

List of pages in this Trip Kit

Trip Kit Index

Airport Information For UUWW

Terminal Charts For UUWW

Revision Letter For Cycle 08-2013

Change Notices

Notebook

General Information

Location: Moscow Rus
IATA Code: VKO
Lat/Long: N55° 35.9' E037° 16.4'
Elevation: 685 ft

Airport Use: Public
Magnetic Variation: 10.3°E

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

Sunrise: 0228 Z
Sunset: 1635 Z,

Runway Information

Runway: 01
Length x Width: 10039 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 667 ft
Lighting: Edge, ALS, Centerline

Runway: 06
Length x Width: 9843 ft x 197 ft
Surface Type: asphalt
TDZ-Elev: 637 ft
Lighting: Edge, ALS, Centerline

Runway: 19
Length x Width: 10039 ft x 148 ft
Surface Type: asphalt
TDZ-Elev: 634 ft
Lighting: Edge, ALS, Centerline, TDZ

Runway: 24
Length x Width: 9843 ft x 197 ft
Surface Type: asphalt
TDZ-Elev: 679 ft
Lighting: Edge, ALS, Centerline, TDZ

Communication Information

ATIS 131.85
ATIS 125.875 Non-English
Vnukovo Vippiport Tower 122.875
Vnukovo Tower 129.0 Secondary
Vnukovo Tower 124.4 Secondary
Vnukovo Tower 119.45 Secondary
Vnukovo Tower 118.3
Vnukovo Taxing 2 Ground Control 121.7
Vnukovo Taxiing 1 Ground Control 129.0 Secondary
Vnukovo Taxiing 1 Ground Control 124.4 Secondary
Vnukovo Taxiing 1 Ground Control 120.45
Vnukovo Taxiing 1 Ground Control 119.45 Secondary
Vnukovo Clearance Delivery 131.8
Vnukovo Clearance Delivery 131.125
Vnukovo Approach Control 129.0 Secondary
Vnukovo Approach Control 122.3
Moscow Approach Two Approach Control 124.4
Moscow Approach Two Approach Control 122.7
Moscow Approach Three Approach Control 128.0
Moscow Approach Six Approach Control 125.3
Moscow Approach Seven Approach Control 131.2
Moscow Approach One Approach Control 127.2
Moscow Approach One Approach Control 119.45
Moscow Approach Nine Approach Control 135.9
Moscow Approach Four Approach Control 123.4
Moscow Approach Five Approach Control 134.0
Moscow Approach Eight Approach Control 129.8
Vnukovo Radar 129.0 Secondary
Vnukovo Radar 126.0
Vnukovo Radar 124.4 Secondary
Vnukovo Radar 119.45

1. GENERAL

1.1. ATIS

ATIS 131.85
125.87 (Russian)

1.2. NOISE ABATEMENT PROCEDURES**1.2.1. GENERAL**

Noise abatement procedures shall be executed by all ACFT.

Noise abatement procedures shall not be executed at the expense of the reduction of flight safety.

1.2.2. NIGHTTIME RESTRICTIONS

Between 2300-0700LT departures and arrivals are allowed only for ACFT with a noise level not exceeding the requirements envisaged by the ICAO Annex 16, Chapter 3.

Arrivals and departures of all ACFT types are prohibited between 0330-0600LT.

1.2.3. PREFERENTIAL RWY SYSTEM

Between 2300-0700LT RWY 19 should not be used for landing in order of preference.

Between 2300-0700LT RWY 01 should not be used for take-off in order of preference.

Deviations from the given restrictions are possible due the prohibition to use RWY 06/24, extreme weather conditions and operational restrictions.

1.2.4. REVERSE THRUST

After landing between 2300-0700LT it is recommended to use reverse thrust at idle power except for flight safety reasons.

1.2.5. USE OF APU

Between 2300-0700LT the run-up of APU is prohibited. The use of APU should be avoided and/or restricted after parking onto the stands or before taxiing out of the stands equipped with the ground APU units and the devices for air conditioning.

1.3. TAXI PROCEDURES

Taxiing on TWYs 14 (between Twy C2 and closed Rwy 06/24), B1, B3, B6, B8, M3 and M4 at reduced speed, strictly along taxi guide line.

Taxiing on TWYs A7, A8, B1, B8, C9, M3 and M4 at night or when VIS is less than 2000m, with Follow-me car only; for AN-124 available by towing only.

1.4. PARKING INFORMATION

Use of Vnukovo I stand 34B by towing.

Use of stand 38 under engines power is prohibited, when start-up position 27 is occupied.

Enter Vnukovo I stand 92A by towing, leave stand under engines power.

Leave Vnukovo I stand 38 by towing, when stand 39 is occupied.

Leave Vnukovo I stand 91 to TWY M1 under engines power; to TWY B5 by towing.

Leave Vnukovo I stand 96 under engines power, when stand 74 vacant.

Vnukovo III stands 21 and 22 to be entered via vacant stands 23 thru 25 and vice versa.

Enter Vnukovo III stand 27 under engines power, when stand 18 vacant.

Enter Vnukovo III stands 1 thru 17, 28, 33, 34, 77 and 78 by towing.

Leave Vnukovo III stands under engines power as follows:

- Stand 6, when stand 31 vacant
- Stands 7 and 8, when stand 23 vacant
- Stands 9 and 10, when stand 22 vacant
- Stand 17, when stand 28 vacant
- Stands 18 and 28, when stand 27 vacant
- Stand 27, when stand 18 vacant

1. GENERAL

Leave Vnukovo III stands 51 thru 53 and 62 thru 78 by towing.

Leave Vnukovo III stands 21 thru 26 by towing, followed by taxiing with engines power 0.4 of the nominal.

Leave Vnukovo III stands by towing as follows:

- Stand 6, when stand 31 occupied
- Stands 7 and 8, when stand 23 occupied
- Stands 9 and 10, when stand 22 occupied
- Stand 17, when stand 28 occupied
- Stand 18, when stand 27 occupied
- Stand 27, when stand 18 occupied.

1.5. OTHER INFORMATION

Birds in vicinity of APT.

2. ARRIVAL

2.1. NOISE ABATEMENT PROCEDURES

2.1.1. APPROACH PHASE

Restrictions

Great rates of descent should be avoided (if possible) directly before the final approach.

The change of flight configuration and speed of ACFT, connected with noise abatement procedures, shall be carried out according to the requirements of the Airplane Flight Manual.

During instrument as well as visual approach, it is prohibited to fly below the ILS GS angle.

The noise abatement procedures shall not envisage the excess of the indicated rate of descent established by the Airplane Flight Manual of the given ACFT type.

2.2. CAT II OPERATIONS

RWY 19 approved for CAT II operations, special aircrew and ACFT certification required.

2.3. RWY OPERATION

2.3.1. MINIMUM RWY OCCUPANCY TIME

The pilot must vacate the RWY as fast as possible.

After obtaining line-up clearance the flight crew must execute taxiing to the assigned position on the RWY without delay.

Cockpit checks must be completed, if possible, before occupation of line-up position and the checks which to be done on the RWY shall be executed as soon as possible.

The flight crew shall provide the beginning of take-off run immediately after obtaining clearance for its execution.

If unable to execute the above mentioned requirements, the flight crews must inform Tower about it.

2.4. SPEED RESTRICTIONS

MAX 280 KT +/- 10 KT or Mach 0.8 whichever is less from cruising FL to FL250;

MAX 270 KT +/- 10 KT below FL250 to FL100;

MAX 250 KT +/- 10 KT below FL100 to TL.

- below transition level - IAS shall be as in accordance with the Aeroplane Flight Manual without exceeding IAS indicated in limitations section. The above mentioned IAS shall be maintained by the flight crew unless otherwise instructed by ATS unit or by the established approach procedure.

If unable to maintain the above mentioned IAS, the flight crew shall report it to ATS unit.

3. DEPARTURE

3.1. START-UP, TOWING & TAXI PROCEDURES

3.1.1. START-UP

General:

Engine start-up, towing and taxiing of ACFT to RWY holding position shall be carried out on the flight crew's request and by clearance of Taxiing.

When requesting for start-up clearance from Taxiing, the flight crews of departing ACFT shall advise call sign and stand number.

When towing of ACFT to engine start-up position is required, the flight crew shall advise stand number and request for towing clearance from Taxiing.

Engine start-up shall be carried out at start-up points by the instruction of the technical specialist.

Flight crew can carry out engine start-up during towing of ACFT if this procedure is envisaged by Airplane Flight Manual and coordinated with the technical personnel of the tow-team.

Procedure:

A pilot-in-command shall request the ATC clearance 5 minutes prior to engines start-up or ACFT towing to the start-up point by passing the following information to Delivery:

- flight number;
- the destination aerodrome;
- the ACFT stand number;
- ATIS information index.

Delivery can clarify the ACFT type, registration number, apron, flight level and other necessary information.

When the ACFT is completely ready for departure, the pilot-in-command must report to Delivery:

- "COMPLETELY READY FOR DEPARTURE",

obtain the ATC clearance and the instruction to change over to communication with Taxiing

.

Note:

"COMPLETELY READY FOR DEPARTURE"

means that all formalities are observed, the preparation works are completed, all passengers are on board, the entrance and cargo doors of the aircraft are closed, the stairs are taken away (the aerobridge is disconnected and is in a retracted position), a tow bar is connected (when towing is required), the procedure of de-icing treatment of aircraft with de-icing fluid is completed, ground personnel are ready for towing (taxiing) and have established radio contact with the pilot-in-command. A period of 10 min established additionally to departure time during reconstruction work for towing and engine start-up from Vnukovo I apron.

3.1.2. TAXIING

Up to 15 min are established for taxiing and provision of air traffic safety during departure.

3. DEPARTURE

3.2. NOISE ABATEMENT PROCEDURES

Flight crews shall strictly adhere to the established departure procedure to avoid overflying the settlements.

TAKE-OFF AND CLIMBING PHASE

Restrictions

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

A change of flight course direction after take-off is permitted only after reaching 1080'(395').

Turns initiated between 1080 '(395') and 1670 '(985') shall be executed with a bank angle of 15°.

Turns initiated between 1670 '(985') and 3640 '(2955') shall be executed with a bank angle of 20°.

Turns initiated at or above 3640 '(2955') shall be executed with 25° bank or with angular speed of turn of 3°/sec.

Noise Abatement Procedures NADP1 and NADP2.

Two methods of noise abatement during climbing are used by the flight crews:

NADP1 for RWYs 01 & 06 and NADP2 for RWYs 19 & 24 (ICAO Doc 8168, Volume 1).

3.3. OTHER INFORMATION

3.3.1. TAKE-OFF FROM INTERSECTION

During briefing, a pilot must report chosen line-up position to Tower.

If pilot-in-command is ready to carry out take-off without stop on RWY, he has to report his decision to Tower at first contact at RWY holding position. Whereas the pilot shall obtain take-off clearance simultaneously with line-up clearance.

TRANSITION DESIGNATION	REFER TO CHART
BOGDANOVO 1W, 2W, 3W, NAMIN 1W, 2W, 3W, 4W	10-2B
LARIONOVO 1W, 2W	10-2C
OKTYABRSKY 1W, 2W, SUKHOTINO 1W	10-2D
GAGARIN 1W, 2W, 3W, 4W, 5W, SODRU 1W, SUGIR 1W	10-2E

RNAV STAR DESIGNATION	REFER TO CHART
IVANOVSKOYE 01PA, 01RA	10-2F
IVANOVSKOYE 19R	10-2G
GISIN 01R, UMBEG 01R	10-2H
GISIN 19P	10-2J
BITSA 01PA, 01RA	10-2K
BITSA 01R	10-2L
BITSA 19P, 19R	10-2M
KLIMOVSK 01PA, 01RA	10-2N
KLIMOVSK 19P, 19R	10-2P
SKURYGINO 01PA, 01R, 01RA	10-2Q
SKURYGINO 19P, 19R	10-2S
GAGARIN 01RA, KULEG 01RA	10-2T
GAGARIN 19R, KULEG 19R	10-2U

FOR STAR DESIGNATION REFER TO PAGE 10-2A

STAR DESIGNATION	REFER TO CHART
BITSA 01A, KLIMOVSK 01A, SKURYGINO 01A, UMBEG 01B	10-2W
BITSA 01B, KLIMOVSK 01B, SKURYGINO 01B, UMBEG 01A	10-2X
BITSA 19B	10-2X1
BITSA 19K	10-2X2
GISIN 19A, IVANOVSKOYE 19A	10-2X3
GISIN 19B, IVANOVSKOYE 19B	10-2X4
KLIMOVSK 19A, SKURYGINO 19A	10-2X5
KLIMOVSK 19K, SKURYGINO 19K, UMBEG 19K	10-2X6

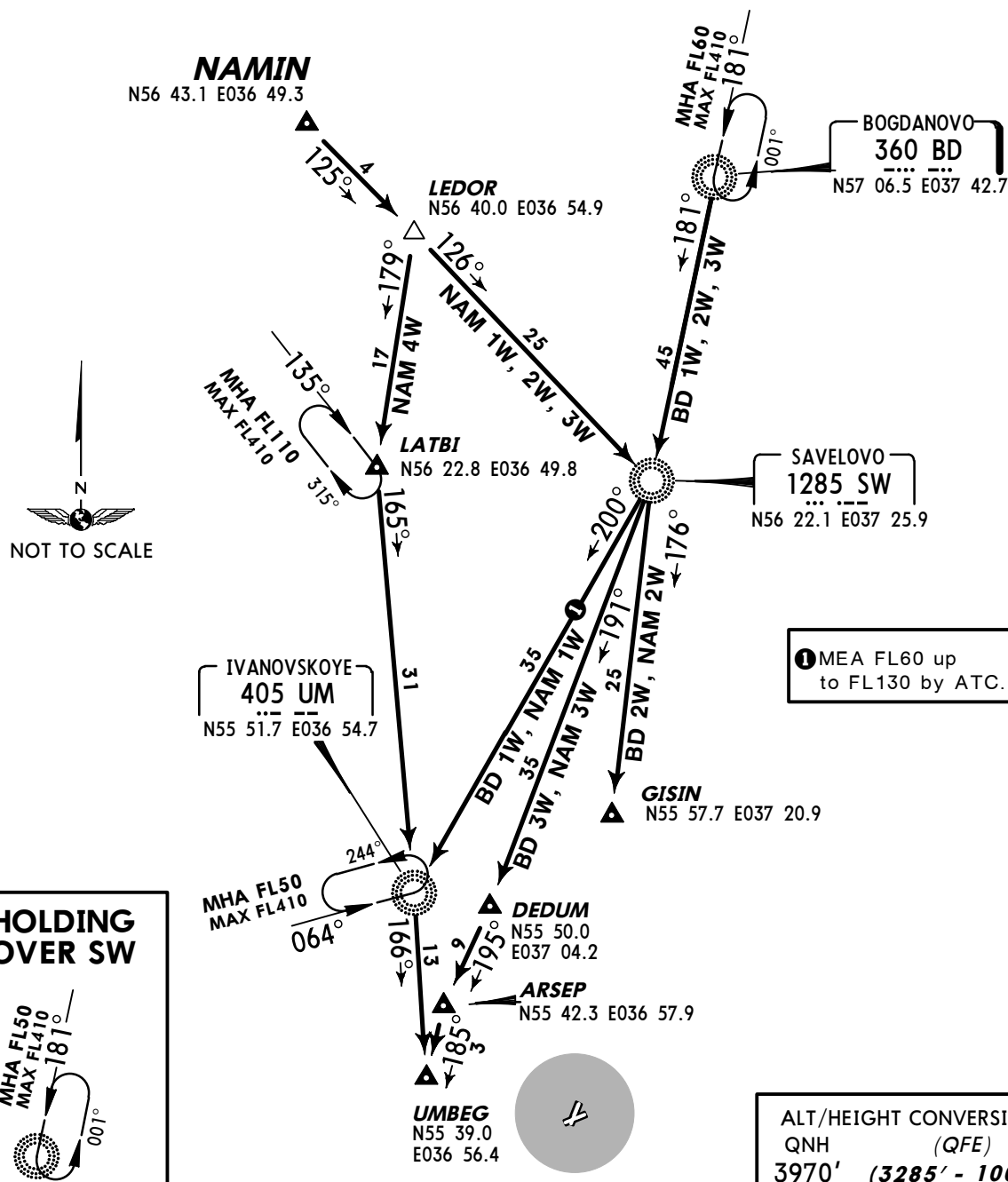
ATIS
131.85 (Russian 125.87)
Apt Elev
685'
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

BOGDANOVO 1W (BD 1W), BOGDANOVO 3W (BD 3W)
NAMIN 1W (NAM 1W), NAMIN 3W (NAM 3W)
NAMIN 4W (NAM 4W)

TO UMBEG

BOGDANOVO 2W (BD 2W), NAMIN 2W (NAM 2W)
TO GISIN

TRANSITIONS



TRANSITION

ROUTING

BD 1W	To SW, then to UM, then to UMBEG.
BD 2W	To SW, then to GISIN.
BD 3W	To SW, then to DEDUM, then to ARSEP, then to UMBEG.
NAM 1W	To LEDOR, then to SW, then to UM, then to UMBEG.
NAM 2W	To LEDOR, then to SW, then to GISIN.
NAM 3W	To LEDOR, then to SW, then to DEDUM, then to ARSEP, then to UMBEG.
NAM 4W	To LEDOR, then to LATBI, then to UM, then to UMBEG.

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

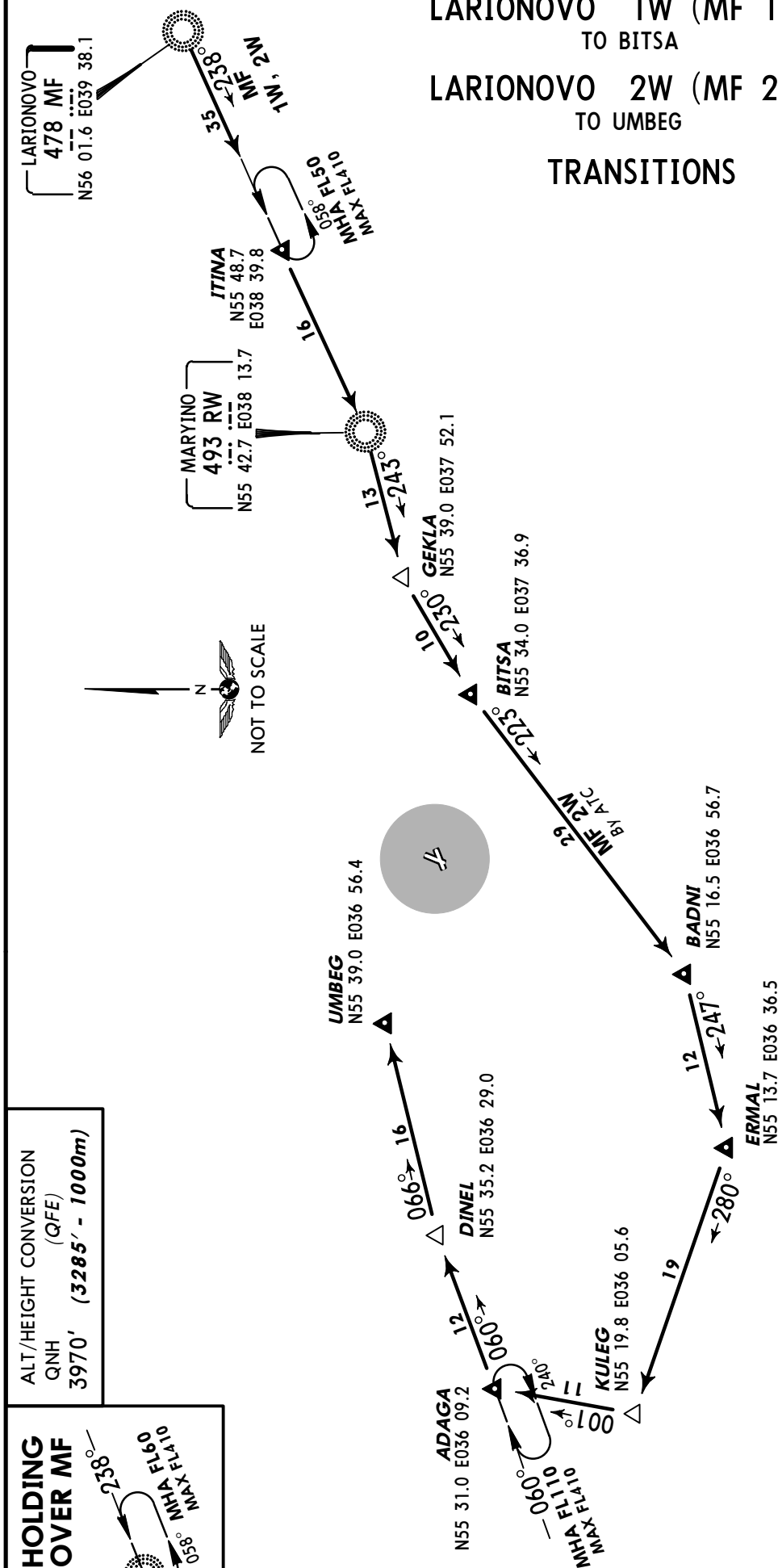
LARIONOVO 1W (MF 1W)

TO BITSA

LARIONOVO 2W (MF 2W)

TO UMBEG

TRANSITIONS



ATIS
131.85 (Russian 125.87)

Apt Elev
685'

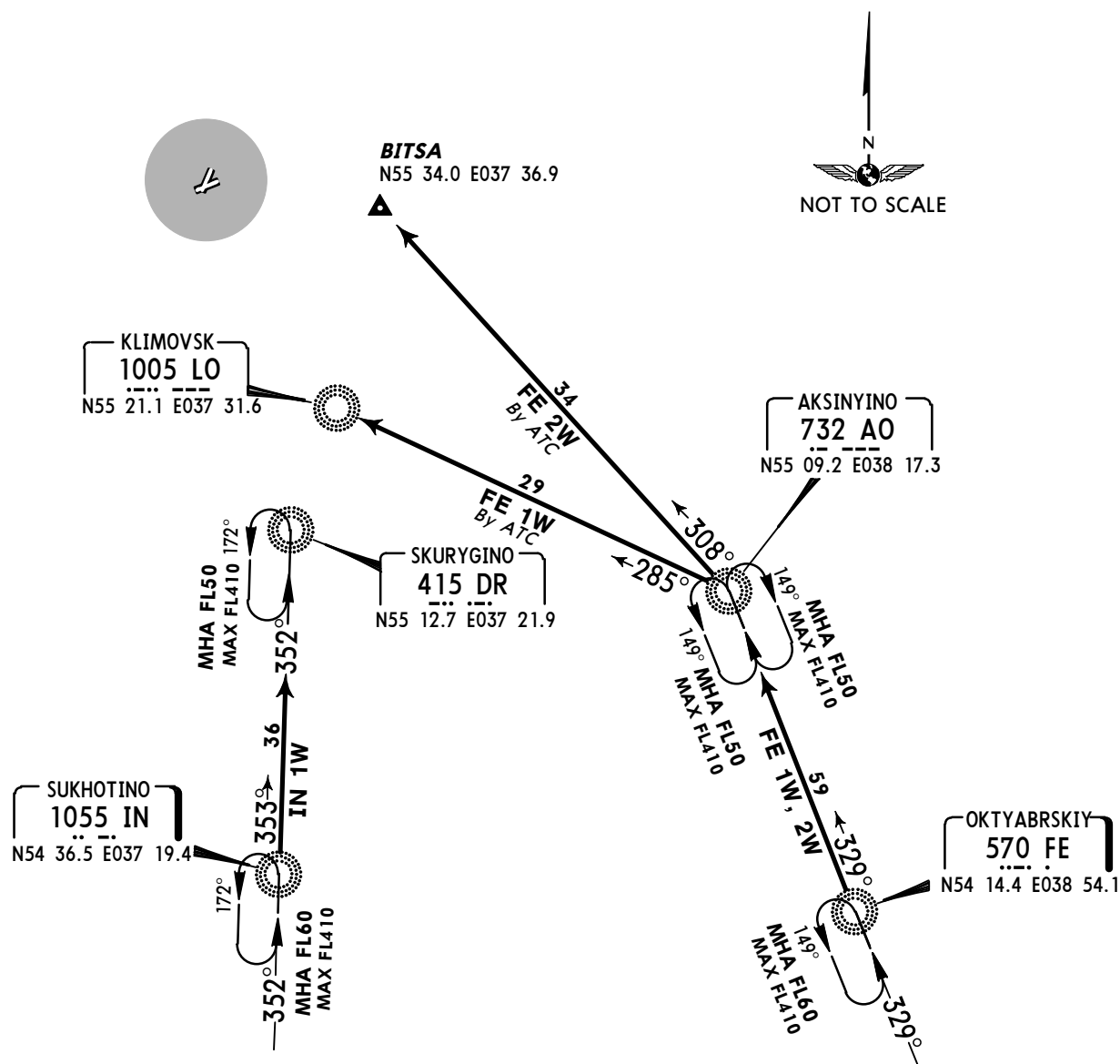
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

OKTYABRSKIY 1W (FE 1W)
TO LO

OKTYABRSKIY 2W (FE 2W)
TO BITSA

SUKHOTINO 1W (IN 1W)
TO DR

TRANSITIONS



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3285' - 1000m)

TRANSITION	ROUTING
FE 1W	To AO, then to LO.
FE 2W	To AO, then to BITSA.
IN 1W	To DR.

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

GAGARIN 1W (FK 1W) TO UM

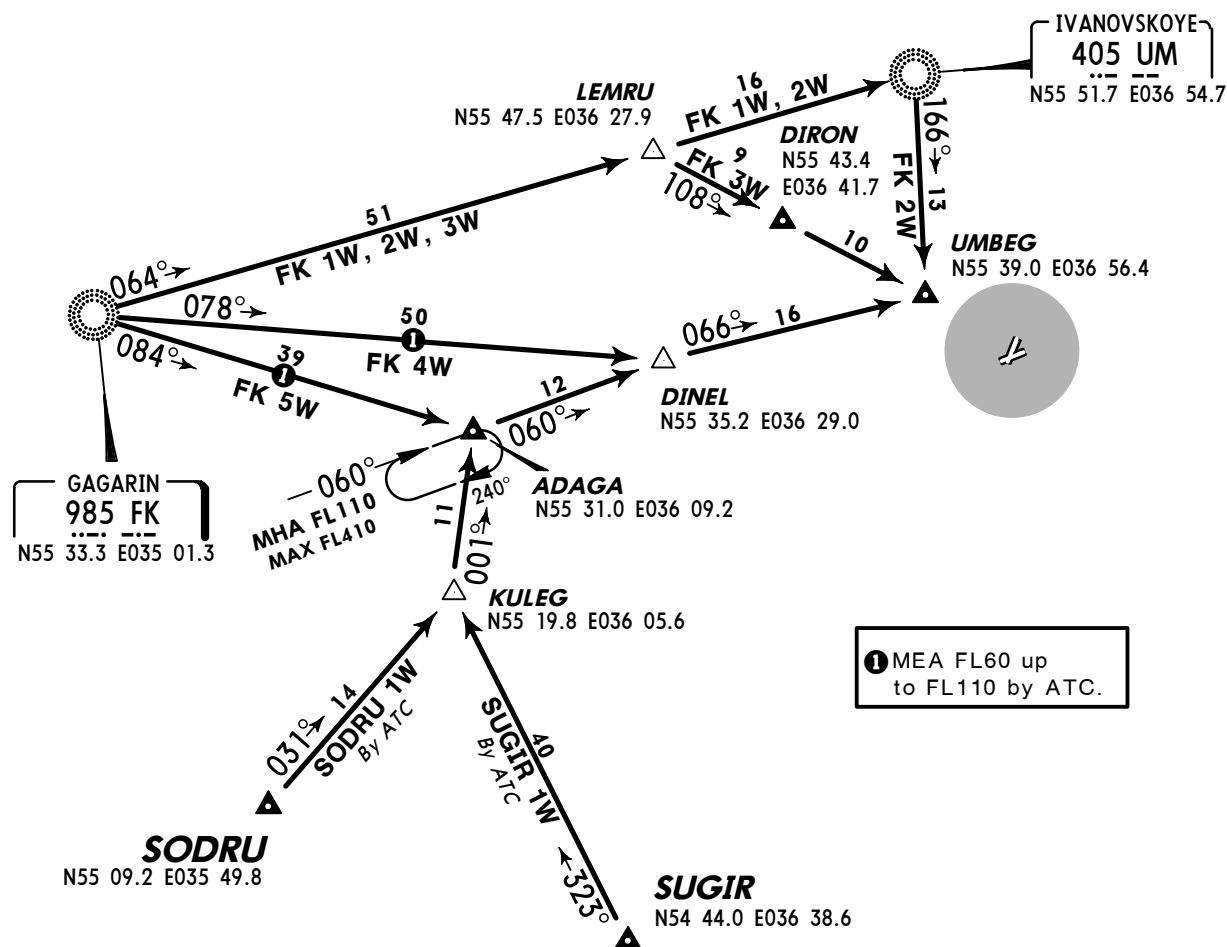
GAGARIN 2W (FK 2W) , GAGARIN 3W (FK 3W)

GAGARIN 4W (FK 4W) , GAGARIN 5W (FK 5W)

SODRU 1W [SOD1W], SUGIR 1W [SUG1W]

TO UMBEG

TRANSITIONS



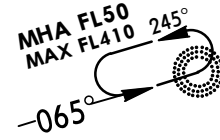
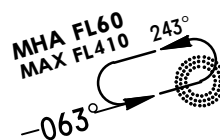
① MEA FL60 up to FL110 by ATC.

ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3285' - 1000m)



NOT TO SCALE

HOLDINGS OVER FK UM



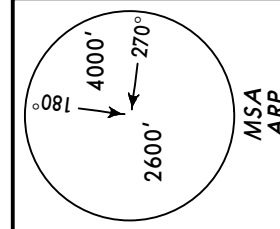
TRANSITION	ROUTING
FK 1W	To LEMRU, then to UM.
FK 2W	To LEMRU, then to UM, then to UMBEG.
FK 3W	To LEMRU, then to DIRON, then to UMBEG.
FK 4W	To DINEL, then to UMBEG.
FK 5W	To ADAGA, then to DINEL, then to UMBEG.
SODRU 1W	To KULEG, then to ADAGA, then to DINEL, then to UMBEG.
SUGIR 1W	

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

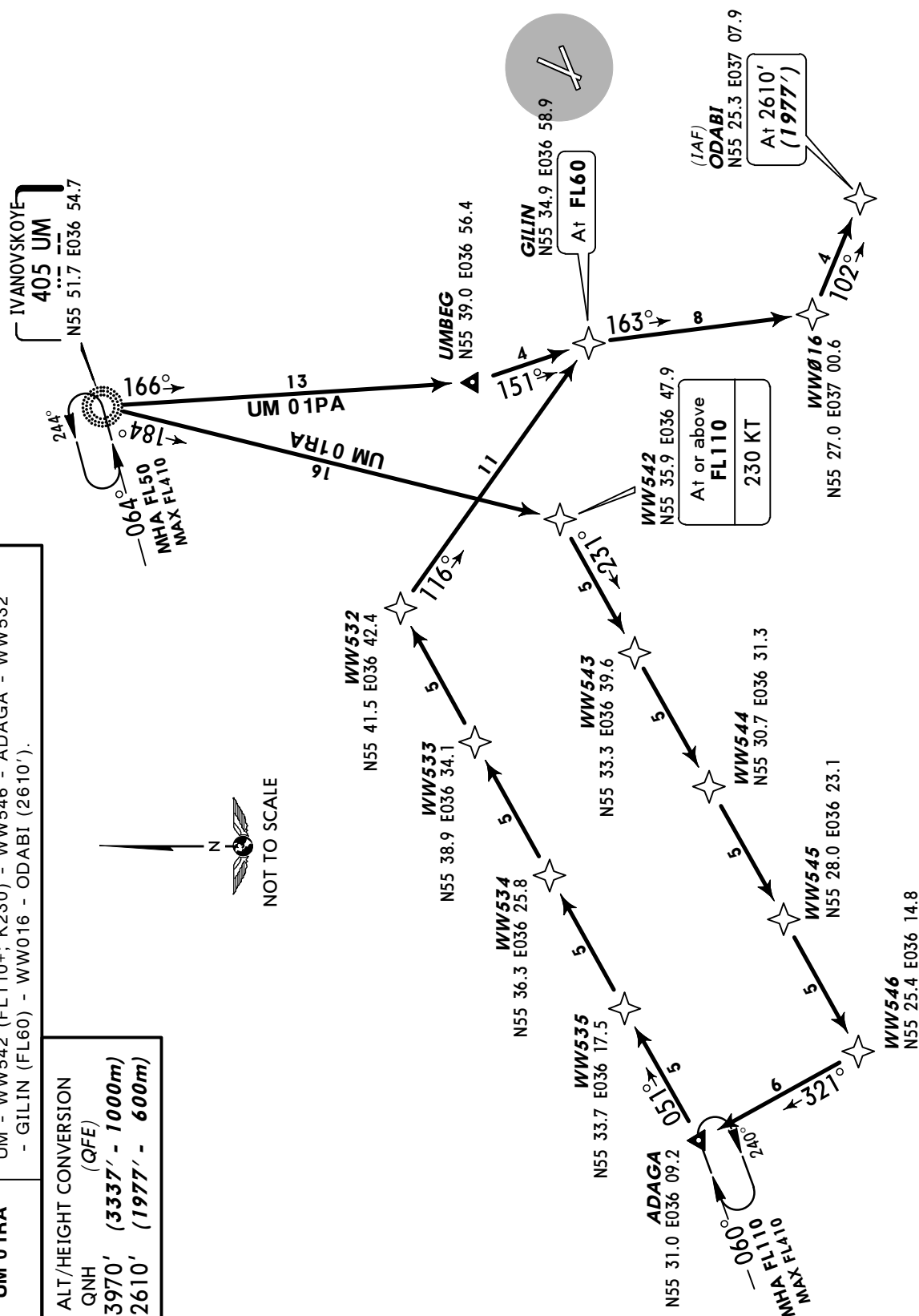
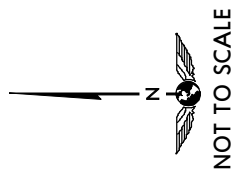
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

IVANOVSKOYE 01PA (UM 01PA)
IVANOVSKOYE 01RA (UM 01RA)
RWY 01 RNAV ARRIVALS



STAR	ROUTING
UM 01PA	UM - UMBEG - GILIN (FL60) - WW016 - ODABI (2610').
UM 01RA	UM - WW542 (FL110+; K230) - WW546 - ADAGA - WW532 - GILIN (FL60) - WW016 - ODABI (2610').

ALT/HEIGHT CONVERSION
(QFE)
3970' (3337' - 1000m)
2610' (1977' - 600m)

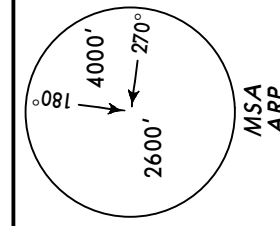


ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

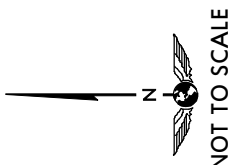
IVANOVSKOYE 19R (UM 19R) RWY 19 RNAV ARRIVAL



(IAF)
OPALIKHA
565 KS
N55 49.5 E037 16.3
At 3590'
(2956')

IVANOVSKOYE
405 UM
N55 51.7 E036 54.7

24°
184°
064°
MHA FL50
MAX FL10



11
063°
WW531
N55 46.3 E036 57.5

WW542
N55 35.9 E036 47.9
At or above
FL110
230 KT

WW532
N55 41.5 E036 42.4
At FL100

WW533
N55 38.9 E036 34.1

WW534
N55 36.3 E036 25.8

WW535
N55 33.7 E036 17.5

ADAGA
N55 31.0 E036 09.2

WW543
N55 33.3 E036 39.6

WW544
N55 30.7 E036 31.3

WW545
N55 28.0 E036 23.1

WW546
N55 25.4 E036 14.8

ROUTING

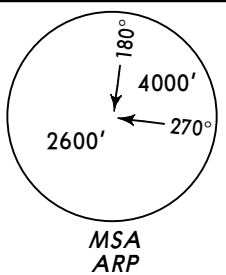
UM - WW542 (FL110+; K230) - WW546 - ADAGA - WW532
(FL100) - WW531 - KS (3590').

ALT/HEIGHT CONVERSION
(QFE)
QNH
3970' (3336' - 1000m)
3590' (2956' - 900m)

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

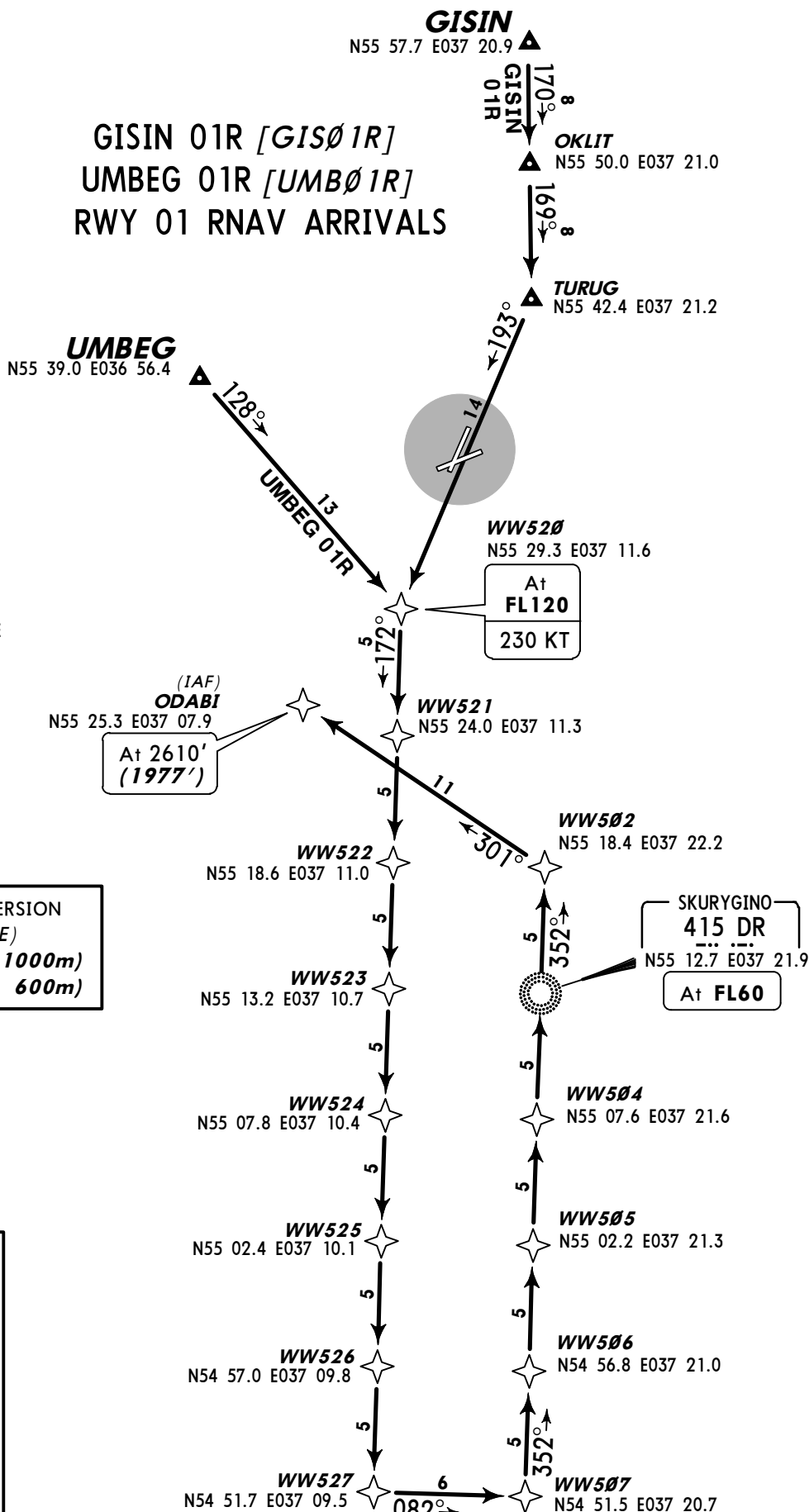


GISIN 01R [GISØ1R]
UMBEG 01R [UMBØ1R]
RWY 01 RNAV ARRIVALS



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3337' - 1000m)
2610' (1977' - 600m)

HOLDING
OVER DR



STAR

ROUTING

GISIN 01R GISIN - OKLIT - TURUG - WW520 (FL120; K230) - WW527 - WW507 - DR (FL60) - WW502 - ODABI (2610').

UMBEG 01R UMBEG - WW520 (FL120; K230) - WW527 - WW507 - DR (FL60) - WW502 - ODABI (2610').

UUWW/VKO
VNUKOVO

JEPPESEN
11 JAN 13 10-2J

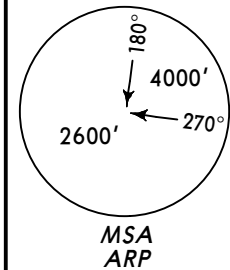
MOSCOW, RUSSIA
RNAV STAR

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

GISIN 19P [GIS19P]
RWY 19 RNAV ARRIVAL



GISIN
N55 57.7 E037 20.9 ▲

170°

8

(IAF)
OKLIT
N55 50.0 E037 21.0

At 3590'
(2956')



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)

ROUTING

GISIN - OKLIT (3590').

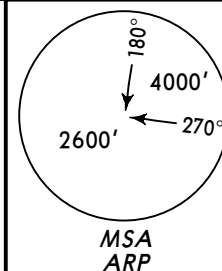
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ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

BITSA 01R [BITØ1R]
RWY 01 RNAV ARRIVAL



WW520
N55 29.3 E037 11.6

At
FL120
230 KT

BITSA
N55 34.0
E037 36.9

(IAF)
ODABI
N55 25.3 E037 07.9

At 2610'
(1977')

WW521
N55 24.0 E037 11.3

WW502
N55 18.4 E037 22.2

ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3337' - 1000m)
2610' (1977' - 600m)

WW522
N55 18.6 E037 11.0

WW523
N55 13.2 E037 10.7

WW524
N55 07.8 E037 10.4

WW525
N55 02.4 E037 10.1

WW526
N54 57.0 E037 09.8

WW527
N54 51.7 E037 09.5

SKURYGINO
415 DR
N55 12.7 E037 21.9
At FL60

WW504
N55 07.6 E037 21.6

WW505
N55 02.2 E037 21.3

WW506
N54 56.8 E037 21.0

WW507
N54 51.5 E037 20.7

HOLDING
OVER DR



ROUTING

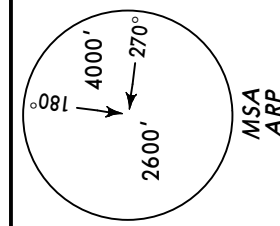
BITSA - WW520 (FL120; K230) - WW527 - WW507 - DR (FL60) - WW502 - ODABI (2610').

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

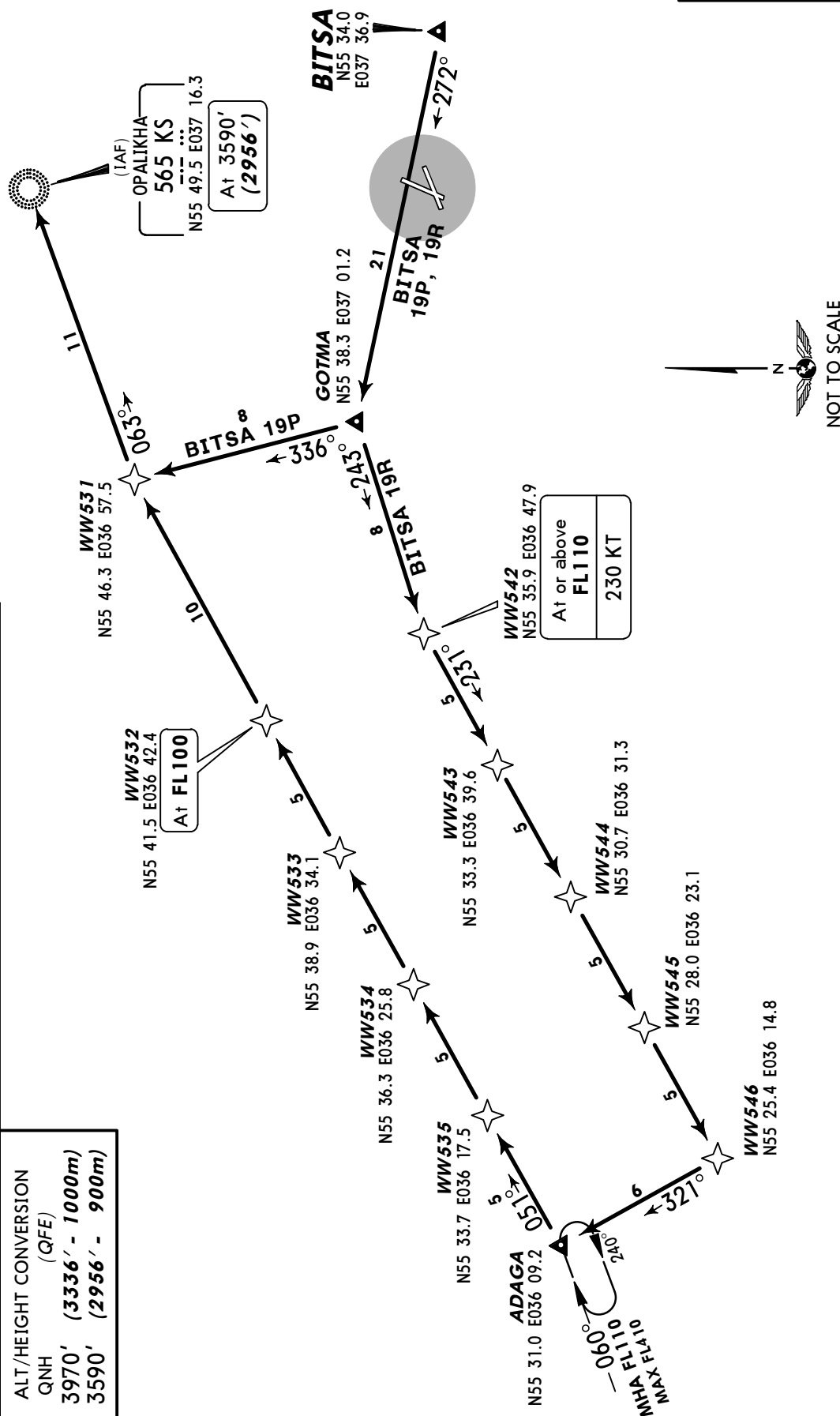
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

BITSA 19P [BIT19P]
BITSA 19R [BIT19R]
RWY 19 RNAV ARRIVALS



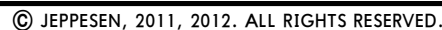
STAR	ROUTING
BITSA 19P	BITSA - GOTMA - WW531 - KS (3590').
BITSA 19R	BITSA - GOTMA - WW542 (FL110+; K230) - WW546 - ADAGA - WW532 (FL100) - WW531- KS (3590').

ALT/HEIGHT CONVERSION
(QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)



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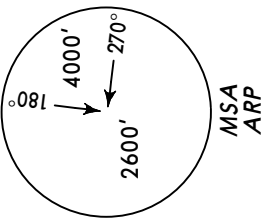
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')



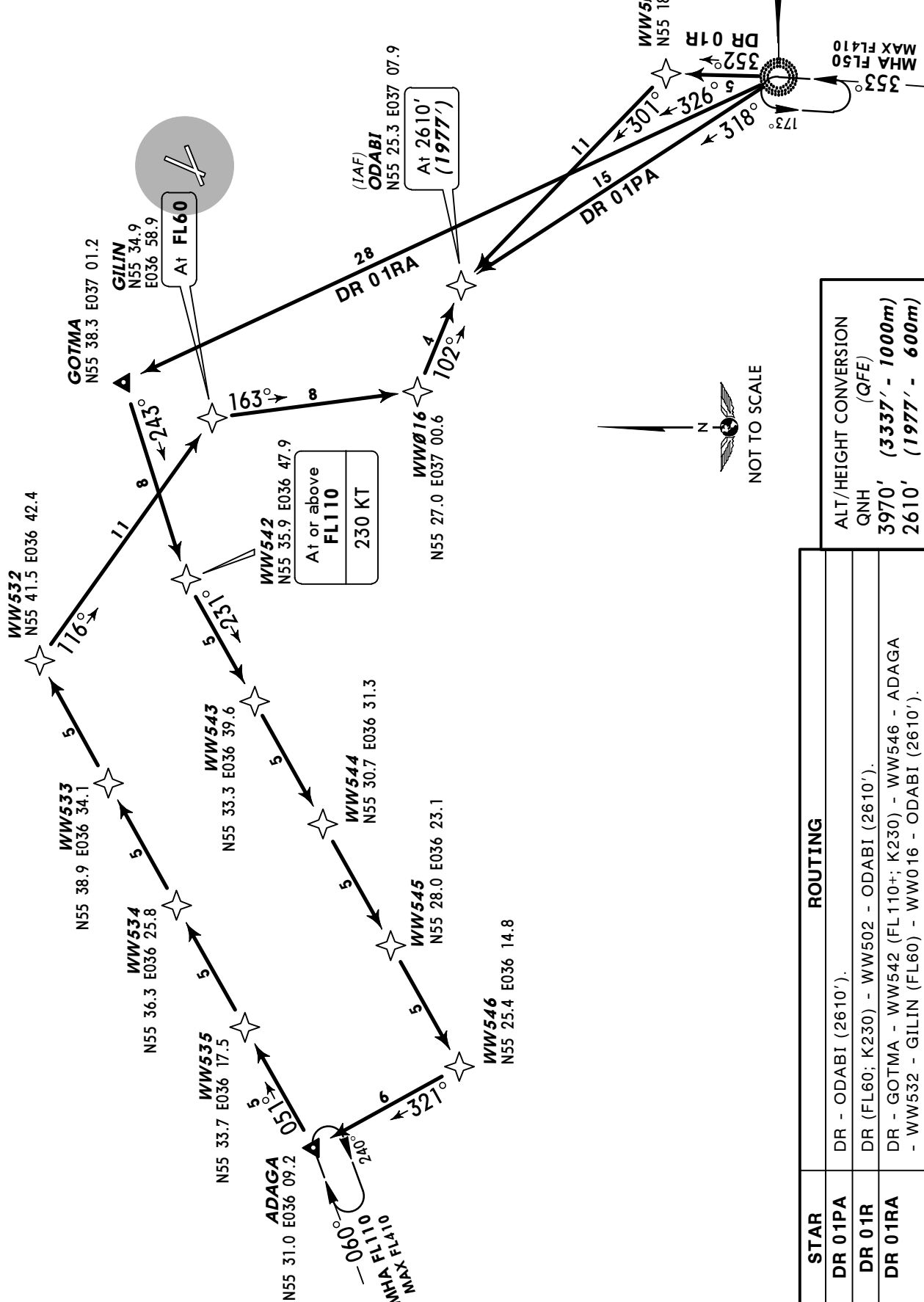
ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')



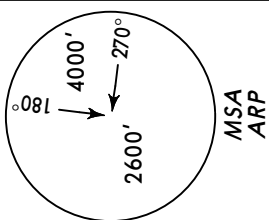
SKURYGINO 01PA (DR 01PA)
SKURYGINO 01R (DR 01R)
SKURYGINO 01RA (DR 01RA)
RWY 01 RNAV ARRIVALS



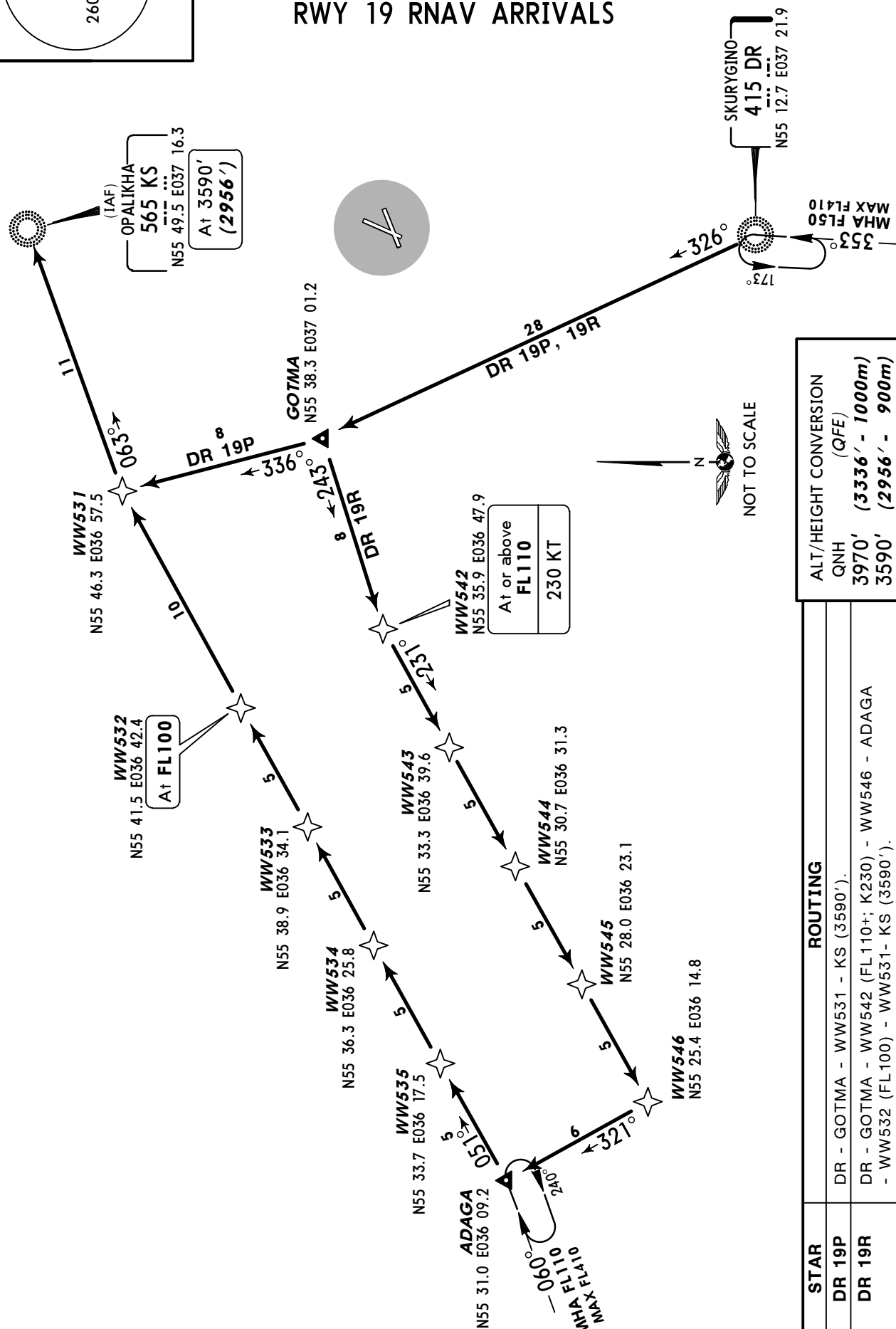
ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')



SKURYGINO 19P (DR 19P) SKURYGINO 19R (DR 19R) RWY 19 RNAV ARRIVALS

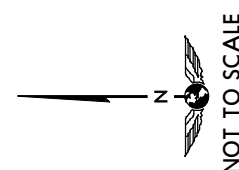
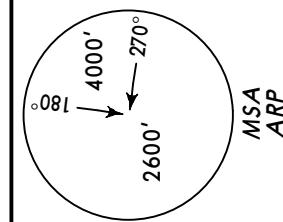


ATIS
131.85 (Russian 125.87)

Apt Elev
685'

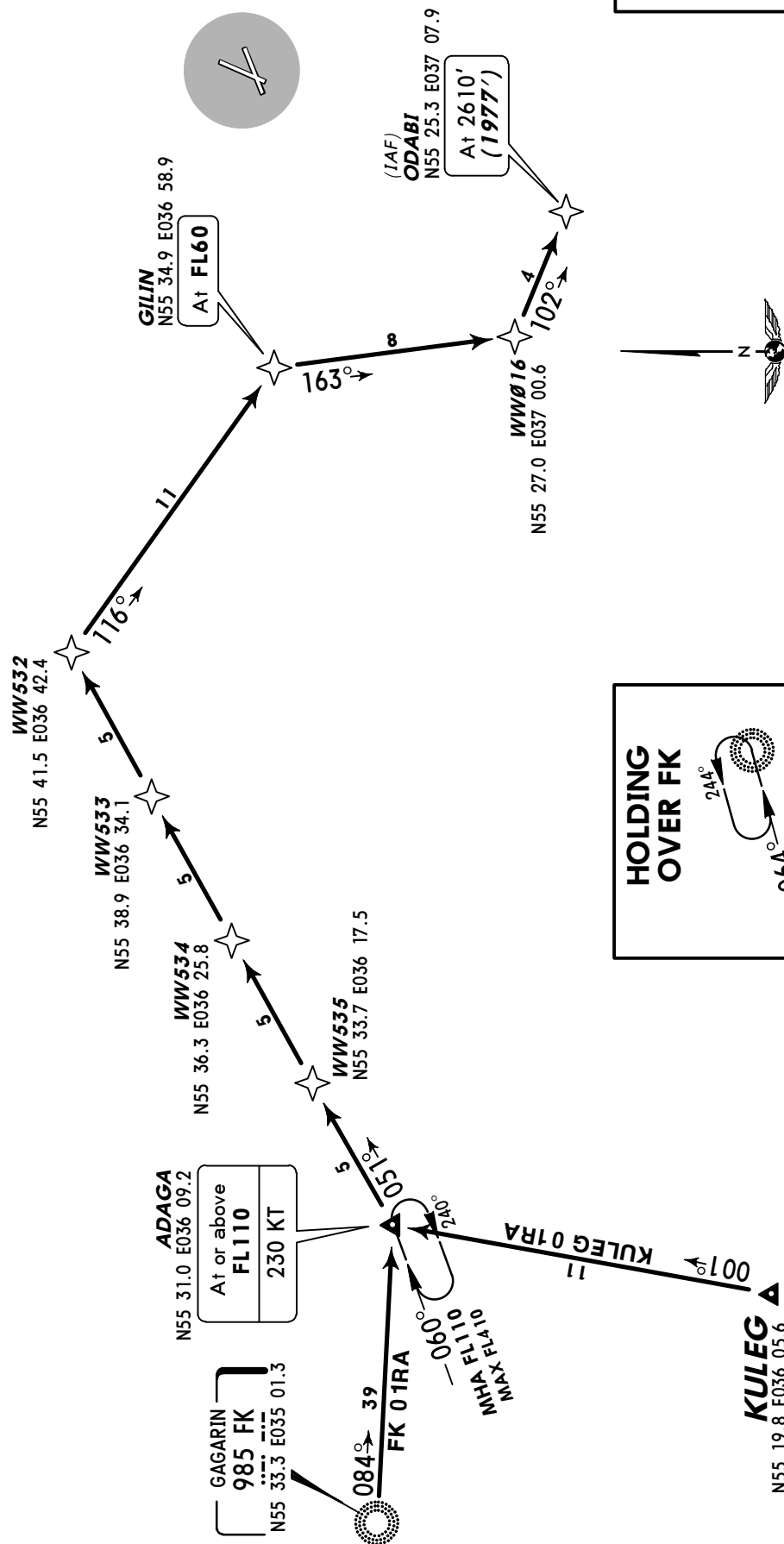
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

GAGARIN 01RA (FK 01RA)
KULEG 01RA [KUØ1RA]
RWY 01 RNAV ARRIVALS



ALT/HEIGHT CONVERSION QNH (QFE)	
3970'	(3337' - 1000m)
2610'	(1977' - 600m)

ROUTING	
STAR	FK - ADAGA (FL110+; K230) - WW532 - GILIN (FL60) - WW016 - ODABI (2610').
KULEG 01RA	KULEG - ADAGA (FL110+; K230) - WW532 - GILIN (FL60) - WW016 - ODABI (2610').

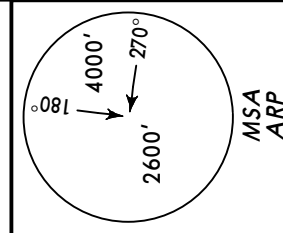


ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

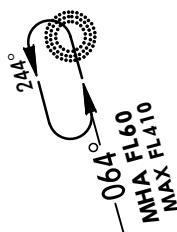
GAGARIN 19R (FK 19R)
KULEG 19R [KUL19R]
RWY 19 RNAV ARRIVALS



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)

ROUTING	
STAR	
FK 19R	FK - ADAGA (FL110+; K230) - WW532 (FL100) - WW531 - KS (3590').
KULEG 19R	KULEG - ADAGA (FL110+; K230) - WW532 (FL100) - WW531 - KS (3590').

HOLDING
OVER FK



OPALIKHA
565 KS
N55 49.5 E037 16.3
At 3590'
(2956')

WW531
N55 46.3 E036 57.5

WW532
N55 41.5 E036 42.4
At FL100

WW533
N55 38.9 E036 34.1

WW534
N55 36.3 E036 25.8

WW535
N55 33.7 E036 17.5

ADAGA
N55 31.0 E036 09.2

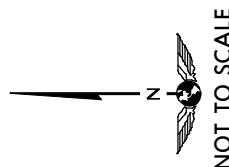
At or above
FL110
230 KT

GAGARIN
985 FK
N55 33.3 E035 01.3

084 39
FK 19R
N55 33.3 E035 01.3

060
N55 33.3 E036 05.6

KULEG 19R
N55 19.8 E036 05.6

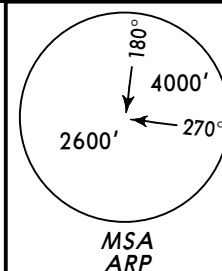


ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

BITSA 01A [BITØ1A], KLIMOVSK 01A (LO 01A)
SKURYGINO 01A (DR 01A), UMBEG 01B[UMBØ1B]
RWY 01 ARRIVALS



UMBEG

N55 39.0 E036 56.4

122°
UMBEG 01B
5

ILS DME
D (T) (111.7) IWM
N55 35.4 E037 15.5

949 OE

N55 34.7 E037 15.1

BITSA

N55 34.0 E037 36.9
(113.3 DMD R-307/D14.7)

N55 36.0 E037 02.5

At FL50

N55 28.3 E037 17.7

At or above
FL50

(IAF)
ODABI
D10.8 IWM
N55 25.3 E037 07.9

At 2610'
(1977')

N55 23.0 E037 16.5

At 3590'
(2957')

N55 22.6 E037 09.9

At 2610'
(1977')

N55 22.3 E037 15.7

At 3590'
(2957')

N55 21.7 E037 12.8

At 2610'
(1977')

11
LO 01A

264°

KLIMOVSK
1005 LO

N55 21.1 E037 31.6
(113.3 DMD R-251/D13.3)



12
DR 01A

MHA FL50
MAX FL410

172°

352°

SKURYGINO
415 DR

N55 12.7 E037 21.9

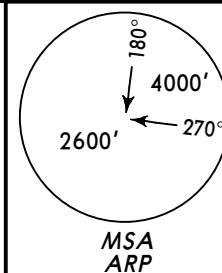
ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3337' - 1000m)
3590' (2957' - 900m)
2610' (1977' - 600m)

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

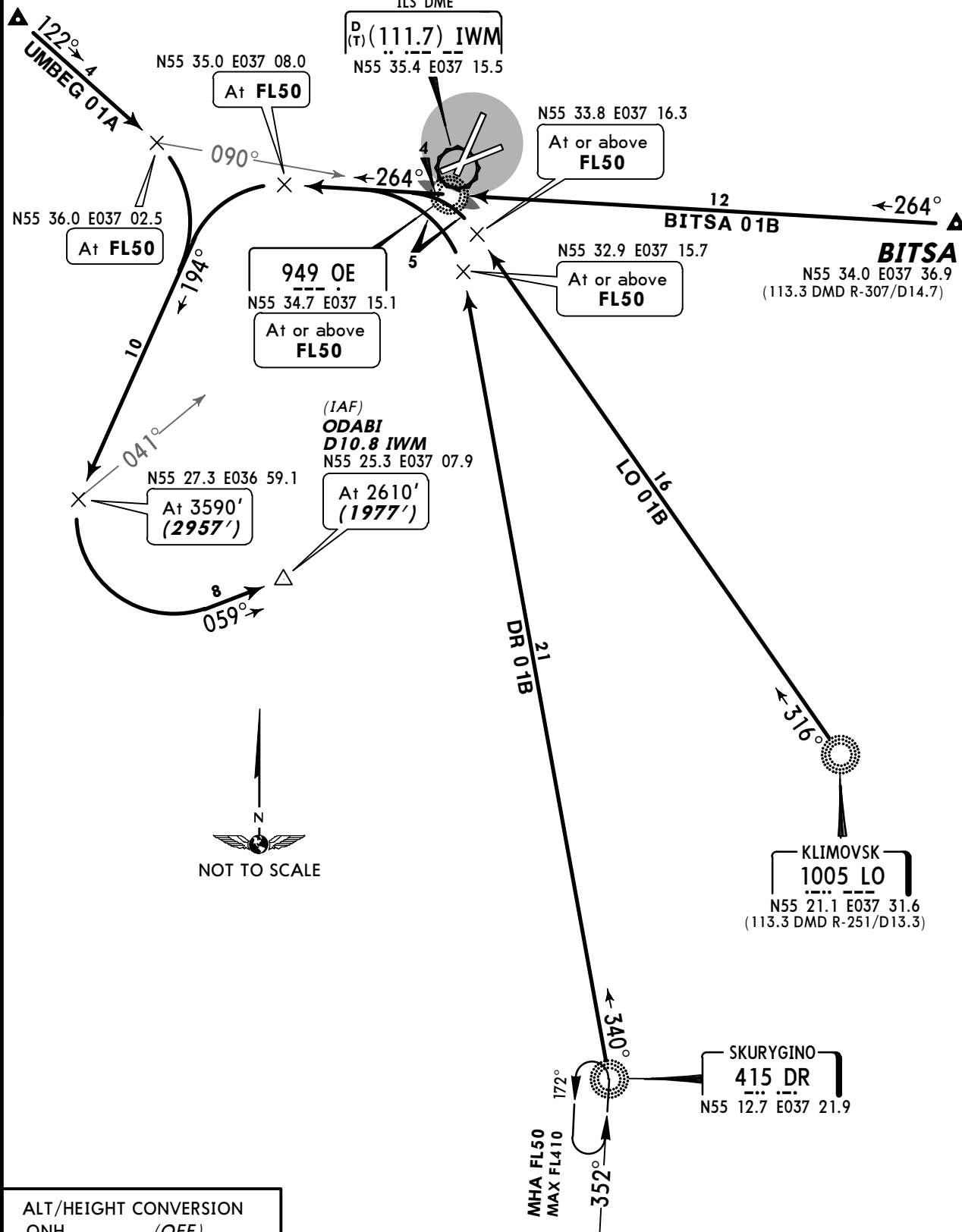
Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3337')

BITSA 01B [BITØ1B] , KLIMOVSK 01B (LO 01B)
SKURYGINO 01B (DR 01B), UMBEG 01A[UMBØ1A]
RWY 01 ARRIVALS



UMBEG

N55 39.0 E036 56.4



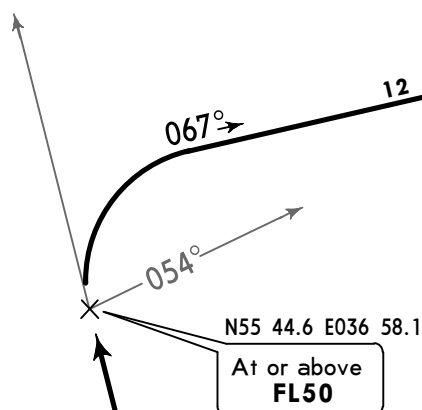
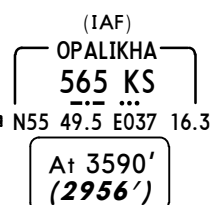
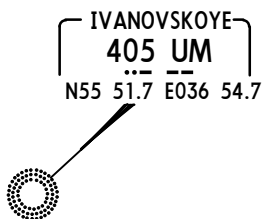
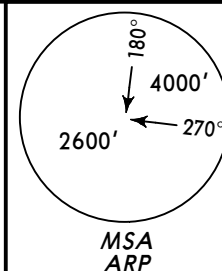
ALT/HEIGHT CONVERSION	
QNH	(QFE)
3970'	(3337' - 1000m)
3590'	(2957' - 900m)
2610'	(1977' - 600m)

ATIS
131.85 (Russian 125.87)

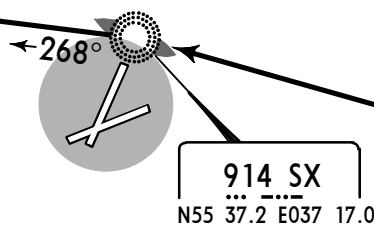
Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

BITSA 19B [BIT19B] RWY 19 ARRIVAL

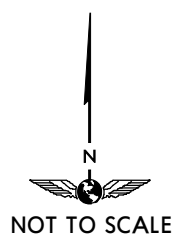


GOTMA
N55 38.3 E037 01.2



BITSA
N55 34.0 E037 36.9
(113.3 DMD R-307/D14.7)

ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)



UUWW/VKO
VNUKOVO

JEPPESEN
5 OCT 12 10-2X2 Eff 18 Oct

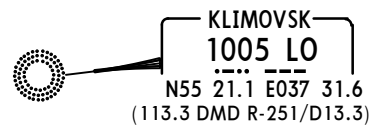
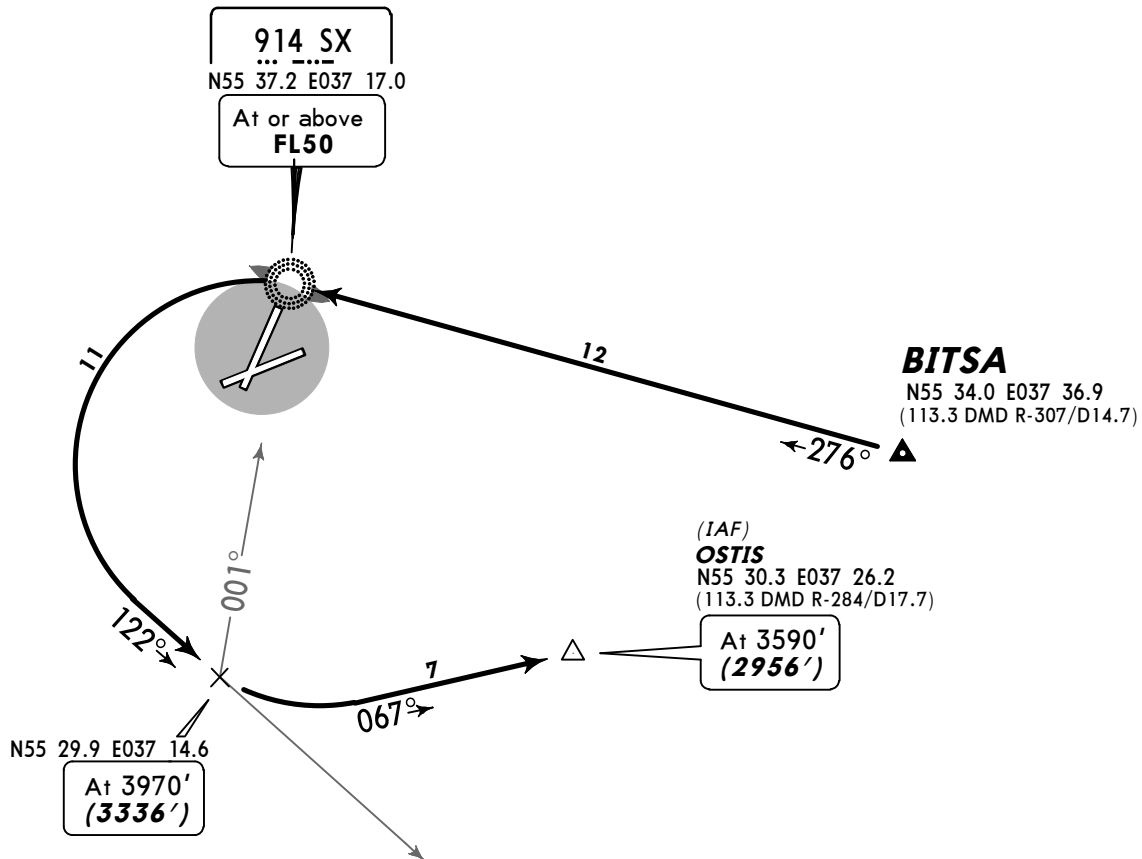
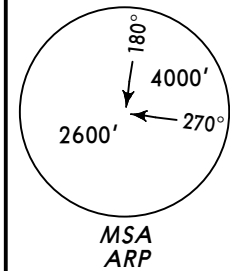
MOSCOW, RUSSIA
STAR

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

BITSA 19K [BIT19K]
RWY 19 ARRIVAL



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)

UUWW/VKO
VNUKOVO

JEPPESEN
5 OCT 12 10-2X3 Eff 18 Oct

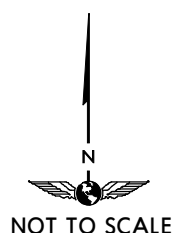
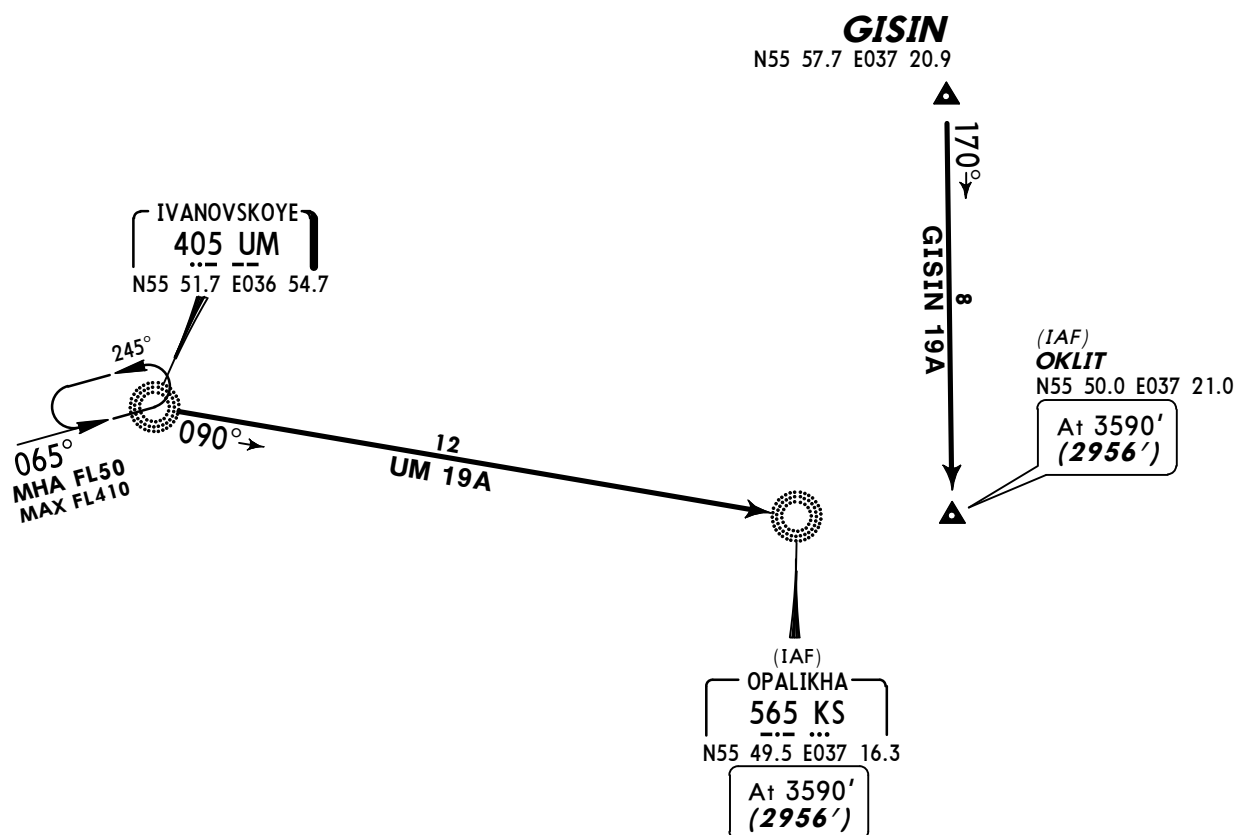
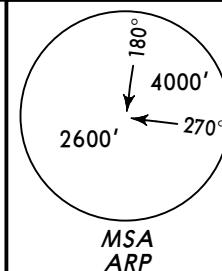
MOSCOW, RUSSIA
STAR

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

GISIN 19A [GIS19A]
IVANOVSKOYE 19A (UM 19A)
RWY 19 ARRIVALS



NOT TO SCALE

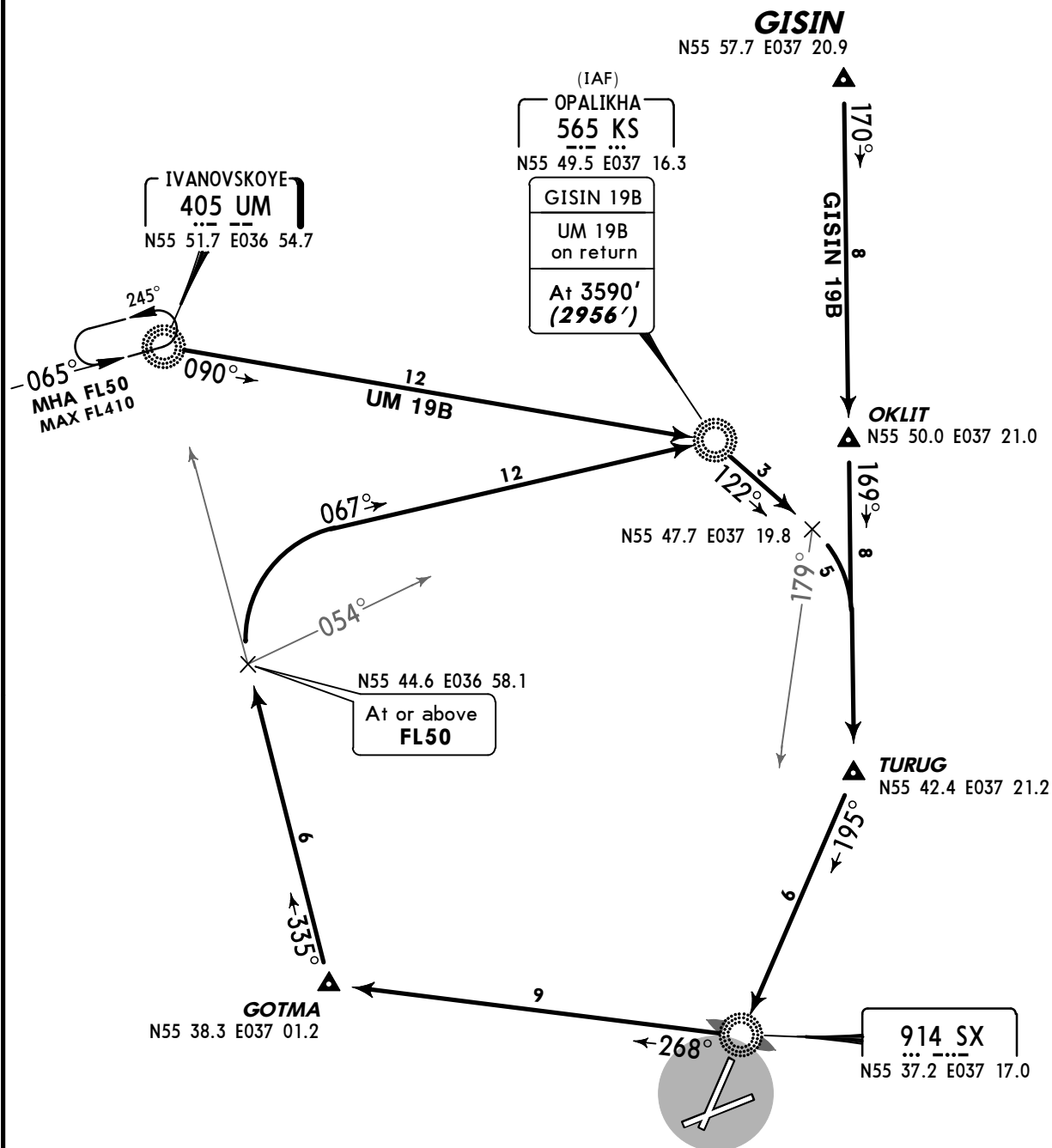
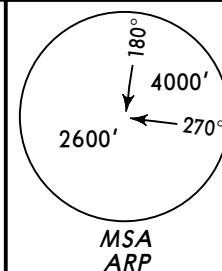
ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)

ATIS
131.85 (Russian 125.87)

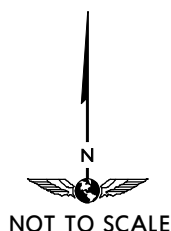
Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

GISIN 19B [GIS19B]
IVANOVSKOYE 19B (UM 19B)
RWY 19 ARRIVALS



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)



UUWW/VKO
VNUKOVO

JEPPESEN
5 OCT 12 10-2X5 Eff 18 Oct

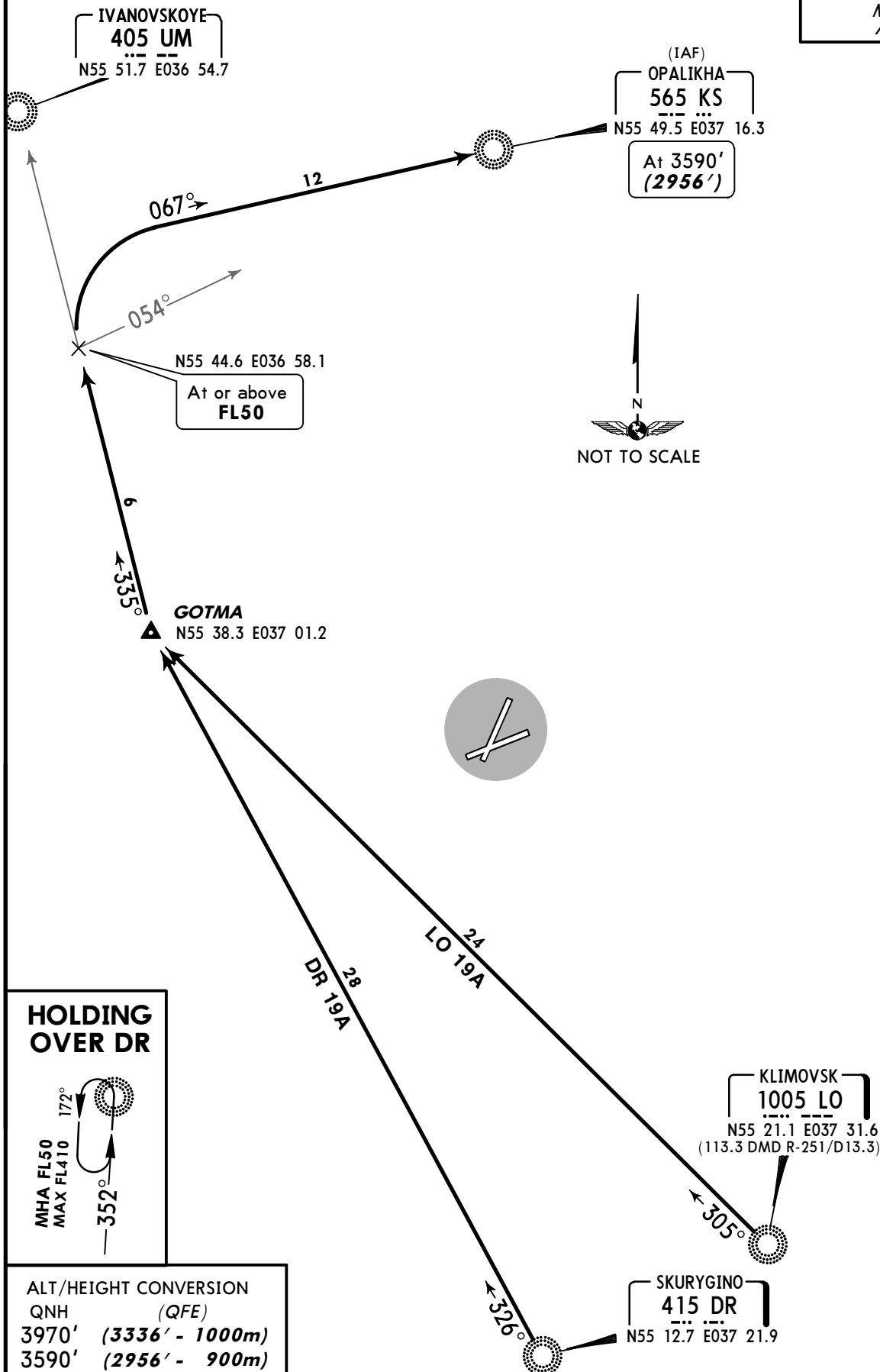
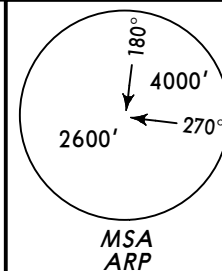
MOSCOW, RUSSIA
STAR

ATIS
131.85 (Russian 125.87)

Apt Elev
685'

Alt Set: MM (hPa on request) QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')

KLIMOVSK 19A (LO 19A)
SKURYGINO 19A (DR 19A)
RWY 19 ARRIVALS



HOLDING
OVER DR



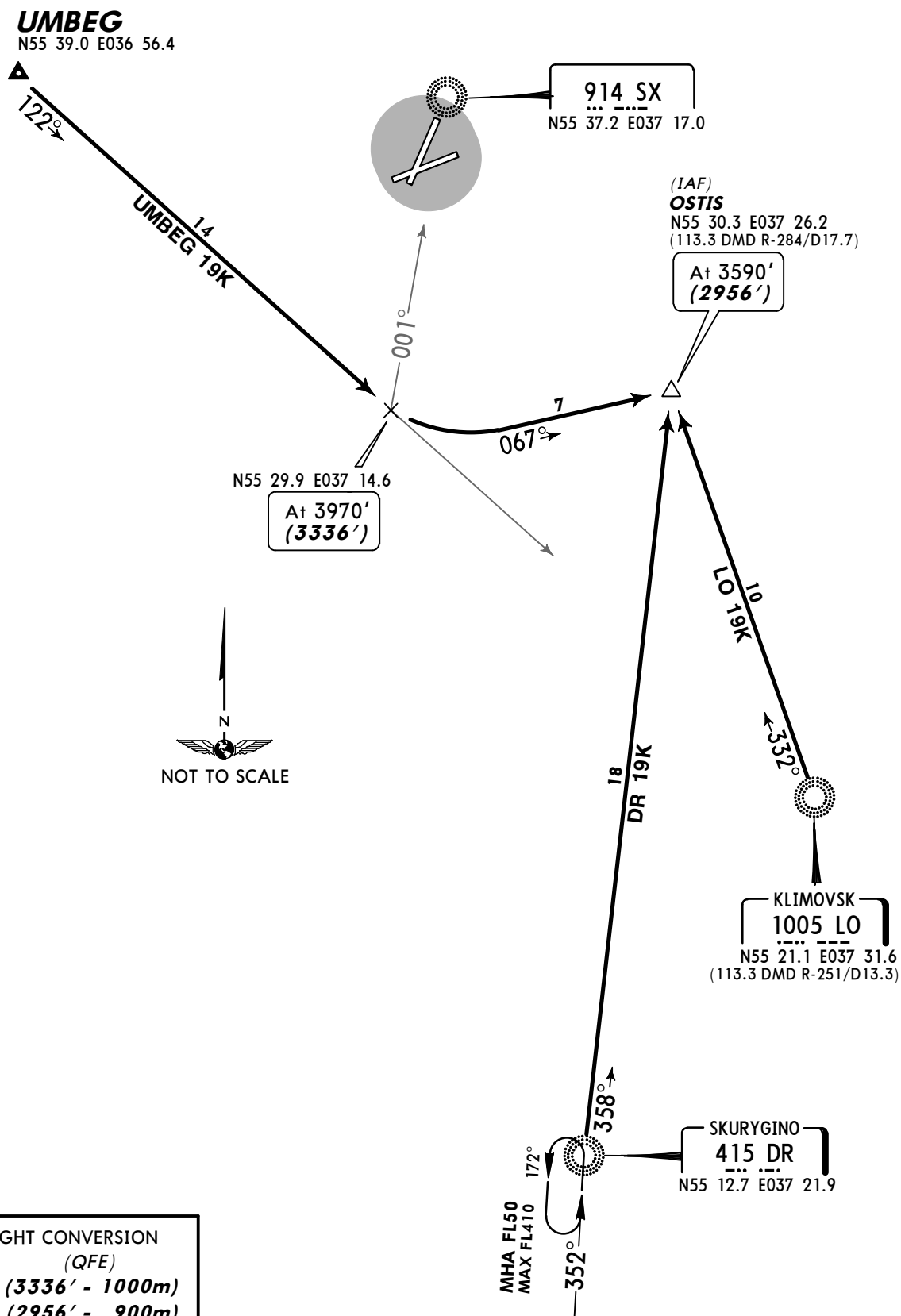
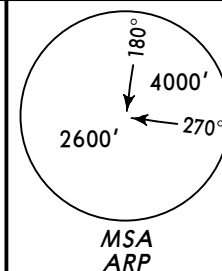
ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3336' - 1000m)
3590' (2956' - 900m)

CHANGES: STARs revised.

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ATIS 131.85 (Russian 125.87)	Apt Elev 685'	Alt Set: MM (hPa on request) QNH on request Trans level: By ATC Trans alt: 3970' (3336')	(QFE)
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KLIMOVSK 19K (LO 19K)
SKURYGINO 19K (DR 19K)
UMBEG 19K [UMB19K]
RWY 19 ARRIVALS



ALT/HEIGHT CONVERSION	
QNH	(QFE)
3970'	(3336' - 1000m)
3590'	(2956' - 900m)

RNAV SID DESIGNATION	REFER TO CHART
DEDUM 3D, 3E, IVANOVSKOYE 3D, 3E	10-3B
DEDUM 4D, IVANOVSKOYE 4D	10-3C
BITSA 3D, 3E, KLIMOVSK 3D, 3E, OKLIT 3D	10-3D
BITSA 4D, 4E, KLIMOVSK 4D, 4E, OKLIT 4E	10-3E
BADNI 3D, 3E, KAMENKA 3D, 3E	10-3F
BADNI 4D, KAMENKA 4D	10-3G

FOR SID AND TRANSITION DESIGNATION
REFER TO PAGE 10-3A

SID DESIGNATION	REFER TO CHART
DEDUM 01D, 01E, IVANOVSKOYE 01D, 01E	10-3H
DEDUM 19D, IVANOVSKOYE 19D	10-3J
BITSA 01D, 01E, KLIMOVSK 01D, 01E, OKLIT 01D	10-3K
BITSA 19D, 19E, KLIMOVSK 19D, 19E, OKLIT 19E	10-3L
BADNI 01D, 01E, KAMENKA 01D, 01E	10-3M
BADNI 19D, KAMENKA 19D	10-3N
TRANSITION DESIGNATION	REFER TO CHART
NERL 1W, 2W, TIMIG 1W, 2W	10-3P
CHERUSTI 1W, VENEV 1W	10-3Q
ADETI 1W, ROLUN 1W, SODRU 2W, SUGIR 2W	10-3S
BELAG 1W, 2W, KARMANOVO 1W, OBELU 1W	10-3T

VNUKOVO
Radar
126.0

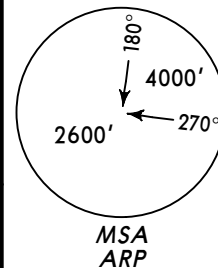
Apt Elev
685'

QNH on request (QFE)

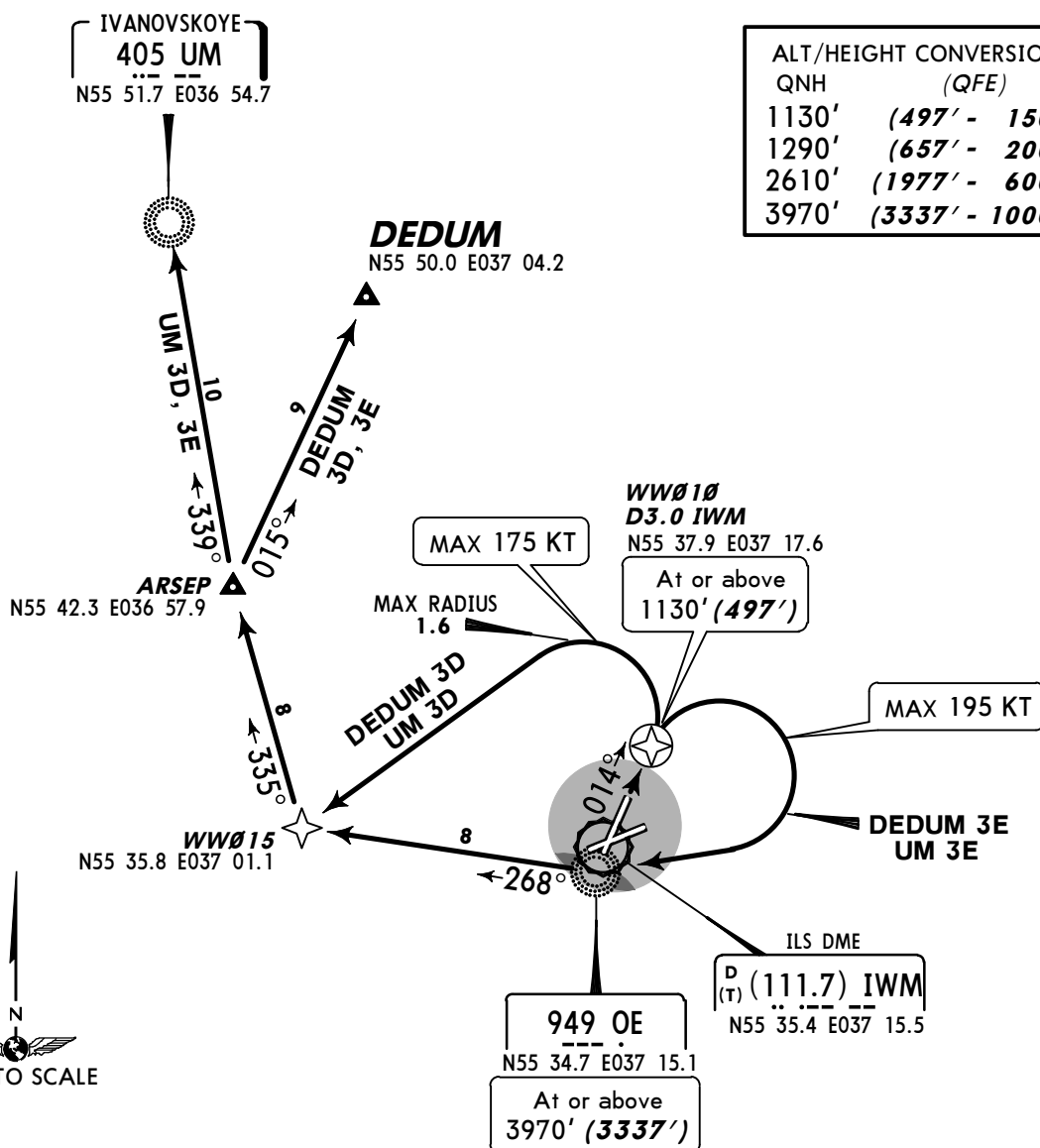
Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



**DEDUM 3D [DEDU3D] , DEDUM 3E [DEDU3E]
IVANOVSKOYE 3D (UM 3D)
IVANOVSKOYE 3E (UM 3E)
RWY 01 RNAV DEPARTURES
SPEED MAX 250 KT BELOW FL100**



ALT/HEIGHT CONVERSION	
QNH	(QFE)
1130'	(497' - 150m)
1290'	(657' - 200m)
2610'	(1977' - 600m)
3970'	(3337' - 1000m)



These SIDs require a minimum climb gradient of 5.8% up to 1130' (497').

Gnd speed-KT	75	100	150	200	250	300
5.8% V/V(fpm)	441	587	881	1175	1468	1762

Initial climb clearance 2610' (1977')

SID	ROUTING
DEDUM 3D	DER01 - WW010 (1130'+; K175-) - WW015 - ARSEP - DEDUM.
DEDUM 3E	DER01 - WW010 (1130'+; K195-) - OE (3970'+) - WW015 - ARSEP - DEDUM.
UM 3D	DER01 - WW010 (1130'+; K175-) - WW015 - ARSEP - UM.
UM 3E	DER01 - WW010 (1130'+; K195-) - OE (3970'+) - WW015 - ARSEP - UM.

VNUKOVO
Radar
126.0

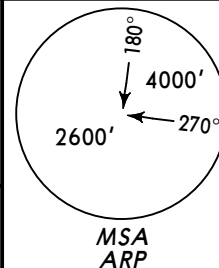
Apt Elev
685'

QNH on request (QFE)

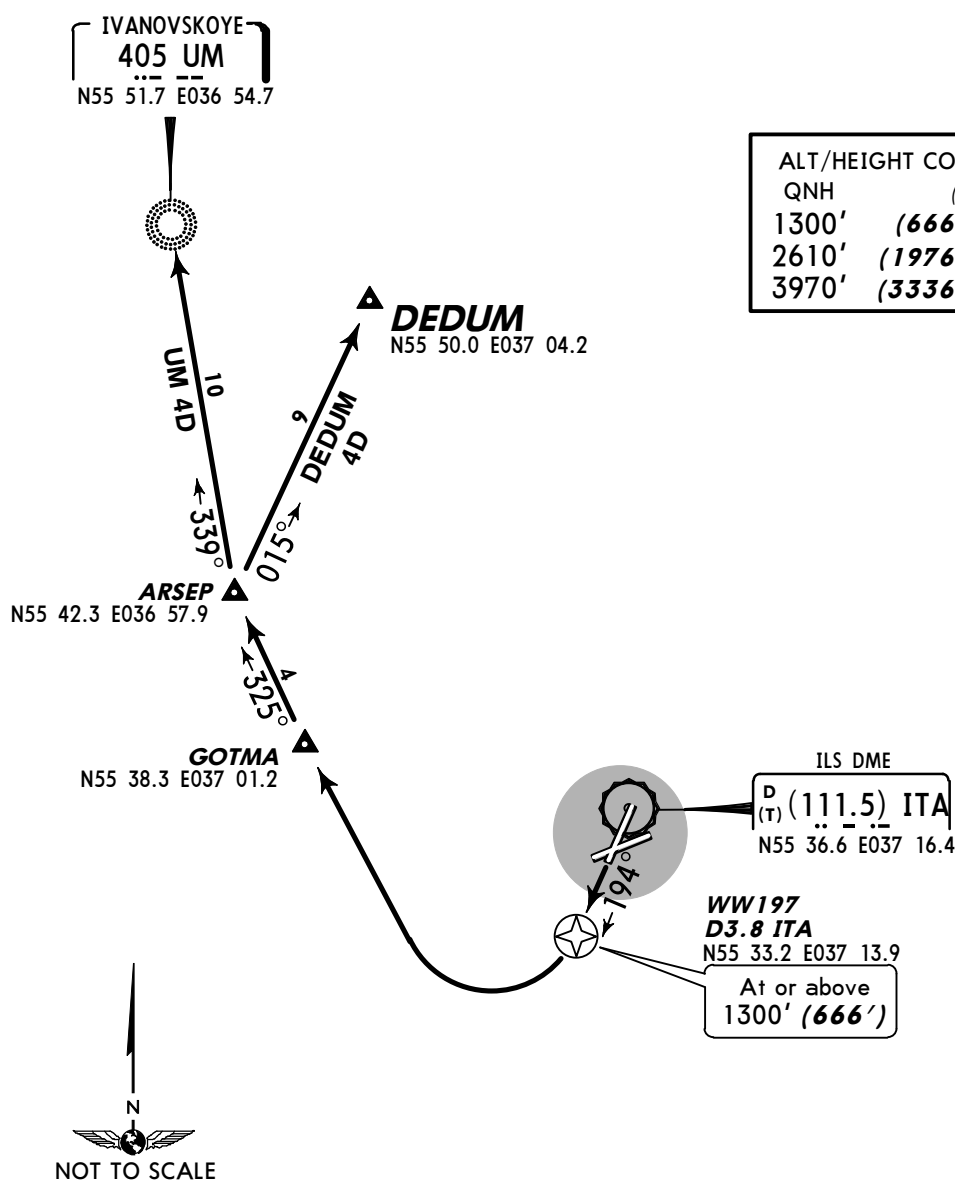
Trans level: By ATC Trans alt: 3970' (3336')

1. Contact VNUKOVO Radar immediately after crossing 1300' (666').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



**DEDUM 4D [DEDU4D]
IVANOVSKOYE 4D (UM 4D)
RWY 19 RNAV DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



QNH	(QFE)
1300'	(666' - 200m)
2610'	(1976' - 600m)
3970'	(3336' - 1000m)

Initial climb clearance 2610' (1976')

SID	ROUTING
DEDUM 4D	DER19 - WW197 (1300'+) - GOTMA - ARSEP - DEDUM.
UM 4D	DER19 - WW197 (1300'+) - GOTMA - ARSEP - UM.

VNUKOVO
Radar
126.0

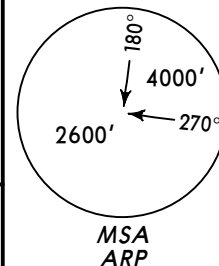
Apt Elev
685'

QNH on request (QFE)

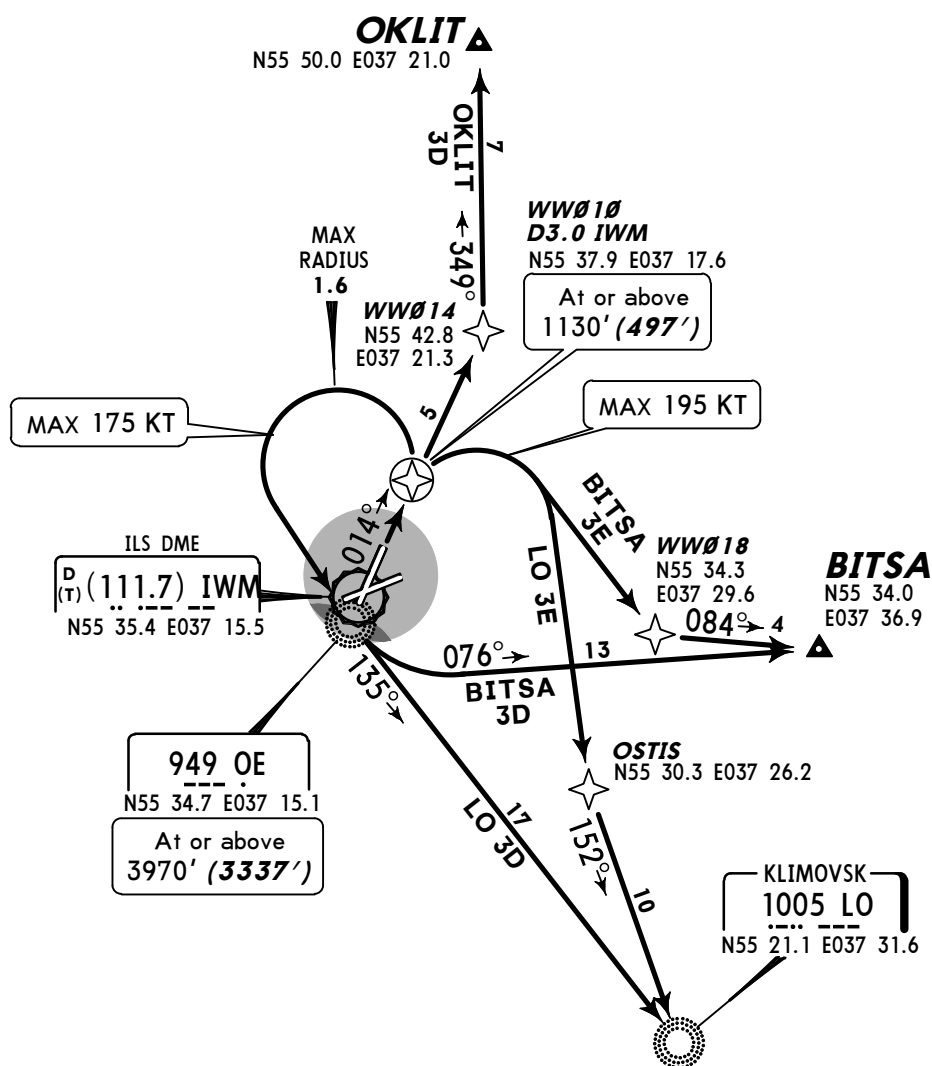
Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



BITSA 3D [BITS3D], BITSA 3E [BITS3E]
KLIMOVSK 3D (LO 3D), KLIMOVSK 3E (LO 3E)
OKLIT 3D [OKLI3D]
RWY 01 RNAV DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100



These SIDs require minimum climb gradients of

BITSA 3D, LO 3D: 4.5% up to 3970' (3337') at OE.

BITSA 3E, LO 3E, OKLIT 3D: 5.8% up to 1130' (497').

Gnd speed-KT	75	100	150	200	250	300
5.8% V/V(fpm)	441	587	881	1175	1468	1762
4.5% V/V(fpm)	342	456	684	911	1139	1367

ALT/HEIGHT CONVERSION	QNH	(QFE)
1130'	(497' - 150m)	
1290'	(657' - 200m)	
2610'	(1977' - 600m)	
3970'	(3337' - 1000m)	

Initial climb clearance 2610' (1977')

SID	ROUTING
BITSA 3D	DER01 - WW010 (1130'+; K175-) - OE (3970'+) - BITSA.
BITSA 3E	DER01 - WW010 (1130'+; K195-) - WW018 - BITSA.
LO 3D	DER01 - WW010 (1130'+; K175-) - OE (3970'+) - LO.
LO 3E	DER01 - WW010 (1130'+; K195-) - OSTIS - LO.
OKLIT 3D	DER01 - WW010 (1130'+) - WW014 - OKLIT.

VNUKOVO
Radar
126.0

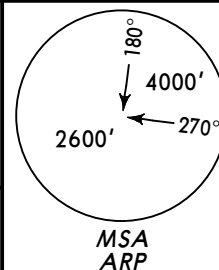
Apt Elev
685'

QNH on request (QFE)

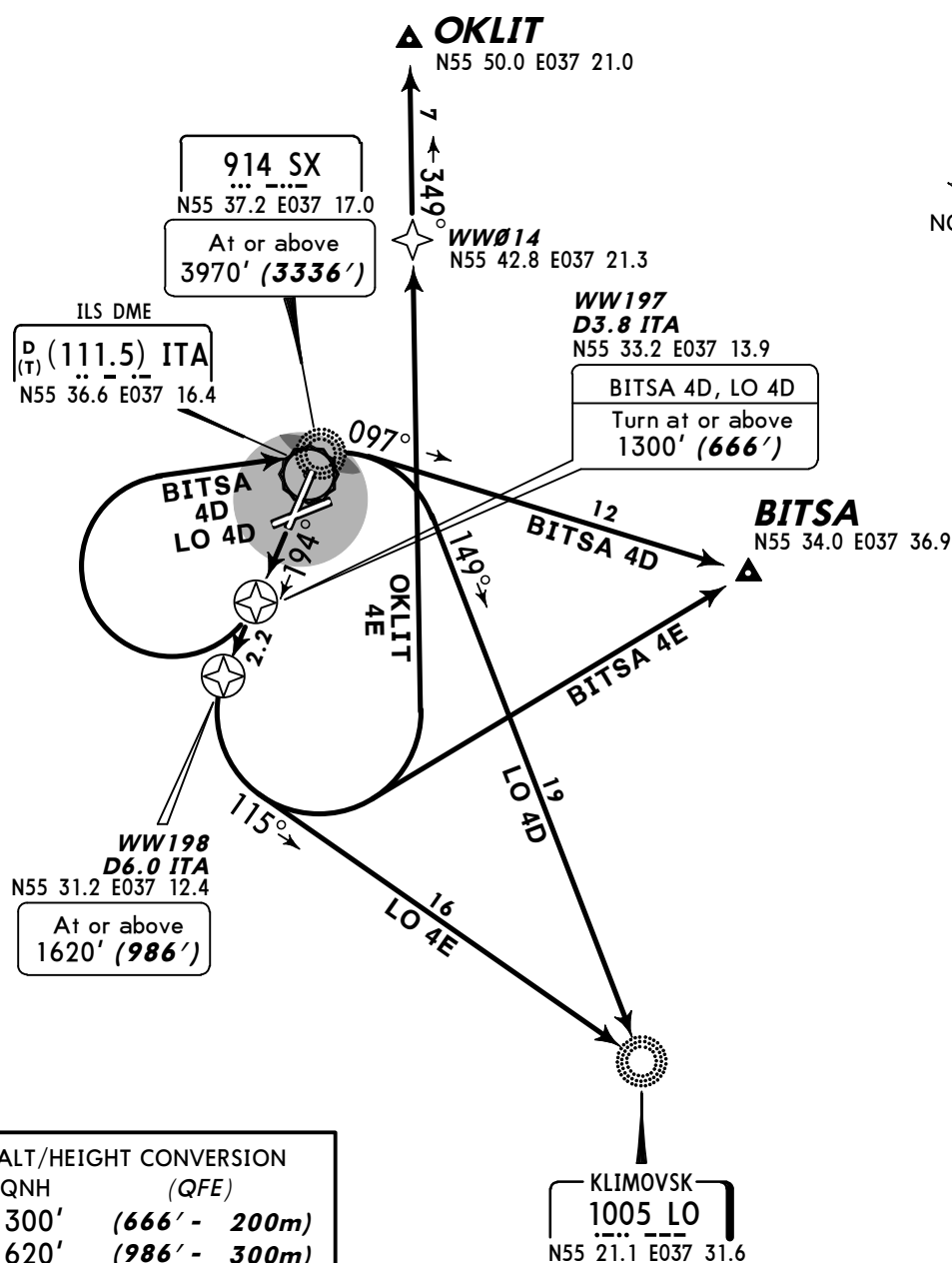
Trans level: By ATC Trans alt: 3970' (3336')

1. Contact VNUKOVO Radar immediately after crossing 1300' (666').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



**BITSA 4D [BITS4D] , BITSA 4E [BITS4E]
KLIMOVSK 4D (LO 4D), KLIMOVSK 4E (LO 4E)
OKLIT 4E [OKLI4E]
RWY 19 RNAV DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



ALT/HEIGHT CONVERSION	QNH	(QFE)
1300'	(666' - 200m)	
1620'	(986' - 300m)	
2610'	(1976' - 600m)	
3970'	(3336' - 1000m)	

Initial climb clearance 2610' (1976')

SID	ROUTING
BITSA 4D	DER19 - WW197 (1300'+) - SX (3970'+) - BITSA.
BITSA 4E	DER19 - WW198 (1620'+) - BITSA.
LO 4D	DER19 - WW197 (1300'+) - SX (3970'+) - LO.
LO 4E	DER19 - WW198 (1620'+) - LO.
OKLIT 4E	DER19 - WW198 (1620'+) - WW014 - OKLIT.

VNUKOVO
Radar
126.0

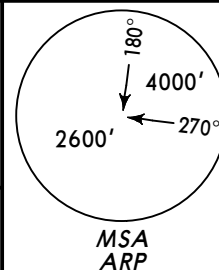
Apt Elev
685'

QNH on request (QFE)

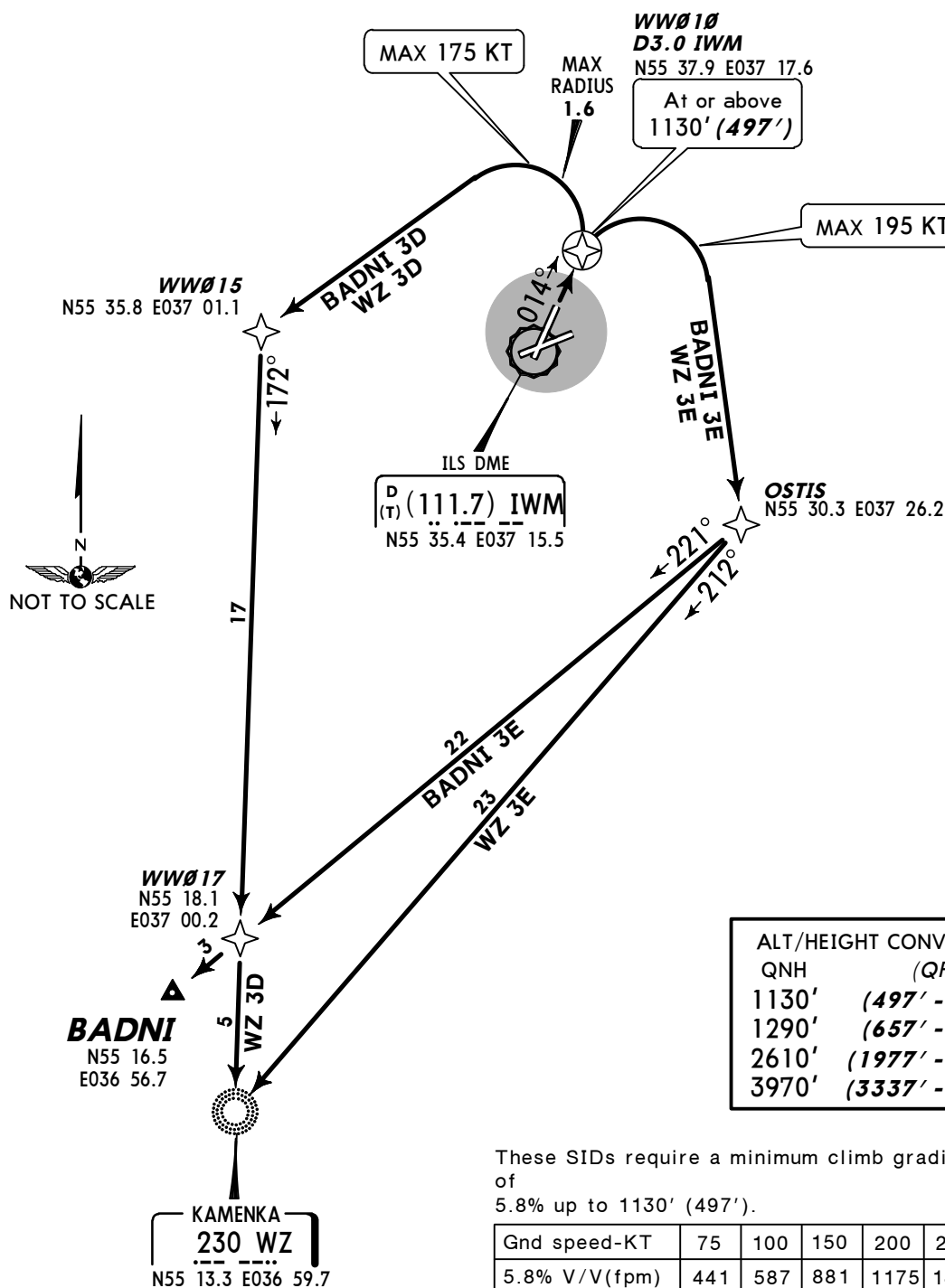
Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



**BADNI 3D [BADN3D], BADNI 3E [BADN3E]
KAMENKA 3D (WZ 3D), KAMENKA 3E (WZ 3E)
RWY 01 RNAV DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



Initial climb clearance 2610' (1977')

SID	ROUTING
BADNI 3D	DER01 - WW010 (1130'+; K175-) - WW015 - WW017 - BADNI.
BADNI 3E	DER01 - WW010 (1130'+; K195-) - OSTIS - BADNI.
WZ 3D	DER01 - WW010 (1130'+; K175-) - WW015 - WZ.
WZ 3E	DER01 - WW010 (1130'+; K195-) - OSTIS - WZ.

VNUKOVO
Radar
126.0

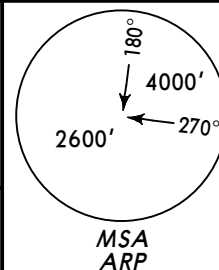
Apt Elev
685'

QNH on request (QFE)

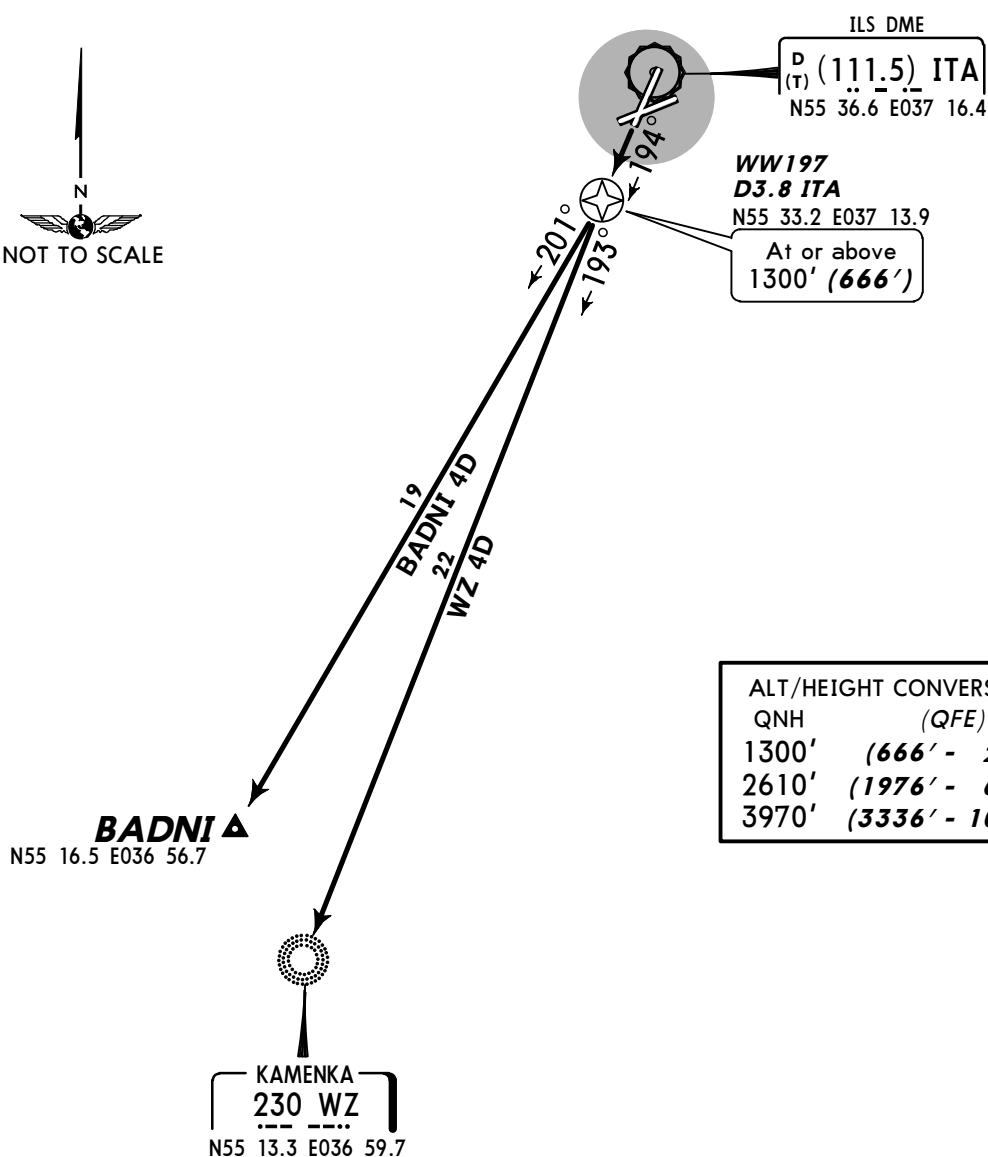
Trans level: By ATC Trans alt: 3970' (3336')

1. Contact VNUKOVO Radar immediately after crossing 1300' (666').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



**BADNI 4D [BADN4D]
KAMENKA 4D (WZ 4D)
RWY 19 RNAV DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



Initial climb clearance 2610' (1976')

SID	ROUTING
BADNI 4D	DER19 - WW197 (1300'+) - BADNI.
WZ 4D	DER19 - WW197 (1300'+) - WZ.

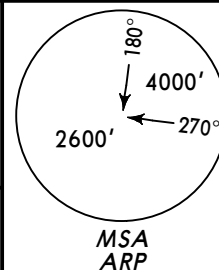
VNUKOVO
Radar
126.0Apt Elev
685'

QNH on request (QFE)

Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.



DEDUM 01D[DEDØ1D], DEDUM 01E[DEDØ1E]

IVANOVSKOYE 01D (UM 01D)

IVANOVSKOYE 01E (UM 01E)

RWY 01 DEPARTURES

SPEED: MAX 250 KT BELOW FL100

ALT/HEIGHT CONVERSION

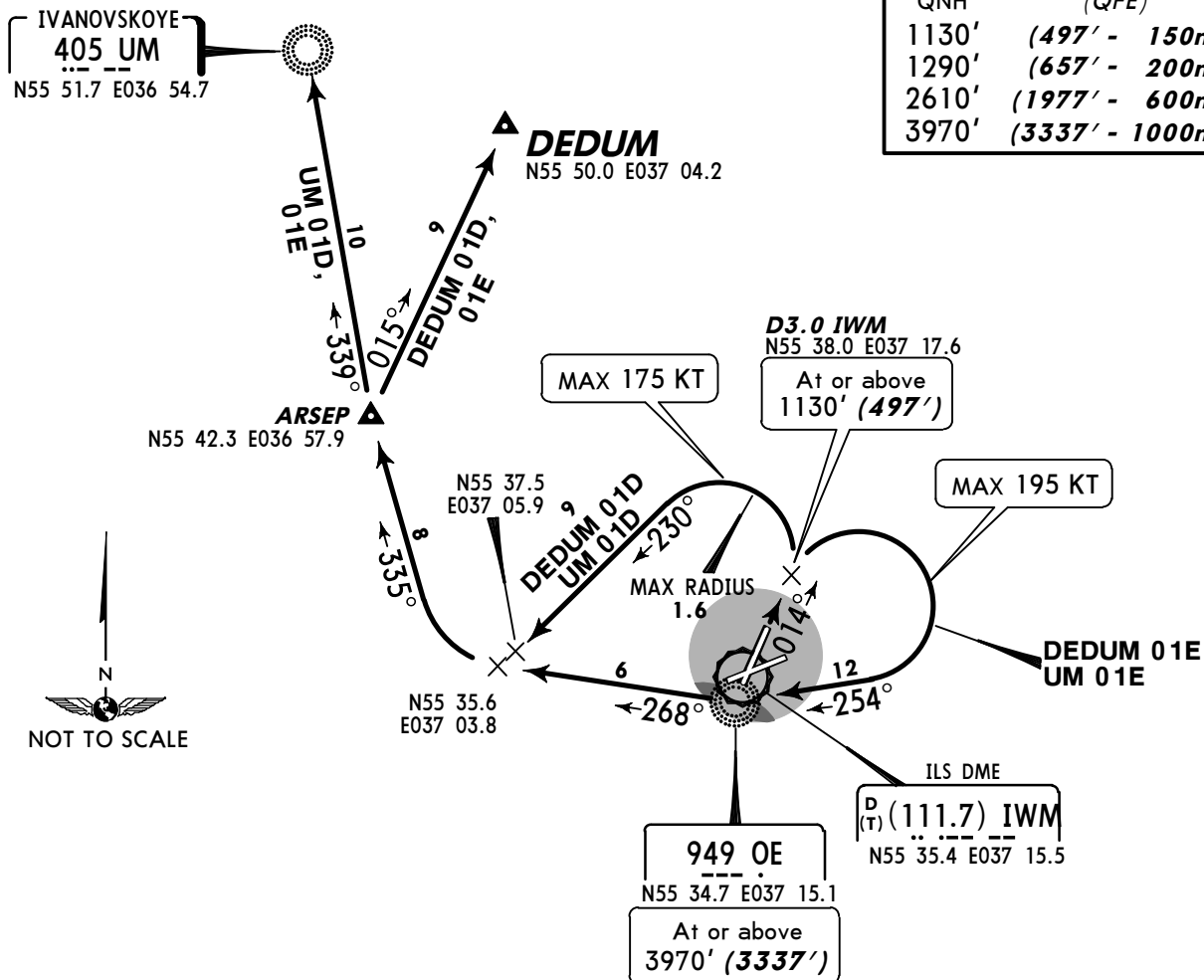
QNH (QFE)

1130' (497' - 150m)

1290' (657' - 200m)

2610' (1977' - 600m)

3970' (3337' - 1000m)



These SIDs require a minimum climb gradient of 5.8% up to 1130' (497').

Gnd speed-KT	75	100	150	200	250	300
5.8% V/V (fpm)	441	587	881	1175	1468	1762

Initial climb clearance 2610' (1977')

SID	ROUTING
DEDUM 01D	Climb straight ahead to D3.0 IWM, turn LEFT, 230° track to N55 37.5 E037 05.9, turn RIGHT, 335° track to ARSEP, then to DEDUM.
DEDUM 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, intercept 254° bearing to OE, 268° bearing to N55 35.6 E037 03.8, turn RIGHT, 335° track to ARSEP, then to DEDUM.
UM 01D	Climb straight ahead to D3.0 IWM, turn LEFT, 230° track to N55 37.5 E037 05.9, turn RIGHT, 335° track to ARSEP, then to UM.
UM 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, intercept 254° bearing to OE, 268° bearing to N55 35.6 E037 03.8, turn RIGHT, 335° track to ARSEP, then to UM.

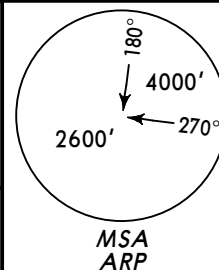
CHANGES: Initial climb revised.

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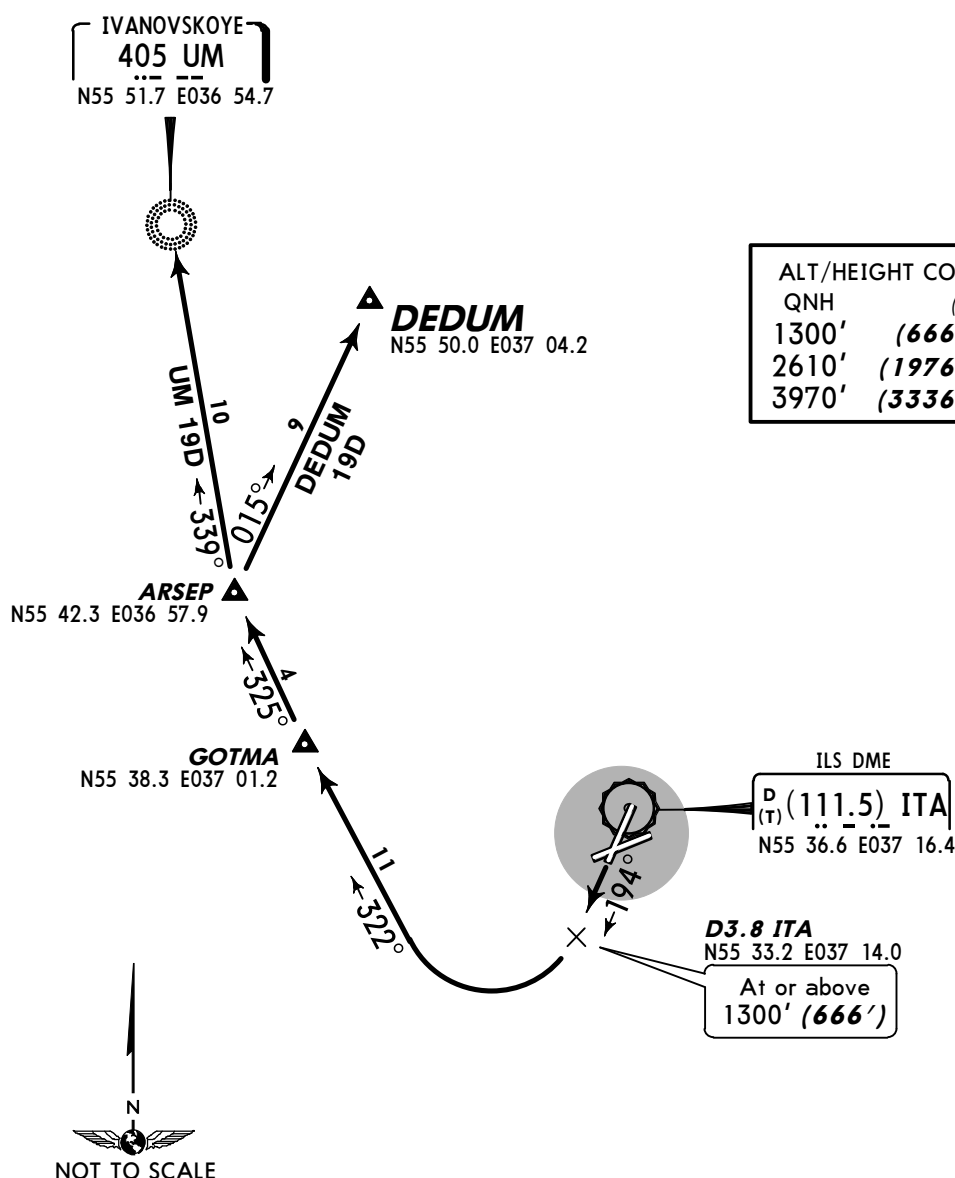
VNUKOVO
Radar
126.0

Apt Elev
685'

QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3336')
1. Contact VNUKOVO Radar immediately after crossing
1300' (666').
2. Execute noise abatement procedures according to
ICAO Annex 16, DOC 8168.



DEDUM 19D [DED 19D]
IVANOVSKOYE 19D (UM 19D)
RWY 19 DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100



ALT/HEIGHT CONVERSION	
QNH	(QFE)
1300'	(666' - 200m)
2610'	(1976' - 600m)
3970'	(3336' - 1000m)

Initial climb clearance 2610' (1976')

SID	ROUTING
DEDUM 19D	Climb straight ahead to D3.8 ITA, turn RIGHT, 322° track to GOTMA, 325° track to ARSEP, then to DEDUM.
UM 19D	Climb straight ahead to D3.8 ITA, turn RIGHT, 322° track to GOTMA, 325° track to ARSEP, then to UM.

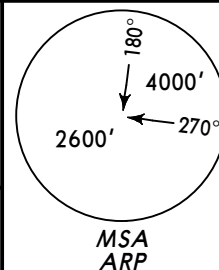
VNUKOVO
Radar
126.0Apt Elev
685'

QNH on request (QFE)

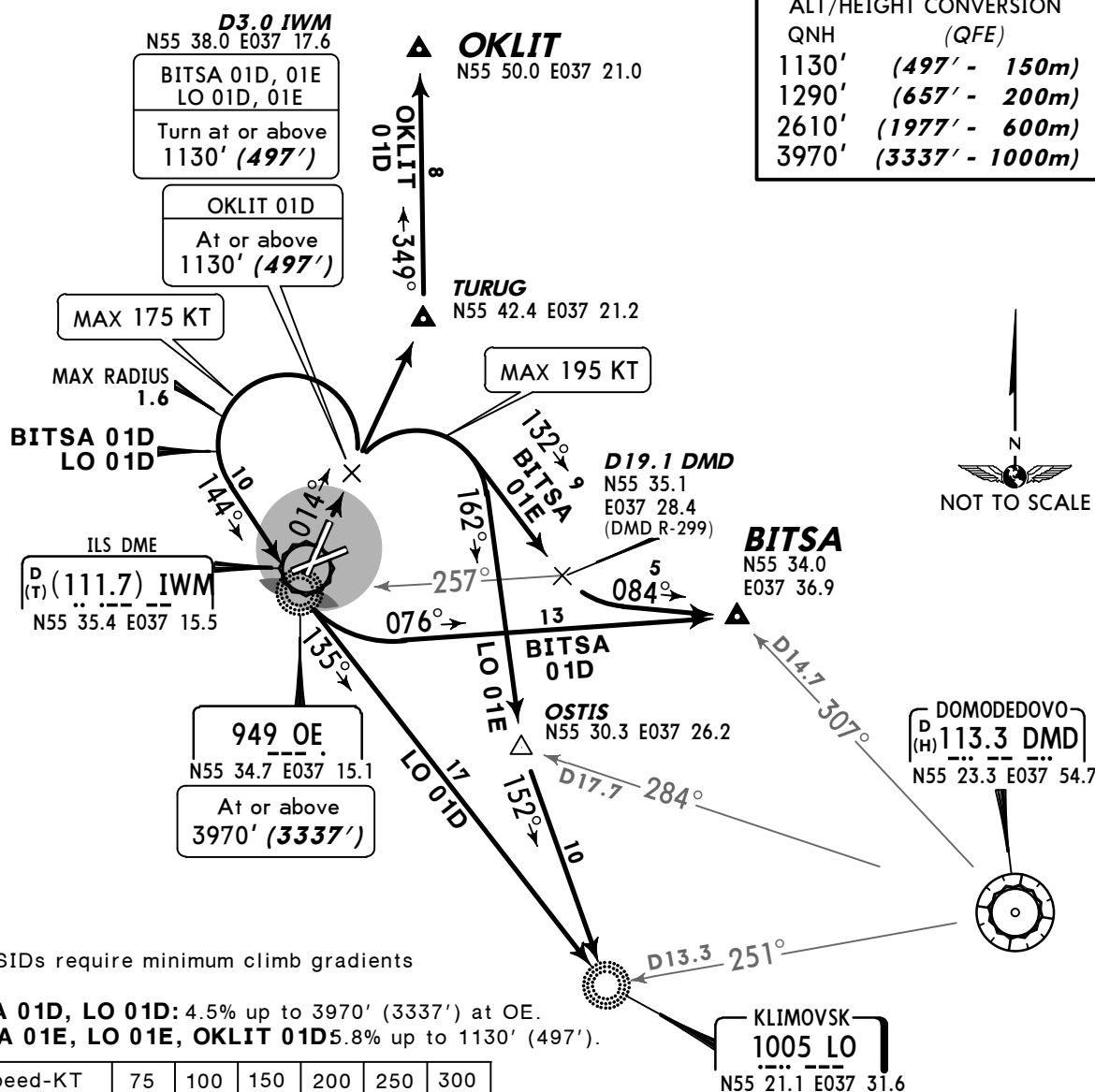
Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.

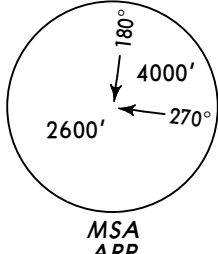


BITSA 01D [BITØ1D], BITSA 01E [BITØ1E]
KLIMOVSK 01D (LO 01D), KLIMOVSK 01E (LO 01E)
OKLIT 01D [OKLØ1D]
RWY 01 DEPARTURES

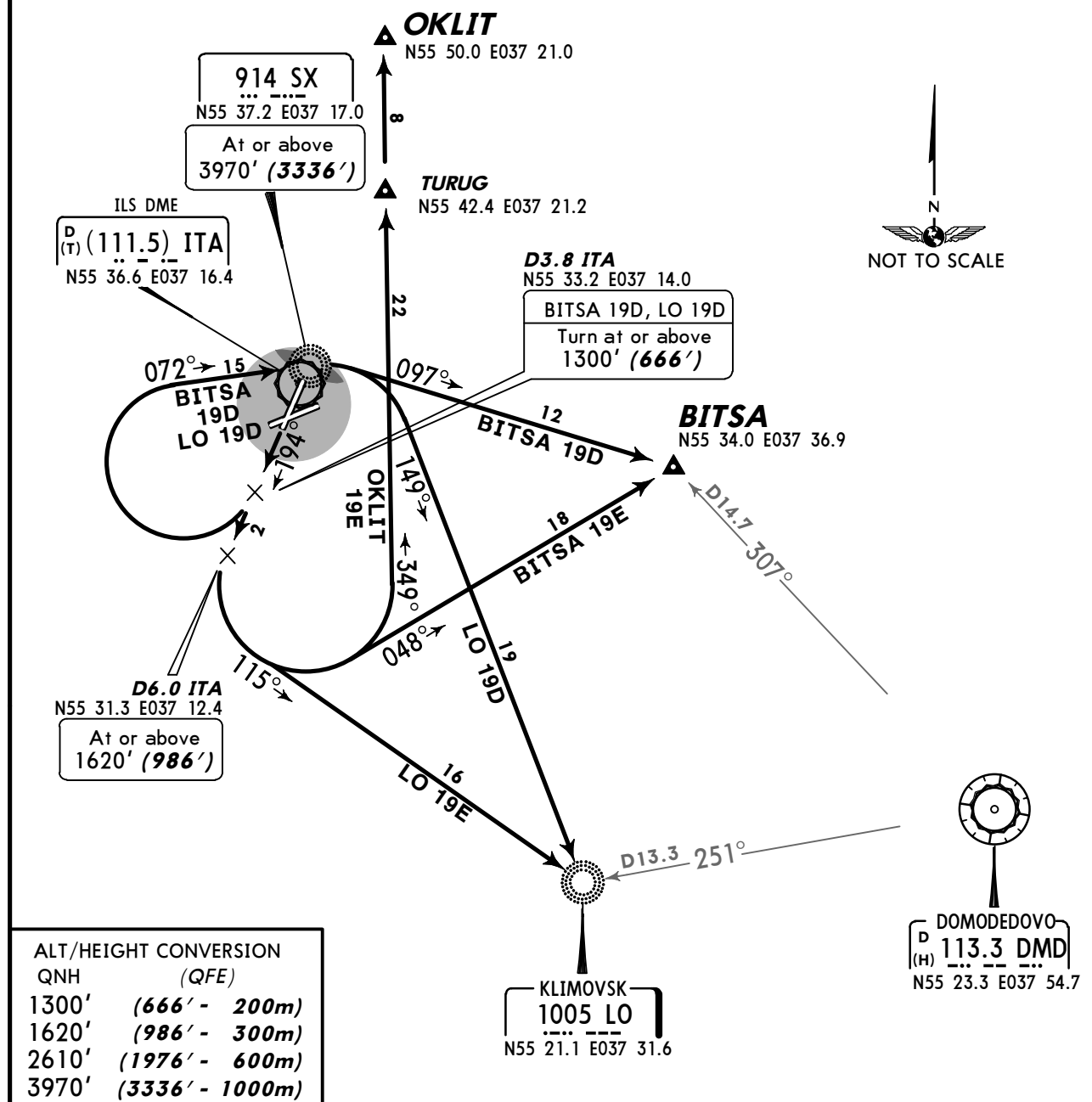
SPEED MAX 250 KT BELOW FL100

Initial climb clearance 2610' (1977')

SID	ROUTING
BITSA 01D	Climb straight ahead to D3.0 IWM, turn LEFT, intercept 144° bearing to OE, 076° track to BITSA.
BITSA 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, 132° track to N55 35.1 E037 28.4, 084° track to BITSA.
LO 01D	Climb straight ahead to D3.0 IWM, turn LEFT, intercept 144° bearing to OE, 135° bearing to LO.
LO 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, 162° track to OSTIS, turn LEFT, intercept 152° bearing to LO.
OKLIT 01D	Climb straight ahead to at or above 1130' (497'), then to TURUG, then to OKLIT.

VNUKOVO Radar 126.0	Apt Elev 685'	QNH on request (QFE) Trans level: By ATC Trans alt: 3970' (3336') 1. Contact VNUKOVO Radar immediately after crossing 1300' (666'). 2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.	 MSA ARP
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**BITSA 19D[BIT19D], BITSA 19E[BIT19E]
KLIMOVSK 19D (LO 19D), KLIMOVSK 19E (LO 19E)
OKLIT 19E[OKL19E]
RWY 19 DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



Initial climb clearance 2610' (1976')	
SID	ROUTING
BITSA 19D	Climb straight ahead to D3.8 ITA, turn RIGHT, intercept 072° bearing to SX, then to BITSA.
BITSA 19E	Climb straight ahead to D6.0 ITA, turn LEFT to BITSA.
LO 19D	Climb straight ahead to D3.8 ITA, turn RIGHT, intercept 072° bearing to SX, then to LO.
LO 19E	Climb straight ahead to D6.0 ITA, turn LEFT to LO.
OKLIT 19E	Climb straight ahead to D6.0 ITA, turn LEFT, 349° track to TURUG, then to OKLIT.

VNUKOVO
Radar
126.0

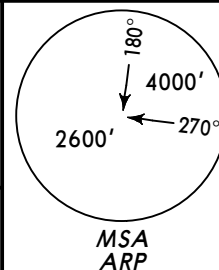
Apt Elev
685'

QNH on request (QFE)

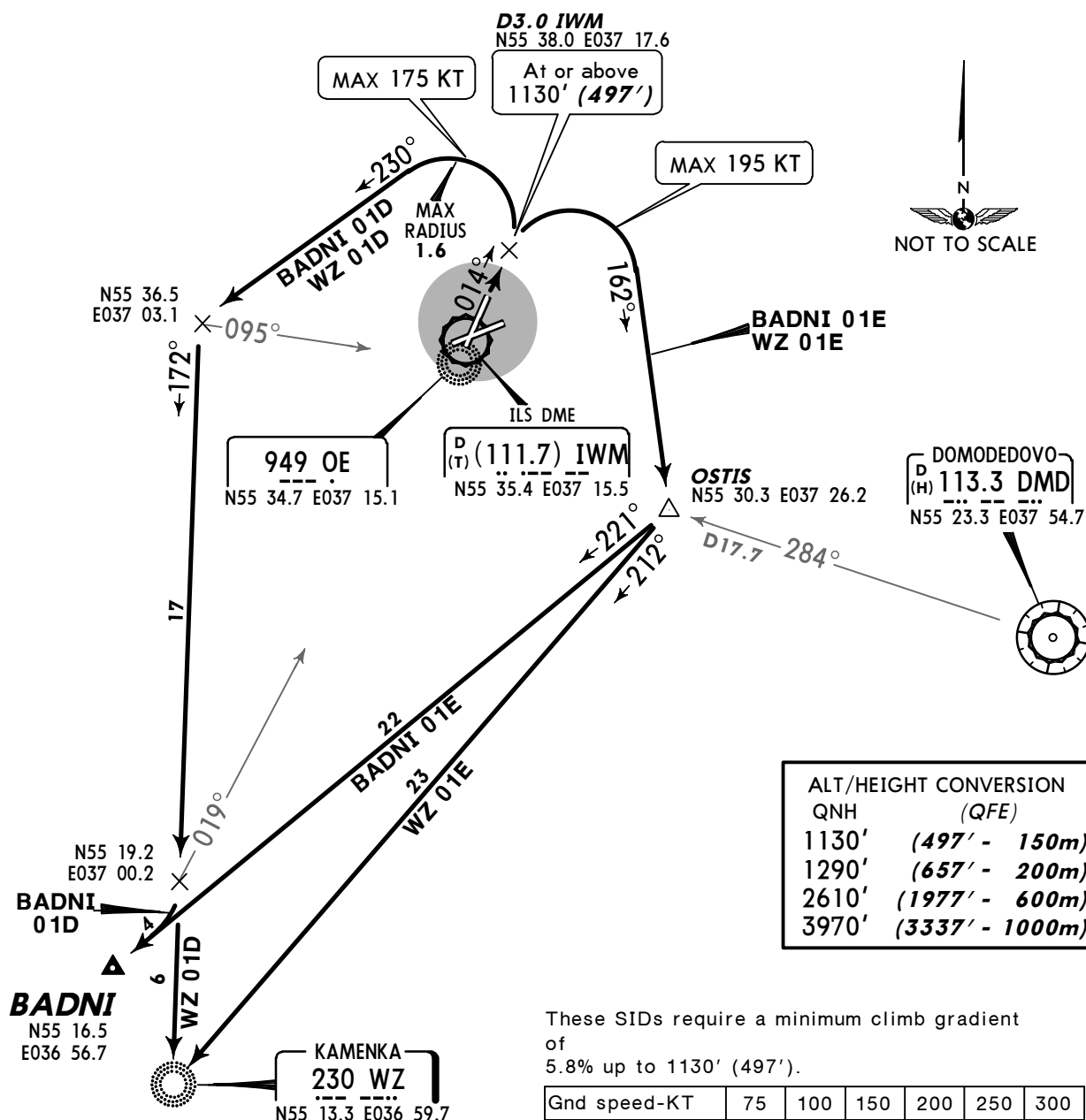
Trans level: By ATC Trans alt: 3970' (3337')

1. Contact VNUKOVO Radar immediately after crossing 1290' (657').

2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.

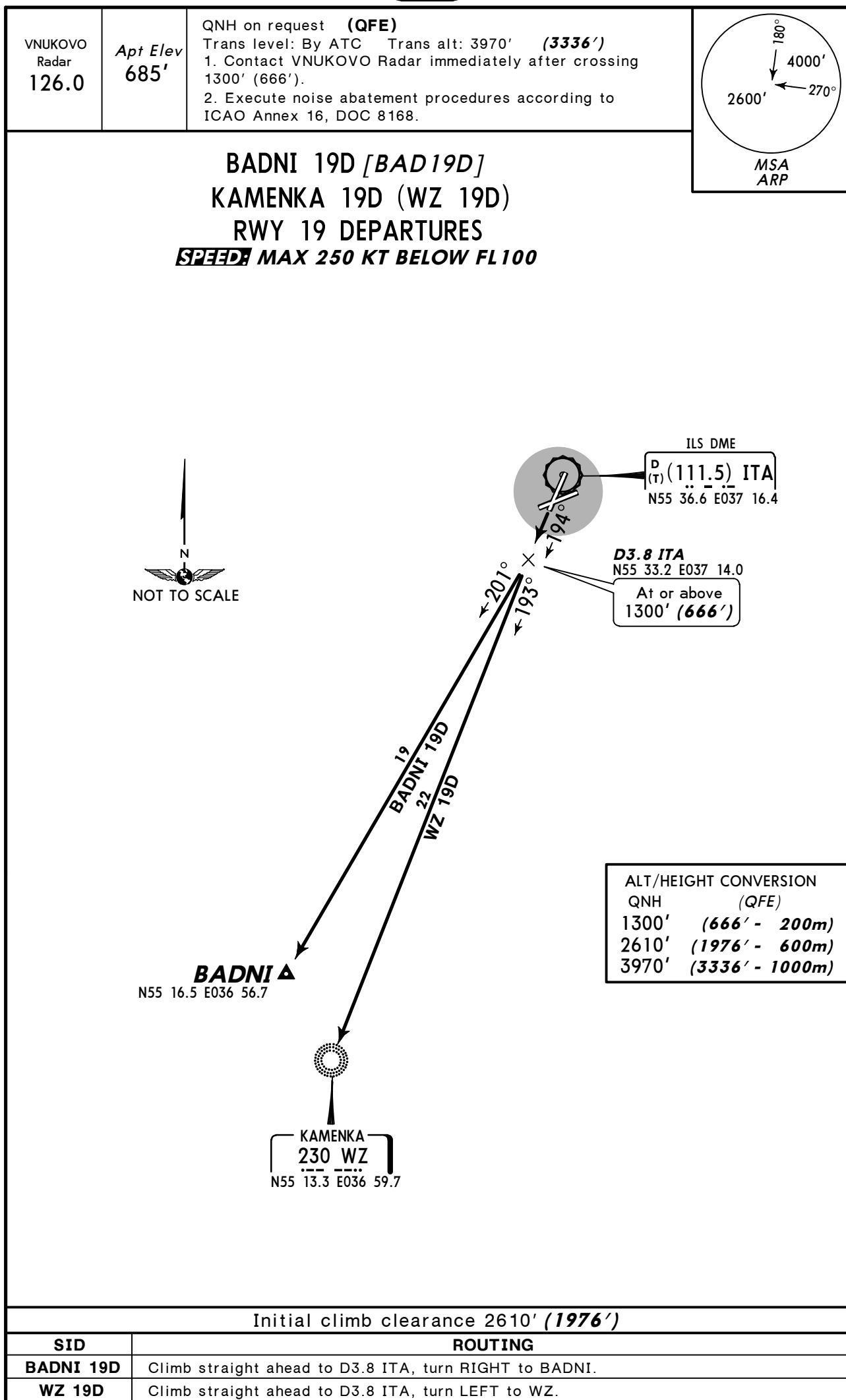


**BADNI 01D [BADØ1D], BADNI 01E [BADØ1E]
KAMENKA 01D (WZ 01D), KAMENKA 01E (WZ 01E)
RWY 01 DEPARTURES
~~SPEED~~ MAX 250 KT BELOW FL100**



Initial climb clearance 2610' (1977')

SID	ROUTING
BADNI 01D	Climb straight ahead to D3.0 IWM, turn LEFT, 230° track to N55 36.5 E037 03.1, turn LEFT, 172° track to N55 19.2 E037 00.2, 221° track to BADNI.
BADNI 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, 162° track to OSTIS, then to BADNI.
WZ 01D	Climb straight ahead to D3.0 IWM, turn LEFT, 230° track to N55 36.5 E037 03.1, intercept 172° bearing to WZ.
WZ 01E	Climb straight ahead to D3.0 IWM, turn RIGHT, 162° track to OSTIS, then to WZ.



Apt Elev
685'
QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

NERL 1W (NE 1W)

NERL 2W (NE 2W)

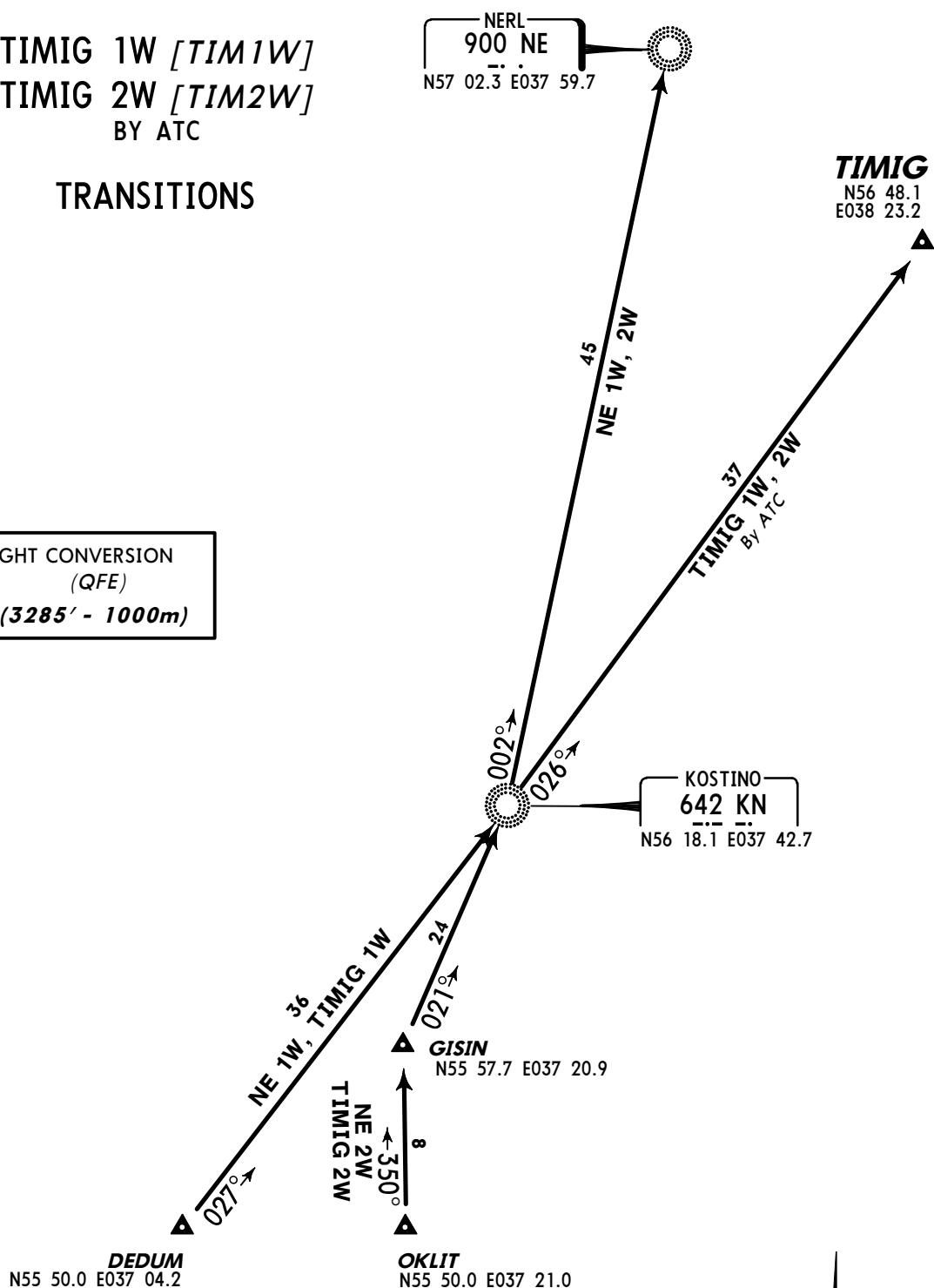
TIMIG 1W [TIM1W]

TIMIG 2W [TIM2W]

BY ATC

TRANSITIONS

ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3285' - 1000m)

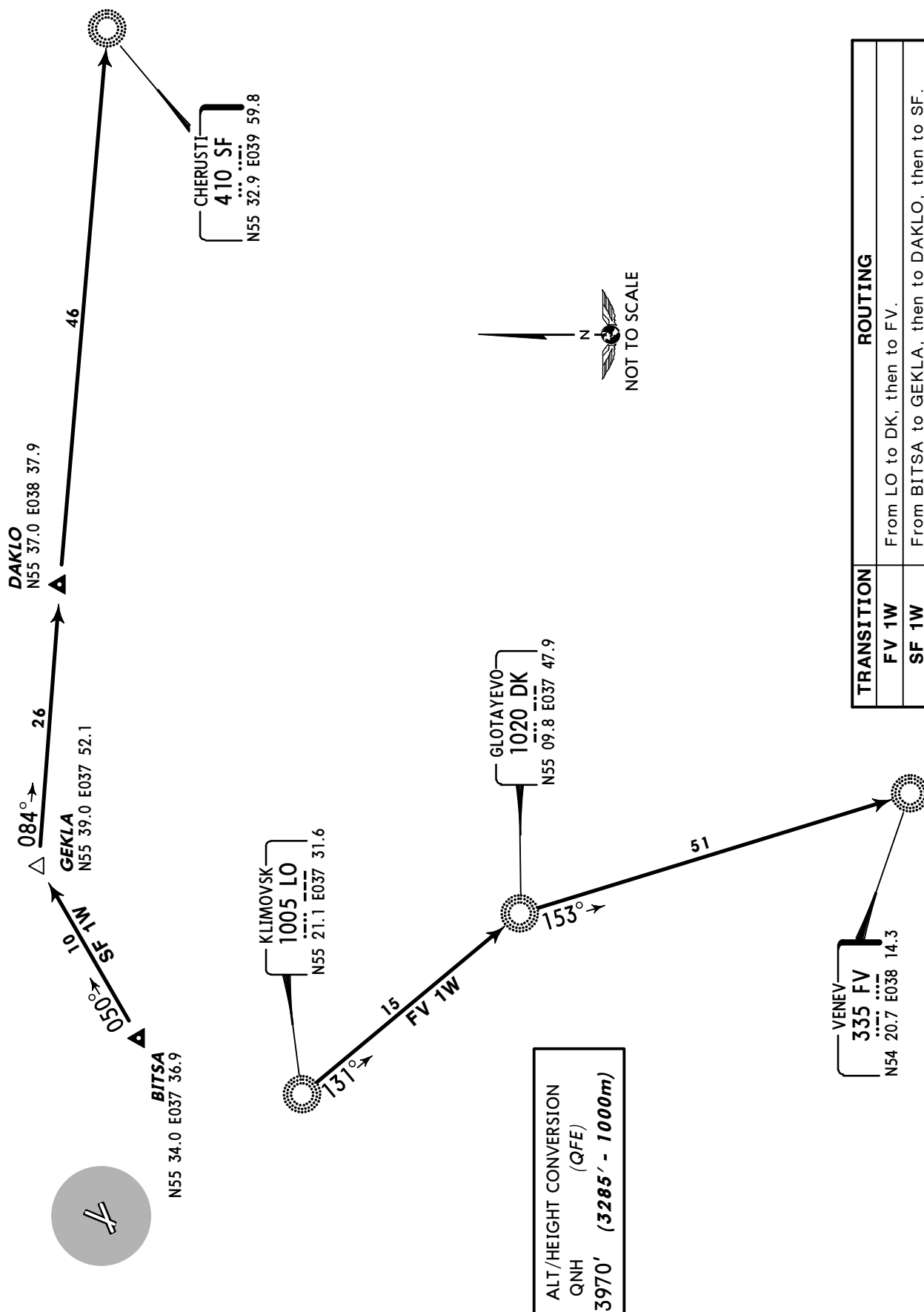


TRANSITION	ROUTING
NE 1W	From DEDUM to KN, then to NE.
NE 2W	From OKLIT to GISIN, then to KN, then to NE.
TIMIG 1W	From DEDUM to KN, then to TIMIG.
TIMIG 2W	From OKLIT to GISIN, then to KN, then to TIMIG.

Apt Elev
685'

QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

CHERUSTI 1W (SF 1W), VENEV 1W (FV 1W) TRANSITIONS



Apt Elev
685' QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

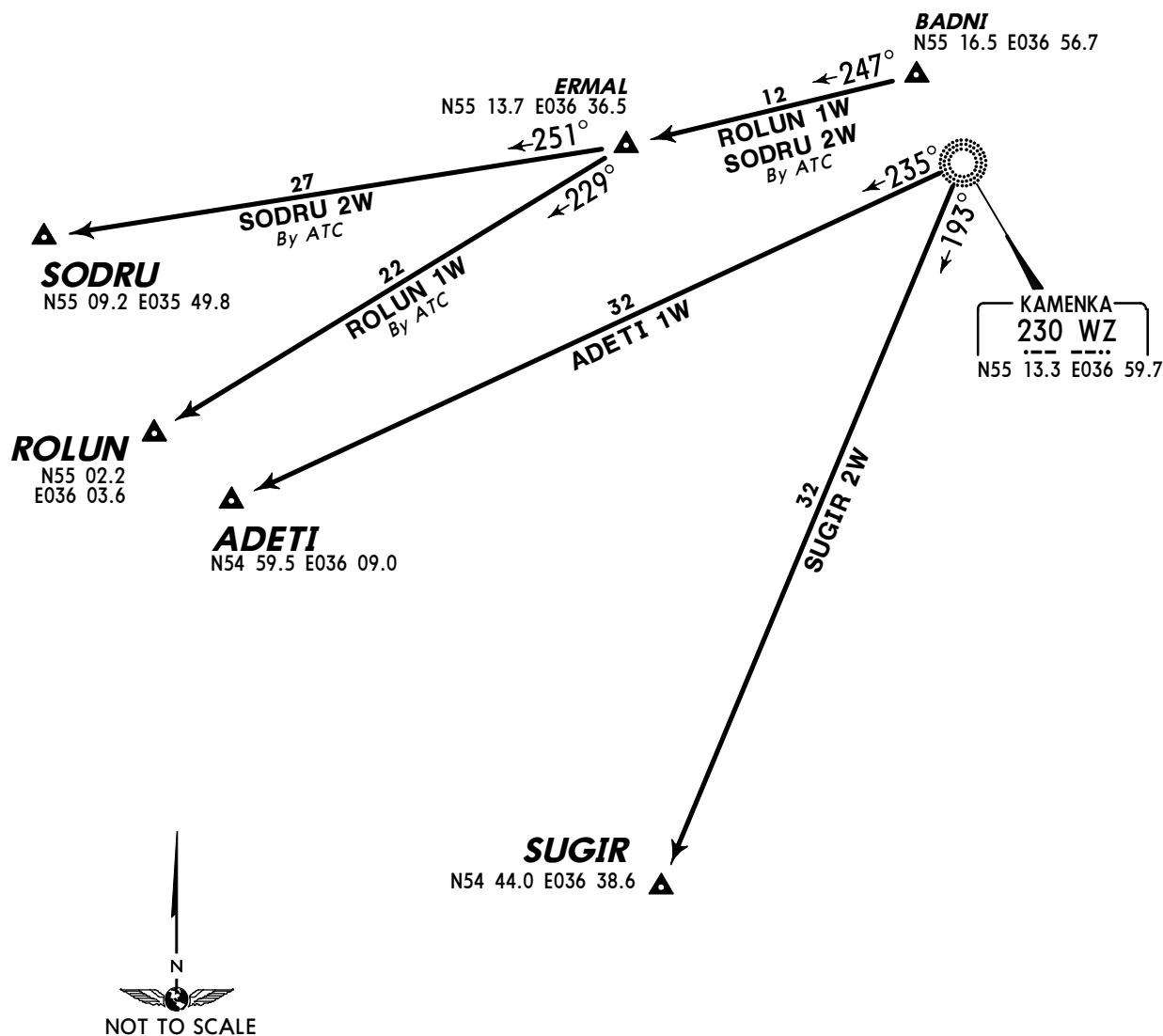
ADETI 1W [ADE1W]
ROLUN 1W [ROL1W]
SODRU 2W [SOD2W]
BY ATC

SUGIR 2W[SUG2W]

TRANSITIONS



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3285' - 1000m)



TRANSITION	ROUTING
ADETI 1W	From WZ to ADETI.
ROLUN 1W	From BADNI to ERMAL, then to ROLUN.
SODRU 2W	From BADNI to ERMAL, then to SODRU.
SUGIR 2W	From WZ to SUGIR.

Apt Elev
685'

QNH on request (QFE)
Trans level: By ATC Trans alt: 3970' (3285')

BELAG 1W [BEL1W], BELAG 2W [BEL2W]

KARMANOVO 1W (BG 1W)

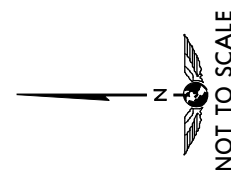
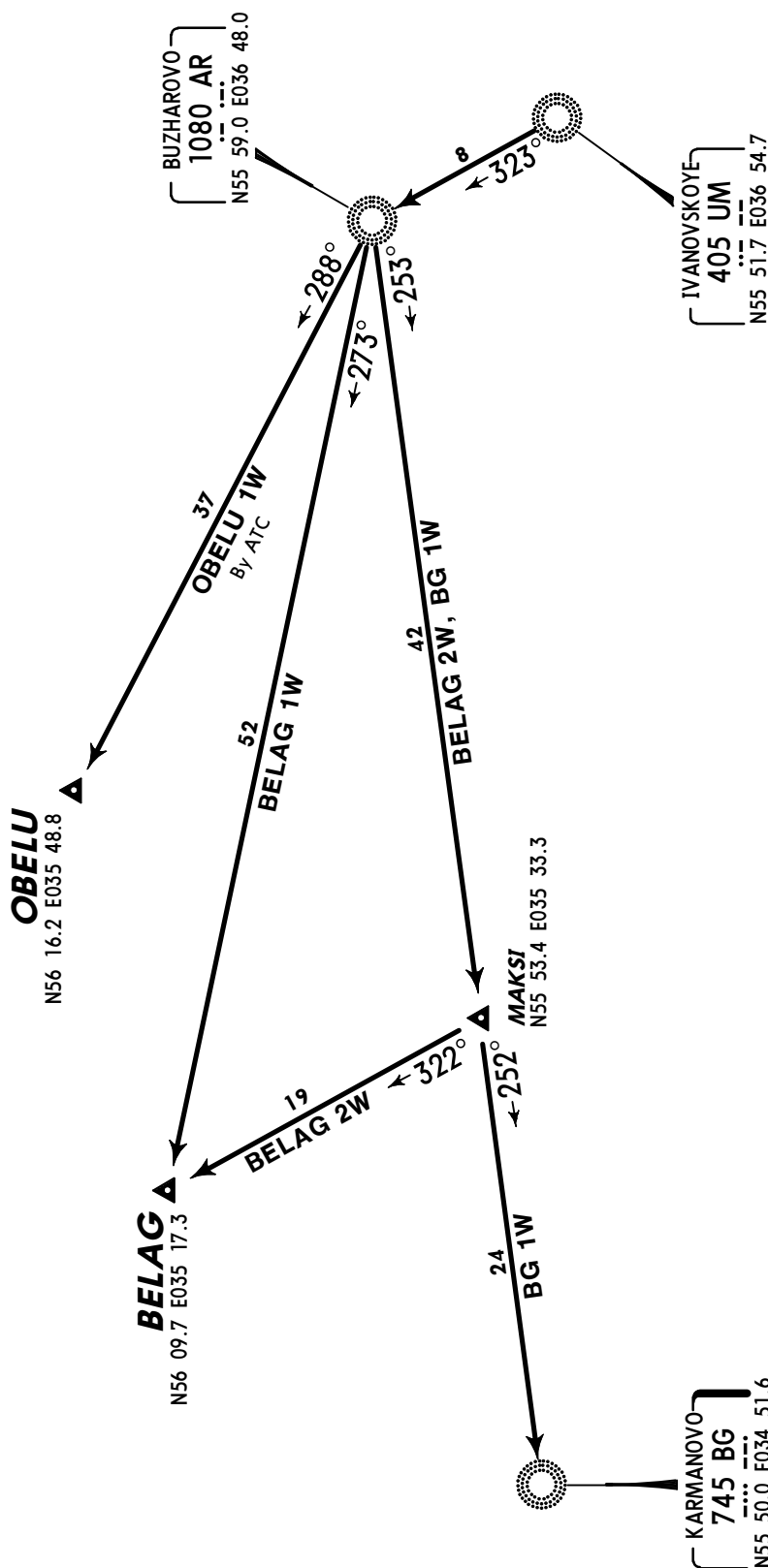
OBELU 1W [OBE1W]

BY ATC

TRANSITIONS



ALT/HEIGHT CONVERSION
QNH
3970' (3285' - 1000m)

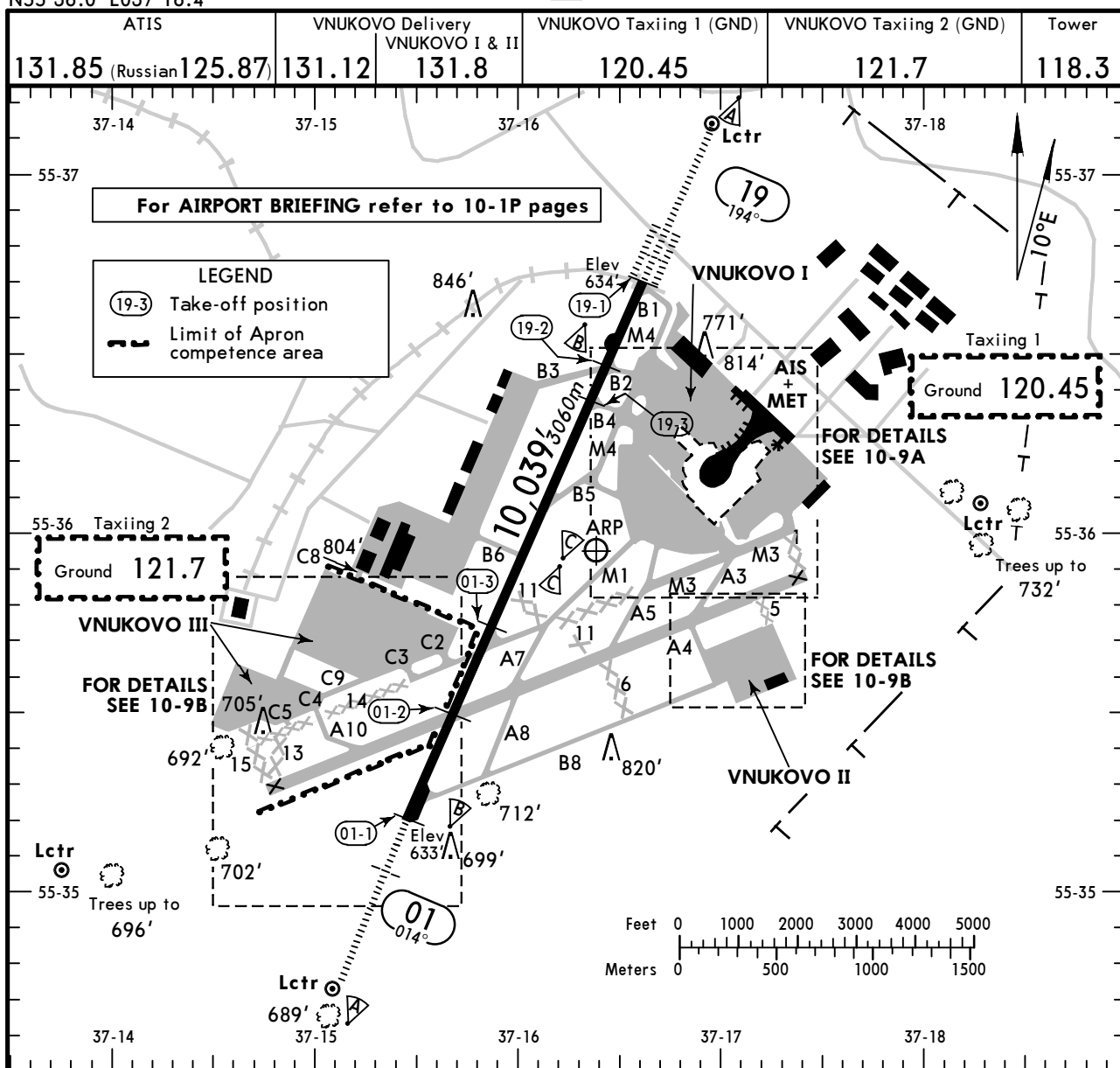


TRANSITION	ROUTING
BELAG 1W	From UM to AR, then to BELAG.
BELAG 2W	From UM to AR, then to MAKSI, then to BELAG.
BG 1W	From UM to AR, then to MAKSI, then to BG.
OBELU 1W	From UM to AR, then to OBELU.

UUWW/VKO
 Apt Elev **685'**
 N55 36.0 E037 16.4

JEPPESEN
 5 OCT 12 **10-9** Eff 18 Oct

MOSCOW, RUSSIA
VNUKOVO



ADDITIONAL RUNWAY INFORMATION

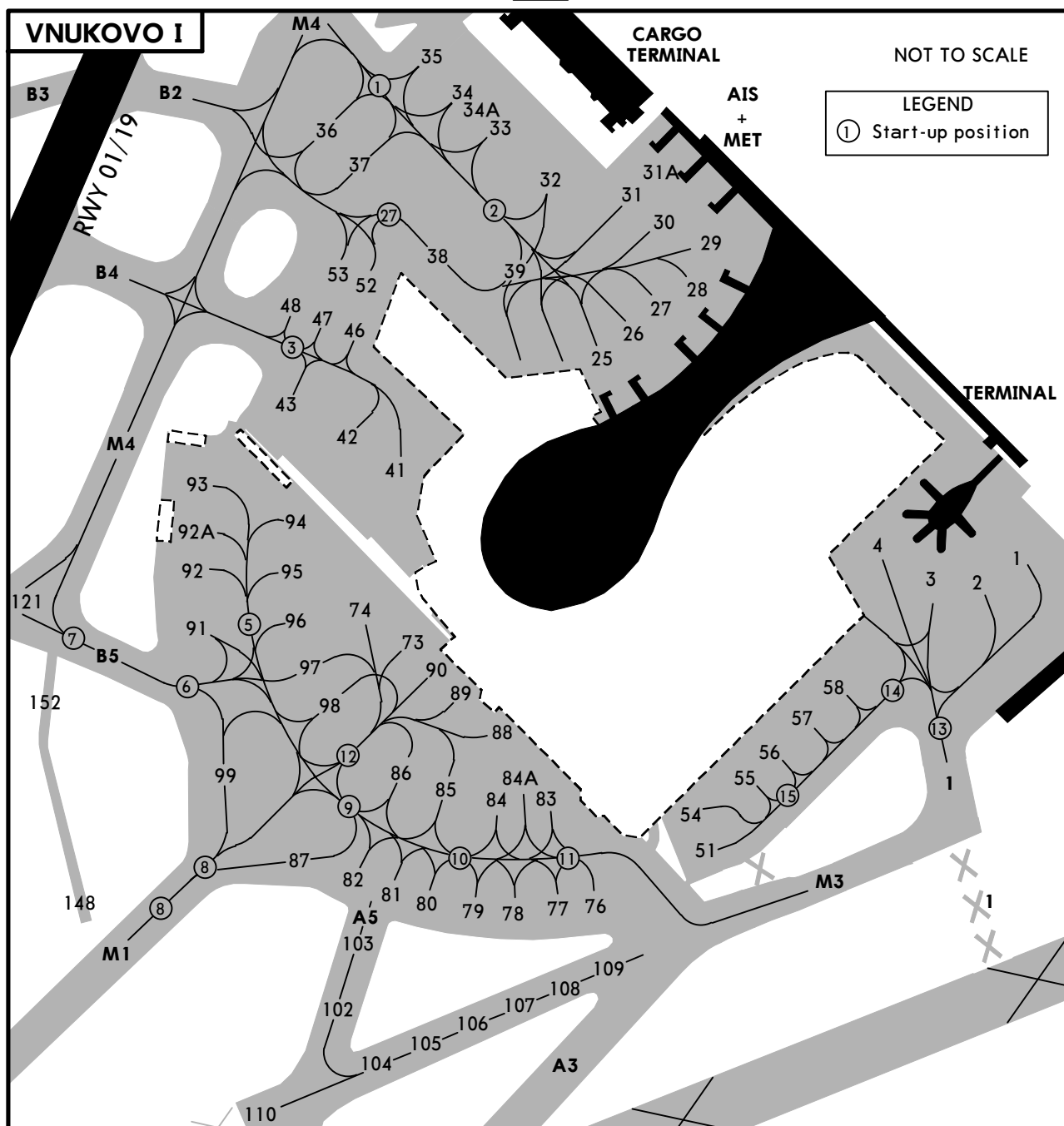
RWY		USABLE LENGTHS			WIDTH
		Threshold	Glide Slope	TAKE-OFF	
01	HIRL (60m) CL (15m) HIALS PAPI-L (3.00°) RVR				148'
19	HIRL (60m) CL (15m) HIALS-II TDZ PAPI-L (3.00°) RVR		9067' 2764m	1	45m

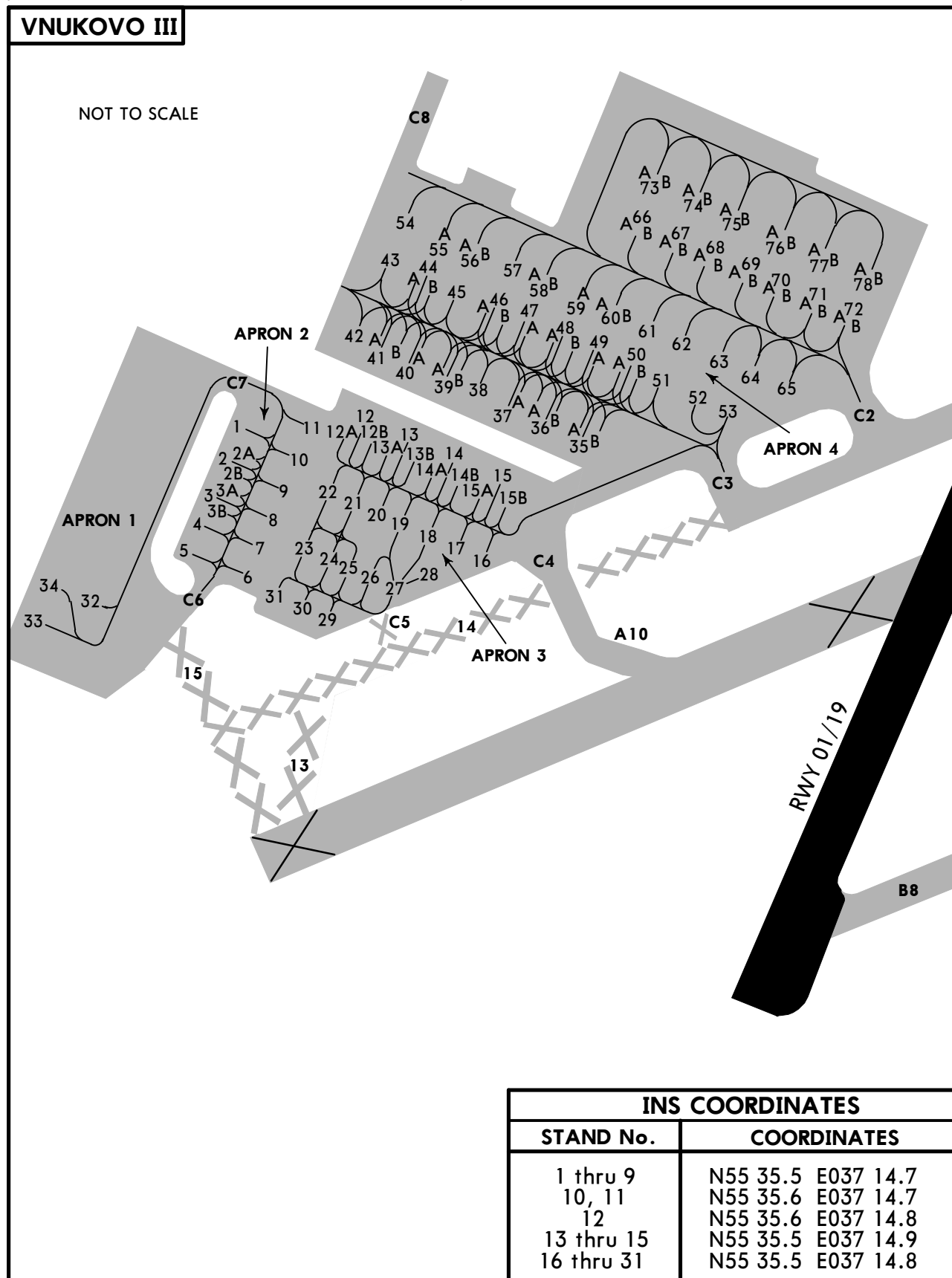
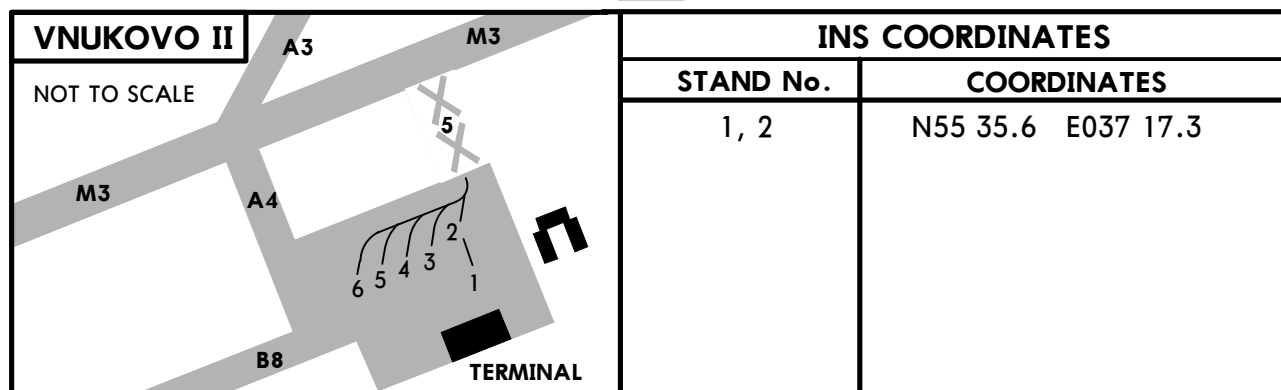
1 TAKE-OFF RUN AVAILABLE

RWY 01: From point 01-1	10,039' (3060m)	RWY 19: From point 19-1	10,039' (3060m)
from point 01-2	8045' (2452m)	from point 19-2	8333' (2540m)
from point 01-3	6936' (2114m)	from point 19-3	7677' (2340m)

TAKE-OFF

	AIR CARRIER (JAA) All Rwys			AIR CARRIER (FAR 121) All Rwys		
	LVP must be in force		RCLM (DAY only) or RL	CL & RCLM any RVR out, other two req.		Adequate Vis Ref
	RL & CL	RCLM (DAY only) or RL				
A			400m	2 Eng	TDZ RVR 200m Mid RVR 200m Roll out RVR 150m	RVR 500m VIS 400m
B	200m (150m)	250m		3 & 4 Eng		
C						
D	250m (200m)	300m				





STRAIGHT-IN RWY		A	B	C	D
01	ILS	833'(200')	833'(200')	833'(200')	833'(200')
	FULL	R550m	R550m	R550m	R550m
	Limited	R750m	R750m	R750m	R750m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC	NOT AUTH	NOT AUTH	NOT AUTH	NOT AUTH
	RNAV ①	1050'(417')	1050'(417')	1050'(417')	1050'(417')
19	ALS out	R1200m	R1200m	R1900m	R1900m
	NDB ①	1400'(767')	1400'(767')	1400'(767')	1400'(767')
		R1500m	R1500m	C2400m	C2400m
	PAR	856'(223')	866'(233')	876'(243')	886'(253')
		R750m	R750m	R750m	R750m
	ALS out	R1200m	R1200m	R1300m	R1300m
19	CAT 2 ILS	734'(100')	734'(100')	734'(100')	734'(100')
		RA105'R350m	RA105'R350m	RA105'R350m	RA105'R350m
	ILS	834'(200')	834'(200')	834'(200')	834'(200')
	FULL	R550m	R550m	R550m	R550m
	Limited	R750m	R750m	R750m	R750m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC	NOT AUTH	NOT AUTH	NOT AUTH	NOT AUTH
	RNAV ①	1110'(476')	1110'(476')	1110'(476')	1110'(476')
		R1500m	R1500m	R1500m	R1500m
	ALS out	R1500m	R1500m	C2200m	C2200m
	NDB ①	1410'(776')	1410'(776')	1410'(776')	1410'(776')
		R1500m	R1500m	C2400m	C2400m
	PAR	857'(223')	867'(233')	877'(243')	887'(253')
	ALS out	R750m	R750m	R750m	R750m
		R1200m	R1200m	R1300m	R1300m

① Continuous Descent Final Approach

TAKE-OFF RWY 01, 19

	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								
B	125m	150m	200m	250m		400m		500m
C								
D	150m	200m	250m	300m				

ILS DME or NDB/MKR Rwy 01

BRIEFING STRIP™

Trans alt: 3970' (**3337'**)10

PANS OPS

STRAIGHT-IN LANDING RWY 01							
ILS <i>DA(H)</i> 833' (200')		LOC (GS out)	NDB <i>MDA(H)</i> 1400' (767')				
FULL	ALS out			ALS out			
A	RVR 720m VIS 800m	1200m	NOT AUTH	1200m	RVR 1500m VIS 1600m		
B							
C					2800m	3600m	
D					3600m	4000m	

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ILS DME or NDB/MKR Rwy 19

BRIEFING STRIP TM

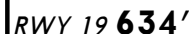
MSA Airport

Trans alt: 3970' (**3336'**)

AF) UL(P) 53



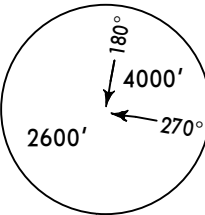
SX NDB/MKR
D0.5 ITA.....
GS 847' (213')



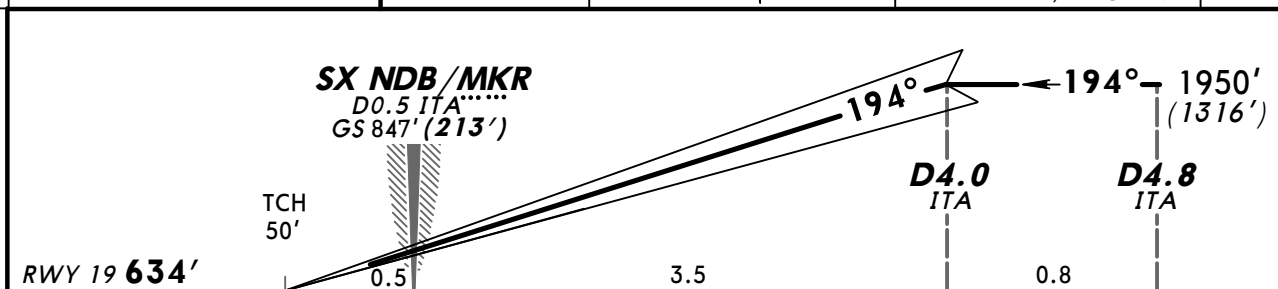
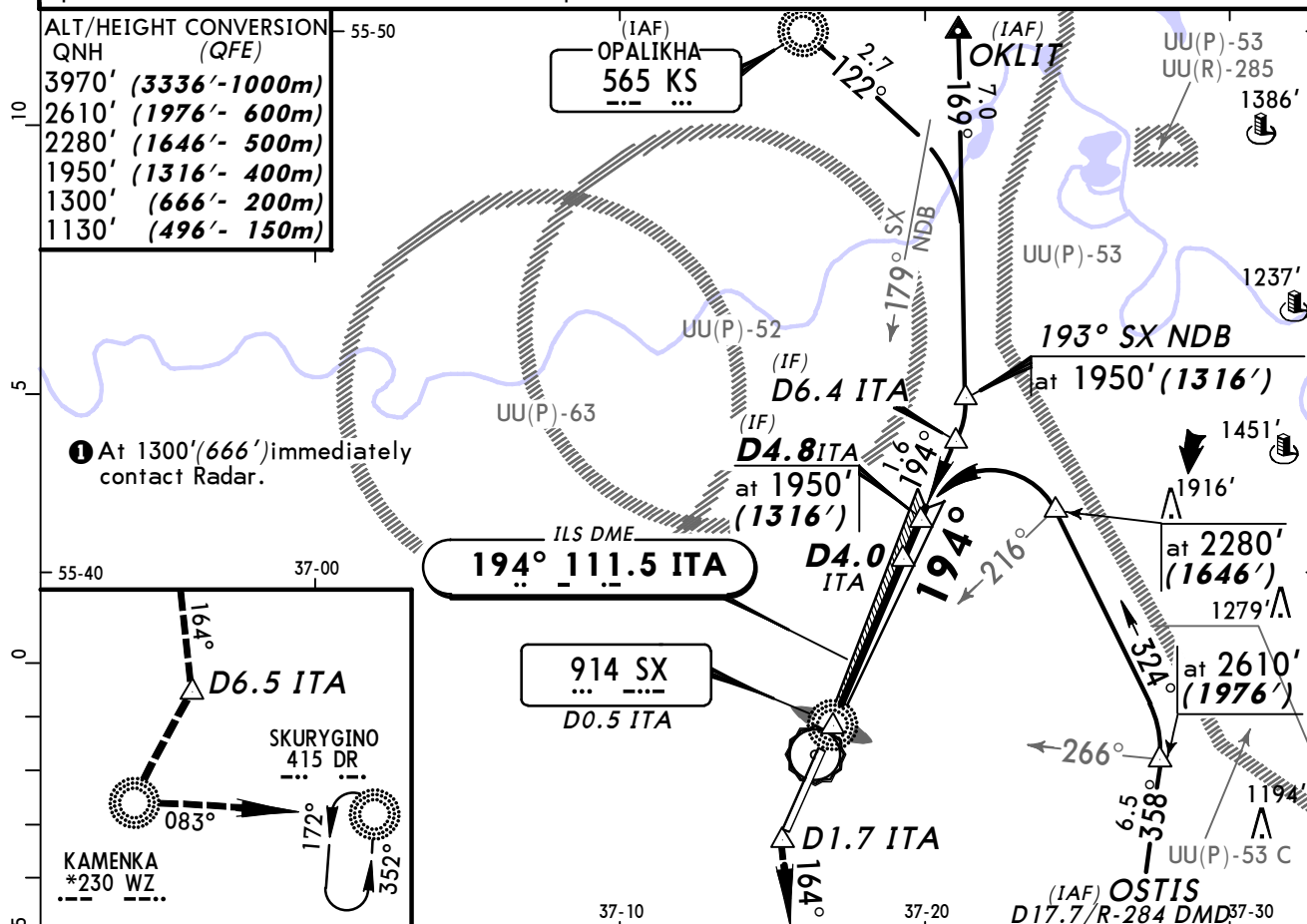
164°
LT

PANS OPS

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ATIS		MOSCOW Approach 3		MOSCOW Approach 4		VNUKOVO Approach	
131.85 (Russian 125.87)		128.0		123.4		122.3	
VNUKOVO Radar	VNUKOVO Precision (PAR)	VNUKOVO Tower		Ground			
126.0	118.3	118.3		120.45 121.7			
LOC ITA 111.5	Final Aptch Crs 194°	GS SX NDB 847' (213')	CAT II ILS RA 105' DA(H) 734' (100')	Apt Elev 685' RWY 634'			
MISSED APCH: Climb STRAIGHT AHEAD to 1130' (496') or D1.7 ITA, whichever is later. Turn LEFT onto 164° to D6.5 ITA climbing to 2610' (1976'), then turn RIGHT to WZ NDB. Turn LEFT onto 083° to DR NDB, or as directed. ①							 MSA Airport
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 3970' (3336') Special Aircrew & Aircraft Certification Required.							

ALT/HEIGHT CONVERSION	
QNH	(QFE)
3970'	(3336' - 1000m)
2610'	(1976' - 600m)
2280'	(1646' - 500m)
1950'	(1316' - 400m)
1300'	(666' - 200m)
1130'	(496' - 150m)

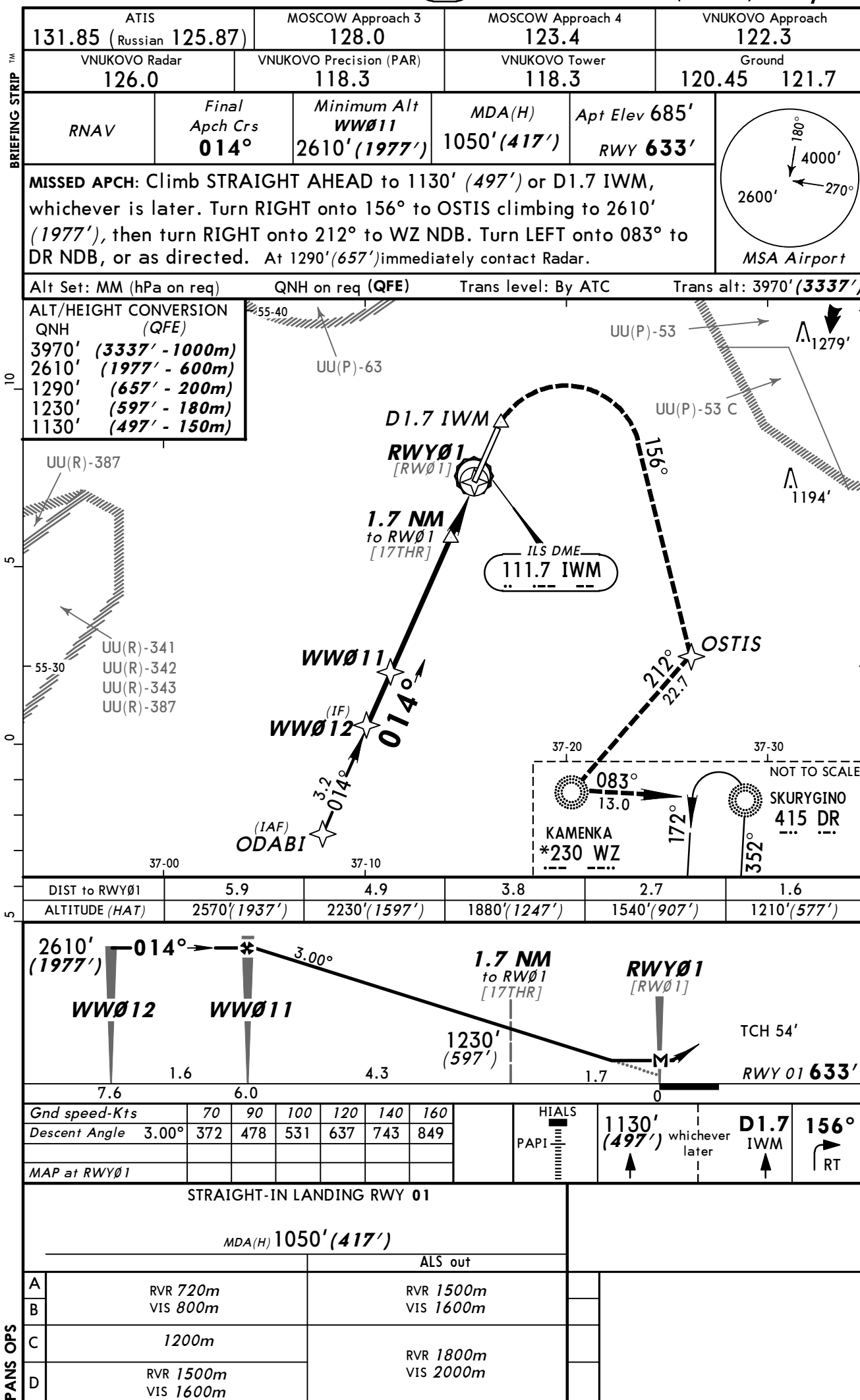


<i>Gnd speed-Kts</i>	70	90	100	120	140	160	HIALS-II PAPI 1130' (496') whichever later D1.7 ITA 164° LT
<i>GS</i> 3.00°	377	484	538	646	753	861	

STRAIGHT-IN LANDING RWY 19
CAT II ILS

RA 105'
DA(H) **734' (100')**

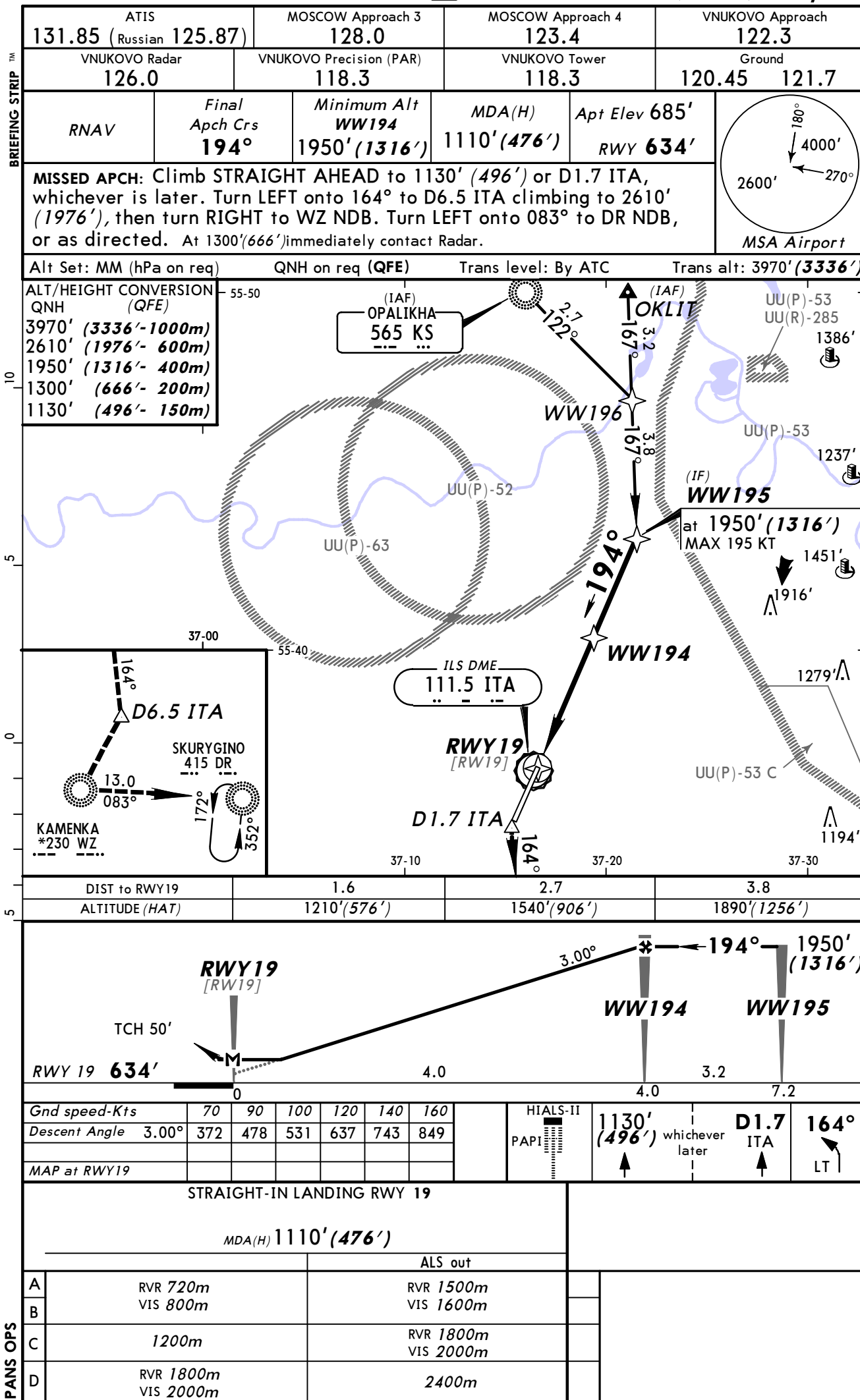
RVR **350m**



UWW/VKO
VNUKOVO

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5 OCT 12 (12-2) Eff 18 Oct

MOSCOW, RUSSIA
RNAV (GNSS) Rwy 19



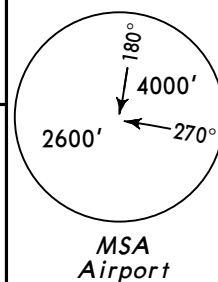
UWW/VKO
VNUKOVO

JEPPESEN
5 OCT 12 (18-1) Eff 18 Oct

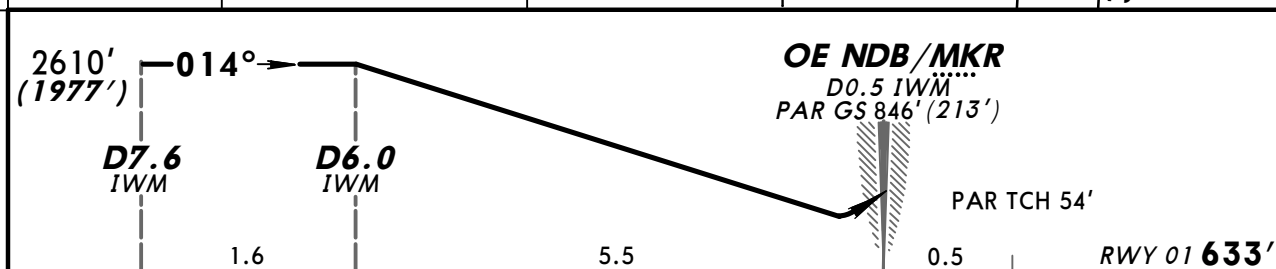
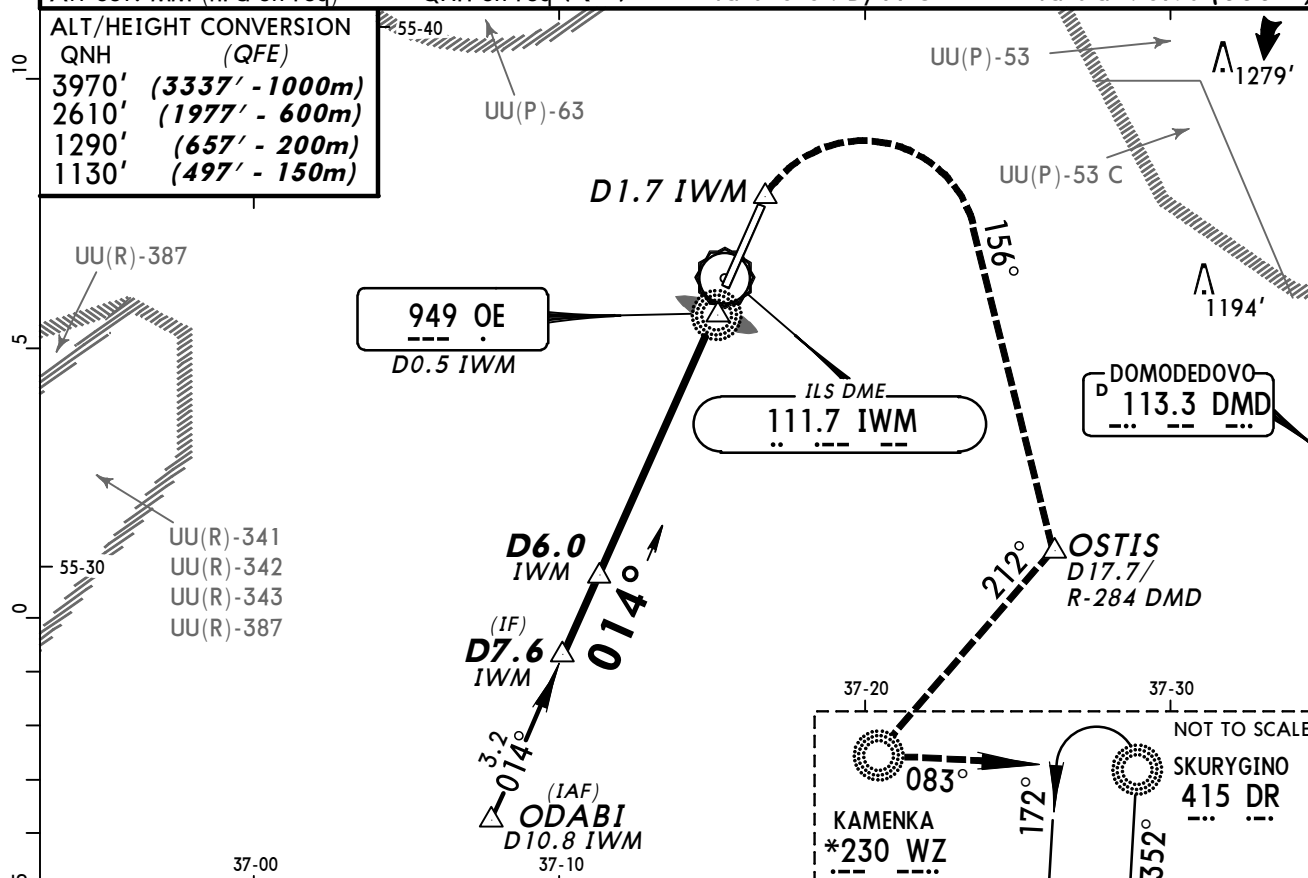
MOSCOW, RUSSIA
PAR Rwy 01

BRIEFING STRIP

ATIS 131.85 (Russian 125.87)	MOSCOW Approach 3 128.0	MOSCOW Approach 4 123.4	VNUKOVO Approach 122.3
VNUKOVO Radar 126.0	VNUKOVO Precision (PAR) 118.3	VNUKOVO Tower 118.3	Ground 120.45 121.7
RADAR	Final Apch Crs 014°	PAR GS D6.0 IWM 2610' (1977')	PAR DA(H) Refer to Minimums
		Apt Elev 685' RWY 633'	
MISSED APCH: Climb STRAIGHT AHEAD to 1130' (497') or D1.7 IWM, whichever is later. Turn RIGHT onto 156° to OSTIS climbing to 2610' (1977'), then turn RIGHT onto 212° to WZ NDB. Turn LEFT onto 083° to DR NDB, or as directed. At 1290' (657') immediately contact Radar.			
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 3970' (3337')			



ALT/HEIGHT CONVERSION
QNH (QFE)
3970' (3337' - 1000m)
2610' (1977' - 600m)
1290' (657' - 200m)
1130' (497' - 150m)



Gnd speed-Kts	70	90	100	120	140	160		HIALS	1130' (497') whichever later	D1.7 IWM	156° RT
PAR GS	3.00°	377	484	538	646	753	861	PAPI			

STRAIGHT-IN LANDING RWY 01							
DA(H)		A: 856' (223')	C: 876' (243')	ALS out			
		B: 866' (233')	D: 886' (253')				
A							
B							
C	RVR 720m VIS 800m			1200m			
D							

PANS OPS

CHANGES: Missed apch.

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UWW/VKO
VNUKOVO

JEPPESEN
5 OCT 12 (18-2) Eff 18 Oct

MOSCOW, RUSSIA
PAR Rwy 19

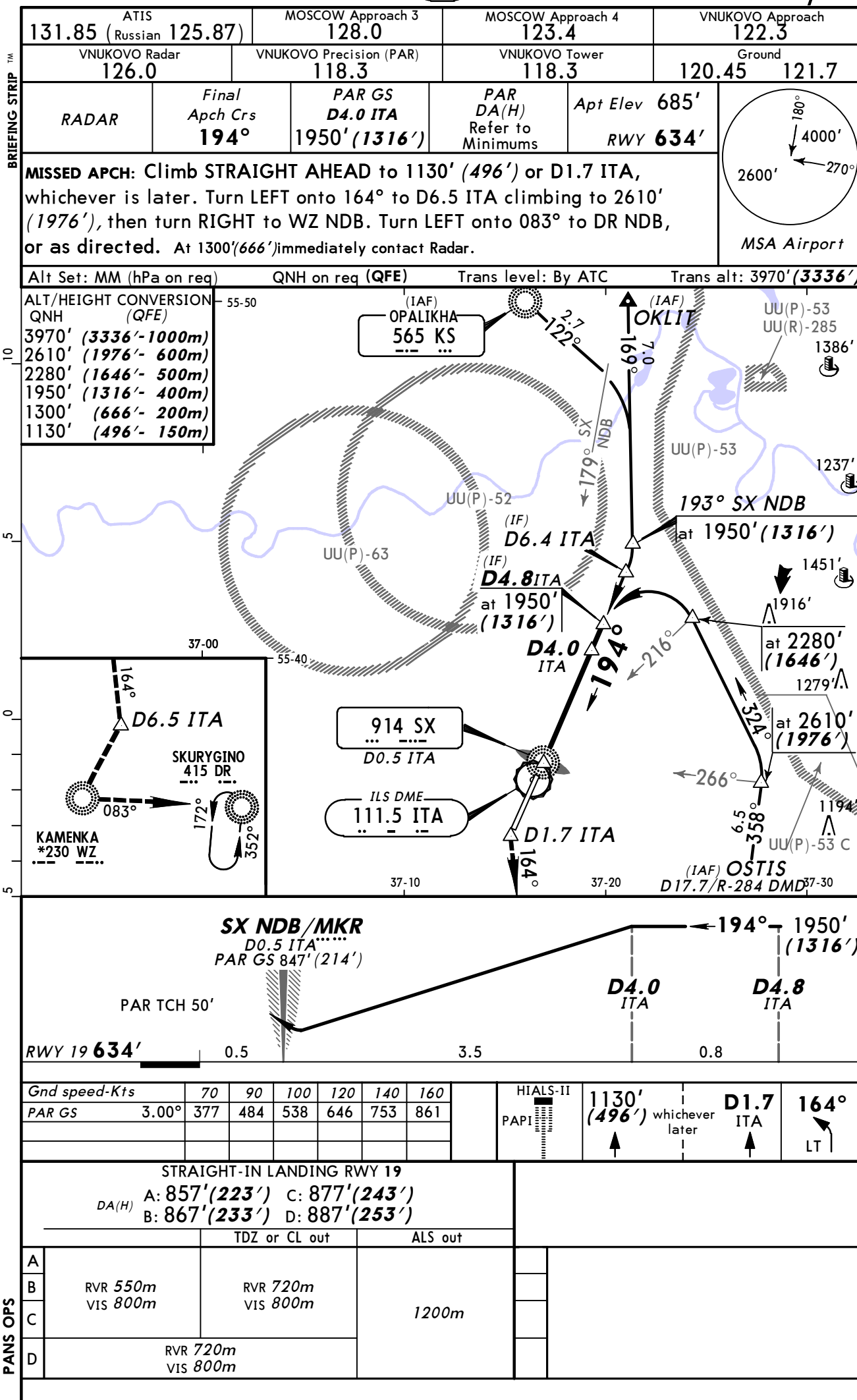


Chart changes since cycle 07-2013

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

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
MOSCOW, (VNUKOVO - UUWW)				

TERMINAL CHART CHANGE NOTICES

No Chart Change Notices for Airport UUWW