

## List of pages in this Trip Kit

Trip Kit Index

Airport Information For UUWW

Terminal Charts For UUWW

Revision Letter For Cycle 09-2019

Change Notices

Notebook

## General Information

Location: MOSCOW RUS  
ICAO/IATA: UUWW / VKO  
Lat/Long: N55° 35.9', E037° 16.4'  
Elevation: 686 ft

Airport Use: Public  
Daylight Savings: Not Observed  
UTC Conversion: -3:00 = UTC  
Magnetic Variation: 10.0° 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: 0131 Z  
Sunset: 1724 Z

## Runway Information

Runway: 01  
Length x Width: 10039 ft x 148 ft  
Surface Type: asphalt  
TDZ-Elev: 633 ft  
Lighting: Edge, ALS, Centerline

Runway: 06  
Length x Width: 11483 ft x 197 ft  
Surface Type: asphalt  
TDZ-Elev: 629 ft  
Lighting: Edge, ALS, Centerline, TDZ

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

Runway: 24  
Length x Width: 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: 118.300  
Vnukovo Ground: 120.450  
Vnukovo Ground: 121.700  
Vnukovo Utg Ramp/Taxi: 123.250  
Vnukovo Service Ramp/Taxi: 118.900  
Vnukovo Service Ramp/Taxi: 118.800 Secondary  
Vnukovo Clearance Delivery: 129.700  
Vnukovo Clearance Delivery: 131.800  
Moscow Approach: 119.450 Secondary  
Vnukovo Approach: 122.300 At or below 33558432 ft  
Moscow Approach: 122.700  
Moscow Approach: 123.400  
Moscow Approach: 124.400 Secondary  
Moscow Approach: 125.300  
Moscow Approach: 127.200  
Moscow Approach: 128.000  
Moscow Approach: 129.000 Secondary  
Moscow Approach: 129.800  
Moscow Approach: 131.200  
Moscow Approach: 134.000  
Moscow Approach: 135.900  
Vnukovo Vippport Operations: 122.875  
Vnukovo Operations: 131.125  
Vnukovo Transit Operations: 131.875  
Vnukovo Radar Radar: 126.000

UUWW/VKO  
VNUKOVO

JEPPESEN  
4 MAR 16 10-1P Eff 9 Mar

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. NOISE ABATEMENT PROCEDURES

1.2.1. GENERAL

Noise abatement procedures shall be executed by all ACFT, but not at the expense of the reduction of flight safety.

1.2.2. NIGHTTIME RESTRICTIONS

Between 2300-0700LT departures and arrivals are allowed only for ACFT that comply with the requirements of ICAO Annex 16, Chapter 3.

1.2.3. PREFERENTIAL RWY SYSTEM

Between 2300-0700LT RWY 19 should not be used for landing in order of preference, and RWY 01 should not be used for take-off in order of preference. Deviations from the given restrictions are possible due the prohibition to use RWY 06/24, extreme weather conditions and operational restrictions.

1.2.4. REVERSE THRUST

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

1.2.5. USE OF APU

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

1.3. LOW VISIBILITY PROCEDURES

1.3.1. GENERAL

- Preparation: RVR is less than 800m and further deterioration of visibility up to the value less than 550m is expected according to weather forecast.
- Implementation: RVR is less than 550m. Flight crews will be informed by ATC or ATIS when LVP are in progress: "Low visibility procedures in progress, check your minimum".
- Termination: RVR is not less than 550m and further improvement of weather is expected according to weather forecast.

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.

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4 MAR 16

10-1P1

Eff 9 Mar

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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## 1. GENERAL

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### 1.3.2. ARRIVAL

Flight crew shall report RWY vacation to VNUKOVO Precision 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.

After CAT IIIA in LVP conditions, the ACFT shall vacate the RWY along TWYs A1 thru A3, A5, A7 and A9 (RWY 06) or TWY A6, A8, RWY 01/19, A10, A11 and A13 (RWY 24). After reporting to VNUKOVO Precision about the vacation of ILS critical area, the flight crew shall change over to the communication with VNUKOVO Taxiing and shall continue proceeding along green TWY center line lights of TWY A1 thru A3, A5, A7, A9 and M1 thru M3 (RWY 06) or A6, A8, A10, A11, A13 and M1 thru M3 (RWY 24) under VNUKOVO Taxiing. Taxiing shall be carried out under VNUKOVO Taxiing after Follow-me car.

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

Further ACFT taxiing shall be carried out under control of VNUKOVO Taxiing.

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

### 1.3.3. 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 Taxiing.

During taxiing along the apron area and manoeuvring area the flight crew must constantly check the ACFT position especially in the places of TWY intersection to make sure that taxiing is carried out in the conditions of complete safety. In case of difficulty or doubt in determination of ACFT position, it is necessary to stop taxiing and report to Taxiing or Tower about it.

RWY-holding positions in front of RWY 01 on TWYs M1 and M2 and in front of RWY 06/24 on TWYs A1 thru A11 and A13 are marked by red stop bar lights.

When visibility is less than 350m, ACFT taxiing for take-off from RWY 06 or RWY 24 shall be carried out after the Follow-me car to the first TWY centerline light, [TWYs A4, M1 and M2 (RWY 06)], which is switched on. The flight crew shall continue taxiing along green lights by the instruction of Taxiing to stop bar lights on TWYs A10, A11 and A13 (RWY 06) or TWYs A1 thru A5 (RWY 24) and stop. The transfer of control from Taxiing to Tower shall be carried out at stop bar lights.

The transfer of control from Taxiing 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 bar lights and with DAY marking installed without the permission of Tower.

The flight crew should read back all instructions of Tower and Taxiing on holding near the RWY.

After receiving the clearance to occupy the line-up position the flight crew must start taxiing only after switching off of stop bar lights. It is prohibited to cross the stop bar lights when they are switched on.

UUWW/VKO  
VNUKOVO

JEPPESEN

26 OCT 18

10-1P2

Eff 8 Nov

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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## 1. GENERAL

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### 1.4. TAXI PROCEDURES

Taxiing along TWYs B1, B3, B6, B8, M3 (from TWY A2 to A3) and M4 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 C9: At NIGHT or when VIS is less than 2000m with Follow-me car only.

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

### 1.5. PARKING INFORMATION

Enter Vnukovo 1 stands 32 and 34A along TWY B2 only by towing.

Enter Vnukovo 1 stands 51A and 64 by towing.

Exit Vnukovo 1 stands 1 thru 31A, 41A thru 41E and 52 thru 61 by towing.

Exit Vnukovo 1 stand 64 under engines power; to TWY B5 by towing.

Use Vnukovo 1 stands 32 thru 35A, 38 thru 41, 65 and 66 by towing.

Enter Vnukovo 3 stands 1 thru 5, 8 thru 10 and 74 thru 75C by towing.

Exit Vnukovo 3 stands 21 and 23 thru 27 by towing.

Use Vnukovo 5 stands 501 thru 510 by towing.

Stands 35, 42 and 43 available for helicopters.

### 1.6. OTHER INFORMATION

Birds in vicinity of APT.

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## 2. ARRIVAL

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### 2.1. NOISE ABATEMENT PROCEDURES

#### 2.1.1. APPROACH PHASE

##### Restrictions

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

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

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

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

### 2.2. CAT II OPERATIONS

RWYs 06, 19 and 24 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.

#### 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.

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10-1P3

Eff 8 Nov

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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## 2. ARRIVAL

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### 2.4. SPEED RESTRICTIONS

Unless otherwise instructed maintain following speeds:

- 250 KT below FL100;
- 220 KT from ADAGA, BITSA, DR, LO, OKLIT, UM or UMBEG until passing IAF (ODABI, OSTIS, ANEDA, GILIN);
- 160 KT after passing IAF, with flaps in intermediate position, landing gear retracted.

If unable to maintain the above-mentioned IAS due to the ACFT performances or meteorological conditions, the flight crew shall report it to ATS unit and maintain the recommended speeds.

### 2.5. TAXIING PROCEDURES

#### 2.5.1. 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, TWY M1, TR X, TR Z, TWY B5, TWY M4, TR W.

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

#### 2.5.2. NON-STANDARD TAXI ROUTES

- RWY 24, RWY 01, TWY B5, Vnukovo 1.
- RWY 24, RWY 01, TWY B4, TWY M4, Vnukovo 1.
- RWY 24, RWY 01, TWY B2, TWY M4, Vnukovo 1.
- RWY 24, RWY 01, TWY B1, TWY M4, Vnukovo 1.

**Warning:** Taxi routes via RWY 01 are only available during daylight hours with VIS more than 2000m.

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8 JUN 18

10-1P4

Eff 21 Jun

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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### 3. DEPARTURE

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

##### 3.1.1. START-UP

###### General

During departure: before requesting ATC clearance the flight crew shall squawk ALT OFF or XPDR and keep this mode till reaching the RWY-holding position.

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

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

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

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

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

###### Procedure

A pilot-in-command shall request the ATC clearance 5 minutes prior to the estimated time indicated in the flight plan and when the ACFT is completely ready for departure, but not later than 30 minutes after the time indicated in the flight plan when the ACFT is completely ready for departure by passing the following information to Delivery:

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

###### Note: "COMPLETELY READY FOR DEPARTURE"

means that all formalities are observed, the preparation works are completed, all passengers are on board, the entrance and cargo doors of the ACFT are closed, the stairs are taken away (the aerobridge is disconnected and is in a retracted position), a tow bar is connected (when towing is required), the procedure of de-icing treatment is completed, ground personnel are ready for towing (taxiing) and have established radio contact with the pilot-in-command.

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.

In case of a change of the time indicated in the flight plan for more than 30 minutes, a new time and slot must be coordinated with the airport services and "DLA" message must be sent.

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 airport services and "FPL" message must be sent.

In case of ACFT departure from VNUKOVO 1 or VNUKOVO 3 Apron 4, 10 minutes shall be added to the time of departure for towing and engine start-up. Up to 15 minutes are given for taxiing and ensuring air traffic safety for all ACFT types.

##### 3.1.2. 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.



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VNUKOVO

8 JUN 18

JEPPesen  
(10-1P5)

Eff 21 Jun

MOSCOW, RUSSIA  
AIRPORT BRIEFING

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### 3. DEPARTURE

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**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. NOISE ABATEMENT PROCEDURES

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

**TAKE-OFF AND CLIMBING PHASE****Restrictions**

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

A change of flight course direction after take-off is permitted only after reaching 1080'(394').

Turns initiated between 1080'(394') and 1670'(984') shall be executed with a bank angle of 15°.

Turns initiated between 1670'(984') and 3640'(2954') shall be executed with a bank angle of 20°.

Turns initiated at or above 3640'(2954') shall be executed with 25° bank or with angular speed of turn of 3°/sec.

**Noise Abatement Procedures NADP1 and NADP2**

Two methods of noise abatement during climbing are used by the flight crews: NADP1 for RWYs 01 and 06 and NADP2 for RWYs 19 and 24 (ICAO Doc 8168, Volume 1).

### 3.3. RWY OPERATION

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

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

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

### 3.4. OTHER INFORMATION

#### 3.4.1. TAKE-OFF FROM INTERSECTION

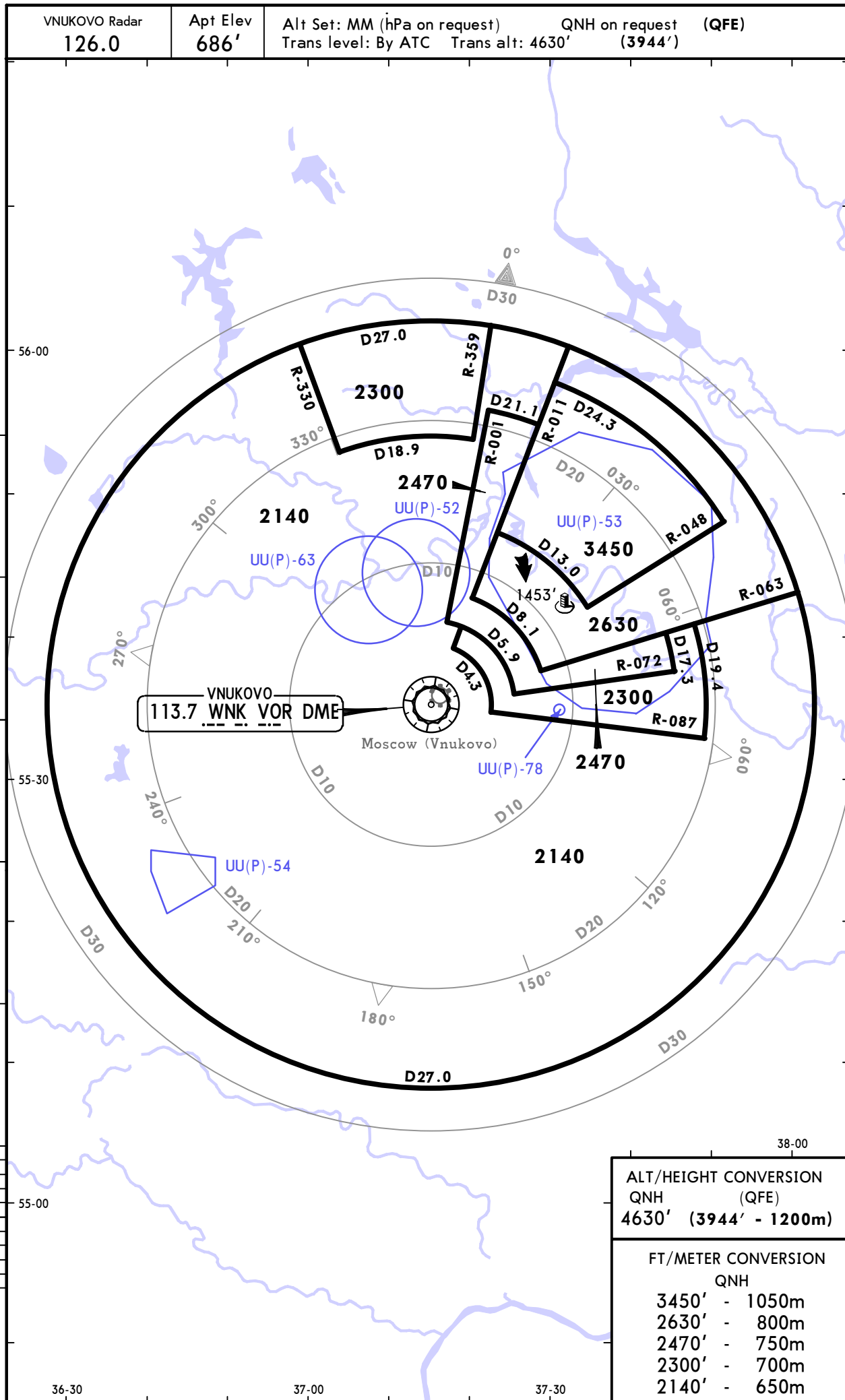
Flight crew must report chosen line-up position during communication with GND controller.

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, whereas the pilot shall obtain take-off clearance simultaneously with line-up clearance.

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8 DEC 17 10-1R

MOSCOW, RUSSIA  
RADAR MINIMUM ALTITUDES



UUWW/VKO  
VNUKOVO

 **JEPPESEN**  
2 NOV 18 **10-2** **Eff 8 Nov**

**MOSCOW, RUSSIA**  
**RNAV STAR**

| TRANSITION DESIGNATION                                 | REFER TO CHART |
|--------------------------------------------------------|----------------|
| BOGDANOVO (BD) 1W, 2W, 3W,<br>NAMIN 1W, 2W, 3W, 4W     | 10-2B          |
| LARIONOVO (MF) 1W, 2W                                  | 10-2C          |
| RELTO 1W, 2W, TIKBI 1W, 2W                             | 10-2D          |
| OKTYABRSKIY (FE) 1W, 2W,<br>SUKHOTINO (IN) 1W          | 10-2E          |
| GAGARIN (FK) 1W, 2W, 3W, 4W, 5W,<br>SODRU 1W, SUGIR 1W | 10-2F          |

| RNAV STAR DESIGNATION                                                                           | REFER TO CHART |
|-------------------------------------------------------------------------------------------------|----------------|
| BITSA 2R, KLIMOVSK (LO) 2R,<br>SKURYGINO (DR) 2R, 4R, UMBEG 2R                                  | 10-2H          |
| BITSA 1R, KLIMOVSK (LO) 1R,<br>SKURYGINO (DR) 1R, 3R, UMBEG 1R                                  | 10-2J          |
| ADAGA 4P, BITSA 4P,<br>IVANOVSKOYE (UM) 4P,<br>KLIMOVSK (LO) 4P, OKLIT 4P,<br>SKURYGINO (DR) 4P | 10-2K          |

FOR STAR DESIGNATION REFER TO PAGE 10-2A

UUWW/VKO  
VNUKOVO

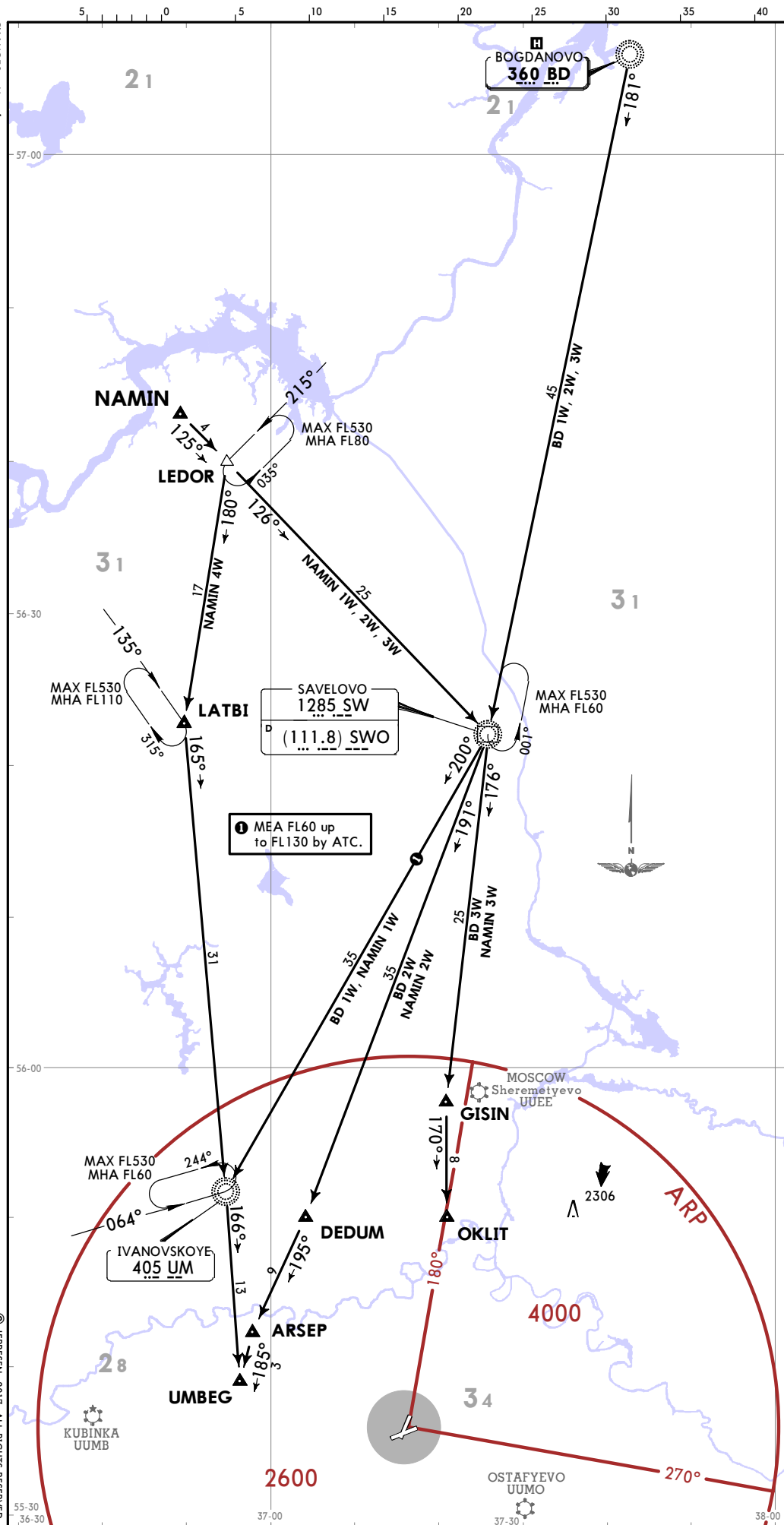
MOSCOW, RUSSIA  
**STAR**

| STAR DESIGNATION                                                    | REFER TO CHART |
|---------------------------------------------------------------------|----------------|
| BITSA Ø1A, Ø1M                                                      | 10-2M          |
| KLIMOVSK (LO) Ø1A, Ø1M                                              | 10-2N          |
| SKURYGINO (DR) Ø1A, Ø1M                                             | 10-2P          |
| UMBEG Ø1B, Ø1K                                                      | 10-2Q          |
| BITSA Ø6A, KLIMOVSK (LO) Ø6A,<br>SKURYGINO (DR) Ø6A, UMBEG Ø6A, Ø6B | 10-2S          |
| BITSA Ø6B, KLIMOVSK (LO) Ø6B,<br>SKURYGINO (DR) Ø6B                 | 10-2T          |
| BITSA 19B                                                           | 10-2U          |
| BITSA 19M, OKLIT 19K                                                | 10-2V          |
| KLIMOVSK (LO) 19A,<br>SKURYGINO (DR) 19A, UMBEG 19A                 | 10-2W          |
| IVANOVSKOYE (UM) 19K,<br>KLIMOVSK (LO) 19K,<br>SKURYGINO (DR) 19K   | 10-2X          |
| BITSA 24B                                                           | 10-2X1         |
| KLIMOVSK (LO) 24A,<br>SKURYGINO (DR) 24A, UMBEG 24A                 | 10-2X2         |

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CHANGES: New format.

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|                                                                                                                                                                                                                         |                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| ATIS<br>131.850 (Russian 125.875)                                                                                                                                                                                       | Apt Elev<br>686                                                       |
| Alt Set: MM (hPa on request)<br>QNH on request (QFE)<br>Trans level: By ATC                                                                                                                                             |                                                                       |
| BOGDANOVO 1W (BD 1W) [BD1W]<br>BOGDANOVO 2W (BD 2W) [BD2W]<br>NAMIN 1W [NAM1W]<br>NAMIN 2W [NAM2W]<br>NAMIN 4W [NAM4W]<br>TO UMBEG<br>BOGDANOVO 3W (BD 3W) [BD3W]<br>NAMIN 3W [NAM3W]<br>TO OKLIT                       |                                                                       |
| TRANSITIONS                                                                                                                                                                                                             |                                                                       |
| <b>SPEED RESTRICTION</b><br>280 KT +/- 10 KT or Mach 0.8<br>whichever is less from cruising FL to FL250.<br>270 KT +/- 10 KT below FL250 to FL100.<br>250 KT +/- 10 KT below FL100 to TL.                               |                                                                       |
| <b>HOLDING OVER BD</b><br>181°<br>MAX FL530<br>MHA FL60                                                                                                                                                                 |                                                                       |
| <b>TRANSITION</b>                                                                                                                                                                                                       | <b>ROUTING</b>                                                        |
| BD 1W                                                                                                                                                                                                                   | To SW, then to UM, then to UMBEG.                                     |
| BD 2W<br>By ATC                                                                                                                                                                                                         | To SW, then to DEDUM, then to ARSEP,<br>then to UMBEG.                |
| BD 3W<br>By ATC                                                                                                                                                                                                         | To SW, then to GISIN, then to OKLIT.                                  |
| NAMIN 1W                                                                                                                                                                                                                | To LEDOR, then to SW, then to UM,<br>then to UMBEG.                   |
| NAMIN 2W<br>By ATC                                                                                                                                                                                                      | To LEDOR, then to SW, then to DEDUM,<br>then to ARSEP, then to UMBEG. |
| NAMIN 3W<br>By ATC                                                                                                                                                                                                      | To LEDOR, then to SW, then to GISIN,<br>then to OKLIT.                |
| NAMIN 4W<br>By ATC                                                                                                                                                                                                      | To LEDOR, then to LATBI, then to UM,<br>then to UMBEG.                |
| <b>TRANSITIONS</b><br>BOGDANOVO 1W (BD 1W) [BD1W]<br>BOGDANOVO 2W (BD 2W) [BD2W]<br>NAMIN 1W [NAM1W]<br>NAMIN 2W [NAM2W]<br>NAMIN 4W [NAM4W]<br>TO UMBEG<br>BOGDANOVO 3W (BD 3W) [BD3W]<br>NAMIN 3W [NAM3W]<br>TO OKLIT |                                                                       |

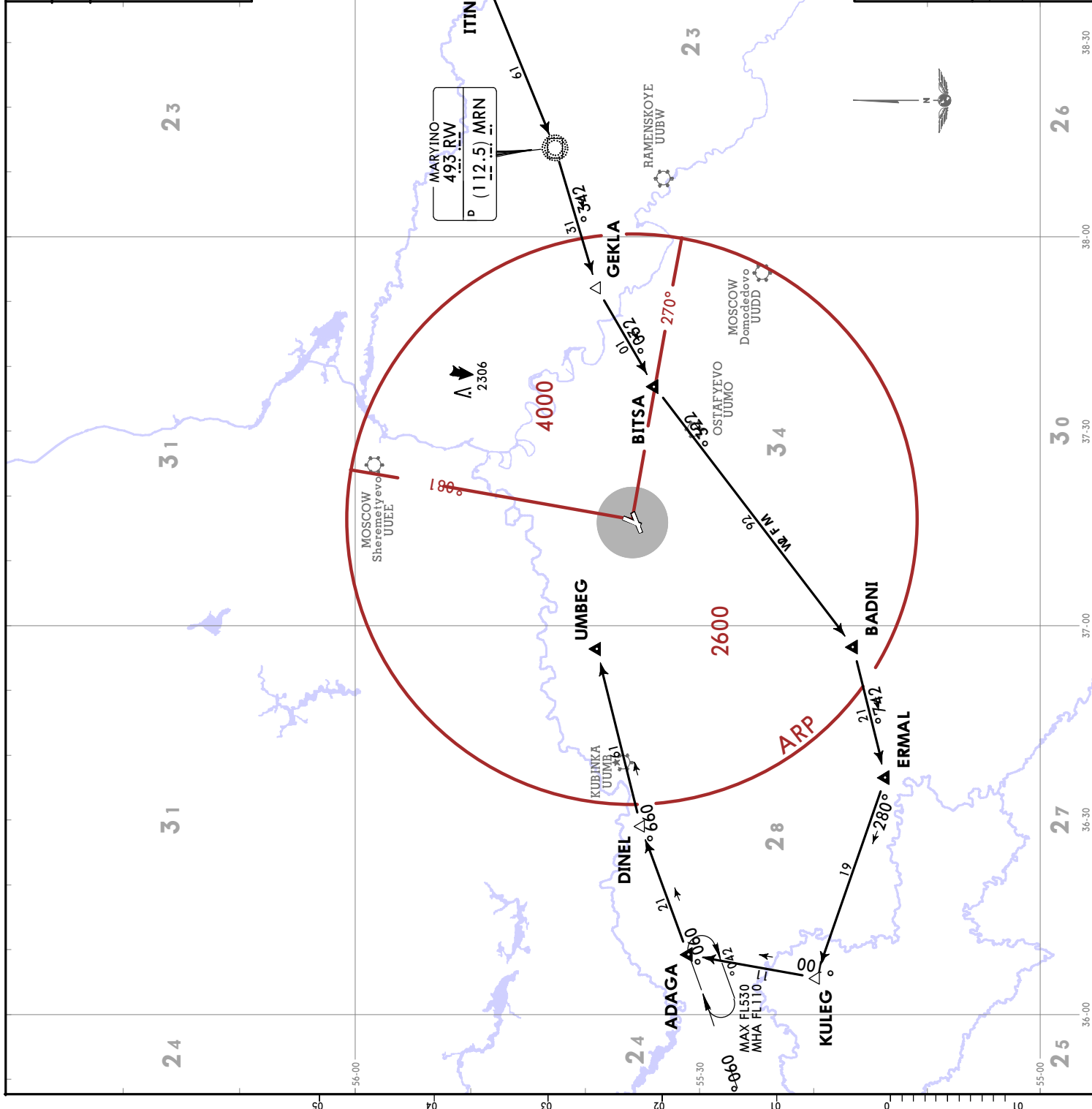
ATIS  
131.850 (Russian 125.875)  
Apt Elev 686

Alt Set: MM (hPa on request) QNH on request (QFE)  
Trans level: By ATC

**LARIONOVO 1W (MF 1W)**  
TO BITSA

**LARIONOVO 2W (MF 2W)**  
TO UMBEG

**TRANSITIONS**



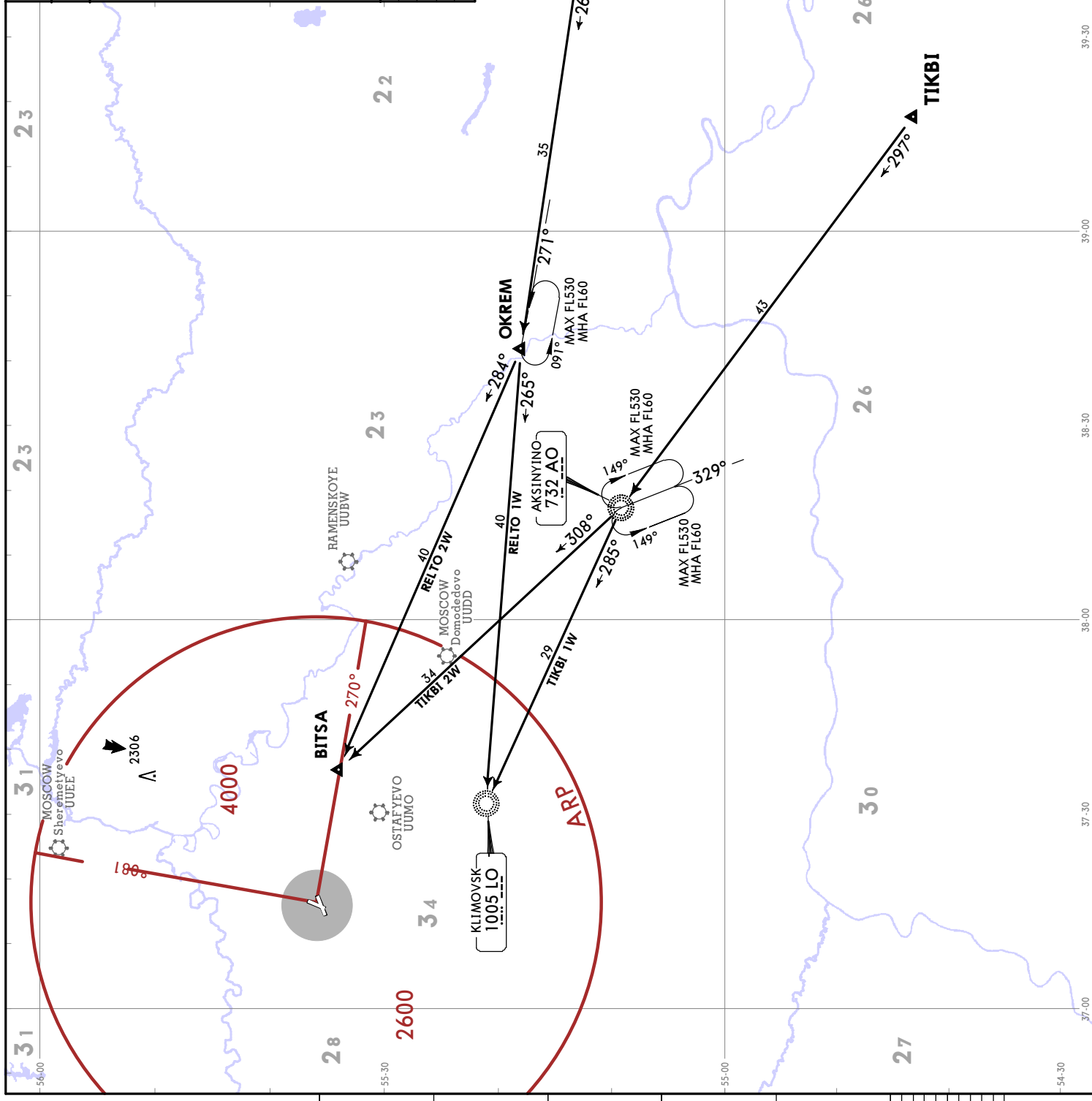
**SPEED RESTRICTION**  
280 KT +/- 10 KT or Mach 0.8  
whichever is less from cruising FL to FL250.  
270 KT +/- 10 KT below FL250 to FL100.  
250 KT +/- 10 KT below FL100 to TL.

| TRANSITION      | ROUTING                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| MF 1W           | To ITINA, then to RW, then to GEKLA, then to BITSA.                                                                                           |
| MF 2W<br>By ATC | To ITINA, then to RW, then to GEKLA, then to BITSA, then to BADNI, then to ERMAL, then to KULEG, then to ADAGA, then to DINEL, then to UMBEG. |

**JEPPesen MOSCOW, RUSSIA**  
3 NOV 17 (10-2D) Eff 9 Nov **TRANSITION**

**UUWW/VKO**  
VNUKOV

|                                                                                                                                                                                           |                           |                     |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------|-----|
| ATIS                                                                                                                                                                                      | 131.850 (Russian 125.875) | Apt Elev            | 686 |
| Alt Set: MM (hPa on request)                                                                                                                                                              | QNH on request (QFE)      | Trans Level: By ATC |     |
| RELTO 1W [REL1W]                                                                                                                                                                          |                           |                     |     |
| TIKBI 1W [TIK1W]                                                                                                                                                                          |                           |                     |     |
| TO LO                                                                                                                                                                                     |                           |                     |     |
| RELTO 2W [REL2W]                                                                                                                                                                          |                           |                     |     |
| TIKBI 2W [TIK2W]                                                                                                                                                                          |                           |                     |     |
| TO BITSA                                                                                                                                                                                  |                           |                     |     |
| TRANSITIONS BY ATC                                                                                                                                                                        |                           |                     |     |
| <b>SPEED RESTRICTION</b><br>280 KT +/- 10 KT or Mach 0.8<br>whichever is less from cruising FL to FL250.<br>270 KT +/- 10 KT below FL250 to FL100.<br>250 KT +/- 10 KT below FL100 to TL. |                           |                     |     |
| TRANSITION                                                                                                                                                                                | ROUTING                   |                     |     |
| RELTO 1W                                                                                                                                                                                  | To OKREM, then to LO.     |                     |     |
| RELTO 2W                                                                                                                                                                                  | To OKREM, then to BITSA.  |                     |     |
| TIKBI 1W                                                                                                                                                                                  | To AO, then to LO.        |                     |     |
| TIKBI 2W                                                                                                                                                                                  | To AO, then to BITSA.     |                     |     |



ATIS

131.850 (Russian 125.875)

Apt Elev  
686

Alt Set: MM (hPa on request)  
Trans level: By ATC

QNH on request (QFE)

OKTYABRSKIY 1W (FE 1W)  
TO LO

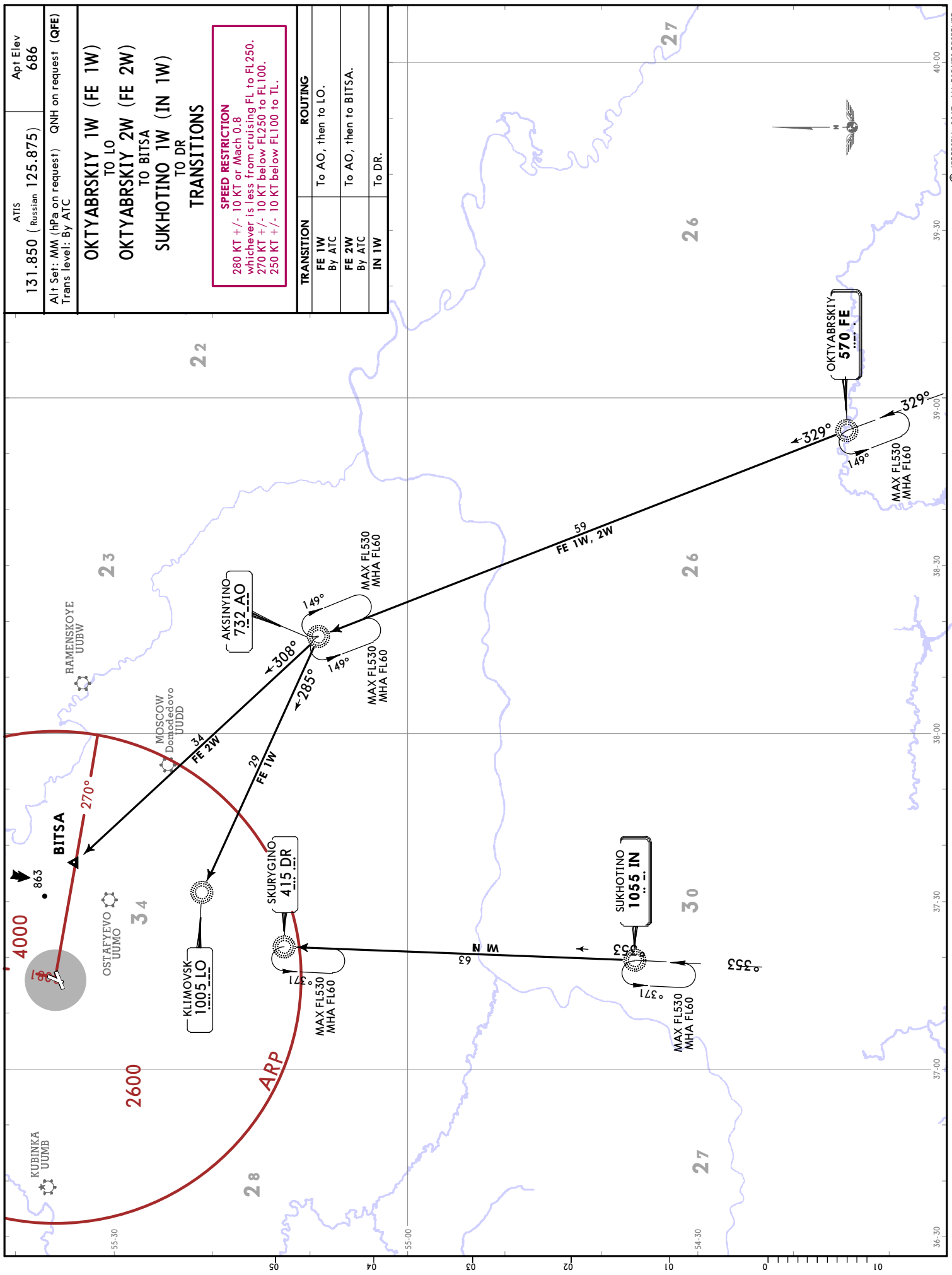
OKTYABRSKIY 2W (FE 2W)  
TO BITSA

SUKHOTINO 1W (IN 1W)  
TO DR

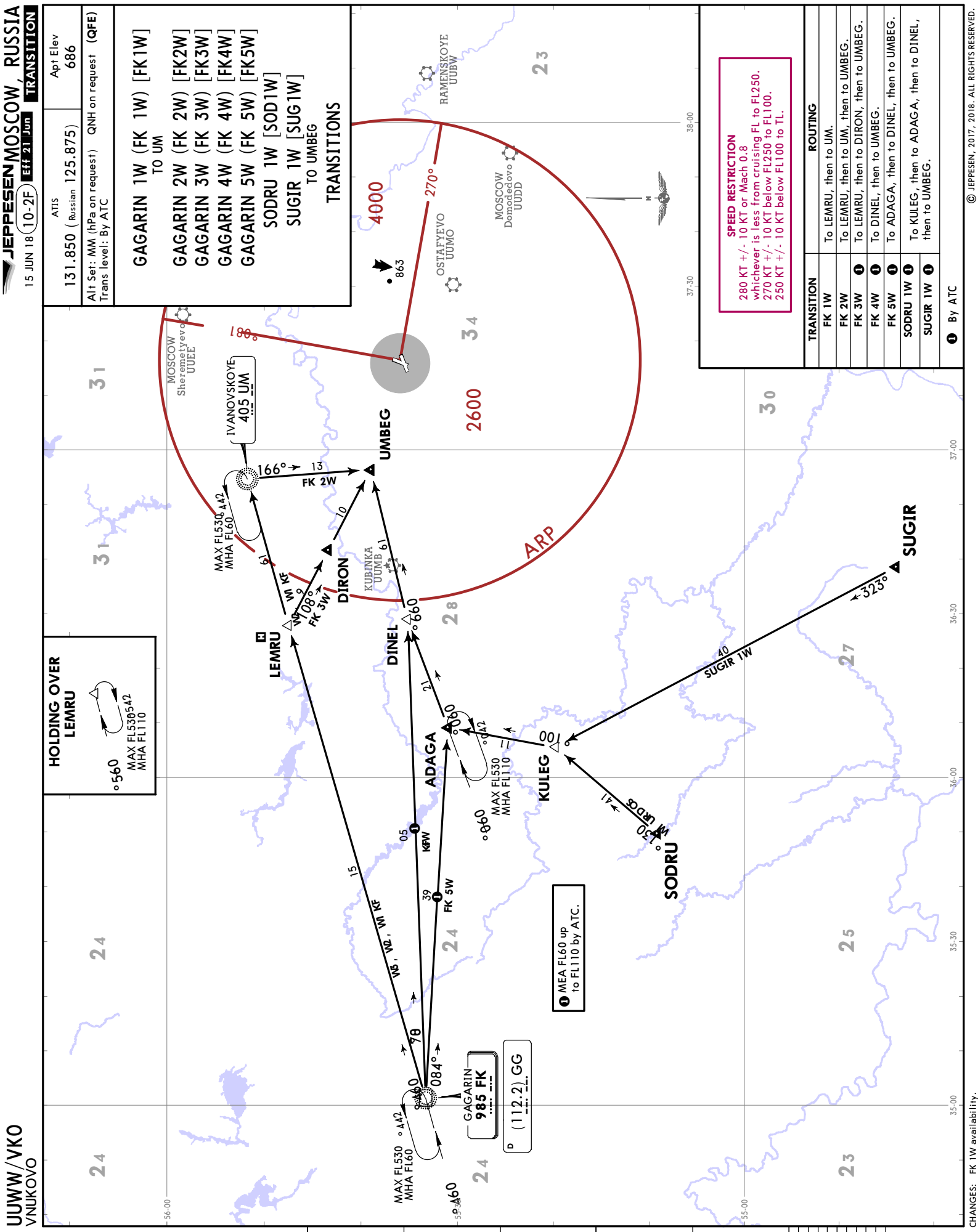
TRANSITIONS

SPEED RESTRICTION  
280 KT +/- 10 KT or Mach 0.8  
whichever is less from cruising FL to FL250.  
270 KT +/- 10 KT below FL250 to FL100.  
250 KT +/- 10 KT below FL100 to TL.

| TRANSITION      | ROUTING               |
|-----------------|-----------------------|
| FE 1W<br>By ATC | To AO, then to LO.    |
| FE 2W<br>By ATC | To AO, then to BITSA. |
| IN 1W           | To DR.                |







**JEPPESEN MOSCOW, RUSSIA**  
15 JUN 18 (10-2F) Eff 21 Jun

| ATIS                                                                     | Apt Elev |
|--------------------------------------------------------------------------|----------|
| 131.850 (Russian 125.875)                                                | 686      |
| Alt Set: MM (hPa on request) QNH on request (QFE)<br>Trans level: By ATC |          |
| <b>TRANSITIONS</b>                                                       |          |
| GAGARIN 1W (FK 1W) [FK1W]<br>TO UM                                       |          |
| GAGARIN 2W (FK 2W) [FK2W]                                                |          |
| GAGARIN 3W (FK 3W) [FK3W]                                                |          |
| GAGARIN 4W (FK 4W) [FK4W]                                                |          |
| GAGARIN 5W (FK 5W) [FK5W]                                                |          |
| SODRU 1W [SOD1W]                                                         |          |
| SUGIR 1W [SUG1W]<br>TO UMBEG                                             |          |

**SPEED RESTRICTION**  
280 KT +/- 10 KT or Mach 0.8  
whichever is less from cruising FL to FL250.  
270 KT +/- 10 KT below FL250 to FL100.  
250 KT +/- 10 KT below FL100 to TL.

| TRANSITION | ROUTING                                                |
|------------|--------------------------------------------------------|
| FK 1W      | To LEMRU, then to UM.                                  |
| FK 2W      | To LEMRU, then to UMBEG.                               |
| FK 3W      | To LEMRU, then to DIRON, then to UMBEG.                |
| FK 4W      | To DINEI, then to UMBEG.                               |
| FK 5W      | To ADAGA, then to DINEI, then to UMBEG.                |
| SODRU 1W   | To KULEG, then to ADAGA, then to DINEI, then to UMBEG. |
| SUGIR 1W   | To UMBEG.                                              |
| By ATC     |                                                        |

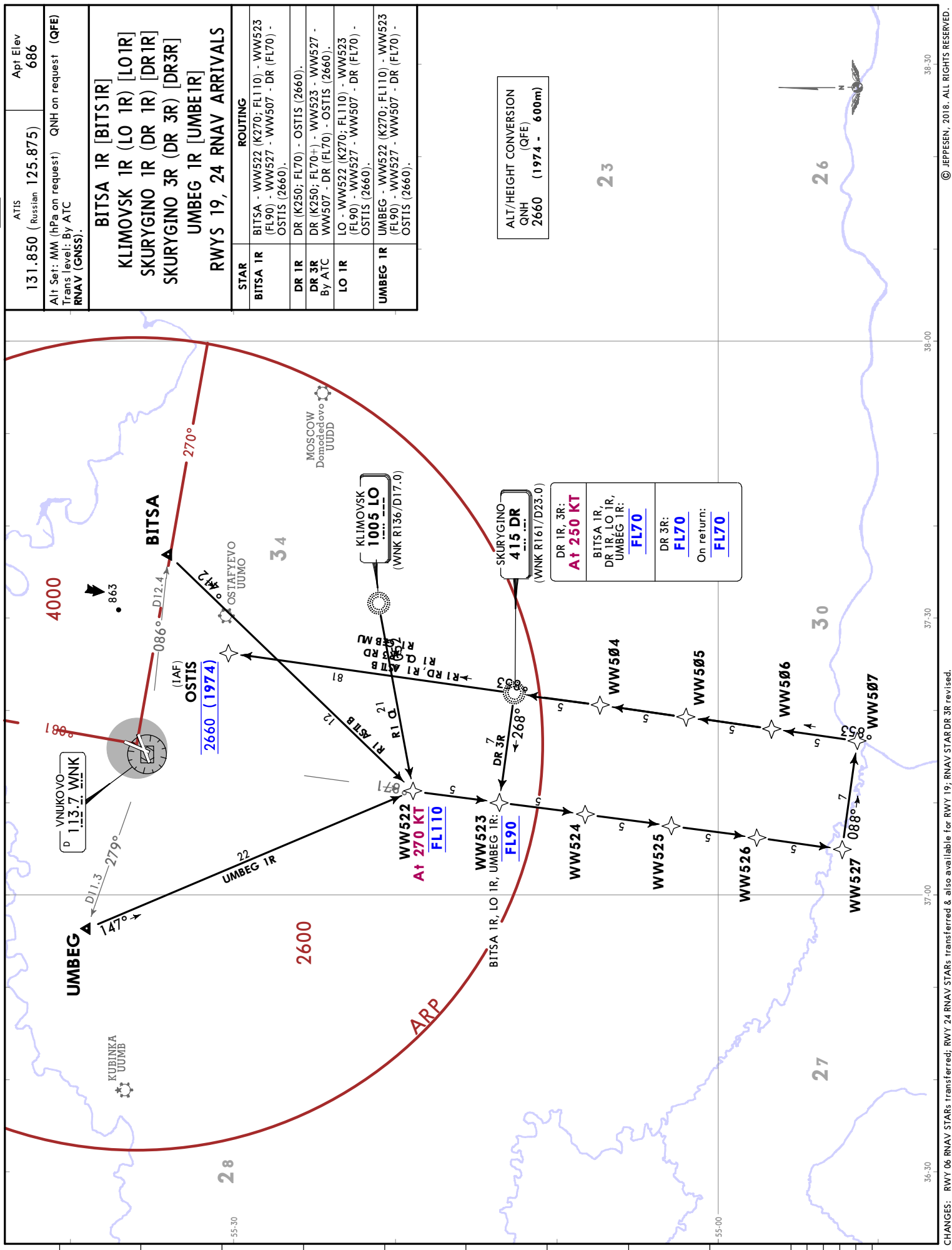
**UJWW/VKO**  
VNUKOVO



**JEPPESSEN MOSCOW, RUSSIA**  
2 NOV 18 (10-2J) Eff 8 Nov  
RNAV STAR

**UUWW/VKO**  
VNUKOVO

|                              |                                                                                        |                     |     |
|------------------------------|----------------------------------------------------------------------------------------|---------------------|-----|
| ATIS                         | 131.850 (Russian 125.875)                                                              | Apt Elev            | 686 |
| Alt Set: MM (hPa on request) | QNH on request (QFE)                                                                   | Trans level: By ATC |     |
| RNAV (GNSS).                 |                                                                                        |                     |     |
| BITSA 1R [BITS1R]            |                                                                                        |                     |     |
| KLIMOVSK 1R (LO 1R) [LO1R]   |                                                                                        |                     |     |
| SKURYGINO 1R (DR 1R) [DR1R]  |                                                                                        |                     |     |
| SKURYGINO 3R (DR 3R) [DR3R]  |                                                                                        |                     |     |
| UMBEG 1R [UMBE1R]            |                                                                                        |                     |     |
| RWYS 19, 24 RNAV ARRIVALS    |                                                                                        |                     |     |
| STAR                         | ROUTING                                                                                |                     |     |
| BITSA 1R                     | BITSA - WW522 (K270; FL110) - WW523 (FL90) - WW527 - WW507 - DR (FL70) - OSTIS (2660). |                     |     |
| DR 1R                        | DR (K250; FL70) - OSTIS (2660).                                                        |                     |     |
| DR 3R<br>By ATC              | DR (K250; FL70+) - WW523 - WW527 - WW507 - DR (FL70) - OSTIS (2660).                   |                     |     |
| LO 1R                        | LO - WW522 (K270; FL110) - WW523 (FL90) - WW527 - WW507 - DR (FL70) - OSTIS (2660).    |                     |     |
| UMBEG 1R                     | UMBEG - WW522 (K270; FL110) - WW523 (FL90) - WW527 - WW507 - DR (FL70) - OSTIS (2660). |                     |     |

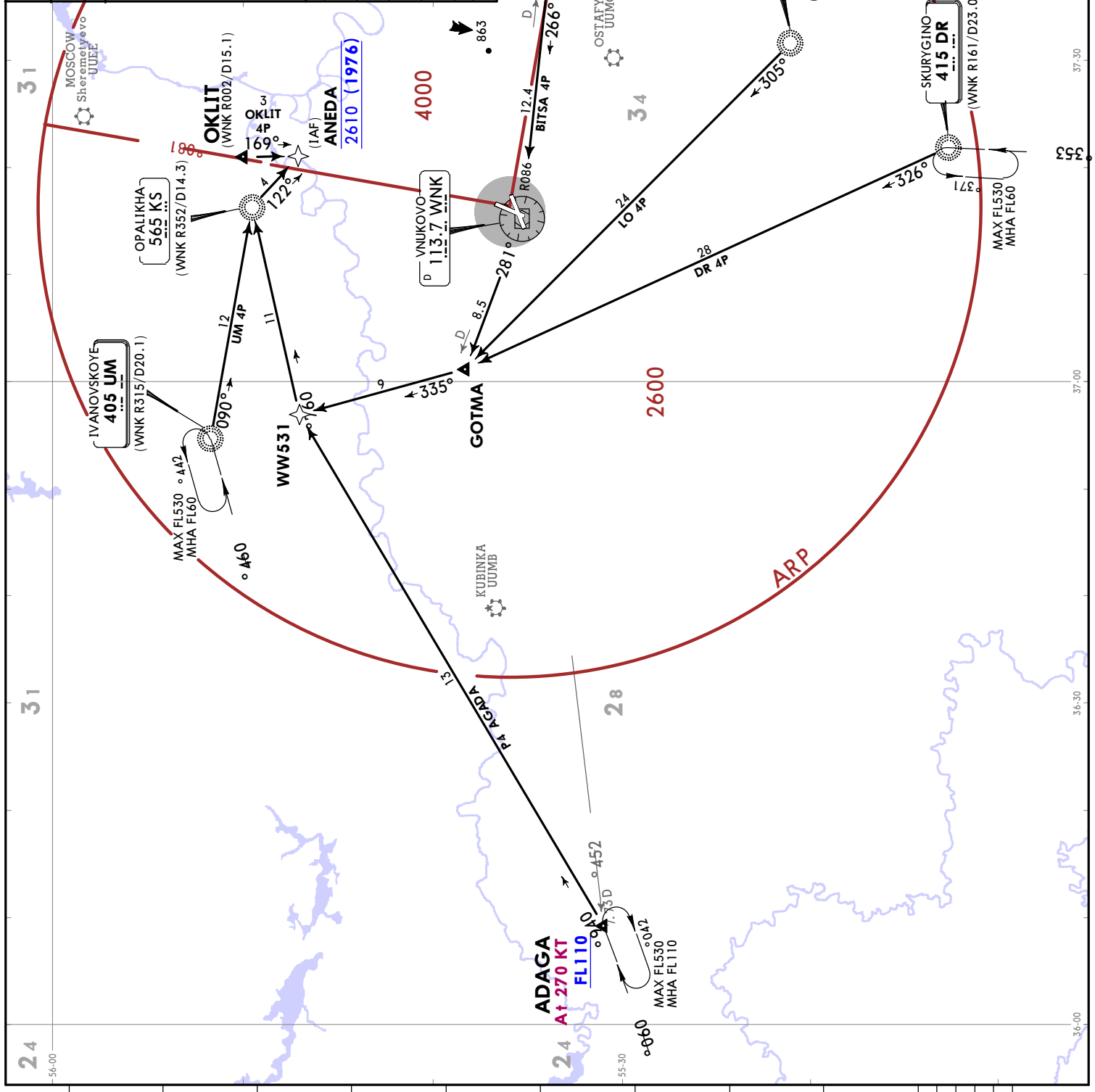


CHANGES: RWY 06 RNAV STARs transferred; RWY 24 RNAV STARs transferred & also available for RWY 19; RNAV STAR DR 3R revised.

**JEPPESEN MOSCOW, RUSSIA**  
2 NOV 18 (10-2K) Eff 8 Nov  
RNAV STAR

UUWW/VKO  
VNUKOVO

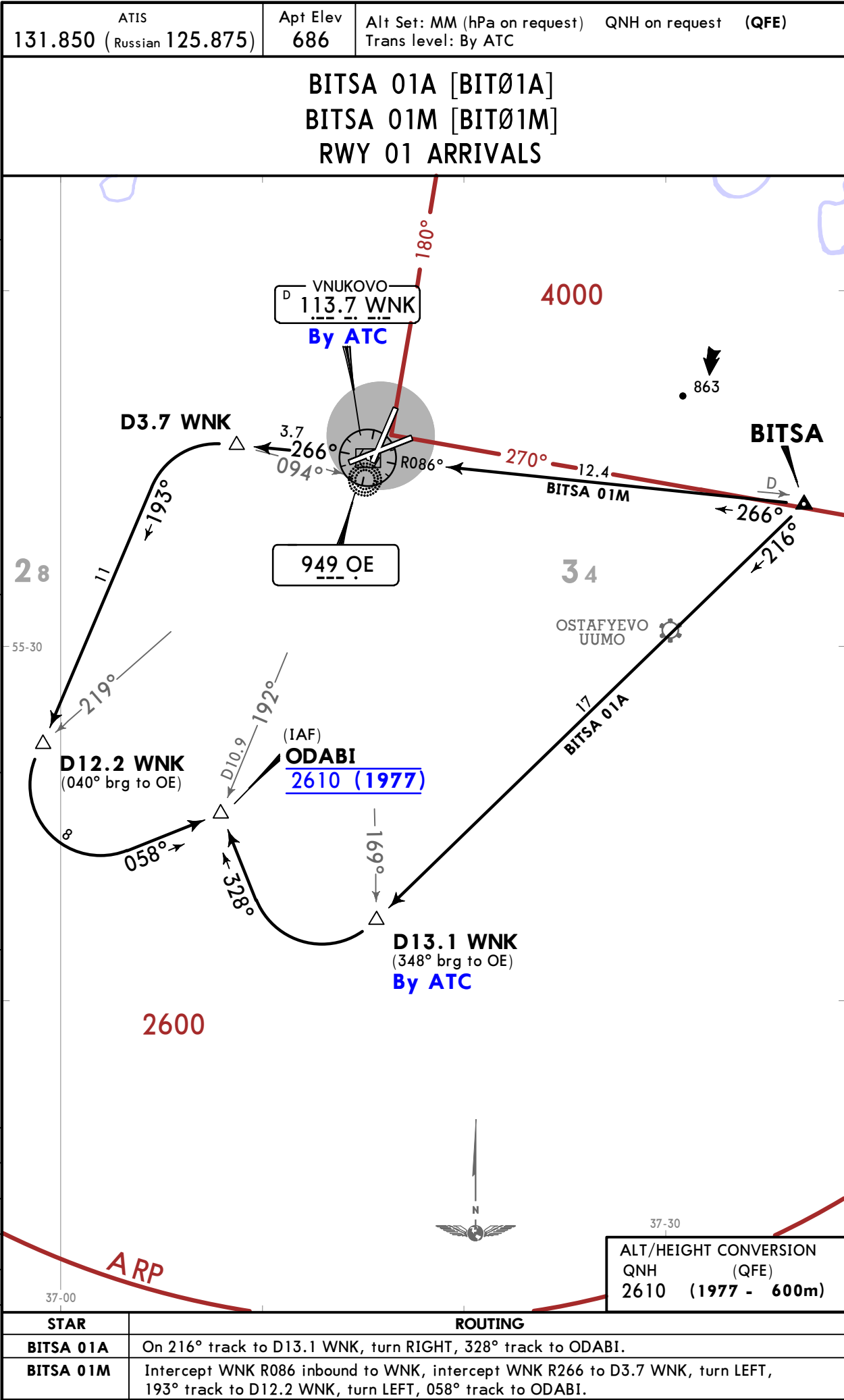
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|
| ATIS                                                                                                                                                                              |                                                   | Apt Elev                                                 |
| 131.850                                                                                                                                                                           | (Russian 125.875)                                 | 686                                                      |
| Alt Set: MM (hPa on request) QNH on request (QFE)<br>Trans level: By ATC<br>RNAV (GNSS).                                                                                          |                                                   |                                                          |
| ADAGA 4P [ADAG4P]<br>BITS4 4P [BITS4P]<br>IVANOVSKOYE 4P (UM 4P) [UM4P]<br>KLIMOVSK 4P (LO 4P) [LO4P]<br>OKLIT 4P [OKLI4P]<br>SKURYGINO 4P (DR 4P) [DR4P]<br>RWY 19 RNAV ARRIVALS |                                                   |                                                          |
| STAR                                                                                                                                                                              | ROUTING                                           |                                                          |
| ADAGA 4P                                                                                                                                                                          | ADAGA (K270; FL110+) - WW531 - KS - ANEDA (2610). |                                                          |
| BITS4 4P                                                                                                                                                                          | BITS4 - WNK - GOTMA - WW531 - KS - ANEDA (2610).  |                                                          |
| DR 4P                                                                                                                                                                             | DR - GOTMA - WW531 - KS - ANEDA (2610).           |                                                          |
| LO 4P                                                                                                                                                                             | LO - GOTMA - WW531 - KS - ANEDA (2610).           |                                                          |
| OKLIT 4P                                                                                                                                                                          | OKLIT - ANEDA (2610).                             |                                                          |
| UM 4P                                                                                                                                                                             | UM - KS - ANEDA (2610).                           |                                                          |
| BITS4                                                                                                                                                                             |                                                   | ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>2610 (1976 - 600m) |



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**JEPPESSEN**  
2 NOV 18 **10-2M** Eff 8 Nov

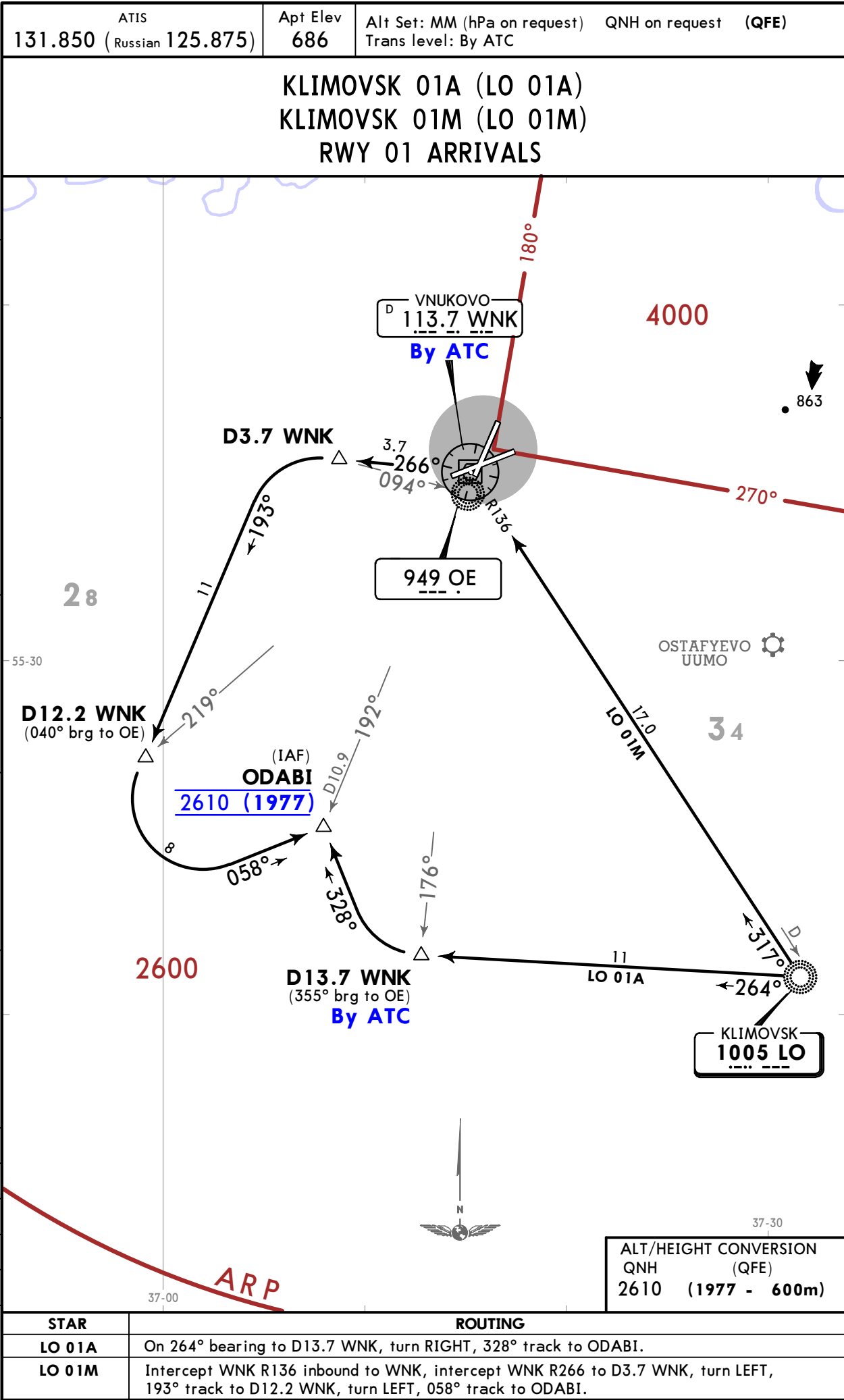
**MOSCOW, RUSSIA**  
**STAR**



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VNUKOVO

JEPPESSEN  
2 NOV 18 10-2N Eff 8 Nov

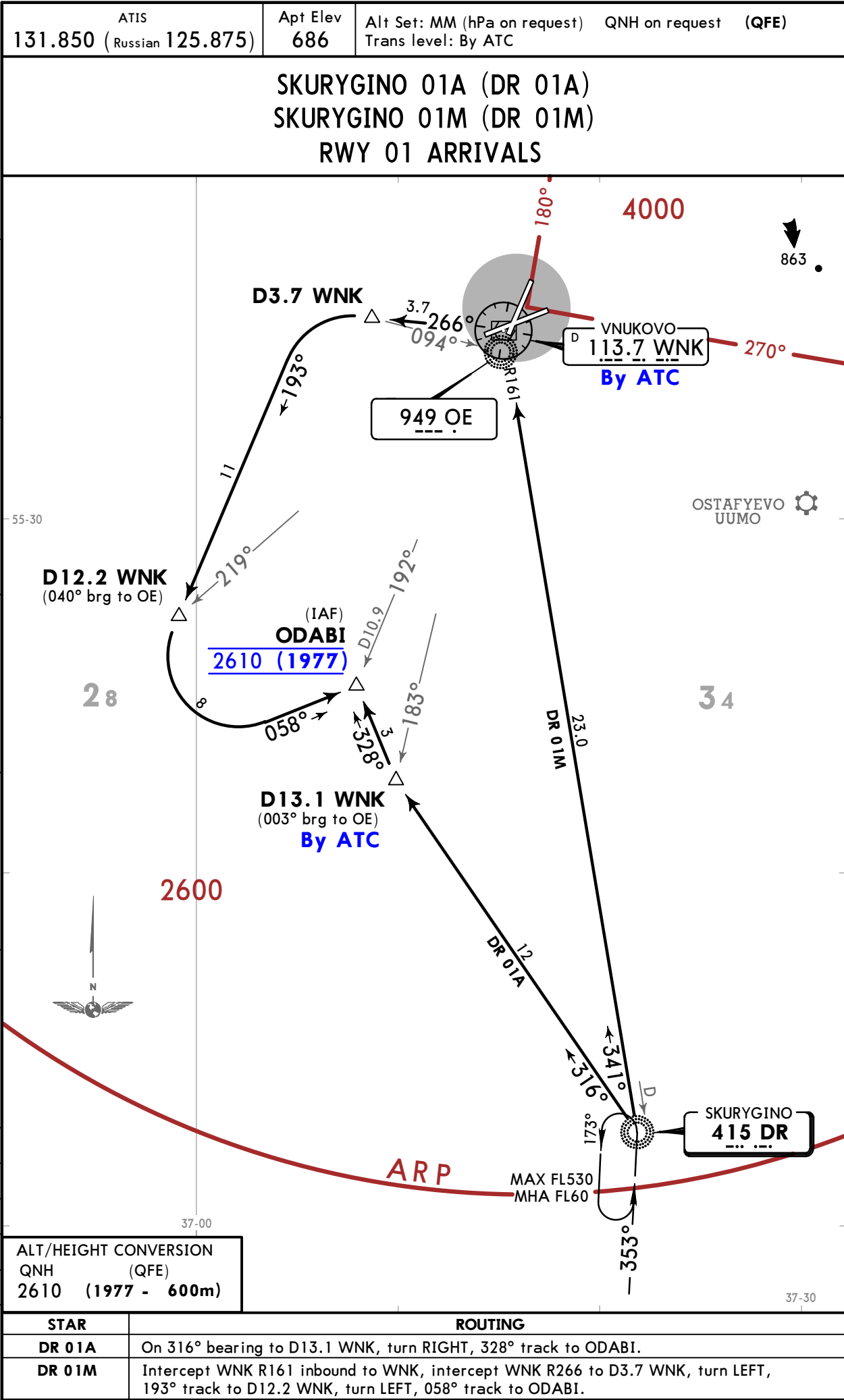
MOSCOW, RUSSIA  
STAR



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VNUKOVO

JEPPESSEN  
2 NOV 18 10-2P Eff 8 Nov

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STAR

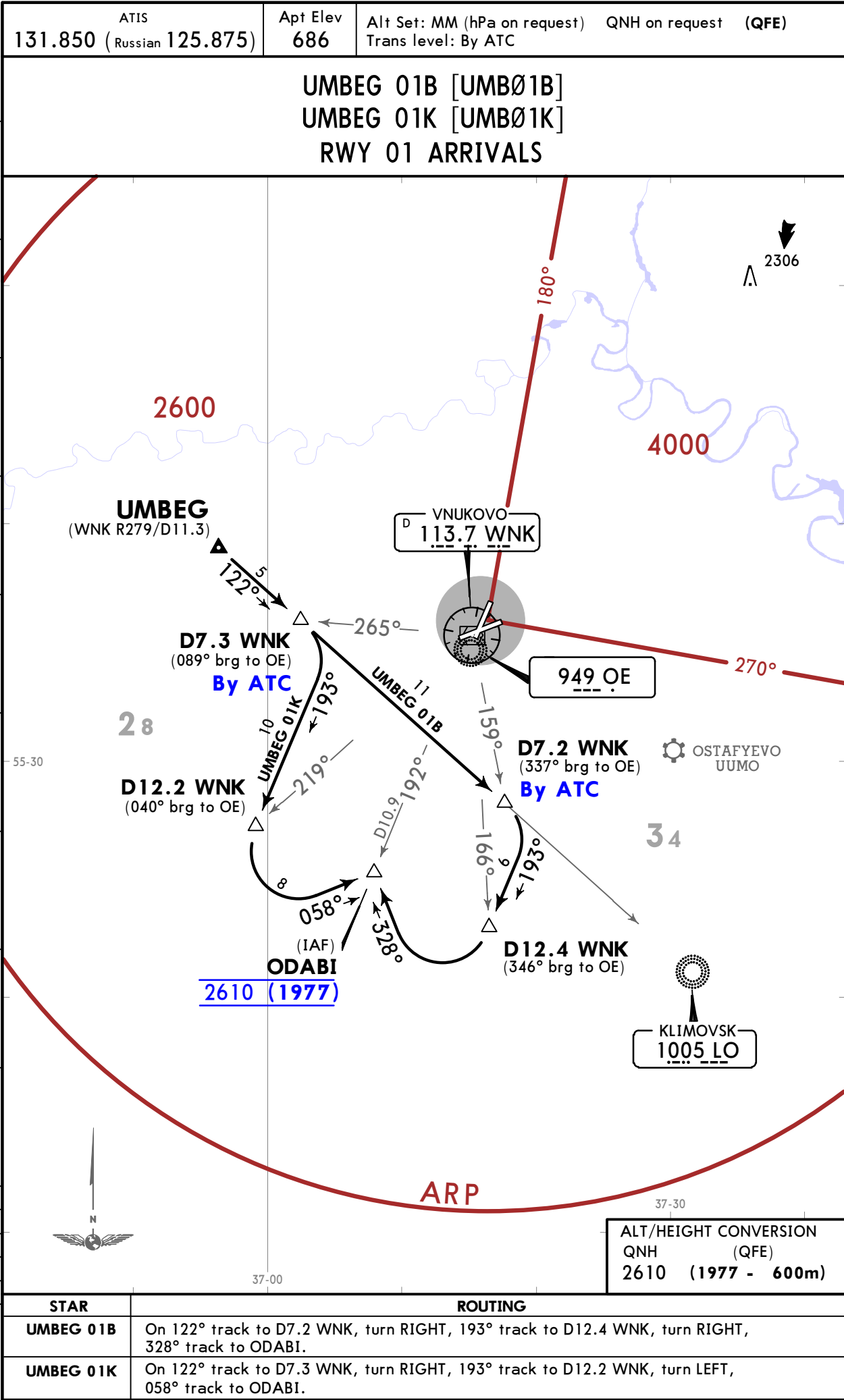




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VNUKOVO

JEPPESSEN  
2 NOV 18 10-2Q Eff 8 Nov

MOSCOW, RUSSIA  
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JEPPESSEN

MOSCOW, RUSSIA

2 NOV 18

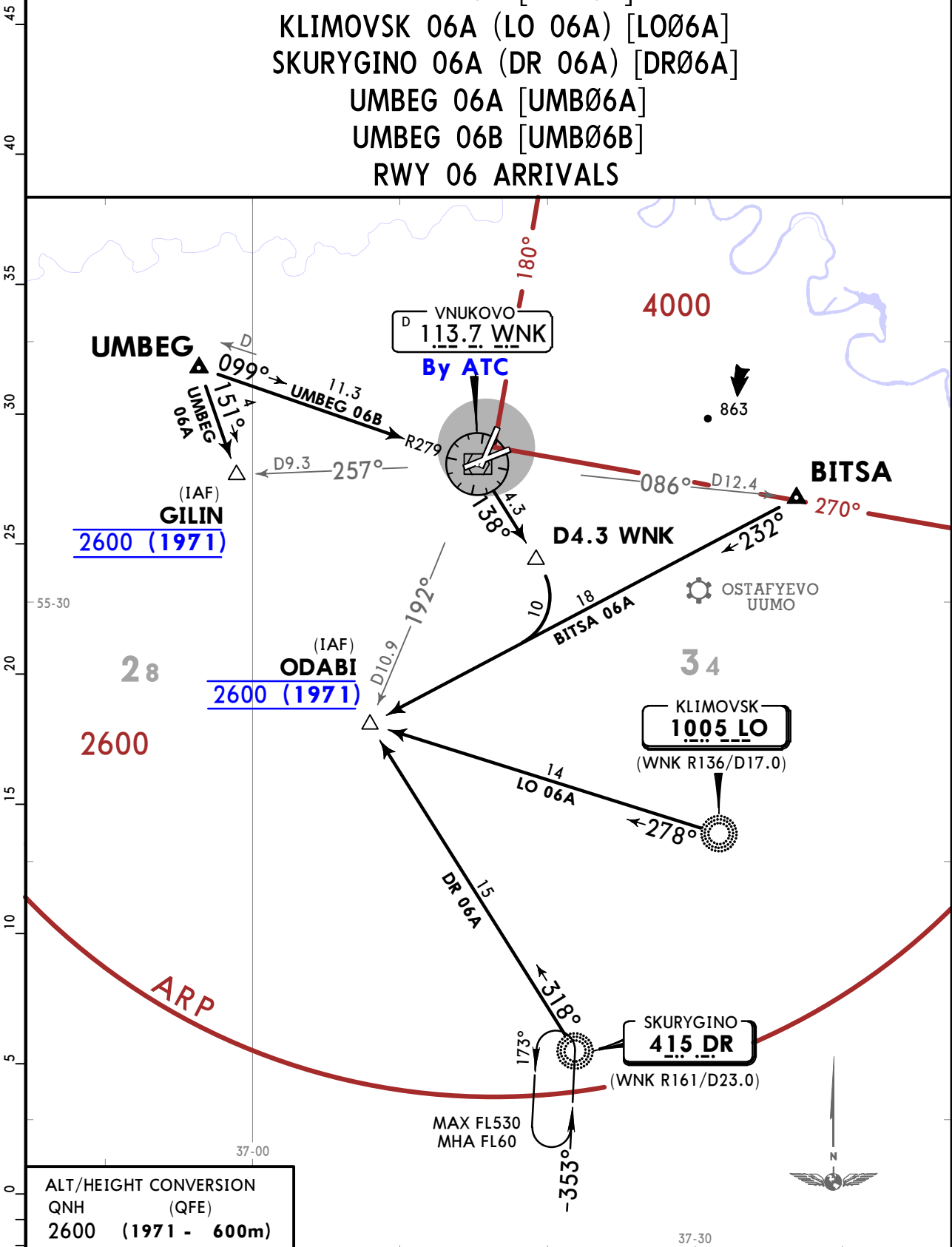
10-2S

Eff 8 Nov

STAR

ATIS 131.850 (Russian 125.875) Apt Elev 686 Alt Set: MM (hPa on request) QNH on request (QFE) Trans level: By ATC

BITSA 06A [BIT06A]  
KLIMOVSK 06A (LO 06A) [LO06A]  
SKURYGINO 06A (DR 06A) [DR06A]  
UMBEG 06A [UMB06A]  
UMBEG 06B [UMB06B]  
RWY 06 ARRIVALS

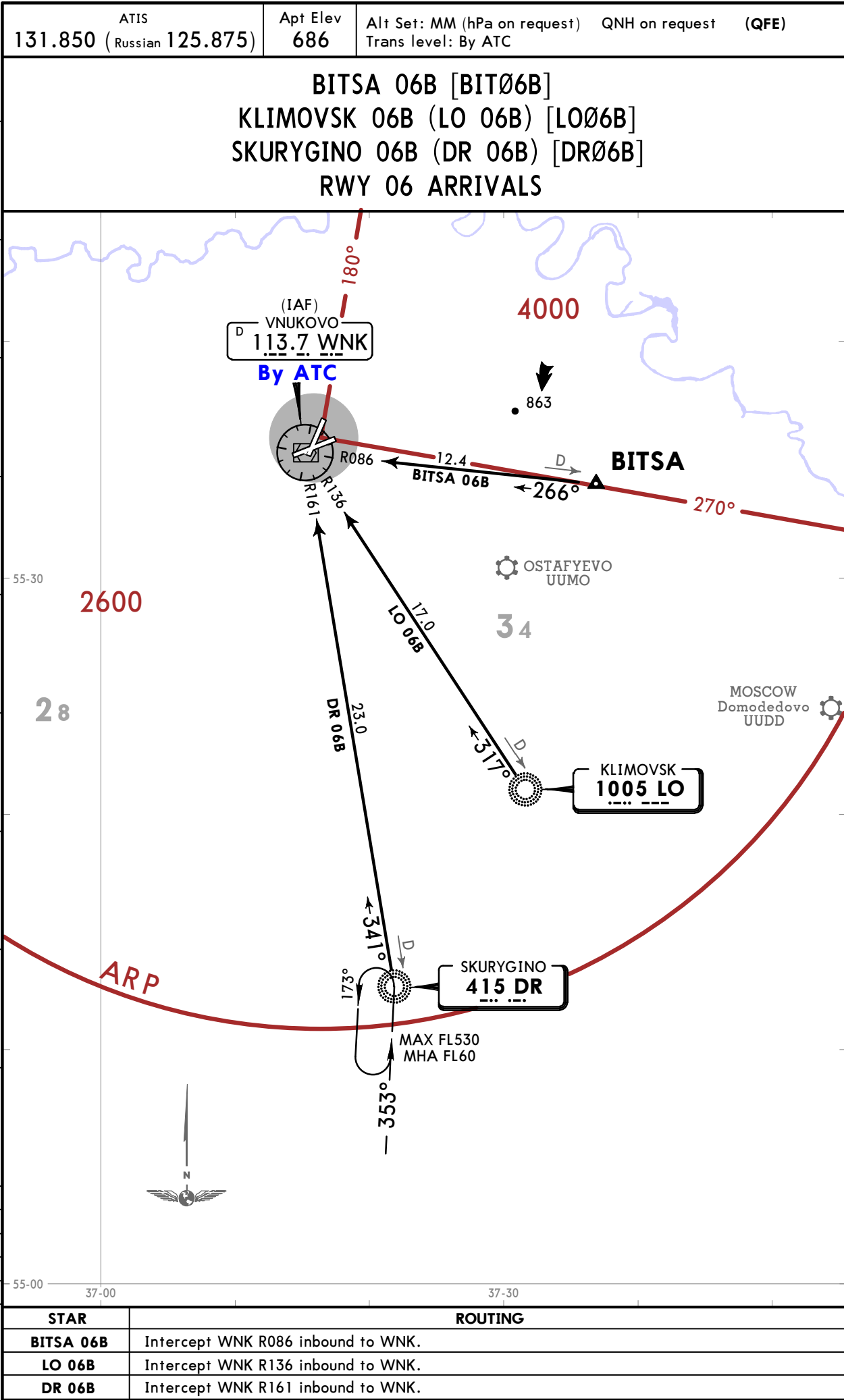


| STAR      | ROUTING                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------|
| BITSA 06A | On 232° track to ODABI.                                                                             |
| LO 06A    | On 278° bearing to ODABI.                                                                           |
| DR 06A    | On 318° bearing to ODABI.                                                                           |
| UMBEG 06A | On 151° track to GILIN.                                                                             |
| UMBEG 06B | Intercept WNK R279 inbound to WNK, intercept WNK R138 to D4.3 WNK, turn RIGHT, 232° track to ODABI. |

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JEPPESSEN  
2 NOV 18 10-2T Eff 8 Nov

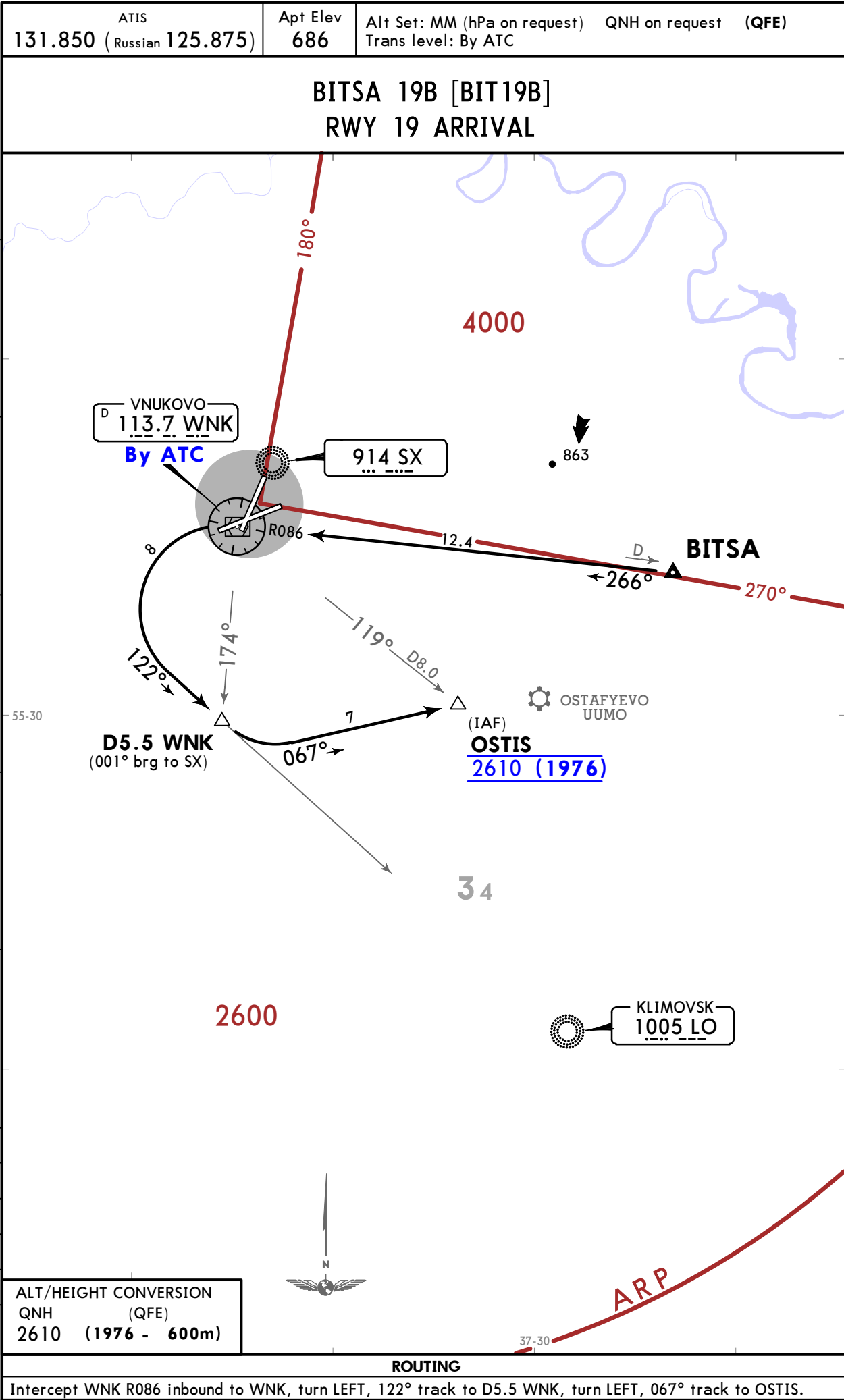
MOSCOW, RUSSIA  
STAR



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VNUKOVO

JEPPESEN  
2 NOV 18 10-2U Eff 8 Nov

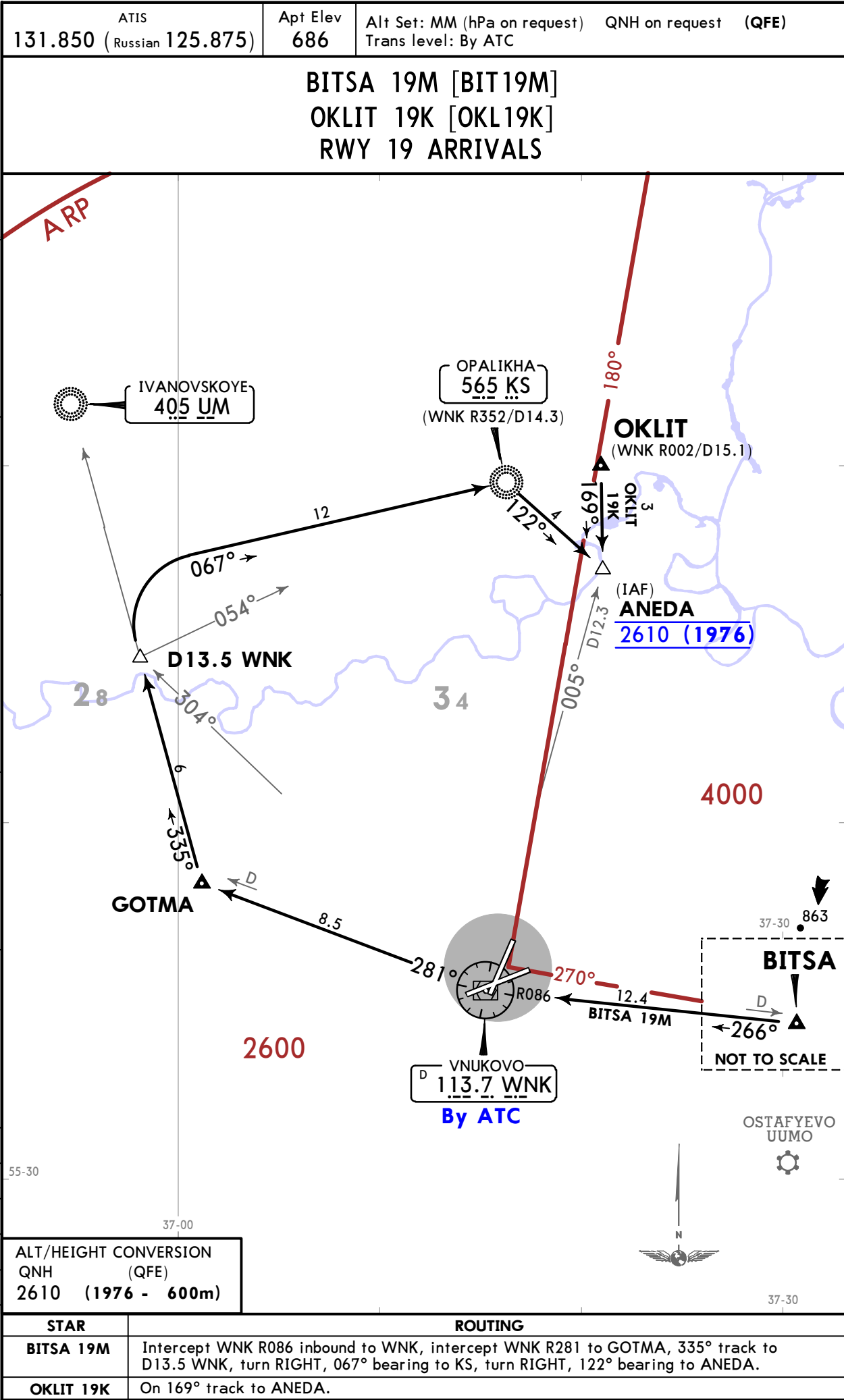
MOSCOW, RUSSIA  
STAR



UUWW/VKO  
VNUKOVO

JEPPESEN  
2 NOV 18 10-2V Eff 8 Nov

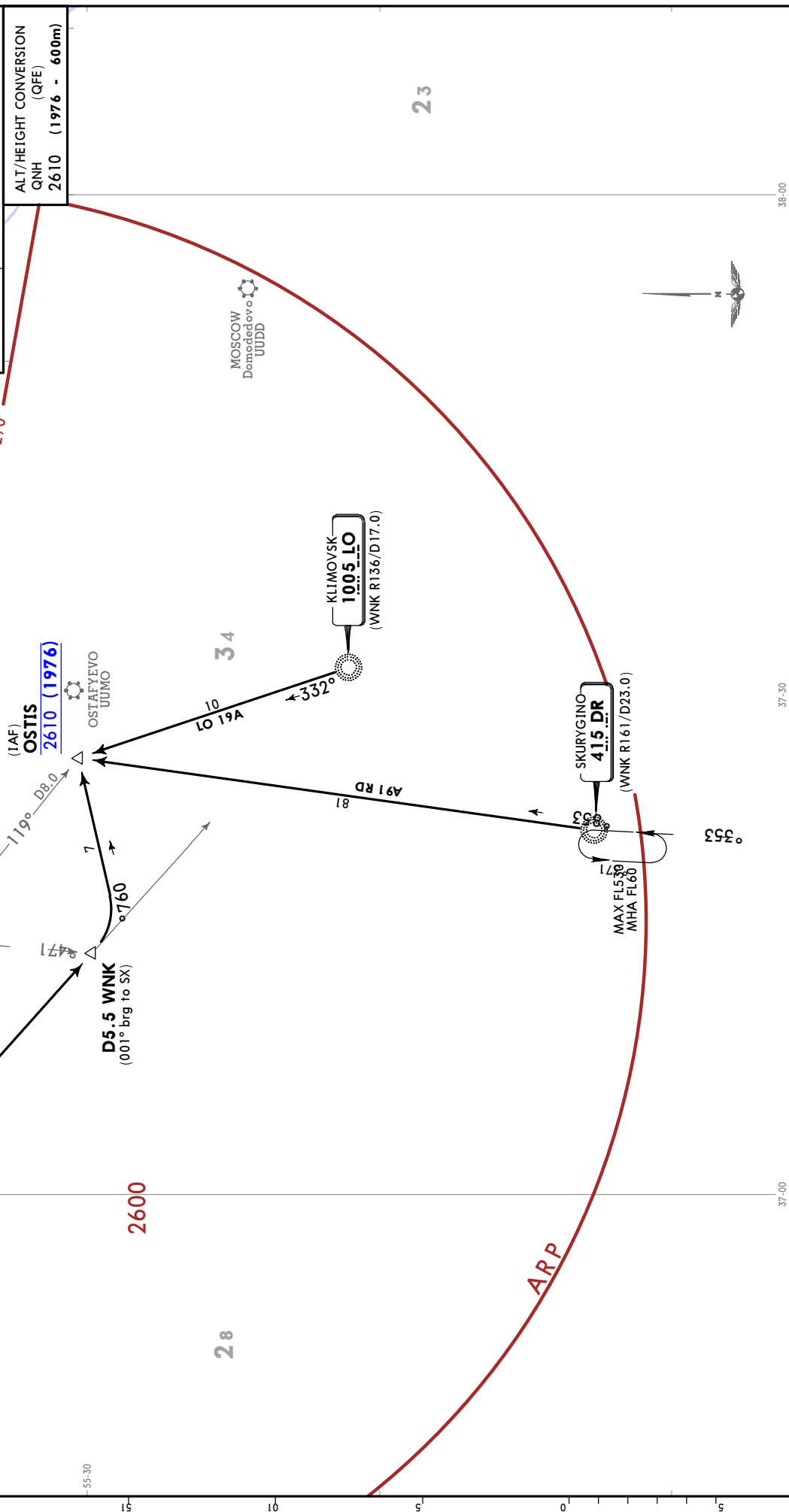
MOSCOW, RUSSIA  
STAR



**JEPPESSEN MOSCOW, RUSSIA**  
2 NOV 18 (10-2W) Eff 8 Nov

**STAR**

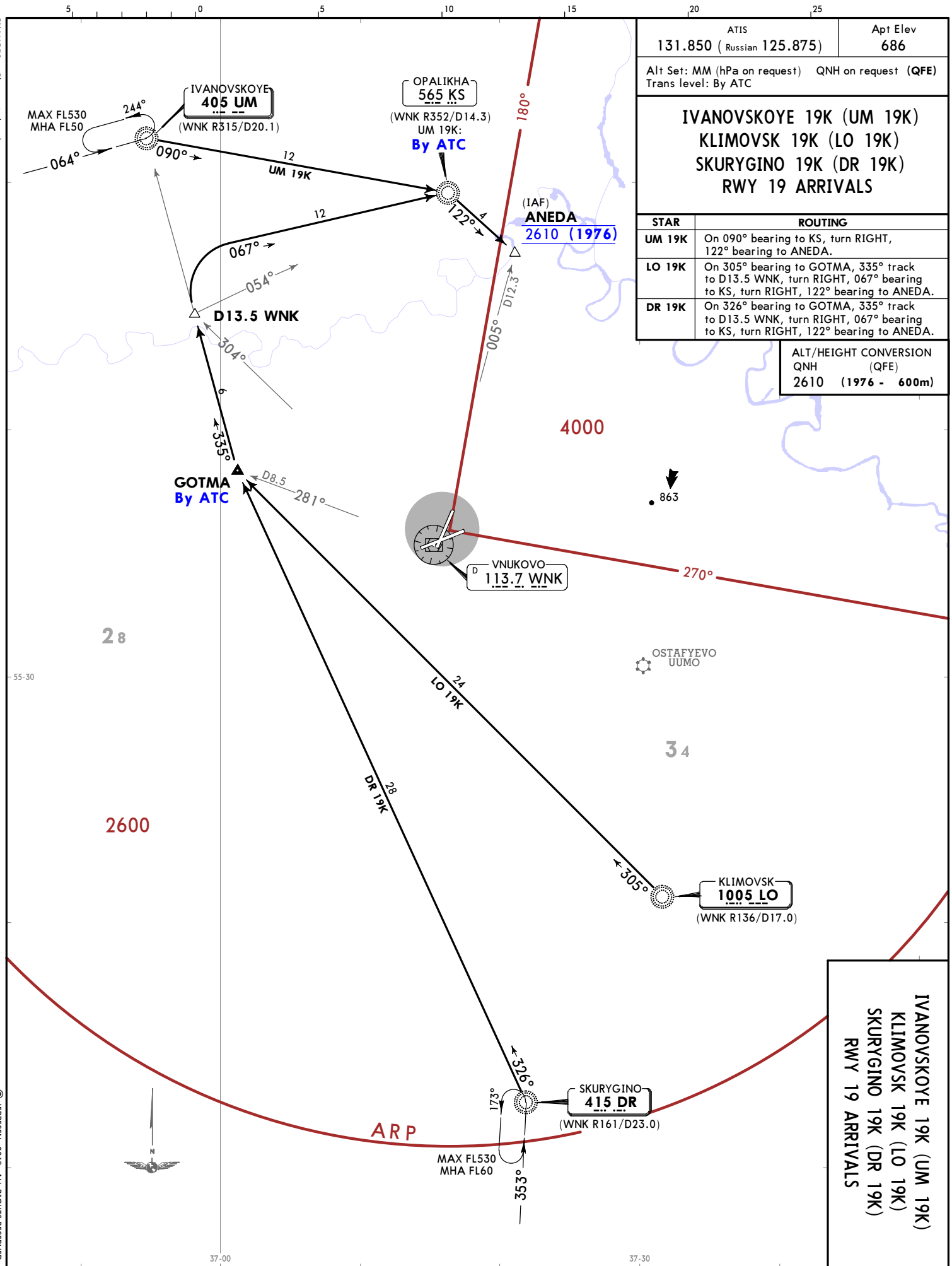
|                                |                                                            |                    |     |
|--------------------------------|------------------------------------------------------------|--------------------|-----|
| ATIS                           | 131.850 (Russian 125.875)                                  | Apt Elev           | 686 |
| Alt Set: MM (hPa on request)   | QNH on request (QFE)                                       |                    |     |
| Trans level: By ATC            |                                                            |                    |     |
| KLIMOVSK 19A (LO 19A) [LO19A]  |                                                            |                    |     |
| SKURYGINO 19A (DR 19A) [DR19A] |                                                            |                    |     |
| UMBEG 19A [UMB19A]             |                                                            |                    |     |
| RWY 19 ARRIVALS                |                                                            |                    |     |
| STAR                           | ROUTING                                                    |                    |     |
| LO 19A                         | On 332° bearing to OSTIS.                                  |                    |     |
| DR 19A                         | On 358° bearing to OSTIS.                                  |                    |     |
| UMBEG 19A                      | On 122° track to D5.5 WNK, turn LEFT, 067° track to OSTIS. |                    |     |
| ALT/HEIGHT CONVERSION          |                                                            |                    |     |
| QNH (QFE)                      |                                                            | 2610 (1976 - 600m) |     |



**UWW/VKO**  
VNUKOV

CHANGES: Chart reindexed.

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|                                                                                                |                                                                                                                       |          |     |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------|-----|
| ATIS                                                                                           | 131.850 ( Russian 125.875)                                                                                            | Apt Elev | 686 |
| Alt Set: MM (hPa on request)    QNH on request (QFE)<br>Trans level: By ATC                    |                                                                                                                       |          |     |
| IVANOVSKOYE 19K (UM 19K)<br>KLIMOVSK 19K (LO 19K)<br>SKURYGINO 19K (DR 19K)<br>RWY 19 ARRIVALS |                                                                                                                       |          |     |
| STAR                                                                                           | ROUTING                                                                                                               |          |     |
| UM 19K                                                                                         | On 090° bearing to KS, turn RIGHT, 122° bearing to ANEDA.                                                             |          |     |
| LO 19K                                                                                         | On 305° bearing to GOTMA, 335° track to D13.5 WNK, turn RIGHT, 067° bearing to KS, turn RIGHT, 122° bearing to ANEDA. |          |     |
| DR 19K                                                                                         | On 326° bearing to GOTMA, 335° track to D13.5 WNK, turn RIGHT, 067° bearing to KS, turn RIGHT, 122° bearing to ANEDA. |          |     |
| ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>2610 (1976 - 600m)                                       |                                                                                                                       |          |     |

UUNW/VKO  
VNUKOVVO  
JEPPESEN  
2 NOV 18  
10-2X  
EFF 8 Nov  
MOSCOW, RUSSIA  
STAR

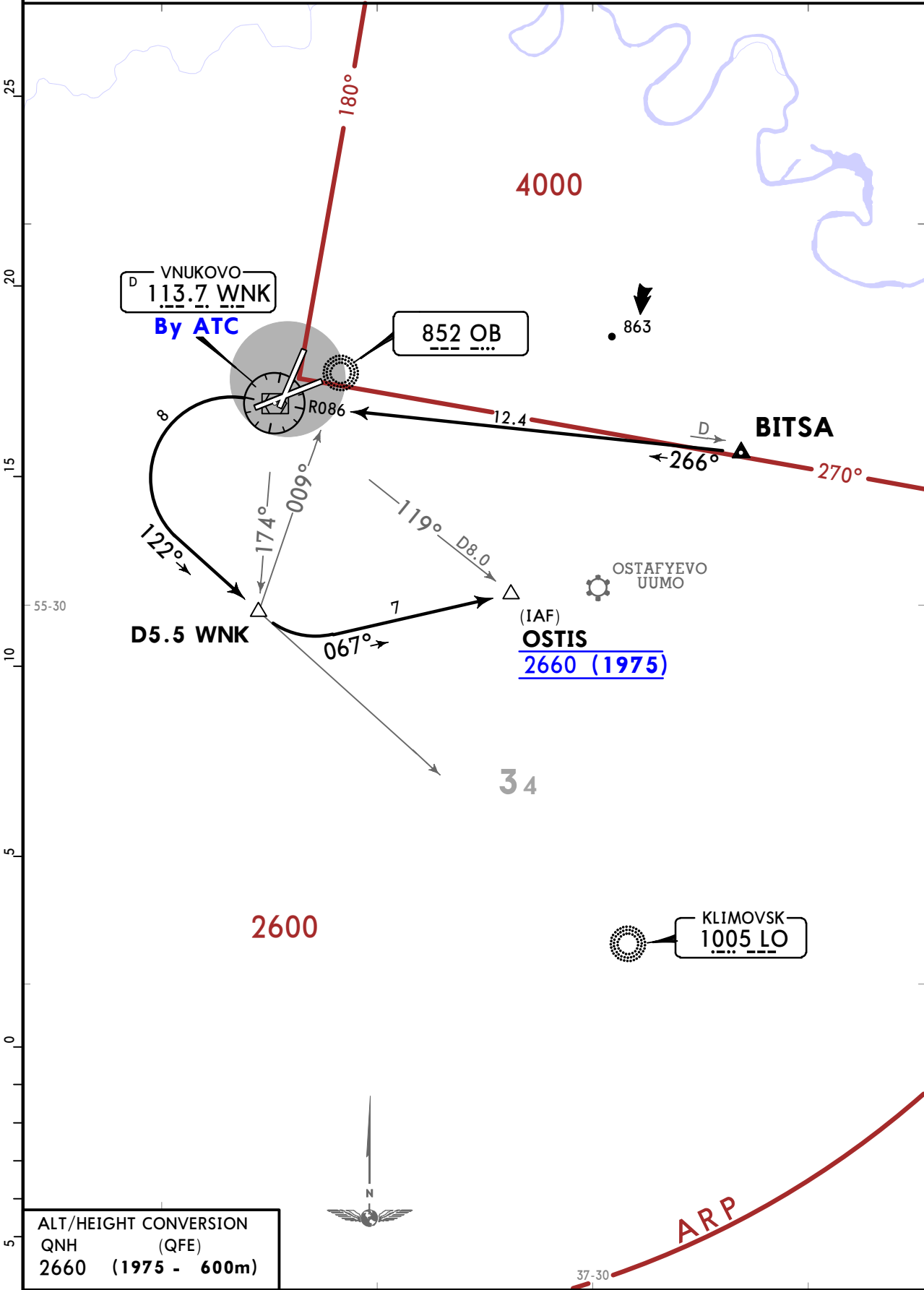
UUWW/VKO  
VNUKOVO

JEPPESEN  
2 NOV 18 10-2X1 Eff 8 Nov

MOSCOW, RUSSIA  
STAR

|                                   |                 |                                                     |                      |
|-----------------------------------|-----------------|-----------------------------------------------------|----------------------|
| ATIS<br>131.850 (Russian 125.875) | Apt Elev<br>686 | Alt Set: MM (hPa on request)<br>Trans level: By ATC | QNH on request (QFE) |
|-----------------------------------|-----------------|-----------------------------------------------------|----------------------|

BITSA 24B [BIT24B]  
RWY 24 ARRIVAL



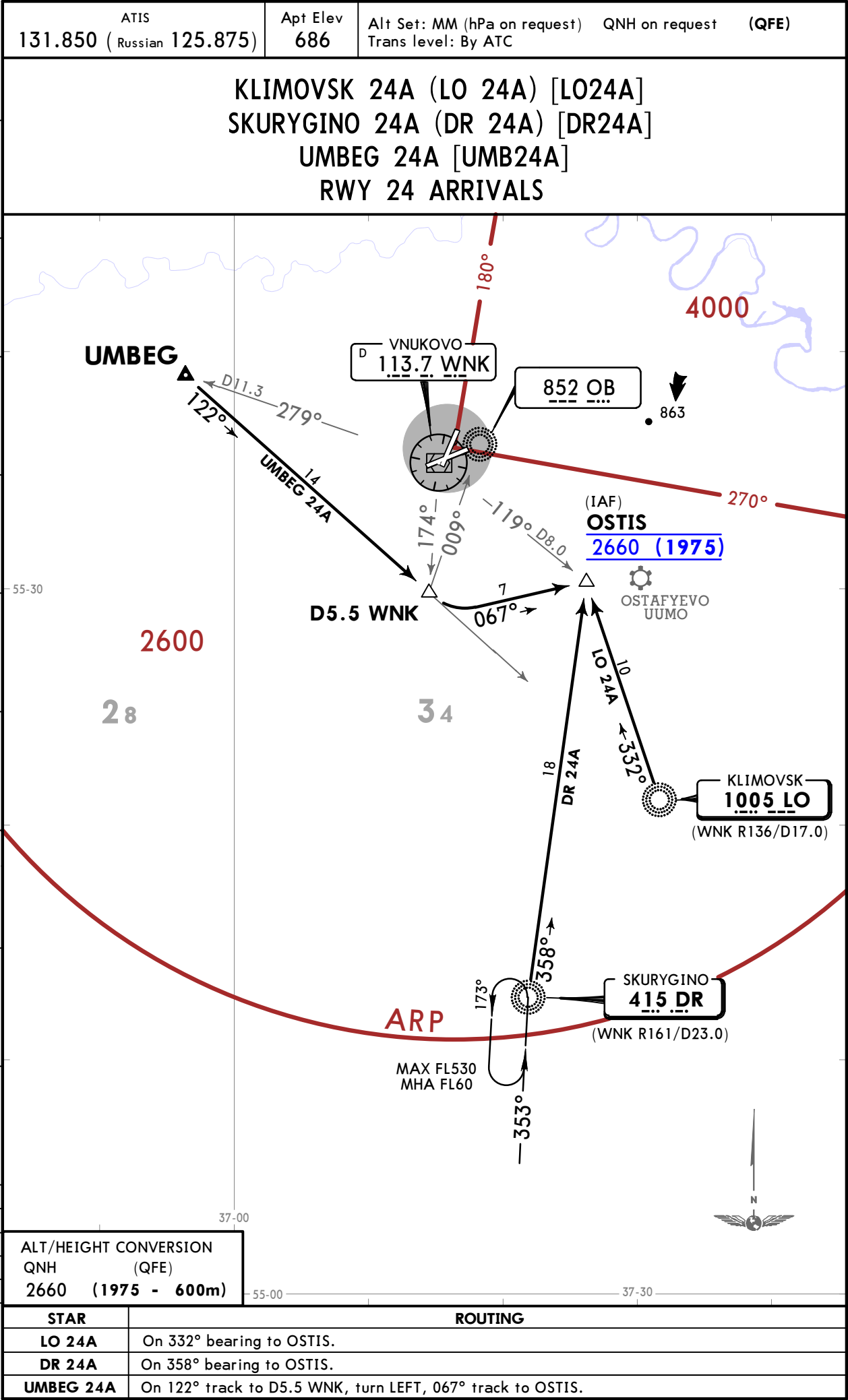
|                       |
|-----------------------|
| ALT/HEIGHT CONVERSION |
| QNH (QFE)             |
| 2660 (1975 - 600m)    |

ROUTING  
Intercept WNK R086 inbound to WNK, turn LEFT, 122° track to D5.5 WNK, turn LEFT, 067° track to OSTIS.

UUWW/VKO  
VNUKOVO

JEPPESSEN  
2 NOV 18 10-2X2 Eff 8 Nov

MOSCOW, RUSSIA  
STAR





UUWW/VKO  
VNUKOVO

 **JEPPESEN**  
2 NOV 18 **10-3** **Eff 8 Nov**

**MOSCOW, RUSSIA**  
**RNAV SID**

| RNAV SID DESIGNATION                                    | REFER TO CHART |
|---------------------------------------------------------|----------------|
| DEDUM 1D, IVANOVSKOYE (UM) 1D                           | 10-3B          |
| DEDUM 2D, 2E,<br>IVANOVSKOYE (UM) 2D, 2E                | 10-3C          |
| DEDUM 3D, 3E,<br>IVANOVSKOYE (UM) 3D, 3E                | 10-3D          |
| DEDUM 4D, IVANOVSKOYE (UM) 4D                           | 10-3E          |
| BITSA 1D, 1E, KLIMOVSK (LO) 1D, 1E                      | 10-3F          |
| BITSA 2D, 2E, 2F,<br>KLIMOVSK (LO) 2D, 2E, 2F, OKLIT 2D | 10-3G          |
| BITSA 3D, 3E,<br>KLIMOVSK (LO) 3D, 3E, OKLIT 3D         | 10-3H          |
| BITSA 4D, 4E,<br>KLIMOVSK (LO) 4D, 4E, OKLIT 4E         | 10-3J          |
| BADNI 1E, KAMENKA (WZ) 1E                               | 10-3K          |
| BADNI 2D, 2E, KAMENKA (WZ) 2D, 2E                       | 10-3L          |
| BADNI 3D, 3E, KAMENKA (WZ) 3D, 3E                       | 10-3M          |
| BADNI 4D, KAMENKA (WZ) 4D                               | 10-3N          |

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

UUWW/VKO  
VNUKOVO

JEPPESEN

2 NOV 18

(10-3A)

Eff 8 Nov

MOSCOW, RUSSIA

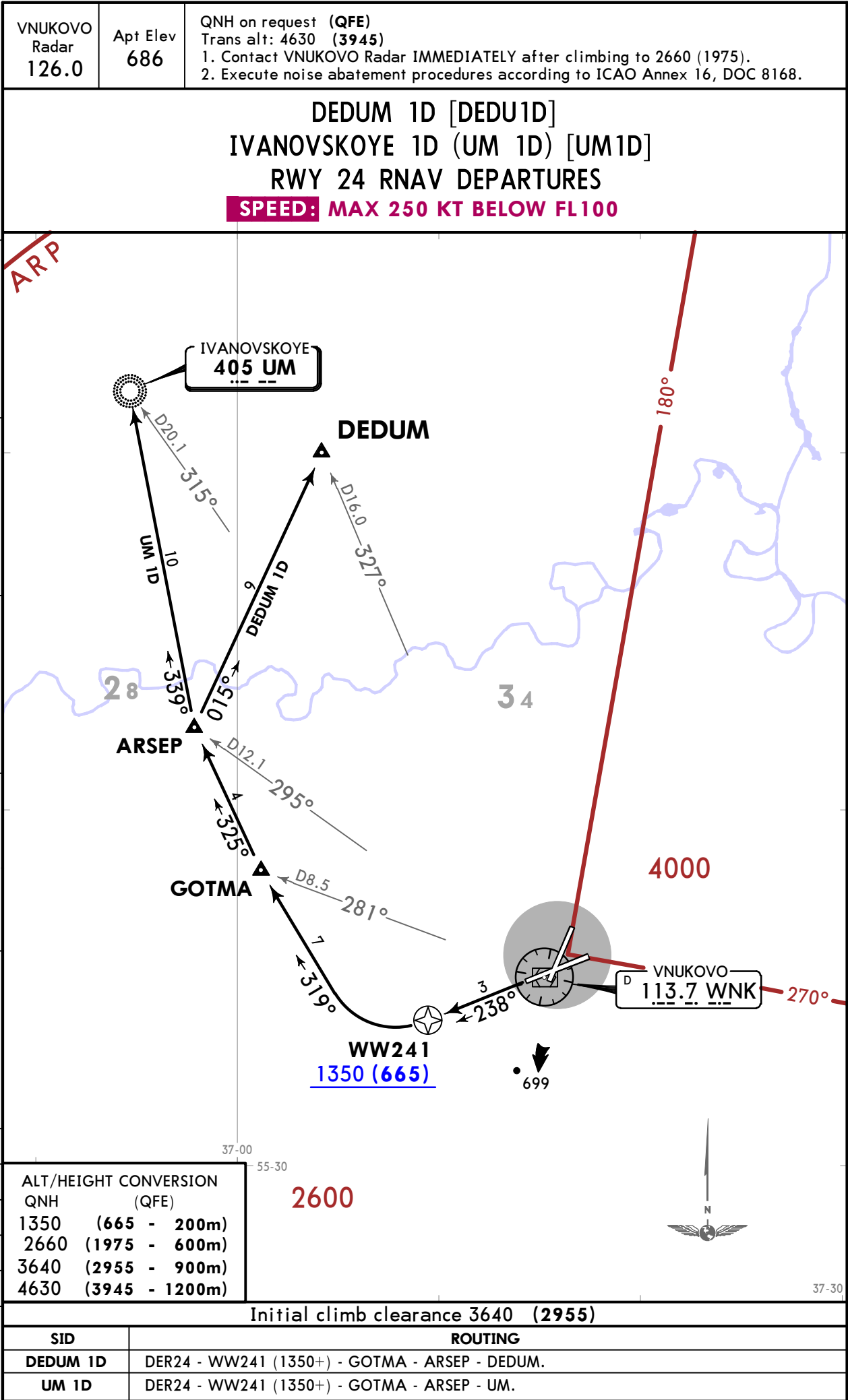
SID

| SID DESIGNATION                                            | REFER TO CHART |
|------------------------------------------------------------|----------------|
| DEDUM 01D, 01E,<br>IVANOVSKOYE (UM) 01D, 01E               | 10-3P          |
| DEDUM 06D, 06E,<br>IVANOVSKOYE (UM) 06D, 06E               | 10-3Q          |
| DEDUM 19D, IVANOVSKOYE (UM) 19D                            | 10-3S          |
| DEDUM 24D, IVANOVSKOYE (UM) 24D                            | 10-3T          |
| BITSA 01D, 01E,<br>KLIMOVSK (LO) 01D, 01E, OKLIT 01D       | 10-3U          |
| BITSA 06D, 06E, 06F                                        | 10-3V          |
| KLIMOVSK (LO) 06D, 06E, 06F,<br>OKLIT 06D                  | 10-3V1         |
| BITSA 19D, 19E,<br>KLIMOVSK (LO) 19D, 19E, OKLIT 19E       | 10-3W          |
| BITSA 24D, 24E,<br>KLIMOVSK (LO) 24D, 24E                  | 10-3X          |
| BADNI 01D, 01E,<br>KAMENKA (WZ) 01D, 01E                   | 10-3X1         |
| BADNI 06D, 06E,<br>KAMENKA (WZ) 06D, 06E                   | 10-3X2         |
| BADNI 19D, KAMENKA (WZ) 19D                                | 10-3X3         |
| BADNI 24E, KAMENKA (WZ) 24E                                | 10-3X4         |
|                                                            |                |
| TRANSITION DESIGNATION                                     | REFER TO CHART |
| NERL 1W, 2W, RILPO 1W, 2W<br>TIMIG 1W, 2W                  | 10-3X5         |
| CHERUSTI (SF) 1W, NOGTI 1W, RELTO 3W<br>TIKBI 3W, VENEV 1W | 10-3X6         |
| ADETI 1W, ROLUN 1W, SODRU 2W,<br>SUGIR 2W                  | 10-3X7         |
| BELAG 1W, KARMANOVO (BG) 1W,<br>OBELU 1W                   | 10-3X8         |
|                                                            |                |

UUWW/VKO  
VNUKOVO

JEPPESSEN  
3 NOV 17 10-3B Eff 9 Nov

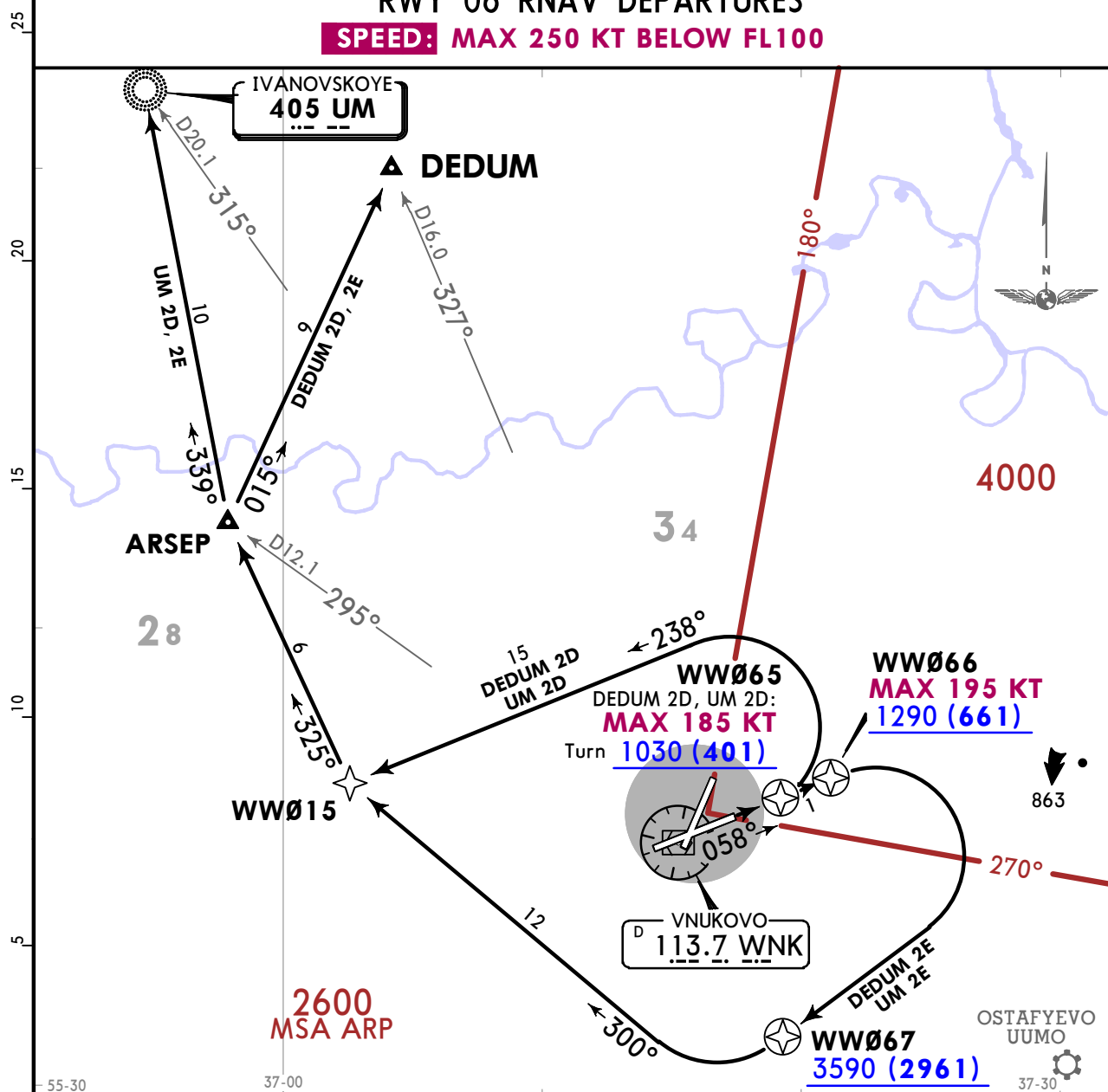
MOSCOW, RUSSIA  
RNAV SID



QNH on request **(QFE)**  
Trans alt: 4630 **(4001)**

1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2600 (1971).
2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.

**SPEED: MAX 250 KT BELOW FL100**



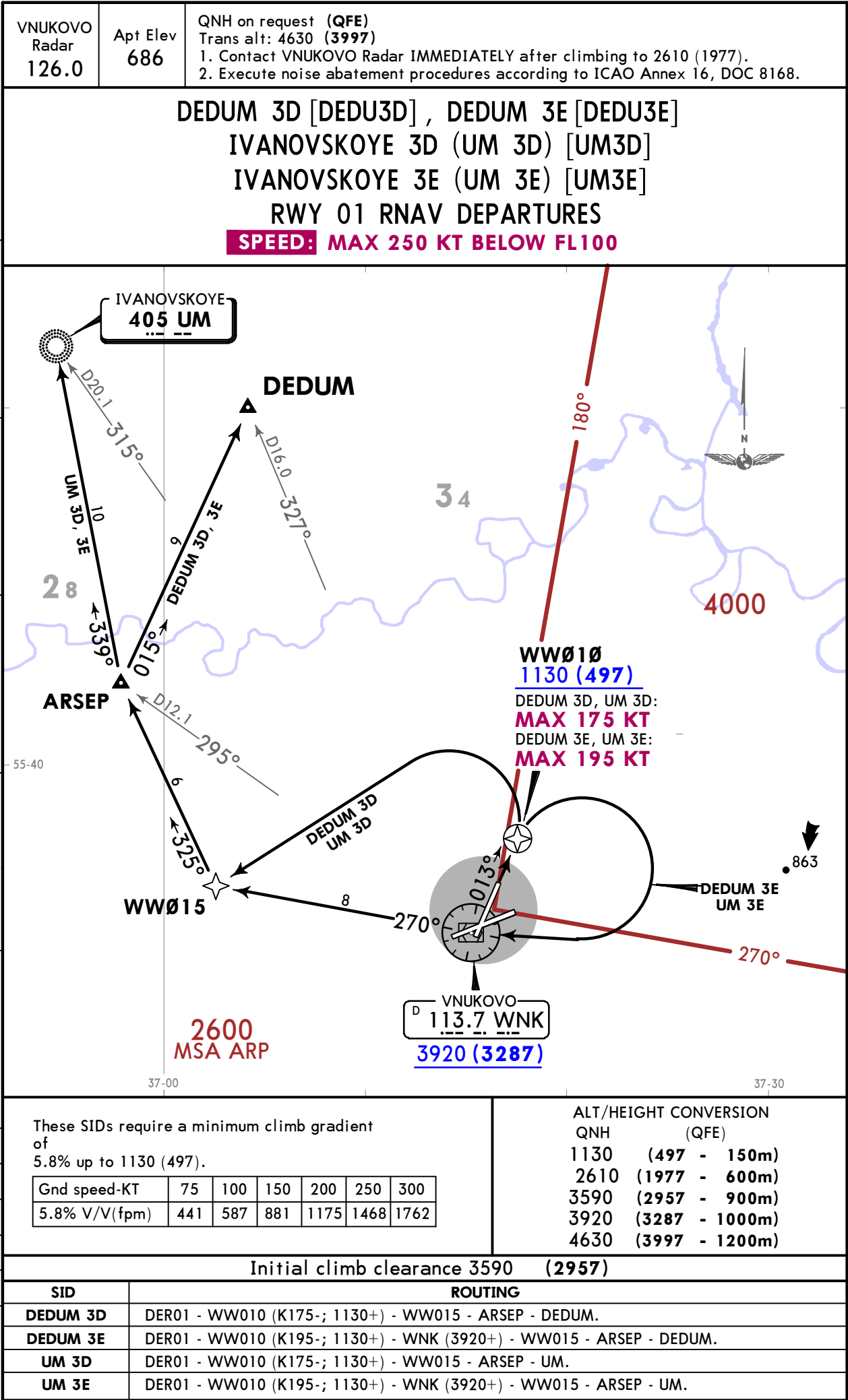
| ALT/HEIGHT CONVERSION |                |
|-----------------------|----------------|
| QNH                   | (QFE)          |
| 1030                  | (401 - 120m)   |
| 1290                  | (661 - 200m)   |
| 2600                  | (1971 - 600m)  |
| 3590                  | (2961 - 900m)  |
| 4630                  | (4001 - 1200m) |

| SID               | ROUTING                                                               |
|-------------------|-----------------------------------------------------------------------|
| <b>DEDUM 2D ①</b> | DER06 - WW065 (K185-; 1030+) - WW015 - ARSEP - DEDUM.                 |
| <b>DEDUM 2E</b>   | DER06 - WW066 (K195-; 1290+) - WW067 (3590+) - WW015 - ARSEP - DEDUM. |
| <b>UM 2D ①</b>    | DER06 - WW065 (K185-; 1030+) - WW015 - ARSEP - UM.                    |
| <b>UM 2E</b>      | DER06 - WW066 (K195-; 1290+) - WW067 (3590+) - WW015 - ARSEP - UM.    |
| <b>①</b> By ATC   |                                                                       |

UUWW/VKO  
VNUKOVO

JEPPESSEN  
3 NOV 17 (10-3D) Eff 9 Nov

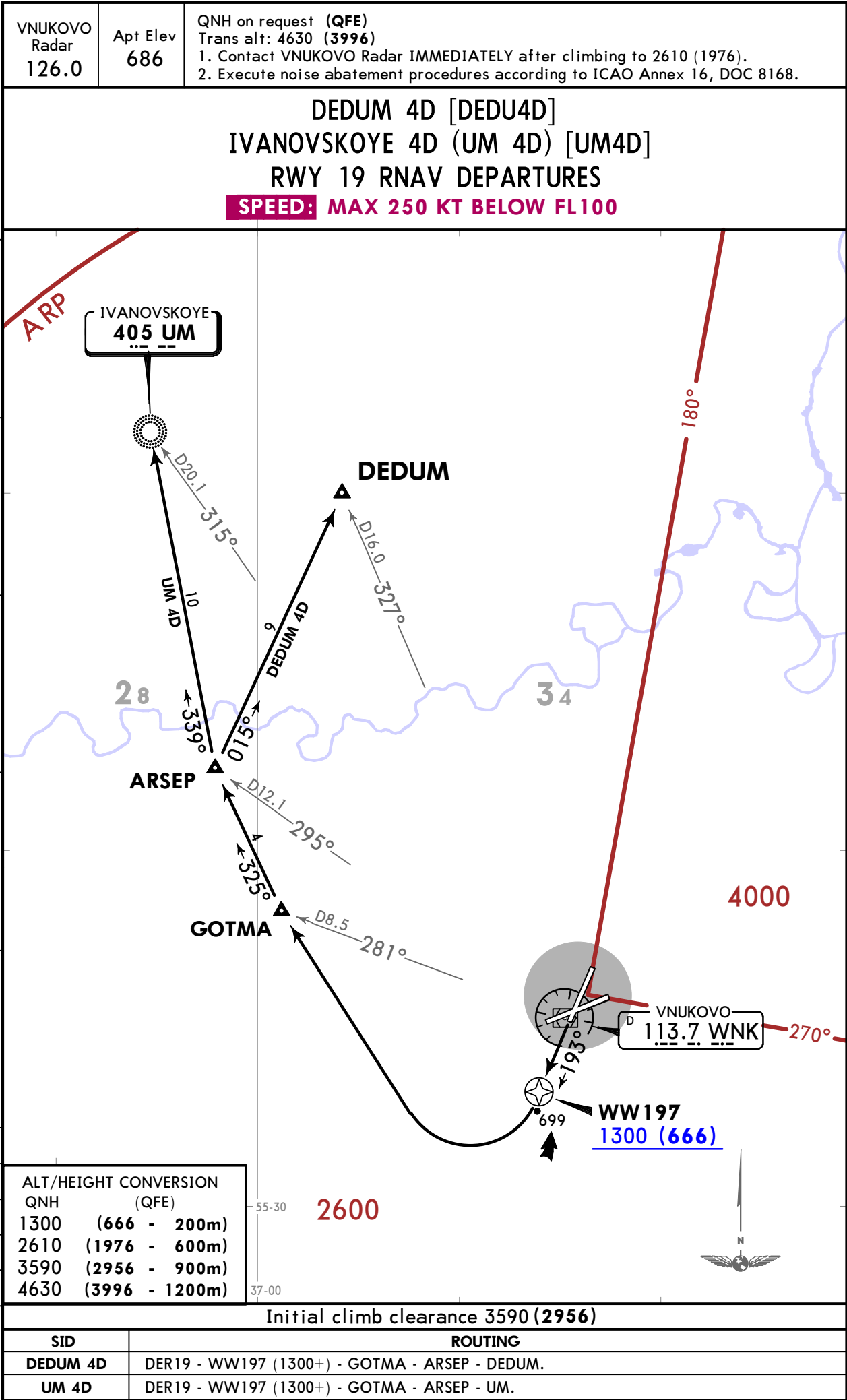
MOSCOW, RUSSIA  
RNAV SID



UUWW/VKO  
VNUKOVO

JEPPESSEN  
3 NOV 17 10-3E Eff 9 Nov

MOSCOW, RUSSIA  
RNAV SID



JEPPesen MOSCOW, RUSSIA

3 NOV 17 10-3F

Eff 9 Nov

RNAV SID

VNUKOV Radar

126.0

Apt Elev  
686

QNH on request (QFE)  
Trans alt: 4630 (3945)

1. Contact VNUKOV Radar IMMEDIATELY after  
climbing to 2660 (1975).

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

BITSA 1D [BITS1D]

BITSA 1E [BITS1E]

KLIMOVSK 1D (LO 1D) [LO1D]

KLIMOVSK 1E (LO 1E) [LO1E]

RWY 24 RNAV DEPARTURES

SPEED: MAX 250 KT BELOW FL100

ALT/HEIGHT CONVERSION

QNH (QFE)

1350 (665 - 200m)

2660 (1975 - 600m)

3640 (2955 - 900m)

3970 (3285 - 1000m)

4630 (3945 - 1200m)

Initial climb clearance 3640 (2955)

SID

ROUTING

BITSA 1D

DER24 - WW241 (K215-; 1350+) -  
WNK (3970+) - BITSA.

BITSA 1E  
By ATC

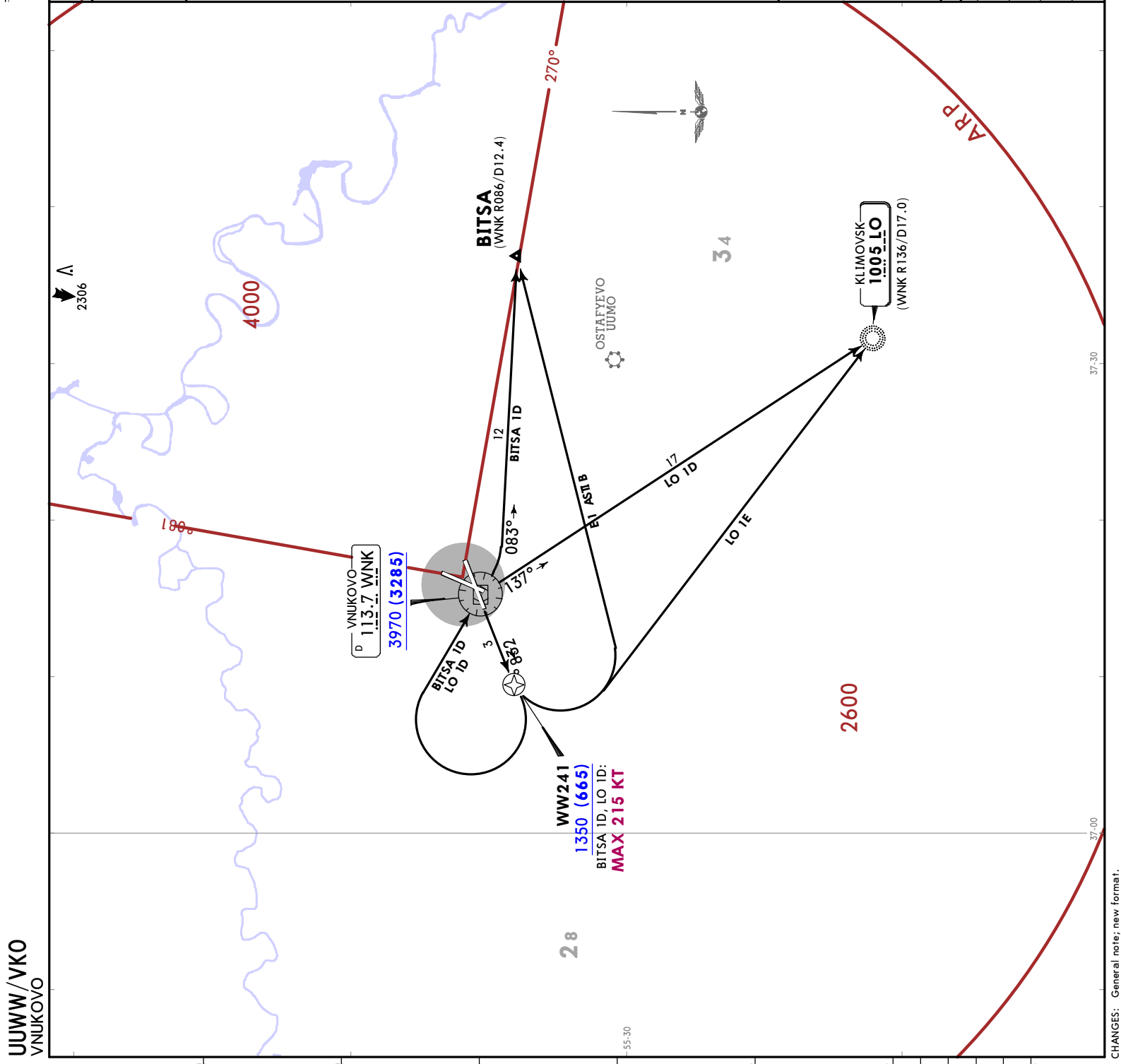
DER24 - WW241 (1350+) - BITSA.

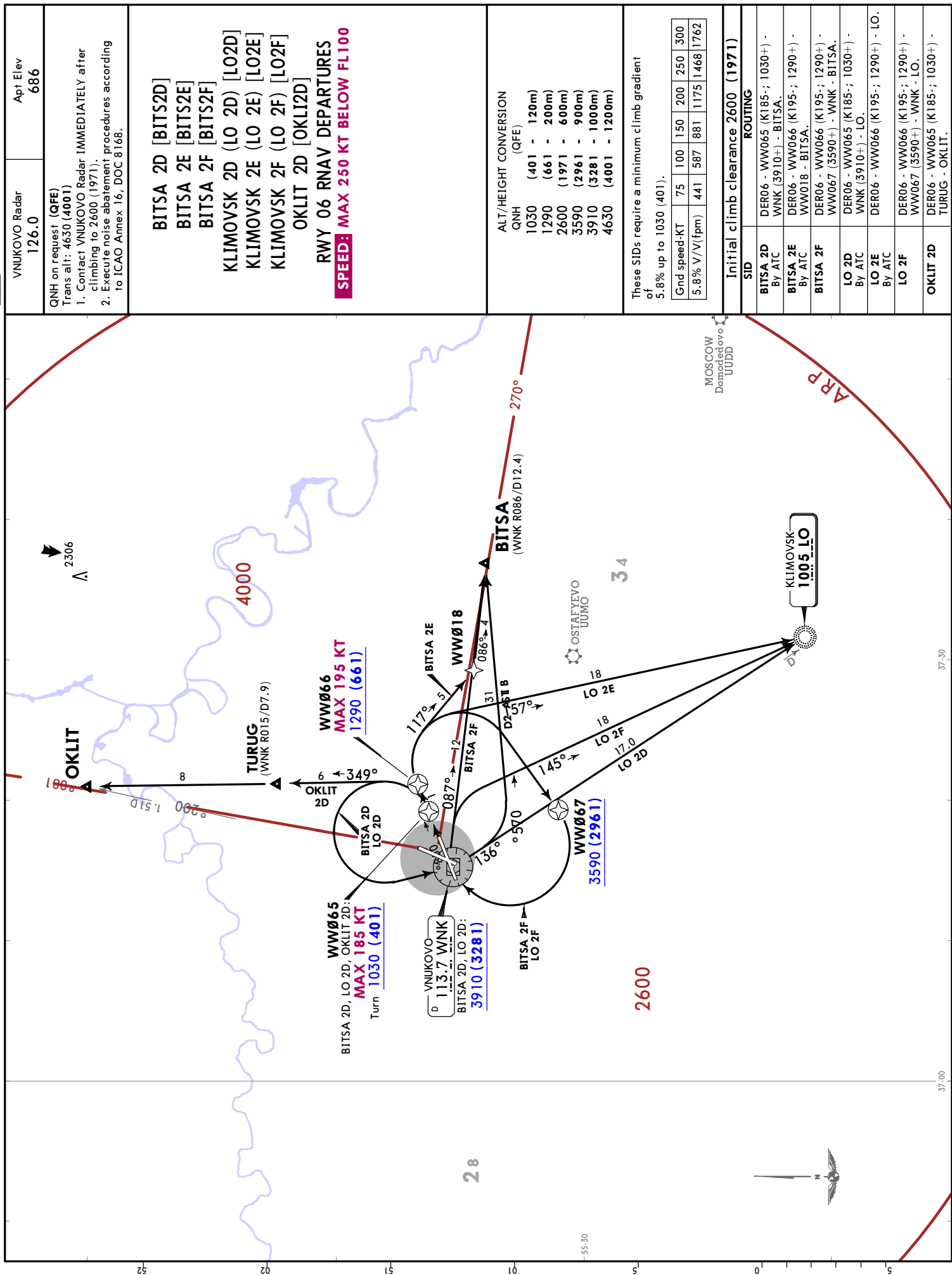
LO 1D

DER24 - WW241 (K215-; 1350+) -  
WNK (3970+) - LO.

LO 1E  
By ATC

DER24 - WW241 (1350+) - LO.





|                                                                                                                                                                                                                                          |       |                                                              |     |      |      |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------|-----|------|------|------|
| VNUKOV Radar                                                                                                                                                                                                                             | 126.0 | Apt Elev                                                     | 686 |      |      |      |
| QNH on request (QFE)<br>Trans alt: 4630 (4001)<br>1. Contact VNUKOV Radar IMMEDIATELY after climbing to 2600 (1971).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.                                      |       |                                                              |     |      |      |      |
| BITSAs 2D [BITS2D]<br>BITSAs 2E [BITS2E]<br>BITSAs 2F [BITS2F]<br>KLIMOVSK 2D (LO 2D) [LO2D]<br>KLIMOVSK 2E (LO 2E) [LO2E]<br>KLIMOVSK 2F (LO 2F) [LO2F]<br>OKLIT 2D [OKLI2D]<br>RWY 06 RNAV DEPARTURES<br>SPEED: MAX 250 KT BELOW FL100 |       |                                                              |     |      |      |      |
| ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>1030 (401 - 120m)<br>1290 (661 - 200m)<br>2600 (1971 - 600m)<br>3590 (2961 - 900m)<br>3910 (3281 - 1000m)<br>4630 (4001 - 1200m)                                                                   |       |                                                              |     |      |      |      |
| These SIDs require a minimum climb gradient of 5.8% up to 1030 (401).                                                                                                                                                                    |       |                                                              |     |      |      |      |
| Gnd speed-KT                                                                                                                                                                                                                             | 75    | 100                                                          | 150 | 200  | 250  | 300  |
| 5.8% V/V(fpm)                                                                                                                                                                                                                            | 441   | 587                                                          | 881 | 1175 | 1468 | 1762 |
| Initial climb clearance 2600 (1971)                                                                                                                                                                                                      |       |                                                              |     |      |      |      |
| ROUTING                                                                                                                                                                                                                                  |       |                                                              |     |      |      |      |
| BITSAs 2D By ATC                                                                                                                                                                                                                         |       | DER06 - WW065 (K185-; 1030+) - WNK (3910+) - BITSAs.         |     |      |      |      |
| BITSAs 2E By ATC                                                                                                                                                                                                                         |       | DER06 - WW066 (K195-; 1290+) - WW018 - BITSAs.               |     |      |      |      |
| BITSAs 2F By ATC                                                                                                                                                                                                                         |       | DER06 - WW066 (K195-; 1290+) - WW067 (3590+) - WNK - BITSAs. |     |      |      |      |
| LO 2D By ATC                                                                                                                                                                                                                             |       | DER06 - WW065 (K185-; 1030+) - WNK (3910+) - LO.             |     |      |      |      |
| LO 2E By ATC                                                                                                                                                                                                                             |       | DER06 - WW066 (K195-; 1290+) - LO.                           |     |      |      |      |
| LO 2F By ATC                                                                                                                                                                                                                             |       | DER06 - WW066 (K195-; 1290+) - LO.                           |     |      |      |      |
| OKLIT 2D By ATC                                                                                                                                                                                                                          |       | DER06 - WW066 (K195-; 1290+) - WW067 (3590+) - WNK - LO.     |     |      |      |      |
| OKLIT 2D By ATC                                                                                                                                                                                                                          |       | DER06 - WW065 (K185-; 1030+) - TURUG - OKLIT.                |     |      |      |      |



3 NOV 17

10-3H

Eff 9 Nov

RNAV SID

JEYPESEN MOSCOW, RUSSIA

UUNW/VKO

VNUKOVO

VNUKOVO Radar

126.0

Apt Elev

686

QNH on request (QFE)

Trans alt: 4630 (3997)

1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2610 (1977).

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

BITSA 3D [BITS3D]

BITSA 3E [BITS3E]

KLIMOVSK 3D (LO 3D) [LO3D]

KLIMOVSK 3E (LO 3E) [LO3E]

OKLIT 3D [OKLI3D]

RWY 01 RNAV DEPARTURES

SPEED: MAX 250 KT BELOW FL100

ALT/HEIGHT CONVERSION

QNH (QFE)

1130 (497 - 150m)

2610 (1977 - 600m)

3590 (2957 - 900m)

3920 (3287 - 1000m)

4630 (3997 - 1200m)

These SIDs require minimum climb gradients of

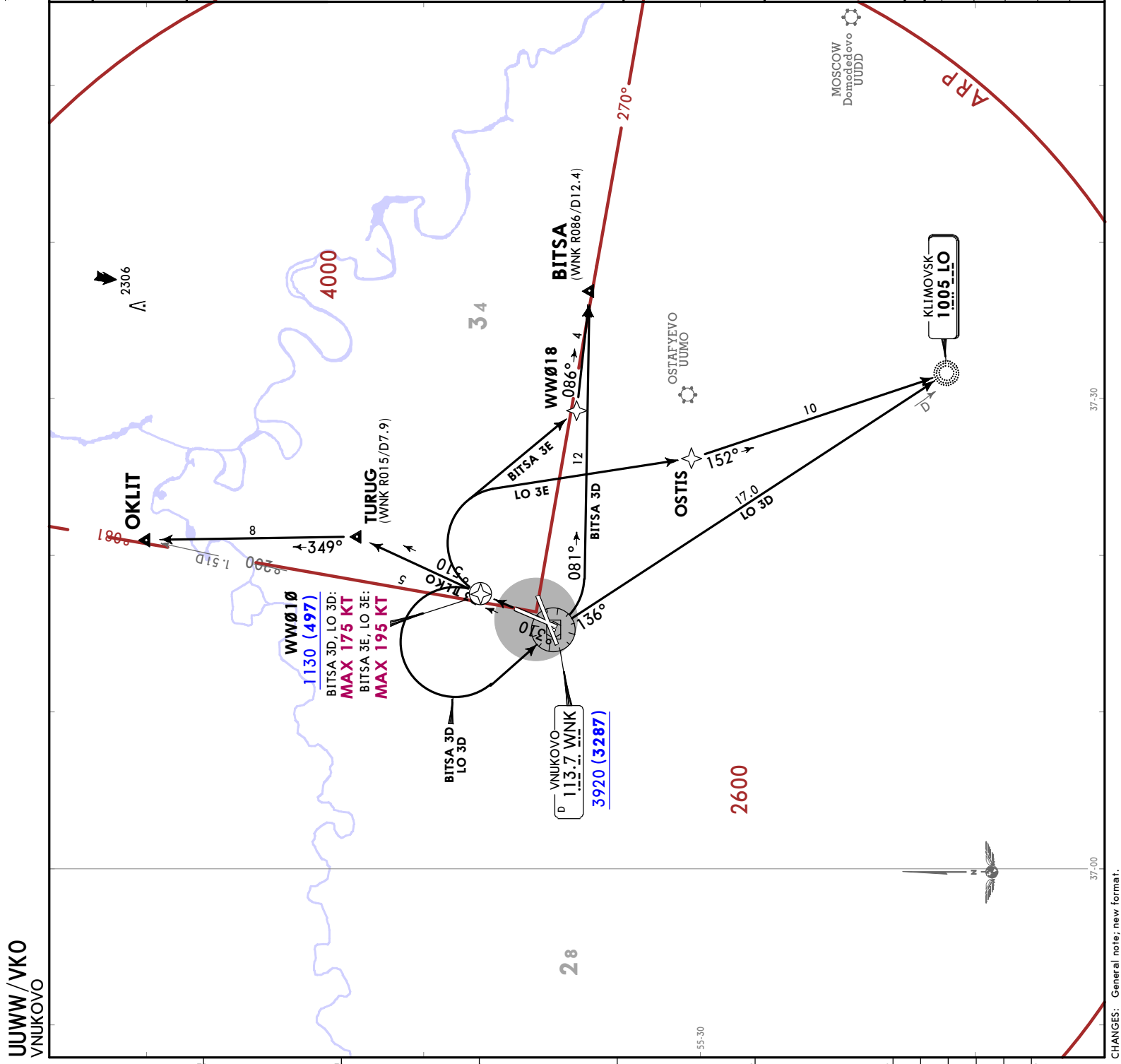
BITSA 3D, LO 3D: 4.8% up to 3920 (3287) at WNK.

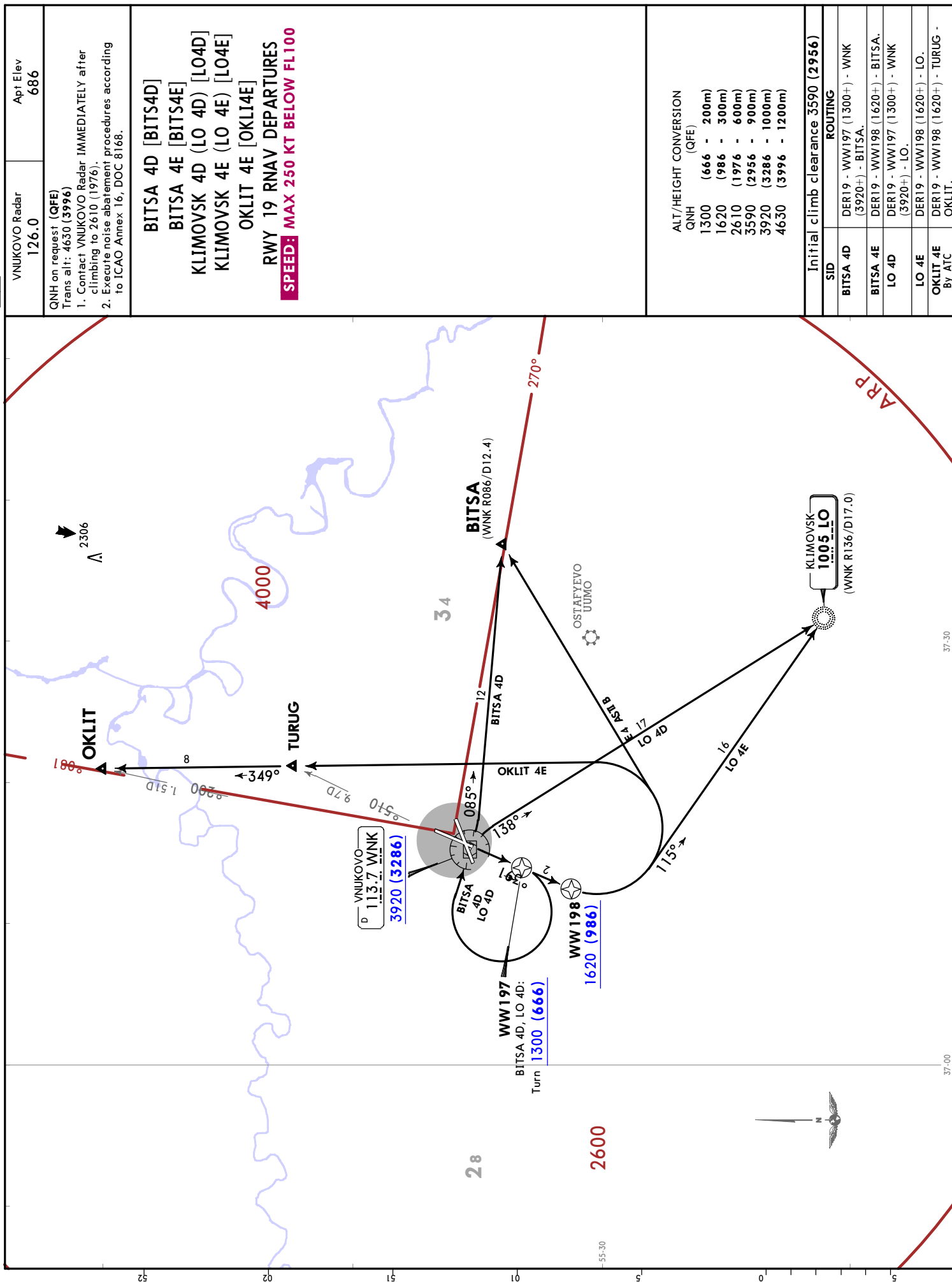
BITSA 3E, LO 3E, OKLIT 3D: 5.8% up to 1130 (497).

|               |     |     |     |      |      |      |
|---------------|-----|-----|-----|------|------|------|
| Gnd speed-KT  | 75  | 100 | 150 | 200  | 250  | 300  |
| 5.8% V/V(fpm) | 441 | 587 | 881 | 1175 | 1468 | 1762 |
| 4.8% V/V(fpm) | 365 | 486 | 729 | 972  | 1215 | 1458 |

Initial climb clearance 3590 (2957)

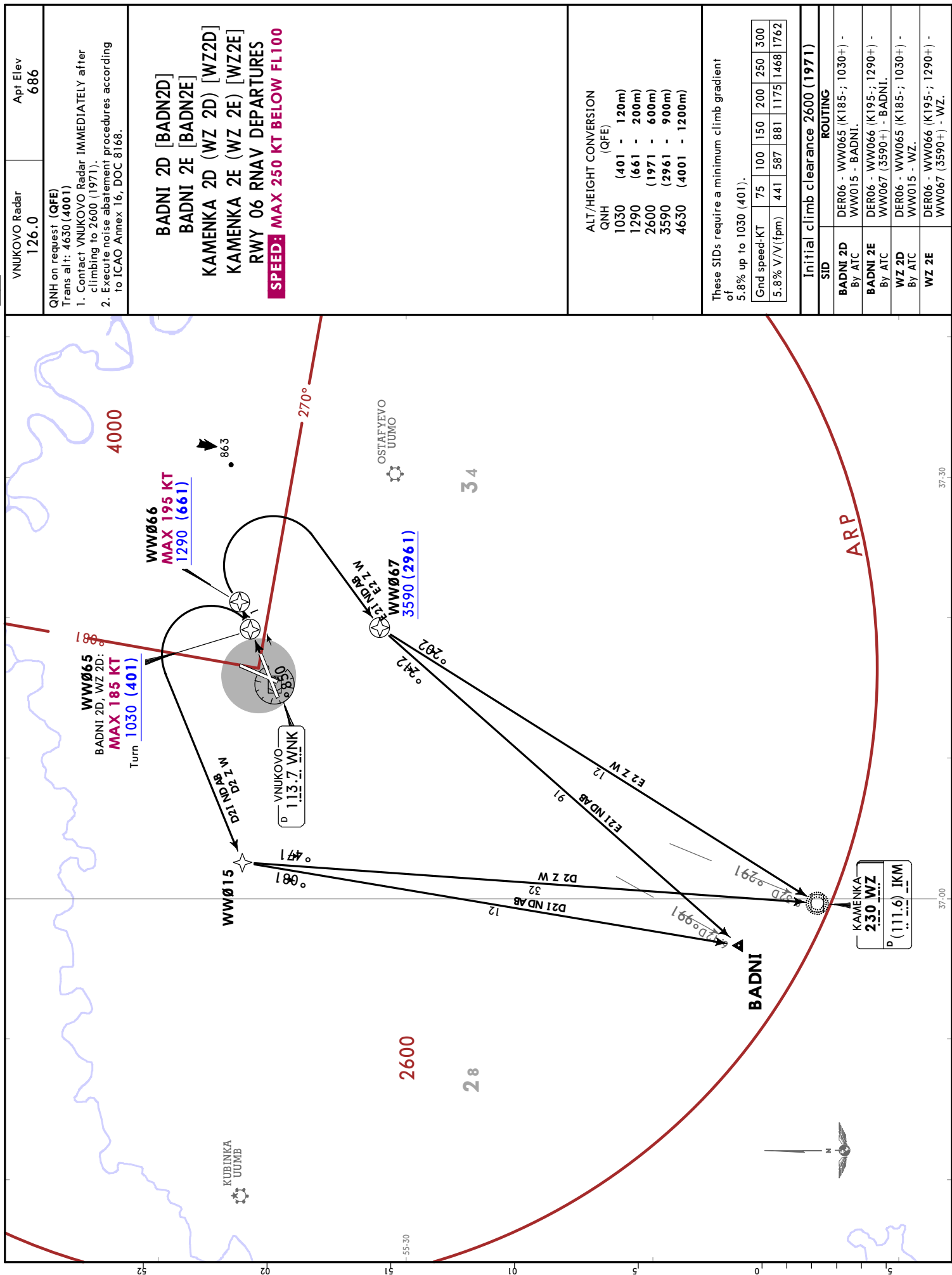
| SID             | ROUTING                                             |
|-----------------|-----------------------------------------------------|
| BITSA 3D        | DER01 - WW010 (K175-; 1130+) - WNK (3920+) - BITSA. |
| BITSA 3E By ATC | DER01 - WW010 (K195-; 1130+) - WW018 - BITSA.       |
| LO 3D           | DER01 - WW010 (K175-; 1130+) - WNK (3920+) - LO.    |
| LO 3E           | DER01 - WW010 (K195-; 1130+) - OSTIS - LO.          |
| OKLIT 3D        | DER01 - WW010 (1130+) - TURUG - OKLIT.              |





|                                                                                                                                                                                                      |                                              |          |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------|-----|
| VNUKOVO Radar                                                                                                                                                                                        | 126.0                                        | Apt Elev | 686 |
| QNH on request (QFE)<br>Trans alt: 4630 (3996)<br>1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2610 (1976).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168. |                                              |          |     |
| BITS4 4D [BITS4D]<br>BITS4 4E [BITS4E]<br>KLIMOVSK 4D (LO 4D) [LO4D]<br>KLIMOVSK 4E (LO 4E) [LO4E]<br>OKLIT 4E [OKLI4E]<br>RWY 19 RNAV DEPARTURES<br><b>SPEED: MAX 250 KT BELOW FL100</b>            |                                              |          |     |
| ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>1300 (666 - 200m)<br>1620 (986 - 300m)<br>2610 (1976 - 600m)<br>3590 (2956 - 900m)<br>3920 (3286 - 1000m)<br>4630 (3996 - 1200m)                               |                                              |          |     |
| Initial climb clearance 3590 (2956)                                                                                                                                                                  |                                              |          |     |
| SID                                                                                                                                                                                                  | ROUTING                                      |          |     |
| BITSA 4D                                                                                                                                                                                             | DER19 - WW197 (1300+) - WNK (3920+) - BITSA. |          |     |
| BITSA 4E                                                                                                                                                                                             | DER19 - WW198 (1620+) - BITSA.               |          |     |
| LO 4D                                                                                                                                                                                                | DER19 - WW197 (1300+) - WNK (3920+) - LO.    |          |     |
| LO 4E                                                                                                                                                                                                | DER19 - WW198 (1620+) - LO.                  |          |     |
| OKLIT 4E By ATC                                                                                                                                                                                      | DER19 - WW198 (1620+) - TURUG - OKLIT.       |          |     |



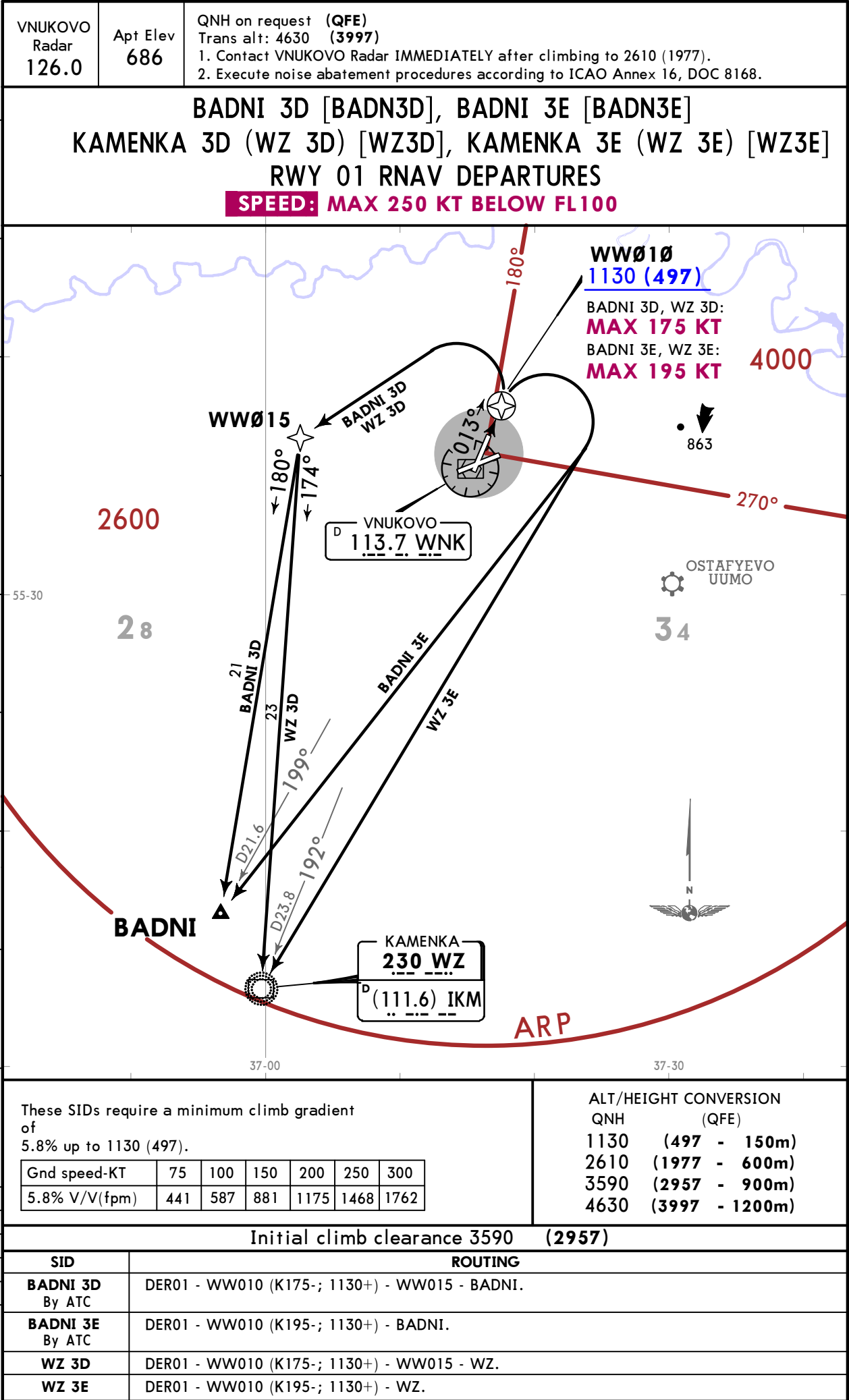


|                                                                                                                                                                                                     |                                                       |          |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------|-----|
| VNUKOV Radar                                                                                                                                                                                        | 126.0                                                 | Apt Elev | 686 |
| QNH on request (QFE)<br>Trans alt: 4630 (4001)<br>1. Contact VNUKOV Radar IMMEDIATELY after climbing to 2600 (1971).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168. |                                                       |          |     |
| BADNI 2D [BADN2D]<br>BADNI 2E [BADN2E]<br>KAMENKA 2D (WZ 2D) [WZ2D]<br>KAMENKA 2E (WZ 2E) [WZ2E]<br>RWY 06 RNAV DEPARTURES<br><b>SPEED: MAX 250 KT BELOW FL100</b>                                  |                                                       |          |     |
| ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>1030 (401 - 120m)<br>1290 (661 - 200m)<br>2600 (1971 - 600m)<br>3590 (2961 - 900m)<br>4630 (4001 - 1200m)                                                     |                                                       |          |     |
| These SIDs require a minimum climb gradient of 5.8% up to 1030 (401).<br>Gnd speed-KT 75 100 150 200 250 300<br>5.8% V/V(fpm) 441 587 881 1175 1468 1762                                            |                                                       |          |     |
| Initial climb clearance 2600 (1971)                                                                                                                                                                 |                                                       |          |     |
| SID                                                                                                                                                                                                 | ROUTING                                               |          |     |
| BADNI 2D<br>By ATC                                                                                                                                                                                  | DER06 - WW065 (K185+; 1030+) - WW015 - BADNI.         |          |     |
| BADNI 2E<br>By ATC                                                                                                                                                                                  | DER06 - WW066 (K195+; 1290+) - WW067 (3590+) - BADNI. |          |     |
| WZ 2D<br>By ATC                                                                                                                                                                                     | DER06 - WW065 (K185+; 1030+) - WW015 - WZ.            |          |     |
| WZ 2E                                                                                                                                                                                               | DER06 - WW066 (K195+; 1290+) - WW067 (3590+) - WZ.    |          |     |

UUWW/VKO  
VNUKOVO

JEPPESEN  
3 NOV 17 (10-3M) Eff 9 Nov

MOSCOW, RUSSIA  
RNAV SID



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

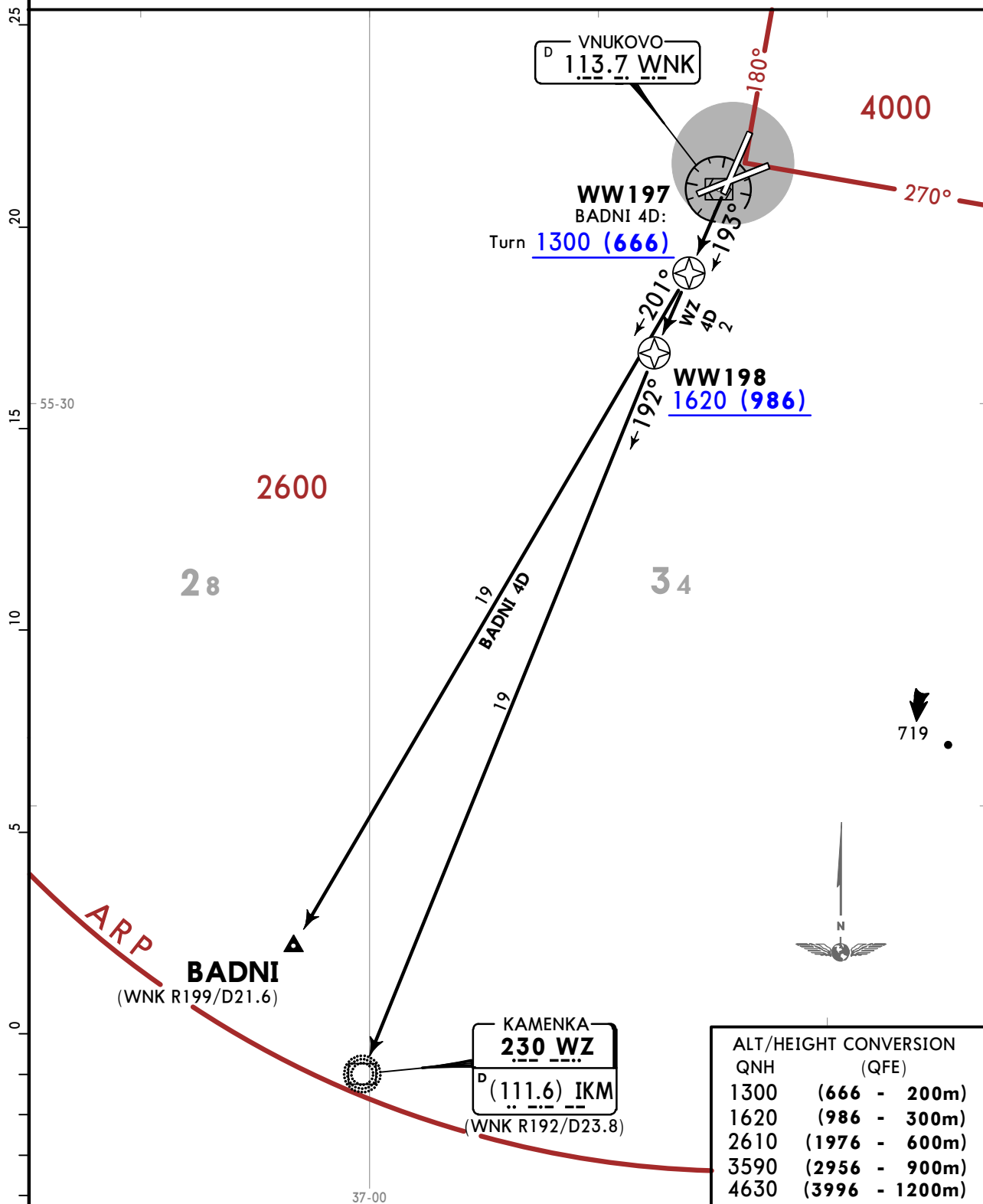
**JEPPESSEN**  
3 NOV 17 **(10-3N)** Eff 9 Nov

**MOSCOW, RUSSIA**  
**RNAV SID**

|                          |                 |                                                                                                                                                                                                     |
|--------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VNUKOV<br>Radar<br>126.0 | Apt Elev<br>686 | QNH on request (QFE)<br>Trans alt: 4630 (3996)<br>1. Contact VNUKOV Radar IMMEDIATELY after climbing to 2610 (1976).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168. |
|--------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**BADNI 4D [BADN4D]  
KAMENKA 4D (WZ 4D) [WZ4D]  
RWY 19 RNAV DEPARTURES**

**SPEED: MAX 250 KT BELOW FL100**



Initial climb clearance 3590 (2956)

| SID                       | ROUTING                        |
|---------------------------|--------------------------------|
| <b>BADNI 4D</b><br>By ATC | DER19 - WW197 (1300+) - BADNI. |
| <b>WZ 4D</b>              | DER19 - WW198 (1620+) - WZ.    |

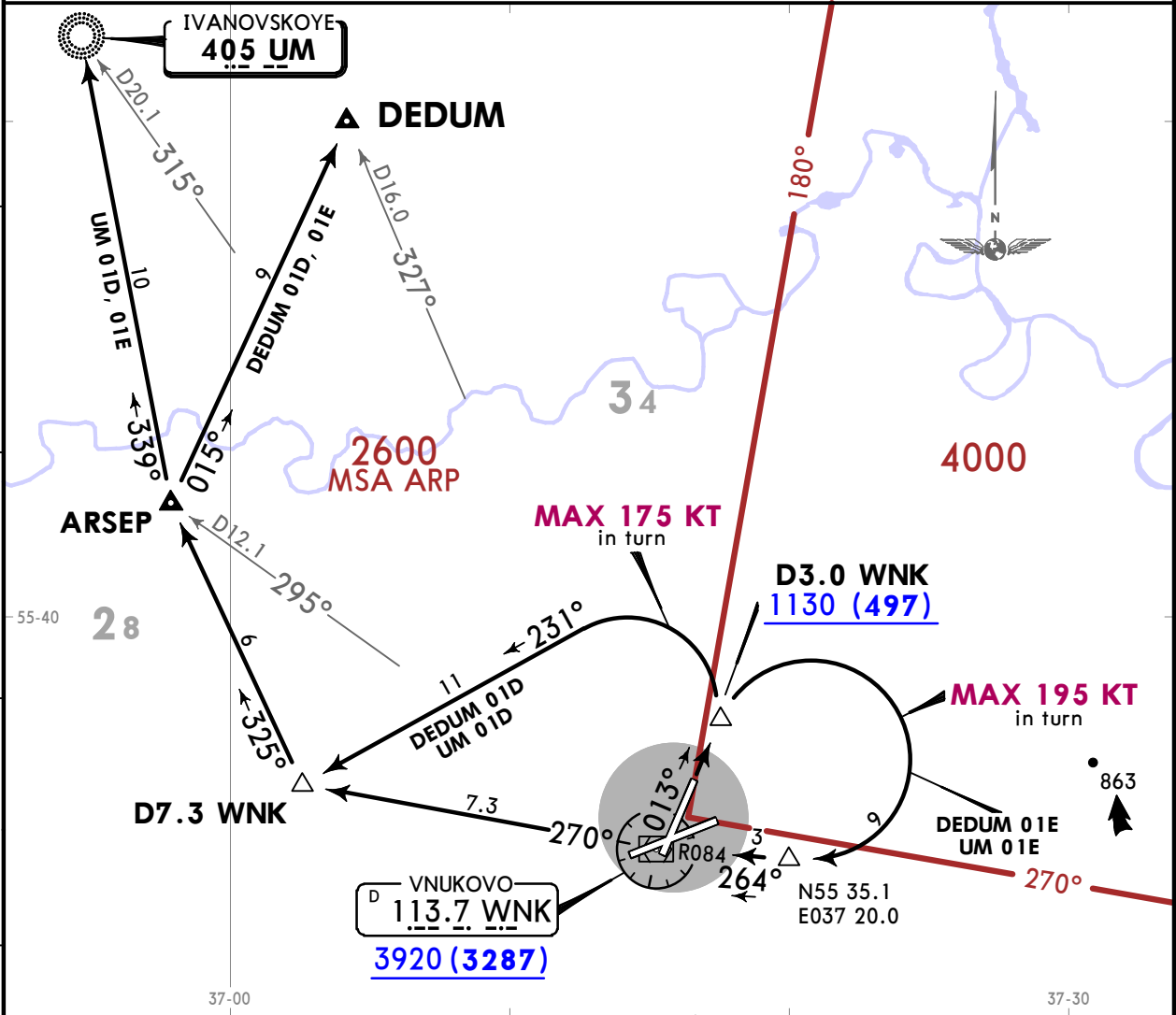
UUWW/VKO  
VNUKOVO

JEPPESSEN  
2 NOV 18 10-3P Eff 8 Nov

MOSCOW, RUSSIA  
SID

|                           |                 |                                                                                                                                                                                                      |
|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VNUKOVO<br>Radar<br>126.0 | Apt Elev<br>686 | QNH on request (QFE)<br>Trans alt: 4630 (3997)<br>1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2610 (1977).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168. |
|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

DEDUM 01D [DEDØ1D], DEDUM 01E [DEDØ1E]  
IVANOVSKOYE 01D (UM 01D) [UMØ1D]  
IVANOVSKOYE 01E (UM 01E) [UMØ1E]  
RWY 01 DEPARTURES  
**SPEED: MAX 250 KT BELOW FL100**



|                                                                       |  |  |  |  |  |  |                       |                |
|-----------------------------------------------------------------------|--|--|--|--|--|--|-----------------------|----------------|
| These SIDs require a minimum climb gradient of 5.8% up to 1130 (497). |  |  |  |  |  |  | ALT/HEIGHT CONVERSION |                |
|                                                                       |  |  |  |  |  |  | QNH                   | (QFE)          |
|                                                                       |  |  |  |  |  |  | 1130                  | (497 - 150m)   |
|                                                                       |  |  |  |  |  |  | 2610                  | (1977 - 600m)  |
|                                                                       |  |  |  |  |  |  | 3590                  | (2957 - 900m)  |
|                                                                       |  |  |  |  |  |  | 3920                  | (3287 - 1000m) |
|                                                                       |  |  |  |  |  |  | 4630                  | (3997 - 1200m) |

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

|                                     |                                                                                                                                                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Initial climb clearance 3590 (2957) |                                                                                                                                                                            |
| SID                                 | ROUTING                                                                                                                                                                    |
| DEDUM 01D                           | Climb straight ahead to D3.0 WNK, turn LEFT, 231° track to D7.3 WNK, 325° track to ARSEP, then to DEDUM.                                                                   |
| DEDUM 01E                           | Climb straight ahead to D3.0 WNK, turn RIGHT to N55 35.1 E037 20.0, intercept WNK R084 inbound to WNK, intercept WNK R270 to D7.3 WNK, 325° track to ARSEP, then to DEDUM. |
| UM 01D                              | Climb straight ahead to D3.0 WNK, turn LEFT, 231° track to D7.3 WNK, 325° track to ARSEP, then to UM.                                                                      |
| UM 01E                              | Climb straight ahead to D3.0 WNK, turn RIGHT to N55 35.1 E037 20.0, intercept WNK R084 inbound to WNK, intercept WNK R270 to D7.3 WNK, 325° track to ARSEP, then to UM.    |



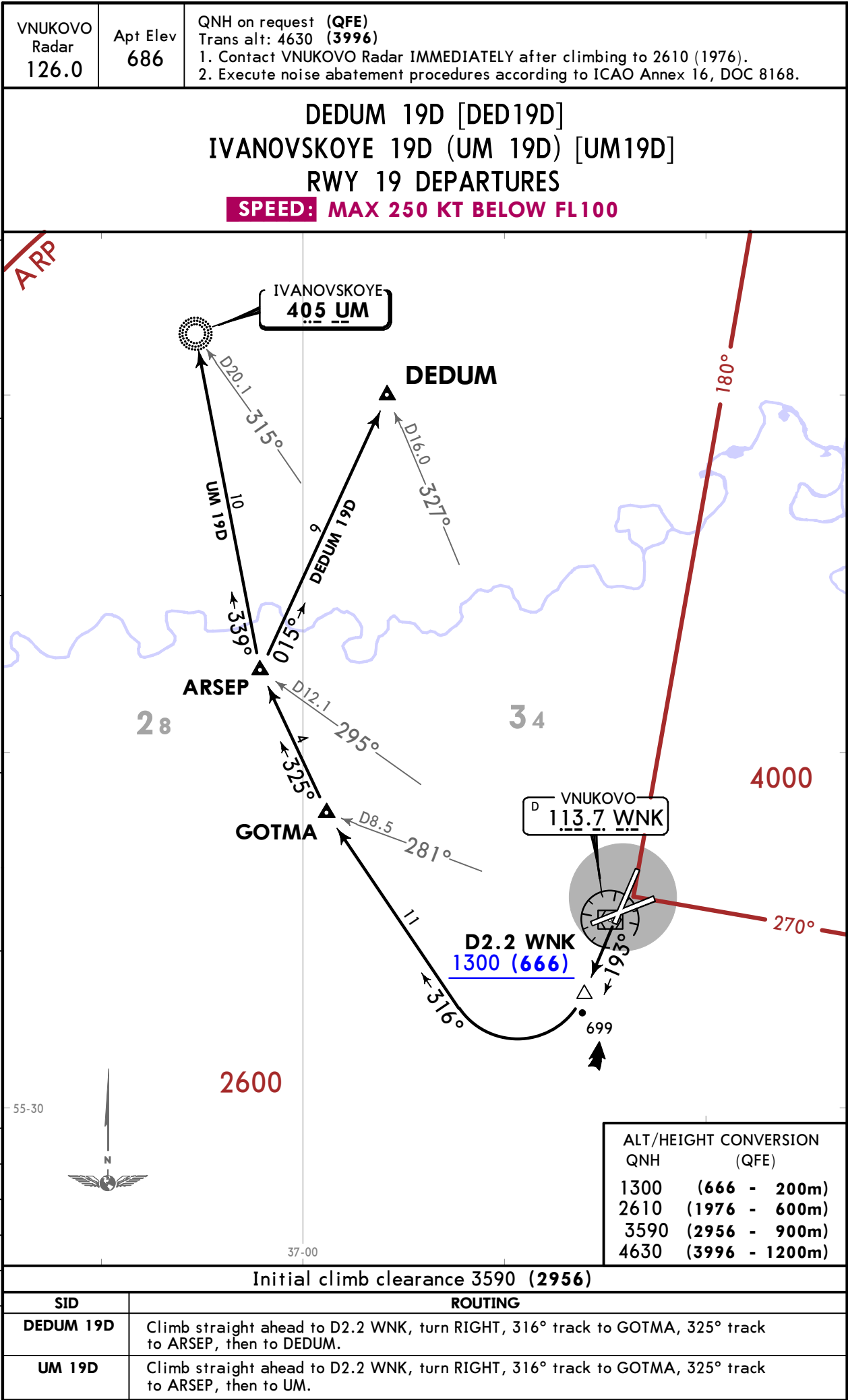
**SID**



UUWW/VKO  
VNUKOVO

JEPPESEN  
3 NOV 17 10-3S Eff 9 Nov

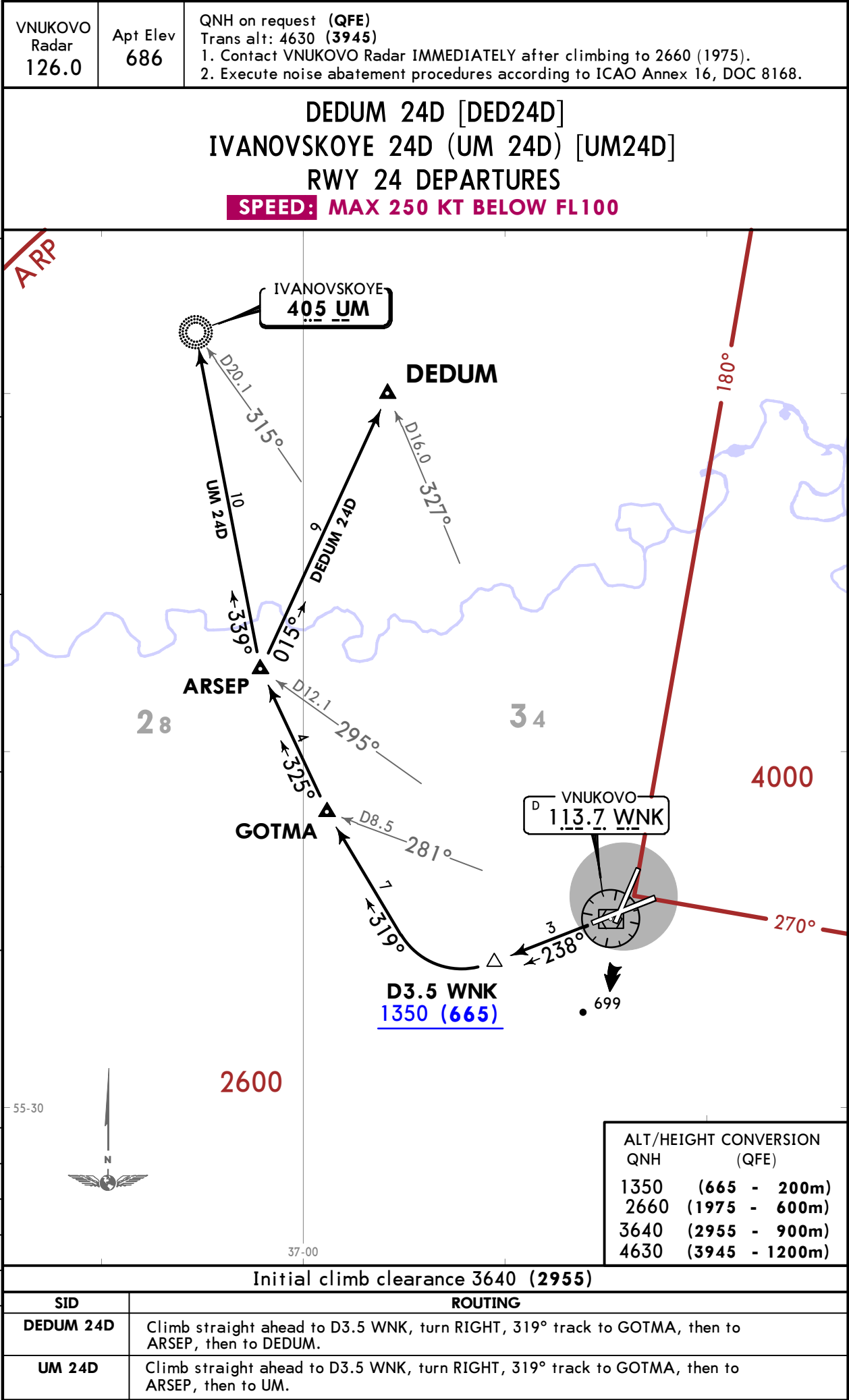
MOSCOW, RUSSIA  
SID



UUWW/VKO  
VNUKOVO

JEPPESEN  
3 NOV 17 10-3T Eff 9 Nov

MOSCOW, RUSSIA  
SID



2 NOV 18

10-3U

Eff 8 Nov

JEPPESSEN MOSCOW, RUSSIA

SID

VNUKOV Radar

126.0

Apt Elev  
686

QNH on request (QFE)  
Trans alt: 4630 (3997)

1. Contact VNUKOV Radar IMMEDIATELY after  
climbing to 2610 (1977).  
2. Execute noise abatement procedures according  
to ICAO Annex 16, DOC 8168.

BITSA 01D [BITØ1D]  
BITSA 01E [BITØ1E]  
KLIMOVSK 01D (LO 01D) [LOØ1D]  
KLIMOVSK 01E (LO 01E) [LOØ1E]  
OKLIT 01D [OKLØ1D]  
RWY 01 DEPARTURES  
**SPEED: MAX 250 KT BELOW FL100**

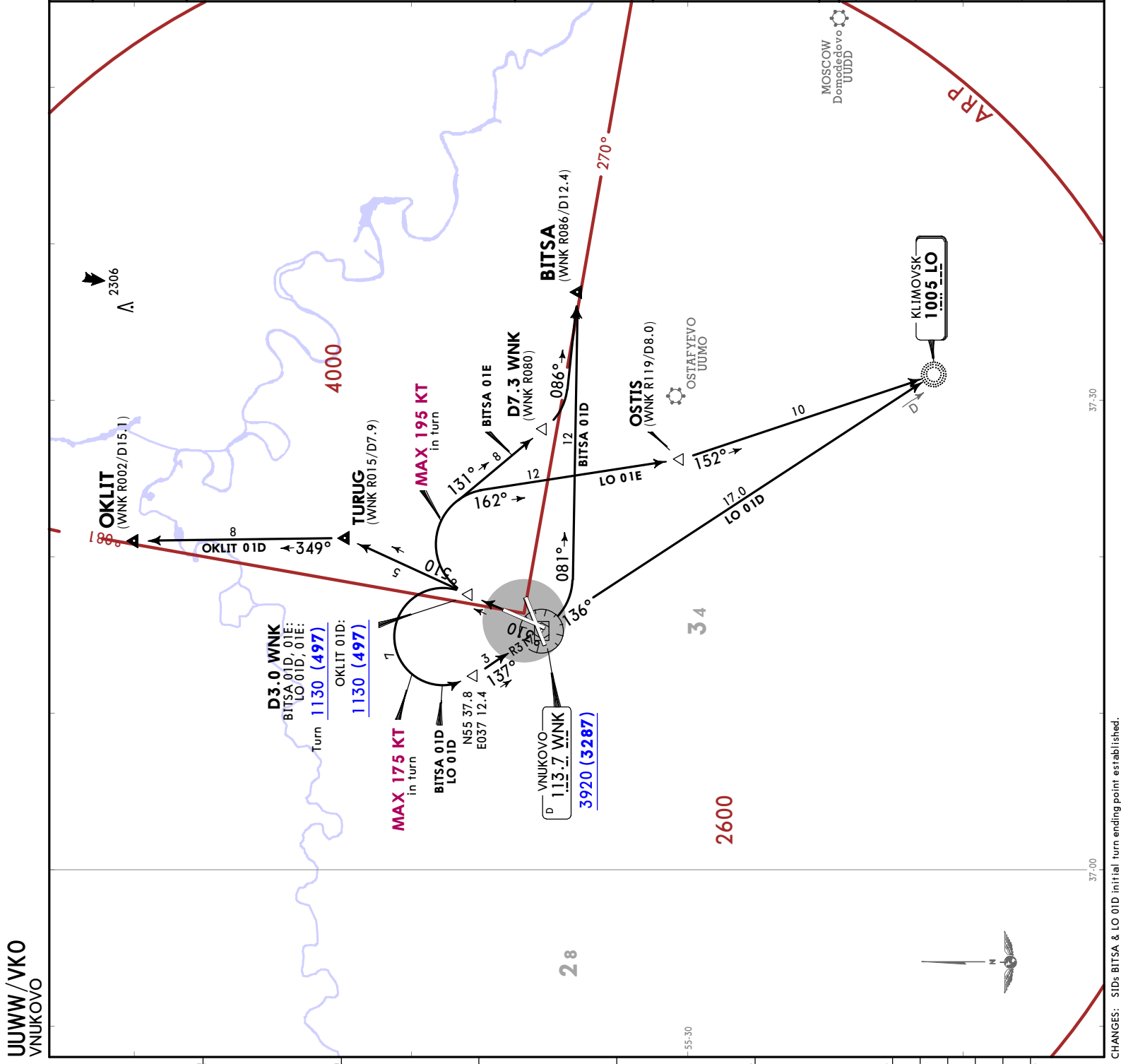
ALT/HEIGHT CONVERSION  
QNH (QFE)  
1130 (497 - 150m)  
2610 (1977 - 600m)  
3590 (2957 - 900m)  
3920 (3287 - 1000m)  
4630 (3997 - 1200m)

These SIDs require minimum climb gradients  
of  
**BITSA 01D, LO 01D: 4.8% up to 3920 (3287) at WNK.**  
**BITSA 01E, LO 01E, OKLIT 01D: 5.8% up to  
1130 (497).**

|               |     |     |     |      |      |      |
|---------------|-----|-----|-----|------|------|------|
| Gnd speed-KT  | 75  | 100 | 150 | 200  | 250  | 300  |
| 5.8% V/V(fpm) | 441 | 587 | 881 | 1175 | 1468 | 1762 |
| 4.8% V/V(fpm) | 365 | 486 | 729 | 972  | 1215 | 1458 |

Initial climb clearance 3590 (2957)

| SID                 | ROUTING                                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| BITSA 01D           | Climb straight ahead to D3.0 WNK, turn<br>LEFT to N55 37.8 E037 12.4, intercept<br>WNK R317 inbound to WNK, 081° track to<br>BITSA.      |
| BITSA 01E<br>By ATC | Climb straight ahead to D3.0 WNK, turn<br>RIGHT, 131° track to D7.3 WNK, 086°<br>track to BITSA.                                         |
| LO 01D              | Climb straight ahead to D3.0 WNK, turn<br>LEFT to N55 37.8 E037 12.4, intercept<br>WNK R317 inbound to WNK; intercept<br>WNK R136 to LO. |
| LO 01E              | Climb straight ahead to D3.0 WNK, turn<br>RIGHT, 162° track to OSTIS, 152° track<br>to LO.                                               |
| OKLIT 01D           | Climb straight ahead to D3.0 WNK, then<br>to TURUG, then to OKLIT.                                                                       |



UUWW/VKO  
VNUKOVO

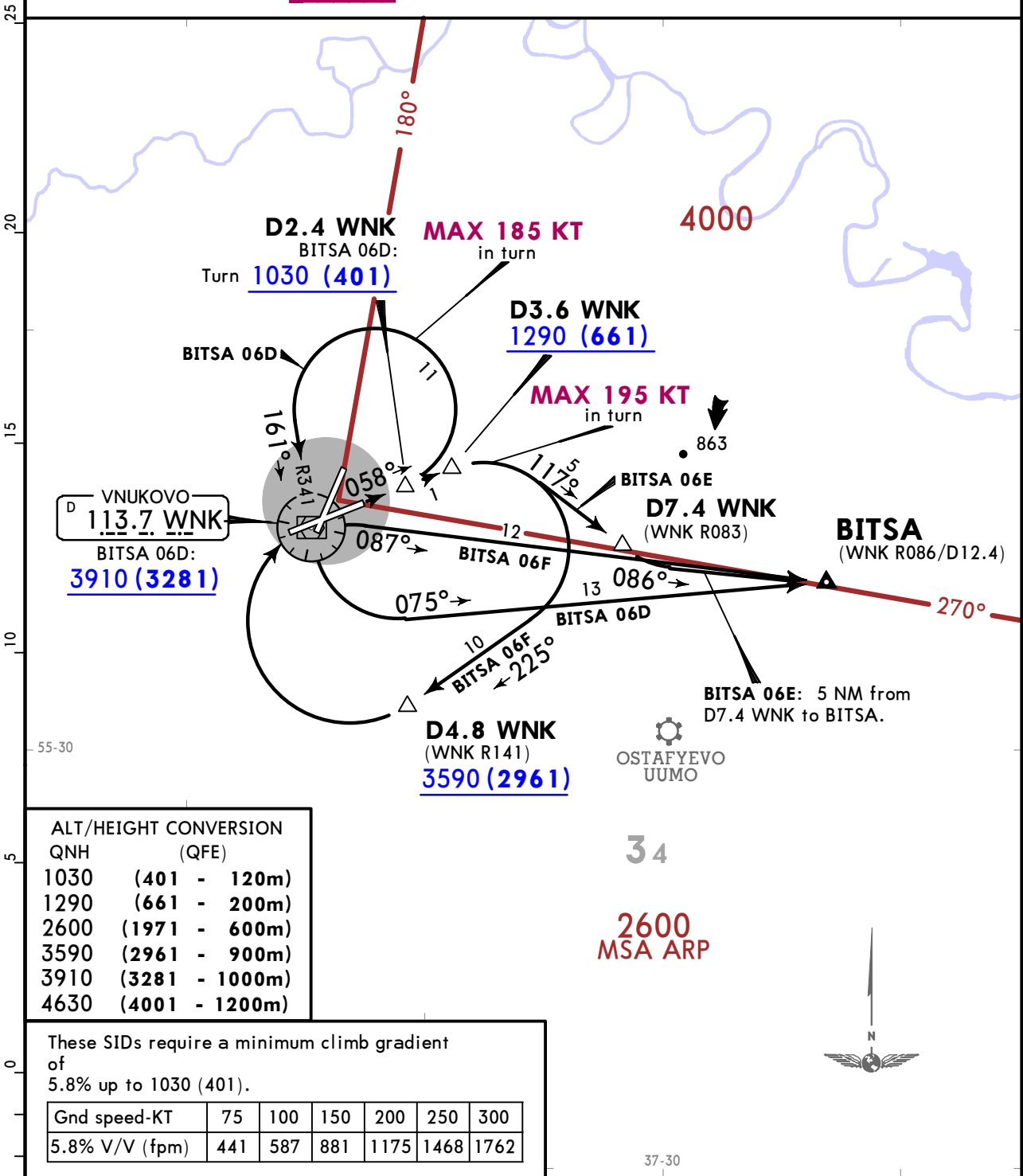
JEPPESEN  
2 NOV 18 10-3V Eff 8 Nov

MOSCOW, RUSSIA  
SID

|                           |                 |                                                                                                                                                                                                      |
|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VNUKOVO<br>Radar<br>126.0 | Apt Elev<br>686 | QNH on request (QFE)<br>Trans alt: 4630 (4001)<br>1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2600 (1971).<br>2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168. |
|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

BITSA 06D [BIT06D], BITSA 06E [BIT06E]  
BITSA 06F [BIT06F]  
RWY 06 DEPARTURES

SPEED: MAX 250 KT BELOW FL100



| SID                 | ROUTING                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| BITSA 06D<br>By ATC | Climb straight ahead to D2.4 WNK, turn LEFT, intercept WNK R341 inbound to WNK, turn LEFT, 075° track to BITSA. |
| BITSA 06E<br>By ATC | Climb straight ahead to D3.6 WNK, turn RIGHT, 117° track to D7.4 WNK, turn LEFT, 086° track to BITSA.           |
| BITSA 06F           | Climb straight ahead to D3.6 WNK, turn RIGHT, 225° track to D4.8 WNK, turn RIGHT to WNK, 087° track to BITSA.   |

JEPPESSEN MOSCOW, RUSSIA

3 NOV 17

10-3V1

Eff 9 Nov

SID

VNUKOVO Radar

126.0

Apt Elev  
686

QNH on request (QFE)  
Trans alt: 4630 (4001)

1. Contact VNUKOVO Radar IMMEDIATELY after  
climbing to 2600 (1971).

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

KLIMOVSK 06D (LO 06D) [LO06D]

KLIMOVSK 06E (LO 06E) [LO06E]

KLIMOVSK 06F (LO 06F) [LO06F]

OKLIT 06D [OKL06D]

RWY 06 DEPARTURES

**SPEED: MAX 250 KT BELOW FL100**

ALT/HEIGHT CONVERSION

QNH (QFE)

1030 (401 - 120m)

1290 (661 - 200m)

2600 (1971 - 600m)

3590 (2961 - 900m)

3910 (3281 - 1000m)

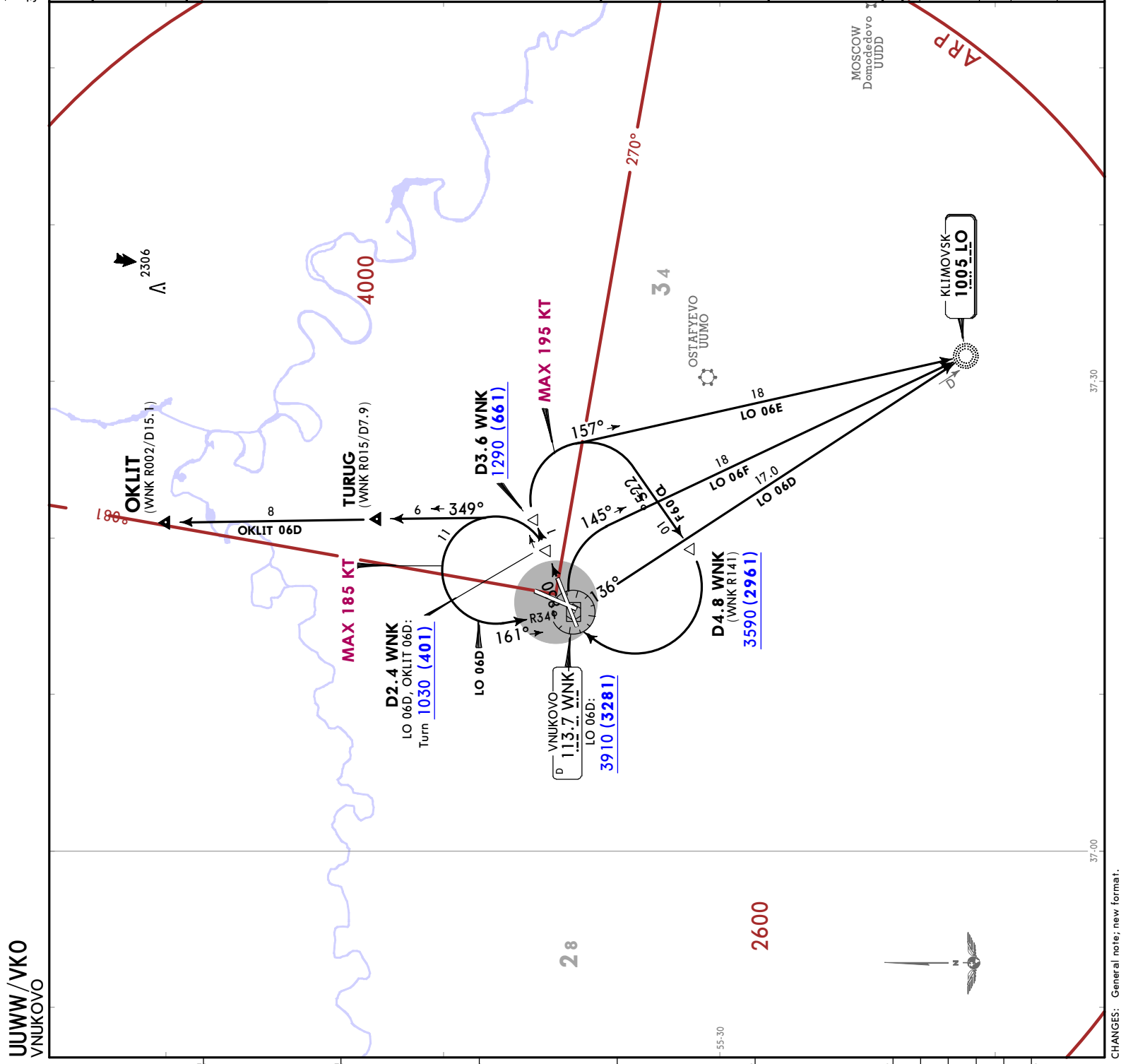
4630 (4001 - 1200m)

These SIDs require a minimum climb gradient  
of 5.8% up to 1030 (401).

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

Initial climb clearance 2600 (1971)

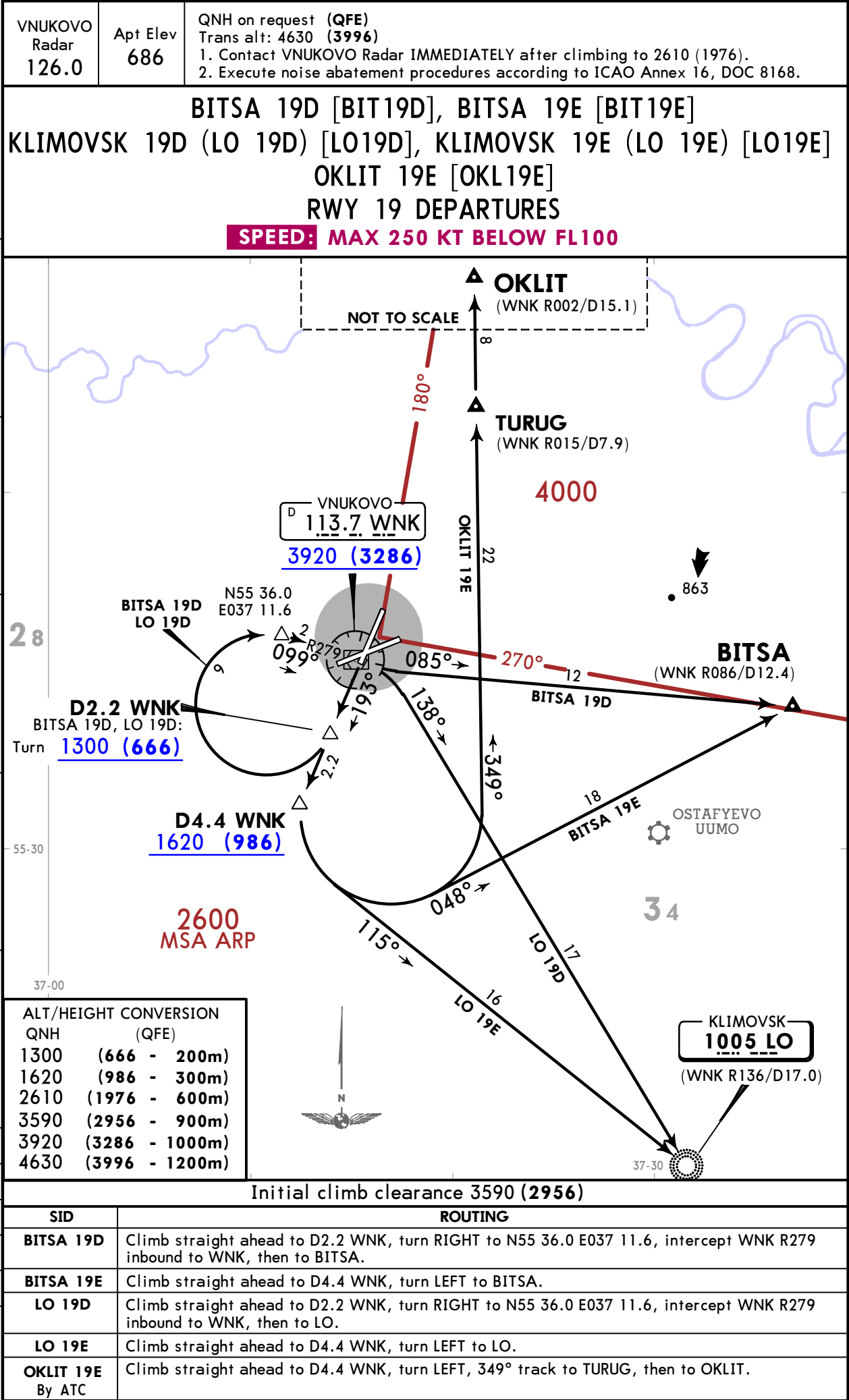
| SID              | ROUTING                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------|
| LO 06D<br>By ATC | Climb straight ahead to D2.4 WNK, turn<br>LEFT, intercept WNK R341 inbound to<br>WNK, turn LEFT, intercept WNK R136<br>to LO. |
| LO 06E<br>By ATC | Climb straight ahead to D3.6 WNK, turn<br>RIGHT, 157° track to LO.                                                            |
| LO 06F           | Climb straight ahead to D3.6 WNK, turn<br>RIGHT, 225° track to D4.8 WNK, turn<br>RIGHT to WNK, 145° track to LO.              |
| OKLIT 06D        | Climb straight ahead to D2.4 WNK, turn<br>LEFT, 349° track to TURUG, then<br>to OKLIT.                                        |



UUWW/VKO  
VNUKOVO

JEPPESSEN  
2 NOV 18 10-3W Eff 8 Nov

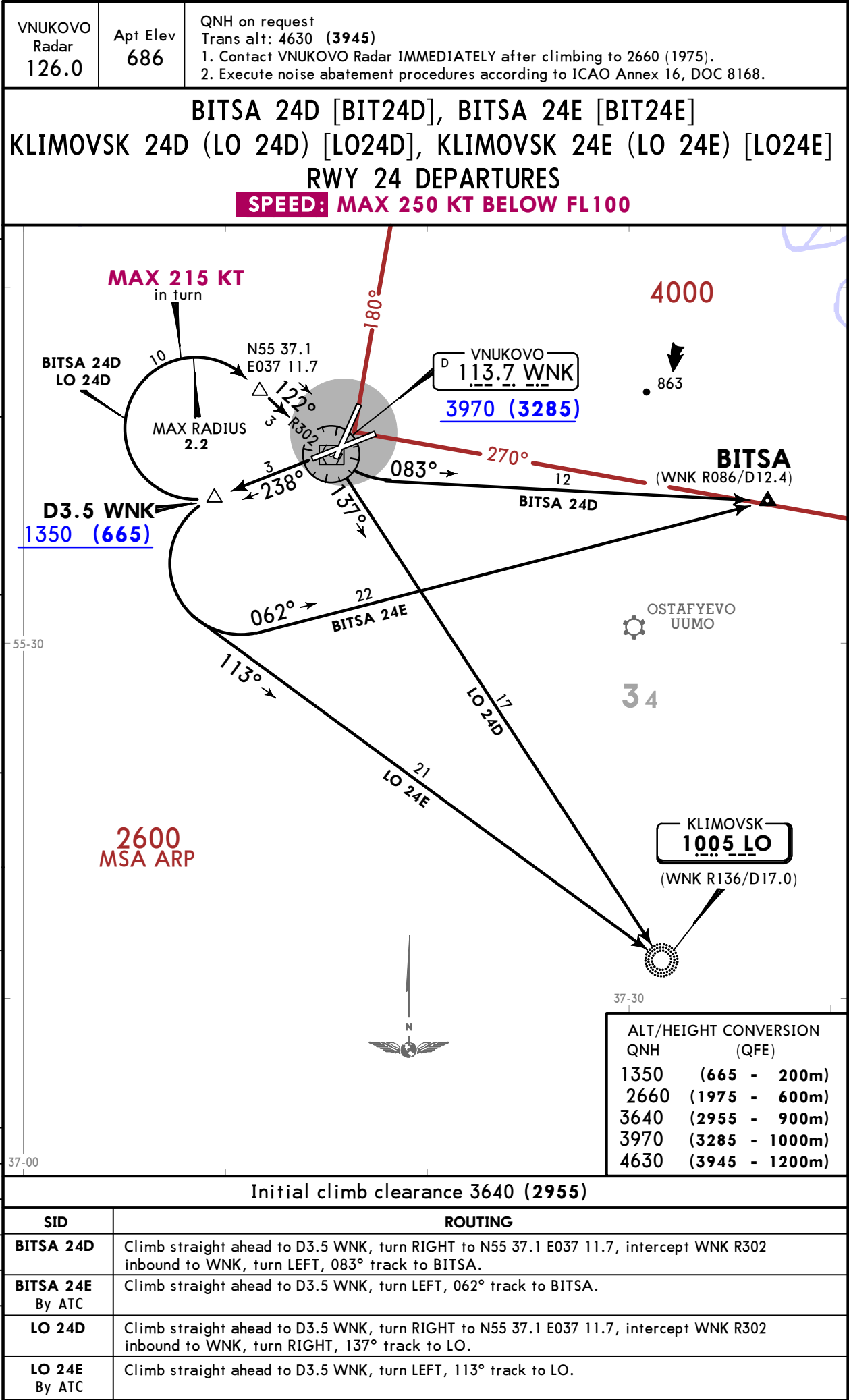
MOSCOW, RUSSIA  
SID



UUWW/VKO  
VNUKOVO

JEPPESSEN  
2 NOV 18 10-3X Eff 8 Nov

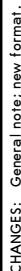
MOSCOW, RUSSIA  
SID











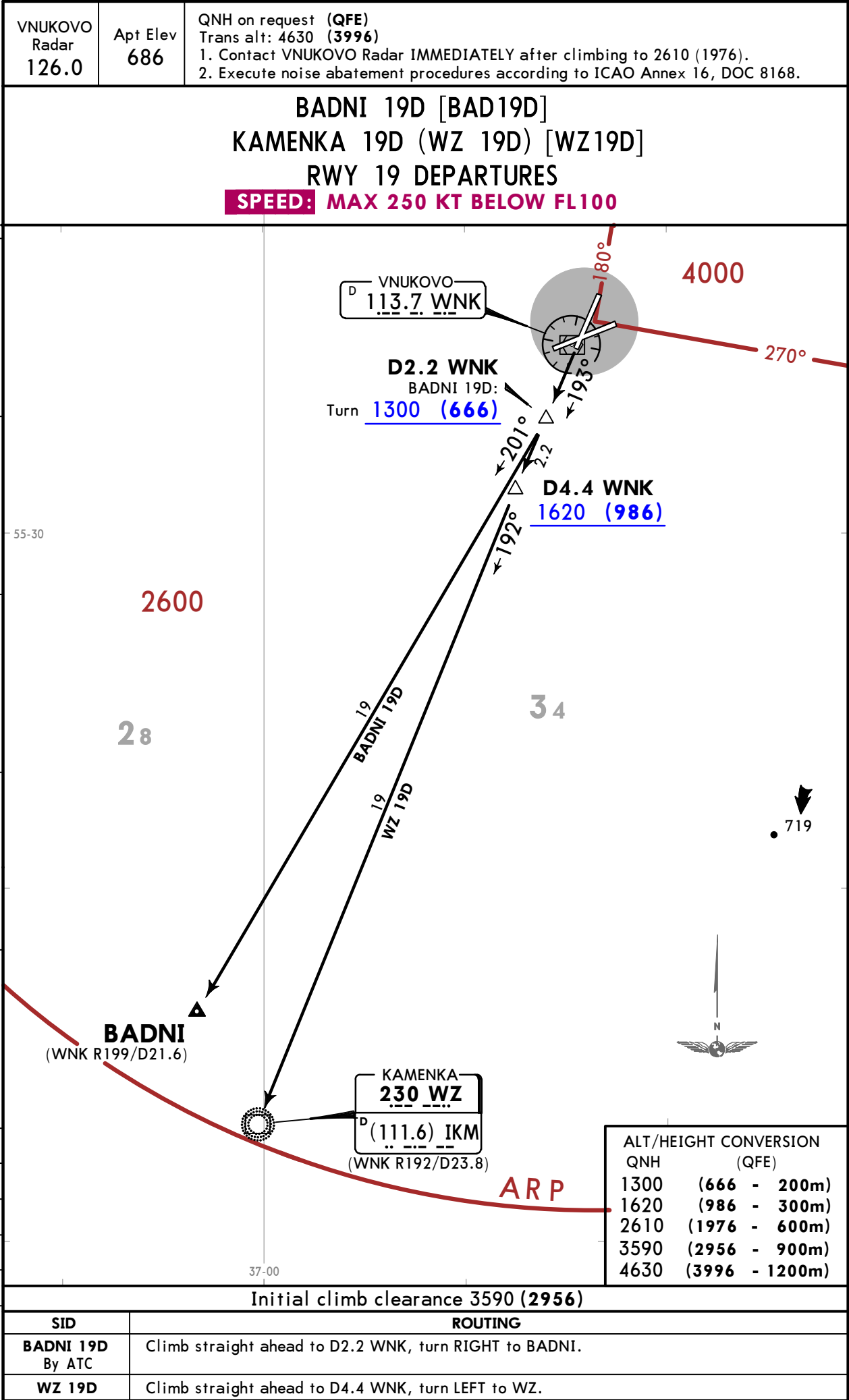
| Initial climb clearance 2600 (1971) |                                                                                                       |
|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| SID                                 | ROUTING                                                                                               |
| <b>BADNI 06D</b><br>By ATC          | Climb straight ahead to D2.4 WNK, turn LEFT, 238° track to D7.3 WNK, 180° track to BADNI.             |
| <b>BADNI 06E</b><br>By ATC          | Climb straight ahead to D3.6 WNK, turn RIGHT, 225° track to D4.8 WNK, turn LEFT, 211° track to BADNI. |
| <b>WZ 06D</b><br>By ATC             | Climb straight ahead to D2.4 WNK, turn LEFT, 238° track to D7.3 WNK, 174° track to WZ.                |
| <b>WZ 06E</b>                       | Climb straight ahead to D3.6 WNK, turn RIGHT, 225° track to D4.8 WNK, turn LEFT, 202° track to WZ.    |

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3 NOV 17 10-3X3 Eff 9 Nov

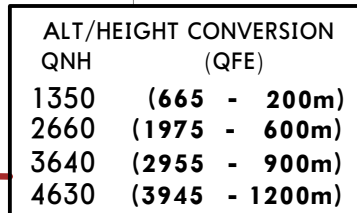
MOSCOW, RUSSIA  
SID



QNH on request **(QFE)**  
Trans alt: 4630 **(3945)**

1. Contact VNUKOVO Radar IMMEDIATELY after climbing to 2660 (1975).
2. Execute noise abatement procedures according to ICAO Annex 16, DOC 8168.

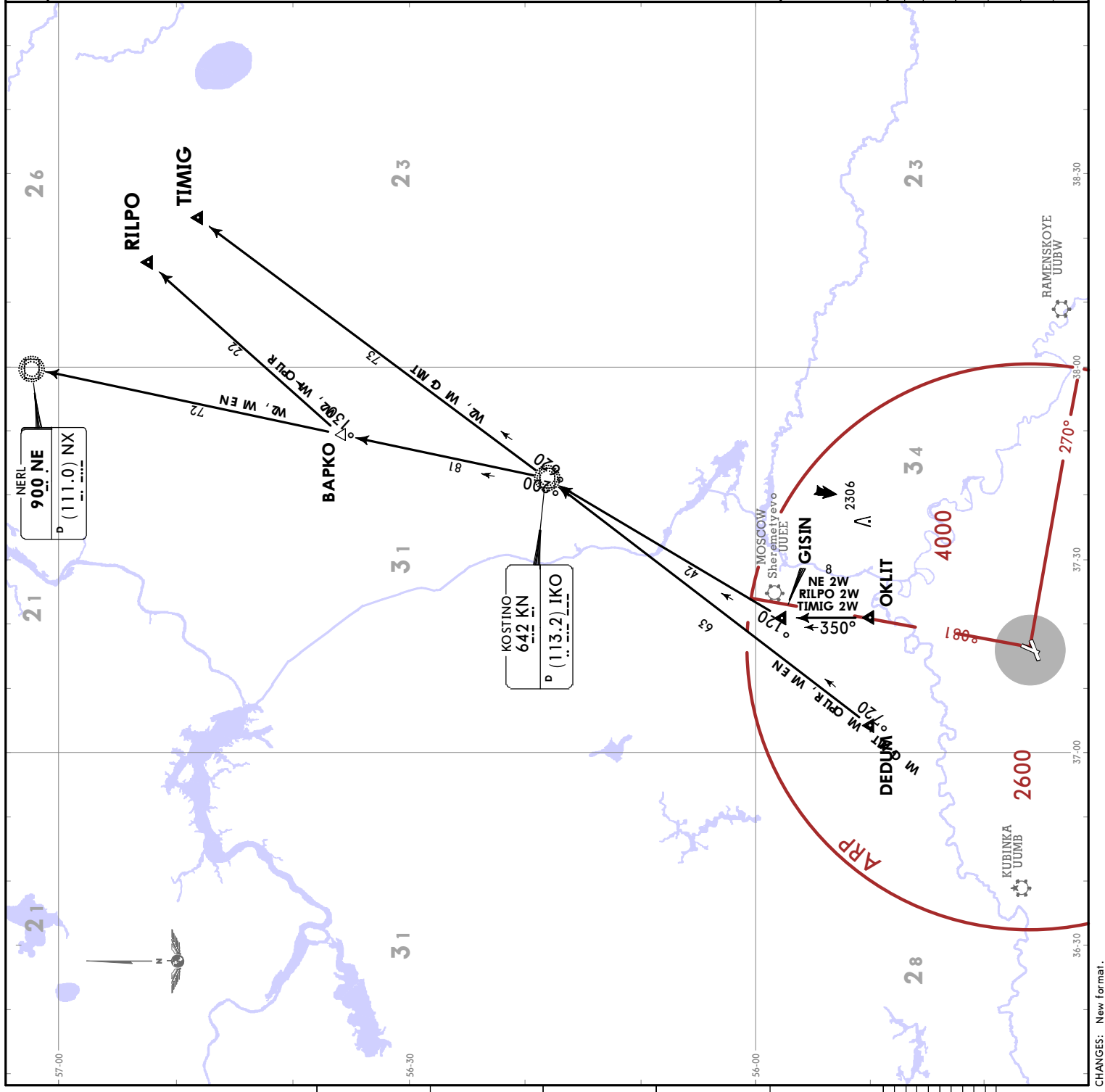
**SPEED: MAX 250 KT BELOW FL100**

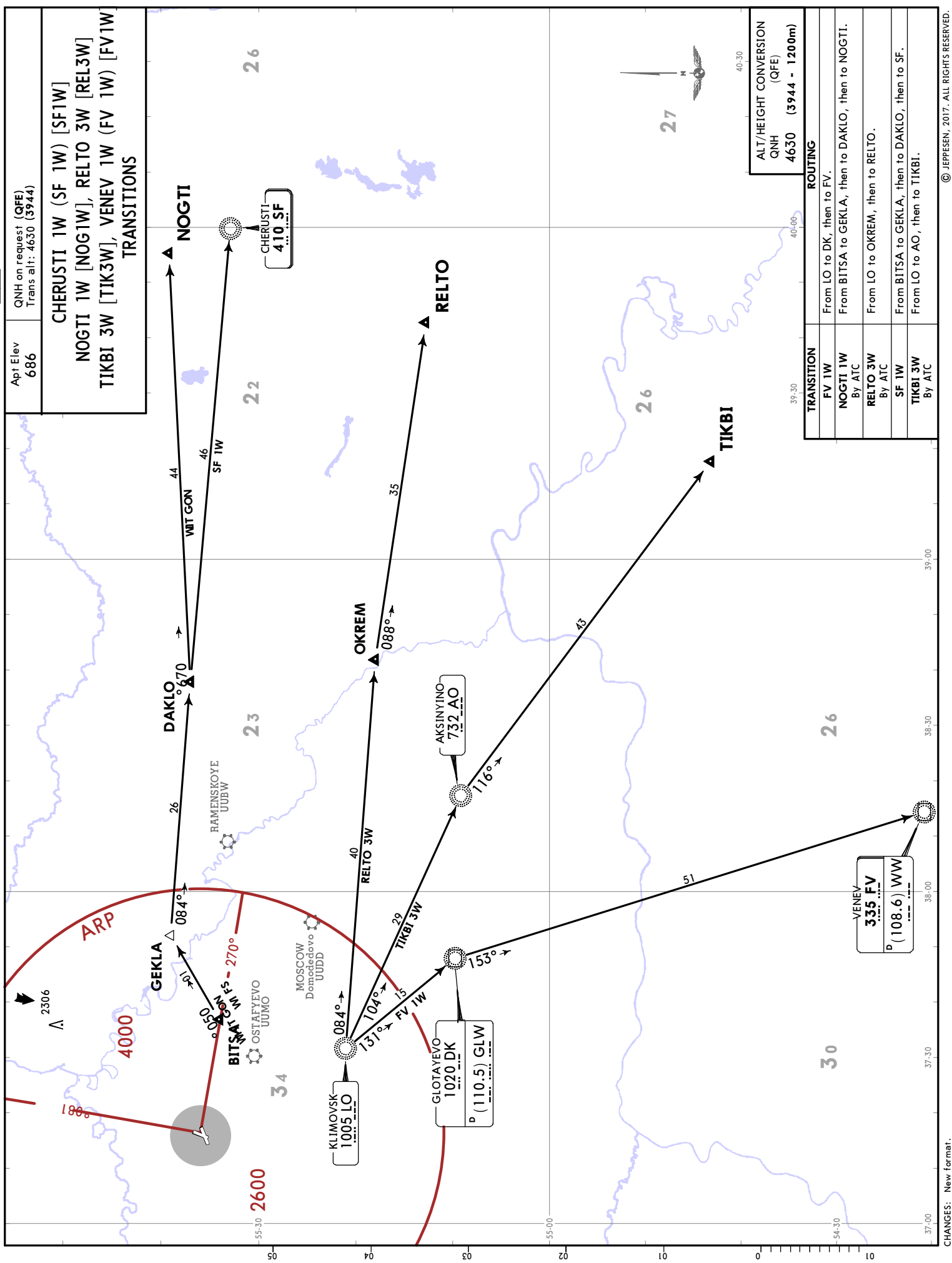


| SID                        | ROUTING                                                           |
|----------------------------|-------------------------------------------------------------------|
| <b>BADNI 24E</b><br>By ATC | Climb straight ahead to D3.5 WNK, turn LEFT, 190° track to BADNI. |
| <b>WZ 24E</b>              | Climb straight ahead to D3.5 WNK, turn LEFT, 182° track to WZ.    |

|                                                                                                                                                 |                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Apt Elev<br>686                                                                                                                                 | QNH on request (QFE)<br>Trans alt: 4630 (3944)                 |
| NERL 1W (NE 1W) [NE1W]<br>NERL 2W (NE 2W) [NE2W]<br>RILPO 1W [RIL1W]<br>RILPO 2W [RIL2W]<br>TIMIG 1W [TIM1W]<br>TIMIG 2W [TIM2W]<br>TRANSITIONS |                                                                |
| ALT/HEIGHT CONVERSION<br>QNH (QFE)<br>4630 (3944 - 1200m)                                                                                       |                                                                |
| TRANSITION                                                                                                                                      | ROUTING                                                        |
| NE 1W                                                                                                                                           | From DEDUM to KN, then to NE.                                  |
| NE 2W                                                                                                                                           | From OKLIT to GISIN, then to KN, then to NE.                   |
| RILPO 1W                                                                                                                                        | From DEDUM to KN, then to BAPKO, then to RILPO.                |
| RILPO 2W                                                                                                                                        | From OKLIT to GISIN, then to KN, then to BAPKO, then to RILPO. |
| TIMIG 1W<br>By ATC                                                                                                                              | From DEDUM to KN, then to TIMIG.                               |
| TIMIG 2W<br>By ATC                                                                                                                              | From OKLIT to GISIN, then to KN, then to TIMIG.                |

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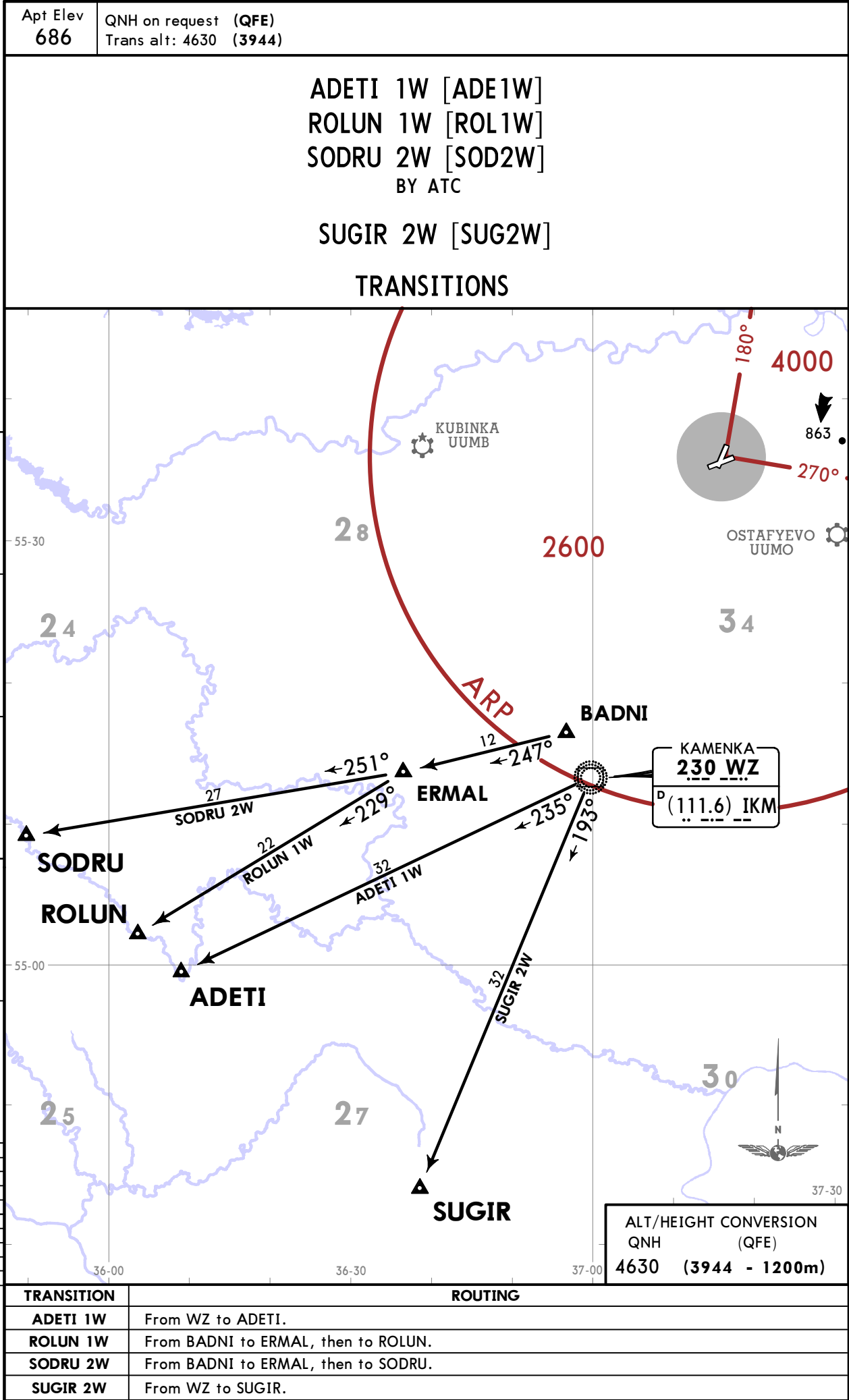
| TRANSITION         | ROUTING                                           |
|--------------------|---------------------------------------------------|
| FV 1W              | From LO to DK, then to FV.                        |
| NOGTI 1W<br>By ATC | From BITS to GEKLA, then to DAKLO, then to NOGTI. |
| RELTO 3W<br>By ATC | From LO to OKREM, then to RELTO.                  |
| SF 1W              | From BITS to GEKLA, then to DAKLO, then to SF.    |
| TIKBI 3W<br>By ATC | From LO to AO, then to TIKBI.                     |

|                                                |                                                                                                                              |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| QNH on request (QFE)<br>Trans alt: 4630 (3944) | CHERUSTI 1W (SF 1W) [SF1W]<br>NOGTI 1W [NOG1W], RELTO 3W [REL3W]<br>TIKBI 3W [TIK3W], VENEV 1W (FV 1W) [FV1W]<br>TRANSITIONS |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|

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3 NOV 17 10-3X7 Eff 9 Nov

MOSCOW, RUSSIA  
TRANSITION



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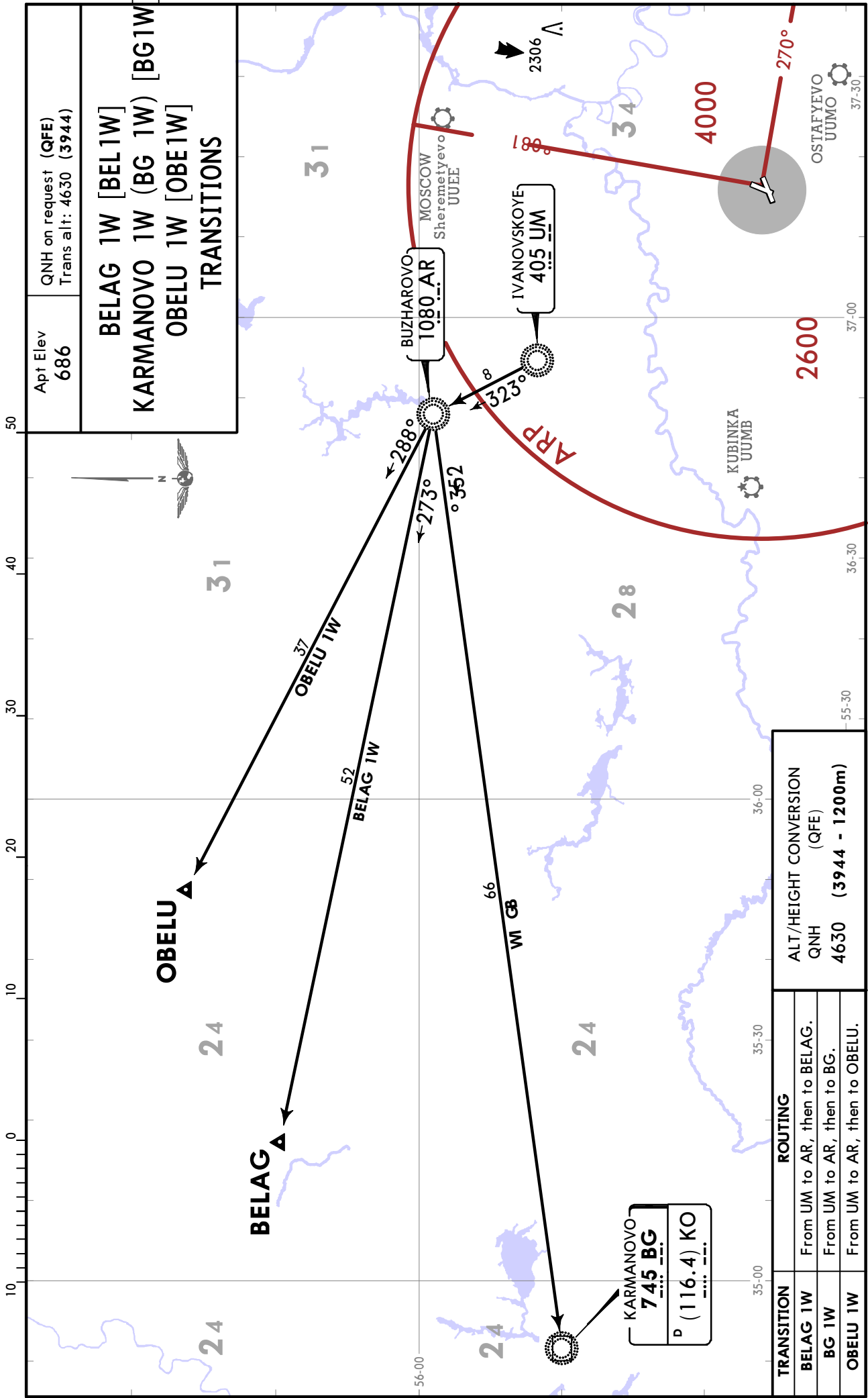
MOSCOW, RUSSIA

3 NOV 17

10-3X8

Eff 9 Nov

TRANSITION



CHANGES: New format.

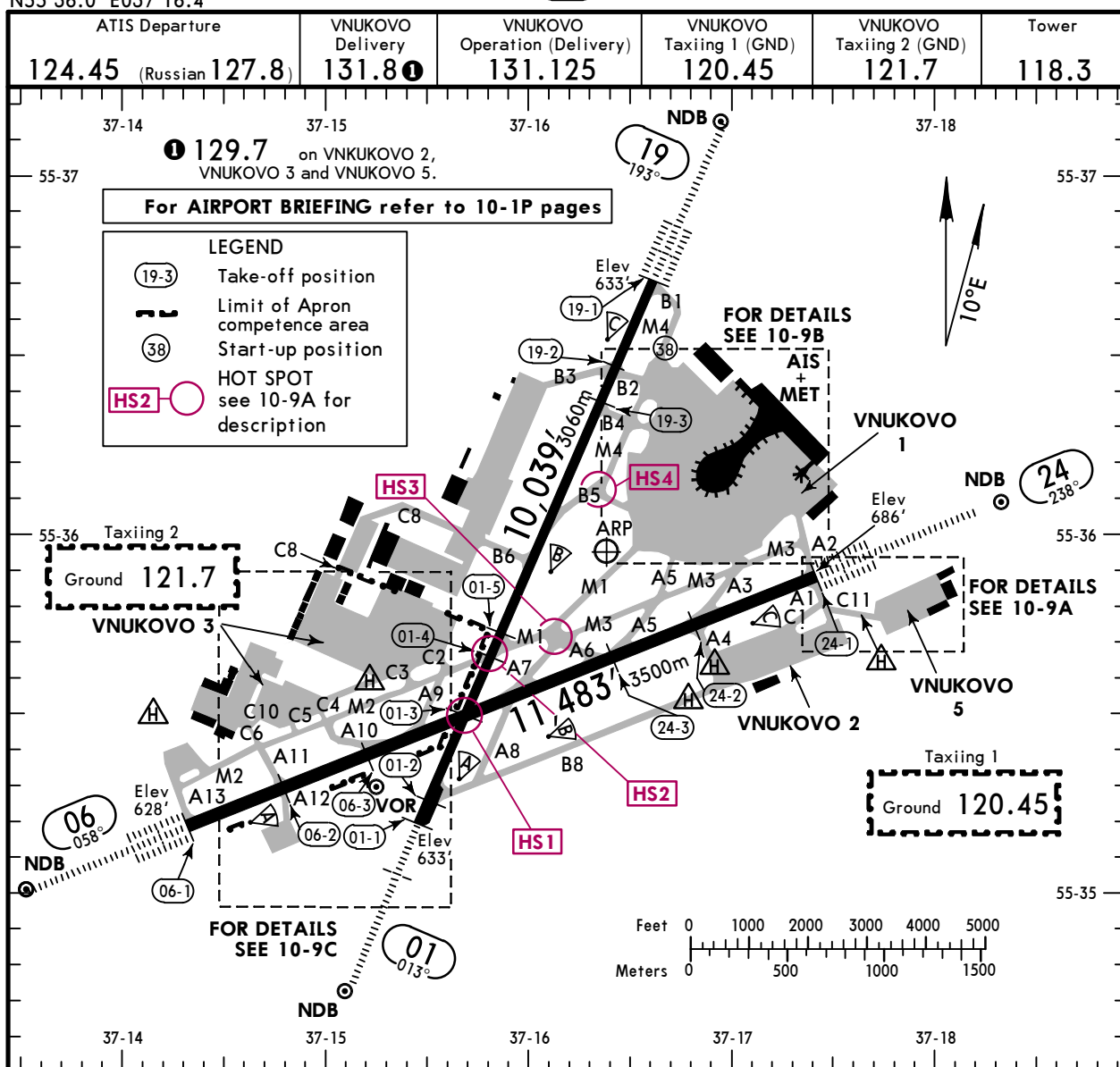
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Apt Elev **686'**  
N55 36.0 E037 16.4

**JEPPESSEN**

8 JUN 18 **(10-9)** Eff 21 Jun

**MOSCOW, RUSSIA**
**VNUKOVO**


| ADDITIONAL RUNWAY INFORMATION |                                                    |                |             |          |          |
|-------------------------------|----------------------------------------------------|----------------|-------------|----------|----------|
| RWY                           |                                                    | USABLE LENGTHS |             |          |          |
|                               |                                                    | Threshold      | Glide Slope | TAKE-OFF | WIDTH    |
| 01                            | HIRL (60m) CL (15m) HIALS PAPI-L (3.0°) RVR        |                | 9128' 2782m | ②        | 148' 45m |
| 19                            | HIRL (60m) CL (15m) HIALS-II TDZ PAPI-L (3.0°) RVR |                |             |          |          |

|                                         |  |  |                                         |  |  |
|-----------------------------------------|--|--|-----------------------------------------|--|--|
| ② TAKE-OFF RUN AVAILABLE                |  |  |                                         |  |  |
| RWY 01: From point 01-1 10,039' (3060m) |  |  | RWY 19: From point 19-1 10,039' (3060m) |  |  |
| from point 01-2 9429' (2874m)           |  |  | from point 19-2 8409' (2563m)           |  |  |
| from point 01-3 8091' (2466m)           |  |  | from point 19-3 7713' (2351m)           |  |  |
| from point 01-4 7119' (2170m)           |  |  |                                         |  |  |
| from point 01-5 6850' (2088m)           |  |  |                                         |  |  |

|    |                                                    |  |               |   |      |
|----|----------------------------------------------------|--|---------------|---|------|
| 06 |                                                    |  | 10,511' 3204m | ③ | 197' |
| 24 | HIRL (60m) CL (15m) HIALS-II TDZ PAPI-L (3.0°) RVR |  | 10,389' 3167m |   | 60m  |

|                                         |  |  |                                         |  |  |
|-----------------------------------------|--|--|-----------------------------------------|--|--|
| ③ TAKE-OFF RUN AVAILABLE                |  |  |                                         |  |  |
| RWY 06: From point 06-1 11,483' (3500m) |  |  | RWY 24: From point 24-1 11,483' (3500m) |  |  |
| from point 06-2 9843' (3000m)           |  |  | from point 24-2 9708' (2959m)           |  |  |
| from point 06-3 8327' (2538m)           |  |  | from point 24-3 8209' (2502m)           |  |  |

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

RVR in parentheses if TDZ RVR is supplemented by Mid and/or Rollout RVR.

CHANGES: Apron. TWYs.

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MOSCOW, RUSSIA  
VNUKOVO

HOT SPOTS

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

**HS1** Intersection of Rwy 06/24 and Rwy 01/19

When both rwys are used for flights simultaneously or acft taxi along runway flight crew shall exercise CAUTION, strictly follow ATS unit instructions.

**HS2** Intersection of Twy M1, M2 and Rwy 01/19

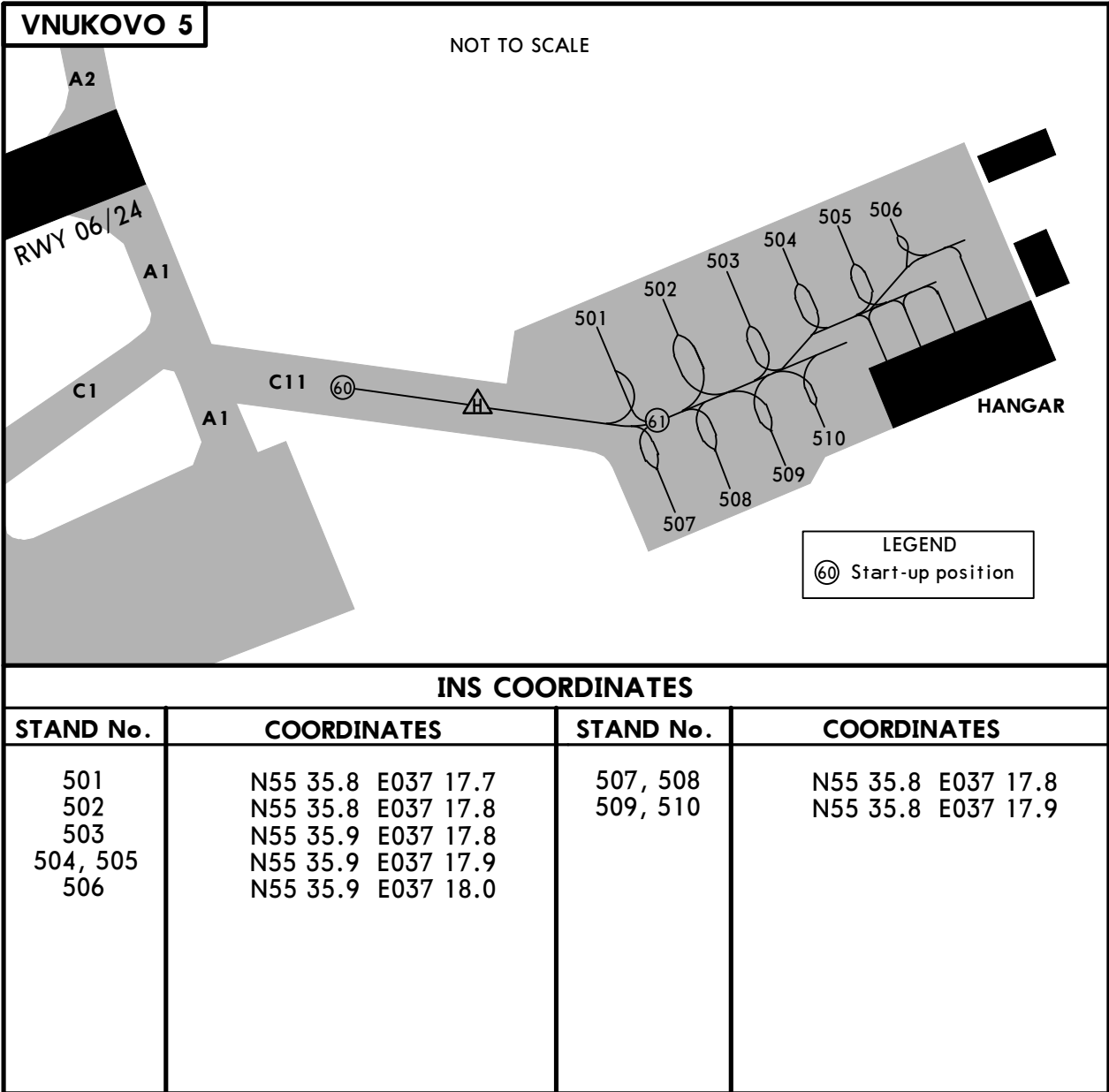
This is the hot spot of intensive crossing of Rwy 01/19.  
Flight crew of acft taxiing from Vnukovo 3 apron must not cross Rwy 01/19 holding position without ATS unit instruction. Crossing runway holding positions at Rwy 01/19 and taxiing to Twy M2 shall be carried out strictly by ATS unit instruction.

**HS3** Intersection of Twys M1, M3, A6 and A7

Acft shall taxi with increased CAUTION according to the established marking and instructions of the ATS unit. During vacation of Rwy 06 along Twy A7 after landing flight crew shall regulate acft speed not to miss Twy A7.

**HS4** Intersection of Twys M4 and B5

During vacation of Rwy 01 along Twy B5 after landing, flight crew shall regulate the speed not to miss the RIGHT turn to Vnukovo 1 apron. While taxiing along Twy M4 to Vnukovo 1 apron flight crew shall increase CAUTION not to miss the LEFT turn.



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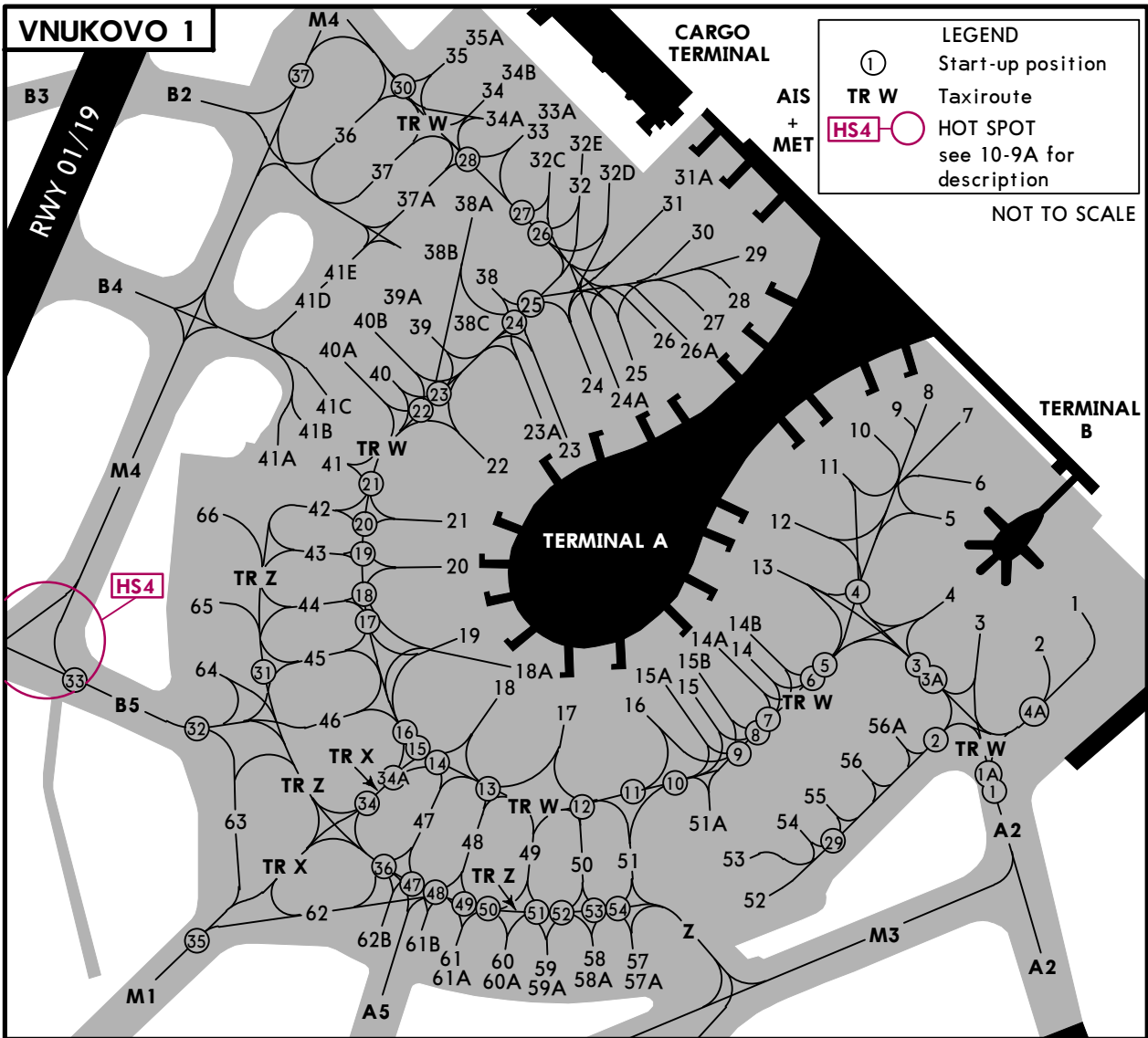
MOSCOW, RUSSIA

8 JUN 18

10-9B

Eff 21 Jun

VNUKOVO



INS COORDINATES

| STAND No.   | COORDINATES        | STAND No.    | COORDINATES        |
|-------------|--------------------|--------------|--------------------|
| 1           | N55 36.2 E037 17.4 | 34B thru 35A | N55 36.5 E037 16.8 |
| 2           | N55 36.1 E037 17.4 | 36, 37       | N55 36.4 E037 16.7 |
| 3           | N55 36.1 E037 17.3 | 37A          | N55 36.4 E037 16.8 |
| 4 thru 7    | N55 36.2 E037 17.3 | 38           | N55 36.3 E037 16.8 |
| 8           | N55 36.3 E037 17.3 | 38A, 38B     | N55 36.4 E037 16.8 |
| 9           | N55 36.3 E037 17.2 | 38C, 39      | N55 36.3 E037 16.8 |
| 10          | N55 36.2 E037 17.2 | 39A thru 40B | N55 36.3 E037 16.7 |
| 11 thru 13  | N55 36.2 E037 17.1 | 42, 43       | N55 36.2 E037 16.7 |
| 14          | N55 36.1 E037 17.0 | 44           | N55 36.1 E037 16.6 |
| 14A, 14B    | N55 36.1 E037 17.1 | 45, 46       | N55 36.1 E037 16.7 |
| 15 thru 15B | N55 36.1 E037 17.0 | 47, 48       | N55 36.0 E037 16.8 |
| 16, 17      | N55 36.1 E037 16.9 | 49, 50       | N55 36.0 E037 16.9 |
| 18 thru 19  | N55 36.1 E037 16.8 | 51           | N55 36.0 E037 16.0 |
| 20 thru 22  | N55 36.2 E037 16.8 | 52 thru 55   | N55 36.0 E037 17.1 |
| 23 thru 24  | N55 36.2 E037 16.9 | 56, 56A      | N55 36.1 E037 17.2 |
| 24A         | N55 36.2 E037 17.0 | 57, 57A      | N55 35.9 E037 17.0 |
| 25 thru 27  | N55 36.3 E037 17.0 | 58 thru 59A  | N55 35.9 E037 16.9 |
| 28, 29      | N55 36.3 E037 17.1 | 60 thru 61A  | N55 35.9 E037 16.8 |
| 30 thru 31A | N55 36.4 E037 17.0 | 61B          | N55 35.9 E037 16.7 |
| 32 thru 32E | N55 36.4 E037 16.9 | 62, 62B      | N55 36.0 E037 16.7 |
| 33          | N55 36.4 E037 16.8 | 63           | N55 36.0 E037 16.6 |
| 33A         | N55 36.4 E037 16.9 | 64, 65       | N55 36.1 E037 16.5 |
| 34, 34A     | N55 36.4 E037 16.8 | 66           | N55 36.2 E037 16.5 |

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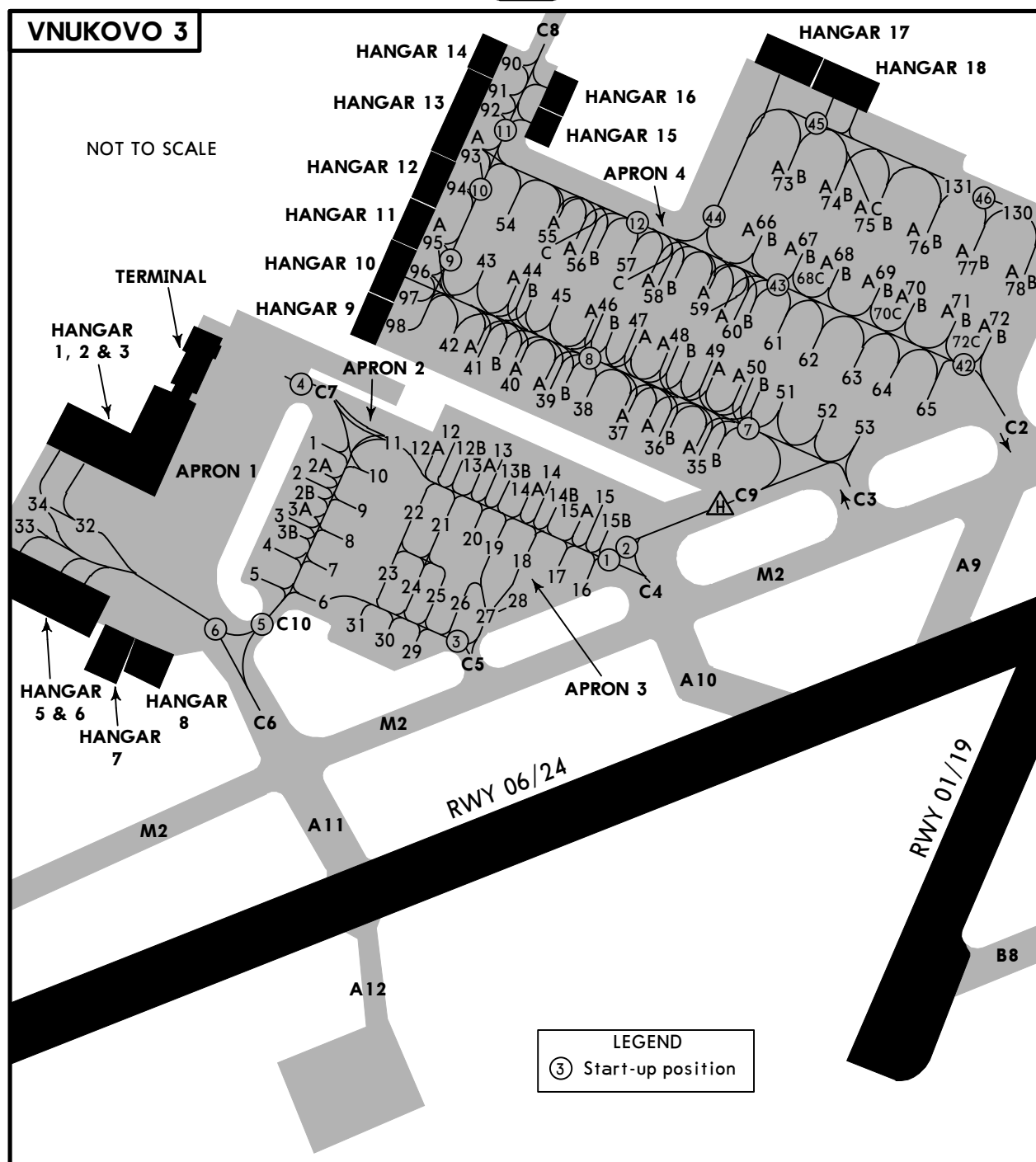
MOSCOW, RUSSIA

8 JUN 18

(10-9C)

Eff 21 Jun

VNUKOVO



### INS COORDINATES

| STAND No.    | COORDINATES        | STAND No.   | COORDINATES        |
|--------------|--------------------|-------------|--------------------|
| 1 thru 9     | N55 35.5 E037 14.7 | 67 thru 68  | N55 35.8 E037 15.4 |
| 10, 11       | N55 35.6 E037 14.7 | 68A thru 69 | N55 35.7 E037 15.4 |
| 12           | N55 35.6 E037 14.8 | 69A         | N55 35.7 E037 15.5 |
| 13 thru 15   | N55 35.5 E037 14.9 | 69B         | N55 35.7 E037 15.4 |
| 16 thru 31   | N55 35.5 E037 14.8 | 70 thru 71B | N55 35.7 E037 15.5 |
| 40 thru 44A  | N55 35.7 E037 15.0 | 72 thru 72C | N55 35.7 E037 15.6 |
| 44B thru 46B | N55 35.7 E037 15.1 | 73 thru 73B | N55 35.8 E037 15.3 |
| 52           | N55 35.7 E037 15.4 | 74 thru 75C | N55 35.8 E037 15.4 |
| 53           | N55 35.6 E037 15.4 | 76, 76A     | N55 35.7 E037 15.5 |
| 54           | N55 35.8 E037 15.0 | 76B         | N55 35.8 E037 15.5 |
| 55 thru 56B  | N55 35.8 E037 15.1 | 77 thru 77B | N55 35.7 E037 15.5 |
| 57 thru 58B  | N55 35.7 E037 15.2 | 78 thru 78B | N55 35.7 E037 15.6 |
| 62 thru 64   | N55 35.7 E037 15.4 |             |                    |
| 65           | N55 35.6 E037 15.5 |             |                    |
| 66 thru 66B  | N55 35.8 E037 15.3 |             |                    |

CHANGES: Twy C10.

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**JEPPESSEN**  
26 OCT 18 **10-9S** Eff 8 Nov

**Standard**  
**MOSCOW, RUSSIA**  
VNUKOVO

| STRAIGHT-IN RWY |                  | A                   | B                   | C                   | D                    |
|-----------------|------------------|---------------------|---------------------|---------------------|----------------------|
| 01              | ILS Z or Y       | <b>833'</b> (200')  | <b>833'</b> (200')  | <b>833'</b> (200')  | <b>833'</b> (200')   |
|                 | FULL             | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |
|                 | GLS              | <b>833'</b> (200')  | <b>833'</b> (200')  | <b>833'</b> (200')  | <b>833'</b> (200')   |
|                 | FULL             | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |
|                 | LOC              | NOT AUTH            | NOT AUTH            | NOT AUTH            | NOT AUTH             |
|                 | ② RNAV           | <b>1080'</b> (447') | <b>1080'</b> (447') | <b>1080'</b> (447') | <b>1080'</b> (447')  |
|                 | ALS out          | R1400m              | R1400m              | R1400m              | R1400m               |
|                 | ALS out          | R1500m              | R1500m              | R2100m              | R2100m               |
| 06              | ②③ NDB           | <b>1080'</b> (447') | <b>1080'</b> (447') | <b>1080'</b> (447') | <b>1080'</b> (447')  |
|                 | FULL             | <b>R1400m</b>       | <b>R1400m</b>       | <b>R1400m</b>       | <b>R1400m</b>        |
|                 | ALS out          | R1500m              | R1500m              | R2100m              | R2100m               |
|                 | ④ NDB            | <b>1180'</b> (547') | <b>1180'</b> (547') | <b>1180'</b> (547') | <b>1180'</b> (547')  |
|                 | FULL             | <b>R2000m</b>       | <b>R2000m</b>       | <b>R2200m</b>       | <b>R2200m</b>        |
|                 | ALS out          | R2700m              | R2700m              | R2900m              | R2900m               |
|                 | CAT 2 ILS Z or Y | <b>729'</b> (100')  | <b>729'</b> (100')  | <b>729'</b> (100')  | <b>⑤ 729'</b> (100') |
|                 |                  | <b>RA104' R300m</b> | <b>RA104' R300m</b> | <b>RA104' R300m</b> | <b>RA104' R300m</b>  |
|                 | ILS Z or Y       | <b>829'</b> (200')  | <b>829'</b> (200')  | <b>829'</b> (200')  | <b>829'</b> (200')   |
|                 | FULL             | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>         |
| 19              | TDZ or CL out    | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |
|                 | GLS              | <b>829'</b> (200')  | <b>829'</b> (200')  | <b>829'</b> (200')  | <b>829'</b> (200')   |
|                 | FULL             | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>         |
|                 | TDZ or CL out    | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |
|                 | LOC              | NOT AUTH            | NOT AUTH            | NOT AUTH            | NOT AUTH             |
|                 | ② RNAV           | <b>1100'</b> (471') | <b>1100'</b> (471') | <b>1100'</b> (471') | <b>1100'</b> (471')  |
|                 | ALS out          | R1500m              | R1500m              | R1500m              | R1500m               |
|                 | ALS out          | R1500m              | R1500m              | R2200m              | R2200m               |
|                 | ②③ NDB           | <b>1100'</b> (471') | <b>1100'</b> (471') | <b>1100'</b> (471') | <b>1100'</b> (471')  |
|                 | FULL             | <b>R1500m</b>       | <b>R1500m</b>       | <b>R1500m</b>       | <b>R1500m</b>        |
|                 | ALS out          | R1500m              | R1500m              | R2200m              | R2200m               |
|                 | ④ NDB            | <b>1220'</b> (591') | <b>1220'</b> (591') | <b>1220'</b> (591') | <b>1220'</b> (591')  |
|                 | FULL             | <b>R2200m</b>       | <b>R2200m</b>       | <b>R2400m</b>       | <b>R2400m</b>        |
|                 | ALS out          | R2900m              | R2900m              | R3100m              | R3100m               |
|                 | ILS Z or Y       | <b>834'</b> (200')  | <b>834'</b> (200')  | <b>834'</b> (200')  | <b>834'</b> (200')   |
|                 | FULL             | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>         |
|                 | TDZ or CL out    | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |
|                 | GLS              | <b>834'</b> (200')  | <b>834'</b> (200')  | <b>834'</b> (200')  | <b>834'</b> (200')   |
|                 | FULL             | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>        | <b>R550m</b>         |
|                 | TDZ or CL out    | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>      | <b>① R550m</b>       |
|                 | ALS out          | R1200m              | R1200m              | R1200m              | R1200m               |

- ①** W/o HUD/AP/FD: RVR 750m.  
**②** Continuous Descent Final Approach.  
**③** with FAF.  
**④** w/o FAF.  
**⑤** Widebodied acft: DA(H) 731'(102') RA106'.

UUWW/VKO


**JEPPESSEN**  
26 OCT 18 **10-9S1** **Eff 8 Nov**
**Standard**  
**MOSCOW, RUSSIA**  
VNUKOVO

| STRAIGHT-IN RWY |                          | A                           | B                           | C                           | D                           |
|-----------------|--------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 19 (contd)      | LOC                      | NOT AUTH                    | NOT AUTH                    | NOT AUTH                    | NOT AUTH                    |
|                 | ① RNAV                   | 1150'(516')<br>R1500m       | 1150'(516')<br>R1500m       | 1150'(516')<br>R1600m       | 1150'(516')<br>R1600m       |
|                 | ALS out                  | R1500m                      | R1500m                      | R2400m                      | R2400m                      |
|                 | ① ② NDB                  | 1150'(516')<br>R1500m       | 1150'(516')<br>R1500m       | 1150'(516')<br>R1600m       | 1150'(516')<br>R1600m       |
|                 | ALS out                  | R1500m                      | R1500m                      | R2400m                      | R2400m                      |
| 24              | ③ NDB                    | 1250'(616')<br>R2300m       | 1250'(616')<br>R2300m       | 1250'(616')<br>R2500m       | 1250'(616')<br>R2500m       |
|                 | ALS out                  | R3000m                      | R3000m                      | R3200m                      | R3200m                      |
|                 | CAT 2 ILS Z, Y or X      | 785'(100')<br>RA 102' R300m | 785'(100')<br>RA 102' R300m | 785'(100')<br>RA 102' R300m | 785'(100')<br>RA 102' R300m |
|                 | ILS Z, Y or X<br>FULL    | 885'(200')<br>R550m         | 885'(200')<br>R550m         | 885'(200')<br>R550m         | 885'(200')<br>R550m         |
|                 | TDZ or CL out<br>ALS out | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           |
|                 | GLS Z or Y<br>FULL       | 885'(200')<br>R550m         | 885'(200')<br>R550m         | 885'(200')<br>R550m         | 885'(200')<br>R550m         |
|                 | TDZ or CL out<br>ALS out | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           | ④ R550m<br>R1200m           |
|                 | LOC                      | NOT AUTH                    | NOT AUTH                    | NOT AUTH                    | NOT AUTH                    |
|                 | ① RNAV A or B            | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       |
|                 | ALS out                  | R1500m                      | R1500m                      | R1700m                      | R1700m                      |
|                 | ① ② NDB                  | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       | 1060'(375')<br>R1000m       |
|                 | ALS out                  | R1500m                      | R1500m                      | R1700m                      | R1700m                      |
|                 | ③ NDB                    | 1480'(795')<br>R3100m       | 1480'(795')<br>R3100m       | 1480'(795')<br>R3300m       | 1480'(795')<br>R3300m       |
|                 | ALS out                  | R3800m                      | R3800m                      | R4000m                      | R4000m                      |

| CIRCLE-TO-LAND | 100 KT                | 135 KT                  | 180 KT                | 205 KT                |
|----------------|-----------------------|-------------------------|-----------------------|-----------------------|
| After GLS apch | 1150'(464')<br>V1500m | 1220'(534')<br>⑤ V1600m | 1330'(644')<br>V2400m | 1390'(704')<br>V3600m |

- ① Continuous Descent Final Approach.  
② with FAF.  
③ w/o FAF.  
④ W/o HUD/AP/FD: RVR 750m.  
⑤ After GLS Rwy 01/19: MDA(H) 1210'(524').

### TAKE-OFF

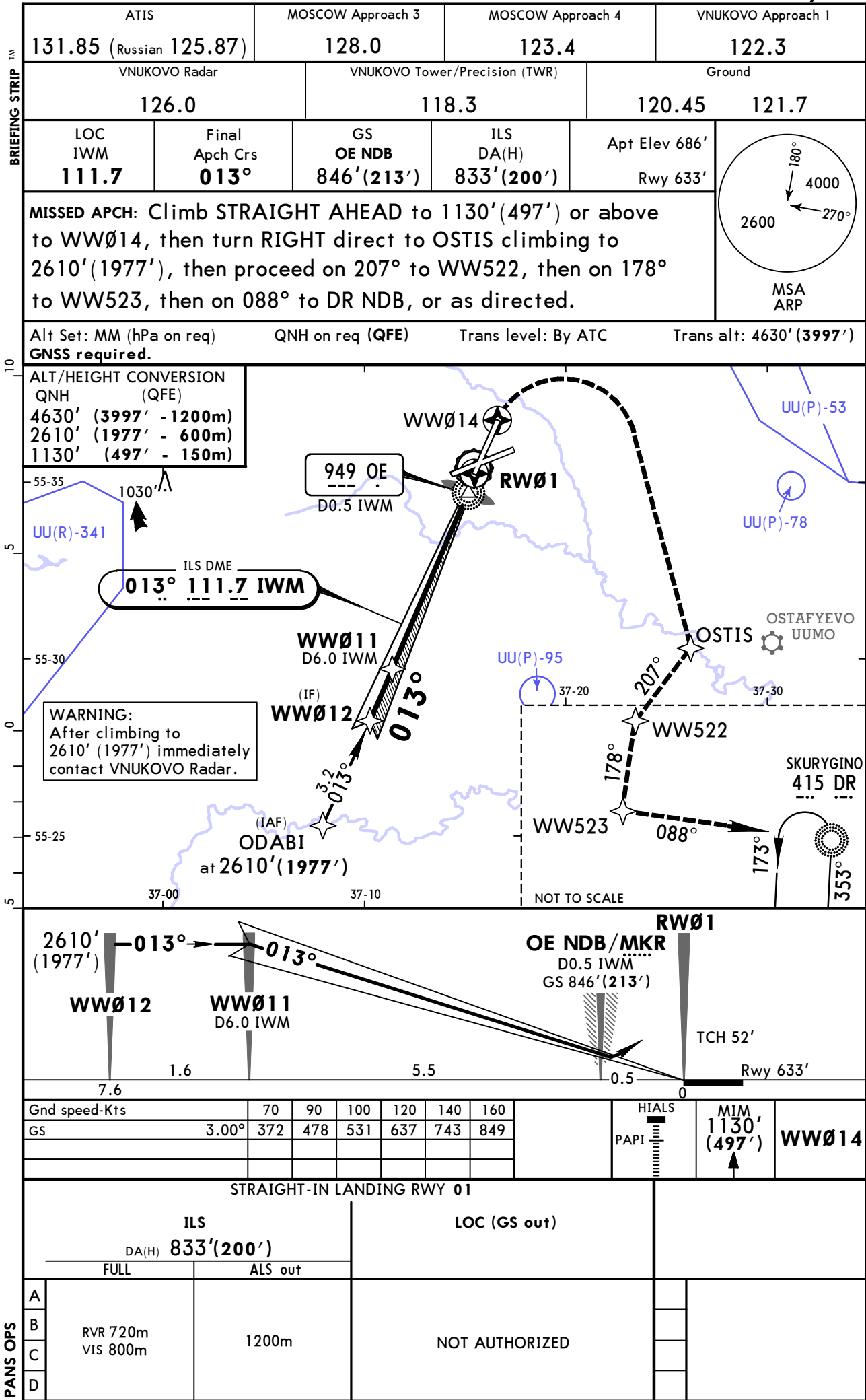
| Low Visibility Take-off |                       |              |                                   |                                    |                                |
|-------------------------|-----------------------|--------------|-----------------------------------|------------------------------------|--------------------------------|
| HIRL, CL & relevant RVR | RL, CL & relevant RVR | RL & CL      | Day: RL & RCLM<br>Night: RL or CL | Day: RL or RCLM<br>Night: RL or CL | Adequate vis ref<br>(Day only) |
| A                       |                       |              |                                   |                                    |                                |
| B                       | TDZ, MID, RO          | TDZ, MID, RO |                                   |                                    |                                |
| C                       | RVR 125m              | RVR 150m     | RVR 200m                          | RVR 300m                           | 400m                           |
| D                       |                       |              |                                   |                                    | 500m                           |

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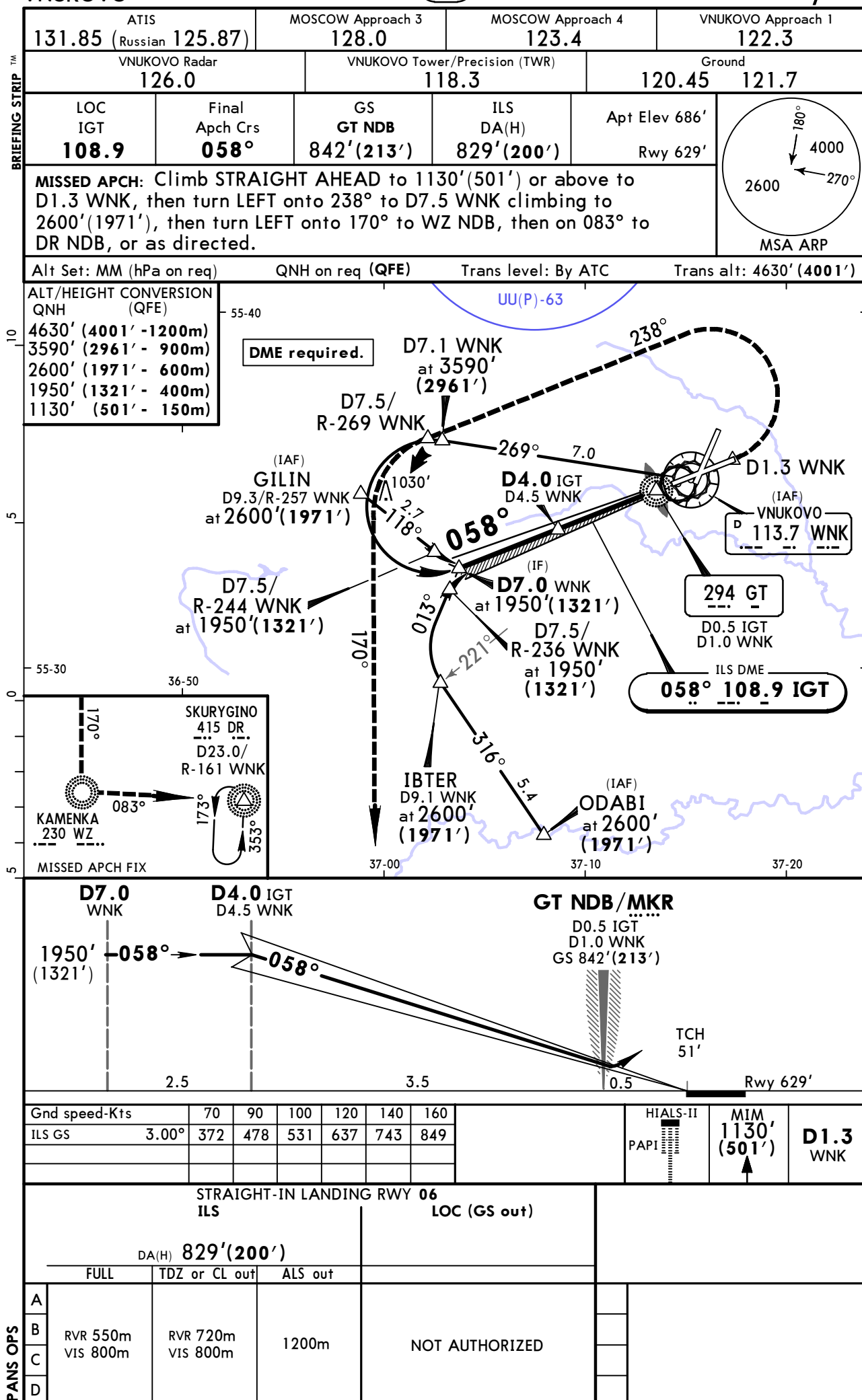
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27 JUL 18 (11-2)

MOSCOW, RUSSIA  
ILS Y Rwy 01



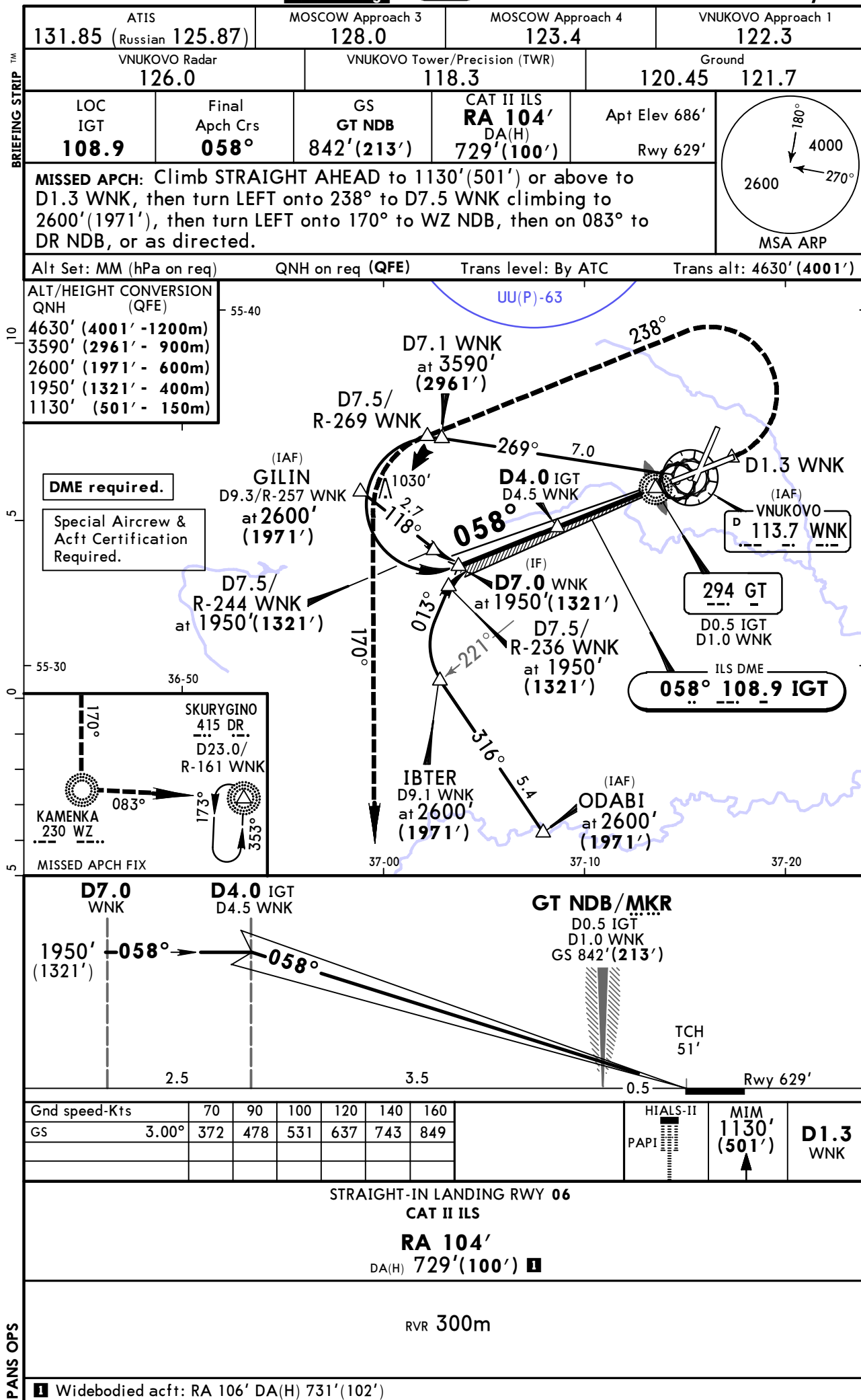


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 4 AUG 17 **(11-3)** Eff 17 Aug

**MOSCOW, RUSSIA**  
**ILS Z Rwy 06**


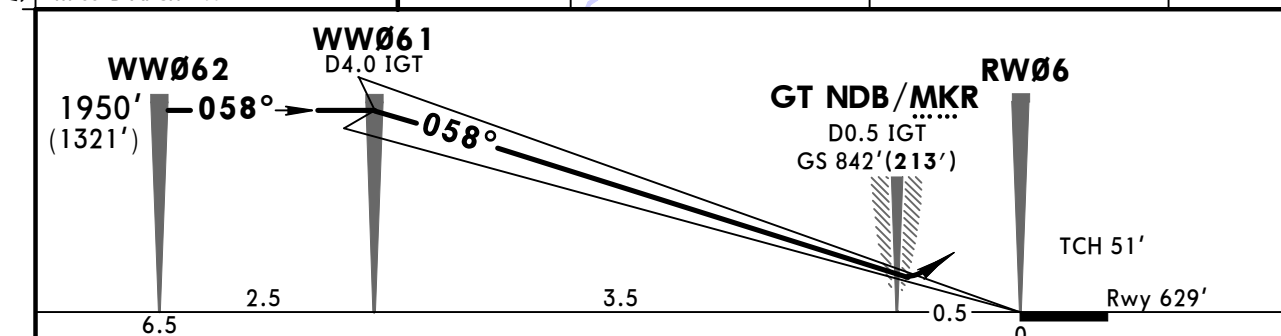
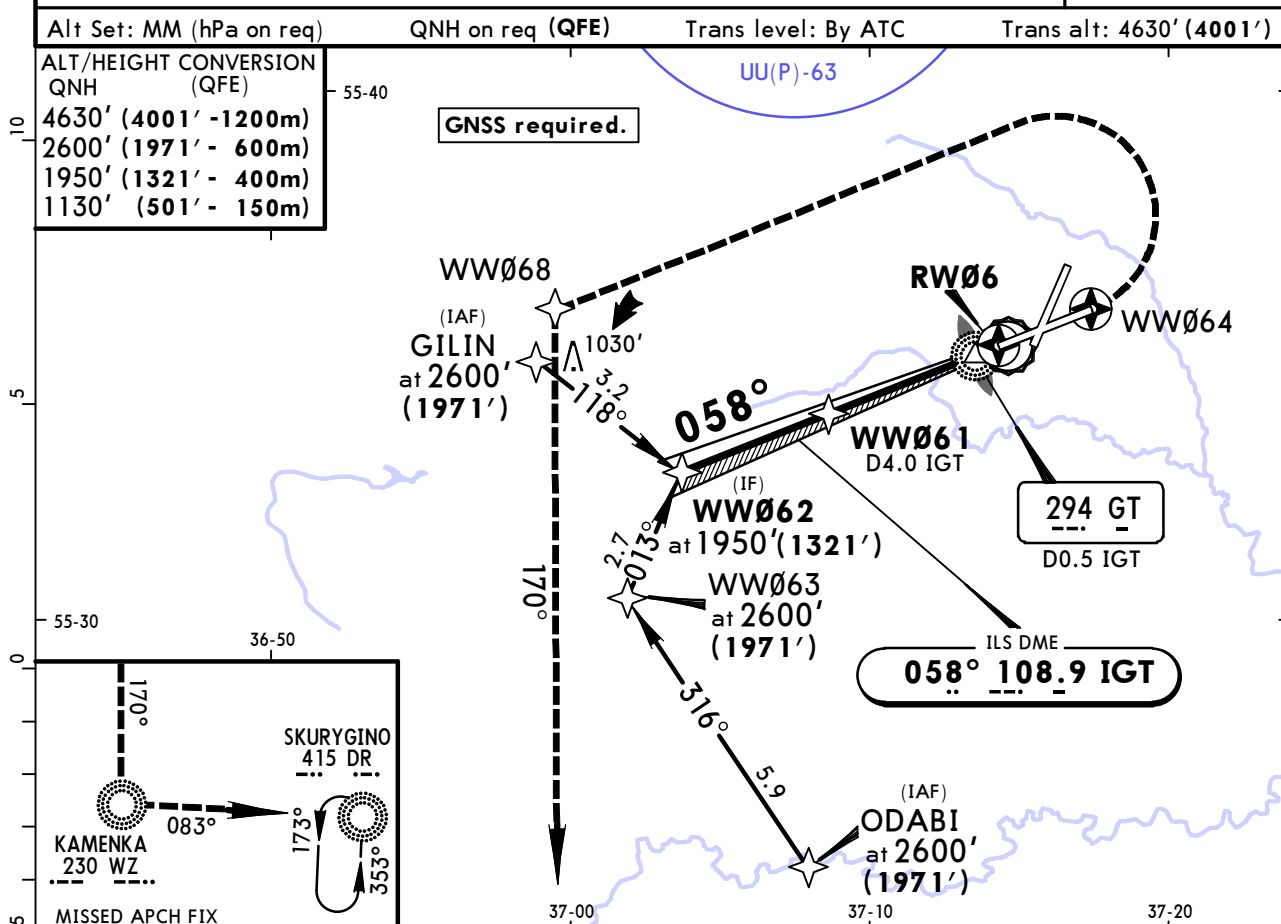


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**VNUKOVO**

4 AUG 17  
**Eff 17 Aug**
**(11-3A)**
**MOSCOW, RUSSIA**  
**CAT II ILS Z Rwy 06**


**UUWW/VKO**  
**VNUKOVO**
**JEPPESSEN**  
4 AUG 17 **(11-4)** **Eff 17 Aug**
**MOSCOW, RUSSIA**  
**ILS Y Rwy 06**

|                                                                                                                                                                                                                                                                                       |                                                |                                                      |                                                 |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------|-------------------------------------------------|-------------------------------------------|
| <b>ATIS</b><br><b>131.85</b> (Russian <b>125.87</b> )                                                                                                                                                                                                                                 |                                                | <b>MOSCOW Approach 3</b><br><b>128.0</b>             | <b>MOSCOW Approach 4</b><br><b>123.4</b>        | <b>VNUKOVO Approach 1</b><br><b>122.3</b> |
| <b>VNUKOVO Radar</b><br><b>126.0</b>                                                                                                                                                                                                                                                  |                                                | <b>VNUKOVO Tower/Precision (TWR)</b><br><b>118.3</b> |                                                 | <b>Ground</b><br><b>120.45 121.7</b>      |
| <b>LOC</b><br><b>IGT</b><br><b>108.9</b>                                                                                                                                                                                                                                              | <b>Final</b><br><b>Apch Crs</b><br><b>058°</b> | <b>GS</b><br><b>GT NDB</b><br><b>842'(213')</b>      | <b>ILS</b><br><b>DA(H)</b><br><b>829'(200')</b> | <b>Apt Elev 686'</b><br><b>Rwy 629'</b>   |
| <b>MISSED APCH:</b> Climb <b>STRAIGHT AHEAD</b> to <b>1130'(501')</b> or above to <b>WW064</b> , then turn <b>LEFT</b> direct to <b>WW068</b> climbing to <b>2600'(1971')</b> , then proceed on <b>170°</b> to <b>WZ NDB</b> , then on <b>083°</b> to <b>DR NDB</b> , or as directed. |                                                |                                                      |                                                 |                                           |
| <b>Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (4001')</b>                                                                                                                                                                                         |                                                |                                                      |                                                 |                                           |



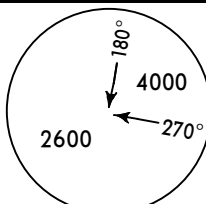
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|---------------|-------|-----|-----|-----|-----|-----|-----------------|-------------|-------------------------|--------------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | <b>HIALS-II</b> |             | <b>MIM</b> 1130' (501') | <b>WW064</b> |
| ILS GS        | 3.00° | 372 | 478 | 531 | 637 | 743 | 849             | <b>PAPI</b> |                         |              |

|          |   |                            |               |         |                |  |
|----------|---|----------------------------|---------------|---------|----------------|--|
|          |   | STRAIGHT-IN LANDING RWY 06 |               |         |                |  |
|          |   | ILS                        |               |         | LOC (GS out)   |  |
|          |   | DA(H) 829'(200')           |               |         |                |  |
|          |   | FULL                       | TDZ or CL out | ALS out |                |  |
| PANS OPS | A |                            |               |         |                |  |
|          | B | RVR 550m                   | RVR 720m      | 1200m   | NOT AUTHORIZED |  |
|          | C | VIS 800m                   | VIS 800m      |         |                |  |
|          | D |                            |               |         |                |  |

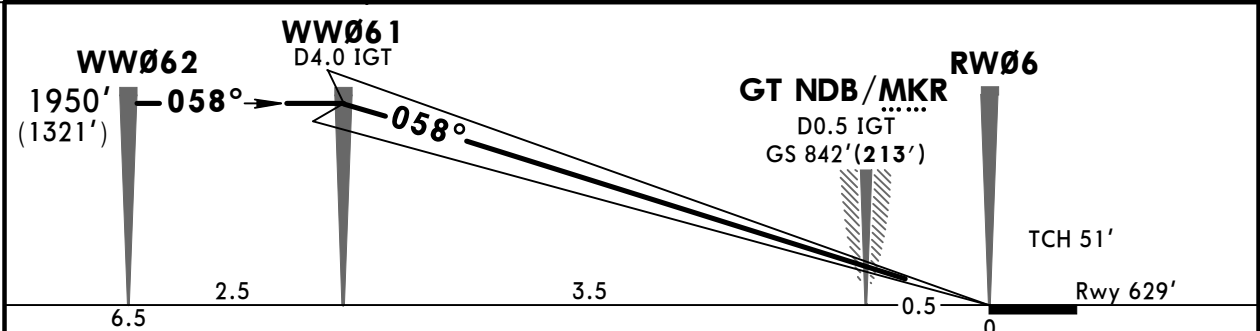
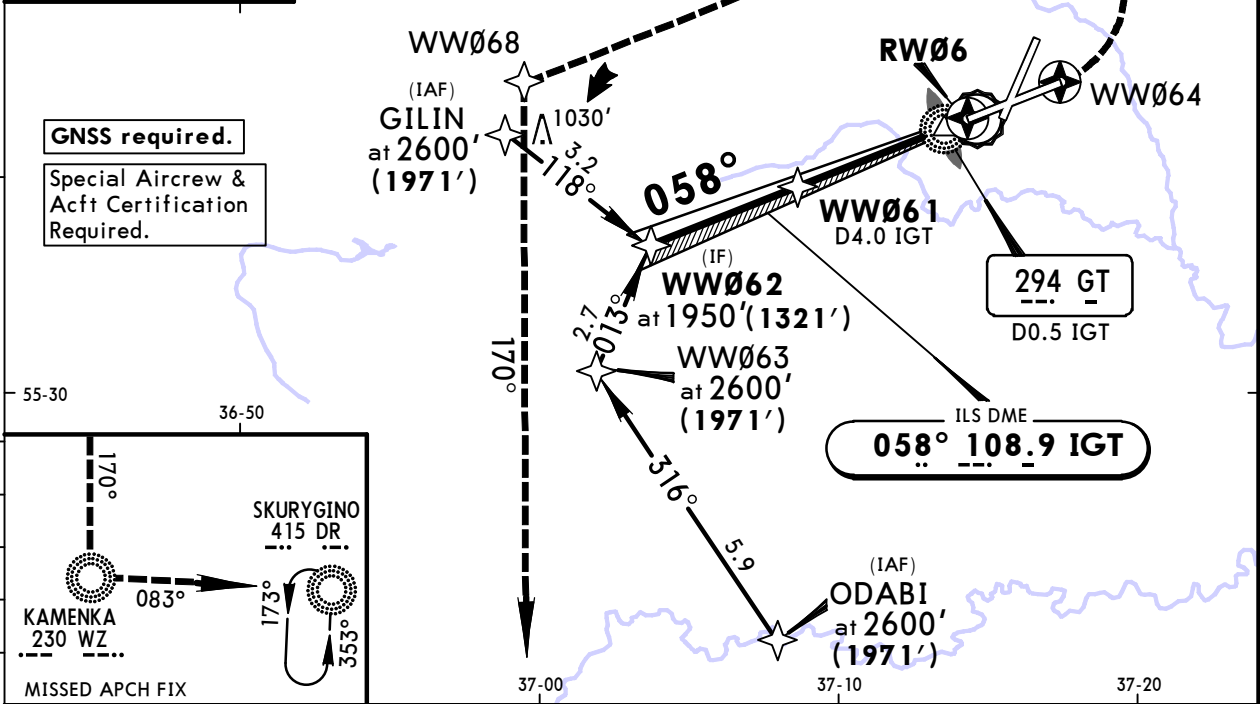
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4 AUG 17  
Eff 17 Aug 11-4A

MOSCOW, RUSSIA  
CAT II ILS Y Rwy 06

|                                                                                                                                                                                                             |                           |                                        |                                              |                            |                           |                             |                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|----------------------------------------------|----------------------------|---------------------------|-----------------------------|-------------------------------------------------------------------------------------|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                                             |                           | MOSCOW Approach 3<br>128.0             |                                              | MOSCOW Approach 4<br>123.4 |                           | VNUKOVO Approach 1<br>122.3 |                                                                                     |
| VNUKOVO Radar<br>126.0                                                                                                                                                                                      |                           | VNUKOVO Tower/Precision (TWR)<br>118.3 |                                              |                            | Ground<br>120.45 121.7    |                             |                                                                                     |
| LOC<br>IGT<br>108.9                                                                                                                                                                                         | Final<br>Apch Crs<br>058° | GS<br>GT NDB<br>842'(213')             | CAT II ILS<br>RA 104'<br>DA(H)<br>729'(100') |                            | Apt Elev 686'<br>Rwy 629' |                             |  |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD to 1130'(501') or above to WW064, then turn LEFT direct to WW068 climbing to 2600'(1971'), then proceed on 170° to WZ NDB, then on 083° to DR NDB, or as directed. |                           |                                        |                                              |                            |                           |                             |                                                                                     |
| Alt Set: MM (hPa on req)                                                                                                                                                                                    |                           | QNH on req (QFE)                       |                                              | Trans level: By ATC        |                           | Trans alt: 4630' (4001')    |                                                                                     |

|                                    |
|------------------------------------|
| ALT/HEIGHT CONVERSION<br>QNH (QFE) |
| 4630' (4001' - 1200m)              |
| 2600' (1971' - 600m)               |
| 1950' (1321' - 400m)               |
| 1130' (501' - 150m)                |



|               |     |     |     |     |     |     |                                                                                      |  |                                                                                       |  |              |
|---------------|-----|-----|-----|-----|-----|-----|--------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|--------------|
| Gnd speed-Kts | 70  | 90  | 100 | 120 | 140 | 160 |  |  |  |  | <b>WW064</b> |
| GS 3.00°      | 372 | 478 | 531 | 637 | 743 | 849 |                                                                                      |  |                                                                                       |  |              |
|               |     |     |     |     |     |     |                                                                                      |  |                                                                                       |  |              |

STRAIGHT-IN LANDING RWY 06  
CAT II ILS  
RA 104'  
DA(H) 729'(100') ■

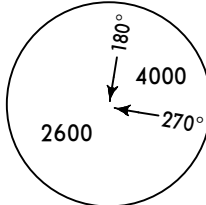
RVR 300m

■ Widebodied acft: RA 106' DA(H) 731'(102')

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VNUKOVO

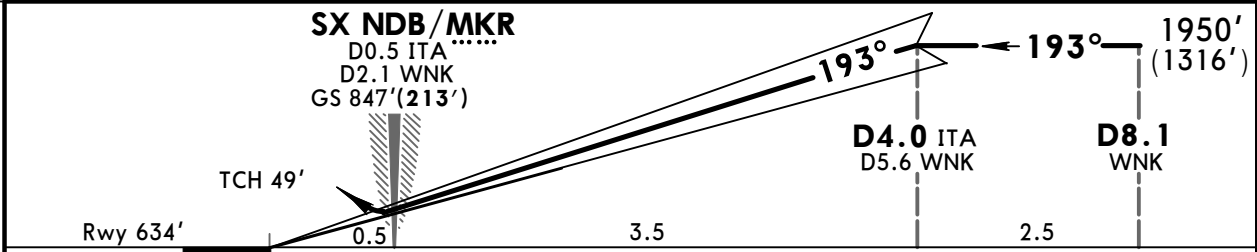
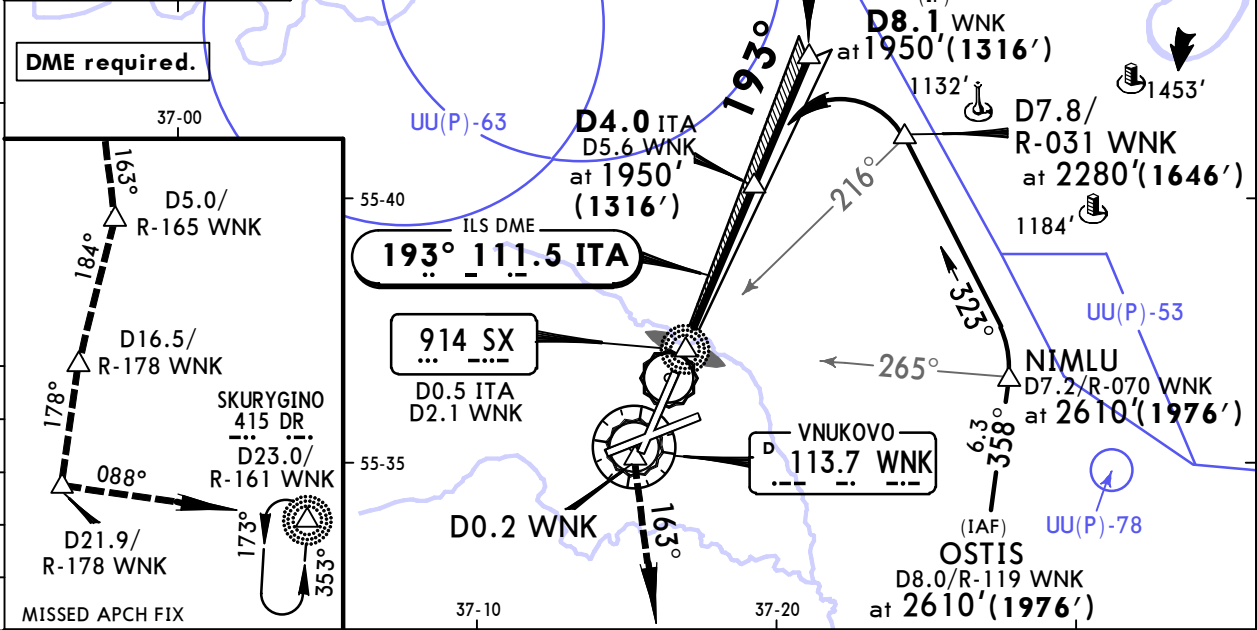
JEPPESSEN  
27 OCT 17 (11-5) Eff 9 Nov

MOSCOW, RUSSIA  
ILS Z Rwy 19

|                                                                                                                                                                                                                                             |                           |                            |                               |                               |  |                                                                                     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|-------------------------------|-------------------------------|--|-------------------------------------------------------------------------------------|--|
| ATIS                                                                                                                                                                                                                                        |                           | MOSCOW Approach 3          |                               | MOSCOW Approach 4             |  | VNUKOVO Approach 1                                                                  |  |
| 131.85 (Russian 125.87)                                                                                                                                                                                                                     |                           | 128.0                      |                               | 123.4                         |  | 122.3                                                                               |  |
| VNUKOVO Radar                                                                                                                                                                                                                               |                           |                            | VNUKOVO Tower/Precision (TWR) |                               |  | Ground                                                                              |  |
| 126.0                                                                                                                                                                                                                                       |                           |                            | 118.3                         |                               |  | 120.45 121.7                                                                        |  |
| LOC<br>ITA<br>111.5                                                                                                                                                                                                                         | Final<br>Apch Crs<br>193° | GS<br>SX NDB<br>847'(213') | ILS<br>DA(H)<br>834'(200')    | Apt Elev 686'<br><br>Rwy 634' |  |  |  |
| MISSED APCH: Climb STRAIGHT AHEAD to 1130'(496') or above to D0.2 WNK, then turn LEFT onto 163° to D5.0 WNK climbing to 2610'(1976'). Turn RIGHT onto 184° to D16.5 WNK, then on 178° to D21.9 WNK, then on 088° to DR NDB, or as directed. |                           |                            |                               |                               |  |                                                                                     |  |

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630'(3996')

|                                    |
|------------------------------------|
| ALT/HEIGHT CONVERSION<br>QNH (QFE) |
| 4630' (3996' - 1200m)              |
| 2610' (1976' - 600m)               |
| 2280' (1646' - 500m)               |
| 1950' (1316' - 400m)               |
| 1130' (496' - 150m)                |



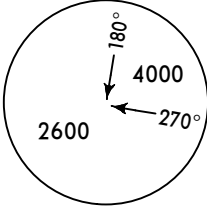
|               |     |     |     |     |     |     |                                                                                                         |
|---------------|-----|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------------|
| Gnd speed-Kts | 70  | 90  | 100 | 120 | 140 | 160 | <div><div>HIALS-II</div><div>PAPI</div><div>MIM<br/>1130'<br/>(496')</div><div>D0.2<br/>WNK</div></div> |
| ILS GS 3.00°  | 372 | 478 | 531 | 637 | 743 | 849 |                                                                                                         |
|               |     |     |     |     |     |     |                                                                                                         |
|               |     |     |     |     |     |     |                                                                                                         |

|                            |               |          |              |                |  |  |  |
|----------------------------|---------------|----------|--------------|----------------|--|--|--|
| STRAIGHT-IN LANDING RWY 19 |               |          |              |                |  |  |  |
| ILS                        |               |          | LOC (GS out) |                |  |  |  |
| DA(H) 834'(200')           |               |          |              |                |  |  |  |
| FULL                       | TDZ or CL out | ALS out  |              |                |  |  |  |
| A                          |               |          |              |                |  |  |  |
| B                          | RVR 550m      | RVR 720m | 1200m        | NOT AUTHORIZED |  |  |  |
| C                          | VIS 800m      | VIS 800m |              |                |  |  |  |
| D                          |               |          |              |                |  |  |  |

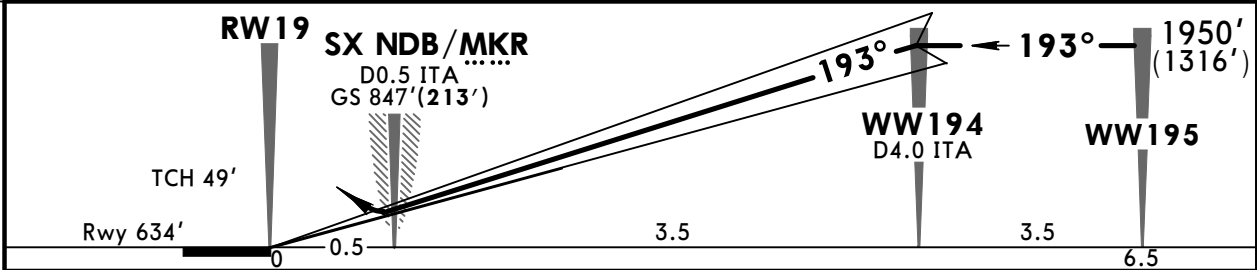
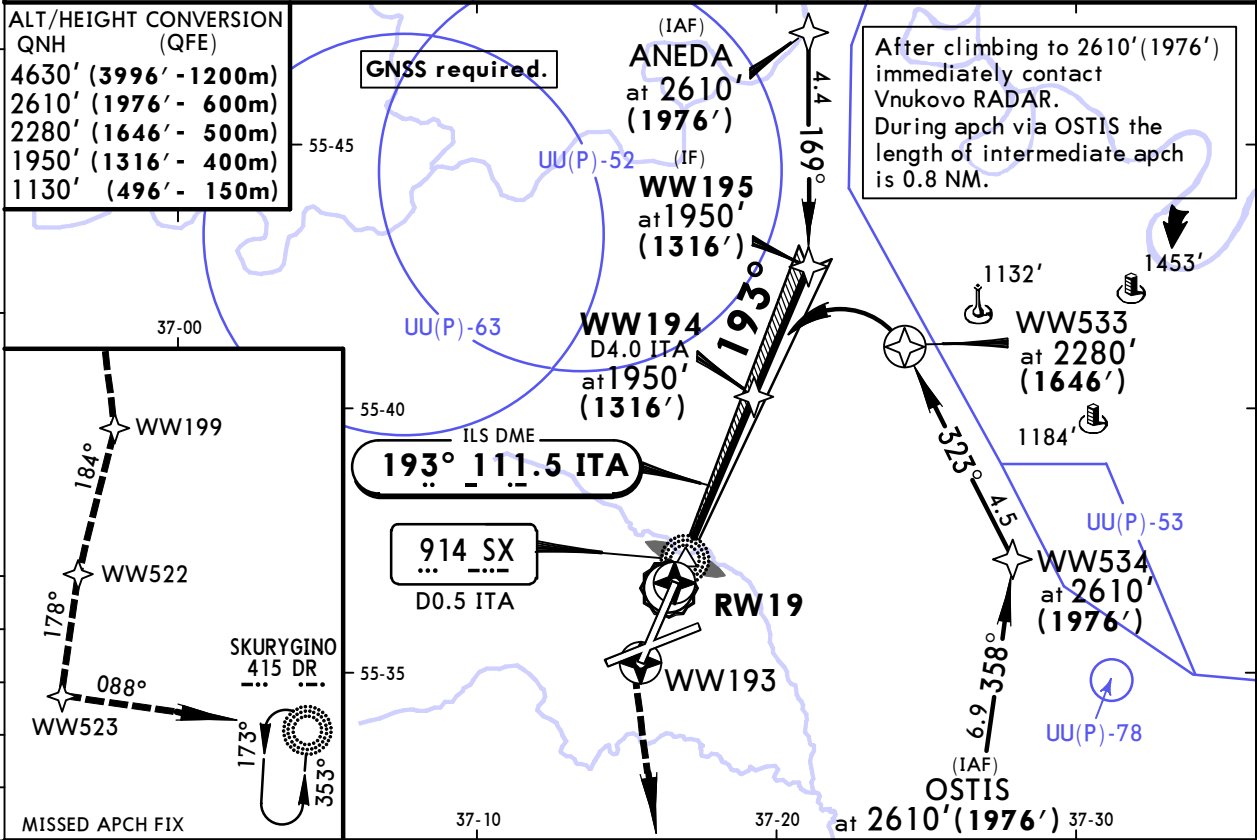
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VNUKOVO

JEPPESSEN  
27 OCT 17 11-6 Eff 9 Nov

MOSCOW, RUSSIA  
ILS Y Rwy 19

|                                                                                                                                                                                                                            |                           |                               |                            |                               |        |                                                                                     |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------|----------------------------|-------------------------------|--------|-------------------------------------------------------------------------------------|-------|
| ATIS                                                                                                                                                                                                                       |                           | MOSCOW Approach 3             |                            | MOSCOW Approach 4             |        | VNUKOVO Approach 1                                                                  |       |
| 131.85 (Russian 125.87)                                                                                                                                                                                                    |                           | 128.0                         |                            | 123.4                         |        | 122.3                                                                               |       |
| VNUKOVO Radar                                                                                                                                                                                                              |                           | VNUKOVO Tower/Precision (TWR) |                            |                               | Ground |                                                                                     |       |
| 126.0                                                                                                                                                                                                                      |                           | 118.3                         |                            |                               | 120.45 |                                                                                     | 121.7 |
| LOC<br>ITA<br>111.5                                                                                                                                                                                                        | Final<br>Apch Crs<br>193° | GS<br>SX NDB<br>847'(213')    | ILS<br>DA(H)<br>834'(200') | Apt Elev 686'<br><br>Rwy 634' |        |  |       |
| MISSED APCH: Climb STRAIGHT AHEAD to 1130'(496') or above to WW193, then turn LEFT direct to WW199 climbing to 2610'(1976'), then proceed on 184° to WW522, then on 178° to WW523, then on 088° to DR NDB, or as directed. |                           |                               |                            |                               |        |                                                                                     |       |

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630'(3996')



|               |       |     |     |     |     |     |  |                        |       |
|---------------|-------|-----|-----|-----|-----|-----|--|------------------------|-------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 |  | MIM<br>1130'<br>(496') | WW193 |
| ILS GS        | 3.00° | 372 | 478 | 531 | 637 | 849 |  |                        |       |

| STRAIGHT-IN LANDING RWY 19 |                      |               |                      |              |       |  |                |
|----------------------------|----------------------|---------------|----------------------|--------------|-------|--|----------------|
| ILS<br>DA(H) 834'(200')    |                      |               |                      | LOC (GS out) |       |  |                |
| FULL                       |                      | TDZ or CL out | ALS out              |              |       |  |                |
| A                          | RVR 550m<br>VIS 800m |               | RVR 720m<br>VIS 800m |              | 1200m |  | NOT AUTHORIZED |
| B                          |                      |               |                      |              |       |  |                |
| C                          |                      |               |                      |              |       |  |                |
| D                          |                      |               |                      |              |       |  |                |

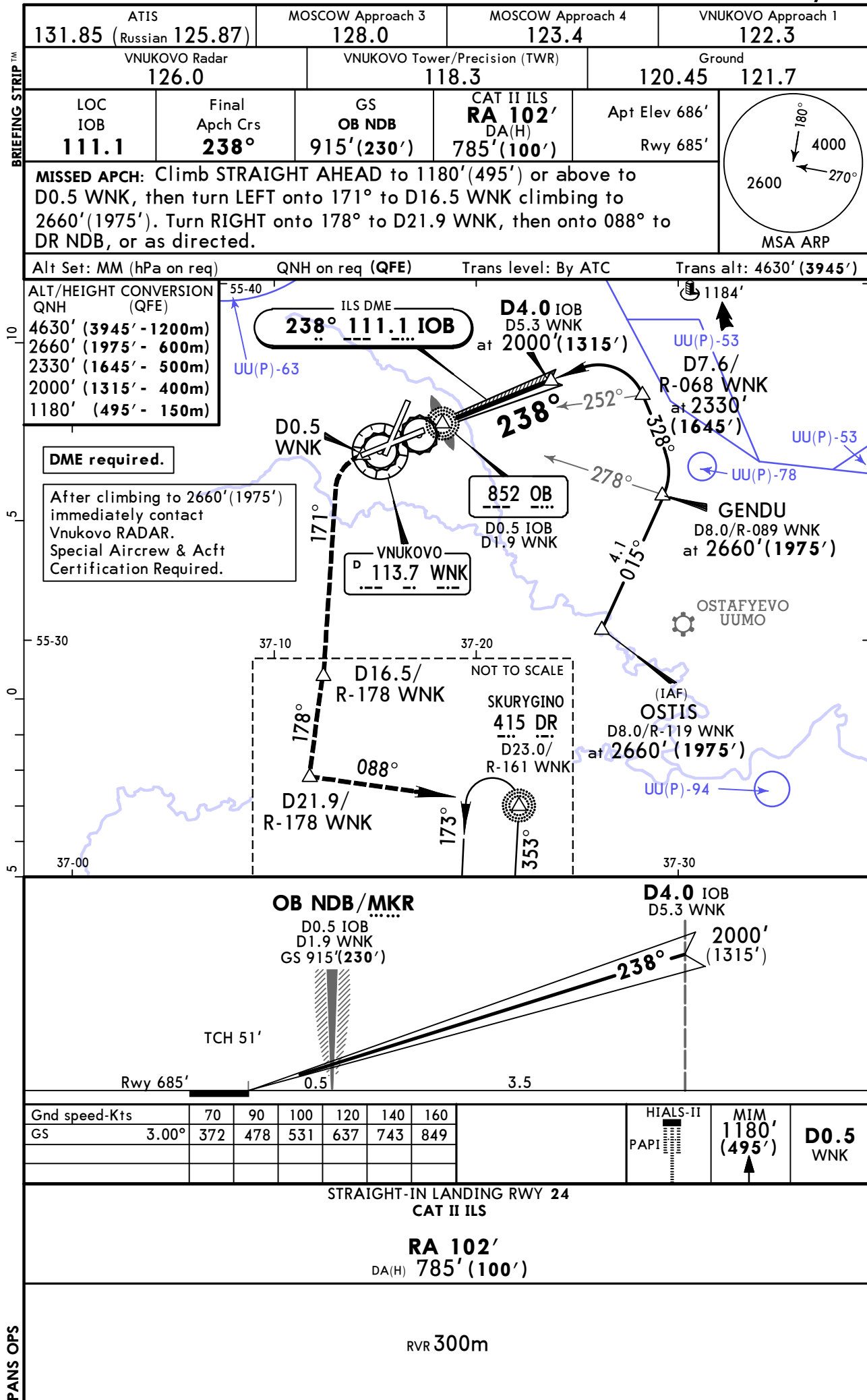


|                            |                      |                      |         |                |  |
|----------------------------|----------------------|----------------------|---------|----------------|--|
| STRAIGHT-IN LANDING RWY 24 |                      |                      |         |                |  |
| ILS                        |                      | LOC (GS out)         |         |                |  |
| DA(H) 885'(200')           |                      |                      |         |                |  |
| FULL                       |                      | TDZ or CL out        | ALS out |                |  |
| A                          | RVR 550m<br>VIS 800m | RVR 720m<br>VIS 800m | 1200m   | NOT AUTHORIZED |  |
| B                          |                      |                      |         |                |  |
| C                          |                      |                      |         |                |  |
| D                          |                      |                      |         |                |  |

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JEPPESSEN  
27 OCT 17  
Eff 9 Nov (11-7A)

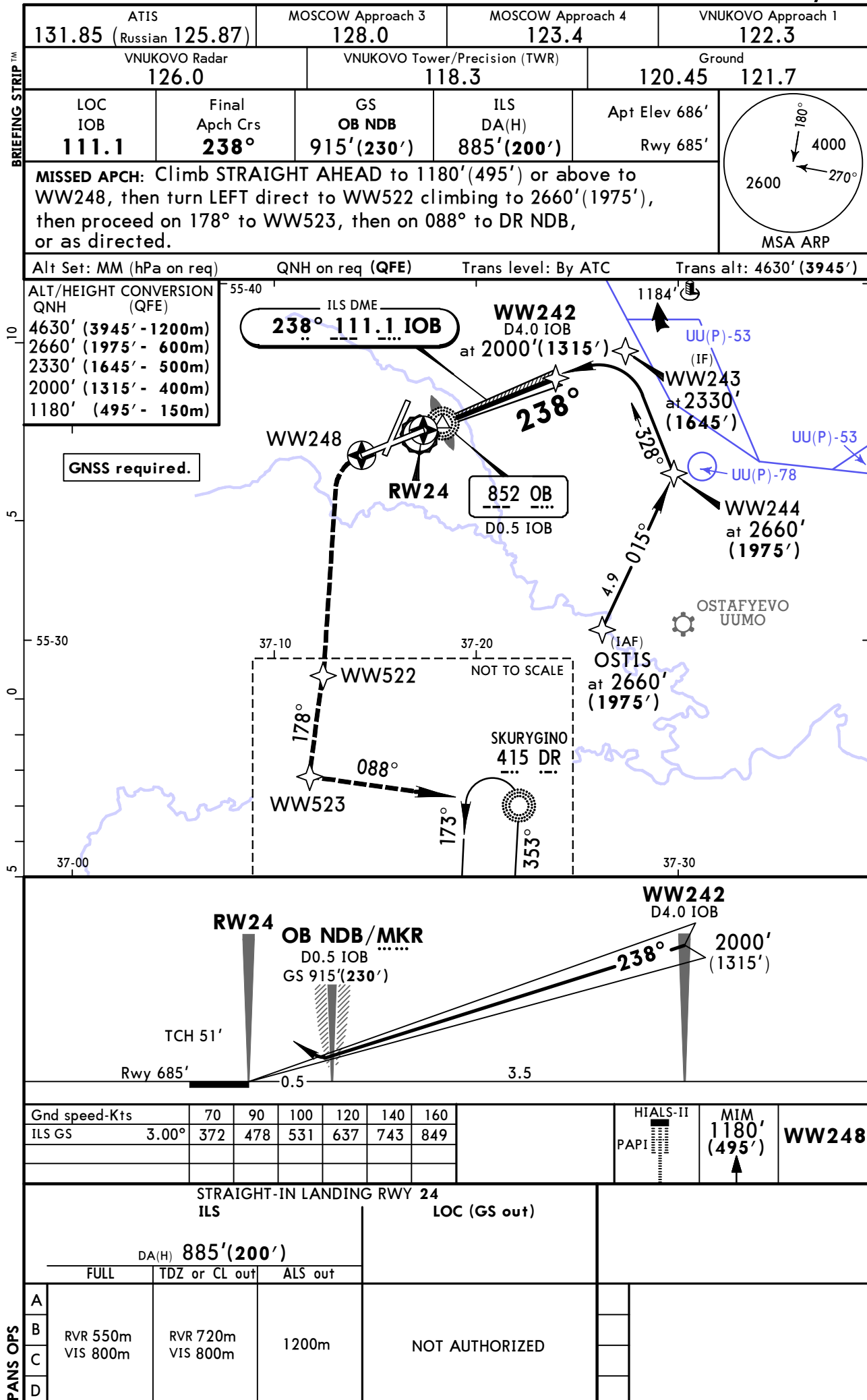
MOSCOW, RUSSIA  
CAT II ILS Z Rwy 24



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VNUKOVO

JEPPESSEN  
4 AUG 17 (11-8) Eff 17 Aug

MOSCOW, RUSSIA  
ILS Y Rwy 24



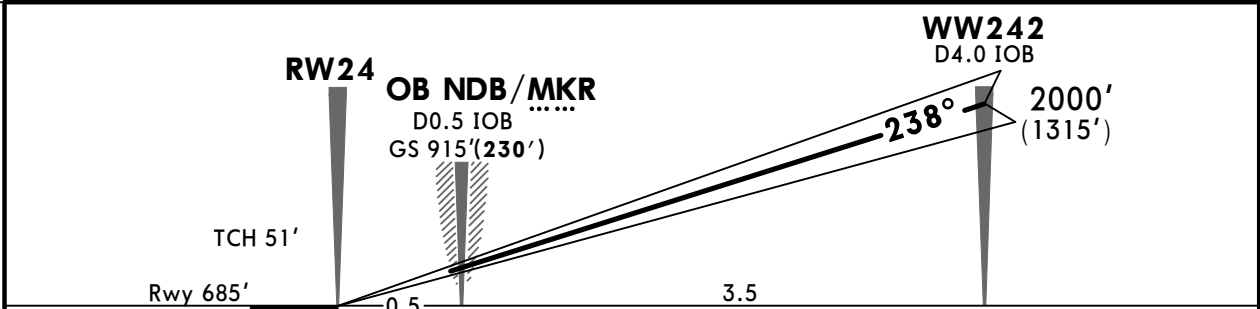
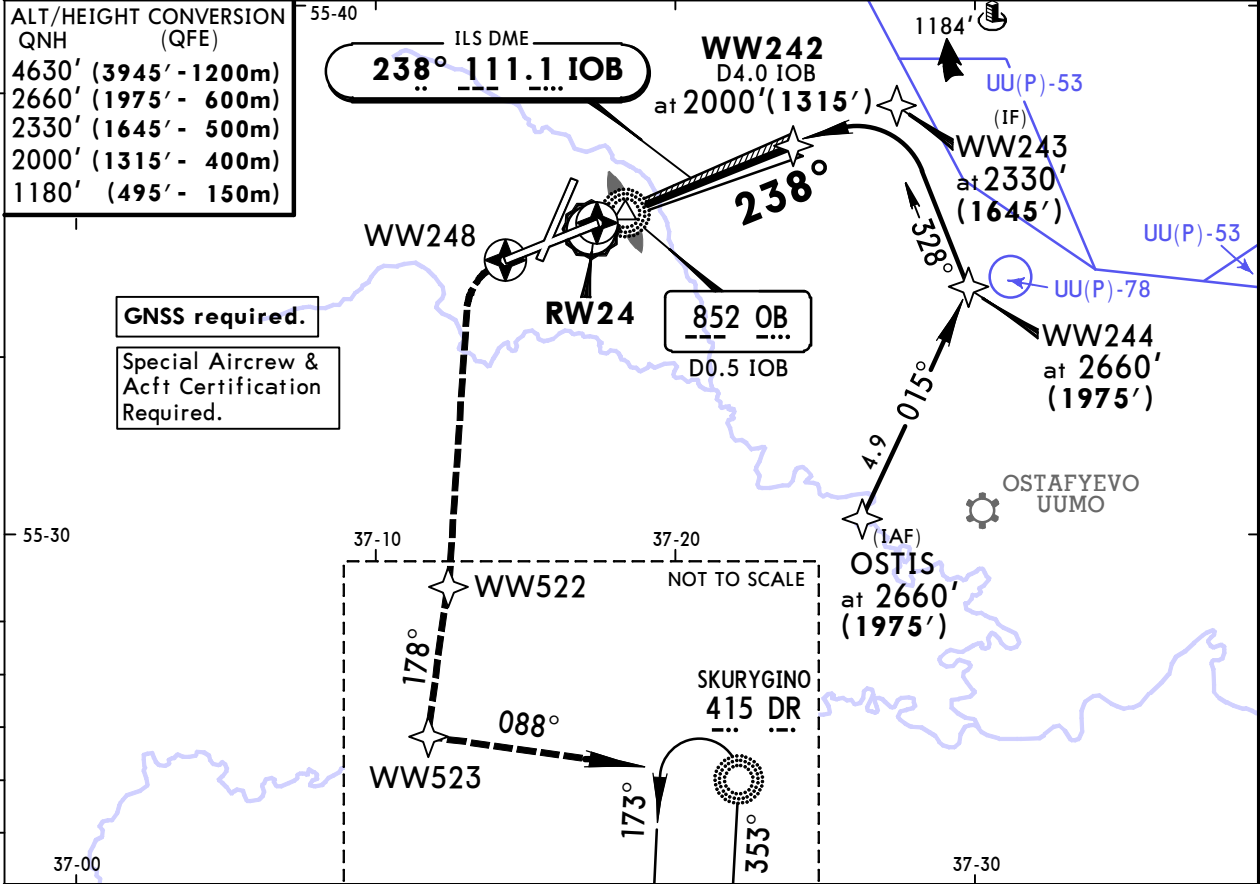


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JEPPESSEN  
4 AUG 17  
Eff 17 Aug 11-8A

MOSCOW, RUSSIA  
CAT II ILS Y Rwy 24

|                                                                                                                                                                                                       |                                        |                             |                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------------------------|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                                       | MOSCOW Approach 3<br>128.0             | MOSCOW Approach 4<br>123.4  | VNUKOVO Approach 1<br>122.3                |
| VNUKOVO Radar<br>126.0                                                                                                                                                                                | VNUKOVO Tower/Precision (TWR)<br>118.3 | Ground<br>120.45 121.7      |                                            |
| LOC<br>IOB<br>111.1                                                                                                                                                                                   | Final<br>Apch Crs<br>238°              | GS<br>OB NDB<br>915' (230') | CAT II ILS<br>RA 102'<br>DA(H) 785' (100') |
| Apt Elev 686'<br>Rwy 685'                                                                                                                                                                             |                                        |                             | MSA ARP                                    |
| MISSED APCH: Climb STRAIGHT AHEAD to 1180' (495') or above to WW248, then turn LEFT direct to WW522 climbing to 2660' (1975'), then proceed on 178° to WW523, then on 088° to DR NDB, or as directed. |                                        |                             |                                            |
| Alt Set: MM (hPa on req)                                                                                                                                                                              | QNH on req (QFE)                       | Trans level: By ATC         | Trans alt: 4630' (3945')                   |



|               |       |     |     |     |     |     |          |              |       |
|---------------|-------|-----|-----|-----|-----|-----|----------|--------------|-------|
| Gnd speed-Kts | 70    | 90  | 100 | 120 | 140 | 160 | HIALS-II |              |       |
| GS            | 3.00° | 372 | 478 | 531 | 637 | 743 | 849      | MIM          | WW248 |
|               |       |     |     |     |     |     |          | 1180' (495') |       |

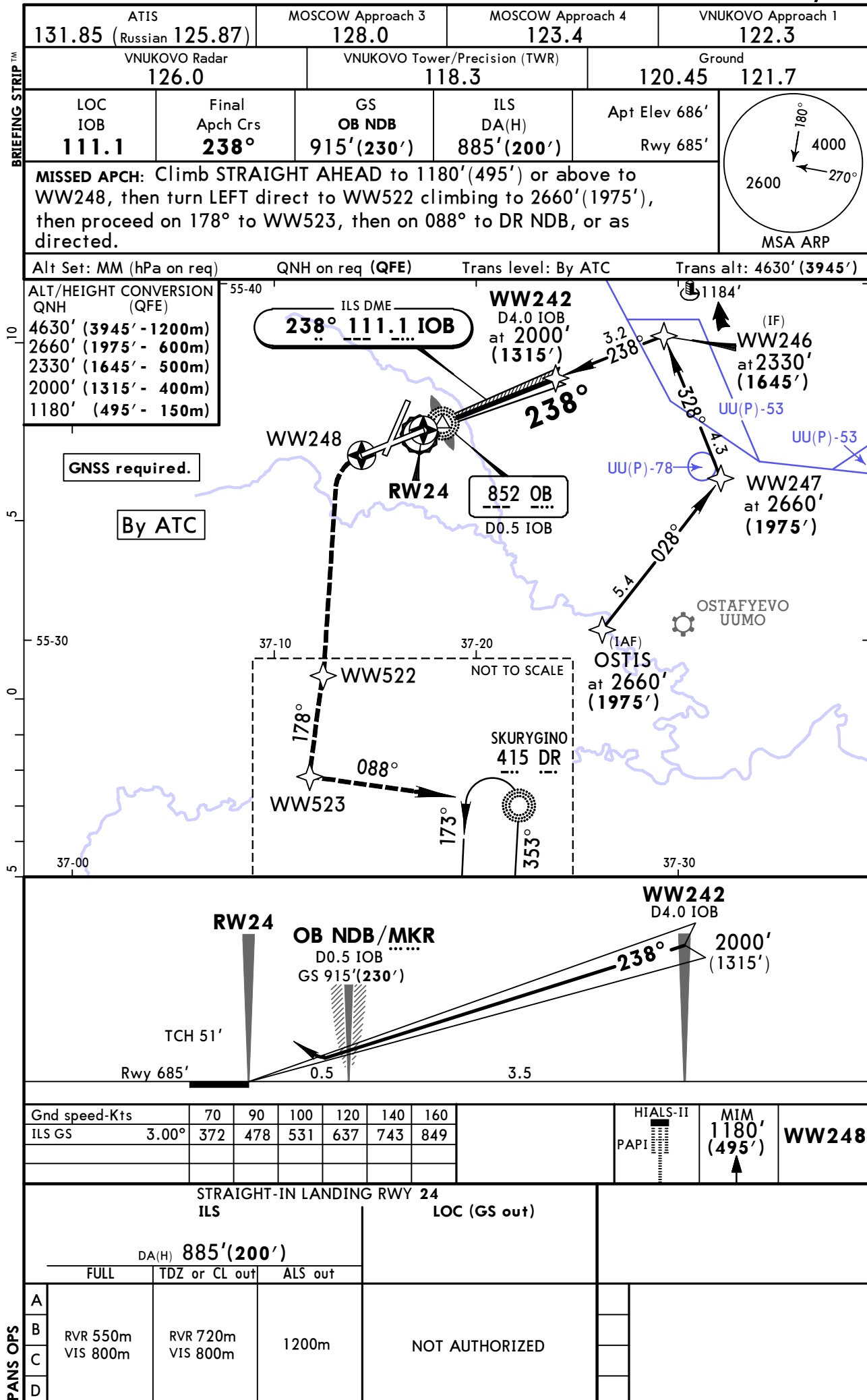
STRAIGHT-IN LANDING RWY 24  
CAT II ILS  
RA 102'  
DA(H) 785' (100')

RVR 300m

UUWW/VKO  
VNUKOVO

JEPPESSEN  
4 AUG 17 (11-9) Eff 17 Aug

MOSCOW, RUSSIA  
ILS X Rwy 24



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VNUKOVO

JEPPESSEN  
4 AUG 17  
Eff 17 Aug 11-9A

MOSCOW, RUSSIA  
CAT II ILS X Rwy 24

ATIS  
131.85 (Russian 125.87)

MOSCOW Approach 3  
128.0

MOSCOW Approach 4  
123.4

VNUKOVO Approach 1  
122.3

VNUKOVO Radar  
126.0

VNUKOVO Tower/Precision (TWR)  
118.3

Ground  
120.45 121.7

LOC  
IOB  
111.1

Final  
Apch Crs  
238°

GS  
OB NDB  
915' (230')

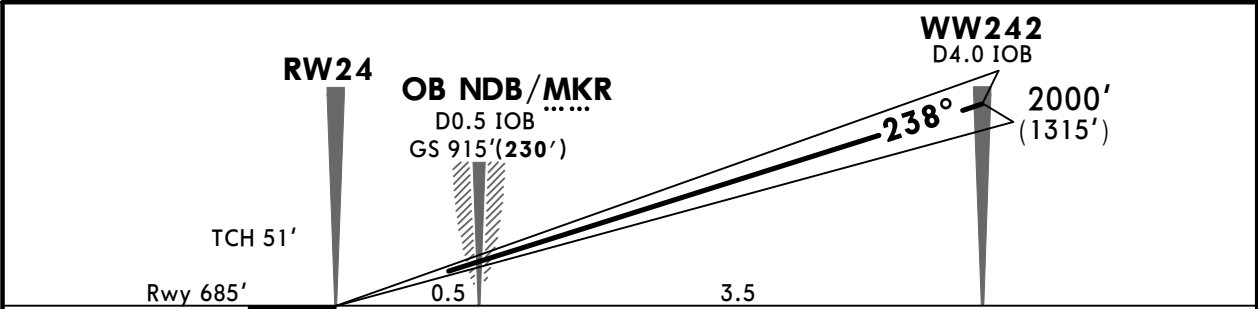
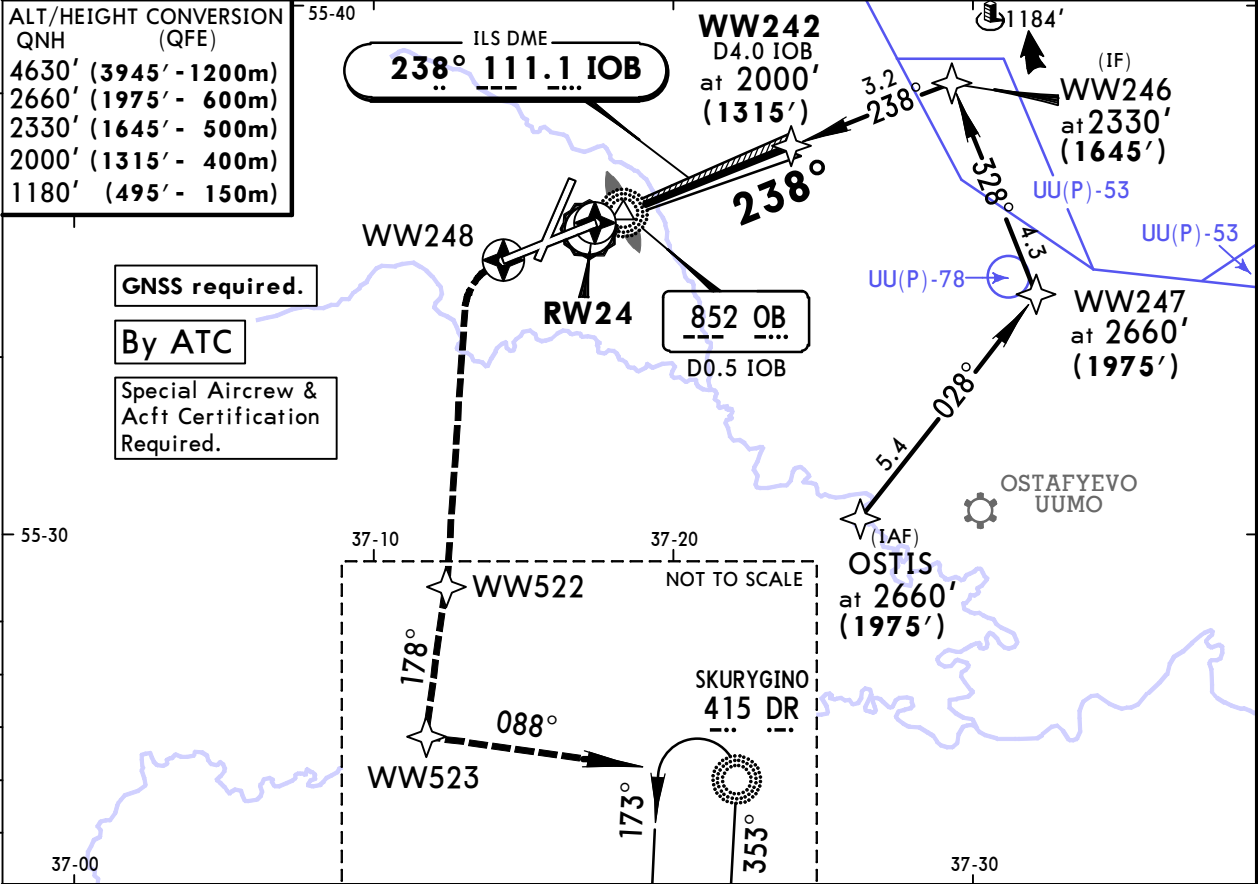
CAT II ILS  
RA 102'  
DA(H) 785' (100')

Apt Elev 686'  
Rwy 685'

MISSED APCH: Climb STRAIGHT AHEAD to 1180' (495') or above to WW248, then turn LEFT direct to WW522 climbing to 2660' (1975'), then proceed on 178° to WW523, then on 088° to DR NDB, or as directed.

MSA ARP

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (3945')



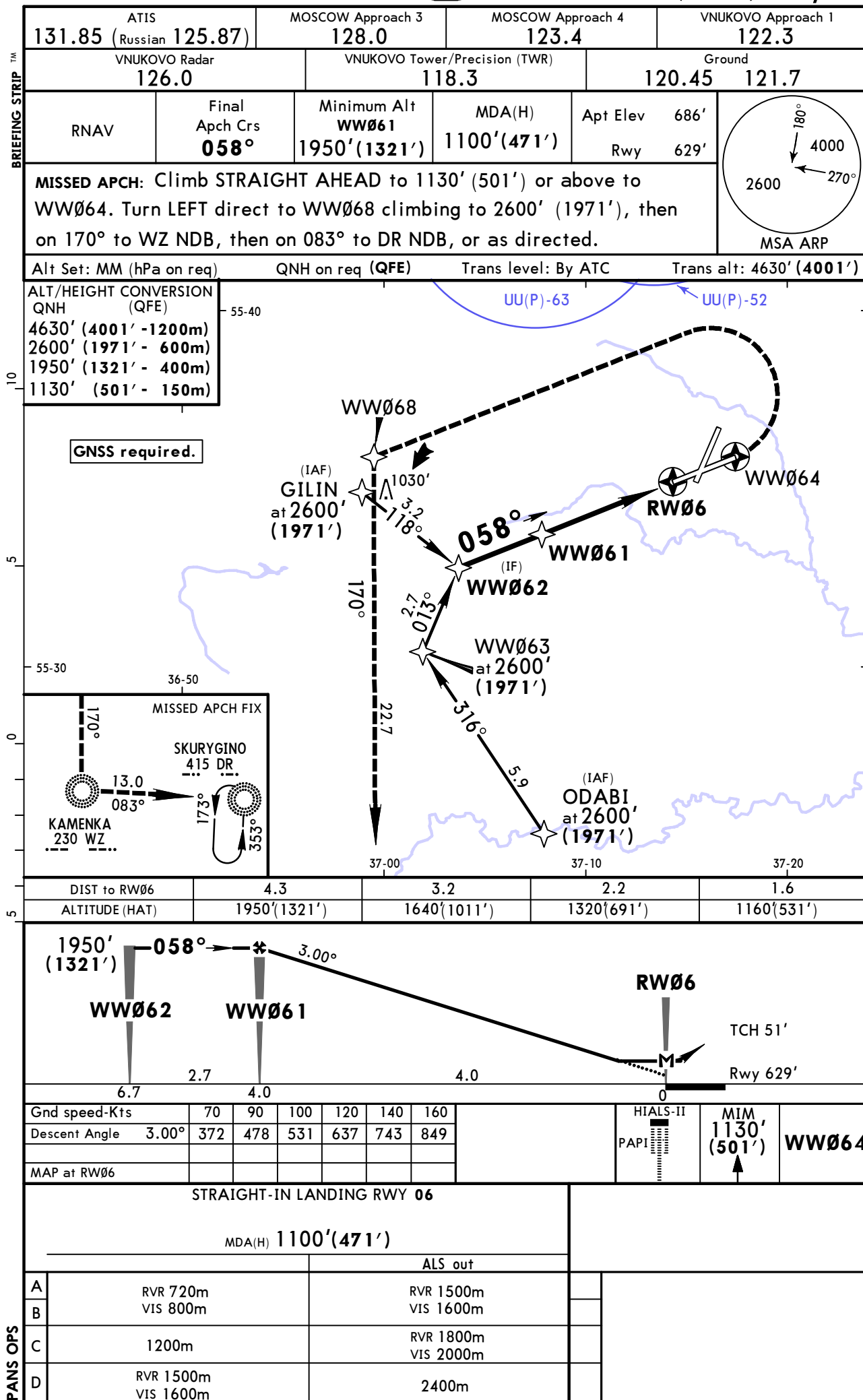
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|---------------|-----|-----|-----|-----|-----|-----|------------------|---------------------|-------|
| Gnd speed-Kts | 70  | 90  | 100 | 120 | 140 | 160 | HIALS-II<br>PAPI | MIM<br>1180' (495') | WW248 |
| GS 3.00°      | 372 | 478 | 531 | 637 | 743 | 849 |                  |                     |       |
|               |     |     |     |     |     |     |                  |                     |       |

STRAIGHT-IN LANDING RWY 24  
CAT II ILS  
RA 102'  
DA(H) 785' (100')

RVR 300m



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**MOSCOW, RUSSIA**

4 AUG 17 **(12-2)**
**Eff 17 Aug**
**RNAV (GNSS) Rwy 06**


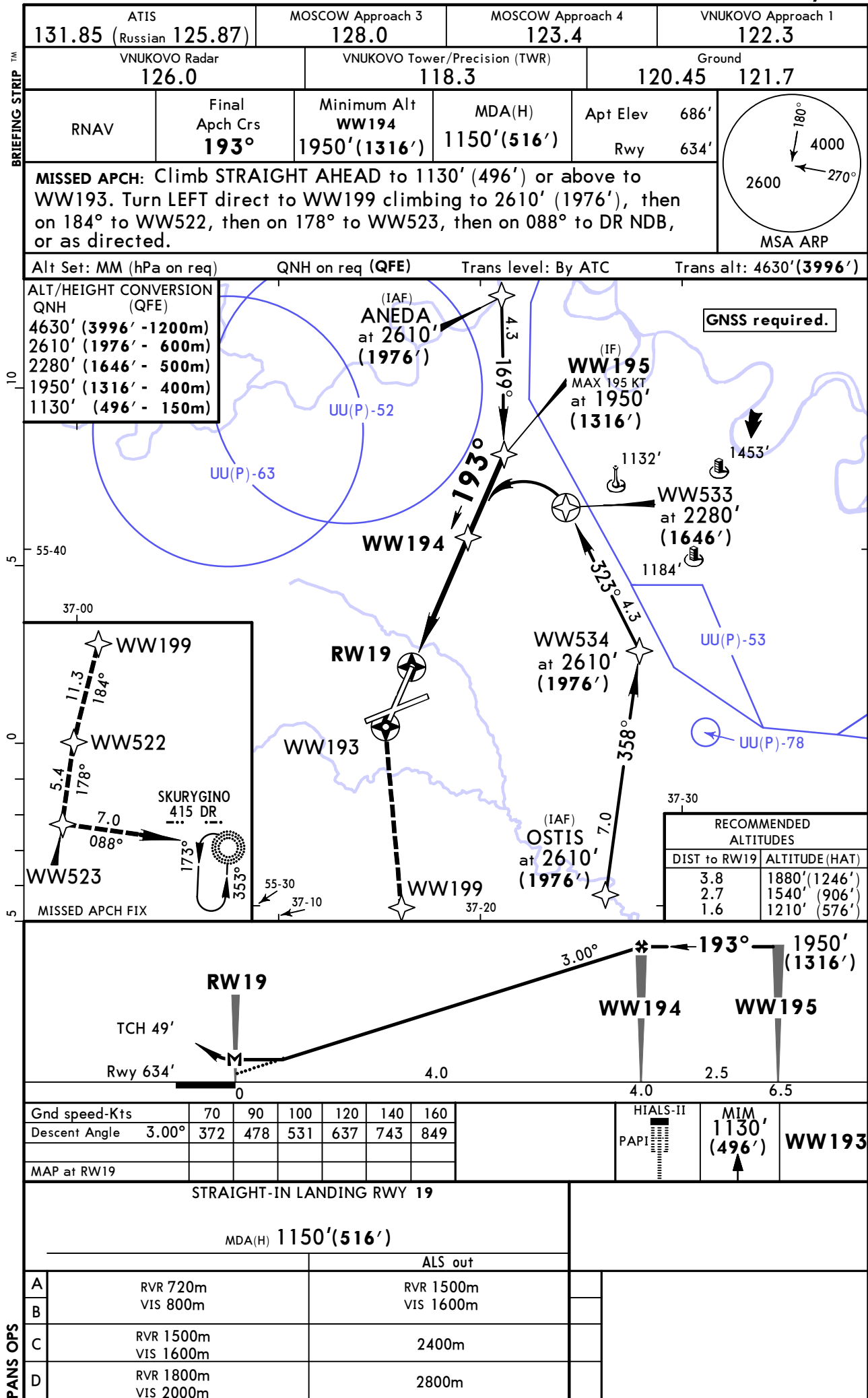
CHANGES: Rwy elev. Trans alt. Notes. Restricted areas.

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4 AUG 17 (12-3) Eff 17 Aug

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RNAV (GNSS) Rwy 19





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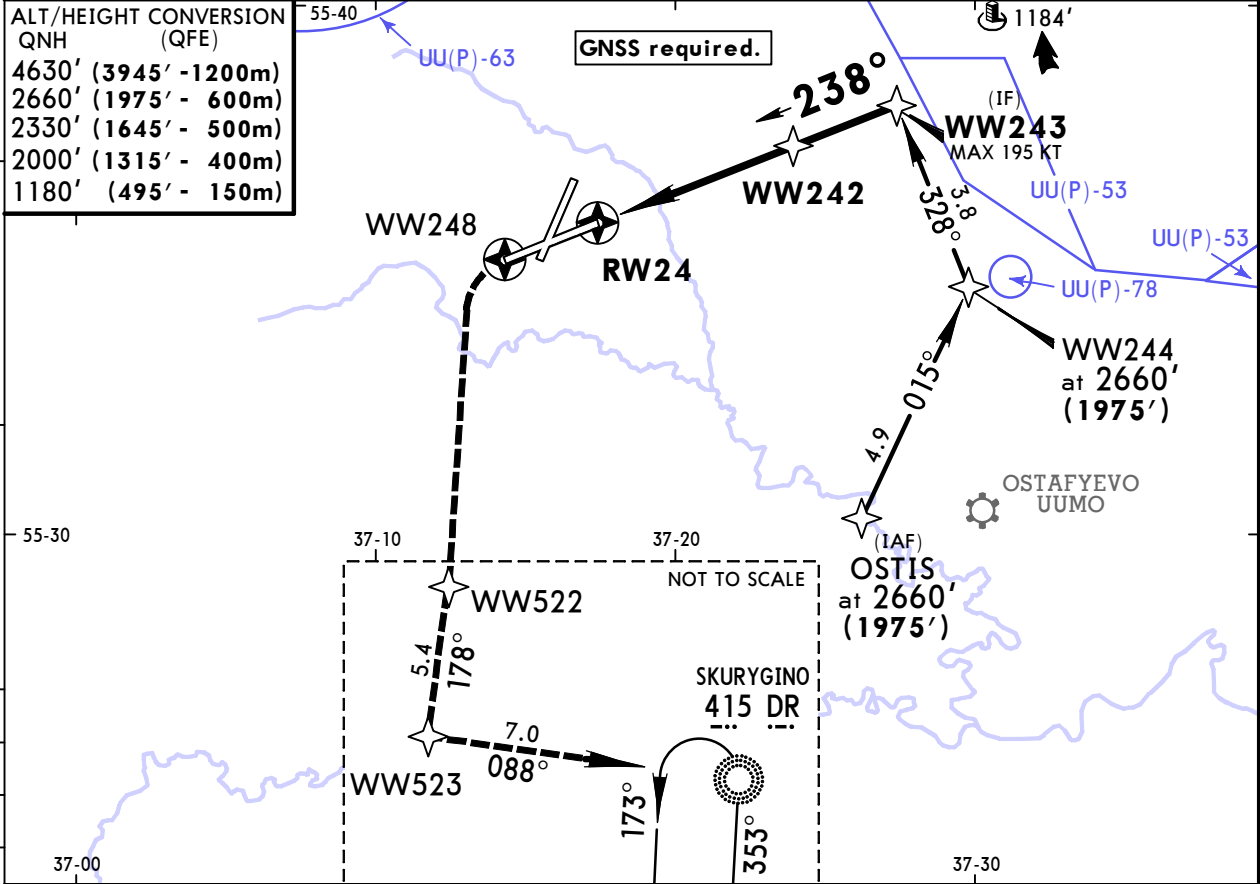
JEPPESSEN  
4 AUG 17  
Eff 17 Aug 12-4

MOSCOW, RUSSIA  
RNAV (GNSS) A Rwy 24

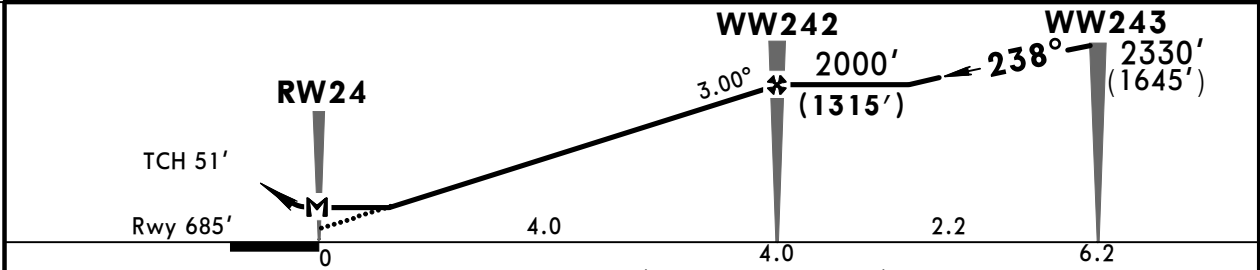
|                                                                                                                                                                                               |                                        |                                       |                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------|-----------------------------|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                               | MOSCOW Approach 3<br>128.0             | MOSCOW Approach 4<br>123.4            | VNUKOVO Approach 1<br>122.3 |
| VNUKOVO Radar<br>126.0                                                                                                                                                                        | VNUKOVO Tower/Precision (TWR)<br>118.3 | Ground<br>120.45 121.7                |                             |
| RNAV                                                                                                                                                                                          | Final<br>Apch Crs<br>238°              | Minimum Alt<br>WW242<br>2000' (1315') | MDA(H)<br>1060' (375')      |
|                                                                                                                                                                                               |                                        | Apt Elev<br>686'                      | Rwy<br>685'                 |
| MISSED APCH: Climb STRAIGHT AHEAD to 1180' (495') or above to WW248, then turn LEFT direct to WW522 climbing to 2660' (1975'), then on 178° to WW523, then on 088° to DR NDB, or as directed. |                                        |                                       | MSA ARP                     |

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (3945')

|                                    |
|------------------------------------|
| ALT/HEIGHT CONVERSION<br>QNH (QFE) |
| 4630' (3945' - 1200m)              |
| 2660' (1975' - 600m)               |
| 2330' (1645' - 500m)               |
| 2000' (1315' - 400m)               |
| 1180' (495' - 150m)                |



|                |              |              |               |
|----------------|--------------|--------------|---------------|
| DIST to RW24   | 1.6          | 2.7          | 3.8           |
| ALTITUDE (HAT) | 1260' (575') | 1590' (905') | 1940' (1255') |



|                     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|-----|-----|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RW24         |     |     |     |     |     |     |

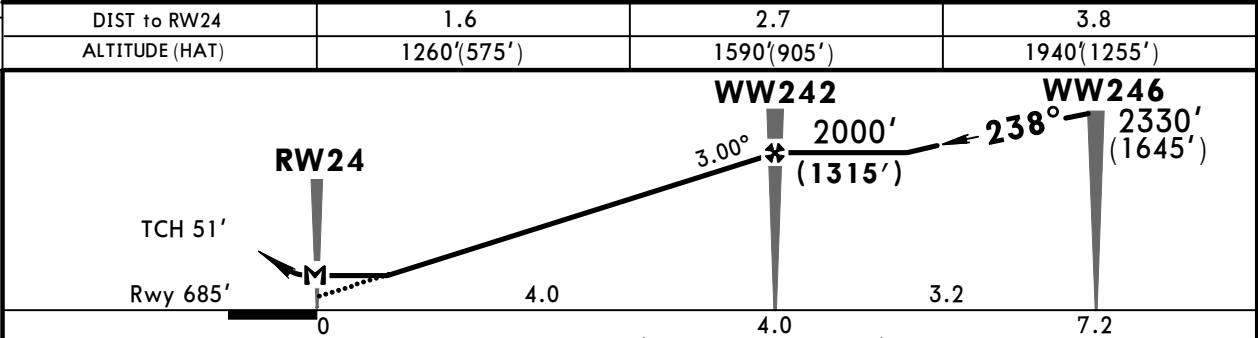
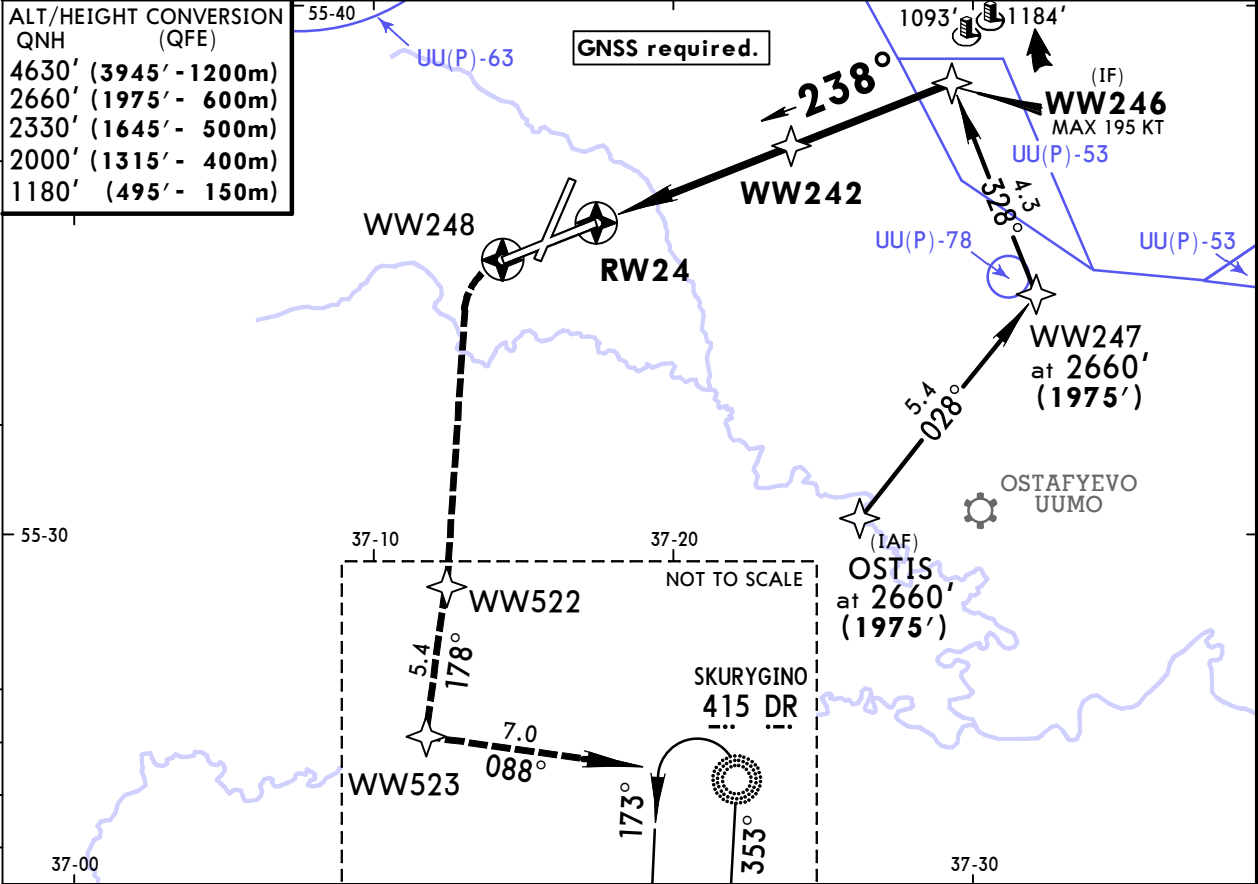
|                            |                        |                        |  |
|----------------------------|------------------------|------------------------|--|
| STRAIGHT-IN LANDING RWY 24 |                        | MIM 1180' (495')       |  |
| MDA(H) 1060' (375')        |                        | ALS out                |  |
| A                          |                        |                        |  |
| B                          | RVR 720m<br>VIS 800m   | RVR 1500m<br>VIS 1600m |  |
| C                          |                        |                        |  |
| D                          | RVR 1500m<br>VIS 1600m | RVR 1800m<br>VIS 2000m |  |

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JEPPESSEN  
4 AUG 17  
Eff 17 Aug (12-5)

MOSCOW, RUSSIA  
RNAV (GNSS) B Rwy 24

|                                                                                                                                                                                               |                                  |                                       |                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------|---------------------------|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                               | MOSCOW Approach 3<br>128.0       | MOSCOW Approach 4<br>123.4            | VNUKOVO Approach<br>122.3 |
| VNUKOVO Radar<br>126.0                                                                                                                                                                        | VNUKOVO Precision (PAR)<br>118.3 | VNUKOVO Tower<br>118.3                | Ground<br>120.45 121.7    |
| RNAV                                                                                                                                                                                          | Final<br>Apch Crs<br>238°        | Minimum Alt<br>WW242<br>2000' (1315') | MDA(H)<br>1060' (375')    |
|                                                                                                                                                                                               |                                  | Apt Elev<br>686'                      | Rwy<br>685'               |
| MISSED APCH: Climb STRAIGHT AHEAD to 1180' (495') or above to WW248, then turn LEFT direct to WW522 climbing to 2660' (1975'), then on 178° to WW523, then on 088° to DR NDB, or as directed. |                                  |                                       |                           |
| Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (3945')                                                                                                        |                                  |                                       |                           |



|                     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|-----|-----|
| Gnd speed-Kts       | 70  | 90  | 100 | 120 | 140 | 160 |
| Descent Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |
| MAP at RW24         |     |     |     |     |     |     |

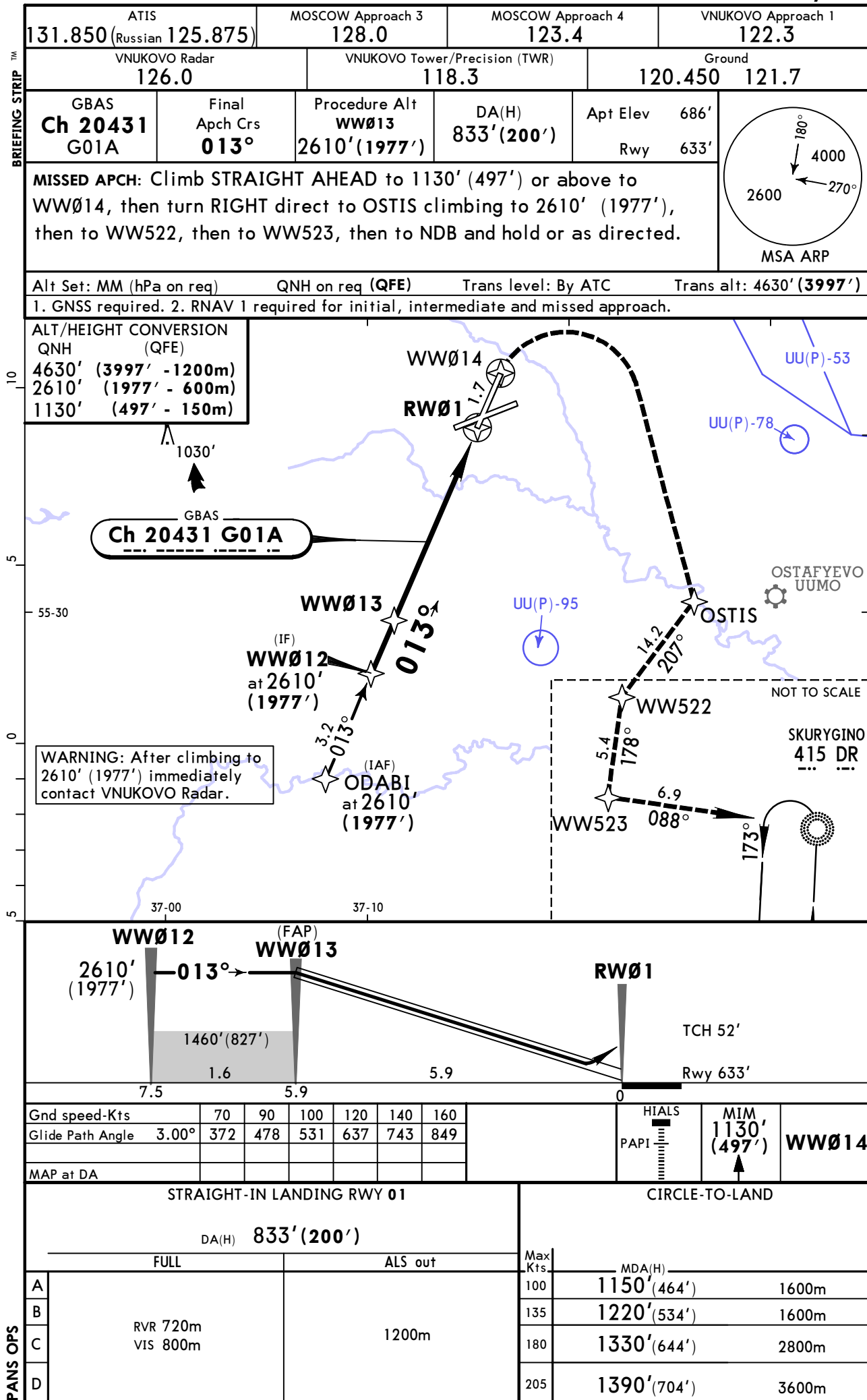
|                            |                        |                        |  |
|----------------------------|------------------------|------------------------|--|
| STRAIGHT-IN LANDING RWY 24 |                        | MDA(H) 1060' (375')    |  |
|                            |                        | ALS out                |  |
| A                          |                        |                        |  |
| B                          | RVR 720m<br>VIS 800m   | RVR 1500m<br>VIS 1600m |  |
| C                          |                        |                        |  |
| D                          | RVR 1500m<br>VIS 1600m | RVR 1800m<br>VIS 2000m |  |



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VNUKOVO

26 OCT 18 **12-40** Eff 8 Nov

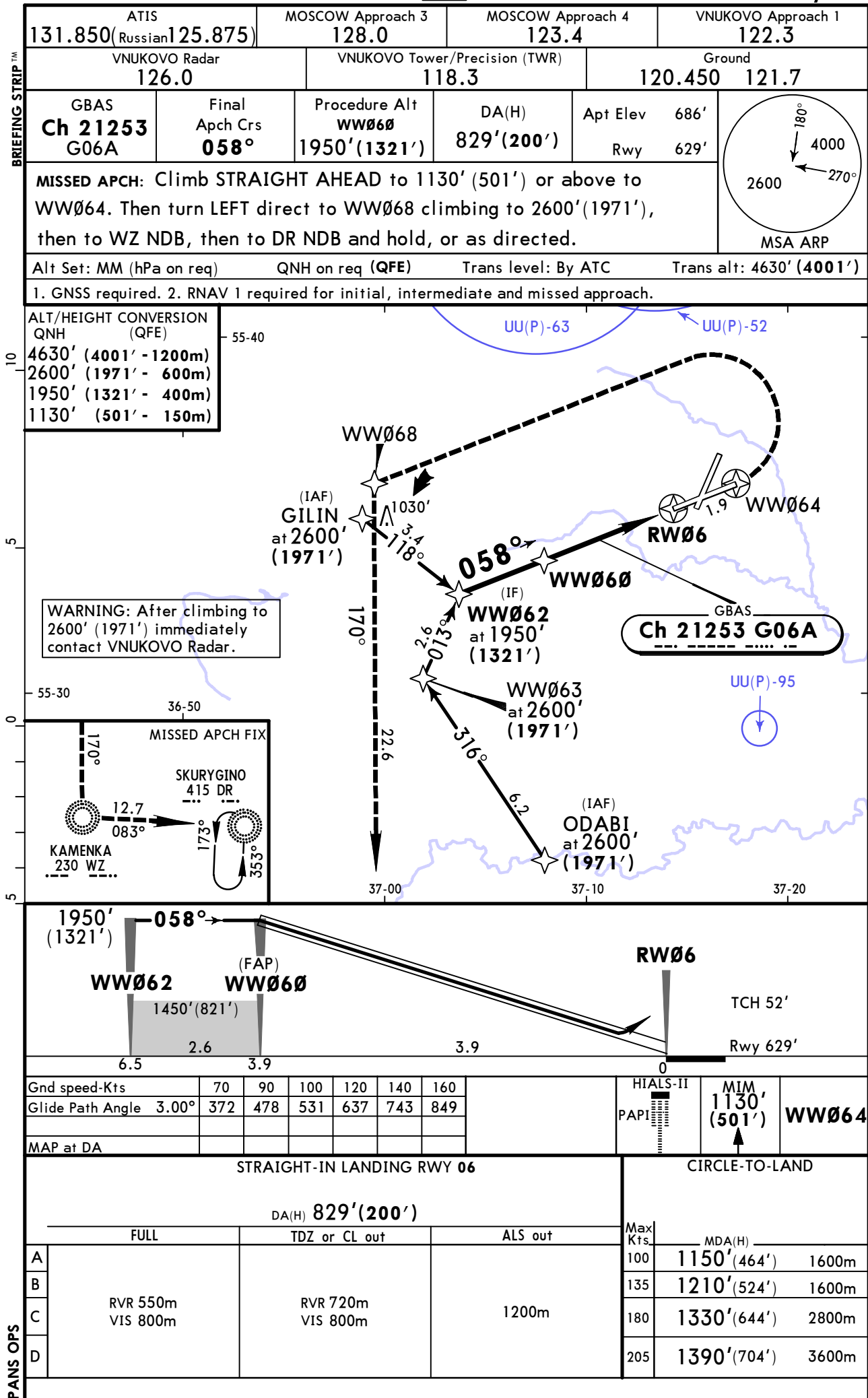
MOSCOW, RUSSIA  
GLS Rwy 01

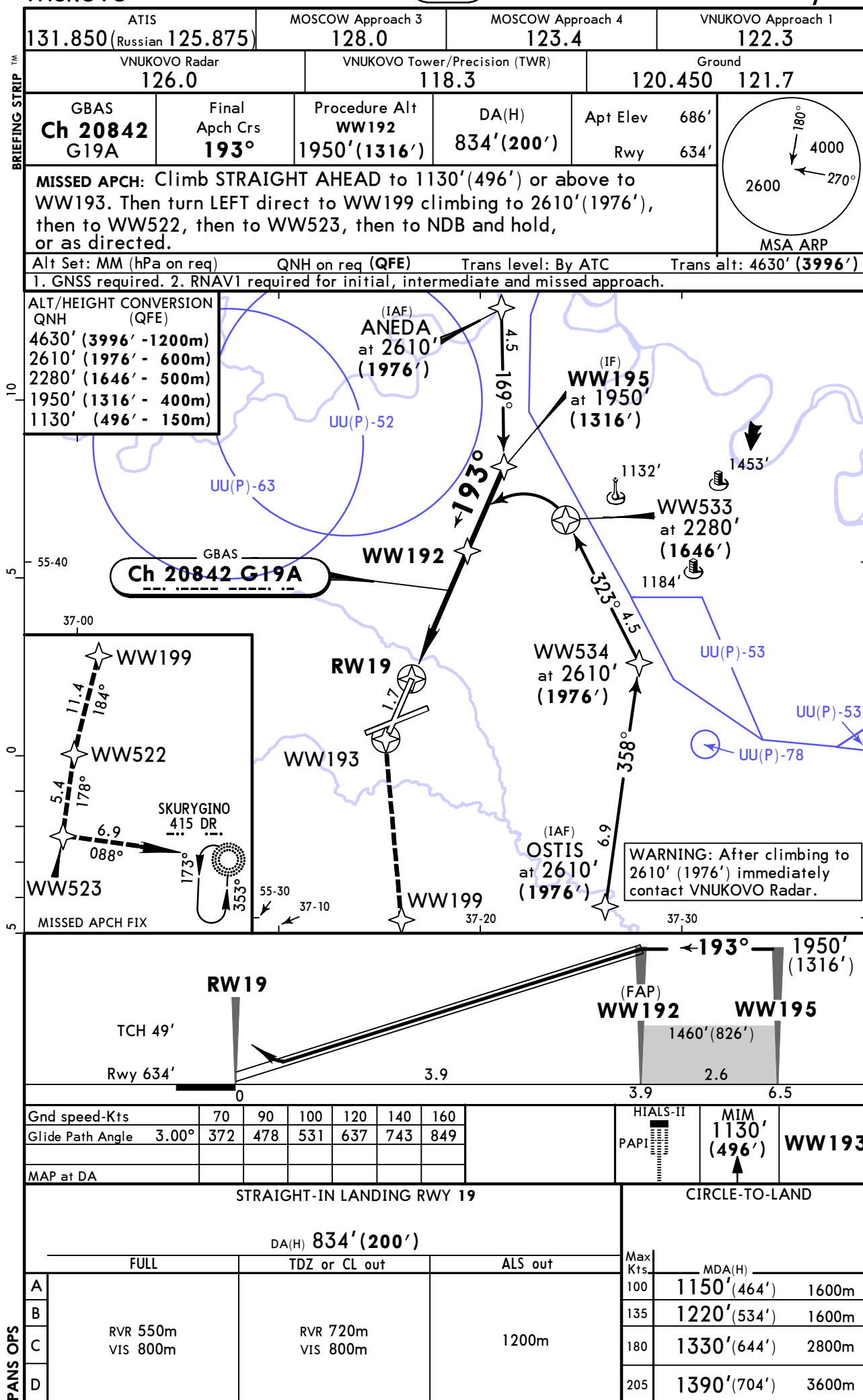


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JEPPESSEN  
26 OCT 18 12-41 Eff 8 Nov

MOSCOW, RUSSIA  
GLS Rwy 06



**UUWW/VKO**  
**VNUKOVO**
**JEPPESSEN**  
 26 OCT 18 **(12-42)** **Eff 8 Nov**
**MOSCOW, RUSSIA**  
**GLS Rwy 19**


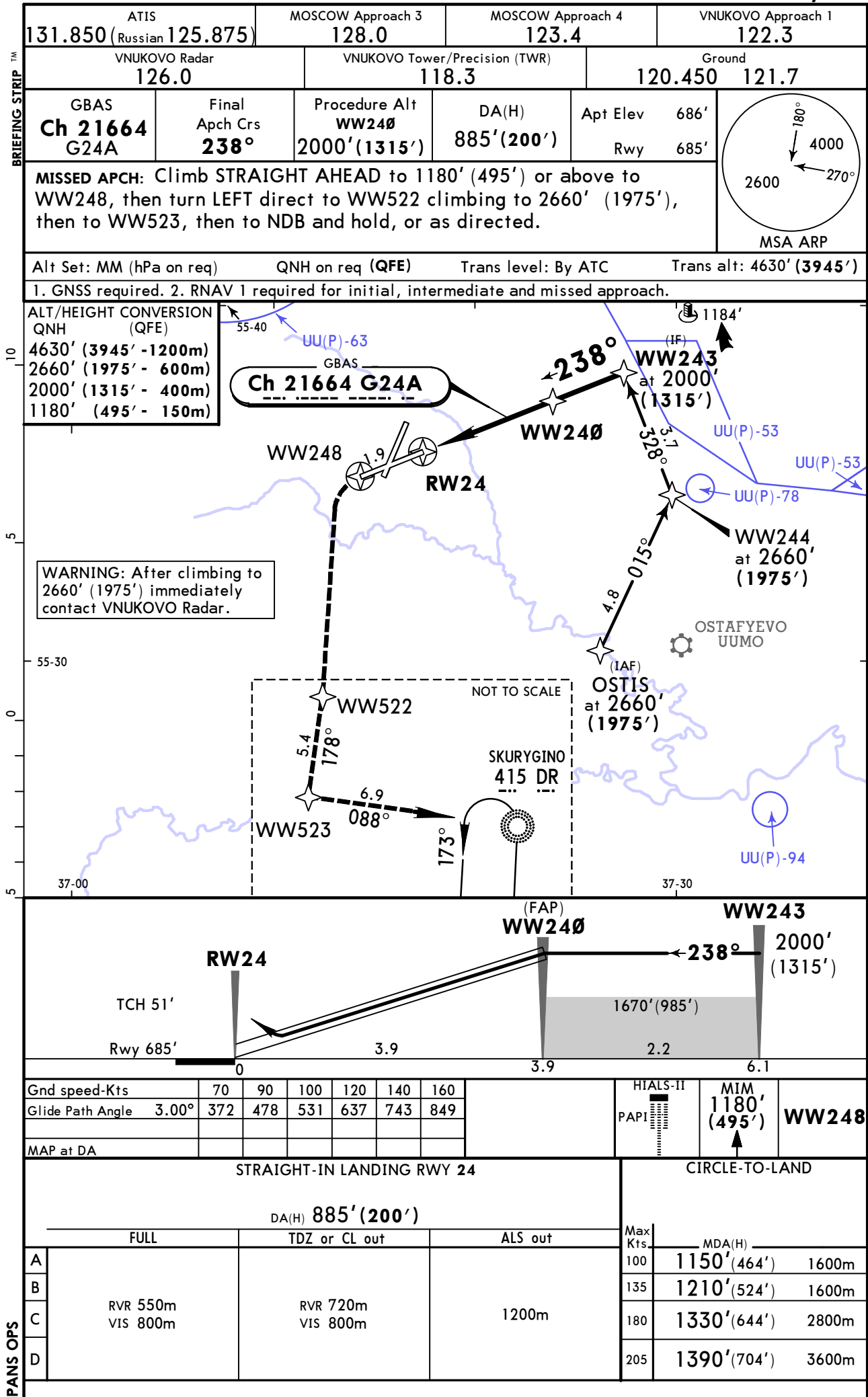
CHANGES: New procedure.

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JEPPESSEN  
26 OCT 18 12-43 Eff 8 Nov

MOSCOW, RUSSIA  
GLS Z Rwy 24



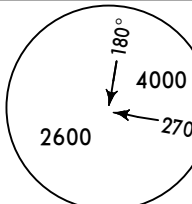
**UUWW/VKO**  
**VNUKOVO**

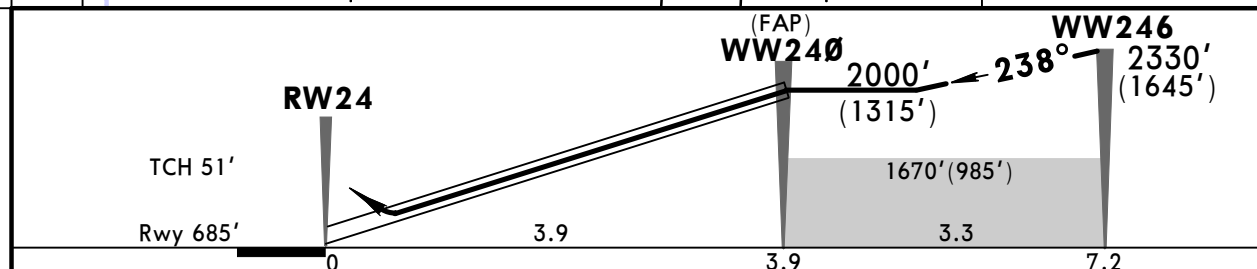
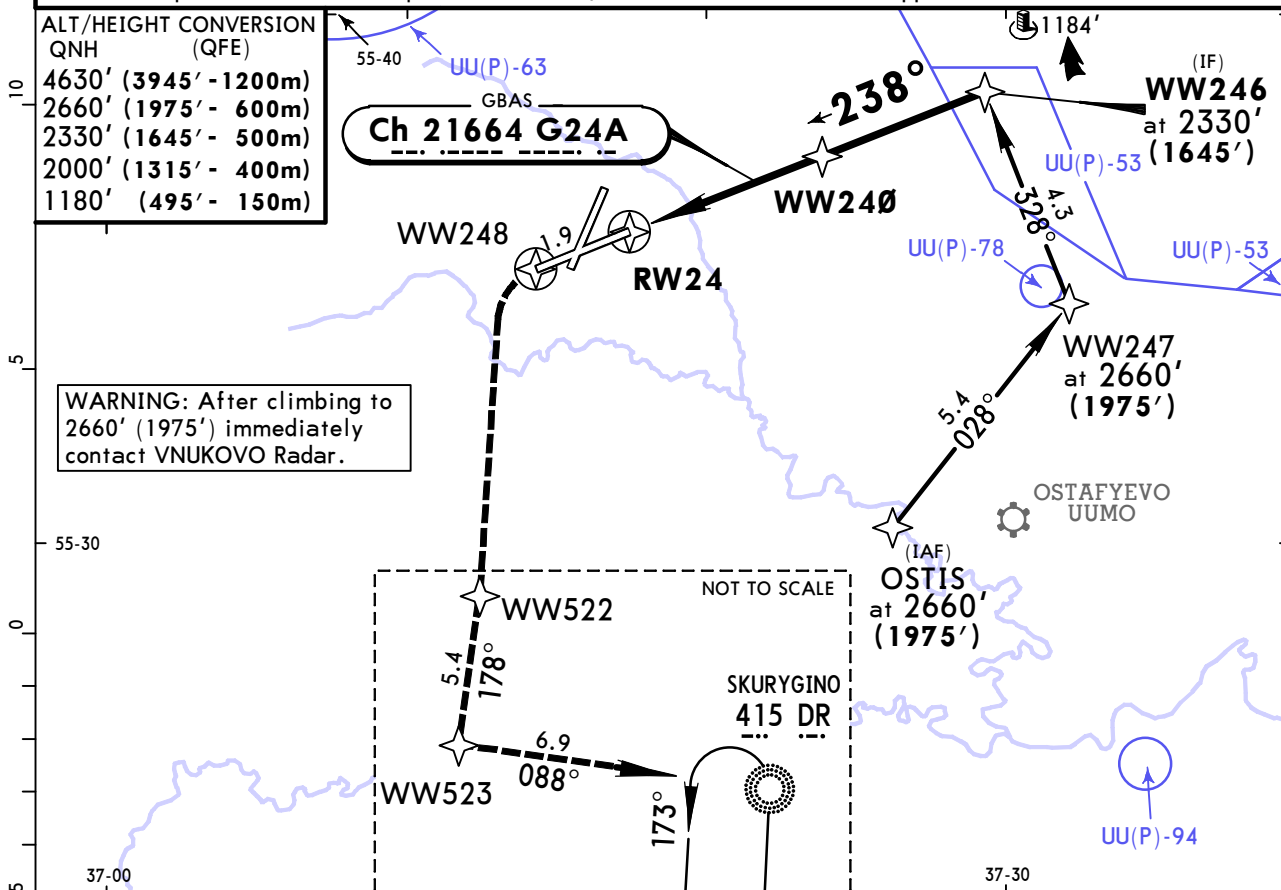
26 OCT 18

12-44

Eff 8 Nov

**MOSCOW, RUSSIA**  
**GLS Y Rwy 24**

|                                                                                                                                                                                            |                                                      |                                                              |                                          |                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>ATIS</b><br><b>131.850</b> (Russian <b>125.875</b> )                                                                                                                                    |                                                      | <b>MOSCOW Approach 3</b><br><b>128.0</b>                     | <b>MOSCOW Approach 4</b><br><b>123.4</b> | <b>VNUKOVO Approach</b><br><b>122.3</b>                                                               |
| <b>VNUKOVO Radar</b><br><b>126.0</b>                                                                                                                                                       | <b>VNUKOVO Tower/Precision (TWR)</b><br><b>118.3</b> |                                                              | <b>Ground</b><br><b>120.450 121.7</b>    |                                                                                                       |
| <b>GBAS</b><br><b>Ch 21664</b><br><b>G24A</b>                                                                                                                                              | <b>Final</b><br><b>Apch Crs</b><br><b>238°</b>       | <b>Procedure Alt</b><br><b>WW240</b><br><b>2000' (1315')</b> | <b>DA(H)</b><br><b>885' (200')</b>       | <b>Apt Elev</b> 686'<br><b>Rwy</b> 685'                                                               |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD to 1180' (495') or above to WW248, then turn LEFT direct to WW522 climbing to 2660' (1975'), then to WW523, then to NDB and hold, or as directed. |                                                      |                                                              |                                          | <br><b>MSA ARP</b> |
| <b>Alt Set:</b> MM (hPa on req)                                                                                                                                                            |                                                      | <b>QNH on req (QFE)</b>                                      | <b>Trans level:</b> By ATC               | <b>Trans alt:</b> 4630' (3945')                                                                       |
| <b>1. GNSS required. 2. RNAV 1 required for initial, intermediate and missed approach.</b>                                                                                                 |                                                      |                                                              |                                          |                                                                                                       |



|                        |     |     |     |     |     |     |                                |                                   |              |
|------------------------|-----|-----|-----|-----|-----|-----|--------------------------------|-----------------------------------|--------------|
| Gnd speed-Kts          | 70  | 90  | 100 | 120 | 140 | 160 | <b>HIALS-II</b><br><b>PAPI</b> | <b>MIM</b><br><b>1180' (495')</b> | <b>WW248</b> |
| Glide Path Angle 3.00° | 372 | 478 | 531 | 637 | 743 | 849 |                                |                                   |              |
| MAP at DA              |     |     |     |     |     |     |                                |                                   |              |

| STRAIGHT-IN LANDING RWY 24         |  |                                    |  | CIRCLE-TO-LAND |  |         |                    |
|------------------------------------|--|------------------------------------|--|----------------|--|---------|--------------------|
| DA(H) 885' (200')                  |  |                                    |  |                |  |         |                    |
| FULL                               |  | TDZ or CL out                      |  | ALS out        |  | Max Kts | MDA(H)             |
| <b>RVR 550m</b><br><b>VIS 800m</b> |  | <b>RVR 720m</b><br><b>VIS 800m</b> |  | <b>1200m</b>   |  | 100     | 1150' (464') 1600m |
|                                    |  |                                    |  |                |  | 135     | 1210' (524') 1600m |
|                                    |  |                                    |  |                |  | 180     | 1330' (644') 2800m |
|                                    |  |                                    |  |                |  | 205     | 1390' (704') 3600m |

CHANGES: New procedure.

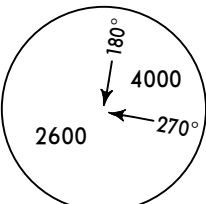
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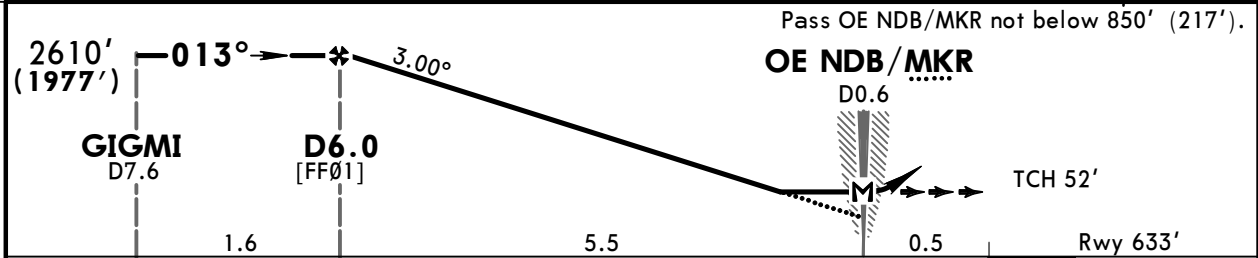
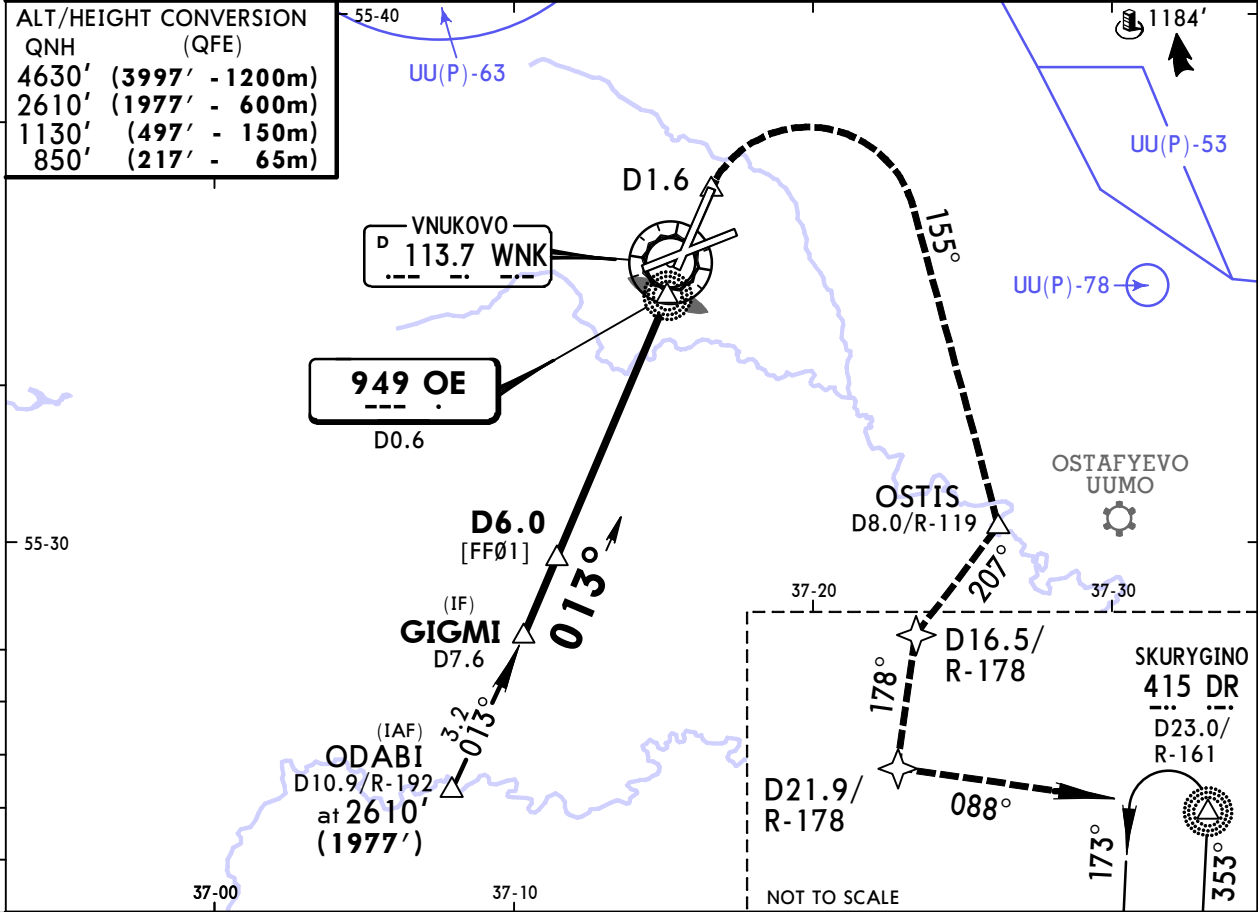
JEPPESSEN  
4 AUG 17 (16-1) Eff 17 Aug

MOSCOW, RUSSIA  
NDB Rwy 01

|                                                                                                                                                                                                                          |                           |                                      |                                         |                            |                                                                                     |                           |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------|-----------------------------------------|----------------------------|-------------------------------------------------------------------------------------|---------------------------|--|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                                                          |                           | MOSCOW Approach 3<br>128.0           |                                         | MOSCOW Approach 4<br>123.4 |                                                                                     | VNUKOVO Approach<br>122.3 |  |
| VNUKOVO Radar<br>126.0                                                                                                                                                                                                   |                           | VNUKOVO Precision (PAR)<br>118.3     |                                         | VNUKOVO Tower<br>118.3     |                                                                                     | Ground<br>120.45 121.7    |  |
| NDB<br>OE<br>949                                                                                                                                                                                                         | Final<br>Apch Crs<br>013° | Minimum Alt<br>D6.0<br>2610' (1977') | MDA(H)<br>(CONDITIONAL)<br>1080' (447') | Apt Elev 686'<br>Rwy 633'  |  |                           |  |
| MISSED APCH: Climb STRAIGHT AHEAD to 1130' (497') or above to D1.6, turn RIGHT onto 155° to OSTIS climbing to 2610' (1977'), then onto 207° to D16.5. Then onto 178° to D21.9, then onto 088° to DR NDB, or as directed. |                           |                                      |                                         |                            |                                                                                     |                           |  |

Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (3997')

|                       |
|-----------------------|
| ALT/HEIGHT CONVERSION |
| QNH (QFE)             |
| 4630' (3997' - 1200m) |
| 2610' (1977' - 600m)  |
| 1130' (497' - 150m)   |
| 850' (217' - 65m)     |



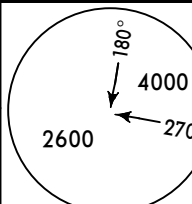
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|------------------------|-------|-----|-----|-----|-----|-----|-----------------------------------------------------------------------------------------------|--------------|------|
| Gnd speed-Kts          | 70    | 90  | 100 | 120 | 140 | 160 | <br>PAPI | 1130' (497') | D1.6 |
| Descent Angle          | 3.00° | 372 | 478 | 531 | 637 | 743 |                                                                                               |              |      |
| MAP at OE NDB/MKR/D0.6 |       |     |     |     |     |     |                                                                                               |              |      |

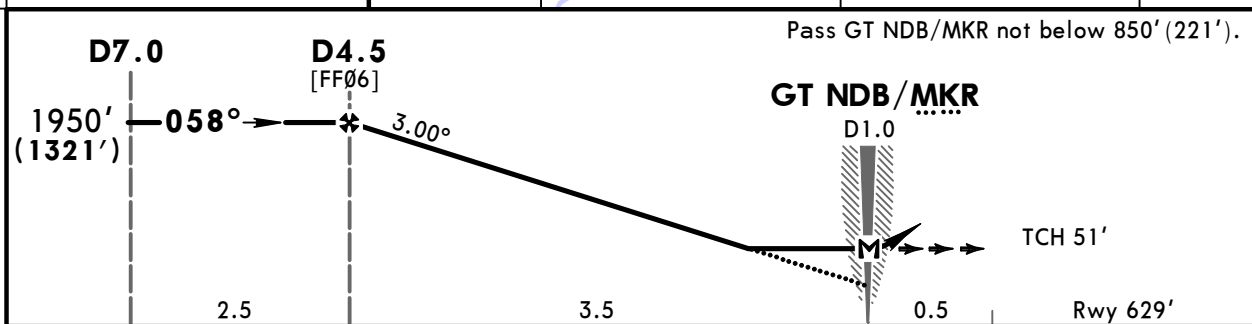
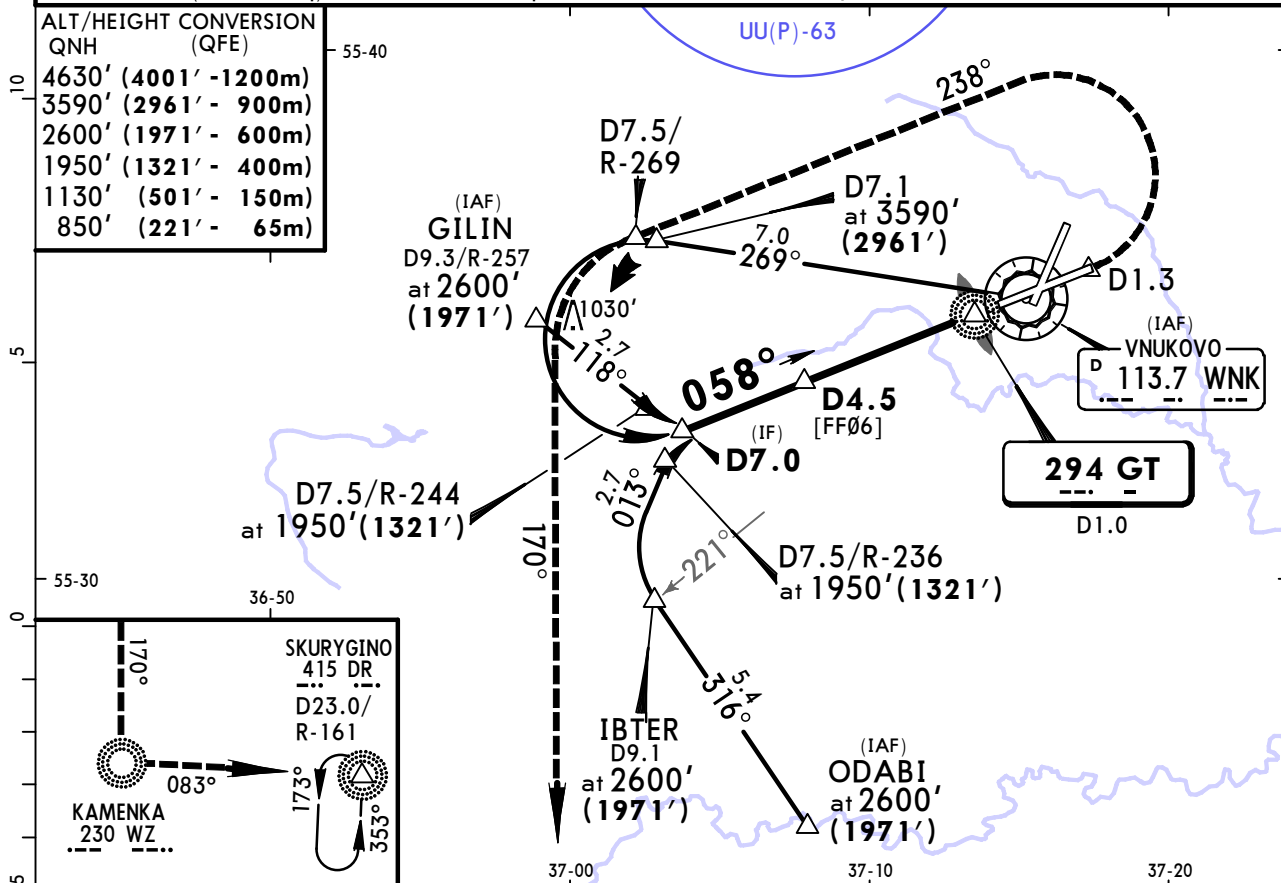
| STRAIGHT-IN LANDING RWY 01 |           |                     |           |           |
|----------------------------|-----------|---------------------|-----------|-----------|
| With FAF                   |           | W/o FAF             |           |           |
| MDA(H) 1080' (447')        |           | MDA(H) 1180' (547') |           |           |
| ALS out                    |           | ALS out             |           |           |
| A                          | 1200m     | RVR 1500m           | 1200m     | RVR 1500m |
|                            |           | VIS 1600m           |           | VIS 1600m |
| B                          |           | RVR 1800m           | RVR 1500m | 2400m     |
| C                          |           | VIS 2000m           |           |           |
| D                          | RVR 1800m | 2400m               | 2400m     | 2800m     |
|                            | VIS 2000m |                     |           |           |

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4 AUG 17 **(16-2)** Eff 17 Aug

**MOSCOW, RUSSIA**  
**NDB Rwy 06**

BRIEFING STRIP™

|                                                                                                                                                                                                                 |                                  |                                                    |                                                |                                                   |                                                                                     |                                   |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|--|
| ATIS<br><b>131.85</b> (Russian <b>125.87</b> )                                                                                                                                                                  |                                  | MOSCOW Approach 3<br><b>128.0</b>                  |                                                | MOSCOW Approach 4<br><b>123.4</b>                 |                                                                                     | VNUKOVO Approach<br><b>122.3</b>  |  |
| VNUKOVO Radar<br><b>126.0</b>                                                                                                                                                                                   |                                  | VNUKOVO Precision (PAR)<br><b>118.3</b>            |                                                | VNUKOVO Tower<br><b>118.3</b>                     |                                                                                     | Ground<br><b>120.45 121.7</b>     |  |
| NDB<br>GT<br><b>294</b>                                                                                                                                                                                         | Final<br>Apch Crs<br><b>058°</b> | Minimum Alt<br><b>D4.5</b><br><b>1950' (1321')</b> | MDA(H)<br>(CONDITIONAL)<br><b>1100' (471')</b> | Apt Elev<br><b>686'</b><br><br>Rwy<br><b>629'</b> |  |                                   |  |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD to 1130' (501') or above to D1.3, turn LEFT onto 238° to D7.5 climbing to 2600' (1971'), then turn LEFT onto 170° to WZ NDB. Then onto 083° to DR NDB, or as directed. |                                  |                                                    |                                                |                                                   |                                                                                     |                                   |  |
| Alt Set: MM (hPa on req)                                                                                                                                                                                        |                                  | QNH on req ( <b>QFE</b> )                          |                                                | Trans level: By ATC                               |                                                                                     | Trans alt: 4630' ( <b>4001'</b> ) |  |



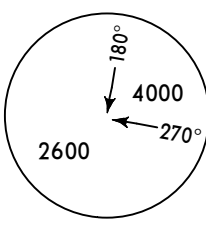
|                        |       |     |     |     |     |     |                                                                                                          |                          |             |
|------------------------|-------|-----|-----|-----|-----|-----|----------------------------------------------------------------------------------------------------------|--------------------------|-------------|
| Gnd speed-Kts          | 70    | 90  | 100 | 120 | 140 | 160 | <b>HIALS-II</b><br> | <b>1130' (501')</b><br>↑ | <b>D1.3</b> |
| Descent Angle          | 3.00° | 372 | 478 | 531 | 637 | 849 |                                                                                                          |                          |             |
| MAP at GT NDB/MKR/D1.0 |       |     |     |     |     |     |                                                                                                          |                          |             |

| STRAIGHT-IN LANDING RWY 06 |                        |                            |       |                        |
|----------------------------|------------------------|----------------------------|-------|------------------------|
| With FAF                   |                        | W/o FAF                    |       |                        |
| MDA(H) <b>1100' (471')</b> |                        | MDA(H) <b>1220' (591')</b> |       |                        |
| ALS out                    |                        | ALS out                    |       |                        |
| A                          | 1200m                  | RVR 1500m<br>VIS 1600m     | 1200m | RVR 1500m<br>VIS 1600m |
| B                          |                        | RVR 1800m<br>VIS 2000m     |       | RVR 1500m<br>VIS 1600m |
| C                          | RVR 1800m<br>VIS 2000m | 2400m                      | 2400m | 2400m                  |
| D                          |                        | 2400m                      |       | 2800m                  |

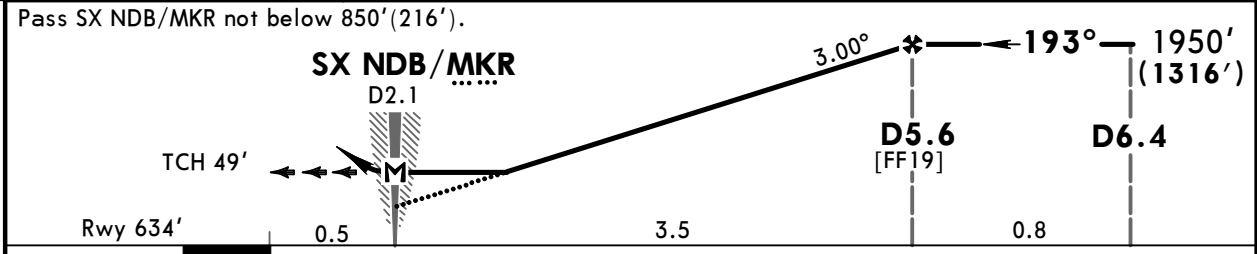
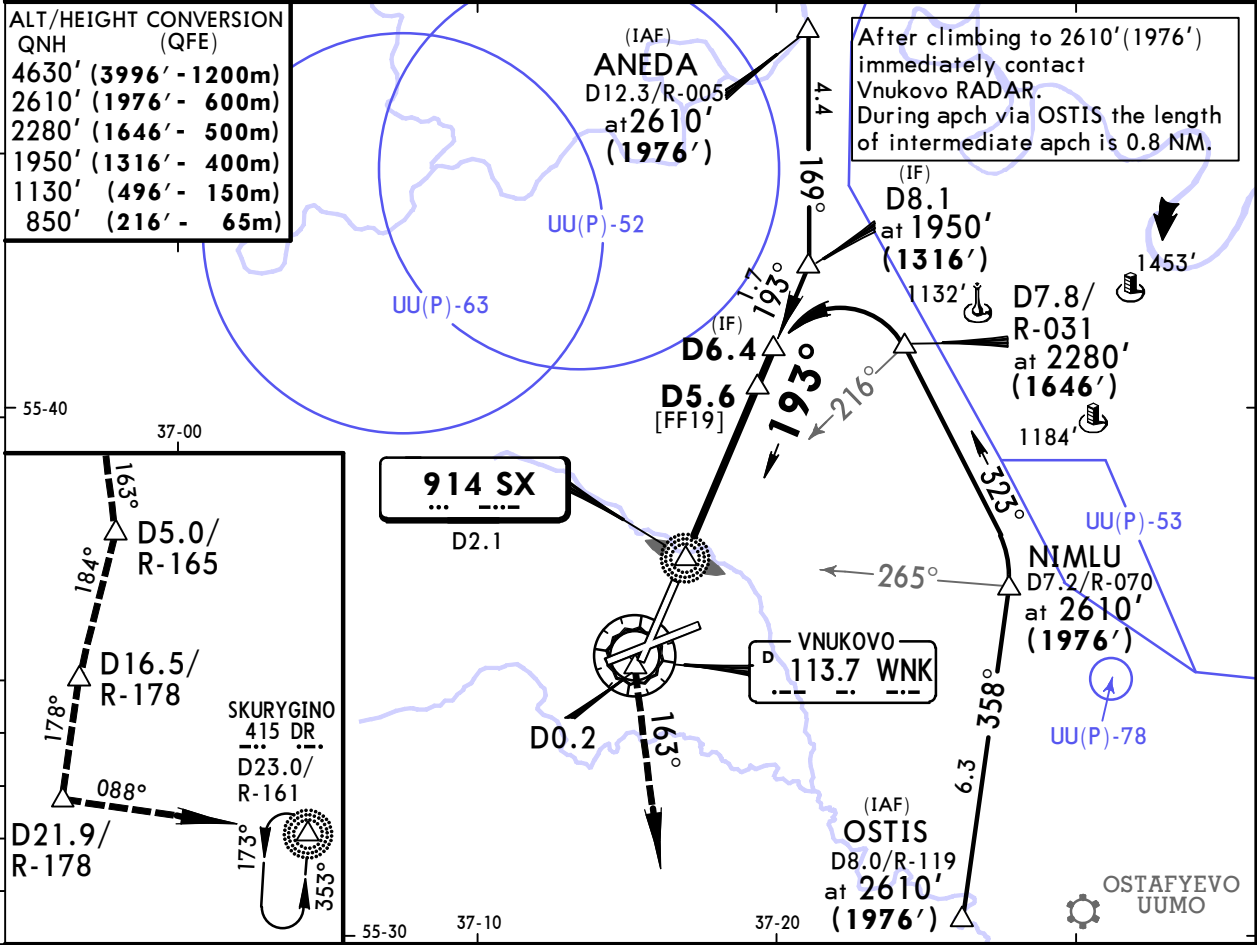
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JEPPESSEN  
27 OCT 17 (16-3) Eff 9 Nov

MOSCOW, RUSSIA  
NDB Rwy 19

|                                                                                                                                                                                                                                     |                           |                                     |                                        |                            |             |                                                                                                |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------|----------------------------------------|----------------------------|-------------|------------------------------------------------------------------------------------------------|--|
| ATIS<br>131.85 (Russian 125.87)                                                                                                                                                                                                     |                           | MOSCOW Approach 3<br>128.0          |                                        | MOSCOW Approach 4<br>123.4 |             | VNUKOVO Approach<br>122.3                                                                      |  |
| VNUKOVO Radar<br>126.0                                                                                                                                                                                                              |                           | VNUKOVO Precision (PAR)<br>118.3    |                                        | VNUKOVO Tower<br>118.3     |             | Ground<br>120.45 121.7                                                                         |  |
| NDB<br>SX<br>914                                                                                                                                                                                                                    | Final<br>Apch Crs<br>193° | Minimum Alt<br>D5.6<br>1950'(1316') | MDA(H)<br>(CONDITIONAL)<br>1150'(516') | Apt Elev<br>686'           | Rwy<br>634' | <br>MSA ARP |  |
| <b>MISSED APCH:</b> Climb STRAIGHT AHEAD to 1130' (496') or above to D0.2, turn LEFT onto 163° to D5.0 climbing to 2610' (1976'). Turn RIGHT onto 184° to D16.5, then onto 178° to D21.9, then onto 088° to DR NDB, or as directed. |                           |                                     |                                        |                            |             |                                                                                                |  |

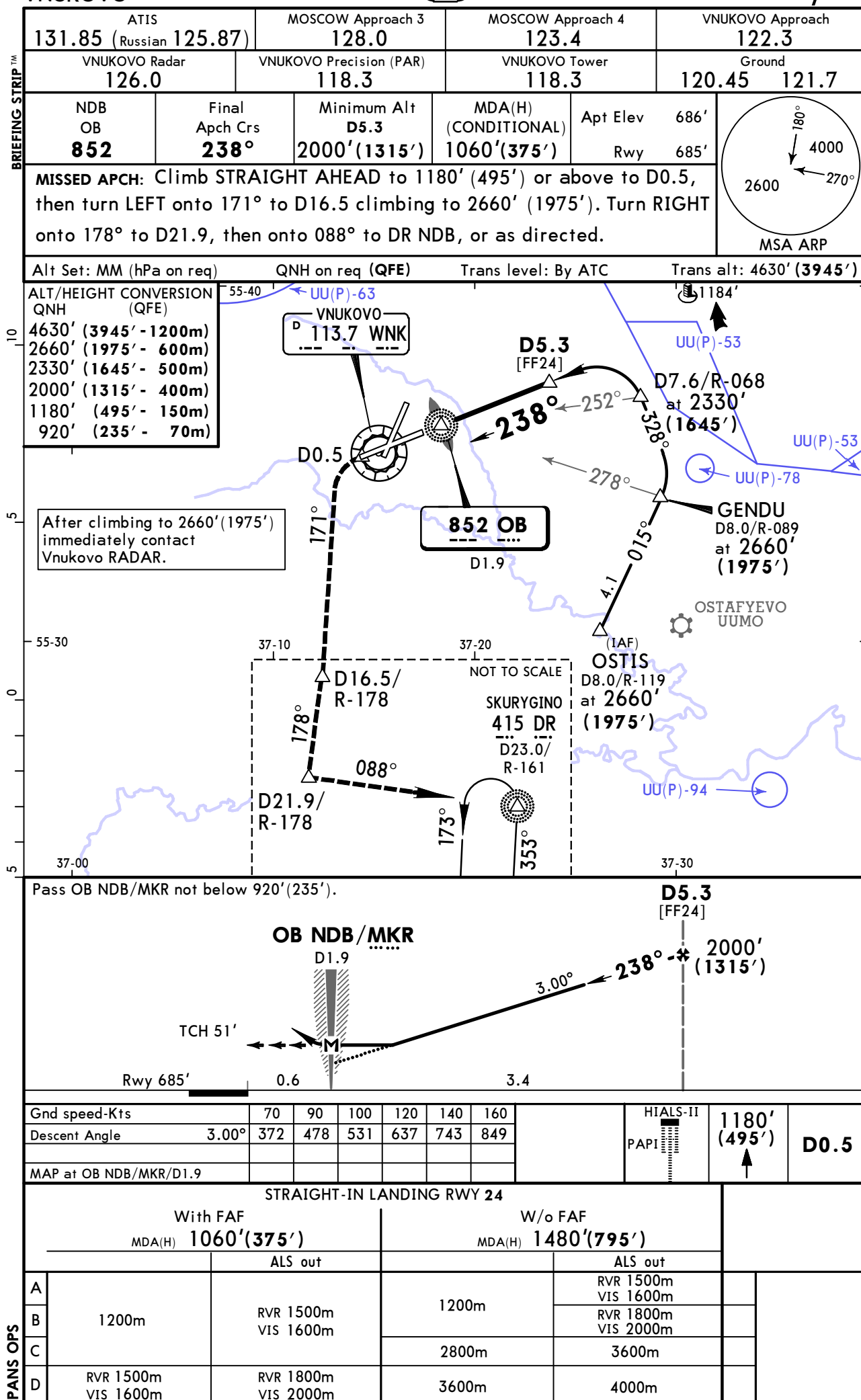
Alt Set: MM (hPa on req) QNH on req (QFE) Trans level: By ATC Trans alt: 4630' (3996')



|                        |       |     |     |     |     |     |                  |              |      |
|------------------------|-------|-----|-----|-----|-----|-----|------------------|--------------|------|
| Gnd speed-Kts          | 70    | 90  | 100 | 120 | 140 | 160 | HIALS-II<br>PAPI | 1130' (496') | D0.2 |
| Descent Angle          | 3.00° | 372 | 478 | 531 | 637 | 849 |                  |              |      |
| MAP at SX NDB/MKR/D2.1 |       |     |     |     |     |     |                  |              |      |

| STRAIGHT-IN LANDING RWY 19      |                        |                                |                        |
|---------------------------------|------------------------|--------------------------------|------------------------|
| With FAF<br>MDA(H) 1150' (516') |                        | W/o FAF<br>MDA(H) 1250' (616') |                        |
| ALS out                         |                        | ALS out                        |                        |
| A                               | 1200m                  | RVR 1500m<br>VIS 1600m         | 1200m                  |
| B                               |                        |                                | RVR 1500m<br>VIS 1600m |
| C                               | RVR 1500m<br>VIS 1600m | 2400m                          | RVR 1800m<br>VIS 2000m |
| D                               | 2400m                  | 2800m                          | 2800m                  |



**UUWW/VKO**  
**VNUKOVO**
**JEPPESSEN**  
 27 OCT 17 **(16-4)** **Eff 9 Nov**
**MOSCOW, RUSSIA**  
**NDB Rwy 24**


CHANGES: D7.6. Note.

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**Chart changes since cycle 08-2019**

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

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

**TERMINAL CHART CHANGE NOTICES**

**No Chart Change Notices for Airport UUWW**