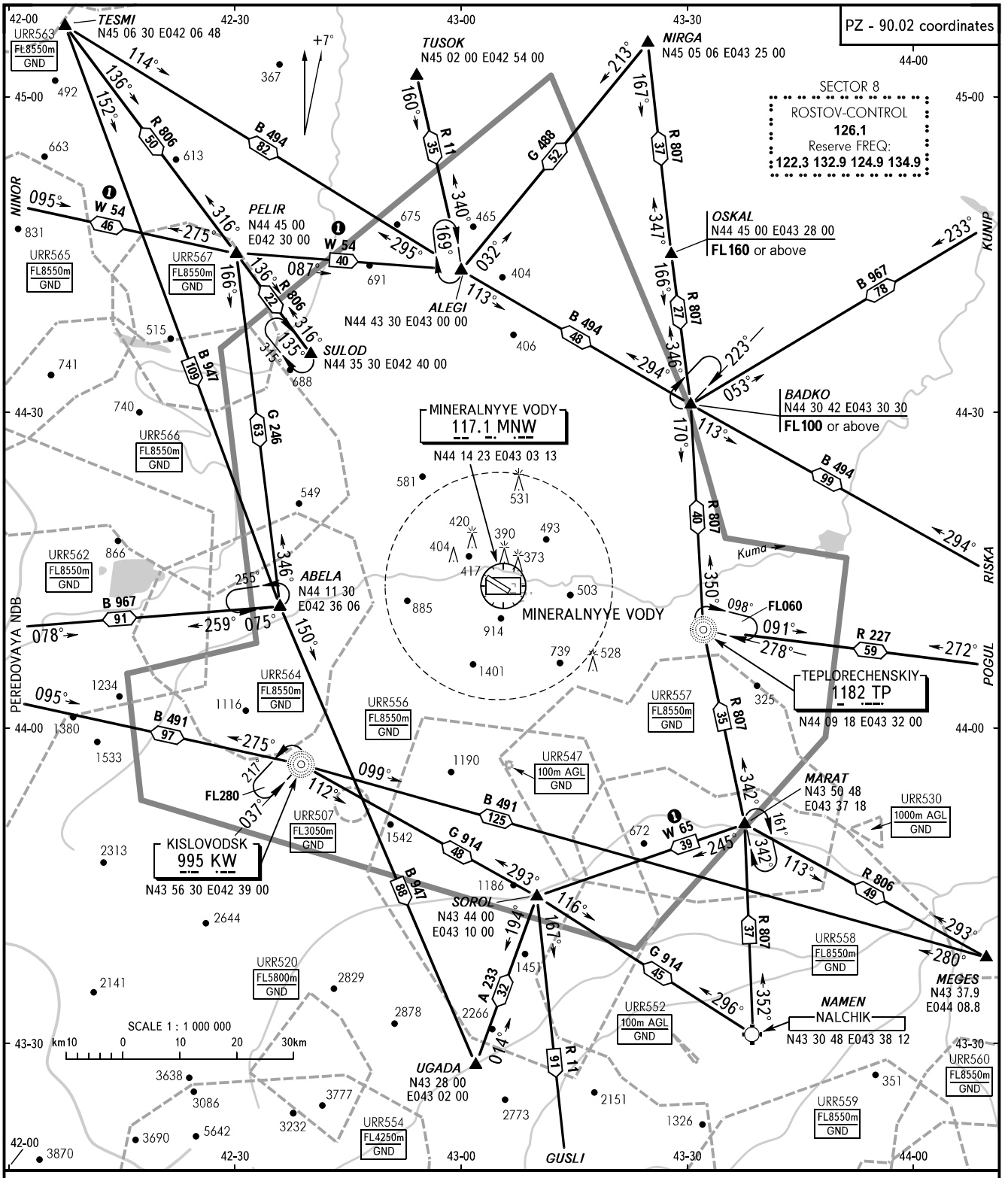
AREA CHART - ICAO

ARRIVAL, DEPARTURE
AND TRANSIT ROUTES

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY



MINERALNYYE VODY	APPROACH	**119.3**
	KRUG	**120.7**
	ATIS	**127.4** RUS
		125.25 ENG

❶ Only for Russian users of airspace.

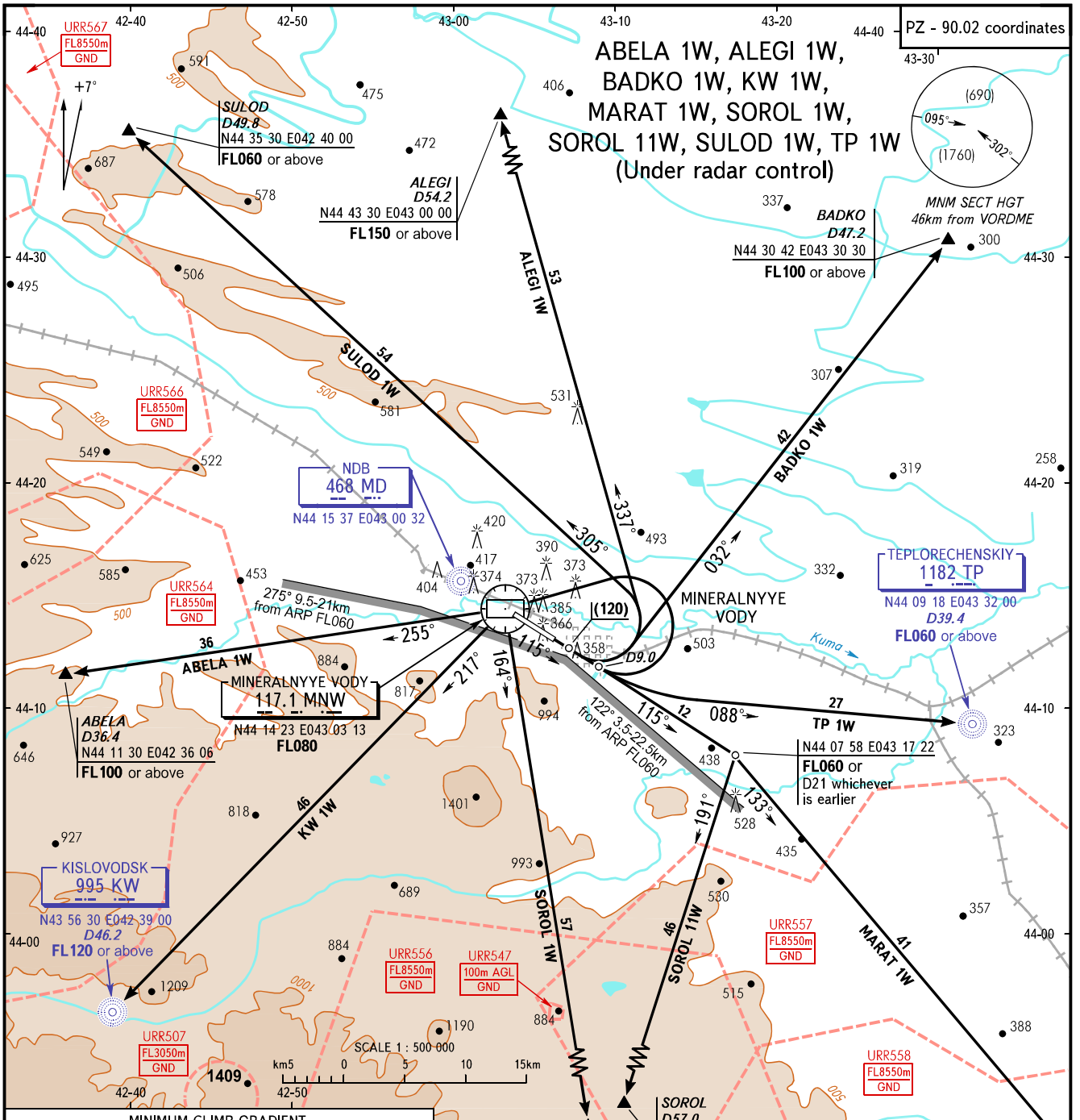
CHANGE: COORD, FL

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA
MINERALNYYE VODY
RWY 12



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	VORDME	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D21 MNW	9.6%	3.7	4.9	7.5	9.8	12.3	14.7
	ALEGI 1W	6.7%	2.6	3.5	5.2	7.0	8.7	10.5
	BADKO 1W	5.5%	2.0	2.7	4.1	5.5	6.8	8.1
	TP 1W	4.4%	1.7	2.3	3.4	4.5	5.7	6.8

START **128.0**
KRUG **120.7**
APPROACH **119.3**

WARNING:
1. Take-off shall be carried out using noise abatement procedure for the area according to the Aeroplane Flight Manual.
2. ACFT unable to maintain the required climb gradient shall advise ATS unit about it and get other instructions.
3. After climbing to (120) immediately contact Mineralnyye Vody-Krug on 120.7.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: COORD, FL

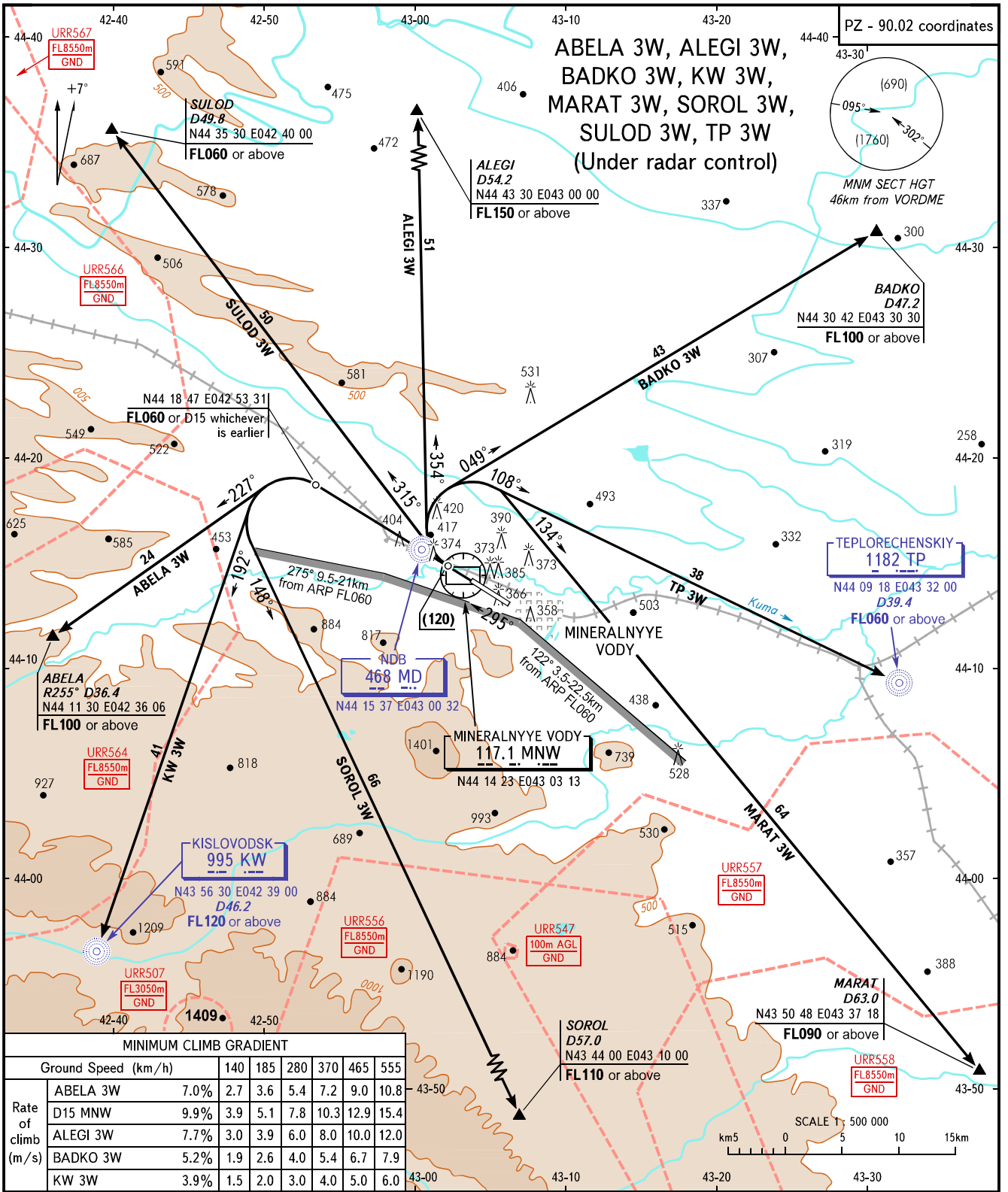
STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RWY 30



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	ABELA 3W	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D15 MNW	9.9%	3.9	5.1	7.8	10.3	12.9	15.4
	ALEGI 3W	7.7%	3.0	3.9	6.0	8.0	10.0	12.0
	BADKO 3W	5.2%	1.9	2.6	4.0	5.4	6.7	7.9
	KW 3W	3.9%	1.5	2.0	3.0	4.0	5.0	6.0

START	**128.0**
KRUG	**120.7**
APPROACH	**119.3**

WARNING:
1. Take-off shall be carried out using noise abatement procedure for the area according to the Aeroplane Flight Manual.
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3. After climbing to (120) immediately contact Mineralnyye Vody-Krug on 120.7.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: COORD, FL

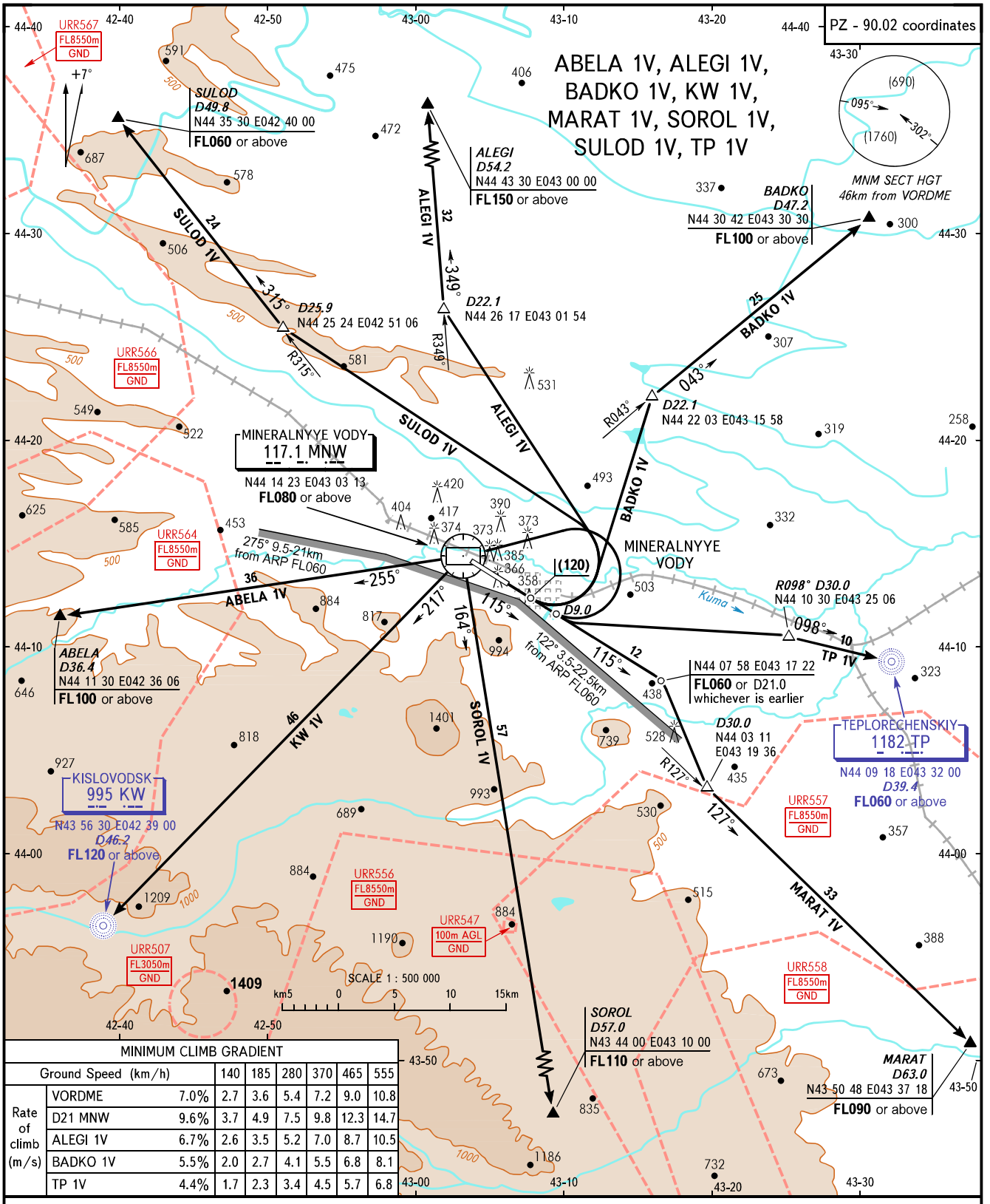
STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

VORDME RWY 12



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	VORDME	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D21 MNW	9.6%	3.7	4.9	7.5	9.8	12.3	14.7
	ALEGI 1V	6.7%	2.6	3.5	5.2	7.0	8.7	10.5
	BADKO 1V	5.5%	2.0	2.7	4.1	5.5	6.8	8.1
	TP 1V	4.4%	1.7	2.3	3.4	4.5	5.7	6.8

START	**128.0**
KRUG	**120.7**
APPROACH	**119.3**

WARNING:
1. Take-off shall be carried out using noise abatement procedure for the area according to the Aeroplane Flight Manual.
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3. After climbing to (120) immediately contact Mineralnyye Vody-Krug on 120.7.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: New chart

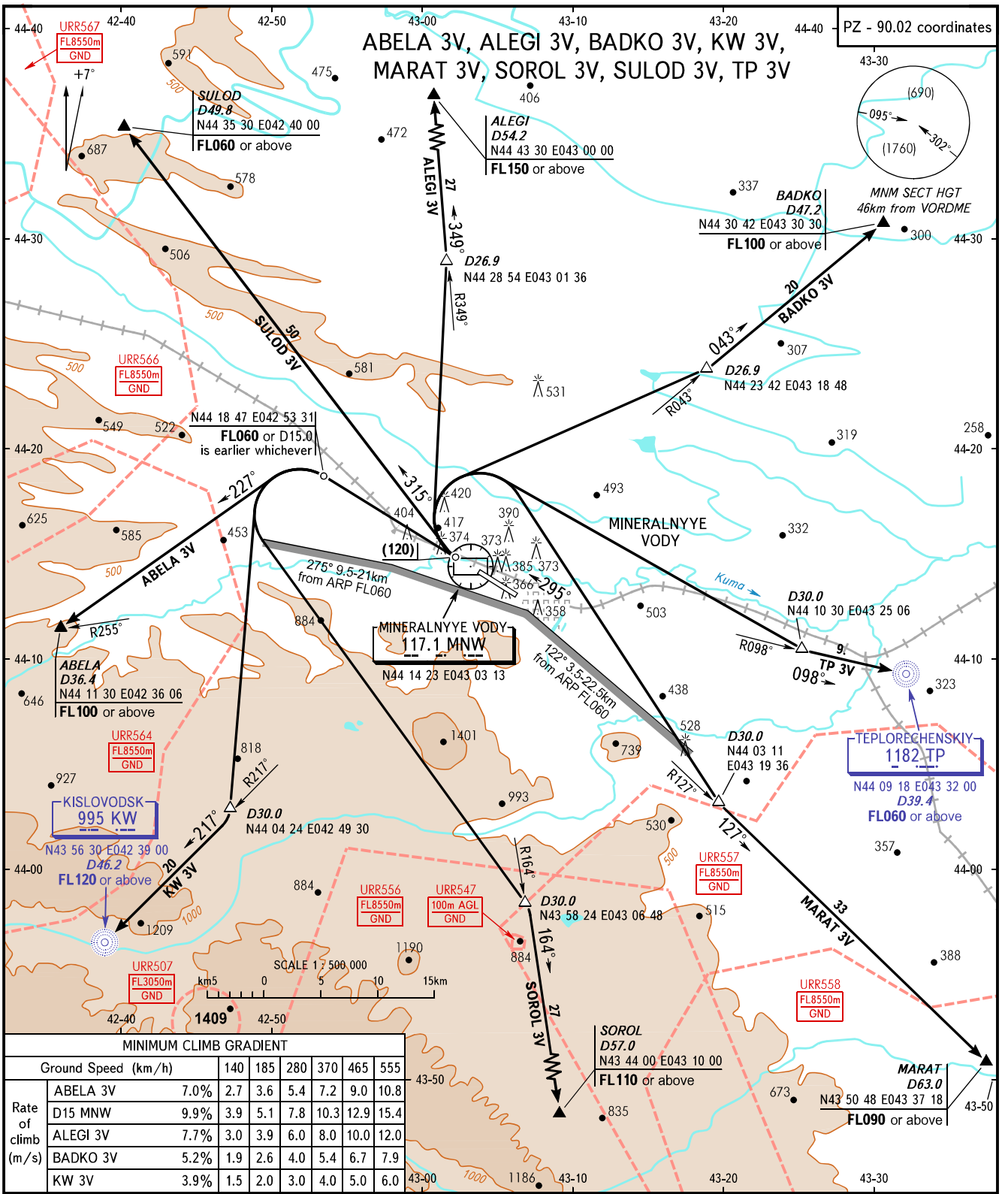
STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

VORDME RWY 30



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	ABELA 3V	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D15 MNW	9.9%	3.9	5.1	7.8	10.3	12.9	15.4
	ALEGI 3V	7.7%	3.0	3.9	6.0	8.0	10.0	12.0
	BADKO 3V	5.2%	1.9	2.6	4.0	5.4	6.7	7.9
	KW 3V	3.9%	1.5	2.0	3.0	4.0	5.0	6.0

START	**128.0**
KRUG	**120.7**
APPROACH	**119.3**

WARNING:

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3. After climbing to (120) immediately contact Mineralnyye Vody-Krug on 120.7.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: New chart

МЕЖДУНАРОДНЫЙ АЭРОПОРТ «МИНЕРАЛЬНЫЕ ВОДЫ»

INTERNATIONAL AIRPORT «MINERALNYYE VODY»

КООРДИНАТЫ ТОЧЕК МАРШРУТОВ ПО RNAV (GNSS)

COORDINATES OF WAYPOINTS FOR RNAV (GNSS)

Точка Point	Rмаг R°MAG	Dкм Dkm	Широта Latitude	Долгота Longitude	Примечание Remarks
MW001			N44° 14’ 23’’	E043° 03’ 12’’	DVOR
MW002	295	10.4	N44° 17’ 23’’	E042° 56’ 36’’	ТВГ ВПП 12 FAP RWY 12
MW003	295	16.9	N44° 19’ 17’’	E042° 52’ 24’’	
MW004	315	25.9	N44° 25’ 24’’	E042° 51’ 06’’	
MW005	321	18.8	N44° 23’ 00’’	E042° 55’ 40’’	
MW006	349	22.1	N44° 26’ 17’’	E043° 01’ 54’’	
MW007	043	22.1	N44° 22’ 03’’	E043° 15’ 58’’	
MW008	353	9.6	N44° 19’ 37’’	E043° 03’ 17’’	
MW009	115	4.7	N44° 13’ 03’’	E043° 06’ 13’’	Порог ВПП 30 Threshold RWY 30
MW010	115	0.8	N44° 14’ 10’’	E043° 03’ 45’’	Порог ВПП 12 Threshold RWY 12
MW011	349	26.9	N44° 28’ 54’’	E043° 01’ 36’’	
MW012	043	26.9	N44° 23’ 42’’	E043° 18’ 48’’	
MW013	095	23.7	N44° 11’ 43’’	E043° 20’ 39’’	
MW014	115	22.3	N44° 07’ 58’’	E043° 17’ 22’’	
MW015	115	49.5	N44° 00’ 12’’	E043° 34’ 36’’	
MW016	115	15.9	N44° 09’ 54’’	E043° 13’ 24’’	ТВГ ВПП 30 FAP RWY 30
MW017	057	9.6	N44° 16’ 40’’	E043° 09’ 44’’	
MW018	098	30	N44° 10’ 30’’	E043° 25’ 06’’	
MW019	127	30	N43° 03’ 11’’	E043° 19’ 36’’	
MW020	164	30	N43° 58’ 24’’	E043° 06’ 48’’	
MW021	217	30	N44° 04’ 24’’	E042° 49’ 30’’	

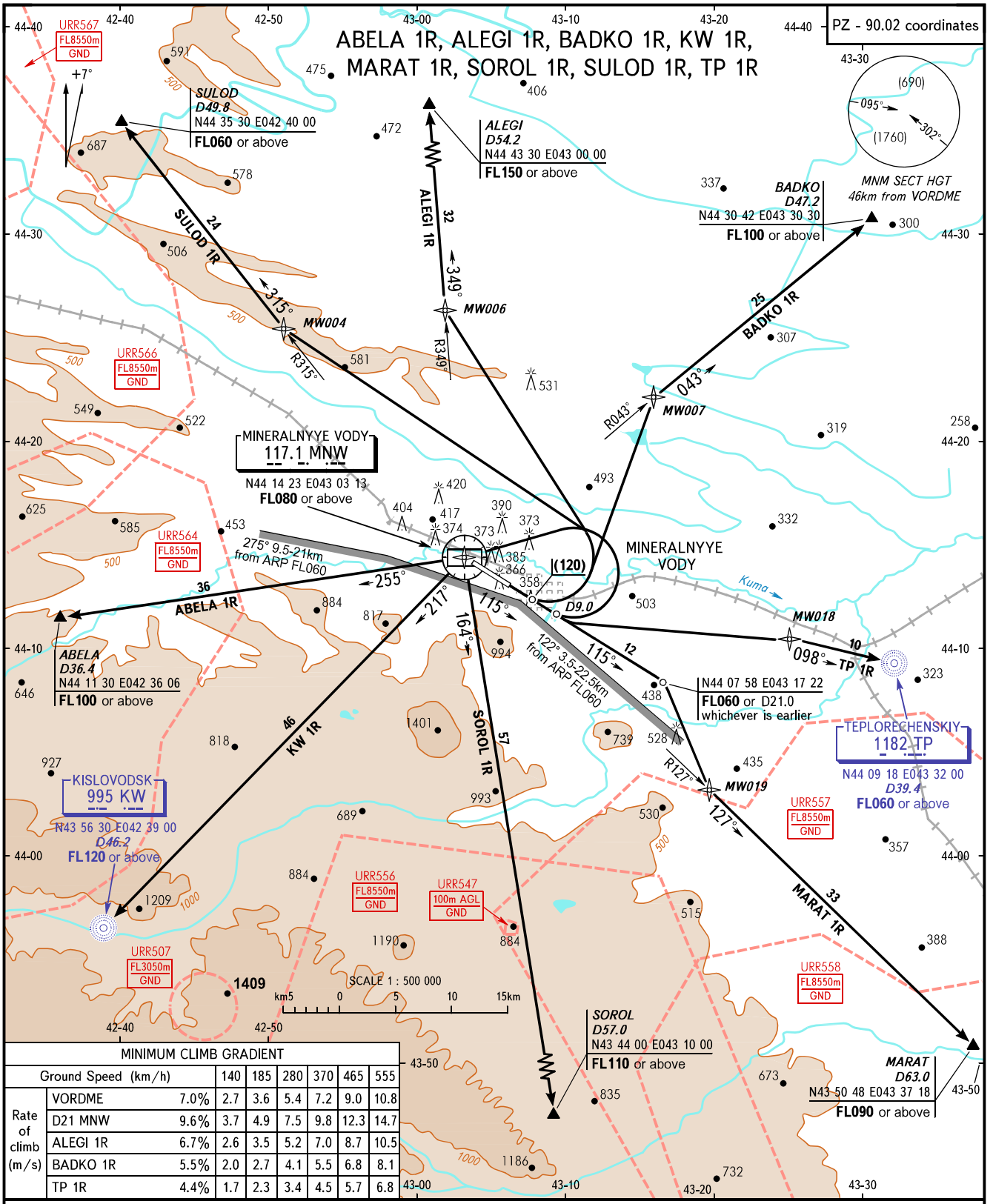
STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RNAV RWY 12



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	VORDME	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D21 MNW	9.6%	3.7	4.9	7.5	9.8	12.3	14.7
	ALEGI 1R	6.7%	2.6	3.5	5.2	7.0	8.7	10.5
	BADKO 1R	5.5%	2.0	2.7	4.1	5.5	6.8	8.1
	TP 1R	4.4%	1.7	2.3	3.4	4.5	5.7	6.8

START	**128.0**
KRUG	**120.7**
APPROACH	**119.3**

WARNING:
1. Take-off shall be carried out using noise abatement procedure for the area according to the Aeroplane Flight Manual.
2. ACFT unable to maintain the required climb gradient shall advise ATS unit about it and get other instructions.
3. After climbing to (120) immediately contact Mineralnyye Vody-Krug on 120.7.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: New chart

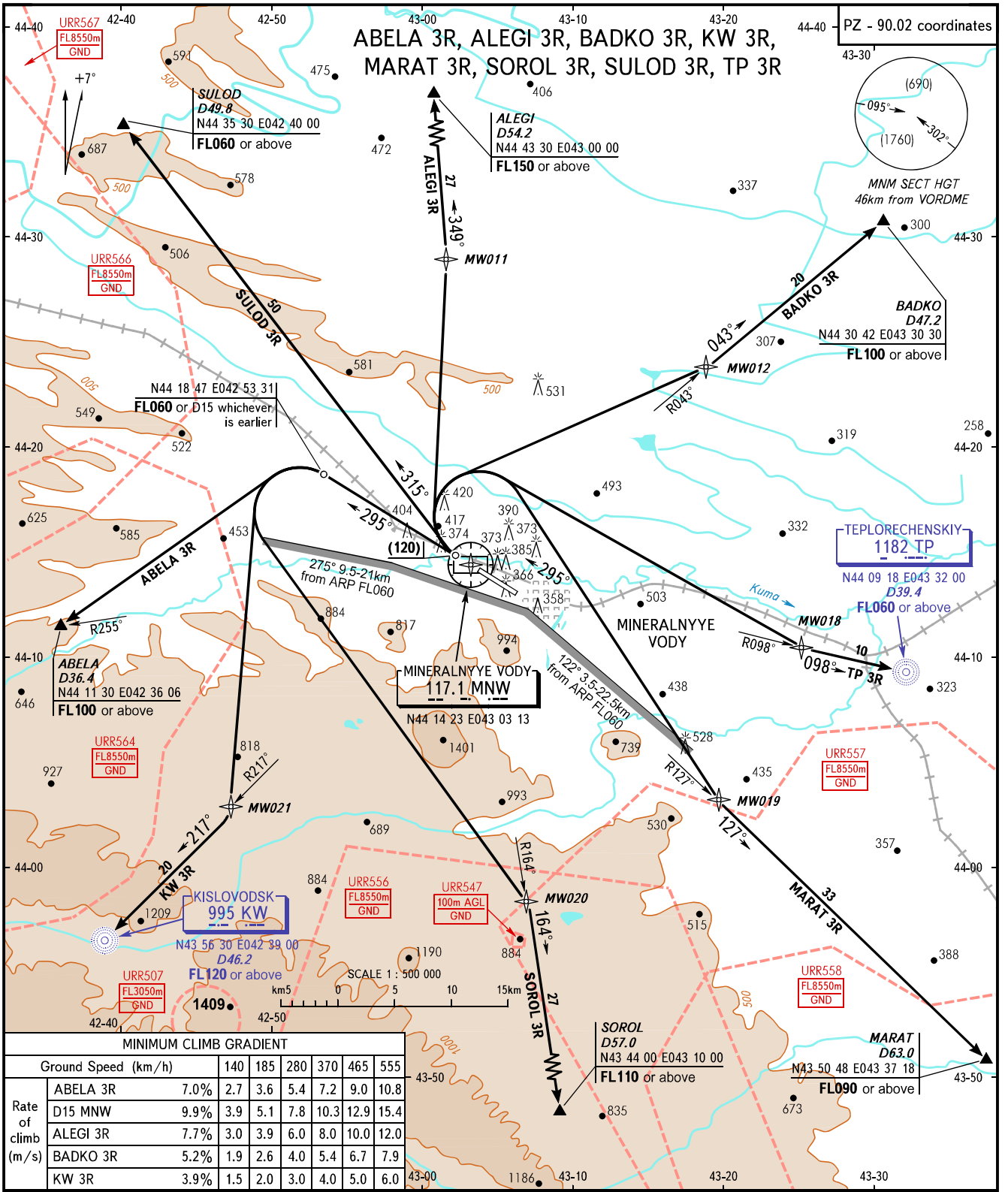
STANDARD DEPARTURE CHART INSTRUMENT (SID) - ICAO

TRANSITION HEIGHT : **(900)**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RNAV RWY 30



MINIMUM CLIMB GRADIENT								
Ground Speed (km/h)			140	185	280	370	465	555
Rate of climb (m/s)	ABELA 3R	7.0%	2.7	3.6	5.4	7.2	9.0	10.8
	D15 MNW	9.9%	3.9	5.1	7.8	10.3	12.9	15.4
	ALEGI 3R	7.7%	3.0	3.9	6.0	8.0	10.0	12.0
	BADKO 3R	5.2%	1.9	2.6	4.0	5.4	6.7	7.9
	KW 3R	3.9%	1.5	2.0	3.0	4.0	5.0	6.0

START	**128.0**
KRUG	**120.7**
APPROACH	**119.3**

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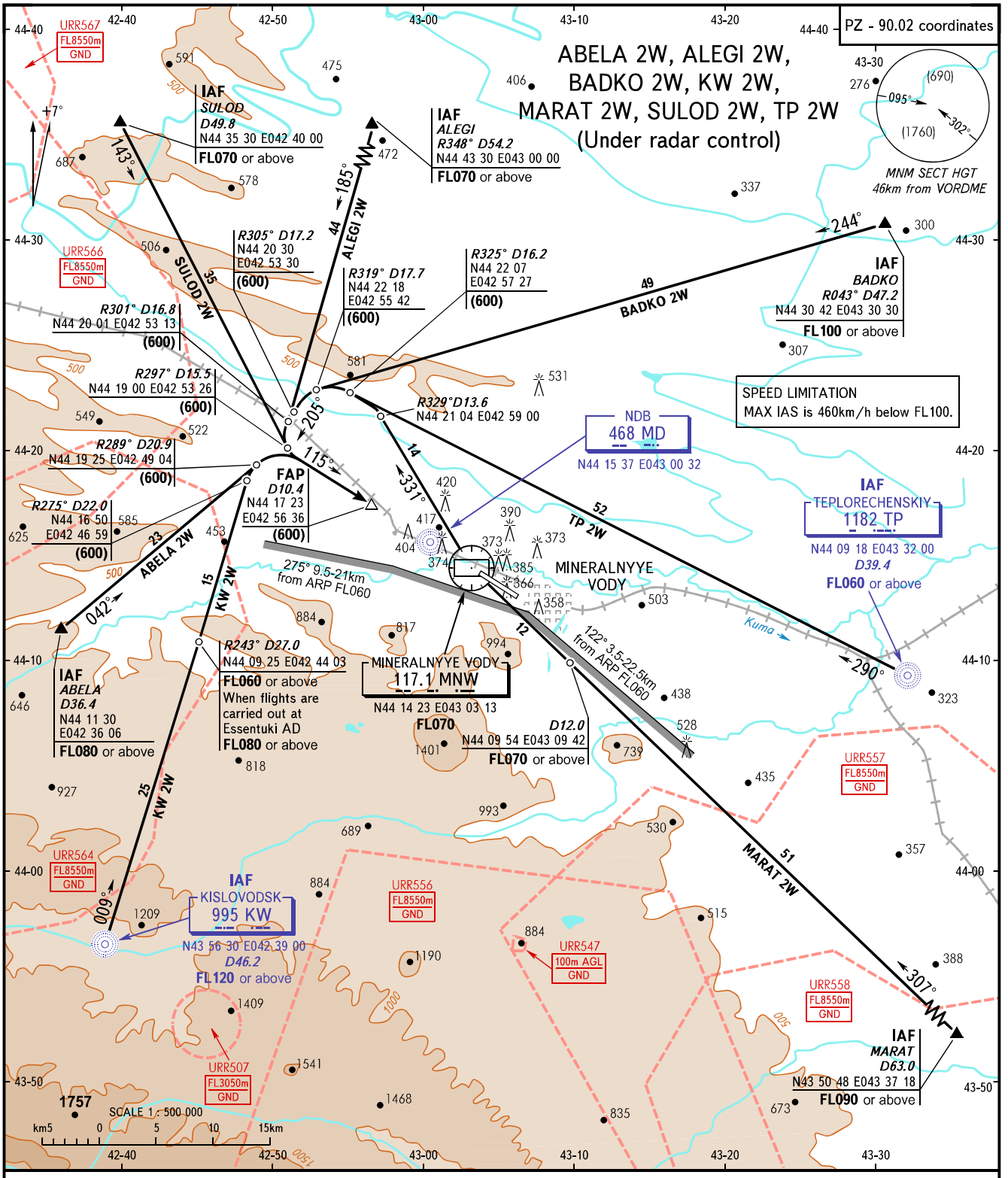
CHANGE: New chart

STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA
MINERALNYYE VODY
RWY 12



APPROACH	**119.3**
KRUG	**120.7**

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES, HEIGHTS AND ELEVATIONS ARE IN METRES
DISTANCES ARE IN KILOMETRES

CHANGE: COORD, FL

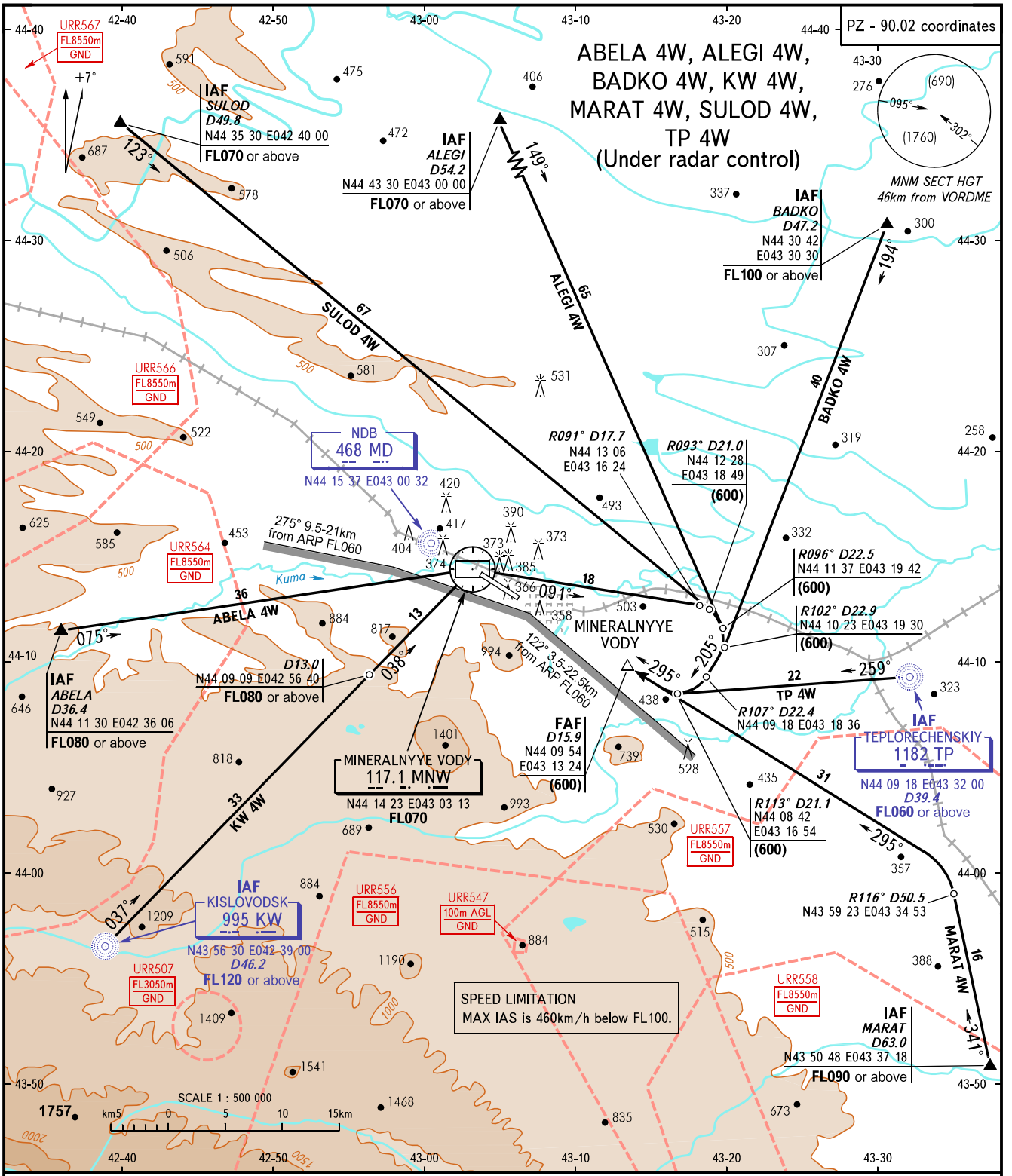
STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RWY 30



APPROACH	**119.3**
KRUG	**120.7**

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- FL070 when atmospheric pressure is less than 704mm mercury column.

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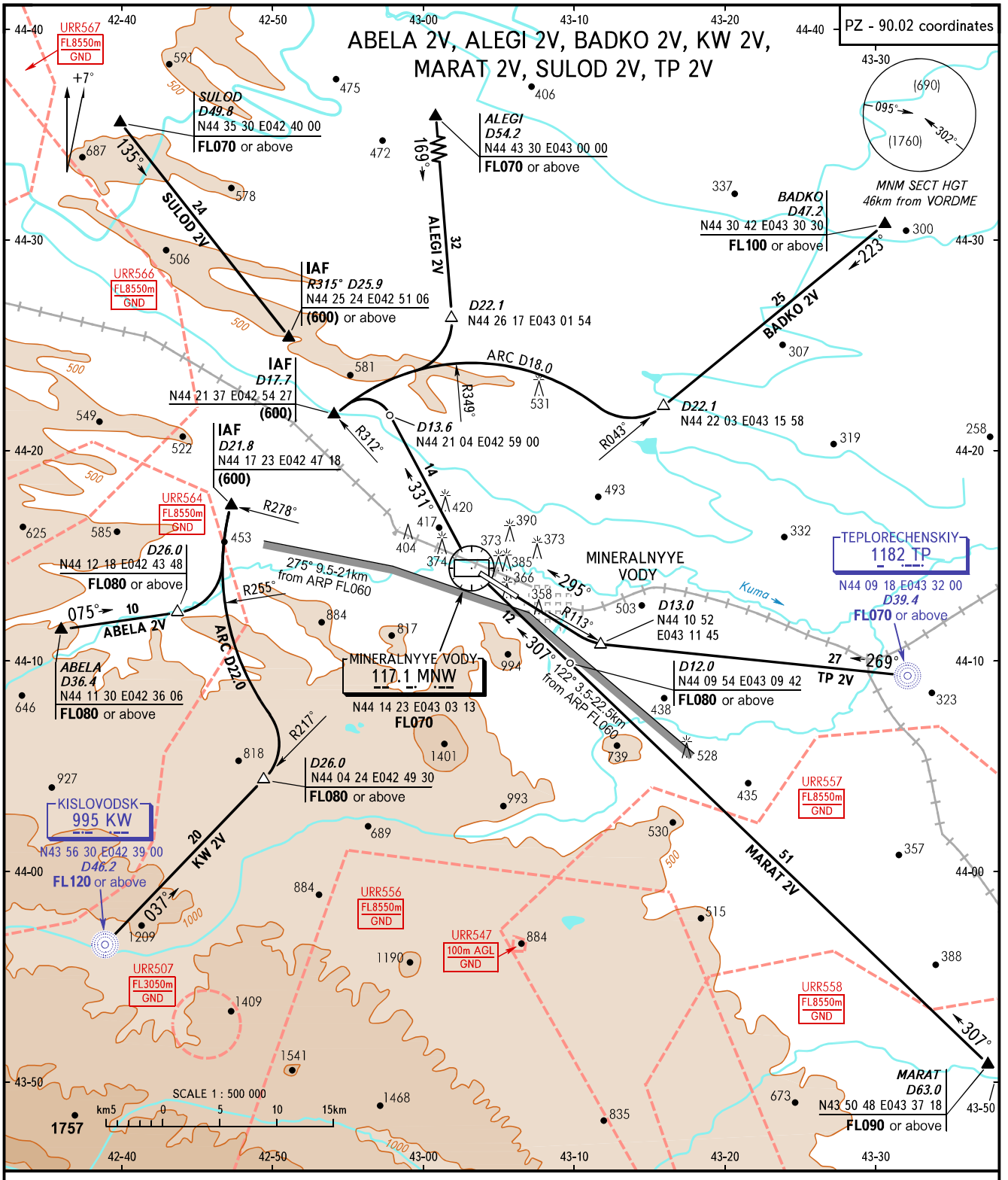
CHANGE: COORD, FL

STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY
VORDME RWY 12



APPROACH	**119.3**
KRUG	**120.7**
START	**128.0**

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
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CHANGE: New chart

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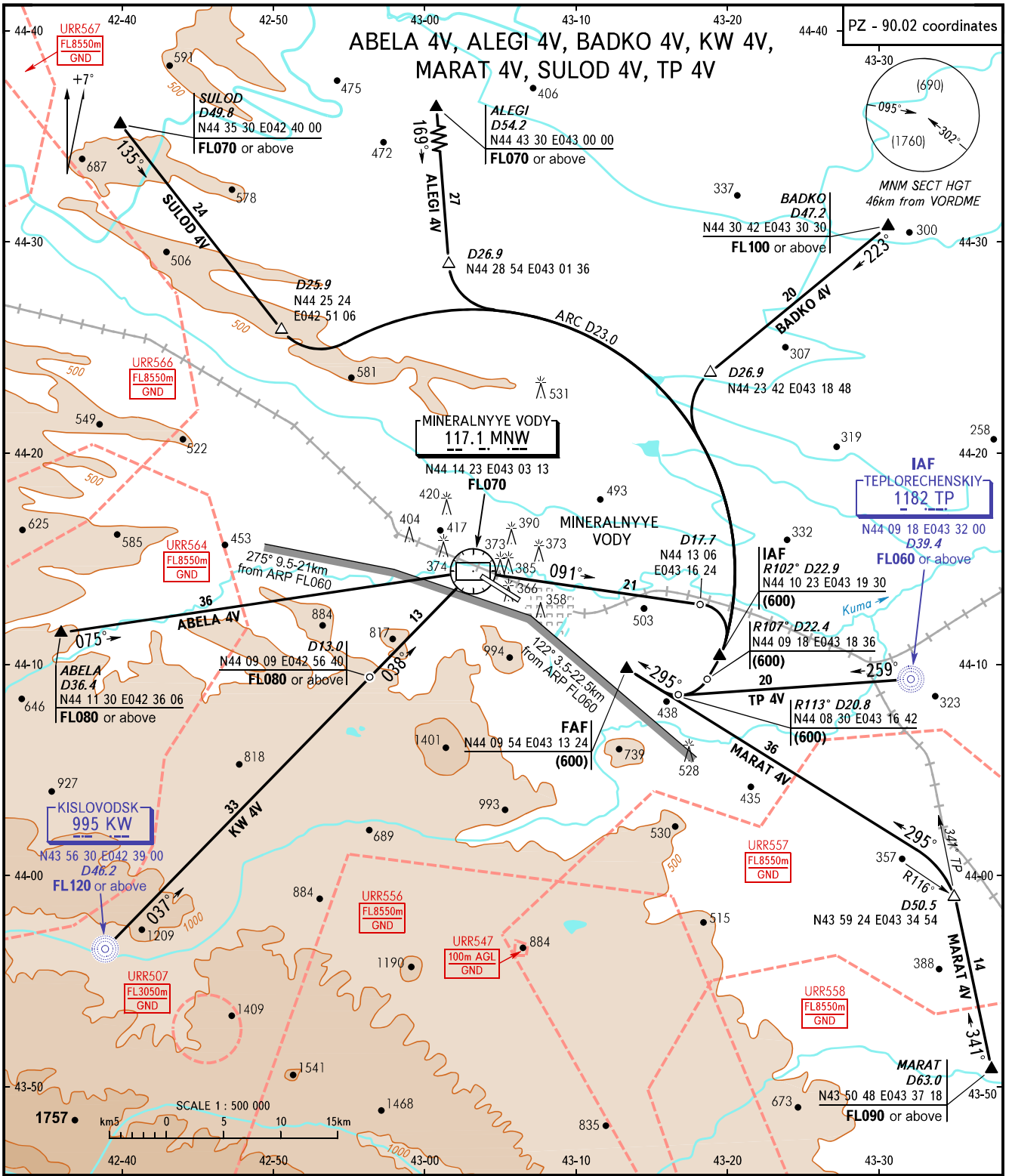
STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

VORDME RWY 30



APPROACH	**119.3**
KRUG	**120.7**
START	**128.0**

❶ TRANSITION LEVEL:
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CHANGE: New chart

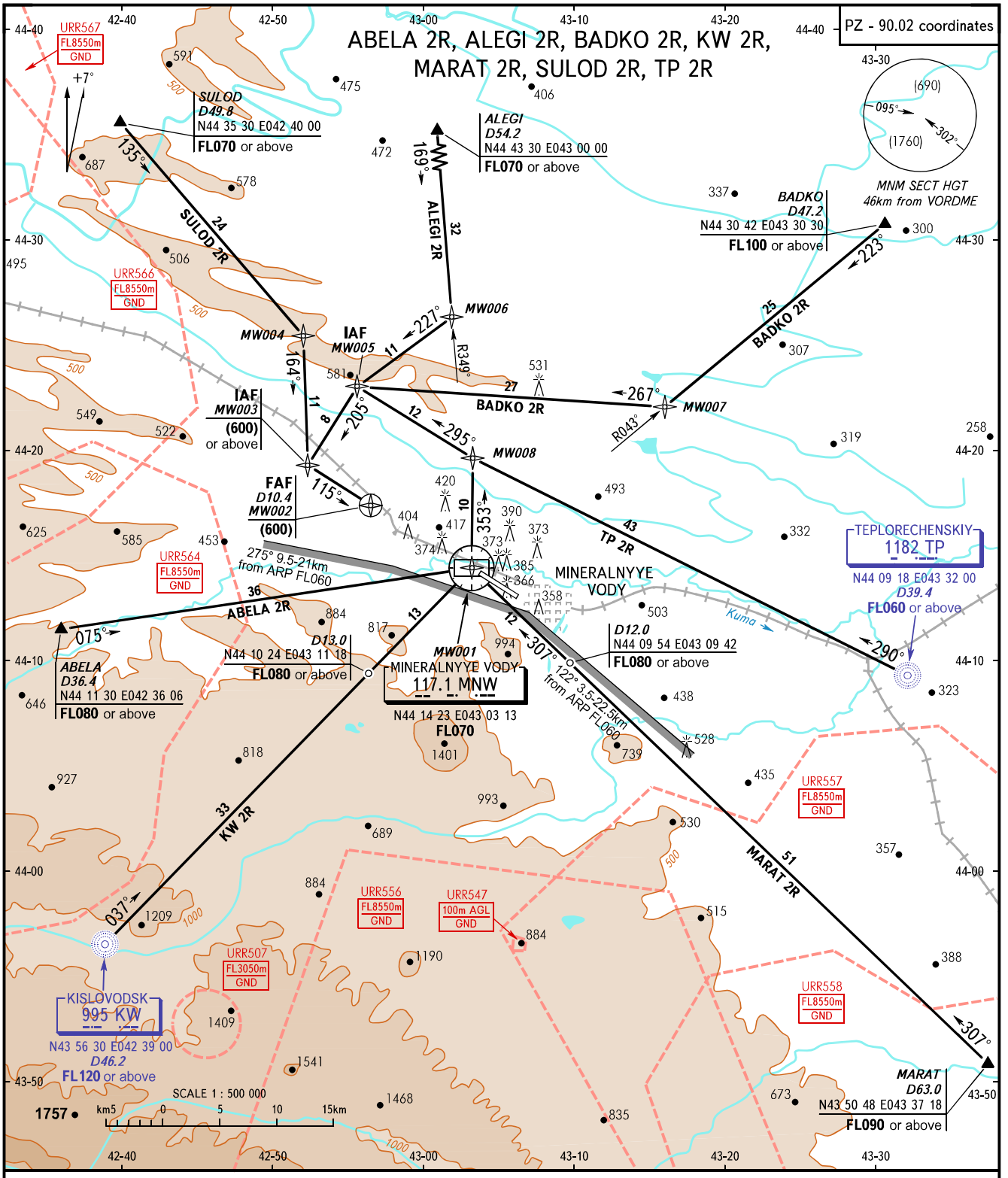
STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RNAV RWY 12



APPROACH	**119.3**
KRUG	**120.7**
START	**128.0**

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- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

CHANGE: New chart

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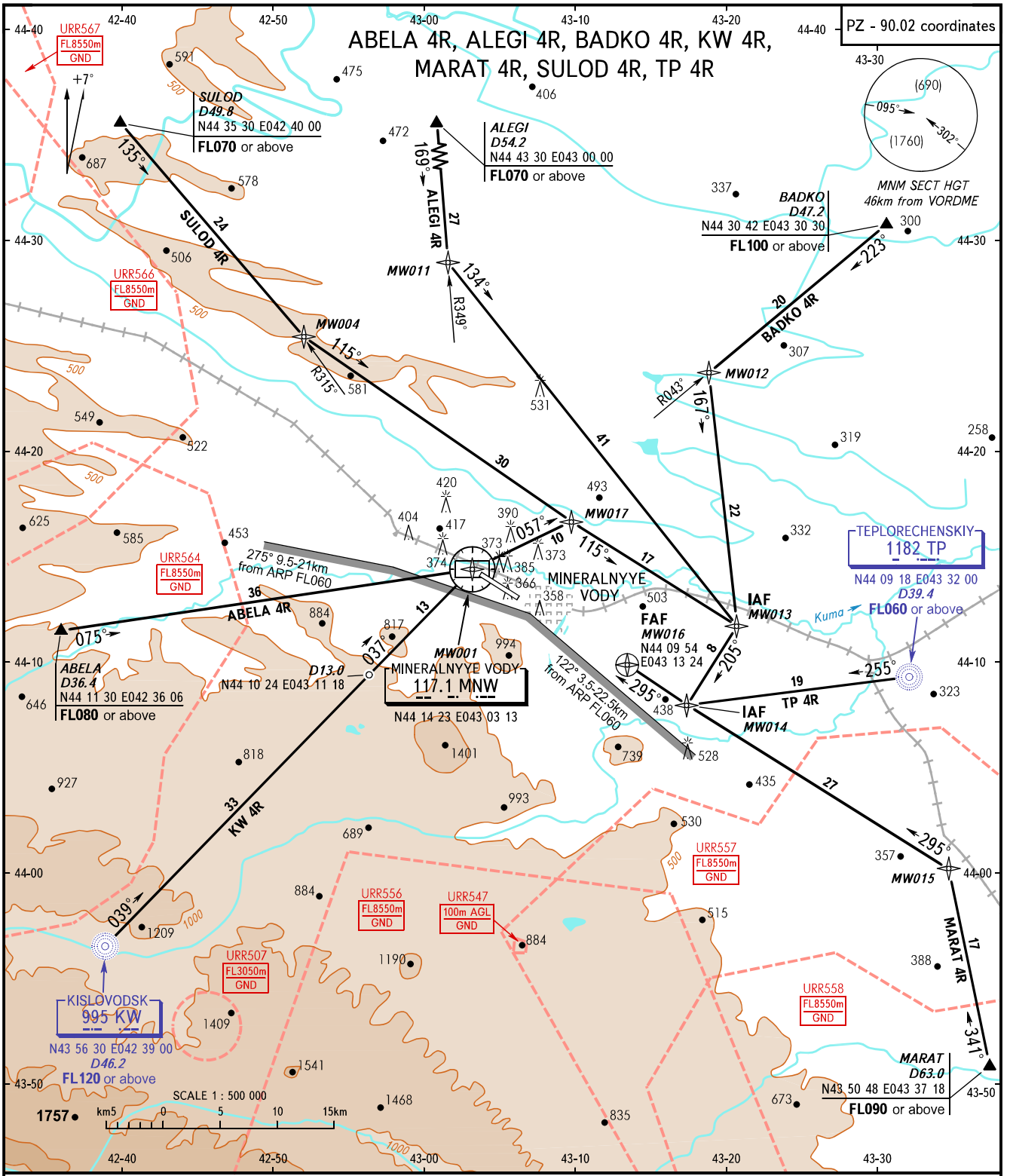
STANDARD ARRIVAL CHART INSTRUMENT (STAR) - ICAO

TRANSITION LEVEL : ❶

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RNAV RWY 30



APPROACH	**119.3**
KRUG	**120.7**
START	**128.0**

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- FL070 when atmospheric pressure is less than 704mm mercury column.

BEARINGS AND TRACKS ARE MAGNETIC
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DISTANCES ARE IN KILOMETRES

CHANGE: New chart

AERODROME CHART - ICAO

ARP
N44°13.6'
E043°05.0'

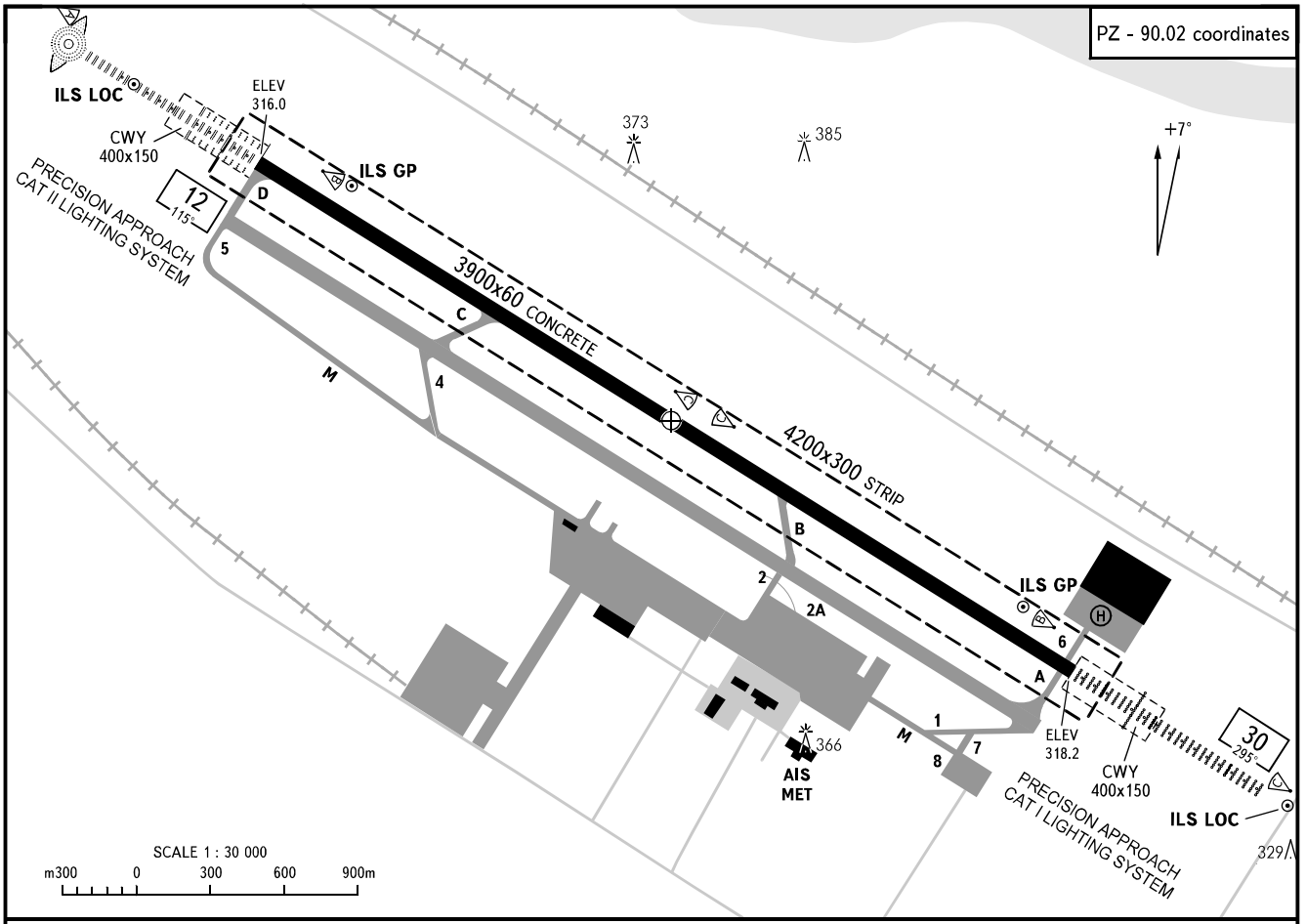
ELEV
319.1m

START	**128.0**
TAXIING	**121.9**

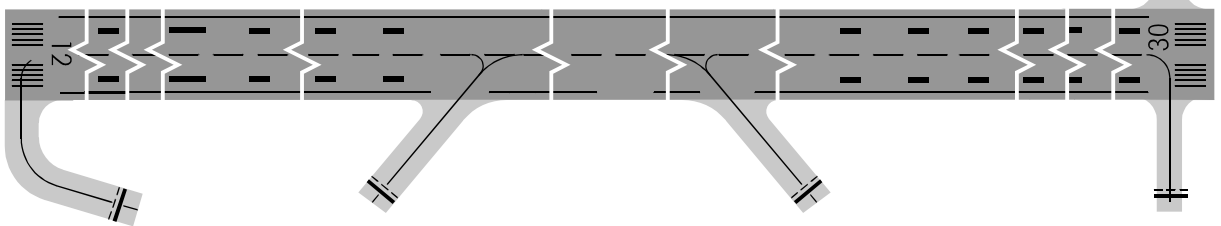
MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

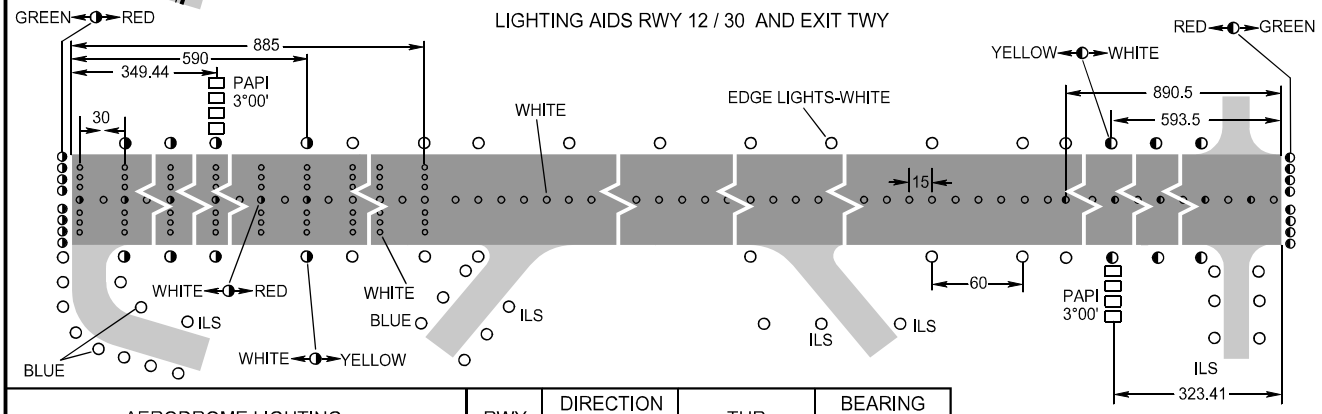
PZ - 90.02 coordinates



MARKING AIDS RWY 12 / 30 AND EXIT TWY



LIGHTING AIDS RWY 12 / 30 AND EXIT TWY



AERODROME LIGHTING	RWY	DIRECTION (TRUE)	THR	BEARING STRENGTH
Approach: RWY 12/30 HIALS Runway: Edge-white, last 600m yellow HIRL Threshold: Green	12	122°11'	N44°14'10.1" E043°03'44.5"	PCN 54 / R / A / W / T
	30	302°12'	N44°13'02.8" E043°06'13.2"	

ELEVATIONS AND DIMENSIONS IN METRES
BEARINGS ARE MAGNETIC

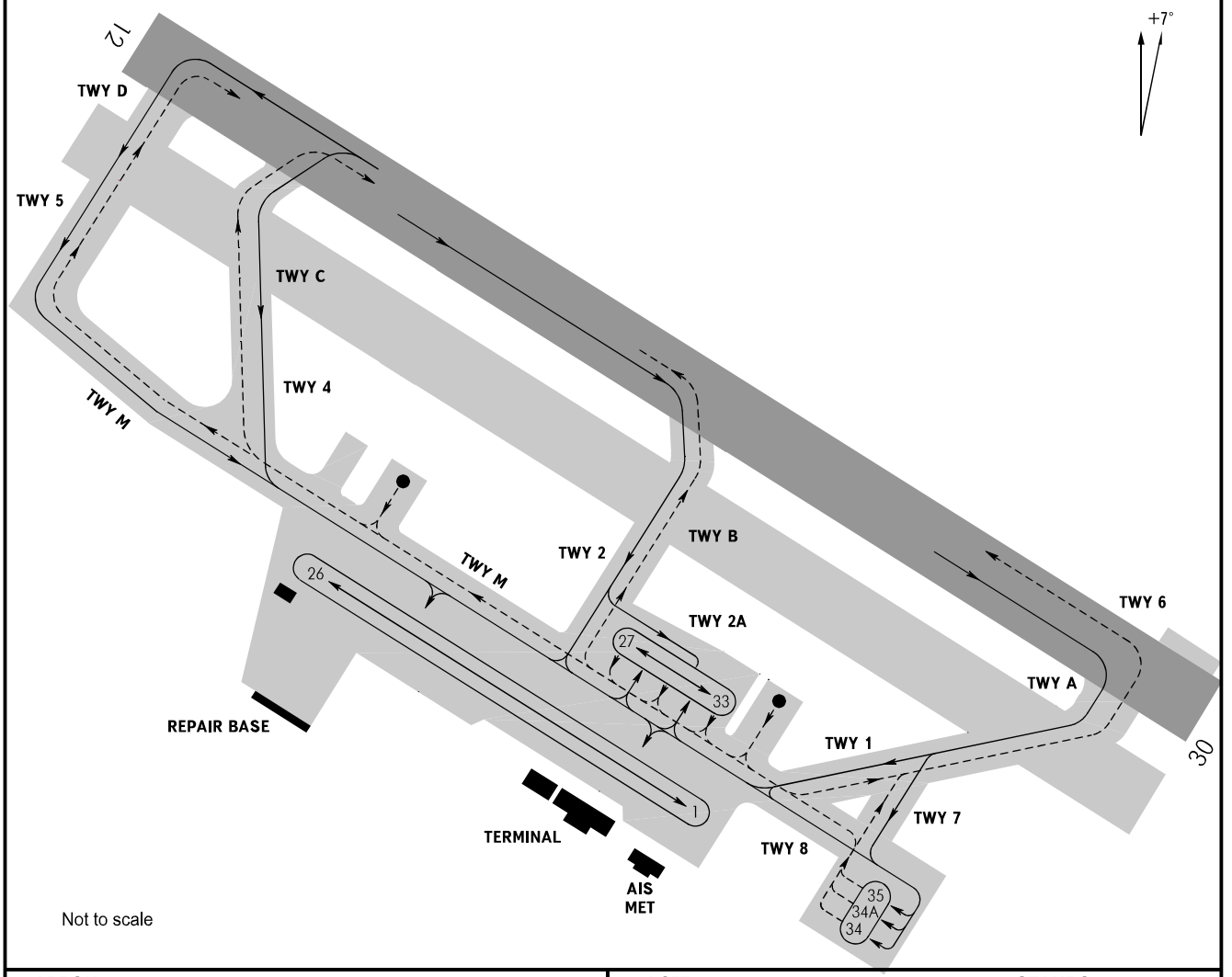
CHANGE: New chart

AERODROME GROUND MOVEMENT AND AIRCRAFT PARKING CHART - ICAO

START	**128.0**
TAXIING	**121.9**

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY



APRON:
Surface: Reinforced Concrete
Strength: PCN 54/R/A/W/T

TAXIWAYS:
Width: 1, 2, 2A, 4, 5, 7, 8, A, B, C, D, M - 22.5m
6 - 18m
Surface: A, B, C, D - Concrete
1, 2, 2A, 4, 5, 7, 8, M - Reinforced Concrete

Strength: A, B, C, D	- PCN 54/R/A/W/T
1	- PCN 49/R/B/X/T
2	- PCN 39/R/B/X/T
2A	- PCN 28/R/B/X/T
4	- PCN 61/R/C/X/T
5, TWY M from TWY 4 to TWY 5	- PCN 59/R/C/X/T
7, 8	- PCN 57/R/B/X/T
TWY M from TWY 1 to TWY 4	- PCN 55/R/B/X/T

WARNING:
1. Six floodlights 9m high are installed on the northern side along stands 27-33.
2. Lead-in line of stand 34A and its contour are marked by grey painting.
3. For ACFT with low-mounted engines the taxi route after landing is established only along TWY B, TWY 2, TWY M, then to the assigned stand. The taxi route for take-off is established only along TWY M, TWY 2, TWY B.

ACFT types:	STANDS:
Tu-214, Tu-204	1-5, 11, 25, 32-35
Tu-154	1-11, 13-26, 32-35
Tu-134	1-26, 32-35
Il-114	1-35
Il-86	1, 2, 5, 11
Il-76T, Il-76TD	34, 35
Il-62, Il-62M	1-5, 11, 32, 33
Il-18	1-11, 13-26, 32-35
CRJ-100, CRJ-200, RJ-85	1-11, 13-26, 32-35
ATR-42, ATR-72, EMB-120, L-410	1-35
B757-200	1-11, 13-26, 32-35
B737-700, B727-200	1-11, 13-26, 33-35
A-320	1-11, 13-26, 33-35
An-140, An-32, An-30, An-28, An-26, An-24	1-35
An-124, An-22	34A
An-74, An-72, An-148, An-12, An-8	1-11, 13-26, 32-35
Yak-42	1-11, 13-26, 32-35
Yak-40	1-35
Mi-26 HEL, Mi-6 HEL	1-11, 13-26, 32-35
Mi-8 HEL	1-35

STAND NR	LATITUDE	LONGITUDE	STAND NR	LATITUDE	LONGITUDE
1-3	N44 13.0	E043 05.6	18, 19	N44 13.3	E043 05.1
4, 5	N44 13.1	E043 05.5	20-23	N44 13.3	E043 05.0
6-9	N44 13.1	E043 05.4	24-26	N44 13.3	E043 04.9
10, 11	N44 13.1	E043 05.3	27, 28	N44 13.2	E043 05.4
12	N44 13.2	E043 05.3	29-32	N44 13.1	E043 05.5
13-16	N44 13.2	E043 05.2	33	N44 13.1	E043 05.6
17	N44 13.2	E043 05.1			

CHANGE: WARNING

INSTRUMENT APPROACH CHART - ICAO

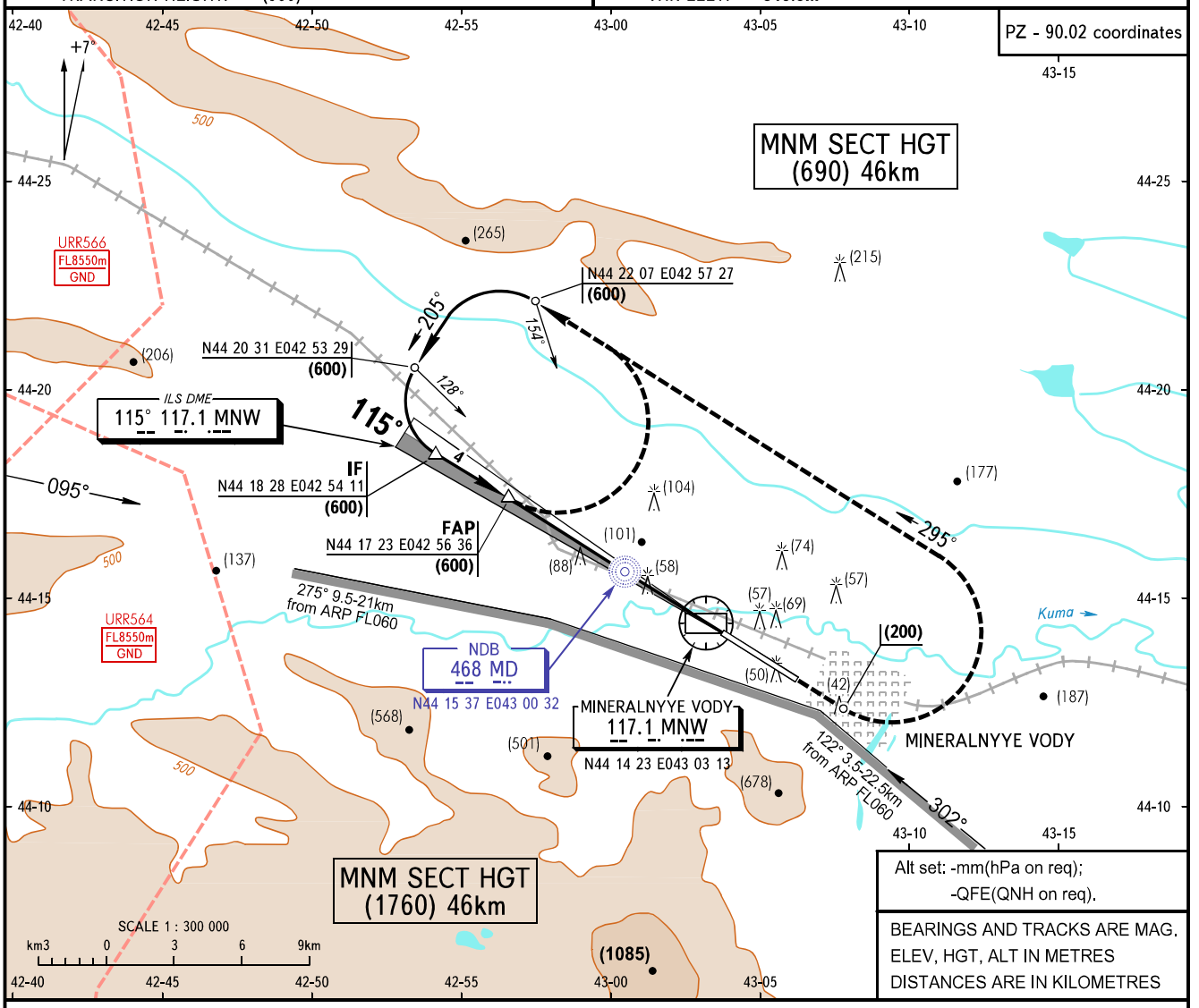
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

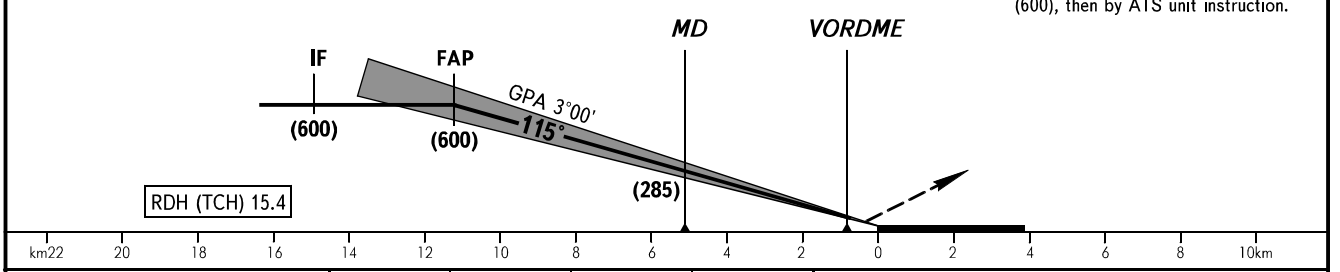
MINERALNYYE VODY

ILS DME RWY 12

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	316.0m



MISSED APPROACH
Climb on track 115° to (120), then turn LEFT on track 295° climbing to (600), then by ATS unit instruction.



OCA/H		A	B	C	D
Straight-in Approach	CAT II	332(16)	335(19)	339(23)	343(27)
	CAT I	360(44)	363(47)	366(50)	371(55)

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	120	150	180	210	240	270	300	330	360		
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT (Grad 5.2%)	m/s	1.7	2.2	2.6	3.1	3.5	3.9	4.4	4.8	5.2		

CHANGE: COORD, FL

INSTRUMENT APPROACH CHART - ICAO

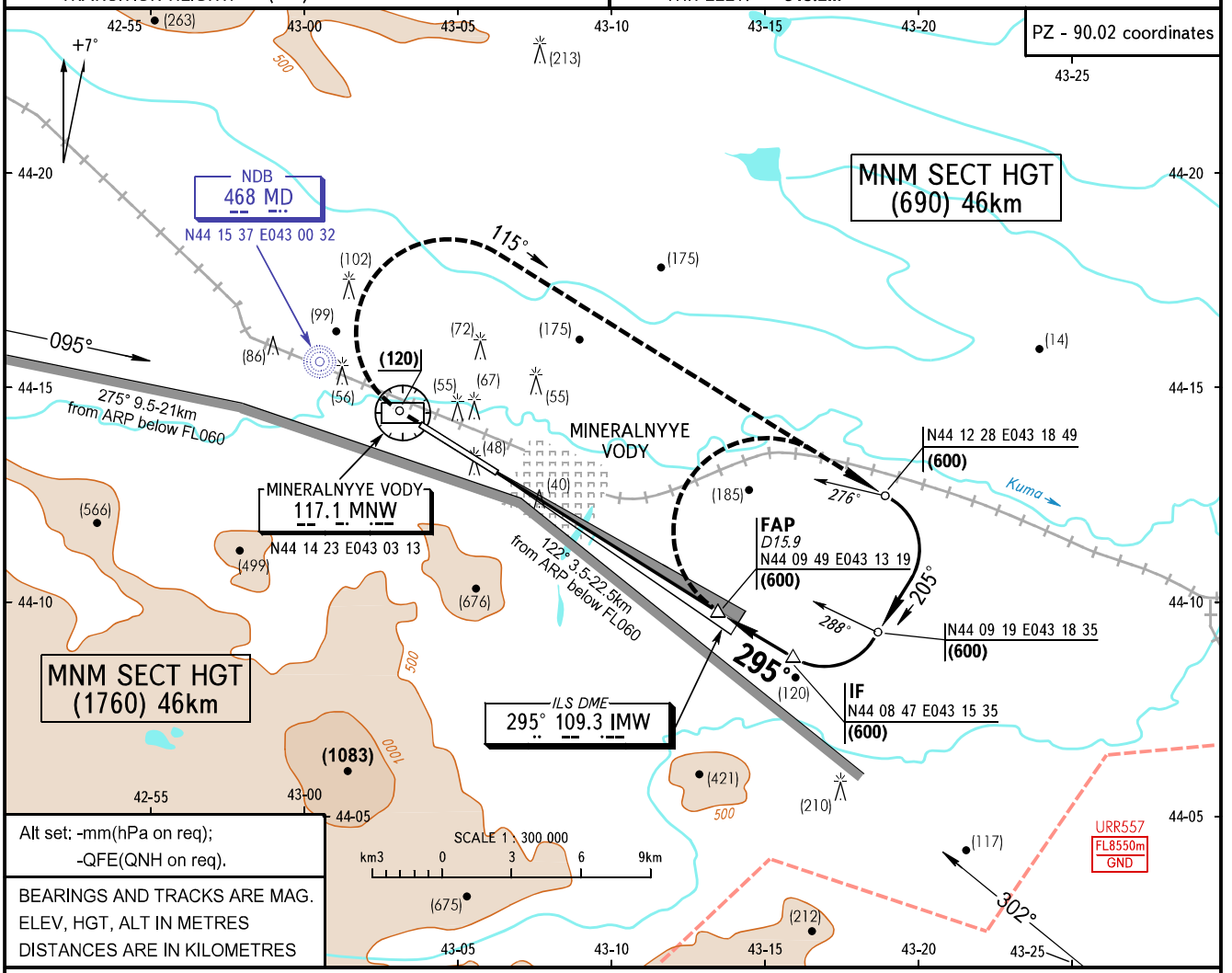
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

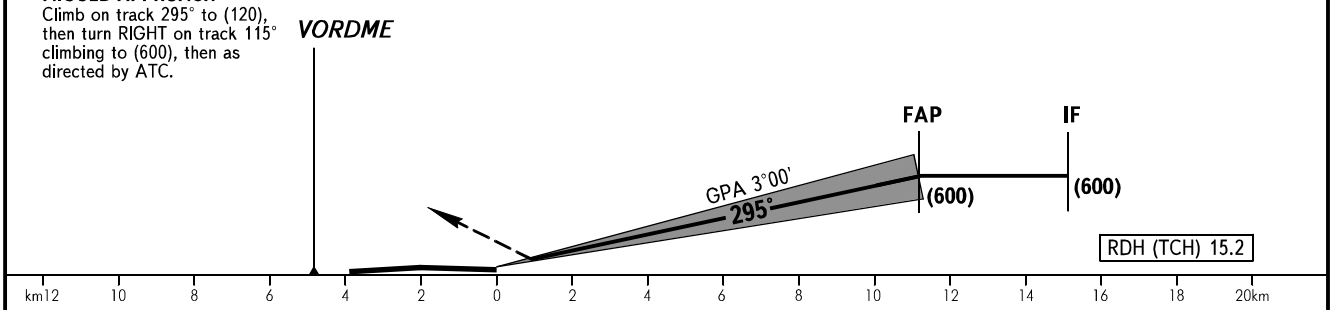
MINERALNYYE VODY

ILS DME RWY 30

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	318.2m



MISSED APPROACH
Climb on track 295° to (120), then turn RIGHT on track 115° climbing to (600), then as directed by ATC.



OCA/H		A	B	C	D
Straight-in Approach	CAT I	363(44)	366(47)	369(50)	374(55)

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED		km/h	150	180	210	240	270	300	330	360	390	420	450
FAF - THR	11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT		m/s	2.2	2.6	3.0	3.5	3.9	4.3	4.8	5.2	5.6	6.1	6.5

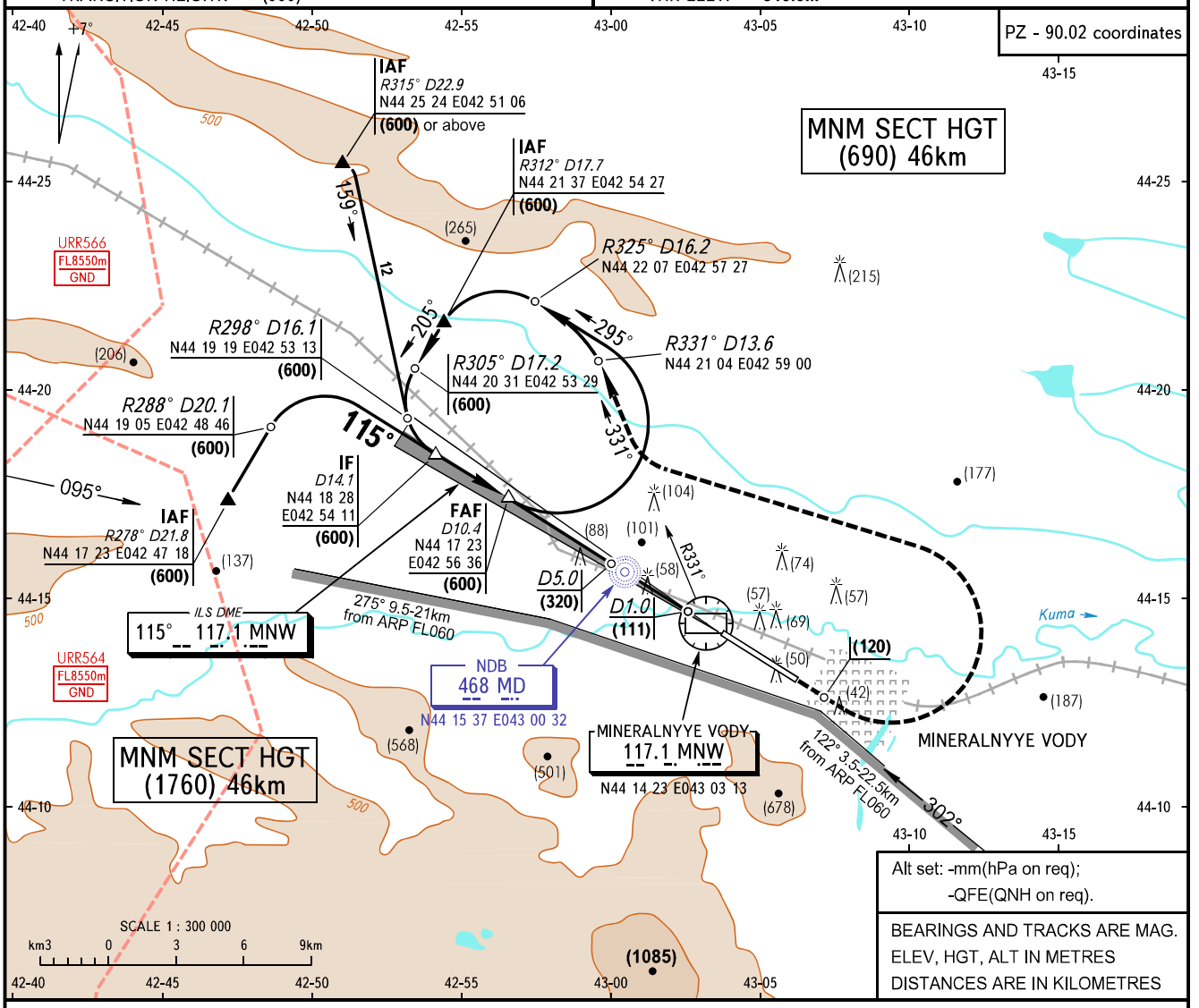
CHANGE: COORD, FL

INSTRUMENT APPROACH CHART - ICAO

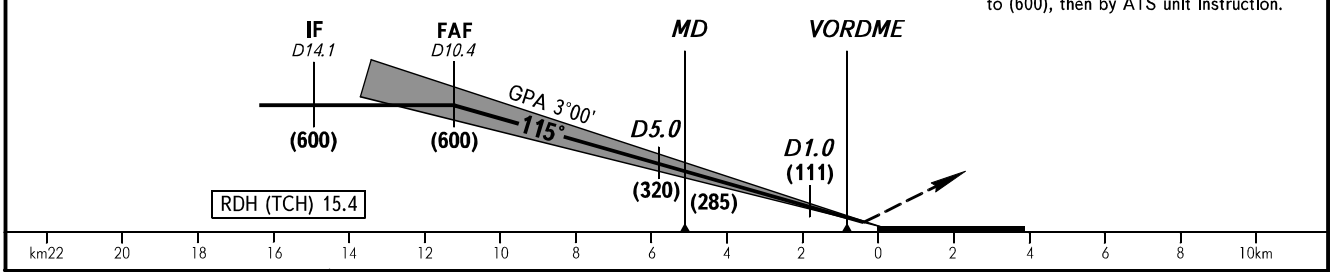
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA
MINERALNYYE VODY
ILS, VORDME RWY 12

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	316.0m



MISSED APPROACH
Climb on track 115° to (120), then turn LEFT to intercept R331° MNW climbing to (600), then by ATS unit instruction.



OCA/H		A	B	C	D
Straight-in	CAT II	332(16)	335(19)	339(23)	343(27)
Approach	CAT I	360(44)	363(47)	366(50)	371(55)

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	120	150	180	210	240	270	300	330	360		
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT (Grad 5.2%)	m/s	1.7	2.2	2.6	3.1	3.5	3.9	4.4	4.8	5.2		

CHANGE: New chart

INSTRUMENT APPROACH CHART - ICAO

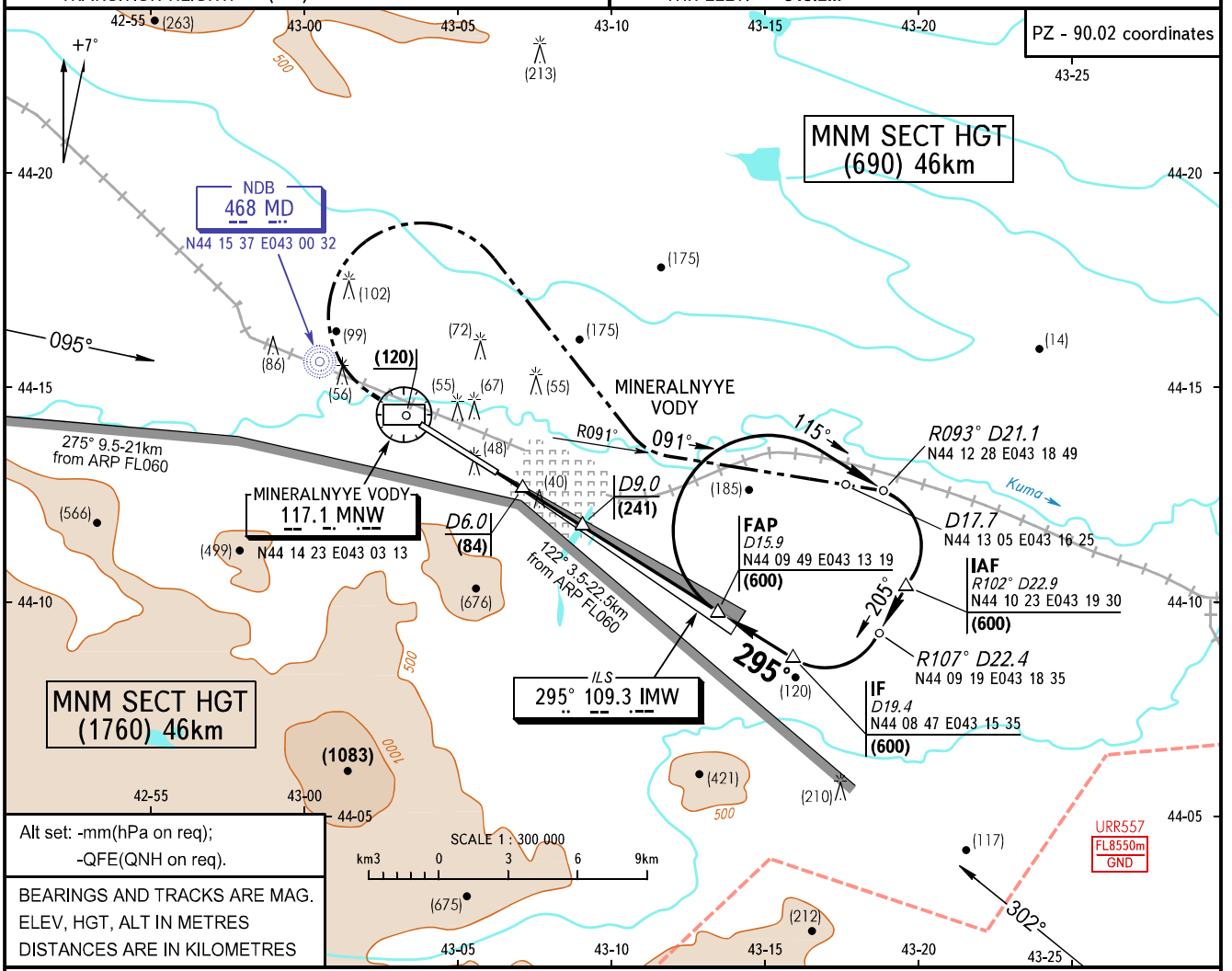
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

ILS, VORDME RWY 30

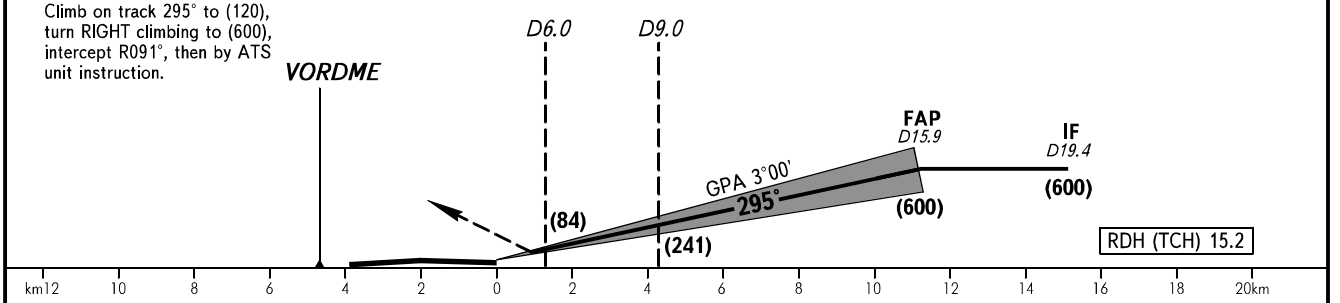
TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	318.2m



Alt set: -mm(hPa on req);
-QFE(QNH on req).

BEARINGS AND TRACKS ARE MAG.
ELEV, HGT, ALT IN METRES
DISTANCES ARE IN KILOMETRES

MISSED APPROACH
Climb on track 295° to (120), turn RIGHT climbing to (600), intercept R091°, then by ATS unit instruction.



OCA/H		A	B	C	D
Straight-in Approach	CAT I	363(44)	366(47)	369(50)	374(55)

❶ TRANSITION LEVEL:
- FL060when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	150	180	210	240	270	300	330	360	390		
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT	m/s	2.2	2.6	3.0	3.5	3.9	4.3	4.8	5.2	5.6		

CHANGE: New chart

INSTRUMENT APPROACH CHART - ICAO

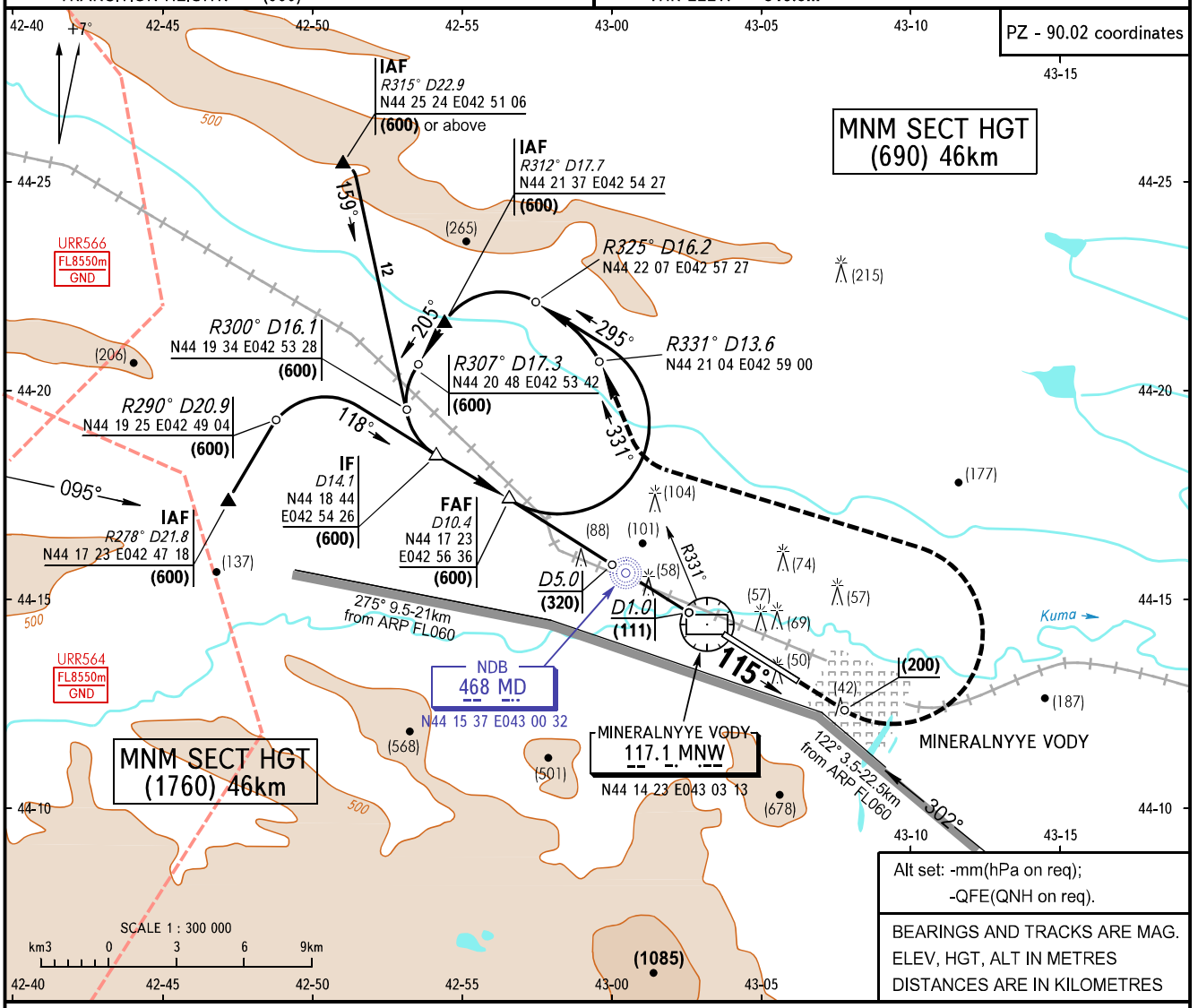
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

VORDME RWY 12

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	316.0m

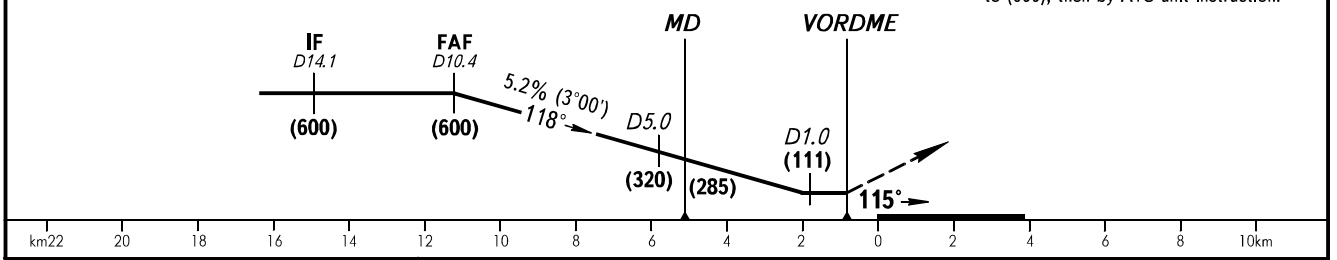


Alt set: -mm(hPa on req);
-QFE(QNH on req).

BEARINGS AND TRACKS ARE MAG.
ELEV, HGT, ALT IN METRES
DISTANCES ARE IN KILOMETRES

FAF is fixed by TAR
13.2km from ARP.

MISSED APPROACH
Climb on track 115° to (200), then turn LEFT to intercept R331° MNW climbing to (600), then by ATS unit instruction.



OCA/H		A	B	C	D
Straight-in Approach	**VORDME, VORDME WO FAF**	449(133)	449(133)	449(133)	449(133)
	NDB, NDB WO FAF	492(176)	492(176)	492(176)	492(176)

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	120	150	180	210	240	270	300	330	360		
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT	m/s	1.7	2.2	2.6	3.1	3.5	3.9	4.4	4.8	5.2		

CHANGE: New chart

INSTRUMENT APPROACH CHART - ICAO

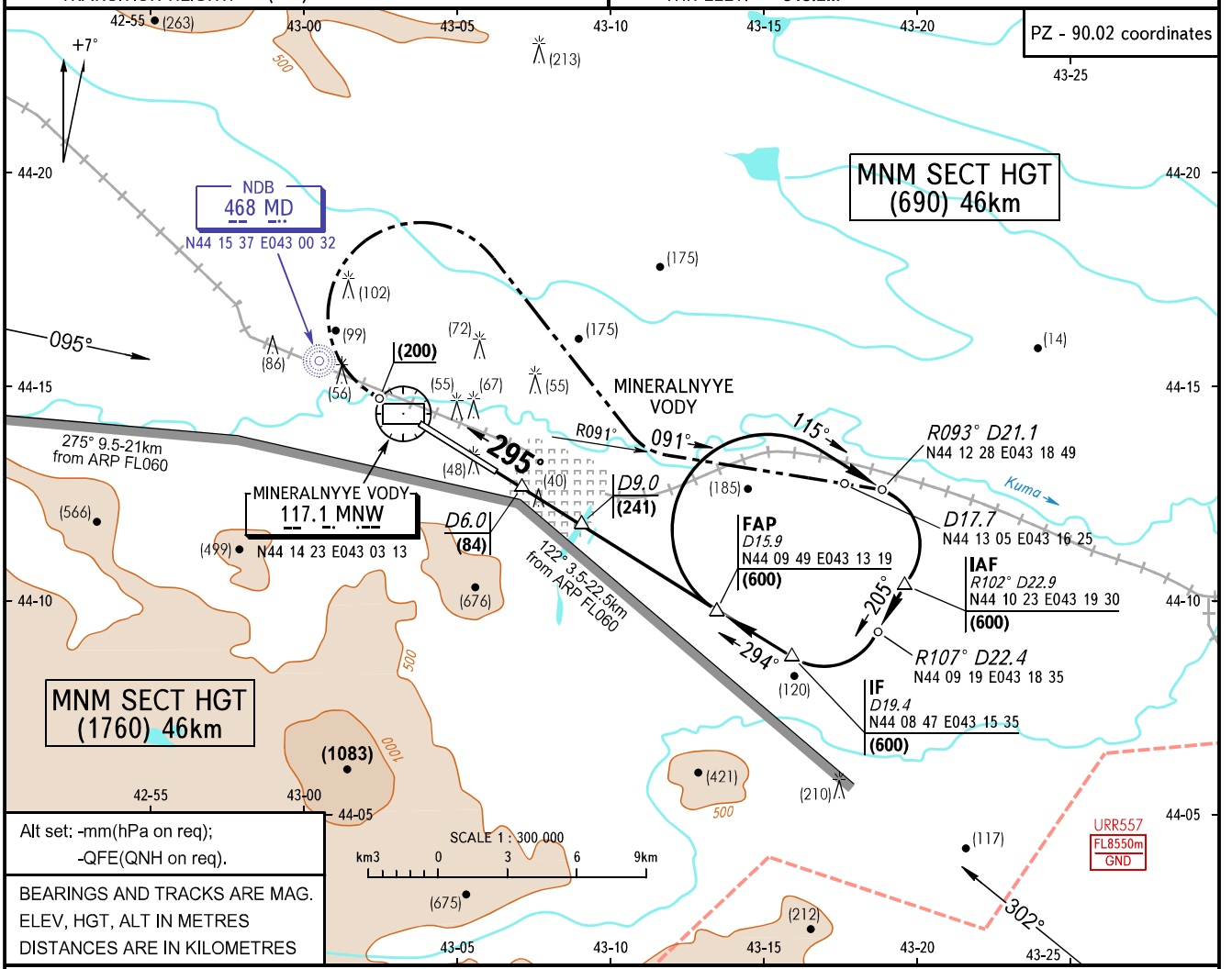
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

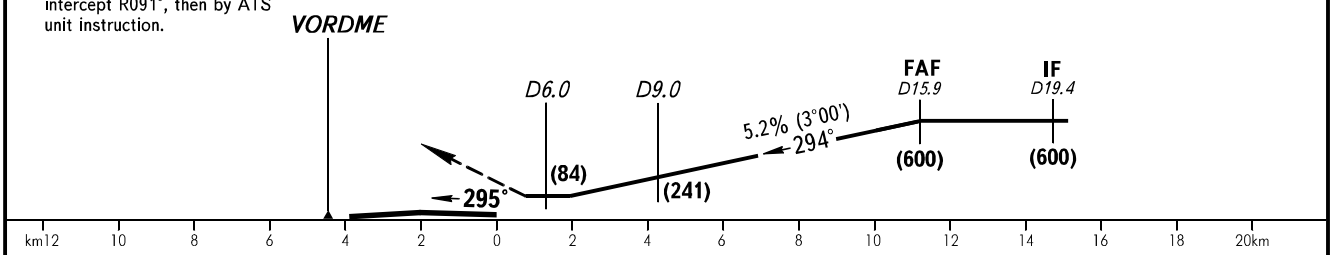
VORDME RWY 30

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	318.2m



MISSED APPROACH
Climb on track 295° to (200), turn RIGHT climbing to (600), intercept R091°, then by ATS unit instruction.

FAF is fixed by TAR 13.2km from ARP.



OCA/H		A	B	C	D
Straight-in Approach	**VORDME**	*474(155)*	*474(155)*	*474(155)*	*474(155)*
	VORDME WO FAF	*561(242)*	*561(242)*	*561(242)*	*561(242)*

❶ TRANSITION LEVEL:
- FL060when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	*150*	*180*	*210*	*240*	*270*	*300*	*330*	*360*	*390*		
FAF - THR 11200m	min:sec	*5.36*	*4.29*	*3.44*	*3.12*	*2.48*	*2.29*	*2.14*	*2.02*	*1.52*		
RATE OF DESCENT	m/s	*2.2*	*2.6*	*3.0*	*3.5*	*3.9*	*4.3*	*4.8*	*5.2*	*5.6*		

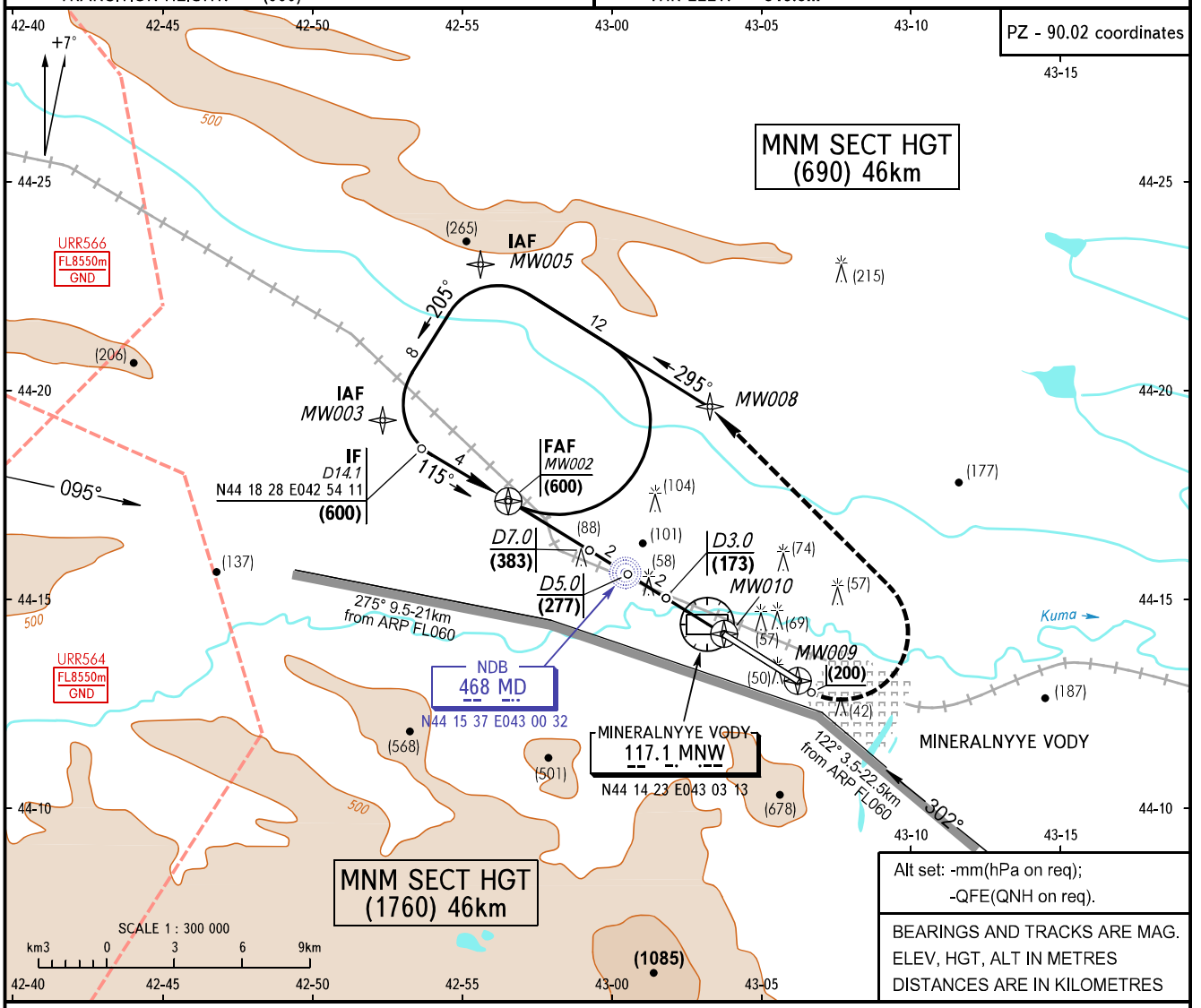
CHANGE: New chart

INSTRUMENT APPROACH CHART - ICAO

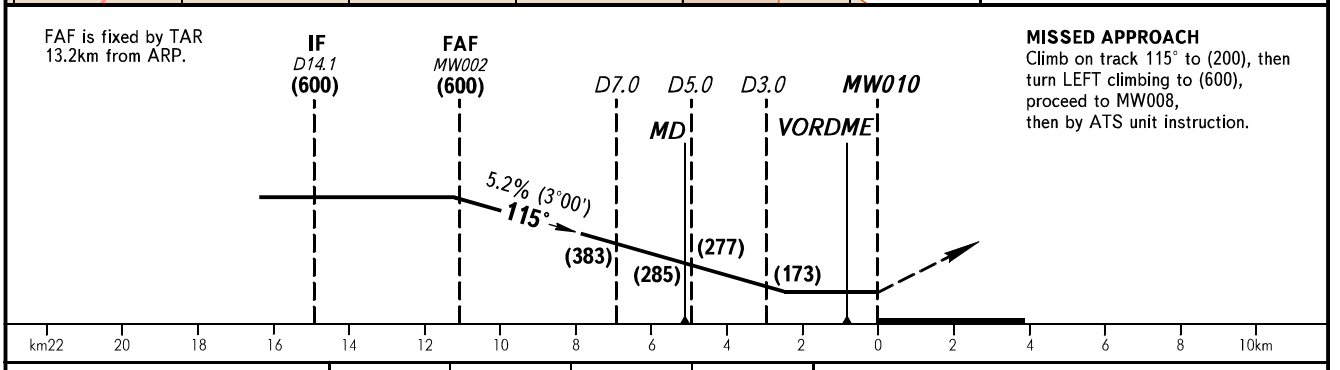
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA
MINERALNYYE VODY
RNAV GNSS RWY 12

TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	316.0m



FAF is fixed by TAR 13.2km from ARP.



MISSED APPROACH
Climb on track 115° to (200), then turn LEFT climbing to (600), proceed to MW008, then by ATS unit instruction.

OCA/H		A	B	C	D
Straight-in Approach	**RNAV GNSS**				

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	120	150	180	210	240	270	300	330	360		
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT	m/s	1.7	2.2	2.6	3.1	3.5	3.9	4.4	4.8	5.2		

CHANGE: New chart

INSTRUMENT APPROACH CHART - ICAO

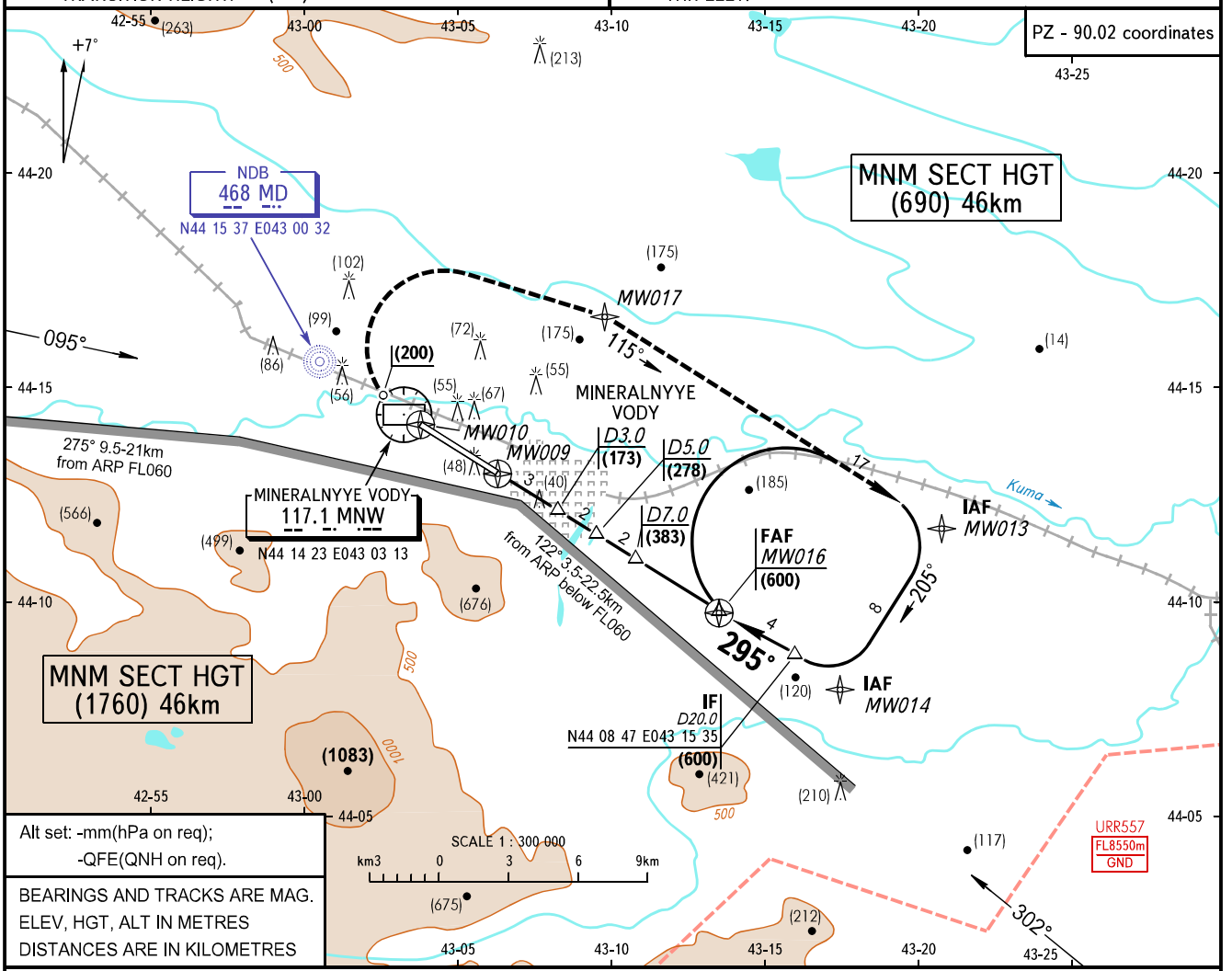
APPROACH	119.3
KRUG	120.7
START	128.0

MINERALNYYE VODY, RUSSIA

MINERALNYYE VODY

RNAV GNSS RWY 30

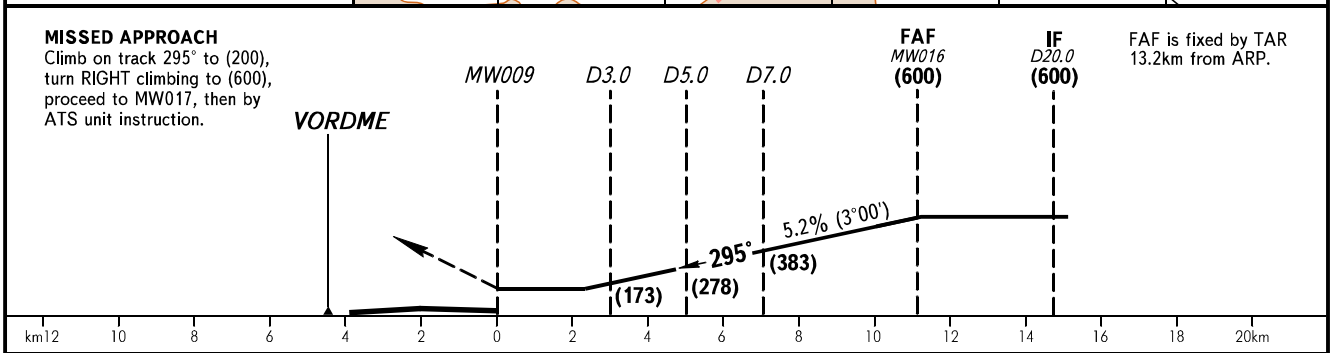
TRANSITION LEVEL:	❶	AD ELEV:	319.1m
TRANSITION HEIGHT:	(900)	THR ELEV:	318.2m



Alt set: -mm(hPa on req);
-QFE(QNH on req).

BEARINGS AND TRACKS ARE MAG.
ELEV, HGT, ALT IN METRES
DISTANCES ARE IN KILOMETRES

MISSED APPROACH
Climb on track 295° to (200), turn RIGHT climbing to (600), proceed to MW017, then by ATS unit instruction.



FAF is fixed by TAR 13.2km from ARP.

OCA/H		A	B	C	D
Straight-in Approach	**RNAV GNSS**				

❶ TRANSITION LEVEL:
- FL060 when atmospheric pressure is 704mm mercury column or above;
- FL070 when atmospheric pressure is less than 704mm mercury column.

GROUND SPEED	km/h	150	180	210	240	270	300	330	360	390	420	450
FAF - THR 11200m	min:sec	5.36	4.29	3.44	3.12	2.48	2.29	2.14	2.02	1.52		
RATE OF DESCENT	m/s	2.2	2.6	3.0	3.5	3.9	4.3	4.8	5.2	5.6	6.1	6.5

CHANGE: New chart