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Revision Letter For Cycle 08-2026

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## General Information

Location: MOSCOW RUS  
ICAO/IATA: UUWW / VKO  
Lat/Long: N55° 35.95', E037° 16.38'  
Elevation: 685 ft

Airport Use: Public  
Daylight Savings: Not Observed  
UTC Conversion: -3:00 = UTC  
Magnetic Variation: 11.0° 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: 0141 Z  
Sunset: 1715 Z

## Runway Information

Runway: 01  
Length x Width: 10039 ft x 148 ft  
Surface Type: asphalt  
TDZ-Elev: 662 ft  
Lighting: Edge, ALS, Centerline

Runway: 06  
Length x Width: 11483 ft x 197 ft  
Surface Type: asphalt  
TDZ-Elev: 638 ft  
Lighting: Edge, ALS, Centerline, TDZ

Runway: 19  
Length x Width: 10039 ft x 148 ft  
Surface Type: asphalt  
TDZ-Elev: 658 ft  
Lighting: Edge, ALS, Centerline, TDZ

Runway: 24  
Length x Width: 11483 ft x 197 ft  
Surface Type: asphalt  
TDZ-Elev: 685 ft  
Lighting: Edge, ALS, Centerline, TDZ

## Communication Information

ATIS: 124.450 Departure Service  
ATIS: 125.875 Arrival Service Non-English  
ATIS: 127.800 Departure Service Non-English  
ATIS: 131.850 Arrival Service  
Vnukovo Tower/Precision Tower: 129.000 Secondary  
Vnukovo Tower/Precision Tower: 118.300 At or below 2500 ft  
Vnukovo Tower 1 Tower: 122.300 At or below 1500 ft  
Vnukovo Tower 1 Tower: 119.450 Secondary  
Vnukovo Ground: 121.700  
Vnukovo Ground: 120.450  
Vnukovo Ground: 129.000  
Vnukovo Ground: 119.450 Secondary  
Vnukovo Utg Ramp/Taxi: 123.250  
Vnukovo Clearance Delivery: 131.800  
Vnukovo Clearance Delivery: 129.700  
Moscow Approach: 134.000  
Moscow Approach: 124.400 Secondary  
Moscow Approach: 127.200  
Moscow Approach: 128.000  
Moscow Approach: 129.000 Secondary  
Moscow Approach: 130.375  
Moscow Approach: 119.450 Secondary  
Moscow Approach: 131.200  
Moscow Approach: 118.950  
Moscow Approach: 124.200  
Moscow Approach: 118.550  
Vnukovo Vippport Operations: 122.875  
Vnukovo De-Icing Operations: 123.200  
Vnukovo Transit Operations: 131.875  
Vnukovo Radar: 123.400  
Vnukovo Radar: 126.000  
Vnukovo Radar: 135.900  
Vnukovo Radar: 129.000 Secondary

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MOSCOW, RUSSIA  
AIRPORT BRIEFING**1. GENERAL****1.1. ATIS**

ATIS Arrival 131.850  
125.875 (Russian)

ATIS Departure 124.450  
127.8 (Russian)

**1.2. LOW VISIBILITY PROCEDURES (LVP)****1.2.1. GENERAL**

LVP shall be implemented when R VR is below 550m and/or height of cloud base (vertical visibility) is below 60m. Flight crews will be informed by ATIS or ATS unit when LVP are in progress: "Low visibility procedures in progress, check your minimum".

Taxiing when visibility is less than 2000m shall be carried out with air navigation lights and landing lights switched on.

When visibility is less than 350m ACFT taxiing shall be carried out along TWY only with TWY centerline lights switched on or after Follow-me car.

**1.2.2. ARRIVAL**

Flight crew shall report RWY vacate to VNUKOVO Tower only after complete crossing of RWY holding position marking painted on TWY or passing last yellow light of exit TWY centerline indicating boundary of ILS critical area.

ACFT must vacate ILS critical area as soon as possible.

Arriving ACFT landing on RWY 06/24 and RWY 19 shall taxi via established routes.

Flight crew shall report the presence of Follow-me car in front of the ACFT as following: "VNUKOVO Ground, TTF 9075, on Mike - 1, Follow-me vehicle in sight".

Thereafter ACFT shall taxi under control of VNUKOVO Ground.

Flight crew shall report to VNUKOVO Ground about ACFT arrival at the stand as following: "TTF 9075, on stand 12".

**1.2.3. DEPARTURE**

When visibility is less than 350m, the flight crew of the departing ACFT shall carry out taxiing only along the TWYs equipped with green TWY centerline lights. In case of failure of TWY centerline lights or stop bar lights, when visibility is less than 350m, the flight crew must carry out taxiing after the Follow-me car only.

When visibility is less than 350m, ACFT taxiing along the apron area shall be carried out after the Follow-me car only under control of VNUKOVO Ground.

During taxiing along the apron area and maneuvering area the flight crew must constantly check the established marking, especially at TWY intersections, to ensure safety of taxi operation. In case of difficulty or doubt, flight crew must stop taxiing and report to VNUKOVO Ground or Tower.

When visibility is below 350m, ACFT intended to take off from RWY 06 shall taxi under assistance of the Follow-me car to the first illuminated on TWY centerline light on TWY A4, TWY M1 and MAIN TWY M2.

Flight crew shall continue taxiing along green lights by the instruction of VNUKOVO Ground controller to stop bars on TWY A10, TWY A11, TWY A13, stop and hold. The transfer of control from VNUKOVO Ground to Tower shall be carried out at stop bars.

When visibility is below 350m, ACFT intended to take off from RWY 24 shall taxi under assistance of the Follow-me car to the first illuminated centerline light on TWYs A1 thru A5 and MAIN TWY M2. Flight crew shall continue taxiing along green lights following the instruction of VNUKOVO Ground controller to stop bars on TWYs A1 thru A5, stop and hold. The transfer of control from VNUKOVO Ground to Tower shall be carried out at stop bars.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING

## 1. GENERAL

When visibility is 350-550m ACFT shall taxi for take-off from RWY 01/19 along established routes. The transfer of control from VNUKOVO Ground to Tower shall be carried out before the marking of RWY holding position.

It is prohibited to cross the RWY holding position line (ILS critical area) marked by stop bars and by DAY without the permission of VNUKOVO Tower.

Holding short of the RWY, the flight crew should read back all instructions of VNUKOVO Tower and Ground.

Having obtained line-up clearance, flight crew must start taxiing only after stop bars are switched off. It is prohibited to cross the illuminated stop bars.

### 1.3. TAXI PROCEDURES

Taxiing along TWYs B1, B3, B6, B8 and M4 (from TWY B1 to TWY B4) at reduced speed, strictly along taxi guideline with increased CAUTION.

Taxiing on segments where TWY centerline lights and marking sign of position and movement direction are absent or on TWY C2 thru C5, TWY C9 or TWYs A13 and M2 (from TWYs A13 to C6): At NIGHT or when VIS is 2000m or below taxiing on TWY segments where TWY centerline lights and location and direction signs are not provided shall be carried out under assistance of Follow-me car.

Taxi route from TWY C8 along hangars 9 thru 14 and between stand 54 and hangar 15 MAX wingspan 118'/36m.

TWY A12 is closed for taxiing and towing of all ACFT types.

At RWY 06 extremity only RIGHT turn shall be carried out at reduced speed with flight crew's increased caution.

### 1.4. PARKING INFORMATION

Enter Vnukovo 1 apron stands 32, 34A, 38, 38C, 39, 40, 41, 51A, 54, 56, 56A, 57, 58, 59, 60, 61, 61B (temporary stand), 62B (temporary stand), 64, 65, 66, 66A and 66B by towing.

Exit Vnukovo 1 apron stands 1 thru 31, 23A, 24A, 26A, 32, 32A, 32B, 32C, 33, 34, 34A, 35, 38A, 38B, 38C, 38D, 38E, 39, 39A, 39B, 40, 41, 41A, 52, 53, 54, 55, 56, 56A, 57A, 58A, 59A, 60A, 61A, 65, 66, 66A, 66B, 67, 67A, 68, 68A, 69, 69A, 70, 70A, 71 and 71A by towing.

Enter Vnukovo 3 stands 1 thru 5, 8 thru 10 by towing.

Use Vnukovo 3 stands 73 thru 78 by towing.

Exit Vnukovo 3 stands 29 thru 31, 33, 34, 35 thru 72A and 90 thru 98 by towing.

Use Vnukovo 5 stands 501 thru 510 by towing.

Stands 62 thru 66 are available for loading and unloading of dangerous goods.

### 1.5. COMMUNICATION FAILURE PROCEDURES

In case of radio communication failure follow established procedures.

In all cases, crew can

- use mobile communication

Flight Control Officer (Moscow TMA Control Center)

Tel: +7 495 956 87 33

+7 495 436 25 36

+7 916 043 35 90

Flight Control Officer (Moscow ACC)

Tel: +7 495 956 87 34

+7 495 436 26 62

+7 916 043 36 16

- monitor LOM frequency for ATC instructions.

### 1.6. OTHER INFORMATION

Birds in vicinity of APT.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING

## 2. ARRIVAL

### 2.1. COMMUNICATION FAILURE PROCEDURES

#### 2.1.1. COMMUNICATION FAILURE DURING ARRIVAL

Set transponder to 7600 and continue the flight maintaining the route and flight profile of the cleared (short-test basic) RNAV STAR.

Execute approach according to the established procedure.

In case of missed approach carry out published missed approach procedure to the nearest holding, and follow paragraph 2.1.2.

Set transponder to 7700 if is necessary to deviate from the mentioned procedure.

#### 2.1.2. COMMUNICATION FAILURE AFTER MISSED APPROACH

Continue maintaining the flight route and profile of missed approach procedure to the nearest holding area.

Enter the holding area at the upper published altitude at IAF, burn out fuel, if necessary.

After taking the decision to execute landing at the destination:

- Execute approach in accordance with the established procedure.

After taking the decision to proceed to the alternate AD in Moscow TMA:

- Proceed to WNK DVORDME climbing to transition altitude 10000'.
- Proceed to IAF of the alternate aerodrome in Moscow TMA via the following waypoints:

Moscow/Sheremetyevo:

LIKNI - GIGUN - NUZOR - PUFIK - ROLAZ - RIZNO - BEGEZ - LUNZA - EE048 - EE049 - EE050 - EE051 - TAFAZ - KEZVU (IAF).

Moscow/Domodedovo:

BITSA - IMZUP - KUPVE - NIDBE - IZVOK - IPKED - ZOVGO - ODZAG - GUFUZ - ALBOR (IAF).

Ostafyevo:

BUPOS - ORSIF - MEZER - NALFI - RAMZA - UKABE - FIDOT - RORUK (IAF).

Ramenskoye:

BITSA - IMZUP - GENKE - RT NDB - BW316 - W317 - BW318 - BW319 - ODLOR (IAF).

- At IAF enter the published, if available, or standard holding area.
- In the holding area descend from transition altitude 10000' to the upper published approach procedure altitude at IAF.
- Execute approach according to the established procedure.

After taking the decision to proceed to the alternate AD outside Moscow TMA:

- Execute approach according to the established procedure to IF.
- Proceed from IF to the initiation point of the basic RNAV SID of the same RWY.
- Maintain flight route and profile of the basic RNAV SID to the maximum extent until leaving Moscow TMA.
- After leaving Moscow TMA reach the flight level specially established for flight without radio communication (FL 140, FL 150, FL 240, FL 250).

After taking the decision to proceed to the destination AD:

- Execute approach in accordance with the established procedure to IF.
- Proceed from IF to the initiation point of the basic RNAV SID of the same RWY.
- Maintain flight route and profile of the basic RNAV SID to the maximum extent until leaving Moscow TMA.
- After leaving Moscow TMA, reach flight level indicated in the flight plan.

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Eff 17 Apr

MOSCOW, RUSSIA  
AIRPORT BRIEFING**2. ARRIVAL****2.2. CAT II OPERATIONS**

RWYs 06, 24 and 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.

The time of RWY vacation after landing when friction coefficient is 0.45 or more:

On heading 012°:

- via TWY B5 - not more than 70 seconds.

On heading 057°:

- via TWY A5 - not more than 70 seconds.
- via TWY A7 - not more than 60 seconds.

On heading 192°:

- via TWY M1 - not more than 70 seconds.

On heading 237°:

- via RWY 01/19, TWY A10, A11, A12 - not more than 100 seconds.

Unless otherwise instructed by ATC, RWY vacation should be planned by flight crew considering LDA to the respective TWY indicated in the table.

RWY	TWY for RWY vacation	LDA
06	A9	4396' (1340m)
	A7	6378' (1944m)
	A5	8209' (2502m)
	A3	9708' (2959m)
24	A6	4154' (1266m)
	A10	8327' (2538m)
	A11	9843' (3000m)
01	B5	5879' (1792m)
	B4	7713' (2351m)
	B2	8409' (2563m)
19	M1	6850' (2088m)
	MAIN M2	7119' (2170m)
	B8	9429' (2874m)

**2.3.2. AFTER LANDING**

After RWY vacation the flight crew shall squawk ALT OFF or XPDR and keep this mode till ACFT parking onto a stand.

**2.3.3. REDUCED RWY SEPARATION MINIMA**

Reduced RWY separation minima are applied during flight operations to/from RWY 06/24 only in the day-time, within the time period that starts 30 minutes after sunrise and ends 30 minutes before sunset (LT), and are subject to the following meteorological conditions:

- visibility is at least 5km;
- the height of cloud base (ceiling) is 300m or above;
- tailwind component does not exceed 3m/s.

Normative friction coefficient on the RWY shall be 0.40 or above (estimated surface friction "good" or "medium to good").

Reduced RWY separation minima is applied based on the decision of the AD Flight Control Officer.

Information on application at the aerodrome must be included in ATIS broadcast.

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AIRPORT BRIEFING

## 2. ARRIVAL

ATS unit can issue landing clearance to flight crew of an arriving ACFT, provided there is reasonable assurance, that when this ACFT crosses the RWY THR:

- the preceding arriving ACFT has landed and has passed the point located at distance at least 2500m from the RWY THR, is in motion and will vacate the RWY without backtracking;
- the preceding departing ACFT is airborne and has passed the point located at distance at least 2500m from the RWY THR.

Landing clearance issued by ATS unit to flight crew of an arriving ACFT must contain information on type of the preceding departing ACFT or arriving ACFT that has already landed.

Flight crew must report sighting the preceding departing ACFT or arriving ACFT that has already landed, and acknowledge receipt of landing clearance, if requested by the ATS unit.

Pilot-in-command makes the final decision to execute landing. The obtained landing clearance does not entail an obligation to execute landing.

### 2.3.4. IFR PROCEDURES WITHIN MOSCOW (VNUKOVO) CTR

Clearance to execute visual approach for ACFT performing IFR flight shall be requested by the flight crew or shall be initiated by ATS unit. In the latter case flight crew's consent is required.

- the flight crew has reported of establishing a visual contact with the RWY and/or its references;
- the height of cloud base is 600m or above or the flight crew has reported that weather conditions allow to execute visual approach.

The flight crew of succeeding ACFT shall provide own acceptable separation interval between the preceding ACFT. If deemed necessary to increase separation interval, the flight crew shall inform ATS unit accordingly or take a decision to go around.

## 2.4. TAXIING PROCEDURES

Towing to stand 62 from the direction of stand 63 is permitted with operating radius of turn of not more than 85'/26m.

### 2.4.1. STANDARD TAXI ROUTES

#### FOR RWY 01:

Route 7: TWY M4, TR W.

Route 8: TWY M4, TWY B5, TR Z.

Route 9: TWY M4, TWY B5, TR Z, TR X, TR W.

#### FOR RWY 06:

Route 1: TWY M3, TWY A5, TR Z, TWY B5, TWY M4, TR W.

Route 2: TWY M3, TWY A5, TR Z (TR X, TR W).

Route 3: TWY M3, TWY A2, TR W.

#### FOR RWY 19:

Route 10: TWY M1, TR X, TR Z, TWY B5, TWY M4, TR W.

Route 11: TWY M1, TR X (TR Z, TR W).

Route 12: TWY M1, TWY M3, TWY A2, TR W.

#### FOR RWY 24:

Route 4: TWY M2, crossing of RWY 01/19 by ATC permission, TWY M1, TR X, TR Z, TWY B5, TWY M4, TR W.

Route 5: TWY M2, crossing of RWY 01/19 by ATC permission, TWY M1, TR X (TR Z, TR W).

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MOSCOW, RUSSIA  
AIRPORT BRIEFING**2. ARRIVAL****2.4.2. CODED TAXI ROUTES (MONITOR PROCEDURES)**

When crossing RWY 01/19 or RWY 06/24, flight crew shall stop at the RWY holding position and maintain listening watch on TWR controller's frequency.

Flight crew may cross the RWY only by TWR controller's clearance. After crossing the RWY, flight crew shall maintain listening watch on GND controller's frequency.

In all cases the flight crew shall inform Delivery controller about the estimated displaced position of take-off run on the RWY while obtaining ATC clearance. In case flight crew doesn't inform Delivery controller, GND controller gives instruction to take off from the RWY beginning taking into account limitations caused by airfield elements.

In case GND controller assigns a coded taxi route, monitor procedure is included in route description. In case the route is assigned indicating route elements, flight crew shall be informed about application of monitor procedure prior to start taxiing out of stand.

**2.4.2.1. RWY 01**

Route	Destination Point	Frequency	Routing via
Magenta 2	Vnukovo 3	120.450 GND 1	B5 (or B4/B2, M4, B5), Z, X, M1, hold short of RWY 01/19, maintain listening watch on FREQ 118.300MHz (TWR controller), M2

**Taxiing to Vnukovo 3 Apron**

Hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall stop at RWY 01/19 holding position maintaining listening watch on frequency of TWR controller without calling the controller. ACFT shall cross RWY01/19 by instruction of TWR controller and taxi to the stand on Vnukovo 3 apron, maintaining listening watch on frequency of GND controller.

**2.4.2.2. RWY 06**

Route	Destination Point	Frequency	Routing via
Blue 2	Vnukovo 1	120.450 GND 1	A7/5/3, M3, Z, B5, M4, W
Blue 4			A7/5/3, M3, A2, W

**Taxiing to Vnukovo 1 Apron**

Hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller). After crossing RWY 01/19 ACFT shall taxi to the stand under assistance of the Follow-me car maintaining listening watch on frequency of GND controller.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING**2. ARRIVAL****2.4.2.3. RWY 19**

Route	Destination Point	Frequency	Routing via
Magenta 4	Vnukovo 1	120.450	M1, X, W
Magenta 6		GND 1	M1, X, Z

**Taxiing to Vnukovo 1 Apron**

ACFT shall vacate RWY via TWY M1 or via intersection of RWY 01/19 and RWY06/ 24, obtain the assigned stand number, taxi instructions or taxi route code and taxi to the stand maintaining listening watch on frequency of GND controller.

ACFT shall vacate RWY via TWY B8.

Hold short of RWY 06/24, maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall stop at RWY 06/24 holding position, maintaining listening watch on frequency of TWR controller without calling the controller. ACFT shall cross RWY06/24 by instruction of TWR controller and taxi to the stand, maintaining listening watch on frequency of GND controller.

**Taxiing to Vnukovo 3 Apron**

ACFT shall taxi to the stand under assistance of the Follow-me car, maintaining listening watch on frequency of GND controller.

**2.4.2.4. RWY 24**

Route	Destination Point	Frequency	Routing via
Blue 6	Vnukovo 1	120.450 GND 1	A10/11/13, M2, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M1, X, W
Blue 8			A10/11/13, M2, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M1, X, Z

**Taxiing to Vnukovo 1 Apron**

Hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller). After crossing RWY 01/19 ACFT shall taxi to the stand maintaining listening watch on frequency of GND controller.

**Taxiing to Vnukovo 3 Apron**

ACFT shall taxi to the stand under assistance of the Follow-me car maintaining listening watch on frequency of GND controller.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING

### 3. DEPARTURE

#### 3.1. DE-ICING

For de-icing positions refer to 10-9 charts.

#### 3.2. START-UP, TOWING AND TAXI PROCEDURES

##### 3.2.1. START-UP

###### General

Parking onto start-up positions shall be executed in the direction indicated by the arrow.

Simultaneous use of two adjacent start-up positions of the same direction is prohibited.

During departure: the flight crew shall squawk ALT OFF or XPDR and keep this Mode till reaching the line-up position.

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

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

Flight crew of ACFT parking on Vnukovo 1 apron shall request the ATC clearance from Delivery 1, on other aprons from Delivery 3, not earlier than 15 minutes before time of departure indicated in the flight plan passing the following information to Delivery:

- flight number;
- the destination aerodrome;
- the ACFT stand number;
- ATIS code letter.

**Note:** Submission of a request for ATC clearance implies that all planned ground handling, passport control and customs clearance procedures were simultaneously completed by the prescribed TOBT.

Obtained ATC clearance is the permission to start up engines on the stand, to start up engines during towing, and to start up engines at start-up point.

After the confirmation of ATC clearance, the flight crew must immediately establish radio contact with GND controller and obtain instructions regarding sequence of ACFT taxiing from the stand, engine start-up operations, tow operations to start-up position, taxi operations to RWY holding position and movement of ACFT to de-icing treatment area.

If within 5 minutes after obtaining instructions regarding above operations, flight crew did not start to execute cleared operation, they must report to Delivery or GND controller, advising time of delay and reason.

In case of landing at Moscow/Vnukovo aerodrome as alternate and a change of the time earlier than indicated in the flight plan, a new time and slot must be coordinated with the APT services and flight plan message must be sent.

In case of ACFT departure from Vnukovo 1 or Vnukovo 3 apron 4, and de-icing treatment is required, 10 minutes shall be added to the time of departure for towing and engine start-up (departure considered as scheduled). Up to 15 minutes are given for taxiing and ensuring air traffic safety for all ACFT types.

**Warning:** ACFT taking off ahead of the departure time indicated in the flight plan shall be constituted as a breach of the Federal rules on the use of the airspace of the Russian Federation.

Flight crew is responsible for ensuring arrival of ACFT on de-icing treatment area.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING

### 3. DEPARTURE

#### 3.2.2. TAXI PROCEDURES

Towing out of stands 64 and 65 is permitted in the direction of stands 42, 66 with operating radius of turn of not more than 85'/26m.

Taxiing out of stand 62A to taxi route Z under own engines power is permitted for ACFT with operating radius of turn of not more than 85'/26m.

#### 3.2.3. STANDARD TAXI ROUTES

##### FOR RWY 01:

Route 19: TR W, TWY M4, TWY B5, TR Z, TR X, TWY M1, TWY A7, crossing of RWY 06/24 by ATC permission, TWY A8, TWY B8.

Route 20: TR W (TR Z), TR X, TWY M1, TWY A7, crossing of RWY 06/24 by ATC permission, TWY A8, TWY B8.

Route 21: TR W, TWY A2, TWY M3, TWY A7, crossing of RWY 06/24 by ATC permission, TWY A8, TWY B8.

##### FOR RWY 06:

Route 13: TR W, TWY M4, TWY B5, TR Z, TR X, TWY M1, crossing of RWY 01/19 by ATC permission, TWY M2.

Route 14: TR W (TR Z), TR X, TWY M1, crossing of RWY 01/19 by ATC permission, TWY M2.

##### FOR RWY 19:

Route 22: TR W, TWY M4.

Route 23: TR W, TR X, TR Z, TWY B5, TWY M4.

##### FOR RWY 24:

Route 16: TR W, TWY M4, TWY B5, TR Z, TWY A3.

Route 17: TR Z, TWY A3.

Route 18: TR W, TWY A2.

#### 3.2.4. CODED TAXI ROUTES (MONITOR PROCEDURES)

When crossing RWY 01/19 or RWY 06/24, flight crew shall stop at the RWY holding position and maintain listening watch on TWR controller's frequency.

Flight crew may cross the RWY only by TWR controller's clearance. After crossing the RWY, flight crew shall maintain listening watch on GND controller's frequency.

In all cases the flight crew shall inform VNUKOVO Delivery controller about the estimated displaced position of take-off run on the RWY while obtaining ATC clearance. In case flight crew doesn't inform Delivery controller, GND controller gives instruction to take off from the RWY beginning taking into account limitations caused by airfield elements.

In case GND controller assigns a coded taxi route, monitor procedure is included in route description. In case the route is assigned indicating route elements, flight crew shall be informed about application of monitor procedure prior to start taxiing out of stand.

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MOSCOW, RUSSIA  
AIRPORT BRIEFING**3. DEPARTURE****3.2.4.1. RWY 01**

Route	Start Point	Frequency	Routing via
Orange 1	Vnukovo 1	120.450 GND 1	W/Z, X, M1, A7, hold short of RWY06/24, maintain listening watch on FREQ 118.300 MHz (TWR controller), A8, B8

**Taxiing from Vnukovo 1 Apron**

Hold short of RWY 06/24 instructed by TWR controller.

ACFT shall stop at RWY 06/24 holding position. Control of an ACFT shall be transferred from GND controller to TWR controller.

ACFT shall cross RWY 06/24 by instruction of TWR controller and taxi to RWY 01 holding position.

**Taxiing from Vnukovo 3 Apron**

Hold on TWY C2/C3, maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall stop at MAIN TWY M2 at the intermediate holding position on TWY C2/C3 and maintain listening watch on frequency of TWR controller without calling the controller. ACFT shall cross RWY 01/19 by instruction of TWR controller and taxi to RWY 06/24 holding position, maintaining listening watch on frequency of GND controller. ACFT shall stop at RWY06/24 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

Flight crew shall cross RWY 06/24 by instruction of TWR controller and taxi to RWY 01 holding position.

**3.2.4.2. RWY 06**

Route	Start Point	Frequency	Routing via
Violet 1	Vnukovo 1	120.450 GND 1	W/Z, X, M1, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M2, A13
Violet 3			W/Z, M3, M1, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M2, A13

**Taxiing from Vnukovo 1 Apron**

Hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall stop at RWY 01/19 RWY holding position, maintaining listening watch on TWR controller's frequency without calling the controller. ACFT shall cross RWY 01/19 by instruction of TWR controller and taxi to RWY 06 holding position maintaining listening watch on frequency of GND controller. Upon arrival to RWY06 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

**Taxiing from Vnukovo 3 Apron**

Upon arrival to RWY 06 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

UUWW/VKO  
VNUKOVO

JEPPESEN

13 MAR 26

10-1P10

Eff 19 Mar

MOSCOW, RUSSIA  
AIRPORT BRIEFING**3. DEPARTURE****3.2.4.3. RWY 19**

Route	Start Point	Frequency	Routing via
Orange 3	Vnukovo 3	120.450 GND 1	M2, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M1, X, Z, B5, M4, B1
Orange 5	Vnukovo 1		W, M3, Z, B5, M4, B1

**Taxiing from Vnukovo 1 Apron**

Upon arrival to RWY 19 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

**Taxiing from Vnukovo 3 Apron**

Hold on TWY C2/C3, maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall hold short of MAIN TWY M2 at the intermediate holding position on TWY C2/C3 and maintain listening watch on frequency of TWR controller without calling the controller. ACFT shall cross RWY 01/19 by instruction of TWR controller and taxi to RWY 19 holding position, maintaining listening watch on frequency of GND controller. ACFT shall stop at RWY 19 holding position. Control of an ACFT shall be transferred from GND controller to TWR controller.

**3.2.4.4. RWY 24**

Route	Start Point	Frequency	Routing via
Violet 5	Vnukovo 3	120.450 GND 1	M2, hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller), M1, M3, A2
Violet 7	Vnukovo 1		W, M4, B5, Z, A3, C3, C2

**Taxiing from Vnukovo 1 Apron**

Upon arrival to RWY 24 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

**Taxiing from Vnukovo 3 Apron**

One active RWY: Hold short of RWY 01/19, maintain listening watch on FREQ 118.300 MHz (TWR controller).

Two active RWYs: Hold short of MAIN TWY M2 (on TWY C2/C3), maintain listening watch on FREQ 118.300 MHz (TWR controller).

ACFT shall stop at RWY 01/19 holding position (hold short of MAIN TWY M2 at the intermediate holding position on TWY C2/C3 - when two RWYs are active) and maintain listening watch on frequency of TWR controller without calling the controller. ACFT shall cross RWY 01/19 by instruction of TWR controller and taxi to RWY 24 holding position, maintaining listening watch on frequency of GND controller. Upon arrival to RWY 24 holding position, control of an ACFT shall be transferred from GND controller to TWR controller.

UUWW/VKO  
VNUKOVO

JEPPESEN

13 MAR 26

10-1P11

Eff 19 Mar

MOSCOW, RUSSIA  
AIRPORT BRIEFING

### 3. DEPARTURE

#### 3.3. COMMUNICATION FAILURE PROCEDURES

##### 3.3.1. COMMUNICATION FAILURE AFTER TAKE-OFF

Set transponder to 7600 and maintain flight route and profile of the cleared RNAV SID.

After taking decision to return to Moscow (Vnukovo):

- Proceed to SID termination point, and then to the significant point of the shortest basic STAR RNAV.
- Maintain flight route and profile of the basic RNAV STAR.
- Execute approach in accordance with the established procedure.

In case of missed approach follow paragraph 2.1.2.

After taking decision to proceed to destination AD:

- After leaving Moscow TMA, continue climbing to the flight level indicated in the flight plan.

Set transponder to 7700 if it is necessary to deviate from the mentioned procedure.

#### 3.4. RWY OPERATION

##### 3.4.1. MINIMUM RWY OCCUPANCY TIME

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 ground checks which have to be done on the RWY shall be executed as soon as possible.

After ACFT occupation of the RWY the flight crew shall ensure commencement of ACFT movement for take-off within 10 seconds after obtaining the take-off clearance.

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

During operation on two RWYs, the time from issuance of line-up clearance till start of take-off run:

On heading 012°:

- from TWY B8 and intersection with RWY 06/24 - not more than 30 seconds.
- from beginning of RWY 01 - not more than 120 seconds.

On heading 057°:

- from TWY A10, A11, A13 - not more than 60 seconds.

On heading 192°:

- from TWY B1, B2, B4 - not more than 60 seconds.

On heading 237°:

- from TWY A3 and A5 - not more than 60 seconds.
- from TWY A2 - not more than 90 seconds.

Using two RWYs, the time from issuance of controllers instruction to line up for take-off till the start of take-off run:

On heading 057° (take-off, landing) and on 012° (take-off):

- from TWY A10, A11, A13, M1, MAIN TWY M2 - not more than 60 seconds.

On heading 237° (take-off) and on 012° (landing):

- from TWY A3 and A5 - not more than 60 seconds.
- from TWY A2 - not more than 90 seconds.

On heading 192° (take-off) and 237° (landing):

- from TWY B1, B2, B4 - not more than 60 seconds.

On heading 057° (take-off) and 012° (landing):

- from TWY A10, A11, A13 - not more than 60 seconds.

UUWW/VKO  
VNUKOVO

JEPPESEN

13 MAR 26

10-1P12

Eff 19 Mar

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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### 3. DEPARTURE

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#### 3.4.2. INTERMEDIATE TAKE-OFF

If the 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.

#### 3.4.3. REDUCED RWY SEPARATION MINIMA

Reduced RWY separation minima are applied during flight operations to/from RWY 06/24 only in the day-time, within the time period that starts 30 minutes after sunrise and ends 30 minutes before sunset (LT), and are subject to the following meteorological conditions:

- visibility is at least 5km;
- the height of cloud base (ceiling) is 300m or above;
- tailwind component does not exceed 3m/s.

Normative friction coefficient on the RWY shall be 0.40 or above (estimated surface friction "good" or "medium to good").

Reduced RWY separation minima is applied based on the decision of the AD Flight Control Officer.

Information on application at the aerodrome must be included in ATIS broadcast.

ATS unit can issue take-off clearance to flight crew of a departing ACFT, provided there is reasonable assurance, that when this ACFT commences its take-off roll from the line-up position, the preceding departing ACFT is airborne and has passed the point located at a distance at least 2500m from the succeeding departing ACFT.

Take-off clearance issued by the ATS unit to flight crew of a succeeding departing ACFT must contain information on type of the preceding departing ACFT. ATS unit may instruct flight crew to comply with initial climb altitude restrictions.

Flight crew must report sighting the preceding departing ACFT and acknowledge receipt of take-off clearance, if requested by the ATS unit.

Pilot-in-command makes the final decision to execute take-off. The obtained take-off clearance does not entail an obligation for the flight crew to execute take-off.

In order to expedite ACFT line up after the approaching ACFT, VNUKOVO Tower controller may issue the conditional line-up clearance using the phrase: "(Call sign), (ACFT type) on final, distance... km, cleared to line up (line up) RWY (designator) after landing ACFT".

In order to expedite ACFT line up after the departing ACFT, VNUKOVO Tower controller may issue the conditional line-up clearance using the phrase: "(Call sign), cleared to line up RWY (designator) in sequence".

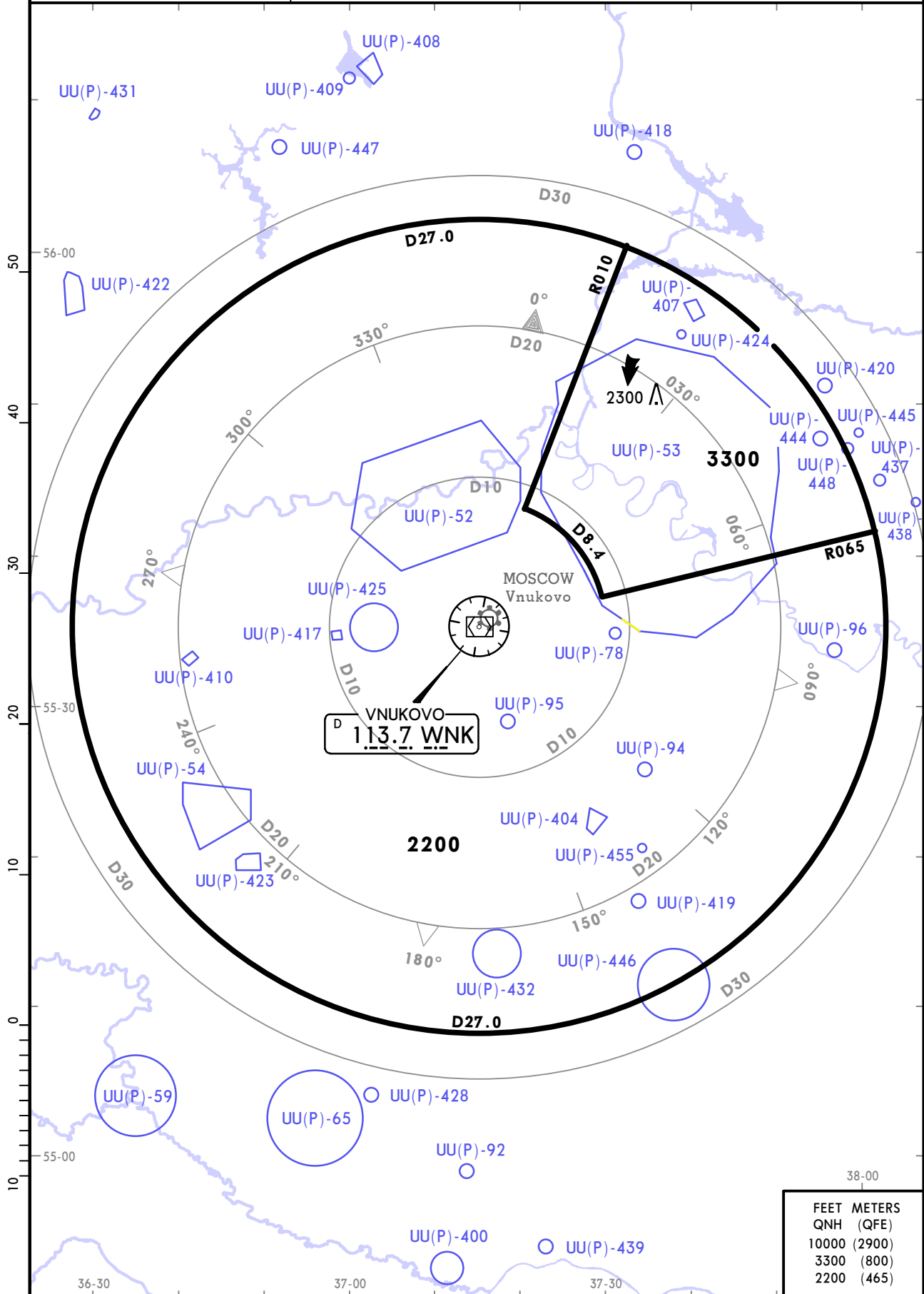
# UUWW/VKO VNUKOVO

VNUKOVO Radar (TWR)		
Sector A4	Sector WD	Sector D4
123.4	126.0	135.9

Apt Elev  
**685**

Alt Set: hPa (MM on request) (QFE on request)  
 Trans level: FL110  
 FL120 if pressure is less than 1013 hPa (760mm)  
 FL130 if pressure is less than 977 hPa (733mm)  
 Trans alt: 10000

1. This chart may only be used for cross-checking of altitudes assigned while under RADAR control
2. When vectoring at 0° C or below, the minimum vectoring altitudes must be corrected by altimeter temperature correction.



CHANGES: Prohibited areas.

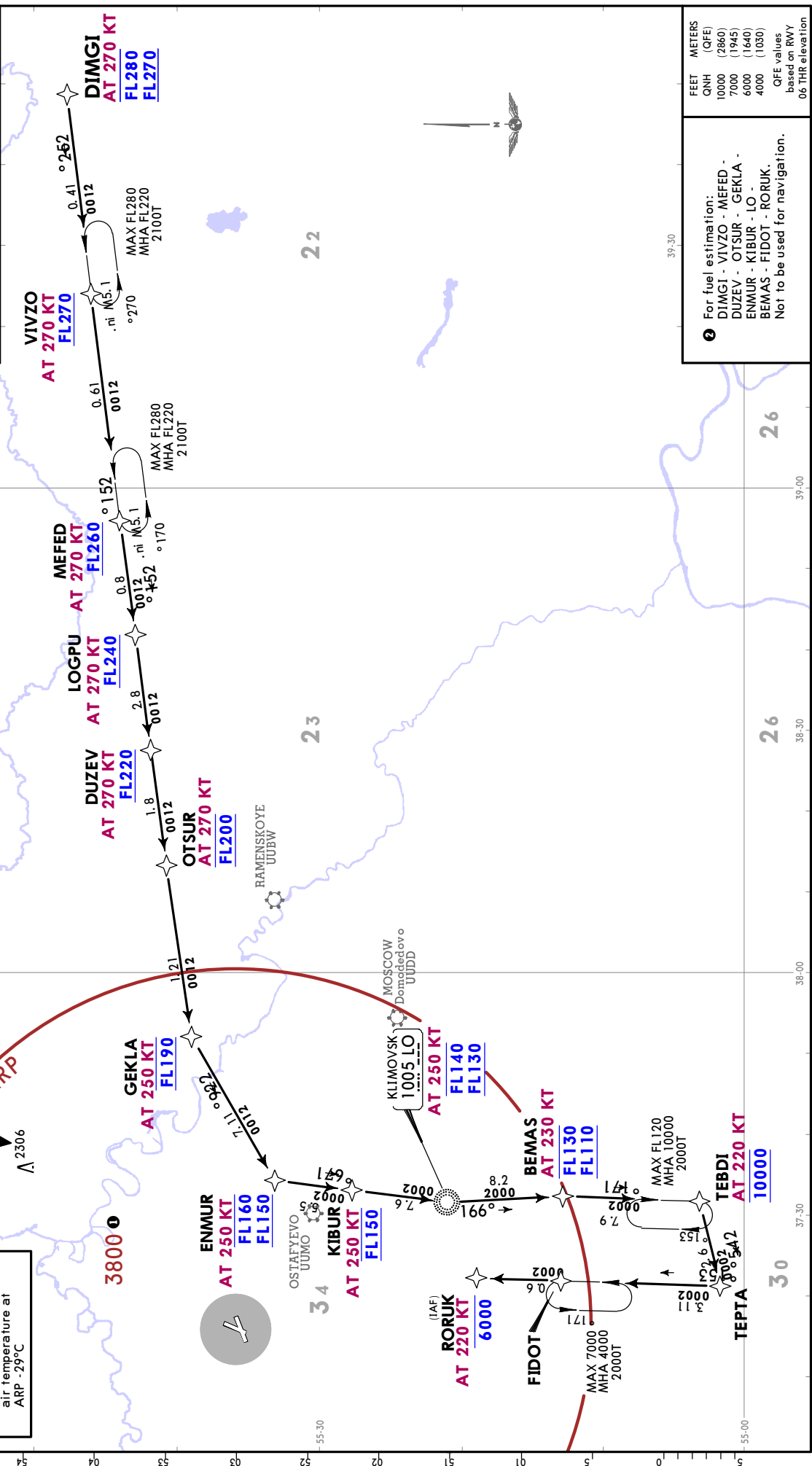
**JEPPesen MOSCOW, RUSSIA**  
 1 NOV 24 10-2  
**RNAV STAR**

ATIS  
 131.850 (Russian 125.875)  
 Apt Elev 685

Alt Set: hPa (MM on request)  
 Trans level: FL110  
 FL120 if pressure is less than 1013 hPa (760mm)  
 FL130 if pressure is less than 977 hPa (733mm)

RNAV 1 DME/DME or GNSS required

**DIMG3A [DIMG3A]**  
**DIMG3H**  
**RNAV ARRIVAL**  
**(ALL RWYS)**



① Computed for surface air temperature at ARP -29°C

② For fuel estimation:  
 DIMGI - VIVZO - MEFED - DUZEV - OTSUR - GEKLA - ENMUR - KIBUR - LO - BEMAS - FIDOT - RORUK.  
 Not to be used for navigation.

FEET METERS  
 QNH (QFE)  
 10000 (2860)  
 7000 (1945)  
 6000 (1640)  
 4000 (1030)  
 QFE values based on RWY  
 06 THR elevation

**UUWW/VKO**  
**VNUKOV**

**JEPPesen MOSCOW, RUSSIA**  
 01 NOV 24 (10-2A) **RNAV STAR**

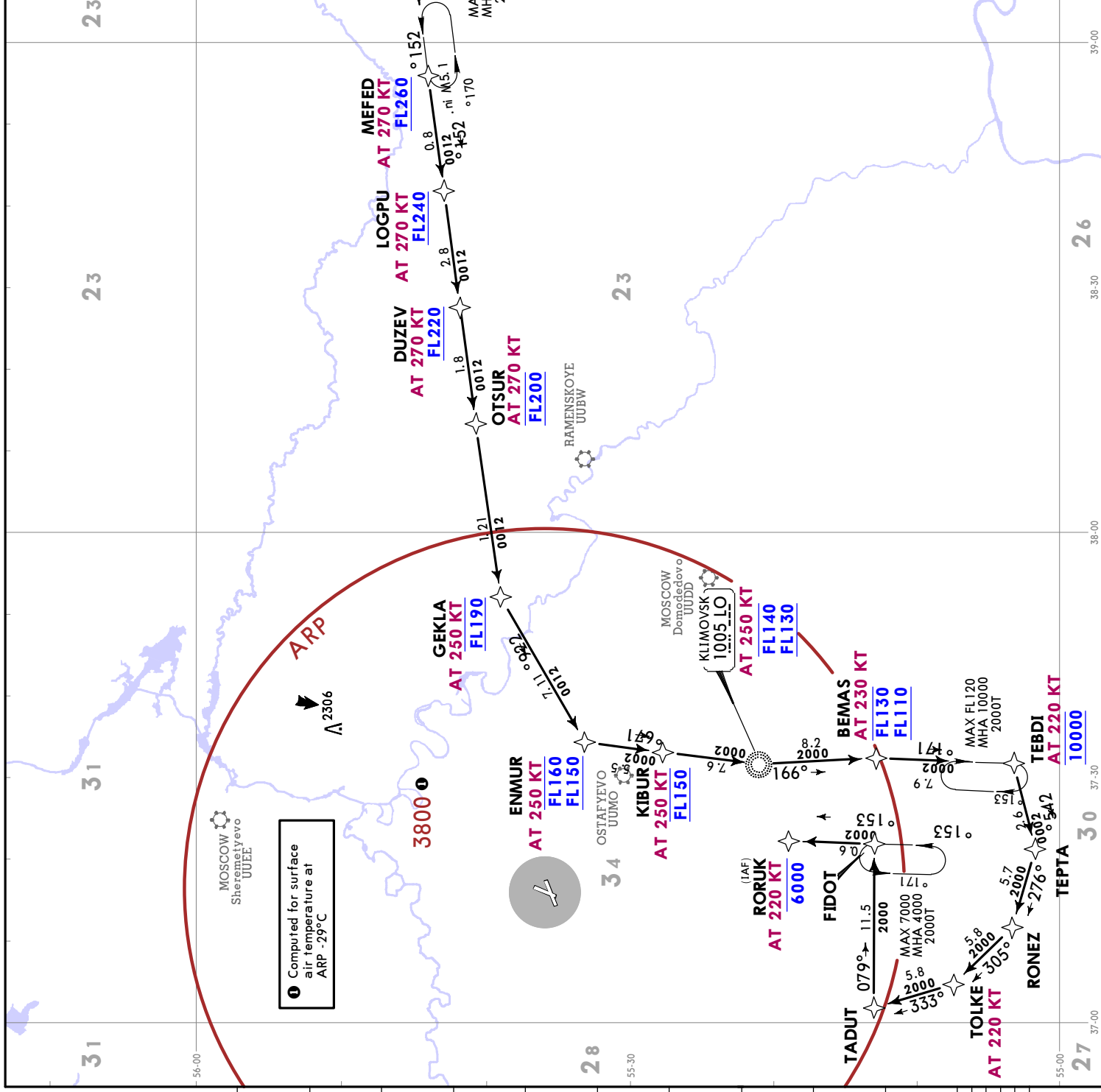
**UJWW/VKO**  
 VNUKOVO

ATIS 131.850 (Russian 125.875) Apt Elev 685

All Set: hPa (MM on request)  
 Trans level: FL110  
 FL120 if pressure is less than 1013 hPa (760mm)  
 FL130 if pressure is less than 977 hPa (733mm)

RNAV 1 DME/DME or GNSS required

**DIMGI 3B [DIMG3B]**  
**RNAV ARRIVAL**  
**(ALL RWYS)**



FEET	METERS
QNH (QFE)	(QFE)
10000	(2860)
7000	(1945)
6000	(1640)
4000	(1030)
QFE values based on RWY	
06 THR elevation	

CHANGES: Nav-Data Ident withdrawn.

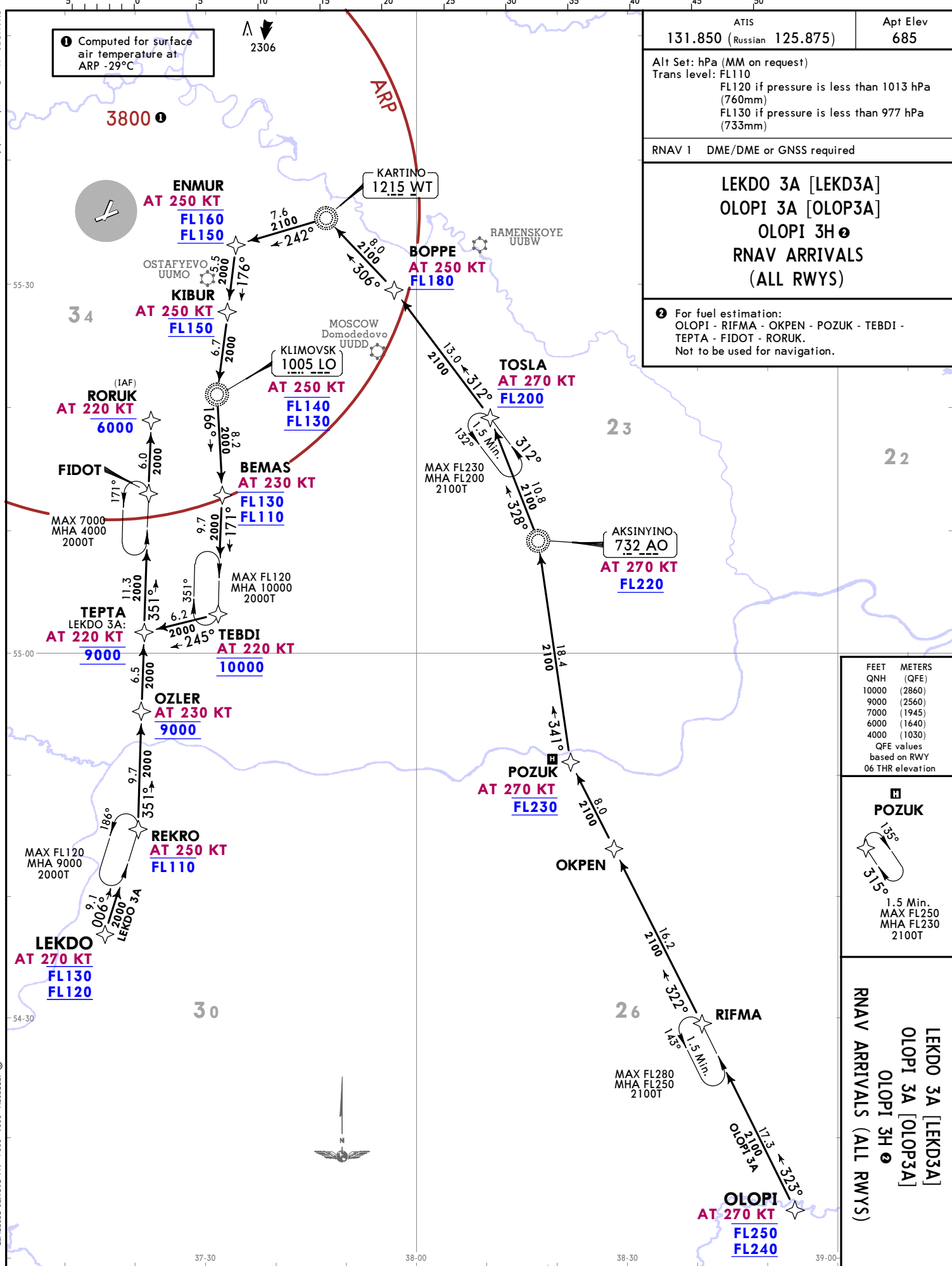
UNUW/VKO  
VNUKOVO

① Computed for surface air temperature at ARP -29°C

ATIS 131.850 (Russian 125.875)	Apt Elev 685
Alt Set: hPa (MM on request) Trans level: FL110 FL120 if pressure is less than 1013 hPa (760mm) FL130 if pressure is less than 977 hPa (733mm)	
RNAV 1 DME/DME or GNSS required	

**LEKDO 3A [LEKD3A]**  
**OLOPI 3A [OLOP3A]**  
**OLOPI 3H**  
**RNAV ARRIVALS**  
**(ALL RWYS)**

② For fuel estimation:  
OLOPI - RIFMA - OKPEN - POZUK - TEBDI - TEPTA - FIDOT - RORUK.  
Not to be used for navigation.



FEET	METERS
QNH (QFE)	
10000 (2860)	
9000 (2560)	
7000 (1945)	
6000 (1640)	
4000 (1030)	
QFE values based on RWY 06 THR elevation	

**POZUK**

1.5 Min.  
MAX FL250  
MHA FL230  
2100T

**RNAV ARRIVALS (ALL RWYS)**

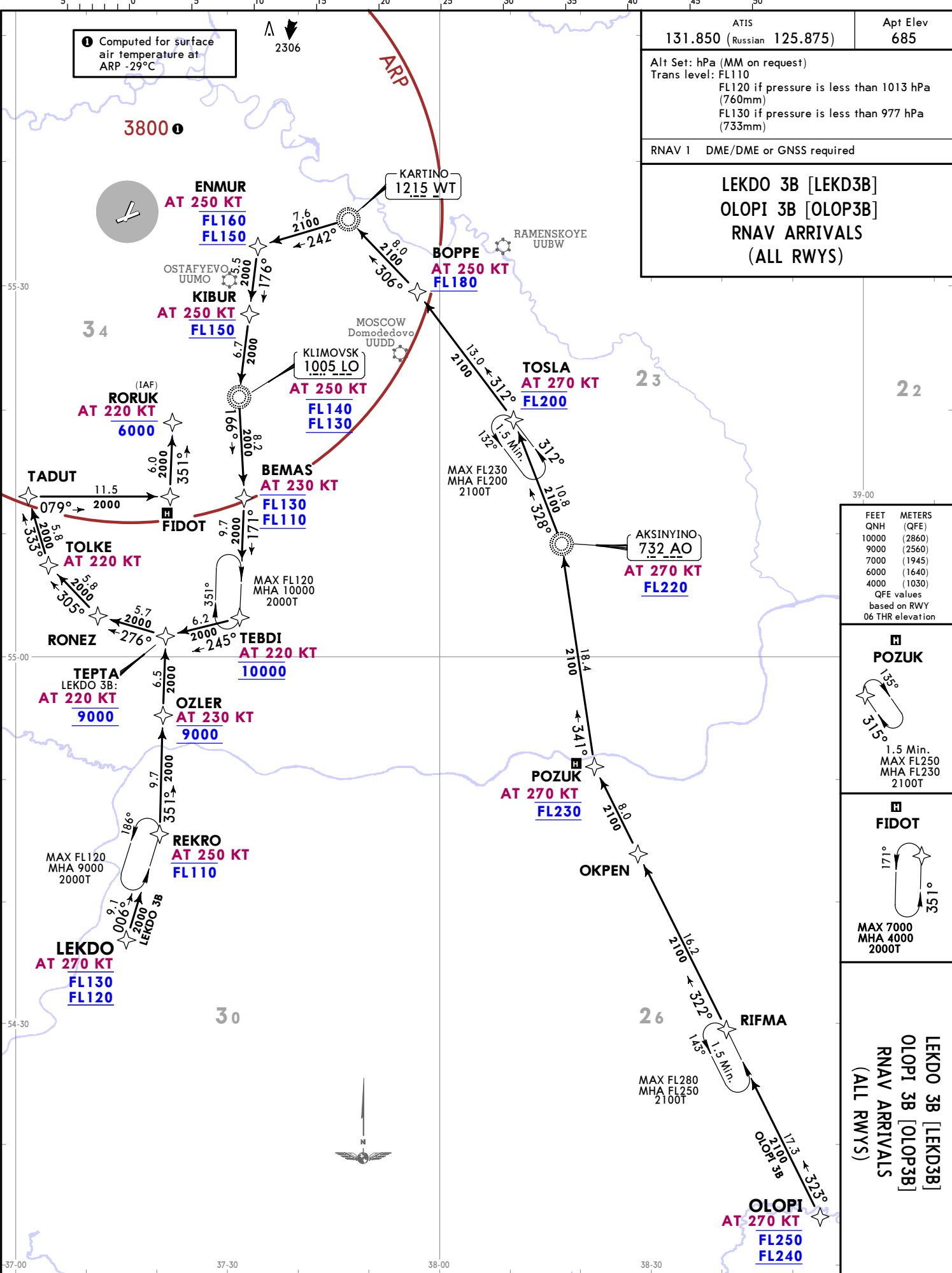
**LEKDO 3A [LEKD3A]**  
**OLOPI 3A [OLOP3A]**  
**OLOPI 3H**

CHANGES: None

Computed for surface air temperature at ARP -29°C

2306

ATIS 131.850 (Russian 125.875)	Apt Elev 685
Alt Set: hPa (MM on request) Trans level: FL110 FL120 if pressure is less than 1013 hPa (760mm) FL130 if pressure is less than 977 hPa (733mm)	
RNAV 1 DME/DME or GNSS required	
<b>LEKDO 3B [LEKD3B]</b> <b>OLOPI 3B [OLOP3B]</b> <b>RNAV ARRIVALS</b> <b>(ALL RWYS)</b>	



FEET	METERS
10000	(2860)
9000	(2560)
7000	(1945)
6000	(1640)
4000	(1030)

QFE values based on RWY 06 THR elevation

**POZUK**

1.5 Min.  
MAX FL250  
MHA FL230  
2100T

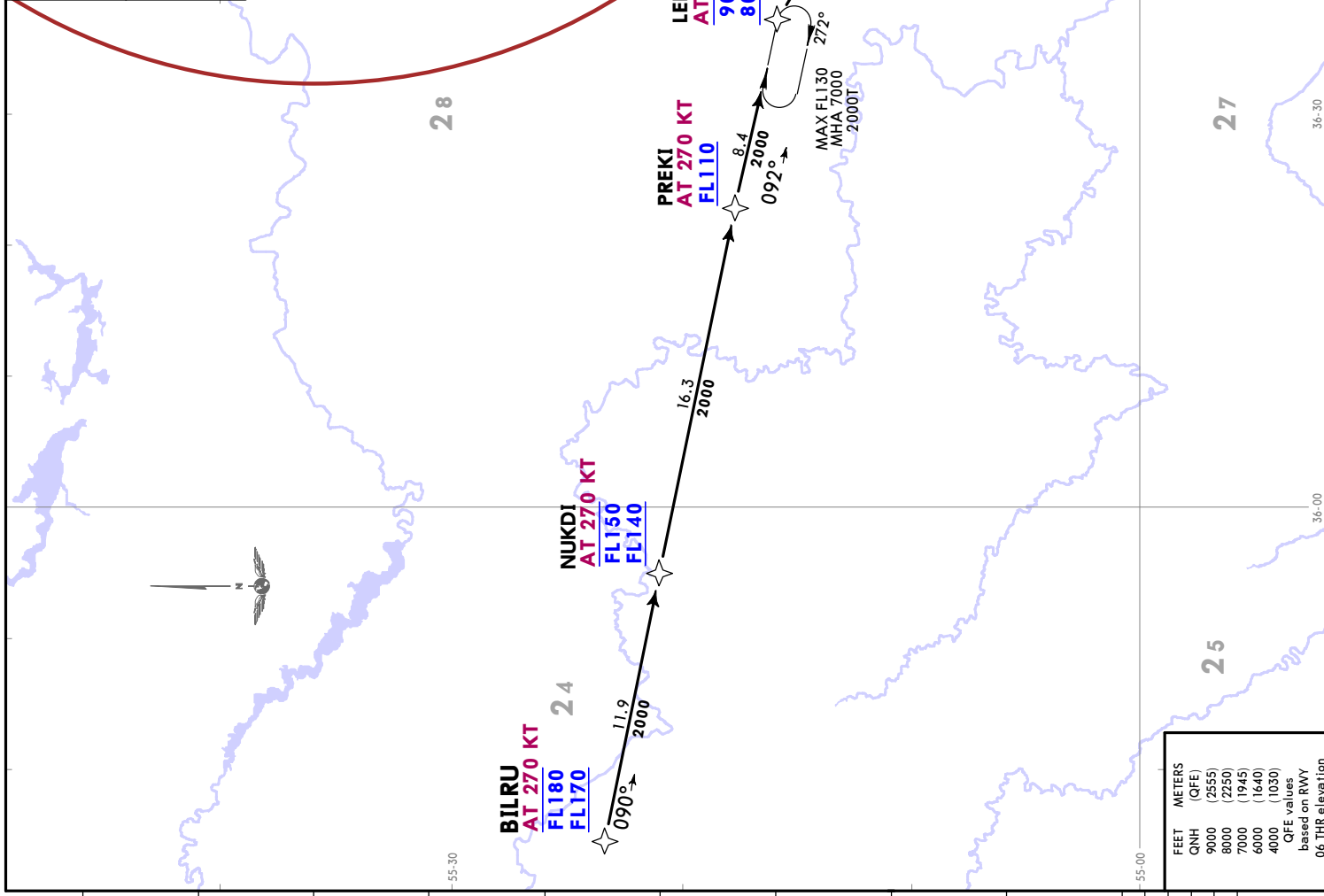
**FIDOT**

MAX 7000  
MHA 4000  
2000T

**LEKDO 3B [LEKD3B]**  
**OLOPI 3B [OLOP3B]**  
**RNAV ARRIVALS**  
**(ALL RWYS)**

UJWW/VKO  
VNIJKOVO  
1 NOV 24 (10-2C)  
JEPPESEN MOSCOW, RUSSIA  
RNAV STAR

ATIS 131.850 (Russian 125.875)	Alt Set: hPa (MM on request) Trans level: FL110 FL120 if pressure is less than 1013 hPa (760mm) FL130 if pressure is less than 977 hPa (733mm)
Apt Elev 685	RNAV 1 DME/DME or GNSS required
<b>BILRU 3A [BILR3A], BILRU 3H</b> RNAV ARRIVAL (ALL RWYS)	
<p>For fuel estimation: BILRU - NUKDI - PREKI - ORSIF - FIDOT - RORUK. Not to be used for navigation.</p>	



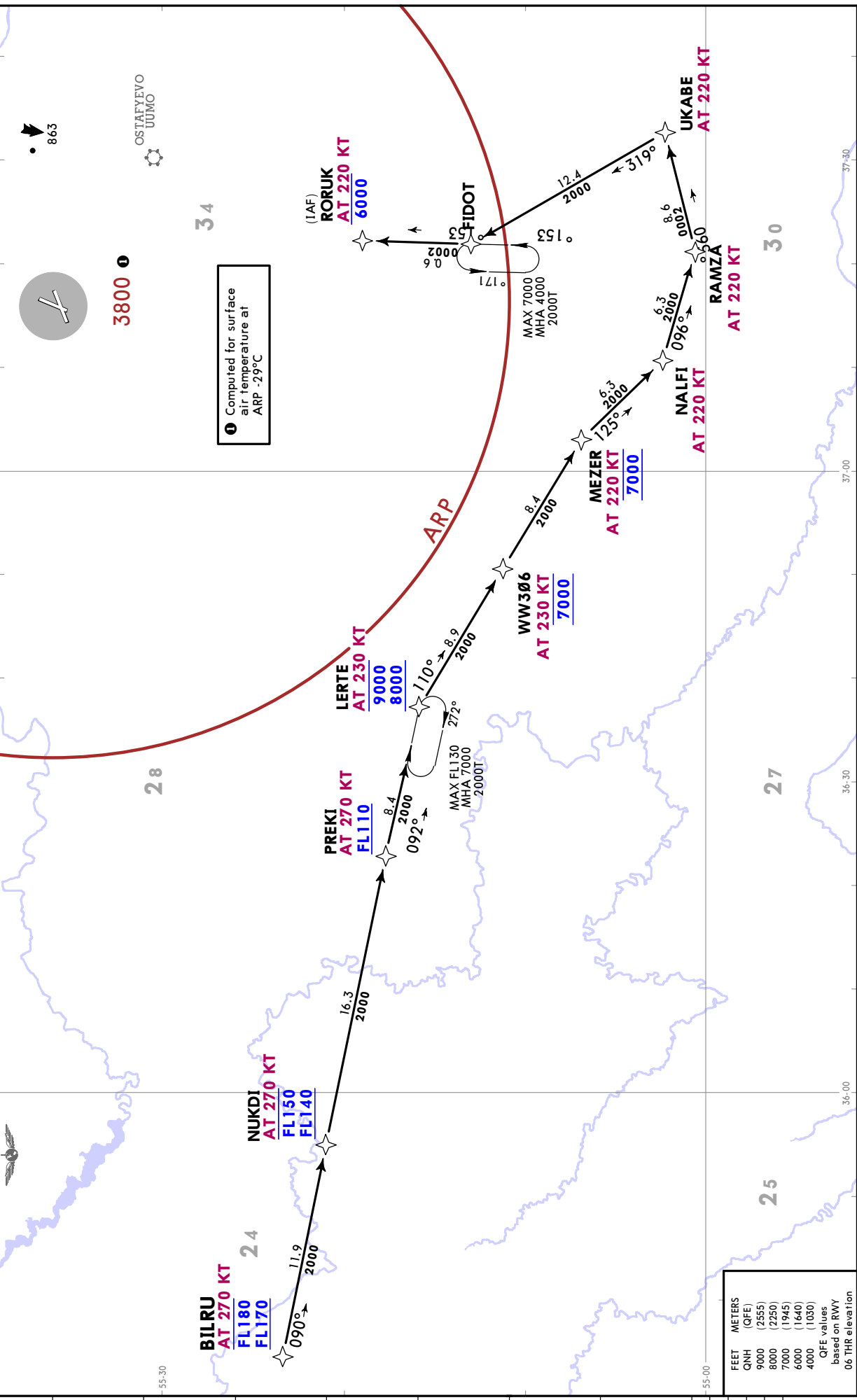
Computed for surface air temperature at ARP -29°C

FEET	METERS
QNH (QFE)	
9000 (2555)	
8000 (2250)	
7000 (1945)	
6000 (1640)	
4000 (1030)	
QFE values based on RWY	
06 THR elevation	

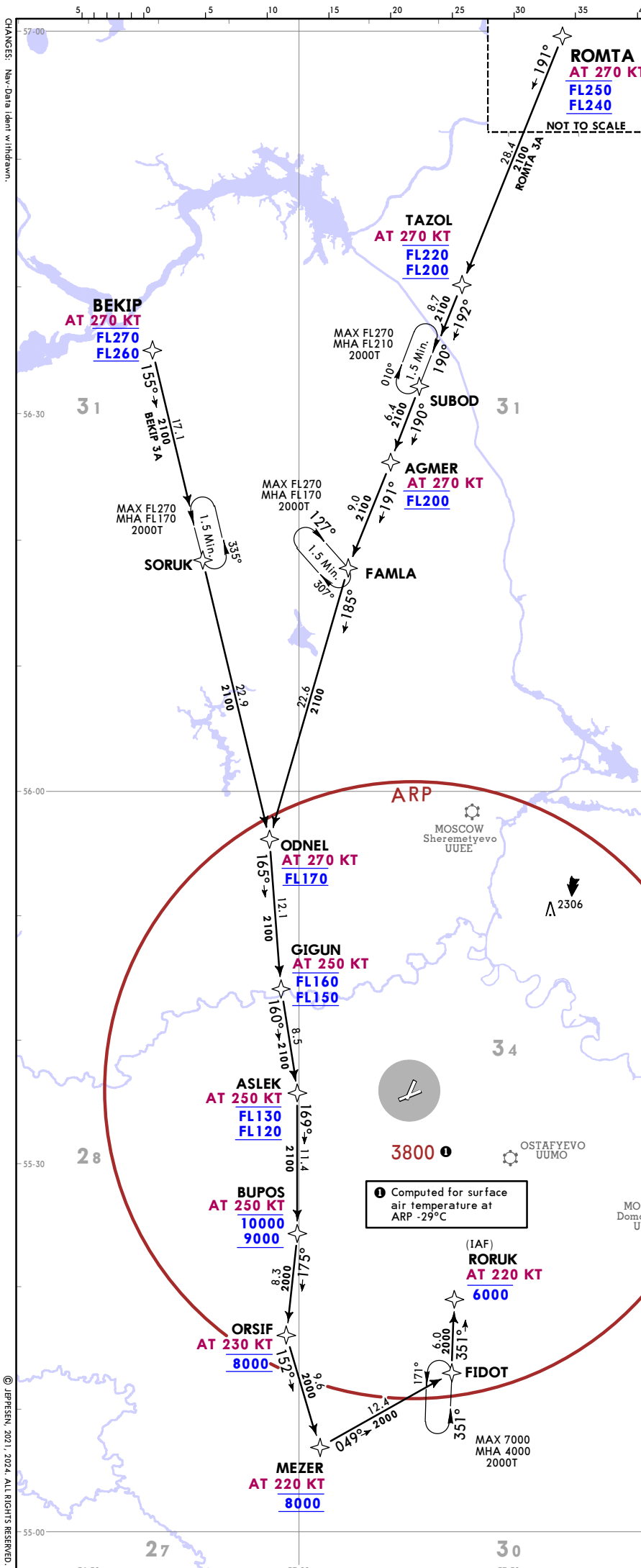
**JEPPESEN**  
 1 NOV 24 10-2E  
**MOSCOW, RUSSIA**  
 RNAV STAR

**UUWW/VKO**  
 VNUKOVO

ATIS 131.850 (Russian 125.875)	Alt Set: hPa (MM on request) Trans level: FL110 FL120 if pressure is less than 1013 hPa (760mm) FL130 if pressure is less than 977 hPa (733mm)
Apt Elev 685	RNAV 1 DME/DME or GNSS required
<b>BILRU 3B [BILR3B]</b> RNAV ARRIVAL (ALL RWYS)	



FEET	METERS
QNH (2555)	QFE (765)
8000 (2250)	7000 (1945)
6000 (1640)	4000 (1030)
QFE values based on RWY 06 THR elevation	



ATIS  
131.850 (Russian 125.875)

Apt Elev  
685

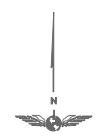
Alt Set: hPa (MM on request)  
Trans level: FL110  
FL120 if pressure is less than 1013 hPa (760mm)  
FL130 if pressure is less than 977 hPa (733mm)

RNAV 1 DME/DME or GNSS required

**BEKIP 3A [BEK13A]**  
**BEKIP 3H**  
**ROMTA 3A [ROMT3A]**  
**ROMTA 3H**  
**RNAV ARRIVALS**  
**(ALL RWYS)**

**1** For fuel estimation:  
BEKIP - SORUK - ODNEL - GIGUN - ASLEK - BUPOS - ORSIF - FIDOT - RORUK.  
Not to be used for navigation.

**2** For fuel estimation:  
ROMTA - TAZOL - SUBOD - AGMER - FAMILA - ODNEL - GIGUN - ASLEK - BUPOS - ORSIF - FIDOT - RORUK.  
Not to be used for navigation.

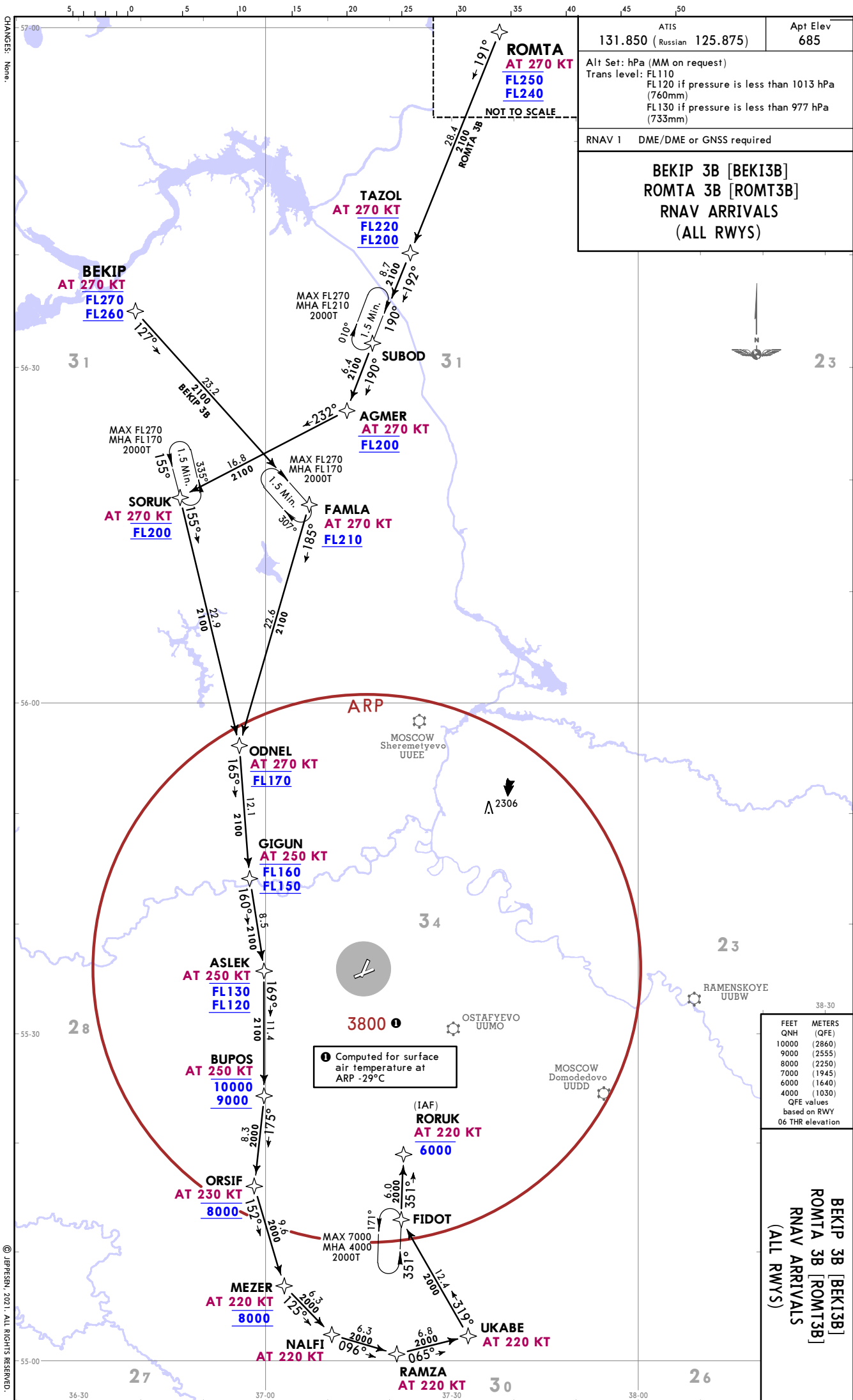


FEET	METERS
QNH (QFE)	
10000	(2860)
9000	(2555)
8000	(2250)
7000	(1945)
6000	(1640)
4000	(1030)

QFE values based on RWY 06 THR elevation

**JEPPESEN MOSCOW, RUSSIA**  
1 NOV 24 (10-2F)  
RNAV STAR

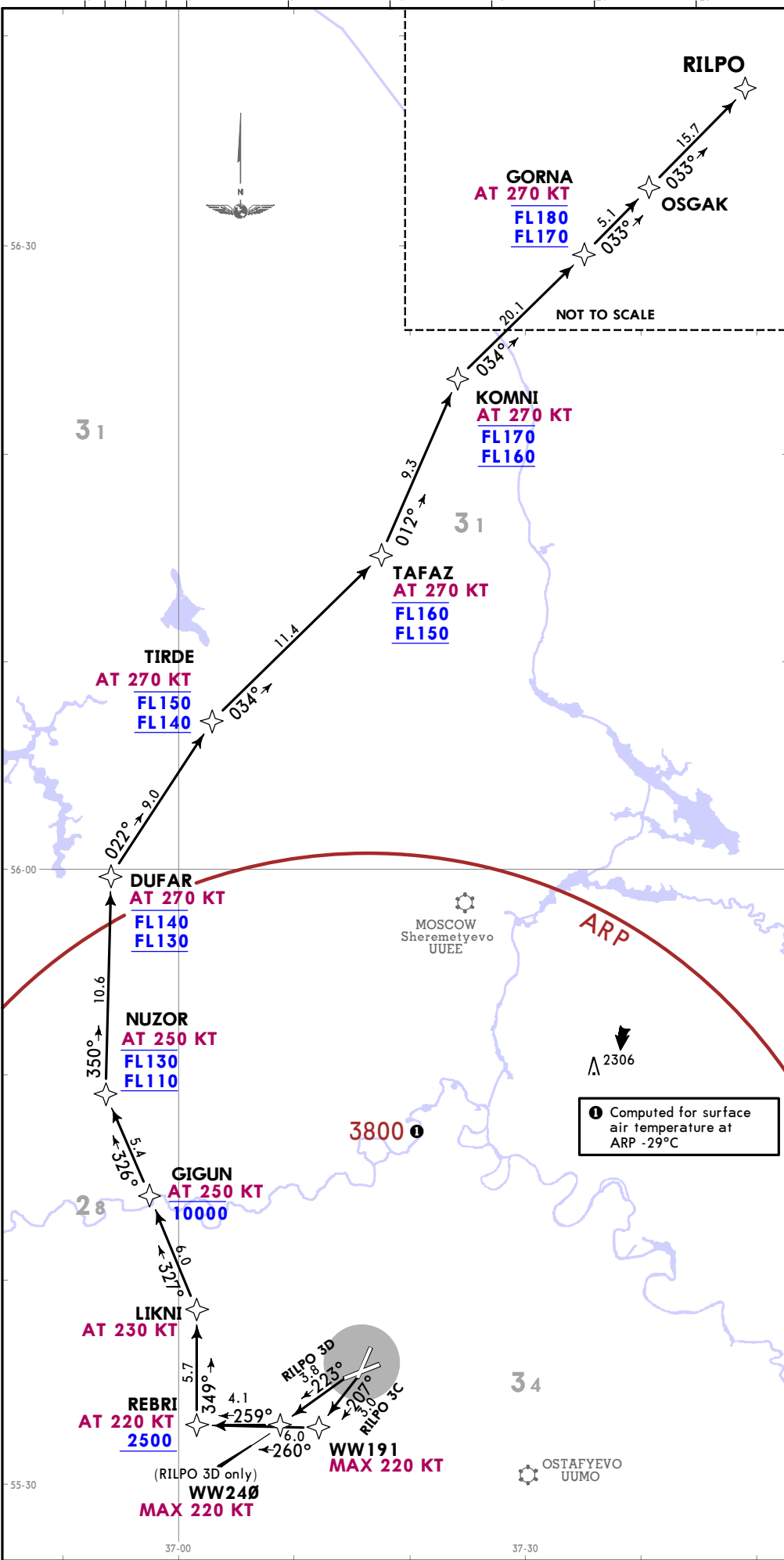
**BEKIP 3A [BEK13A]**  
**BEKIP 3H**  
**ROMTA 3A [ROMT3A]**  
**ROMTA 3H**  
**RNAV ARRIVALS**  
**(ALL RWYS)**



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CHANGES: Initial climb clearance withdrawn.



VNUKOVO Delivery-1 (TWR) 131.8	VNUKOVO Delivery-3 (TWR) 129.7	Apt Elev 685																					
QNH (QFE on request) Trans alt: 10000																							
RNAV 1 DME/DME or GNSS required																							
<b>RILPO 3C [RILP3C] (RWY 19)</b>																							
<b>RILPO 3D [RILP3D] (RWY 24)</b>																							
<b>RNAV DEPARTURES</b>																							
<b>Close-in Obstacles</b> RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading. RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading. These SIDs require minimum climb gradients of of RILPO 3C: 6.6% up to FL110 due to airspace structure. RILPO 3D: 6.9% up to FL110 due to airspace structure.																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Gnd speed-KT</th> <th>75</th> <th>100</th> <th>150</th> <th>200</th> <th>250</th> <th>300</th> </tr> </thead> <tbody> <tr> <td>6.6% V/V (fpm)</td> <td>501</td> <td>668</td> <td>1003</td> <td>1337</td> <td>1671</td> <td>2005</td> </tr> <tr> <td>6.9% V/V (fpm)</td> <td>524</td> <td>699</td> <td>1048</td> <td>1397</td> <td>1747</td> <td>2096</td> </tr> </tbody> </table>			Gnd speed-KT	75	100	150	200	250	300	6.6% V/V (fpm)	501	668	1003	1337	1671	2005	6.9% V/V (fpm)	524	699	1048	1397	1747	2096
Gnd speed-KT	75	100	150	200	250	300																	
6.6% V/V (fpm)	501	668	1003	1337	1671	2005																	
6.9% V/V (fpm)	524	699	1048	1397	1747	2096																	
If unable to comply advise VNUKOVO - Delivery																							
▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS Refer to 10-1P pages.		FEET METERS QNH (QFE) 2500 (570) 10000 (2855) QFE values based on RWY 19 THR elevation																					

**RNAV DEPARTURES**

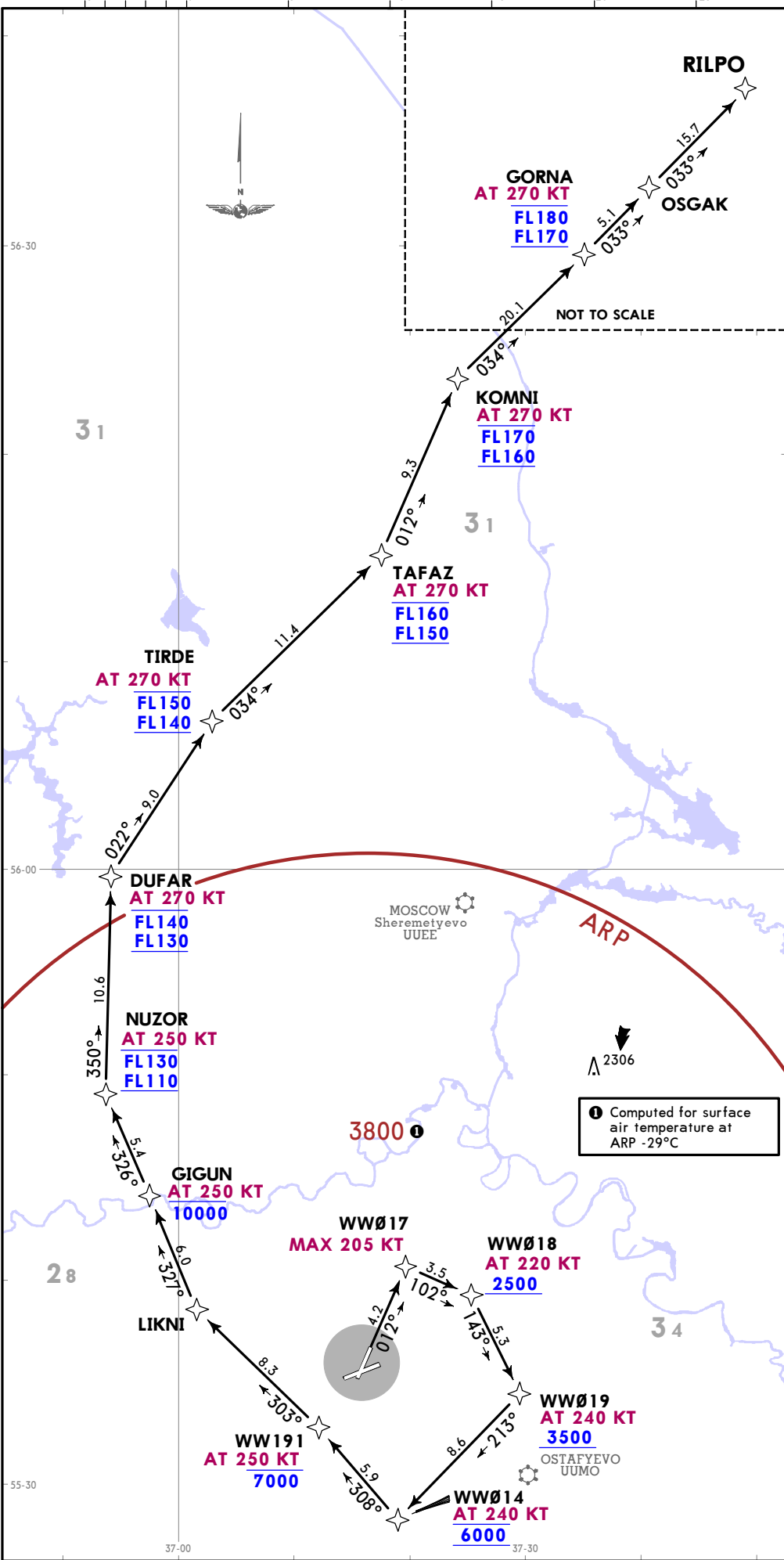
RILPO 3C [RILP3C]  
(RWY 19)

RILPO 3D [RILP3D]  
(RWY 24)

JEPPISEN MOSCOW, RUSSIA  
 VNUKOVO  
 RNAV SID  
 5 JUL 24 (10-3A) EFF 11 JUL

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CHANGES: Initial climb clearance withdrawn.



VNUKOVO Delivery-1 (TWR) 131.8	VNUKOVO Delivery-3 (TWR) 129.7	Apt Elev 685				
QNH (QFE on request) Trans alt: 10000						
RNAV 1 DME/DME or GNSS required						
<b>RILPO 3W [RILP3W] RNAV DEPARTURE (RWY 01)</b>						
<b>Close-in Obstacles</b> MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading.						
This SID requires minimum climb gradient of 3.6% up to 1200 due to obstacles. 4.0% up to 6000 due to airspace structure.						
Gnd speed-KT	75	100	150	200	250	300
3.6% V/V (fpm)	273	365	547	729	911	1094
4.0% V/V (fpm)	304	405	608	810	1013	1215
If unable to comply advise VNUKOVO - Delivery						
▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS Refer to 10-1P pages. ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS			FEET METERS QNH (QFE) 1200 (175) 2500 (570) 3500 (875) 6000 (1640) 7000 (1945) 10000 (2860)			

**RILPO 3W [RILP3W]  
(RWY 01)  
RNAV DEPARTURE**

CHANGES: Initial climb clearance withdrawn.

VNUKOVO Delivery-1 (TWR) <b>131.8</b>	VNUKOVO Delivery-3 (TWR) <b>129.7</b>
Apt Elev <b>685</b>	QNH (QFE on request) Trans alt: 10000
RNAV 1 DME/DME or GNSS required	
<b>RILPO 3Y [RILP3Y] (RWY 19)</b>	
<b>RILPO 3Z [RILP3Z] (RWY 24)</b>	
<b>RNAV DEPARTURES</b>	

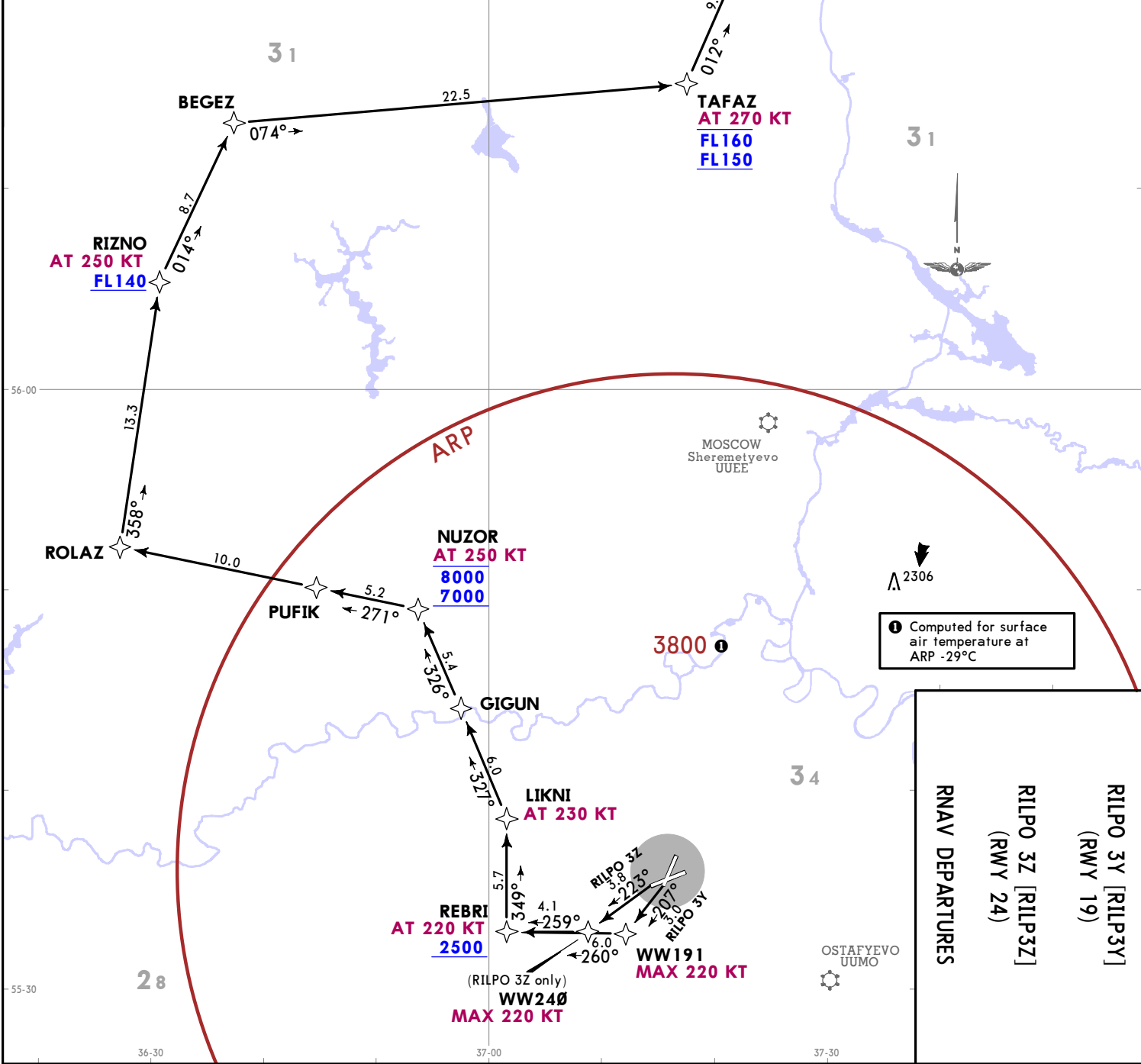
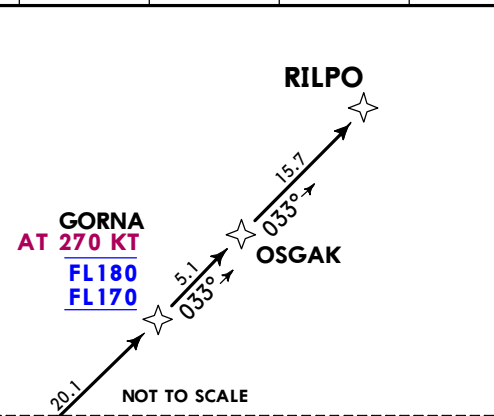
**Close-in Obstacles**  
 RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading.  
 RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.

These SIDs require minimum climb gradients of  
 RILPO 3Y: 4.1% up to 7000 due to airspace structure.  
 RILPO 3Z: 4.2% up to 7000 due to airspace structure.

Gnd speed-KT	75	100	150	200	250	300
4.1% V/V (fpm)	311	415	623	830	1038	1246
4.2% V/V (fpm)	319	425	638	851	1063	1276

If unable to comply advise VNUKOVO - Delivery

FEET METERS	▼ LOST COMMS	▼ LOST COMMS	▼ LOST COMMS
QNH (QFE)	▲ LOST COMMS	▲ LOST COMMS	▲ LOST COMMS
2500 (570)	Refer to 10-1P pages.		
7000 (1945)			
8000 (2250)			
QFE values based on RWY 19 THR elevation			



① Computed for surface air temperature at ARP -29°C

**RNAV DEPARTURES**

**RILPO 3Y [RILP3Y]  
(RWY 19)**

**RILPO 3Z [RILP3Z]  
(RWY 24)**

**UUNW/WKO**  
**VNUKOVO**  
**JEPPesen MOSCOW, RUSSIA**  
 5 JUL 24 (10-3C) EFF 11 JUL  
**RNAV SID**

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VNUKOVO Delivery-1 (TWR) 131.8  
 VNUKOVO Delivery-3 (TWR) 129.7  
 Apt Elev 685

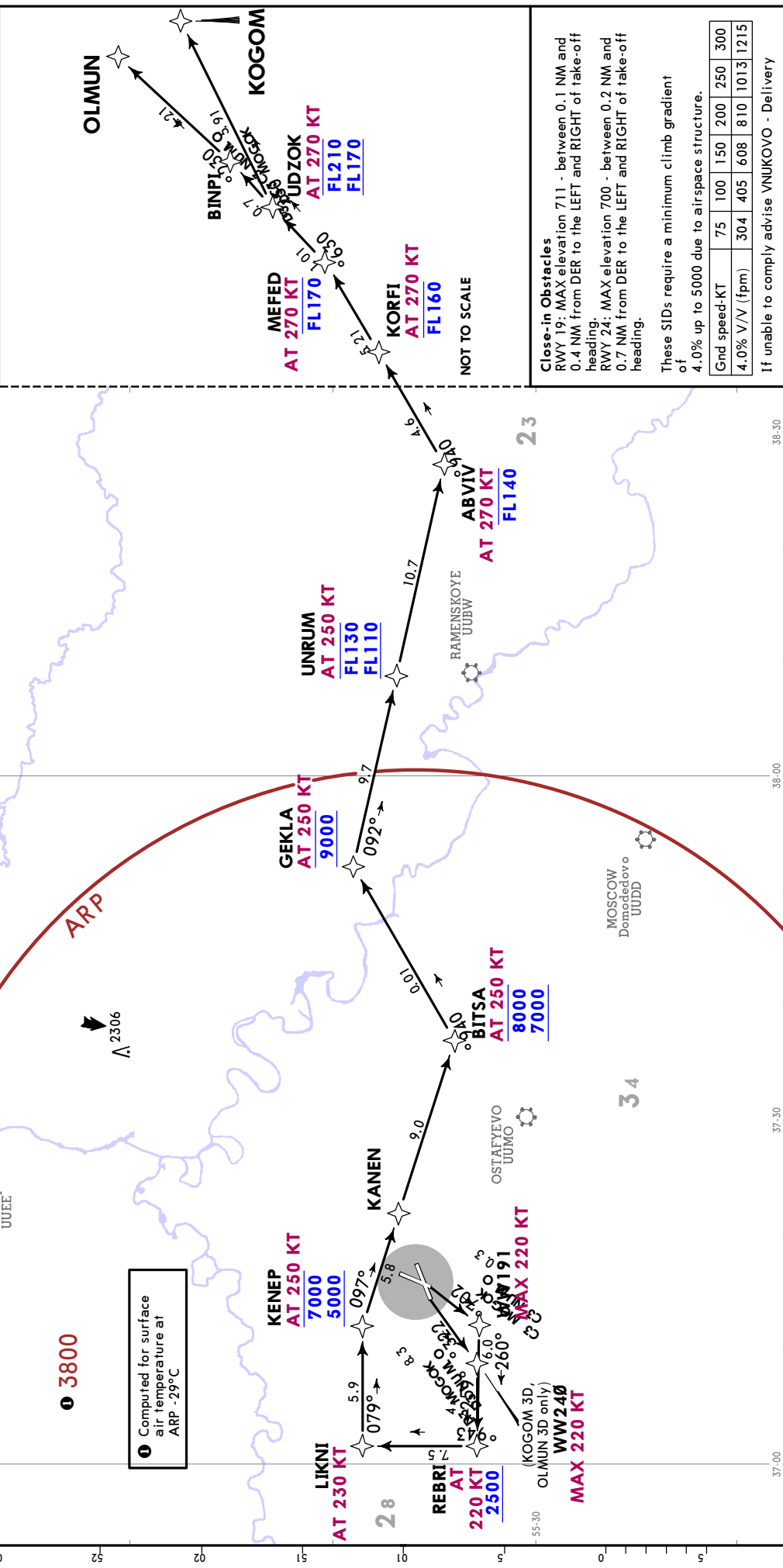
QNH (QFE on request)  
 Trans alt: 10000  
 RNAV 1 DME/DME or GNSS required

**KOGOM 3C [KOG03C]**  
**OLMUJ 3C [OLMU3C]**  
 (RWY 19)  
**KOGOM 3D [KOG03D]**  
**OLMUJ 3D [OLMU3D]**  
 (RWY 24)  
**RNAV DEPARTURES**

FEET METERS  
 QNH (QFE)  
 2500 (570)  
 5000 (1335)  
 7000 (1945)  
 8000 (2250)  
 9000 (2555)  
 QFE values based on RWY 19 THR elevation

LOST COMMS  
 LOST COMMS  
 LOST COMMS  
 Refer to 10-IP pages.  
 LOST COMMS  
 LOST COMMS  
 COMMS

**31**  
**23**



**Close-in Obstacles**  
 RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading.  
 RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.

These SIDs require a minimum climb gradient of 4.0% up to 5000 due to airspace structure.

Grnd speed-KT	75	100	150	200	250	300
4.0% V/V (fpm)	304	405	608	810	1013	1215

If unable to comply advise VNUKOVO - Delivery

**UUWW/VKO**  
VNUKOVO

**JEPPESEN MOSCOW, RUSSIA**  
5 JUL 24 (10-3F) Eff 11 Jul RNAV SID

VNUKOVO Delivery-1 (TWR)	VNUKOVO Delivery-3 (TWR)	QNH (QFE on request) Trans alt: 10000
131.8	129.7	RNAV 1
		DME/DME or GNSS required

**KOGOM 3W [KOG03W]**  
**OLMUN 3W [OLMU3W]**  
(RWY 01)

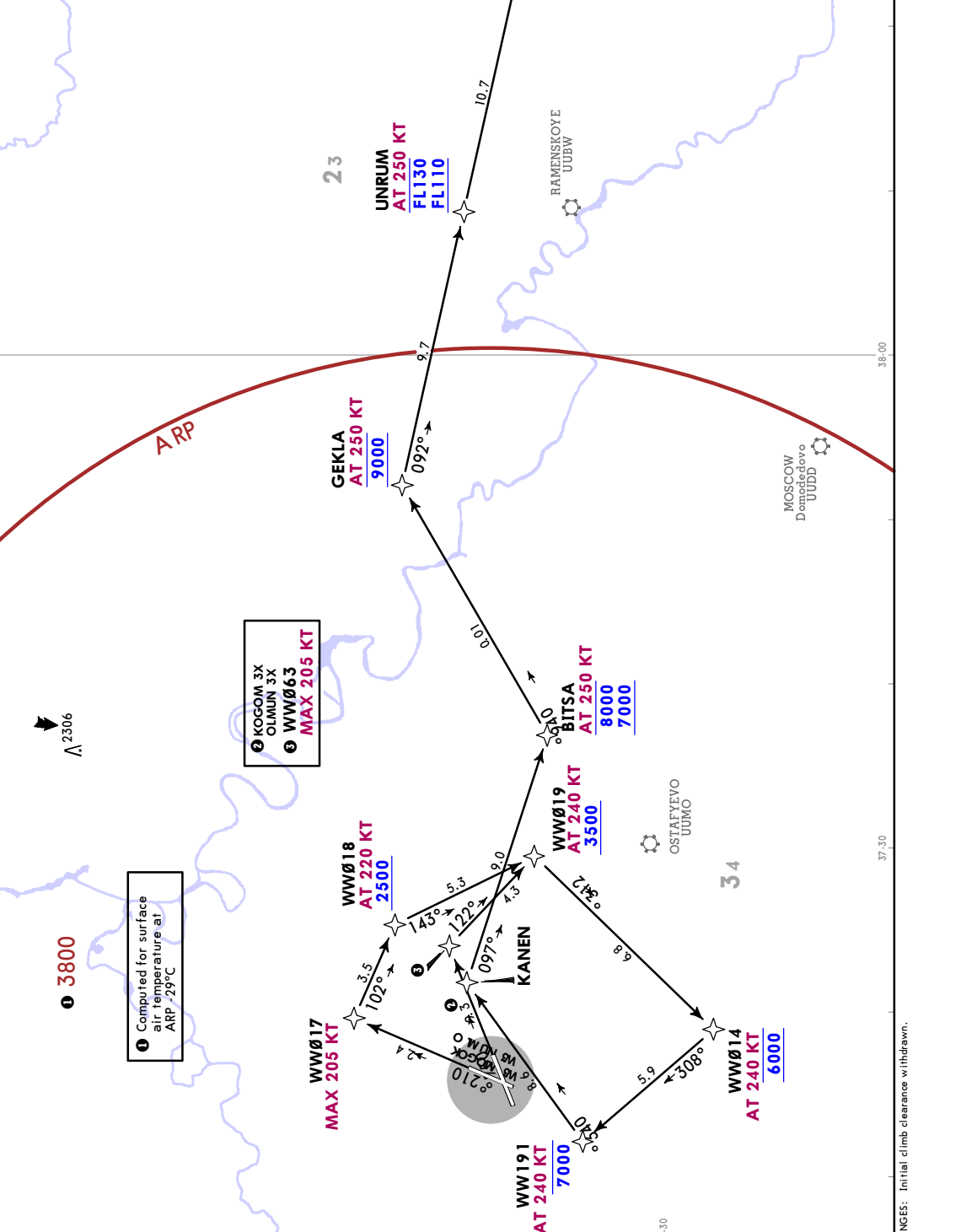
**RNAV DEPARTURES**

<b>KOGOM 3X [KOG03X]</b>
<b>OLMUN 3X [OLMU3X]</b>
<b>(RWY 06)</b>

<b>FEET METERS</b>
QNH (QFE)
1200 (175)
2500 (575)
3500 (880)
6000 (1640)
7000 (1945)
8000 (2250)
9000 (2555)
QFE values based on RWY 06 THR elevation

Refer to 10-1P pages.

LOST COMMS  
LOST COMMS  
COMMS

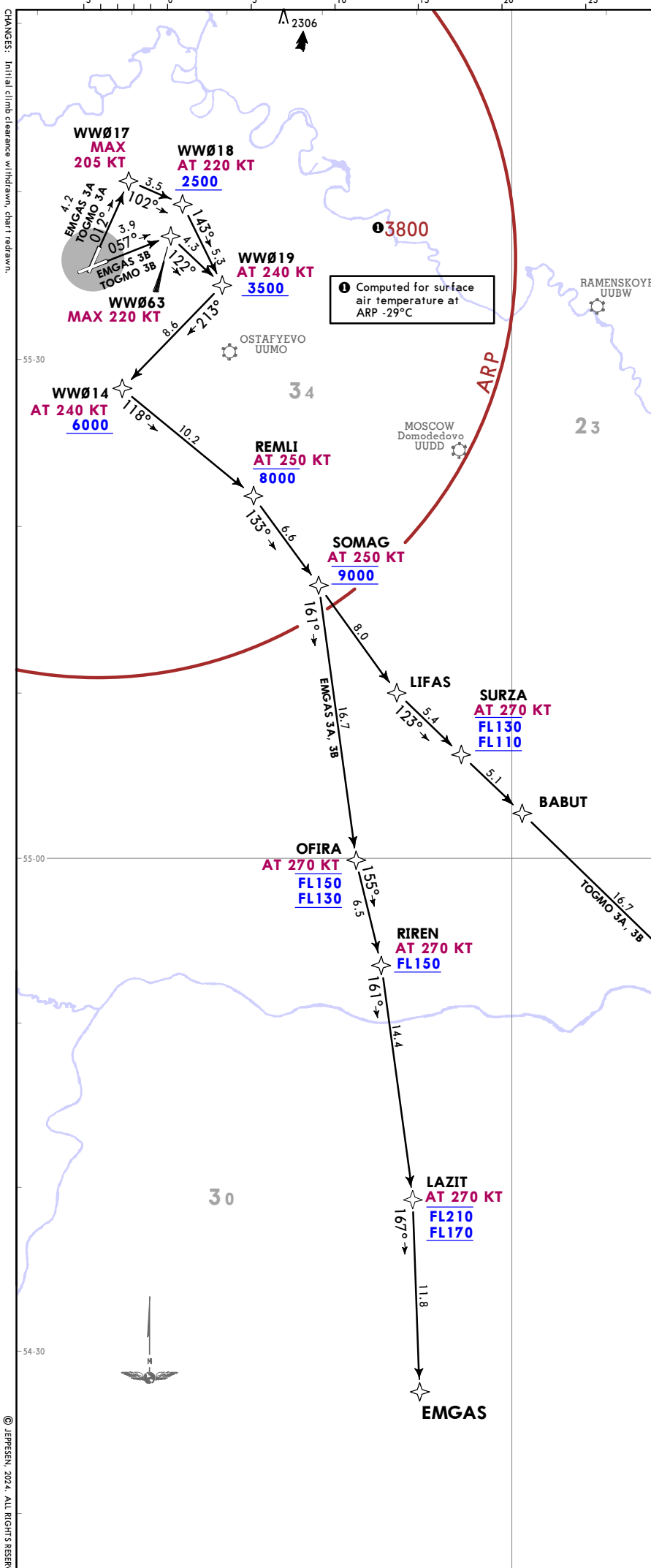


**Close-in Obstacles**  
RWY 01: MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading.  
RWY 06: MAX elevation 746 - group of obstacles at 0.4 NM from DER to the RIGHT of take-off heading.

These SIDs require minimum climb gradients of:  
KOGOM 3W, KOGOM 3X, OLMUN 3W, OLMUN 3X: 5.3% up to 6000 due to airspace structure.  
KOGOM 3W, OLMUN 3W: 3.6% up to 1200 due to obstacles.

Gnd speed-KT	75	100	150	200	250	300
3.6% V/V (fpm)	273	365	547	729	911	1094
5.3% V/V (fpm)	403	537	805	1073	1342	1610

If unable to comply advise VNUKOVO - Delivery



VNUKOVO Delivery-1 (TWR) 131.8	VNUKOVO Delivery-3 (TWR) 129.7	Apt Elev 685
-----------------------------------	-----------------------------------	-----------------

QNH (QFE on request)  
Trans alt: 10000

RNAV 1 DME/DME or GNSS required

**EMGAS 3A [EMGA3A]  
TOGMO 3A [TOGM3A]  
(RWY 01)**

**EMGAS 3B [EMGA3B]  
TOGMO 3B [TOGM3B]  
(RWY 06)**

**RNAV DEPARTURES**

**Close-in Obstacles**  
RWY 01: MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading.  
RWY 06: MAX elevation 746 - group of obstacles at 0.4 NM from DER to the RIGHT of take-off heading.

These SIDs require minimum climb gradients of  
of  
EMGAS 3A, EMGAS 3B, TOGMO 3A, TOGMO 3B:  
5.4% up to 6000 due to airspace structure.  
EMGAS 3A & TOGMO 3A:  
3.6% up to 1200 due to obstacles.

Gnd speed-KT	75	100	150	200	250	300
3.6% V/V (fpm)	273	365	547	729	911	1094
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply advise VNUKOVO - Delivery

▼ LOST COMMS	▼ LOST COMMS	▼ COMMS	FEET METERS
▲ LOST COMMS	▲ LOST COMMS	▲ LOST COMMS	QNH (QFE)
Refer to 10-1P pages.			1200 (175)
			2500 (575)
			3500 (880)
			6000 (1640)
			8000 (2250)
			9000 (2555)
			QFE values based on RWY 06 THR elevation

UUMW/VKO  
VNUKOVO

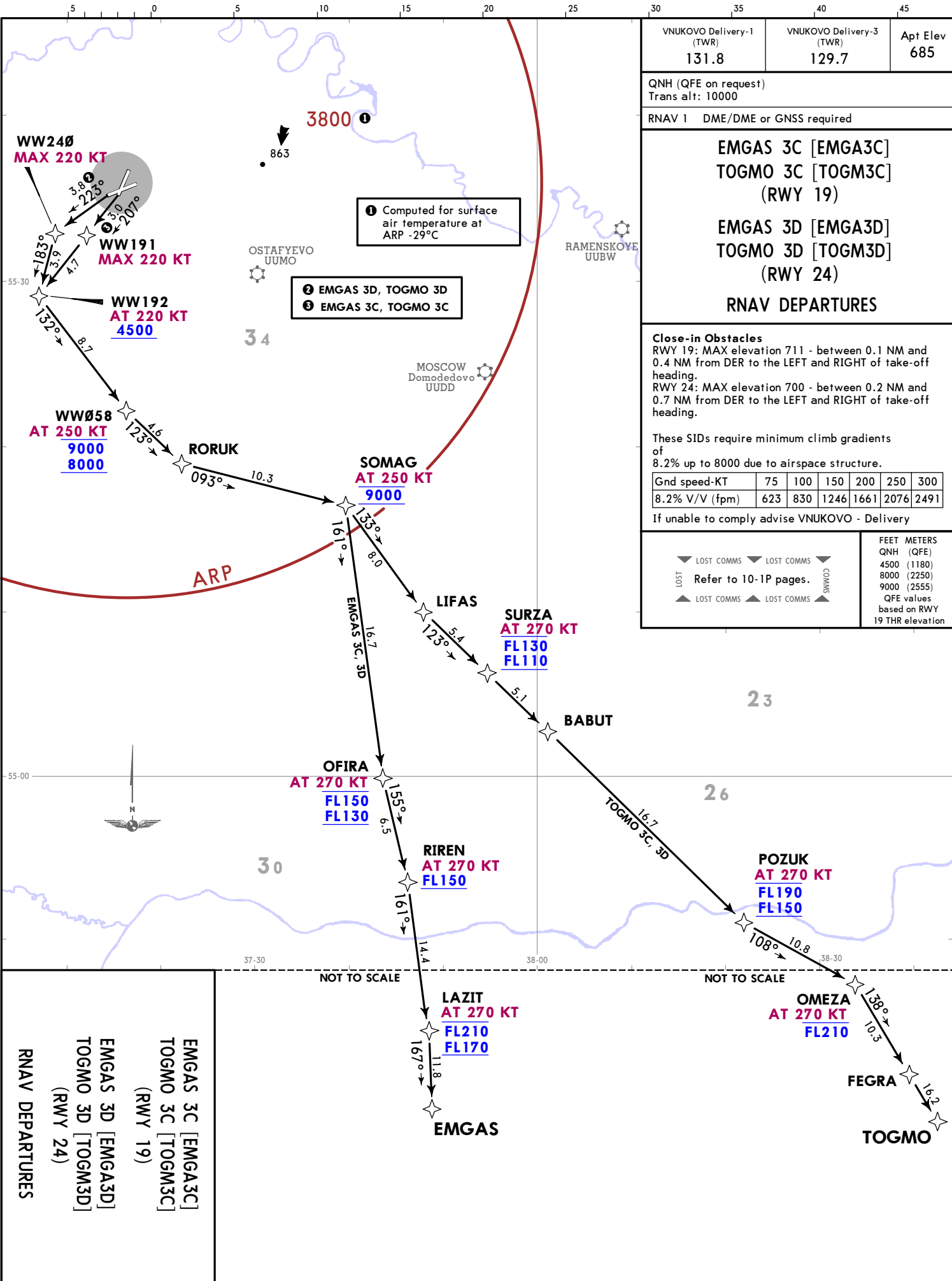
38-30  
NOT TO SCALE  
FEGRA  
TOGMO

**EMGAS 3A [EMGA3A]  
TOGMO 3A [TOGM3A]  
(RWY 01)**

**EMGAS 3B [EMGA3B]  
TOGMO 3B [TOGM3B]  
(RWY 06)**

**RNAV DEPARTURES**

CHANGES: Initial climb clearance withdrawn.



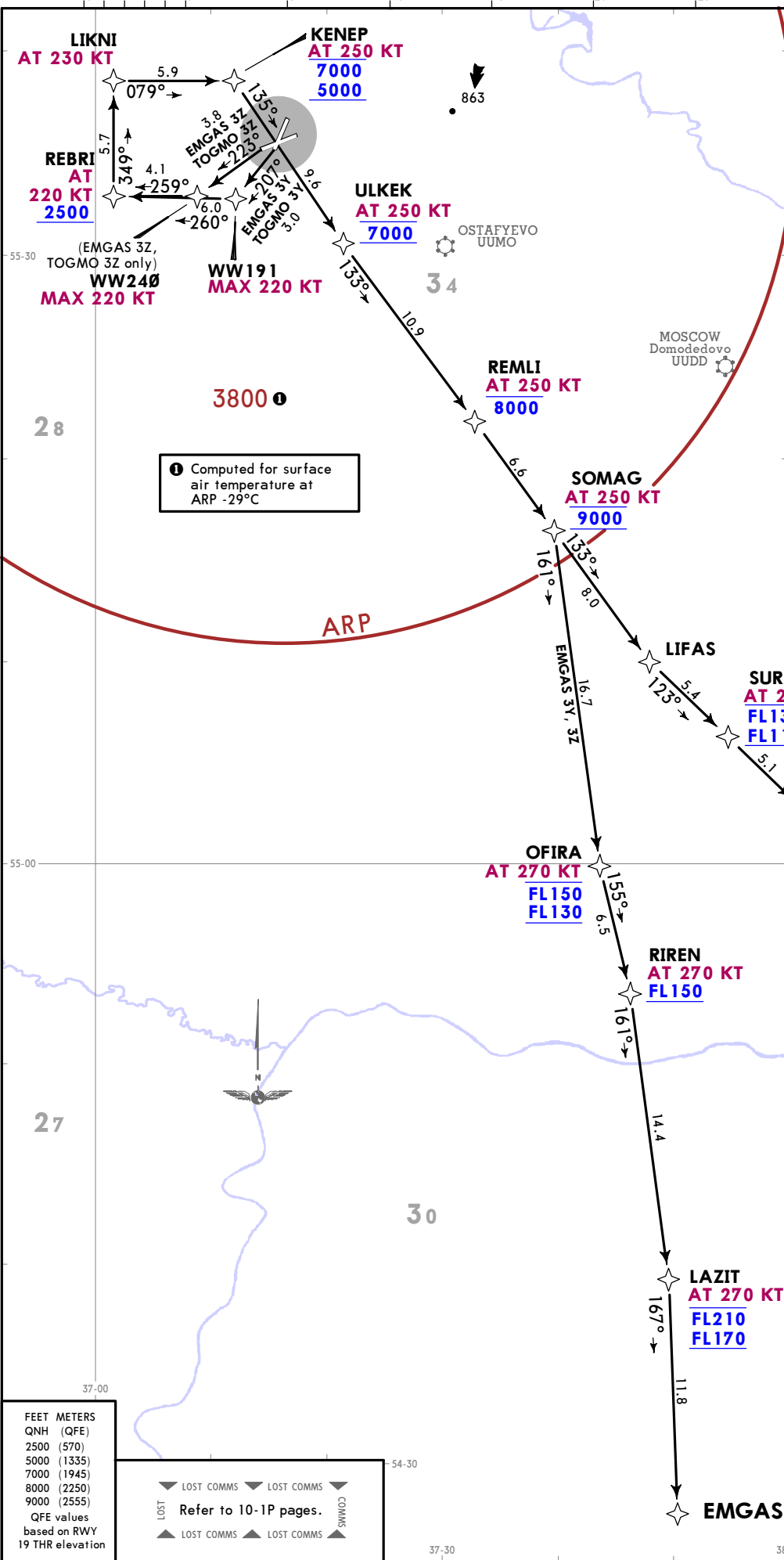
① Computed for surface air temperature at ARP -29°C

② EMGAS 3D, TOGMO 3D  
③ EMGAS 3C, TOGMO 3C

VNUKOVO Delivery-1 (TWR)	VNUKOVO Delivery-3 (TWR)	Apt Elev														
131.8	129.7	685														
QNH (QFE on request) Trans alt: 10000																
RNAV 1 DME/DME or GNSS required																
<b>EMGAS 3C [EMGA3C]</b> <b>TOGMO 3C [TOGM3C]</b> (RWY 19)  <b>EMGAS 3D [EMGA3D]</b> <b>TOGMO 3D [TOGM3D]</b> (RWY 24)  <b>RNAV DEPARTURES</b>																
<b>Close-in Obstacles</b> RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading. RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.  These SIDs require minimum climb gradients of 8.2% up to 8000 due to airspace structure.																
<table border="1"> <thead> <tr> <th>Gnd speed-KT</th> <th>75</th> <th>100</th> <th>150</th> <th>200</th> <th>250</th> <th>300</th> </tr> </thead> <tbody> <tr> <td>8.2% V/V (fpm)</td> <td>623</td> <td>830</td> <td>1246</td> <td>1661</td> <td>2076</td> <td>2491</td> </tr> </tbody> </table>			Gnd speed-KT	75	100	150	200	250	300	8.2% V/V (fpm)	623	830	1246	1661	2076	2491
Gnd speed-KT	75	100	150	200	250	300										
8.2% V/V (fpm)	623	830	1246	1661	2076	2491										
If unable to comply advise VNUKOVO - Delivery																
▼ LOST COMMS Refer to 10-1P pages.	▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS	FEET METERS QNH (QFE) 4500 (1180) 8000 (2250) 9000 (2555) QFE values based on RWY 19 THR elevation														

EMGAS 3C [EMGA3C]  
TOGMO 3C [TOGM3C]  
(RWY 19)  
  
EMGAS 3D [EMGA3D]  
TOGMO 3D [TOGM3D]  
(RWY 24)  
  
RNAV DEPARTURES

CHANGES: Initial climb clearance withdrawn.



VNUKOVO Delivery-1 (TWR)	VNUKOVO Delivery-3 (TWR)	Apt Elev
131.8	129.7	685

QNH (QFE on request)  
Trans alt: 10000

RNAV 1 DME/DME or GNSS required

**EMGAS 3Y [EMGA3Y]  
TOGMO 3Y [TOGM3Y]  
(RWY 19)**

**EMGAS 3Z [EMGA3Z]  
TOGMO 3Z [TOGM3Z]  
(RWY 24)**

**RNAV DEPARTURES**

**Close-in Obstacles**  
RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading.  
RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.

These SIDs require minimum climb gradients of 3.5% up to 5000 due to airspace structure.

Gnd speed-KT	75	100	150	200	250	300
3.5% V/V (fpm)	266	354	532	709	886	1063

If unable to comply advise VNUKOVO - Delivery

FEET	METERS
2500	(570)
5000	(1335)
7000	(1945)
8000	(2250)
9000	(2555)

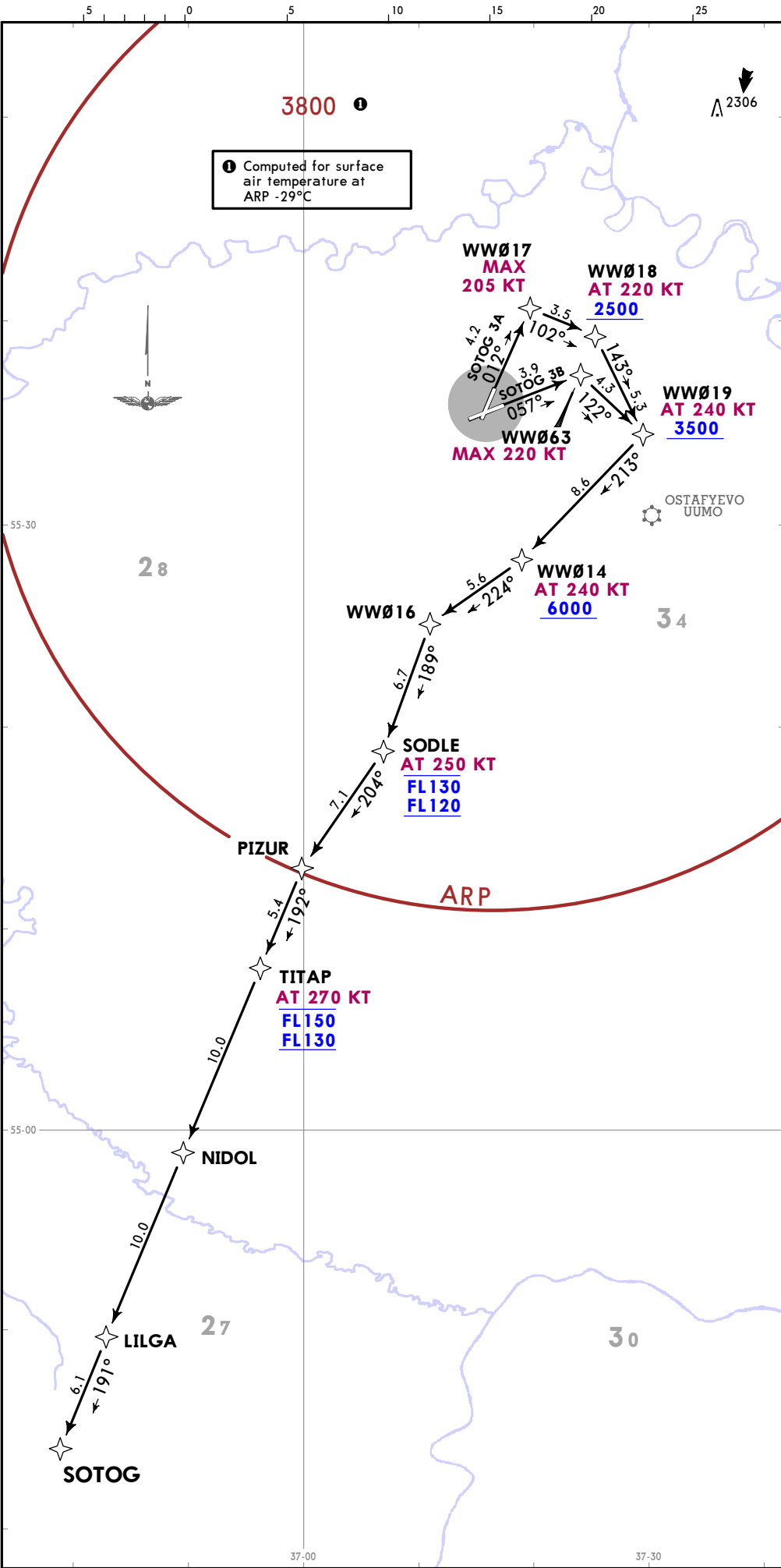
QFE values based on RWY 19 THR elevation

Refer to 10-1P pages.

LOST COMMS

UUUW/VKO  
 VNUKOVO  
 5 JUL 24 (10-3J)  
 JEPPesen MOSCOW, RUSSIA  
 RNAV SID

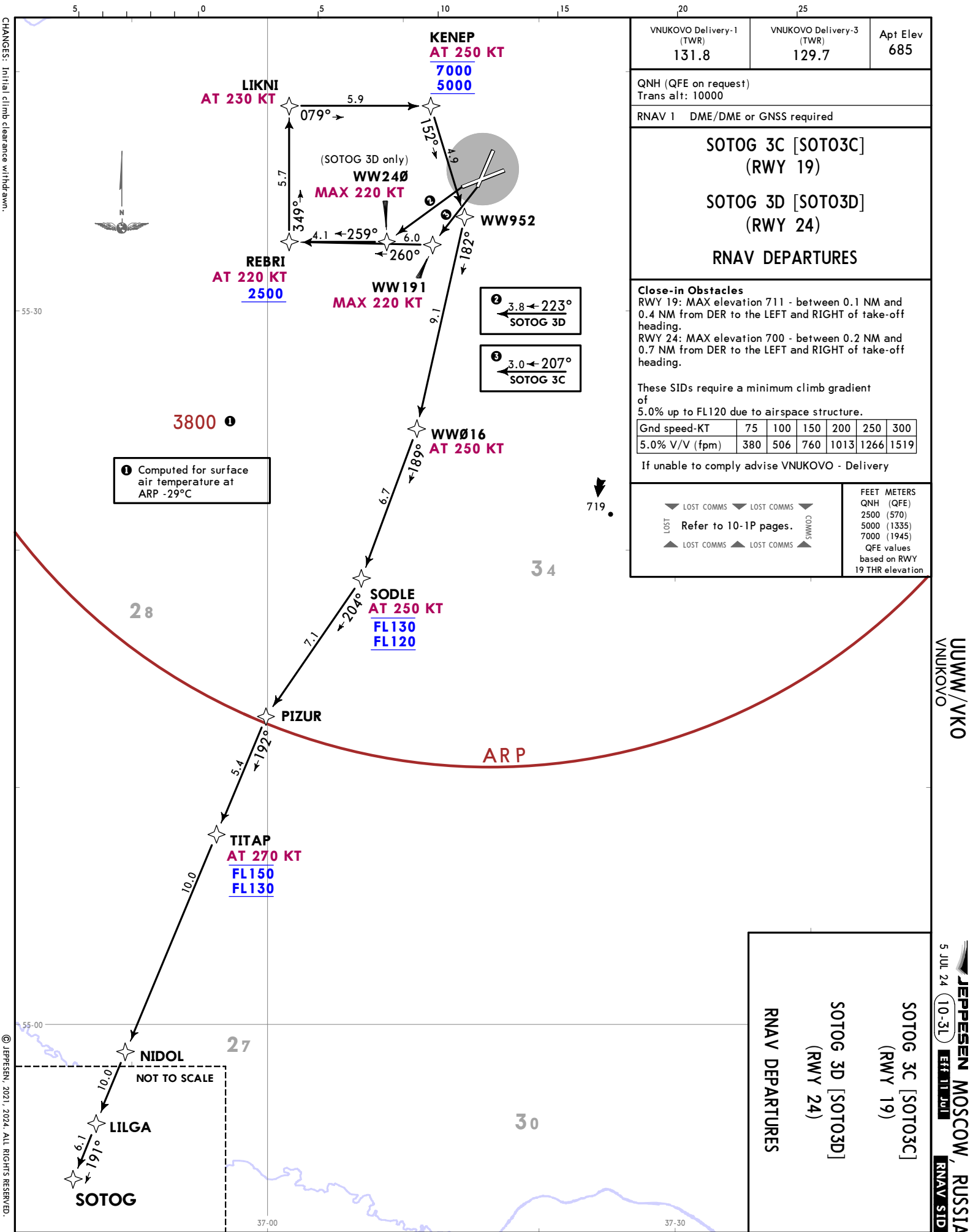
CHANGES: Initial climb clearance withdrawn.



① Computed for surface air temperature at ARP -29°C

VNUKOVO Delivery-1 (TWR) 131.8	VNUKOVO Delivery-3 (TWR) 129.7	Apt Elev 685																					
QNH (QFE on request) Trans alt: 10000																							
RNAV 1 DME/DME or GNSS required																							
<b>SOTOG 3A [SOTO3A]</b> (RWY 01)  <b>SOTOG 3B [SOTO3B]</b> (RWY 06)  <b>RNAV DEPARTURES</b>																							
<b>Close-in Obstacles</b> RWY 01: MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading. RWY 06: MAX elevation 746 - group of obstacles at 0.4 NM from DER to the RIGHT of take-off heading.  These SIDs require minimum climb gradients of of SOTOG 3A, SOTOG 3B: 6.5% up to FL120 due to airspace structure. SOTOG 3A: 3.6% up to 1200 due to obstacles.																							
<table border="1"> <thead> <tr> <th>Gnd speed-KT</th> <th>75</th> <th>100</th> <th>150</th> <th>200</th> <th>250</th> <th>300</th> </tr> </thead> <tbody> <tr> <td>3.6% V/V (fpm)</td> <td>273</td> <td>365</td> <td>547</td> <td>729</td> <td>911</td> <td>1094</td> </tr> <tr> <td>6.5% V/V (fpm)</td> <td>494</td> <td>658</td> <td>987</td> <td>1316</td> <td>1646</td> <td>1975</td> </tr> </tbody> </table>			Gnd speed-KT	75	100	150	200	250	300	3.6% V/V (fpm)	273	365	547	729	911	1094	6.5% V/V (fpm)	494	658	987	1316	1646	1975
Gnd speed-KT	75	100	150	200	250	300																	
3.6% V/V (fpm)	273	365	547	729	911	1094																	
6.5% V/V (fpm)	494	658	987	1316	1646	1975																	
If unable to comply advise VNUKOVO - Delivery																							
▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS Refer to 10-1P pages. ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS		FEET METERS QNH (QFE) 1200 (175) 2500 (575) 3500 (880) 6000 (1640) QFE values based on RWY 06 THR elevation																					

<b>SOTOG 3A [SOTO3A]</b> (RWY 01)  <b>SOTOG 3B [SOTO3B]</b> (RWY 06)  <b>RNAV DEPARTURES</b>
--



VNUKOVO Delivery-1 (TWR)	VNUKOVO Delivery-3 (TWR)	Apt Elev				
131.8	129.7	685				
QNH (QFE on request) Trans alt: 10000						
RNAV 1 DME/DME or GNSS required						
<b>SOTOG 3C [SOT03C]</b> (RWY 19)  <b>SOTOG 3D [SOT03D]</b> (RWY 24)  <b>RNAV DEPARTURES</b>						
<b>Close-in Obstacles</b> RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading. RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.  These SIDs require a minimum climb gradient of 5.0% up to FL120 due to airspace structure.						
Grnd speed-KT	75	100	150	200	250	300
5.0% V/V (fpm)	380	506	760	1013	1266	1519
If unable to comply advise VNUKOVO - Delivery						
▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS Refer to 10-1P pages.			FEET METERS QNH (QFE) 2500 (570) 5000 (1335) 7000 (1945) QFE values based on RWY 19 THR elevation			

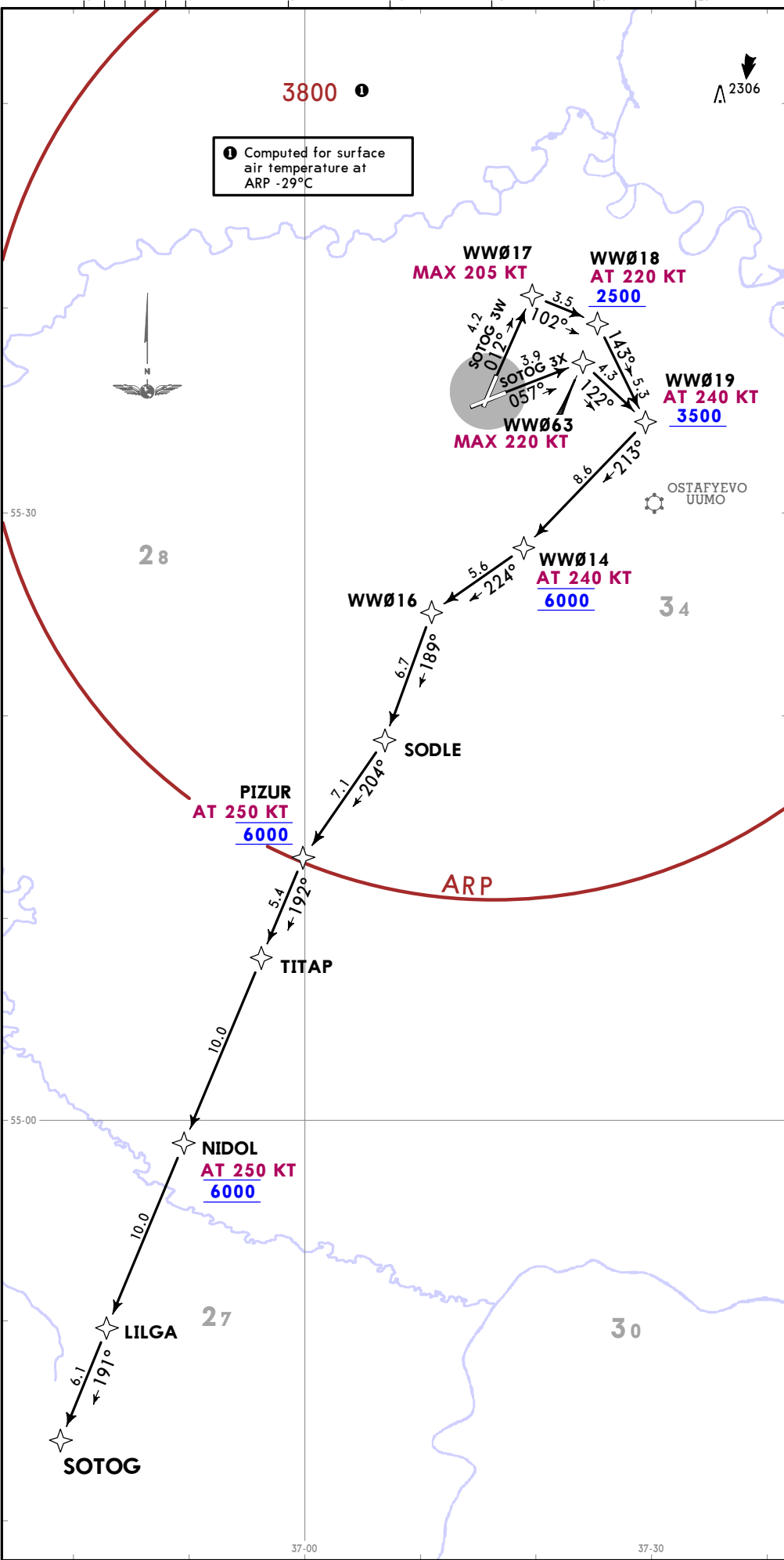
<b>SOTOG 3C [SOT03C]</b> (RWY 19)  <b>SOTOG 3D [SOT03D]</b> (RWY 24)  <b>RNAV DEPARTURES</b>
--

CHANGES: Initial climb clearance withdrawn.

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CHANGES: Initial climb clearance withdrawn.

VNUKOVO  
UUWW/VKO



VNUKOVO Delivery-1 (TWR) <b>131.8</b>	VNUKOVO Delivery-3 (TWR) <b>129.7</b>	Apt Elev <b>685</b>				
QNH (QFE on request) Trans alt: 10000						
RNAV 1 DME/DME or GNSS required						
<b>SOTOG 3W [SOTO3W] (RWY 01)</b>						
<b>SOTOG 3X [SOTO3X] (RWY 06)</b>						
<b>RNAV DEPARTURES</b>						
<b>Close-in Obstacles</b> RWY 01: MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading. RWY 06: MAX elevation 746 - group of obstacles at 0.4 NM from DER to the RIGHT of take-off heading.						
SOTOG 3W: This SID requires minimum climb gradients of 3.6% up to 1200 due to obstacles. 4.1% up to 6000 due to airspace structure.						
Gnd speed-KT	75	100	150	200	250	300
3.6% V/V (fpm)	273	365	547	729	911	1094
4.1% V/V (fpm)	311	415	623	830	1038	1246
If unable to comply advise VNUKOVO - Delivery						
▼ LOST COMMS	▼ LOST COMMS	▼ LOST COMMS				
▲ LOST COMMS	▲ LOST COMMS	▲ LOST COMMS				
Refer to 10-1P pages.			COMMS			
			FEET METERS			
			QNH (QFE)			
			1200 (175)			
			2500 (575)			
			3500 (880)			
			6000 (1640)			
			QFE values based on RWY 06 THR elevation			

**RNAV DEPARTURES**

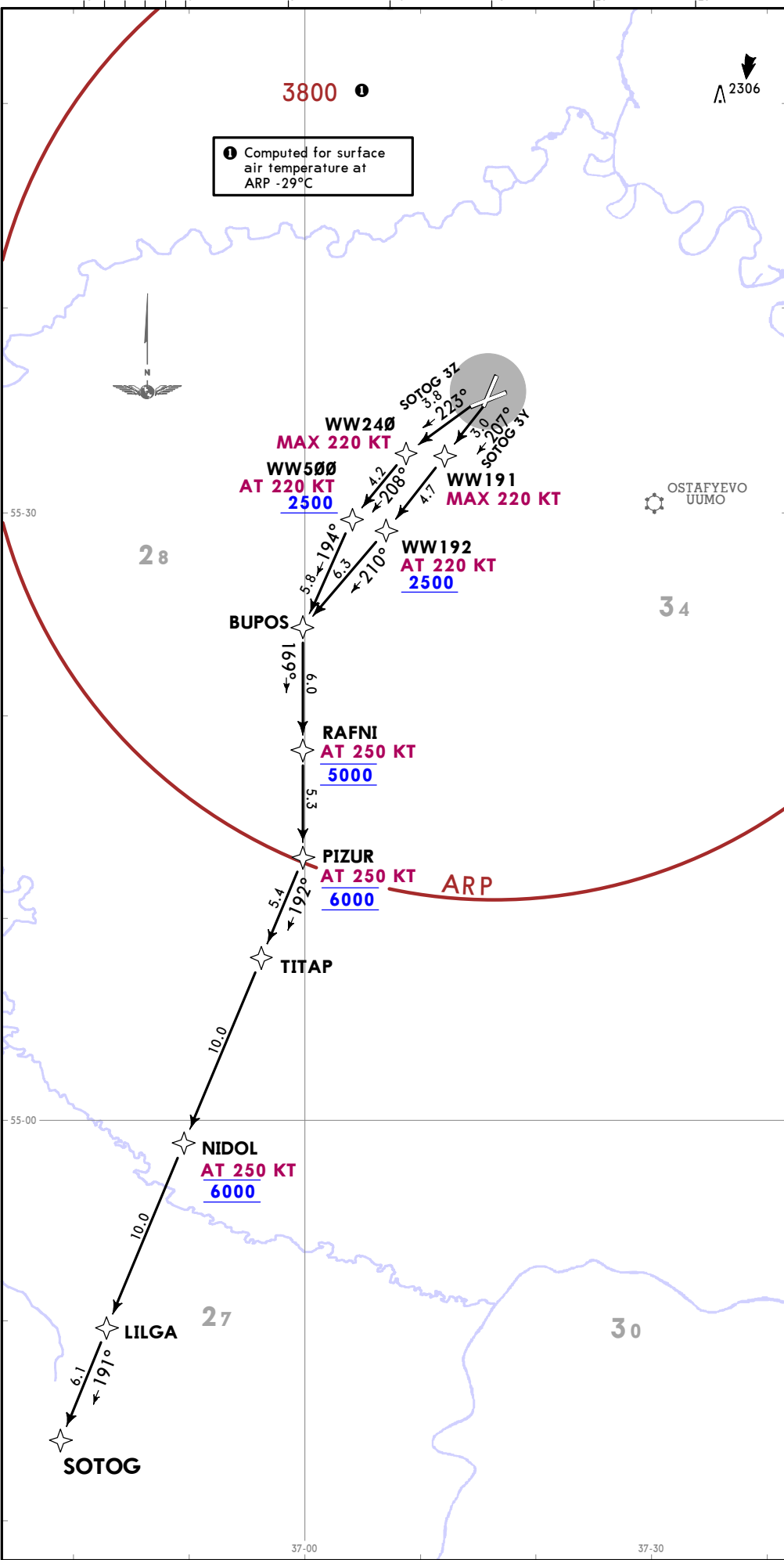
**SOTOG 3W [SOTO3W]  
(RWY 01)**

**SOTOG 3X [SOTO3X]  
(RWY 06)**

5 JUL 24 (10-3M) EFF 11 JUL  
JEPPesen MOSCOW, RUSSIA  
RNAV SID

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CHANGES: Initial climb clearance withdrawn.



VNUKOVO Delivery-1 (TWR) 131.8	VNUKOVO Delivery-3 (TWR) 129.7	Apt Elev 685														
QNH (QFE on request) Trans alt: 10000																
RNAV 1 DME/DME or GNSS required																
<b>SOTOG 3Y [SOTO3Y]</b> (RWY 19)  <b>SOTOG 3Z [SOTO3Z]</b> (RWY 24)  <b>RNAV DEPARTURES</b>																
<b>Close-in Obstacles</b> RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading. RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.  These SIDs require a minimum climb gradient of 4.2% up to 2500 due to airspace structure.																
<table border="1"> <tr> <td>Gnd speed-KT</td> <td>75</td> <td>100</td> <td>150</td> <td>200</td> <td>250</td> <td>300</td> </tr> <tr> <td>4.2% V/V (fpm)</td> <td>319</td> <td>425</td> <td>638</td> <td>851</td> <td>1063</td> <td>1276</td> </tr> </table> If unable to comply advise VNUKOVO - Delivery			Gnd speed-KT	75	100	150	200	250	300	4.2% V/V (fpm)	319	425	638	851	1063	1276
Gnd speed-KT	75	100	150	200	250	300										
4.2% V/V (fpm)	319	425	638	851	1063	1276										
Refer to 10-1P pages.		FEET METERS QNH (QFE) 2500 (570) 5000 (1335) 6000 (1640) QFE values based on RWY 19 THR elevation														

SOTOG 3Y [SOTO3Y] (RWY 19)  SOTOG 3Z [SOTO3Z] (RWY 24)  <b>RNAV DEPARTURES</b>
--

VNUKOVO / VNUKOVO  
 RUSSIA  
 JEPPESSEN MOSCOW  
 EFF 11 JUL 24  
 5 JUL 24 (10-3N)  
 RNAV SID

**JEPPESSEN MOSCOW, RUSSIA**  
 5 JUL 24 (10-3P) Eff 11 Jul  
**RNAV SID**

VNUKOVO Delivery-1 (TWR) **131.8**  
 VNUKOVO Delivery-3 (TWR) **129.7**  
 Apt Elev **685**  
 QNH (QFE on request) Trans alt: 10000  
 RNAV 1 DME/DME or GNS required

**POKAG 3A [POKA3A]**  
**SUNUN 3A [SUNU3A]**  
 (RWY 01)  
 [CAT A, B & C]

**POKAG 3B [POKA3B]**  
**SUNUN 3B [SUNU3B]**  
 (RWY 06)  
**RNAV DEPARTURES**

**Close-in Obstacles**  
 RWY 01: MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading.  
 RWY 06: MAX elevation 746 - group of obstacles at 0.4 NM from DER to the RIGHT of take-off heading. These SIDs require minimum climb gradients of

**POKAG 3A, SUNUN 3A:**  
 5.1% up to 1200 due to obstacles.  
 8.8% up to FL120 due to airspace structure.

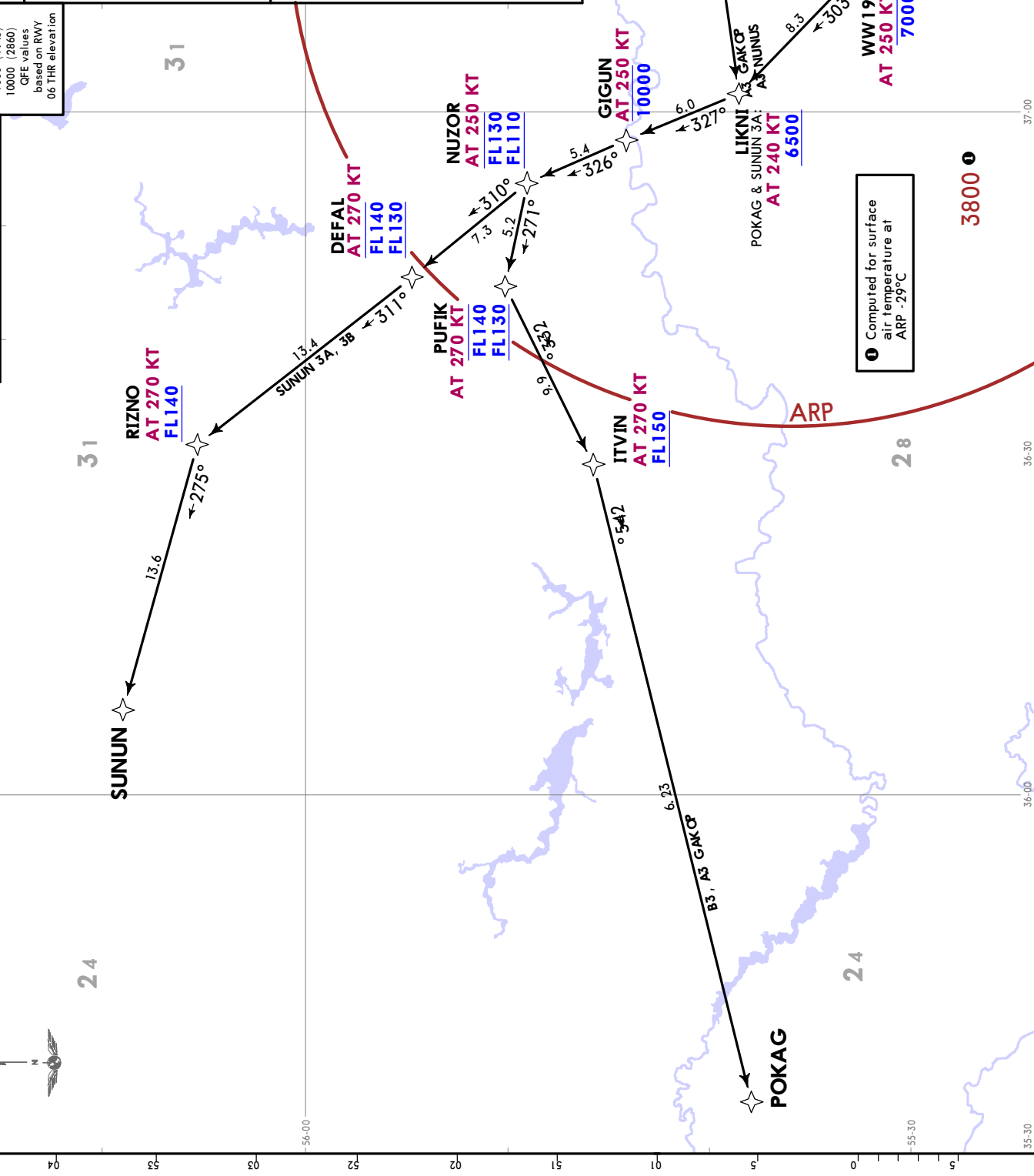
**POKAG 3B, SUNUN 3B:**  
 5.7% up to 6000 due to airspace structure.

Gnd speed:KT	75	100	150	200	250	300
5.1% V/V (fpm)	387	516	775	1033	1291	1549
5.7% V/V (fpm)	433	577	866	1154	1443	1732
8.8% V/V (fpm)	668	891	1337	1782	2228	2673

If unable to comply advise VNUKOVO - Delivery

**FEET METERS**  
 QNH (QFE)  
 1100 (145)  
 1200 (175)  
 3500 (875)  
 6000 (1640)  
 6500 (1795)  
 7000 (1945)  
 10000 (2860)  
 QFE values based on RWY elevation  
 0.6 THR elevation

Refer to 10-1P pages.  
 LOST COMMS LOST COMMS LOST COMMS



**UUWW/VKO**  
 VNUKOVO

**JEPPesen MOSCOW, RUSSIA**  
 5 JUL 24 (10-3Q) Eff 11 Jul

**UWW/VKO**  
**VNUKOVO**

FEET METERS  
 QNH (QFE)  
 2500 (570)  
 10000 (2855)  
 QFE values based on RWY 19 THR elevation

LOST COMMS  
 Refer to 10-1P pages.

COMMS

VNUKOVO Delivery-1 (TWR) 131.8  
 VNUKOVO Delivery-3 (TWR) 129.7  
 Apt Elev 685

QNH (QFE on request)  
 Trans alt: 10000

RNAV 1 DME/DME or GNS required

**RNAV SID**

**POKAG 3C [POKA3C]**  
**SUNUN 3C [SUNU3C]**  
 (RWY 19)

**POKAG 3D [POKA3D]**  
**SUNUN 3D [SUNU3D]**  
 (RWY 24)

**RNAV DEPARTURES**

**Close-in Obstacles**  
 RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading.  
 RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.

These SIDs require minimum climb gradients of

POKAG 3C, SUNUN 3C:  
 6.6% up to FL110 due to airspace structure.  
 POKAG 3D, SUNUN 3D:  
 6.9% up to FL110 due to airspace structure.

Grnd speed-KT	75	100	150	200	250	300
6.6% V/V (fpm)	501	668	1003	1337	1671	2005
6.9% V/V (fpm)	524	699	1048	1397	1747	2096

If unable to comply advise VNUKOVO - Delivery

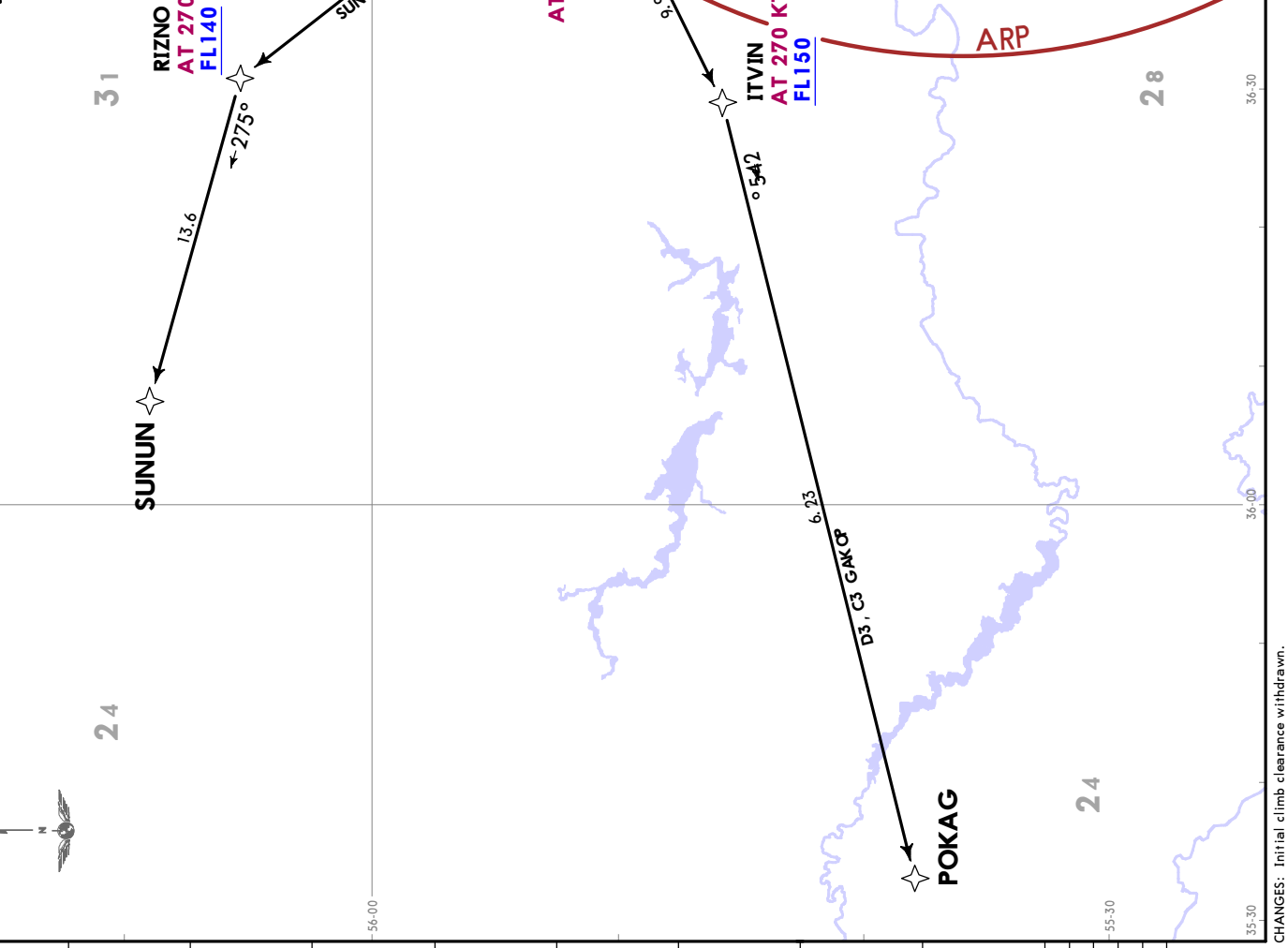
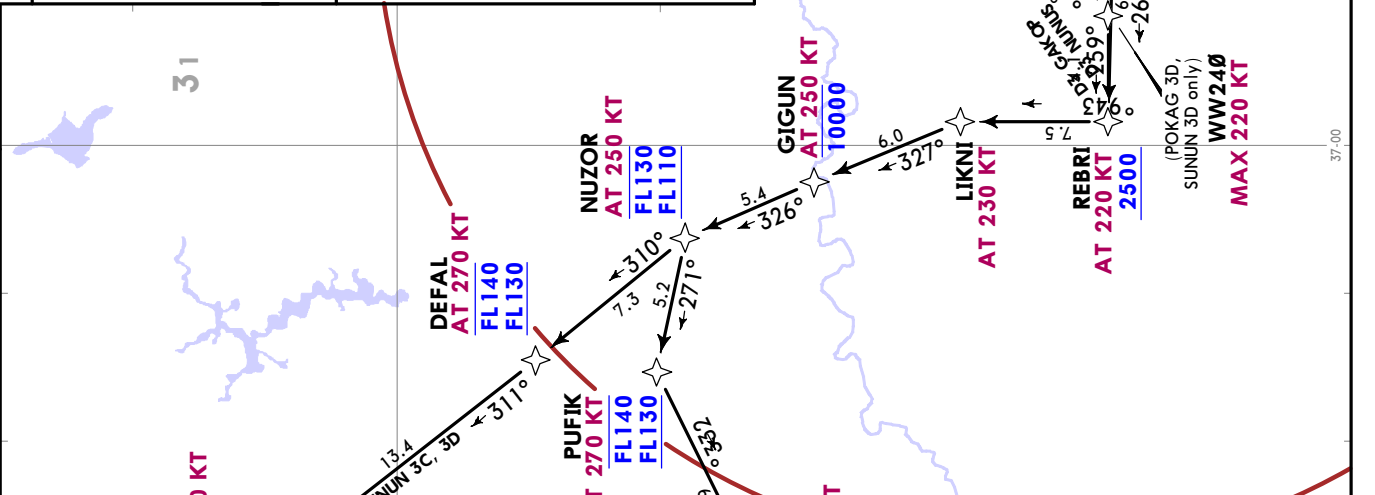
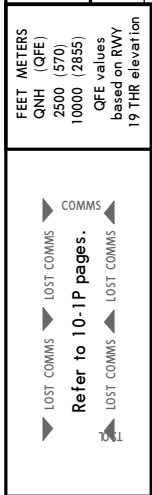
Computed for surface air temperature at ARP -29°C

3800

863

OSTAFYEVO UUMMO

34



**JEJPESEN MOSCOW, RUSSIA**  
 5 JUL 24 (10-3S) Eff: 11 Jul  
**RNAV SID**

VNUKOVO Delivery-1 (TWR) **131.8**  
 VNUKOVO Delivery-3 (TWR) **129.7**  
 Apt Elev **685**  
 QNH (QFE on request)  
 Trans alt: 10000  
 RNAV 1 DME/DME or GNS required

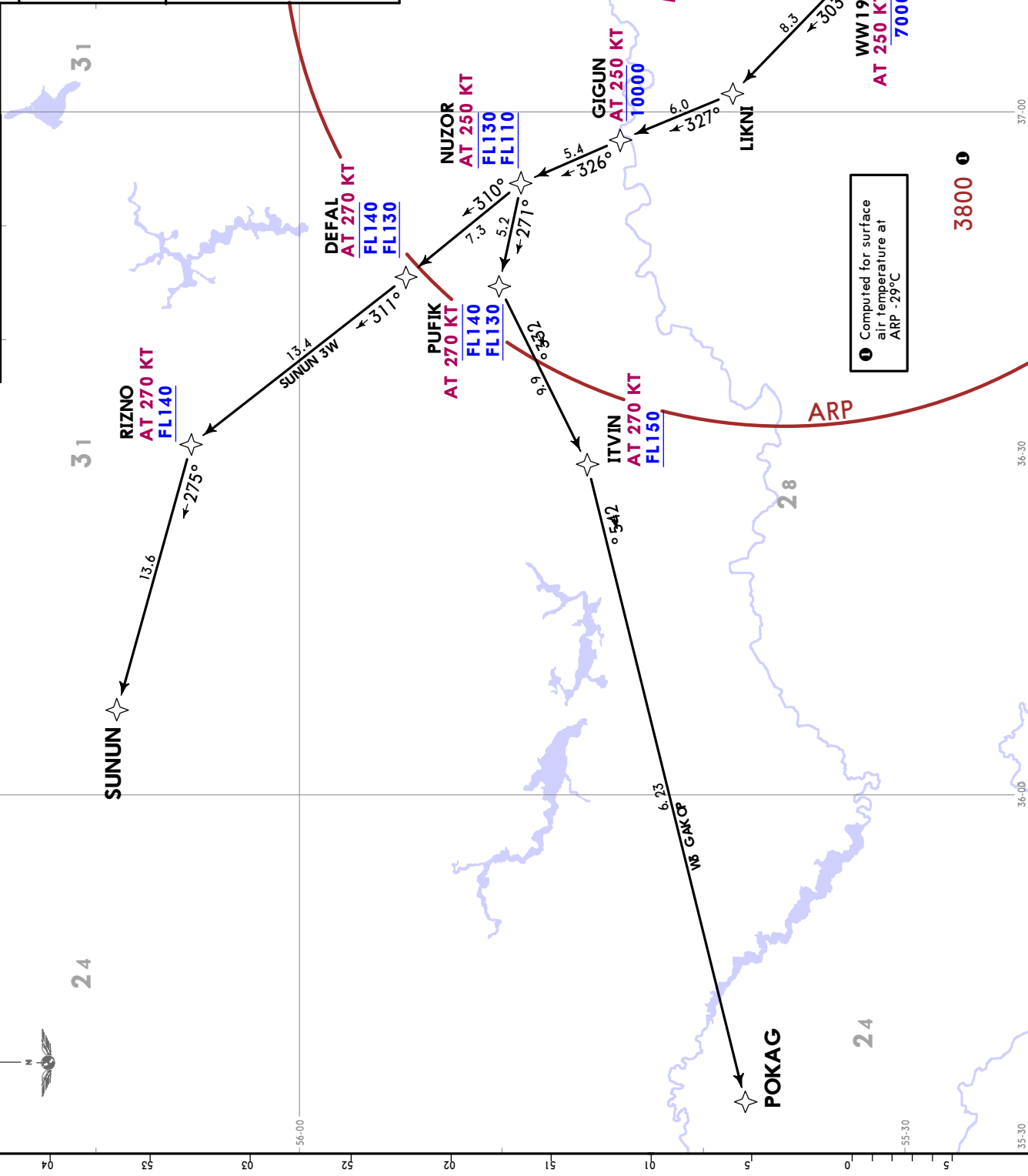
**POKAG 3W [POKA3W]**  
**SUNUN 3W [SUNU3W]**  
**RNAV DEPARTURES (RWY 01)**

**Close-in Obstacles**  
 MAX elevation 665 - between 0.1 NM and 0.8 NM from DER to the LEFT and RIGHT of take-off heading.  
 These SIDs require minimum climb gradient of  
 3.6% up to 1200 due to obstacles.  
 4.0% up to 6000 due to airspace structure.  
 If unable to comply advise VNUKOVO - Delivery

Grnd speed-KT	75	100	150	200	250	300
3.6% V/V (fpm)	273	365	547	729	911	1094
4.0% V/V (fpm)	304	405	608	810	1013	1215

**FEET METERS**  
 QNH (QFE)  
 1200 (175)  
 2500 (570)  
 3500 (875)  
 4000 (1640)  
 7000 (1945)  
 10000 (2860)

Refer to 10-1P pages.  
 LOST COMMS LOST COMMS LOST COMMS



**UUWW/VKO**  
 VNUKOVO

**JEJPESEN MOSCOW, RUSSIA**  
 5 JUL 24 (10-3T) Eff. 11 Jul  
**RNAV SID**

**UUWW/VKO**  
**VNUKOVO**

FEET METERS  
 QNH (QFE)  
 2500 (570)  
 7000 (1945)  
 8000 (2250)  
 QFE values based on RWY 19 THR elevation

LOST COMMS  
 Refer to 10-1P pages.  
 LOST COMMS

COMMS

VNUKOVO Delivery-1 (TWR) **131.8**  
 VNUKOVO Delivery-3 (TWR) **129.7**  
 Apt Elev **685**

QNH (QFE on request)  
 Trans alt: 10000

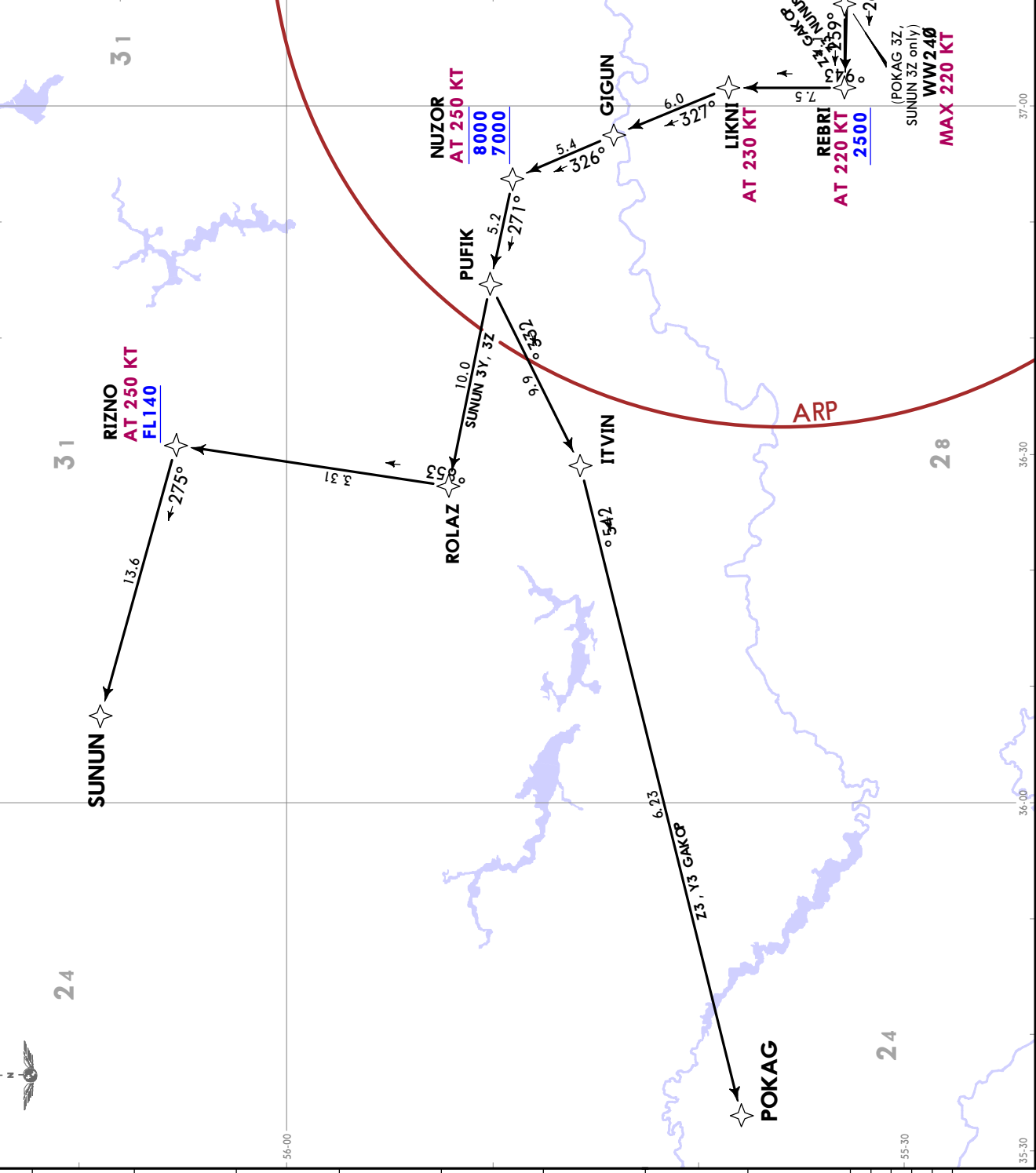
RNAV 1 DME/DME or GNSS required

**POKAG 3Y [POKA3Y]**  
**SUNUN 3Y [SUNU3Y]**  
 (RWY 19)  
**POKAG 3Z [POKA3Z]**  
**SUNUN 3Z [SUNU3Z]**  
 (RWY 24)  
**RNAV DEPARTURES**

**Close-in Obstacles**  
 RWY 19: MAX elevation 711 - between 0.1 NM and 0.4 NM from DER to the LEFT and RIGHT of take-off heading.  
 RWY 24: MAX elevation 700 - between 0.2 NM and 0.7 NM from DER to the LEFT and RIGHT of take-off heading.  
 These SIDs require minimum climb gradients of  
 POKAG 3Y, SUNUN 3Y:  
 4.1% up to 7000 due to airspace structure.  
 POKAG 3Z, SUNUN 3Z:  
 4.2% up to 7000 due to airspace structure.

Gnd speed-KT	75	100	150	200	250	300
4.1% V/V (fpm)	311	415	623	830	1038	1246
4.2% V/V (fpm)	319	425	638	851	1063	1276

If unable to comply advise VNUKOVO - Delivery



**UUWW/VKO**  
**VNUKOVO**

**JEPPESEN**  
 3 SEP 21 **(10-3U)** **Eff 9 Sep**

**MOSCOW, RUSSIA**  
**DEPARTURE**

Apt Elev  
**685**

Trans alt: 10000 QNH (QFE on request)

## FLIGHT ROUTES BETWEEN AERODROMES WITHIN MOSCOW TMA

1. Departure instructions provide ACFT vectoring to the significant point on the route (the first waypoint in the flight plan);
2. Flights within CTRs shall be carried out via waypoints, separated by letters DCT in the flight plan, to IAF of the destination aerodrome (in accordance with the information published for appropriate departure aerodrome);
3. Approach shall be executed from IAF of the destination aerodrome:
  - Moscow/Sheremetyevo - KEZVU (IAF)
  - Moscow/Domodedovo - ALBOR (IAF)
  - Moscow/Vnukovo - RORUK (IAF)
  - Ostafyevo - RORUK (IAF)
  - Ramenskoye - ODLOR (IAF).

Departure To	ROUTING
<b>Moscow/ Sheremetyevo</b>	LIKNI - GIGUN - NUZOR - PUFIK - ROLAZ - RIZNO - BEGEZ - LUNZA - EEØ48 - EEØ49 - EEØ5Ø - EEØ51 - TAFAZ - KEZVU (IAF).
<b>Moscow/ Domodedovo</b>	BITSA - IMZUP - KUPVE - NIDBE - IZVOK - IPKED - ZOVGO - ODZAG - GUFUZ - ALBOR (IAF).
<b>Ostafyevo</b>	BUPOS - ORSIF - MEZER - NALFI - RAMZA - UKABE - FIDOT - RORUK (IAF).
<b>Ramenskoye</b>	BITSA - IMZUP - GENKE - RT NDB - BW316 - BW317 - BW318 - BW319 - ODLOR (IAF).

UUWW/VKO  
VNUKOVO

  
19 MAY 23 10-4
MOSCOW, RUSSIA  
NOISE**NOISE ABATEMENT**

LT minus 3 HOURS = UTC (Z)

**GENERAL**

Noise abatement procedures during take-off, climb and approach shall be employed by all ACFT.

Noise abatement procedures shall not be employed at the expense of compromising safety of flight operations.

Maintain the assigned SID and STAR routes, and in case of deviation from them, immediately join the assigned flight track.

**ARRIVALS**

Great rates of descent should be avoided (if possible) immediately prior to the final approach segment.

Change of ACFT configuration and flight speed within noise abatement procedures is permitted in accordance with the requirements of the Aeroplane Flight Manual.

Flying below ILS glide path is PROHIBITED, during instrument and visual approach.

Noise abatement procedures should not involve employment of speed greater than the indicated airspeed of descent prescribed in the Aeroplane Flight Manual.

**USE OF REVERSE TRUST**

Engines reverse thrust at idle power is recommended for ACFT landing at the AD from 2300-0700 LT except for safety related cases.

**DEPARTURES**

Runway threshold displacement must not be used as a noise abatement measure.

NADP 1 is employed for ACFT departing from RWY 01 and RWY 06, NADP 2 is employed for ACFT departing from RWY 19 and RWY 24.

ACFT with partial load shall take-off at rated engines power, in accordance with the Aeroplane Flight Manual.

Aircraft turn from 500' (150 m) to 1000' (300 m) AAL shall be carried out with a 15° bank, from 1000' (300 m) to 2960' (900 m) with a 20° bank and from 2960' (900 m) with a 25° bank or at angular speed of 3°/sec.

Change of flight direction (course) after take-off is permitted only after reaching 500' (150 m) AAL.

**APU USAGE**

ACFT APU run-up on designated stands not equipped with jet blast deflectors and sound barriers is PROHIBITED.

Also, use of ACFT APU between 2300-0700 LT is PROHIBITED.

Use of APU should be avoided and/or restricted on stands equipped with ACFT ground power units and preconditioned air systems from 2300-0700 LT after ACFT is parked on stand or before ACFT leaves the stand.

**PREFERENTIAL RWY SYSTEM DURING NIGHT PERIOD**

Within noise abatement procedures the term NIGHT indicates the period from 2300-0700 LT.

RWY 19 and RWY 06 should not be used as preferential RWYs for landing operations, RWY 01 should not be used as preferential RWY for take-off operations.

Deviations from the given restrictions are possible in view of RWY 06/24 closure, adverse weather conditions or operating limitations.

Arrivals and departures of ACFT that comply with noise certification requirements specified in ICAO Annex 16, Chapter 3 are permitted during that time.

**Restrictions**

Flight operations of Tu-134, Tu-154B and Il-86 ACFT are prohibited, except for flights operated for the purpose of transport of Heads of State, provision of medical and safety and rescue assistance.

# UUWW/VKO

Apt Elev **685'**  
N55 36.0 E037 16.4

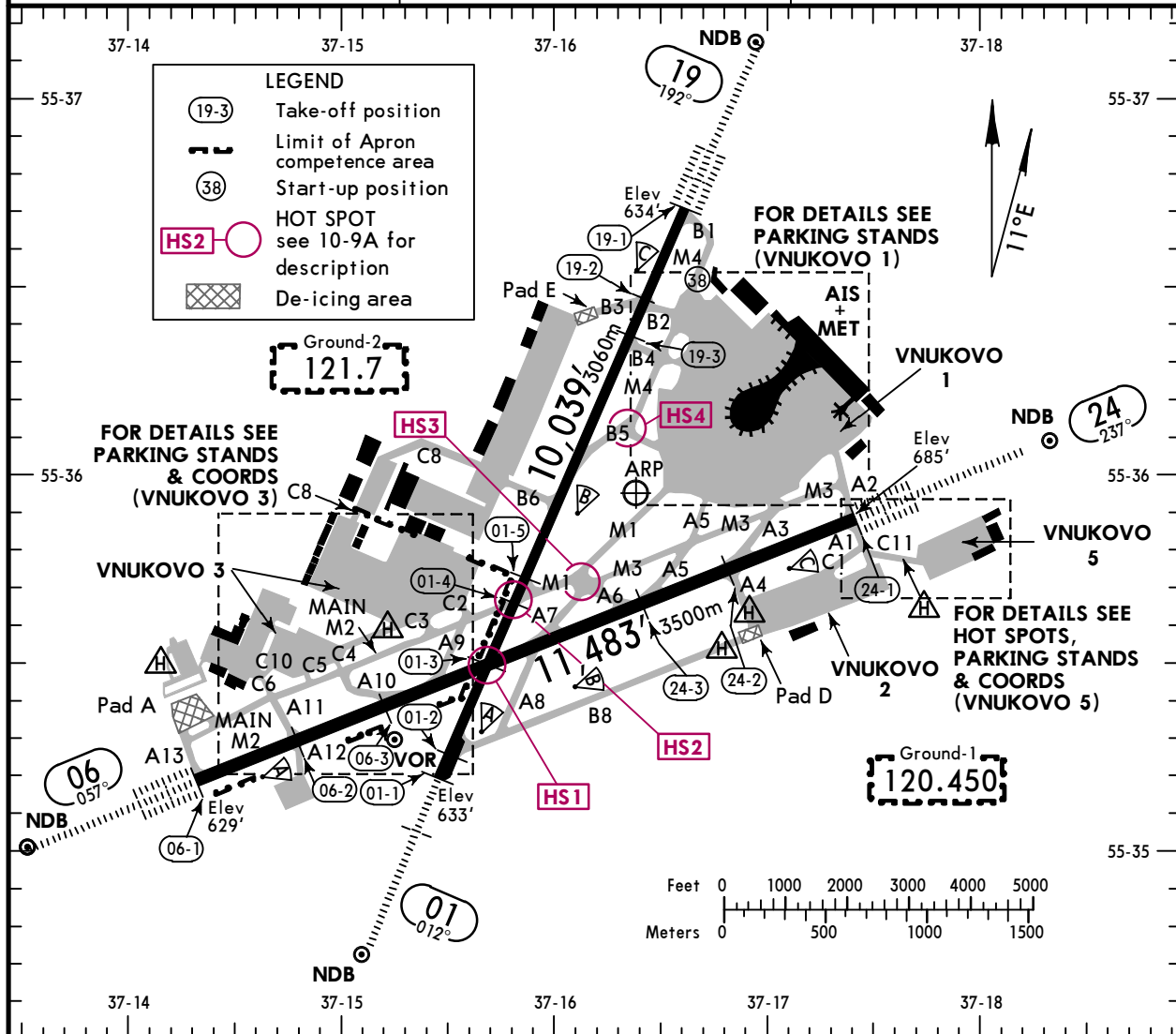


9 JUN 23 **(10-9)** Eff 15 Jun

# MOSCOW, RUSSIA

VNUKOVO

ATIS Departure <b>124.45</b> (Russian 127.8)	VNUKOVO Delivery-1 (TWR) VNUKOVO 1 <b>131.8</b>	VNUKOVO Delivery-3 (TWR) VNUKOVO 2, 3 and 5 <b>129.7</b>
VNUKOVO Ground-1 (TWR) <b>120.450</b>	VNUKOVO Ground-2 (TWR) <b>121.7</b>	Tower <b>118.3</b>



### ADDITIONAL RUNWAY INFORMATION

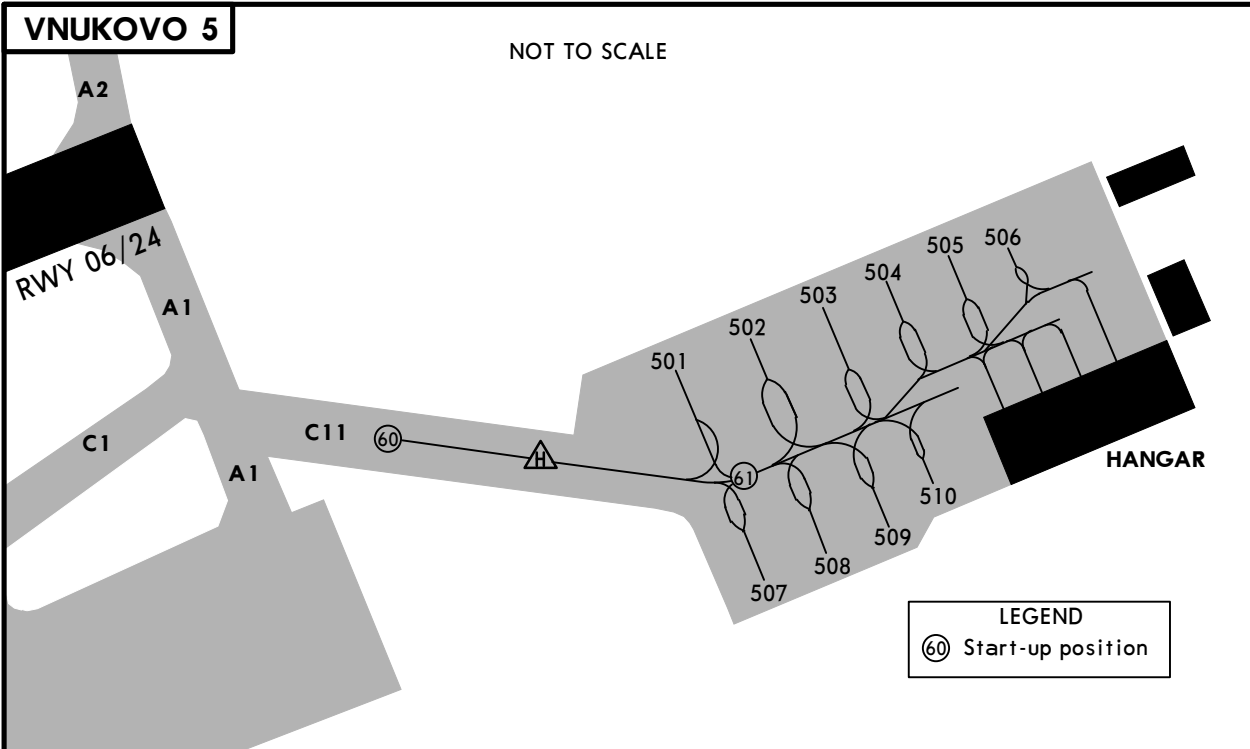
RWY	HIRL (60m) CL (15m) HIALS PAPI-L (3.0°) RVR	USABLE LENGTHS			WIDTH
		Threshold	Glide Slope	TAKE-OFF	
01 19	HIRL (60m) CL (15m) HIALS PAPI-L (3.0°) RVR		9128' 2782m	<b>1</b>	148' 45m
<b>1 TAKE-OFF RUN AVAILABLE</b> RWY 01: From rwy head 10,039' (3060m) twy B8 int 9429' (2874m) rwy 06/24 int 8091' (2466m) main twy M2 int 7119' (2170m) twy M1 int 6850' (2088m) RWY 19: From rwy head 10,039' (3060m) twy B2 int 8409' (2563m) twy B4 int 7713' (2351m)					
06 24	HIRL (60m) CL (15m) HIALS-II TDZ PAPI-L (3.0°) RVR		10,511' 3204m 10,389' 3167m	<b>2</b>	197' 60m
<b>2 TAKE-OFF RUN AVAILABLE</b> RWY 06: From rwy head 11,483' (3500m) twy A11 int 9843' (3000m) twy A10 int 8327' (2538m) RWY 24: From rwy head 11,483' (3500m) twy A3 int 9708' (2959m) twy A5 int 8209' (2502m)					

Std TAKE-OFF								
HIRL & CL (spacing 15m or less) & relevant RVR	RL & CL & relevant RVR	RL & CL	RL & RCLM		RL or CL		Adequate Vis Ref	
			DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
TDZ R125m Mid R125m Rollout R125m	TDZ R150m Mid R150m Rollout R150m	R200m	R300m		R400m		R/V500m	NA

**HOT SPOTS**

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

- HS1** Intersection of Rwy 06/24 and Rwy 01/19  
During simultaneous flight operations or simultaneous taxiing on two Rwys, flight crews must maintain an active lookout and a listening watch, strictly observe ATS unit instructions.
- HS2** Intersection of Twy M1, Main Twy M2 and Rwy 01/19  
ACFT taxiing from Vnukovo 3 apron must keep a lookout for runway-holding position marking on Rwy 01/19. Crossing runway-holding positions at Rwy 01/19 and taxiing onto Main Twy M2 shall be carried out strictly by ATS unit instruction.
- HS3** Intersection of Twys M1, M3, A6 and A7  
Flight crews must exercise extreme caution during taxiing, follow the marking and ATS unit instructions. ACFT exiting Rwy 06 via TWY A7 after landing must keep speed under control to avoid missing the turn onto Twy A7.
- HS4** Intersection of Twys M4 and B5  
ACFT exiting Rwy 01 via Twy B5 after landing must keep speed under control to avoid missing the RIGHT turn onto Vnukovo 1 apron. ACFT taxiing to Vnukovo 1 via Twy M4 must avoid missing the LEFT turn.



**INS COORDINATES**

STAND No.	COORDINATES	STAND No.	COORDINATES
501	N55 35.8 E037 17.7	507, 508	N55 35.8 E037 17.8
502	N55 35.8 E037 17.8	509, 510	N55 35.8 E037 17.9
503	N55 35.9 E037 17.8		
504, 505	N55 35.9 E037 17.9		
506	N55 35.9 E037 18.0		



UUWW/VKO

**JEPPESEN**  
11 APR 25 (10-9C) Eff 17 Apr

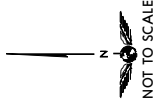
**MOSCOW, RUSSIA**  
VNUKOVO

**INS COORDINATES VNUKOVO 1**

STAND No.	COORDINATES	STAND No.	COORDINATES
1	N55 36.2 E037 17.4	42A thru 43A	N55 36.2 E037 16.6
2, 3	N55 36.1 E037 17.3	44 thru 45A	N55 36.1 E037 16.6
4 thru 7	N55 36.2 E037 17.3	46	N55 36.1 E037 16.7
8	N55 36.3 E037 17.3	46A	N55 36.1 E037 16.6
9	N55 36.3 E037 17.2	47, 48	N55 36.0 E037 16.8
10	N55 36.2 E037 17.2	49, 50	N55 36.0 E037 16.9
11 thru 13	N55 36.2 E037 17.1	51 thru 51B	N55 36.0 E037 17.0
14	N55 36.1 E037 17.0	52 thru 55	N55 36.0 E037 17.1
15	N55 36.1 E037 17.0	56, 56A	N55 36.1 E037 17.2
16, 17	N55 36.1 E037 16.9	57, 57A	N55 35.9 E037 17.0
18, 19	N55 36.1 E037 16.8	58 thru 59A	N55 35.9 E037 16.9
20 thru 22	N55 36.2 E037 16.8	60 thru 61A	N55 35.9 E037 16.8
23 thru 24	N55 36.2 E037 16.9	61B, 62	N55 36.0 E037 16.7
24A	N55 36.2 E037 17.0	62A	N55 36.0 E037 16.6
25 thru 27	N55 36.3 E037 17.0	62B	N55 36.0 E037 16.7
28, 29	N55 36.3 E037 17.1	63, 63A	N55 36.0 E037 16.6
30, 31	N55 36.4 E037 17.0	64, 65	N55 36.1 E037 16.5
32 thru 33	N55 36.4 E037 16.9	66 thru 66B	N55 36.2 E037 16.5
34	N55 36.5 E037 16.8	67 thru 68	N55 36.2 E037 16.6
34A	N55 36.4 E037 16.8	68A	N55 36.3 E037 16.6
35	N55 36.5 E037 16.8	69	N55 36.3 E037 16.7
36, 37	N55 36.4 E037 16.7	69A	N55 36.3 E037 16.6
37A	N55 36.4 E037 16.8	70	N55 36.3 E037 16.7
38	N55 36.3 E037 16.8	70A	N55 36.3 E037 16.6
38A, 38B	N55 36.4 E037 16.8	71, 71A	N55 36.3 E037 16.7
38C thru 39	N55 36.3 E037 16.8		
39A thru 40	N55 36.3 E037 16.7		
41	N55 36.2 E037 16.7		
41A	N55 36.2 E037 16.6		
42	N55 36.2 E037 16.7		

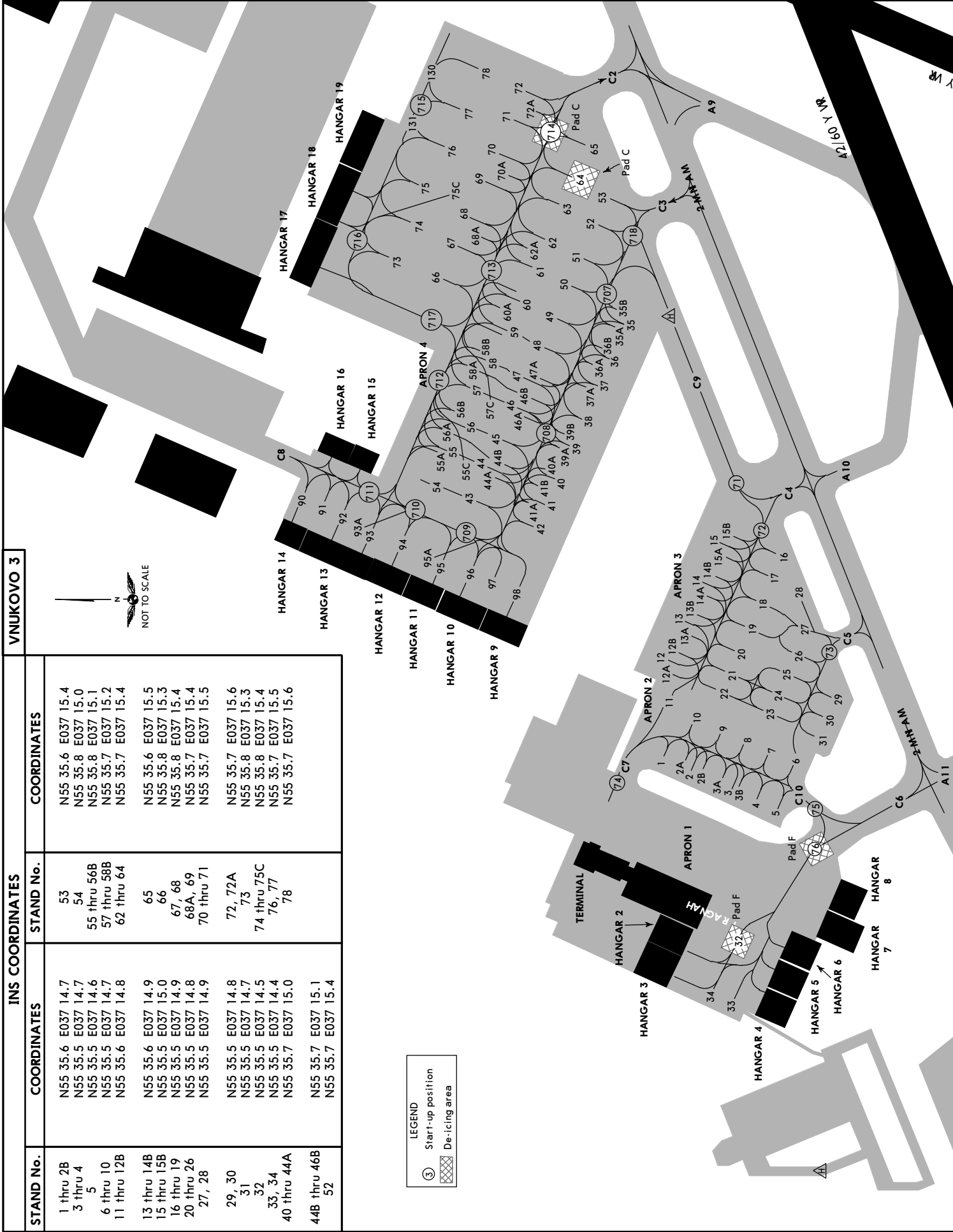
INS COORDINATES		
STAND No.	COORDINATES	STAND No.
1 thru 2B	N55 35.6 E037 14.7	53
3 thru 4	N55 35.5 E037 14.7	54
5	N55 35.5 E037 14.6	55 thru 56B
6 thru 10	N55 35.5 E037 14.7	57 thru 58B
11 thru 12B	N55 35.6 E037 14.8	62 thru 64
13 thru 14B	N55 35.6 E037 14.9	65
15 thru 15B	N55 35.5 E037 15.0	66
16 thru 19	N55 35.5 E037 14.9	67, 68
20 thru 26	N55 35.5 E037 14.8	68A, 69
27, 28	N55 35.5 E037 14.9	70 thru 71
29, 30	N55 35.5 E037 14.8	72, 72A
31	N55 35.5 E037 14.7	73
32	N55 35.5 E037 14.5	74 thru 75C
33, 34	N55 35.5 E037 14.4	76, 77
40 thru 44A	N55 35.7 E037 15.0	78
44B thru 46B	N55 35.7 E037 15.1	
52	N55 35.7 E037 15.4	

VNIUKOVO 3



**LEGEND**

- Start-up position
- De-icing area



UUWW/VKO

**JEPPESEN**  
6 JUN 25 **(10-9S)** Eff 12 Jun

**EASA AIR OPS**  
**MOSCOW, RUSSIA**  
VNUKOVO

STRAIGHT-IN RWY		A	B	C	D
01	ILS	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	GLS	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m	<b>833'</b> (200') ① R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	RNP LNAV/VNAV	<b>958'</b> (325') R800m	<b>971'</b> (338') R800m	<b>979'</b> (346') R900m	<b>989'</b> (356') R900m
	ALS out	R1500m	R1500m	R1600m	R1600m
	②RNP LNAV	<b>1010'</b> (377') R1000m	<b>1010'</b> (377') R1000m	<b>1060'</b> (427') R1300m	<b>1060'</b> (427') R1300m
	ALS out	R1500m	R1500m	R2000m	R2000m
	② VOR	<b>990'</b> (357') R900m	<b>1020'</b> (387') R1100m	<b>1050'</b> (417') R1200m	<b>1070'</b> (437') R1300m
	ALS out	R1500m	R1500m	R1900m	R2000m
	② NDB	<b>980'</b> (347') R900m	<b>980'</b> (347') R900m	<b>980'</b> (347') R900m	<b>980'</b> (347') R900m
	ALS out	R1500m	R1500m	R1600m	R1600m
	② NDB Y	<b>1160'</b> (527') R1500m	<b>1160'</b> (527') R1500m	<b>1160'</b> (527') R1700m	<b>1160'</b> (527') R1700m
	ALS out	R1500m	R1500m	R2400m	R2400m
06	CAT 2 ILS	<b>729'</b> (100') <b>RA104'</b> R300m	<b>729'</b> (100') <b>RA104'</b> R300m	<b>729'</b> (100') <b>RA104'</b> R300m	<b>729'</b> (100') <b>RA104'</b> ③ R300m
	ILS	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m
	TDZ or CL out	① R550m	① R550m	① R550m	① R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	GLS	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m	<b>829'</b> (200') R550m
	TDZ or CL out	① R550m	① R550m	① R550m	① R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	RNP LNAV/VNAV	<b>950'</b> (321') R800m	<b>963'</b> (334') R800m	<b>971'</b> (342') R900m	<b>981'</b> (352') R900m
	ALS out	R1500m	R1500m	R1600m	R1600m
	②RNP LNAV	<b>1000'</b> (371') R1000m	<b>1000'</b> (371') R1000m	<b>1000'</b> (371') R1000m	<b>1000'</b> (371') R1000m
	ALS out	R1500m	R1500m	R1700m	R1700m
	② VOR	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m
	ALS out	R1500m	R1500m	R2200m	R2200m
	② NDB	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m	<b>1100'</b> (471') R1500m
ALS out	R1500m	R1500m	R2200m	R2200m	
② NDB Y	<b>1150'</b> (521') R1500m	<b>1150'</b> (521') R1500m	<b>1150'</b> (521') R1700m	<b>1150'</b> (521') R1700m	
ALS out	R1500m	R1500m	R2400m	R2400m	

① R750m when a Flight Director or Autopilot or HUDLS to DA is not used.

② Continuous Descent Final Approach.

③ without autoland: R350m.

UUWW/VKO

**JEPPESEN**

**EASA AIR OPS**

6 JUN 25 **(10-9S)** Eff 12 Jun

**MOSCOW, RUSSIA**  
VNUKOVO

STRAIGHT-IN RWY		A	B	C	D
19	CAT 2 ILS	<b>734'</b> (100') <b>RA105'</b> R300m	<b>734'</b> (100') <b>RA105'</b> R300m	<b>734'</b> (100') <b>RA105'</b> R300m	<b>739'</b> (105') <b>RA111'</b> ① R300m
	ILS	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m
	TDZ or CL out ALS out	② R550m R1200m	② R550m R1200m	② R550m R1200m	② R550m R1200m
	GLS	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m	<b>834'</b> (200') R550m
	TDZ or CL out ALS out	② R550m R1200m	② R550m R1200m	② R550m R1200m	② R550m R1200m
	RNP LNAV/VNAV	<b>978'</b> (344') R900m	<b>991'</b> (357') R900m	<b>999'</b> (365') R1000m	<b>1009'</b> (375') R1000m
	ALS out	R1500m	R1500m	R1700m	R1700m
	③ RNP LNAV	<b>1130'</b> (496') R1500m	<b>1130'</b> (496') R1500m	<b>1130'</b> (496') R1500m	<b>1130'</b> (496') R1500m
	ALS out	R1500m	R1500m	R2300m	R2300m
	③ VOR	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m
ALS out	R1500m	R1500m	R2300m	R2300m	
③ NDB	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m	<b>1120'</b> (486') R1500m	
ALS out	R1500m	R1500m	R2300m	R2300m	
③ NDB Y	<b>1270'</b> (636') R1500m	<b>1270'</b> (636') R1500m	<b>1270'</b> (636') R2200m	<b>1270'</b> (636') R2200m	
ALS out	R1500m	R1500m	R2400m	R2400m	
24	CAT 2 ILS	<b>785'</b> (100') <b>RA103'</b> R300m	<b>785'</b> (100') <b>RA103'</b> R300m	<b>785'</b> (100') <b>RA103'</b> R300m	<b>785'</b> (100') <b>RA103'</b> ① R300m
	ILS	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m
	TDZ or CL out ALS out	② R550m R1200m	② R550m R1200m	② R550m R1200m	② R550m R1200m
	GLS	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m	<b>885'</b> (200') R550m
	TDZ or CL out ALS out	② R550m R1200m	② R550m R1200m	② R550m R1200m	② R550m R1200m
	RNP LNAV/VNAV	<b>949'</b> (264') ④ R750m	<b>961'</b> (276') ④ R750m	<b>999'</b> (314') ⑤ R750m	<b>1009'</b> (324') R800m
	ALS out	R1300m	R1300m	R1400m	R1500m
	③ RNP LNAV	<b>1070'</b> (385') R1100m	<b>1070'</b> (385') R1100m	<b>1070'</b> (385') R1100m	<b>1070'</b> (385') R1100m
	ALS out	R1500m	R1500m	R1800m	R1800m
	③ VOR	<b>1060'</b> (375') R1000m	<b>1060'</b> (375') R1000m	<b>1060'</b> (375') R1000m	<b>1060'</b> (375') R1000m
ALS out	R1500m	R1500m	R1700m	R1700m	
③ NDB	<b>1150'</b> (465') R1500m	<b>1150'</b> (465') R1500m	<b>1150'</b> (465') R1500m	<b>1150'</b> (465') R1500m	
ALS out	R1500m	R1500m	R2200m	R2200m	
③ NDB Y	<b>1280'</b> (595') R1500m	<b>1280'</b> (595') R1500m	<b>1280'</b> (595') R2000m	<b>1280'</b> (595') R2000m	
ALS out	R1500m	R1500m	R2400m	R2400m	

① without autoland: R350m.

② R750m when a Flight Director or Autopilot or HUDLS to DA is not used.

③ Continuous Descent Final Approach.

④ With TDZ & CL & HUD: R600m

⑤ With TDZ & CL & HUD: R700m

**UUWW/VKO**



**EASA AIR OPS**

11 APR 25 **10-9S2** Eff 17 Apr

**MOSCOW, RUSSIA**  
VNUKOVO

**TAKE-OFF**

Low Visibility Procedures required				RCLM or RL or CL	RL or CL	Adequate Vis Ref	
Approval for Low Visibility Take-off required						DAY	NIGHT
RCLM & RL & CL (spacing 15m or less) & RVR	RCLM & RL & CL & RVR	RCLM & RL & RVR	RCLM & RVR & RL or CL	DAY	NIGHT	DAY	NIGHT
		DAY	NIGHT				
R125m	R150m	R300m		R/V400m	R/V500m	NA	



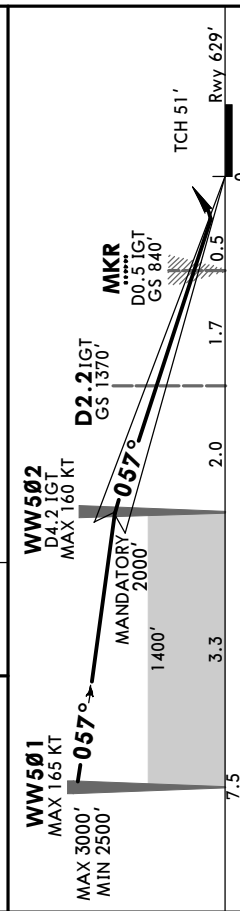
ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian)	123.4	135.9
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	118.3	126.0	120.450
LOC	Final	DA(H)	Apt Elev 685'
108.9	057°	829' (200')	Rwy 629'
Final	MANDATORY		
2000' (1371')			

**MISSED APCH:** Climb STRAIGHT AHEAD to WW652 (MAX 180 KT), then turn RIGHT to WW187 (MAX 190 KT) climbing to 3500', then proceed to LO NDB (MANDATORY 200 KT) climbing to 4000', then to BEMAS (MANDATORY 200 KT) to 4000', then to TEBDI (MANDATORY 200 KT), then to TEPTA (MANDATORY 200 KT), then to SIDAZ (MANDATORY 200 KT), then to RORLUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.

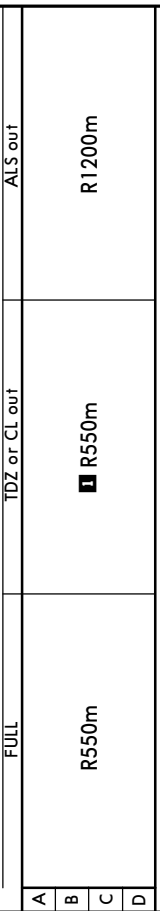
Alt Set: hPa (MM on req) Rwy Elev: 23 hPa Trans level: FL110 Trans alt: 10000'

RNAV 1 for initial, intermediate and missed approach.

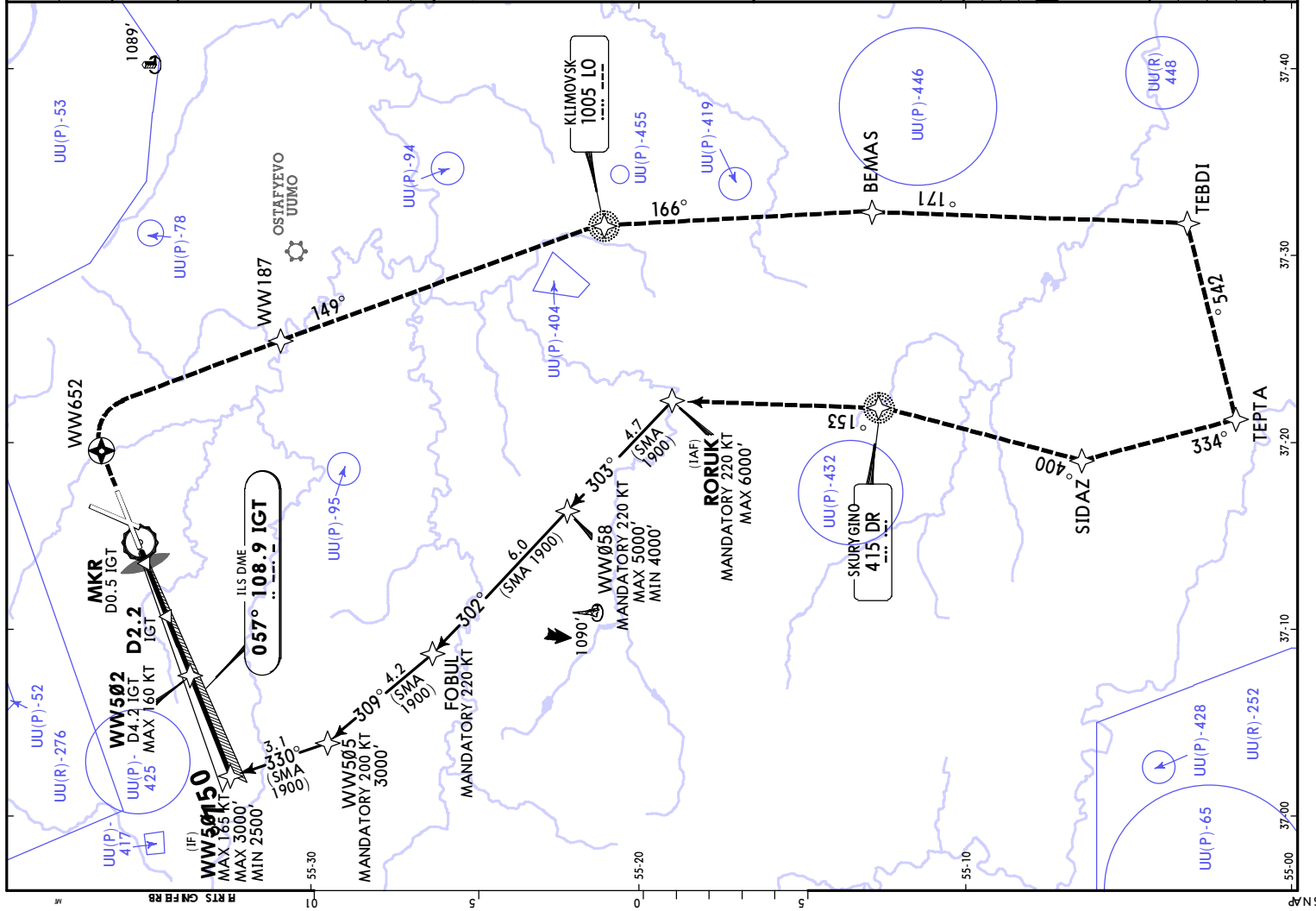
1. GNSS or DME/DME required. 2. ILS DME reads zero at rwy 06 threshold.



FEET METERS	
QNH (QFE)	
10000 (2900)	
7000 (1945)	
6000 (1640)	
5000 (1335)	
4000 (1030)	
3800 (1000)	
3500 (880)	
3000 (725)	
2500 (575)	
2000 (420)	
1900 (390)	
1400 (240)	
1370 (230)	
840 (65)	
829 (60)	



STRAIGHT-IN LANDING	
ILS	
DA(H) 829' (200')	
FULL	IDZ or CL out
A	ALS out
B	
C	R550m
D	R1200m



**JEPPESEN**  
 22 NOV 24  
 EFF 28 NOV

**MOSCOW, RUSSIA**  
**CAT II ILS RWY 06**

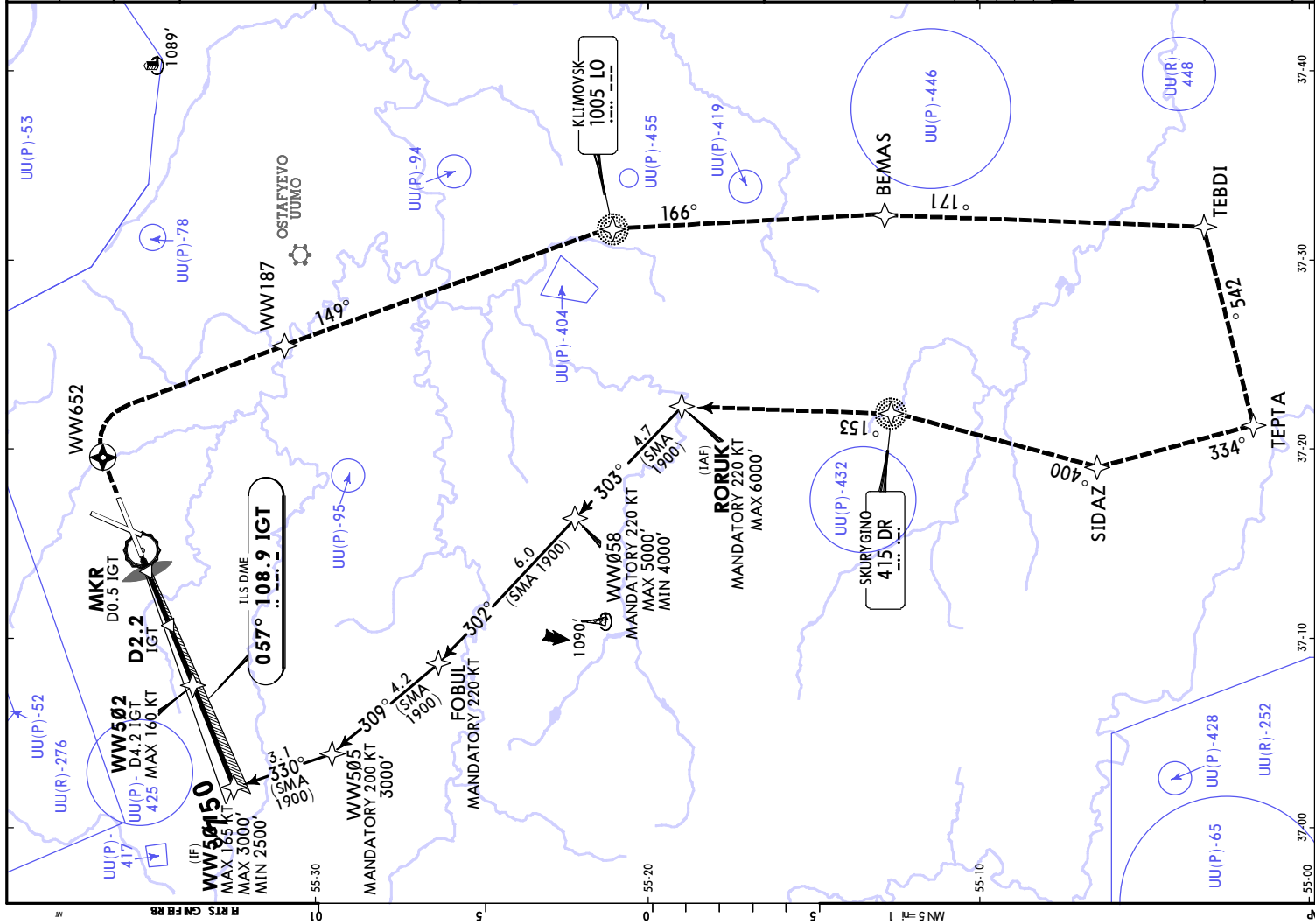
**UUWW/VKO**  
**VNUKOVO**

ATIS		131.850		(Russian) 125.875		123.4		126.0		135.9	
VNUKOVO Precision (TWR)		118.3		VNUKOVO Tower		118.3		Ground-1		120.450	
LOC	Final	Final	Final	Final	Final	Final	Final	Final	Final	Final	Final
108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9
IGT	IGT	IGT	IGT	IGT	IGT	IGT	IGT	IGT	IGT	IGT	IGT
057°	057°	057°	057°	057°	057°	057°	057°	057°	057°	057°	057°
MANDATORY 2000' (1371')		MANDATORY 2000' (1371')		MANDATORY 2000' (1371')		MANDATORY 2000' (1371')		MANDATORY 2000' (1371')		MANDATORY 2000' (1371')	
DA(H) 729' (100')		DA(H) 729' (100')		DA(H) 729' (100')		DA(H) 729' (100')		DA(H) 729' (100')		DA(H) 729' (100')	
Rwy 629'		Rwy 629'		Rwy 629'		Rwy 629'		Rwy 629'		Rwy 629'	
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to WW652 (MAX 180 KT), then turn RIGHT to WW187 (MAX 190 KT) climbing to 3500', then proceed to LO NDB (MANDATORY 200 KT) climbing to 4000', then to BEMAS (MANDATORY 200 KT) to 4000', then to TEBDI (MANDATORY 200 KT), then to TEPTA (MANDATORY 200 KT), then to SIDAZ (MANDATORY 200 KT), then to RORLUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p> <p>Alt Set: hPa (MM on req) Rwy Elev: 23 hPa Trans level: FL110 Trans alt: 10000'</p> <p>RNAV 1 for initial, intermediate and missed approach.                  1. Special Aircrew &amp; Acft Certification Required. 2. GNSS or DME/DME required. 3. ILS DME reads zero at rwy 06 threshold.</p>											

HOLDING FIX		FEET METERS	
<p>DR NDB 171° 1500'</p> <p>MAX 220 KT MAX 7000 MHA 4000 (SMA 2000)</p>		<p>1 FL120 if pressure is less than 1013 hPa (760mm).                  FL130 if pressure is less than 977 hPa (733mm).</p>	
<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	
<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	

<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	
<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	

<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	
<p>WW501 MAX 165 KT MAX 3000' MIN 2500'</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>		<p>WW502 D4.2 IGT MAX 160 KT</p> <p>057°</p> <p>MANDATORY 2000'</p> <p>1400'</p> <p>3.2</p> <p>7.4</p>	

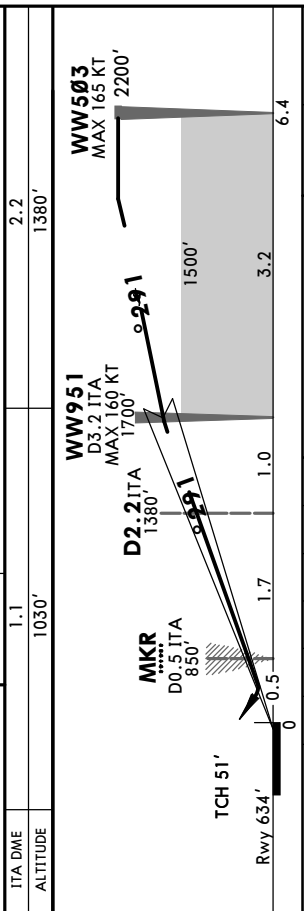


1 CAT D without autoland: R350m.  
 CHANGES: Airspaces.  
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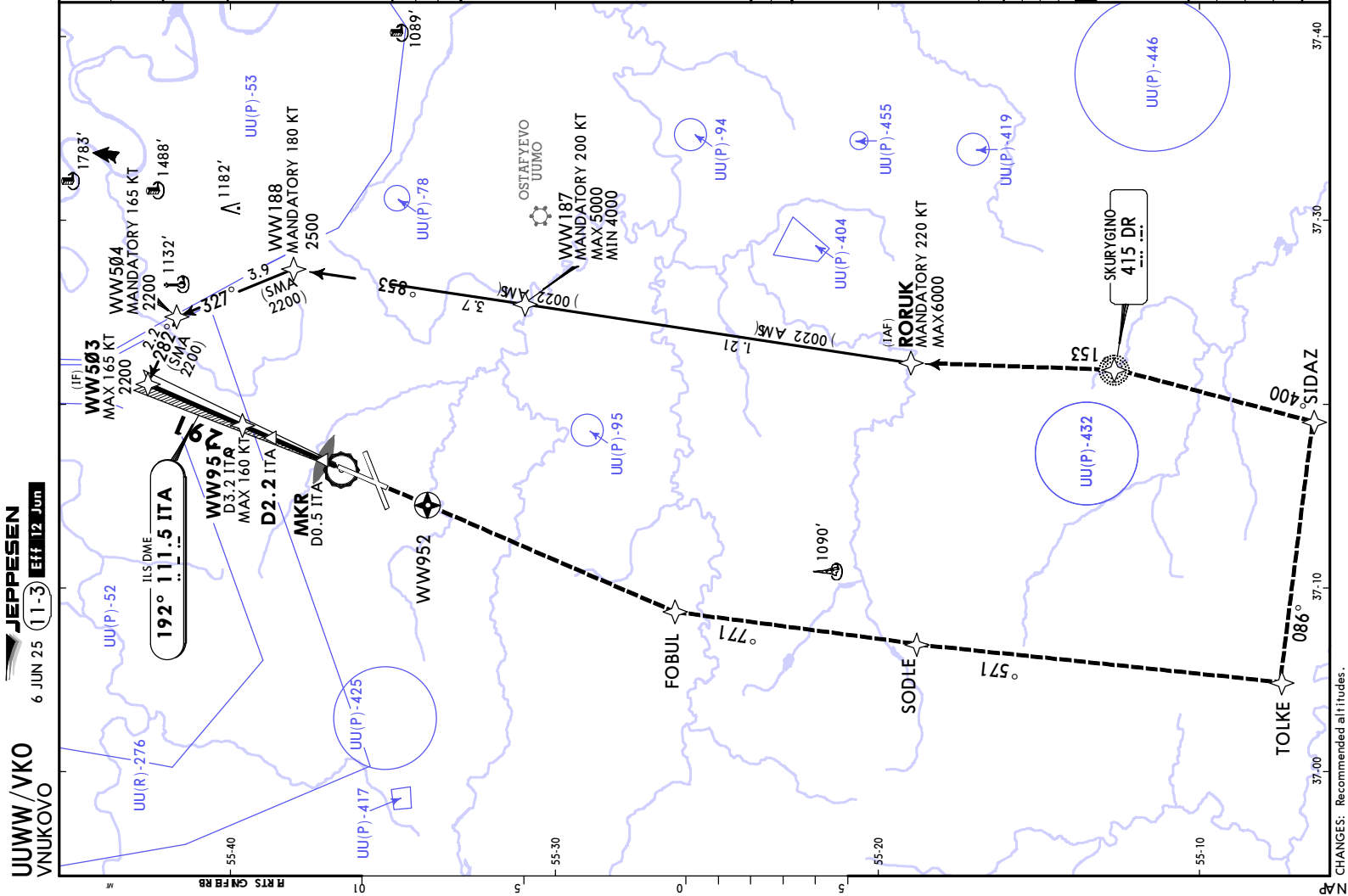
# MOSCOW, RUSSIA ILS, Rwy 19

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	120.450	
LOC	Final	DA(H)	Apt Elev 685'
111.5	192°	834' (200')	Rwy 634'
ITA	1700' (1066')		
<p><b>MISSAPCH:</b> Climb STRAIGHT AHEAD to WW952, then turn LEFT to FOBUL (MANDATORY 220 KT) climbing to 3500', then proceed to SODLE (MANDATORY 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p> <p>Alt Set: hPa (MM on req) Rwy Elev: 23 hPa Trans level: FL110 Trans alt: 10000'</p> <p>RNAV 1 for initial, intermediate and missed approach.</p> <p>1. GNSS or DME/DME required. 2. ILS DME reads zero at rwy 19 threshold.</p>			

HOLDING FIX																	
DR	NDB																
<p>MAX 220 KT MAX 7000 MHA 4000 (SMA 2000)</p>																	
<p>● FL120 if pressure is less than 1013 hPa (760mm). FL130 if pressure is less than 977 hPa (733mm).</p>																	
<p>FEET METERS</p> <table border="1"> <tr><td>QNH (QFE)</td><td>10000 (2900)</td></tr> <tr><td>7000 (1945)</td><td>6000 (1640)</td></tr> <tr><td>5000 (1335)</td><td>4000 (1030)</td></tr> <tr><td>3800 (1000)</td><td>3500 (875)</td></tr> <tr><td>2500 (570)</td><td>2200 (480)</td></tr> <tr><td>1700 (325)</td><td>1500 (265)</td></tr> <tr><td>1030 (125)</td><td>850 (70)</td></tr> <tr><td>834 (60)</td><td></td></tr> </table>		QNH (QFE)	10000 (2900)	7000 (1945)	6000 (1640)	5000 (1335)	4000 (1030)	3800 (1000)	3500 (875)	2500 (570)	2200 (480)	1700 (325)	1500 (265)	1030 (125)	850 (70)	834 (60)	
QNH (QFE)	10000 (2900)																
7000 (1945)	6000 (1640)																
5000 (1335)	4000 (1030)																
3800 (1000)	3500 (875)																
2500 (570)	2200 (480)																
1700 (325)	1500 (265)																
1030 (125)	850 (70)																
834 (60)																	
ITA DME	1.1																
ALTIMETER	1030'																
	2.2																
	1380'																



Gnd speed-Kts		70	90	100	120	140	160
GS	3.00°	372	478	531	637	743	849
Std		STRAIGHT-IN LANDING					
		ILS					
		DA(H) 834' (200')					
		TDZ or CL out					
		ALS out					
A		R550m					
B		R1200m					
C							
D							



**MOSCOW, RUSSIA**  
**CAT II ILS RWY 19**

**UUWW/VKO**  
VNUKOVO

**JEPPESSEN**  
6 JUN 25 11-3A Eff 12 Jun

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	135.9
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	120.450	
LOC	Final	CAT II ILS	
111.5	Apch Crs	RA/DA(H)	Appt Elev 685'
	192°	1700' (1066')	Rwy 634'
		Minimums	

3800

MSA ARP is computed for surface air temperature at apt -29.0°C

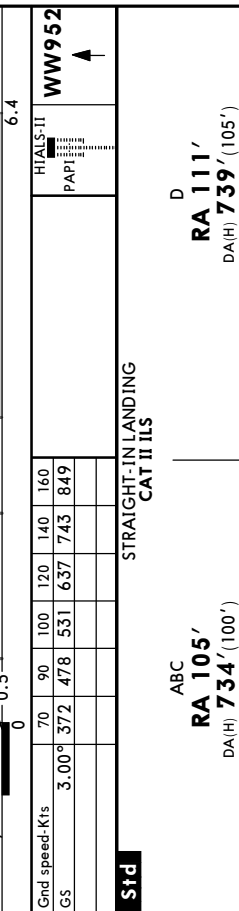
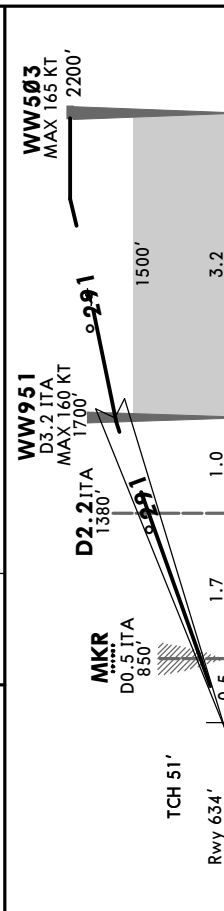
Trans alt: 10000'

Rwy Elev: 23 hPa Trans level: FL110

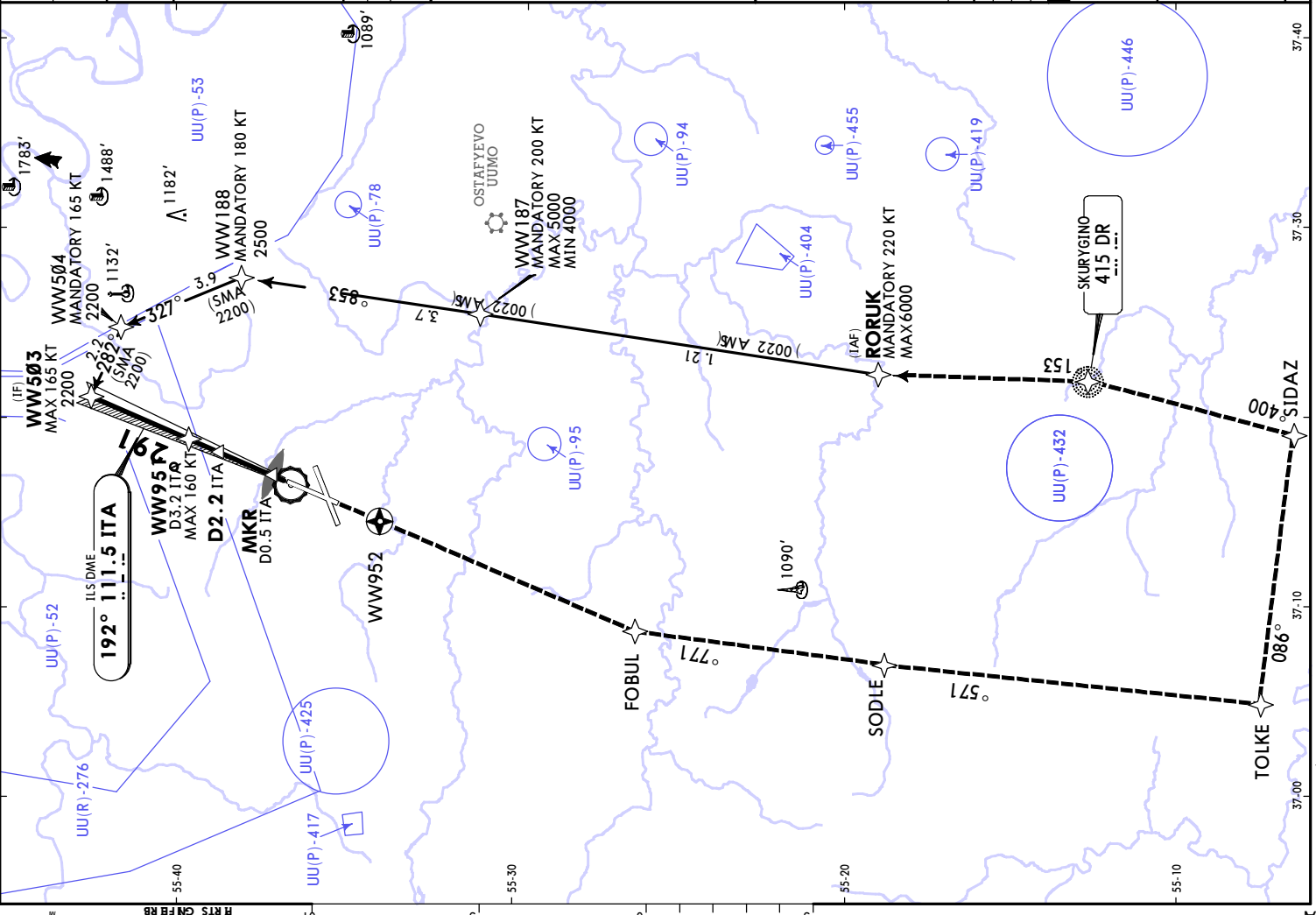
RNAV 1 for initial, intermediate and missed approach.

1. GNSS or DME/DME required.  
2. ILS DME reads zero at rwy 19 threshold.

FEET METERS	
QNH (QFE)	
1000 (2900)	
7000 (1945)	
6000 (1640)	
5000 (1335)	
4000 (1030)	
3800 (1000)	
3500 (875)	
2500 (570)	
2200 (480)	
1700 (325)	
1500 (265)	
1380 (230)	
850 (70)	
734 (30)	



RA 105'		RA 111'	
DA(H) 734' (100')		DA(H) 739' (105')	
ABC		D	
STR-A		STR-B	
STR-C		STR-D	
STR-E		STR-F	
STR-G		STR-H	
STR-I		STR-J	
STR-K		STR-L	
STR-M		STR-N	
STR-O		STR-P	
STR-Q		STR-R	
STR-S		STR-T	
STR-U		STR-V	
STR-W		STR-X	
STR-Y		STR-Z	



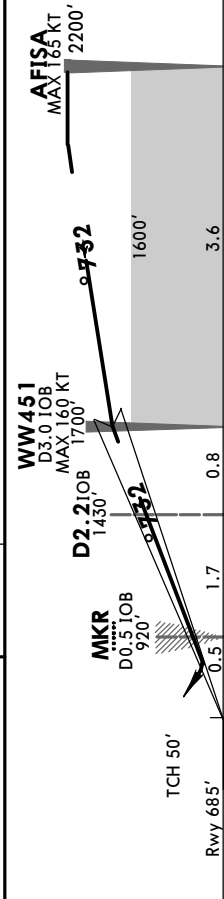
CHANGES: New procedure.

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ATIS (Russian) 125.875) 123.4 135.9  
 VNUKOVO Radar (TWR) 126.0  
 VNUKOVO Tower 118.3  
 VNUKOVO Precision (TWR) 131.850  
 Ground-2 121.7

LOC IOB 111.1 Final Apch Crs 237° DA(H) 885' (200')  
 WW451 1700' (1015')  
 Apt Elev 685' Rwy 685'  
 MSA ARP is computed for surface air temperature at apt -29.0°C  
 3800  
 MISSED APCH: Climb STRAIGHT AHEAD to WW452 (MAX 220 KT), then turn LEFT to AMRED (MAX 220 KT) climbing to 3500', then proceed to BUPOS (MAX 220 KT), then to SODLE (MAX 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.  
 Alt Set: hPa (MM on req) Rwy Elev: 25 hPa Trans level: FL1100  
 RNAV 1 for initial, intermediate and missed approach.  
 1. GNSS or DME/DME required. 2. ILS DME reads zero at rwy 24 threshold.

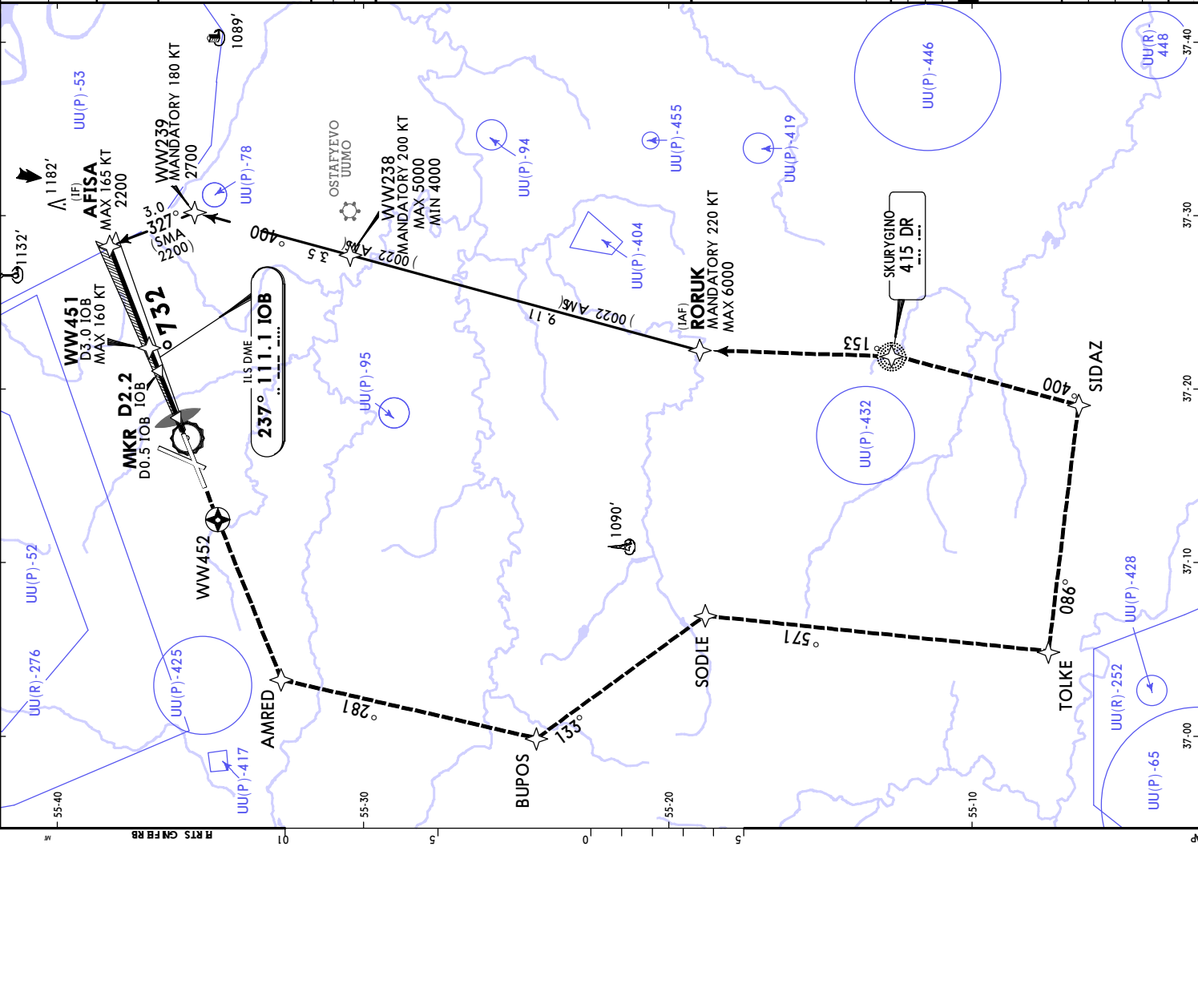
HOLDING FIX  
 FEET METERS  
 QNH (QFE)  
 7000 (1925)  
 6000 (1625)  
 5000 (1520)  
 4000 (1015)  
 3800 (1000)  
 3500 (860)  
 2700 (615)  
 2200 (465)  
 2000 (405)  
 1700 (310)  
 1600 (280)  
 1400 (230)  
 920 (75)  
 885 (60)  
 DR NDB  
 171°  
 MAX 220 KT  
 MAX 7000  
 MHA 4000  
 (SMA 2000)  
 1 FL120 if pressure is less than 1013 hPa (760mm).  
 FL130 if pressure is less than 977 hPa (733mm).



Grnd speed-Kts	70	90	100	120	140	160
GS	3.00	3.72	4.78	5.31	6.37	7.43
	8.49					

ILS  
 DA(H) 885' (200')  
 TDZ or CL out  
 R550m  
 R1200m

STRAIGHT-IN LANDING  
 Std  
 R750m when a Flight Director or Autopilot or HUD to DA is not used.



ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian)	123.4	135.9
VNUKOVO Precision (TWR)		Ground-2	
118.3	118.3	126.0	121.7
LOC IOB	Final Appch Crs	CAT II ILS	Apt Elev 685'
111.1	237°	RA 103'	Rwy 685'
		DA(H)	
		785' (100')	

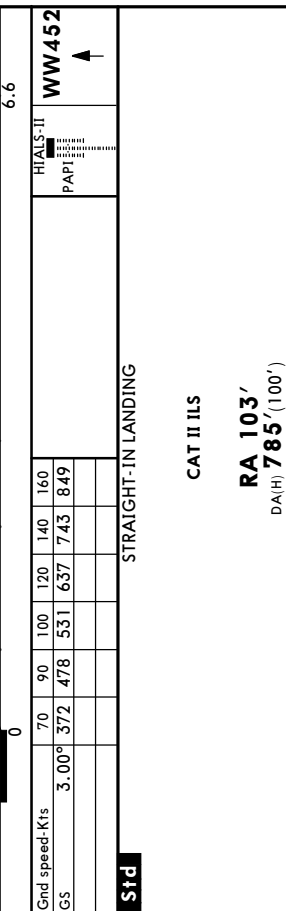
**MISSED APCH:** Climb STRAIGHT AHEAD to WW452 (MAX 220 KT), then turn LEFT to AMRED (MAX 220 KT) climbing to 3500', then proceed to BUPOS (MAX 220 KT), then to SODLE (MAX 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.

Alt Set: hPa (MM on req) Rwy Elev: 25 hPa Trans level: FL110

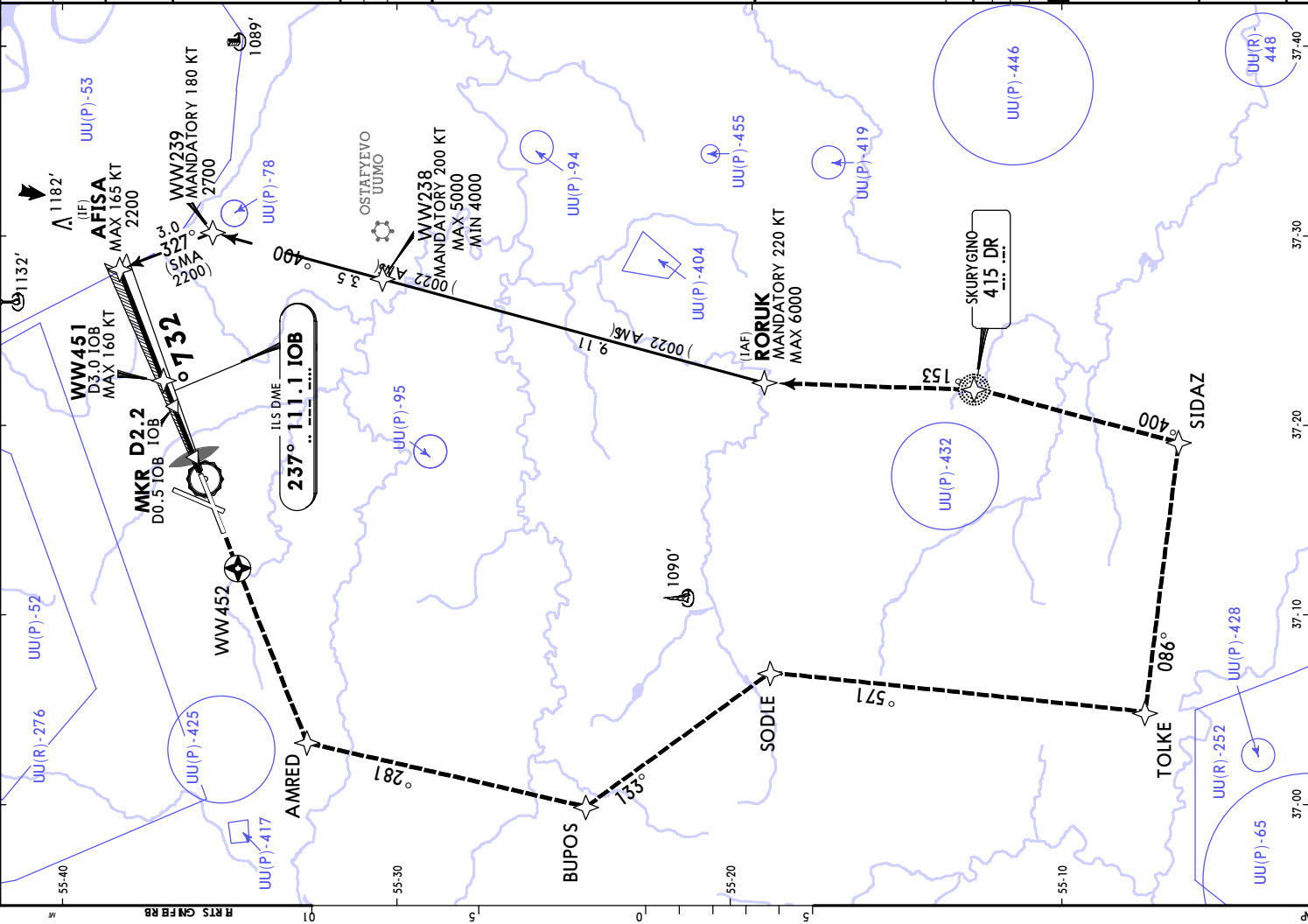
RNAV 1 for initial, intermediate and missed approach.

1. GNSS or DME/DME required. 2. ILS DME reads zero at rwy 24 threshold. 3. Special Aircrew & Acft Certification Required.

FEET METERS	
QNH (QFE)	
10000 (2900)	
7000 (1925)	
6000 (1625)	
5000 (1320)	
4000 (1015)	
3800 (1000)	
3500 (860)	
2700 (615)	
2200 (465)	
2000 (405)	
1700 (310)	
1600 (280)	
1430 (230)	
920 (75)	
785 (30)	



HOLDING FIX	
DR NDB	
171°	
153°	
135°	
MAX 220 KT	
MAX 7000	
MHA 4000	
(SMA 2000)	



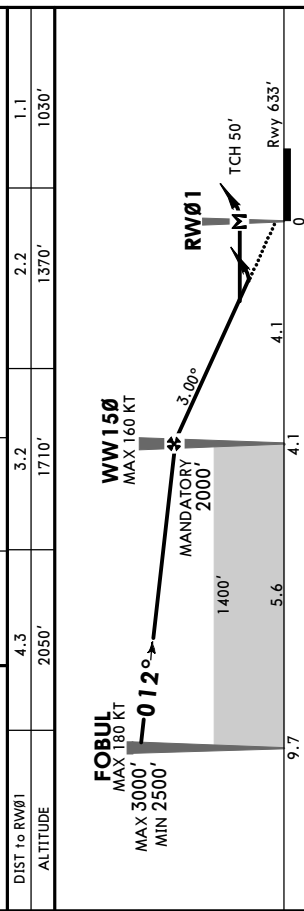
**MOSCOW, RUSSIA**  
**RNP Rwy 01**

**UJWW/VKO**  
VNUKOVO

**JEPPESSEN**  
22 NOV 24 (12-1) EFF 28 Nov

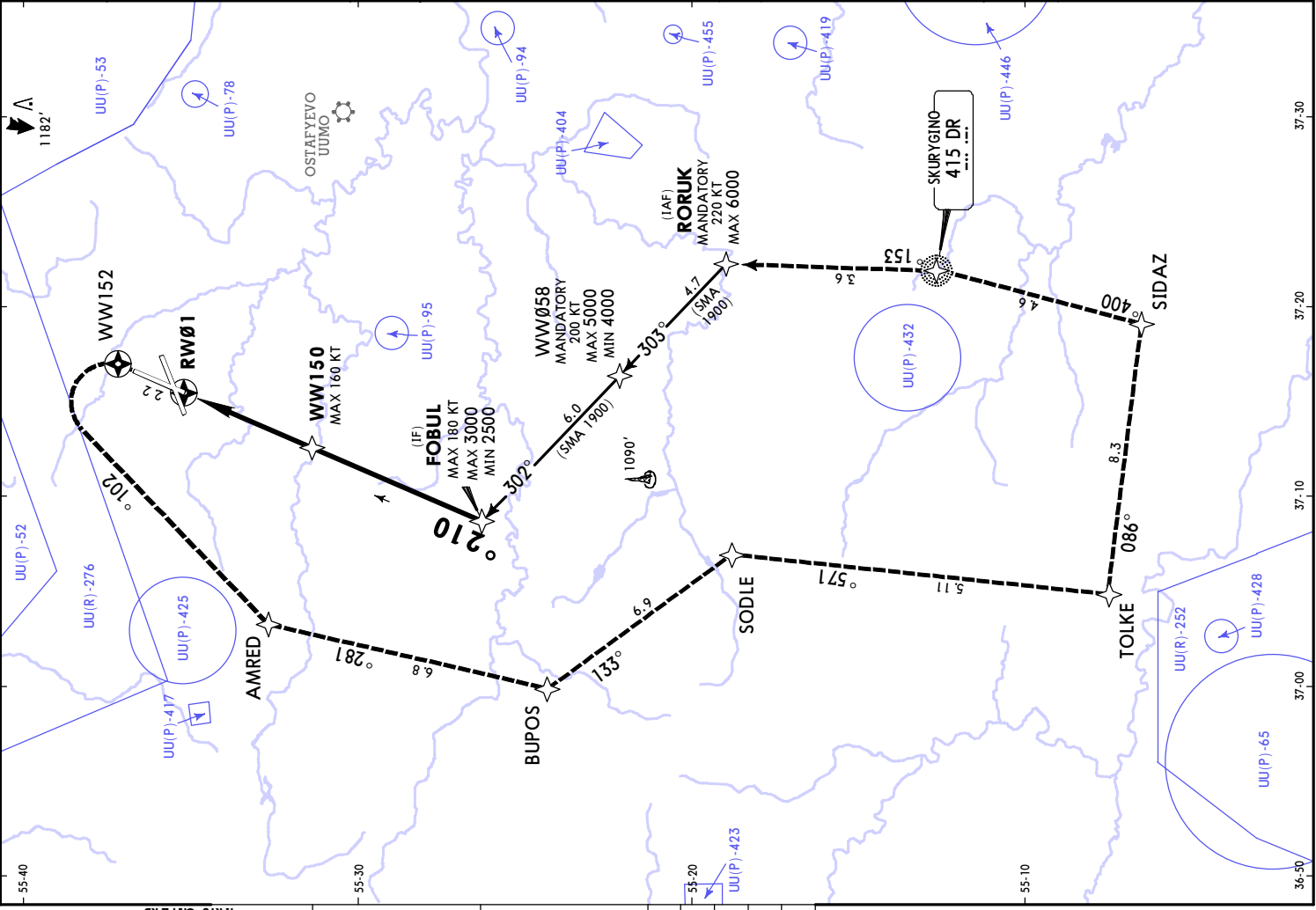
ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	135.9
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	118.3	120.450	120.450
Final	Final	Apt Elev 685'	Rwy 633'
Apch Cfs	DA(H)	Refer to	Minimums
012°	2000' (1367')	WW150	MANDATORY
MISSED APCH: Climb STRAIGHT AHEAD to WW152 (MAX 190 KT), then turn LEFT to AMRED (MAX 190 KT) climbing to 3500', then proceed to BOPUS (MANDATORY 220 KT), then to SODLE (MANDATORY 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa Trans level: FL110	
RNP Apch		RNP Apch	
1. GNSs required. 2. Baro-VNAV not authorized below -31°C.		1. GNSs required. 2. Baro-VNAV not authorized below -31°C.	

FEET METERS	FEET METERS
GNH (QFE)	GNH (QFE)
10000 (2900)	1010 (115)
7000 (1945)	989 (109)
6000 (1640)	979 (106)
5000 (1335)	971 (104)
4000 (1030)	958 (100)
3800 (1000)	
3500 (875)	
3000 (725)	
2500 (570)	
2000 (420)	
1900 (390)	
1710 (330)	
1400 (235)	
1370 (225)	
1060 (135)	
1030 (125)	



DIST to RW01		4.3	3.2	2.2	1.1
ALTITUDE		2050'	1710'	1370'	1030'

FORUL		WW150		WW152	
MAX 180 KT		MAX 160 KT		MAX 160 KT	
MAX 3000'		MANDATORY 2000'		MANDATORY 2000'	
MIN 2500'		MANDATORY 2000'		MANDATORY 2000'	
9.7		4.1		4.1	
3.00°		3.00°		3.00°	
70		100		120	
372		478		531	
637		743		849	
MAP at RW01		MAP at RW01		MAP at RW01	
Std		Std		Std	
LNAV/VNAV		LNAV/VNAV		LNAV/VNAV	
STRAIGHT-IN LANDING		STRAIGHT-IN LANDING		STRAIGHT-IN LANDING	
LNAV CDA		LNAV CDA		LNAV CDA	
DA(H) A: 958' (325') C: 979' (346')		DA(MDA(H))		DA(MDA(H))	
B: 971' (338') D: 989' (356')		AB: 1010' (377') CD: 1060' (427')		ALS out	
ALS out		ALS out		ALS out	
A	R800m	R1500m	R1000m	R1500m	R1500m
B	R900m	R1600m	R1300m	R1300m	R2000m
C					
D					



CHANGES: Airspaces, general note 1.  
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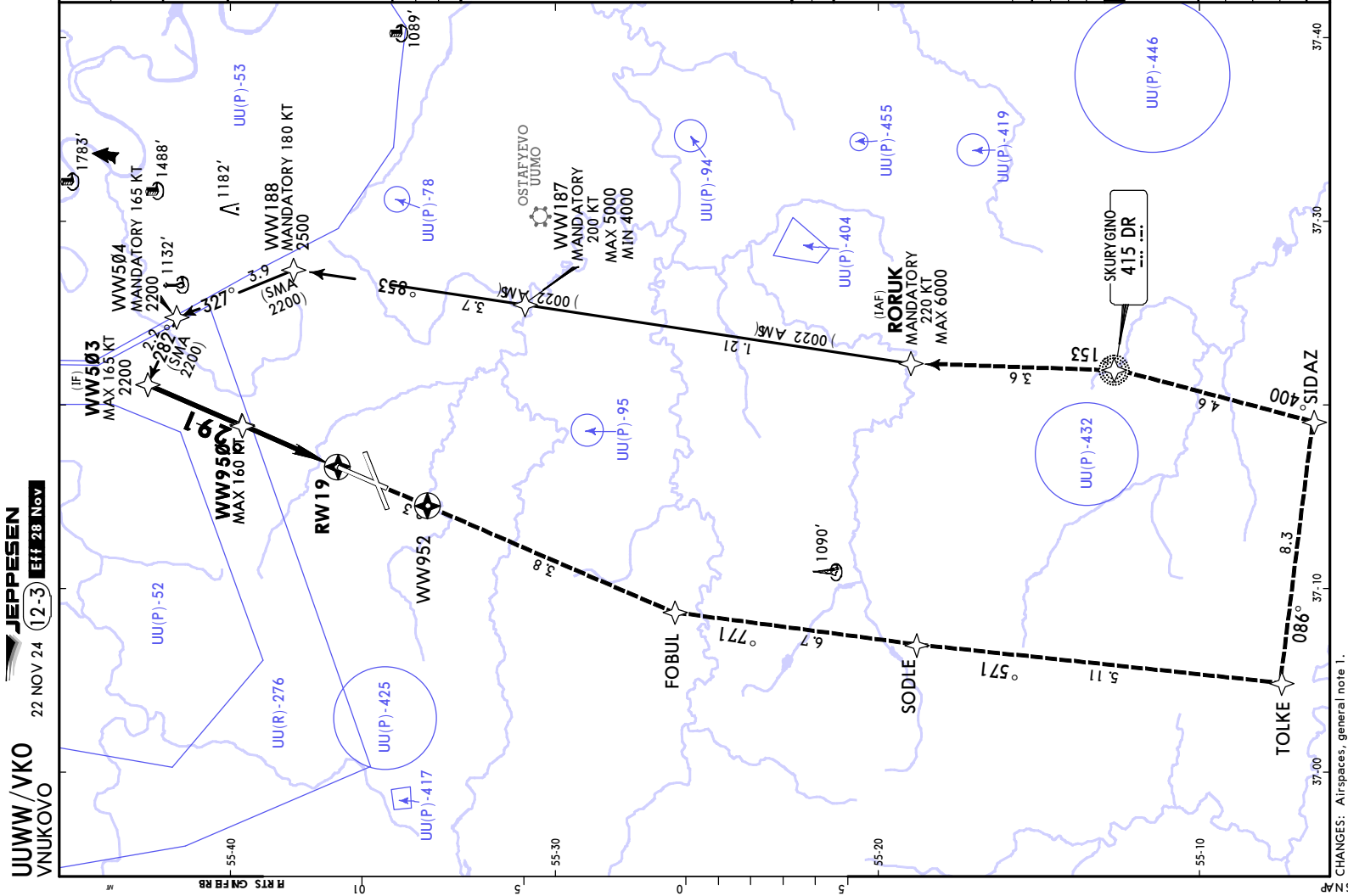


# MOSCOW, RUSSIA RNP, Rwy 19

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	120.450	135.9
RNAV	Final Appch Crs	Final DA(H) Minimums	Apt Elev 685'
	192°	1700' (1066')	Rwy 634'
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to WW952, then turn LEFT to FOBUL (MANDATORY 220 KT) climbing to 3500', then proceed to SODLE (MANDATORY 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p>			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL1100
RNP Apch RNAV 1 for initial, intermediate and missed approach.		Trans alt: 10000'	
1. GNSS required. 2. Baro-VNAV not authorized below -30°C.			

HOLDING FIX		FEET METERS	
		GNH (QFE)	10000 (2900)
		7000 (1945)	6000 (1640)
		5000 (1335)	4000 (1030)
		3800 (1000)	3500 (875)
		2500 (570)	2200 (480)
		1700 (325)	1500 (265)
		1130 (155)	1030 (125)
		1009 (115)	999 (109)
		978 (105)	
		<p>① FL120 if pressure is less than 1013 hPa (760mm). FL130 if pressure is less than 977 hPa (733mm).</p>	
DIST to RW19		1.1	3.2
ALTITUDE		1030'	1370'
			1710'

Grd speed-Kts	70	90	100	120	140	160
Glide Path Angle	3.00°	372	478	531	637	743
MAP at RW19						
<p><b>Std</b> STRAIGHT-IN LANDING</p> <p>LNNAV/VNAV DA(H) A: 978' (344') C: 999' (365') B: 991' (357') D: 1009' (375')</p> <p>LNNAV CDFA DA(MDA(H)) 1130' (496')</p>						
A	R900m	R1500m	R1500m	R1500m	R1500m	R1500m
B						
C	R1000m	R1700m				
D						R2300m







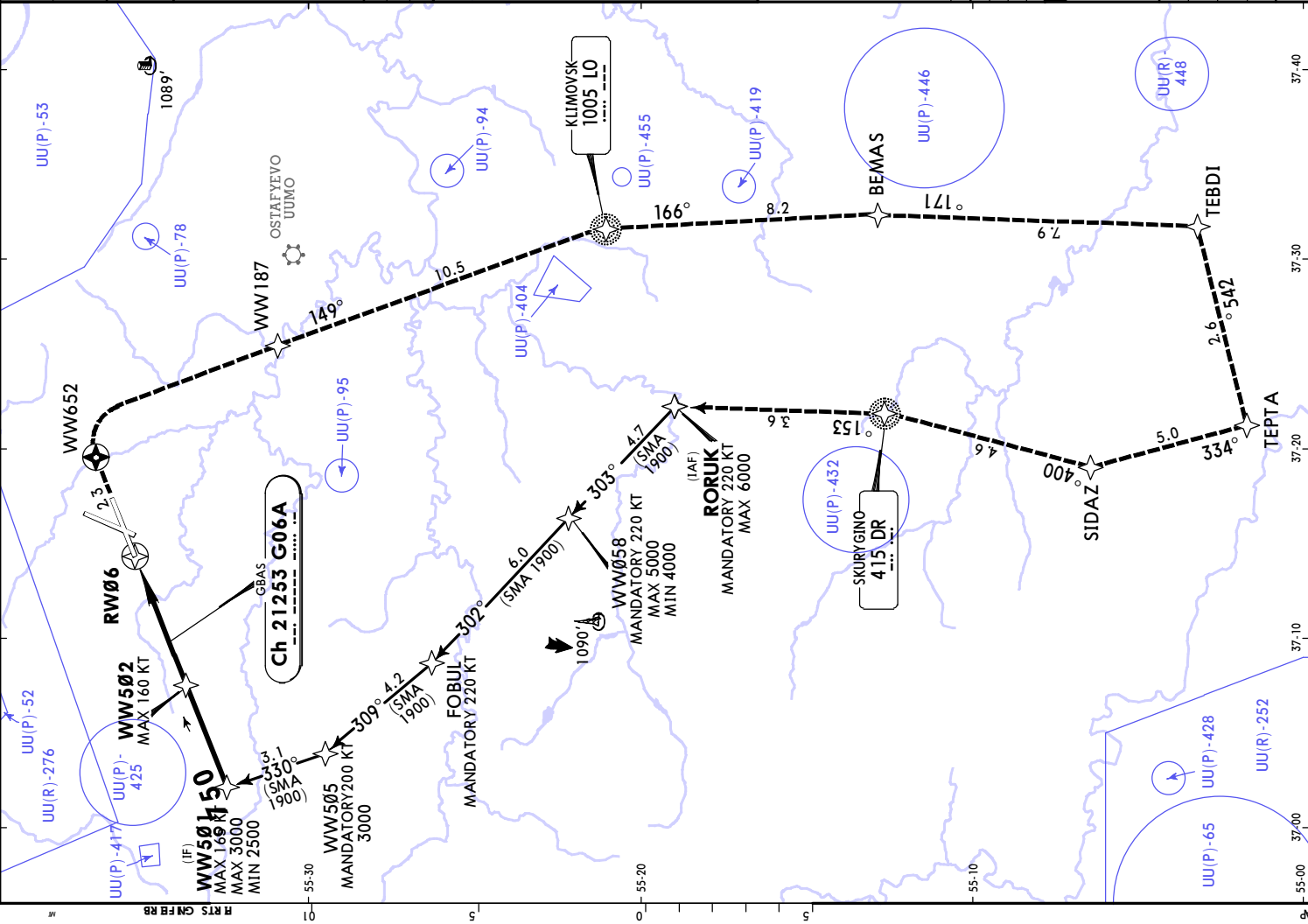
ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian)	125.875	123.4
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	Final	118.3	Ground-1
GBAS		GLS	
Ch 21253 G06A	Final	WW502	Apt Elev 685'
	Apch Crs	MANDATORY 2000' (1371')	Rwy 629'
057°	DA(H)	829' (200')	

MISSED APCH: Climb STRAIGHT AHEAD to WW652 (MAX 180 KT), then turn RIGHT to WW187 (MAX 190 KT) climbing to 3500', then proceed to LO NDB (MANDATORY 200 KT) climbing to 4000', then to BEMAS (MANDATORY 200 KT) to 4000', then to TEBDI (MANDATORY 200 KT), then to TEPTA (MANDATORY 200 KT), then to SIDAZ (MANDATORY 200 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.	
Alt Set: hPa (MM on req) Rwy Elev: 23 hPa Trans level: FL110	
RNAV 1 for initial, intermediate and missed approach.	
GNSS or DME/DME required.	

HOLDING FIX	
DR NDB	171°
153°	
MAX 220 KT	
MAX 7000	
MHA 4000	
(SMA 2000)	

FEET METERS	
QNH (QFE)	
10000 (2900)	
7000 (1945)	
6000 (1640)	
5000 (1335)	
4000 (1030)	
3800 (980)	
3500 (880)	
3000 (725)	
2500 (575)	
2000 (420)	
1900 (390)	
1400 (240)	
829 (60)	

STRAIGHT-IN LANDING	
GLS	
DA(H) 829' (200')	
TDZ or CL out	
ALS out	
A	R550m
B	R550m
C	R1200m
D	



# MOSCOW, RUSSIA GLS Rwy 19

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	120.450	135.9
GBAS	Final	DA(H)	Apt Elev
<b>Ch 20842</b> G19A	Apch Crs <b>192°</b>	<b>834' (200')</b>	Rwy 634'
WW951 MANDATORY	1700' (1066')	834' (200')	Rwy 634'
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to WW952, then turn LEFT to FOBUL (MANDATORY 220 KT) climbing to 3500', then proceed to SODLE (MANDATORY 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p>			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL1100
RNAV 1 for initial, intermediate and missed approach.		Trans alt: 10000'	
GNSS or DME/DME required.			

**HOLDING FIX**

DR NDB  
MAX 220 KT  
MAX 7000  
MHA 4000  
(SMA 2000)

171°  
153°

FEET METERS

QNH (QFE)	10000 (2900)
7000 (1945)	6000 (1640)
5000 (1335)	4000 (1030)
3800 (1000)	3500 (875)
2500 (570)	2200 (480)
1700 (325)	1500 (265)
834 (60)	

● FL120 if pressure is less than 1013 hPa (760mm).  
FL130 if pressure is less than 977 hPa (733mm).

**RW19**  
TCH 51'  
Rwy 634'

**WW951** (FAP)  
MANDATORY  
MAX 160 KT  
1700'

**WW953**  
MANDATORY  
MAX 165 KT  
2200'

**WW952**  
MANDATORY  
MAX 160 KT  
2200'

End speed-Kts	70	90	100	120	140	160
Glide Path Angle	3.00°	372	478	531	637	743
				849		

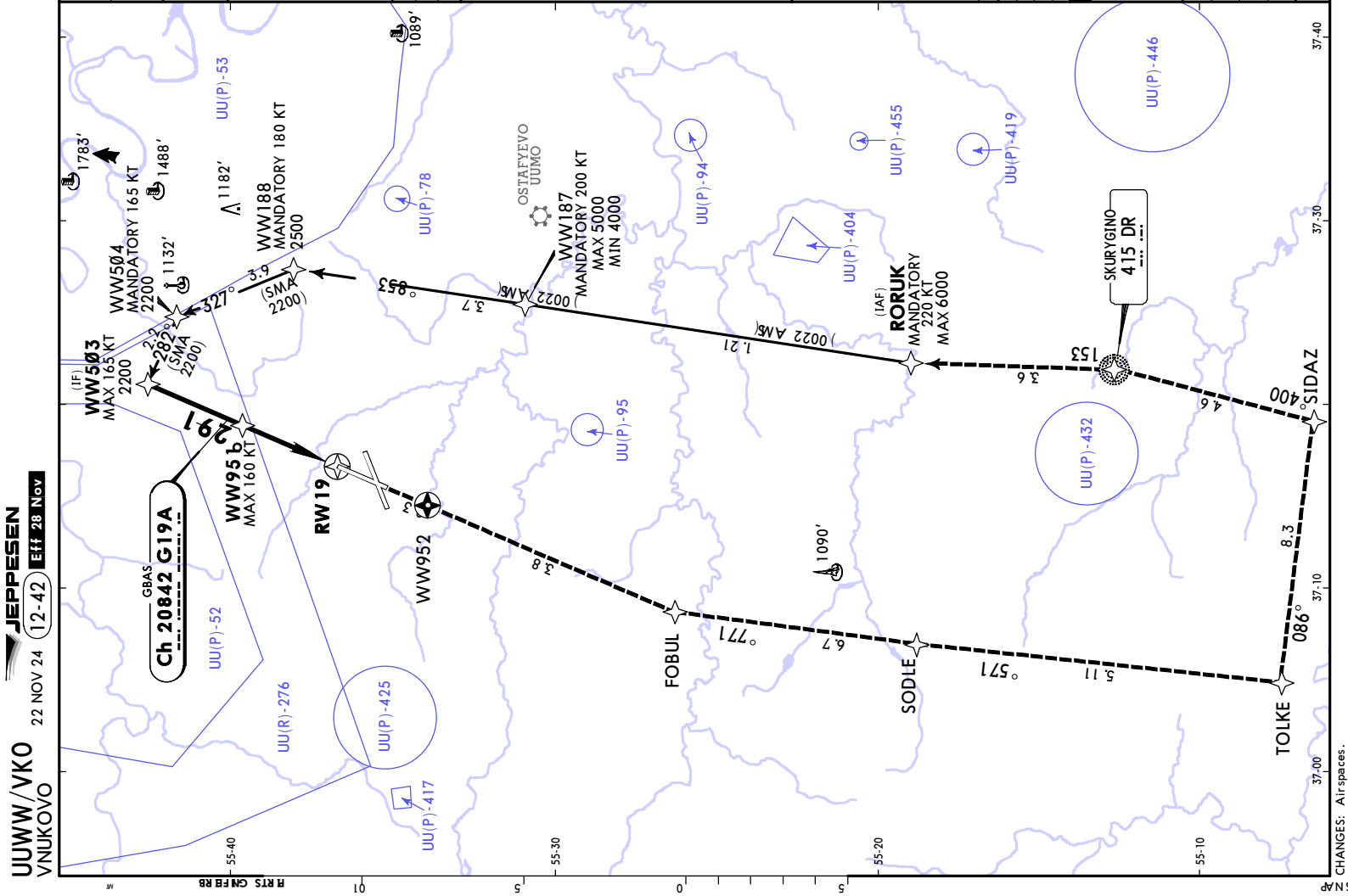
STRAIGHT-IN LANDING  
GLS

A	R550m	ALS out
B	R550m	ALS out
C	R550m	ALS out
D	R1200m	ALS out

DA(H) **834' (200')**  
TDZ or CL out

Standard

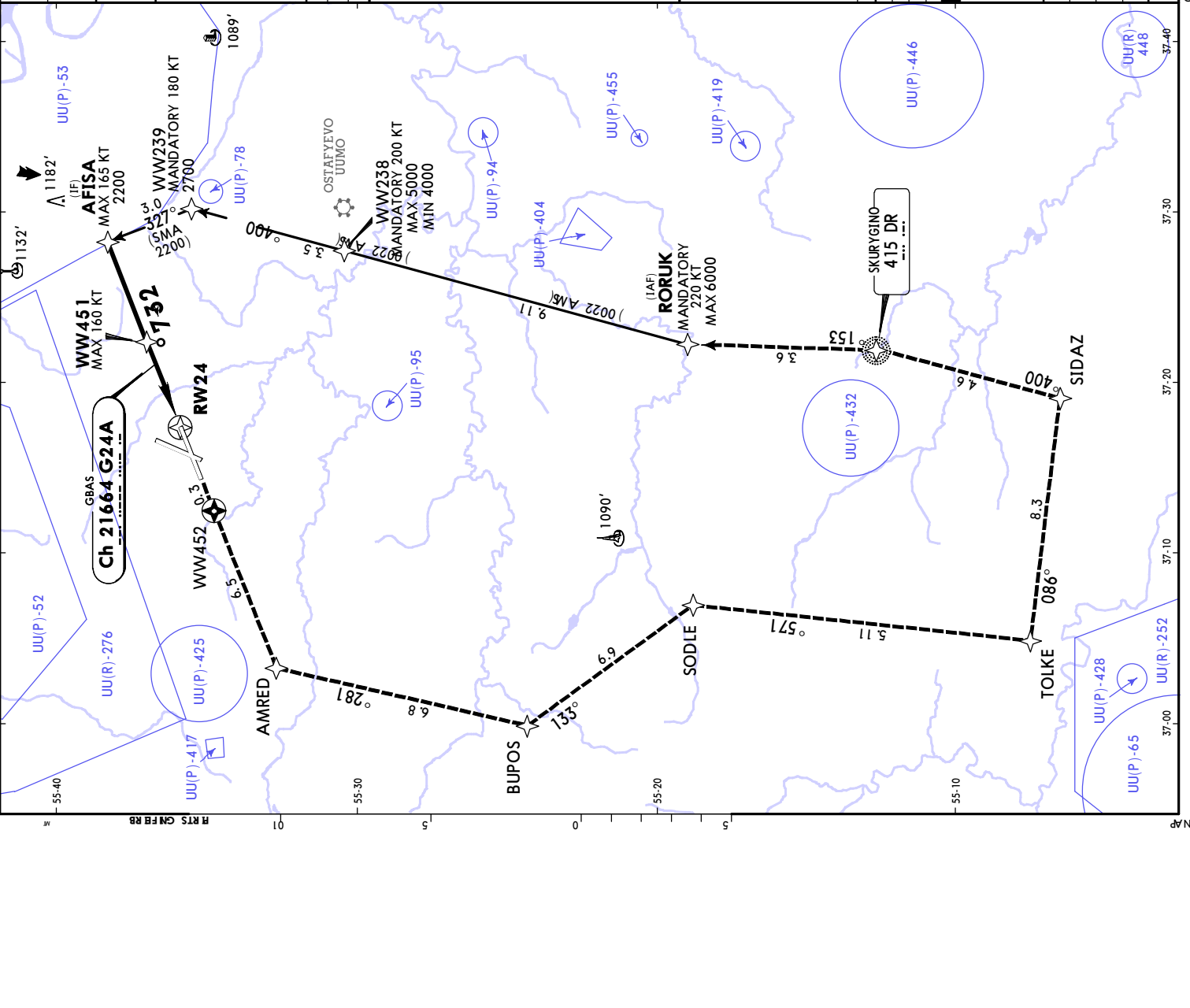
● R750m when a Flight Director or Autopilot or HUD to DA is not used.



ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian)	125.875	123.4
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	Final	118.3	121.7
Ch 21664	Final	WW451	Apt Elev 685'
G24A	Apch Crs	MANDATORY	DA(H)
	237°	1700' (1015')	885' (200')
			Rwy 685'
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to WW452 (MAX 220 KT), then turn LEFT to AMRED (MAX 220 KT) climbing to 3500', then proceed to BUPOS (MAX 220 KT), then to SODLE (MAX 220 KT), then to TOLKE (MANDATORY 220 KT) climbing to 4000', then to SIDAZ (MANDATORY 220 KT), then to DR NDB (MANDATORY 220 KT), then to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p> <p>Alt Set: hPa (MM on req) Rwy Elev: 25 hPa Trans level: FL1100                  RNAV 1 for initial, intermediate and missed approach.                  GNSS or DME/DME required.</p>			

<p><b>HOLDING FIX</b></p> <p>DR NDB                  1.5                  171°                  MAX 220 KT                  MAX 7000                  MHA 4000                  (SMA 2000)</p>		<p><b>FEET METERS</b></p> <table border="1"> <tr><td>QNH (QFE)</td><td></td></tr> <tr><td>10000 (2900)</td><td></td></tr> <tr><td>7000 (1925)</td><td></td></tr> <tr><td>6000 (1625)</td><td></td></tr> <tr><td>5000 (1325)</td><td></td></tr> <tr><td>4000 (1015)</td><td></td></tr> <tr><td>3800 (1000)</td><td></td></tr> <tr><td>3500 (860)</td><td></td></tr> <tr><td>2700 (615)</td><td></td></tr> <tr><td>2200 (465)</td><td></td></tr> <tr><td>2000 (405)</td><td></td></tr> <tr><td>1700 (310)</td><td></td></tr> <tr><td>1600 (280)</td><td></td></tr> <tr><td>885 (60)</td><td></td></tr> </table> <p>① FL120 if pressure is less than 1013 hPa (760mm).                  FL130 if pressure is less than 977 hPa (733mm).</p>	QNH (QFE)		10000 (2900)		7000 (1925)		6000 (1625)		5000 (1325)		4000 (1015)		3800 (1000)		3500 (860)		2700 (615)		2200 (465)		2000 (405)		1700 (310)		1600 (280)		885 (60)	
QNH (QFE)																														
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1600 (280)																														
885 (60)																														

<p><b>RWY 24</b></p> <p>Rwy 685' TCH 50'                  3.0 3.6 6.6</p>		<p><b>AFISA</b>                  MAX 165 KT                  2200'</p> <p><b>WW451</b>                  (FAP)                  MAX 160 KT MANDATORY                  1700'</p> <p><b>WW452</b></p>																		
<p><b>STRAIGHT-IN LANDING</b></p> <p>GLS</p> <p>DA(H) 885' (200')</p> <p>TDZ or CL out</p>		<p><b>GLS</b></p> <table border="1"> <tr><td>70</td><td>90</td><td>100</td><td>120</td><td>140</td><td>160</td></tr> <tr><td>372</td><td>478</td><td>531</td><td>637</td><td>743</td><td>849</td></tr> <tr><td colspan="6">Glide Path Angle 3.00°</td></tr> </table>	70	90	100	120	140	160	372	478	531	637	743	849	Glide Path Angle 3.00°					
70	90	100	120	140	160															
372	478	531	637	743	849															
Glide Path Angle 3.00°																				
<p><b>STRIGHT-IN LANDING</b></p> <p>GLS</p> <p>DA(H) 885' (200')</p> <p>TDZ or CL out</p>		<p><b>GLS</b></p> <table border="1"> <tr><td>A</td><td>R550m</td><td>ALS out</td></tr> <tr><td>B</td><td>R550m</td><td></td></tr> <tr><td>C</td><td>R550m</td><td></td></tr> <tr><td>D</td><td>R1200m</td><td></td></tr> </table>	A	R550m	ALS out	B	R550m		C	R550m		D	R1200m							
A	R550m	ALS out																		
B	R550m																			
C	R550m																			
D	R1200m																			



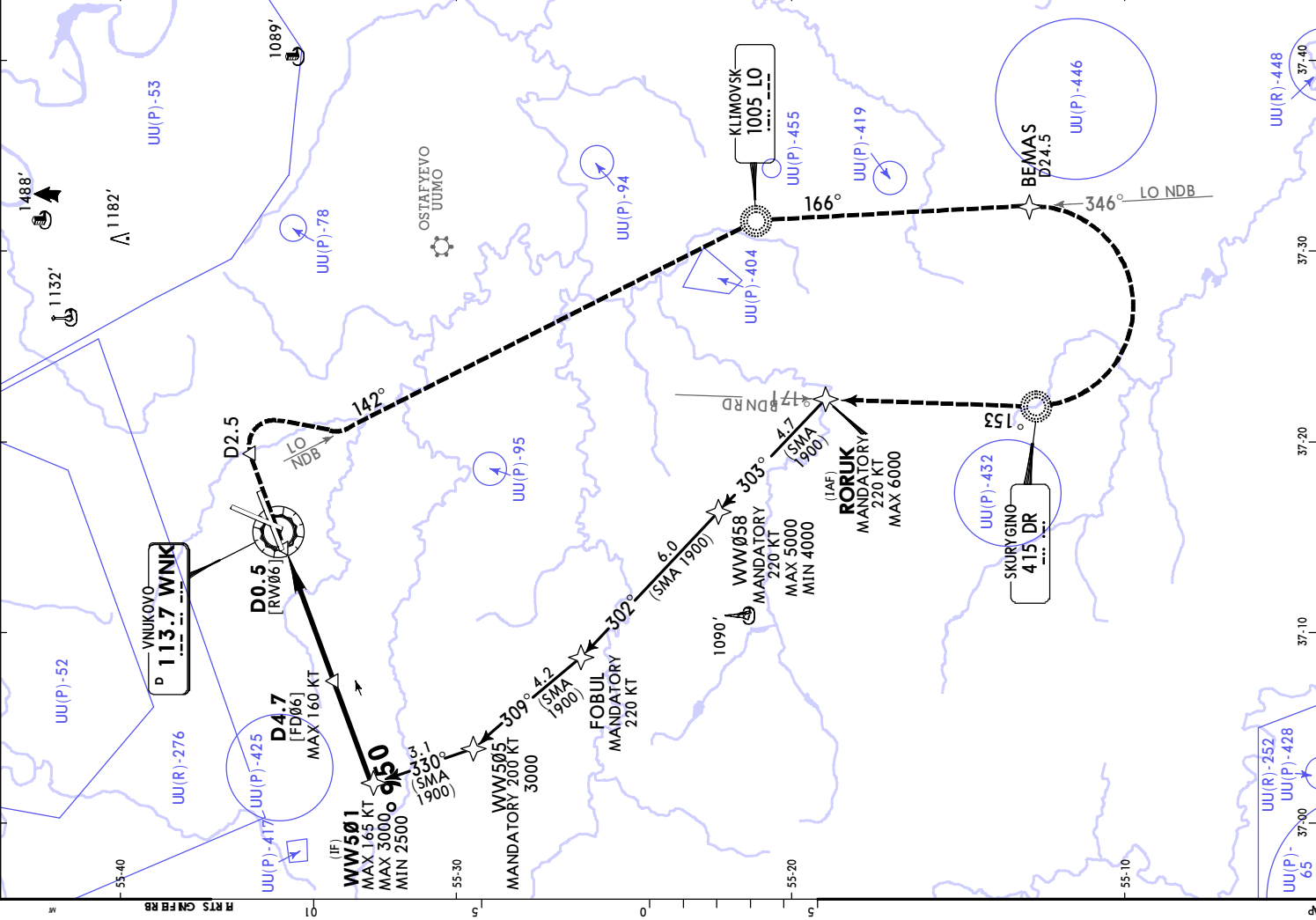


**UJWW/VKO**  
**VNUKOVO**  
**MOSCOW, RUSSIA**  
**VOR Rwy 06**

22 NOV 24 (13-2) EFF 28 NOV

JEPPESEN

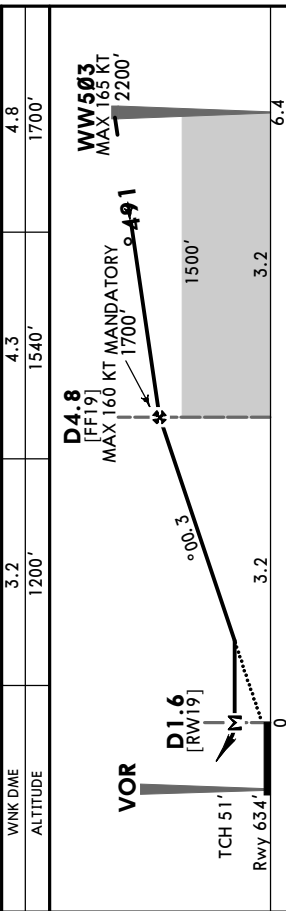
ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian)	123.4	135.9
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	126.0	120.450
VOR WNK	Final Apch Crs	DA/MDA(H)	Apt Elev 685'
113.7	059°	1100' (471')	Rwy 629'
MANDATORY 2000' (1371')		3800	
MSA ARP is computed for surface air temperature at apt -29.0°C			
MISSED APCH: Climb STRAIGHT AHEAD to D2.5, then turn RIGHT onto 142° LO NDB to LO NDB (MANDATORY 200 KT) climbing to 4000', then onto 346° LO NDB and proceed to BEMAS (MANDATORY 200 KT) to 4000, then turn RIGHT to DR NDB (MANDATORY 220 KT), then onto 171° DR NDB proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL110
RNAV 1 for initial approach.			
1. GNSS or DME/DME required. 2. Final approach offset by 2° from runway centerline.			
HOLDING FIX		FEET METERS	
		QNH (QFE) 10000 (2900) 7000 (1945) 6000 (1640) 4000 (1030) 3800 (1000) 3000 (725) 2500 (575) 2000 (420) 1900 (390) 1700 (330) 1540 (280) 1400 (240) 1200 (175) 1100 (145)	
DR NDB MAX 220 KT MAX 7000 MHA 4000 (SMA 2000)		1. FL 120 if pressure is less than 1013 hPa (760mm). FL 130 if pressure is less than 977 hPa (733mm).	
WNK DME		WINK DME	
1700'		1700'	
ALTITUDE		ALTITUDE	
3.8		3.2	
1540'		1200'	
WW501 MAX 165 KT MAX 3000' MIN 2500'		D4.7 [FD061] MAX 160 KT MANDATORY 2000'	
059° 3.00° 1400' 3.3		3.00° 4.2 3.3	
7.5 70 90 100 120 140 160 3.00° 372 478 531 637 743 849		D0.5 [RW06] TCH 51' Rwy 629'	
MAP at D0.5		MAP at D0.5	
Std		Std	
STRAIGHT-IN LANDING			
CDFA			
DA/MDA(H) 1100' (471')			
ALS out		ALS out	
R1500m		R1500m	
R2200m		R2200m	
R1500m		R1500m	
R2200m		R2200m	



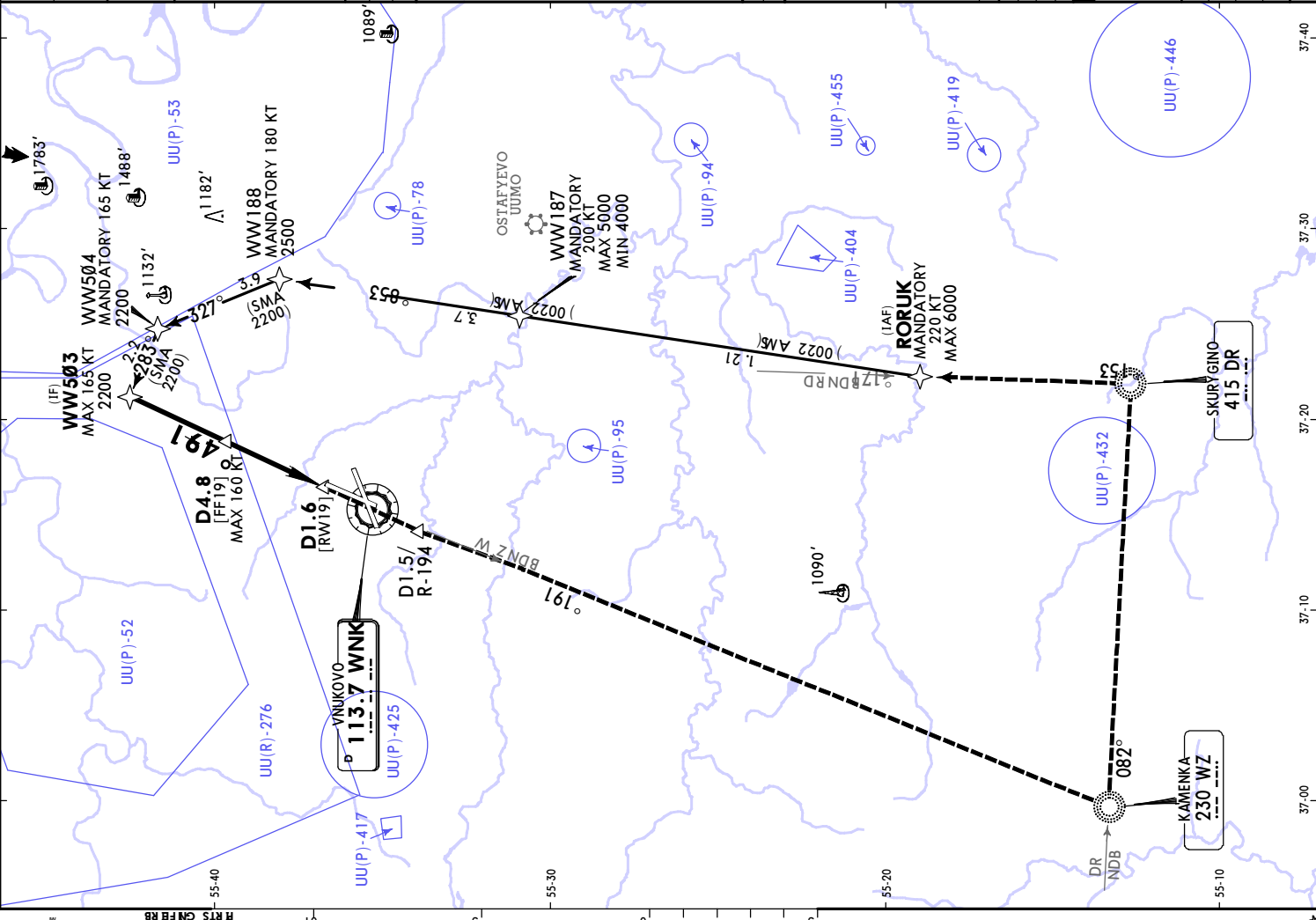
# MOSCOW, RUSSIA VOR, Rwy 19

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	Final	118.3	120.450
VOR	DA/MDA(H)	Apt Elev	3800
WNC	MANDATORY	Rwy 634'	
113.7	1700' (1066')	1120' (486')	
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to D1.5, then turn LEFT onto 191° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p>			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL110
RNAV 1 for initial approach.		Trans alt: 10000'	

HOLDING FIX		FEET METERS	
DR NDB	10000 (2900)	7000 (1945)	6000 (1640)
	5000 (1335)	4000 (1030)	3800 (1000)
	3500 (875)	2500 (570)	2200 (480)
	2000 (420)	1700 (325)	1540 (280)
	1500 (265)	1200 (175)	1120 (150)
<p>MAX 220 KT MAX 7000 MHA 4000 (SMA 2000)</p>			
WNC DME		3.2	4.3
ALTITUDE		1200'	1540'
		1700'	



ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	Final	118.3	120.450
VOR	DA/MDA(H)	Apt Elev	3800
WNC	MANDATORY	Rwy 634'	
113.7	1700' (1066')	1120' (486')	
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to D1.5, then turn LEFT onto 191° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.</p>			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL110
RNAV 1 for initial approach.		Trans alt: 10000'	



**JEPPESEN**  
 22 NOV 24 (13-4) EFF 28 NOV  
**MOSCOW, RUSSIA**  
**VOR RWY 24**

ATIS (Russian) 125.875, 123.4, 126.0, 135.9  
 VNUKOVO Radar (TWR)  
 VNUKOVO Precision (TWR) 118.3, 118.3, 121.7  
 VNUKOVO Tower  
 Ground-2

VOR WNK 113.7  
 Final Appch Crs 235°  
 D4.4 MANDATORY 1700' (1015')  
 DA/MDA(H) 1060' (375')  
 Apt Elev 685'  
 3800  
 MSA ARP is computed for surface air temperature at apt -29.0°C

MISSED APCH: Climb STRAIGHT AHEAD to D1.7, then turn LEFT onto 186° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.

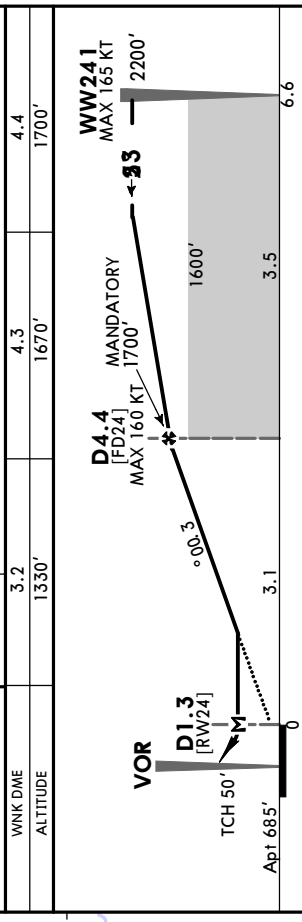
Alt Set: hPa (MM on req) Apt Elev: 23 hPa Trans level: FL110  
 RNAV 1 for initial approach. Trans alt: 10000'

HOLDING FIX

FEET METERS
10000 (2900)
7000 (1925)
6000 (1625)
5000 (1320)
4000 (1015)
3800 (1000)
3500 (860)
2700 (615)
2200 (465)
2000 (405)
1700 (310)
1670 (305)
1600 (280)
1330 (200)
1060 (115)

DR NDB  
 171°  
 153'  
 MAX 220 KT  
 MAX 7000  
 MHA 4000  
 (SMA 2000)

1. GNSS or DME/DME required. 2. Final approach offset by 2° from runway centerline.



MAP at D1.3	MAP at D1.3	MAP at D1.3	MAP at D1.3	MAP at D1.3	MAP at D1.3	MAP at D1.3	MAP at D1.3
70	90	100	120	140	160	180	200
3.00°	372	478	531	637	743	849	

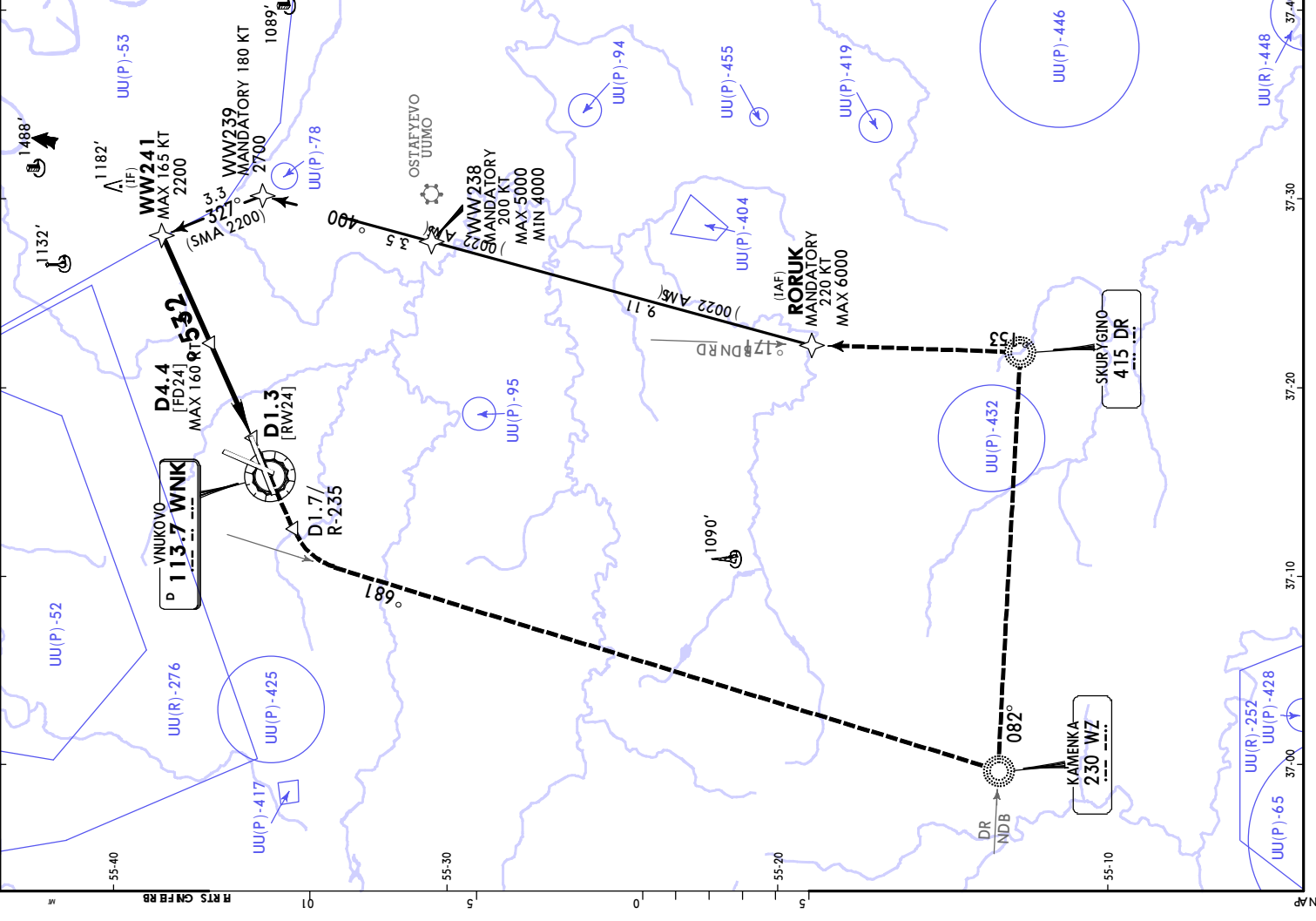
MAP at D1.3

STRAIGHT-IN LANDING

CDFDA

DA/MDA(H) 1060' (375')

ALS out
R1500m
R1700m



CHANGES: Airspaces.  
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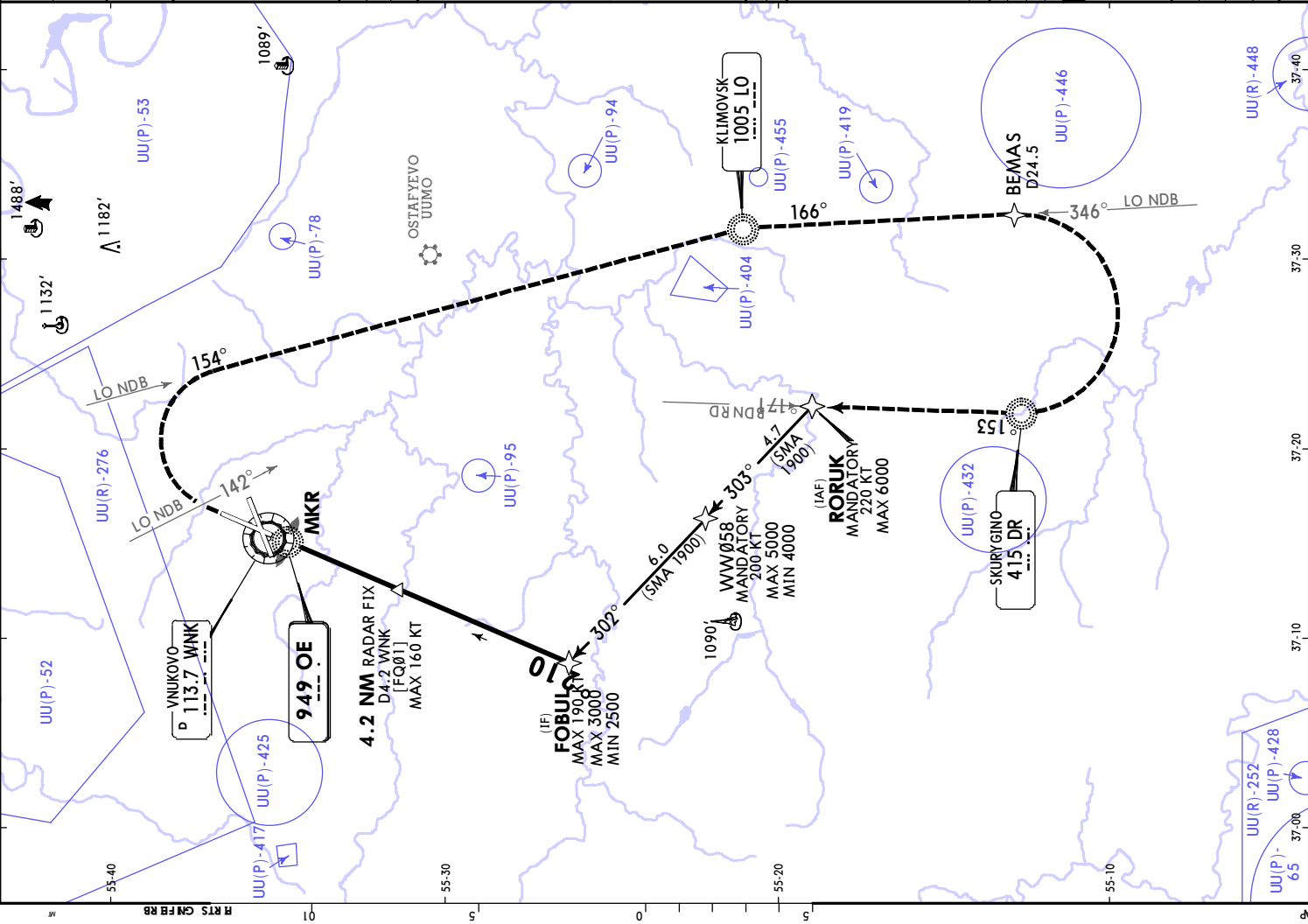
# MOSCOW, RUSSIA NDB, Rwy 01

**JEPPESSEN**  
11 APR 25 (16-1) Eff 17 Apr  
**UUWW/VKO**  
VNUKOVO

ATIS 131.850 VNUKOVO Precision (TWR)		123.4 VNUKOVO Tower		126.0 Ground-1		135.9	
118.3 Final Apch Crs <b>012°</b>		118.3 4.2 NM RADAR FIX MANDATORY <b>2000'</b> (1367')		120.450 DA/MDA(H) <b>980'</b> (347')		3800 MSA ARP is computed for surface air temperature at apt -29.0°C	
<p><b>NDB OE 949</b></p> <p><b>MISSED APCH:</b> Climb on 012° OE NDB to 1300' or above, then turn RIGHT onto 154° LO NDB to LO NDB (MANDATORY 200 KT) climbing to 4000', then onto 346° LO NDB and proceed to BEMAS (MANDATORY 200 KT) to 4000', then turn RIGHT to DR NDB (MANDATORY 220 KT), then onto 171° DR NDB proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed. Turn before MAP is PROHIBITED.</p> <p>Alt Set: hPa (MM on req) Rwy Elev: 23 hPa Trans level: FL1100 RNAV 1 for initial approach. Trans alt: 10000' GNSS or DME/DME required.</p>							

<p><b>HOLDING FIX</b></p> <p><b>DR NDB</b></p> <p>MAX 220 KT MAX 7000 MHA 4000 (SMA 2000)</p>		<p><b>FEET METERS</b></p> <table border="1"> <tr><td>QNH (QFE)</td><td>10000 (2900)</td></tr> <tr><td>7000 (1945)</td><td>6000 (1640)</td></tr> <tr><td>5000 (1335)</td><td>4000 (1030)</td></tr> <tr><td>3800 (1000)</td><td>3000 (725)</td></tr> <tr><td>2500 (570)</td><td>2000 (420)</td></tr> <tr><td>1900 (390)</td><td>1690 (325)</td></tr> <tr><td>1400 (235)</td><td>1350 (220)</td></tr> <tr><td>1300 (205)</td><td>980 (110)</td></tr> </table>		QNH (QFE)	10000 (2900)	7000 (1945)	6000 (1640)	5000 (1335)	4000 (1030)	3800 (1000)	3000 (725)	2500 (570)	2000 (420)	1900 (390)	1690 (325)	1400 (235)	1350 (220)	1300 (205)	980 (110)
QNH (QFE)	10000 (2900)																		
7000 (1945)	6000 (1640)																		
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2500 (570)	2000 (420)																		
1900 (390)	1690 (325)																		
1400 (235)	1350 (220)																		
1300 (205)	980 (110)																		
<p><b>FOBUL (IF)</b> MAX 190 KT MAX 3000 MIN 2500</p>		<p><b>4.2 NM RADAR FIX</b> D4.2 WNK [FQ01] MAX 160 KT</p>																	

<p><b>WINK DME</b> 4.2 <b>ALTITUDE</b> 2000'</p>		<p><b>WINK DME</b> 3.2 <b>ALTITUDE</b> 1690'</p>		<p><b>WINK DME</b> 2.2 <b>ALTITUDE</b> 1350'</p>	
<p><b>FOBUL</b> MAX 190 KT MAX 3000' MIN 2500'</p> <p><b>4.2 NM RADAR FIX</b> D4.2 WNK [FQ01] MAX 160 KT MANDATORY 2000'</p> <p><b>OE NDB / MKR</b> TCH 54'</p>					
<p><b>Std</b></p>		<p><b>STRAIGHT-IN LANDING</b></p> <p>CDA</p> <p>DA/MDA(H) <b>980'</b> (347')</p>			
<p><b>A</b> R900m</p>		<p><b>B</b> R1500m</p>		<p><b>C</b> R1600m</p>	
<p><b>D</b> VNAV DA(H) in lieu of MDA(H) depends on operator policy.</p>					

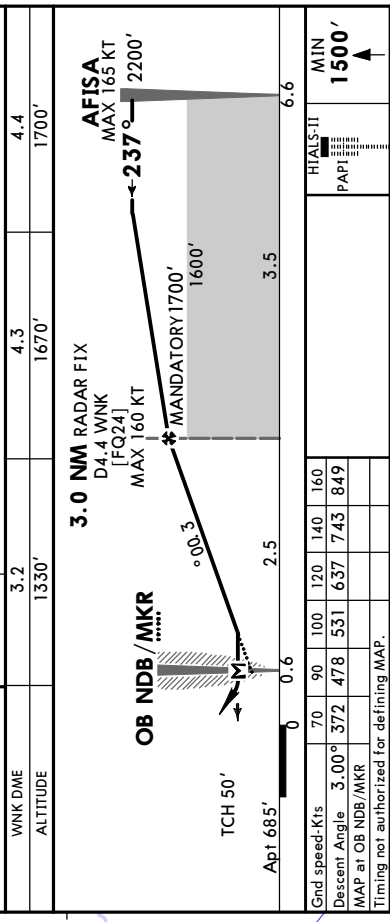




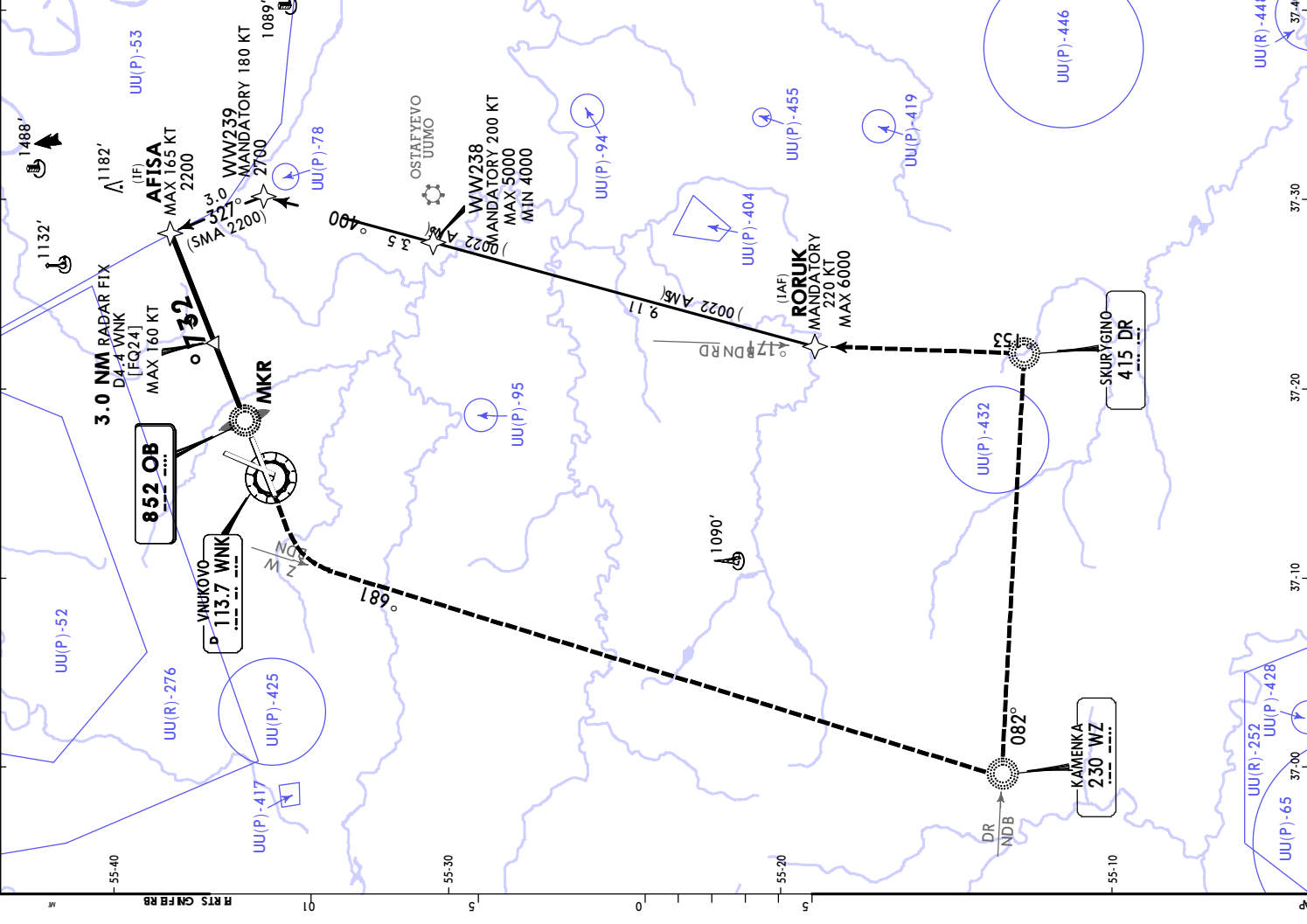


ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	135.9
VNUKOVO Precision (TWR)		Ground-2	
118.3	118.3	126.0	121.7
NDB	Final	3.0 NM	DA/MDA(H)
OB	Apch Crs	RADAR FIX	1150' (465')
852	237°	MANDATORY	1700' (1015')
MISSED APCH: Climb STRAIGHT AHEAD to 1500' or above, then turn LEFT onto 186° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.			
Turn before MAP is PROHIBITED.			
Apt Set: hPa (MM on req)		Trans level: FL1100	
Apt Elev: 23 hPa		Trans alt: 10000'	
RNAV 1 for initial approach.			
GNSS or DME/DME required.			

HOLDING FIX		FEET METERS	
DR NDB		GNR (QFE)	
171°		10000 (2900)	
153°		7000 (1925)	
		6000 (1625)	
		5000 (1320)	
		4000 (1015)	
		3800 (1000)	
		3500 (860)	
		2700 (615)	
		2200 (465)	
		2000 (465)	
		1700 (310)	
		1670 (305)	
		1600 (280)	
		1500 (250)	
		1330 (200)	
		1150 (140)	
		MAX 220 KT	
		MAX 7000	
		MHA 4000	
		(SMA 2000)	
		WINK DME	
		3.2	4.3
		1330'	1670'
		ALTIITUDE	
		3.2	4.4
		1700'	1700'



MAP at OB NDB/MKR		Timing not authorized for defining MAP.	
<b>Std</b>			
STRAIGHT-IN LANDING			
CDFA			
DA/MDA(H) 1150' (465')			
ALS out			
A	R 1500m		ALS out
B	R 1500m		
C	R 1500m		
D	R 2200m		



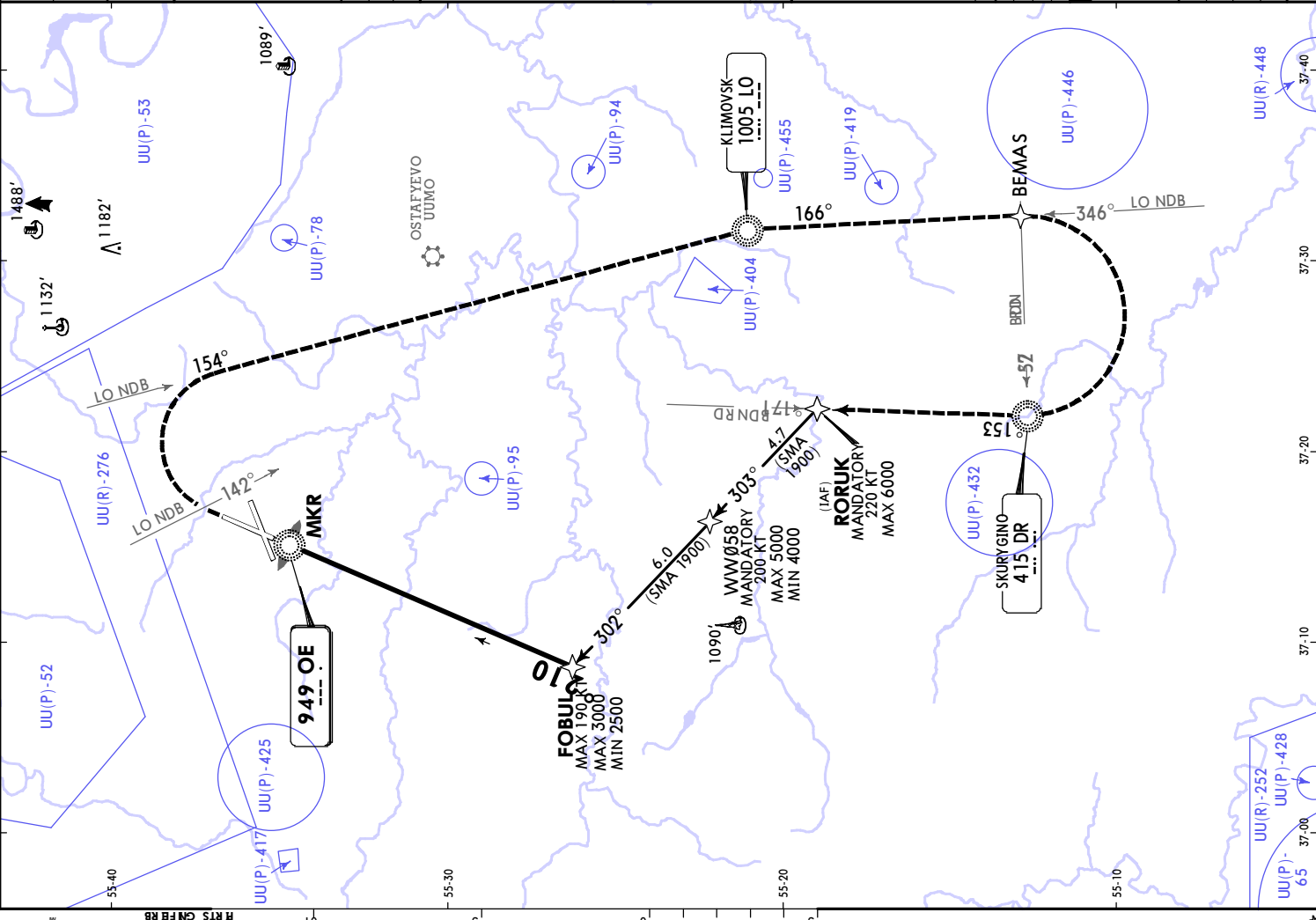
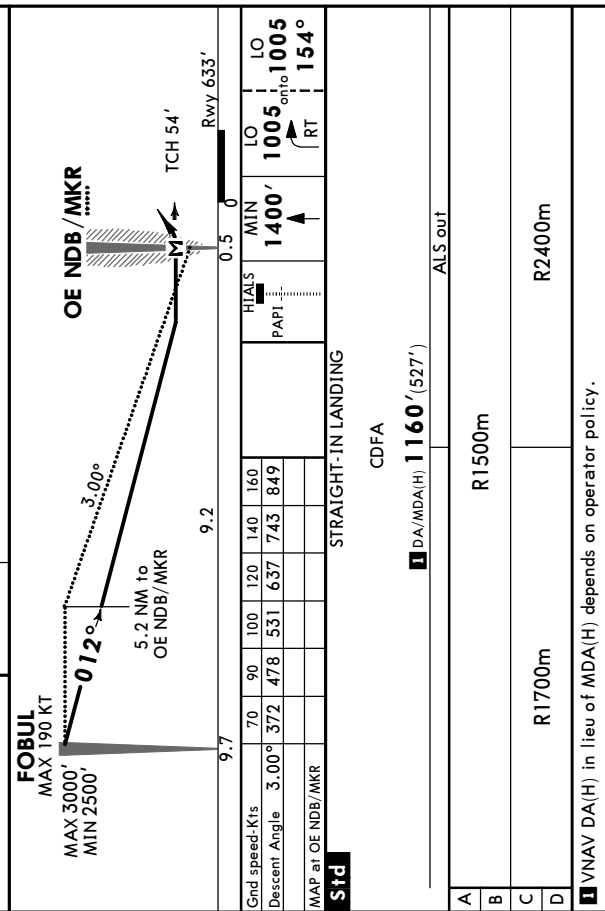
**MOSCOW, RUSSIA**  
**NDB Y Rwy 01**

**JEPPESSEN**  
11 APR 25 (16-5) Eff 17 Apr

**UUWW/VKO**  
VNUKOVO

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		Ground-1	
118.3	118.3	120.450	135.9
NDB OE	Final Apch Crs	FOBUL DA/MDA(H)	Apt Elev 685'
949	012°	2500' (1867')	1160' (527')
MISSED APCH: Climb STRAIGHT AHEAD to 1400' or above, then turn RIGHT onto 154° LO NDB to LO NDB (MANDATORY 200 KT) climbing to 4000' then onto 346° LO NDB and proceed to BEMAS (MANDATORY 200 KT) to 4000', then turn RIGHT to DR NDB (MANDATORY 220 KT), then onto 171° DR NDB proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed. Turn before MAP is PROHIBITED.		Rwy 633'	3800
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	MSA ARP is computed for surface air temperature at apt -29.0°C
RNAV 1 for initial approach.		Trans level: FL1100	Trans alt: 10000'
GNSS or DME/DME required.			

HOLDING FIX		FEET METERS	
		QNH (QFE)	10000 (2900)
		7000 (1945)	6000 (1640)
		5000 (1335)	4000 (1030)
		3800 (1000)	3000 (725)
		2500 (570)	2000 (420)
		1900 (390)	1400 (235)
		1160 (160)	
<p>DR NDB</p> <p>MAX 220 KT</p> <p>MAX 7000</p> <p>MHA 4000</p> <p>(SMA 2000)</p>		<p>1 FL120 if pressure is less than 1013 hPa (760mm). FL130 if pressure is less than 977 hPa (733mm).</p>	





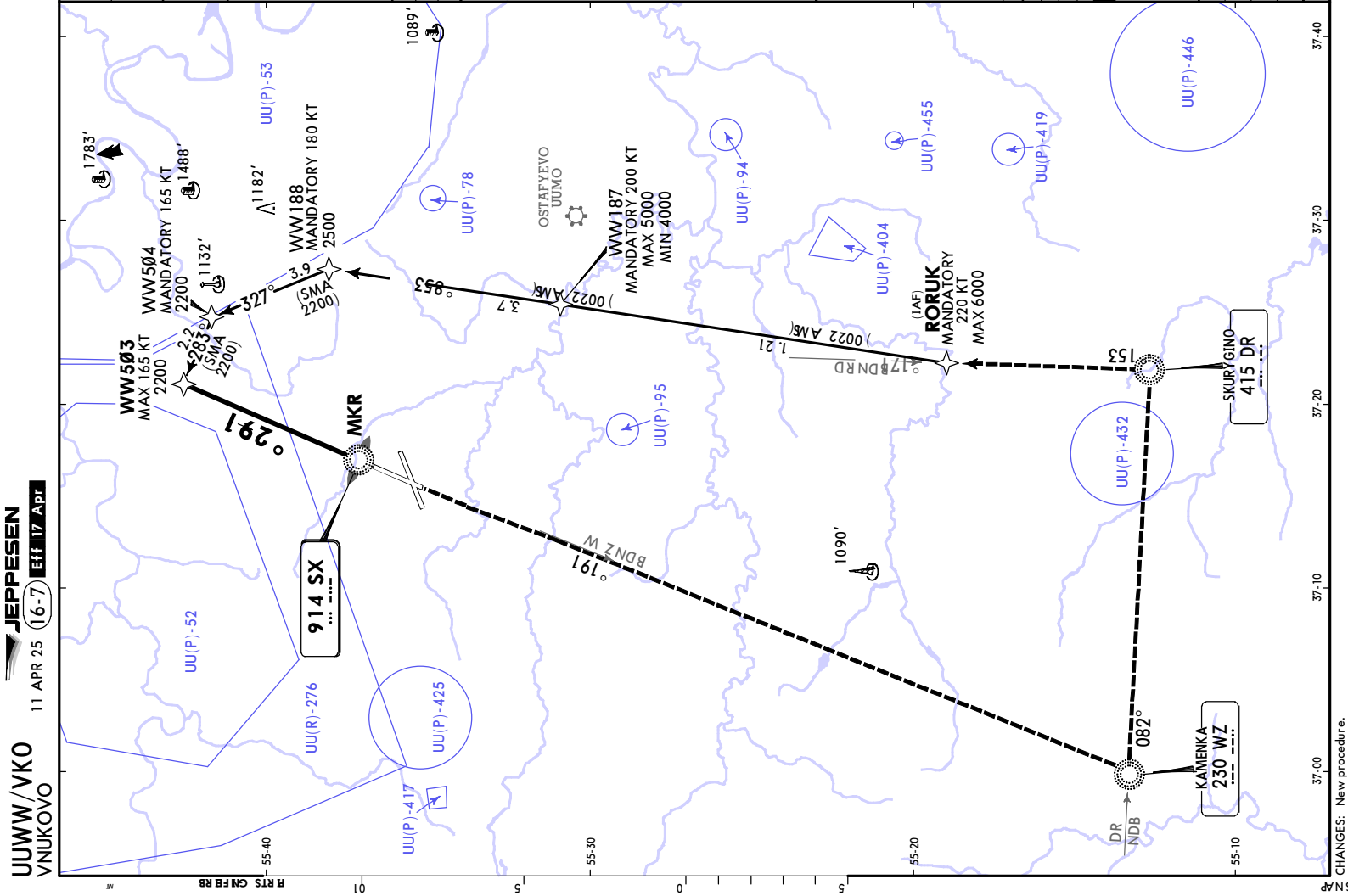
# MOSCOW, RUSSIA NDB Y Rwy 19

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	126.0
VNUKOVO Precision (TWR)		Ground-1	
118.3	VNUKOVO tower	118.3	120.450
NDB SX	Final	DA/MDA(H)	Apt Elev 685'
914	192°	2200' (1566')	Rwy 634'
<p><b>WW503</b> MAX 165 KT MANDATORY 2200'</p> <p><b>WW504</b> MANDATORY 165 KT MANDATORY 2200'</p> <p><b>WW187</b> MANDATORY 200 KT MAX 5000 MIN 4000</p> <p><b>WW188</b> MANDATORY 180 KT MANDATORY 2500'</p> <p><b>WW189</b> MANDATORY 165 KT MANDATORY 2200'</p>			
<p><b>MISSED APCH:</b> Climb STRAIGHT AHEAD to 1500' or above, then turn LEFT onto 191° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed. Turn before MAP is PROHIBITED.</p>			
Alt Set: hPa (MM on req)		Rwy Elev: 23 hPa	Trans level: FL110
RNAV 1 for initial approach.		Trans alt: 10000'	
GNSS or DME/DME required.			

FEET	METERS
10000 (2900)	3000 (914)
7000 (1945)	2100 (640)
6000 (1640)	1800 (549)
5000 (1335)	1500 (457)
4000 (1030)	1200 (366)
3800 (1000)	1150 (351)
3500 (875)	1060 (323)
2500 (570)	760 (231)
2200 (480)	670 (204)
2000 (420)	600 (183)
1500 (265)	450 (137)
1270 (195)	380 (116)

● FL120 if pressure is less than 1013 hPa (760mm).  
● FL130 if pressure is less than 977 hPa (733mm).

<p><b>HOLDING FIX</b></p>																						
<p><b>HOLDING FIX</b></p>																						
<p><b>STRAIGHT-IN LANDING</b></p>																						
<p>MAP at SX NDB/MKR</p> <table border="1"> <tr> <th>Grnd speed-Kts</th> <td>70</td> <td>90</td> <td>100</td> <td>120</td> <td>140</td> <td>160</td> </tr> <tr> <th>Descent Angle</th> <td>3.00°</td> <td>3.72°</td> <td>4.78°</td> <td>5.31°</td> <td>6.37°</td> <td>7.43°</td> </tr> <tr> <th>PAP</th> <td>849</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Grnd speed-Kts	70	90	100	120	140	160	Descent Angle	3.00°	3.72°	4.78°	5.31°	6.37°	7.43°	PAP	849					
Grnd speed-Kts	70	90	100	120	140	160																
Descent Angle	3.00°	3.72°	4.78°	5.31°	6.37°	7.43°																
PAP	849																					
<p>MIN 1500'</p>																						
<p>CDFA</p> <p>DA/MDA(H) 1270' (636')</p>																						
<p>ALS out</p>																						
A	R1500m																					
B																						
C	R2200m																					
D	R2400m																					



**JEPESEN**  
 11 APR 25 (16-8) Eff 17 Apr  
**MOSCOW, RUSSIA**  
**NDB Y Rwy 24**

**UJWW/VKO**  
**VNUKOVO**

ATIS		VNUKOVO Radar (TWR)	
131.850	(Russian) 125.875	123.4	135.9
VNUKOVO Precision (TWR)		VNUKOVO Tower	
118.3	118.3	126.0	121.7
Final		Ground-2	
NDB	AFISA	DA/MDA(H)	Apt Elev 685'
OB	2200' (1515')	1280' (595')	
852	237°		

**MISSED APCH:** Climb STRAIGHT AHEAD to 1600' or above, then turn LEFT onto 186° WZ NDB to WZ NDB climbing to 3500', then onto 082° DR NDB to DR NDB (MANDATORY 220 KT), then turn LEFT onto 171° DR NDB and proceed to RORUK (MANDATORY 220 KT) climbing to 6000' or below, or as directed.

Turn before MAP is PROHIBITED.

Alt Set: hPa (MM on req) Apt Elev: 23 hPa Trans level: FL1100  
 RNAV 1 for initial approach.

GNSS or DME/DME required.

**HOLDING FIX**

**DR NDB**

171°

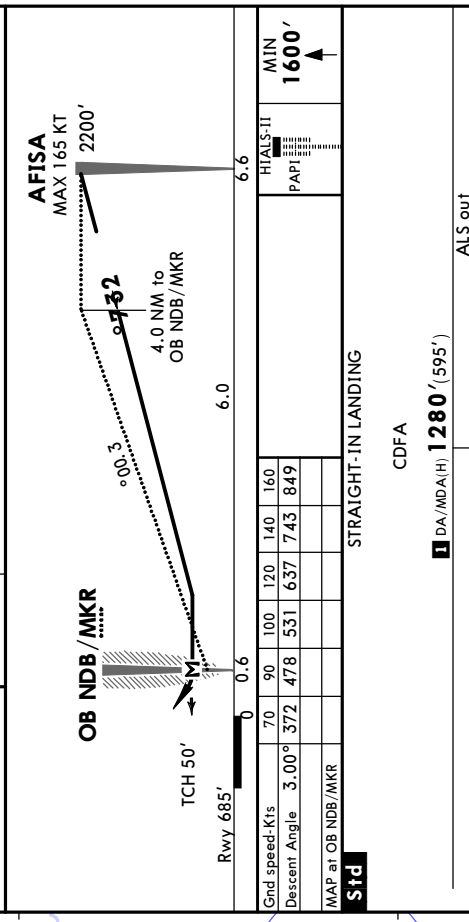
153

MAX 220 KT  
 MAX 7000  
 MHA 4000  
 (SMA 2000)

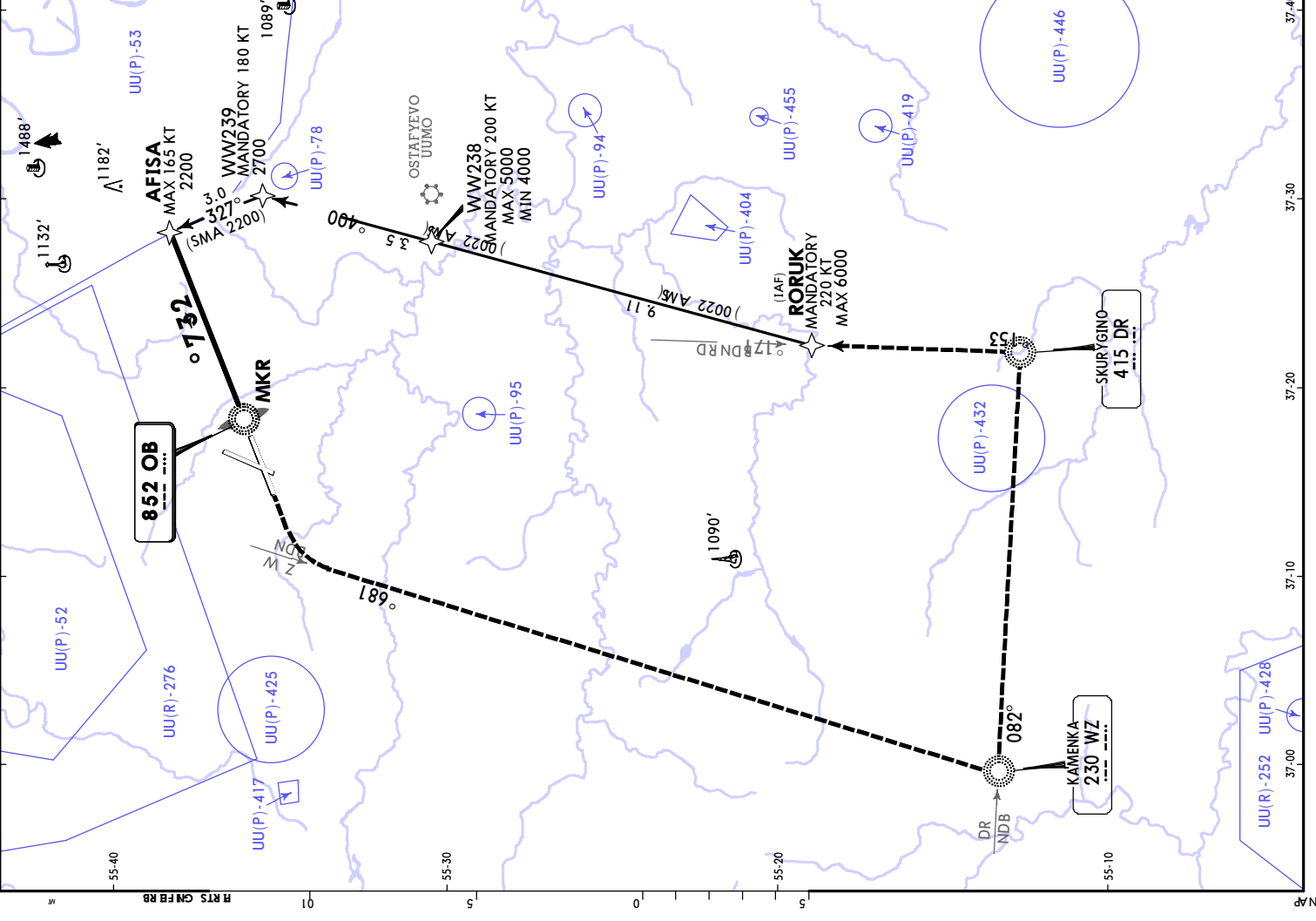
**FEET METERS**

QNH (QFE)	
10000 (2900)	
7000 (1925)	
6000 (1625)	
5000 (1320)	
4000 (1015)	
3800 (1000)	
3500 (860)	
2700 (615)	
2200 (465)	
2000 (405)	
1500 (280)	
1200 (180)	

① FL120 if pressure is less than 1013 hPa (760mm).  
 FL130 if pressure is less than 977 hPa (733mm).



MAP at OB NDB/MKR		STRAIGHT-IN LANDING	
Std			
CDFA		ALS out	
DA/MDA(H) 1280' (595')			
A	R1500m		
B			
C	R2000m		
D	R2400m		



## Chart changes since cycle 07-2026

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

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
<b>MOSCOW, (VNUKOVO - UUWW)</b>				

## TERMINAL CHART CHANGE NOTICES

No Chart Change Notices for Airport UUWW