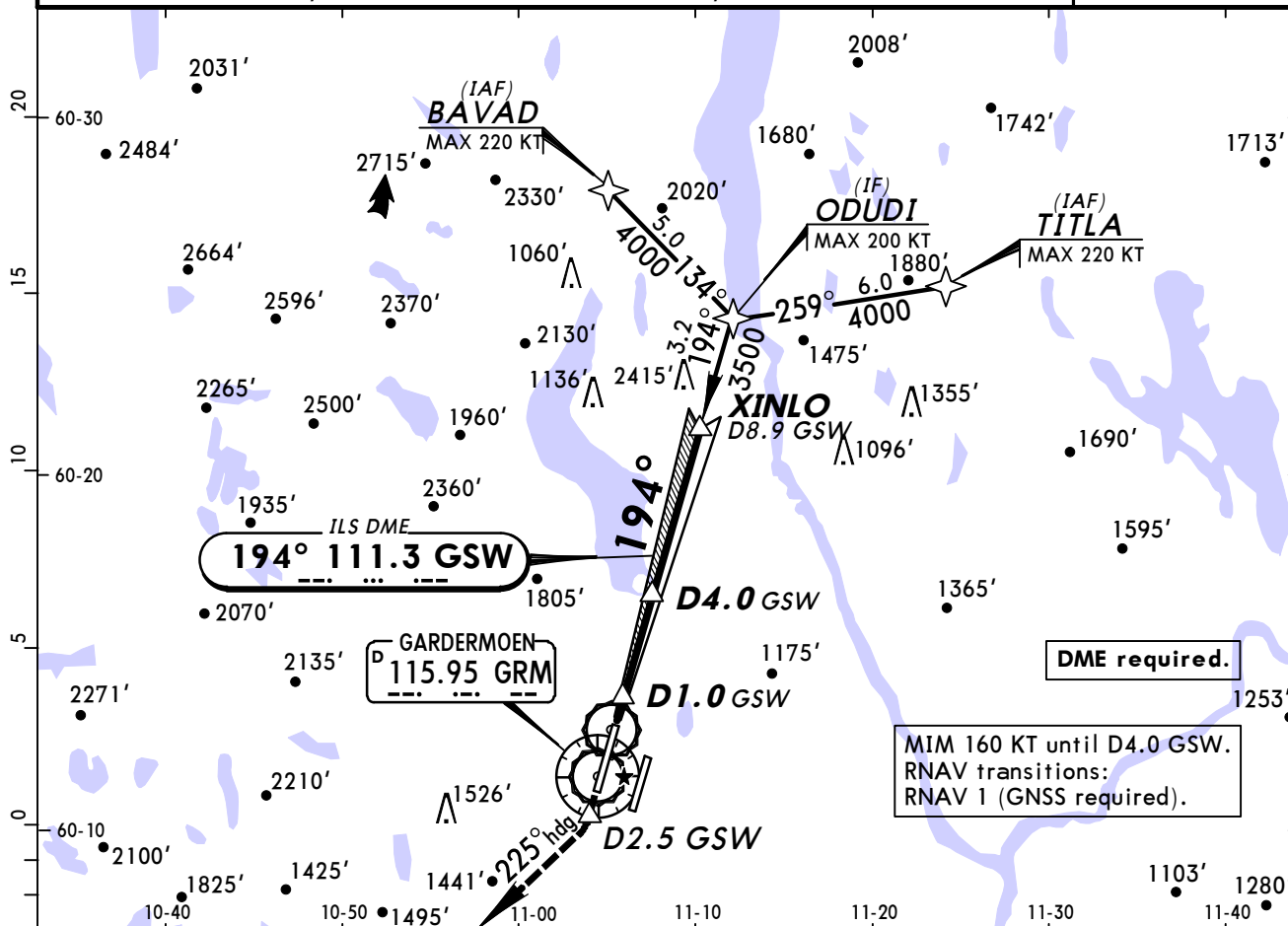
Gnd speed-Kts	70	90	100	120	140	160		Refer to Missed Apch above
ILS GS or LOC Desc Angle 3.00°	372	478	531	637	743	849		
MAP at D1.0 GME								

PANS OPS	STRAIGHT-IN LANDING RWY 19L				CIRCLE-TO-LAND	
	ILS			LOC (GS out)	Not authorized West of rwy 01R/19L	
	DA(H) 881' (200')			DA(H) 1030' (349')		
	FULL	Limited	ALS out	ALS out	Max Kts	MDA(H) VIS
	A				100	1280' (599') 1500m
B				RVR 1500m	135	1280' (599') 1600m
C	RVR 550m	RVR 750m	RVR 1200m		180	1570' (889') 2400m
D				RVR 1600m	205	1630' (949') 3600m

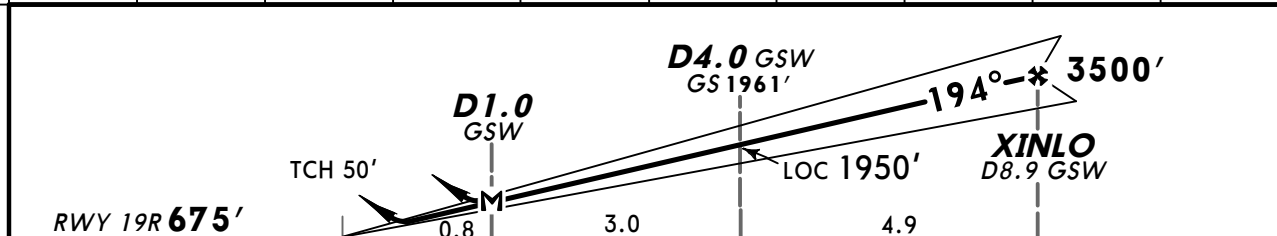
BRIEFING STRIP™

D-ATIS Arrival 126.12				*OSLO Approach East 118.47 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	
LOC GSW 111.3	Final Apch Crs 194°	GS D4.0 GSW 1961' (1286')	ILS DA(H) 875' (200')	Apt Elev 681' RWY 675'	
MISSED APCH: Climb on 194° to D2.5 GSW, then turn RIGHT onto heading 225°. Climb to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Continue on heading 225°. 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'	
MSA GRM VOR					

A circular diagram with a central point. Four arrows point outwards from the center to the circumference, labeled with headings and altitudes: 194° (top), 104° (left), 284° (right), and 014° (bottom). The altitudes are 3400' for the 194° and 104° headings, and 2700' for the 284° and 014° headings.

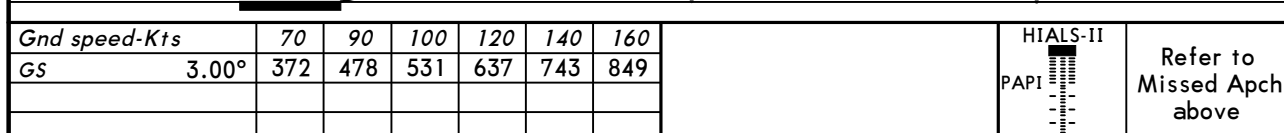
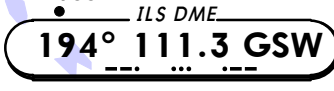


LOC (GS out)	GSW DME	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
	ALTITUDE	1000'	1320'	1630'	1950'	2270'	2590'	2910'	3230'



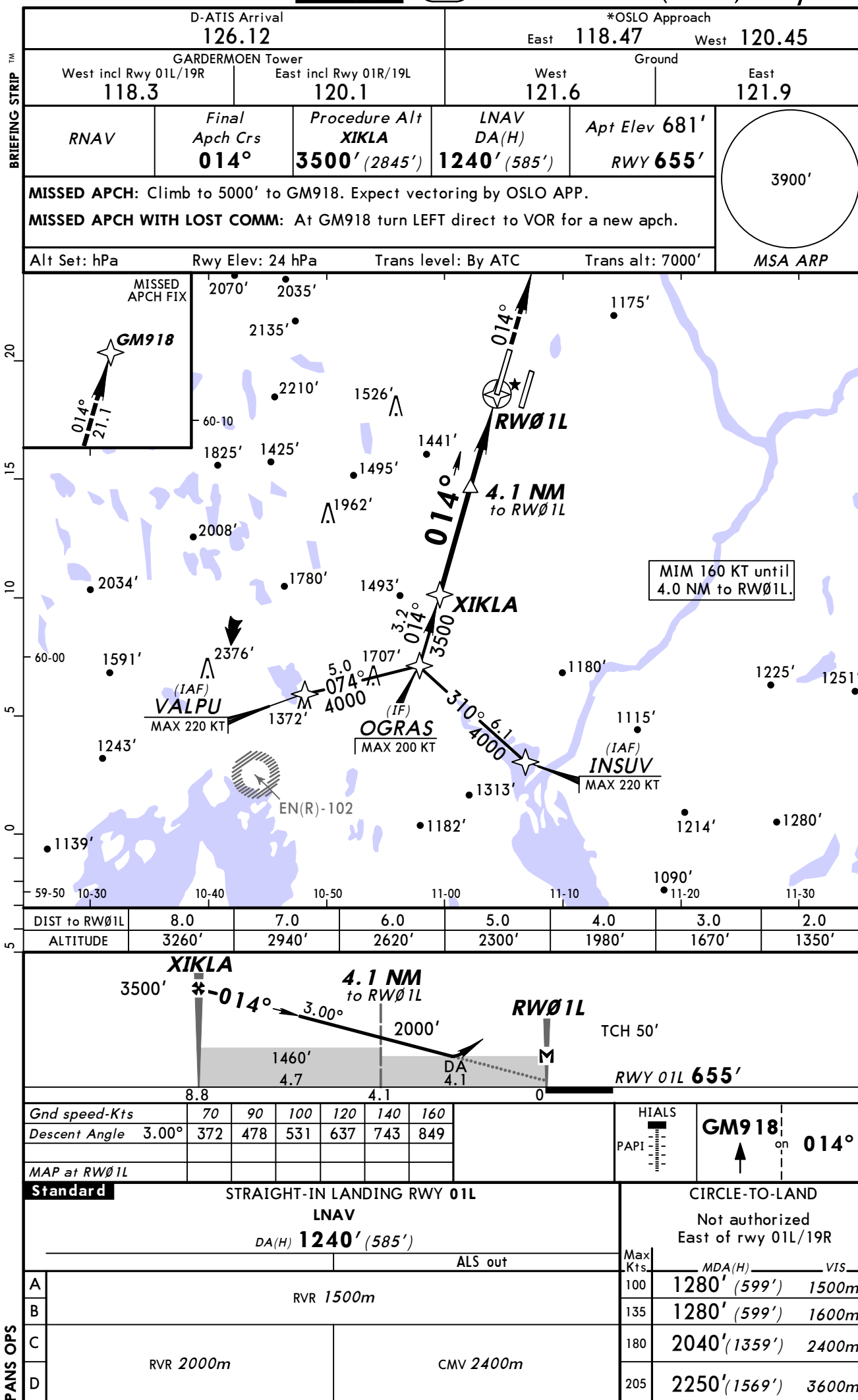
Gnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI Refer to Missed Apch above	
ILS GS or LOC Desc Angle 3.00°	372	478	531	637	743	849		
MAP at D1.0 GSW								

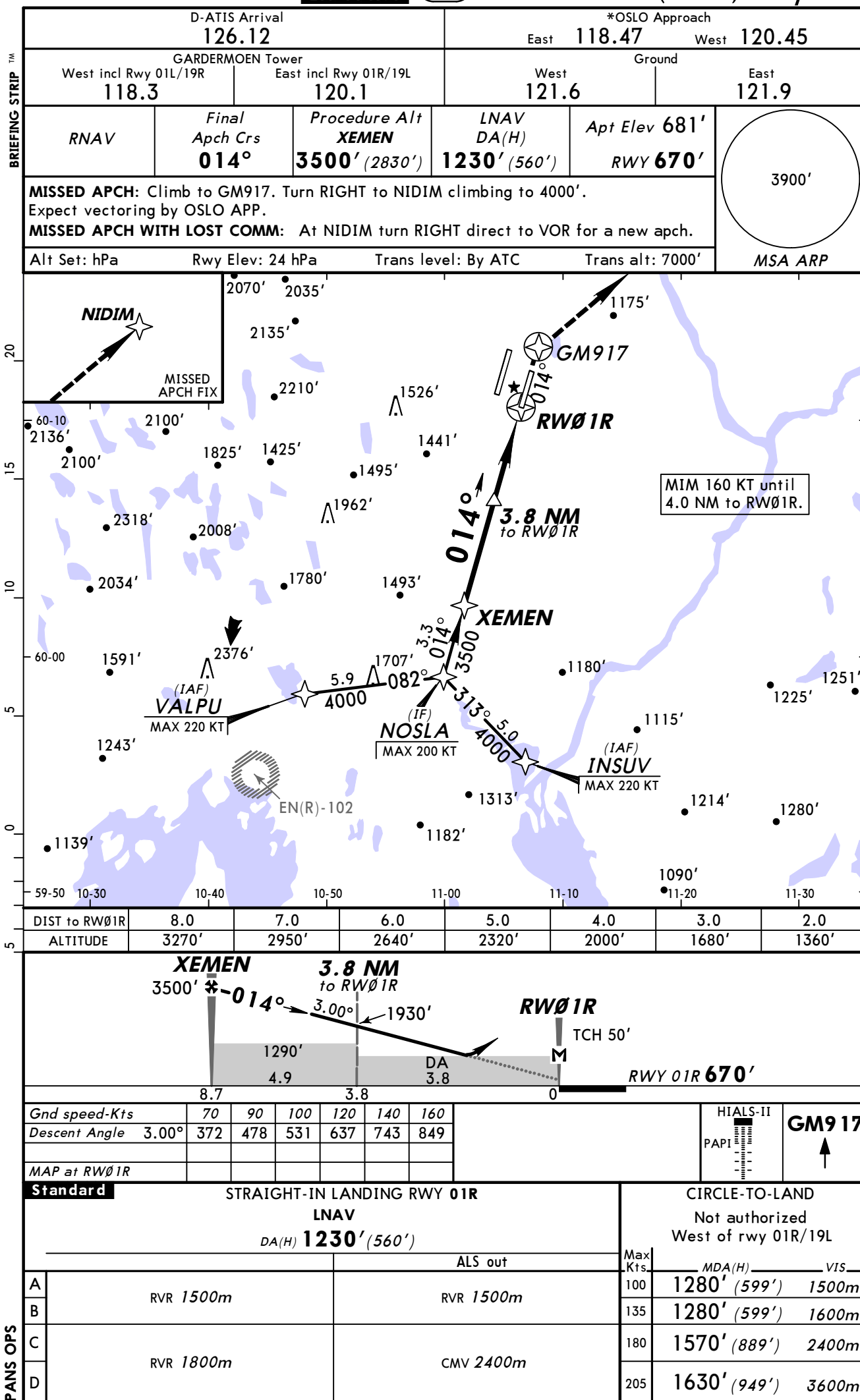
STRAIGHT-IN LANDING RWY 19R				CIRCLE-TO-LAND			
ILS			LOC (GS out)			Not authorized East of rwy 01L/19R	
DA(H) 875' (200')			DA(H) 1020' (345')			Max Kts	
FULL	Limited	ALS out	FULL	Limited	ALS out	100	1280' (599') 1500m
A						135	1280' (599') 1600m
B	RVR 550m	RVR 750m	RVR 1200m	RVR 900m	RVR 1500m	180	1980' (1299') 2400m
C						205	2230' (1549') 3600m
D							



PANS OPS

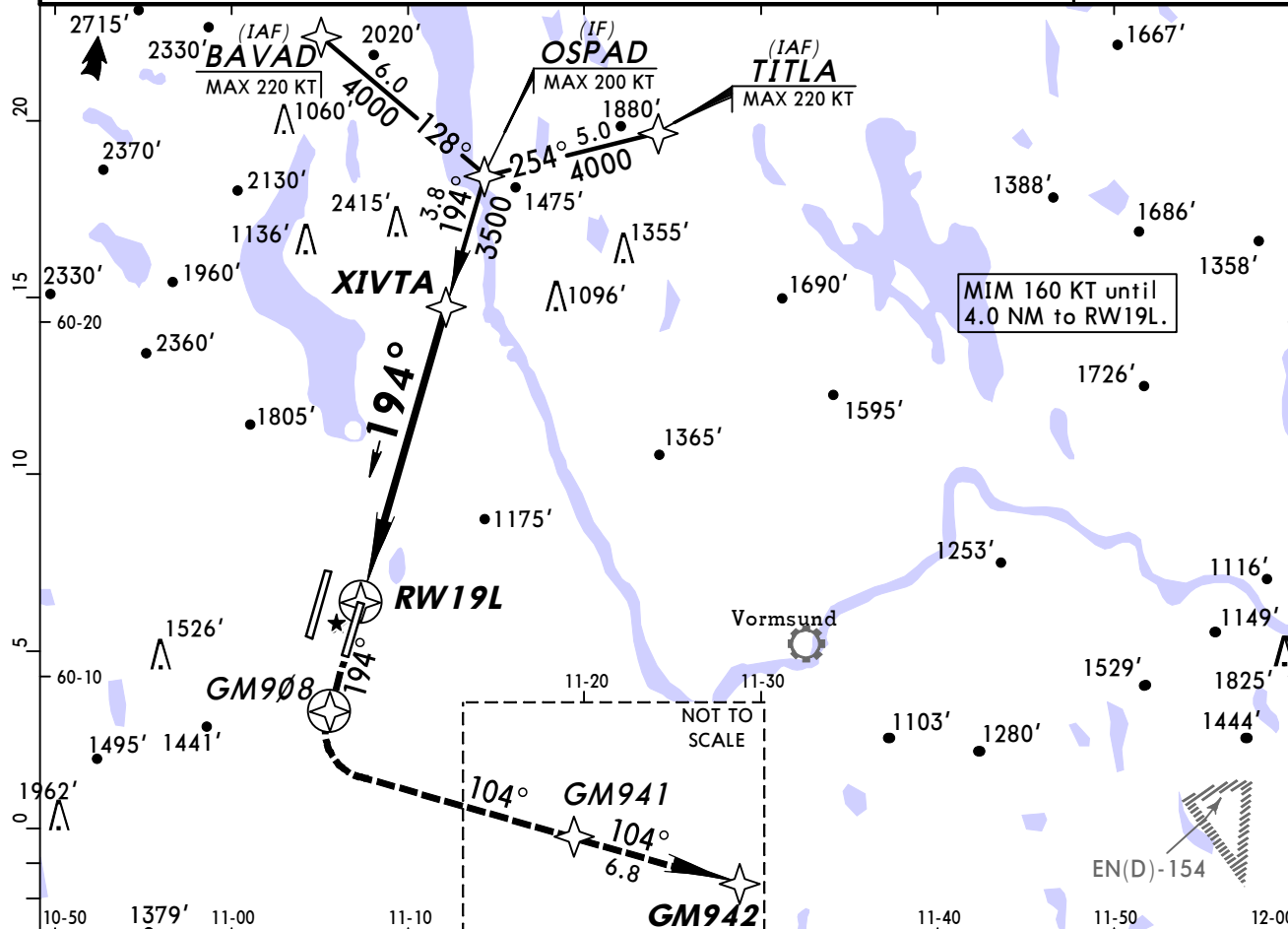
CHANGES: Procedure.



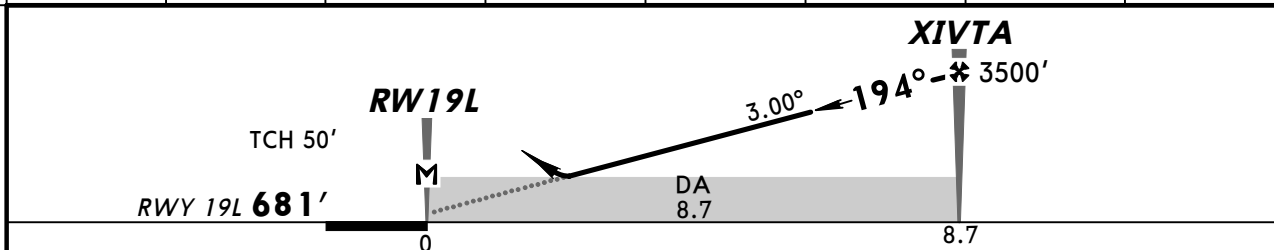


BRIEFING STRIP™

D-ATIS Arrival 126.12			*OSLO Approach East 118.47 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	
RNAV	Final Apch Crs 194°	Procedure Alt XIVTA 3500' (2819')	LNAV DA(H) 1230' (549')	Apt Elev 681' RWY 681'	3900'
MISSED APCH: Climb to GM908. Turn LEFT to GM941 on course 104°, 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'

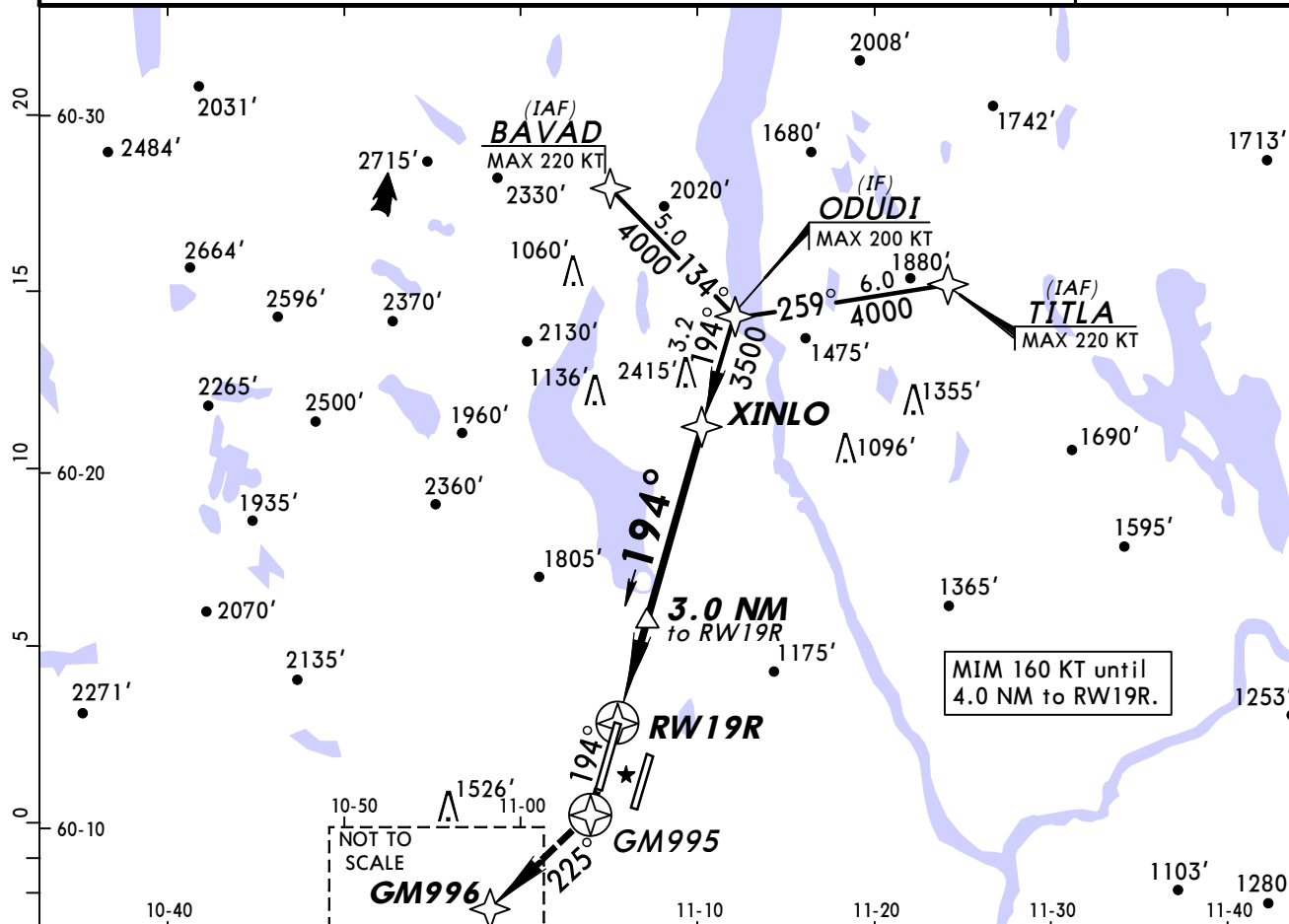


Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI GM908
Descent Angle 3.00°	372	478	531	637	743	849	
MAP at RW19L							

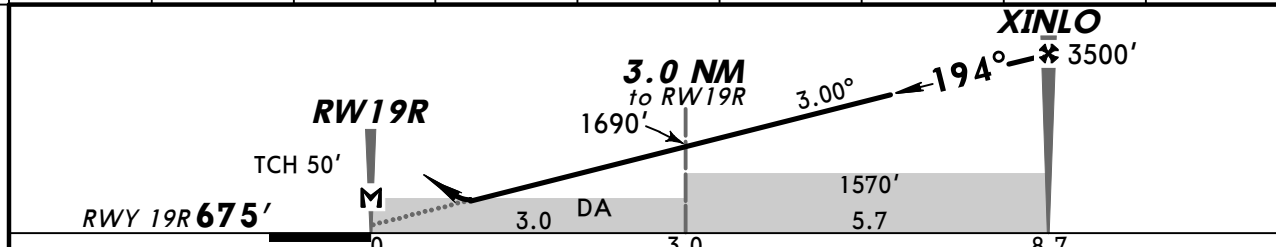
Standard				STRAIGHT-IN LANDING RWY 19L		CIRCLE-TO-LAND	
				LNAV		Not authorized	
				DA(H) 1230' (549')		West of rwy 01R/19L	
				ALS out		Max Kts	
A	RVR 1500m					100	1280' (599') 1500m
B						135	1280' (599') 1600m
C	RVR 1800m			CMV 2400m		180	1570' (889') 2400m
D						205	1630' (949') 3600m

BRIEFING STRIP™

D-ATIS Arrival 126.12				*OSLO Approach East 118.47 West 120.45	
West incl Rwy 01L/19R 118.3		GARDERMOEN Tower East incl Rwy 01R/19L 120.1		Ground West 121.6 East 121.9	
RNAV	Final Apch Crs 194°	Procedure Alt XINLO 3500' (2825')	LNAV DA(H) Refer to Minimums	Apt Elev 681' RWY 675'	3900' MSA ARP
MISSED APCH: Climb to GM995. Turn RIGHT to GM996 on course 225°, climbing to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: At GM996 turn RIGHT direct to VOR for new apch.					
Alt Set: hPa Rwy Elev: 25 hPa Trans level: By ATC Trans alt: 7000'					



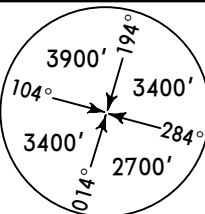
DIST to RW19R	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
ALTITUDE	1050'	1370'	1690'	2000'	2320'	2640'	2960'	3280'

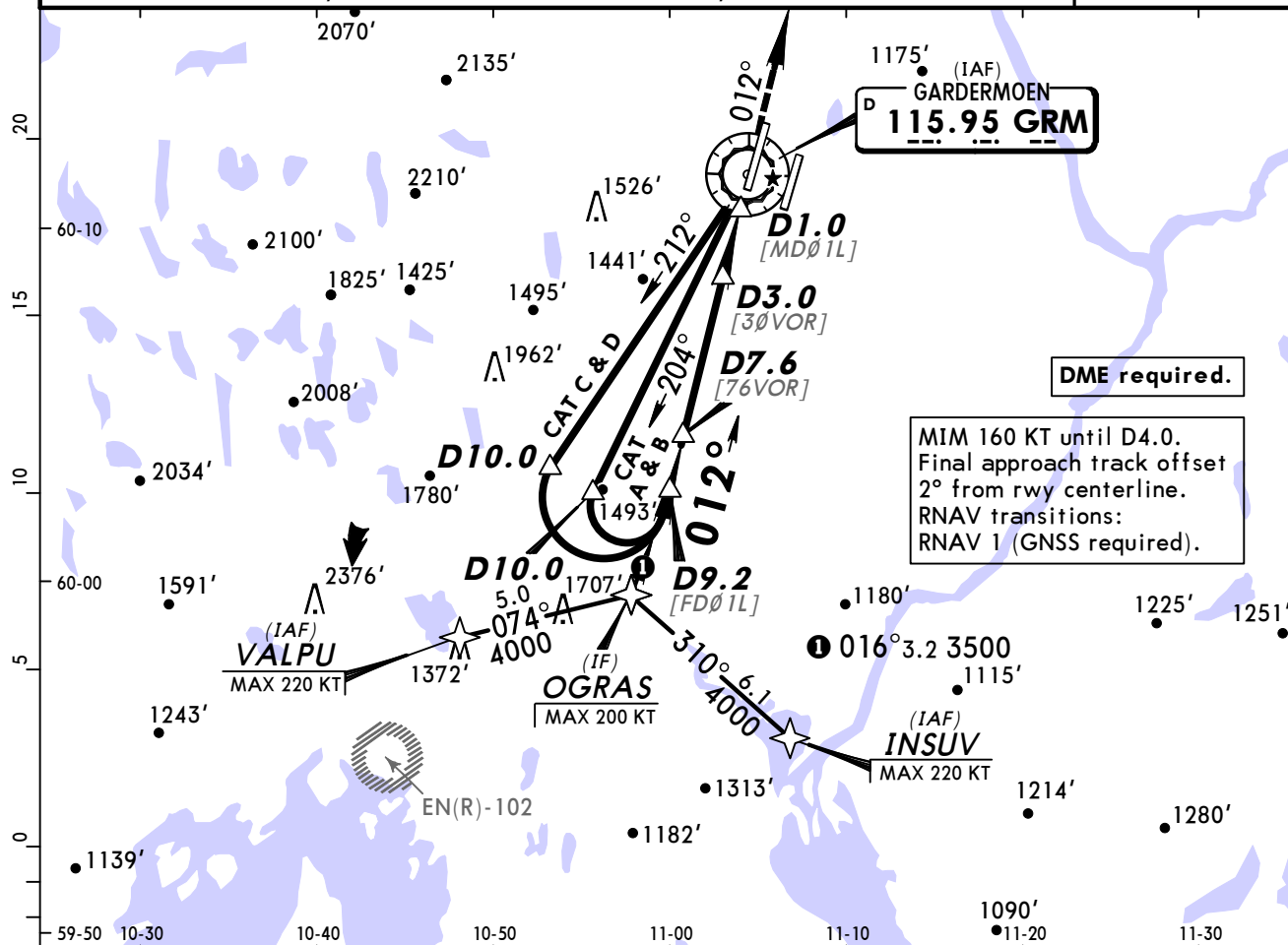


Gnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI	GM995 on 194°
Descent Angle 3.00°	372	478	531	637	743	849		
MAP at RW19R								

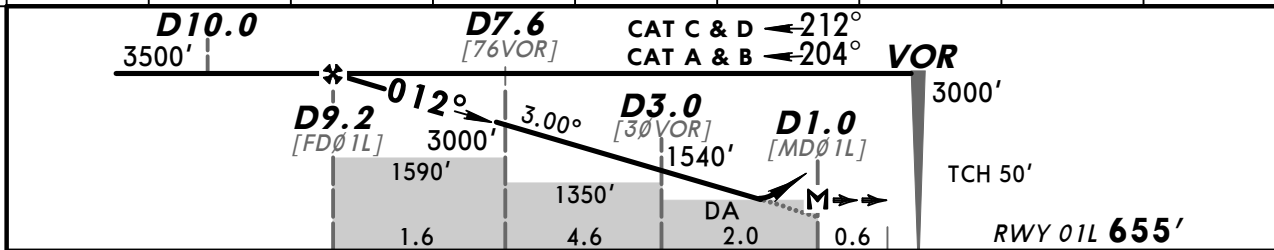
Standard				STRAIGHT-IN LANDING RWY 19R		CIRCLE-TO-LAND	
				LNAV		Not authorized	
				DA(H) AB: 1040' (365') C: 1060' (385') D: 1080' (405')		East of rwy 01L/19R	
				ALS out		Max Kts	MDA(H) VIS
A	RVR 1000m		RVR 1500m		100	1280' (599')	1500m
B	RVR 1000m		RVR 1500m		135	1280' (599')	1600m
C	RVR 1100m		RVR 1800m		180	1980' (1299')	2400m
D	RVR 1200m		RVR 1900m		205	2230' (1549')	3600m

BRIEFING STRIP™

D-ATIS Arrival 126.12				*OSLO Approach East 118.47 West 120.45						
GARDERMOEN Tower West incl Rwy 01L/19R 118.3				Ground East incl Rwy 01R/19L 120.1						
West 121.6				East 121.9						
VOR GRM 115.95		Final Apch Crs 012°		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-012 to 5000'. Expect vectoring by OSLO APP.										
MISSED APCH WITH LOST COMM: Climb on R-012 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		Trans alt: 7000'		MSA GRM VOR		



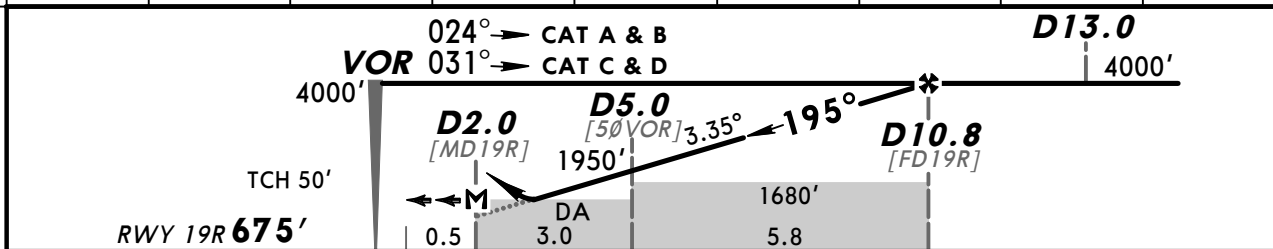
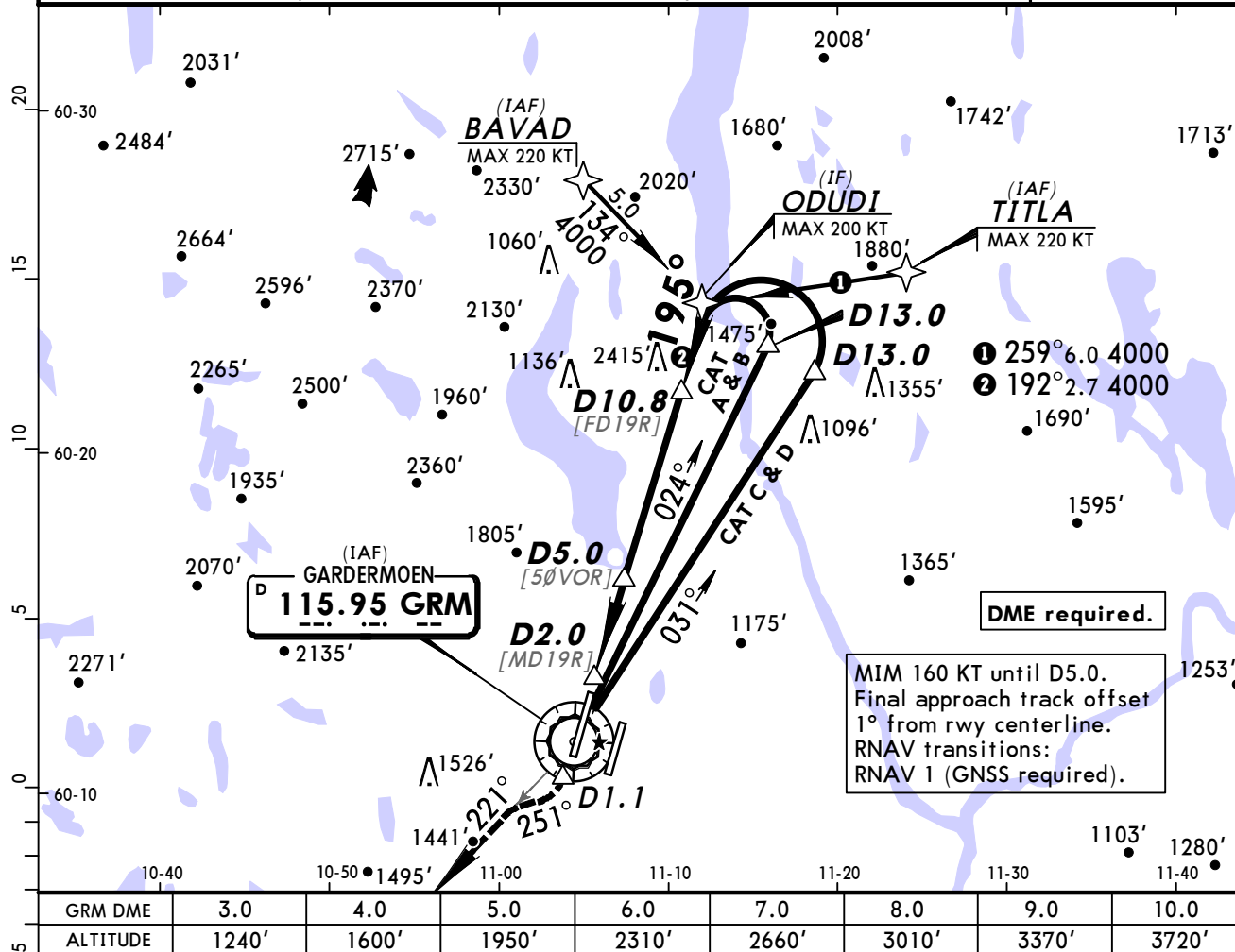
GRM DME	9.0	8.0	7.0	6.0	5.0	4.0	3.0	2.0
ALTITUDE	3450'	3130'	2810'	2490'	2180'	1860'	1540'	1220'



Gnd speed-Kts	70	90	100	120	140	160	HIALS PAPI 5000' on GRM 115.95 R-012
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 900m	RVR 1500m		100	1280' (599') 1500m
B	RVR 1000m			135	1280' (599') 1600m
C	RVR 1100m	RVR 1800m		180	2040' (1359') 2400m
D	RVR 1200m	RVR 1900m		205	2250' (1569') 3600m

D-ATIS Arrival 126.12			*OSLO Approach East 118.47 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 195°	Procedure Alt D10.8 4000' (3325')	DA(H) 1060' (385')	Apt Elev 681' RWY 675'	
MISSED APCH: Climb on R-015 inbound to VOR. Continue climb on R-195 to D1.1, then turn RIGHT to 251°, intercept and proceed R-221. Climb to 5000'. Expect vectoring by OSLO APP. MISSED APCH WITH LOST COMM: Continue climb on R-221 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	



Grnd speed-Kts	70	90	100	120	140	160	HIALS-II PAPI 	D1.1 on 115.95 R-195
Descent Angle	3.35°	415	534	593	711	830		
MAP at D2.0								

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 1500m			100	1280' (599')	1500m
B						135	1280' (599')	1600m
C			RVR 1800m			180	2040' (1359')	2400m
D						205	2250' (1569')	3600m

OSLO, (GARDERMOEN - ENGM)

TERMINAL CHART CHANGE NOTICES

Chart Change Notices for Airport ENGM

Type: Terminal

Effectivity: Temporary

Begin Date: 20130627

End Date: Until Further Notice

EFF 27 JUN 13 construction works on apron & twys. Refer to temp charts 10-8A & 10-8B and latest NOTAMs.