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Terminal Charts For URMM
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Notebook

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General Information

Location: Mineralnyye Vody Rus
IATA Code: MRV
Lat/Long: N44° 13.6' E043° 05.0'
Elevation: 1047 ft

Airport Use: Public
Magnetic Variation: 7.0°E

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

Sunrise: 0443 Z
Sunset: 1344 Z,

Runway Information

Runway: 12
Length x Width: 12795 ft x 197 ft
Surface Type: concrete
TDZ-Elev: 1037 ft
Lighting: Edge, ALS, Centerline, TDZ

Runway: 30
Length x Width: 12795 ft x 197 ft
Surface Type: concrete
TDZ-Elev: 1044 ft
Lighting: Edge, ALS, Centerline

Communication Information

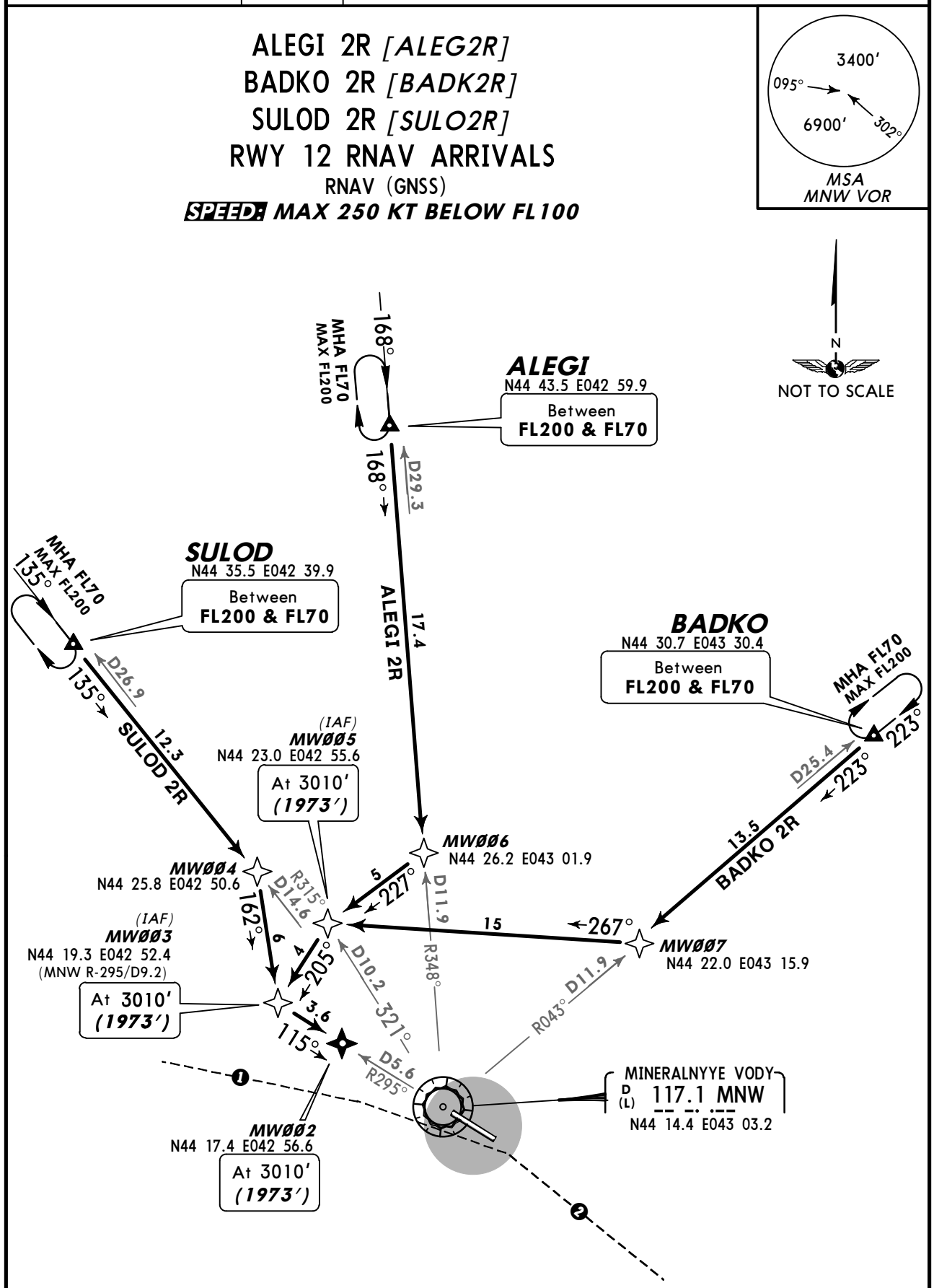
ATIS 127.4 Non-English
ATIS 125.25
Mineralnyye Vody Start Tower 128.0
Mineralnyye Vody Taxiing Ground Control 121.9
Mineralnyye Vody Approach Control 119.3
Mineralnyye Vody Krug Radar 120.7
Mineralnyye Vody Transit Operations 118.0

ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***

ALEGI 2R *[ALEG2R]*
BADKO 2R *[BADK2R]*
SULOD 2R *[SULO2R]*
RWY 12 RNAV ARRIVALS

RNAV (GNSS)

SPEED: MAX 250 KT BELOW FL100



1. 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
2. 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2963′ - 900m)***
3010′	***(1973′ - 600m)***

CHANGES: RNAV STARs revised.

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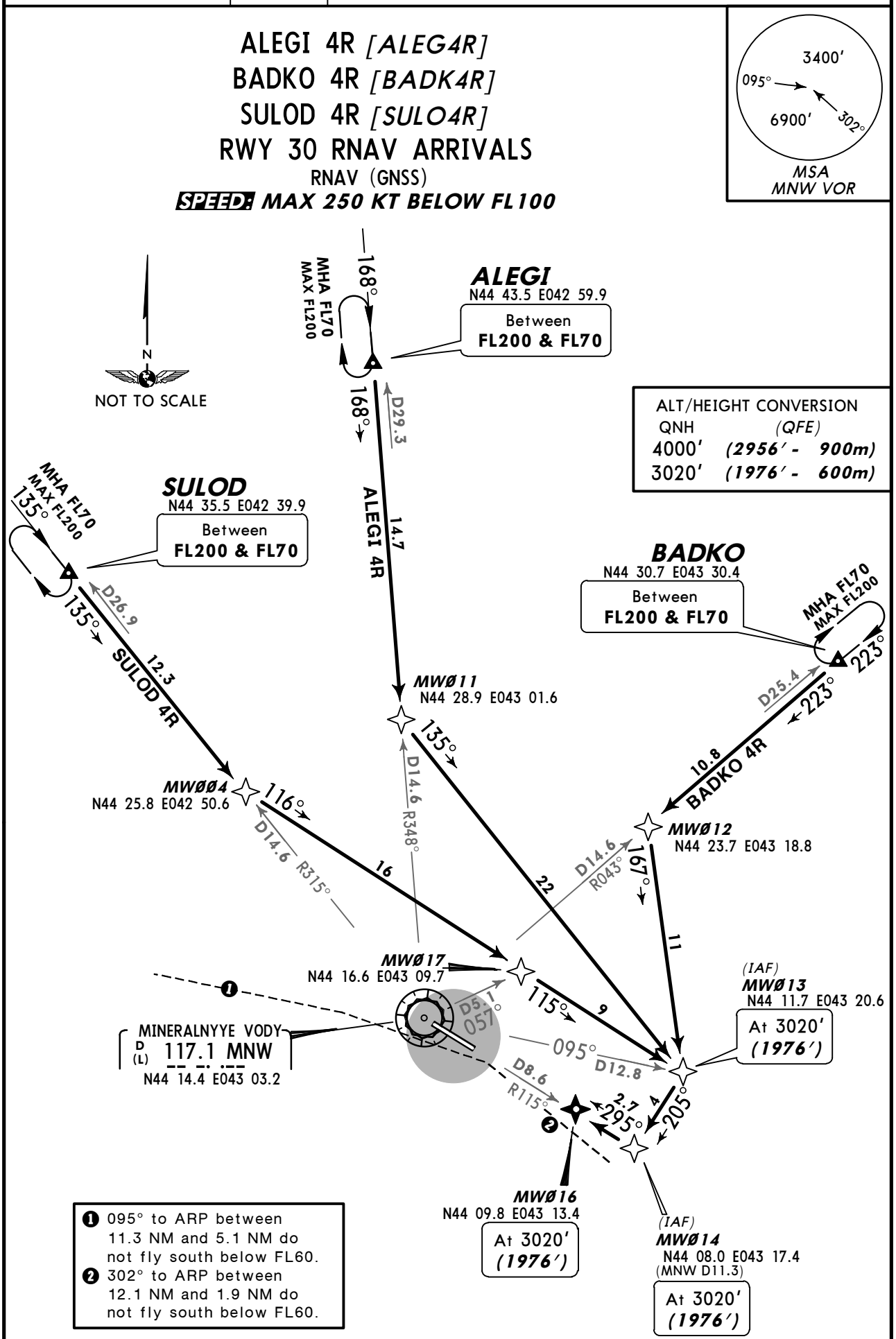
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ALEGI 4R *[ALEG4R]*
BADKO 4R *[BADK4R]*
SULOD 4R *[SULO4R]*
RWY 30 RNAV ARRIVALS

RNAV (GNSS)

SPEED: MAX 250 KT BELOW FL100



ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2956′ - 900m)***
3020′	***(1976′ - 600m)***

❶ 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

CHANGES: RNAV STARs revised.

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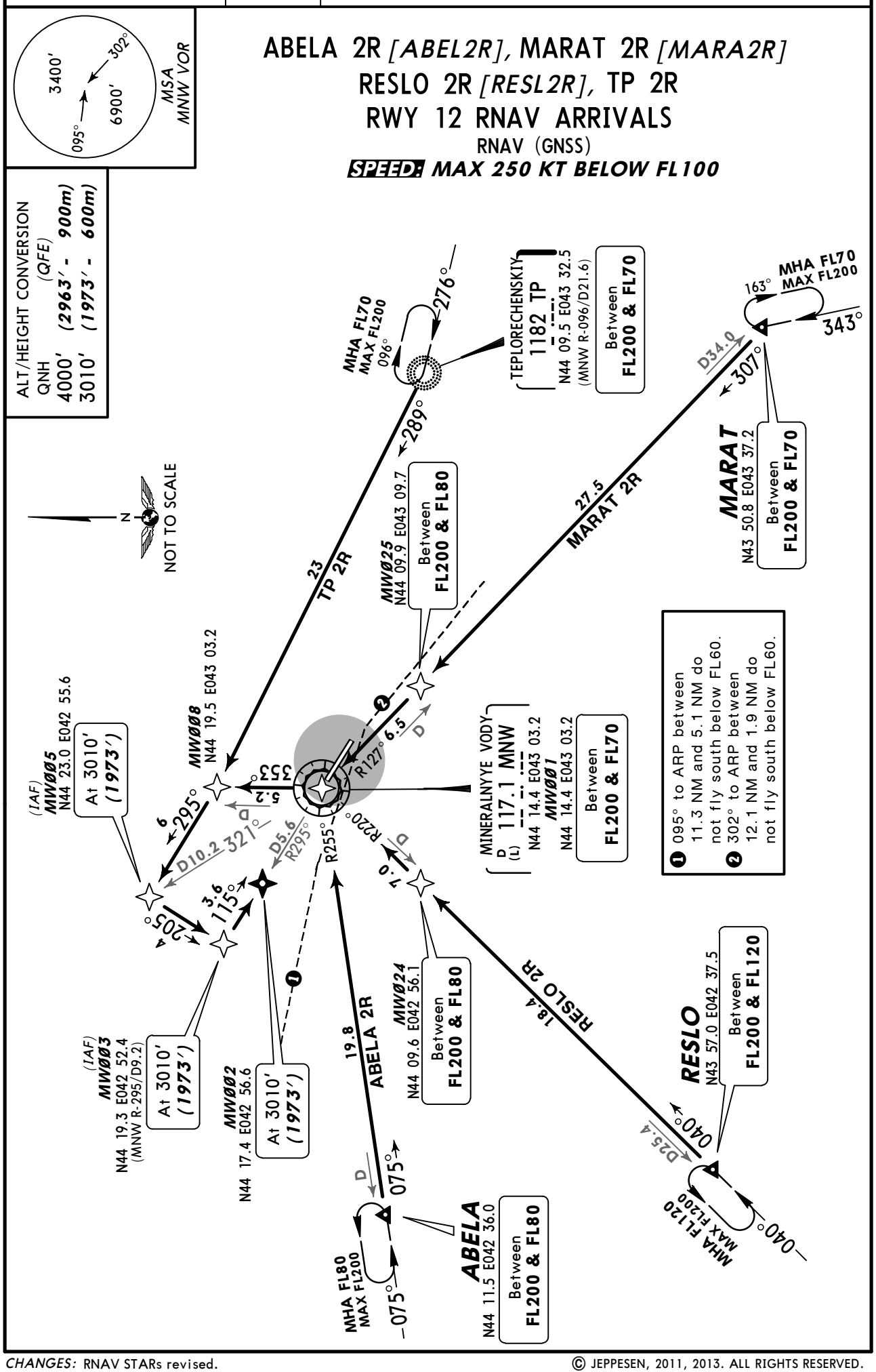

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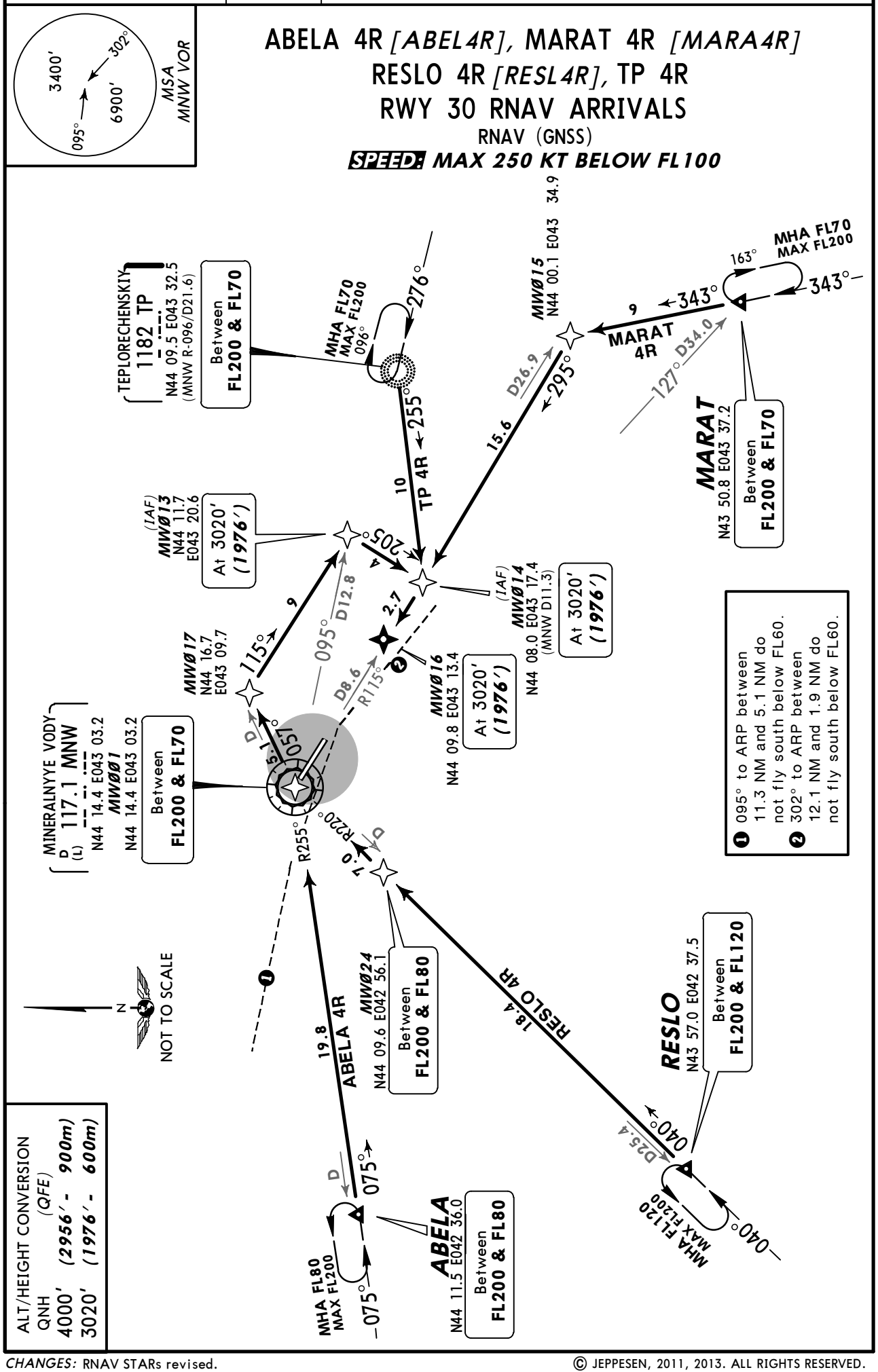
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***



CHANGES: RNAV STARs revised.

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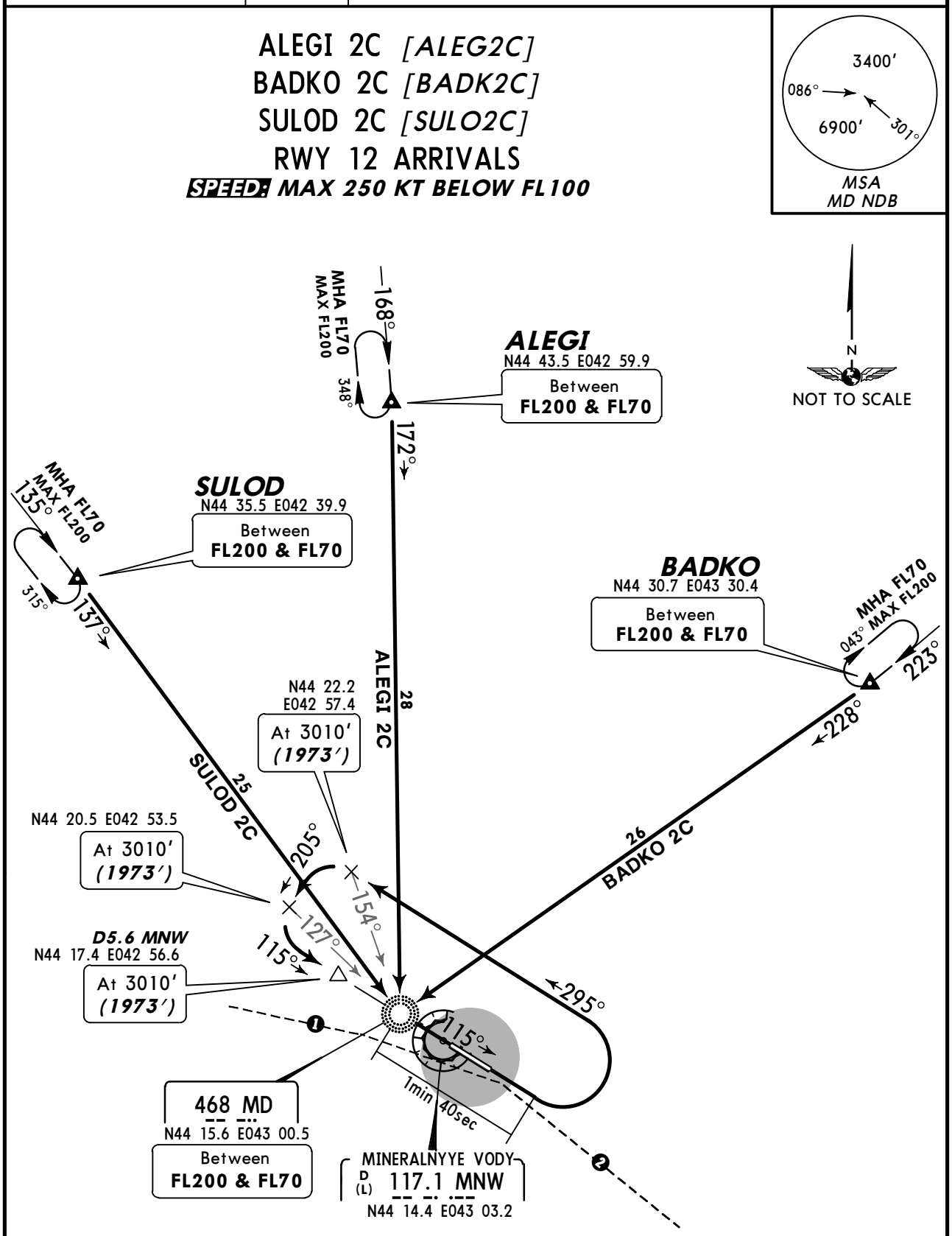
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***

ALEGI 2C *[ALEG2C]*
BADKO 2C *[BADK2C]*
SULOD 2C *[SULO2C]*
RWY 12 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



❶ 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2963′ - 900m)***
3010′	***(1973′ - 600m)***

CHANGES: MSA.

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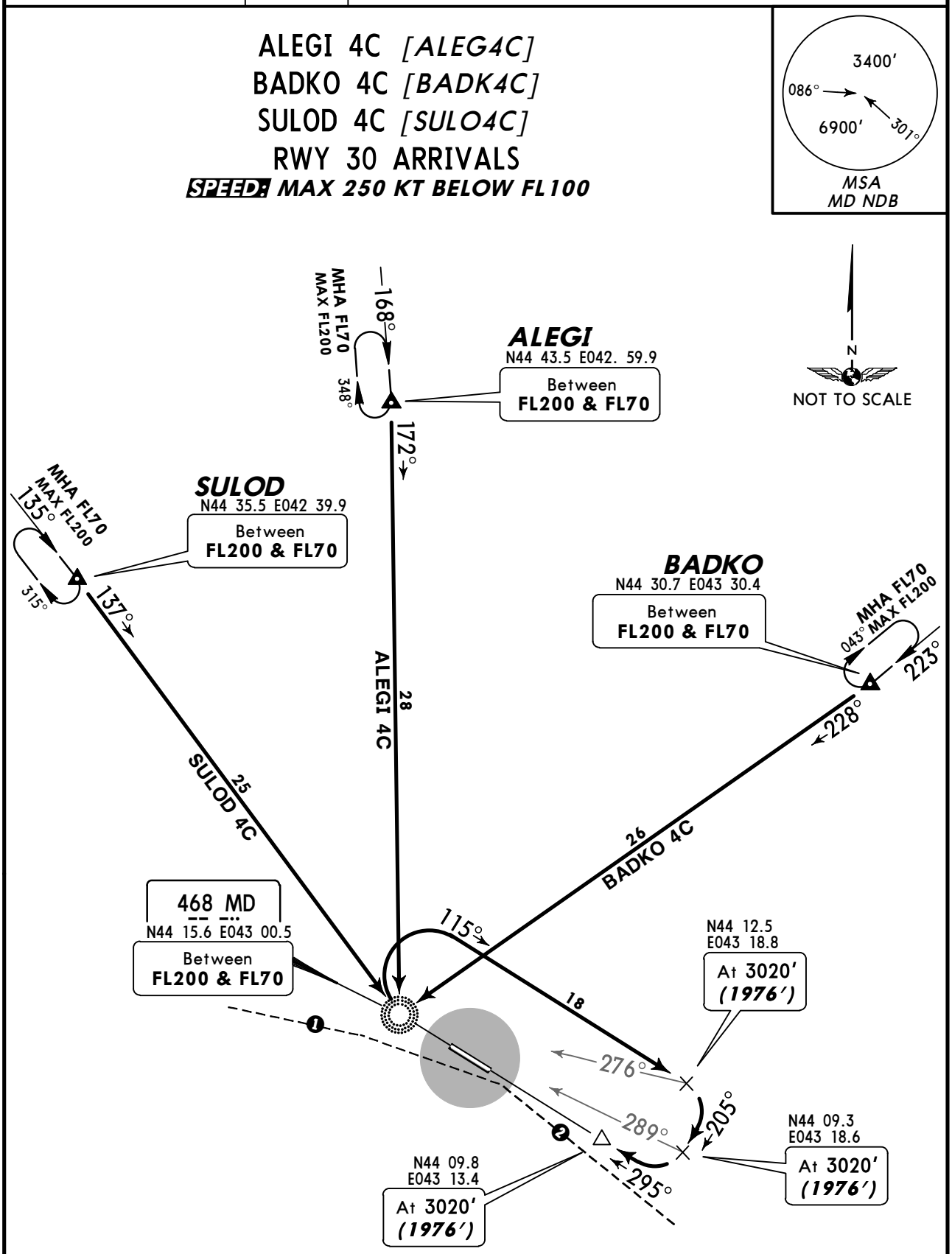
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ALEGI 4C *[ALEG4C]*
BADKO 4C *[BADK4C]*
SULOD 4C *[SULO4C]*
RWY 30 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



❶ 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
4000′	***(2956′ - 900m)***
3020′	***(1976′ - 600m)***

CHANGES: MSA.

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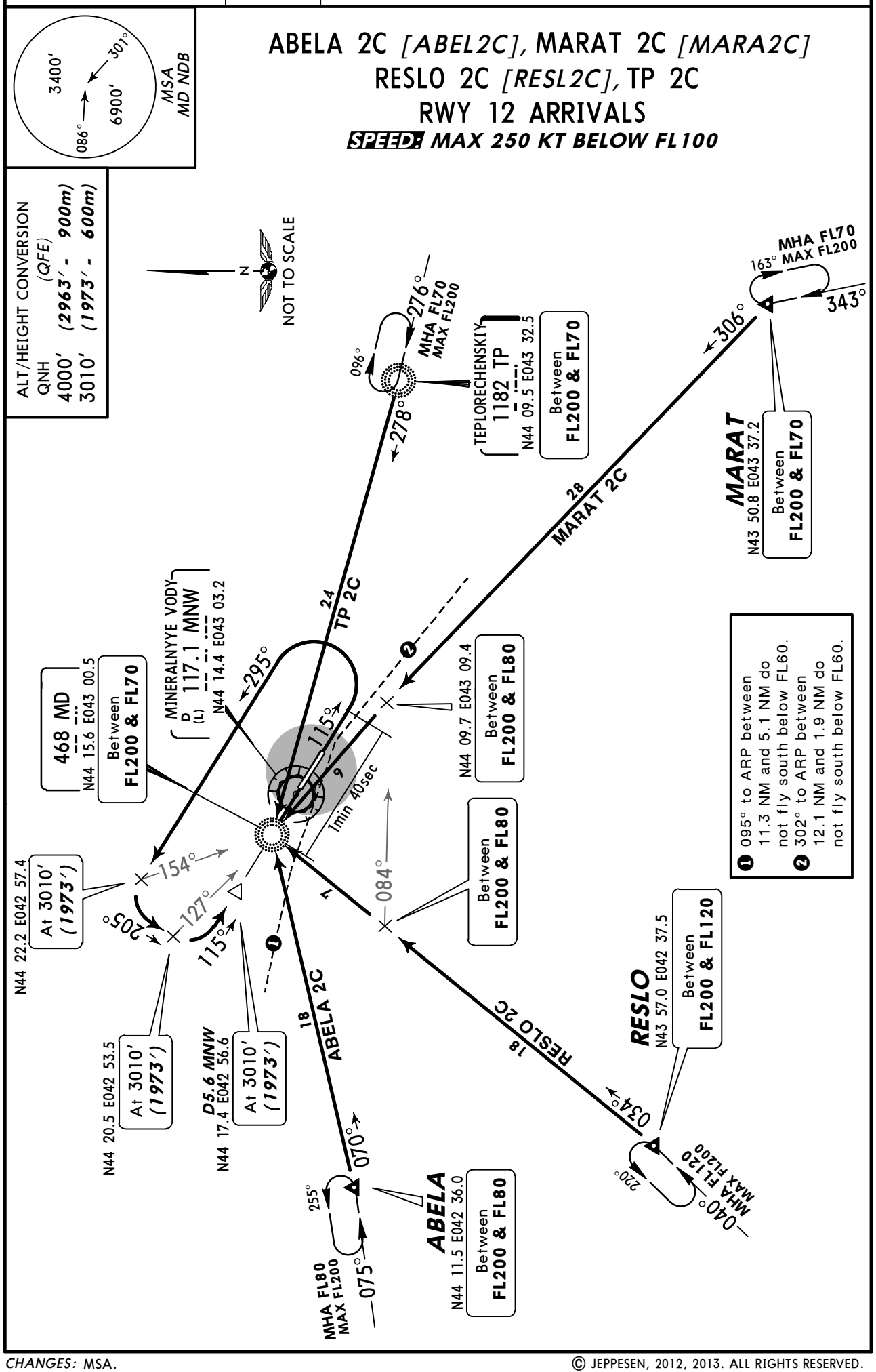
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***



CHANGES: MSA.

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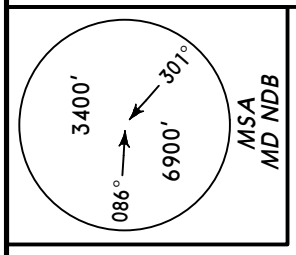
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***



ABELA 4C *[ABEL4C]*, MARAT 4C *[MARA4C]* RESLO 4C *[RESL4C]*, TP 4C RWY 30 ARRIVALS

SPEED: *MAX 250 KT BELOW FL100*

TEPLORECHENSKIY
1182 TP
N44 09.5 E043 32.5
Between FL200 & FL70

276°
MHA FL70
MAX FL200
096°
278°
24
TP 4C
205°
N44 09.3
E043 18.6
At 3020′ *(1976′)*

N44 12.5
E043 18.8
At 3020′ *(1976′)*

N44 09.8
E043 13.4
At 3020′ *(1976′)*

276°
289°
295°
18
115°
9
N44 09.7 E043 09.4
Between FL200 & FL80

084°
7
Between FL200 & FL80

468 MD
N44 15.6 E043 00.5
Between FL200 & FL70

18
ABELA 4C
070°
255°
MHA FL80
MAX FL200
075°
ABELA
N44 11.5 E042 36.0
Between FL200 & FL80

RESLO 4C
18
034°
RESLO
N43 57.0 E042 37.5
Between FL200 & FL120
220°
040°
MHA FL120
MAX FL200

28
MARAT 4C
306°
163°
MHA FL70
MAX FL200
343°
MARAT
N43 50.8 E043 37.2
Between FL200 & FL70

❶ 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

N
NOT TO SCALE

ALT/HEIGHT CONVERSION
QNH (QFE)
4000′ ***(2956′ - 900m)***
3020′ ***(1976′ - 600m)***

CHANGES: MSA.

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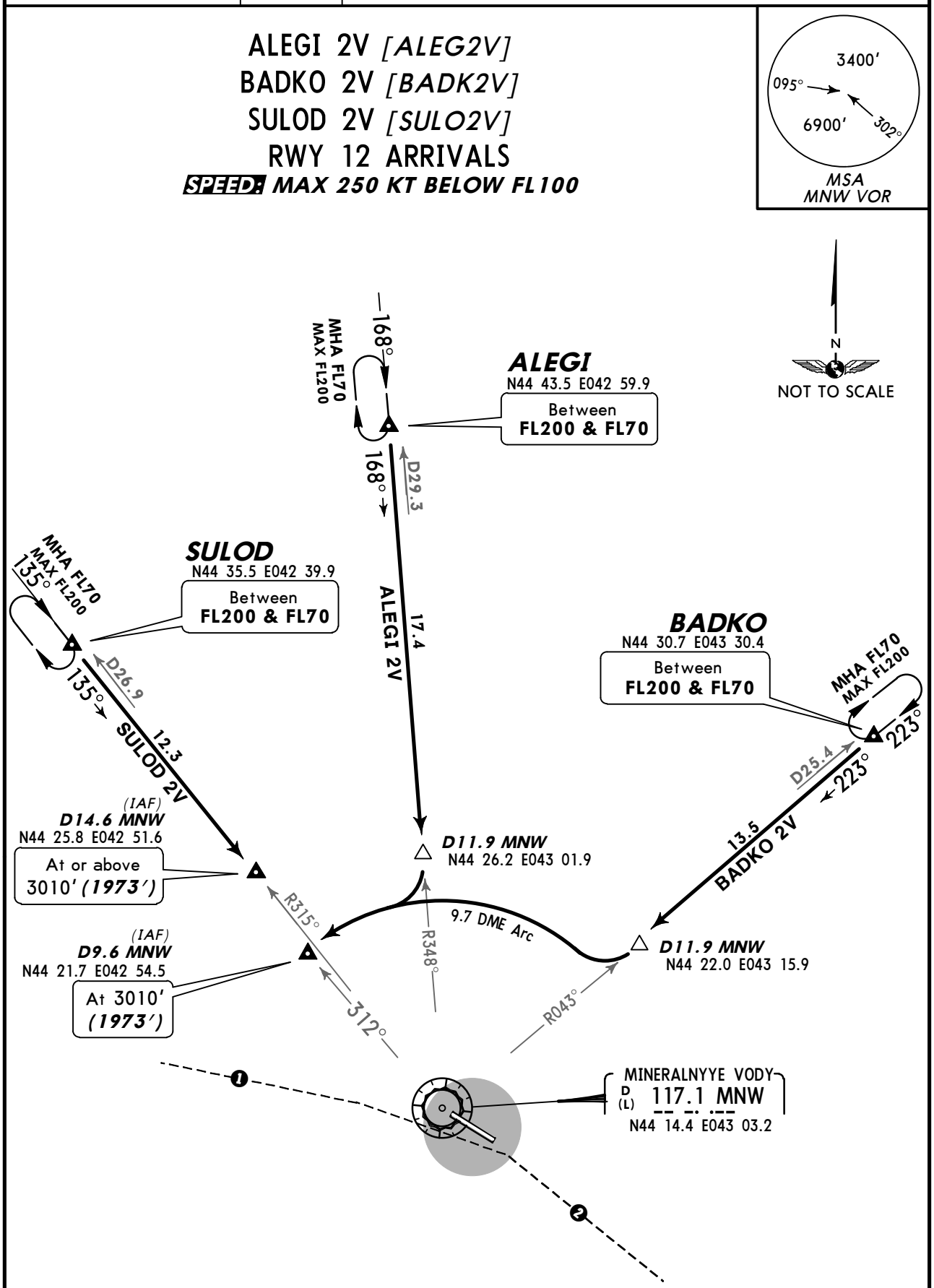
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***

ALEGI 2V *[ALEG2V]*
BADKO 2V *[BADK2V]*
SULOD 2V *[SULO2V]*
RWY 12 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



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❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2963′ - 900m)***
3010′	***(1973′ - 600m)***

CHANGES: Crossing over BADKO revised.

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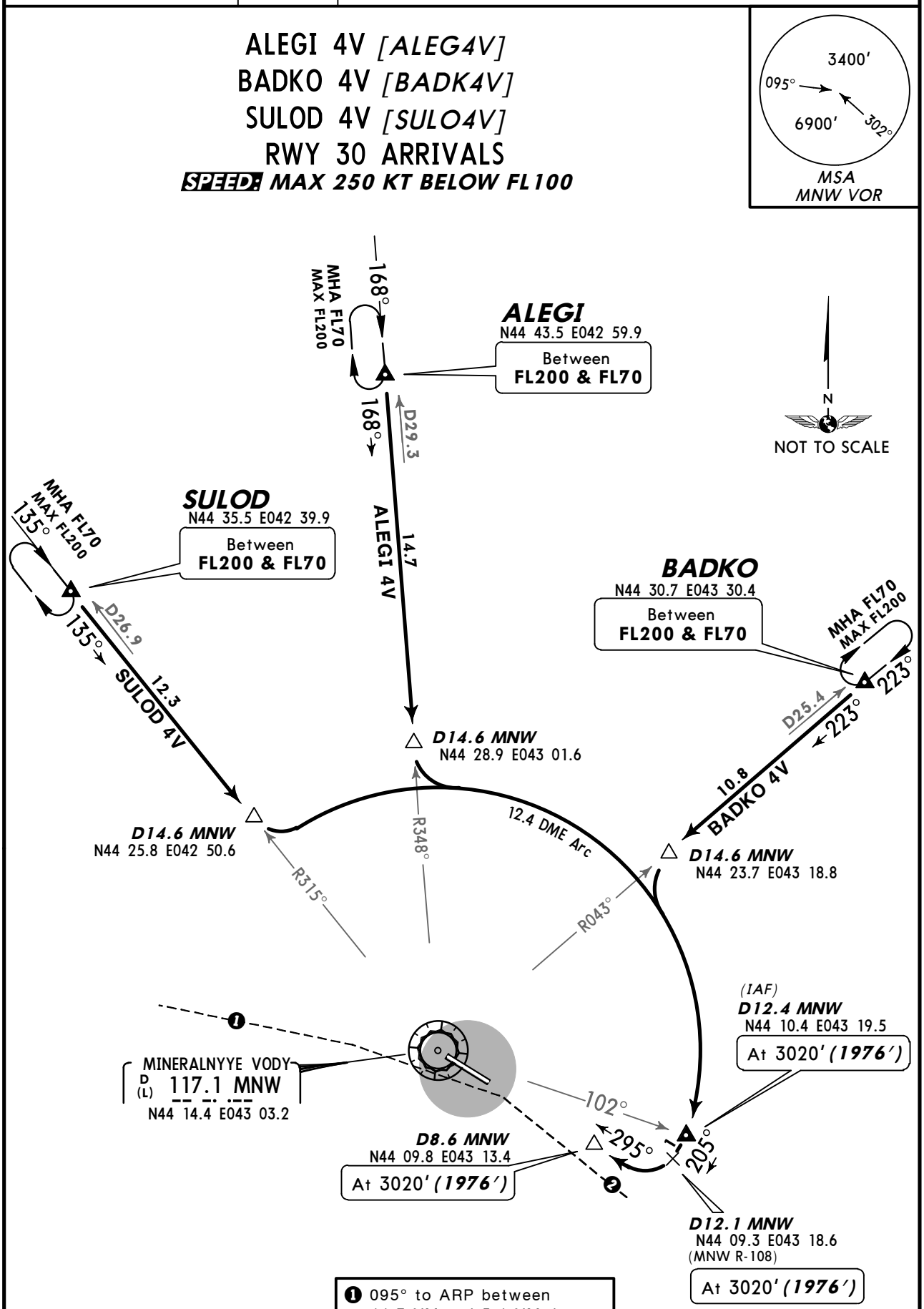
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ALEGI 4V *[ALEG4V]*
BADKO 4V *[BADK4V]*
SULOD 4V *[SULO4V]*
RWY 30 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



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ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2956′ - 900m)***
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CHANGES: Crossing over BADKO revised.

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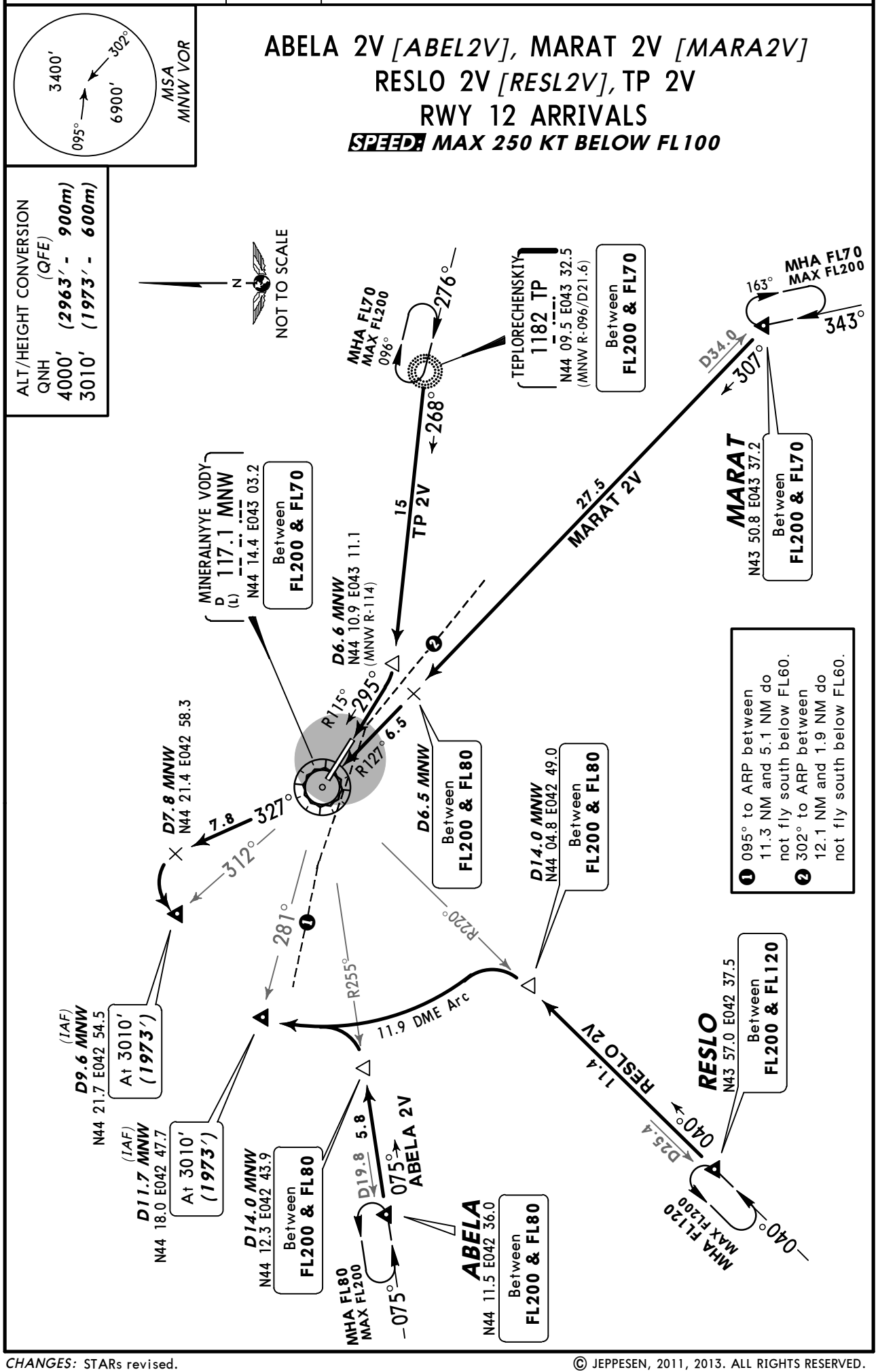
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***

ABELA 2V *[ABEL2V]*, MARAT 2V *[MARA2V]* RESLO 2V *[RESL2V]*, TP 2V RWY 12 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



CHANGES: STARs revised.

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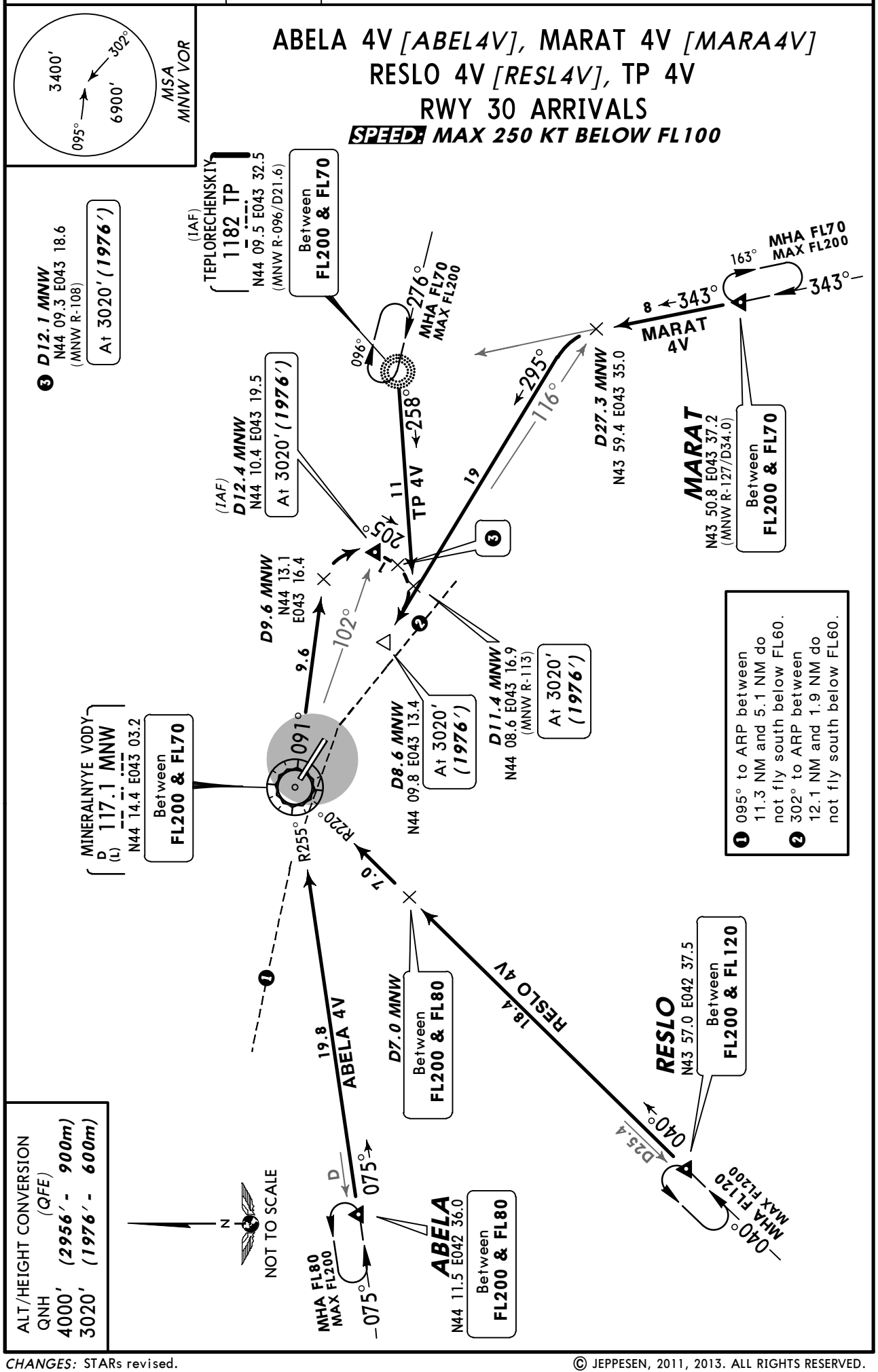
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ABELA 4V *[ABEL4V]*, MARAT 4V *[MARA4V]*
RESLO 4V *[RESL4V]*, TP 4V
RWY 30 ARRIVALS

SPEED: MAX 250 KT BELOW FL100



ALT/HEIGHT CONVERSION (QFE)	
QNH	
4000′	***(2956′ - 900m)***
3020′	***(1976′ - 600m)***

CHANGES: STARs revised.

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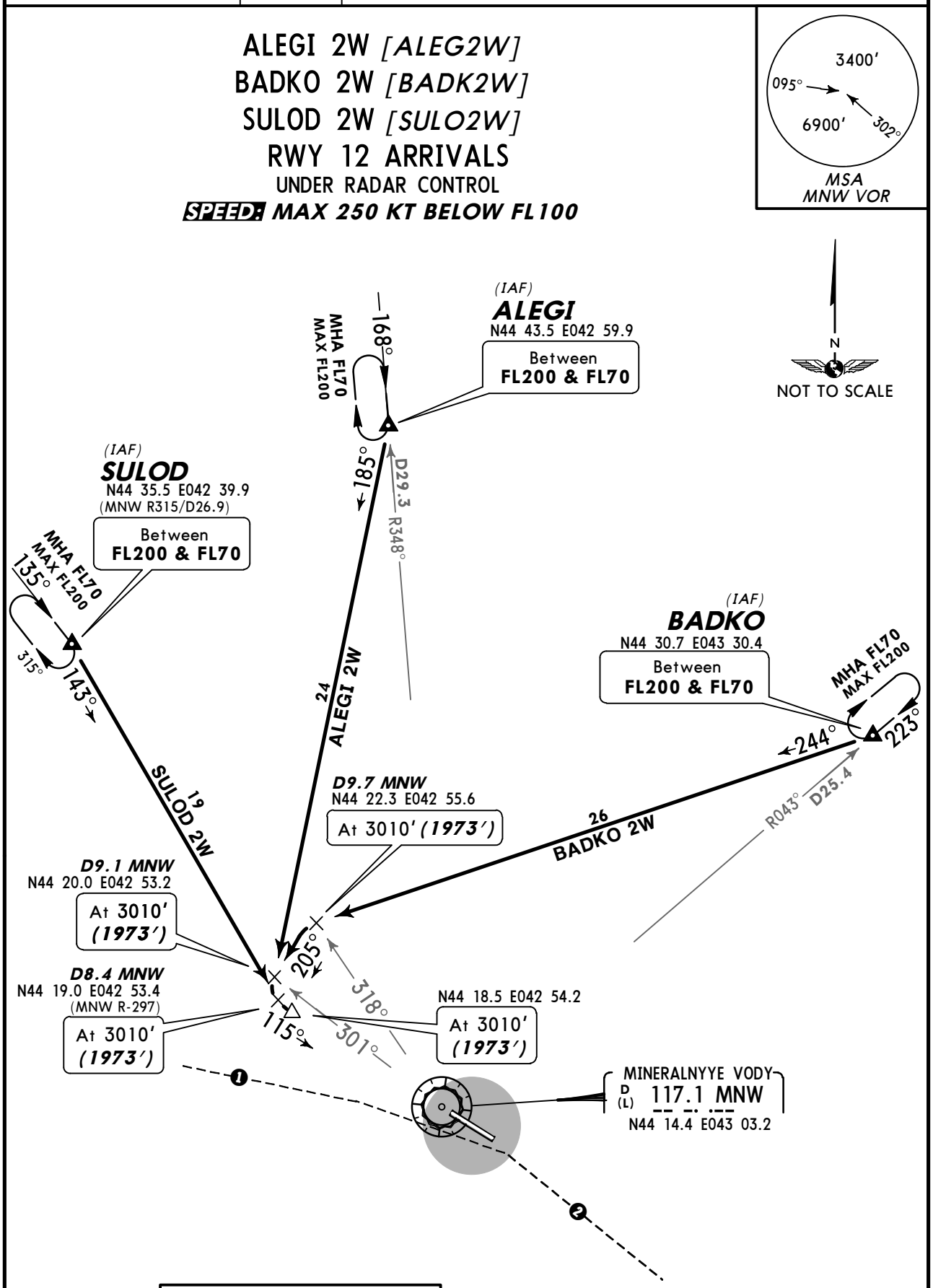
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2963′)***

ALEGI 2W *[ALEG2W]*
BADKO 2W *[BADK2W]*
SULOD 2W *[SULO2W]*
RWY 12 ARRIVALS
UNDER RADAR CONTROL
SPEED: MAX 250 KT BELOW FL100



1. 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
2. 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2963′ - 900m)***
3010′	***(1973′ - 600m)***

CHANGES: Crossing over BADKO revised.

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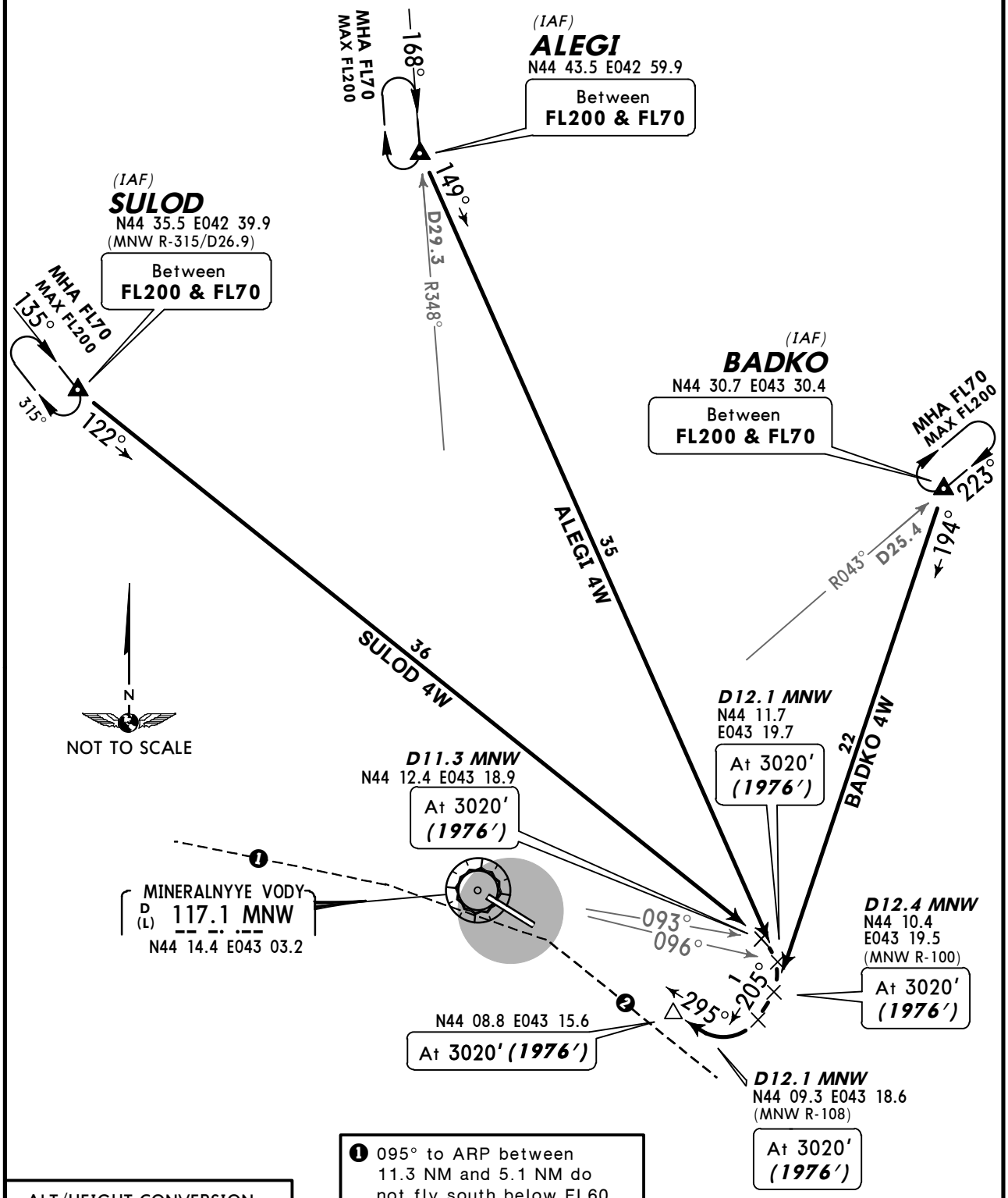
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ALEGI 4W *[ALEG4W]*
BADKO 4W *[BADK4W]*
SULOD 4W *[SULO4W]*
RWY 30 ARRIVALS
UNDER RADAR CONTROL
SPEED: MAX 250 KT BELOW FL100



❶ 095° to ARP between 11.3 NM and 5.1 NM do not fly south below FL60.
❷ 302° to ARP between 12.1 NM and 1.9 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	***(2956′ - 900m)***
3020′	***(1976′ - 600m)***

CHANGES: Crossing over BADKO revised.

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ATIS	Apt Elev	
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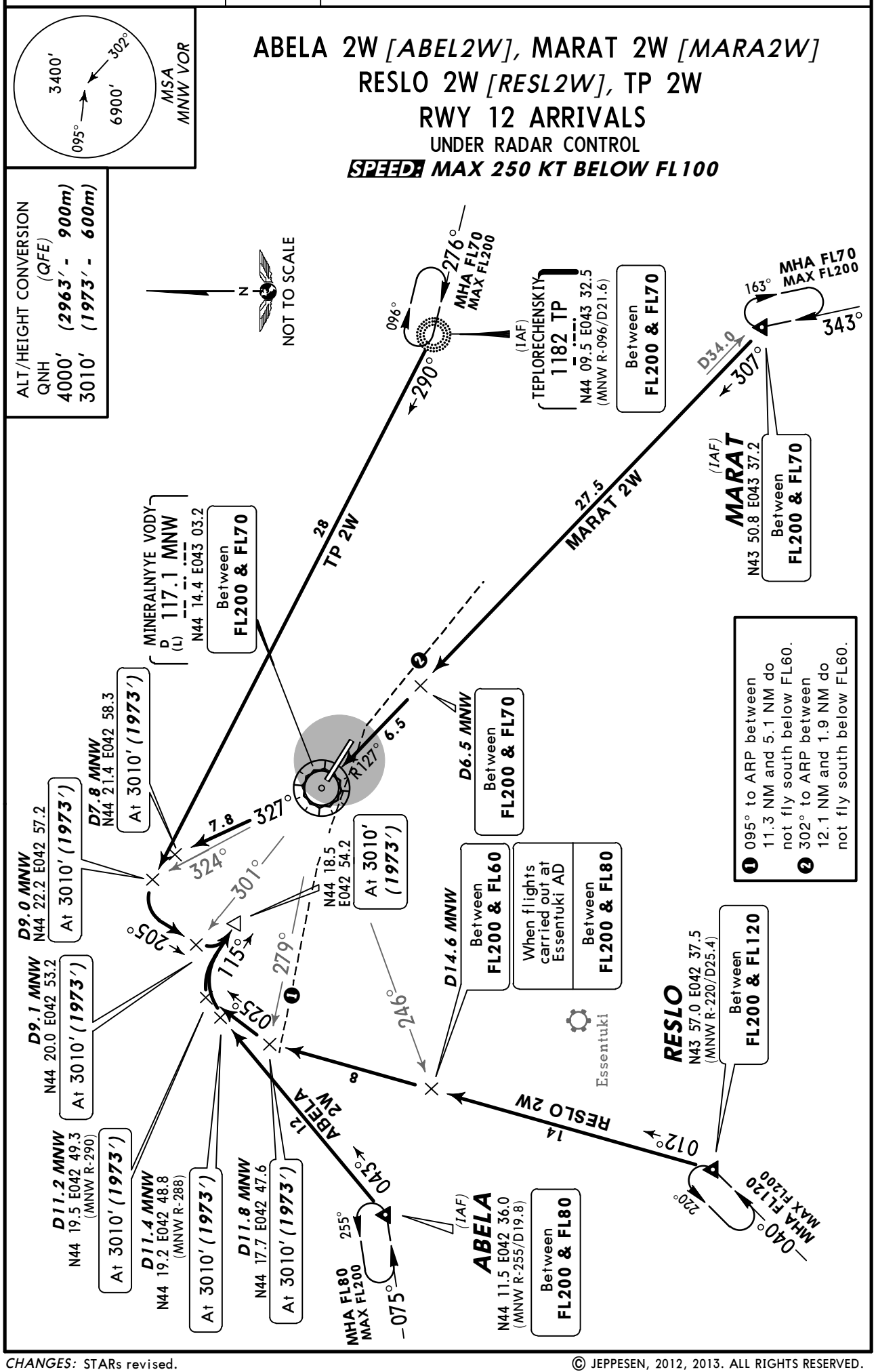

CHANGES: STARs revised.

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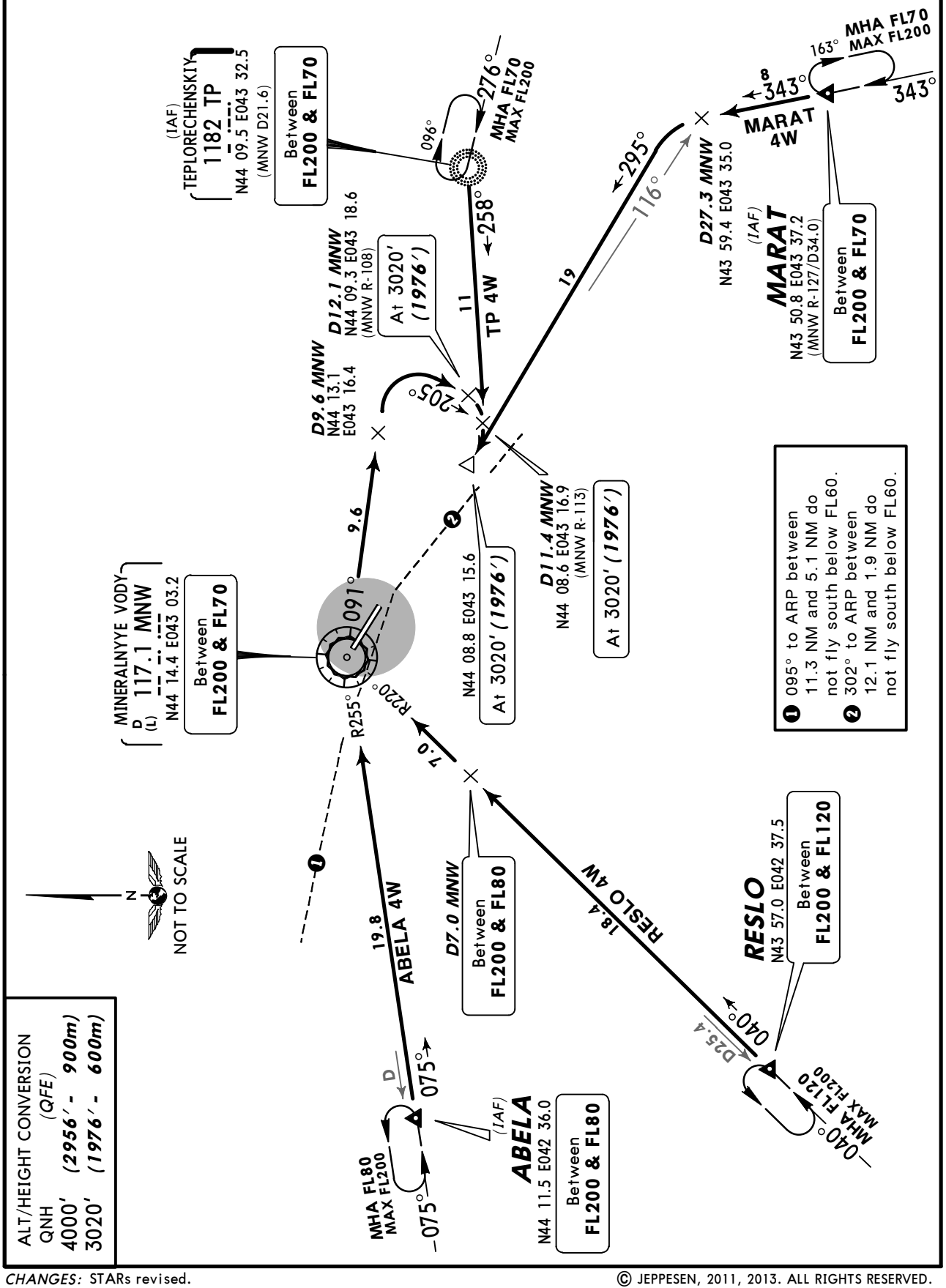
ATIS	Apt Elev	
125.25 (Russian 127.4)	1047′	Alt Set: MM (hPa on request) QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704mm (938.6 hPa) Trans alt: 4000′ ***(2956′)***

ABELA 4W *[ABEL4W]*, MARAT 4W *[MARA4W]*
RESLO 4W *[RESL4W]*, TP 4W
RWY 30 ARRIVALS

UNDER RADAR CONTROL

SPEED: MAX 250 KT BELOW FL100



ALT/HEIGHT CONVERSION (QFE)

QNH	
4000′	***(2956′ - 900m)***
3020′	***(1976′ - 600m)***

CHANGES: STARs revised.

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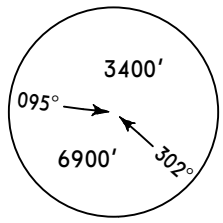
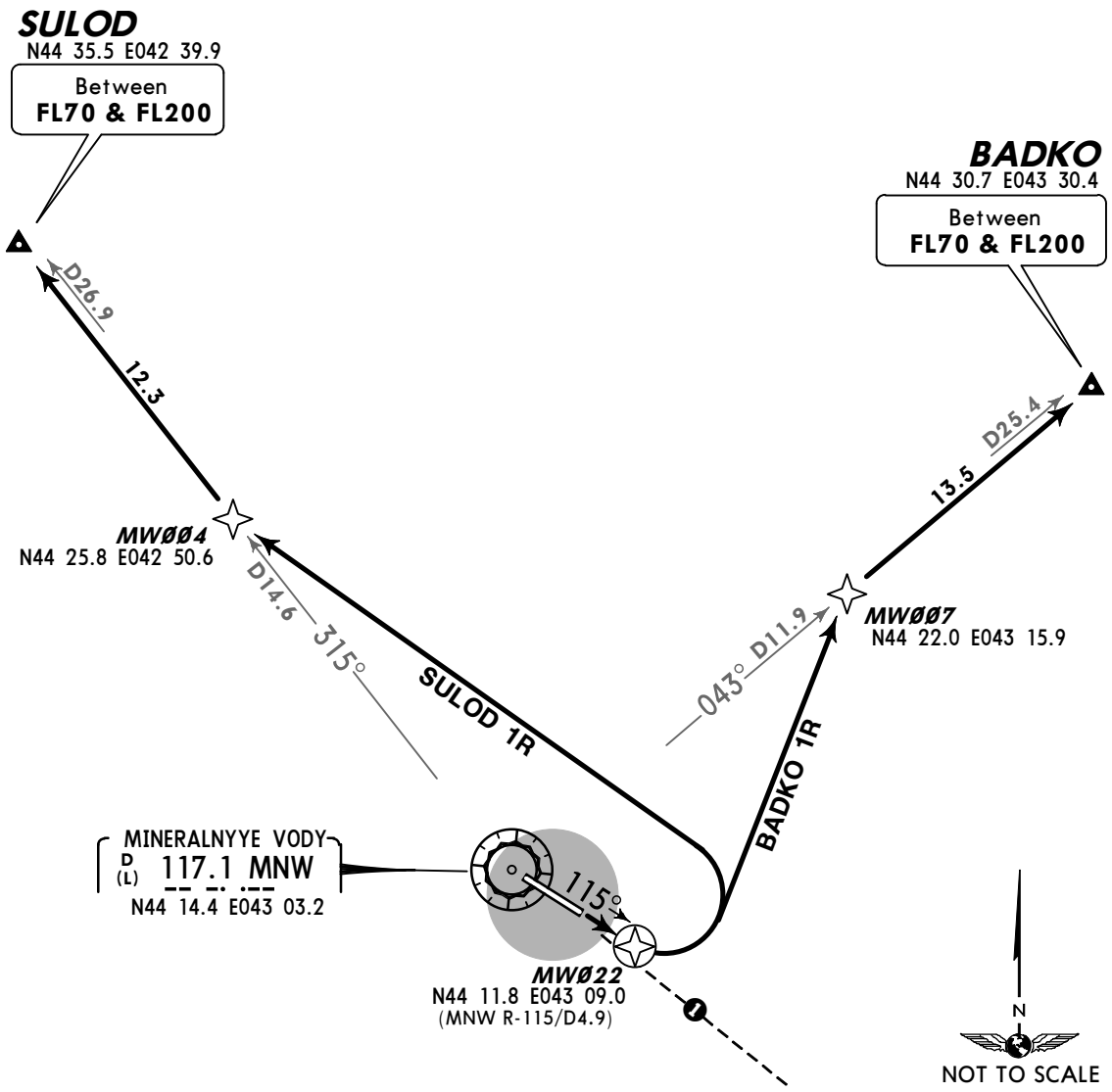
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 1R *[BADK1R]*
SULOD 1R *[SULO1R]*
RWY 12 RNAV DEPARTURES
RNAV (GNSS)



MSA
MNW VOR



❶ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 1R: 5.5%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.5% (V/V fpm)	418	557	835	1114	1392	1671

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
1440′	***(403′ - 120m)***
4000′	***(2963′ - 900m)***

CHANGES: ALEGI RNAV SID withdrawn; RNAV SIDs revised.

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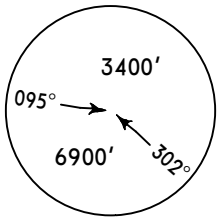
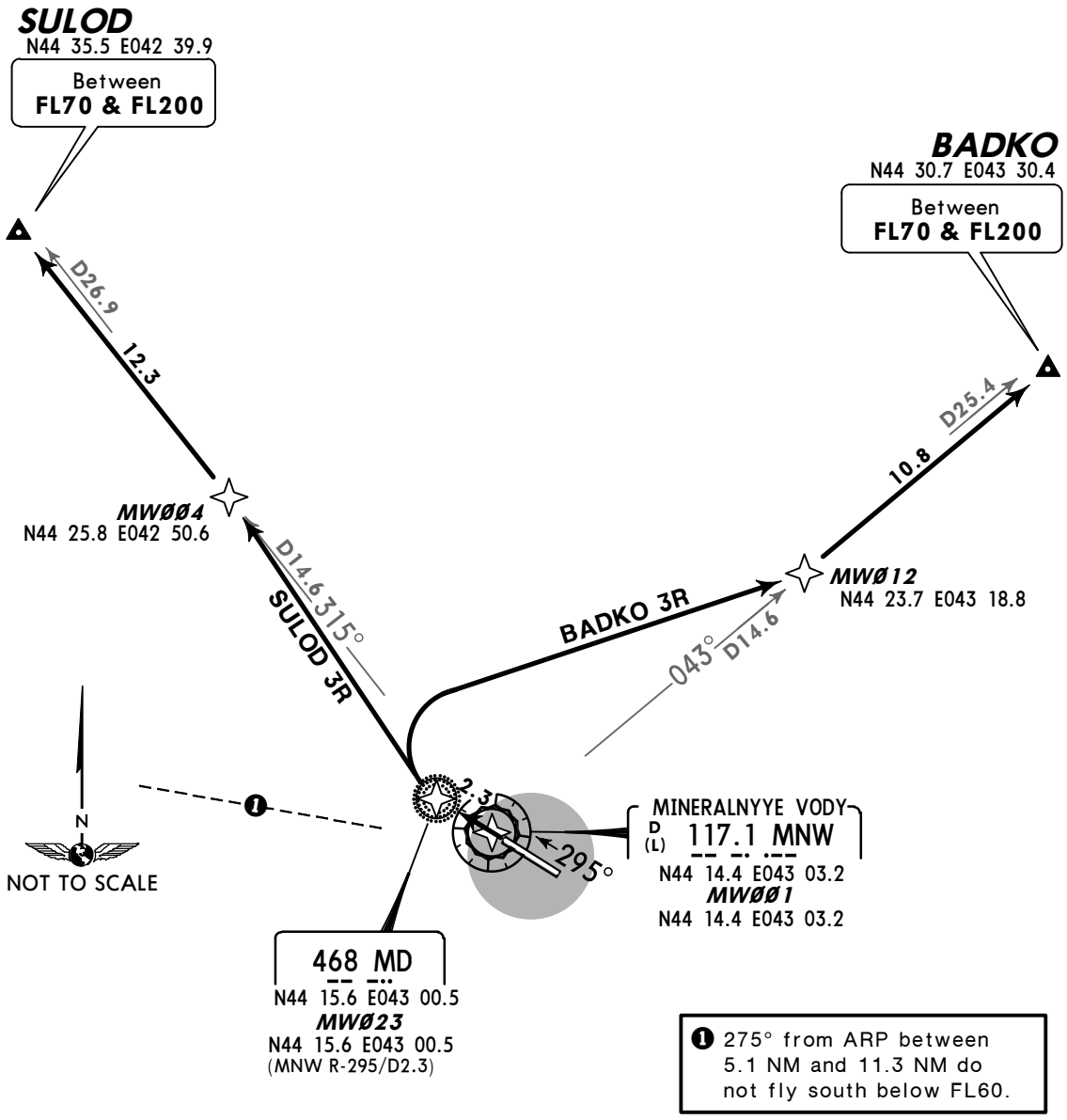
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 3R *[BADK3R]*
SULOD 3R *[SULO3R]*
RWY 30 RNAV DEPARTURES
RNAV (GNSS)



MSA
MNW VOR



❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 3R: 5.2%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.2% (V/V fpm)	395	527	790	1053	1317	1549

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: ALEGI RNAV SID withdrawn; RNAV SIDs revised.

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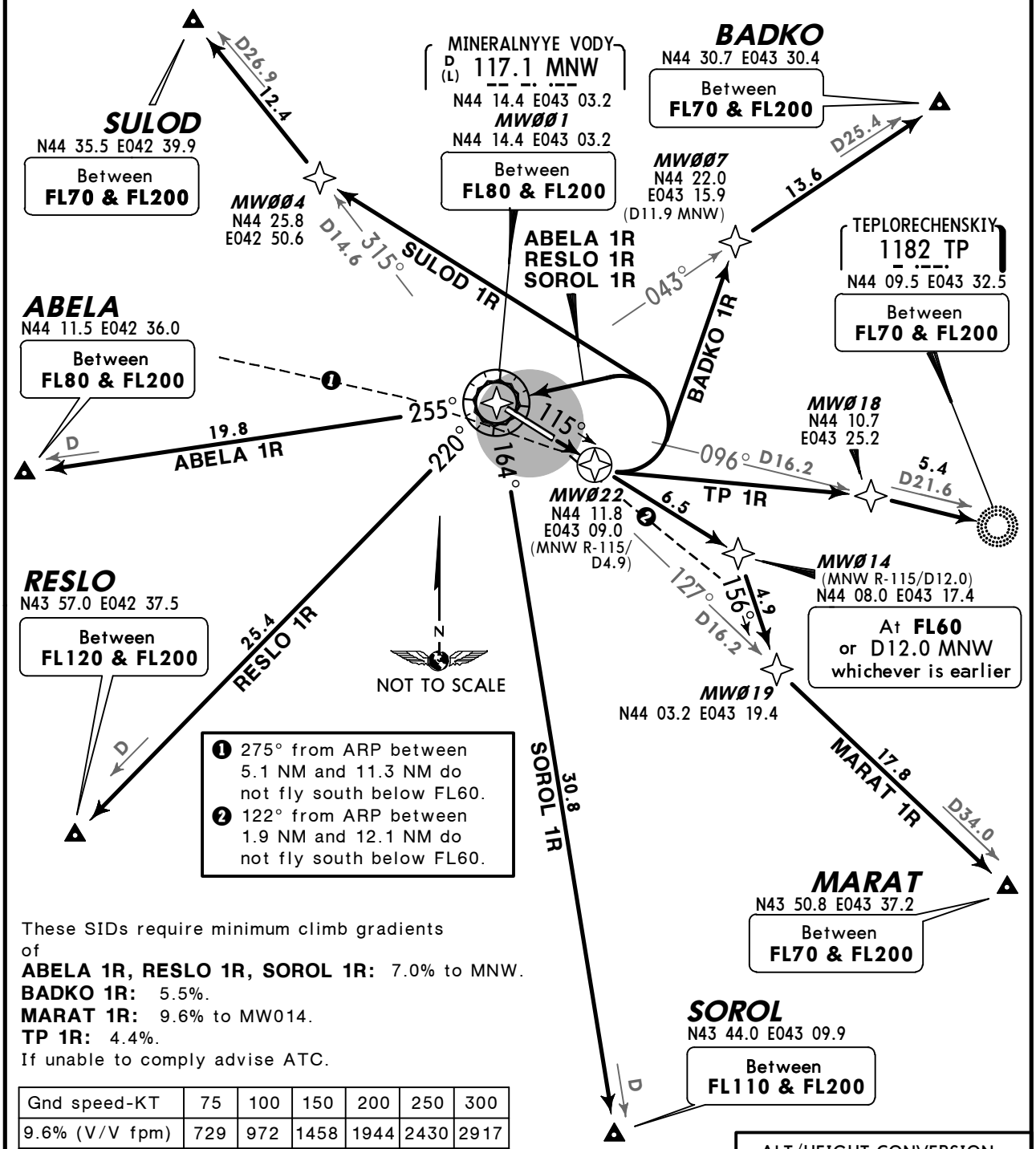
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 1R *[ABEL1R]*, BADKO 1R *[BADK1R]*, MARAT 1R *[MARA1R]*, RESLO 1R *[RESL1R]*, SOROL 1R *[SORO1R]*, SULOD 1R *[SULO1R]*, TP 1R RWY 12 RNAV DEPARTURES

RNAV (GNSS)



These SIDs require minimum climb gradients of

ABELA 1R, RESLO 1R, SOROL 1R: 7.0% to MNW.
BADKO 1R: 5.5%.
MARAT 1R: 9.6% to MW014.
TP 1R: 4.4%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.6% (V/V fpm)	729	972	1458	1944	2430	2917
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
5.5% (V/V fpm)	418	557	835	1114	1392	1671
4.4% (V/V fpm)	334	446	668	891	1114	1337

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(403′ - 120m)***
4000′	***(2963′ - 900m)***

CHANGES: SIDs SULOD & BADKO 1R established; MW014 dme reading.

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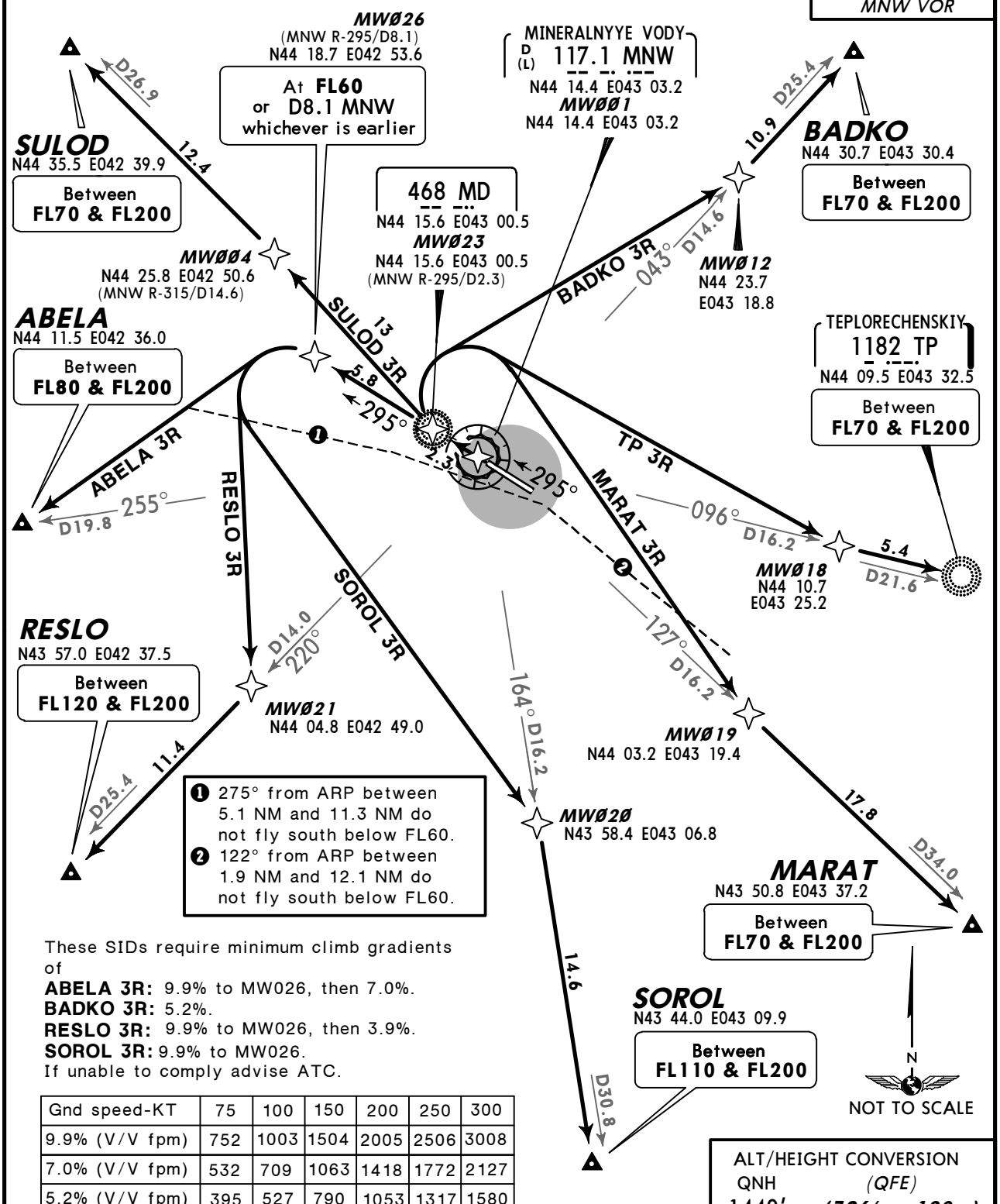
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 3R *[ABEL3R]*, BADKO 3R *[BADK3R]*, MARAT 3R *[MARA3R]*, RESLO 3R *[RESL3R]*, SOROL 3R *[SORO3R]*, SULOD 3R *[SULO3R]*, TP 3R RWY 30 RNAV DEPARTURES

RNAV (GNSS)



❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.
❷ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

These SIDs require minimum climb gradients of
ABELA 3R: 9.9% to MW026, then 7.0%.
BADKO 3R: 5.2%.
RESLO 3R: 9.9% to MW026, then 3.9%.
SOROL 3R: 9.9% to MW026.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.9% (V/V fpm)	752	1003	1504	2005	2506	3008
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
5.2% (V/V fpm)	395	527	790	1053	1317	1580
3.9% (V/V fpm)	296	395	592	790	987	1185

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: SIDs SULOD & BADKO 3R established.

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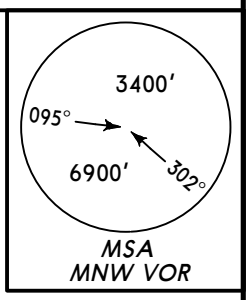
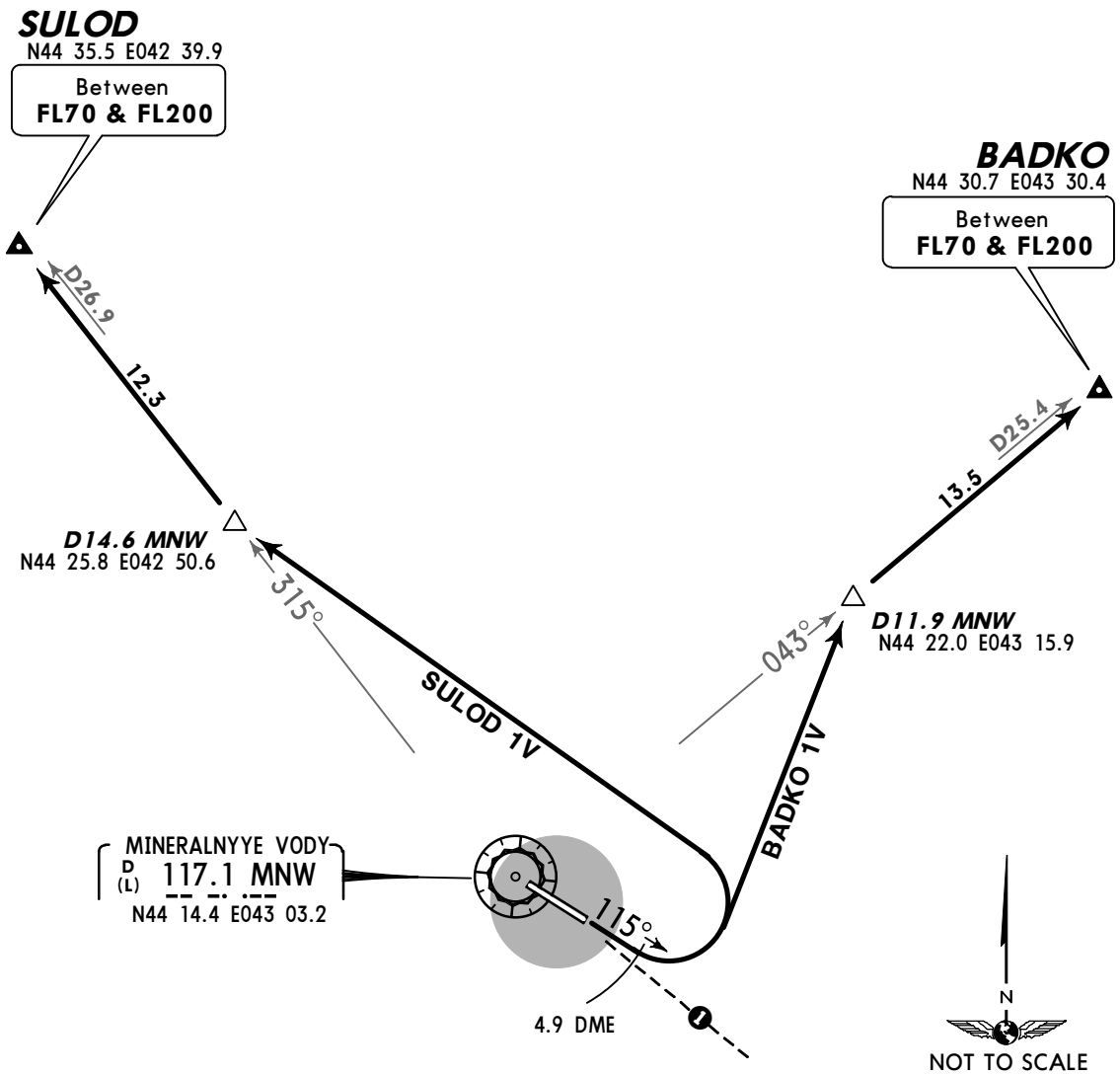
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 1V *[BADK1V]*
SULOD 1V *[SULO1V]*
RWY 12 DEPARTURES





❶ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 1V: 5.5%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.5% (V/V fpm)	418	557	835	1114	1392	1671

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(403′ - 120m)***
4000′	***(2963′ - 900m)***

CHANGES: ALEGI SID withdrawn; SIDs revised.

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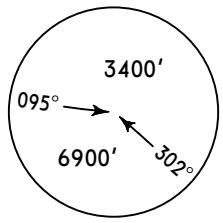
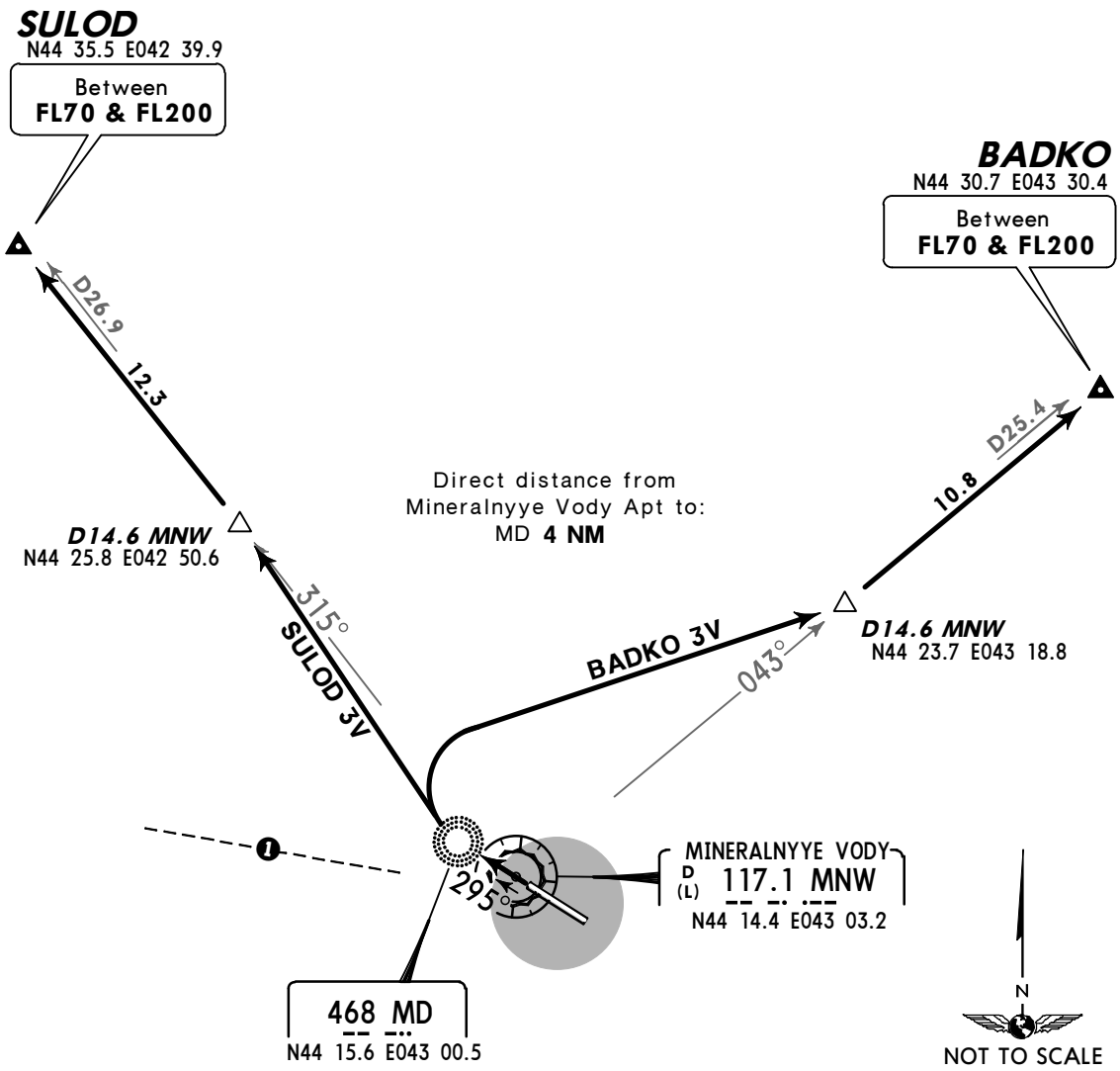
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 3V *[BADK3V]*
SULOD 3V *[SULO3V]*
RWY 30 DEPARTURES



MSA
MNW VOR



❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 3V: 5.2%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.2% (V/V fpm)	395	527	790	1053	1317	1549

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: ALEGI SID withdrawn; crossings revised.

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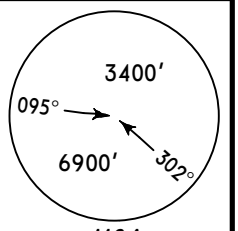
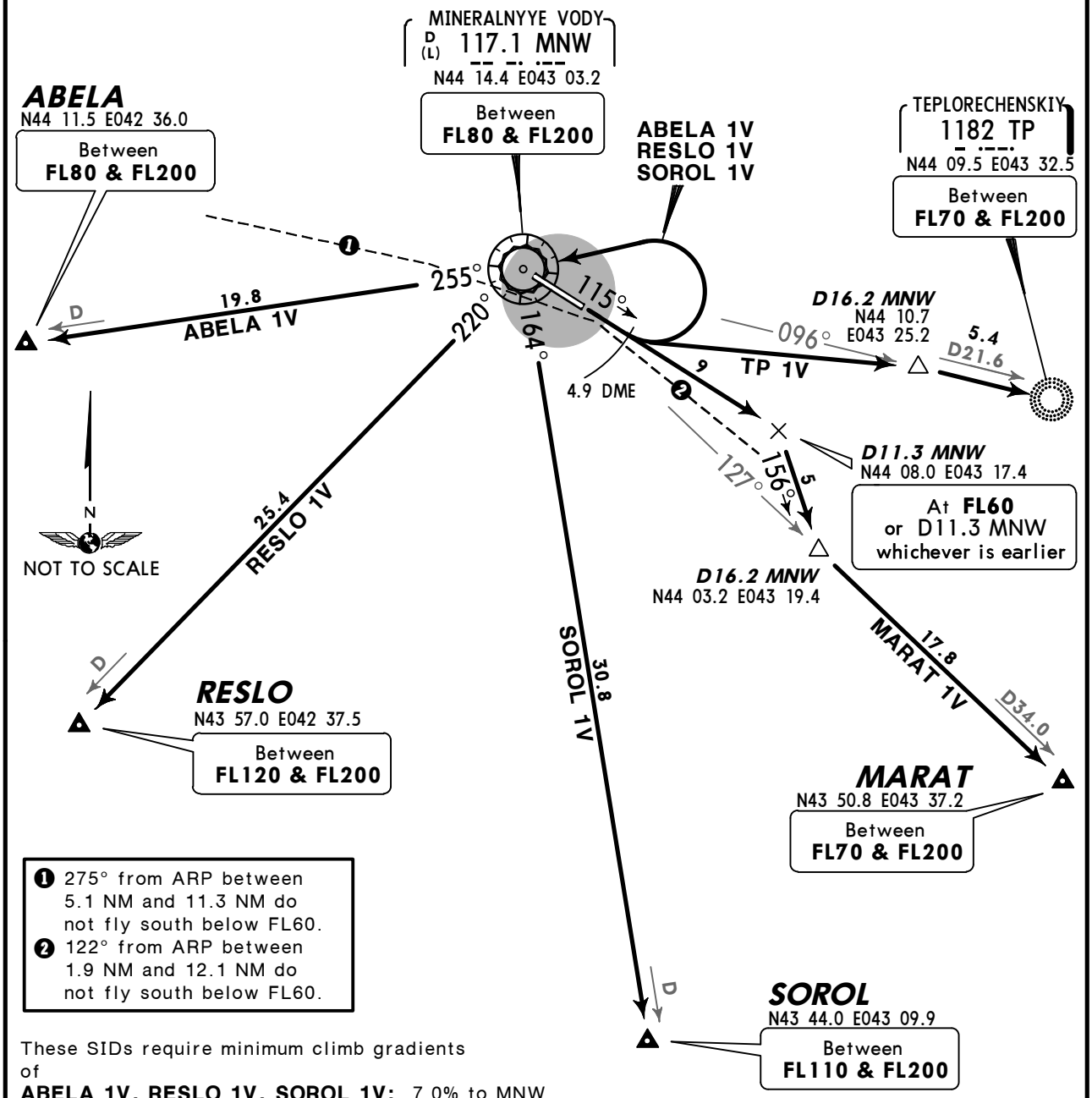
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 1V *[ABEL1V]*, MARAT 1V *[MARA1V]*
RESLO 1V *[RESL1V]*, SOROL 1V *[SORO1V]*
TP 1V
RWY 12 DEPARTURES





❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.
❷ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

These SIDs require minimum climb gradients of
ABELA 1V, RESLO 1V, SOROL 1V: 7.0% to MNW.
MARAT 1V: 9.6% to D11.3 MNW.
TP 1V: 4.4%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.6% (V/V fpm)	729	972	1458	1944	2430	2917
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
4.4% (V/V fpm)	334	446	668	891	1114	1337

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(403′ - 120m)***
4000′	***(2963′ - 900m)***

CHANGES: SIDs revised.

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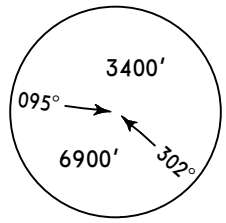
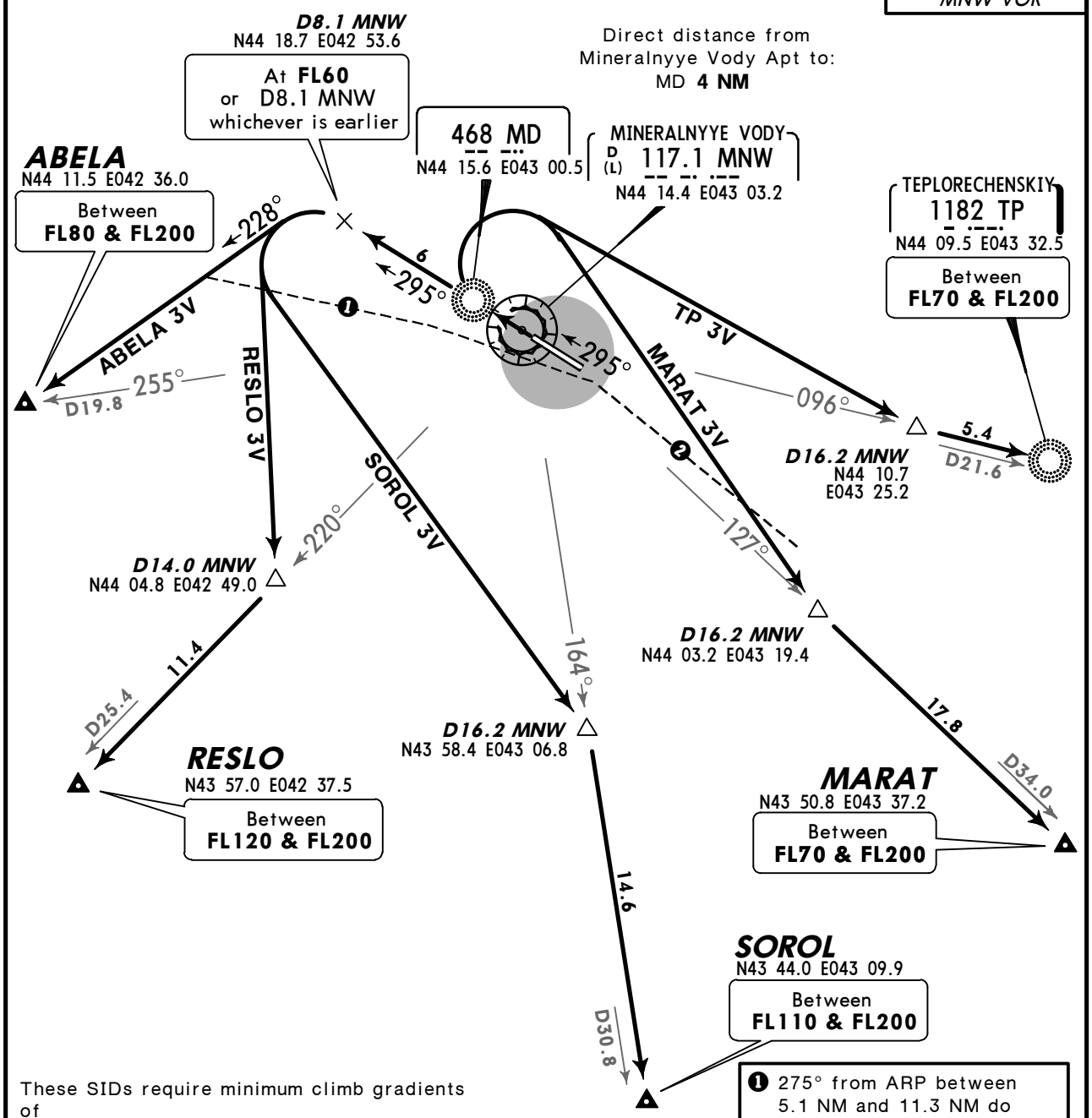
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 3V *[ABEL3V]*, MARAT 3V *[MARA3V]* RESLO 3V *[RESL3V]*, SOROL 3V *[SORO3V]* TP 3V RWY 30 DEPARTURES



MSA
MNW VOR



These SIDs require minimum climb gradients of
ABELA 3V: 9.9% to D8.1 MNW, then 7.0%.
RESLO 3V: 9.9% to D8.1 MNW, then 3.9%.
SOROL 3V: 9.9% to D8.1 MNW.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.9% (V/V fpm)	752	1003	1504	2005	2674	3209
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
3.9% (V/V fpm)	296	395	592	790	987	1185

❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.
❷ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: SIDs revised.

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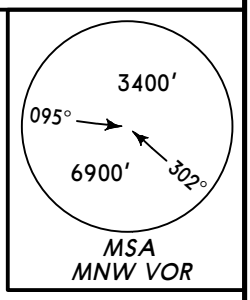
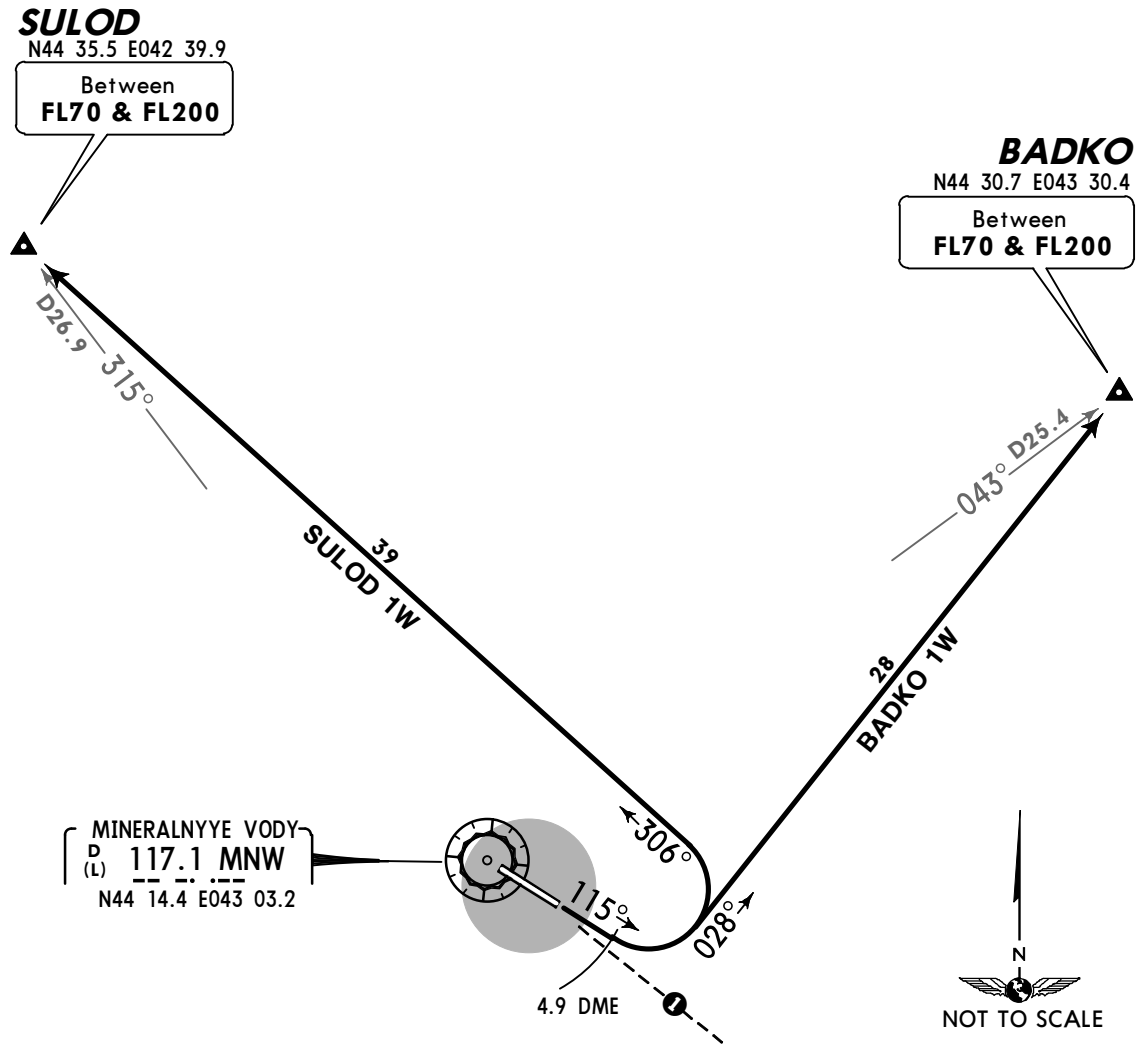
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 1W *[BADK1W]*
SULOD 1W *[SULO1W]*
RWY 12 DEPARTURES
UNDER RADAR CONTROL





❶ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 1W: 5.5%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.5% (V/V fpm)	418	557	835	1114	1392	1671

ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(403′ - 120m)***
4000′	***(2963′ - 900m)***

CHANGES: ALEGI SID withdrawn; crossings revised.

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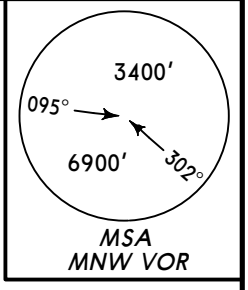
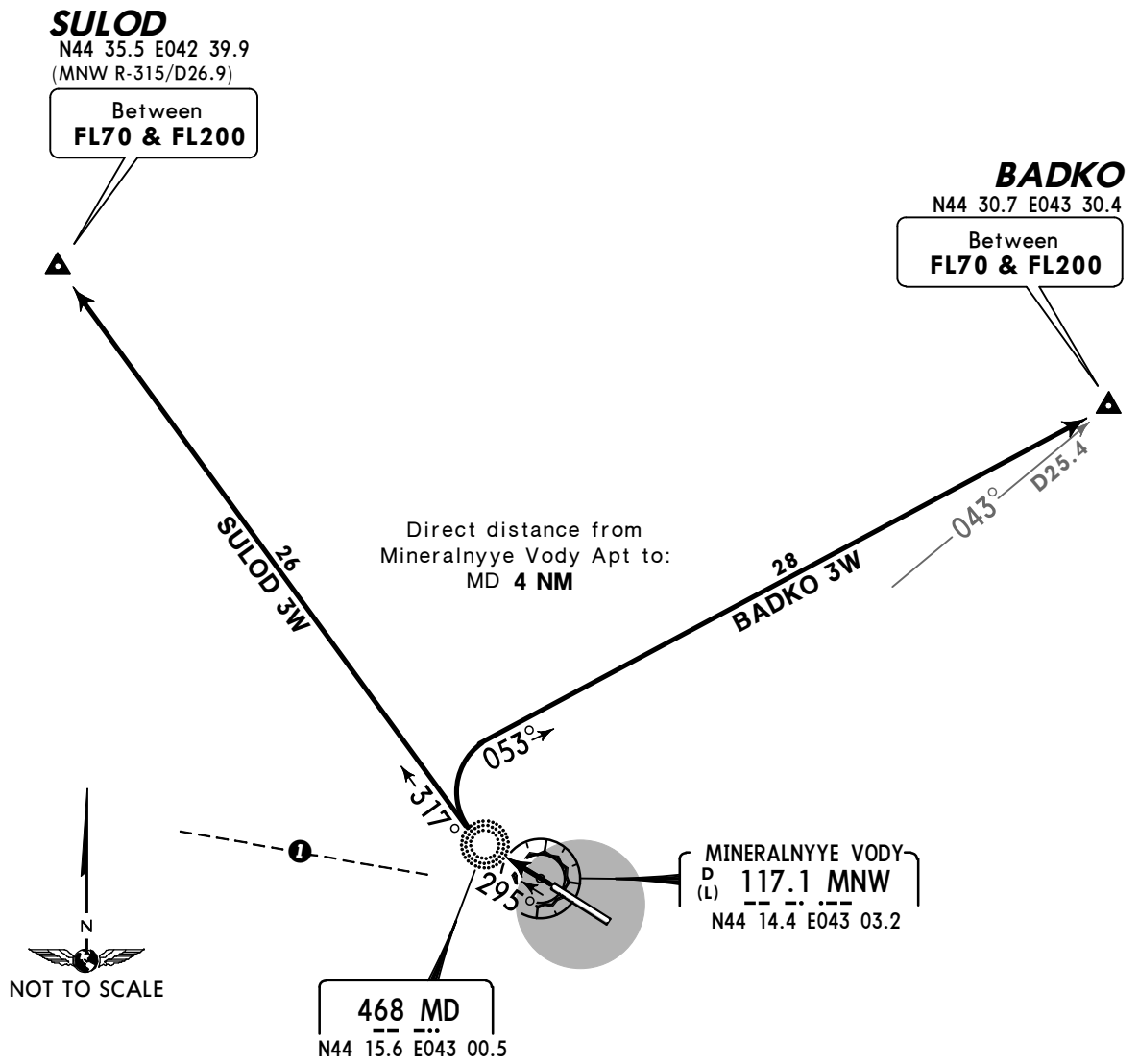
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

BADKO 3W *[BADK3W]*
SULOD 3W *[SULO3W]*
RWY 30 DEPARTURES
UNDER RADAR CONTROL





❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.

This SID requires a minimum climb gradient of
BADKO 3W: 5.2%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
5.2% (V/V fpm)	395	527	790	1053	1317	1549

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: ALEGI SID withdrawn; crossings revised.

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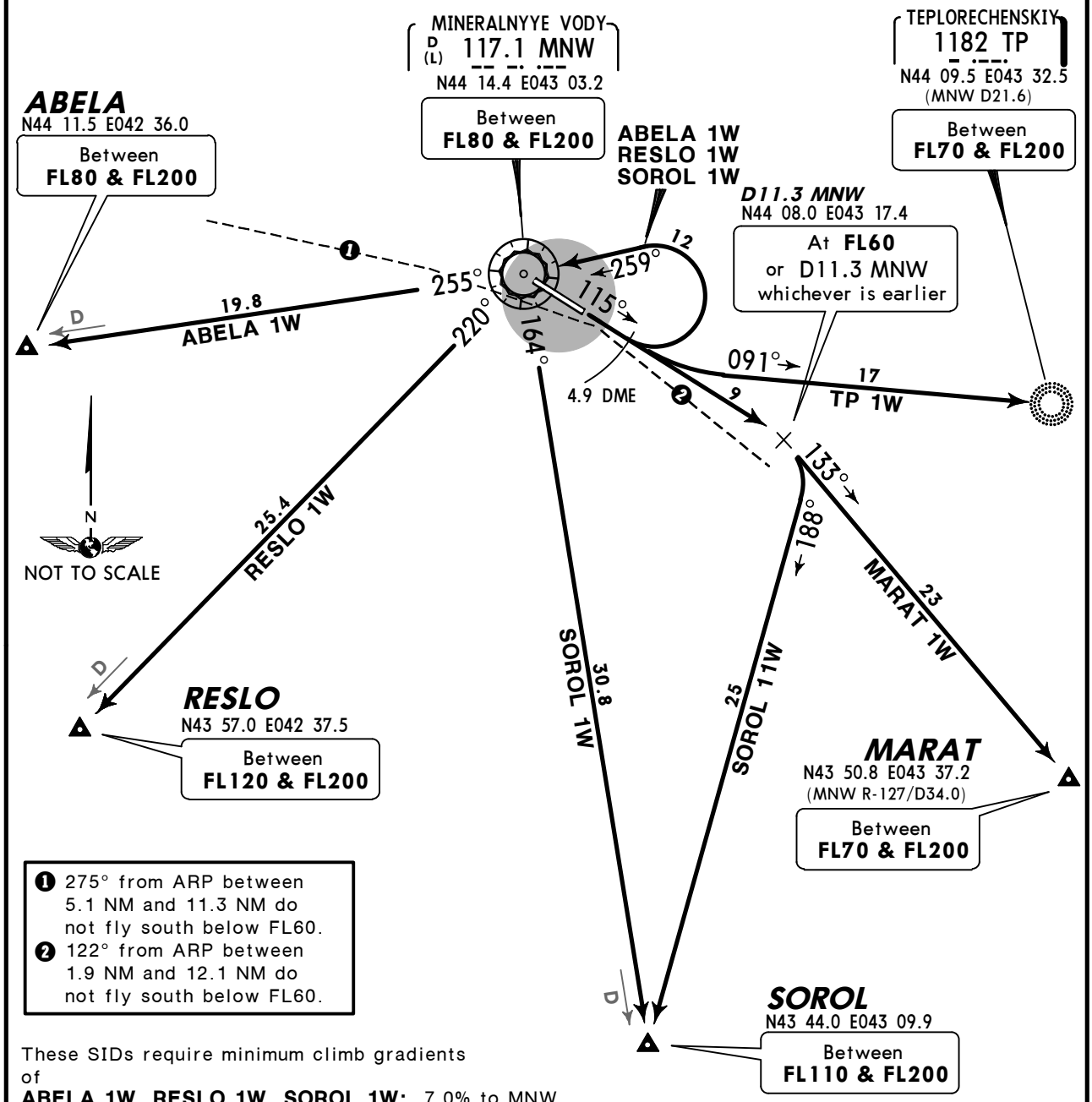
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2963′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (403′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 1W *[ABEL1W]*, MARAT 1W *[MARA1W]* RESLO 1W *[RESL1W]*, SOROL 1W *[SORO1W]* SOROL 11W *[SOR11W]*, TP 1W RWY 12 DEPARTURES

UNDER RADAR CONTROL



❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.
❷ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

These SIDs require minimum climb gradients of
ABELA 1W, RESLO 1W, SOROL 1W: 7.0% to MNW.
MARAT 1W, SOROL 11W: 9.6% to D11.3 MNW.
TP 1W: 4.4%.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.6% (V/V fpm)	729	972	1458	1944	2430	2917
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
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ALT/HEIGHT CONVERSION

QNH	(QFE)
1440′	***(403′ - 120m)***
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CHANGES: SIDs revised.

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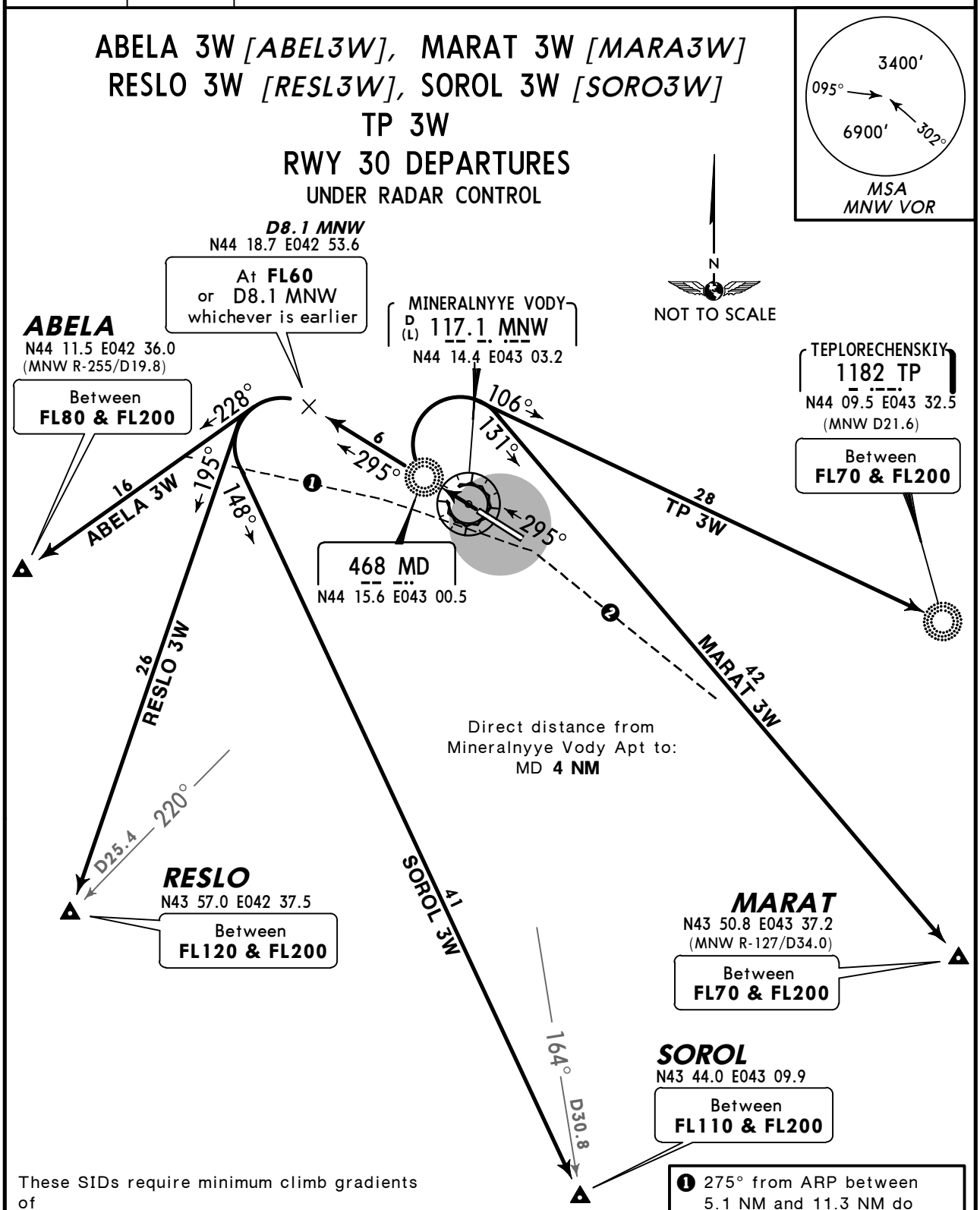
MINERALNYYE VODY Krug 120.7	Apt Elev 1047′	QNH on request **(QFE)** Trans level: FL60 FL70 if pressure is less than 704 mm (938.6 hPa) Trans alt: 4000′ ***(2956′)*** 1. Contact MINERALNYYE VODY Krug immediately after crossing 1440′ (396′). 2. Take-off should be carried out with noise abatement procedures according to Flight Operation Manual.

ABELA 3W *[ABEL3W]*, MARAT 3W *[MARA3W]* RESLO 3W *[RESL3W]*, SOROL 3W *[SORO3W]* TP 3W

RWY 30 DEPARTURES

UNDER RADAR CONTROL



These SIDs require minimum climb gradients of
ABELA 3W: 9.9% to D8.1 MNW, then 7.0%.
RESLO 3W: 9.9% to D8.1 MNW, then 3.9% .
SOROL 3W: 9.9% to D8.1 MNW.
If unable to comply advise ATC.

Gnd speed-KT	75	100	150	200	250	300
9.9% (V/V fpm)	752	1003	1504	2005	2674	3209
7.0% (V/V fpm)	532	709	1063	1418	1772	2127
3.9% (V/V fpm)	296	395	592	790	987	1185

❶ 275° from ARP between 5.1 NM and 11.3 NM do not fly south below FL60.
❷ 122° from ARP between 1.9 NM and 12.1 NM do not fly south below FL60.

ALT/HEIGHT CONVERSION

QNH	*(QFE)*
1440′	***(396′ - 120m)***
4000′	***(2956′ - 900m)***

CHANGES: SIDs revised.

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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) on 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 4000' (2956' - 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' (1486' - 450m) at a distance of about 5.2 NM from THR.

At or above 2530' (1486' - 450m) pilots shall terminate to set wing devices into landing position and before reaching 2200' (1156' - 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 2200' (1156' - 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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NOISE ABATEMENT

DEPARTURES

General

Noise abatement procedures during take-off and climbing phase shall be executed by all ACFT, 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 2040' (993' - 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 I, Part V, Chapter 3).

REVERSE THRUST

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

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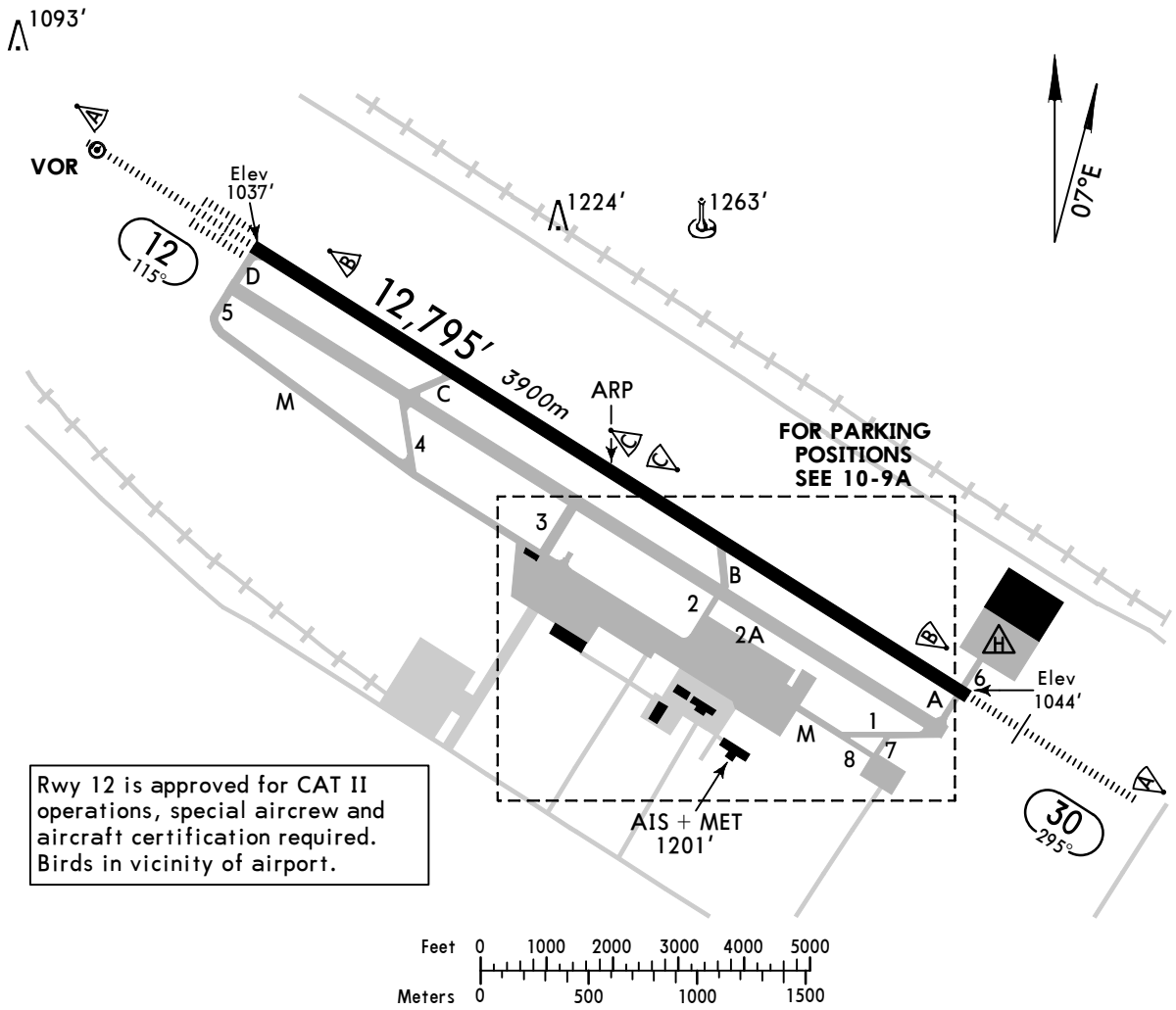
ATIS	MINERALNYYE VODY Taxiing (GND)	Start (TWR)
125.25 (Russian 127.4)	121.9	128.0



Rwy 12 is approved for CAT II operations, special aircrew and aircraft certification required. Birds in vicinity of airport.

ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND — Threshold	Glide Slope	TAKE-OFF	WIDTH
12	HIRL *(60m)* CL*(15m)* HIALS-II TDZ PAPI-L(3.00°) RVR		11,762′ *3585m*		197′ *60m*
30	HIRL *(60m)* CL*(15m)* HIALS PAPI-L(3.00°) RVR		11,823′ *3604m*		

TAKE-OFF

AIR CARRIER (JAA)
All Rwys

LVP must be in force

	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL
A	*200m (150m)*	*250m*	*400m*
B			
C			
D	*250m (200m)*	*300m*	

CHANGES: New Twy 3.

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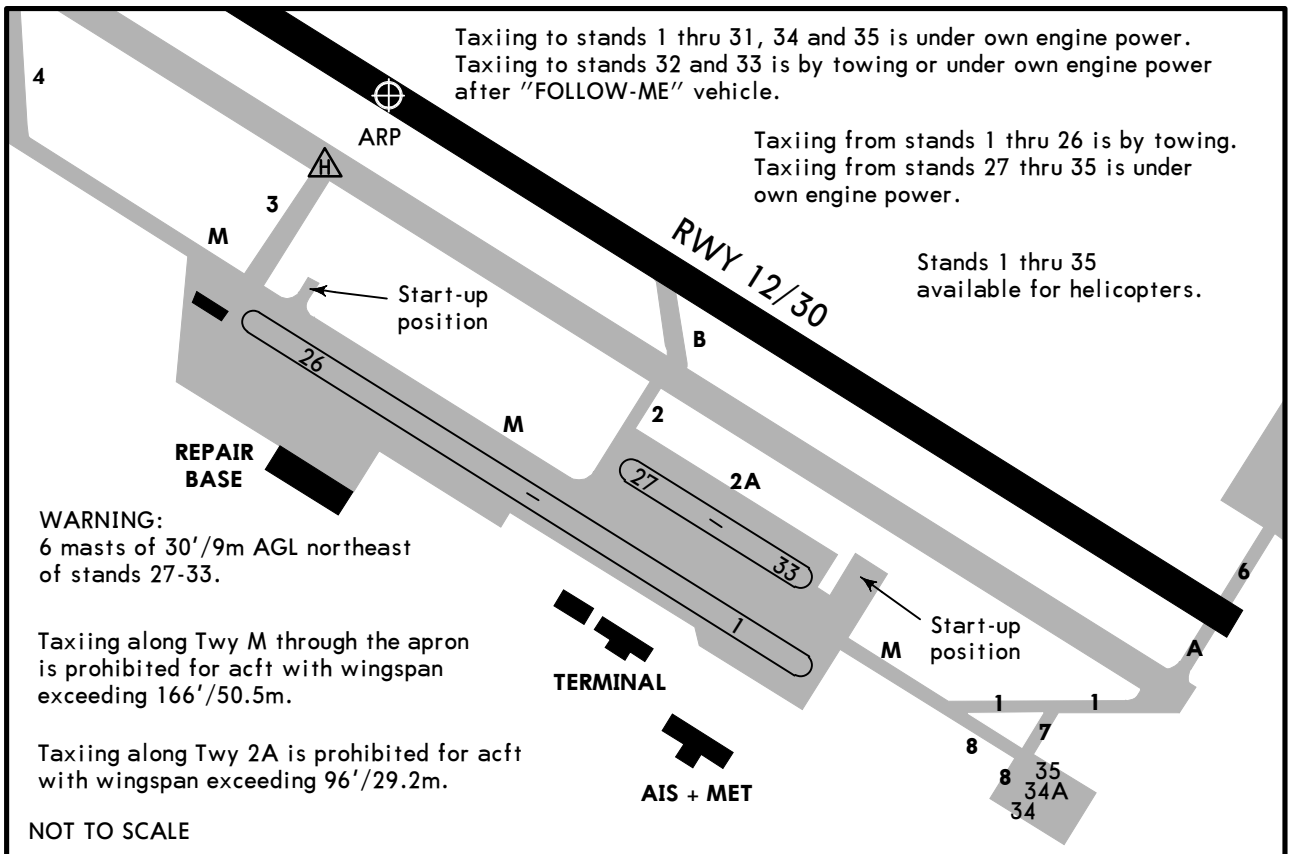

INS COORDINATES

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 come into force when rwy visibility values are less than 1000m and/or cloud ceiling is 80m. The implementation of LVP will be broadcasted by ATIS: "Low visibility procedures are in force". "Low visibility procedure" mean that an interval between arriving acft is maintained so that the ILS critical area should be vacant after each landing.

Rwy 12 is equipped for CAT II operations, rwy 30 for CAT I operations.
CAT I and II approach procedures shall be implemented under the following meteorological conditions:
Rwy 12 CAT I - ceiling less than 80m and RVR 1000m but not less than ceiling 60m RVR 550m.
Rwy 12 CAT II - ceiling less than 60m and RVR 550m but not less than ceiling 30m RVR 350m.
Rwy 30 CAT I - ceiling less than 80m and RVR 1000m but not less than ceiling 60m RVR 800m.
Landed acft shall report the vacation of rwy when they have passed ILS critical area.

1. Arrival
Vacating of rwy 12 along twy A or B, rwy 30 along twy C or D.
"FOLLOW ME" vehicle shall be applied during taxiing by request.
When visibility is less than 400m or when the flight crew has doubts in taxiing safety, the pilot shall stop the acft and request for the "FOLLOW ME" vehicle.
Acft arriving on rwy 12 shall be met after landing by the "FOLLOW ME" vehicle on twy A or B. Acft arriving on rwy 30 shall be met after landing by the "FOLLOW ME" vehicle on twy C or D. Further taxiing of acft after the "FOLLOW ME" vehicle shall be carried out under control of the taxiing controller.

2. Departure
Towing of acft shall be carried out with navigation and flashing lights switched on. Taxiing of acft on apron and twy, if an escort vehicle was requested, shall be carried out after the "FOLLOW ME" vehicle.
It is prohibited to cross the rwy holding position line on twys A thru D designated by ILS lighting marking and the established day marking without Tower controller's permission.

CHANGES: New twy 3. New Helipad. Taxi restrictions.

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MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

STRAIGHT-IN RWY		A	B	C	D
12	CAT 2 ILS	**1137**′(100′)	**1137**′(100′)	**1137**′(100′)	**1137**′(100′)
		RA115′R350m	**RA115′R350m**	**RA115′R350m**	**RA115′R350m**
	ILS	**1237**′(200′)	**1237**′(200′)	**1237**′(200′)	**1237**′(200′)
	FULL	**R550m**	**R550m**	**R550m**	**R550m**
	Limited	R750m	R750m	R750m	R750m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC ❶	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)
		R1400m	**R1400m**	**R1400m**	**R1400m**
	ALS out	C2100m	C2100m	C2100m	C2100m
	RNAV ❶	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)
		R1400m	**R1400m**	**R1400m**	**R1400m**
	ALS out	R1500m	R1500m	C2100m	C2100m
	VOR ❶	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)	**1480**′(443′)
		R1400m	**R1400m**	**R1400m**	**R1400m**
	ALS out	R1500m	R1500m	C2100m	C2100m
30	ILS	**1244**′(200′)	**1244**′(200′)	**1244**′(200′)	**1244**′(200′)
	FULL	**R550m**	**R550m**	**R550m**	**R550m**
	Limited	R750m	R750m	R750m	R750m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC ❷	**1560**′(516)	**1560**′(516)	**1560**′(516)	**1560**′(516)
		R1800m	**R1800m**	**R2000m**	**R2000m**
	ALS out	C2600m	C2600m	C2800m	C2800m
	LOC ❸	**1850**′(806′)	**1850**′(806′)	**1850**′(806′)	**1850**′(806′)
		C3300m	**C3300m**	**C3500m**	**C3500m**
	ALS out	C4000m	C4000m	C4200m	C4200m
	RNAV ❶	**1460**′(416′)	**1460**′(416′)	**1460**′(416′)	**1460**′(416′)
		R1200m	**R1200m**	**R1200m**	**R1200m**
	ALS out	R1500m	R1500m	R1900m	R1900m
	VOR ❶❹	**1560**′(516′)	**1560**′(516′)	**1560**′(516′)	**1560**′(516′)
		R1500m	**R1500m**	**R1600m**	**R1600m**
	ALS out	R1500m	R1500m	C2400m	C2400m
	VOR ❺	**1850**′(806′)	**1850**′(806′)	**1850**′(806′)	**1850**′(806′)
		C3300m	**C3300m**	**C3500m**	**C3500m**
	ALS out	C4000m	C4000m	C4200m	C4200m

❶ Continuous Descent Final Approach.
❷ with Radar.
❸ w/o Radar.
❹ with D8.6.
❺ w/o D8.6.

TAKE-OFF RWY 12, 30

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

CHANGES: NDB rwy 12 withdrawn.

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URMM/MRV
MINERALNYYE VODY

1 FEB 13
Eff 7 Feb

JEPPESEN MINERALNYYE VODY, RUSSIA

(11-1) CAT I/II ILS DME or NDB Rwy 12

BRIEFING STRIP ™

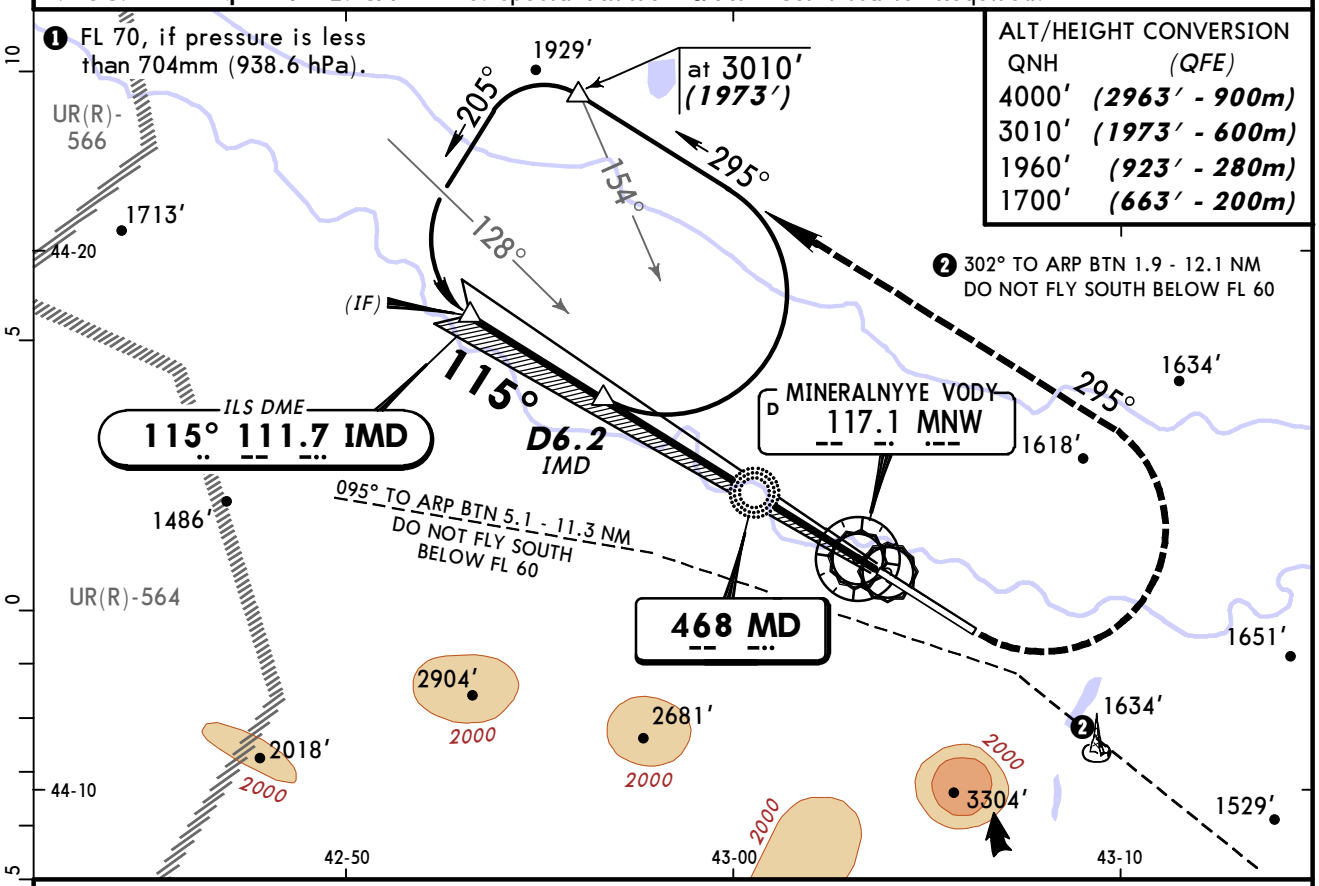
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

LOC IMD	Final Apch Crs	GS NDB	CAT II ILS RA 115′ DA(H)	CAT I ILS DA(H)	Apt Elev 1047′
111.7	115°	1955′ (918′)	1137′ (100′)	1237′ (200′)	RWY 1037′
NDB MD 468		Minimum Alt D6.2 IMD 3010′ (1973′)	NDB MDA(H) 2900′ (1863′)		

MISSED APCH: Climb on 115° to 1700′ (663′), then turn LEFT onto 295° climbing to 3010′ (1973′), then as directed.

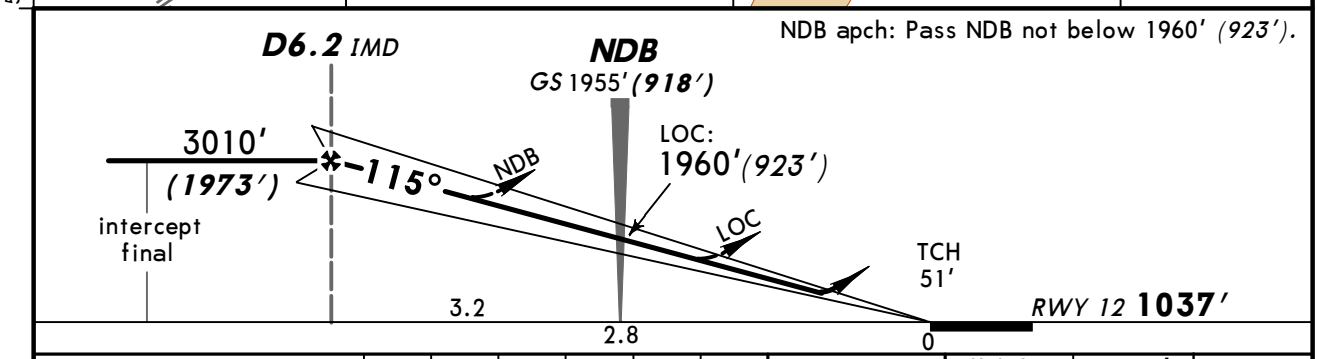
3400′ 086° 301° 6900′
MSA
MD NDB

Alt Set: MM (hPa on req) QNH on req **(QFE)** Trans level: FL 60 ❶ Trans alt: 4000′ (2963′)
1. LOC: **NDB required.** 2. CAT II ILS: Special Aircrew & Acft Certification Required.



ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	(2963′ - 900m)
3010′	(1973′ - 600m)
1960′	(923′ - 280m)
1700′	(663′ - 200m)



Gnd speed-Kts	70	90	100	120	140	160
ILS GS or LOC or NDB Desc Angle 3.00°	372	478	531	637	743	849

HIALS-II
PAPI
1700′ (663′) on 115°

STRAIGHT-IN LANDING RWY 12

PANS OPS	CAT II ILS RA 115′ DA(H) 1137′ (100′)	CAT I DA(H) 1237′ (200′) FULL	CAT I TDZ or CL out	CAT I ALS out	LOC (GS out) MDA(H) 1480′ (443′)	LOC ALS out	NDB MDA(H) 2900′ (1863′)	NDB ALS out
A	RVR 350m	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m	RVR 720m VIS 800m	RVR 1500m VIS 1600m	3200m	
B								
C					1200m	RVR 1800m VIS 2000m	4400m	4800m
D					RVR 1500m VIS 1600m	2400m		

CHANGES: MSA. FAF added.

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URMM/MRV
MINERALNYYE VODY

1 FEB 13
Eff 7 Feb

JEPPESEN

(11-2)

MINERALNYYE VODY, RUSSIA
CAT I/II VOR DME ILS Rwy 12

BRIEFING STRIP ™

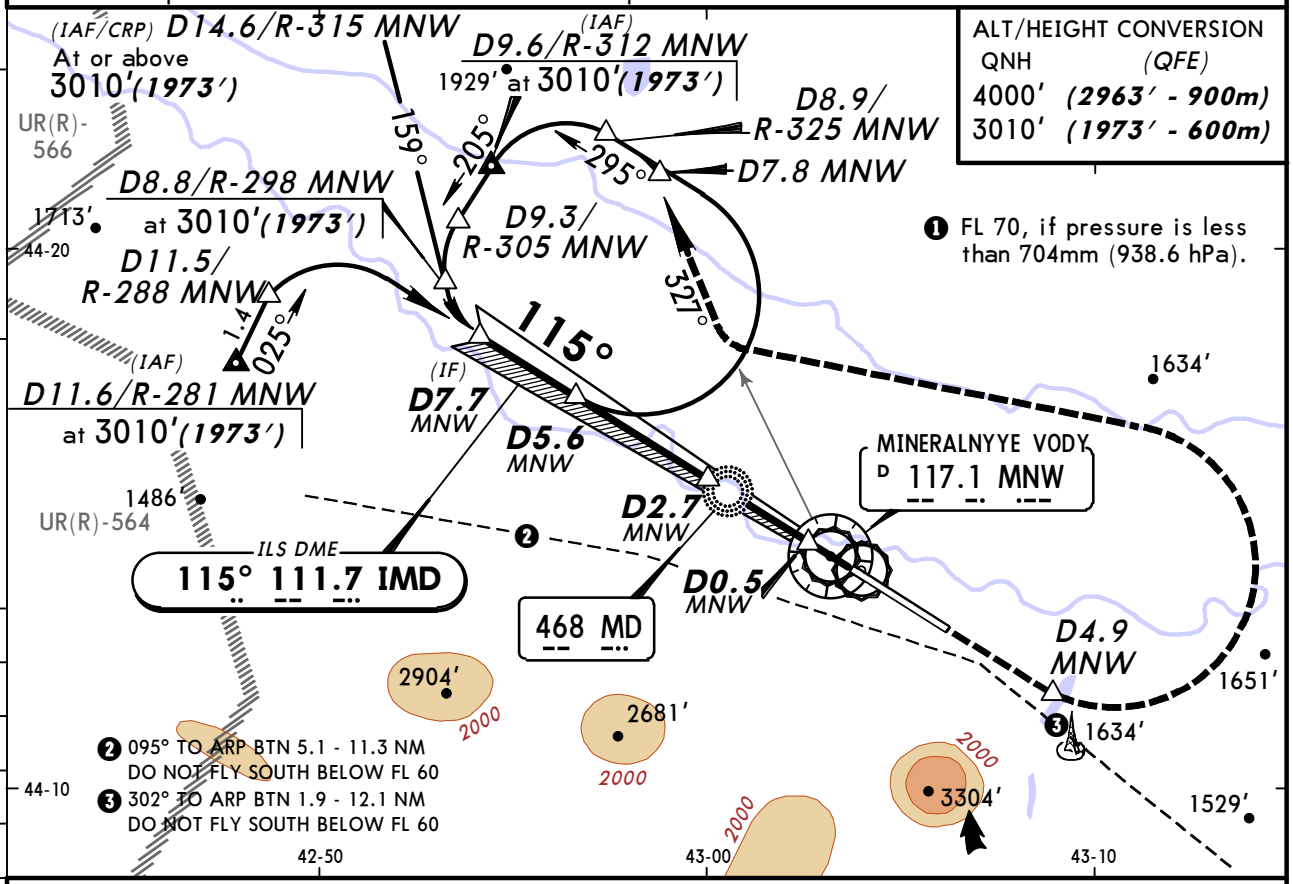
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

LOC	Final Apch Crs	GS	CAT II ILS	CAT I ILS	Apt Elev 1047′
IMD 111.7	115°	NDB 1955′(918′)	RA 115′ DA(H) 1137′(100′)	DA(H) 1237′(200′)	RWY 1037′

MISSED APCH: Climb on 115° to D4.9 MNW , then turn LEFT to intercept R-327 climbing to 3010′ (1973′) then as directed.

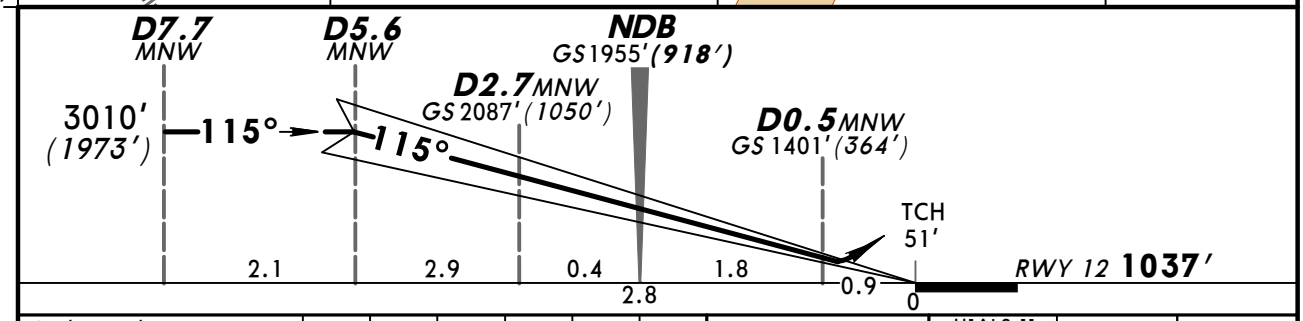
3400′ 095° 302° 6900′
MSA
MNW VOR

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000′ (2963′)
CAT II ILS: Special Aircrew & Acft Certification Required.



ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	(2963′ - 900m)
3010′	(1973′ - 600m)



Gnd speed-Kts		70	90	100	120	140	160
ILS GS	3.00°	372	478	531	637	743	849

HIALS-II
PAPI
D4.9 MNW on 115°

STRAIGHT-IN LANDING RWY 12

PANS OPS	CAT II	ILS CAT I FULL	ILS CAT I TDZ or CL out	ILS CAT I ALS out	LOC (GS out)
	RA 115′ DA(H) 1137′(100′)	DA(H) 1237′(200′)			
A	RVR 350m	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m	NOT AUTHORIZED
B					
C					
D					

CHANGES: None.

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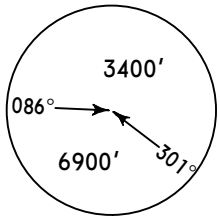
BRIEFING STRIP

ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

LOC	Final Apch Crs	GS	ILS	Apt Elev 1047′
IMW		D6.2 IMW	DA(H)	RWY 1044′
109.3	295°	3020′ (1976′)	1244′ (200′)	

MISSED APCH: Climb on 295° to NDB, then turn RIGHT onto 115° climbing to 3020′ (1976′), then as directed.

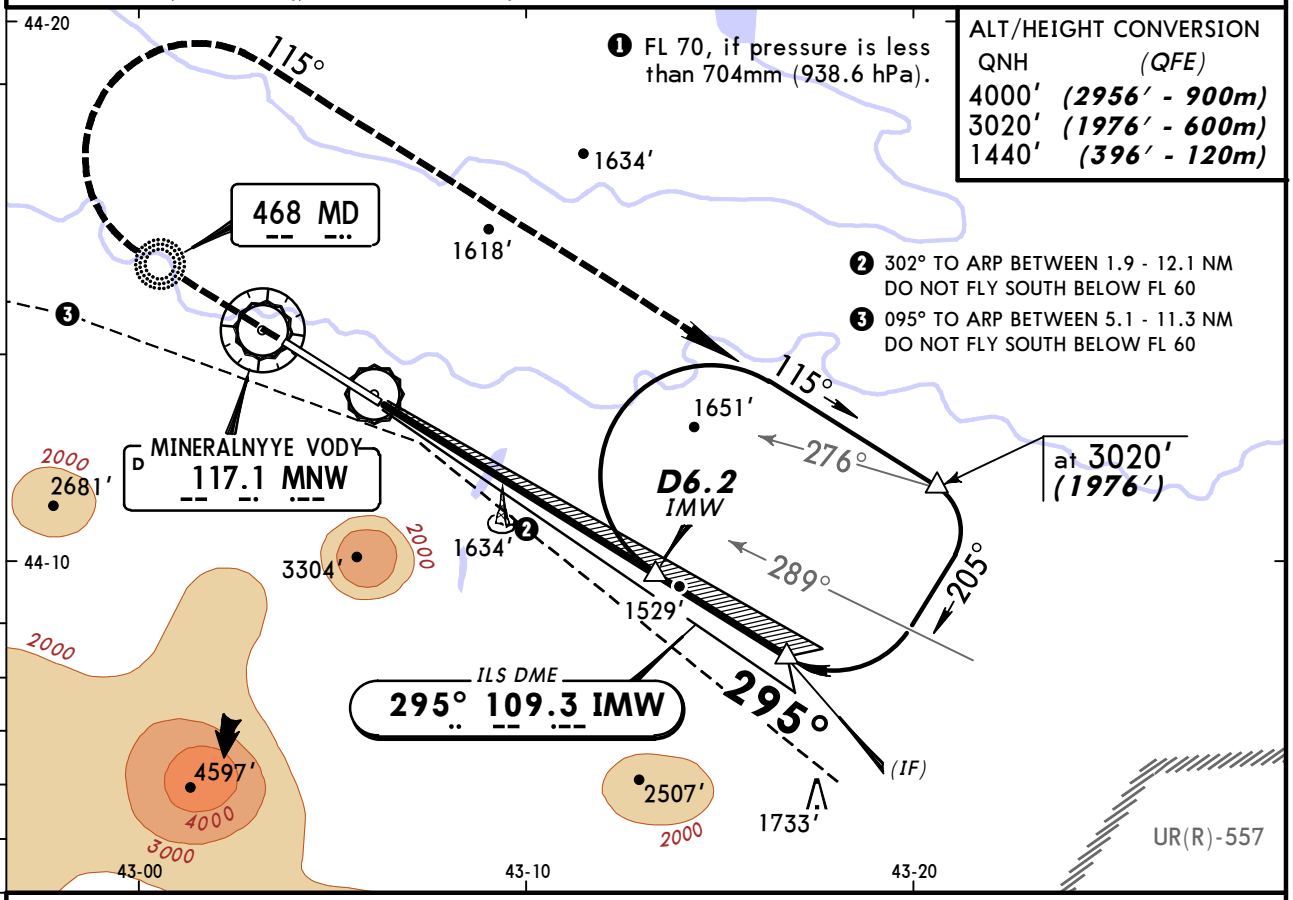


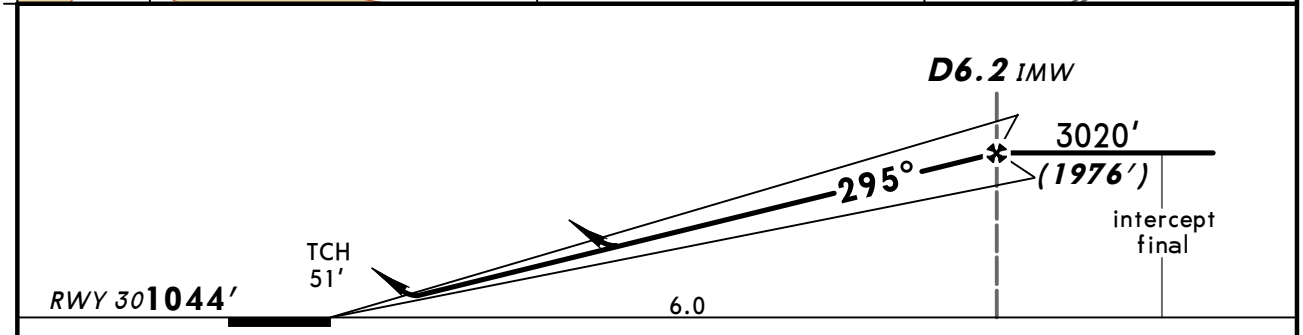
MSA
MD NDB

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000′ (2956′)

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	(2956′ - 900m)
3020′	(1976′ - 600m)
1440′	(396′ - 120m)





Gnd speed-Kts	70	90	100	120	140	160
ILS GS or LOC Desc Angle 3.00°	372	478	531	637	743	849

HIALS
PAPI
MD 468 on 295°

STRAIGHT-IN LANDING RWY 30

	ILS DA(H) 1244′ (200′) FULL	ILS DA(H) 1244′ (200′) ALS out	LOC (GS out) with Radar MDA(H) 1560′ (516′)	LOC (GS out) with Radar MDA(H) 1560′ (516′) ALS out	LOC (GS out) w/o Radar MDA(H) 1850′ (806′)	LOC (GS out) w/o Radar MDA(H) 1850′ (806′) ALS out
A	RVR 720m VIS 800m	1200m	RVR 720m VIS 800m	RVR 1500m VIS 1600m	RVR 720m VIS 800m	RVR 1500m VIS 1600m
B					1200m	2000m
C			RVR 1500m VIS 1600m	2400m	2800m	3600m
D			RVR 1800m VIS 2000m	2800m	3200m	4000m

PANS OPS

CHANGES: MSA. FAF added.

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BRIEFING STRIP

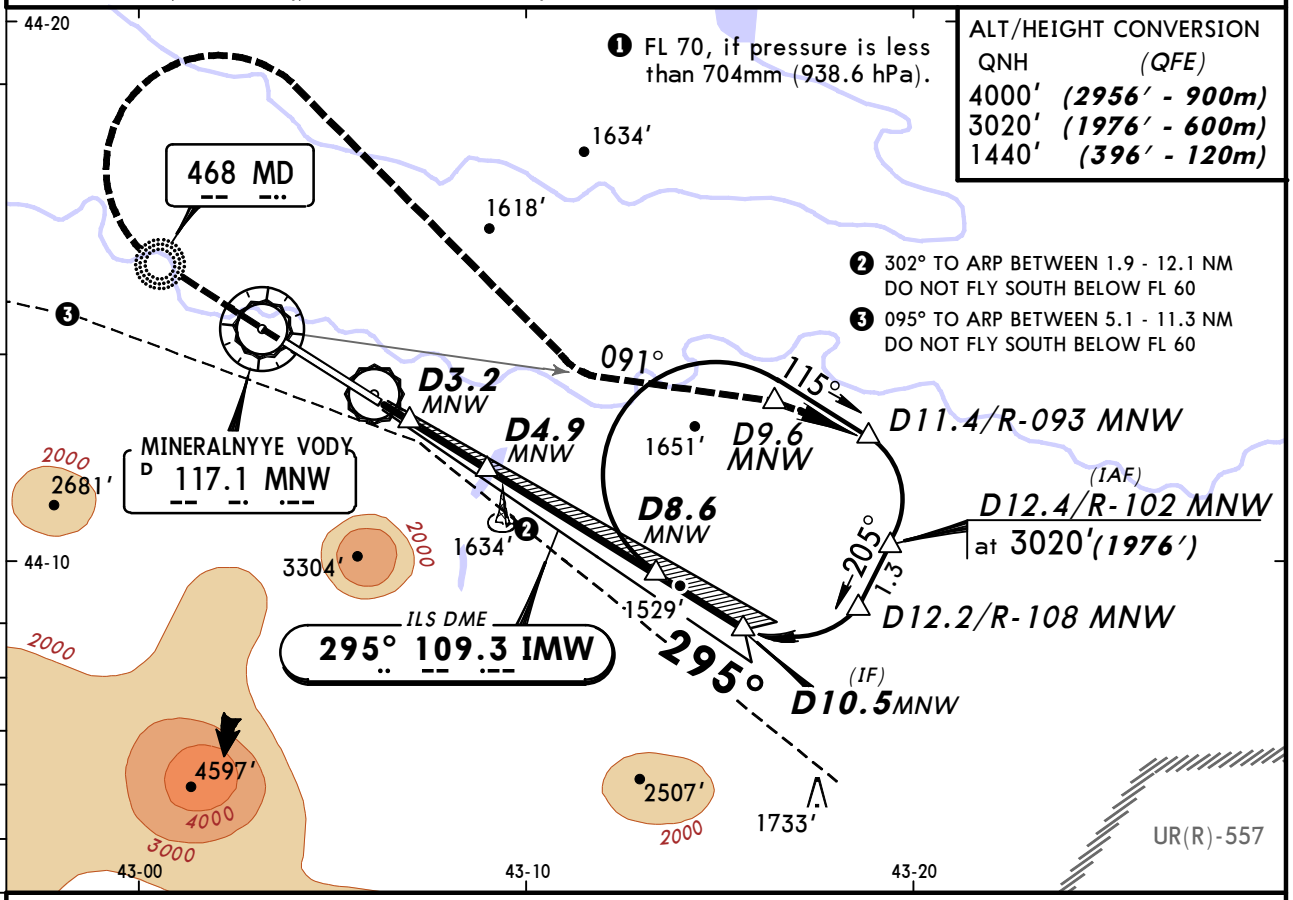
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

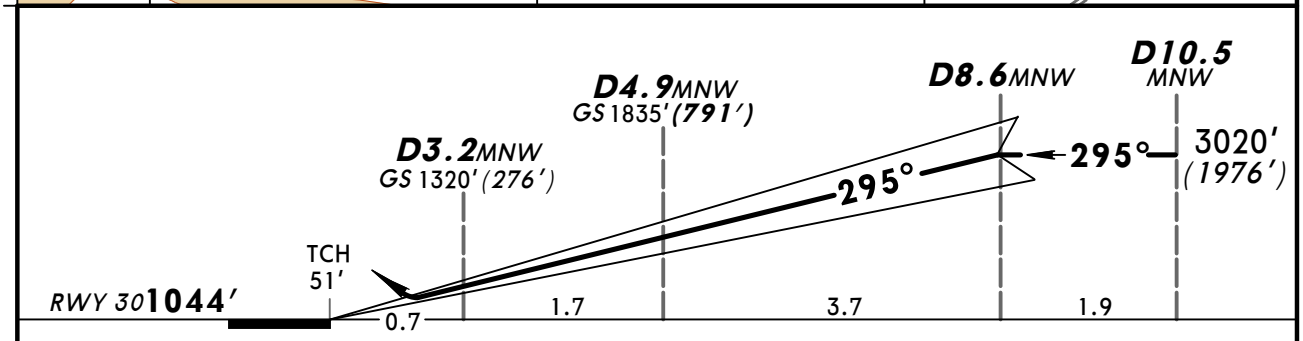
LOC	Final Apch Crs	GS	ILS DA(H)	Apt Elev 1047'
IMW 109.3	295°	D4.9 MNW 1835' (791')	1244' (200')	RWY 1044'

MISSED APCH: Climb on 295° to NDB, then turn RIGHT climbing to 3020' (1976') and intercept R-091, then as directed.

MSA MNW VOR: 095° 3400', 302° 6900'

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000' (2956')





Gnd speed-Kts		70	90	100	120	140	160
ILS GS	3.00°	372	478	531	637	743	849

HIALS PAPI MD 468 on 295°

STRAIGHT-IN LANDING RWY 30

	ILS DA(H) 1244' (200') FULL	ILS DA(H) 1244' (200') ALS out	LOC (GS out)
A	RVR 720m VIS 800m	1200m	NOT AUTHORIZED
B			
C			
D			

PANS OPS

CHANGES: None.

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URMM/MRV
MINERALNYYE VODY

JEPPESEN 1 FEB 13 (12-1) Eff 7 Feb

MINERALNYYE VODY, RUSSIA
RNAV (GNSS) Rwy 12

BRIEFING STRIP ™

ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

RNAV	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 1047′
	115°	MWØØ2 3010′(1973′)	1480′(443′)	RWY 1037′

MISSED APCH: Climb on 115° to MWØ22, then turn LEFT climbing to 3010′ (1973′) and proceed to MWØØ8, then as directed.

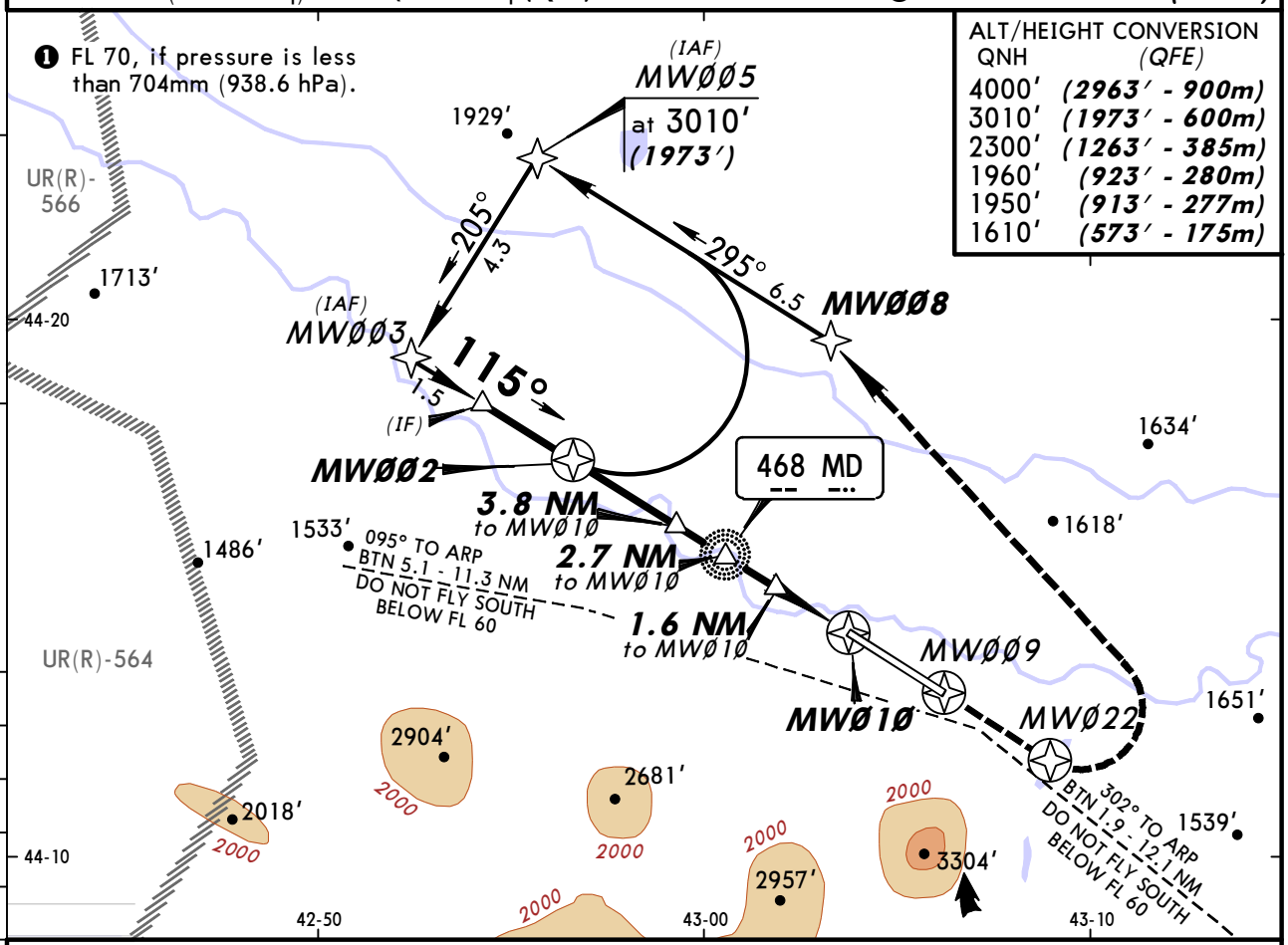
3400′ 086° 6900′ 301°
MSA MD NDB

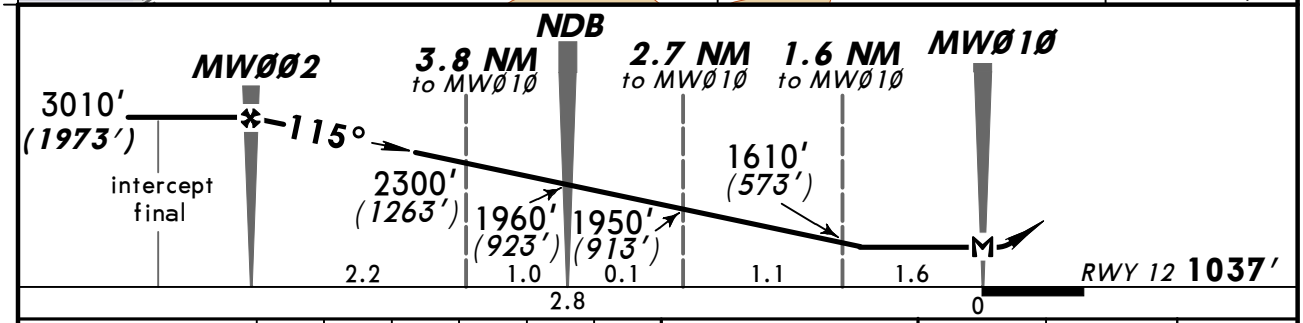
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000′ (2963′)

❶ FL 70, if pressure is less than 704mm (938.6 hPa).

ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	(2963′ - 900m)
3010′	(1973′ - 600m)
2300′	(1263′ - 385m)
1960′	(923′ - 280m)
1950′	(913′ - 277m)
1610′	(573′ - 175m)





Gnd speed-Kts	70	90	100	120	140	160
Descent Angle 3.00°	372	478	531	637	743	849
MAP at MWØ1Ø						

HIALS-II
PAPI

MWØ22 on 115°

PANS OPS

STRAIGHT-IN LANDING RWY 12

MDA(H) 1480′(443′)

		ALS out
A	RVR 720m VIS 800m	RVR 1500m VIS 1600m
B		
C	1200m	RVR 1800m VIS 2000m
D	RVR 1500m VIS 1600m	2400m

CHANGES: MSA. Procedure.

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URMM/MRV
MINERALNYYE VODY

JEPPESEN 1 FEB 13 (12-2) Eff 7 Feb

MINERALNYYE VODY, RUSSIA
RNAV (GNSS) Rwy 30

BRIEFING STRIP TM

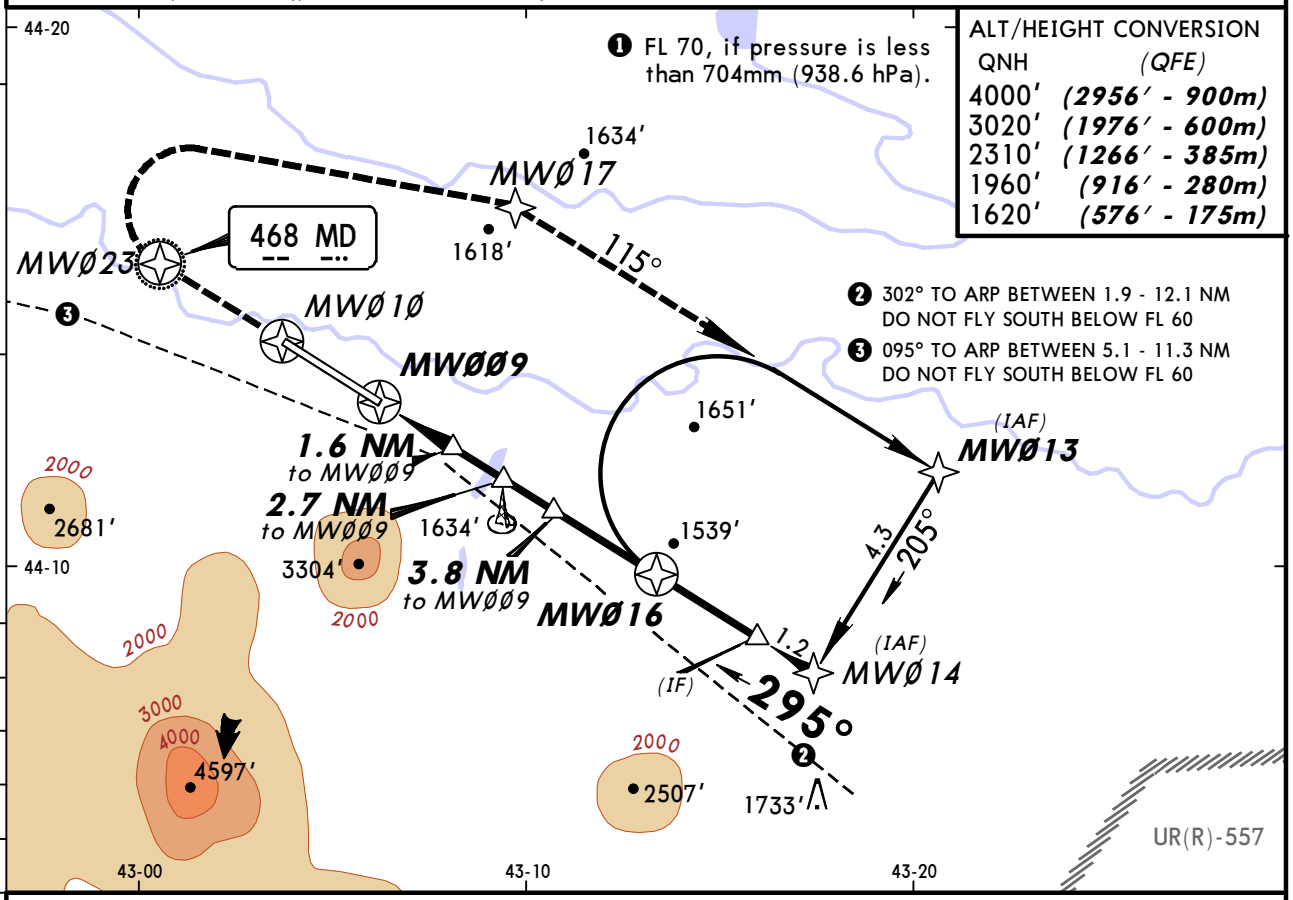
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

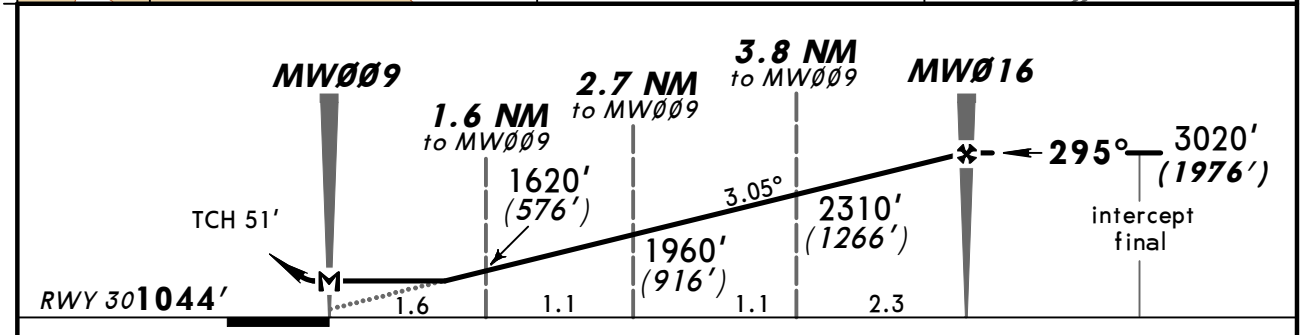
RNAV	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 1047'
	295°	MWØ16 3020'(1976')	1460'(416')	RWY 1044'

MISSED APCH: Climb on 295° to MWØ23, then turn RIGHT climbing to 3020'(1976') and proceed to MWØ17, then as directed.

3400' 086° 301° 6900'
MSA
MD NDB

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000'(2956')





Gnd speed-Kts	70	90	100	120	140	160
Descent Angle 3.05°	378	486	540	648	755	863
MAP at MWØØ9						

HIALS PAPI MWØ23 on 295°

STRAIGHT-IN LANDING RWY 30

MDA(H) 1460'(416')

PANS OPS

		ALS out
A	RVR 720m VIS 800m	RVR 1500m VIS 1600m
B		
C	1200m	RVR 1800m VIS 2000m
D	RVR 1500m VIS 1600m	

CHANGES: MSA.

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URMM/MRV
MINERALNYYE VODY

28 DEC 12 (13-1) Eff 10 Jan

JEPPESEN

MINERALNYYE VODY, RUSSIA
VOR DME Rwy 12

BRIEFING STRIP

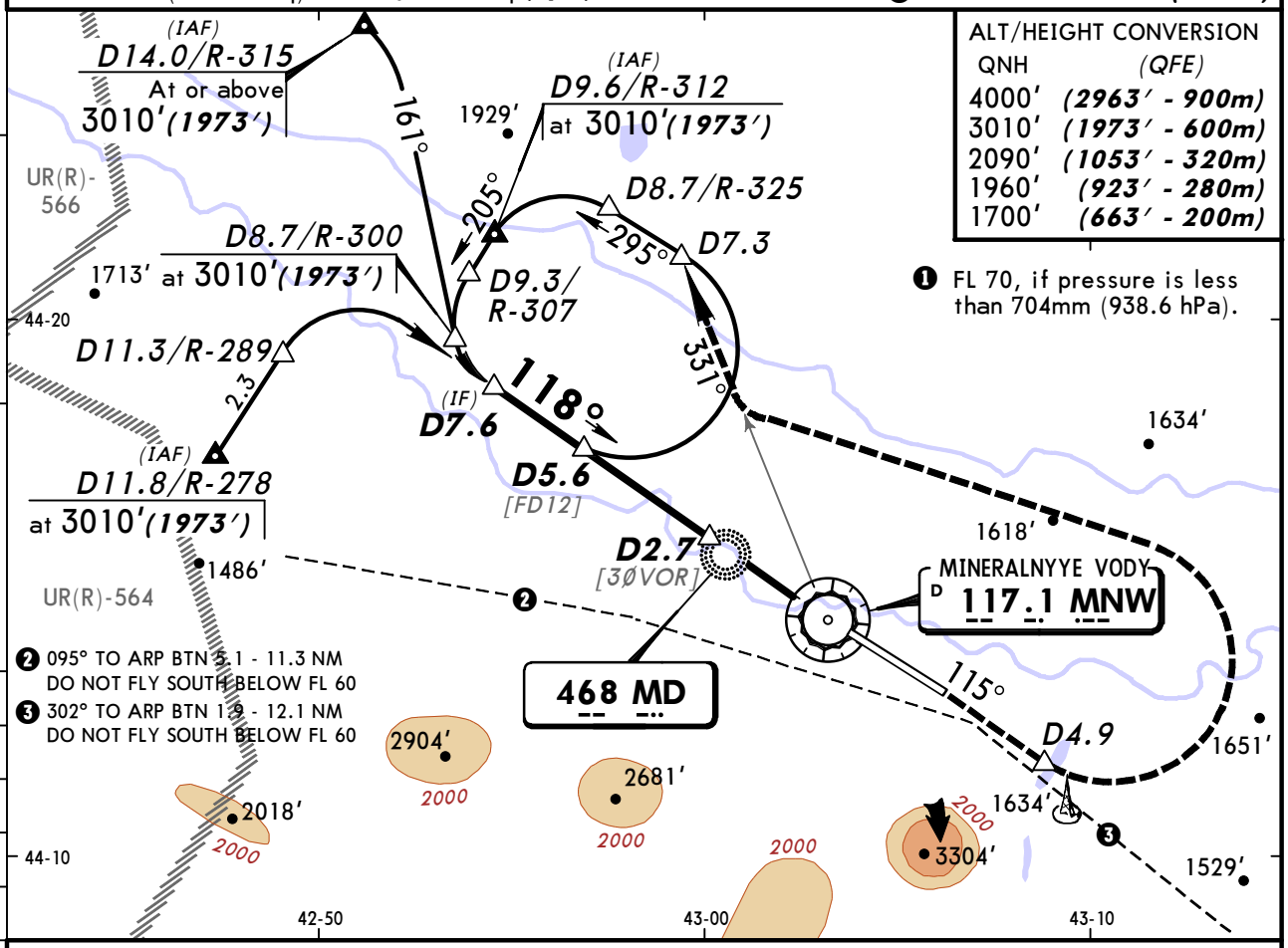
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

VOR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 1047′
MNW 117.1	118°	D5.6 3010′(1973′)	1480′(443′)	RWY 1037′

MISSED APCH: Climb on 115° to D4.9 , then turn LEFT to intercept R-331 MNW climbing to 3010′ (1973′) then as directed.

MSA MNW VOR: 095° 6900′; 302° 3400′

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000′ (2963′)

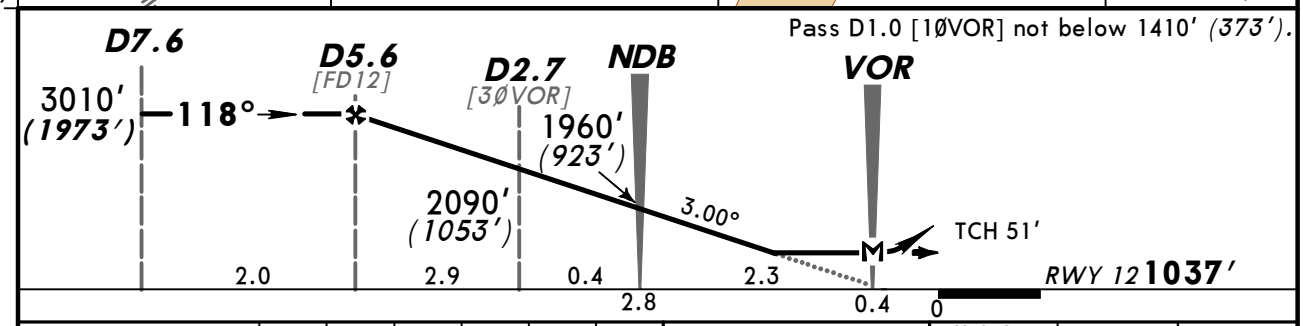


ALT/HEIGHT CONVERSION

QNH	(QFE)
4000′	(2963′ - 900m)
3010′	(1973′ - 600m)
2090′	(1053′ - 320m)
1960′	(923′ - 280m)
1700′	(663′ - 200m)

❶ FL 70, if pressure is less than 704mm (938.6 hPa).

Pass D1.0 [1ØVOR] not below 1410′ (373′).



Gnd speed-Kts	70	90	100	120	140	160
Descent angle 3.00°	372	478	531	637	743	849
MAP at VOR						

HIALS-II
PAPI
D4.9 on 115°

STRAIGHT-IN LANDING RWY 12

MDA(H) 1480′(443′)

PANS OPS

		ALS out
A	RVR 720m VIS 800m	RVR 1500m VIS 1600m
B		
C	1200m	RVR 1800m VIS 2000m
D	RVR 1500m VIS 1600m	2400m

CHANGES: NDB approach withdrawn. Bearings. Minimums.

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URMM/MRV
MINERALNYYE VODY

28 DEC 12 (13-2) Eff 10 Jan

JEPPESEN

MINERALNYYE VODY, RUSSIA
VOR DME Rwy 30

BRIEFING STRIP

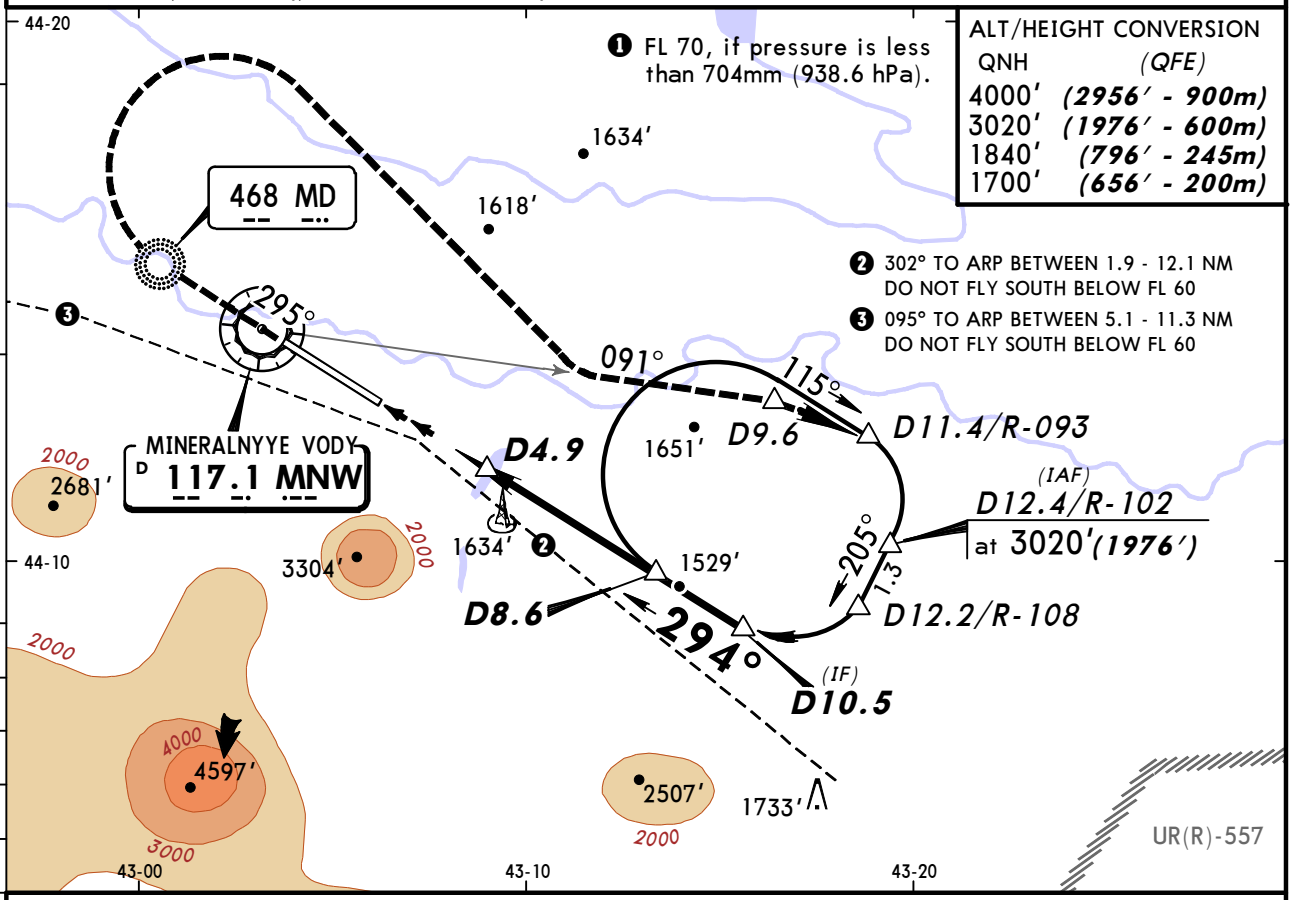
ATIS	MINERALNYYE VODY Approach	MINERALNYYE VODY Krug (R)	MINERALNYYE VODY Start (TWR)	Ground
125.25 (Russian 127.4)	119.3	120.7	128.0	121.9

VOR	Final Apch Crs	Minimum Alt	MDA(H) (CONDITIONAL)	Apt Elev 1047′
MNW 117.1	294°	D8.6 3020′(1976′)	1560′(516′)	RWY 1044′

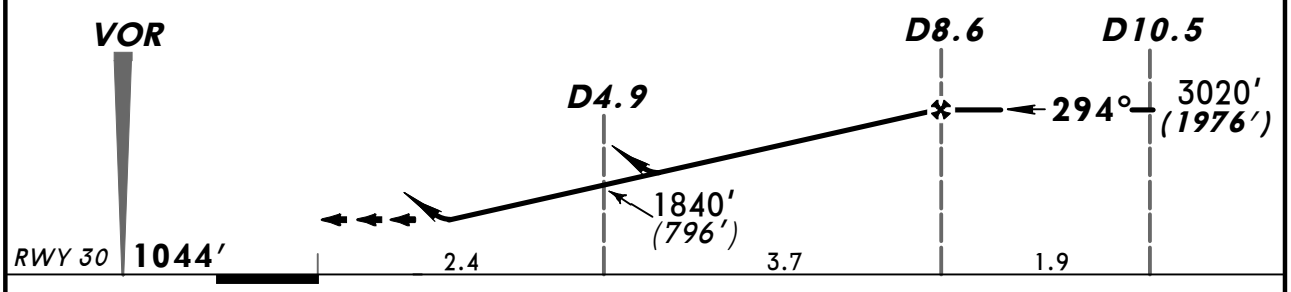
MISSED APCH: Climb on 295° to NDB, then turn RIGHT climbing to 3020′(1976′) and intercept R-091, then as directed.

MSA MNW VOR: 095° 3400′; 302° 6900′

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: FL 60 ❶ Trans alt: 4000′(2956′)



Pass D3.3 not below 1320′(276′).



Gnd speed-Kts		70	90	100	120	140	160
Descent angle	3.00°	372	478	531	637	743	849

HIALS PAPI

MD 468 on 295°

STRAIGHT-IN LANDING RWY 30

	with D8.6 MDA(H) 1560′(516′)		w/o D8.6 MDA(H) 1850′(806′)	
		ALS out		ALS out
A	RVR 720m VIS 800m	RVR 1500m VIS 1600m	RVR 720m VIS 800m	RVR 1500m VIS 1600m
B			1200m	RVR 1800m VIS 2000m
C	RVR 1500m VIS 1600m	2400m	2800m	3600m
D	RVR 1800m VIS 2000m	2800m	3200m	4000m

PANS OPS

CHANGES: DME fixes. Note.

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Chart changes since cycle 26-2013

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

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE

MINERALNYYE VODY, (MINERALNYYE VODY - URMM)

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TERMINAL CHART CHANGE NOTICES

No Chart Change Notices for Airport URMM