

URMM (Mineralnyye Vody)**General Info**

Mineralnyye Vody, RUS

N 44° 13.5' E 43° 05.0' Mag Var: 5.6°E

Elevation: 1054'

Public, IFR, Control Tower, Customs, Landing Fee

Fuel: Jet A-1

Repairs: Minor Airframe, Minor Engine

Time Zone Info: GMT+3:00 uses DST

Runway Info

Runway 12-30 12795' x 197' concrete

Runway 12 (117.0°M) TDZE 1043'

Lights: Edge, ALS, Centerline, TDZ

Runway 30 (297.0°M) TDZE 1046'

Lights: Edge, ALS, Centerline

Communications InfoATIS **127.4**Mineralnyye Vody Start Tower **128.0**Mineralnyye Vody Taxiing Ground Control **121.9**Mineralnyye Vody Approach Control **119.3**Mineralnyye Vody Krug Radar **120.7****Notebook Info**

URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-2



JEPPesen

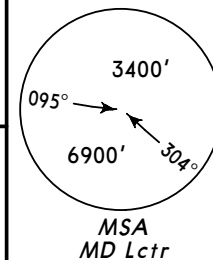
MINERALNYYE VODY, RUSSIA

STAR

ATIS
127.4

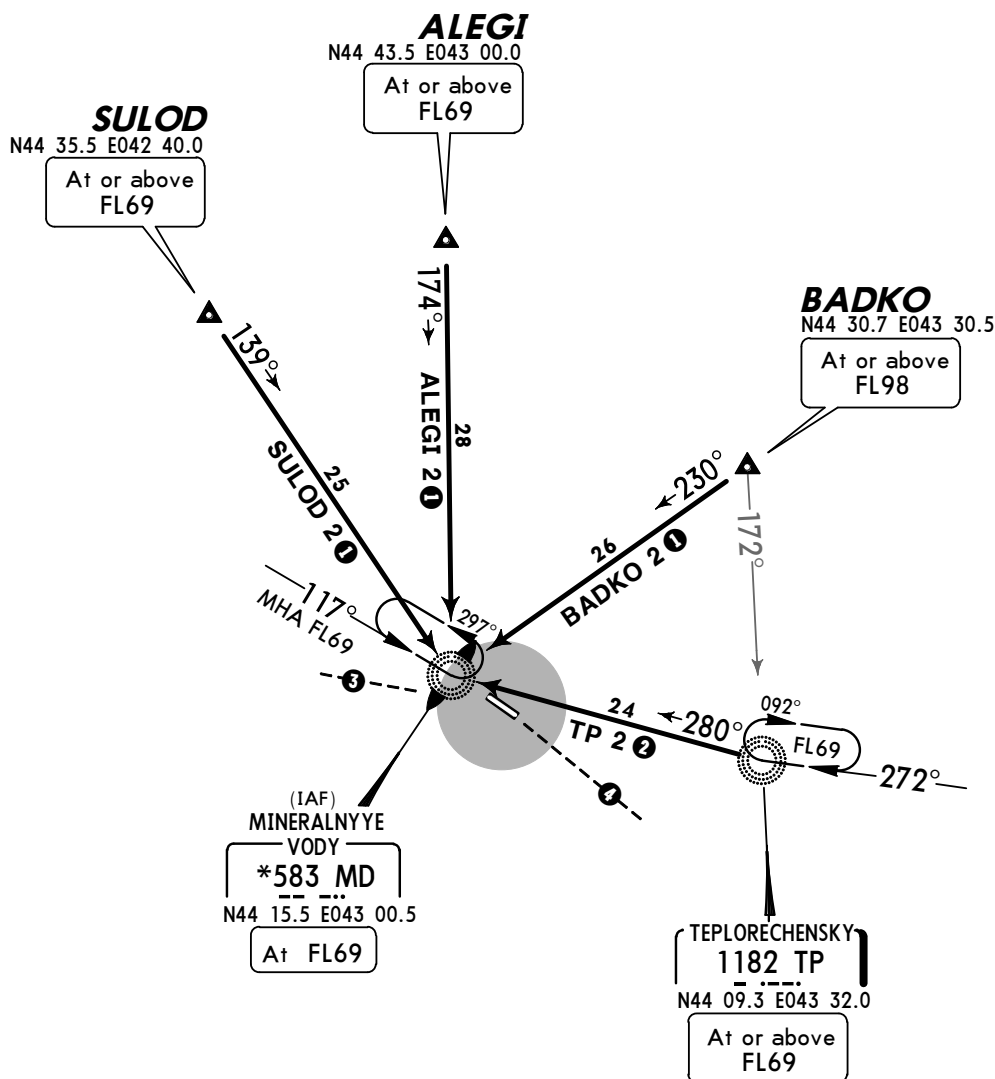
Apt Elev
1054'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: FL59
FL69 if pressure is less than 704mm (938.6 hPa)
Trans alt: 4010' (2967')



ALEGI 2①, BADKO 2①
SULOD 2①, TP 2②
RWY 12 ARRIVALS
FROM NORTH

- ① For approach via racetrack.
- ② For approach via procedure turn.



- ③ 095° to ARP between 11.9 NM and 5.4 NM do not fly south below FL59.
- ④ 304° to ARP between 11.9 NM and 1.6 NM do not fly south below FL59.

FL CONVERSION

FL98 FL3000m
FL69 FL2100m
FL59 FL1800m

ALT/HEIGHT CONVERSION

QNH (QFE)
4010' (2967' - 900m)

URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-2A



JEPPesen

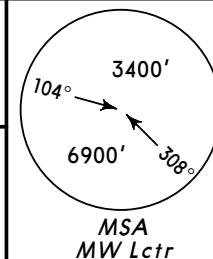
MINERALNYYE VODY, RUSSIA

STAR

ATIS
127.4

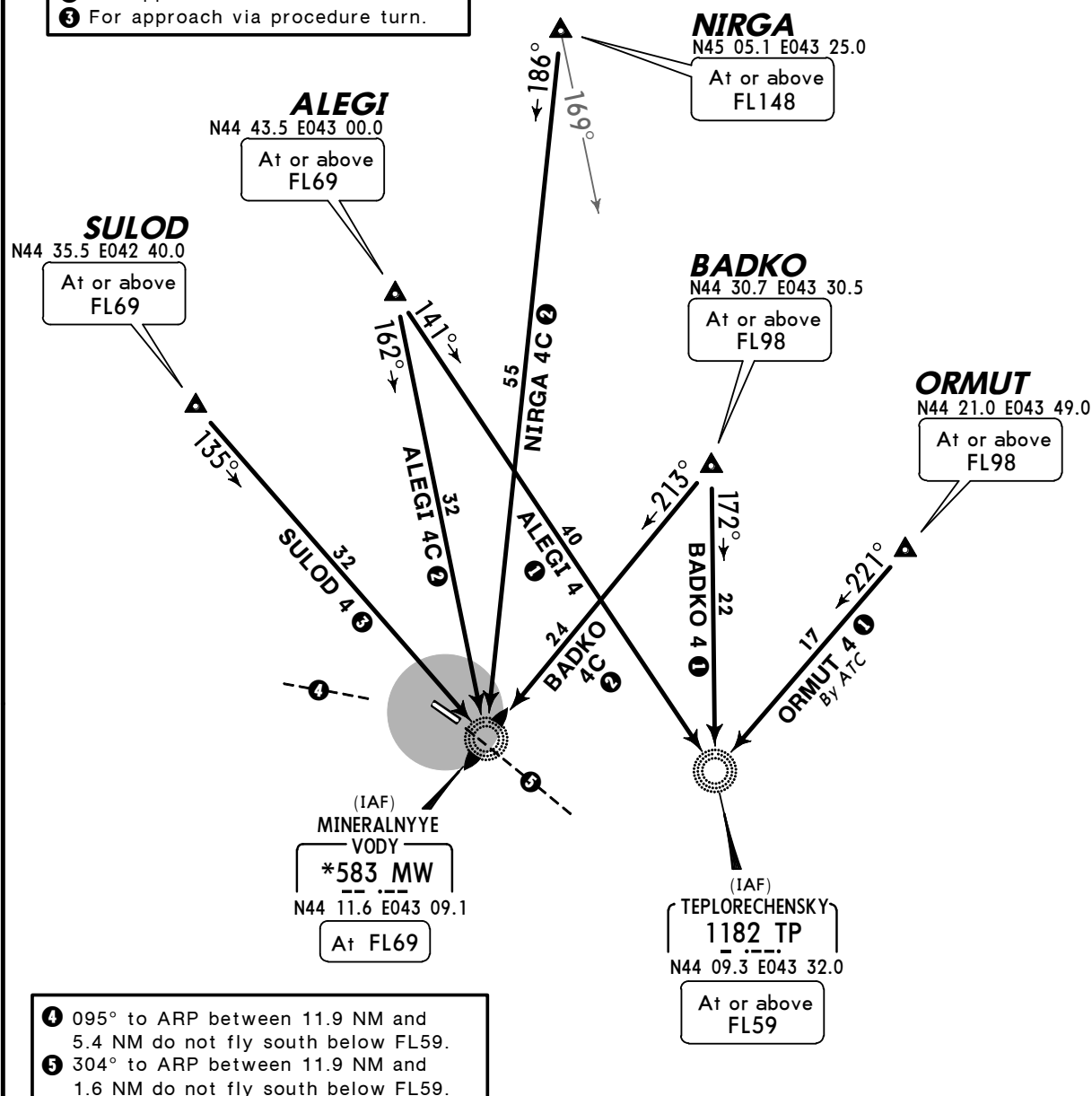
Apt Elev
1054'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: FL59
FL69 if pressure is less than 704mm (938.6 hPa)
Trans alt: 4010' (2964')



ALEGI 4 ①, ALEGI 4C [ALEG4C] ②
BADKO 4 ①, BADKO 4C [BADK4C] ②
NIRGA 4C [NIRG4C] ②, ORMUT 4 ①, SULOD 4 ③
RWY 30 ARRIVALS
FROM NORTH

- ① For direct approach.
- ② For approach via racetrack.
- ③ For approach via procedure turn.

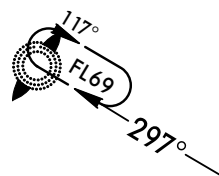


FL CONVERSION
FL148 FL4500m
FL98 FL3000m
FL69 FL2100m
FL59 FL1800m

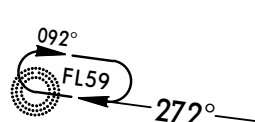
ALT/HEIGHT CONVERSION
QNH (QFE)
4010' (2964' - 900m)

HOLDINGS OVER

MW



TP



URMM/MRV

JEPPESEN MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

7 DEC 07

10-2B

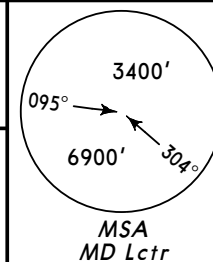
Eff 20 Dec

STAR

ATIS
127.4

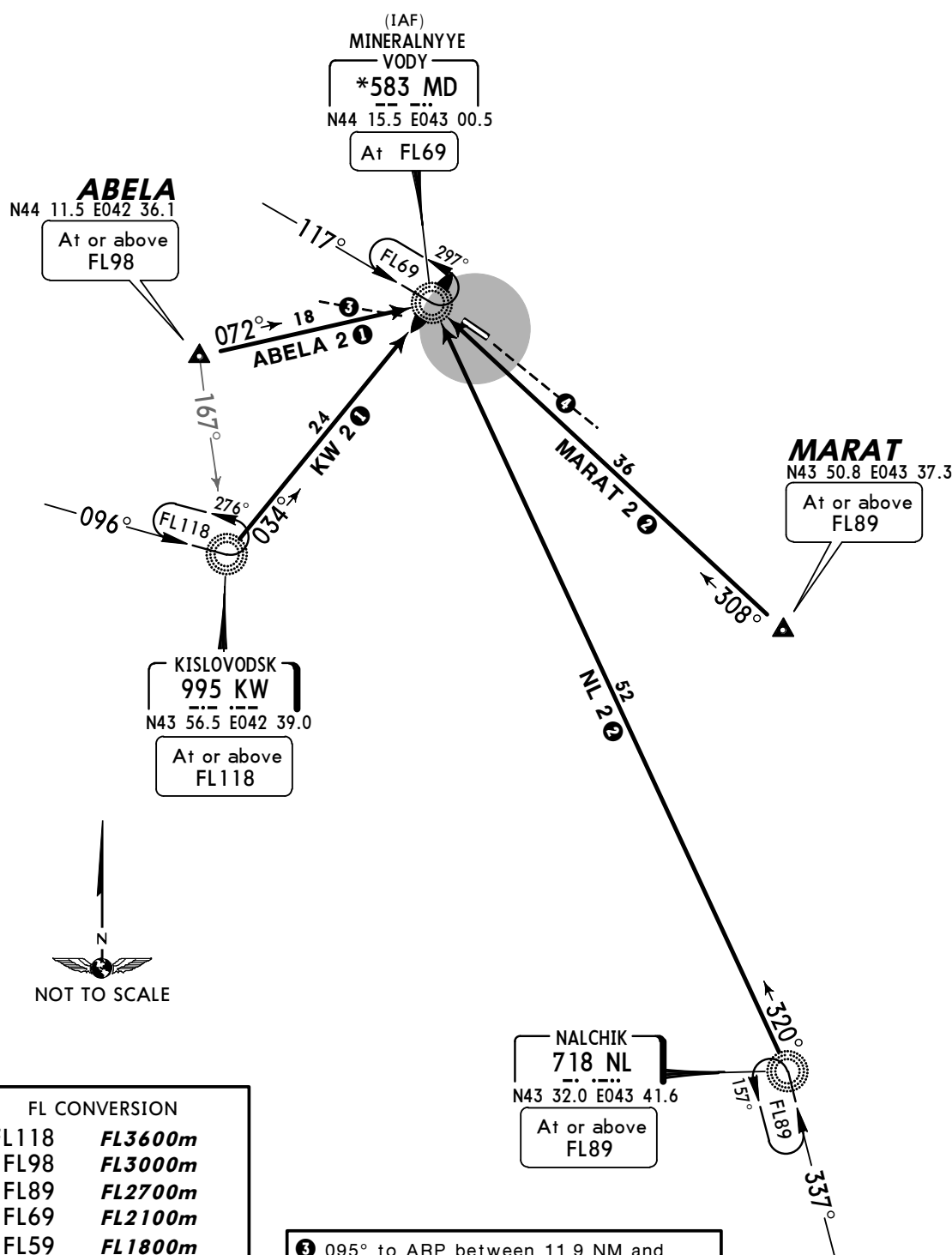
Apt Elev
1054'

Alt Set: MM (hPa on request) QNH on request (QFE)
 Trans level: FL59
 FL69 if pressure is less than 704mm (938.6 hPa)
 Trans alt: 4010' (2967')



ABELA 2①, KW 2①, MARAT 2②, NL 2②
 RWY 12 ARRIVALS
 FROM SOUTH

- ① For approach via racetrack.
- ② For approach via procedure turn.



FL CONVERSION

FL118	FL3600m
FL98	FL3000m
FL89	FL2700m
FL69	FL2100m
FL59	FL1800m

ALT/HEIGHT CONVERSION

QNH (QFE)
 4010' (2967' - 900m)

- ③ 095° to ARP between 11.9 NM and 5.4 NM do not fly south below FL59.
- ④ 304° to ARP between 11.9 NM and 1.6 NM do not fly south below FL59.

URMM/MRV MINERALNYE VODY

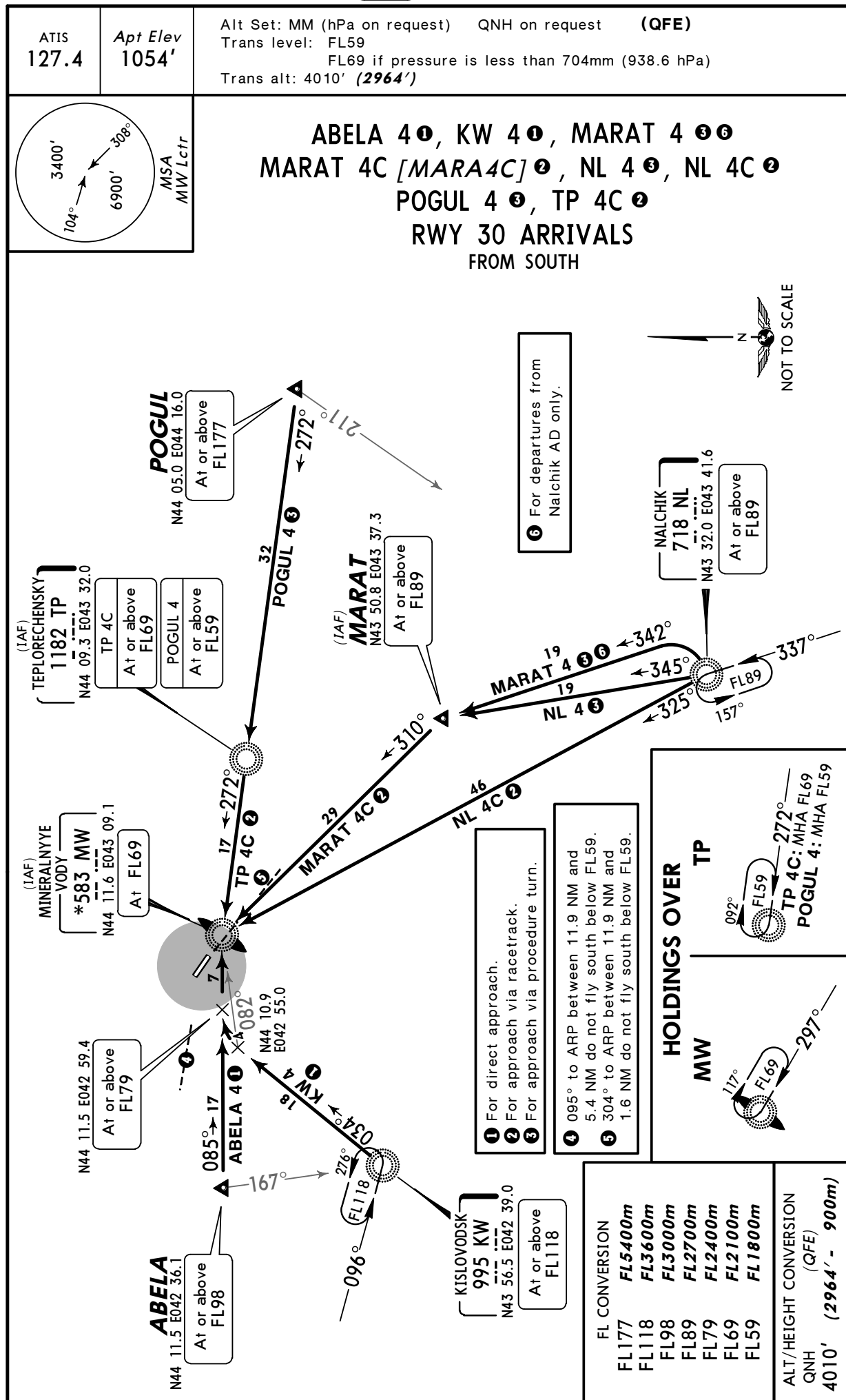
7 DEC 07

10-2C

Eff 20 Dec

STAR

JEPPESEN MINERALNYE VODY, RUSSIA



URMM/MRV

MINERALNYYE VODY

20 JUL 07



JEPPESEN MINERALNYYE VODY, RUSSIA

10-2C1

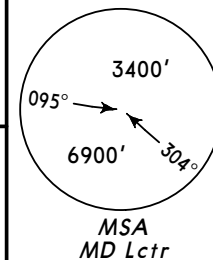
Eff 2 Aug

STAR

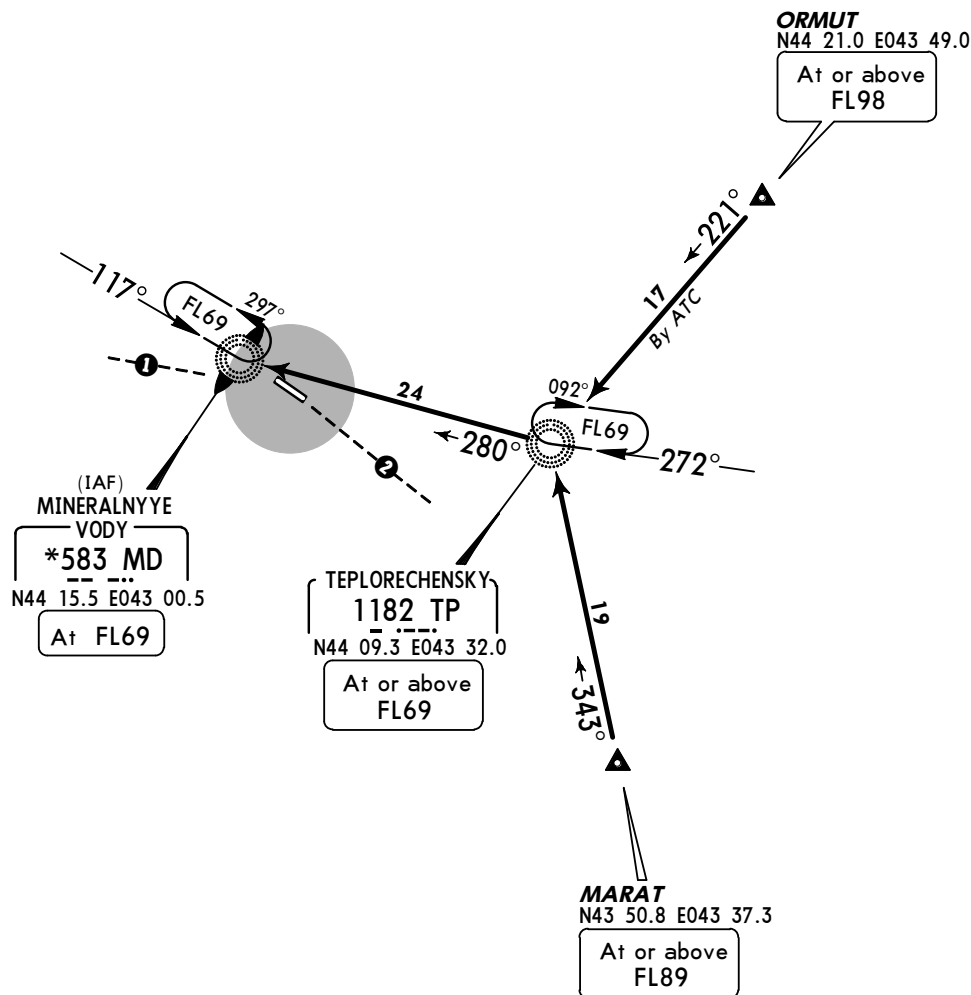
ATIS
127.4

Apt Elev
1054'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: FL59
FL69 if pressure is less than 704mm (938.6 hPa)
Trans alt: 4010' (2967')



RWY 12 ARRIVALS



- ① 095° to ARP between 11.9 NM and 5.4 NM do not fly south below FL59.
- ② 304° to ARP between 11.9 NM and 1.6 NM do not fly south below FL59.

FL CONVERSION	
FL98	FL3000m
FL89	FL2700m
FL69	FL2100m
FL59	FL1800m

ALT/HEIGHT CONVERSION	
QNH	(QFE)
4010'	(2967' - 900m)

URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-2D



JEPPesen

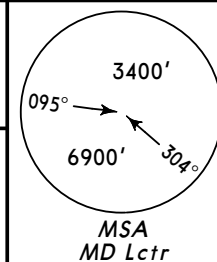
MINERALNYYE VODY, RUSSIA

RADAR STAR

ATIS
127.4

Apt Elev
1054'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: FL59
FL69 if pressure is less than 704mm (938.6 hPa)
Trans alt: 4010' (2967')



RWY 12 RADAR VECTORING ARRIVALS FROM NORTH

- ① 095° to ARP between 11.9 NM and 5.4 NM do not fly south below FL59.
- ② 304° to ARP between 11.9 NM and 1.6 NM do not fly south below FL59.

NIRGA
N45 05.1 E043 25.0

At or above
FL148

ALEGI
N44 43.5 E043 00.0

At or above
FL69

SULOD
N44 35.5 E042 40.0

At or above
FL59

N44 21.8 E042 51.3

At or below
4010' (2967')
but not less than
3020' (1977')

N44 21.4 E042 51.1

At or below
4010' (2967')
but not less than
3020' (1977')

N44 20.2 E042 51.2

At or below
4010' (2967')
but not less than
3020' (1977')

N44 18.8 E042 53.2

At or below
4010' (2967')
but not less than
3020' (1977')

N44 22.9 E042 54.0

At or below
4010' (2967')
but not less than
3020' (1977')

Intercept final at
3020' (1977')

BADKO
N44 30.7 E043 30.5

At or above
FL69



TEPLORECHENSKY
1182 TP
N44 09.3 E043 32.0

**MINERALNYYE
VODY**
*583 MD
N44 15.5 E043 00.5

URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-2E

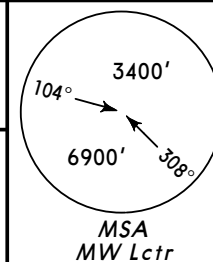


JEPPesen

MINERALNYYE VODY, RUSSIA

RADAR STAR

ATIS 127.4
Apt Elev 1054'
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: FL59
FL69 if pressure is less than 704mm (938.6 hPa)
Trans alt: 4010' (2964')

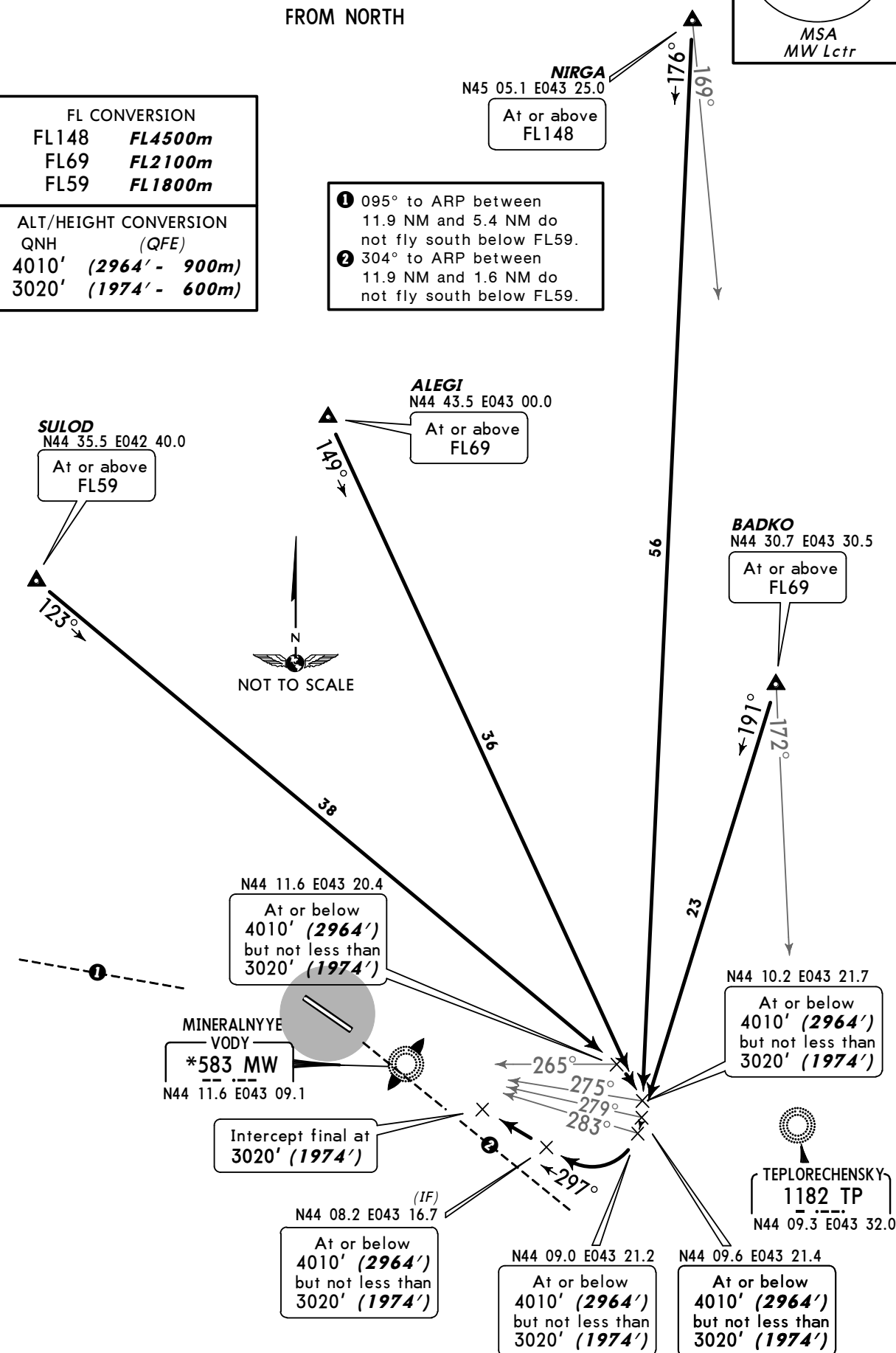


RWY 30 RADAR VECTORING ARRIVALS FROM NORTH

FL CONVERSION
FL148 **FL4500m**
FL69 **FL2100m**
FL59 **FL1800m**

ALT/HEIGHT CONVERSION
QNH (QFE)
4010' (2964' - 900m)
3020' (1974' - 600m)

- ① 095° to ARP between 11.9 NM and 5.4 NM do not fly south below FL59.
- ② 304° to ARP between 11.9 NM and 1.6 NM do not fly south below FL59.



URMM/MRV
MINERALNYE VODY

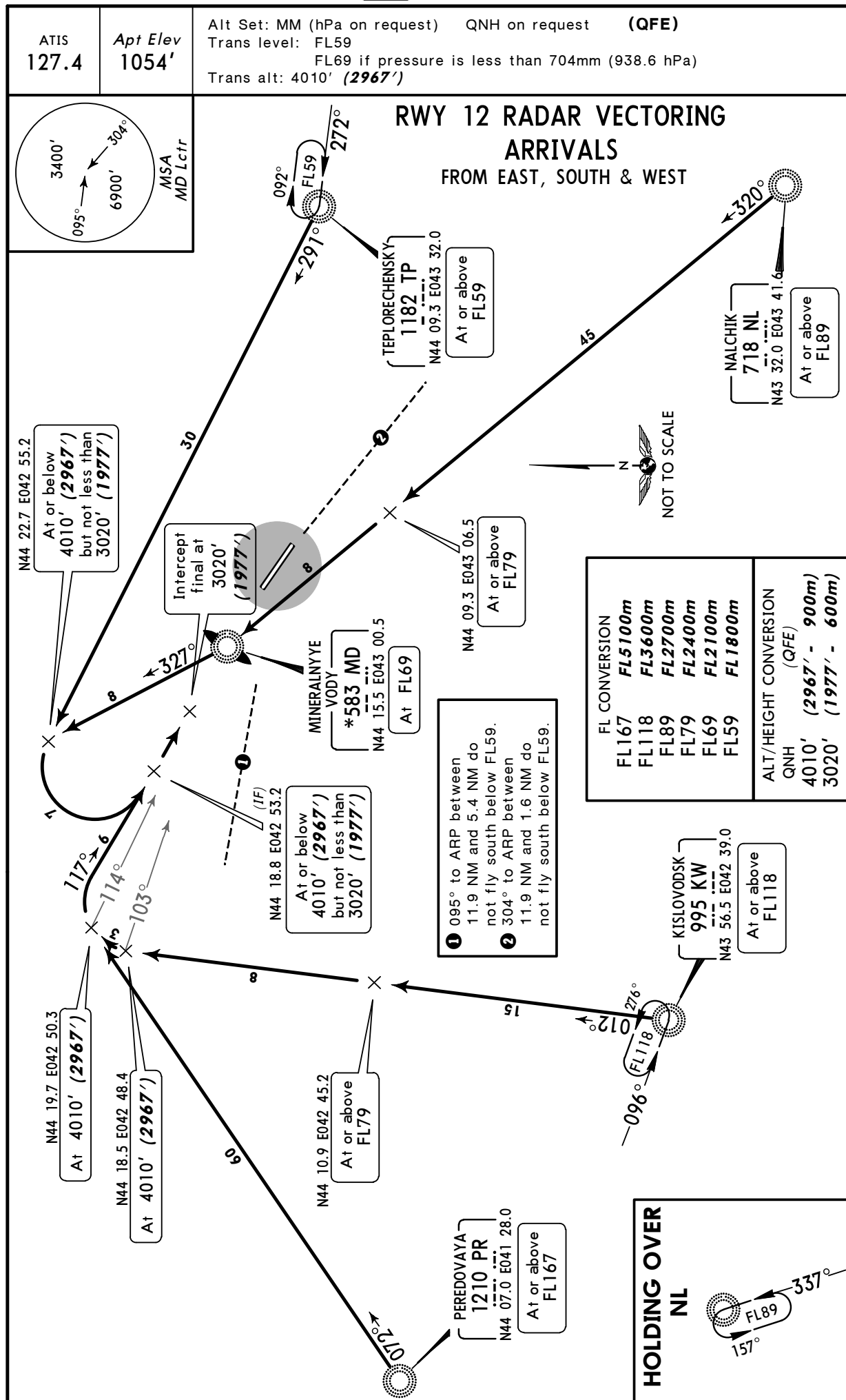
2 JUN 06

10-2F

Eff 8 Jun

JEPPesen MINERALNYE VODY, RUSSIA

RADAR STAR



URMM/MRV
 MINERALNYE VODY

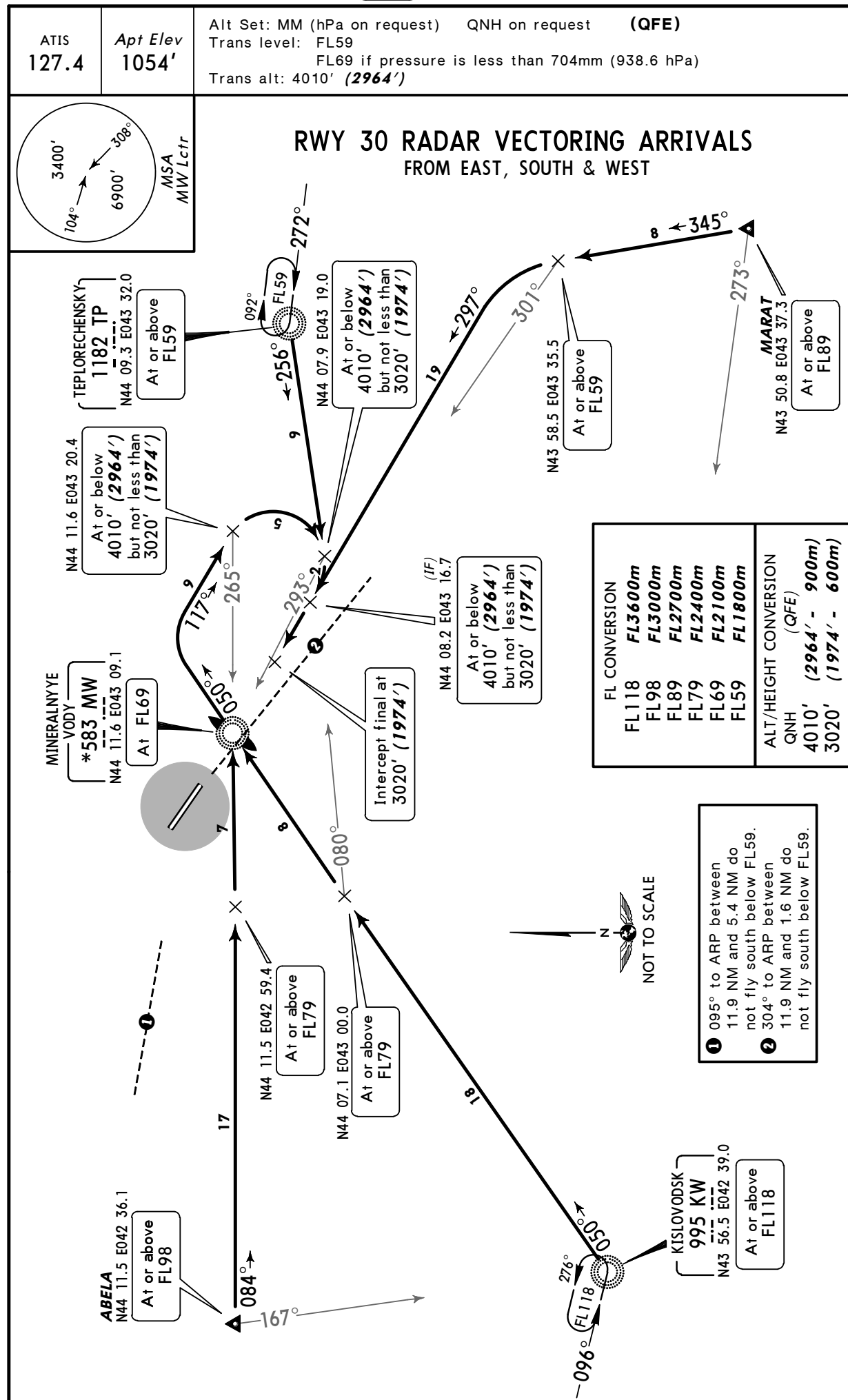
2 JUN 06

10-2G

Eff 8 Jun

JEPPESEN MINERALNYE VODY, RUSSIA

RADAR STAR



URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-3



JEPPesen

MINERALNYYE VODY, RUSSIA

SID

Apt Elev
 1054'

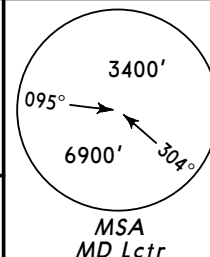
QNH on request (QFE)

Trans level: FL59

FL69 if pressure is less than 704 mm (938.6 hPa)

Trans alt: 4010' (2967')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



ABELA 1, ALEGI 1, BADKO 1

NIRGA 1

BY ATC

RWY 12 DEPARTURES

RWY 12 RADAR VECTORED
 DEPARTURES

ALT/HEIGHT CONVERSION
 QNH (QFE)
 1700' (657' - 200m)
 4010' (2967' - 900m)

FL CONVERSION
 FL59 FL1800m
 FL69 FL2100m
 FL79 FL2400m
 FL98 FL3000m
 FL148 FL4500m

124° from ARP between
 1.6 NM and 11.9 NM do
 not fly south below FL59.

ABELA
 N44 11.5 E042 36.1
 (167° brg to 995 KW)

At or above
 FL98

MINERALNYYE
 VODY
 *583 MD
 N44 15.5 E043 00.5

At or above
 FL79

NIRGA
 N45 05.1 E043 25.0

At or above
 FL148

ALEGI
 N44 43.5 E043 00.0

At or above
 FL148

BADKO
 N44 30.7 E043 30.5
 (172° brg to 1182 TP)

At or above
 FL98

ABELA 1

At 1700' (657')



These SIDs require minimum climb gradients of

ABELA 1: 510' per NM (8.4%) until MD.

ALEGI 1: 377' per NM (6.2%).

BADKO 1: 334' per NM (5.5%).

NIRGA 1: 237' per NM (3.9%).

If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
510' per NM	638	851	1276	1701	2127	2552
377' per NM	471	628	942	1256	1570	1884
334' per NM	418	557	835	1114	1392	1671
237' per NM	296	395	592	790	987	1185

URMM/MRV

MINERALNYYE VODY

8 MAY 09

10-3A



JEPPesen

MINERALNYYE VODY, RUSSIA

SID

Apt Elev
1054'

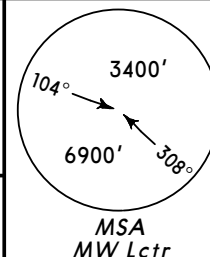
QNH on request (QFE)

Trans level: FL59

FL69 if pressure is less than 704 mm (938.6 hPa)

Trans alt: 4010' (2964')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



ABELA 3, ALEGI 3, BADKO 3

NIRGA 3

BY ATC

RWY 30 DEPARTURES

RWY 30 RADAR VECTORED
DEPARTURES

ALT/HEIGHT CONVERSION

QNH (QFE)

1710' (664' - 200m)

4010' (2964' - 900m)

FL CONVERSION

FL59 FL1800m

FL69 FL2100m

FL98 FL3000m

FL148 FL4500m

① 275° from ARP between
5.4 NM and 11.9 NM do
not fly south below FL59.



N44 18.9 E042 53.5

At or above
FL59

ABELA

N44 11.5 E042 36.1
(167° brg to 995 KW)

At or above
FL98

ALEGI 3
BADKO 3
NIRGA 3

Turn at
1710' (664')

MINERALNYYE
VODY

*583 MW

N44 11.6 E043 09.1

These SIDs require minimum climb gradients
of

ABELA 3: 547' per NM (9%) until
N44 18.9 E042.53.5.

ALEGI 3: 425' per NM (7%).

BADKO 3: 304' per NM (5%).

NIRGA 3: 249' per NM (4.1%).

If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
547' per NM	684	911	1367	1823	2279	2734
425' per NM	532	709	1063	1418	1772	2127
304' per NM	380	506	760	1013	1266	1519
249' per NM	311	415	623	830	1038	1246

URMM/MRV

JEPPESEN MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

26 MAY 06

10-3B

Eff 8 Jun

SID

Apt Elev
1054'

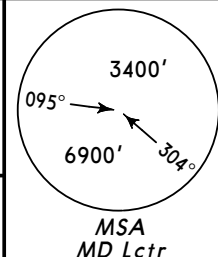
QNH on request (QFE)

Trans level: FL59

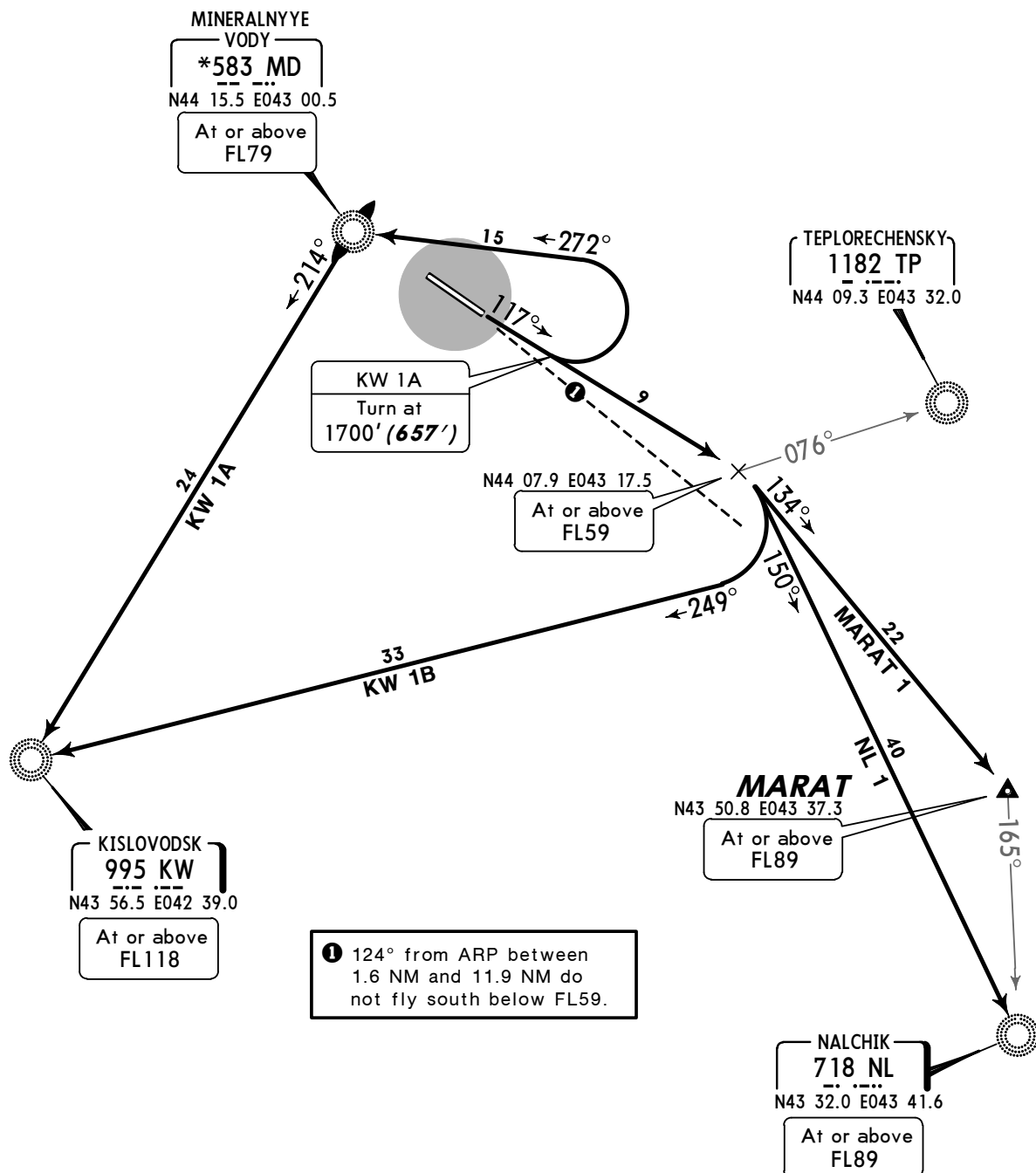
FL69 if pressure is less than 704 mm (938.6 hPa)

Trans alt: 4010' (2967')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



KW 1A, KW 1B, MARAT 1, NL 1
RWY 12 DEPARTURES



ALT/HEIGHT CONVERSION
 QNH (QFE)
 1700' (657' - 200m)
 4010' (2967' - 900m)

FL CONVERSION
 FL59 FL1800m
 FL69 FL2100m
 FL79 FL2400m
 FL89 FL2700m
 FL118 FL3600m



These SIDs require a minimum climb gradient of

KW 1A
 510' per NM (8.4%) until MD.
KW 1B, MARAT 1, NL 1
 510' per NM (8.4%) until N44 07.9 E043 17.5.

Gnd speed-KT	75	100	150	200	250	300
510' per NM	638	851	1276	1701	2127	2552

If unable to comply advise ATC.

URMM/MRV

MINERALNYE VODY

26 MAY 06

10-3C

Eff 8 Jun

JEPPesen MINERALNYE VODY, RUSSIA

SID

Apt Elev
1054'

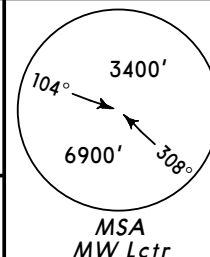
QNH on request (QFE)

Trans level: FL59

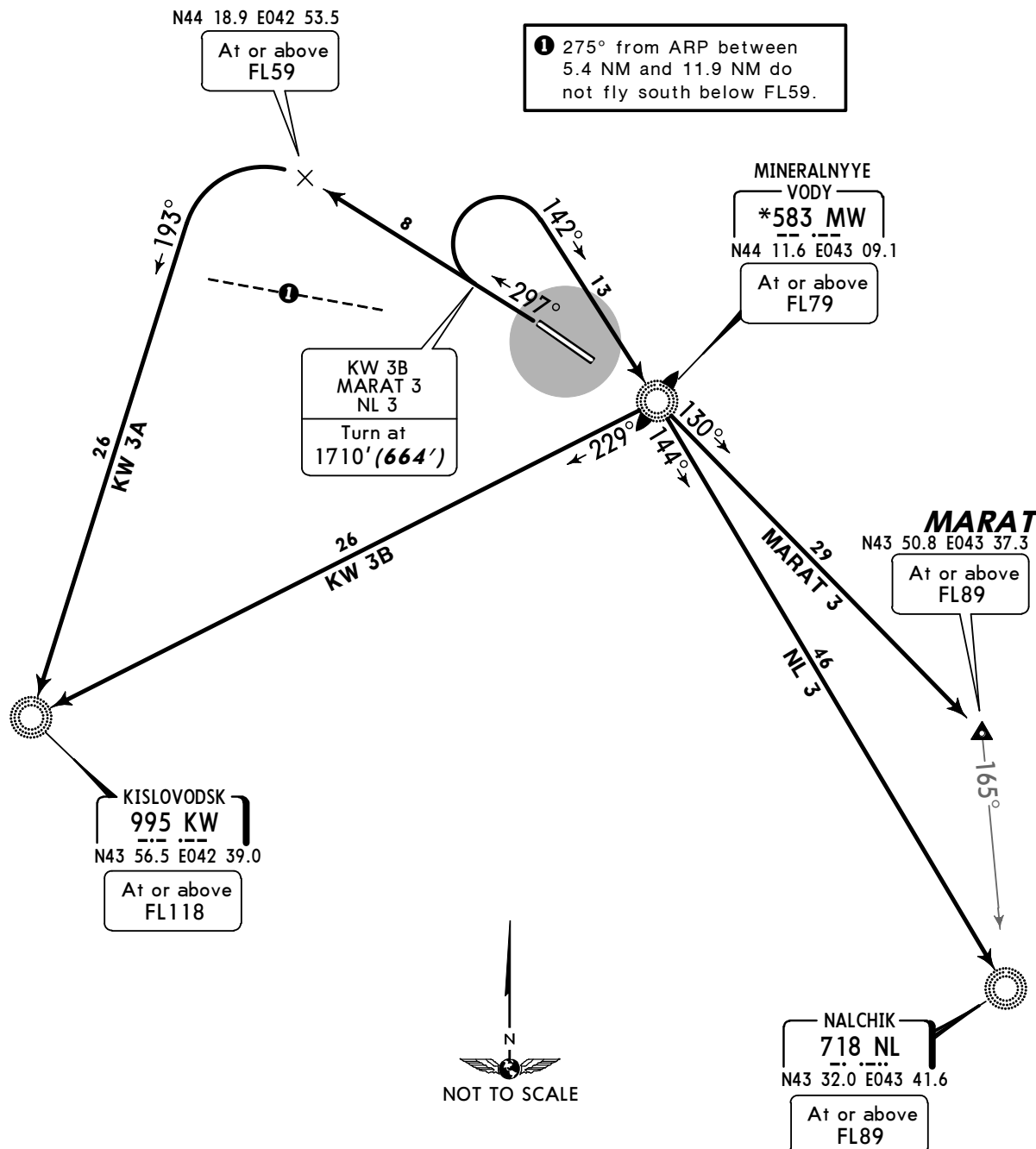
FL69 if pressure is less than 704 mm (938.6 hPa)

Trans alt: 4010' (2964')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



KW 3A, KW 3B, MARAT 3, NL 3 RWY 30 DEPARTURES



ALT/HEIGHT CONVERSION

QNH (QFE)
1710' (664' - 200m)
4010' (2964' - 900m)

FL CONVERSION

FL59 FL1800m
FL69 FL2100m
FL79 FL2400m
FL89 FL2700m
FL118 FL3600m

These SIDs require minimum climb gradients of

KW 3A

547' per NM (9%) until N44 18.9 E042 53.5.

KW 3B, MARAT 3, NL 3

529' per NM (8.7%) until MW.

Gnd speed-KT	75	100	150	200	250	300
547' per NM	684	911	1367	1823	2279	2734
529' per NM	661	881	1322	1762	2203	2643

If unable to comply advise ATC.

URMM/MRV

MINERALNYE VODY

26 MAY 06

(10-3D)

Eff 8 Jun

JEPPESEN MINERALNYE VODY, RUSSIA

SID

Apt Elev
1054'

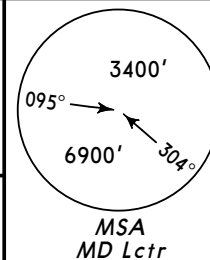
QNH on request (QFE)

Trans level: FL59

FL69 if pressure is less than 704 mm (938.6 hPa)

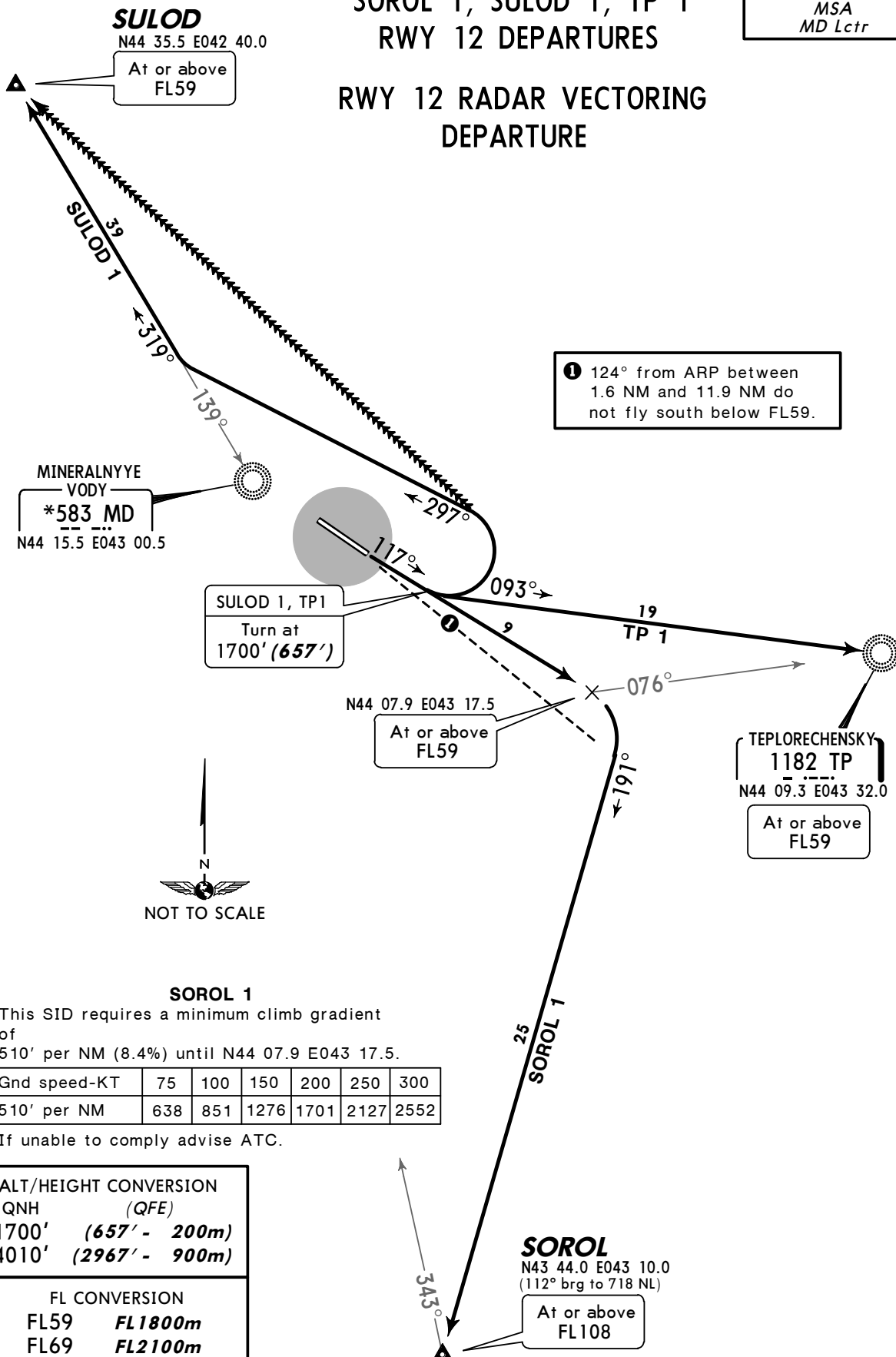
Trans alt: 4010' (2967')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



SOROL 1, SULOD 1, TP 1
RWY 12 DEPARTURES

RWY 12 RADAR VECTORED
DEPARTURE



SOROL 1

This SID requires a minimum climb gradient of 510' per NM (8.4%) until N44 07.9 E043 17.5.

Gnd speed-KT	75	100	150	200	250	300
510' per NM	638	851	1276	1701	2127	2552

If unable to comply advise ATC.

ALT/HEIGHT CONVERSION

QNH (QFE)
1700' (657' - 200m)
4010' (2967' - 900m)

FL CONVERSION

FL59 FL1800m
FL69 FL2100m
FL108 FL3300m

URMM/MRV

MINERALNYE VODY

26 MAY 06

10-3E

Eff 8 Jun

JEPPESEN MINERALNYE VODY, RUSSIA

SID

Apt Elev
1054'

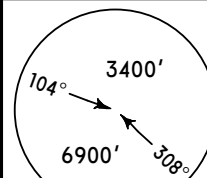
QNH on request (QFE)

Trans level: FL59

FL69 if pressure is less than 704 mm (938.6 hPa)

Trans alt: 4010' (2964')

Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.



MSA
MW Lctr

ALT/HEIGHT CONVERSION

QNH (QFE)

1710' (664' - 200m)

4010' (2964' - 900m)

FL CONVERSION

FL59 FL1800m

FL69 FL2100m

FL79 FL2400m

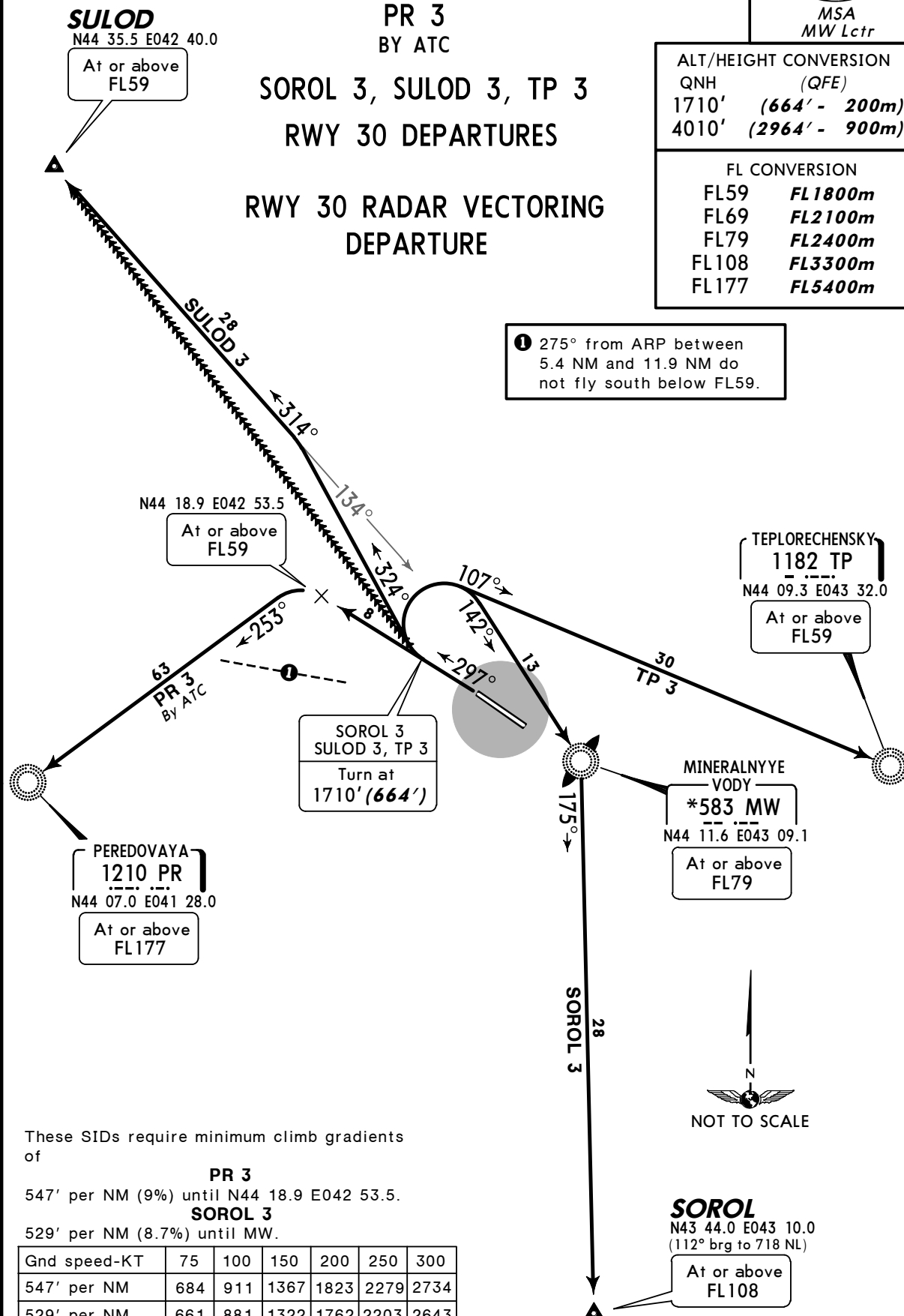
FL108 FL3300m

FL177 FL5400m

PR 3
BY ATC
SOROL 3, SULOD 3, TP 3
RWY 30 DEPARTURES

RWY 30 RADAR VECTORED
DEPARTURE

① 275° from ARP between
5.4 NM and 11.9 NM do
not fly south below FL59.



These SIDs require minimum climb gradients of

PR 3

547' per NM (9%) until N44 18.9 E042 53.5.

SOROL 3

529' per NM (8.7%) until MW.

Gnd speed-KT	75	100	150	200	250	300
547' per NM	684	911	1367	1823	2279	2734
529' per NM	661	881	1322	1762	2203	2643

If unable to comply advise ATC.

NOT TO SCALE

SOROL

N43 44.0 E043 10.0
(112° brg to 718 NL)

At or above
FL108

URMM/MRV



JEPPESEN

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

31 OCT 03

10-4

NOISE**NOISE ABATEMENT****ARRIVALS****Runway 30**

Noise abatement procedures shall be executed by all aircraft. If special meteorological conditions, such as considerable wind, cumulo nimbus clouds etc are present in arrival and approach sectors, ATC unit may, if it is considered necessary for safety reasons, at its own discretion or by a pilot-in-command's request deviate from the provisions stated below.

Restrictions

The required noise abatement procedures shall not be observed over the overflown areas in the following cases:

- if there is ice, slush, water, mud, rubber, oil etc on runway and friction coefficient is 0.4 or less
- when ceiling is less than 150m or visibility is less than 1800m
- when crosswind component (including gusts) over runway exceeds 7m/sec
- when tailwind component on runway exceeds 2.5m/sec
- when wind shear is forecasted or reported, or when it is expected that unfavourable weather conditions may influence aircraft approach and landing.

During instrument as well as visual approach it is not allowed to fly below ILS glide path.

No noise abatement procedure shall envisage the increasing of indicated air speed during descent.

A displacement of THR shall not be used as a noise abatement measure.

AIR-GROUND communication shall be kept to a minimum.

Downwind landing of aircraft taking into account friction coefficient shall be allowed in cases when this direction is optimal for noise abatement over the city or in cases when upwind landing does not provide safety or is prohibited. A tailwind component shall correspond to the norms established in Airplane Flight Manual.

Runway 30 special approach procedure

When reaching a distance of 13.5 ± 1.6 NM from THR pilots shall conduct the flight at 4010' (2964' - 900m) maintaining MAX 210 KT. At a distance of 11.9 NM from THR speed shall be reduced to 185 KT ± 10 KT. At 10.8 NM from THR pilots shall lower the landing gear and wing devices into intermediate position at 15-30° angle (speed and angle of wing devices' settings depend on type and mass of aircraft).

After glide path interception and commencement of descent along glide path pilots shall continue to reduce speed to 155 - 160 KT ± 15 KT by the moment of reaching 2530' (1484' - 450m) at a distance of about 5.2 NM from THR.

At or above 2530' (1484' - 450m) pilots shall terminate to set wing devices into landing position and before reaching 2200' (1154' - 350m) and a distance of 3.8 NM from THR complete the stabilization of aircraft in the landing configuration at final approach speed.

At or above 2220' (1154' - 350m) and a distance of 4.1 NM the aircraft shall be completely stabilized and the pilot shall maintain final approach speed until landing taking into account the aircraft weight.

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JEPPESEN

MINERALNYE VODY, RUSSIA

MINERALNYE VODY

31 OCT 03

(10-4A)

NOISE**NOISE ABATEMENT****DEPARTURES****Runway 12**

Noise abatement procedures during take-off and climbing phase shall be executed by all aircraft, except in case of reduction of flight safety and in case of engine failure.

Restrictions

Downwind take-off taking into account friction coefficient shall be allowed in cases when the direction is optimal for noise abatement over the city or in cases when upwind take-off does not provide safety or is prohibited. The tailwind component shall correspond to the norms established in the aircraft Flight Manual.

The minimum indicated air speed during climb shall not be less than $V_2 + 10$ KT or less than that prescribed in the Aircraft Flight Manual if higher.

Maintaining the minimum indicated air speed of climb is not required if it leads to the exceeding of the minimum permissible angle of attack.

The reduction of power shall not be applied until:

- reaching 2030' (987' - 300m)
- the established standard power mode enables to maintain the established climb gradient of not less than 4% at the above specified speed and with maximum certified take-off mass
- take-off flight path provides overflying of all obstacles located under the flight path with sufficient clearance when all engines are operating normally and also taking into account possible engine failure and time period necessary for the rest engines to develop full power.

Special take-off procedure

Pilots shall apply two special take-off procedures, NADP 1 and NADP 2. The pilot-in-command may use any of them for reaching necessary effect. (ICAO Doc 8168, Vol 1, Part V, Chapter 3).

REVERSE THRUST

Reverse thrust power with the exception of reverse idle thrust is used for safety reasons only.

URMM/MRV

Apt Elev **1054'**
N44 13.5 E043 05.0

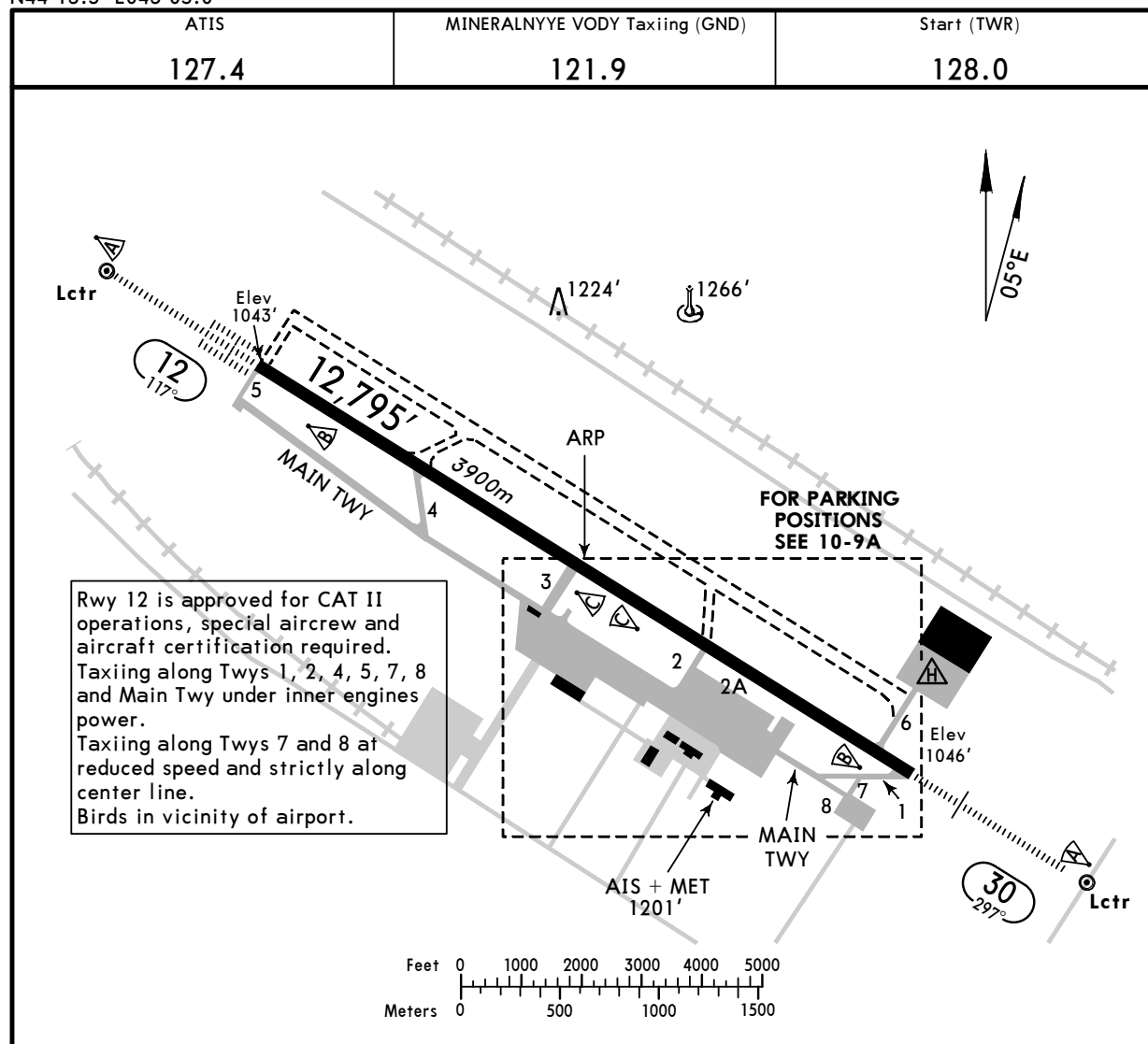
JEPPESEN

9 MAY 08

(10-9)

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY



ADDITIONAL RUNWAY INFORMATION					
RWY		USABLE LENGTHS		TAKE-OFF	WIDTH
		LANDING	BEYOND		
		Threshold	Glide Slope		
12	HIRL(60m) CL(15m) HIALS-II TDZ PAPI-L(2.67°) RVR		11,614' 3540m		197'
30	HIRL(60m) CL(15m) HIALS PAPI-L(2.67°) RVR		11,647' 3550m		60m

TAKE-OFF			
AIR CARRIER All Rwys			
LVP must be in force			
	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL
A			
B	200m (150m)	250m	400m
C			
D	250m (200m)	300m	

URMM/MRV

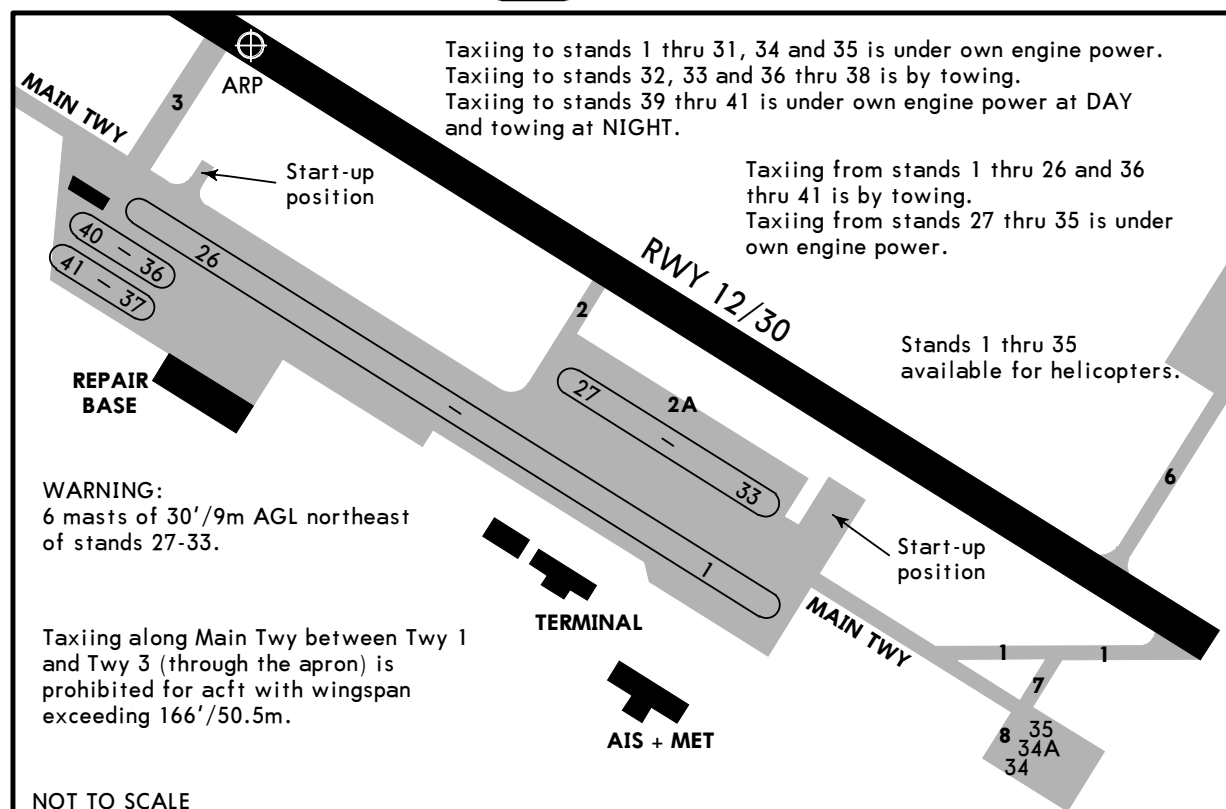
JEPPesen

MINERALNYYE VODY, RUSSIA

9 MAY 08

10-9A

MINERALNYYE VODY



INS COORDINATES

STAND No.	COORDINATES	STAND No.	COORDINATES
1 thru 3	N44 13.0 E043 05.6	27, 28	N44 13.2 E043 05.4
4, 5	N44 13.1 E043 05.5	29 thru 32	N44 13.1 E043 05.5
6 thru 9	N44 13.1 E043 05.4	33	N44 13.1 E043 05.6
10, 11	N44 13.1 E043 05.3		
12	N44 13.2 E043 05.3		
13 thru 16	N44 13.2 E043 05.2		
17	N44 13.2 E043 05.1		
18, 19	N44 13.3 E043 05.1		
20 thru 23	N44 13.3 E043 05.0		
24 thru 26	N44 13.3 E043 04.9		

LOW VISIBILITY PROCEDURES (LVP)

Low visibility procedures shall be applied when rwy visibility values are less than 800m and/or cloud ceiling is 60m.

The availability of LVP will be broadcasted via ATIS: "Low visibility procedures in progress". "Low visibility procedure" means that 10.8 NM interval shall be maintained between the arriving acft so that the critical and sensitive areas of ILS are vacant after each landing. The acft shall be vectored or time intervals shall be established for acft when using standard routes before entry into LOC operational area at a distance of not less than 8.6 NM from touchdown and with a heading different from landing heading not more than $\pm 30^\circ$.

Pilots of landed acft shall report the vacation of runway when the acft have passed ILS critical area. LOC critical area is a rectangular area limited by parallel lines located at 394'/120m on both sides from the runway centerline between LOC antenna and the beginning of the runway.

When visibility is 400m or less or when the crew have lost the orientation the pilot shall stop the acft and request "FOLLOW ME" vehicles assistance. The responsibility for maintaining a safe distance between the acft and escort vehicles rests with the pilot.

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JEPPESSEN
 20 MAR 09 **10-9S**
Standard**MINERALNYYE VODY, RUSSIA**
MINERALNYYE VODY

STRAIGHT-IN RWY		A	B	C	D
12	CAT 2 ILS	1143' (100')	1143' (100')	1143' (100')	1143' (100')
		RA104' R350m	RA104' R350m	RA104' R350m	RA104' R350m
	ILS	1243' (200')	1243' (200')	1243' (200')	1243' (200')
	<i>FULL</i>	R550m	R550m	R550m	R550m
	<i>Limited</i>	R750m	R750m	R750m	R750m
	<i>ALS out</i>	R1200m	R1200m	R1200m	R1200m
	LOC	NOT AUTH	NOT AUTH	NOT AUTH	NOT AUTH
	NDB ①	1480' (437')	1480' (437')	1480' (437')	1480' (437')
		R1300m	R1300m	R1300m	R1300m
	<i>ALS out</i>	R2000m	R2000m	R2000m	R2000m
30	ILS	1246' (200')	1246' (200')	1246' (200')	1246' (200')
	<i>FULL</i>	R550m	R550m	R550m	R550m
	<i>Limited</i>	R750m	R750m	R750m	R750m
	<i>ALS out</i>	R1200m	R1200m	R1200m	R1200m
	LOC	NOT AUTH	NOT AUTH	NOT AUTH	NOT AUTH
	NDB ①	1460' (414')	1460' (414')	1460' (414')	1460' (414')
		R1200m	R1200m	R1200m	R1200m
	<i>ALS out</i>	R1900m	R1900m	R1900m	R1900m

① Continuous Descent Final Approach

TAKE-OFF RWY 12, 30

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

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JEPPESEN

JAA MINIMUMS

2 APR 04

10-9X

MINERALNYE VODY, RUSSIA
MINERALNYYE VODY

STRAIGHT-IN RWY		A	B	C	D
12	CAT II ILS	1143' (100')	1143' (100')	1143' (100')	1143' (100')
		RA 104' R350m	RA 104' R350m	RA 104' R350m	RA 104' R350m
	ILS	1243' (200')	1243' (200')	1243' (200')	1243' (200')
		R550m	R550m	R550m	R550m
	ALS out	R1000m	R1000m	R1000m	R1000m
	LOC	NOT AUTHORIZED			
30	NDB	1480' (437')	1480' (437')	1480' (437')	1480' (437')
		R900m	R1000m	R1000m	R1400m
	ALS out	R1500m	R1500m	R1800m	R2000m
	ILS	1246' (200')	1246' (200')	1246' (200')	1246' (200')
		R550m	R550m	R550m	R550m
	ALS out	R1000m	R1000m	R1000m	R1000m
	NDB	1460' (414')	1460' (414')	1460' (414')	1460' (414')
		R900m	R1000m	R1000m	R1400m
	ALS out	R1500m	R1500m	R1800m	R2000m
	LOC	NOT AUTHORIZED			
	NDB	1460' (414')	1460' (414')	1460' (414')	1460' (414')
		R900m	R1000m	R1000m	R1400m
	ALS out	R1500m	R1500m	R1800m	R2000m

TAKE-OFF RWY 12, 30

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

URMM/MRV

MINERALNYE VODY

25 MAY 07
Eff 7 Jun

(11-1)

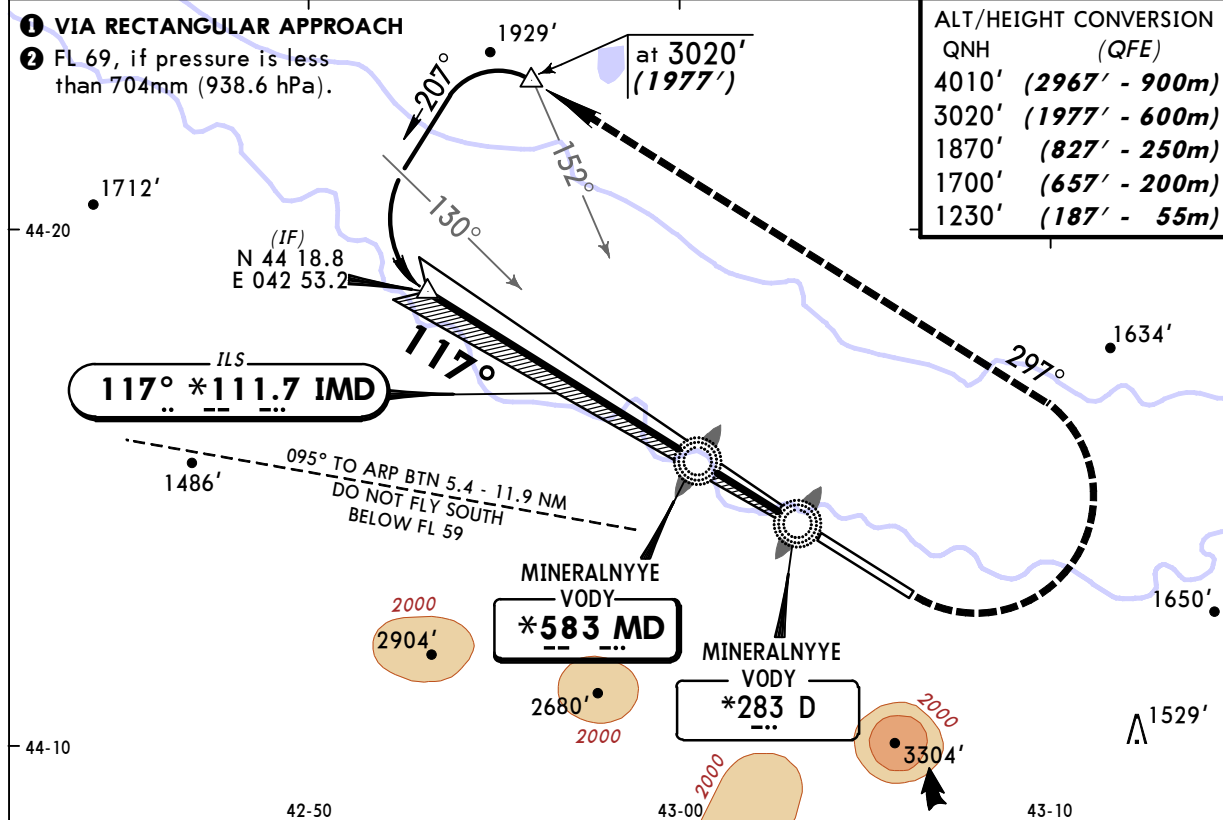
JEPPESEN MINERALNYE VODY, RUSSIA

CAT II/I ILS or 2 NDB Rwy 12

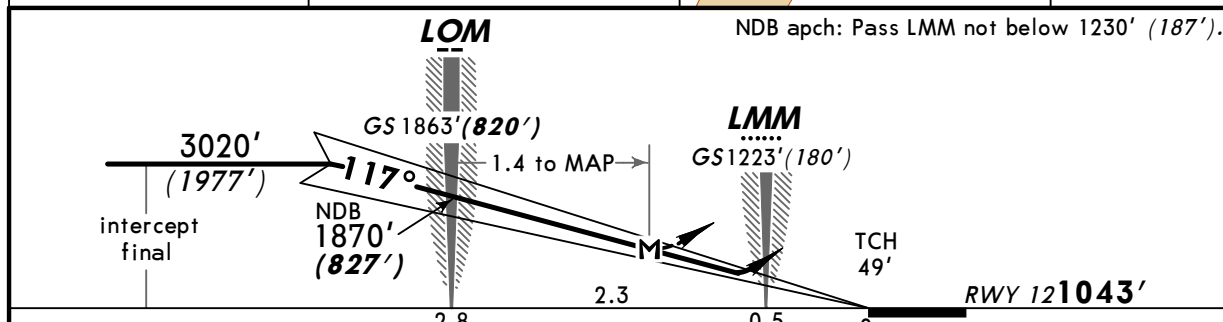
BRIEFING STRIP

ATIS 127.4	MINERALNYE VODY Approach 119.3	MINERALNYE VODY Krug (R) 120.7	MINERALNYE VODY Start (TWR) 128.0	Ground 121.9
LOC IMD *111.7	GS LOM 1863' (820')	CAT II ILS RA 104' DA(H) 1143' (100')	CAT I ILS DA(H) 1243' (200')	Apt Elev 1054'
NDB MD *583	Final Apch Crs 117°	Minimum Alt LOM 1870' (827')	NDB MDA(H) 1480' (437')	RWY 1043'
MISSED APCH: Climb on 117° to 1700' (657'), then turn LEFT onto 297° climbing to 3020' (1977'), then as directed.				MSA MD NDB

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 59 ② Trans alt: 4010' (2967')
1. CAT II ILS: Special Aircrew and Acft Certification Required. 2. LOM is 180'/55m LEFT of RCL.



ALT/HEIGHT CONVERSION	QNH	(QFE)
4010'	(2967' - 900m)	
3020'	(1977' - 600m)	
1870'	(827' - 250m)	
1700'	(657' - 200m)	
1230'	(187' - 55m)	



Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	1700' (657') on 117°	297° LT	3020' (1977')
ILS GS 2.67° or NDB Descent Gradient 4.7%	336	432	480	576	671	767	PAPI			
LOM to MAP	1.4	1:12	0:56	0:50	0:42	0:36	0:31			

STRAIGHT-IN LANDING RWY 12				LOC (GS out)		NDB			
CAT II RA 104' DA(H) 1143' (100')		CAT I DA(H) 1243' (200')				MDA(H) 1480' (437')			
		FULL	TDZ or CL out	ALS out			ALS out		
A									
B									
C									
D									

PANS OPS

CHANGES: Procedure.

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MINERALNYE VODY

25 MAY 07
Eff 7 Jun

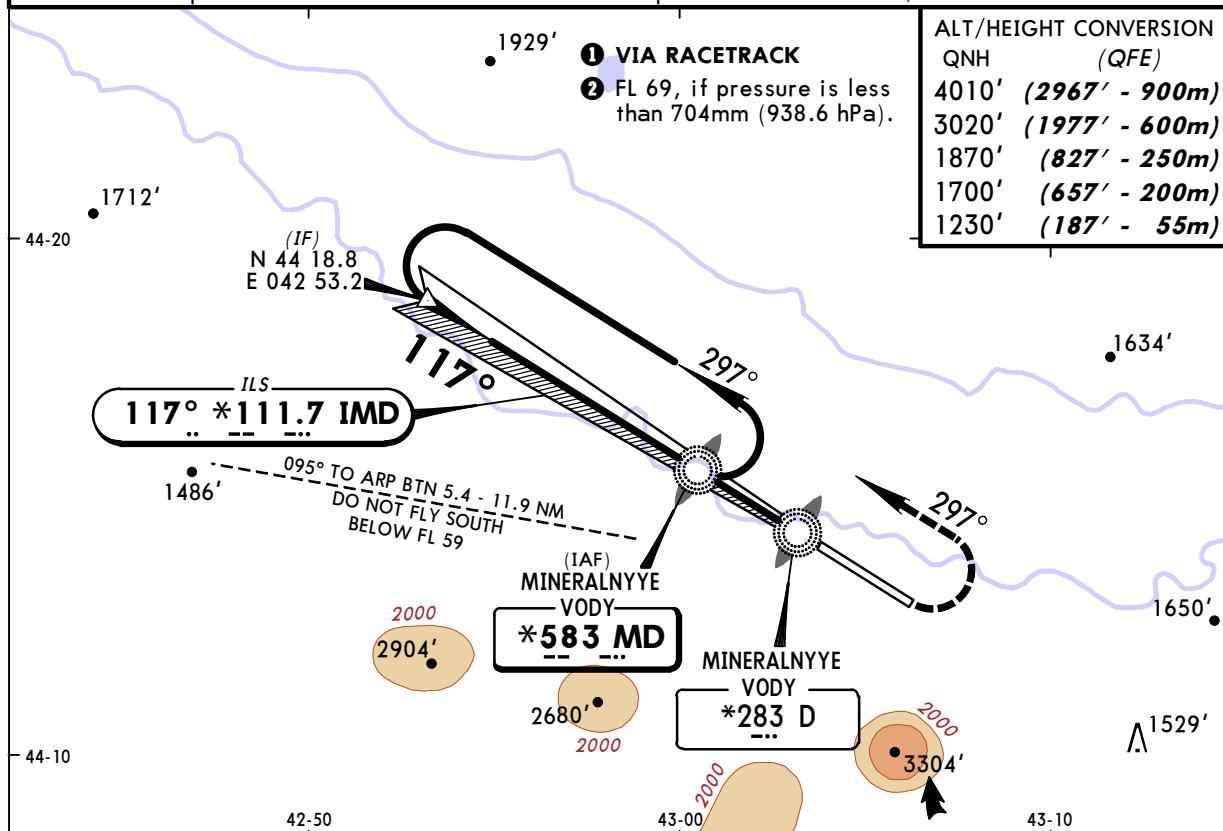
(11-2)

JEPPESEN MINERALNYE VODY, RUSSIA
CAT II/I ILS or 2 NDB Rwy 12

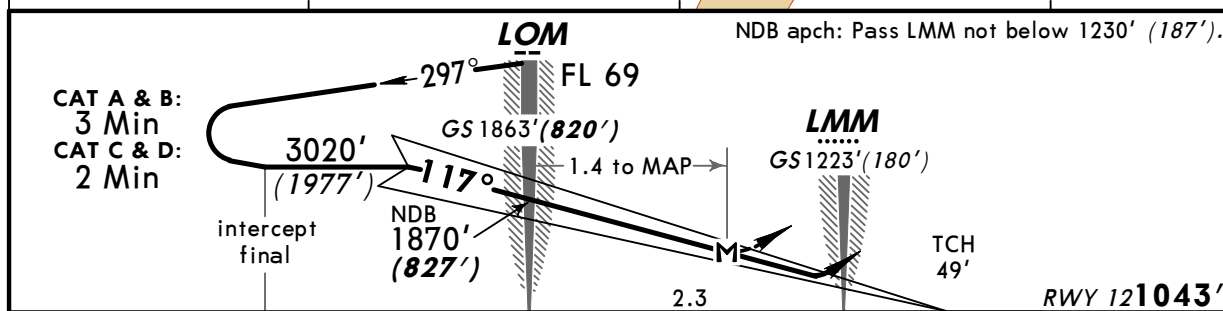
BRIEFING STRIP

ATIS 127.4	MINERALNYE VODY Approach 119.3	MINERALNYE VODY Krug (R) 120.7	MINERALNYE VODY Start (TWR) 128.0	Ground 121.9
LOC IMD *111.7	GS LOM 1863' (820')	CAT II ILS RA 104' DA(H) 1143' (100')	CAT I ILS DA(H) 1243' (200')	Apt Elev 1054'
NDB MD *583	Final Apch Crs 117°	Minimum Alt LOM 1870' (827')	NDB MDA(H) 1480' (437')	RWY 1043'
MISSED APCH: Climb on 117° to 1700' (657'), then turn LEFT onto 297° climbing to 3020' (1977'), then as directed.				MSA MD NDB

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 59 ② Trans alt: 4010' (2967')
1. CAT II ILS: Special Aircrew and Acft Certification Required. 2. LOM is 180'/55m LEFT of RCL.



ALT/HEIGHT CONVERSION	QNH	(QFE)
4010'	(2967' - 900m)	
3020'	(1977' - 600m)	
1870'	(827' - 250m)	
1700'	(657' - 200m)	
1230'	(187' - 55m)	



Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	1700' (657') on 117°	297° LT	3020' (1977')
ILS GS 2.67° or NDB Descent Gradient 4.7%	336	432	480	576	671	767	PAPI			
LOM to MAP	1.4	1:12	0:56	0:50	0:42	0:36	0:31			

STRAIGHT-IN LANDING RWY 12				LOC (GS out)	NDB	
CAT II RA 104'		CAT I DA(H) 1243' (200')			MDA(H) 1480' (437')	
DA(H) 1143' (100')		FULL	TDZ or CL out	ALS out	ALS out	
A						
B	RVR 350m	RVR 550m	RVR 720m	1200m	1700m	2500m
C		VIS 800m	VIS 800m			
D					2100m	

PANS OPS

CHANGES: Procedure.

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MINERALNYE VODY

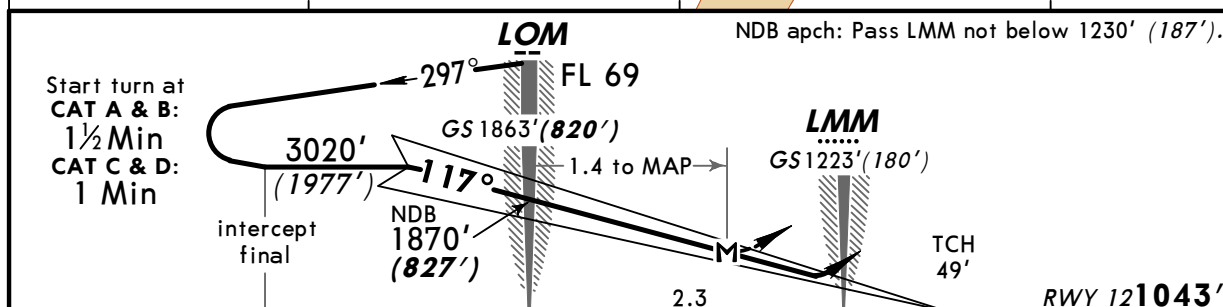
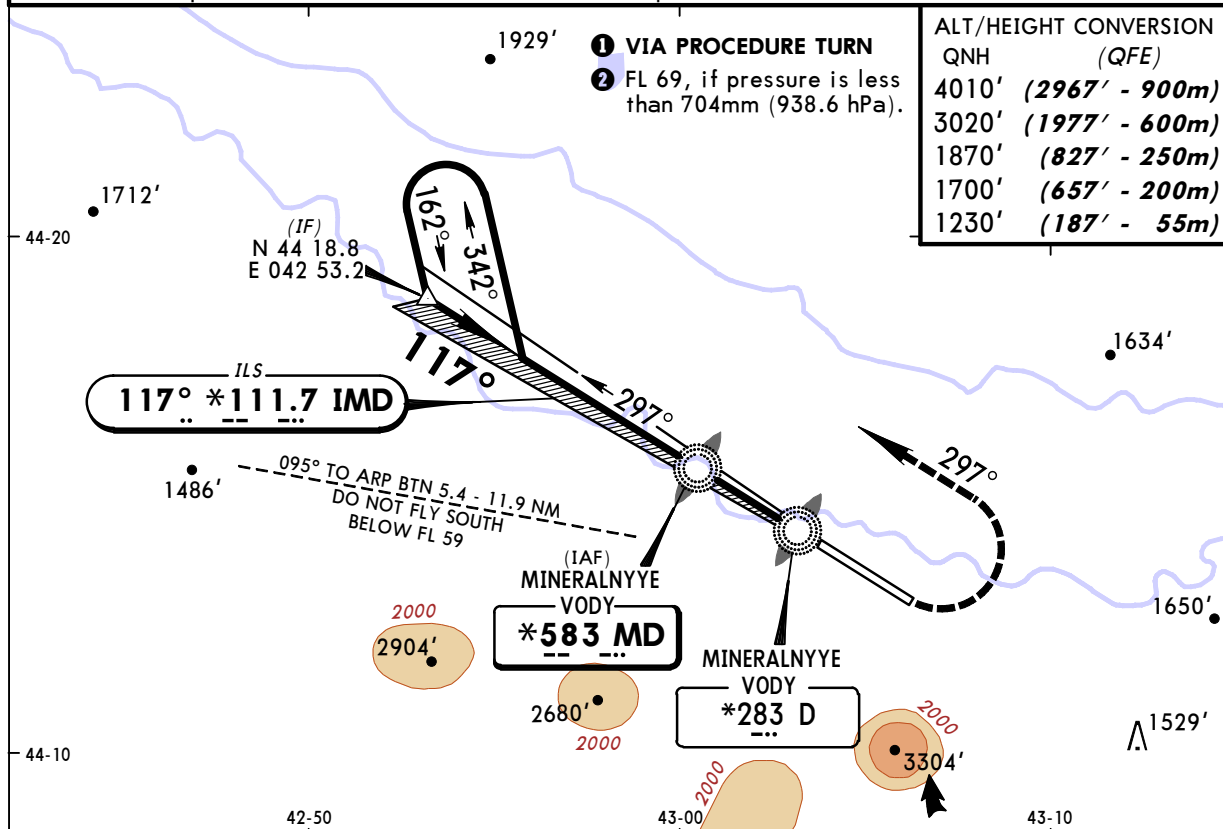
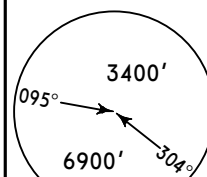
25 MAY 07
Eff 7 Jun

(11-3)

JEPPESEN MINERALNYE VODY, RUSSIA
CAT II/I ILS or 2 NDB Rwy 12

BRIEFING STRIP

ATIS 127.4	MINERALNYE VODY Approach 119.3	MINERALNYE VODY Krug (R) 120.7	MINERALNYE VODY Start (TWR) 128.0	Ground 121.9
LOC IMD *111.7	GS LOM 1863' (820')	CAT II ILS RA 104' DA(H) 1143' (100')	CAT I ILS DA(H) 1243' (200')	Apt Elev 1054'
NDB MD *583	Final Apch Crs 117°	Minimum Alt LOM 1870' (827')	NDB MDA(H) 1480' (437')	RWY 1043'
MISSED APCH: Climb on 117° to 1700' (657'), then turn LEFT onto 297° climbing to 3020' (1977'), then as directed.				
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 59 ② Trans alt: 4010' (2967')				
1. CAT II ILS: Special Aircrew and Acft Certification Required. 2. LOM is 180'/55m LEFT of RCL.				



Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	1700' (657') on 117°	297° LT	3020' (1977')
ILS GS 2.67° or NDB Descent Gradient 4.7%	336	432	480	576	671	767	PAPI			
LOM to MAP	1.4	1:12	0:56	0:50	0:42	0:36	0:31			

STRAIGHT-IN LANDING RWY 12				LOC (GS out)		NDB			
CAT II RA 104' DA(H) 1143' (100')		CAT I DA(H) 1243' (200')				MDA(H) 1480' (437')			
FULL		TDZ or CL out		ALS out		ALS out			
RVR 350m		RVR 550m VIS 800m		RVR 720m VIS 800m		1200m		NOT AUTH	
						1700m		2500m	
						2100m			

CHANGES: Procedure.

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URMM/MRV MINERALNYE VODY

25 MAY 07
Eff 7 Jun

(11-4)

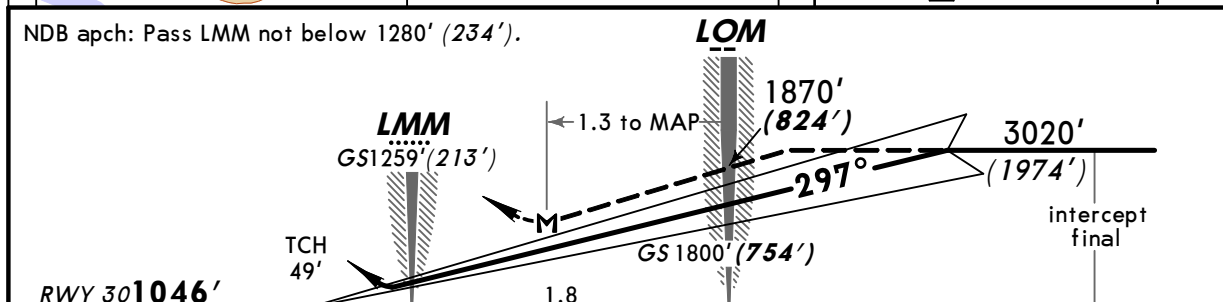
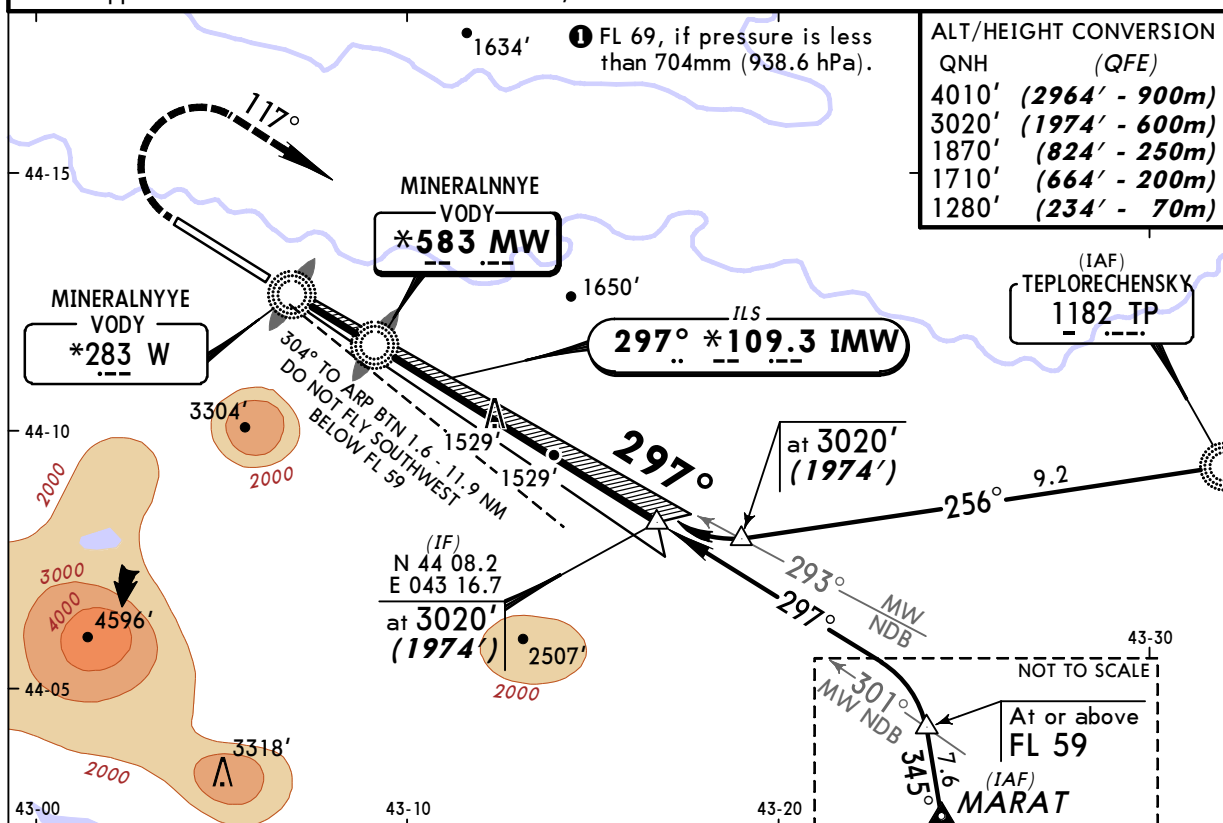
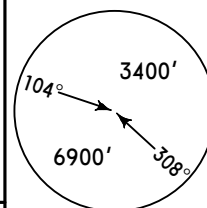
JEPPESEN MINERALNYE VODY, RUSSIA VIA DIRECT APCH ILS or 2 NDB Rwy 30

BRIEFING STRIP

ATIS 127.4		MINERALNYE VODY Approach 119.3		MINERALNYE VODY Krug (R) 120.7		MINERALNYE VODY Start (TWR) 128.0		Ground 121.9	
LOC IMW *109.3		Final Apch Crs 297°		GS LOM 1800' (754')		ILS DA(H) 1246' (200')		Apt Elev 1054' RWY 1046'	
NDB MW *583				Minimum Alt LOM 1870' (824')		NDB MDA(H) 1460' (414')			
MISSED APCH: Climb on 297° to 1710' (664'), then turn RIGHT onto 117° climbing to 3020' (1974'), then as directed.									
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 59 ① Trans alt: 4010' (2964') Initial approach restricted to CAT A MAX 135 KT, CAT B MAX 140 KT.									

A circular diagram with a center point. Two arrows originate from the center. One arrow points towards the upper-left and is labeled '104°'. The other arrow points towards the lower-right and is labeled '308°'. The distance '3400'' is written near the 104° arrow, and '6900'' is written near the 308° arrow.

MSA
MW NDB



Gnd speed-Kts	70	90	100	120	140	160	ILS	1710' (664')	117°	3020' (1974')
ILS GS	2.67°	336	432	480	576	671	PAPI	on 297°	RT	
NDB Descent Gradient 5.2%		369	474	527	632	737				
LOM to MAP	1.3	1:07	0:52	0:47	0:39	0:33				

STRAIGHT-IN LANDING RWY 30				NDB		LOC	
ILS		LOC (GS out)		MDA(H) 1460' (414')		ALS out	
DA(H) 1246' (200')							
FULL	ALS out						
A							
B							
C	RVR 720m VIS 800m	1200m		1300m		2100m	
D		NOT AUTHORIZED		1700m			

CHANGES: Procedure.

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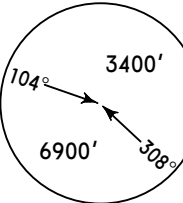
URMM/MRV MINERALNYE VODY

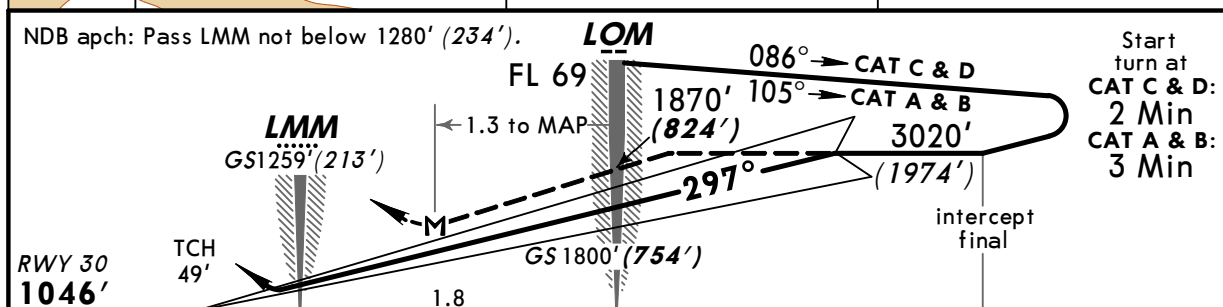
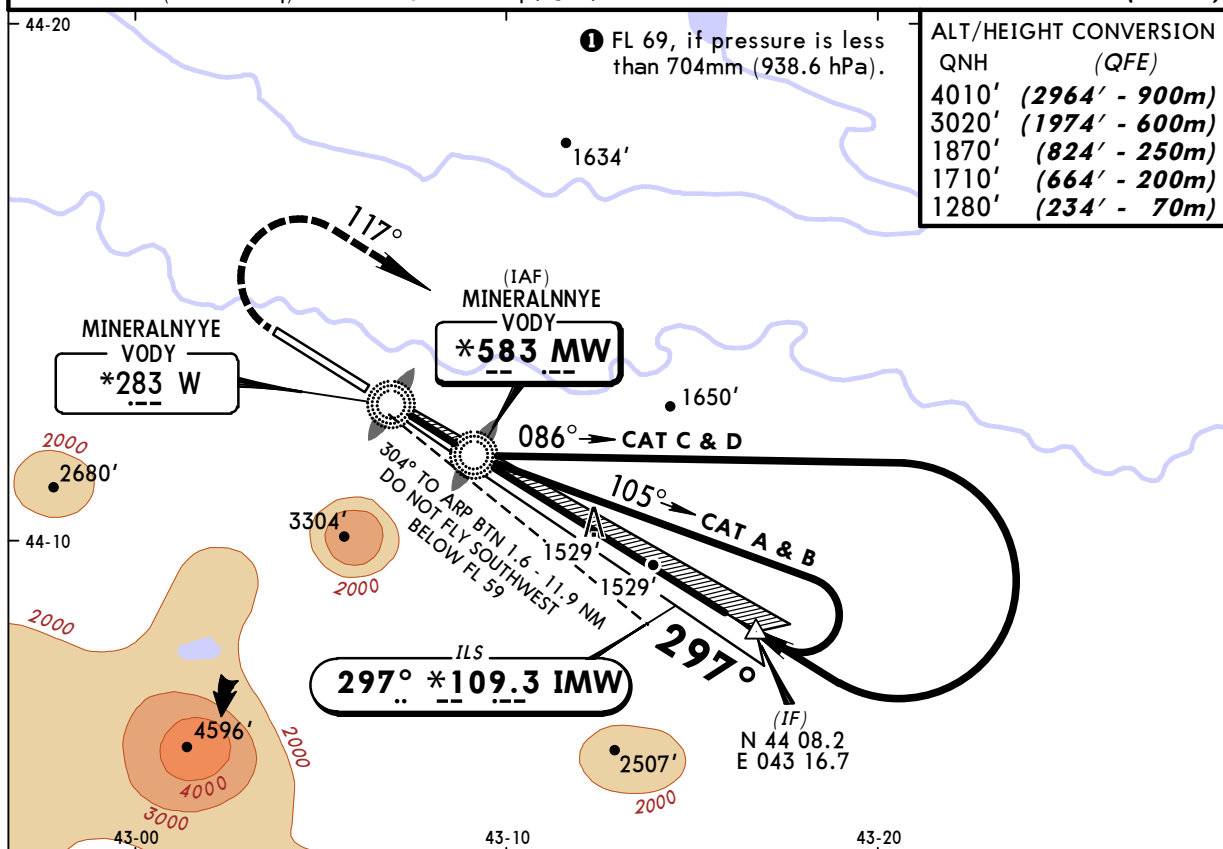
25 MAY 07
Eff 7 Jun

(11-5)

JEPPESEN MINERALNYE VODY, RUSSIA VIA FINAL TURN ILS or 2 NDB Rwy 30

BRIEFING STRIP

ATIS 127.4		MINERALNYE VODY Approach 119.3		MINERALNYE VODY Krug (R) 120.7		MINERALNYE VODY Start (TWR) 128.0		Ground 121.9		
LOC IMW *109.3		Final Apch Crs 297°		GS LOM 1800' (754')		ILS DA(H) 1246' (200')		Apt Elev 1054' RWY 1046'		
NDB MW *583				Minimum Alt LOM 1870' (824')		NDB MDA(H) 1460' (414')				
MISSED APCH: Climb on 297° to 1710' (664'), then turn RIGHT onto 117° climbing to 3020' (1974'), then as directed.									 MSA MW NDB	
Alt Set: MM (hPa on req)			QNH on req (QFE)			Trans level: FL 59 ①		Trans alt: 4010' (2964')		



Gnd speed-Kts	70	90	100	120	140	160	HIALS	1710' (664')	117°	3020' (1974')
ILS GS	2.67°	336	432	480	576	671	PAPI	297°		
NDB Descent Gradient 5.2%		369	474	527	632	737				
LOM to MAP	1.3	1:07	0:52	0:47	0:39	0:33				

STRAIGHT-IN LANDING RWY 30						
ILS		LOC (GS out)	NDB			
DA(H) 1246'(200')			MDA(H) 1460'(414')			
FULL	ALS out			ALS out		
A	RVR 720m VIS 800m	1200m	NOT AUTHORIZED	1300m	2100m	
B						
C						
D				1700m		

PANS OPS

URMM/MRV

MINERALNYE VODY

25 MAY 07

11-6

Eff 7 Jun

ILS or 2 NDB Rwy 30

BRIEFING STRIP

ATIS

127.4

MINERALNYE VODY
Approach

119.3

MINERALNYE VODY
Krug (R)

120.7

MINERALNYE VODY
Start (TWR)

128.0

Ground

121.9

LOC
IMW

*109.3

Final
Aptch Crs

297°

GS
LOM

1800' (754')

ILS
DA(H)

1246' (200')

Apt Elev 1054'

RWY 1046'

NDB
MW

*583

Minimum Alt
LOM

1870' (824')

NDB
MDA(H)

1460' (414')

MISSED APCH: Climb on 297° to 1710' (664'), then turn RIGHT onto 117° climbing to 3020' (1974'), then as directed.

Alt Set: MM (hPa on req)

QNH on req (QFE)

Trans level: FL 59 2

Trans alt: 4010' (2964')

104°

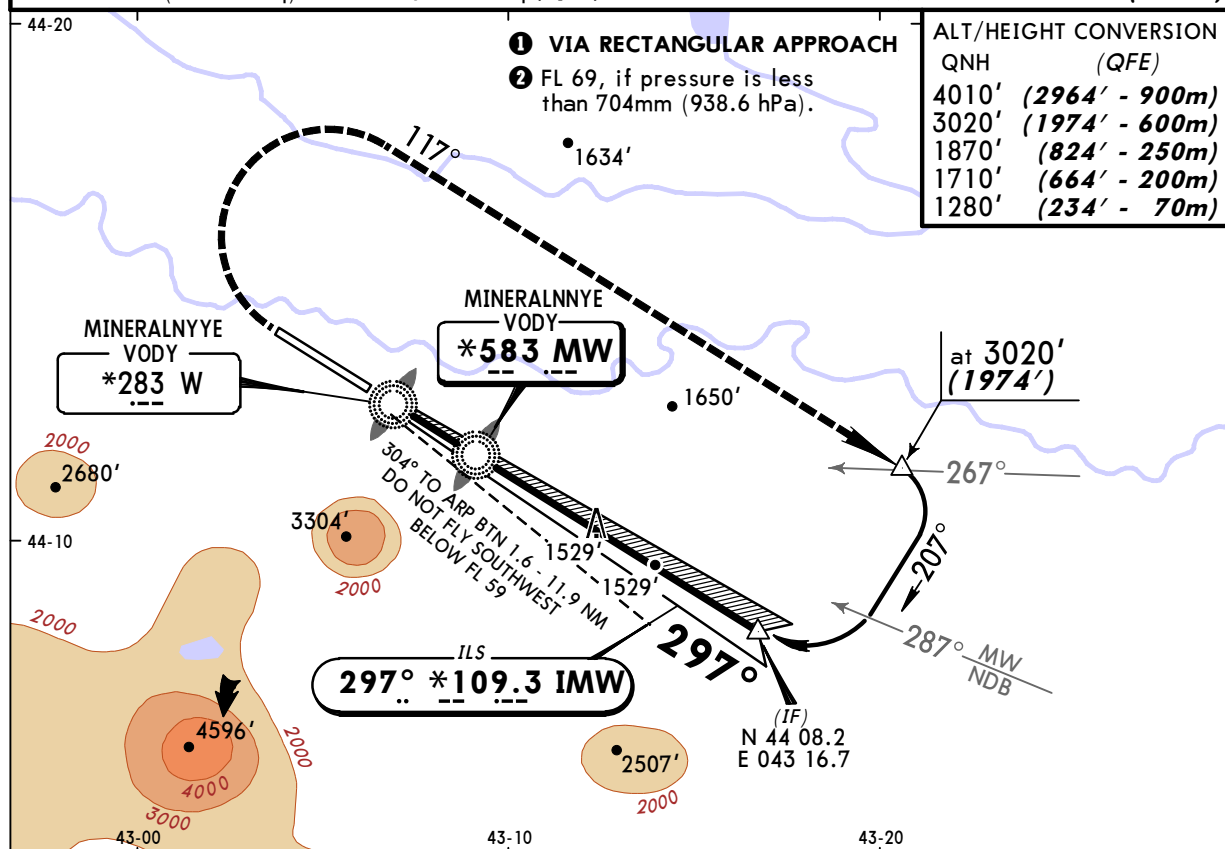
3400'

6900'

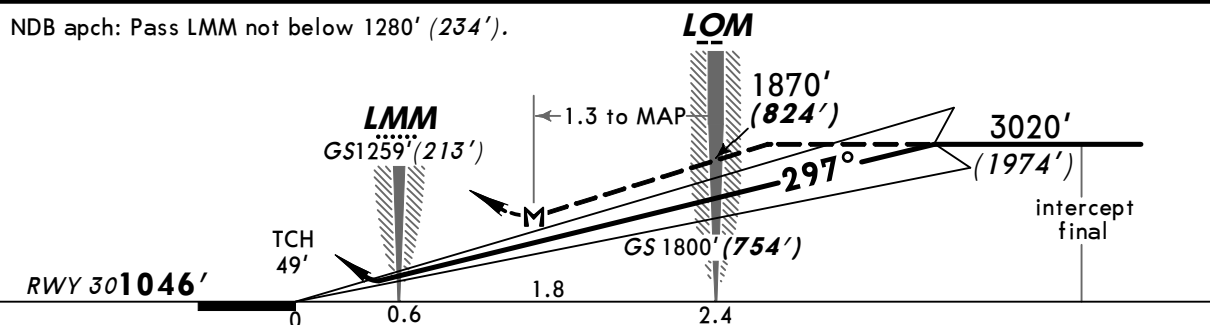
308°

MSA

MW NDB



NDB apch: Pass LMM not below 1280' (234').



Gnd speed-Kts	70	90	100	120	140	160	HIALS	1710' (664')	117°	3020' (1974')
ILS GS	2.67°	336	432	480	576	671	PAPI	on 297°	RT	
NDB Descent Gradient 5.2%		369	474	527	632	737				
LOM to MAP	1.3	1:07	0:52	0:47	0:39	0:33				

PANS OPS

STRAIGHT-IN LANDING RWY 30						
ILS			LOC (GS out)	NDB		
DA(H) 1246'(200')				MDA(H) 1460'(414')		
FULL		ALS out			ALS out	
A	RVR 720m VIS 800m		1200m	NOT AUTHORIZED	1300m	2100m
B						
C						
D						
					1700m	

CHANGES: Procedure.

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URMM/MRV

MINERALNYE VODY

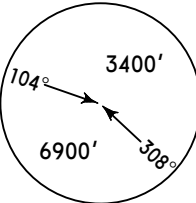
25 MAY 07
Eff 7 Jun

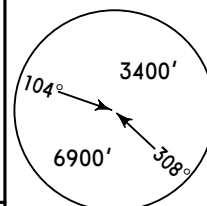


MINERALNYE VODY, RUSSIA

VIA RACETRACK ILS or 2 NDB Rwy 30

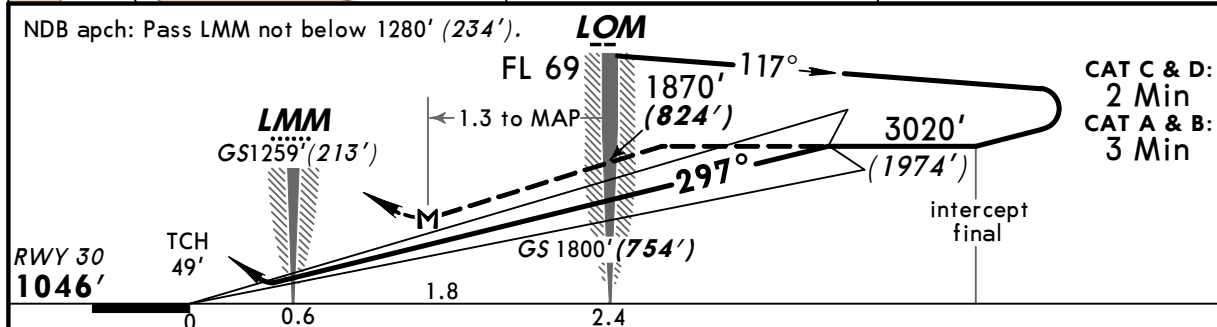
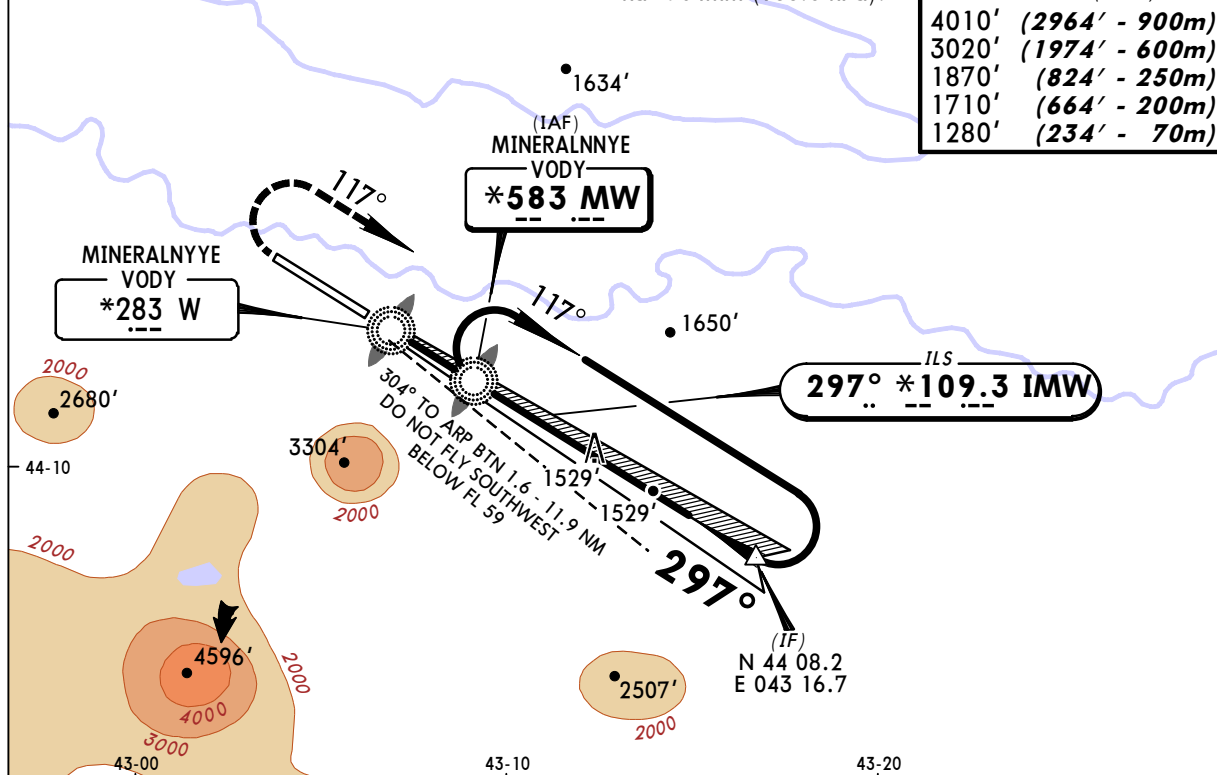
BRIEFING STRIP

ATIS 127.4		MINERALNYE VODY Approach 119.3		MINERALNYE VODY Krug (R) 120.7		MINERALNYE VODY Start (TWR) 128.0		Ground 121.9		
LOC IMW *109.3		Final Apch Crs 297°		GS LOM 1800' (754')		ILS DA(H) 1246' (200')		Apt Elev 1054' RWY 1046'		
NDB MW *583				Minimum Alt LOM 1870' (824')		NDB MDA(H) 1460' (414')				
MISSED APCH: Climb on 297° to 1710' (664'), then turn RIGHT onto 117° climbing to 3020' (1974'), then as directed.										
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 59 1 Trans alt: 4010' (2964')										



44-20
1 FL 69, if pressure is less than 704mm (938.6 hPa).

ALT/HEIGHT CONVERSION	QNH	(QFE)
4010'	(2964' - 900m)	
3020'	(1974' - 600m)	
1870'	(824' - 250m)	
1710'	(664' - 200m)	
1280'	(234' - 70m)	



Gnd speed-Kts	70	90	100	120	140	160	HIALS	1710' (664')	117°	3020' (1974')
ILS GS	2.67°	336	432	480	576	671	767	↑	297°	↑
NDB Descent Gradient 5.2%		369	474	527	632	737	843			
LOM to MAP	1.3	1:07	0:52	0:47	0:39	0:33	0:29			

STRAIGHT-IN LANDING RWY 30						
ILS		LOC (GS out)	NDB			
DA(H) 1246'(200')			MDA(H) 1460'(414')			
FULL	ALS out			ALS out		
A	RVR 720m VIS 800m	1200m	NOT AUTHORIZED	1300m 1700m	2100m	
B						
C						
D						

PANS OPS

URMM/MRV
MINERALNYYE VODY

25 MAY 07

11-8

Eff 7 Jun

① ILS or 2 NDB Rwy 30

JEPPESEN MINERALNYYE VODY, RUSSIA

ATIS

127.4

MINERALNYE VODY
Approach

119.3

MINERALNYE VODY
Krug (R)

120.7

MINERALNYE VODY
Start (TWR)

128.0

Ground

121.9

LOC
IMW

*109.3

Final
Aptch Crs

297°

GS
LOM

1800' (754')

ILS
DA(H)

1246' (200')

Apt Elev 1054'

RWY 1046'

NDB
MW

*583

Minimum Alt
LOM

1870' (824')

NDB
MDA(H)

1460' (414')

MISSED APCH: Climb on 297° to 1710' (664'), then turn RIGHT
onto 117° climbing to 3020' (1974'), then as directed.

104°

3400'

6900'

308°

MSA

MW NDB

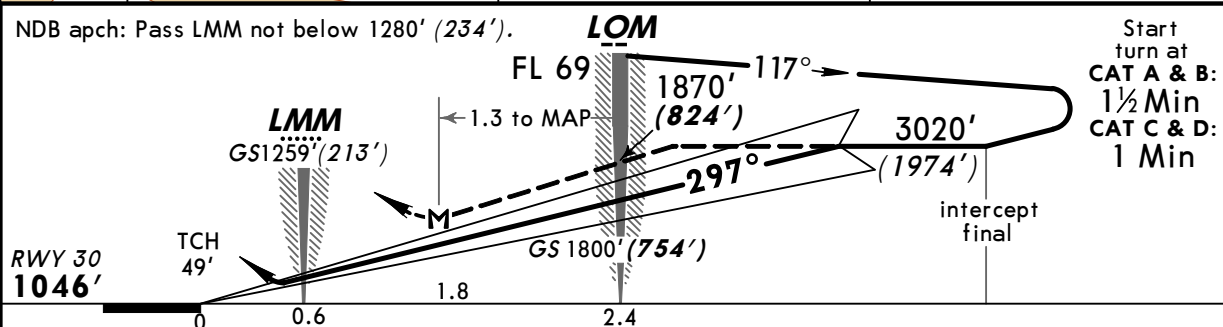
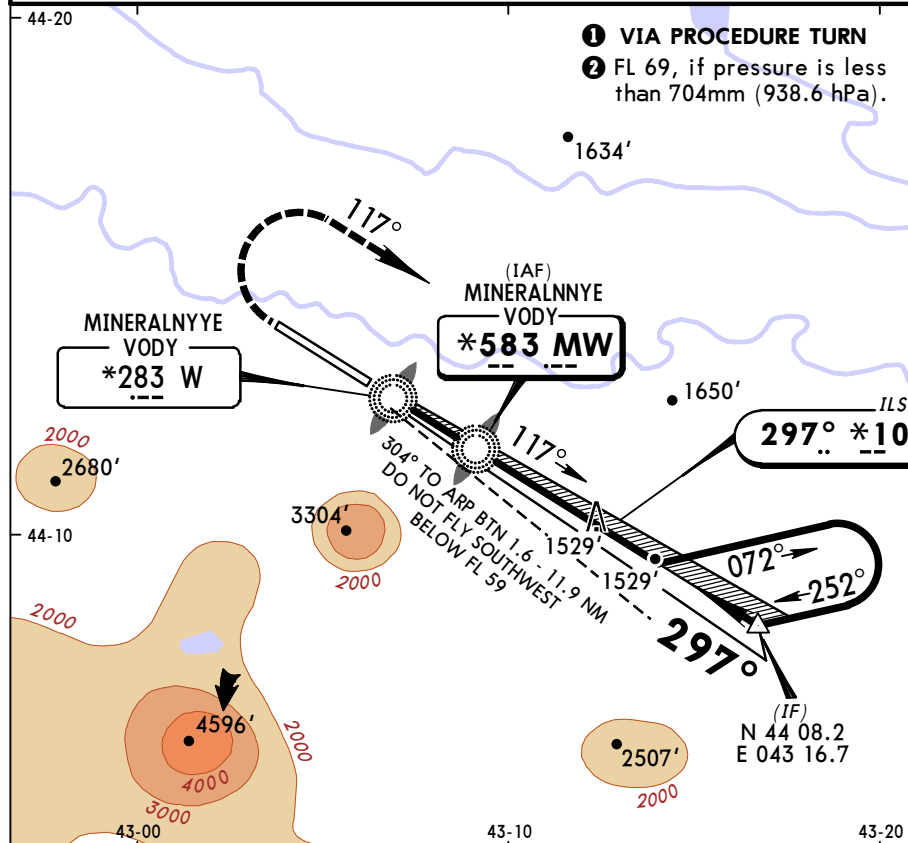
Alt Set: MM (hPa on req)

QNH on req (QFE)

Trans level: FL 59 2

Trans alt: 4010' (2964')

ALT/HEIGHT CONVERSION	
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3020'	(1974' - 600m)
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STRAIGHT-IN LANDING RWY 30						
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DA(H) 1246'(200')			MDA(H) 1460'(414')			
FULL	ALS out			ALS out		
A	RVR 720m VIS 800m	1200m	NOT AUTHORIZED	1300m	2100m	
B						
C						
D				1700m		

CHANGES: Procedure.

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