OTHH — HAMAD INTL

OTHH AD 2.1 AERODROME LOCATION INDICATOR AND NAME

OTHH - HAMAD INTL

OTHH AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP coordinates and site at AD*	251628N 0513630E Adjacent to control Tower building
2	*Direction and distance from (city)*	5.5 NM East from Doha City Centre
3	*Elevation / Reference temperature*	13 FT / 39.3°C
4	*Geoid undulation at AD ELEV PSN*	-98 FT
5	*MAG VAR / Annual change*	2.6°E 2025 / 0.003°W
6	*Aerodrome operator*	QATAR COMPANY FOR AIRPORTS OPERATION AND MANAGEMENT - MATAR
	Address	Chief Operating Officer Hamad International Airport P.O. Box 24730 DOHA STATE OF QATAR
	Telephone	+974 4010 7715, +974 4010 3999
	Telefax	+974 4010 1010
	AFS	SITA: DOHAOXH
	E-mail	coohiaoffice@hamadairport.com.qa
	Website	www.dohahamadairport.com
7	*Type of traffic permitted (IFR/VFR)*	IFR/VFR
8	*Remarks*	Airport Operations Control Centre Duty Manager (AOCC DM) 24/7: Tel: +974 4010 3999

OTHH AD 2.3 OPERATIONAL HOURS

1	*AD Operator*	H24
2	*Customs and immigration*	H24
3	*Health and sanitation*	H24
4	*AIS Briefing Office*	H24
5	*ATS Reporting Office (ARO)*	H24
6	*MET Briefing Office*	H24
7	*ATS*	H24
8	*Fuelling*	H24
9	*Handling*	H24
10	*Security*	H24
11	*De-icing*	Not required due to local climate.
12	*Remarks*	Runway operations may be suspended if required for routine maintenance and/or operational reasons. Information will be available on ATIS, refer OTHH AD 2.18 ATS Communication Facilities for details.

OTHH AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo-handling facilities*	Available

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2	*Fuel/oil types*	Fuel: Jet A1 Oil: NIL
3	*Fuelling facilities / capacity*	Fuel Hydrant System on Concourse A, B, C, D and E, Remote Stands G1, G2, G4, G5, G6, H1, H2, H4, H5 AND H6, Apron 3, Apron 6 including MARS configuration, Emiri Apron, Victor Apron including MARS configuration, Cargo Apron and Stand Q4. Code C Stands in MARS configuration and GA Apron, Stands G7, G8, G9, G10, H7, H8, H9, H10, Q1, Q2, Q3, Q20, Q21, Q40, Q41, Q50, Q51, Apron 4, Apron 5, Stands F12, F13, F14, F15 and F16 Bowsers only.
4	*De-icing facilities*	Not Available.
5	*Hangar space for visiting aircraft*	NIL
6	*Repair facilities for visiting aircraft*	Available upon request and appointment Qatar Airways Technical
7	*Remarks*	For Handling services. Contact QAS. See Item 9 of GEN 1.1 and 2.5 of GEN 1.2

OTHH AD 2.5 PASSENGER FACILITIES

1	*Hotels*	Hotel accommodation available in the airport and in Doha City
2	*Restaurants*	H24 Airport restaurant in the terminal building
3	*Transportation*	Bus Services, Taxi and courtesy coaches to hotels
4	*Medical Facilities*	Airport's Medical Centre located at passenger terminal complex. Operated H24. Full medical facilities (Level 3 Hospital) are available in the City of Doha. Ambulance available at airport.
5	*Bank and Post Office*	Available at Airport Terminal building
6	*Tourist Office*	Available at Airport Terminal building
7	*Remarks*	NIL

OTHH AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT 10
2	*Rescue equipment*	Rescue equipment: As per ICAO Annex 14 and QCAR - ADR - "Aerodrome Design, Operations and Licensing"
3	*Capability for removal of disabled aircraft*	The recovery equipment available at Hamad International Airport is able to assist in the recovery of aircraft up to and including A380. The disabled Aircraft Recovery Team shall be activated through the Qatar Airways OCC H24. Duty Manager Telephone number(s) +974 4018 4500 / +974 4018 4977 to activate the Disabled Aircraft Recovery Team.
4	*Remarks*	Total number of trained personnel 100+. Communications with aircraft on ground available on 121.600 MHz.

OTHH AD 2.7 SEASONAL AVAILABILITY - CLEARING

1	*Types of clearing equipment*	NIL
2	*Clearance priorities*	N/A
3	*Remarks*	Local climate precludes the requirement. Aerodrome is available in all seasons.

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OTHH AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	*Designation, surface and strength of aprons*	APRON 3: concrete, PCR 1471/R/C/W/T APRON 4: concrete, PCR 979/R/A/W/T APRON 5: concrete, PCR 1471/R/C/W/T APRON 6: concrete, PCR 1471/R/C/W/T CARGO: concrete, PCR 979/R/A/W/T CONCOURSE A: concrete, PCR 979/R/A/W/T CONCOURSE B: concrete, PCR 979/R/A/W/T CONCOURSE C: concrete, PCR 979/R/A/W/T CONCOURSE D: concrete, PCR 979/R/A/W/T CONCOURSE E: concrete, PCR 979/R/A/W/T EMIRI APRON: concrete, PCR 979/R/A/W/T GA APRON: concrete, PCR 1471/R/C/W/T ISOLATION PAD: concrete, PCR 979/R/A/W/T MAINTENANCE: concrete, PCR 979/R/A/W/T REMOTE TRANSFER G: concrete, PCR 979/R/A/W/T REMOTE TRANSFER H: concrete, PCR 979/R/A/W/T VICTOR APRON: concrete, PCR 979/R/A/W/T

2	*Designation, width, surface and strength of taxiways*	TWY A between TWY V and 85 M from RWY 34R CL: 30 M, concrete, PCR 979/R/A/W/T TWY A between 85 M from RWY 34R CL and RWY 34R CL: 30 M, asphalt, PCR 851/F/A/W/T TWY A1 between TWY C and 85 M from RWY 34R CL: 30 M, concrete, PCR 979/R/A/W/T TWY A1 between 85 M from RWY 34R CL and RWY 34R CL: 30 M, asphalt, PCR 851/F/A/W/T TWY A2 between RWY and TWY C: 30 M, asphalt, PCR 851/F/A/W/T TWY A2 between TWY C and TWY V: 30 M, concrete, PCR 979/R/A/W/T TWY A3: 30 M, asphalt, PCR 851/F/A/W/T TWY A4: 30 M, asphalt, PCR 851/F/A/W/T TWY A5: 30 M, asphalt, PCR 851/F/A/W/T TWY A6: 30 M, asphalt, PCR 851/F/A/W/T TWY A7: 30 M, asphalt, PCR 851/F/A/W/T TWY A8 between RWY and 59 M west of TWY B CL: 30 M, asphalt, PCR 851/F/A/W/T TWY A8 between 59 M west of TWY B CL and TWY F: 30 M, concrete, PCR 979/R/A/W/T TWY A9 between RWY and 59 M west of TWY B CL: 30 M, asphalt, PCR 851/F/A/W/T TWY A9 between 59 M west of TWY B CL and TWY F: 30 M, concrete, PCR 979/R/A/W/T TWY A10: 30 M, asphalt, PCR 851/F/A/W/T TWY A11: 30 M, asphalt, PCR 851/F/A/W/T TWY A12: 30 M, asphalt, PCR 851/F/A/W/T TWY B between TWY A and TWY A2: 25 M, concrete, PCR 979/R/A/W/T TWY B between TWY A2 and TWY A12: 25 M, asphalt, PCR 851/F/A/W/T TWY C between TWY A and TWY A8: 25 M, concrete, PCR 979/R/A/W/T TWY C between TWY Q and Stand 428W: 25 M, concrete, PCR 979/R/A/W/T TWY C between Stand 428W and TWY A12: 25 M, asphalt, PCR 851/F/A/W/T TWY D: 25 M, concrete, PCR 1471/R/C/W/T TWY E: 30 M, concrete, PCR 979/R/A/W/T TWY E1: 25 M, concrete, PCR 979/R/A/W/T TWY E2: 25 M, concrete, PCR 979/R/A/W/T TWY E3: 25 M, concrete, PCR 979/R/A/W/T TWY E4: 25 M, concrete, PCR 979/R/A/W/T TWY EL: 30 M, concrete, PCR 979/R/A/W/T TWY F: 25 M, concrete, PCR 979/R/A/W/T TWY G: 30 M, asphalt, PCR 851/F/A/W/T TWY H: 25 M, concrete, PCR 1471/R/C/W/T TWY J: 25 M, concrete, PCR 1471/R/C/W/T TWY K between TWY L and TWY G: 25 M, concrete, PCR 979/R/A/W/T TWY K between TWY G and TWY S: 25 M, asphalt, PCR 851/F/A/W/T TWY K between TWY S and TWY R: 25 M, concrete, PCR 979/R/A/W/T TWY K between TWY R and TWY L12: 25 M, asphalt, PCR 851/F/A/W/T TWY L between TWY W and 85 M from RWY 34L CL: 30 M, concrete, PCR 979/R/A/W/T TWY L between 85 M from RWY 34L CL and RWY 34L CL: 30 M, asphalt, PCR 851/F/A/W/T TWY L1 between TWY H and 85 M from RWY 34L CL: 30 M, concrete, PCR 979/R/A/W/T TWY L1 between 85 M from RWY 34L CL and RWY 34L CL: 30 M, asphalt, PCR 851/F/A/W/T TWY L2: 30 M, asphalt, PCR 851/F/A/W/T TWY L3: 30 M, asphalt, PCR 851/F/A/W/T TWY L4: 30 M, asphalt, PCR 851/F/A/W/T TWY L5: 30 M, asphalt, PCR 851/F/A/W/T TWY L6: 30 M, asphalt, PCR 851/F/A/W/T TWY L7: 30 M, asphalt, PCR 851/F/A/W/T TWY L8: 30 M, asphalt, PCR 851/F/A/W/T

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2		TWY L9: 30 M, asphalt, PCR 851/F/A/W/T TWY L10 between RWY 16R/34L and TWY K: 30 M, asphalt, PCR 851/F/A/W/T TWY L10 between TWY K and TWY J: 25 M, concrete, PCR 979/R/A/W/T TWY L11 between RWY 16R/34L and TWY K: 30 M, asphalt, PCR 851/F/A/W/T TWY L11 between TWY K and TWY J: 25 M, concrete, PCR 979/R/A/W/T TWY L12 between RWY 16R/34L and TWY K: 30 M, asphalt, PCR 851/F/A/W/T TWY L12 between TWY K and TWY J: 25 M, concrete, PCR 979/R/A/W/T TWY M: 25 M, concrete, PCR 979/R/A/W/T TWY M1: 25 M, concrete, PCR 979/R/A/W/T TWY M2: 25 M, concrete, PCR 979/R/A/W/T TWY M3: 25 M, concrete, PCR 979/R/A/W/T TWY M4: 25 M, concrete, PCR 979/R/A/W/T TWY M5 between TWY M and 80 M from edge of RWY 16R: 25 M, concrete, PCR 979/R/A/W/T TWY M5 between 80 M from edge of RWY 16R and RWY 16R edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M6 between TWY M and 67 M from edge of RWY 34L: 25 M, concrete, PCR 979/R/A/W/T TWY M6 between 67 M from edge of RWY 34L and RWY 34L edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M7 between TWY M and 73 M from edge of RWY 16R: 25 M, concrete, PCR 979/R/A/W/T TWY M7 between 73 M from edge of RWY 16R and RWY 16R edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M8 between TWY M and 75 M from edge of RWY 34L: 25 M, concrete, PCR 979/R/A/W/T TWY M8 between 75 M from edge of RWY 34L and RWY 34L edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M9 between TWY M and 75 M from edge of RWY 16R: 25 M, concrete, PCR 979/R/A/W/T TWY M9 between 75 M from edge of RWY 16R and RWY 16R edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M10 between TWY M and 77 M from edge of RWY 34L: 25 M, concrete, PCR 979/R/A/W/T TWY M10 between 77 M from edge of RWY 34L and RWY 34L edge: 25 M, asphalt, PCR 851/F/A/W/T TWY M11: 25 M, concrete, PCR 979/R/A/W/T TWY M12: 25 M, concrete, PCR 979/R/A/W/T TWY M13: 25 M, concrete, PCR 979/R/A/W/T TWY M14: 25 M, concrete, PCR 979/R/A/W/T TWY N: 25 M, concrete, PCR 1471/R/C/W/T TWY P: 25 M, concrete, PCR 979/R/A/W/T TWY P1: 25 M, concrete, PCR 979/R/A/W/T TWY P2: 25 M, concrete, PCR 979/R/A/W/T TWY P3: 25 M, concrete, PCR 979/R/A/W/T TWY P4: 25 M, concrete, PCR 979/R/A/W/T TWY P5: 25 M, concrete, PCR 979/R/A/W/T TWY P6: 25 M, concrete, PCR 979/R/A/W/T TWY P7: 25 M, concrete, PCR 979/R/A/W/T TWY P8: 25 M, concrete, PCR 979/R/A/W/T TWY P9: 25 M, concrete, PCR 979/R/A/W/T TWY P10: 25 M, concrete, PCR 979/R/A/W/T TWY P11: 25 M, concrete, PCR 979/R/A/W/T TWY P12: 25 M, concrete, PCR 979/R/A/W/T TWY P13: 25 M, concrete, PCR 979/R/A/W/T TWY P14: 25 M, concrete, PCR 979/R/A/W/T TWY Q between TWY B CL and 60 M from TWY B CL: 25 M, asphalt, PCR 851/F/A/W/T TWY Q between 60 M from TWY B CL and 193 M from TWY B CL: 25 M, concrete, PCR 979/R/A/W/T TWY Q between 193 M from TWY B CL and TWY Q2: 25 M, asphalt, PCR 851/F/A/W/T TWY Q1: 25 M, asphalt, PCR 851/F/A/W/T TWY Q2: 25 M, asphalt, PCR 851/F/A/W/T TWY R: 25 M, concrete, PCR 1471/R/C/W/T TWY R1 between TWY R2 and 32 M from RWY 16R/34L edge: 25 M, concrete, PCR 979/R/A/W/T TWY R1 between 32 M from edge of RWY 16R/34L and RWY 16R/34L edge: 25 M, asphalt, PCR 851/F/A/W/T TWY R2: 25 M, concrete, PCR 979/R/A/W/T TWY S: 25 M, concrete, PCR 1471/R/C/W/T TWY S1: 25 M, concrete, PCR 979/R/A/W/T TWY S2: 25 M, concrete, PCR 979/R/A/W/T TWY S3: 25 M, concrete, PCR 979/R/A/W/T TWY S4: 25 M, concrete, PCR 979/R/A/W/T TWY T: 40 M, asphalt, PCR 851/F/A/W/T TWY T1: 25 M, concrete, PCR 979/R/A/W/T TWY T2: 25 M, concrete, PCR 1255/R/B/W/T TWY T3: 25 M, concrete, PCR 979/R/A/W/T TWY T4: 25 M, concrete, PCR 979/R/A/W/T TWY T5: 25 M, concrete, PCR 979/R/A/W/T TWY T6: 25 M, concrete, PCR 979/R/A/W/T TWY T7: 25 M, concrete, PCR 979/R/A/W/T TWY T8: 25 M, concrete, PCR 979/R/A/W/T TWY T9: 25 M, concrete, PCR 979/R/A/W/T TWY V: 25 M, concrete, PCR 979/R/A/W/T TWY W: 30 M, concrete, PCR 1471/R/C/W/T

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2		TWY W1: 25 M, concrete, PCR 979/R/A/W/T TWY W2: 25 M, concrete, PCR 979/R/A/W/T TWY W3: 25 M, concrete, PCR 979/R/A/W/T TWY W4: 25 M, concrete, PCR 979/R/A/W/T TWY WL: 30 M, concrete, PCR 979/R/A/W/T TWY Y: 30 M, concrete, PCR 1471/R/C/W/T
3	*Altimeter checkpoint location and elevation*	All aircraft stands: 17 FT
4	*VOR checkpoints*	NIL
5	*INS checkpoints*	See APDC.01 AIRCRAFT PARKING / DOCKING CHART - ICAO
6	*Remarks*	Code F aircraft operations are permitted on all taxiways except following taxiways: TWY E (BTN TWY D and Stand B2 - Max up to Code E) TWY M1 and TWY M12 (Max up to Code E except aircraft types with four engines (e.g.: B747 series and A340 series) TWY N (Max up to Code E) TWY W (BTN TWY H and Stand A4 – Max up to Code E) TWY Y (Max up to Code C)

OTHH AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	*Use of aircraft stand ID signs, TWY guide lines and visual docking/ parking guidance system at aircraft stands*	Mandatory signs at all intersections of TWYs and RWYs at all holding positions. Taxi information and location signs at all TWYs. Aircraft stand ID signs provided on all stands, except Apron 4 and MARS stands. VDGS installed and operational on all stands except for MARS stands, on APRON 4 stands, stands F12, F13, F14, F15, F16, G7, G8, G9, G10, H7, H8, H9, H10, 551 to 564. Stands not equipped with VDGS have marked centre lines and shall be marshalled. For information on Visual Docking Guidance System (VDGS); For stand A1 to A11, stand B1 to B10, stand C1 to C13, Apron 3, Apron 6, stand 118 to 126, stand 217 to 226, stand V6 to V12 refer: AD 2.23 ADDITIONAL INFORMATION - 1.4 Stand docking procedures For all other stands refer: AD 2.23 ADDITIONAL INFORMATION - 1.3 Stand docking procedures
2	*RWY and TWY markings and lights*	RWY: Designation, THR, TDZ, CL, Edge, RWY end. See AD 2.14 APPROACH AND RUNWAY LIGHTING and AD 2.15 OTHER LIGHTING AND SECONDARY POWER SUPPLY for additional information on lighting. TWY: Edge marking, CL, Holding Positions at all TWY / RWY intersections. Mandatory Taxiway Reporting Points are provided at some Intermediate Holding Positions, and marked by five - letter designations on ground in white on red background. See AD 2.20 section 3 TAXIWAY UTILIZATION AND LIMITATIONS.
3	*Stop bars and RWY guard lights*	Stop bars at all RWY entrances and where appropriate. RWY guard lights provided at all RWY holding positions where appropriate.
4	Other RWY protection measures	NIL
5	*Remarks*	NIL

OTHH AD 2.10 AERODROME OBSTACLES

1 OBSTACLES IN AREA 2

1.1 Obstacles in Area 2 are available in electronic format.refer to GEN 3.1 item 6 Digital data sets.

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2 OBSTACLES IN AREA 3

2.1 Obstacles in Area 3 are available in electronic format. Refer to GEN 3.1 item 6 Digital data sets.

OTHH AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	*Associated MET Office*	Forecast and Analysis Office, Qatar Met Dept, Doha International Airport.
2	*Hours of service*	H24
	MET Office outside hours	NIL
3	*Office responsible for TAF preparation*	Forecast and Analysis Office, Qatar Met Dept, Doha International Airport.
	Periods of validity	H30 (prepared 6 hourly).
4	*Trend forecast*	TREND
	Interval of issuance	½ HR
5	*Briefing/consultation provided*	Issue of forecast folders, Personal consultations, self briefings, telephone consultation with duty forecaster.
6	*Flight documentation*	Charts, abbreviated plain language text.
	Language(s) used	English
7	*Charts and other information available for briefing or consultation*	S, U_{25}, P_{25}, (other levels on request), T, SWH (East & West), SWM, TB (Gulf sector winds).
8	*Supplementary equipment available for providing information*	Fax, e-mail, IVR (Interactive Voice Response) for general information.
9	*ATS units provided with information*	HAMAD TOWER, DOHA APPROACH
10	*Additional information (limitation of service, etc.)*	NIL

OTHH AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	***TRUE BRG***	***Dimensions of RWY (M)***	***Strength (PCR) and surface of RWY and SWY***	***THR coordinates, RWY end coordinates, THR geoid undulation***	***THR elevation and highest elevation of TDZ of precision APP RWY***
1	**2**	**3**	**4**	**5**	**6**
16L	158.17°	4850 x 60	851/F/A/W/T asphalt	251745.97N 0513631.96E 251519.65N 0513736.41E -98.32 FT	THR 13.21 FT TDZ 13.39 FT
34R	338.18°	4850 x 60	851/F/A/W/T asphalt	251519.65N 0513736.41E 251745.97N 0513631.96E -98.57 FT	THR 13.13 FT TDZ 13.39 FT
16R	158.16°	4250 x 60	851/F/A/W/T asphalt	251727.52N 0513523.07E 251519.32N 0513619.56E -98.27 FT	THR 13.13 FT TDZ 13.50 FT
34L	338.17°	4250 x 60	851/F/A/W/T asphalt	251519.32N 0513619.56E 251727.52N 0513523.07E -98.49 FT	THR 13.22 FT TDZ 13.47 FT

Designations RWY NR	***Slope of RWY - SWY***		***SWY dimensions (M)***	***CWY dimensions (M)***	***Strip dimensions (M)***	***RESA dimensions (M)***
	RWY	***SWY***				
1	**7**		**8**	**9**	**10**	**11**
16L	0	NIL	NIL	NIL	4970 x 300	240 x 120

Designations RWY NR	Slope of RWY - SWY		SWY dimensions (M)	CWY dimensions (M)	Strip dimensions (M)	RESA dimensions (M)
	RWY	SWY				
1	7		8	9	10	11
34R	0	NIL	NIL	NIL	4970 x 300	240 x 120
16R	0	NIL	NIL	NIL	4370 x 300	240 x 120
34L	0	NIL	NIL	NIL	4370 x 300	240 x 120

Designations RWY NR	Location and Description of Arresting System	OFZ	Remarks
1	12	13	14
16L	NIL	Yes	Non-load bearing Runway shoulders - 7.5 M each side
34R	NIL	Yes	Non-load bearing Runway shoulders - 7.5 M each side
16R	NIL	Yes	Non-load bearing Runway shoulders - 7.5 M each side
34L	NIL	Yes	Non-load bearing Runway shoulders - 7.5 M each side

OTHH AD 2.13 DECLARED DISTANCES

RWY Designator	From	TORA (M)	TODA (M)	ASDA (M)	LDA (M)	Remarks
1	2	3	4	5	6	7
16L	THR	4850	4850	4850	4850	NIL
	TWY A11	4730	4730	4730	Not Applicable	NIL
	TWY A10	4082	4082	4082	Not Applicable	NIL
	TWY A6	2497	2497	2497	Not Applicable	NIL
34R	THR	4850	4850	4850	4850	NIL
	TWY A1	4730	4730	4730	Not Applicable	NIL
	TWY A2	4266	4266	4266	Not Applicable	NIL
	TWY A3	3077	3077	3077	Not Applicable	NIL
	TWY A6	2386	2386	2386	Not Applicable	NIL
16R	THR	4250	4250	4250	4250	NIL
	TWY M13	4212	4212	4212	Not Applicable	NIL
	TWY L11	4130	4130	4130	Not Applicable	NIL
	TWY M12	3817	3817	3817	Not Applicable	NIL
	TWY L10	3614	3614	3614	Not Applicable	NIL
	TWY M11	3613	3613	3613	Not Applicable	NIL
	TWY L7	2348	2348	2348	Not Applicable	NIL
	TWY R	1704	1704	1704	Not Applicable	NIL
	TWY R1	1704	1704	1704	Not Applicable	NIL
	TWY S	1604	1604	1604	Not Applicable	NIL
	TWY S1	1604	1604	1604	Not Applicable	NIL

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RWY Designator	*From*	*TORA (M)*	*TODA (M)*	*ASDA (M)*	*LDA (M)*	*Remarks*
1	**2**	**3**	**4**	**5**	**6**	**7**
34L	THR	4250	4250	4250	4250	NIL
	TWY M2	4195	4195	4195	Not Applicable	NIL
	TWY L1	4122	4122	4122	Not Applicable	NIL
	TWY M3	3785	3785	3785	Not Applicable	NIL
	TWY L2	3646	3646	3646	Not Applicable	NIL
	TWY M4	3646	3646	3646	Not Applicable	NIL
	TWY S	2672	2672	2672	Not Applicable	NIL
	TWY S1	2672	2672	2672	Not Applicable	NIL
	TWY R	2572	2572	2572	Not Applicable	NIL
	TWY R1	2572	2572	2572	Not Applicable	NIL
	TWY L7	1935	1935	1935	Not Applicable	NIL
Note: Intersection departures are allowed subject to the following: *a. Initiated by pilot and approved by ATC, subject to traffic.* *b. ATC is able to keep aircraft visual at all times*						

OTHH AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	*APCH LGT type, LEN, INTST*	*THR LGT, colour, WBAR*	*VASIS (MEHT) PAPI*	*TDZ LGT LEN*	*RWY Centre Line LGT Length, spacing, colour, INTST*
1	**2**	**3**	**4**	**5**	**6**
16L	CAT III 900 M LIH	LIH, GREEN supplemented by WBAR	PAPI 3° (16.2 M)	900 M	Length: 4 850 M Spacing: 15 M Colour: fm 0 M to last 900 M White last 900 M to last 300 M Red / White last 300 M Red INTST: LIH
34R	CAT III 900 M LIH	LIH, GREEN supplemented by WBAR	PAPI 3° (19.902 M)	900 M	Length: 4 850 M Spacing: 15 M Colour: fm 0 M to last 900 M White last 900 M to last 300 M Red / White last 300 M Red INTST: LIH
16R	CAT III 900 M LIH	LIH, GREEN supplemented by WBAR	PAPI 3° (19.903 M)	900 M	Length: 4 250 M Spacing: 15 M Colour: fm 0 M to last 900 M White last 900 M to last 300 M Red / White last 300 M Red INTST: LIH
34L	CAT III 900 M LIH	LIH, GREEN supplemented by WBAR	PAPI 3° (19.899 M)	900 M	Length: 4 250 M Spacing: 15 M Colour: fm 0 M to last 900 M White last 900 M to last 300 M Red / White last 300 M Red INTST: LIH

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RWY Designator	*RWY edge LGT LEN, spacing, colour, INTST*	*RWY End LGT colour, WBAR*	*SWY LGT LEN, colour*	*Remarks*
1	**7**	**8**	**9**	**10**
16L	Length: 4 850 M Spacing: 60 M Colour: fm 0 M to last 600 M White last 600 M Yellow INTST: LIH	RED, NIL	NIL	NIL
34R	Length: 4 850 M Spacing: 60 M Colour: fm 0 M to last 600 M White last 600 M Yellow INTST: LIH	RED, NIL	NIL	NIL
16R	Length: 4 250 M Spacing: 60 M Colour: fm 0 M to last 600 M White last 600 M Yellow INTST: LIH	RED, NIL	NIL	NIL
34L	Length: 4 250 M Spacing: 60 M Colour: fm 0 M to last 600 M White last 600 M Yellow INTST: LIH	RED, NIL	NIL	NIL

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OTHH AD 2.15 OTHER LIGHTING AND SECONDARY POWER SUPPLY

1	*ABN / IBN location, characteristics and hours of operation*	ABN: NIL IBN: NIL
2	*LDI location and LGT*	LDI: NIL
	Anemometer location and LGT	Anemometer: 16L - 251736.4560N 0513640.7313E 34R - 251532.1162N 0513735.5462E 16R - 251715.2675N 0513524.0348E 34L - 251530.2198N 0513609.9122E Automated Weather Observing System (AWOS). WS425 Ultrasonic wind Sensor
3	*TWY edge and centre line lighting*	Rapid Exit Taxiway Indicator Lights (RETIL) marked and lit when required. RETIL lead-off lights are alternate green/amber indicating within ILS sensitive area. Taxiway centreline lights are green, except when within ILS sensitive area, where taxiway centre line lights are alternate green/amber. Centre line lights not available on TWY A8 (between TWY C and TWY F) and a part of TWY A9 (between TWY B and TWY F). Taxiway blue edge lighting provided on bends and curves only. TWY edge markers are available on TWY A8 (between TWY C and TWY F) and a part of TWY A9 (between TWY B and TWY F). Holding positions at all taxiways to runway intersections are equipped with stop bars, except on Cat I holding position of Taxiway A2, A6, A10, L2, L7, L10, R and S. Red stop bars will be switched off when permission is given to enter the runway. Aircraft are at no time to cross a lit red stop bar to enter a runway.
4	*Secondary power supply/switch-over time*	Available via UPS immediate power. Standby generator also available. Switch-over time of less than 1 second.
5	*Remarks*	NIL

OTHH AD 2.16 HELICOPTER LANDING AREA

1	*Coordinates TLOF or THR of FATO* *Geoid undulation*	NIL
2	*TLOF and/or FATO elevation M/FT*	NIL
3	*TLOF and FATO area dimensions, surface, strength, marking*	NIL
4	*True BRG of FATO*	NIL
5	*Declared distance available*	NIL
6	*APP and FATO lighting*	NIL
7	*Remarks*	NIL

OTHH AD 2.17 ATS AIRSPACE

1	*Designation and lateral limits*	DOHA CTR Lateral limits are available in the AIP Data set, Feature ID: 8d22fe52-2ea1-4e50-9d95-28990073b667 Standardised presentation of the airspace lateral limits: 253407N 0513740E - 253023N 0513919E then clockwise 20NM arc centred on 251020N 0513838E to 252814N 0514835E - 251255N 0515519E then clockwise 20NM arc centred on 251939N 0513432E to 250143N 0512438E - 245951N 0511930E - 250205N 0511831E then clockwise 5NM arc centred on 250706N 0511846E to 251032N 0511446E - 251510N 0511243E - 251703N 0511751E then clockwise 20NM arc centred on 251020N 0513838E to 252425N 0512254E - 252808N 0512115E then clockwise 20NM arc centred on 251404N 0513659E to 253407N 0513740E.
2	*Vertical limits*	SFC to 2500 FT

3	*Airspace classification*	Class D
4	*ATS unit call sign* *Language(s)*	HAMAD TOWER EAST EN HAMAD TOWER WEST EN
5	*Transition altitude*	13000 FT
6	*Hour of applicability*	H24
7	*Remarks*	NIL

OTHH AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	***Call sign***	***Channel(s)***	***SATVOICE number(s)***	***Logon address***	***Hours of operation***	***Remarks***
1	**2**	**3**	**4**	**5**	**6**	**7**
APP	DOHA APPROACH EAST	124.775 MHz As directed by ATC	N/A	N/A	H24	*Primary*
		120.600 MHz As directed by ATC	N/A	N/A		*Secondary*
	DOHA APPROACH WEST	119.725 MHz	N/A	N/A	H24	*Primary*
		125.125 MHz	N/A	N/A		*Secondary*
	DOHA DIRECTOR	124.050 MHz As directed by ATC	N/A	N/A	H24	*Primary*
		121.775 MHz As directed by ATC	N/A	N/A		*Secondary*
	DOHA DIRECTOR EAST	119.400 MHz	N/A	N/A	H24	*Primary*
		121.125 MHz	N/A	N/A		*Secondary*
	DOHA DIRECTOR WEST	123.875 MHz As directed by ATC	N/A	N/A	H24	*Primary*
		119.225 MHz As directed by ATC	N/A	N/A		*Secondary*
	DOHA RADAR NORTH	121.100 MHz	N/A	N/A	H24	*Primary*
		121.625 MHz	N/A	N/A		*Secondary*
	DOHA RADAR SOUTH	120.675 MHz As directed by ATC	N/A	N/A	H24	*Primary*
		119.150 MHz As directed by ATC	N/A	N/A		*Secondary*
	-	121.500 MHz	N/A	N/A	H24	*Emergency*
		243.000 MHz	N/A	N/A		*Emergency*

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Service designation	*Call sign*	*Channel(s)*	*SATVOICE number(s)*	*Logon address*	*Hours of operation*	*Remarks*
1	**2**	**3**	**4**	**5**	**6**	**7**
TWR	HAMAD CLEARANCE DELIVERY	120.875 MHz	N/A	N/A	H24	*(See Note 2)*
	HAMAD TOWER EAST	118.525 MHz	N/A	N/A	H24	*(See Note 1) Primary*
		118.225 MHz	N/A	N/A		*Secondary*
	HAMAD TOWER WEST	118.025 MHz	N/A	N/A	H24	*(See Note 1) Primary*
		118.225 MHz	N/A	N/A		*Secondary*
	-	121.500 MHz	N/A	N/A	H24	*Emergency*
		243.000 MHz	N/A	N/A		*Emergency*
GMC	HAMAD GROUND	121.675 MHz As directed by ATC	N/A	N/A	H24	*Secondary*
	HAMAD GROUND CENTRAL	118.650 MHz	N/A	N/A	H24	
	HAMAD GROUND EAST	120.225 MHz	N/A	N/A	H24	
	HAMAD GROUND OVERFLOW	118.075 MHz As directed by ATC	N/A	N/A	H24	
	HAMAD GROUND PLANNER	119.075 MHz As directed by ATC	N/A	N/A	H24	
	HAMAD GROUND WEST	118.575 MHz	N/A	N/A	H24	
ATIS DEP	HAMAD DEPARTURE INFORMATION	126.850 MHz	N/A	DOHATYA	H24	*Data Link Service available. ATIS broadcast can also be obtained via Hotline: +974 4470 5312*
ATIS ARR	HAMAD ARRIVAL INFORMATION	126.825 MHz	N/A	N/A	H24	*Data Link service available. ATIS broadcast can also be obtained via hotline: +974 4470 5310*
DCL	N/A	N/A	N/A	DOHDCYA	H24	*Data Link Service for departure clearance (See Note 2)*
CPDLC	DOHA RADAR	N/A	N/A	N/A	H24	*SITA access address: DOHFAYA*

Note 1: All departing aircraft should remain on Tower frequency after departure and report passing 1000 FT.
Departures from RWY 34L/16R should expect to be transferred to Doha Approach West on (119.725 MHz) and departures from RWY 34R/16L should expect to be transferred to Doha Approach East on (124.775 MHz).

Note 2: Departure clearance via Data Link (DCL) and Departure clearances by voice on Hamad Clearance Delivery on 120.875 MHz may be requested by aircrew up to 25 minutes prior to EOBT. Requests for RWY in use should be avoided. Aircrews should as far as practicable only contact Clearance Delivery when requesting departure clearance.

OTHH AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aids, MAG VAR, Type of supported OPS for ILS/MLS/GLS, basic GNSS and SBAS, Classification for ILS, Facility Classification and approach facility designation(s) for GBAS, VOR/ILS/MLS station declination	*IDENT*	*Frequency, Channel number, Service provider*	*Hours of operation*	*Position of transmitting antenna coordinates*	*ELEV of DME transmitting antenna, GBAS reference point ELEV/ ellipsoid HGT, SBAS LTP/FTP ellipsoid HGT*	*Service volume radius from the GBAS reference point*	*Remarks*
1	2	3	4	5	6	7	8
DVOR/DME (2.6°E 2025)	DOH	114.400 MHZ CH 91X	H24	251459.7N 0513634.8E	0 FT	NIL	NIL
ILS 16L (CAT III) (2.6°E 2025) III/E/4							
LOC 16L	IDE	108.700 MHZ	H24	251510.3N 0513740.5E		NIL	Distance from threshold 16L 5158.71M
GP 16L		330.500 MHZ	H24	251738.2N 0513640.4E		NIL	3° ILS RDH 55 FT
DME 16L	IDE	CH 24X	H24	251738.2N 0513640.4E	30 FT	NIL	Co-located with GP, DIST zero TDZ
ILS 16R (CAT III) (2.6°E 2025) III/E/4							
LOC 16R	QAT	108.100 MHZ	H24	251510.0N 0513623.7E		NIL	Distance from threshold 16R 4559.70M
GP 16R		334.700 MHZ	H24	251716.6N 0513522.9E		NIL	3° ILS RDH 53 FT
DME 16R	QAT	CH 18X	H24	251716.6N 0513522.9E	30 FT	NIL	Co-located with GP, DIST zero TDZ
ILS 34L (CAT III) (2.6°E 2025) III/E/4							
LOC 34L	HJJ	111.900 MHZ	H24	251736.9N 0513518.9E		NIL	Distance from threshold 34L 4562.47 M
GP 34L		331.100 MHZ	H24	251528.7N 0513610.4E		NIL	3° ILS RDH 53 FT
DME 34L	HJJ	CH 56X	H24	251528.7N 0513610.3E	30 FT	NIL	Co-located with GP, DIST zero TDZ

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Type of aids, MAG VAR, Type of supported OPS for ILS/MLS/ GLS, basic GNSS and SBAS, Classification for ILS, Facility Classification and approach facility designation(s) for GBAS, VOR/ILS/MLS station declination	*IDENT*	*Frequency, Channel number, Service provider*	*Hours of operation*	*Position of transmitting antenna coordinates*	*ELEV of DME transmitting antenna, GBAS reference point ELEV/ ellipsoid HGT, SBAS LTP/FTP ellipsoid HGT*	*Service volume radius from the GBAS reference point*	*Remarks*
1	2	3	4	5	6	7	8
ILS 34R (CAT III) (2.6°E 2025) III/E/4							
LOC 34R	AZM	110.100 MHZ	H24	251755.5N 0513627.8E		NIL	Distance from threshold 34R 5165.49 M
GP 34R	34R	334.400 MHZ	H24	251530.6N 0513736.6E		NIL	3° ILS RDH 53FT
DME 34R	AZM	CH 38X	H24	251530.6N 0513736.6E	30 FT	NIL	Co-located with GP, DIST zero TDZ

OTHH AD 2.20 LOCAL AERODROME REGULATIONS

1 AIRPORT REGULATIONS

1.1 Diversion Aircraft: Available as an alternate and can accommodate any type of diversion.

1.2 At Hamad International Airport, several local regulations apply. When a local regulation is of importance for the safe operation of aircraft on the apron, the information will be given to each aircraft by the ATC or ATIS.

1.3 Voluntary reporting of any defect, fault, safety hazard, safety accident, serious incidents and occurrence should be reported to the aerodrome operator on the following email:
safetyreports@hamadairport.com.qa

2 RUNWAY UTILISATION AND LIMITATIONS

2.1 Departures

a) On receipt of line-up clearance pilots should ensure that they are able to taxi and line-up on the runway as soon as the preceding aircraft has commenced either its take-off roll or landing run.

b) On receipt of take-off clearance, pilots should ensure that they are able to commence take-off without delay.

c) Pilots not able to comply with these requirements should notify ATC as soon as possible, at the latest when transferred to Hamad Tower frequency.

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2.2 Arrivals.

a) Possible ILS Glide Path signal fluctuations for arriving aircraft on RWY 16R/34L due to taxiing and departing aircraft. Pilots should anticipate possible Glide Path interference and monitor ILS profile, flight display indications and autopilot behavior during manual or coupled ILS approaches when low visibility procedues are not in force.

b) Any taxiway other than Rapid Exit Taxiways shall only be used if instructed to do so by ATC.

c) Aircraft will receive instructions on the runway exit point to utilise on first contact with tower. High intensity runway operations (HIRO) are in force H24. Refer to 2.3.1 HIRO for anticipated runway exit points.

d) Pilots should vacate the runway as quickly as practicable to enable ATC to apply minimum spacing on final approach thereby maximising runway utilisation and minimising the occurrence of missed approaches.

e) When HIRO is not in force, aircraft vacating the runway should not stop on the exit taxiway until the entire aircraft has passed the runway holding point.

f) Rapid Exit Taxiway Indicator Lights (RETILs) are provided on runway 16R/34L and 16L/34R to assist pilots in judging distances to rapid exit taxiways and enable them to apply braking action for a more efficient roll-out and runway exit speed. RETILs are provided for rapid exit taxiways as follows:

RWY 16R - L8, L5, L3, M9, M7, M5

RWY 34L - L4, L6, L9, M6, M8, M10

RWY 16L - A8, A7, A3

RWY 34R - A4, A5, A9

2.3 High Intensity Runway Operation (HIRO):

2.3.1 Arriving Aircraft.

a) HIRO for arriving aircraft is in force H24 when the runway surface condition is dry and adverse weather conditions are not present. ATC will inform via ATIS if HIRO for arriving aircraft is suspended (Phrase: “High Intensity Runway Operation suspended”).

b) During HIRO operations, pilots are encouraged to vacate the landing runway within 60 seconds.

c) Pilots unable to comply with HIRO shall advise Tower on first contact.

Runway ID	Standard Runway Exit	Distance to turnoff* (m)
16L	A7	1895
34R	A5	2006
16R	M7/L5	1971
34L	M8/L6	1841
**Distance from threshold to turn off intersection*		
Note: Pilots should anticipate being issued the above RET’s		

d) Pilots are encouraged to refer to the following rapid exit taxiway configuration information to decide proper exit taxi speed.

Design Speed	Radius	Exit Angle	Straight Distance on RET	
50 Kt	550 m	29°	A3, A4, A5, A7, A8, A9 (16L / 34R)	270 m
			L3, L4, L5, L6, L8, L9 (16R / 34L)	270 m
			M5, M6, M7, M8, M9, M10 (16R / 34L)	300 m

e) After landing, aircraft must not stop on rapid exit taxiways but should continue taxi via the following taxi procedures, unless otherwise instructed by TWR:

1) If vacating runway 16L, continue via taxiway A6 and hold short of C.
2) If vacating runway 34R, continue via taxiway A6 and hold short of C.
3) If vacating runway 16R, continue via taxiway K/M southbound.
4) If vacating runway 16R and parking stand is planned on Apron 5, expect a northbound turn onto taxiway K.
5) If vacating runway 34L, continue via taxiway K/M Southbound. If parking stand is planned North of the L6, expect instructions to continue Northbound on taxiway K.

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2.3.2 Departing Aircraft (all Runways)

1) High Intensity Runway Operations for departing aircraft are in force 24 hours.
2) All checks should be completed when reaching the assigned holding point.
   – a. Line-up without delay when cleared by ATC.
   – b. React promptly to take-off clearance.
3) Intersection departures are encouraged to facilitate sequencing. Whenever possible, advise ATC if able to depart from the following intersection:

Runway ID	Intersection	TORA (m)
16L	A10	4082
34R	A2	4266
16R	L10 / M11	3614
	M12	3817
34L	L2 / M 4	3646
	M3	3785

3 TAXIWAY UTILIZATION AND LIMITATIONS

3.1 Insufficient safety distances restrict large ACFT's use of certain TWYs when using their own power.

3.2 Push- and pull maneuvers will be required to achieve sufficient safety distance from certain stands (A4, A6, A8, B2, B4, B6). In addition, refer to AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA part 6.

3.3 The mandatory taxiway reporting points designations are of five - letter words. Aircraft are required to stop and report at taxiway reporting points unless an ATC instruction is issued to taxi beyond the reporting point. The use of reporting points is permitted for RVR conditions 600 M or more.

4 AIRCRAFT PARKING STAND UTILIZATION AND LIMITATIONS

4.1 Pilot shall inform ATC in case of difficulty entering the stand on own power.

4.2 Nose-in parking is mandatory. Exemptions are only given in special cases with specific authorization from ATC & AD operator.

4.3 Aircraft are restricted to push back from nose in parking stands. Exemptions will be granted to certain aircraft by the AD operator.

4.4 Non-marked parking areas may also be assigned for aircraft parking. Aircraft will be hand-marshalled.

4.5 Parking Restrictions in APRON 4.

4.5.1 Apron 4 is having Power In – Power Out (PIPO) Aircraft stand parking configuration.

4.5.2 Power In – Power Out stands are 425E, 425W, 426E, 426W, 427E, 427W, 428E, 428W, 429E, 429W. There will be 5 parallel lead in/off lines with two nose wheel parking position on each line; Facing West to and from TWY Q; and Facing East to and from TWY C. Pilots must follow " Follow Me vehicle" and marshaller for parking and shall use of minimum thrust taxiing only.

4.5.3 Power In – Power Out arrangement on Stands mentioned in item 4.5.2 are for aircraft type up to code C only.

4.5.4 If stands 425W, 426W, 427W, 428W, 429W is/are occupied with Aircraft, stands 425E, 426E, 427E, 428E, 429E will be automatically blocked (vice versa).

4.5.5 180 degrees turn on the Power In – Power Out (PIPO) stands are not allowed.

4.6 VICTOR APRON Between ACFT stand V7R and TWY E:

4.6.1 ACFT Stands V8, V8L, V10, V10L, V10R, V12, V12L and V12R are Power-In and Pushback stands.

4.6.2 If any of the stands mentioned in item 4.6.1 is/are in used, TWY V between Stand V7R and TWY E will not be available.

4.6.3 To activate TWY V between stand V7R and TWY E, NOTAM shall be issued for closure of stands mentioned in item 4.6.1 .

4.7 All RWY crossings made under own power should be done with all ACFT engines running.

4.8 Parking stands designated "L" or "R" are restricted to use by aircraft with a wingspan not exceeding 36 M.

4.9 Pilots are advised to exercise caution while docking on remote G stands via TWYs E1/E4 to ensure alignment with the correct stand lead-in line.

4.10 Pilots are advised to exercise caution while docking on remote H stands via TWYs W1/W4 to ensure alignment with the correct stand lead-in line.

4.11 Pilots are advised to exercise caution when docking at stands 124/124R to ensure alignment with the correct stand lead-in line.

4.12 Use of Auxiliary Power Unit (APU)

4.12.1 For environmental purposes, for aircraft parked at stands supplied with ground power unit and/or preconditioned air, the use of Auxiliary Power Unit (APU) shall be avoided/not exceed Ten (10) minutes in total between on-block time and departure of the aircraft from the stand. For stands not equipped with serviceable ground power unit and/or preconditioned air, the above limitations shall not apply.

4.13 Parking area for small aircraft (General Aviation)

4.13.1 General Aviation Aircraft shall be guided by marshallers if no VDGS available.

5 AIRPORT COLLABORATIVE DECISION MAKING (ACDM)

5.1 GENERAL

5.1.1 AIRPORT COLLABORATIVE DECISION MAKING (A-CDM) concept of operations has been implemented at Hamad International Airport, to optimize airport operations by having an efficient turnaround process, departure and arrival sequencing planning and overall improving the predictability of events.

5.1.2 A-CDM involves the sharing of accurate and timely information between airport operator, aircraft operators, ground handlers and ATC through different supporting systems and implementing a set of operational procedures.

5.1.3 Target Off Block Time (TOBT) – The time an Aircraft Operator (AO) or Ground Handling Agent (GHA) or Airport authority estimates that an aircraft will be ready, all doors closed, boarding bridge removed, push back vehicle connected to the aircraft and ready to start-up/pushback immediately upon reception of approval from ATC.

5.1.4 Target Start Up Approval Time (TSAT) – The time provided by ATC that an aircraft can expect start-up/push back approval, based on RWY sequencing, push-back & taxi constraints and ATFM measures – Calculated Take-Off Time (CTOT), if applicable.

5.2 A-CDM PRE-DEPARTURE PROCEDURES

5.2.1 A-CDM procedures apply to all flights departing from Hamad International Airport, except HEAD, Military, SAR, MEDEVAC, HOSP and other special flights, whereby ATC shall have full discretion in the conduct of such operations.

5.2.2 A-CDM will generate and calculate an automated system-TOBT taking into account the estimated/actual in-block time (EIBT/AIBT), minimum turnaround time and scheduled time of departure (SOBT).

5.2.3 The ground handler (Qatar Aviation Services – QAS) will confirm the system generated TOBT at 45 minutes and later as required update the prior calculated TOBT. TOBT can be updated to an earlier time if needed. TOBT is subsequently updated to an accuracy of +/- 5 minutes if changes are expected.

5.2.4 TOBT is available through:

a) A-CDM platform.
b) Turnaround Coordinator.
c) Parking stands equipped with VDGS.

5.2.5 TSAT information is available through:

a) A-CDM platform at 30 minutes before TOBT.
b) Turnaround Coordinator.
c) Parking stands equipped with VDGS shall display TSAT.

Note: Flight deck crew shall not contact ATC for start-up request earlier than TSAT -2 minutes or later than TSAT +2 minutes.

5.3 A-CDM START-UP PROCEDURES

5.3.1 ATC/En-route Clearance request:

a) ATC may communicate TSAT to flight deck crew if required, but only via voice, if TSAT is not available from the TRC or VDGS.

5.3.2 Flight deck crew shall ensure aircraft is ready to push back at TOBT.

5.3.3 Start-up and Push back clearance: The flight deck crew must have a valid ATC en-route clearance.

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5.3.4 At TSAT:

1) At TSAT +/- 2 minutes:
   a) Flight deck crew to call the appropriate ATC frequency, allocated during en-route clearance, to request start and push-back or start and taxi.
   b) Flight deck crew shall continue monitoring the ATC frequency.
   c) ATC will advise ATC-related changes to TSAT via frequency (if required).
   d) Aircraft are supposed to push-back at TSAT +/- 2 minutes.
2) At TSAT + 5 minutes:
   a) If the pushback cannot be executed by TSAT + 5 minutes due to any reason (and the crew requested and received startup clearance from ATC within the TSAT +/- 2 minutes window), it is the flight deck crew's responsibility to advise the ground handler and its airline representatives to update TOBT accordingly for a new TSAT.
   b) The flight deck crew may be required to coordinate with ATC for new clearances (start-up approval and/or en-route clearance if required) based on the new TSAT.

   Note: Flight deck crew shall not contact ATC or report ready for start-up request prior TSAT. Unless start-up on parking stand is required, ref 5.3.5.

5.3.5 Start-up procedure on parking stand:
   a) If an ACFT requires to start engine/s while on parking stand (i.e due APU INOP), flight deck crew shall request engine start on stand at a time that ensures TSAT is met (i.e TSAT -5 minutes.)
   b) Pushback request (after engine start on stand) shall be made at TSAT -/+ 2 minutes.
   c) Ref 5.3.4 item 2, if at TSAT +5 minutes pushback cannot be executed.

6 PARKING AREA FOR HELICOPTERS

(To be developed).

7 SCHOOL AND TRAINING FLIGHTS — TECHNICAL TEST FLIGHTS — USE OF RUNWAYS

7.1 Training flights and technical test flights necessary for the purpose of ascertaining the airworthiness of an aircraft during flight are accepted and must only be made after permission has been obtained from ATS.

7.1.1 Permissions shall be requested through:

Tel: +974 44705999 / +974 33337087
E-mail: twr.ops@caa.gov.qa

7.2 Civil fixed wing aircraft VFR training flights.

7.2.1 VFR touch and go can be conducted at OTHH with prior approval of ATC (for additional information refer AD 2.3 OPERATIONAL HOURS).

7.2.2 After touch and go, ACFT can expect a turn to the West unless otherwise instructed by ATC.

7.2.3 It is the pilot's responsibility to remain clear of restricted areas.

7.2.4 The VFR downwind for OTHH Western and Eastern RWY is 1000 FT along the Ras Abu Aboud Road.

8 REMOVAL OF DISABLED AIRCRAFT FROM RUNWAYS

8.1 When an aircraft is wrecked on a runway, it is the duty of the owner or user of such aircraft to have it removed as soon as possible. If a wrecked aircraft is not removed from the runway as quickly as possible by the owner or user, the aircraft will be removed by the aerodrome authority at the owner's or user's expense.

OTHH AD 2.21 NOISE ABATEMENT PROCEDURES

NIL

OTHH AD 2.22 FLIGHT PROCEDURES

1 SPECIAL PROCEDURES APPLICABLE TO ILS CATEGORY II / III OPERATIONS

1.1 ILS CAT II / III approach facilities are available at HAMAD INTERNATIONAL airport as follows:

a) OTHH: RWY 16L, CAT II or CAT III
b) OTHH: RWY 34R, CAT II or CAT III
c) OTHH: RWY 16R, CAT II or CAT III
d) OTHH: RWY 34L, CAT II or CAT III

1.2 Current Information concerning surface, wind and RVR is immediately available from ATC and significant changes will be reported in accordance with the provisions of PANS - ATM (DOC 4444).

1.3 Any changes in the operational status expected to last more than one hour will be promulgated by NOTAM and pilots will be advised accordingly by ATIS or on initial contact with ATC.

1.4 Authorization

1.4.1 Operators will be permitted to execute CAT II / III approaches and landings if they are legally authorized by their own state of registration to do so, and after having conveyed a copy of their relevant certification papers to the:

Post: President
Civil Aviation Authority
P.O. Box 3000
Doha
State of Qatar

And obtaining endorsement of acceptance therefrom.

2 LOW VISIBILITY PROCEDURES (LVP)

2.1 Low Visibility Procedures (LVP) at Hamad International Airport will be enforced whenever the meteorological visibility condition or the cloud ceiling does not meet the required standards. The procedures will ensure the protection of ILS CAT II/III operations and ILS localizer and GP signals up to ILS CAT III limits (see also AD 1 aerodromes/heliports - introduction/ 3 Low visibility procedures (LVP) - CAT II/III operations at aerodromes)

2.2 LVP will only be in force when the activation message is broadcasted via ATIS DEP on 126.850 MHz and ATIS ARR on 126.825 MHz.

2.3 Requests for practice CAT II or CAT III approaches outside of LVP conditions may be approved but LVP will not be enforced as ILS signal protection cannot be guaranteed.

3 TRANSPONDER AND COMMUNICATION PROCEDURES FOR DEPARTURES AND ARRIVALS

3.1 General

3.1.1 Advanced Surface Movement Guidance and Control System (A-SMGCS) using Mode-S Multi-lateration had been commissioned at Hamad International Airport.

3.1.2 Aircraft Transponder Operating Procedures, in the movement area, as listed below;

3.2 Departures

3.2.1 ACFT at parking stand.

a) Enter the discrete SSR code received from Clearance Delivery/TWR.
b) Enter the three letter ICAO designator followed by the flight number (e.g. QTR123) through the FMS or the Transponder.

3.2.2 During Pushback

a) Transponder shall be selected manually in order to display the aircraft identification (Callsign and the SSR code) on the A-SMGCS display.
b) ATC will verify the data and use it for identification.

3.3 Arrivals

3.3.1 Landing aircraft to maintain their transponder switched-on until they park on the stand.

4 RNP INSTRUMENT APPROACH PROCEDURE

4.1 The following is the list of waypoints used in RNP Instrument Approach Procedures.

Designator	Co-ordinates	Approach procedure
ODBIP	253537.40N 0512800.00E	RNP RWY 16L, RNP RWY 16R

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Designator	Co-ordinates	Approach procedure
IVANI	253302.21N 0513544.87E	RNP RWY 16L, RNP RWY 16R
TOVAN	253109.81N 0513037.05E	RNP RWY 16L, ILS RWY 16L
HH601	252621.31N 0513244.59E	RNP RWY 16L
RW16L	251745.97N 0513631.96E	RNP RWY 16L
HH602	251449.85N 0513749.52E	RNP RWY 16L
GENOT	252018.11N 0515114.66E	RNP RWY 16L, RNP RWY 16R, RNP RWY 34L, RNP RWY 34R
MUSIG	252751.10N 0513204.88E	ILS RWY 16L
BAYAN	252926.00N 0514849.00E	ILS RWY 16L
HH611	252452.74N 0513323.71E	ILS RWY 16L
SIVET	253727.14N 0514914.49E	ILS RWY 16L
GOLSI	253047.17N 0512929.86E	RNP RWY 16R, ILS RWY 16R, ILS RWY 34L
HH501	252602.84N 0513135.62E	RNP RWY 16R
RW16R	251727.52N 0513523.07E	RNP RWY 16R
HH502	251439.85N 0513636.94E	RNP RWY 16R
VEKIS	250047.55N 0513419.39E	RNP RWY 16R
PURVA	250341.28N 0514617.29E	RNP RWY 16R
ASLEB	251255.45N 0515211.43E	RNP RWY 16R
DEPLA	252732.66N 0513056.00E	ILS RWY 16R
HH511	252434.64N 0513214.60E	ILS RWY 16R
IMKAT	250138.57N 0514220.38E	ILS RWY 16R, ILS RWY 34L, RNP RWY 34L
PASID	250515.69N 0514045.07E	ILS RWY 34L
HH811	250812.13N 0513927.55E	ILS RWY 34L
EMUNA	245712.86N 0514455.31E	RNP RWY 34L, RNP RWY 34R
MUXED	250356.10N 0514832.78E	RNP RWY 34L, RNP RWY 34R
HH801	250643.86N 0514006.34E	RNP RWY 34L
RW34L	251519.32N 0513619.56E	RNP RWY 34L
HH802	251806.98N 0513505.67E	RNP RWY 34L
DARTU	252224.62N 0513133.18E	RNP RWY 34L
SIVOT	252655.93N 0512749.08E	RNP RWY 34L
BUBOD	252920.40N 0513612.95E	RNP RWY 34L
TATSA	252615.54N 0514621.66E	RNP RWY 34L
LAGMA	250204.62N 0514325.78E	RNP RWY 34R, ILS RWY 34R
HH901	250644.17N 0514123.09E	RNP RWY 34R
RW34R	251519.65N 0513736.41E	RNP RWY 34R
HH902	251807.32N 0513622.55E	RNP RWY 34R
GOMBO	252944.22N 0514450.16E	RNP RWY 34R
LADSO	250514.36N 0514202.65E	ILS RWY 34R
HH911	250812.41N 0514044.34E	ILS RWY 34R
HH912	251030.07N 0515158.20E	ILS RWY 34R
BOSUP	251611.22N 0514552.22E	ILS RWY 34R
DANIK	245948.49N 0513712.89E	RNP RWY 34L, RNP RWY 34R
TANDO	252853.68N 0512422.68E	RNP RWY 16L, RNP RWY 16R

5 INDEPENDENT PARALLEL RUNWAY OPERATIONS (IPO)

5.1 PROCEDURES

5.1.1 At OTHH, simultaneous parallel runway operations are in use, both for departures and for arrivals. SPD – simultaneous parallel departures can be conducted from any of the three parallel instrument runways (including OTBD RWY 15/33). SPA – simultaneous parallel approaches according to the traffic imbalance or to mode of operations, can be conducted as Dependent Parallel Approaches or Independent Parallel Approaches.

5.2 DEPENDENT PARALLEL APPROACHES - DPA

5.2.1 DPA are simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway center lines are prescribed.

5.2.2 During DPA operations a 1.5 NM diagonal stagger shall be provided between inbound aircraft to OTHH runways.

5.2.3 During DPA operations a 2.0 NM diagonal stagger shall be provided between inbound aircraft to OTHH West Runway and OTBD Runway.

5.2.4 DPA shall be notified to pilots via ATIS.

5.3 INDEPENDENT PARALLEL APPROACHES - IPA

5.3.1 IPA are simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway center lines are not prescribed.

5.3.2 IPA shall be notified to pilots via ATIS.

5.3.3 When independent parallel approaches are in operation, the following altitudes or last assigned altitudes have to be maintained after ILS clearance granted until established on the glidepath. Pilots can expect to intercept the glidepath from 2500 FT for OTHH RWY 16L/34R and 3500 FT for OTHH RWY 16R/34L. No early descend below glidepath to the Final Approach Altitude is permitted unless instructed by ATC.

5.3.4 When independent parallel approaches are in operation, base turn for RWY 16L/34R (low side) will be instructed by ATC, only once the aircraft is maintaining the final intercept altitude 2500 FT.

5.4 NORMAL OPERATING ZONE (NOZ)

5.4.1 Airspace of defined dimensions extending to either side of an ILS localizer course final approach track. Only the inner half of the normal operating zone is taken into account in independent parallel approaches.

5.5 NO TRANSGRESSION ZONE (NTZ)

5.5.1 In the context of independent parallel approaches, a corridor of airspace of defined dimensions located centrally between the two extended runway center lines, where a penetration by an aircraft requires an ATCO intervention to manoeuvre any threatened aircraft on the adjacent approach.

5.6 RNP APPROACHES

5.6.1 RNP approaches will not be authorised for Simultaneous Independent Parallel Approaches.

5.6.2 Inbound flights unable to accept an ILS approach shall inform Doha Approach on first contact.

5.6.3 Pilots shall monitor the Hamad Arrival Information (ATIS ARR) for the expected Instrument Approach and mode of operation.

5.7 BREAK-OUT MANOEUVRES

5.7.1 If any aircraft is committing an NTZ infringement, a Final Approach Monitoring Controller will provide a breakout instruction to the aircraft under their responsibility to protect it from the threat. Break-out manoeuvres consist of heading and altitude instructions.

5.7.2 The Final Approach Monitoring Controller will override the relevant Tower frequency when issuing a break-out manoeuvre because of the infringement of the NTZ from the adjacent approach path.

6 CONTACT PROCEDURES

6.1 DEPARTURES

6.1.1 Flight crew should inform Hamad Clearance delivery (if requesting clearance via frequency) or Ground Control on first contact if the Aircraft livery differs from the airline associated with the callsign.

Departing aircraft shall contact Hamad Clearance Delivery on 120.875 MHz up to Twenty-five (25) minutes prior to EOBT and pass the following information.

a) ACFT Callsign
b) Type of ACFT
c) Departure-DATIS Letter
d) Parking Stand
e) Requested FL
f) Destination

6.2 ARRIVALS

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6.2.1 If no instruction has been received, landing aircraft are advised to contact Hamad Tower East on frequency 118.525 MHz (RWY 16L/34R) or Tower West on frequency 118.025 MHz (RWY 16R/34L) not later than 5 NM on Final.

6.2.2 When vacating the runway pilots shall remain on the appropriate Tower frequency until instructed to contact the relevant Ground Control frequency.

7 REDUCED RUNWAY SEPARATION MINIMA (RRSM) APPLICATION

7.1 Special landing and departing procedures are implemented at Hamad International Airport (OTHH) for RWYs 16L/34R and 16R/34L, subject to the procedures and conditions shown hereunder.

Note 1: Pilots unable to comply with the procedures due to their airline SOPs must inform ATC as soon as possible so that alternative clearances may be issued.

Note 2: RRSM procedures shall apply to Category 1 and 2 ACFT types as if they were Category 3 ACFT types.

7.2 Subject to the 'conditions for the application of RRSM' the following procedure(s) may be applied H24 at OTHH between;

1) two successive landing ACFT; or
2) a departing ACFT and a succeeding landing ACFT; or
3) two successive departing ACFT.

provided that:

a) The tail wind component does not exceed 5 KT, measured at the landing THR, and there are no pilot reports of wind shear.
b) MET visibility shall be equal to or greater than 5 KM and the cloud ceiling shall not be lower than 1000 FT and the ATC is satisfied that the pilot of the following ACFT will be able to observe the relevant traffic clearly and continuously.
c) The pilot of the following ACFT is warned i.e. Traffic information shall be provided to the pilot of the succeeding ACFT concerned.
d) The RWY is dry and there is no evidence that the braking action may be adversely affected.
e) The ATC is able to assess separation visually.
f) Wake turbulence separation minima shall be applied.
g) Minimum separation continues to exist between two departing ACFT immediately after take-off of the second ACFT.
h) In order to ensure that the preceding ACFT vacates the RWY in a timely manner, the pilot shall be advised of the exit at which to plan to vacate.

7.3 Landing following landing:

7.3.1 When the RWY-in-use is temporarily occupied by other traffic, landing clearance may be issued to an arriving ACFT, provided that the controller has reasonable assurance that the following separation distances/criteria will be met when the landing ACFT crosses the RWY THR:

a) RWY 16L:
The preceding landing ACFT has landed and has vacated the RWY; or has passed a point at least 2400 M from the THR of the RWY (abeam TWY A5); and is in motion and will vacate the RWY without stopping and/or backtracking.
b) RWY 34R:
The preceding landing ACFT has landed and has vacated the RWY; or has passed a point at least 2400 M from the THR of the RWY (abeam TWY A7); and is in motion and will vacate the RWY without stopping and/or backtracking.
c) RWY 16R:
The preceding landing ACFT has landed and has vacated the RWY; or has passed a point at least 2400 M from the THR of the RWY (abeam TWY R); and is in motion and will vacate the RWY without stopping and/or backtracking.
d) RWY 34L:
The preceding landing ACFT has landed and has vacated the RWY; or has passed a point at least 2400 M from the THR of the RWY (abeam TWY L8); and is in motion and will vacate the RWY without stopping and/or backtracking.

Note: Landing RRSM will only be applied between two successive arrivals provided both ACFT have been instructed to vacate at published Rapid Exit Taxiways (RETs).

7.4 Landing following departure:

7.4.1 When the RWY-in-use is temporarily occupied by other traffic, landing clearance may be issued to an arriving ACFT, provided that the controller has reasonable assurance that the following separation distances/criteria will be met when the landing ACFT crosses the RWY THR:

a) RWY 16L:
The preceding departing ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY A5), or if not airborne, will be at least 2400 M from the THR of the RWY.
b) RWY 34R:
The preceding departing ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY A7), or if not airborne, will be at least 2400 M from the THR of the RWY.
c) RWY 16R:
The preceding departing ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY R), or if not airborne, will be at least 2400 M from the THR of the RWY.
d) RWY 34L:
The preceding departing ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY L8), or if not airborne, will be at least 2400 M from the THR of the RWY.

Note: Pilots should be aware of the possibility of a go-around when no landing clearance has been received approaching 2 NM from the THR, with another ACFT lined up or departing.

7.5 Departure following departure:

7.5.1 Take-off clearance may be issued to a departing ACFT, commencing its take-off roll from full length, before the preceding departure has passed the upwind end of the RWY, provided that ATC has reasonable assurance that:

a) RWY 16L:
The preceding ACFT will be airborne and passed a point at least 2400 M from the THR of the RWY (abeam TWY A5) by the time the succeeding ACFT commences its take-off roll and minimum separation will continue to exist, constant or increasing, between the two departing ACFT immediately after take-off of the second ACFT.
b) RWY 34R:
The preceding ACFT will be airborne and passed a point at least 2400 M from the THR of the RWY (abeam TWY A7) by the time the succeeding ACFT commences its take-off roll and minimum separation will continue to exist, constant or increasing, between the two departing ACFT immediately after take-off of the second ACFT.
c) RWY 16R:
The preceding ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY R) by the time the succeeding ACFT commences its take-off roll and minimum separation will continue to exist, constant or increasing, between the two departing ACFT immediately after take-off of the second ACFT.
d) RWY 34L:
The preceding ACFT will be airborne and has passed a point at least 2400 M from the THR of the RWY (abeam TWY L8) by the time the succeeding ACFT commences its take-off roll and minimum separation will continue to exist, constant or increasing, between the two departing ACFT immediately after take-off of the second ACFT.

Note: The succeeding departure may commence its take-off roll subject to the same provisos above when departing from:

1) RWY 16L from A11
2) RWY 34R from A1
3) RWY 16R from L11
4) RWY 34L from L1

7.6 Traffic Information Phraseology for pilot of following ACFT:

7.6.1 When applying RRSM in a scenario where the RWY is temporarily occupied by a previously landed or departing ACFT, ATC shall provide a warning (traffic information) to the following ACFT when issuing the landing clearance or departure clearance.

7.6.2 The following examples illustrate ICAO standard phraseology that will be used:

a) Landing Clearance Phraseology
1) "(Call sign), (traffic Information) (wind) (RWY) cleared to land".
2) "(Call sign), (type) departing ahead (wind) (RWY) cleared to land".
b) Departing Clearance Phraseology
1) "(Call sign), (type) departing ahead (wind) (RWY) cleared for take-off"

Note: When necessary or desirable in order to expedite traffic, a landing ACFT may be requested to expedite vacating the RWY. When there is a requirement to expedite departing traffic, a clearance for immediate take-off may be issued to an ACFT before it enters the RWY.

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8 SEASONAL CONSTRAINTS ON ARRIVAL AND DEPARTURE PROCEDURES

8.1 Large vessel movements are expected in waters close to threshold RWY 16L (APROX DIST 2600 M/1.40 NM) and RWY 16R (APROX DIST 2420 M/1.31 NM). Information on heights of these vessels can be provided by ATC, if required.

8.2 Amended flight procedures will be published via NOTAM during the cruise ship season between 01 October and 30 April (every year). Operators are advised to monitor all NOTAM related to this subject. D-ATIS information will be available in addition to the NOTAM.

9 CONTINUOUS CLIMB OPERATION PROCEDURES FOR OUTBOUD AIRCRAFT

9.1 Continuous Climb Operation (CCO) procedures are integrated into specific Standard Instrument Departures (SIDs) at Hamad International Airport (OTHH) to enhance airspace efficiency for users. These SIDs are subject to time-based availability. For detailed information, refer to ADP “ENR 1.9” item 4.8.

OTHH AD 2.23 ADDITIONAL INFORMATION

1 VISUAL DOCKING GUIDANCE SYSTEM (VDGS)

1.1 The VDGS is an aircraft parking aid for airport and aircraft safety and efficiency.

1.2 General safety measures

1.2.1 The VDGS has a built-in error detection program to inform the aircraft pilot of impending dangers during the docking procedure.

1.2.2 If the pilot is unsure of the information being shown on the VDGS display unit, he / she must immediately stop the aircraft and obtain further information for clearance.

1.2.3 The pilot shall not enter the stand area, unless the docking system first is showing the vertical running arrows. The pilot must not proceed beyond the bridge, unless these arrows have been superseded by the closing rate bar.

1.2.4 The pilot shall not enter the stand area, unless the aircraft type displayed is equal to approaching aircraft.

1.2.5 When using the docking system, pilots are advised to taxi into the aircraft stand at minimum speed. The system will display "SLOW" to inform the pilot if the aircraft‘s taxiing speed is too fast. (See 1.3 Stand docking procedures table item 6).

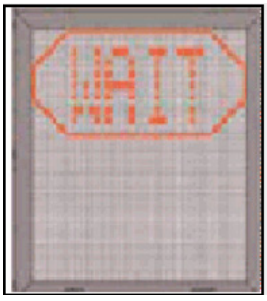
1.2.6 To avoid overshooting, pilots are advised to approach the stop position slowly and observe the closing rate information displayed. Pilots should stop the aircraft immediately when seeing the "STOP" display or when given the "STOP" sign by the aircraft marshaller.

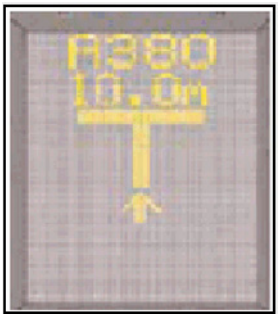
1.2.7 The SBU MESSAGE - The message STOP SBU means that docking has been interrupted and has to be resumed only by manual guidance. Do not try to resume docking without manual guidance.

1.2.8 No Marshall will be presented in bays equipped with VDGS. In the event of malfunction of VDGS, pilots should hold position and inform ATC.

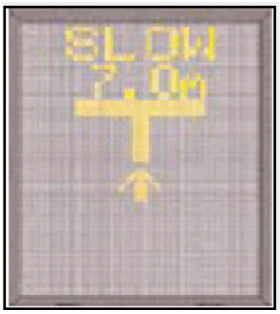
1.3 Stand docking procedures

1.3.1 *Refer AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS item 1 for Applicable Stands)*

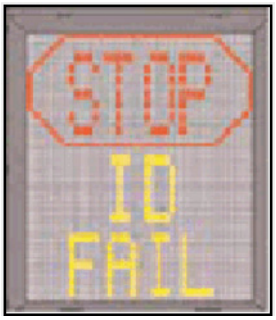
Item.	Procedure	Pilot Display
1	**START-OF-DOCKING** The system is activated by pressing one of the aircraft type buttons on the operator panel. When the system has been activated, 'WAIT' will be displayed.	

Item.	Procedure	Pilot Display
2	**CAPTURE** The yellow scrolling arrows indicate that the system is activated and in capture mode, searching for an approaching aircraft. It shall be checked that the correct aircraft type is displayed. The lead-in line shall be followed. The pilot must not enter the parking stand area unless the yellow scrolling arrows are displayed.	
3	**TRACKING** On successful capture of the aircraft, the yellow scrolling arrows are replaced by the yellow centre line indicator (Closing Rate Bar). The flashing red arrow indicates the direction the aircraft should turn. The yellow arrow shows position in relation to the centre line. This indicator gives the correct position and azimuth guidance. In the figure, the yellow arrow indicates an aircraft to the left of the centre line and the red flashing arrow indicates the direction to steer in-order to align the aircraft with the centre line.	
4	**CLOSING RATE** Display of digital countdown starts when the aircraft is 20 meters from stop position. When the aircraft is less than 12 meters from the stop-position, the closing rate is indicated by turning off one row of the centre line symbol per half a metre of the distance, covered by the aircraft towards the stop-position of the stand. The picture illustrates the aircraft is 16 meters from the stop-position, slightly left of the centre line. The red arrow indicates the direction to steer.	
5	**ALIGNED TO CENTRE** The absence of any direction arrow indicates the aircraft is on the centre line. The picture illustrates that the aircraft is 10 meters from the stop-position and is on the centre line.	

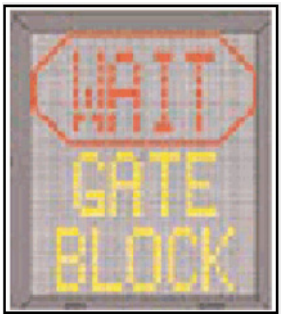
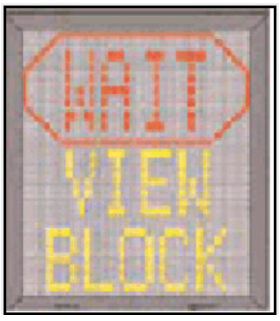
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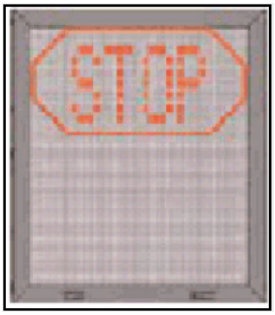
Item.	Procedure	Pilot Display
6	**SLOW (DECREASE SPEED)** If the aircraft is approaching faster than the accepted speed, the system will show 'SLOW' as a warning to the pilot.	
7	**STOP POSITION REACHED** When the correct stop-position is reached, the display will show 'STOP'.	
8	**DOCKING COMPLETED** When the aircraft has parked, 'OK' will be displayed.	
9	**OVERSHOOT** If the aircraft overshot the stop-position, 'TOO FAR' will be displayed.	

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Item.	Procedure	Pilot Display
10	**STOP SHORT** If the aircraft is found standing still but has not reached the intended stop-position, the message 'STOP OK' will be shown after a while.	
11	**WAIT** If some object is blocking the view toward approaching aircraft or the detected aircraft is lost during docking close to STOP, the display will show 'WAIT'. The docking will continue as soon as the blocking object has disappeared or the system detects the aircraft again. The pilot must not proceed further, unless the ‘WAIT’ message has been superseded by the closing rate bar.	
12	**AIRCRAFT VERIFICATION FAILURE** During entry into the stand, the aircraft geometry is being checked. If, for any reason, aircraft verification is not made 12 M before the stop-position, the display will first show 'WAIT' and make a second verification check. If this fails 'STOP' and 'ID FAIL' will be displayed. The pilot must not proceed further without manual guidance, unless the ‘WAIT’ message has been superseded by the closing rate bar.	

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Item.	Procedure	Pilot Display
13	**SLOW (IN ABNORMAL SITUATIONS)** This display can be shown for two reasons: a) **BAD WEATHER CONDITION** During heavy fog, rain or sandstorm, the visibility for the docking system can be reduced. When the system is activated and in capture mode, the display will disable the yellow scrolling arrows and display 'SLOW' and the aircraft type. As soon as the system detects the approaching aircraft, the closing rate bar will appear. If the system has been configured in this mode to make a shortened ID verification (check of engine position excluded), the aircraft symbol will blink to give attention. b) **AIRCRAFT LOST DURING DOCKING** If the aircraft is lost during docking, the display will show 'SLOW'. As soon as the system detects the approaching aircraft, the closing rate bar will re-appear. The pilot must not proceed further, unless the closing rate bar is shown.	
14	**GATE BLOCKED** If an object is found blocking the view from the docking system to the planned stop position for the aircraft, the docking procedure will be halted with a 'WAIT' and 'GATE BLOCK' message. The docking procedure will resume as soon as the blocking object has been removed. The pilot must not proceed further without manual guidance, unless the 'WAIT' message has been superseded by the closing rate bar.	
15	**VIEW BLOCKED** If the view towards the approaching aircraft is hindered, for example internally in the unit on the laser lens or on the laser window by dirt, or another obstacle in the closest view area, the docking system will report a view blocked condition, i.e. 'VIEW BLOCK'. Once the system is able to see the aircraft through the hinder, the message will be replaced by closing rate bar. The pilot must not proceed further without manual guidance, unless the 'WAIT' message has been superseded by the closing rate bar.	

Item.	Procedure	Pilot Display
16	**SBU-STOP** Any unrecoverable error during the docking procedure will generate a SBU (Safety Back Up) condition. The display will show 'STOP SBU' message. A manual backup procedure will be used for docking guidance.	
17	**TOO FAST** If the aircraft approaches with a speed higher than the docking system can handle, the message 'STOP' and 'TOO FAST' will be displayed. The docking system must be re-started or the docking procedure completed by manual guidance.	
18	**EMERGENCY STOP** Pilots should stop the aircraft immediately when ‘STOP’ is displayed.	
19	**CHOCKS ON** 'CHOCK ON' will be displayed when the ground staff has put the chocks in front of the nose wheel and pressed the 'chocks on' button on the operator panel.	

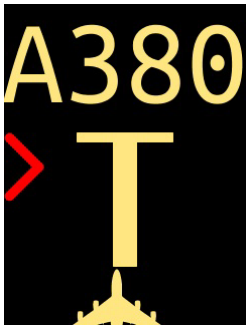
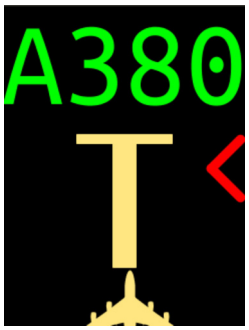
© QATAR CIVIL AVIATION AUTHORITY

Item.	Procedure	Pilot Display
20	**ERROR** If a system error occurs, the message 'ERROR' will be displayed with an error code.	
21	**SYSTEM BREAKDOWN / POWER FAILURE** In case of a severe system failure or power failure, the display will go black. A manual backup procedure will be used for docking guidance.	

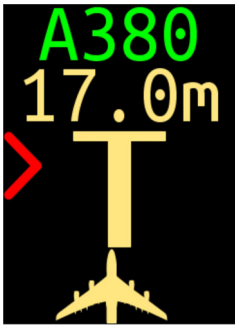
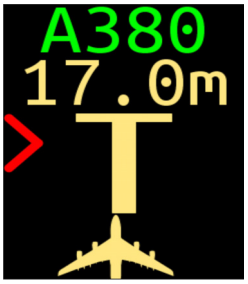
1.4 STAND DOCKING PROCEDURES

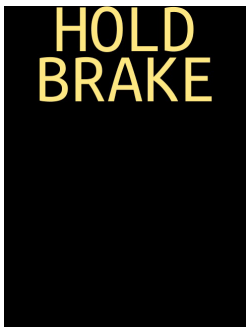
1.4.1 (Refer AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS item 1 for Applicable Stands)

Item.	Procedure	Pilot Display
1	**Aircraft Docking Activation**	
1.1	Aircraft docking activation is performed by the operator. When the Docking system has been activated, the pilot display indicates 'WAIT' with red border. *(At the operator panel: When the Docking system is ready to operate, the operator panel will show 'SAFEDOCK SYSTEM' followed by a status message. If the status is 'READY', the docking procedure can be initiated by tapping the Start Dock button. A 'START DOCKING' message appears, followed by the option 'SELECT AIRCRAFT'.* *Or* *Manual Pause* *If the system is configured with a manual pause input, such as a push button, then when pressed the docking will be suspended and the operator panel will display 'PAUSED'. Depending on configuration, the system will remain suspended until the input is released or toggled again. If an apron scan was interrupted, a full apron scan will be done again, otherwise the system will resume with 'CAPTURE')*	
2	**Aircraft Capture and Guidance Workflow in VDGS Systems**	
2.1	**Capturing signals**	

Item.	Procedure	Pilot Display
2.1.1	When the Docking system is in active mode and scanning for an approaching aircraft, the pilot display indicates capturing signals. *Caution: The pilot must not proceed beyond the PBB, unless the capture signals have been superseded by the closing rate bar.*	
2.2	**Tracking**	
2.2.1	On actively tracking and verifying the aircraft: – The capture signal supersedes by a yellow centerline distance-to- go indicator. – A red flashing direction arrow indicates the direction to turn for azimuth guidance and indicates the direction to steer. – The yellow aircraft indicates the aircraft position in relation to the centerline.	
2.2.2	On successful verification: – The aircraft ID changes from yellow to green. – The centerline distance-to-go indicator changes from capture signals to a filled closing rate bar. The closing-rate bar shrinks as the aircraft nears its configured stop-position.	
3	**Closing Rate**	

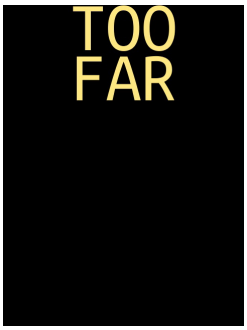
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Item.	Procedure	Pilot Display
3.1	The closing rate is the final countdown from a specific distance to the stop-position. A yellow vertical closing rate bar and centerline indicator appears, optionally with a digital countdown indication, depending on the configuration. The closing rate bar consists of a number of rows representing the remaining distance to go. Each row turns off in steps, beginning 20 meters from the stop-position as the aircraft approaches, illustrating a shrinking bar from the bottom. The given image illustrates the aircraft at the closing rate distance from stop-position, slightly left of the centerline. As the last row turns off, less than the interval for one row remains until the message 'STOP' appears. A digital countdown (option) shows the distance to stop numerically, with intervals depending on the configuration requirements.	 
4	**Aligned to Center**	
4.1	The given pilot display illustrates that the aircraft is at the displayed distance from the stop-position. The absence of a red flashing direction arrow indicates that the aircraft is aligned with the centerline.	
5	**Slow (Decrease Speed)**	
5.1	The Docking system is configured with a slowdown active zone. The limit speed for 'SLOW' down indication is configurable per aircraft type in the 0–10 range from the stop-position, with a default setting of 2 m/s. The limits further out are fixed: 10–20 m 3 m/s; more than 20 m 4 m/s.	
6	**Azimuth Guidance**	

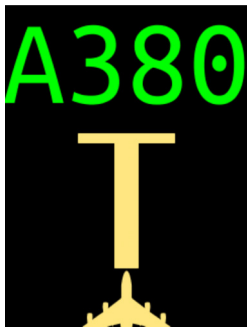
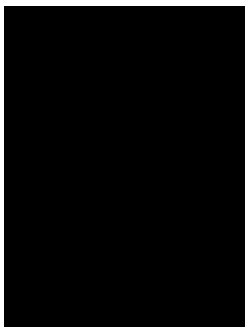
Item.	Procedure	Pilot Display
6.1	The aircraft is at the displayed distance from the stop-position. If the aircraft is not aligned to centerline, a yellow aircraft indicates an aircraft position relative to the centerline, and a red flashing direction arrow indicates the direction to turn.	
7	**Stop**	
7.1	**Stop-Position Reached** When the correct stop-position is reached, the pilot display indicates ‘STOP’ with a red border. Or **Emergency Stop** When the emergency stop button on the operator panel is activated, the pilot display indicates ‘STOP’ with red border.	
8	**Docking Completed**	
8.1	When the aircraft has parked, the pilot display indicates ‘OK’.	
9	**Hold Brake (Optional)**	
9.1	If the Docking System is provided with optional support for information, the pilot display indicates ‘HOLD BRAKE’ as a remainder to the pilot. The message will remain on the pilot display until an operator overrides it via a CHOCKS ON message (See Item 10) or a Shutdown command.	
10	**Chocks On (Optional)**	

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Item.	Procedure	Pilot Display
10.1	The pilot display indicates 'CHOCKS ON' when the ground staff has put the chocks in front of the nose wheel and pressed the 'chocks on' button on the operator panel.	
11	**Bad Weather Conditions**	
11.1	During heavy fog, rain or snow, the visibility of the Docking system can be reduced. When the system is activated and in capture mode, the pilot display disables the floating arrows and indicates aircraft ID followed by 'SLOW'. As soon as the docking system detects the approaching aircraft, the vertical closing-rate bar appears. If the system has been configured in this mode, to make a shortened ID verification (check of engine position excluded), the yellow aircraft symbol blinks to give attention.	 
12	**Overshoot**	

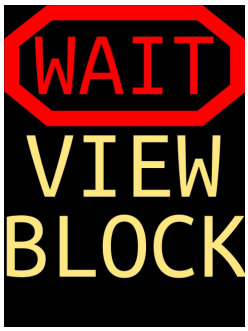
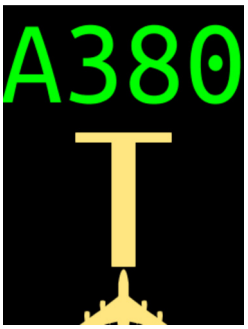
Item.	Procedure	Pilot Display
12.1	If the aircraft overshoots the stop-position with a configurable distance, the pilot display indicates ‘STOP’ with red borders and bars. It is then superseded by ‘TOO FAR’ after the aircraft comes to a complete stop.	 
13	**Stop Short**	
13.1	If the aircraft is found standing still, within a configurable distance up to 5 meters short of the stop-position, the pilot display indicates ‘STOP’ with red border followed by ‘OK’ after a configurable amount of time.	
14	**Failed Aircraft Identification – ID FAIL**	

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Item.	Procedure	Pilot Display
14.1	After capture of the aircraft, its geometry is checked against a stored profile. If, for any reason, aircraft verification is not confirmed 15 meters before the stop-position, the pilot display indicates 'STOP' with red border followed by 'ID FAIL'. The pilot must not proceed beyond the PBB without manual guidance, unless the 'WAIT' message has been superseded by the 'closing rate bar'.	  
15	**Power Failure**	
15.1	In case of a power failure, the pilot display will be completely black. *A manual backup procedure must be used for docking guidance.*	
16	**SBU Stop**	

Item.	Procedure	Pilot Display
16.1	Any unrecoverable error during the docking procedure generates a Safety Backup (SBU) condition. The pilot display indicates 'STOP' with a red border followed by 'SBU'. *A manual backup procedure must be used for docking guidance.*	
17	**Bridge In/Up Check**	
17.1	The Docking system can be configured to require confirmation from various equipment, such as the correct positioning of the PBB, before a docking procedure may begin. For example, if the PBB is in an incorrect position, the pilot display indicates 'BR IN' and 'Stand equipment' interlock on the operator panel.	
18	**Gate Blocked**	
18.1	If an object is found to be blocking the view from the Docking system unit towards the aircraft, and closer than the stop-position, this will be reported as a blocking object and the pilot display indicates 'WAIT' with red border followed by 'GATE BLOCK'.	
19	**View Blocked**	

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Item.	Procedure	Pilot Display
19.1	If the view towards the approaching aircraft is hindered, the Docking system indicates 'WAIT' with red border followed by 'VIEW BLOCK'. For example, hindered by dirt on the scanning unit window (<2.5 m to the laser). Once the system is able to see the aircraft through the dirt, the message is superseded with a closing rate bar.	 
20	**Configuration Error**	
20.1	Any error related to the system configuration that occurs during the docking operation generates an error message 'ERR' with red border will be indicated in both pilot display and operator panel. Or **EmSource Missing** When attempting to start a docking procedure with one or more emergency stop sources missing, the docking system will be aborted, and error message 'ERR' with red border will be indicated in both pilot display and operator panel.	
21	**Approach Monitoring (Optional)**	
21.1	If the Docking system is provided with optional support for approach monitoring, and the aircraft is within the configured distance while outside the allowed approach region, the pilot display indicates 'STOP' with red border followed by "APPR ERR'. *A manual backup procedure must be used for docking guidance. When the aircraft is in position after manual guidance, on the operator panel the Park On button may be taped on to detect the aircraft. If no aircraft is detected the approach error is again displayed.*	
22	**LDM Recovery**	

Item.	Procedure	Pilot Display
22.1	If the system detects an issue with incoming Laser Distance Meter (LDM) data, the pilot display indicates a yellow 'WAIT' and 'LDM Recovery' will be displayed on the operator panel while the system attempts to recover LDM function.	
23	**Undetected Object**	
23.1	If an object that has not been picked up by the Lidar and it is detected by the Radar inside the critical area, the pilot display indicates 'HOLD' with red border, docking procedure will continue if the object moves out of the area.	

2 AREAS IN THE AD WHERE BIRDS ARE OBSERVED

2.1 Based on result of continuous wildlife activity monitoring by AD operator, bird concentration chart has been prepared. Chart is available at AD 2.24 CHARTS RELATED TO AN AERODROME.

3 SURFACE MOVEMENT GUIDANCE, CONTROL SYSTEM AND MARKINGS

3.1 Stand identification / taxiway guide lines / visual docking / parking guidance system.

3.2 Nose wheel guidelines on taxiways and aprons.

3.3 A follow-me vehicle will be provided for all non-standard parking.

3.4 Parking stands are equipped with Visual Docking Guidance System (VDGS).

4 ADVISORY NOTICE TO ALL DEPARTING TRAFFIC

4.1 Aircraft departing on RWY 16R/34L should be aware of possible TCAS warnings due to VFR (helicopter) operations East of OTBD RWY 15/33 and west of OTHH RWY 16R/34L. OTBD VFR helicopter traffic are deemed separated from OTHH departing traffic.

4.2 VFR traffic at OTBD, operate as follows:

a) For rotary wing, refer to AD2.24 - Helicopter Route Chart.

b) For fixed wing

1) VFR departures from OTBD - RWY 15 are independent from OTHH IFR traffic on the proviso that the VFR traffic climbs straight ahead to 700 FT, turns to the West before the upwind end of OTBD RWY 15. The VFR departure will state if it is unable to adhere to this route and will therefore be treated as per OTBD IFR departure.

2) VFR departures from OTBD - RWY 33 are independent from OTHH IFR traffic on the proviso that the VFR traffic climbs straight ahead to 700 FT, turns to the West and remains South of OTP45. The VFR departure will state if it is unable to adhere to this route and will therefore be treated as per OTBD IFR departure.

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OTHH AD 2.24 CHARTS RELATED TO AN AERODROME

Chart Name	Page
AERODROME CHART - ICAO	AD2.OTHH-ADC.01 *
AERODROME GROUND MOVEMENT CHART - ICAO	AD2.OTHH-AGMC.01
AIRCRAFT PARKING / DOCKING CHART - ICAO	AD2.OTHH-APDC.01 *
AERODROME OBSTACLE CHART ICAO - TYPE A RWY 16L/34R	AD2.OTHH-AOC-A.01
AERODROME OBSTACLE CHART ICAO - TYPE A RWY 16R/34L	AD2.OTHH-AOC-A.03
PRECISION APPROACH TERRAIN CHART ICAO - RWY 16L	AD2.OTHH-PATC.01
PRECISION APPROACH TERRAIN CHART ICAO - RWY 34R	AD2.OTHH-PATC.03
PRECISION APPROACH TERRAIN CHART ICAO - RWY 16R	AD2.OTHH-PATC.05
PRECISION APPROACH TERRAIN CHART ICAO - RWY 34L	AD2.OTHH-PATC.07
RWY 16L ALSEM 2M / KUPRO 1M / VAXIN 2M RNP CHART	AD2.OTHH-SID.01 *
RWY 16L ALVEN 2M / LUBET 1M / LUBET 1Y / TULUB 1M RNP CHART	AD2.OTHH-SID.03 *
RWY 16L KASIS TWO RADAR DEPARTURE RNP CHART	AD2.OTHH-SID.05 *
RWY 16R BUNDU 2C RNP CHART	AD2.OTHH-SID.07 *
RWY 16R DATRI 1C / ULIKA 1C RNP CHART	AD2.OTHH-SID.09 *
RWY 16R IVENA THREE RADAR DEPARTURE RNP CHART	AD2.OTHH-SID.11 *
RWY 16R LUBET 1C / TULUB 1C RNP CHART	AD2.OTHH-SID.13 *
RWY 34L DATRI 2W / ULIKA 2W RNP CHART	AD2.OTHH-SID.15 *
RWY 34L LUBET 2A (CCO) / TULUB 2A (CCO) RNP CHART	AD2.OTHH-SID.17 *
RWY 34L LUBET 2W RNP CHART	AD2.OTHH-SID.19 *
RWY 34L PARES THREE RADAR DEPARTURE RNP CHART	AD2.OTHH-SID.21 *
RWY 34L TULUB 2W RNP CHART	AD2.OTHH-SID.23 *
RWY 34L ULIKA 2A (CCO) RNP CHART	AD2.OTHH-SID.25 *
RWY 34R ALSEM 3E / BUNDU 3E / KUPRO 2E / VAXIN 3E RNP CHART	AD2.OTHH-SID.27 *
RWY 34R ALVEN 4E / LUBET 3E / LUBET 3Z / TULUB 3E RNP CHART	AD2.OTHH-SID.29 *
RWY 34R DEMBO FOUR RADAR DEPARTURE RNP CHART	AD2.OTHH-SID.31 *
RWY 16L/R ALKAN 1F / HAYYA 1F / HAYYA 1K / VEDED 1F RNP CHART	AD2.OTHH-STAR.01 *
RWY 16L/R ALKAN 2H / HAYYA 2H / VEDED 2H RNP CHART	AD2.OTHH-STAR.03 *
RWY 16L/R ALKAN 1P / HAYYA 1P / TOSNA 1T / VEDED 1P RNP CHART	AD2.OTHH-STAR.05 *
RWY 16L/R LAEEB 2F / LAEEB 2K / ORLEK 2F / TOSNA 2F / TOVOX 2F RNP CHART	AD2.OTHH-STAR.07 *
RWY 16L/R LAEEB 1P / ORLEK 1P / TOSNA 1P / TOVOX 2P RNP CHART	AD2.OTHH-STAR.09 *
RWY 34L/R ALKAN 2L / HAYYA 1J / HAYYA 2L / TOSNA 2J / VEDED 2L RNP CHART	AD2.OTHH-STAR.11 *
RWY 34L/R ALKAN 2R / HAYYA 2R / ORLEK 1R / TOSNA 2V / VEDED 2R RNP CHART	AD2.OTHH-STAR.13 *
RWY 34L/R ALKAN 2V / HAYYA 2V / VEDED 2V RNP CHART	AD2.OTHH-STAR.15 *
RWY 34L/R LAEEB 1R / TOSNA 2R / TOVOX 2R RNP CHART	AD2.OTHH-STAR.17 *
RWY 34L/R LAEEB 1J / LAEEB 1L / ORLEK 1L / TOSNA 2L / TOVOX 2L RNP CHART	AD2.OTHH-STAR.19 *
RWY 16L ILS CHART	AD2.OTHH-IAC.01 *
RWY 16L RNP CHART	AD2.OTHH-IAC.03 *
RWY 16R ILS CHART	AD2.OTHH-IAC.05 *
RWY 16R RNP CHART	AD2.OTHH-IAC.07 *
RWY 34L ILS CHART	AD2.OTHH-IAC.09 *
RWY 34L RNP CHART	AD2.OTHH-IAC.11 *
RWY 34R ILS CHART	AD2.OTHH-IAC.13 *
RWY 34R RNP CHART	AD2.OTHH-IAC.15 *
ATC SURVEILLANCE MINIMUM ALTITUDE CHART - ICAO	AD2.OTHH-ATCSMAC.01

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Chart Name	Page
BIRD CONCENTRATION	AD2.OTHH-BCC.01

* Contain multiple pages

OTHH AD 2.25 VISUAL SEGMENT SURFACE (VSS) PENETRATION

NIL

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AERODROME CHART - ICAO

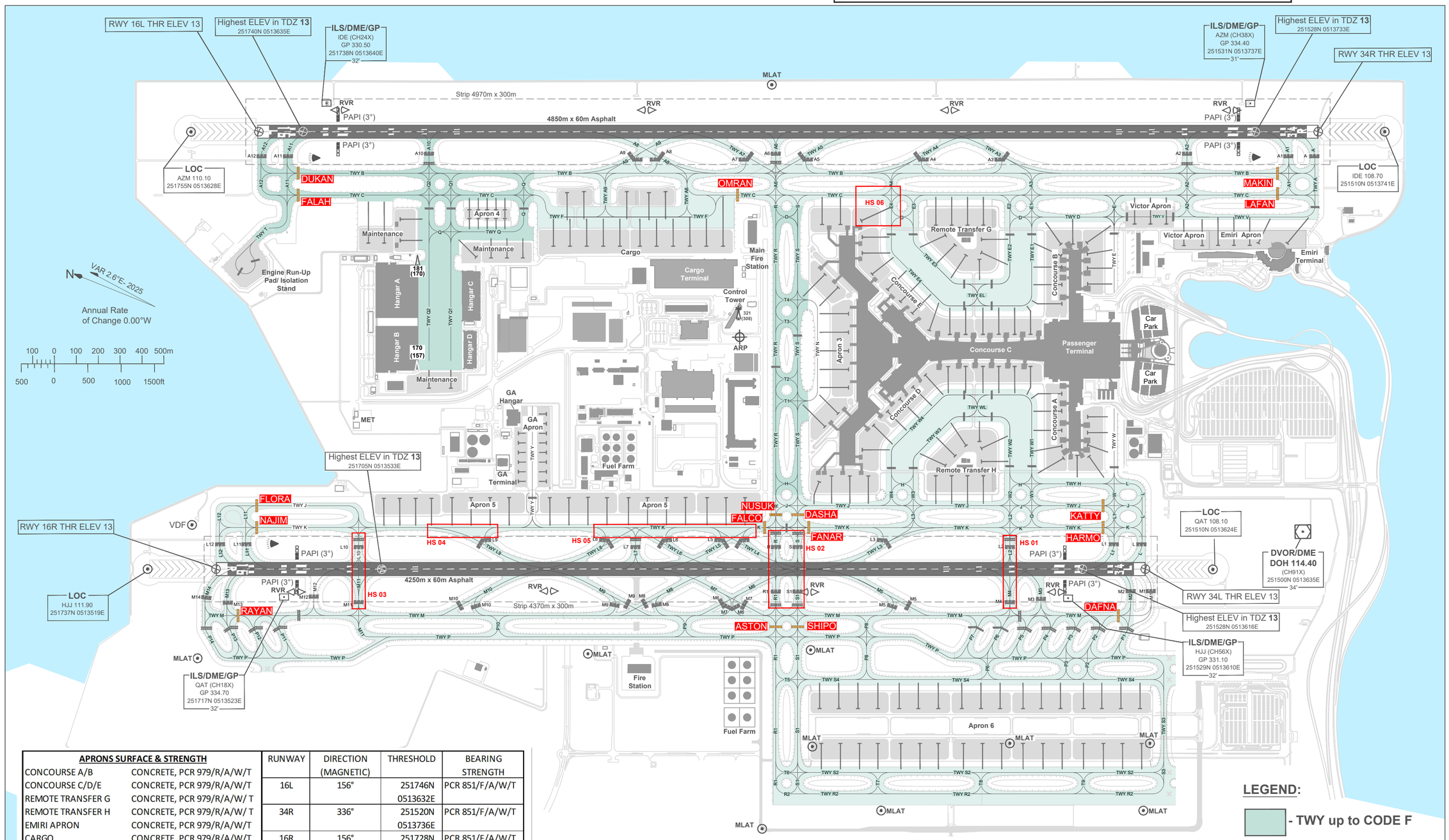
DISTANCES IN METRES, ALTITUDES, ELEVATIONS AND HEIGHTS IN FEET.

ARP
251628N
0513630E

AD ELEV 13FT

DOHA APP EAST	124.775 / 120.600	HAMAD CLEARANCE DELIVERY	120.875
DOHA APP WEST	119.725 / 125.125	HAMAD GROUND EAST	120.225 / 121.675
DOHA DIRECTOR EAST	119.400 / 121.125	HAMAD GROUND WEST	118.575 / 121.675
DOHA DIRECTOR WEST	123.875 / 119.225	HAMAD GROUND CENTRAL	118.650 / 121.675
HAMAD TWR EAST	118.525 / 118.225	HAMAD GROUND PLANNER	119.075
HAMAD TWR WEST	118.025 / 118.225	HAMAD GROUND OVERFLOW	118.075
		HAMAD DEPARTURE INFORMATION	126.850

HAMAD Intl. OTHH



APRONS SURFACE & STRENGTH	
CONCOURSE A/B	CONCRETE, PCR 979/R/A/W/T
CONCOURSE C/D/E	CONCRETE, PCR 979/R/A/W/T
REMOTE TRANSFER G	CONCRETE, PCR 979/R/A/W/ T
REMOTE TRANSFER H	CONCRETE, PCR 979/R/A/W/ T
EMIRI APRON	CONCRETE, PCR 979/R/A/W/T
CARGO	CONCRETE, PCR 979/R/A/W/T
MAINTENANCE	CONCRETE, PCR 979/R/A/W/T
GA APRON	CONCRETE, PCR 1471/R/C/W/T
ISOLATION PAD	CONCRETE, PCR 979/R/A/W/T
VICTOR APRON	CONCRETE, PCR 979/R/A/W/T
APRON 3	CONCRETE, PCR 1471/R/C/W/T
APRON 4	CONCRETE, PCR 979/R/A/W/T
APRON 5	CONCRETE, PCR 1471/R/C/W/T
APRON 6	CONCRETE, PCR 1471/R/C/W/T

RUNWAY	DIRECTION (MAGNETIC)	THRESHOLD	BEARING STRENGTH
16L	156°	251746N 0513632E	PCR 851/F/A/W/T
34R	336°	251520N 0513736E	PCR 851/F/A/W/T
16R	156°	251728N 0513523E	PCR 851/F/A/W/T
34L	336°	251519N 0513620E	PCR 851/F/A/W/T

TAXIWAYS WIDTH & STRENGTH
refer to OTHH AD 2.8

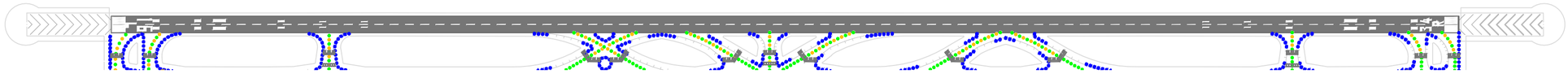
Hotspot Designator	Description
HS 01, HS 02, HS 03	Increased risk of RWY incursions due to traffic flow. Pilots should use due diligence while approaching the RWY holding positions. Obtain clearance to enter or cross the RWY. Be observant of holding position marking, signage and stop bars.
HS 04, HS 05	Complex taxiway layout. Pilots to exercise caution while exiting RWY for traffic pushing back from Apron 5.
HS 06	Risk of aircraft damage due to proximity of parked vehicles and aerodrome equipment. Pilots should ensure adherence to the correct lead-in line for aircraft stands in the area.

LEGEND:

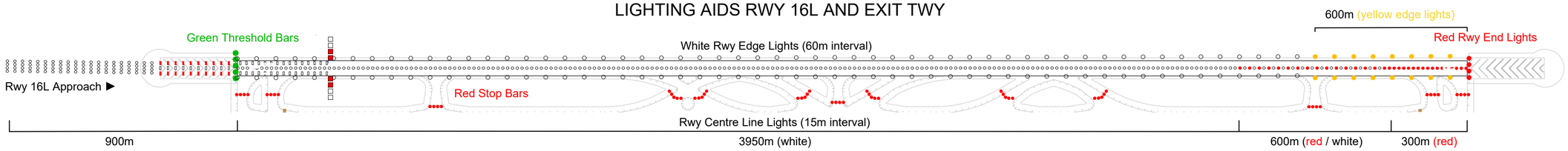
- TWY up to CODE F
- Apron
- Hotspot Area
- TWY Reporting Point (ASTON)

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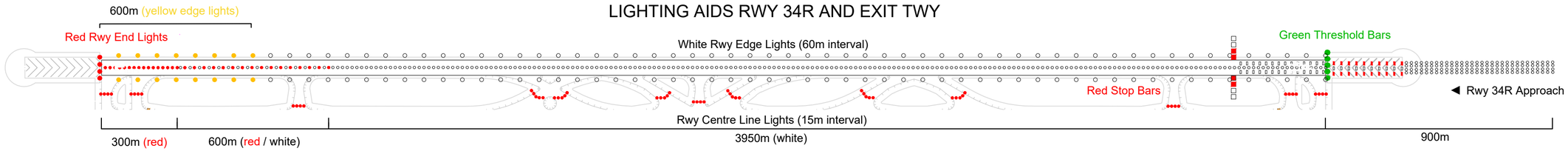
MARKING AIDS RWY 16L/34R AND EXIT TWY / TWY CENTERLINE AND EDGE LIGHTING



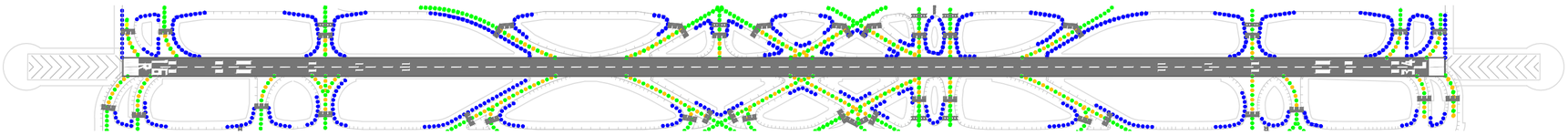
LIGHTING AIDS RWY 16L AND EXIT TWY



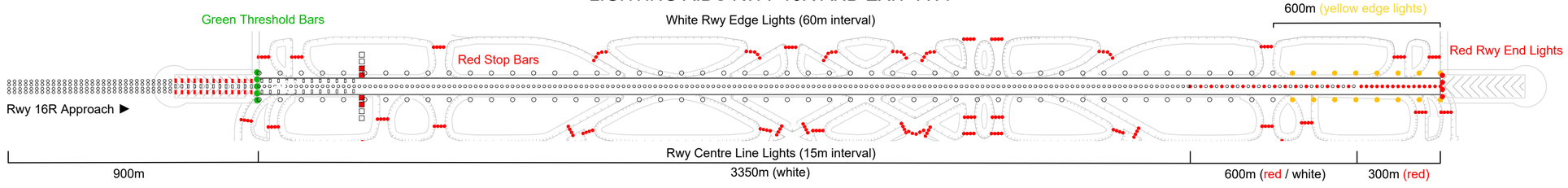
LIGHTING AIDS RWY 34R AND EXIT TWY



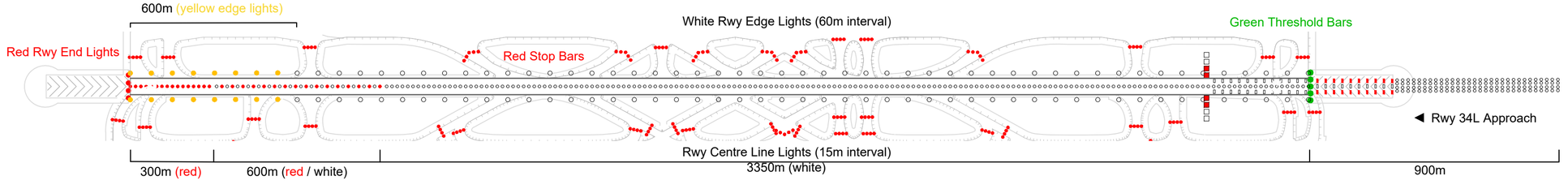
MARKING AIDS RWY 16R/34L AND EXIT TWY / TWY CENTERLINE AND EDGE LIGHTING



LIGHTING AIDS RWY 16R AND EXIT TWY



LIGHTING AIDS RWY 34L AND EXIT TWY



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AERODROME GROUND MOVEMENT CHART - ICAO

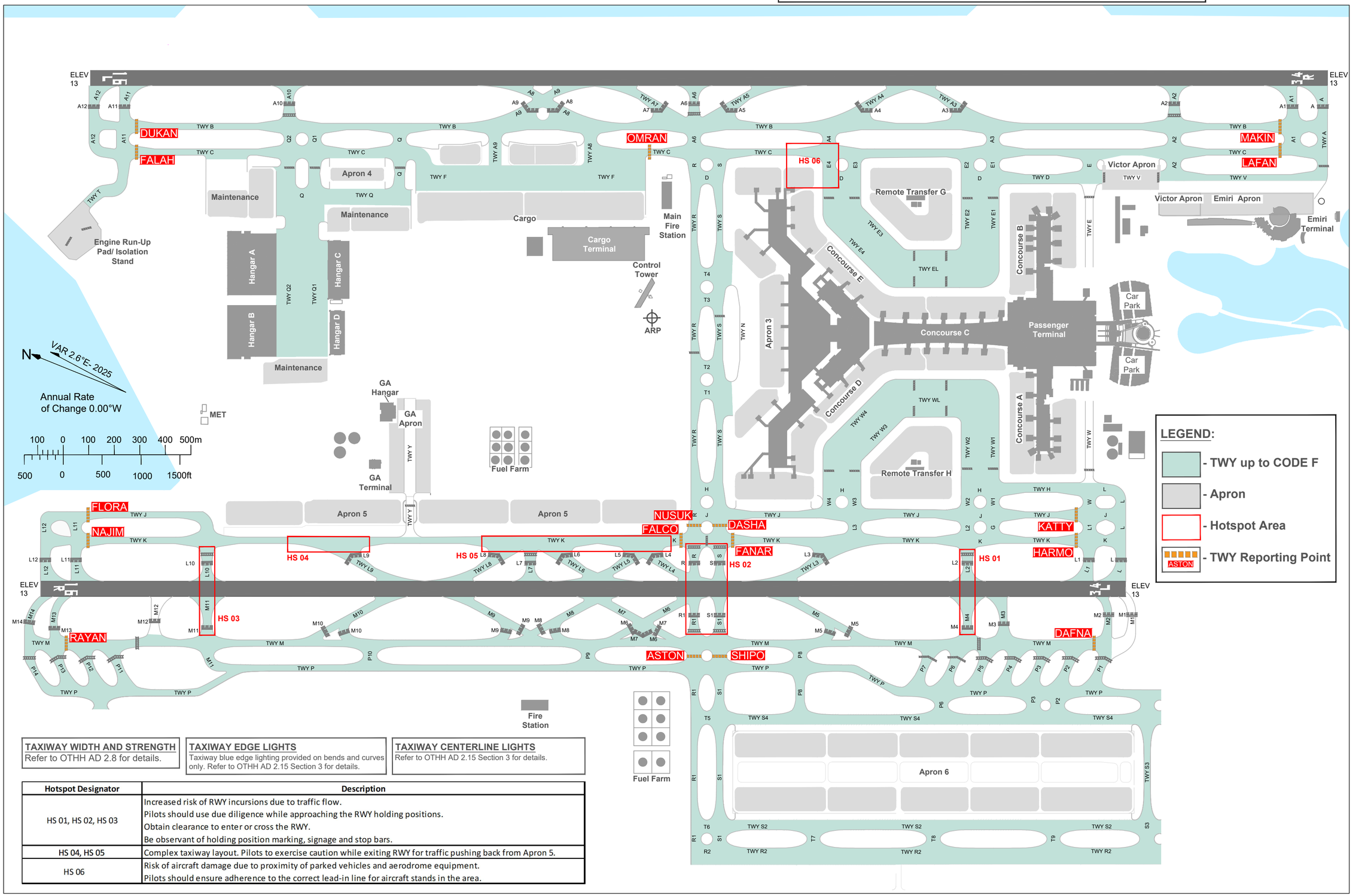
DISTANCES IN METRES, ALTITUDES, ELEVATIONS AND HEIGHTS IN FEET.

ARP
251628N
0513630E

APRON ELEV 17FT

DOHA APP EAST	124.775 / 120.600	HAMAD CLEARANCE DELIVERY	120.875
DOHA APP WEST	119.725 / 125.125	HAMAD GROUND EAST	120.225 / 121.675
DOHA DIRECTOR EAST	119.400 / 121.125	HAMAD GROUND WEST	118.575 / 121.675
DOHA DIRECTOR WEST	123.875 / 119.225	HAMAD GROUND CENTRAL	118.650 / 121.675
HAMAD TWR EAST	118.525 / 118.225	HAMAD GROUND PLANNER	119.075
HAMAD TWR WEST	118.025 / 118.225	HAMAD GROUND OVERFLOW	118.075
		HAMAD DEPARTURE INFORMATION	126.850

HAMAD Intl. OTHH



TAXIWAY WIDTH AND STRENGTH
Refer to OTHH AD 2.8 for details.

TAXIWAY EDGE LIGHTS
Taxiway blue edge lighting provided on bends and curves only. Refer to OTHH AD 2.15 Section 3 for details.

TAXIWAY CENTERLINE LIGHTS
Refer to OTHH AD 2.15 Section 3 for details.

Hotspot Designator	Description
HS 01, HS 02, HS 03	Increased risk of RWY incursions due to traffic flow. Pilots should use due diligence while approaching the RWY holding positions. Obtain clearance to enter or cross the RWY. Be observant of holding position marking, signage and stop bars.
HS 04, HS 05	Complex taxiway layout. Pilots to exercise caution while exiting RWY for traffic pushing back from Apron 5.
HS 06	Risk of aircraft damage due to proximity of parked vehicles and aerodrome equipment. Pilots should ensure adherence to the correct lead-in line for aircraft stands in the area.

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AIRCRAFT PARKING/DOCKING CHART - ICAO

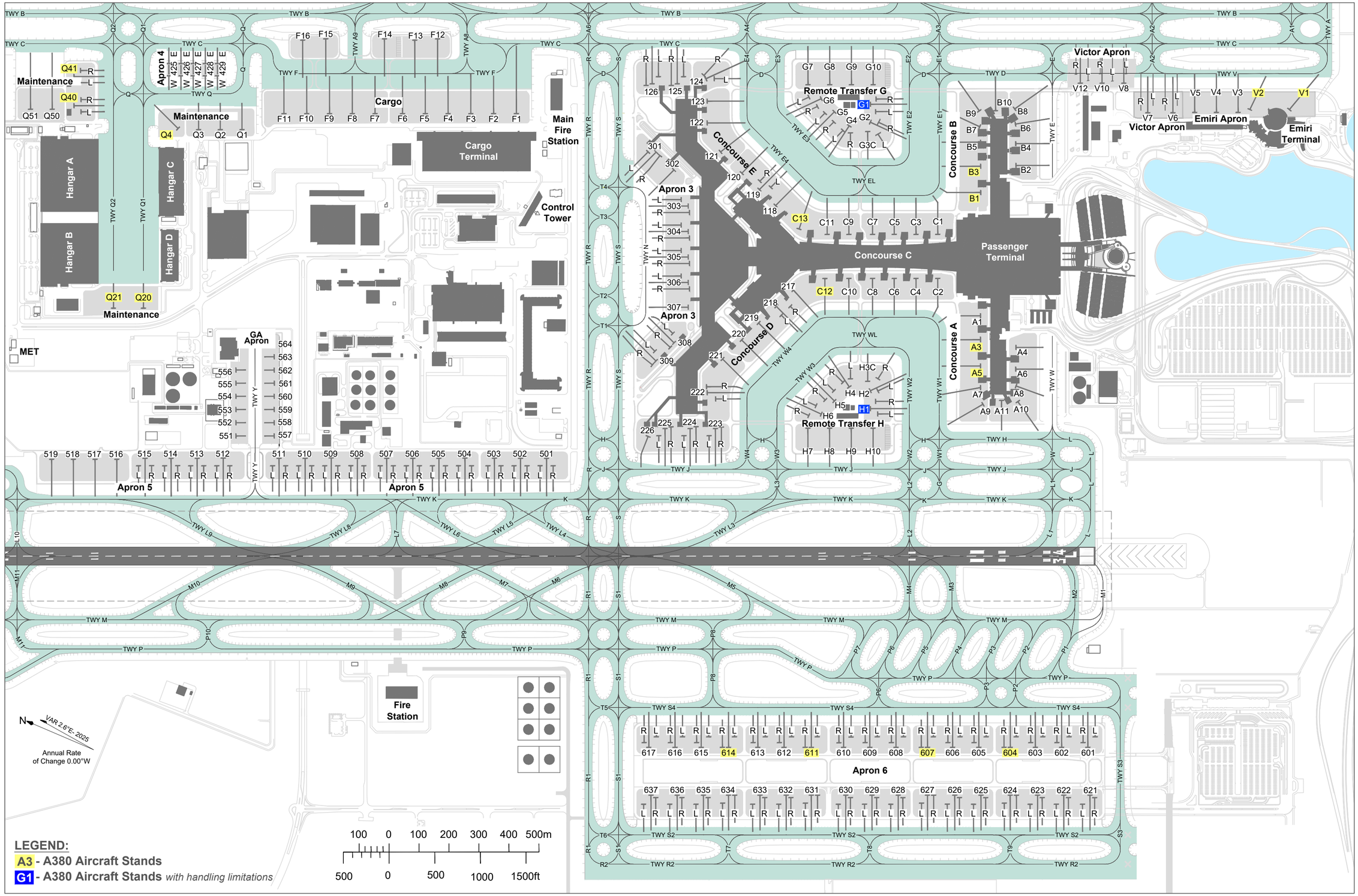
DISTANCES IN METRES, ALTITUDES, ELEVATIONS AND HEIGHTS IN FEET.

ARP
251628N
0513630E

APRON ELEV 17FT

HAMAD TWR EAST	118.525 / 118.225	HAMAD GROUND EAST	120.225 / 121.675
HAMAD TWR WEST	118.025 / 118.225	HAMAD GROUND WEST	118.575 / 121.675
HAMAD CLEARANCE DELIVERY	120.875	HAMAD GROUND CENTRAL	118.650 / 121.675
HAMAD DEPARTURE INFORMATION	126.850	HAMAD GROUND PLANNER	119.075
HAMAD ARRIVAL INFORMATION	126.825	HAMAD GROUND OVERFLOW	118.075

HAMAD Intl. OTHH



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A1	251540.55N 0513641.08E	G6	251605.33N 0513658.05E	119L	251606.85N 0513646.00E	427E	251709.92N 0513633.91E	558	251647.33N 0513557.92E*	622	251512.84N 0513551.73E*
A3	251539.59N 0513638.43E	G6L	251606.64N 0513657.68E	119R	251608.20N 0513646.19E	427W	251709.56N 0513632.91E	559	251647.86N 0513559.38E*	622R	251512.27N 0513551.65E*
A4	251535.70N 0513639.16E	G6R	251605.41N 0513657.02E	120	251610.31N 0513646.27E*	428E	251708.70N 0513634.45E	560	251648.39N 0513600.84E*	623L	251515.86N 0513549.22E*
A5	251538.53N 0513635.53E	G7	251607.28N 0513659.09E	121	251613.31N 0513647.69E*	428W	251708.34N 0513633.45E	561	251648.92N 0513602.30E*	623	251515.48N 0513550.57E*
A6	251534.83N 0513636.75E	G8	251605.09N 0513700.06E	122	251615.82N 0513650.31E*	429E	251707.48N 0513634.98E	562	251649.45N 0513603.76E*	623R	251514.91N 0513550.49E*
A7	251537.65N 0513633.14E	G9	251602.90N 0513701.02E	123	251616.69N 0513652.71E*	429W	251707.12N 0513633.99E	563	251649.98N 0513605.22E*	624L	251518.50N 0513548.20E*
A8	251534.14N 0513634.90E	G10	251600.72N 0513701.99E	124	251617.74N 0513655.14E*	501	251618.49N 0513606.06E	564	251650.52N 0513606.68E	624	251518.23N 0513549.36E*
A9	251536.73N 0513631.40E	H1	251547.90N 0513625.92E	124L	251616.90N 0513655.51E*	501L	251618.84N 0513604.95E	601L	251511.97N 0513559.43E*	624R	251517.60N 0513549.62E*
A10	251533.34N 0513633.25E	H1L	251546.94N 0513625.66E	124R	251618.07N 0513655.42E*	501R	251617.53N 0513605.53E	601	251512.35N 0513558.08E*	625L	251521.56N 0513546.71E*
A11	251534.92N 0513632.39E	H1R	251547.67N 0513626.96E	125	251620.41N 0513653.31E*	502	251621.11N 0513604.91E	601R	251512.92N 0513558.16E*	625	251521.17N 0513548.06E*
B1	251545.50N 0513654.74E	H2	251548.63N 0513627.90E	125L	251620.06N 0513654.38E*	502L	251621.47N 0513603.79E	602L	251514.61N 0513558.26E*	625R	251520.60N 0513547.98E*
B2	251543.04N 0513659.30E	H2L	251547.86N 0513628.22E	125R	251620.94N 0513652.85E*	502R	251620.15N 0513604.37E	602	251514.99N 0513556.92E*	626L	251524.19N 0513545.55E*
B3	251546.56N 0513657.64E	H2R	251548.34N 0513629.56E	126	251622.94N 0513652.19E*	503	251623.74N 0513603.75E	602R	251515.56N 0513556.99E*	626	251523.81N 0513546.89E*
B4	251543.92N 0513701.71E	H3C	251549.27N 0513628.83E	126L	2516'22.59N 0513653.27E*	503L	251624.09N 0513602.63E	603L	251517.25N 0513557.10E*	626R	251523.24N 0513546.82E*
B5	251547.55N 0513700.29E	H4	251550.89N 0513627.38E	126R	251623.48N 0513651.74E*	503R	251622.78N 0513603.21E	603	251517.63N 0513555.75E*	627L	251526.84N 0513544.53E*
B6	251544.74N 0513703.87E	H4L	251551.11N 0513628.34E	217	251600.42N 0513635.64E	504	251626.70N 0513602.44E	603R	251518.20N 0513555.83E*	627	251526.56N 0513545.68E*
B7	251548.25N 0513701.97E	H4R	251551.71N 0513627.62E	218	251601.46N 0513633.06E	504L	251627.06N 0513601.33E	604L	251519.88N 0513555.79E*	627R	251525.94N 0513545.95E*
B8	251545.46N 0513705.50E	H5	251551.82N 0513625.17E	218L	251600.63N 0513632.32E	504R	251625.74N 0513601.91E	604	251520.15N 0513554.64E*	628L	251529.89N 0513543.04E*
B9	251548.94N 0513703.71E	H5L	251552.28N 0513626.26E	218R	251600.09N 0513633.69E	505	251629.33N 0513601.29E	604R	251520.78N 0513554.37E*	628	251529.50N 0513544.39E*
B10	251547.31N 0513704.45E	H5R	251552.79N 0513624.87E	219	251602.58N 0513630.45E*	505L	251629.68N 0513600.17E	605L	251522.94N 0513554.59E*	628R	251528.93N 0513544.31E*
C1	251548.15N 0513648.22E	H6	251552.61N 0513623.13E	220	251603.60N 05136'27.82E*	505R	251628.37N 0513600.75E	605	251523.32N 0513553.24E*	629L	251532.53N 0513541.87E*
C2	251546.36N 0513643.29E	H6L	251553.48N 0513623.84E	221	251604.75N 05136'24.86E*	506	251631.95N 0513600.13E	605R	251523.89N 0513553.32E*	629	251532.14N 0513543.22E*
C3	251550.34N 0513647.25E	H6R	251553.81N 0513622.41E	222	251604.94N 05136'20.44E*	506L	251632.30N 0513559.01E	606L	251525.58N 0513553.43E*	629R	251531.57N 0513543.15E*
C4	251548.54N 0513642.33E	H7	251553.37N 0513620.90E	222L	251603.84N 0513620.12E*	506R	251630.99N 0513559.59E	606	251525.96N 0513552.08E*	630L	251535.17N 0513540.71E*
C5	251552.52N 0513646.29E	H8	251551.18N 0513621.86E	222R	251605.25N 05136'21.08E*	507	251634.57N 0513558.97E	606R	251526.53N 0513552.16E*	630	251534.78N 0513542.06E*
C6	251550.73N 0513641.37E	H9	251548.99N 0513622.83E	223	251602.67N 0513616.84E*	507L	251634.93N 0513557.86E	607L	251528.21N 0513552.12E*	630R	251534.21N 0513541.98E*
C7	251554.71N 0513645.33E	H10	251546.80N 0513623.79E	223L	251603.01N 0513615.77E*	507R	251633.62N 0513558.44E	607	251528.49N 0513550.97E*	631L	251538.52N 0513539.38E*
C8	251552.92N 0513640.40E	Q1	251702.40N 0513628.93E	223R	251602.14N 0513617.31E*	508	251637.54N 0513557.67E	607R	251529.11N 0513550.70E*	631	251538.25N 0513540.53E*
C9	251557.08N 0513644.25E	Q2	251704.59N 0513627.97E	224	251605.22N 0513615.71E*	508L	251637.89N 0513556.55E	608L	251531.27N 0513550.92E*	631R	251537.63N 0513540.80E*
C10	251555.30N 0513639.36E	Q3	251706.77N 0513627.00E	224L	251605.55N 0513614.65E*	508R	251636.58N 0513557.13E	608	251531.66N 0513549.57E*	632L	251541.16N 0513538.07E*
C11	251559.27N 0513643.28E	Q4	251708.88N 0513626.22E	224R	251604.69N 0513616.19E*	509	251640.16N 0513556.51E	608R	251532.23N 0513549.65E*	632	251540.78N 0513539.42E*
C12	251557.71N 0513638.27E	Q20	251705.13N 0513604.79E	225	251607.73N 0513614.61E*	509L	251640.52N 0513555.40E	609L	251533.91N 0513549.75E*	632R	251540.21N 0513539.34E*
C13	251602.32N 0513642.64E	Q21	251708.14N 0513603.46E	225L	251608.08N 0513613.54E*	509R	251639.21N 0513555.97E	609	251534.30N 0513548.41E*	633L	251543.80N 0513536.92E*
F1	251635.43N 0513642.87E	Q40	251720.28N 0513624.13E	225R	251607.20N 0513615.06E*	510	251642.79N 0513555.35E	609R	251534.87N 0513548.48E*	633	251543.42N 0513538.25E*
F2	251637.72N 0513641.86E	Q40L	251719.33N 0513623.77E	226	251609.12N 0513612.99E*	510L	251643.14N 0513554.24E	610L	251536.55N 0513548.59E*	633R	251542.84N 0513538.18E*
F3	251640.01N 0513640.85E	Q40R	251719.82N 0513625.11E	301	251619.78N 0513644.82E*	510R	251641.83N 0513554.81E	610	251536.94N 0513547.24E*	634L	251546.86N 0513535.70E*
F4	251642.30N 0513639.84E	Q41	251721.45N 0513627.36E	301L	251620.59N 0513644.48E*	511	251645.41N 0513554.20E	610R	251537.51N 0513547.32E*	634	251546.59N 0513536.86E*
F5	251644.60N 0513638.83E	Q41L	251720.51N 0513626.99E	301R	251619.25N 0513644.60E*	511L	251645.77N 0513553.08E	611L	251539.91N 0513546.97E*	634R	251545.96N 0513537.13E*
F6	251646.89N 0513637.82E	Q41R	251721.04N 0513628.32E	302	251617.26N 0513643.63E*	511R	251644.46N 0513553.66E	611	251540.18N 0513545.81E*	635L	251549.50N 0513534.39E*
F7	251649.65N 0513636.60E	Q50	251722.33N 0513622.76E	303	251614.37N 0513640.26E*	512	251651.03N 0513551.72E	611R	251540.81N 0513545.55E*	635	251549.11N 0513535.74E*
F8	251651.95N 0513635.60E	Q51	251724.52N 0513621.80E	303L	251615.34N 0513640.66E*	512L	251651.39N 0513550.60E	612L	251542.55N 0513545.95E*	635R	251548.54N 0513535.67E*
F9	251654.24N 0513634.58E	V1	251517.78N 0513717.60E	303R	251613.98N 0513639.60E*	512R	251650.08N 0513551.18E	612	251542.93N 0513544.60E*	636L	251552.13N 0513533.23E*
F10	251656.53N 0513633.57E	V2	251521.73N 0513715.83E*	304	251613.35N 0513637.44E*	513	251653.66N 0513550.56E	612R	251543.50N 0513544.68E*	636	251551.75N 0513534.58E*
F11	251658.82N 0513632.56E	V3	251522.82N 0513715.02E	304L	251614.32N 0513637.84E*	513L	251654.01N 0513549.45E	613L	251545.19N 0513544.78E*	636R	251551.18N 0513534.50E*
F12	251646.38N 0513647.66E	V4	251525.01N 0513714.05E	304R	251612.96N 0513636.78E*	513R	251652.70N 0513550.03E	613	251545.57N 0513543.44E*	637L	251554.77N 0513532.07E*
F13	251648.62N 0513646.50E	V5	251527.19N 0513713.09E	305	251612.32N 0513634.62E*	514	251656.28N 0513549.41E	613R	251546.14N 0513543.51E*	637	251554.39N 0513533.42E*
F14	251651.72N 0513645.30E	V6	251529.37N 0513712.09E*	305L	251613.29N 0513635.02E*	514L	251656.64N 0513548.29E	614L	251548.24N 0513543.30E*	637R	251553.81N 0513533.34E*
F15	251657.63N 0513642.70E	V6L	251529.22N 0513713.07E*	305R	251611.93N 0513633.96E*	514R	251655.32N 0513548.87E	614	251548.51N 0513542.14E*		
F16	251659.90N 0513641.53E	V6R	251530.24N 0513711.99E*	306	251611.29N 0513631.80E*	515	251658.91N 0513548.25E	614R	251549.14N 0513541.87E*		
G1	251600.17N 0513659.62E	V7	251531.90N 0513710.97E*	306L	251612.26N 0513632.20E*	515L	251659.26N 0513547.13E	615L	251550.88N 0513542.27E*		
G1L	251559.34N 0513659.04E	V7L	251531.66N 0513712.00E*	306R	251610.91N 0513631.14E*	515R	251657.95N 0513547.71E	615	251551.26N 0513540.93E*		
G1R	251559.80N 0513700.45E	V7R	251532.69N 0513710.92E*	307	251610.29N 0513629.06E*	516	251701.71N 0513546.89E	615R	251551.83N 0513541.00E*		
G2	251559.46N 0513657.63E	V8	251535.51N 0513713.18E*	308	251610.29N 0513624.48E*	517	251703.90N 0513545.93E	616L	251553.52N 0513541.11E*		
G2L	251558.20N 0513656.65E	V8L	251535.65N 0513714.33E*	308L	251610.78N 0513625.47E*	518	251706.08N 0513544.96E	616	251553.90N 0513539.76E*		
G2R	251558.62N 0513657.98E	V10	251537.70N 0513712.22E*	308R	251610.48N 0513623.81E*	519	251708.27N 0513544.00E	616R	251554.47N 0513539.84E*		
G3C	251559.34N 0513656.47E	V10L	251536.74N 0513712.91E*	309	251611.38N 0513621.68E*	551	251650.65N 0513554.76E*	617L	251556.16N 0513539.95E*		
G4	251601.42N 0513656.29E	V10R	251538.26N 0513713.18E*	309L	251611.87N 0513622.71E*	552	251651.19N 0513556.22E*	617	251556.54N 0513538.60E*		
G4L	251601.87N 0513655.50E	V12	251539.88N 0513711.26E*	309R	251611.58N 0513621.09E*	553	251651.72N 0513557.68E*	617R	251557.11N 0513538.68E*		
G4R	251601.02N 0513655.56E	V12L	251539.20N 0513711.89E*	425E	251712.37N 0513632.83E	554	251652.25N 0513559.14E	621L	251510.58N 0513551.55E*		
G5	251603.48N 0513657.18E	V12R	251540.68N 0513712.04E*	425W	251712.00N 0513631.84E	555	251652.78N 0513600.60E*	621	251510.20N 0513552.89E*		
G5L	251604.38N 0513656.62E	118	251605.62N 0513644.21E	426E	251711.14N 0513633.37E	556	251653.31N 0513602.06E*	621R	251509.63N 0513552.82E*		
G5R	251603.13N 0513656.05E	119	251607.89N 0513645.28E	426W	251710.78N 0513632.37E	557	251646.79N 0513556.46E*	622L	251513.22N 0513550.38E*		

Note: * - Calculated data

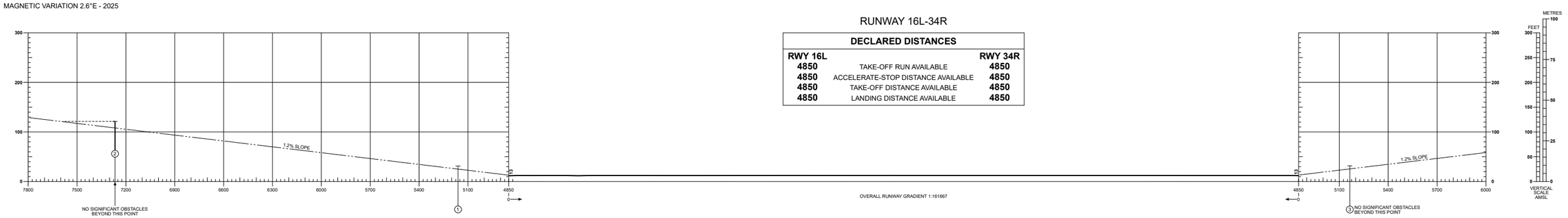
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ELEVATIONS IN FEET
ALL OTHER DIMENSIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A OPERATING LIMITATIONS

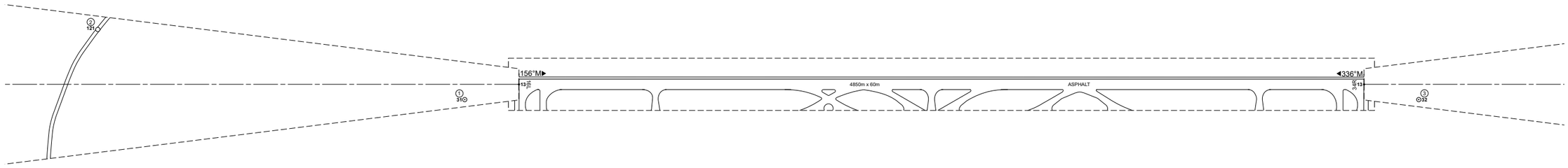
DOHA/Hamad Intl. (OTHH)
16L/34R - QATAR

MAGNETIC VARIATION 2.6°E - 2025



RUNWAY 16L-34R

DECLARED DISTANCES		
RWY 16L		**RWY 34R**
4850	TAKE-OFF RUN AVAILABLE	**4850**
4850	ACCELERATE-STOP DISTANCE AVAILABLE	**4850**
4850	TAKE-OFF DISTANCE AVAILABLE	**4850**
4850	LANDING DISTANCE AVAILABLE	**4850**



HORIZONTAL SCALE
METRES
500 400 300 200 100 0 500 1000 1500 2000 2500 3000
FEET
1000 500 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

ORDER OF ACCURACY: Horizontal 3m; Vertical 1ft
CHANGE:
Aerodrome information current SEPTEMBER 2014
Based on survey dated JAN 2020

LEGEND		
	PLAN	PROFILE
IDENTIFICATION NUMBER	③	③
HEIGHT AMSL	32	
POLE, TOWER, SPIRE, ANTENNA, ETC.	⊙	
MOBILE OBSTACLE		

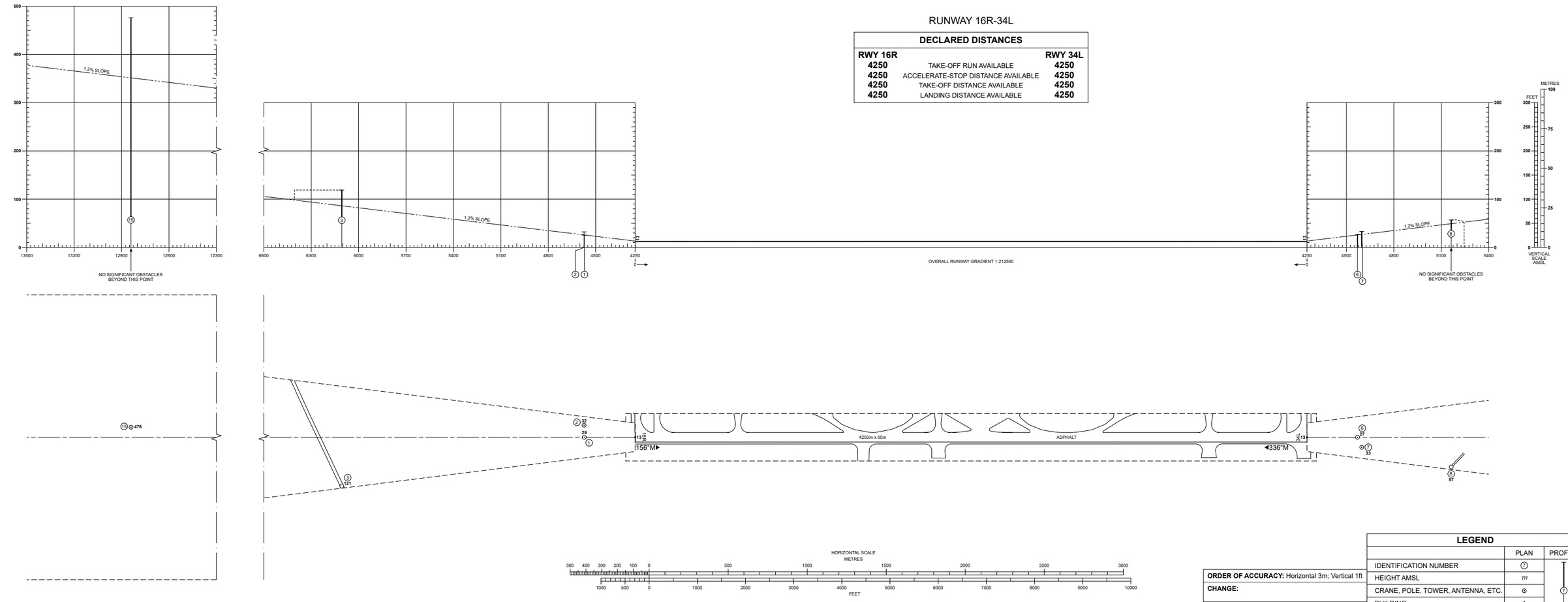
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ELEVATIONS IN FEET
ALL OTHER DIMENSIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A OPERATING LIMITATIONS

DOHA/Hamad Intl. (OTHH)
16R/34L - QATAR

MAGNETIC VARIATION 2.6°E - 2025



RUNWAY 16R-34L

DECLARED DISTANCES		
RWY 16R		RWY 34L
4250	TAKE-OFF RUN AVAILABLE	4250
4250	ACCELERATE-STOP DISTANCE AVAILABLE	4250
4250	TAKE-OFF DISTANCE AVAILABLE	4250
4250	LANDING DISTANCE AVAILABLE	4250

LEGEND		
	PLAN	PROFILE
IDENTIFICATION NUMBER	⑦	
HEIGHT AMSL	777	
CRANE, POLE, TOWER, ANTENNA, ETC.	⊙	⑦
BUILDING	◆	
MOBILE OBSTACLE		

ORDER OF ACCURACY: Horizontal 3m; Vertical 1ft

CHANGE:

Aerodrome information current SEPTEMBER 2014

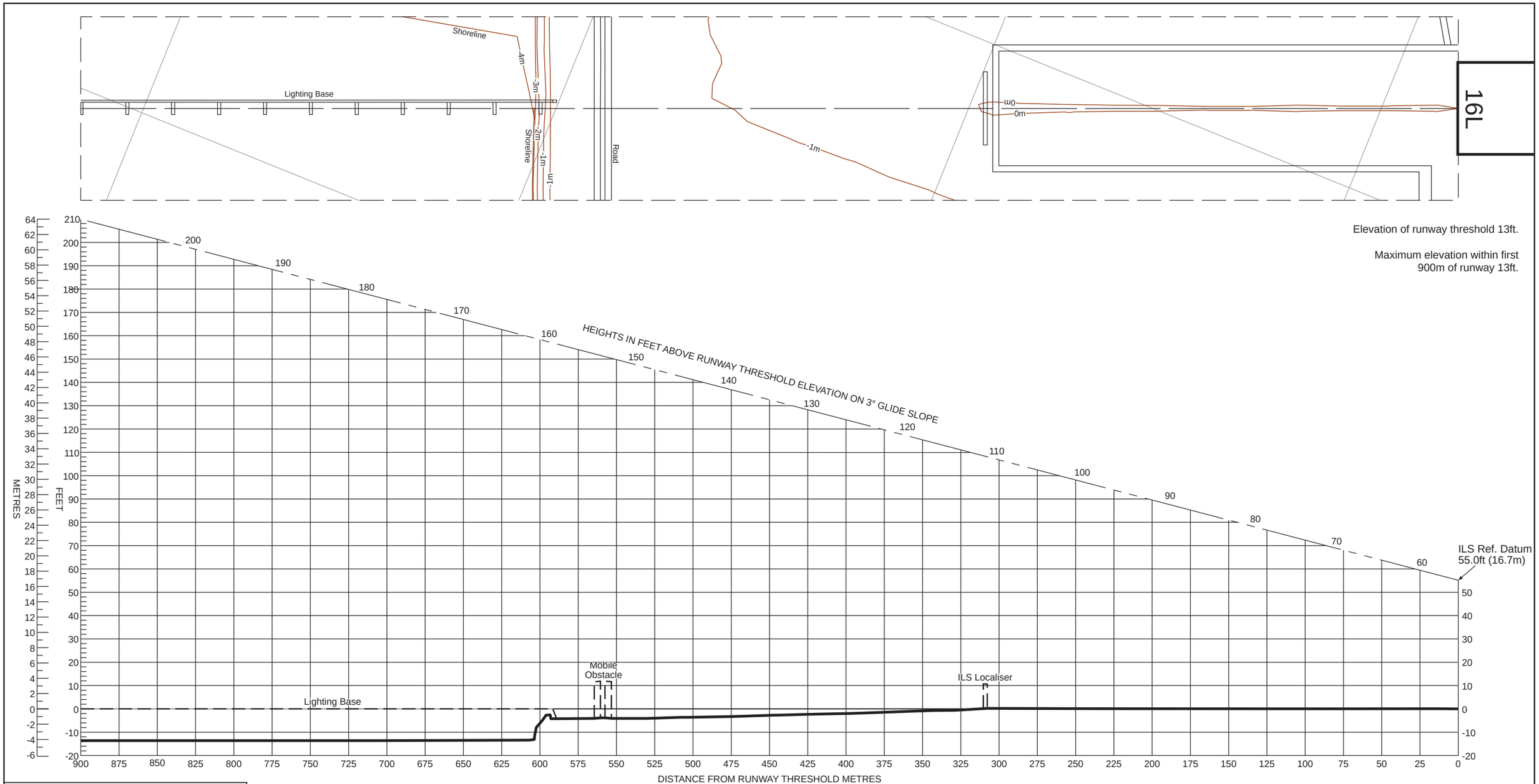
Based on survey dated January 2020

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ELEVATIONS IN FEET
ALL OTHER DIMENSIONS IN METRES

PRECISION APPROACH TERRAIN CHART - ICAO

DOHA/Hamad Intl. (OTHH)
RUNWAY 16L



Elevation of runway threshold 13ft.

Maximum elevation within first 900m of runway 13ft.

LEGEND	
BUILDING OR LARGE STRUCTURE	
CENTRELINE PROFILE	
DEVIATION OF ±10ft (3m) IN HEIGHT FROM CENTRELINE PROFILE	

HORIZONTAL SCALE 1:2500

VERTICAL SCALE 1:500

CONTOURS AND HEIGHTS ARE RELATED TO ELEVATION OF RUNWAY THRESHOLD

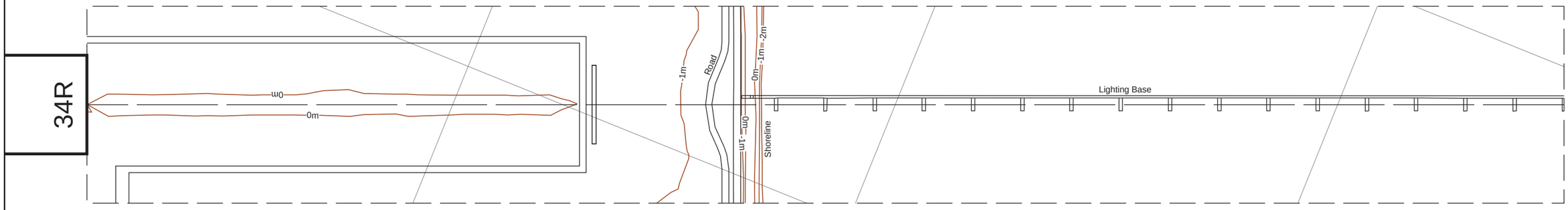
CHANGE:
Aerodrome information current JAN 2013 V2
Based on survey dated AUG 2015

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ELEVATIONS IN FEET
ALL OTHER DIMENSIONS IN METRES

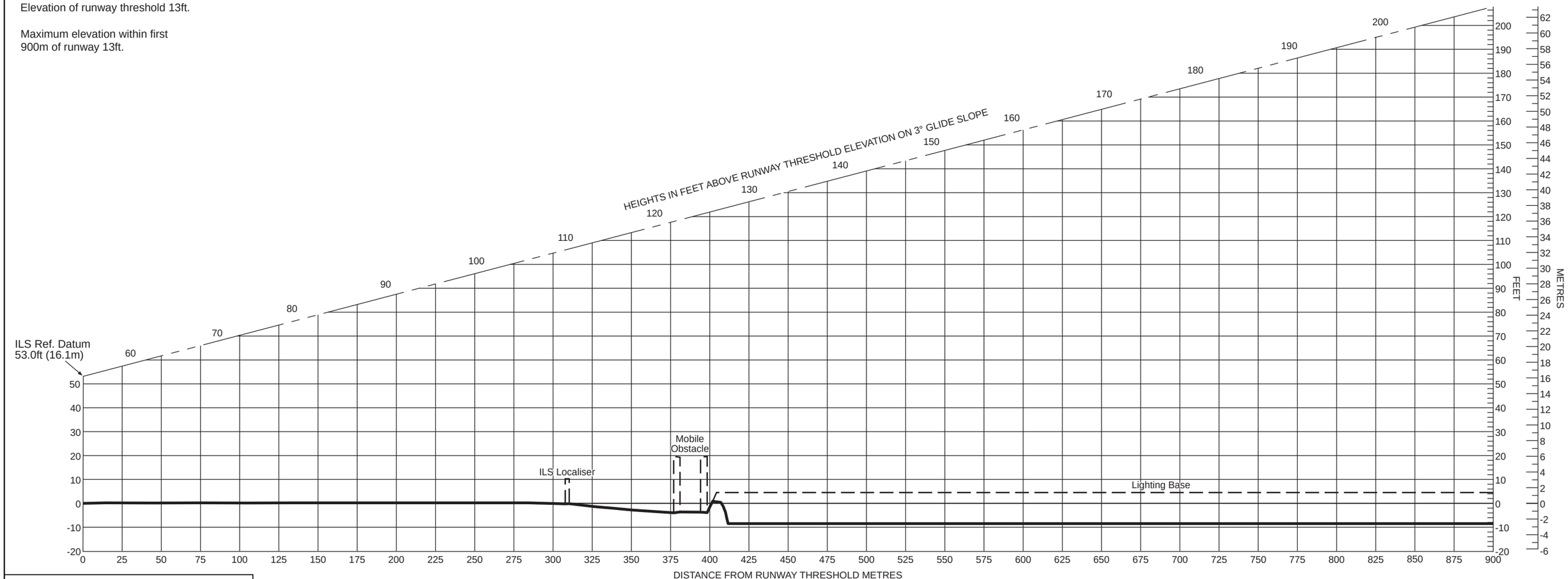
PRECISION APPROACH TERRAIN CHART - ICAO

DOHA/Hamad Intl. (OTHH)
RUNWAY 34R



Elevation of runway threshold 13ft.

Maximum elevation within first
900m of runway 13ft.



LEGEND	
BUILDING OR LARGE STRUCTURE	
CENTRELINE PROFILE	
DEVIATION OF ±10ft (3m) IN HEIGHT FROM CENTRELINE PROFILE	

HORIZONTAL SCALE 1:2500

VERTICAL SCALE 1:500

CONTOURS AND HEIGHTS ARE RELATED TO ELEVATION OF RUNWAY THRESHOLD

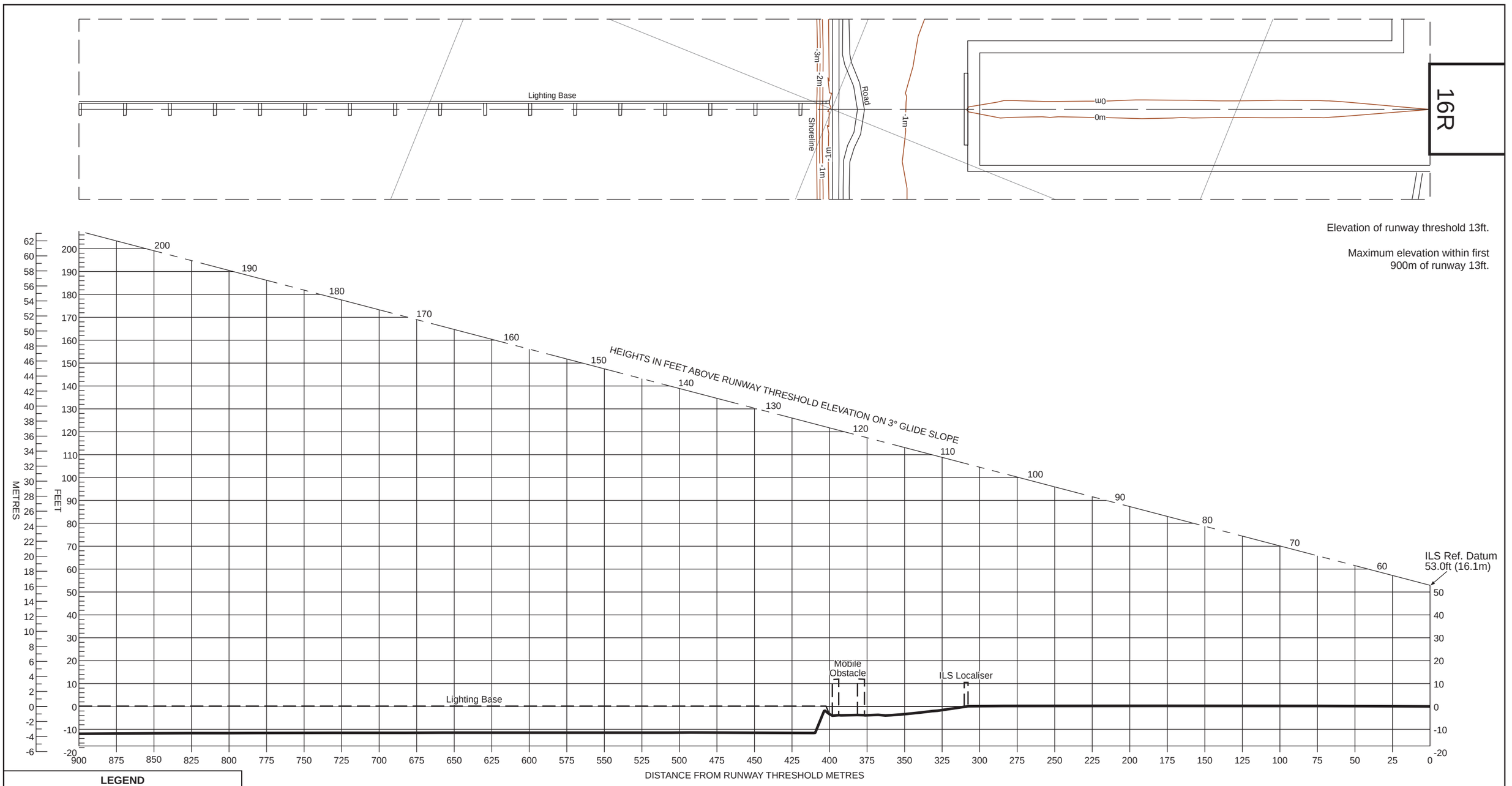
CHANGE:
Aerodrome information current JAN 2013 V2
Based on survey dated AUG 2015

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ELEVATIONS IN FEET
ALL OTHER DIMENSIONS IN METRES

PRECISION APPROACH TERRAIN CHART - ICAO

DOHA/Hamad Intl. (OTHH)
RUNWAY 16R



LEGEND	
BUILDING OR LARGE STRUCTURE	
CENTRELINE PROFILE	
DEVIATION OF ±10ft (3m) IN HEIGHT FROM CENTRELINE PROFILE	

HORIZONTAL SCALE 1:2500

VERTICAL SCALE 1:500

CONTOURS AND HEIGHTS ARE RELATED TO ELEVATION OF RUNWAY THRESHOLD

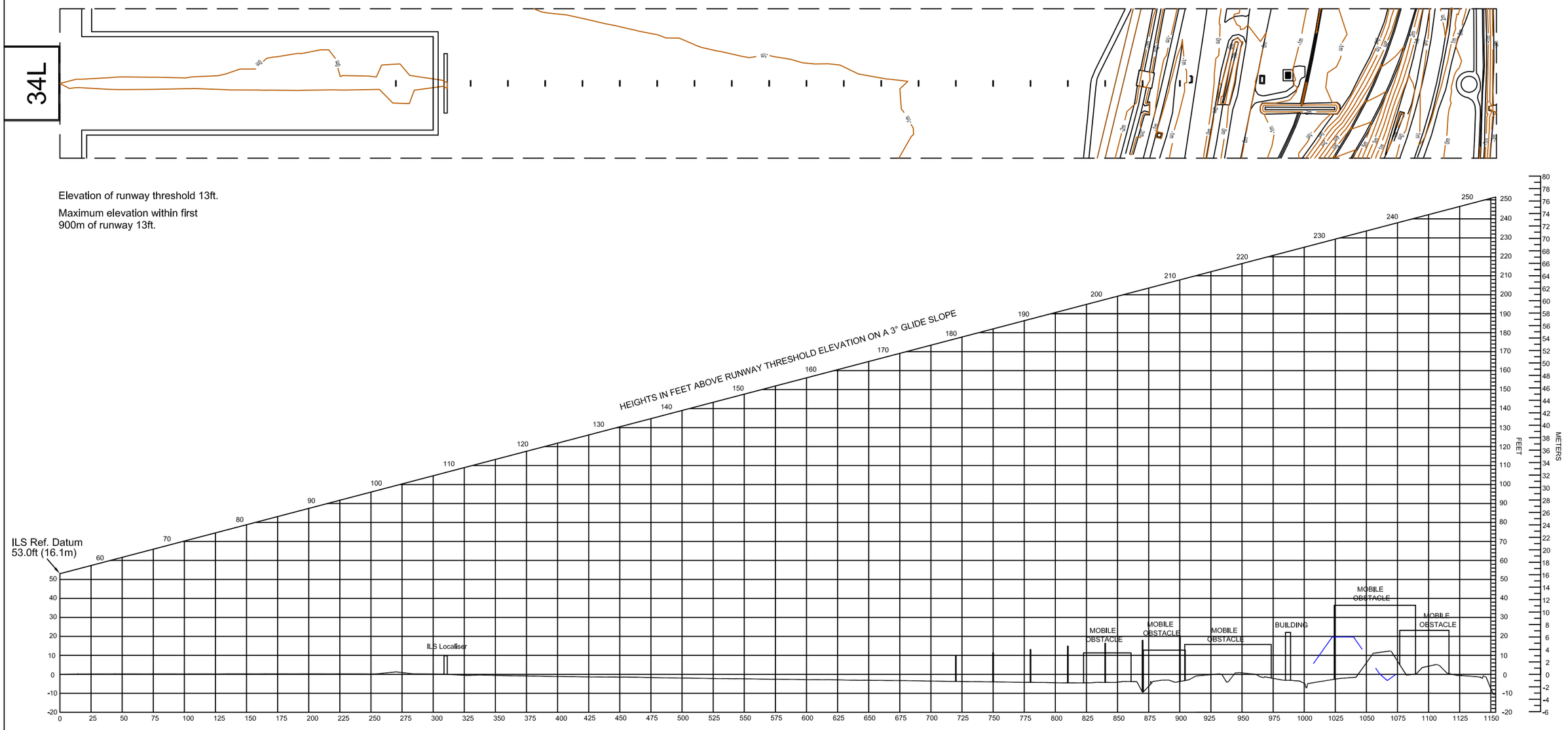
CHANGE:
Aerodrome information current JAN 2013 V2
Based on survey dated AUG 2015

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ELEVATIONS IN METERS
ALL OTHER DIMENSIONS IN METRES

PRECISION APPROACH TERRAIN CHART - ICAO

DOHA/Hamad Intl. (OTHH)
RUNWAY 34L



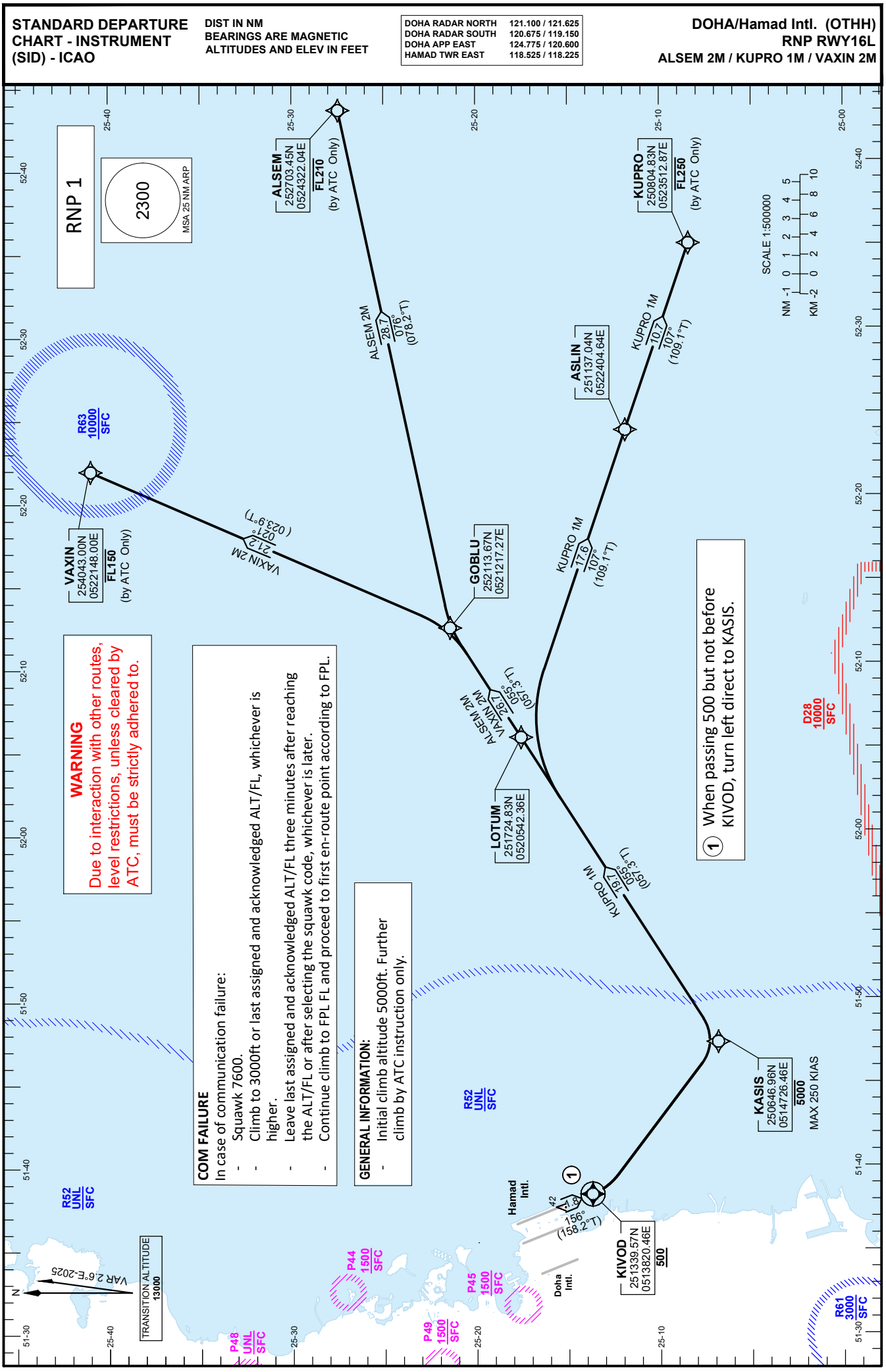
LEGEND	
BUILDING OR LARGE STRUCTURE	
CENTRELINE PROFILE	
DEVIATION AT LEAST ±10FT (3M) FROM CENTRELINE PROFILE	
APPROACH LIGHT	

HORIZONTAL SCALE 1:2500
VERTICAL SCALE 1:500
CONTOURS AND HEIGHTS ARE IN METRES AND RELATED TO ELEVATION OF RUNWAY THRESHOLD

CHANGE:
Aerodrome Information Current JUNE 2014
Based on survey dated AUG 2015

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO
DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET
DOHA RADAR NORTH 121.100 / 121.625
DOHA RADAR SOUTH 120.675 / 119.150
DOHA APP EAST 124.775 / 120.600
HAMAD TWR EAST 118.525 / 118.225
DOHA/Hamad Intl. (OTHH)
RNP RWY16L
ALSEM 2M / KUPRO 1M / VAXIN 2M
RNP 1
2300
MSA 25 NM ARP
ALSEM
252703.45N
0524322.04E
FL210
(by ATC Only)
KUPRO
250804.83N
0523512.87E
FL250
(by ATC Only)
ASLIN
251137.04N
0522404.64E
VAXIN
254043.00N
0522148.00E
FL150
(by ATC Only)
GOBLU
252113.67N
0521217.27E
LOTUM
251724.83N
0520542.36E
KASIS
250646.96N
0514726.46E
5000
MAX 250 KIAS
KIVOD
251339.57N
0513820.46E
500
ALSEM 2M
28.7
076°
(078.2°T)
KUPRO 1M
10.7
107°
(109.1°T)
KUPRO 1M
17.6
107°
(109.1°T)
VAXIN 2M
21.2
021°
(023.9°T)
ALSEM 2M
VAXIN 2M
21.7
055°
(057.3°T)
KUPRO 1M
19.1
055°
(057.3°T)
R63
10000
SFC
R52
UNL
SFC
R52
UNL
SFC
D28
10000
SFC
R61
3000
SFC
P44
1500
SFC
P45
1500
SFC
P49
1500
SFC
P48
UNL
SFC
WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.
COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.
GENERAL INFORMATION:
- Initial climb altitude 5000ft. Further climb by ATC instruction only.
1 When passing 500 but not before KIVOD, turn left direct to KASIS.
SCALE 1:500000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10
VAR 2.6°E-2025
TRANSITION ALTITUDE 13000
Hamad Intl.
Doha Intl.
42
7.6
156°
(158.2°T)

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L
ALSEM 2M / KUPRO 1M / VAXIN 2M

TABULAR DESCRIPTION

RNP SID ALSEM 2M

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	KASIS	-	-	-2.6	-	L	-5000	-250	-	RNP 1
4	TF	GOBLU	-	055 (057.3)	-2.6	26.7	-	-	-	-	RNP 1
5	TF	ALSEM	-	076 (078.2)	-2.6	28.7	-	-FL210	-	-	RNP 1
Remarks	ALSEM -FL210 by ATC only										

RNP SID KUPRO 1M

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	KASIS	-	-	-2.6	-	L	-5000	-250	-	RNP 1
4	TF	LOTUM	-	055 (057.3)	-2.6	19.7	-	-	-	-	RNP 1
5	TF	ASLIN	-	107 (109.1)	-2.6	17.6	-	-	-	-	RNP 1
6	TF	KUPRO	-	107 (109.1)	-2.6	10.7	-	-FL250	-	-	RNP 1
Remarks	KUPRO -FL250 by ATC only										

RNP SID VAXIN 2M

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	KASIS	-	-	-2.6	-	L	-5000	-250	-	RNP 1
4	TF	GOBLU	-	055 (057.3)	-2.6	26.7	-	-	-	-	RNP 1
5	TF	VAXIN	-	021 (023.9)	-2.6	21.2	-	-FL150	-	-	RNP 1
Remarks	VAXIN -FL150 by ATC only										

WAYPOINT LIST

RNP SID ALSEM 2M / KUPRO 1M / VAXIN 2M

Waypoint Identifier	Coordinates
KIVOD	251339.57N 0513820.46E
KASIS	250646.96N 0514726.46E
GOBLU	252113.67N 0521217.27E
ALSEM	252703.45N 0524322.04E
LOTUM	251724.83N 0520542.36E
ASLIN	251137.04N 0522404.64E
KUPRO	250804.83N 0523512.87E
VAXIN	254043.00N 0522148.00E

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L
ALVEN 2M / LUBET 1M / LUBET 1Y / TULUB 1M

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

RNP 1

N
VAR 2.6°E-2025

2300
MSA 25 NM ARP

TRANSITION ALTITUDE
13000

LUBET
261440.67N
0510346.54E
FL180
(by ATC Only)

MISEL
260906.55N
0510850.78E

TULUB
260644.00N
0510041.00E
FL180
(by ATC Only)

PATOM
255821.41N
0511836.36E
FL160
(by ATC Only)

IMSUN
255445.54N
0513833.11E
FL170

ALVEN
255418.19N
0515315.30E
FL150
(by ATC Only)

ALNAK
255053.49N
0513401.89E

EMISA
254658.35N
0514206.68E

DEBIL
254336.08N
0513726.39E
13000

GIBIN
254006.23N
0514417.85E

PASIS
253154.63N
0514146.81E
8000
7000

GIDOS
252502.23N
0514447.73E
5000

DERTI
251934.52N
0514711.24E
4000

KIVOD
251339.57N
0513820.46E
500

MIRAV
251400.80N
0514937.14E
MAX 250 KIAS

R53 3000 SFC
R51 3000 SFC
R52 UNL SFC
R55 3000 SFC
R62 13000 SFC
R60 1000 SFC
P43 15000 SFC
P48 UNL SFC
P44 1500 SFC
P49 1500 SFC
P45 1500 SFC
P47 5000 SFC
R58 3000 SFC
D29 500 SFC
R56 5000 SFC
R61 3000 SFC

Hamad Intl.
Doha Intl.
Al-Udaid

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

(1) When passing 500 but not before KIVOD, turn left direct to MIRAV.

(2) Further climb clearance by ATC.

GENERAL INFORMATION:
- Initial climb altitude 5000ft. Further climb by ATC instruction only.

SCALE 1:500000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L
ALVEN 2M / LUBET 1M / LUBET 1Y / TULUB 1M

TABULAR DESCRIPTION

RNP SID ALVEN 2M

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	MIRAV	-	-	-2.6	-	L	-	-250	-	RNP 1
4	TF	DERTI	-	336 (338.3)	-2.6	6.0	-	+4000	-	-	RNP 1
5	TF	GIDOS	-	336 (338.3)	-2.6	5.9	-	@5000	-	-	RNP 1
6	TF	PASIS	-	336 (338.3)	-2.6	7.4	-	-8000/+7000	-	-	RNP 1
7	TF	GIBIN	-	013 (015.6)	-2.6	8.5	-	-	-	-	RNP 1
8	TF	ALVEN	-	027 (029.7)	-2.6	16.3	-	-FL150	-	-	RNP 1
Remarks		ALVEN -FL150 by ATC only									

RNP SID LUBET 1M

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	MIRAV	-	-	-2.6	-	L	-	-250	-	RNP 1
4	TF	DERTI	-	336 (338.3)	-2.6	6.0	-	+4000	-	-	RNP 1
5	TF	GIDOS	-	336 (338.3)	-2.6	5.9	-	@5000	-	-	RNP 1
6	TF	PASIS	-	336 (338.3)	-2.6	7.4	-	-8000/+7000	-	-	RNP 1
7	TF	GIBIN	-	013 (015.6)	-2.6	8.5	-	-	-	-	RNP 1
8	TF	EMISA	-	341 (343.9)	-2.6	7.1	-	-	-	-	RNP 1
9	TF	IMSUN	-	335 (337.5)	-2.6	8.4	-	-FL170	-	-	RNP 1
10	TF	MISEL	-	296 (298.2)	-2.6	30.3	-	-	-	-	RNP 1
11	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks		LUBET +FL180 by ATC only									

RNP SID LUBET 1Y

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	KIVOD	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	-	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	MIRAV	-	-	-2.6	-	L	-	-250	-	RNP 1
4	TF	DERTI	-	336 (338.3)	-2.6	6.0	-	+4000	-	-	RNP 1
5	TF	GIDOS	-	336 (338.3)	-2.6	5.9	-	@5000	-	-	RNP 1
6	TF	PASIS	-	336 (338.3)	-2.6	7.4	-	-8000/+7000	-	-	RNP 1
7	TF	DEBIL	-	339 (341.4)	-2.6	12.3	-	-13000	-	-	RNP 1
8	TF	ALNAK	-	334 (337.1)	-2.6	7.9	-	-	-	-	RNP 1
9	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
10	TF	MISEL	-	318 (320.7)	-2.6	13.9	-	-	-	-	RNP 1
11	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks		PATOM +FL160 and LUBET +FL180 by ATC only									

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RNP SID TULUB 1M											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**KIVOD**	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	**-**	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	**MIRAV**	-	-	-2.6	-	L	-	-250	-	RNP 1
4	TF	**DERTI**	-	336 (338.3)	-2.6	6.0	-	+4000	-	-	RNP 1
5	TF	**GIDOS**	-	336 (338.3)	-2.6	5.9	-	@5000	-	-	RNP 1
6	TF	**PASIS**	-	336 (338.3)	-2.6	7.4	-	-8000/+7000	-	-	RNP 1
7	TF	**DEBIL**	-	339 (341.4)	-2.6	12.3	-	-13000	-	-	RNP 1
8	TF	**ALNAK**	-	334 (337.1)	-2.6	7.9	-	-	-	-	RNP 1
9	TF	**PATOM**	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
10	TF	**TULUB**	-	295 (297.4)	-2.6	18.2	-	+FL180	-	-	RNP 1
Remarks		PATOM +FL160 and TULUB +FL180 by ATC only									

WAYPOINT LIST

RNP SID ALVEN 2M /LUBET 1M /LUBET 1Y /TULUB 1M	
Waypoint Identifier	**Coordinates**
KIVOD	251339.57N 0513820.46E
MIRAV	251400.80N 0514937.14E
DERTI	251934.52N 0514711.24E
GIDOS	252502.23N 0514447.73E
PASIS	253154.63N 0514146.81E
GIBIN	254006.23N 0514417.85E
ALVEN	255418.19N 0515315.30E

RNP SID ALVEN 2M /LUBET 1M /LUBET 1Y /TULUB 1M	
Waypoint Identifier	**Coordinates**
EMISA	254658.35N 0514206.68E
IMSUN	255445.54N 0513833.11E
MISEL	260906.55N 0510850.78E
LUBET	261440.67N 0510346.54E
DEBIL	254336.08N 0513726.39E
ALNAK	255053.49N 0513401.89E
PATOM	255821.41N 0511836.36E
TULUB	260644.00N 0510041.00E

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L
KASIS TWO RADAR DEPARTURE
KASIS 2

RNP 1

N
VAR 2.6°E-2025

TRANSITION ALTITUDE
13000

2300
MSA 25 NM ARP

TULUB
260644.00N
0510041.00E

PATOM
255821.41N
0511836.36E
FL160
(by ATC Only)

ALNAK
255053.49N
0513401.89E

KOBEN
253921.98N
0513334.39E
FL150

ENELI
252959.45N
0512502.14E
12000

GIRKA
251738.38N
0512108.29E
9000

KIVOD
251339.57N
0513820.46E

KASIS
250646.96N
0514726.46E
5000
MAX 250 KIAS

KUSIL
250830.24N
0520036.92E

LONOG
250353.00N
0521704.51E

BUNDU
250024.00N
0522924.00E
FL250
(by ATC Only)

KUTER
250149.00N
0512807.93E
6000

IMKAT
250138.57N
0514220.38E

ULIKA
251545.29N
0503848.79E
FL200
(by ATC Only)

MURKI
245213.59N
0513122.69E
7000

KATOV
245505.82N
0513913.83E

NORLU
250111.79N
0505359.43E

GIBOV
244937.46N
0512416.92E

SOLAL
244558.18N
0513454.33E
7000

DATRI
244239.38N
0513407.28E

Not to scale
KIVOD
KASIS

RADAR required:
Expect "DCT to" clearances.
MCAs apply.

Expected ATC Routeing

(1) When passing 500 but not before KIVOD, turn left direct to KASIS

GENERAL INFORMATION:
- Initial climb altitude 5000ft. Further climb by ATC instruction only.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

SCALE 1:750000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L
KASIS TWO RADAR DEPARTURE
KASIS 2

TABULAR DESCRIPTION

RNP SID KASIS 2

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	**KIVOD**	Y	156 (158.2)	-2.6	1.8	-	-	-	-	RNP 1
2	CA	**-**	-	156 (158.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	**KASIS**	-	-	-2.6	-	L	-5000	-250	-	RNP 1
4	FM	**KASIS**	-	127 (129.7)	-2.6	-	-	-	-	-	RNP 1
Remarks		NIL									

RADAR Vectoring to En-Route	
FPL route via	**Expected ATC routeing after KASIS**
BUNDU	KUSIL - LONOG - BUNDU
DATRI	IMKAT - KATOV - SOLAL - DATRI
TULUB	IMKAT - KUTER - GIRKA - ENELI - KOBEN - ALNAK - PATOM - TULUB
ULIKA	IMKAT - KATOV - MURKI - GIBOV - NORLU - ULIKA

WAYPOINT LIST

KASIS 2

Waypoint Identifier	Coordinates
KIVOD	251339.57N 0513820.46E
KASIS	250646.96N 0514726.46E

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16R
BUNDU 2C

RNP 1

2300
MSA 25 NM ARP

N
VAR 2.6°E-2025

TRANSITION ALTITUDE
13000

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

GENERAL INFORMATION:
- Initial climb altitude 7000ft. Further climb by ATC instruction only.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

BUNDU
250024.00N
0522924.00E
FL250
(by ATC Only)

LONOG
250353.00N
0521704.51E

KUSIL
250830.24N
0520036.92E

KIREB
250137.78N
0514849.39E
7000

IMKAT
250138.57N
0514220.38E

IVENA
250615.83N
0514018.65E
2500

BUNDU 2C
11.7
105°
(107.2°T)

BUNDU 2C
15.6
104°
(107.1°T)

BUNDU 2C
7.7
095°
(097.3°T)

5.9
088°
(090.1°T)

5.0
156°
(158.2°T)

BUNDU 2C
9.7
156°
(158.2°T)

SCALE 1:500000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

Hamad Intl.
Doha Intl.

D28 10000 SFC
R52 UNL SFC
P44 1500 SFC
P45 1500 SFC
P49 1500 SFC
P48 UNL SFC
P47 5000 SFC
R58 3000 SFC
D29 500 SFC
R56 5000 SFC
R52 UNL SFC
R61 3000 SFC
R59 3000 SFC
R54 1500 SFC

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16R
BUNDU 2C

TABULAR DESCRIPTION

RNP SID BUNDU 2C											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**IVENA**	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	TF	**IMKAT**	-	156 (158.2)	-2.6	5.0	-	-	-	-	RNP 1
3	TF	**KIREB**	-	088 (090.1)	-2.6	5.9	-	-7000	-	-	RNP 1
4	TF	**KUSIL**	-	055 (057.3)	-2.6	12.7	-	-	-	-	RNP 1
5	TF	**LONOG**	-	104 (107.1)	-2.6	15.6	-	-	-	-	RNP 1
6	TF	**BUNDU**	-	105 (107.2)	-2.6	11.7	-	-FL250	-	-	RNP 1
Remarks	BUNDU -FL250 by ATC only										

WAYPOINT LIST

RNP SID BUNDU 2C	
Waypoint Identifier	**Coordinates**
IVENA	250615.83N 0514018.65E
IMKAT	250138.57N 0514220.38E
KIREB	250137.78N 0514849.39E
KUSIL	250830.24N 0520036.92E
LONOG	250353.00N 0521704.51E
BUNDU	250024.00N 0522924.00E

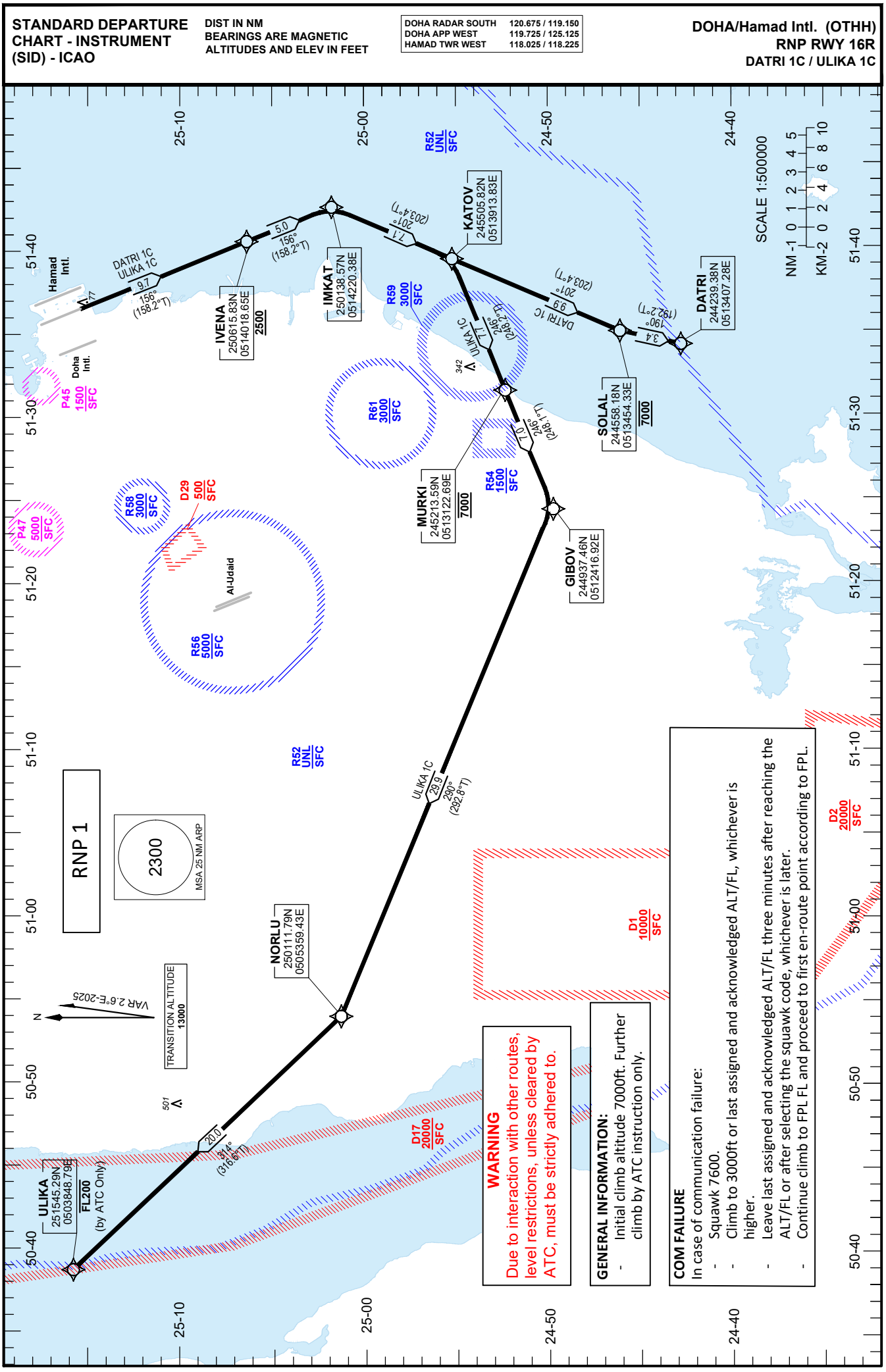
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16R
DATRI 1C / ULIKA 1C



WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

GENERAL INFORMATION:
- Initial climb altitude 7000ft. Further climb by ATC instruction only.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Leave last assigned and acknowledged ALT/FL or after selecting the squawk code, whichever is higher.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY16R
DATRI 1C / ULIKA 1C

TABULAR DESCRIPTION

RNP SID DATRI 1C

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	IVENA	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	TF	IMKAT	-	156 (158.2)	-2.6	5.0	-	-	-	-	RNP 1
3	TF	KATOV	-	201 (203.4)	-2.6	7.1	-	-	-	-	RNP 1
4	TF	SOLAL	-	201 (203.4)	-2.6	9.9	-	@7000	-	-	RNP 1
5	TF	DATRI	-	190 (192.2)	-2.6	3.4	-	-	-	-	RNP 1
Remarks											

RNP SID ULIKA 1C

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	IVENA	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	TF	IMKAT	-	156 (158.2)	-2.6	5.0	-	-	-	-	RNP 1
3	TF	KATOV	-	201 (203.4)	-2.6	7.1	-	-	-	-	RNP 1
4	TF	MURKI	-	246 (248.2)	-2.7	7.7	-	@7000	-	-	RNP 1
5	TF	GIBOV	-	246 (248.1)	-2.6	7.0	-	-	-	-	RNP 1
6	TF	NORLU	-	290 (292.8)	-2.6	29.9	-	-	-	-	RNP 1
7	TF	ULIKA	-	314 (316.6)	-2.6	20.0	-	-FL200	-	-	RNP 1
Remarks				ULIKA -FL200 by ATC only							

WAYPOINT LIST

RNP SID DATRI 1C / ULIKA 1C

Waypoint Identifier	Coordinates
IVENA	250615.83N 0514018.65E
IMKAT	250138.57N 0514220.38E
KATOV	245505.82N 0513913.83E
SOLAL	244558.18N 0513454.33E
DATRI	244239.38N 0513407.28E
MURKI	245213.59N 0513122.69E
GIBOV	244937.46N 0512416.92E
NORLU	250111.79N 0505359.43E
ULIKA	251545.29N 0503848.79E

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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16R
IVENA THREE RADAR DEPARTURE
IVENA 3

RNP 1

2300
MSA 25 NM ARP

TRANSITION ALTITUDE
13000

VAR 2.6°E-2025

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

RADAR required:
Expect "DCT to" clearances.
MCAs apply.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

GENERAL INFORMATION:
- Initial climb altitude 5000ft. Further climb by ATC instruction only.

Expected ATC Routing

LUBET
261440.67N
0510346.54E
FL180
(by ATC Only)

MISEL
260906.55N
0510850.78E

PATOM
255821.41N
0511836.36E
FL160
(by ATC Only)

ALNAK
255053.49N
0513401.89E

IMSUN
255445.54N
0513833.11E
FL170

EMISA
254658.35N
0514206.68E

ALVEN
255418.19N
0515315.30E
FL150
(by ATC Only)

DEBIL
254336.08N
0513726.39E
13000

GIBIN
254006.23N
0514417.85E

PASIS
253154.63N
0514146.81E
8000
7000

GIDOS
252502.23N
0514447.73E
5000

DERTI
251934.52N
0514711.24E
4000

VAXIN
254043.00N
0522148.00E
FL150
(by ATC Only)

IVENA
250615.83N
0514018.65E
2500

MIRAV
251400.80N
0514937.14E

KASIS
250646.96N
0514726.46E
5000

GOBLU
252113.67N
0521217.27E

LOTUM
251724.83N
0520542.36E

ALSEM
252703.45N
0524322.04E
FL210
(by ATC Only)

ASLIN
251137.04N
0522404.64E

KUPRO
250804.83N
0523512.87E
FL250
(by ATC Only)

9.7
156°
(158.2°T)

SCALE 1:750000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16R
IVENA THREE RADAR DEPARTURE
IVENA 3

TABULAR DESCRIPTION

RNP SID IVENA 3											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**IVENA**	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	FM	**IVENA**	-	156 (158.2)	-2.6	-	-	-	-	-	RNP 1
Remarks		NIL									

RADAR Vectoring to En-Route	
FPL route via	**Expected ATC routing after IVENA**
ALSEM	KASIS - GOBLU - ALSEM
ALVEN	KASIS - MIRAV - DERTI - GIDOS - PASIS - GIBIN - ALVEN
KUPRO	KASIS - LOTUM - ASLIN - KUPRO
LUBET	KASIS - MIRAV - DERTI - GIDOS - PASIS - GIBIN - EMISA - IMSUN - MISEL - LUBET
PATOM	KASIS - MIRAV - DERTI - GIDOS - PASIS - DEBIL - ALNAK - PATOM
VAXIN	KASIS - GOBLU - VAXIN

WAYPOINT LIST

RNP SID IVENA 3	
Waypoint Identifier	**Coordinates**
IVENA	250615.83N 0514018.65E

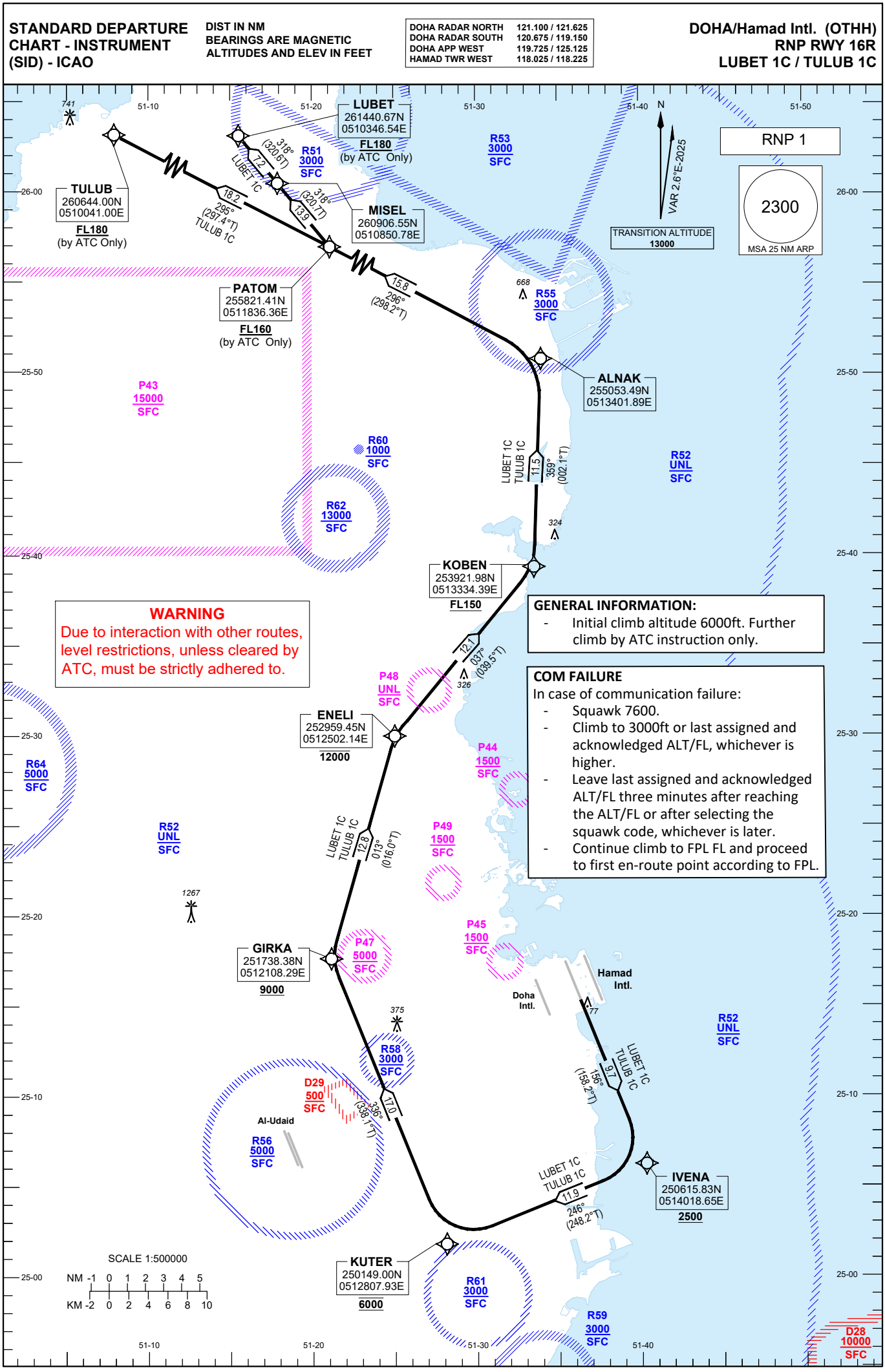
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16R
LUBET 1C / TULUB 1C



WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

GENERAL INFORMATION:
- Initial climb altitude 6000ft. Further climb by ATC instruction only.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16R
LUBET 1C/ TULUB 1C

TABULAR DESCRIPTION

RNP SID LUBET 1C

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	IVENA	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	TF	KUTER	-	246 (248.2)	-2.6	11.9	-	@6000	-	-	RNP 1
3	TF	GIRKA	-	336 (338.1)	-2.6	17.0	-	+9000	-	-	RNP 1
4	TF	ENELI	-	013 (016.0)	-2.6	12.8	-	-12000	-	-	RNP 1
5	TF	KOBEN	-	037 (039.5)	-2.6	12.1	-	+FL150	-	-	RNP 1
6	TF	ALNAK	-	359 (002.1)	-2.6	11.5	-	-	-	-	RNP 1
7	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
8	TF	MISEL	-	318 (320.7)	-2.6	13.9	-	-	-	-	RNP 1
9	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks	PATOM +FL160 and LUBET +FL180 by ATC only										

RNP SID TULUB 1C

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	IVENA	-	156 (158.2)	-2.6	9.7	-	+2500	-	-	RNP 1
2	TF	KUTER	-	246 (248.2)	-2.6	11.9	-	@6000	-	-	RNP 1
3	TF	GIRKA	-	336 (338.1)	-2.6	17.0	-	+9000	-	-	RNP 1
4	TF	ENELI	-	013 (016.0)	-2.6	12.8	-	-12000	-	-	RNP 1
5	TF	KOBEN	-	037 (039.5)	-2.6	12.1	-	+FL150	-	-	RNP 1
6	TF	ALNAK	-	359 (002.1)	-2.6	11.5	-	-	-	-	RNP 1
7	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
8	TF	TULUB	-	295 (297.4)	-2.6	18.2	-	+FL180	-	-	RNP 1
Remarks	PATOM +FL160 and TULUB +FL180 by ATC only										

WAYPOINT LIST

RNP SID LUBET 1C /TULUB 1C

Waypoint Identifier	Coordinates
IVENA	250615.83N 0514018.65E
KUTER	250149.00N 0512807.93E
GIRKA	251738.38N 0512108.29E
ENELI	252959.45N 0512502.14E
KOBEN	253921.98N 0513334.39E
ALNAK	255053.49N 0513401.89E
PATOM	255821.41N 0511836.36E
TULUB	260644.00N 0510041.00E
MISEL	260906.55N 0510850.78E
LUBET	261440.67N 0510346.54E

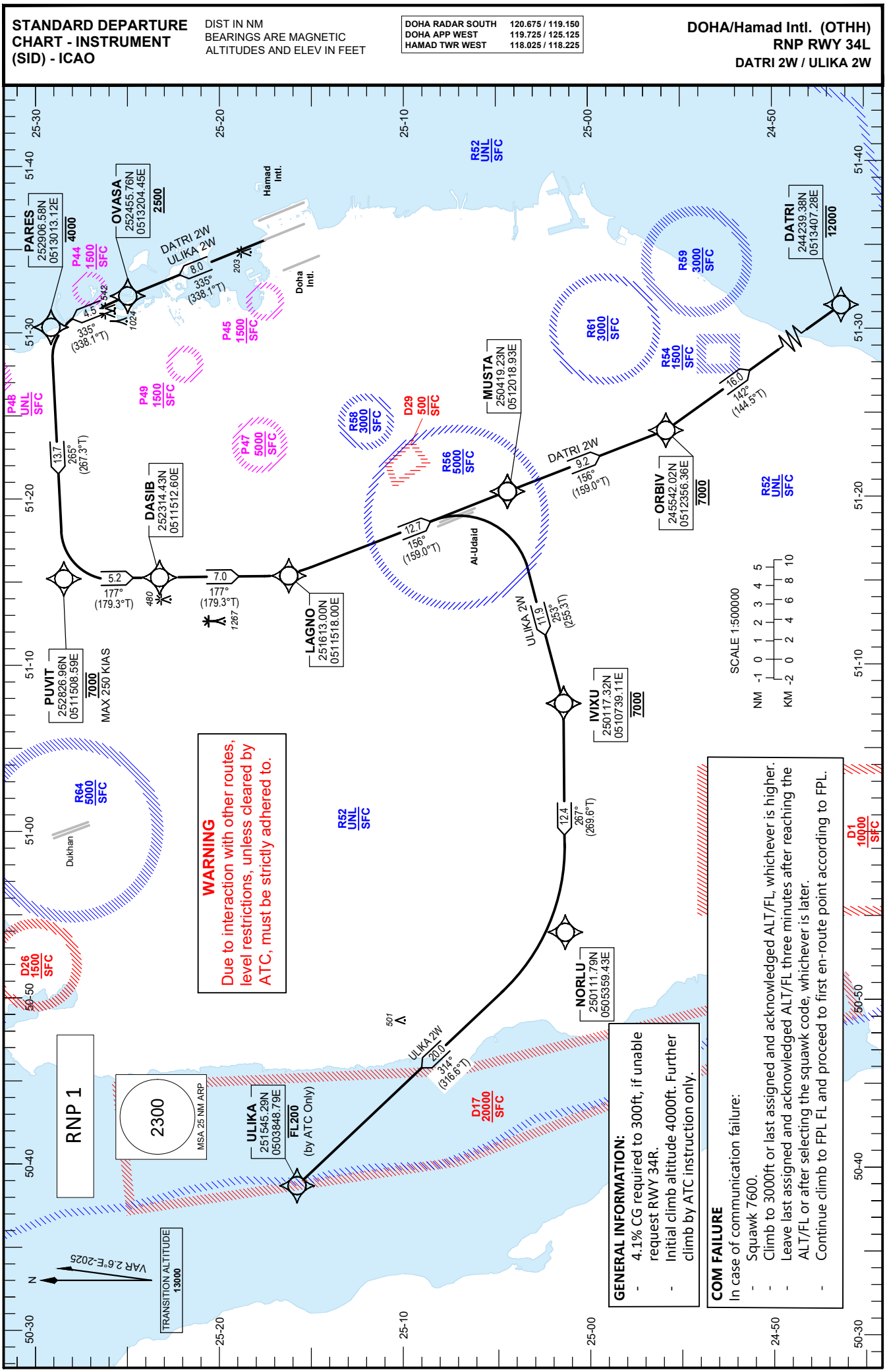
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
DATRI 2W / ULIKA 2W



STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
DATRI 2W / ULIKA 2W

TABULAR DESCRIPTION

RNP SID DATRI 2W

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	OVASA	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	PARES	-	335 (338.1)	-2.6	4.5	-	-4000	-	-	RNP 1
3	TF	PUVIT	-	265 (267.3)	-2.6	13.7	-	@7000	-250	-	RNP 1
4	TF	DASIB	-	177 (179.3)	-2.6	5.2	-	-	-	-	RNP 1
5	TF	LAGNO	-	177 (179.3)	-2.6	7.0	-	-	-	-	RNP 1
6	TF	MUSTA	-	156 (159.0)	-2.6	12.7	-	-	-	-	RNP 1
7	TF	ORBIV	-	156 (159.0)	-2.6	9.2	-	@7000	-	-	RNP 1
8	TF	DATRI	-	142 (144.5)	-2.6	16.0	-	-12000	-	-	RNP 1
Remarks	NIL										

RNP SID ULIKA 2W

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	OVASA	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	PARES	-	335 (338.1)	-2.6	4.5	-	-4000	-	-	RNP 1
3	TF	PUVIT	-	265 (267.3)	-2.6	13.7	-	@7000	-250	-	RNP 1
4	TF	DASIB	-	177 (179.3)	-2.6	5.2	-	-	-	-	RNP 1
5	TF	LAGNO	-	177 (179.3)	-2.6	7.0	-	-	-	-	RNP 1
6	TF	MUSTA	-	156 (159.0)	-2.6	12.7	-	-	-	-	RNP 1
7	TF	IVIXU	-	253 (255.3)	-2.6	11.9	-	@7000	-	-	RNP 1
8	TF	NORLU	-	267 (269.6)	-2.6	12.4	-	-	-	-	RNP 1
9	TF	ULIKA	-	314 (316.6)	-2.6	20.0	-	-FL200	-	-	RNP 1
Remarks	ULIKA -FL200 by ATC only										

WAYPOINT LIST

RNP SID DATRI 2W / ULIKA 2W

Waypoint Identifier	Coordinates
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E
PUVIT	252826.96N 0511508.59E
DASIB	252314.43N 0511512.60E
LAGNO	251613.00N 0511518.00E
MUSTA	250419.23N 0512018.93E
ORBIV	245542.02N 0512356.36E
DATRI	244239.38N 0513407.28E
IVIXU	250117.32N 0510739.11E
NORLU	250111.79N 0505359.43E
ULIKA	251545.29N 0503848.79E

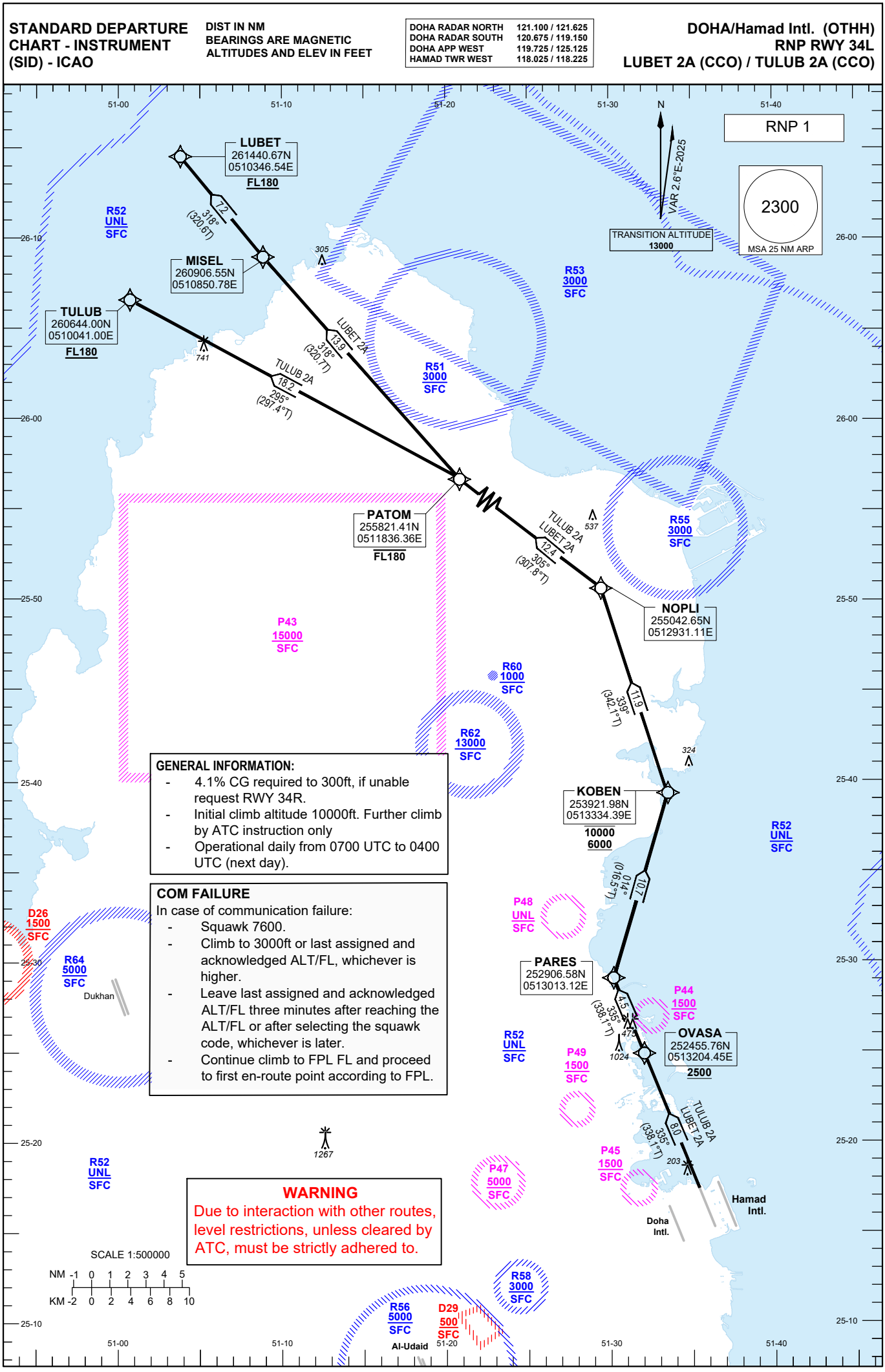
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
LUBET 2A (CCO) / TULUB 2A (CCO)



GENERAL INFORMATION:

- 4.1% CG required to 300ft, if unable request RWY 34R.
- Initial climb altitude 10000ft. Further climb by ATC instruction only
- Operational daily from 0700 UTC to 0400 UTC (next day).

COM FAILURE

In case of communication failure:

- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

WARNING

Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
LUBET 2A (CCO) / TULUB 2A (CCO)

TABULAR DESCRIPTION

RNP SID LUBET 2A (CCO)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	OVASA	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	PARES	-	335 (338.1)	-2.6	4.5	-	-	-	-	RNP 1
3	TF	KOBEN	-	014 (016.5)	-2.6	10.7	-	+6000/-10000	-	-	RNP 1
4	TF	NOPLI	-	339 (342.1)	-2.6	11.9	-	-	-	-	RNP 1
5	TF	PATOM	-	305 (307.8)	-2.6	12.4	-	-FL180	-	-	RNP 1
6	TF	MISEL	-	318 (320.7)	-2.6	13.9	-	-	-	-	RNP 1
7	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks	NIL										

RNP SID TULUB 2A (CCO)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	OVASA	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	PARES	-	335 (338.1)	-2.6	4.5	-	-	-	-	RNP 1
3	TF	KOBEN	-	014 (016.5)	-2.6	10.7	-	+6000/-10000	-	-	RNP 1
4	TF	NOPLI	-	339 (342.1)	-2.6	11.9	-	-	-	-	RNP 1
5	TF	PATOM	-	305 (307.8)	-2.6	12.4	-	-FL180	-	-	RNP 1
6	TF	TULUB	-	295 (297.4)	-2.6	18.2	-	+FL180	-	-	RNP 1
Remarks	NIL										

WAYPOINT LIST

RNP SID LUBET 2A (CCO) /TULUB 2A (CCO)

Waypoint Identifier	Coordinates
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E
KOBEN	253921.98N 0513334.39E
NOPLI	255042.65N 0512931.11E
PATOM	255821.41N 0511836.36E
MISEL	260906.55N 0510850.78E
LUBET	261440.67N 0510346.54E
TULUB	260644.00N 0510041.00E

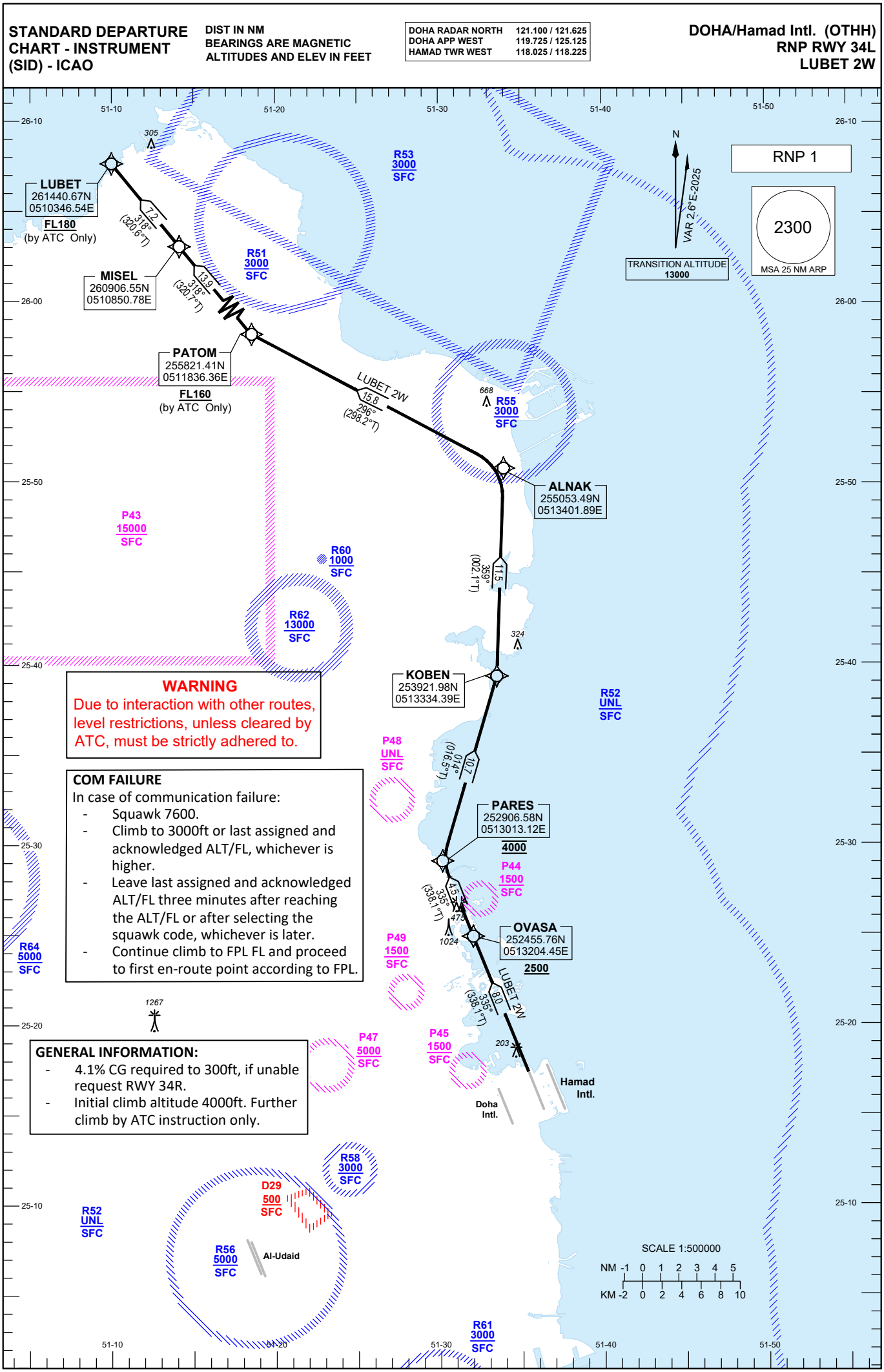
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
LUBET 2W



WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

GENERAL INFORMATION:
- 4.1% CG required to 300ft, if unable request RWY 34R.
- Initial climb altitude 4000ft. Further climb by ATC instruction only.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
LUBET 2W

TABULAR DESCRIPTION

RNP SID LUBET 2W

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	OVASA	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	PARES	-	335 (338.1)	-2.6	4.5	-	@4000	-	-	RNP 1
3	TF	KOBEN	-	014 (016.5)	-2.6	10.7	-	-	-	-	RNP 1
4	TF	ALNAK	-	359 (002.1)	-2.6	11.5	-	-	-	-	RNP 1
5	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
6	TF	MISEL	-	318 (320.7)	-2.6	13.9	-	-	-	-	RNP 1
7	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks	LUBET at FL180 or above and PATOM at FL160 or above by ATC only										

WAYPOINT LIST

RNP SID LUBET 2W

Waypoint Identifier	Coordinates
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E
KOBEN	253921.98N 0513334.39E
ALNAK	255053.49N 0513401.89E
PATOM	255821.41N 0511836.36E
MISEL	260906.55N 0510850.78E
LUBET	261440.67N 0510346.54E

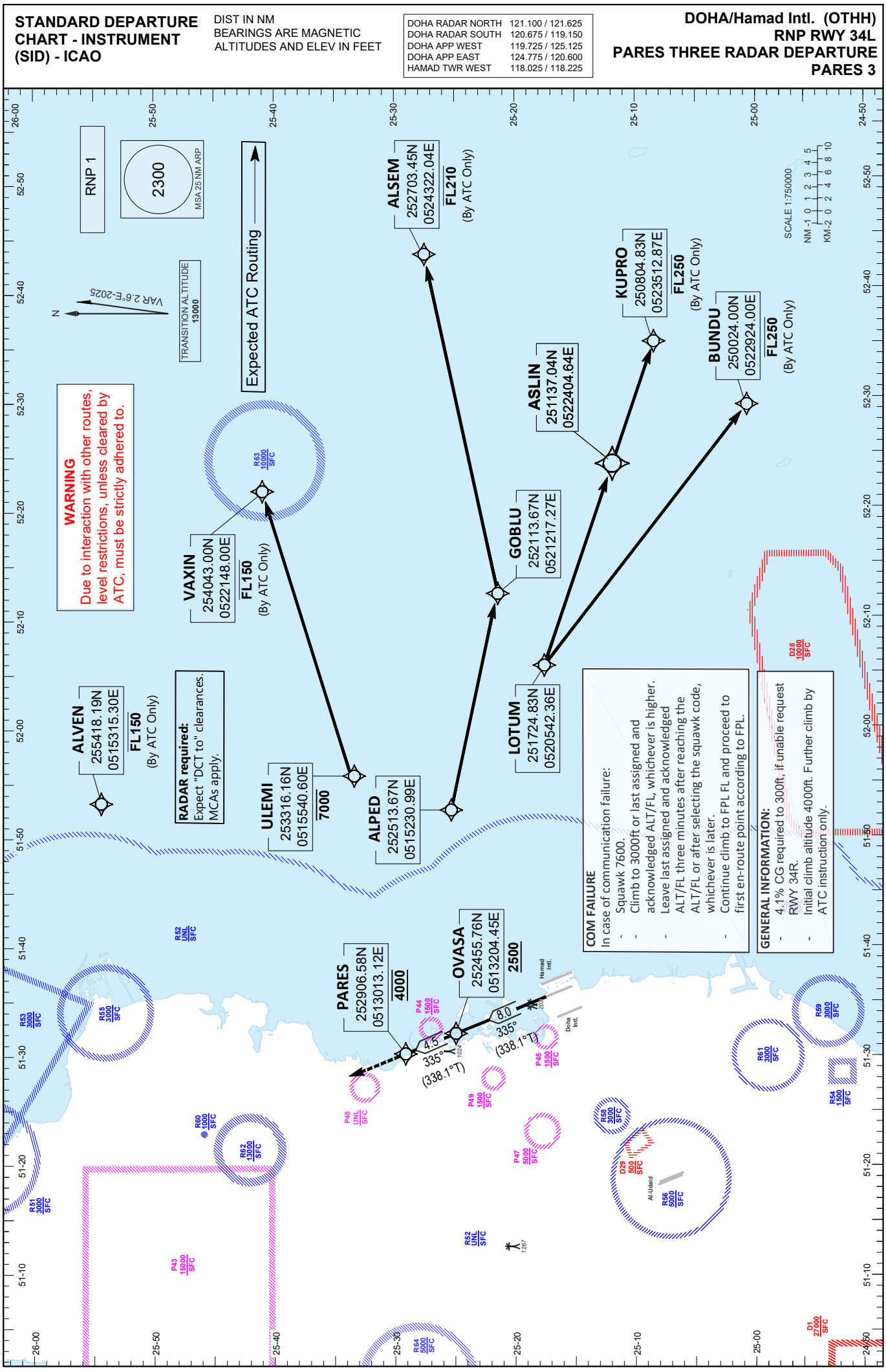
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
PARES THREE RADAR DEPARTURE
PARES 3



STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
PARES THREE RADAR DEPARTURE
PARES 3

TABULAR DESCRIPTION

RNP SID PARES 3											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**OVASA**	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	**PARES**	-	335 (338.1)	-2.6	4.5	-	@4000	-	-	RNP 1
3	FM	**PARES**	-	335 (338.1)	-2.6	-	-	-	-	-	RNP 1
Remarks		NIL									

RADAR Vectoring to En-Route	
FPL route via	**Expected ATC routing after PARES**
ALVEN	ALVEN
VAXIN	ULEMI - VAXIN
ALSEM	ALPED - GOBLU - ALSEM
BUNDU	LOTUM - BUNDU
KUPRO	LOTUM - ASLIN - KUPRO

WAYPOINT LIST

RNP SID PARES 3	
Waypoint Identifier	**Coordinates**
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E

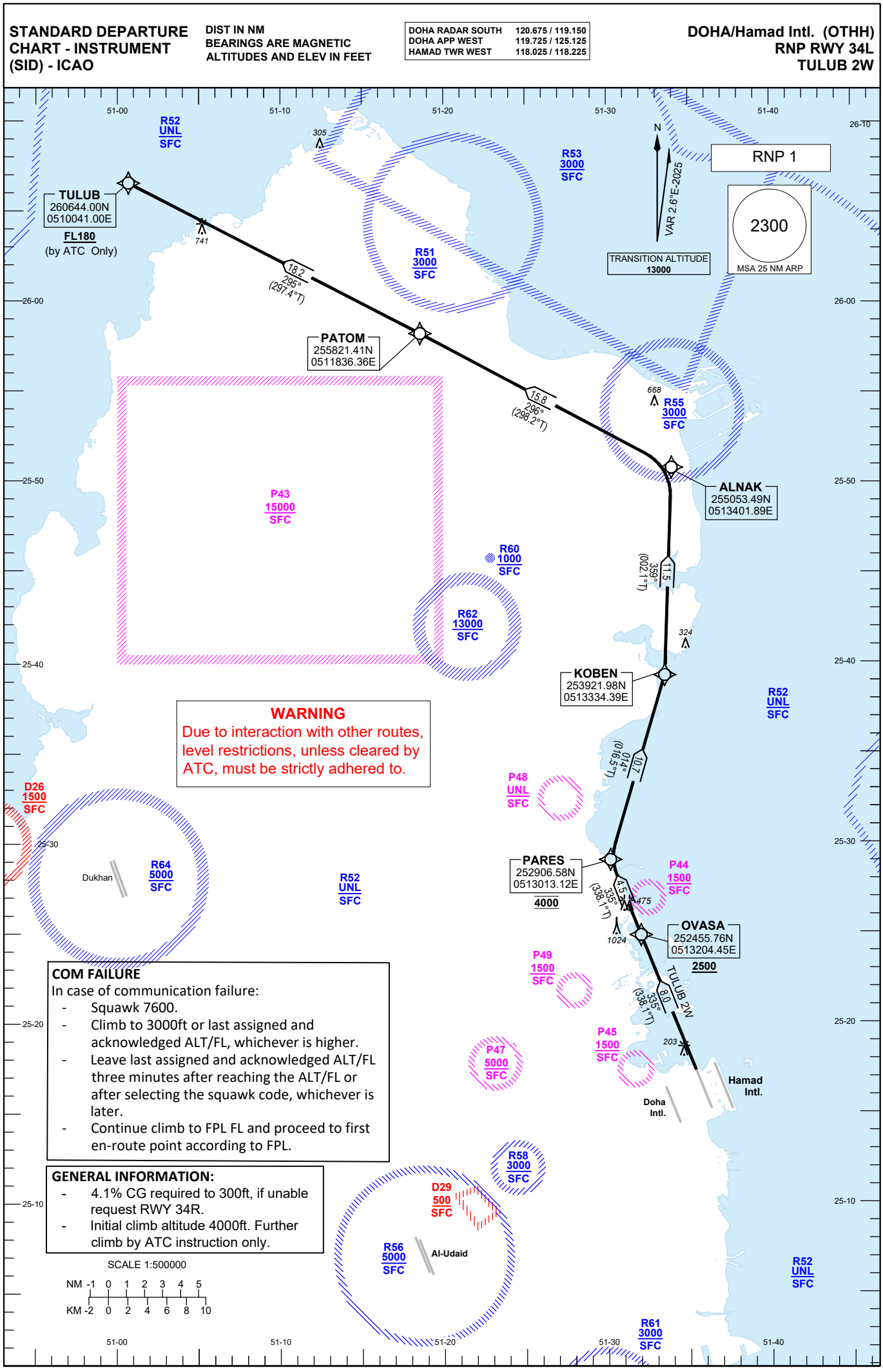
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
TULUB 2W



WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

GENERAL INFORMATION:
- 4.1% CG required to 300ft, if unable request RWY 34R.
- Initial climb altitude 4000ft. Further climb by ATC instruction only.

SCALE 1:500000

NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
TULUB 2W

TABULAR DESCRIPTION

RNP SID TULUB 2W

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	**OVASA**	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	**PARES**	-	335 (338.1)	-2.6	4.5	-	@4000	-	-	RNP 1
3	TF	**KOBEN**	-	014 (016.5)	-2.6	10.7	-	-	-	-	RNP 1
4	TF	**ALNAK**	-	359 (002.1)	-2.6	11.5	-	-	-	-	RNP 1
5	TF	**PATOM**	-	296 (298.2)	-2.6	15.8	-	-	-	-	RNP 1
6	TF	**TULUB**	-	295 (297.4)	-2.6	18.2	-	+FL180	-	-	RNP 1
Remarks	TULUB +FL180 by ATC only										

WAYPOINT LIST

RNP SID TULUB 2W

Waypoint Identifier	Coordinates
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E
KOBEN	253921.98N 0513334.39E
ALNAK	255053.49N 0513401.89E
PATOM	255821.41N 0511836.36E
TULUB	260644.00N 0510041.00E

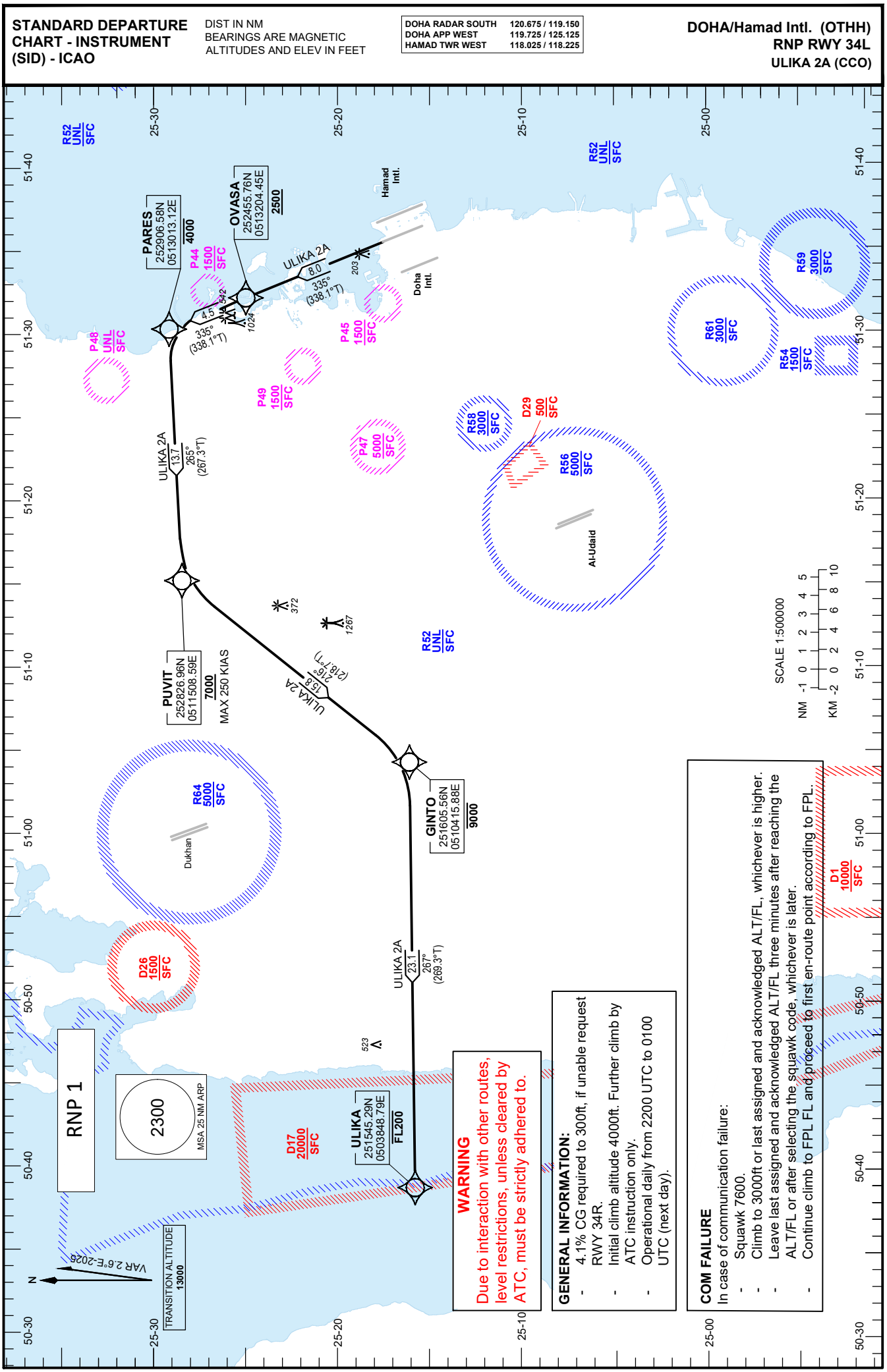
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L
ULIKA 2A (CCO)



WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

GENERAL INFORMATION:
- 4.1% CG required to 300ft, if unable request RWY 34R.
- Initial climb altitude 4000ft. Further climb by ATC instruction only.
- Operational daily from 2200 UTC to 0100 UTC (next day).

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
ULIKA 2A (CCO)

TABULAR DESCRIPTION

RNP SID ULIKA 2A (CCO)											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**OVASA**	-	335 (338.1)	-2.6	8.0	-	+2500	-	-	RNP 1
2	TF	**PARES**	-	335 (338.1)	-2.6	4.5	-	-4000	-	-	RNP 1
3	TF	**PUVIT**	-	265 (267.3)	-2.6	13.7	-	+7000	-250	-	RNP 1
4	TF	**GINTO**	-	216 (218.7)	-2.6	15.8	-	-9000	-	-	RNP 1
5	TF	**ULIKA**	-	267 (269.3)	-2.6	23.1	-	-FL200	-	-	RNP 1
Remarks		NIL									

WAYPOINT LIST

RNP SID ULIKA 2A (CCO)	
Waypoint Identifier	**Coordinates**
OVASA	252455.76N 0513204.45E
PARES	252906.58N 0513013.12E
PUVIT	252826.96N 0511508.59E
GINTO	251605.56N 0510415.88E
ULIKA	251545.29N 0503848.79E

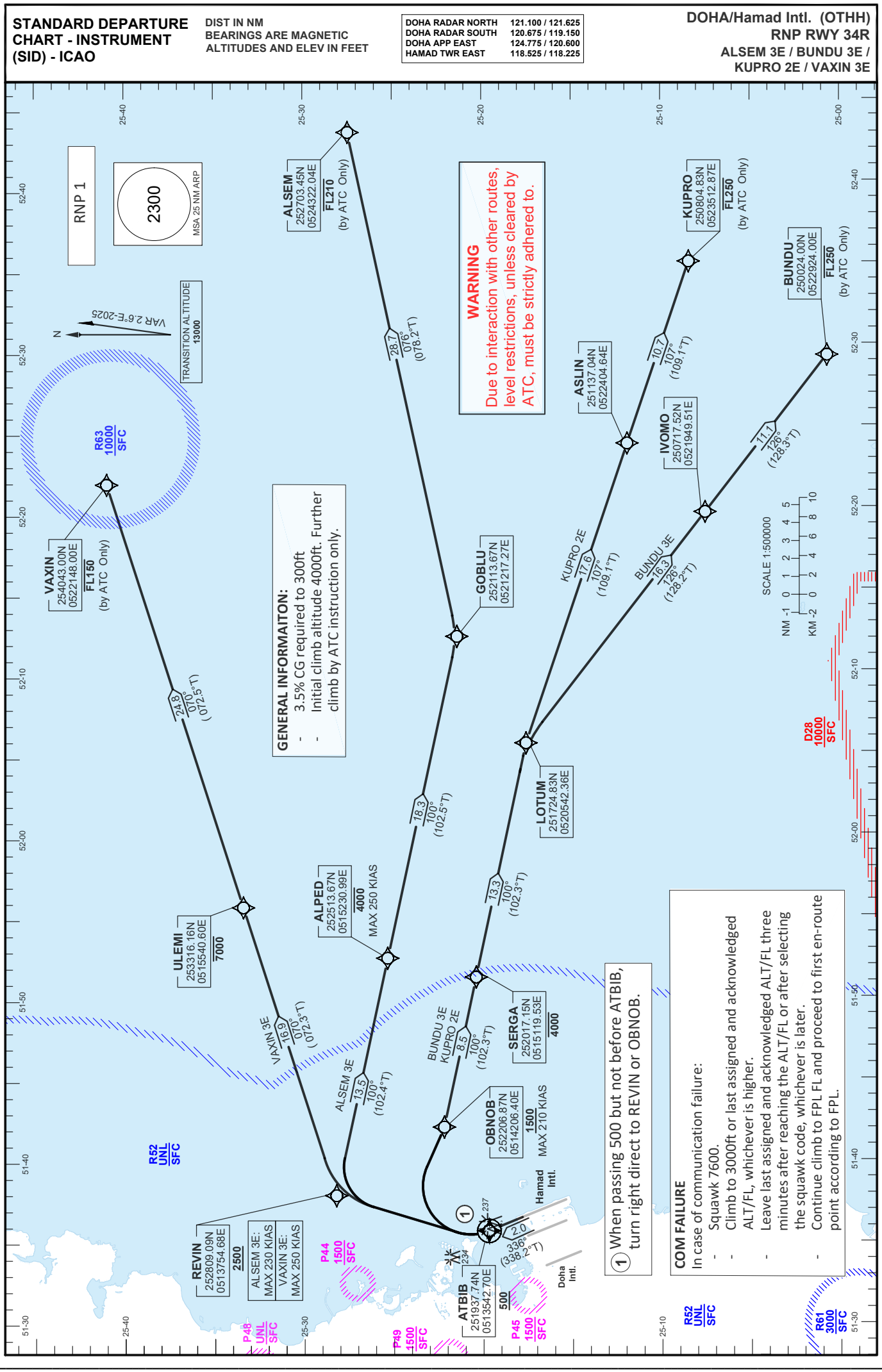
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP EAST	124.775 / 120.600
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34R
ALSEM 3E / BUNDU 3E / KUPRO 2E / VAXIN 3E



STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34R
ALSEM 3E / BUNDU 3E / KUPRO 2E / VAXIN 3E

TABULAR DESCRIPTION

RNP SID ALSEM 3E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-230	-	RNP 1
4	TF	ALPED	-	100 (102.4)	-2.6	13.5	-	-4000	-250	-	RNP 1
5	TF	GOBLU	-	100 (102.5)	-2.6	18.3	-	-	-	-	RNP 1
6	TF	ALSEM	-	076 (078.2)	-2.6	28.7	-	-FL210	-	-	RNP 1
Remarks		ALSEM -FL210 by ATC only									

RNP SID BUNDU 3E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	OBNOB	-	-	-2.6	-	R	+1500	-210	-	RNP 1
4	TF	SERGA	-	100 (102.3)	-2.6	8.5	-	-4000	-	-	RNP 1
5	TF	LOTUM	-	100 (102.3)	-2.6	13.3	-	-	-	-	RNP 1
6	TF	IVOMO	-	126 (128.2)	-2.6	16.3	-	-	-	-	RNP 1
7	TF	BUNDU	-	126 (128.3)	-2.6	11.1	-	-FL250	-	-	RNP 1
Remarks		BUNDU -FL250 by ATC only									

RNP SID KUPRO 2E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	OBNOB	-	-	-2.6	-	R	+1500	-210	-	RNP 1
4	TF	SERGA	-	100 (102.3)	-2.6	8.5	-	-4000	-	-	RNP 1
5	TF	LOTUM	-	100 (102.3)	-2.6	13.3	-	-	-	-	RNP 1
6	TF	ASLIN	-	107 (109.1)	-2.6	17.6	-	-	-	-	RNP 1
7	TF	KUPRO	-	107 (109.1)	-2.6	10.7	-	-FL250	-	-	RNP 1
Remarks		KUPRO -FL250 by ATC only									

RNP SID VAXIN 3E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-250	-	RNP 1
4	TF	ULEMI	-	070 (072.3)	-2.6	16.9	-	-7000	-	-	RNP 1
5	TF	VAXIN	-	070 (072.5)	-2.6	24.8	-	-FL150	-	-	RNP 1
Remarks		VAXIN -FL150 by ATC only									

WAYPOINT LIST

RNP SID ALSEM 3E / BUNDU 3E / KUPRO 2E / VAXIN 3E	
Waypoint Identifier	Coordinates
ATBIB	251937.74N 0513542.70E
REVIN	252809.09N 0513754.68E
ALPED	252513.67N 0515230.99E
GOBLU	252113.67N 0521217.27E
ALSEM	252703.45N 0524322.04E
OBNOB	252206.87N 0514206.40E
SERGA	252017.15N 0515119.53E

RNP SID ALSEM 3E / BUNDU 3E / KUPRO 2E / VAXIN 3E	
Waypoint Identifier	Coordinates
LOTUM	251724.83N 0520542.36E
IVOMO	250717.52N 0521949.51E
BUNDU	250024.00N 0522924.00E
ASLIN	251137.04N 0522404.64E
KUPRO	250804.83N 0523512.87E
ULEMI	253316.16N 0515540.60E
VAXIN	254043.00N 0522148.00E

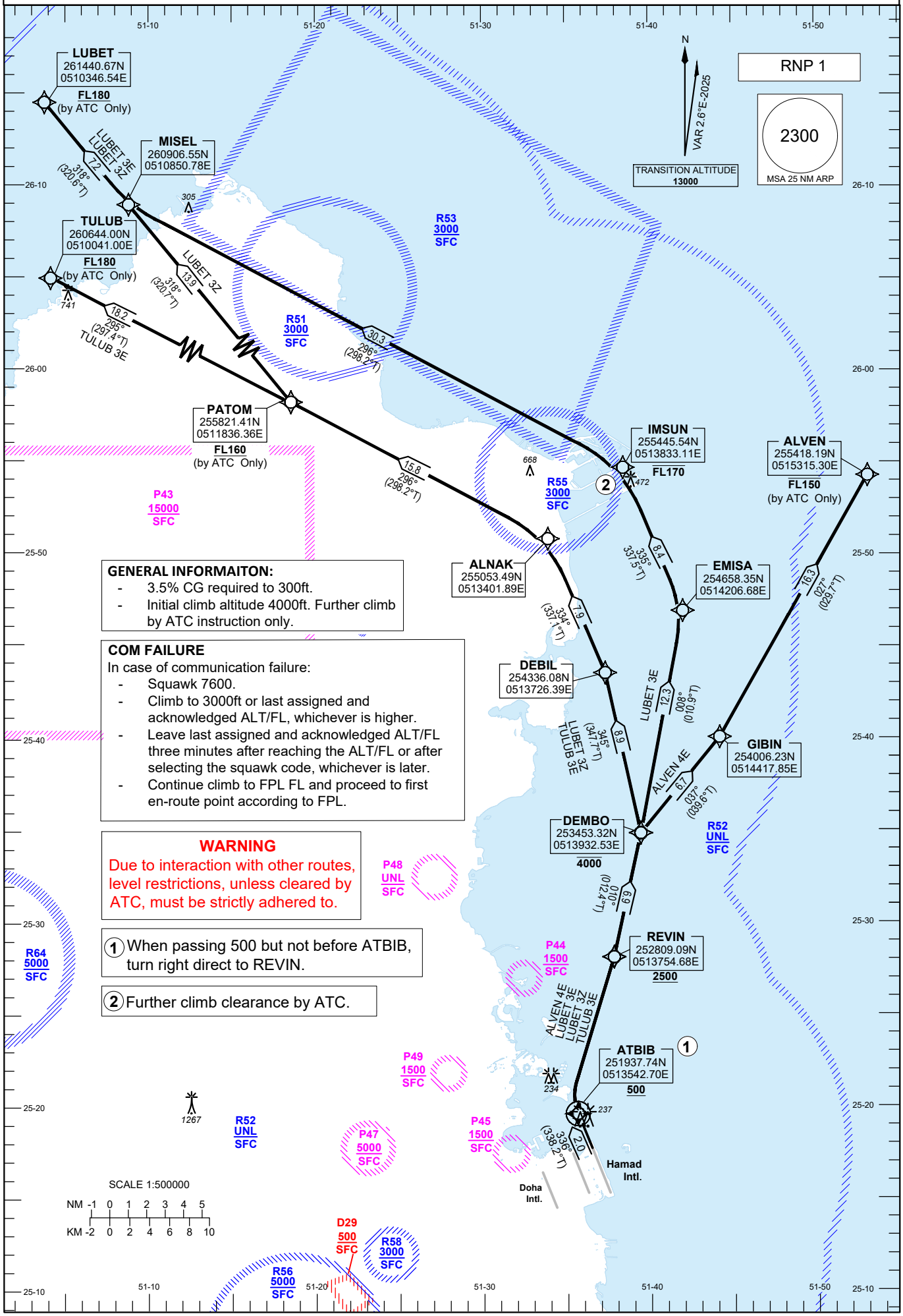
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34R
ALVEN 4E / LUBET 3E / LUBET 3Z / TULUB 3E



GENERAL INFORMAITON:
- 3.5% CG required to 300ft.
- Initial climb altitude 4000ft. Further climb by ATC instruction only.

COM FAILURE
In case of communication failure:
- Squawk 7600.
- Climb to 3000ft or last assigned and acknowledged ALT/FL, whichever is higher.
- Leave last assigned and acknowledged ALT/FL three minutes after reaching the ALT/FL or after selecting the squawk code, whichever is later.
- Continue climb to FPL FL and proceed to first en-route point according to FPL.

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

(1) When passing 500 but not before ATBIB, turn right direct to REVIN.

(2) Further climb clearance by ATC.

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34R
ALVEN 4E / LUBET 3E / LUBET 3Z / TULUB 3E

TABULAR DESCRIPTION

RNP SID ALVEN 4E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-	-	RNP 1
4	TF	DEMBO	-	010 (012.4)	-2.6	6.9	-	-4000	-	-	RNP 1
5	TF	GIBIN	-	037 (039.6)	-2.6	6.7	-	-	-	-	RNP 1
6	TF	ALVEN	-	027 (029.7)	-2.6	16.3	-	-FL150	-	-	RNP 1
Remarks		ALVEN -FL150 by ATC only									

RNP SID LUBET 3E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-	-	RNP 1
4	TF	DEMBO	-	010 (012.4)	-2.6	6.9	-	-4000	-	-	RNP 1
5	TF	EMISA	-	008 (010.9)	-2.6	12.3	-	-	-	-	RNP 1
6	TF	IMSUN	-	335 (337.5)	-2.6	8.4	-	-FL170	-	-	RNP 1
7	TF	MISEL	-	296 (298.2)	-2.6	30.3	-	-	-	-	RNP 1
8	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks		LUBET +FL180 by ATC only									

RNP SID LUBET 3Z

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-	-	RNP 1
4	TF	DEMBO	-	010 (012.4)	-2.6	6.9	-	-4000	-	-	RNP 1
5	TF	DEBIL	-	345 (347.7)	-2.6	8.9	-	-	-	-	RNP 1
6	TF	ALNAK	-	334 (337.1)	-2.6	7.9	-	-	-	-	RNP 1
7	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
8	TF	MISEL	-	318 (320.7)	-2.6	13.9	-	-	-	-	RNP 1
9	TF	LUBET	-	318 (320.6)	-2.6	7.2	-	+FL180	-	-	RNP 1
Remarks		PATOM +FL160 and LUBET +FL180 by ATC only									

RNP SID TULUB 3E

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	CF	ATBIB	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	-	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	REVIN	-	-	-2.6	-	R	+2500	-	-	RNP 1
4	TF	DEMBO	-	010 (012.4)	-2.6	6.9	-	-4000	-	-	RNP 1
5	TF	DEBIL	-	345 (347.7)	-2.6	8.9	-	-	-	-	RNP 1
6	TF	ALNAK	-	334 (337.1)	-2.6	7.9	-	-	-	-	RNP 1
7	TF	PATOM	-	296 (298.2)	-2.6	15.8	-	+FL160	-	-	RNP 1
8	TF	TULUB	-	295 (297.4)	-2.6	18.2	-	+FL180	-	-	RNP 1
Remarks		PATOM +FL160 and TULUB +FL180 by ATC only									

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WAYPOINT LIST

RNP SID ALVEN 4E / LUBET 3E / LUBET 3Z / TULUB 3E	
Waypoint Identifier	**Coordinates**
ATBIB	251937.74N 0513542.70E
REVIN	252809.09N 0513754.68E
DEMBO	253453.32N 0513932.53E
DEBIL	254336.08N 0513726.39E
ALNAK	255053.49N 0513401.89E
TULUB	260644.00N 0510041.00E
PATOM	255821.41N 0511836.36E

RNP SID ALVEN 4E / LUBET 3E / LUBET 3Z / TULUB 3E	
Waypoint Identifier	**Coordinates**
GIBIN	254006.23N 0514417.85E
ALVEN	255418.19N 0515315.30E
EMISA	254658.35N 0514206.68E
IMSUN	255445.54N 0513833.11E
MISEL	260906.55N 0510850.78E
LUBET	261440.67N 0510346.54E

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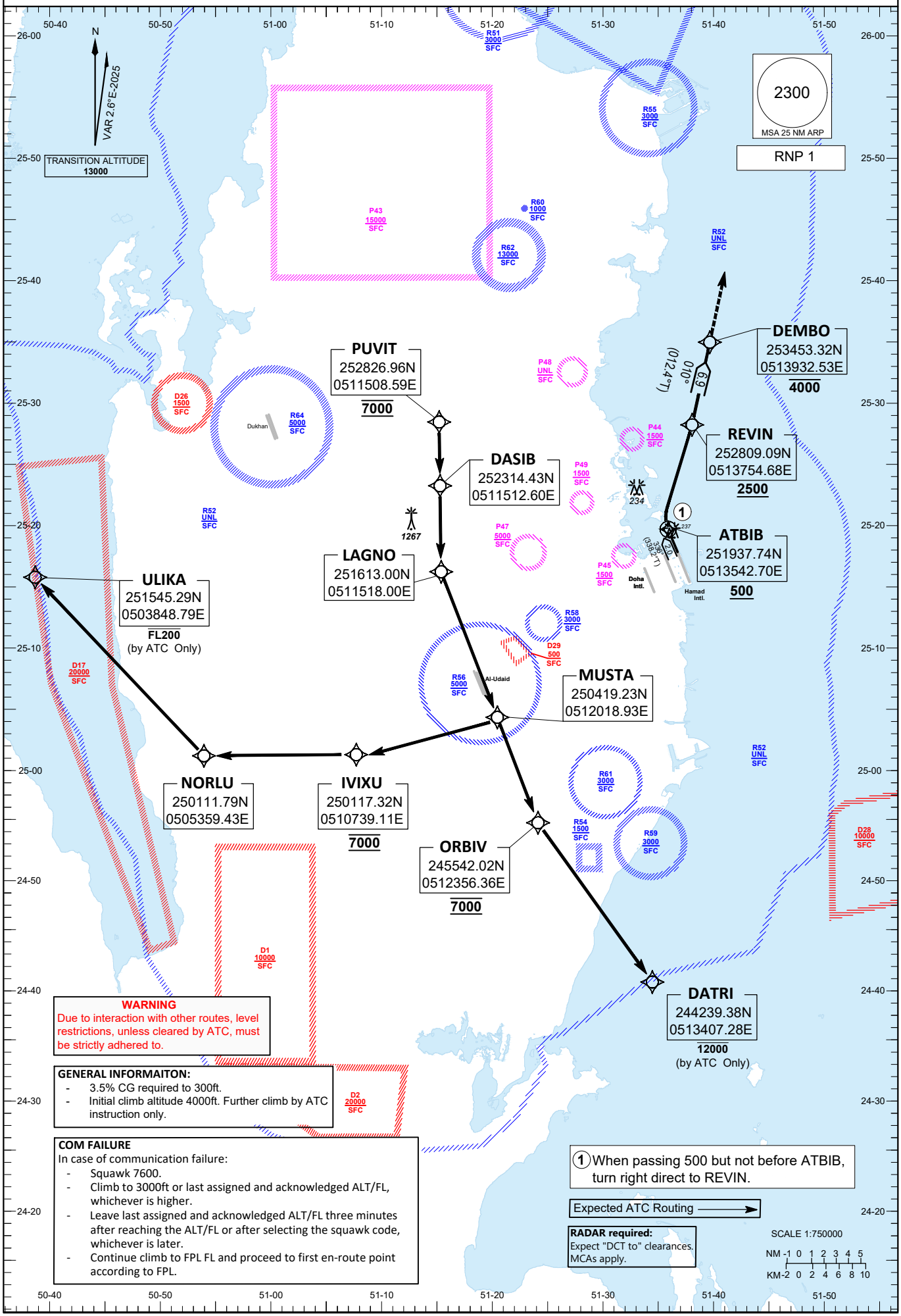
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STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.600
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34R
DEMBO FOUR RADAR DEPARTURE
DEMBO 4



STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34R
DEMBO FOUR RADAR DEPARTURE

DEMBO 4

TABULAR DESCRIPTION

RNP SID DEMBO 4											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	CF	**ATBIB**	Y	336 (338.2)	-2.6	2.0	-	-	-	-	RNP 1
2	CA	**-**	-	336 (338.2)	-2.6	-	-	+500	-	-	RNP 1
3	DF	**REVIN**	-	-	-2.6	-	R	+2500	-	-	RNP 1
4	TF	**DEMBO**	-	010 (012.4)	-2.6	6.9	-	-4000	-	-	RNP 1
5	FM	**DEMBO**	-	010 (012.4)	-2.6	-	-	-	-	-	RNP 1
Remarks		NIL									

RADAR Vectoring to En-Route	
FPL route via	**Expected ATC routing after DEMBO**
DATRI	PUVIT - DASIB - LAGNO - MUSTA - ORBIV - DATRI
ULIKA	PUVIT - DASIB - LAGNO - MUSTA - IVIXU - NORLU - ULIKA

WAYPOINT LIST

DEMBO 4	
Waypoint Identifier	**Coordinates**
ATBIB	251937.74N 0513542.70E
REVIN	252809.09N 0513754.68E
DEMBO	253453.32N 0513932.53E

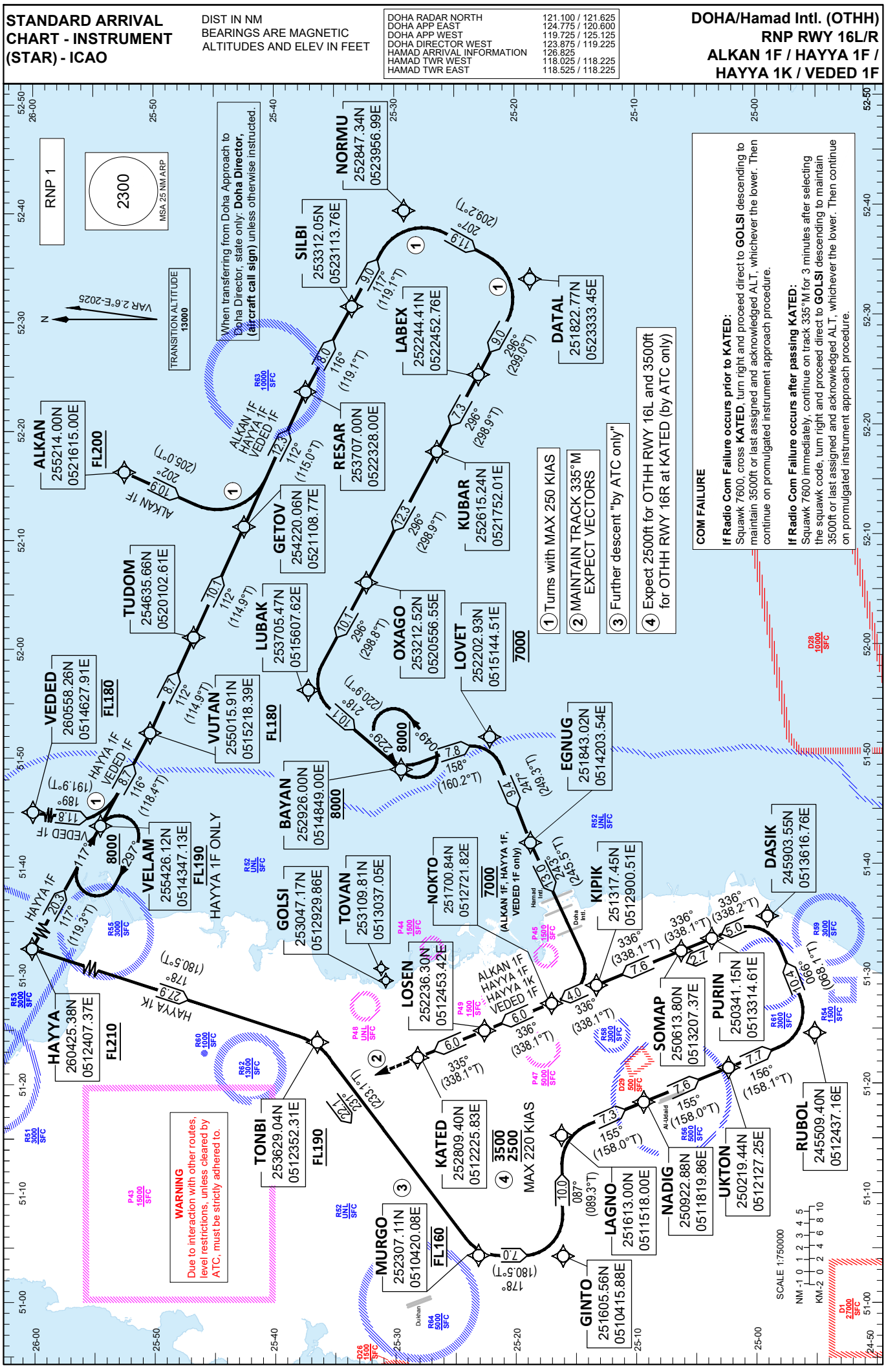
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA APP WEST	119.725 / 125.125
DOHA DIRECTOR WEST	123.875 / 119.225
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L/R
ALKAN 1F / HAYYA 1F / HAYYA 1K / VEDED 1F



STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L/R
ALKAN 1F / HAYYA 1F / HAYYA 1K / VEDED 1F

TABULAR DESCRIPTION

RNP STAR ALKAN 1F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ALKAN	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	GETOV	-	202 (205.0)	-2.6	10.9	-	-	-250	-	RNP 1
3	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
4	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
5	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
6	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
7	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
8	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
9	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
10	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
11	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
12	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
13	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
14	TF	KIPIK	-	243 (245.5)	-2.6	13.0	-	-	-	-	RNP 1
15	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	@7000	-	-	RNP 1
16	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
17	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
18	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

RNP STAR HAYYA 1F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+ FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
15	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
16	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
17	TF	KIPIK	-	243 (245.5)	-2.6	13.0	-	-	-	-	RNP 1
18	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	@7000	-	-	RNP 1
19	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
20	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
21	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

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RNP STAR HAYYA 1K

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	TONBI	-	178 (180.5)	-2.6	27.9	-	+FL190	-	-	RNP 1
3	TF	MURGO	-	213 (233.1)	-2.6	22.1	-	@FL160	-	-	RNP 1
4	TF	GINTO	-	178 (180.5)	-2.6	7.0	-	-	-	-	RNP 1
5	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	-	-	-	RNP 1
6	TF	NADIG	-	155 (158.0)	-2.6	7.3	-	-	-	-	RNP 1
7	TF	UKTON	-	155 (158.0)	-2.6	7.6	-	-	-	-	RNP 1
8	TF	RUBOL	-	156 (158.1)	-2.6	7.7	-	-	-	-	RNP 1
9	TF	DASIK	-	066 (068.1)	-2.6	10.4	-	-	-	-	RNP 1
10	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
11	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
12	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
13	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
14	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
15	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
16	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1

Remarks	Further descent after MURGO by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).

RNP STAR VEDED 1F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	VEDED	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	VELAM	-	189 (191.9)	-2.6	11.8	-	-	-250	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
15	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
16	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
17	TF	KIPIK	-	243 (245.5)	-2.6	13.0	-	-	-	-	RNP 1
18	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	@7000	-	-	RNP 1
19	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
20	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
21	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1

Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).

WAYPOINT LIST

RNP STAR ALKAN 1F / HAYYA 1F / HAYYA 1K / VEDED 1F	
Waypoint Identifier	**Coordinates**
ALKAN	255214.00N 0521615.00E
GETOV	254220.06N 0521108.77E
RESAR	253707.00N 0522328.00E
SILBI	253312.05N 0523113.76E
NORMU	252847.34N 0523956.99E
DATAL	251822.77N 0523333.45E
LABEX	252244.41N 0522452.76E
KUBAR	252615.24N 0521752.01E
OXAGO	253212.52N 0520556.55E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
LOVET	252202.93N 0515144.51E
EGNUG	251843.02N 0514203.54E
KIPIK	251317.45N 0512900.51E
NOKTO	251700.84N 0512721.82E
LOSEN	252236.30N 0512453.42E

RNP STAR ALKAN 1F / HAYYA 1F / HAYYA 1K / VEDED 1F	
Waypoint Identifier	**Coordinates**
KATED	252809.40N 0512225.83E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
TUDOM	254635.66N 0520102.61E
VEDED	260558.26N 0514627.91E
TONBI	253629.04N 0512352.31E
MURGO	252307.11N 0510420.08E
GINTO	251605.56N 0510415.88E
LAGNO	251613.00N 0511518.00E
NADIG	250922.88N 0511819.86E
UKTON	250219.44N 0512127.25E
RUBOL	245509.40N 0512437.16E
DASIK	245903.55N 0513516.76E
PURIN	250341.15N 0513314.61E
SOMAP	250613.80N 0513207.37E

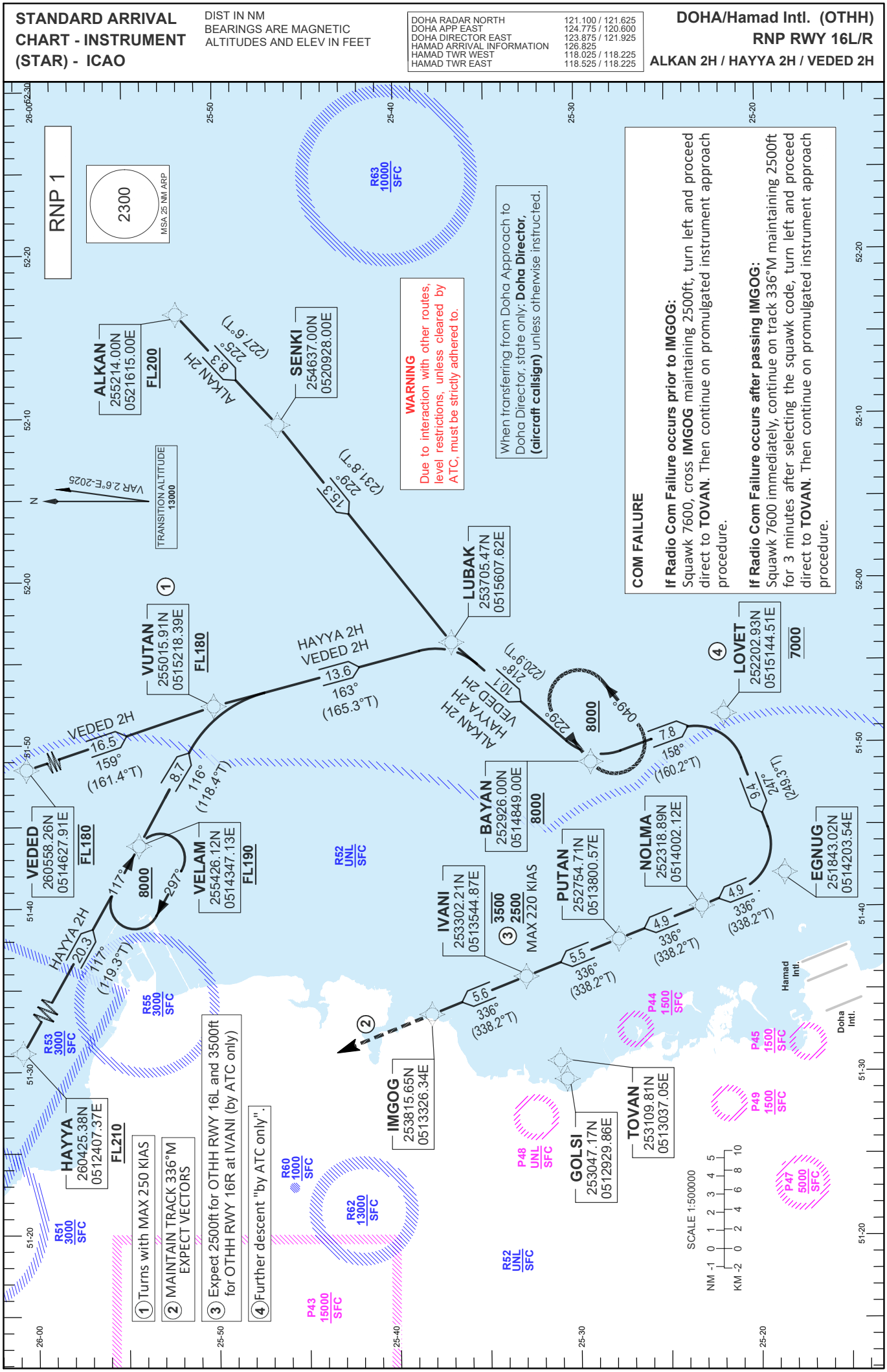
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	123.875 / 121.925
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L/R
ALKAN 2H / HAYYA 2H / VEDED 2H



STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L/R
ALKAN 2H / HAYYA 2H / VEDED 2H

TABULAR DESCRIPTION

RNP STAR ALKAN 2H

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ALKAN	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	SENKI	-	225 (227.6)	-2.6	8.3	-	-	-	-	RNP 1
3	TF	LUBAK	-	229 (231.8)	-2.6	15.3	-	-	-	-	RNP 1
4	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
5	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
6	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
7	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
8	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
9	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
10	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
11	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after LOVET by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR HAYYA 2H

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	LUBAK	-	163 (165.3)	-2.6	13.6	-	-	-	-	RNP 1
5	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
6	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
7	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
8	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
9	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
10	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/+3500	-220	-	RNP 1
11	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
12	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after LOVET by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR VEDED 2H

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	VEDED	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	VUTAN	-	159 (161.4)	-2.6	16.5	-	+FL180	-	-	RNP 1
3	TF	LUBAK	-	163 (165.3)	-2.6	13.6	-	-	-	-	RNP 1
4	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
5	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
6	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
7	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
8	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
9	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
10	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
11	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after LOVET by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

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WAYPOINT LIST

RNP STAR ALKAN 2H / HAYYA 2H / VEDED 2H	
Waypoint Identifier	**Coordinates**
ALKAN	255214.00N 0521615.00E
SENKI	254637.00N 0520928.00E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
LOVET	252202.93N 0515144.51E
EGNUG	251843.02N 0514203.54E
NOLMA	252318.89N 0514002.12E
PUTAN	252754.71N 0513800.57E
IVANI	253302.21N 0513544.87E
IMGOG	253815.65N 0513326.34E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
VEDED	260558.26N 0514627.91E

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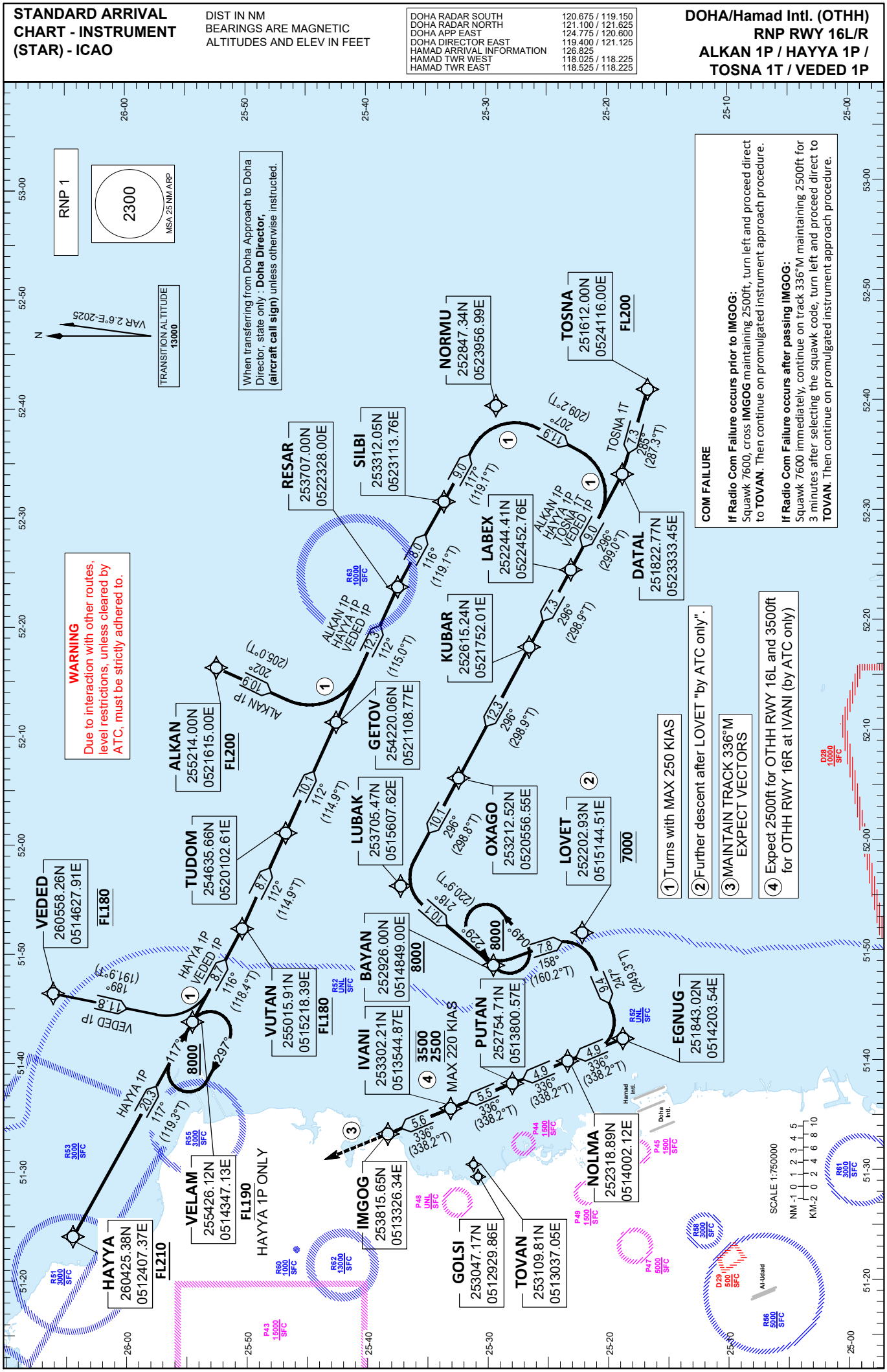
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L/R
ALKAN 1P / HAYYA 1P / TOSNA 1T / VEDED 1P



STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L/R
ALKAN 1P / HAYYA 1P / TOSNA 1T / VEDED 1P

TABULAR DESCRIPTION

RNP STAR ALKAN 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ALKAN	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	GETOV	-	202 (205.0)	-2.6	10.9	-	-	-250	-	RNP 1
3	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
4	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
5	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
6	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
7	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
8	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
9	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
10	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
11	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
12	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
13	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
14	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
15	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
16	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
17	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
18	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR HAYYA 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
15	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
16	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
17	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
18	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
19	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
20	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
21	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

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RNP STAR TOSNA 1T

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	DATAL	-	285 (287.3)	-2.6	7.3	-	-	-	-	RNP 1
3	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
4	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
6	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
7	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
8	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
9	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
10	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
11	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
12	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
13	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
14	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR VEDED 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	VEDED	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	VELAM	-	189 (191.9)	-2.6	11.8	-	-	-250	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	116 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+8000	-	-	RNP 1
15	TF	LOVET	-	158 (160.2)	-2.6	7.8	-	@7000	-	-	RNP 1
16	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	-	-	-	RNP 1
17	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
18	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
19	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
20	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
21	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

WAYPOINT LIST

RNP STAR ALKAN 1P / HAYYA 1P / TOSNA 1T / VEDED 1P

Waypoint Identifier	Coordinates
ALKAN	255214.00N 0521615.00E
GETOV	254220.06N 0521108.77E
RESAR	253707.00N 0522328.00E
SILBI	253312.05N 0523113.76E
NORMU	252847.34N 0523956.99E
DATAL	251822.77N 0523333.45E
LABEX	252244.41N 0522452.76E
KUBAR	252615.24N 0521752.01E
OXAGO	253212.52N 0520556.55E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
LOVET	252202.93N 0515144.51E

RNP STAR ALKAN 1P / HAYYA 1P / TOSNA 1T / VEDED 1P

Waypoint Identifier	Coordinates
EGNUG	251843.02N 0514203.54E
NOLMA	252318.89N 0514002.12E
PUTAN	252754.71N 0513800.57E
IVANI	253302.21N 0513544.87E
IMGOG	253815.65N 0513326.34E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
TUDOM	254635.66N 0520102.61E
TOSNA	251612.00N 0524116.00E
VEDED	260558.26N 0514627.91E

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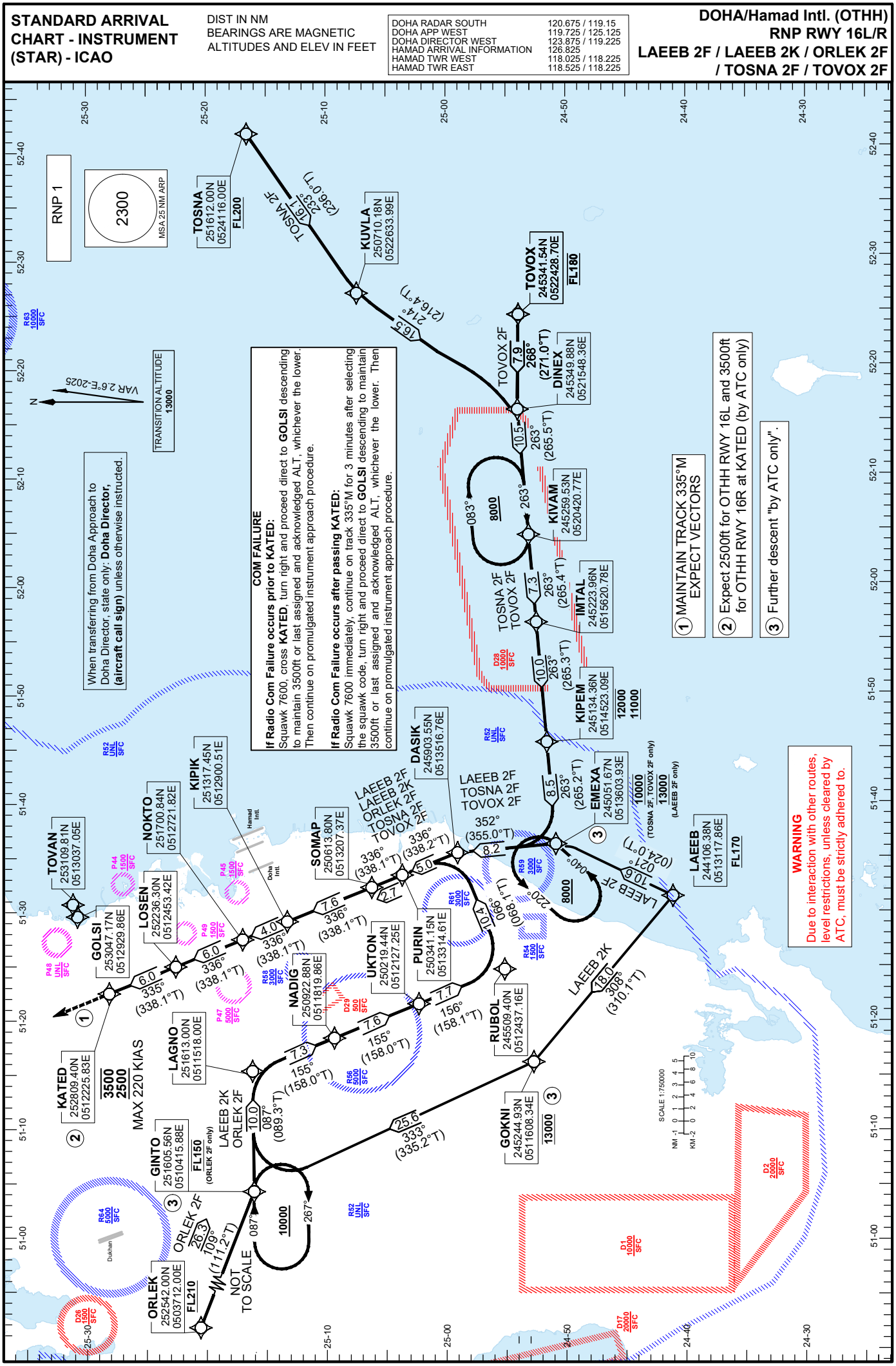
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.15
DOHA APP WEST	119.725 / 125.125
DOHA DIRECTOR WEST	123.875 / 119.225
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 16L/R
LAEEB 2F / LAEEB 2K / ORLEK 2F / TOSNA 2F / TOVOX 2F



STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L/R
LAEEB 2F / LAEEB 2K / ORLEK 2F / TOSNA 2F / TOVOX 2F

TABULAR DESCRIPTION

RNP STAR LAEEB 2F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	+FL170	-	-	RNP 1
2	TF	EMEXA	-	021 (024.0)	-2.6	10.6	-	@13000	-	-	RNP 1
3	TF	DASIK	-	352 (355.0)	-2.6	8.2	-	-	-	-	RNP 1
4	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
5	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
6	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
7	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
8	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
9	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
10	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after EMEXA by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

RNP STAR LAEEB 2K

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	+FL170	-	-	RNP 1
2	TF	GOKNI	-	308 (310.1)	-2.6	18.0	-	@13000	-	-	RNP 1
3	TF	GINTO	-	333 (335.2)	-2.6	25.6	-	-	-	-	RNP 1
4	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	-	-	-	RNP 1
5	TF	NADIG	-	155 (158.0)	-2.6	7.3	-	-	-	-	RNP 1
6	TF	UKTON	-	155 (158.0)	-2.6	7.6	-	-	-	-	RNP 1
7	TF	RUBOL	-	156 (158.1)	-2.6	7.7	-	-	-	-	RNP 1
8	TF	DASIK	-	066 (068.1)	-2.6	10.4	-	-	-	-	RNP 1
9	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
10	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
11	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
12	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
13	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
14	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
15	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after GOKNI by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

RNP STAR ORLEK 2F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ORLEK	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	GINTO	-	109 (111.2)	-2.6	26.3	-	@FL150	-	-	RNP 1
3	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	-	-	-	RNP 1
4	TF	NADIG	-	155 (158.0)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	UKTON	-	155 (158.0)	-2.6	7.6	-	-	-	-	RNP 1
6	TF	RUBOL	-	156 (158.1)	-2.6	7.7	-	-	-	-	RNP 1
7	TF	DASIK	-	066 (068.1)	-2.6	10.4	-	-	-	-	RNP 1
8	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
9	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
10	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
11	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
12	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
13	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
14	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

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RNP STAR TOSNA 2F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	KUVLA	-	233 (236.0)	-2.6	16.1	-	-	-	-	RNP 1
3	TF	DINEX	-	214 (216.4)	-2.6	16.5	-	-	-	-	RNP 1
4	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-	-	-	RNP 1
5	TF	IMTAL	-	263 (265.4)	-2.6	7.3	-	-	-	-	RNP 1
6	TF	KIPEM	-	263 (265.3)	-2.6	10.0	-	+11000/-12000	-	-	RNP 1
7	TF	EMEXA	-	263 (265.2)	-2.6	8.5	-	@10000	-	-	RNP 1
8	TF	DASIK	-	352 (355.0)	-2.6	8.2	-	-	-	-	RNP 1
9	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
10	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
11	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
12	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
13	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
14	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
15	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after EMEXA by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

RNP STAR TOVOX 2F

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOVOX	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	DINEX	-	268 (271.0)	-2.6	7.9	-	-	-	-	RNP 1
3	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-	-	-	RNP 1
4	TF	IMTAL	-	263 (265.4)	-2.6	7.3	-	-	-	-	RNP 1
6	TF	KIPEM	-	263 (265.3)	-2.6	10.0	-	+11000/-12000	-	-	RNP 1
6	TF	EMEXA	-	263 (265.2)	-2.6	8.5	-	@10000	-	-	RNP 1
7	TF	DASIK	-	352 (355.0)	-2.6	8.2	-	-	-	-	RNP 1
8	TF	PURIN	-	336 (338.2)	-2.6	5.0	-	-	-	-	RNP 1
9	TF	SOMAP	-	336 (338.1)	-2.6	2.7	-	-	-	-	RNP 1
10	TF	KIPIK	-	336 (338.1)	-2.6	7.6	-	-	-	-	RNP 1
11	TF	NOKTO	-	336 (338.1)	-2.6	4.0	-	-	-	-	RNP 1
12	TF	LOSEN	-	336 (338.1)	-2.6	6.0	-	-	-	-	RNP 1
13	TF	KATED	-	335 (338.1)	-2.6	6.0	-	+2500/-3500	-220	-	RNP 1
14	FM	KATED	-	335 (338.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after EMEXA by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at KATED (by ATC only).										

WAYPOINT LIST

RNP STAR LAEEB 2F / LAEEB 2K / ORLEK 2F / TOSNA 2F / TOVOX 2F

Waypoint Identifier	Coordinates
LAEEB	244106.38N 0513117.86E
EMEXA	245051.67N 0513603.93E
DASIK	245903.55N 0513516.76E
PURIN	250341.15N 0513314.61E
SOMAP	250613.80N 0513207.37E
KIPIK	251317.45N 0512900.51E
NOKTO	251700.84N 0512721.82E
LOSEN	252236.30N 0512453.42E
KATED	252809.40N 0512225.83E
ORLEK	252542.00N 0503712.00E
GOKNI	245244.93N 0511608.34E
GINTO	251605.56N 0510415.88E

RNP STAR LAEEB 2F / LAEEB 2K / ORLEK 2F / TOSNA 2F / TOVOX 2F

Waypoint Identifier	Coordinates
LAGNO	251613.00N 0511518.00E
NADIG	250922.88N 0511819.86E
UKTON	250219.44N 0512127.25E
RUBOL	245509.40N 0512437.16E
TOSNA	251612.00N 0524116.00E
KUVLA	250710.18N 0522633.99E
DINEX	245349.88N 0521548.36E
KIVAM	245259.53N 0520420.77E
IMTAL	245223.96N 0515620.78E
KIPEM	245134.36N 0514523.09E
TOVOX	245341.54N 0522428.70E

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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.15
DOHA APP EAST	124.775 / 120.60
DOHA DIRECTOR EAST	119.40 / 121.125
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH) RNP RWY 16L/R LAEEB 1P / ORLEK 1P / TOSNA 1P / TOVOX 2P

RNP 1

2300 MSA 25 NM ARP

COM FAILURE

If Radio Com Failure occurs prior to IMGOG:
Squawk 7600, cross **IMGOG** maintaining 2500ft, turn left and proceed direct to **TOVAN**. Then continue on promulgated instrument approach procedure.

If Radio Com Failure occurs after passing IMGOG:
Squawk 7600 immediately, continue on track 336°M maintaining 2500ft for 3 minutes after selecting the squawk code, turn left and proceed direct to **TOVAN**. Then continue on promulgated instrument approach procedure.

1. Turn with MAX 250 KIAS
2. Further descent "by ATC only".
3. MAINTAIN TRACK 336°M EXPECT VECTORS
4. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only)

TOSNA 251612.00N 0524116.00E **FL200**
KUVLA 250710.18N 0522633.99E
TOVOX 245341.54N 0522428.70E **FL180**
DINEX 245349.88N 0521548.36E
UKOBA 245816.01N 0515644.46E **11000**
KIVAM 245259.53N 0520420.77E
MUXED 250356.10N 0514832.78E
SIDMU 251131.44N 0514513.15E **8000**
NOLMA 252318.89N 0514002.12E
PUTAN 252754.71N 0513800.57E
IVANI 253302.21N 0513544.87E **3500** **2500** MAX 220 KIAS
EGNUG 251843.02N 0514203.54E
DASIK 245903.55N 0513516.76E **12000**
LAEEB 244806.38N 0513117.86E **FL170**
IMGOG 253815.65N 0513326.34E
GOLSI 253047.17N 0512929.86E
TOVAN 253109.81N 0513037.05E
LAGNO 251613.00N 0511518.00E
NADIG 240922.88N 0511819.86E
UKTON 240219.44N 0512127.25E
RUBOL 245509.40N 0512437.16E
GINTO 251605.56N 0510415.88E **FL150**
ORLEK 252542.00N 0503712.00E **FL210**

TOSNA 1P (236.0°T) 16.1
214° (216.4°T) 16.5
TOVOX 2P 7.9 268° (271.0°T)
TOSNA 1P TOVOX 2P 10.5 263° (265.5°T)
083° 8000 263°
8.7 305° (307.3°T)
9.3 305° (307.2°T)
LAEEB 1P ORLEK 1P TOSNA 1P TOVOX 2P
8.1 336° (338.3°T)
7.7 336° (338.2°T)
4.9 336° (338.2°T)
4.9 336° (338.2°T)
5.5 336° (338.2°T)
5.6 336° (338.2°T)
13.0 065° (068.0°T)
LAEEB 1P ORLEK 1P 10.4 066° (068.1°T)
LAEEB 1P 15.3 334° (336.6°T)
ORLEK 1P 7.7 156° (158.1°T)
7.6 155° (158.0°T)
7.3 155° (158.0°T)
10.0 087° (089.3°T)
087° 10000 267°
ORLEK 1P 26.3 109° (111.2°T)

SCALE 1:750000
NM -1 0 1 2 3 4 5
KM-2 0 2 4 6 8 10

VAR 2.6°E-2025
TRANSITION ALTITUDE 13000
NOT TO SCALE

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

When transferring from Doha Approach to Doha Director, state only: **Doha Director, (aircraft call sign)** unless otherwise instructed.

STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L/R
LAEEB 1P / ORLEK 1P / TOSNA 1P / TOVOX 2P

TABULAR DESCRIPTION

RNP STAR LAEEB 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	+FL170	-	-	RNP 1
2	TF	RUBOL	-	334 (336.6)	-2.6	15.3	-	-	-	-	RNP 1
3	TF	DASIK	-	066 (068.1)	-2.6	10.4	-	@12000	-	-	RNP 1
4	TF	MUXED	-	065 (068.0)	-2.6	13.0	-	-	-	-	RNP 1
5	TF	SIDMU	-	336 (338.3)	-2.6	8.1	-	+8000	-	-	RNP 1
6	TF	EGNUG	-	336 (338.2)	-2.6	7.7	-	-	-	-	RNP 1
7	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
8	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
9	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
10	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
11	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after LAEEB and SIDMU by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR ORLEK 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ORLEK	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	GINTO	-	109 (111.2)	-2.6	26.3	-	@FL150	-	-	RNP 1
3	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	-	-	-	RNP 1
4	TF	NADIG	-	155 (158.0)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	UKTON	-	155 (158.0)	-2.6	7.6	-	-	-	-	RNP 1
6	TF	RUBOL	-	156 (158.1)	-2.6	7.7	-	-	-	-	RNP 1
7	TF	DASIK	-	066 (068.1)	-2.6	10.4	-	@12000	-	-	RNP 1
8	TF	MUXED	-	065 (068.0)	-2.6	13.0	-	-	-	-	RNP 1
9	TF	SIDMU	-	336 (338.3)	-2.6	8.1	-	+8000	-	-	RNP 1
10	TF	EGNUG	-	336 (338.2)	-2.6	7.7	-	-	-	-	RNP 1
11	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
12	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
13	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
14	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
15	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after GINTO and SIDMU by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

RNP STAR TOSNA 1P

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	KUVLA	-	233 (236.0)	-2.6	16.1	-	-	-	-	RNP 1
3	TF	DINEX	-	214 (216.4)	-2.6	16.5	-	-	-	-	RNP 1
4	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-	-250	-	RNP 1
5	TF	UKOBA	-	305 (307.3)	-2.6	8.7	-	@11000	-	-	RNP 1
6	TF	MUXED	-	305 (307.2)	-2.6	9.3	-	-	-	-	RNP 1
7	TF	SIDMU	-	336 (338.3)	-2.6	8.1	-	+8000	-	-	RNP 1
8	TF	EGNUG	-	336 (338.2)	-2.6	7.7	-	-	-	-	RNP 1
9	TF	NOLMA	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
10	TF	PUTAN	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
11	TF	IVANI	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
12	TF	IMGOG	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
13	FM	IMGOG	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after SIDMU by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

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RNP STAR TOVOX 2P											
Serial Num	**Path Descriptor**	**Waypoint Identifier**	**Fly-over**	**Course °M(°T)**	**Magnetic Variation(°)**	**Distance (NM)**	**Turn Direction**	**Altitude (ft)**	**Speed (kt)**	**VPA(°)/ TCH(ft)**	**Navigation Specification**
1	IF	**TOVOX**	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	**DINEX**	-	268 (271.0)	-2.6	7.9	-	-	-	-	RNP 1
3	TF	**KIVAM**	-	263 (265.5)	-2.6	10.5	-	-	-250	-	RNP 1
4	TF	**UKOBA**	-	305 (307.3)	-2.6	8.7	-	@11000	-	-	RNP 1
5	TF	**MUXED**	-	305 (307.2)	-2.6	9.3	-	-	-	-	RNP 1
6	TF	**SIDMU**	-	336 (338.3)	-2.6	8.1	-	+8000	-	-	RNP 1
7	TF	**EGNUG**	-	336 (338.2)	-2.6	7.7	-	-	-	-	RNP 1
8	TF	**NOLMA**	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
9	TF	**PUTAN**	-	336 (338.2)	-2.6	4.9	-	-	-	-	RNP 1
10	TF	**IVANI**	-	336 (338.2)	-2.6	5.5	-	+2500/-3500	-220	-	RNP 1
11	TF	**IMGOG**	-	336 (338.2)	-2.6	5.6	-	-	-	-	RNP 1
12	FM	**IMGOG**	-	336 (338.2)	-2.6	-	-	-	-	-	RNP 1
Remarks	Further descent after SIDMU by ATC only. Expect 2500ft for OTHH RWY 16L and 3500ft for OTHH RWY 16R at IVANI (by ATC only).										

WAYPOINT LIST

RNP STAR LAEEB 1P / ORLEK 1P / TOSNA 1P / TOVOX 2P	
Waypoint Identifier	**Coordinates**
TOSNA	251612.00N 0524116.00E
KUVLA	250710.18N 0522633.99E
DINEX	245349.88N 0521548.36E
KIVAM	245259.53N 0520420.77E
UKOBA	245816.01N 0515644.46E
MUXED	250356.10N 0514832.78E
SIDMU	251131.44N 0514513.15E
EGNUG	251843.02N 0514203.54E
NOLMA	252318.89N 0514002.12E
PUTAN	252754.71N 0513800.57E
IVANI	253302.21N 0513544.87E

RNP STAR LAEEB 1P / ORLEK 1P / TOSNA 1P / TOVOX 2P	
Waypoint Identifier	**Coordinates**
IMGOG	253815.65N 0513326.34E
TOVOX	245341.54N 0522428.70E
LAEEB	244106.38N 0513117.86E
RUBOL	245509.40N 0512437.16E
DASIK	245903.55N 0513516.76E
ORLEK	252542.00N 0503712.00E
GINTO	251605.56N 0510415.88E
LAGNO	251613.00N 0511518.00E
NADIG	250922.88N 0511819.86E
UKTON	250219.44N 0512127.25E

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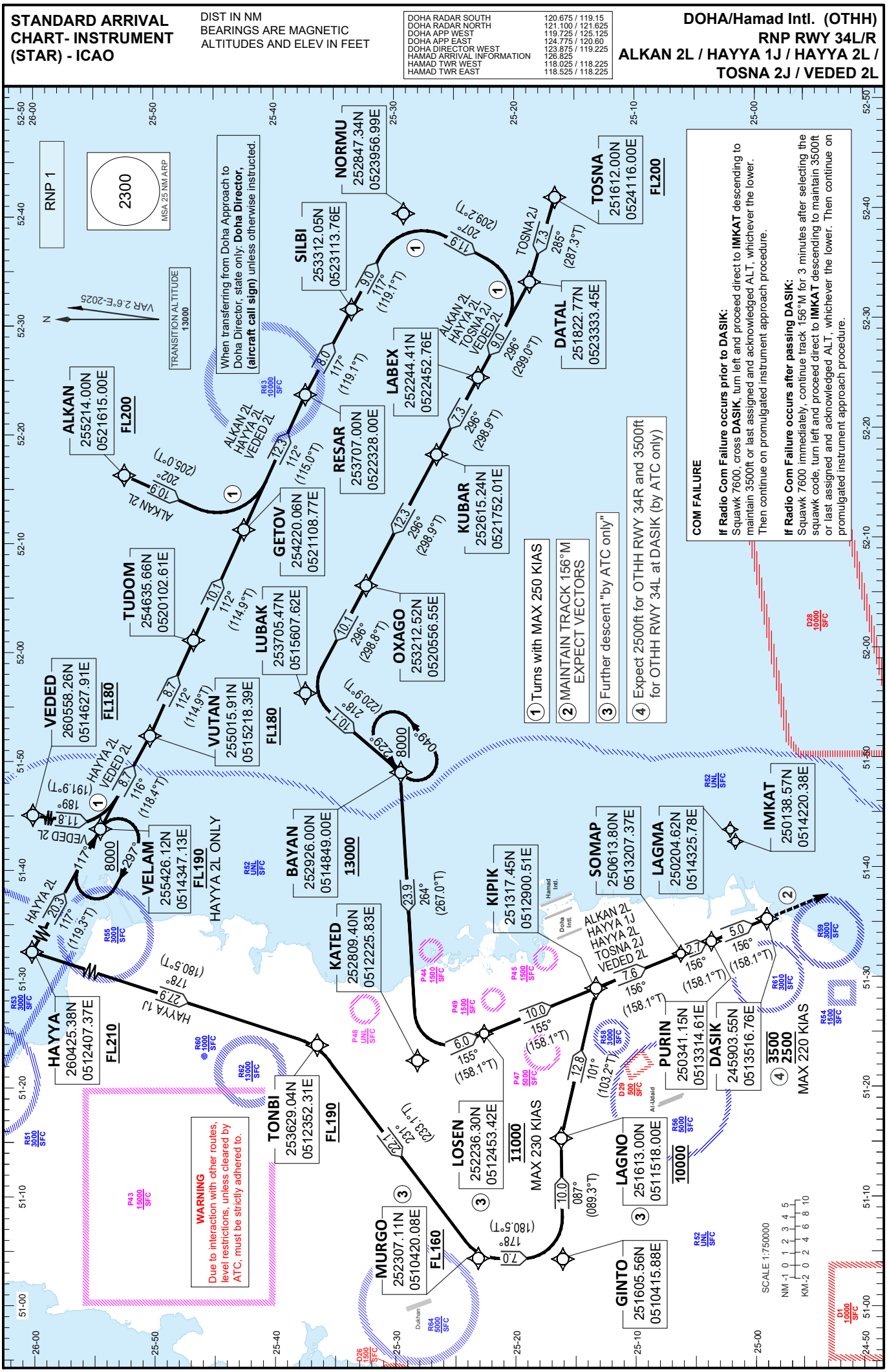
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STANDARD ARRIVAL CHART- INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.15
DOHA RADAR NORTH	121.100 / 121.625
DOHA APP WEST	119.725 / 125.125
DOHA APP EAST	124.775 / 120.60
DOHA DIRECTOR WEST	123.875 / 119.225
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L/R
ALKAN 2L / HAYYA 1J / HAYYA 2L / TOSNA 2J / VEDED 2L



STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L/R
ALKAN 2L / HAYYA 1J/ HAYYA 2L / TOSNA 2J / VEDED 2L

TABULAR DESCRIPTION

RNP STAR ALKAN 2L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	**ALKAN**	**-**	-	-2.6	-	**-**	+FL200	-	**-**	RNP 1
2	TF	**GETOV**	**-**	202 (205.0)	-2.6	10.9	-	-	-250	**-**	RNP 1
3	TF	**RESAR**	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
4	TF	**SILBI**	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
5	TF	**NORMU**	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
6	TF	**DATAL**	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
7	TF	**LABEX**	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
8	TF	**KUBAR**	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
9	TF	**OXAGO**	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
10	TF	**LUBAK**	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
11	TF	**BAYAN**	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
12	TF	**KATED**	-	264 (267.0)	-2.6	23.9	-	-	-	-	RNP 1
13	TF	**LOSEN**	-	155 (158.1)	-2.6	6.0	-	@11000	-230	-	RNP 1
14	TF	**KIPIK**	-	155 (158.1)	-2.6	10.0	-	-	-	-	RNP 1
15	TF	**SOMAP**	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
16	TF	**PURIN**	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
17	TF	**DASIK**	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
18	FM	**DASIK**	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after LOSEN by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

RNP STAR HAYYA 1J

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	**HAYYA**	**-**	-	-2.6	-	**-**	+FL210	-	**-**	RNP 1
2	TF	**TONBI**	**-**	178 (180.5)	-2.6	27.9	-	+FL190	-	**-**	RNP 1
3	TF	**MURGO**	-	231 (233.1)	-2.6	22.1	-	+FL160	-	-	RNP 1
4	TF	**GINTO**	-	178 (180.5)	-2.6	7.0	-	-	-	-	RNP 1
5	TF	**LAGNO**	-	087 (089.3)	-2.6	10.0	-	@10000	-	-	RNP 1
6	TF	**KIPIK**	-	101(103.2)	-2.6	12.8	-	-	-	-	RNP 1
7	TF	**SOMAP**	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
8	TF	**PURIN**	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
9	TF	**DASIK**	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
10	FM	**DASIK**	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after MURGO and LAGNO by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

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RNP STAR HAYYA 2L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
15	TF	KATED	-	264 (267.0)	-2.6	23.9	-	-	-	-	RNP 1
16	TF	LOSEN	-	155 (158.1)	-2.6	6.0	-	@11000	-230	-	RNP 1
17	TF	KIPIK	-	155 (158.1)	-2.6	10.0	-	-	-	-	RNP 1
18	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
19	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
20	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
21	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks		Further descent after LOSEN by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).									

RNP STAR TOSNA 2J

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	DATAL	-	285 (287.3)	-2.6	7.3	-	-	-	-	RNP 1
3	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
4	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
6	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
7	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
8	TF	KATED	-	264 (267.0)	-2.6	23.9	-	-	-	-	RNP 1
9	TF	LOSEN	-	155 (158.1)	-2.6	6.0	-	@11000	-230	-	RNP 1
10	TF	KIPIK	-	155 (158.1)	-2.6	10.0	-		-	-	RNP 1
11	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
12	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
13	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
14	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks		Further descent after LOSEN by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).									

RNP STAR VEDED 2L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	**VEDED**	**-**	-	-2.6	-	**-**	@FL180	-	**-**	RNP 1
2	TF	**VELAM**	**-**	189 (191.9)	-2.6	11.8	-	-	-250	**-**	RNP 1
3	TF	**VUTAN**	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	**TUDOM**	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	**GETOV**	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	**RESAR**	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	**SILBI**	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	**NORMU**	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	**DATAL**	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	**LABEX**	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	**KUBAR**	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	**OXAGO**	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	**LUBAK**	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	**BAYAN**	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
15	TF	**KATED**	-	264 (267.0)	-2.6	23.9	-	-	-	-	RNP 1
16	TF	**LOSEN**	-	155 (158.1)	-2.6	6.0	-	@11000	-230	-	RNP 1
17	TF	**KIPIK**	-	155 (158.1)	-2.6	10.0	-	-	-	-	RNP 1
18	TF	**SOMAP**	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
19	TF	**PURIN**	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
20	TF	**DASIK**	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
21	FM	**DASIK**	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after LOSEN by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

WAYPOINT LIST

RNP STAR ALKAN 2L / HAYYA 1J / HAYYA 2L / TOSNA 2J / VEDED 2L

Waypoint Identifier	Coordinates
ALKAN	255214.00N 0521615.00E
GETOV	254220.06N 0521108.77E
RESAR	253707.00N 0522328.00E
SILBI	253312.05N 0523113.76E
NORMU	252847.34N 0523956.99E
DATAL	251822.77N 0523333.45E
LABEX	252244.41N 0522452.76E
KUBAR	252615.24N 0521752.01E
OXAGO	253212.52N 0520556.55E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
KATED	252809.40N 0512225.83E
LOSEN	252236.30N 0512453.42E
KIPIK	251317.45N 0512900.51E

RNP STAR ALKAN 2L / HAYYA 1J / HAYYA 2L / TOSNA 2J / VEDED 2L

Waypoint Identifier	Coordinates
SOMAP	250613.80N 0513207.37E
PURIN	250341.15N 0513314.61E
DASIK	245903.55N 0513516.76E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
TUDOM	254635.66N 0520102.61E
TOSNA	251612.00N 0524116.00E
VEDED	260558.26N 0514627.91E
TONBI	253629.04N 0512352.31E
MUROG	252307.11N 0510420.08E
GINTO	251605.56N 0510415.88E
LAGNO	251613.00N 0511518.00E

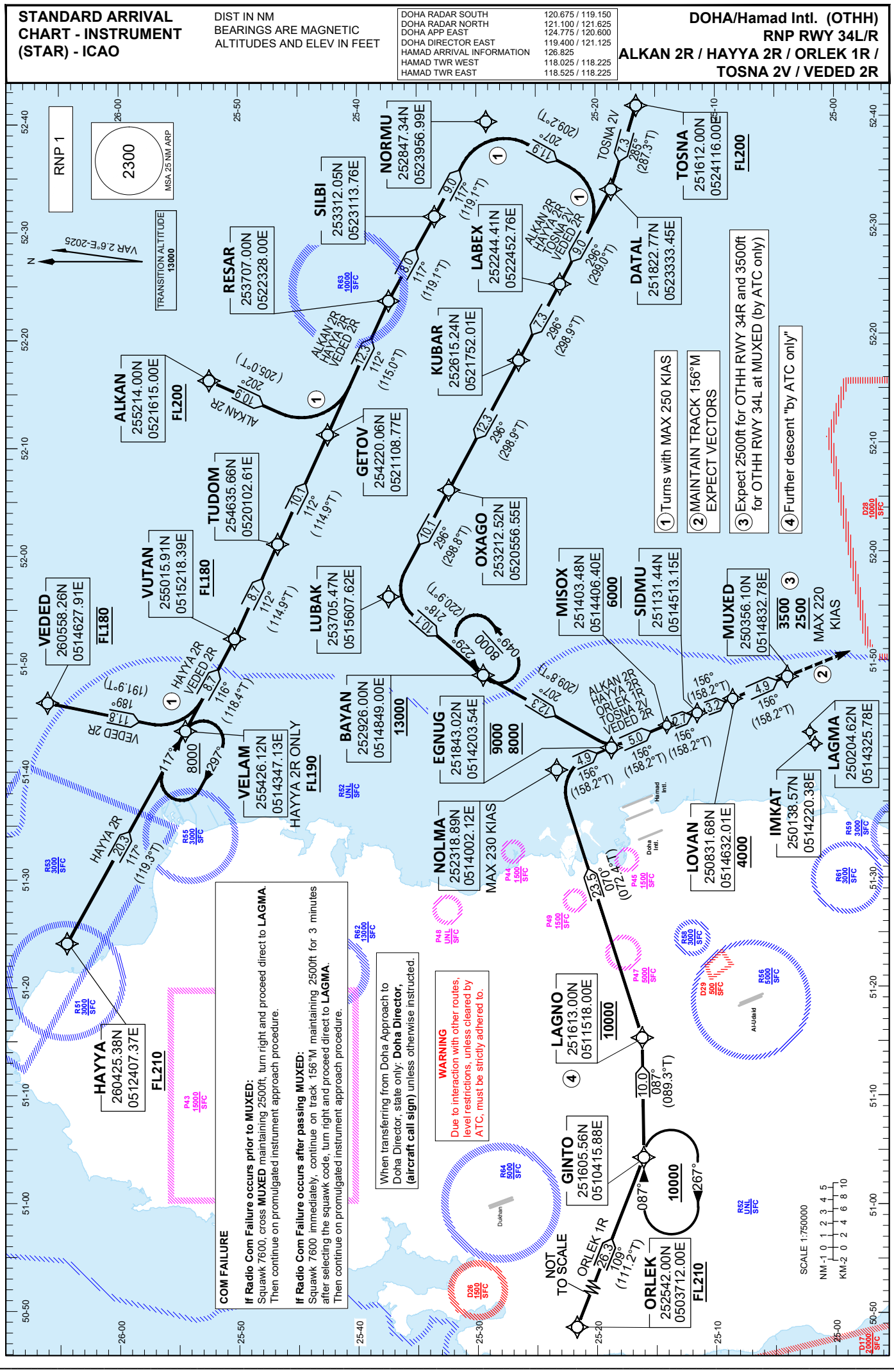
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L/R
ALKAN 2R / HAYYA 2R / ORLEK 1R / TOSNA 2V / VEDED 2R



STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L/R
ALKAN 2R / HAYYA 2R / ORLEK 1R / TOSNA 2V / VEDED 2R

TABULAR DESCRIPTION

RNP STAR ALKAN 2R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ALKAN	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	GETOV	-	202 (205.0)	-2.6	10.9	-	-	-250	-	RNP 1
3	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
4	TF	SILBI	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
5	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
6	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
7	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
8	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
9	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
10	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
11	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
12	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
13	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
14	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
15	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
16	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
17	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks		Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).									

RNP STAR HAYYA 2R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
15	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
16	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
17	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
18	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
19	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
20	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks		Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).									

RNP STAR ORLEK 1R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ORLEK	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	GINTO	-	109 (111.2)	-2.6	26.3	-	-	-	-	RNP 1
3	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	@10000	-	-	RNP 1
4	TF	NOLMA	-	070 (072.4)	-2.6	23.5	-	-	-230	-	RNP 1
5	TF	EGNUG	-	156 (158.2)	-2.6	4.9	-	+8000/-9000	-	-	RNP 1
6	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
7	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
8	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
9	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
10	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks		Further descent after LAGNO by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).									

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RNP STAR TOSNA 2V

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	DATAL	-	285 (287.3)	-2.6	7.3	-	-	-	-	RNP 1
3	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
4	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
6	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
7	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
8	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
9	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
10	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
11	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
12	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
13	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

RNP STAR VEDED 2R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	VEDED	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	VELAM	-	189 (191.9)	-2.6	11.8	-	-	-250	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	TUDOM	-	112 (114.9)	-2.6	8.7	-	-	-	-	RNP 1
5	TF	GETOV	-	112 (114.9)	-2.6	10.1	-	-	-	-	RNP 1
6	TF	RESAR	-	112 (115.0)	-2.6	12.3	-	-	-	-	RNP 1
7	TF	SILBI	-	117 (119.1)	-2.6	8.0	-	-	-	-	RNP 1
8	TF	NORMU	-	117 (119.1)	-2.6	9.0	-	-	-250	-	RNP 1
9	TF	DATAL	-	207 (209.2)	-2.6	11.9	-	-	-250	-	RNP 1
10	TF	LABEX	-	296 (299.0)	-2.6	9.0	-	-	-	-	RNP 1
11	TF	KUBAR	-	296 (298.9)	-2.6	7.3	-	-	-	-	RNP 1
12	TF	OXAGO	-	296 (298.9)	-2.6	12.3	-	-	-	-	RNP 1
13	TF	LUBAK	-	296 (298.8)	-2.6	10.1	-	-	-	-	RNP 1
14	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
15	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
16	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
17	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
18	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
19	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
20	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

WAYPOINT LIST

RNP STAR ALKAN 2R / HAYYA 2R / ORLEK 1R/ TOSNA 2V / VEDED 2R

Waypoint Identifier	Coordinates
ALKAN	255214.00N 0521615.00E
GETOV	254220.06N 0521108.77E
RESAR	253707.00N 0522328.00E
SILBI	253312.05N 0523113.76E
NORMU	252847.34N 0523956.99E
DATAL	251822.77N 0523333.45E
LABEX	252244.41N 0522452.76E
KUBAR	252615.24N 0521752.01E
OXAGO	253212.52N 0520556.55E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
EGNUG	251843.02N 0514203.54E
MISOX	251403.48N 0514406.40E

RNP STAR ALKAN 2R / HAYYA 2R / ORLEK 1R/ TOSNA 2V / VEDED 2R

Waypoint Identifier	Coordinates
SIDMU	251131.44N 0514513.15E
LOVAN	250831.68N 0514632.01E
MUXED	250356.10N 0514832.78E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
TUDOM	254635.66N 0520102.61E
VEDED	260558.26N 0514627.91E
TOSNA	251612.00N 0524116.00E
ORLEK	252542.00N 0503712.00E
GINTO	251605.56N 0510415.88E
LAGNO	251613.00N 0511518.00E
NOLMA	252318.89N 0514002.12E

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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L/R
ALKAN 2V / HAYYA 2V / VEDED 2V

RNP 1

2300 MSA 25 NM ARP

TRANSITION ALTITUDE 13000

VAR 2.6°E-2025

When transferring from Doha Approach to Doha Director, state only: **Doha Director, (aircraft call sign)** unless otherwise instructed.

COM FAILURE

If Radio Com Failure occurs prior to MUXED:
Squawk 7600, cross **MUXED** maintaining 2500ft, turn right and proceed direct to **LAGMA**. Then continue on promulgated instrument approach procedure.

If Radio Com Failure occurs after passing MUXED:
Squawk 7600 immediately, continue track on 156°M maintaining 2500ft for 3 minutes after selecting the squawk code, turn right and proceed direct to **LAGMA**. Then continue on promulgated instrument approach procedure.

① Turns with MAX 250 KIAS

② MAINTAIN TRACK 156°M EXPECT VECTORS

③ Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only)

SCALE 1:750000
NM 1 0 1 2 3 4 5
KM 2 0 2 4 6 8 10

ALKAN
255214.00N
0521615.00E
FL200

SENKI
254637.00N
0520928.00E

LUBAK
253705.47N
0515607.62E

VUTAN
255015.91N
0515218.39E
FL180

VEDED
260558.26N
0514627.91E
FL180

LOVAN
250831.68N
0514632.01E
4000

MUXED
250356.10N
0514832.78E
3500
2500
MAX 220 KIAS

VELAM
255426.12N
0514347.13E
FL190
HAYYA 2V ONLY

BAYAN
252926.00N
0514849.00E
13000

EGNUG
251843.02N
0514203.54E
9000
8000

HAYYA
260425.38N
0512407.37E
FL210

MISOX
251403.48N
0514406.40E
6000

SIDMU
251131.44N
0514513.15E

LAGMA
250204.62N
0514325.78E

IMKAT
250138.57N
0514220.38E

ALKAN 2V
HAYYA 2V
VEDED 2V

WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.

STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L/R
ALKAN 2V / HAYYA 2V / VEDED 2V

TABULAR DESCRIPTION

RNP STAR ALKAN 2V

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ALKAN	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	SENKI	-	225 (227.6)	-2.6	8.3	-	-	-	-	RNP 1
3	TF	LUBAK	-	229 (231.8)	-2.6	15.3	-	-	-	-	RNP 1
4	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
5	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
6	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
7	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
8	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
9	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
10	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

RNP STAR HAYYA 2V

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	HAYYA	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	VELAM	-	117 (119.3)	-2.6	20.3	-	+FL190	-	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	LUBAK	-	163 (165.3)	-2.6	13.6	-	-	-	-	RNP 1
5	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
6	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
7	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
8	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
9	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
10	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
11	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

RNP STAR VEDED 2V

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	VEDED	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	VELAM	-	189 (191.9)	-2.6	11.8	-	-	-250	-	RNP 1
3	TF	VUTAN	-	116 (118.4)	-2.6	8.7	-	+FL180	-	-	RNP 1
4	TF	LUBAK	-	163 (165.3)	-2.6	13.6	-	-	-	-	RNP 1
5	TF	BAYAN	-	218 (220.9)	-2.6	10.1	-	+13000	-	-	RNP 1
6	TF	EGNUG	-	207 (209.8)	-2.6	12.3	-	+8000/-9000	-	-	RNP 1
7	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
8	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
9	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
10	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
11	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

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WAYPOINT LIST

RNP STAR ALKAN 2V / HAYYA 2V / VEDED 2V

Waypoint Identifier	Coordinates
ALKAN	255214.00N 0521615.00E
SENKI	254637.00N 0520928.00E
LUBAK	253705.47N 0515607.62E
BAYAN	252926.00N 0514849.00E
EGNUG	251843.02N 0514203.54E
MISOX	251403.48N 0514406.40E
SIDMU	251131.44N 0514513.15E
LOVAN	250831.68N 0514632.01E
MUXED	250356.10N 0514832.78E
HAYYA	260425.38N 0512407.37E
VELAM	255426.12N 0514347.13E
VUTAN	255015.91N 0515218.39E
VEDED	260558.26N 0514627.91E

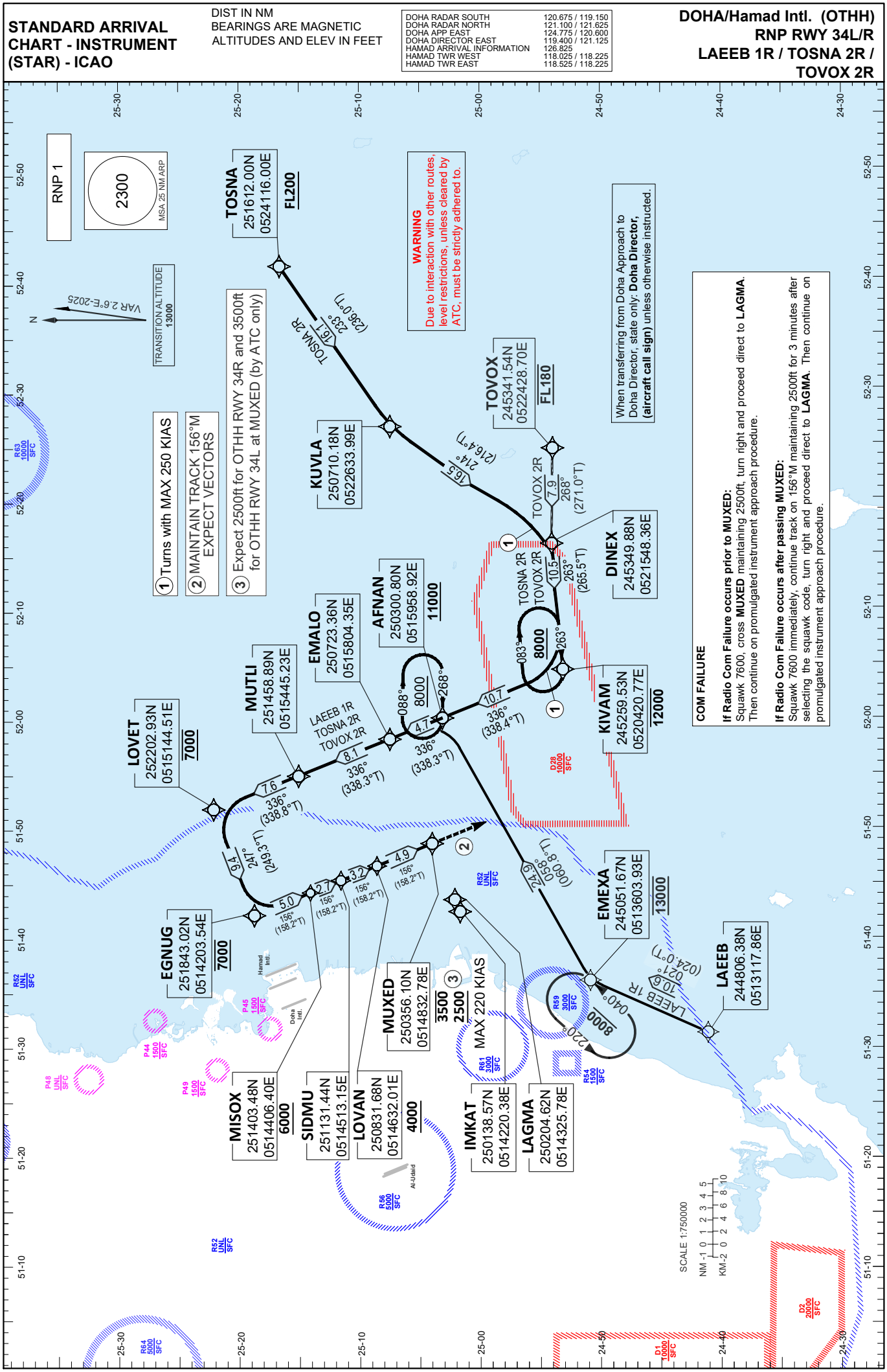
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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR SOUTH	120.675 / 119.150
DOHA RADAR NORTH	121.100 / 121.625
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD ARRIVAL INFORMATION	126.825
HAMAD TWR WEST	118.025 / 118.225
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY 34L/R
LAEEB 1R / TOSNA 2R / TOVOX 2R



STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L/R
LAEEB 1R / TOSNA 2R / TOVOX 2R

TABULAR DESCRIPTION

RNP STAR LAEEB 1R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	-	-	-	RNP 1
2	TF	EMEXA	-	021 (024.0)	-2.6	10.6	-	@13000	-	-	RNP 1
3	TF	AFNAN	-	058 (060.8)	-2.6	24.9	-	+11000	-	-	RNP 1
4	TF	EMALO	-	336 (338.3)	-2.6	4.7	-	-	-	-	RNP 1
5	TF	MUTLI	-	336 (338.3)	-2.6	8.1	-	-	-	-	RNP 1
6	TF	LOVET	-	336 (338.8)	-2.6	7.6	-	@7000	-	-	RNP 2
7	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	@7000	-	-	RNP 1
8	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
9	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
10	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
11	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
12	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

RNP STAR TOSNA 2R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	KUVLA	-	233 (236.0)	-2.6	16.1	-	-	-	-	RNP 1
3	TF	DINEX	-	214 (216.4)	-2.6	16.5	-	-	-250	-	RNP 1
4	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-12000	-	-	RNP 1
5	TF	AFNAN	-	336 (338.4)	-2.6	10.7	-	+11000	-	-	RNP 1
6	TF	EMALO	-	336 (338.3)	-2.6	4.7	-	-	-	-	RNP 1
7	TF	MUTLI	-	336 (338.3)	-2.6	8.1	-	-	-	-	RNP 1
8	TF	LOVET	-	336 (338.8)	-2.6	7.6	-	@7000	-	-	RNP 1
9	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	@7000	-	-	RNP 1
10	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
11	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
12	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
13	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
14	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

RNP STAR TOVOX 2R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOVOX	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	DINEX	-	268 (271.0)	-2.6	7.9	-	-	-	-	RNP 1
3	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-12000	-250	-	RNP 1
4	TF	AFNAN	-	336 (338.4)	-2.6	10.7	-	+11000	-	-	RNP 1
5	TF	EMALO	-	336 (338.3)	-2.6	4.7	-	-	-	-	RNP 1
6	TF	MUTLI	-	336 (338.3)	-2.6	8.1	-	-	-	-	RNP 1
7	TF	LOVET	-	336 (338.8)	-2.6	7.6	-	@7000	-	-	RNP 1
8	TF	EGNUG	-	247 (249.3)	-2.6	9.4	-	@7000	-	-	RNP 1
9	TF	MISOX	-	156 (158.2)	-2.6	5.0	-	+6000	-	-	RNP 1
10	TF	SIDMU	-	156 (158.2)	-2.6	2.7	-	-	-	-	RNP 1
11	TF	LOVAN	-	156 (158.2)	-2.6	3.2	-	+4000	-	-	RNP 1
12	TF	MUXED	-	156 (158.2)	-2.6	4.9	-	+2500/-3500	-220	-	RNP 1
13	FM	MUXED	-	156 (158.2)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at MUXED (by ATC only).										

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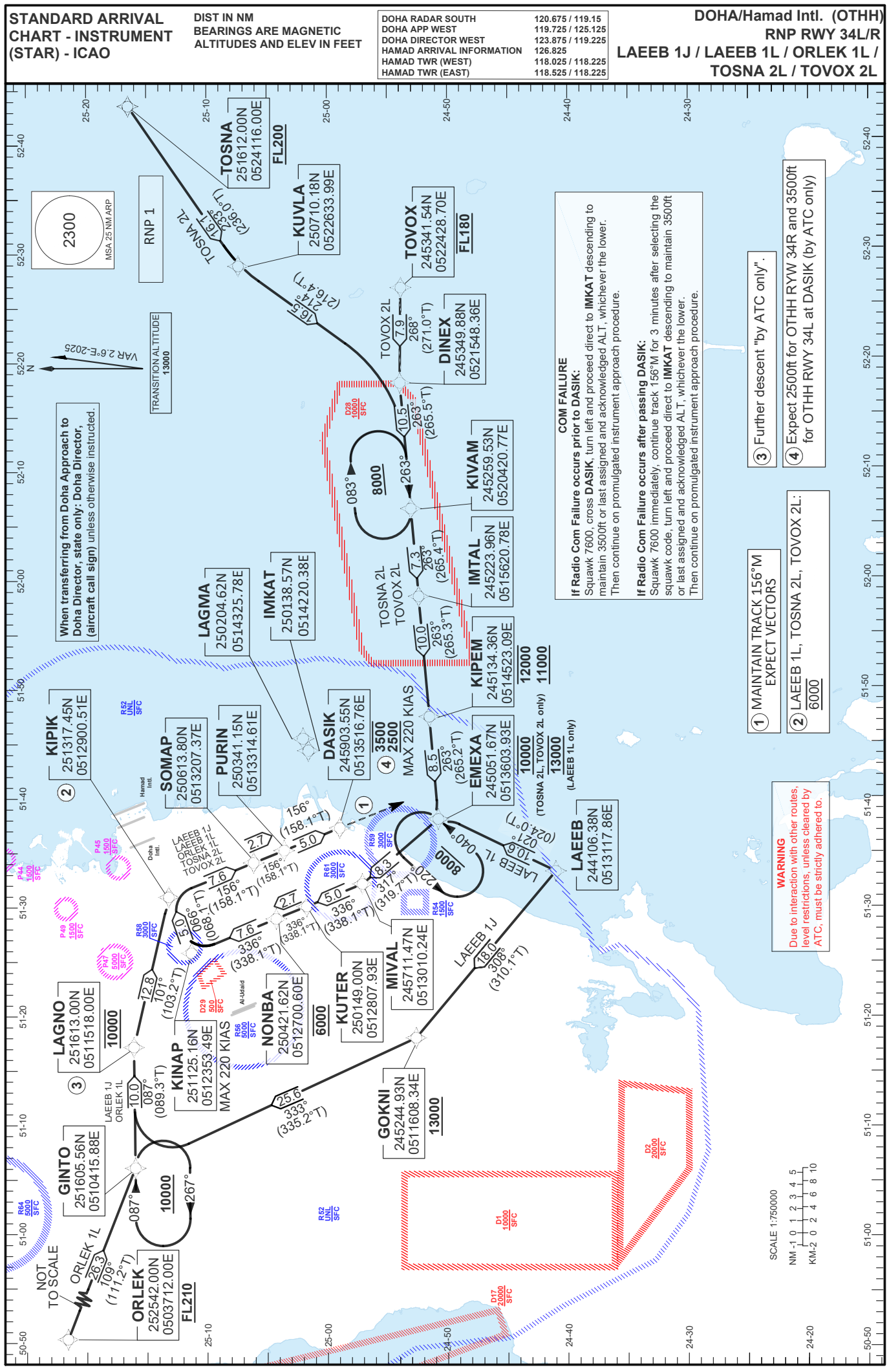
WAYPOINT LIST

RNP STAR LAEEB 1R / TOSNA 2R / TOVOX 2R

Waypoint Identifier	Coordinates
LAEEB	244106.38N 0513117.86E
EMEXA	245051.67N 0513603.93E
AFNAN	250300.80N 0515958.92E
EMALO	250723.36N 0515804.35E
MUTLI	251458.89N 0515445.23E
LOVET	252202.93N 0515144.51E
EGNUG	251843.02N 0514203.54E
MISOX	251403.48N 0514406.40E
SIDMU	251131.44N 0514513.15E
LOVAN	250831.68N 0514632.01E
MUXED	250356.10N 0514832.78E
TOSNA	251612.00N 0524116.00E
KUVLA	250710.18N 0522633.99E
DINEX	245349.88N 0521548.36E
KIVAM	245259.53N 0520420.77E
TOVOX	245341.54N 0522428.70E

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STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO
DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET
DOHA RADAR SOUTH 120.675 / 119.15
DOHA APP WEST 119.725 / 125.125
DOHA DIRECTOR WEST 123.875 / 119.225
HAMAD ARRIVAL INFORMATION 126.825
HAMAD TWR (WEST) 118.025 / 118.225
HAMAD TWR (EAST) 118.525 / 118.225
DOHA/Hamad Intl. (OTHH)
RNP RWY 34L/R
LAEEB 1J / LAEEB 1L / ORLEK 1L /
TOSNA 2L / TOVOX 2L
RNP 1
2300
MSA 25 NM ARP
TRANSITION ALTITUDE 13000
VAR 2.6°E-2025
When transferring from Doha Approach to Doha Director, state only: Doha Director, (aircraft call sign) unless otherwise instructed.
COM FAILURE
If Radio Com Failure occurs prior to DASIK:
Squawk 7600, cross DASIK, turn left and proceed direct to IMKAT descending to maintain 3500ft or last assigned and acknowledged ALT, whichever the lower. Then continue on promulgated instrument approach procedure.
If Radio Com Failure occurs after passing DASIK:
Squawk 7600 immediately, continue track 156°M for 3 minutes after selecting the squawk code, turn left and proceed direct to IMKAT descending to maintain 3500ft or last assigned and acknowledged ALT, whichever the lower. Then continue on promulgated instrument approach procedure.
1 MAINTAIN TRACK 156°M EXPECT VECTORS
2 LAEEB 1L, TOSNA 2L, TOVOX 2L: 6000
3 Further descent "by ATC only".
4 Expect 2500ft for OTHH RYW 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only)
WARNING
Due to interaction with other routes, level restrictions, unless cleared by ATC, must be strictly adhered to.
NOT TO SCALE
SCALE 1:750000
NM -1 0 1 2 3 4 5
KM-2 0 2 4 6 8 10
TOSNA
251612.00N
0524116.00E
FL200
KUVLA
250710.18N
0522633.99E
TOVOX
245341.54N
0522428.70E
FL180
DINEX
245349.88N
0521548.36E
KIVAM
245259.53N
0520420.77E
IMTAL
245223.96N
0515620.78E
KIPEM
245134.36N
0514523.09E
12000
11000
EMEXA
245051.67N
0513603.93E
10000
13000
(TOSNA 2L, TOVOX 2L only)
(LAEEB 1L only)
LAEEB
244106.38N
0513117.86E
DASIK
245903.55N
0513516.76E
3500
2500
MAX 220 KIAS
IMKAT
250138.57N
0514220.38E
LAGMA
250204.62N
0514325.78E
KIPIK
251317.45N
0512900.51E
SOMAP
250613.80N
0513207.37E
PURIN
250341.15N
0513314.61E
LAGNO
251613.00N
0511518.00E
10000
KINAP
251125.16N
0512353.49E
MAX 220 KIAS
NONBA
250421.62N
0512700.60E
6000
KUTER
250149.00N
0512807.93E
MIVAL
245711.47N
0513010.24E
GOKNI
245244.93N
0511608.34E
13000
GINTO
251605.56N
0510415.88E
10000
ORLEK
252542.00N
0503712.00E
FL210
8000
LAEEB 1L
LAEEB 1J
ORLEK 1L
TOSNA 2L
TOVOX 2L
Hamad Intl.
Doha Intl.
Al-Udaid
D1 10000 SFC
D2 20000 SFC
D17 23000 SFC
D28 10000 SFC
D29 500 SFC
P44 1500 SFC
P45 1500 SFC
P47 5000 SFC
P49 1500 SFC
R52 UNL SFC
R54 1500 SFC
R56 500 SFC
R59 3000 SFC
R61 3000 SFC
R64 6000 SFC

STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L/R
LAEEB 1J / LAEEB 1L / ORLEK 1L / TOSNA 2L / TOVOX 2L

TABULAR DESCRIPTION

RNP STAR LAEEB 1J

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	-	-	-	RNP 1
2	TF	GOKNI	-	308 (310.1)	-2.6	18.0	-	+13000	-	-	RNP 1
3	TF	GINTO	-	333 (335.2)	-2.6	25.6	-	-	-	-	RNP 1
4	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	@10000	-	-	RNP 1
5	TF	KIPIK	-	101 (103.2)	-2.6	12.8	-	-	-	-	RNP 1
6	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
7	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
8	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
9	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after LAGNO by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

RNP STAR LAEEB 1L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAEEB	-	-	-2.6	-	-	-	-	-	RNP 1
2	TF	EMEXA	-	021 (024.0)	-2.6	10.6	-	@13000	-	-	RNP 1
3	TF	MIVAL	-	317 (319.7)	-2.6	8.3	-	-	-	-	RNP 1
4	TF	KUTER	-	336 (338.1)	-2.6	5.0	-	-	-	-	RNP 1
5	TF	NONBA	-	336 (338.1)	-2.6	2.7	-	@6000	-	-	RNP 1
6	TF	KINAP	-	336 (338.1)	-2.6	7.6	-	-	-220	-	RNP 1
7	TF	KIPIK	-	066 (068.1)	-2.6	5.0	-	@6000	-	-	RNP 1
8	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
9	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
10	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
11	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

RNP STAR ORLEK 1L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	ORLEK	-	-	-2.6	-	-	+FL210	-	-	RNP 1
2	TF	GINTO	-	109 (111.2)	-2.6	26.3	-	-	-	-	RNP 1
3	TF	LAGNO	-	087 (089.3)	-2.6	10.0	-	@10000	-	-	RNP 1
4	TF	KIPIK	-	101 (103.2)	-2.6	12.8	-	-	-	-	RNP 1
5	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
6	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
7	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
8	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Further descent after LAGNO by ATC only. Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

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RNP STAR TOSNA 2L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOSNA	-	-	-2.6	-	-	+FL200	-	-	RNP 1
2	TF	KUVLA	-	233 (236.0)	-2.6	16.1	-	-	-	-	RNP 1
3	TF	DINEX	-	214 (216.4)	-2.6	16.5	-	-	-	-	RNP 1
4	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-	-	-	RNP 1
5	TF	IMTAL	-	263 (265.4)	-2.6	7.3	-	-	-	-	RNP 1
6	TF	KIPEM	-	263 (265.3)	-2.6	10.0	-	+11000/-12000	-	-	RNP 1
7	TF	EMEXA	-	263 (265.2)	-2.6	8.5	-	@10000	-	-	RNP 1
8	TF	MIVAL	-	317 (319.7)	-2.6	8.3	-	-	-	-	RNP 1
9	TF	KUTER	-	336 (338.1)	-2.6	5.0	-	-	-	-	RNP 1
10	TF	NONBA	-	336 (338.1)	-2.6	2.7	-	@6000	-	-	RNP 1
11	TF	KINAP	-	336 (338.1)	-2.6	7.6	-	-	-220	-	RNP 1
12	TF	KIPIK	-	066 (068.1)	-2.6	5.0	-	@6000	-	-	RNP 1
13	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
14	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
15	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
16	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

RNP STAR TOVOX 2L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation(°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOVOX	-	-	-2.6	-	-	@FL180	-	-	RNP 1
2	TF	DINEX	-	268 (271.0)	-2.6	7.9	-	-	-	-	RNP 1
3	TF	KIVAM	-	263 (265.5)	-2.6	10.5	-	-	-	-	RNP 1
4	TF	IMTAL	-	263 (265.4)	-2.6	7.3	-	-	-	-	RNP 1
5	TF	KIPEM	-	263 (265.3)	-2.6	10.0	-	+11000/-12000	-	-	RNP 1
6	TF	EMEXA	-	263 (265.2)	-2.6	8.5	-	@10000	-	-	RNP 1
7	TF	MIVAL	-	317 (319.7)	-2.6	8.3	-	-	-	-	RNP 1
8	TF	KUTER	-	336 (338.1)	-2.6	5.0	-	-	-	-	RNP 1
9	TF	NONBA	-	336 (338.1)	-2.6	2.7	-	@6000	-	-	RNP 1
10	TF	KINAP	-	336 (338.1)	-2.6	7.6	-	-	-220	-	RNP 1
11	TF	KIPIK	-	066 (068.1)	-2.6	5.0	-	@6000	-	-	RNP 1
12	TF	SOMAP	-	156 (158.1)	-2.6	7.6	-	-	-	-	RNP 1
13	TF	PURIN	-	156 (158.1)	-2.6	2.7	-	-	-	-	RNP 1
14	TF	DASIK	-	156 (158.1)	-2.6	5.0	-	+2500/-3500	-220	-	RNP 1
15	FM	DASIK	-	156 (158.1)	-2.6	-	-	-	-220	-	RNP 1
Remarks	Expect 2500ft for OTHH RWY 34R and 3500ft for OTHH RWY 34L at DASIK (by ATC only).										

WAYPOINT LIST

RNP STAR LAEEB 1L / LAEEB 1J / ORLEK 1L / TOSNA 2L / TOVOX 2L

Waypoint Identifier	Coordinates
LAEEB	244106.38N 0513117.86E
GOKNI	245244.93N 0511608.34E
EMEXA	245051.67N 0513603.93E
MIVAL	245711.47N 0513010.24E
KUTER	250149.00N 0512807.93E
NONBA	250421.62N 0512700.60E
KINAP	251125.16N 0512353.49E
KIPIK	251317.45N 0512900.51E
SOMAP	250613.80N 0513207.37E
PURIN	250341.15N 0513314.61E
DASIK	245903.55N 0513516.76E

RNP STAR LAEEB 1L / LAEEB 1J / ORLEK 1L / TOSNA 2L / TOVOX 2L

Waypoint Identifier	Coordinates
ORLEK	252542.00N 0503712.00E
GINTO	251605.56N 0510415.88E
LAGNO	251613.00N 0511518.00E
TOSNA	251612.00N 0524116.00E
KUVLA	250710.18N 0522633.99E
DINEX	245349.88N 0521548.36E
KIVAM	245259.53N 0520420.77E
IMTAL	245223.96N 0515620.78E
KIPEM	245134.36N 0514523.09E
TOVOX	245341.54N 0522428.70E

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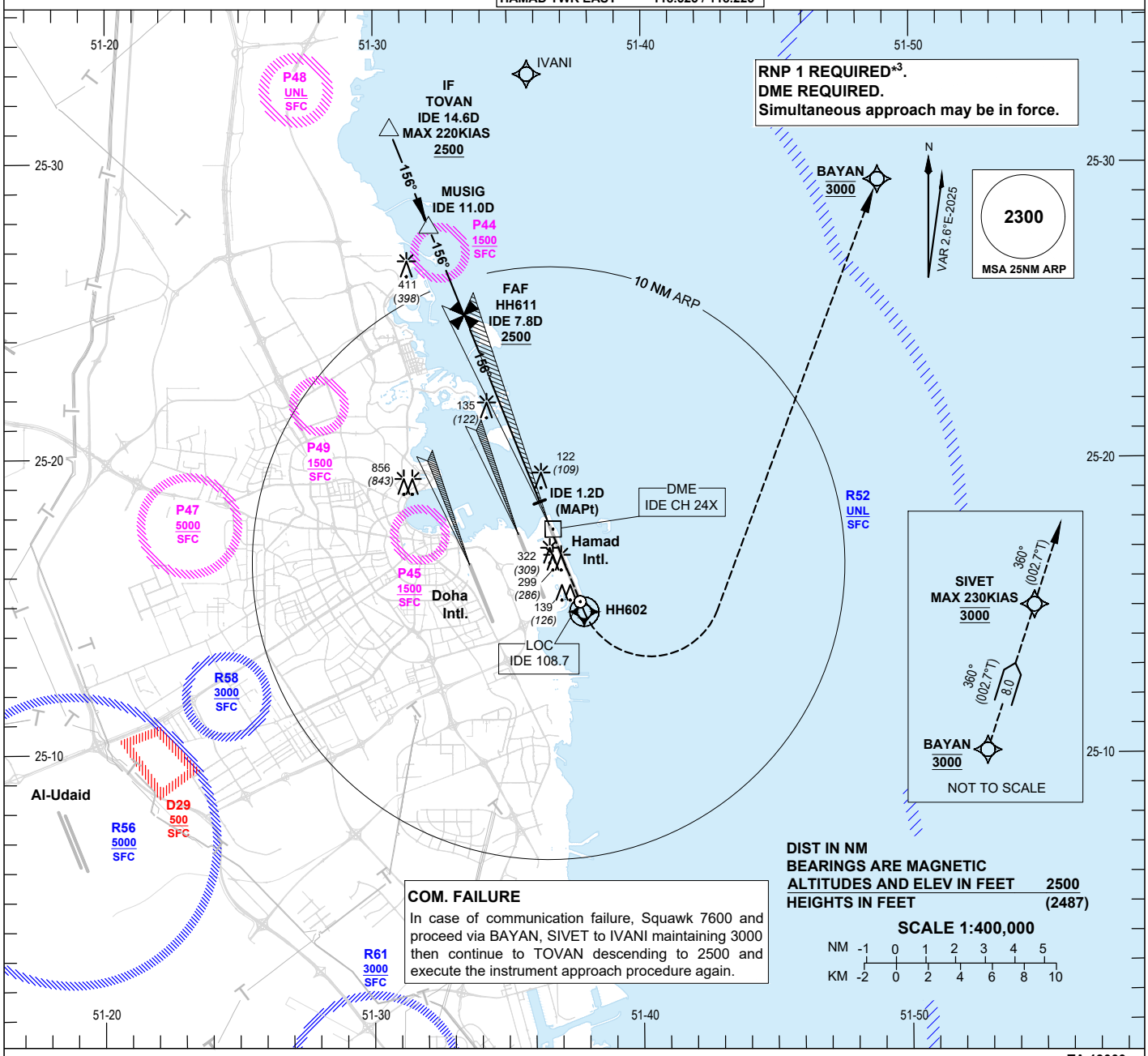
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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 16L - ELEV 13

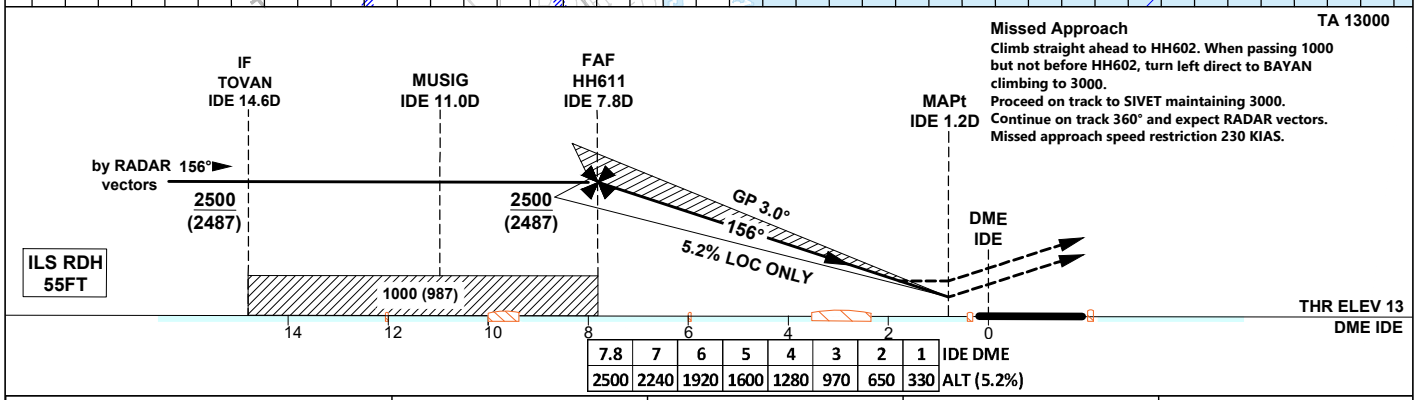
DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
ILS RWY16L CAT II & III
ACFT CAT A B C D



COM. FAILURE

In case of communication failure, Squawk 7600 and proceed via BAYAN, SIVET to IVANI maintaining 3000 then continue to TOVAN descending to 2500 and execute the instrument approach procedure again.



OCA (OCH)		A	B	C	D
Straight in Approach	ILS CAT I	188 (175)	200 (187)	213 (200)	230 (217)
	ILS CAT II	108 (95)	119 (106)	130 (117)	147 (134)
	LOC ONLY	490 (477)			
Circling		620 (607)		1260 (1247)	

1. IDE DME Zero Ranged to TDZ.
2. CAT IIIA and CAT IIIB Approved.
3. *RNP 1 required in the Missed Approach.
4. In case of Missed Approach inform ATC immediately.

LOC ONLY Approach: MAPt at IDE 1.2D							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART- ICAO

DOHA/Hamad Intl.(OTHH)
ILS RWY 16L CAT II & III
ACFT CAT A B C D

AERONAUTICAL DATA TABULATION

TABULAR DESCRIPTION

ILS approach to RWY16L from TOVAN (IF)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Recom. Navaid	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOVAN	-	-	-	-	-	+2500	-220	-	-
2	CF	MUSIG	-	156 (158.2)	IDE	3.6	-	-	-	-	-
3	CF	HH611	-	156 (158.2)	IDE	3.2	-	+2500	-	-	-
4	CF	THR 16L	-	156 (158.2)	IDE	7.6	-	-	-	-3.00 / 55	-
5	CF	HH602	Y	156 (158.2)	DOH	-	-	-	-	-	RNP 1
6	CA	-	-	156 (158.2)	-	-	-	+1000	-	-	RNP 1
7	DF	BAYAN	-	-	-	-	L	@3000	-	-	RNP 1
8	TF	SIVET	-	360 (002.7)	-	8.0	-	@3000	-	-	RNP 1
9	FM	SIVET	-	360 (002.8)	-	-	-	-	-230	-	RNP 1

Waypoint & Fix/Point list

Waypoint/Fix/Point	Coordinates
TOVAN (IF) - BRG 155.57° / 14.56 NM IDE	253109.81N 0513037.05E
MUSIG - BRG 155.57° / 11.00 NM IDE	252751.10N 0513204.88E
HH611 (FAF) - BRG 155.57° / 7.81 NM IDE	252452.74N 0513323.71E
Final approach descent angle (LOC Only) - 3.00°	-
IDE 1.2D (MAPt LOC Only) - BRG 155.57° / 1.20 NM IDE	251843.56N 0513606.58E
HH602 (MATF)	251449.85N 0513749.52E
BAYAN (MATF)	252926.00N 0514849.00E
SIVET (MATF)	253727.14N 0514914.49E

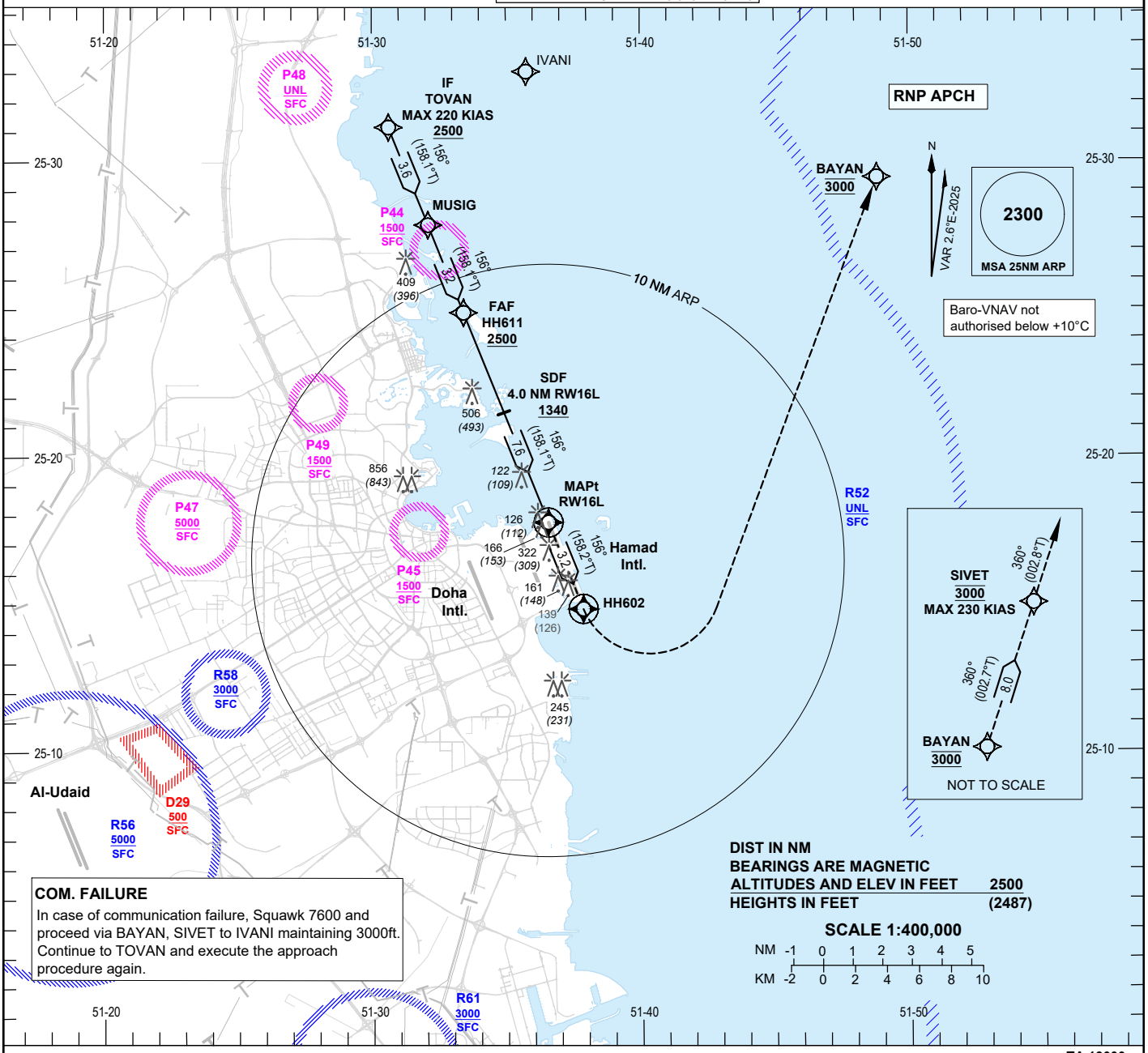
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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 16L - ELEV 13

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP EAST	124.775 / 120.600
DOHA DIRECTOR EAST	119.400 / 121.125
HAMAD TWR EAST	118.525 / 118.225

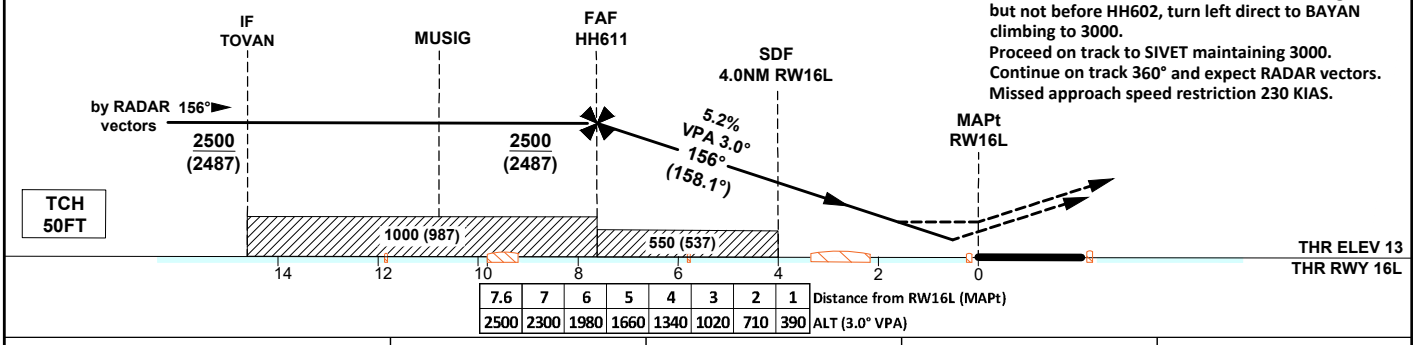
DOHA/Hamad Intl. (OTHH)
RNP RWY16L
ACFT CAT A B C D



COM. FAILURE
In case of communication failure, Squawk 7600 and proceed via BAYAN, SIVET to IVANI maintaining 3000ft. Continue to TOVAN and execute the approach procedure again.

TA 13000

Missed Approach
Climb straight ahead to HH602. When passing 1000 but not before HH602, turn left direct to BAYAN climbing to 3000.
Proceed on track to SIVET maintaining 3000.
Continue on track 360° and expect RADAR vectors.
Missed approach speed restriction 230 KIAS.



Distance from RW16L (MAPt)	7.6	7	6	5	4	3	2	1
ALT (3.0° VPA)	2500	2300	1980	1660	1340	1020	710	390

OCA (OCH)		A	B	C	D
Straight in Approach	LNAV/VNAV	367 (354)	380 (367)	388 (375)	398 (385)
	LNAV	490 (477)			
Circling		620 (607)		1260 (1247)	

1. In case of Missed Approach inform ATC immediately.

Approach: MAPt at RW16L							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART-ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16L
ACFT CAT A,B,C,D

TABULAR DESCRIPTION

RNP RWY 16L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation (°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	TOVAN	-	-	-2.6	-	-	+2500	-220	-	RNP APCH
2	TF	MUSIG	-	156 (158.1)	-2.6	3.6	-	-	-	-	RNP APCH
3	TF	HH611	-	156 (158.1)	-2.6	3.2	-	+2500	-	-	RNP APCH
4	TF	RW16L	Y	156 (158.1)	-2.6	7.6	-	-	-	-3.00 / 50	RNP APCH
5	TF	HH602	Y	156 (158.2)	-2.6	3.2	-	-	-	-	RNP APCH
6	CA	-	-	156 (158.2)	-2.6	-	-	+1000	-	-	RNP APCH
7	DF	BAYAN	-	-	-2.6	-	L	@3000	-	-	RNP APCH
8	TF	SIVET	-	360 (002.7)	-2.6	8.0	-	@3000	-	-	RNP APCH
9	FM	SIVET	-	360 (002.8)	-2.6	-	-	-	-230	-	RNP APCH

WAYPOINT LIST

RNP RWY 16L

Waypoint Identifier	Coordinates
TOVAN	253109.81N 0513037.05E
MUSIG	252751.10N 0513204.88E
HH611	252452.74N 0513323.71E
RW16L	251745.97N 0513631.96E
HH602	251449.85N 0513749.52E
BAYAN	252926.00N 0514849.00E
SIVET	253727.14N 0514914.49E

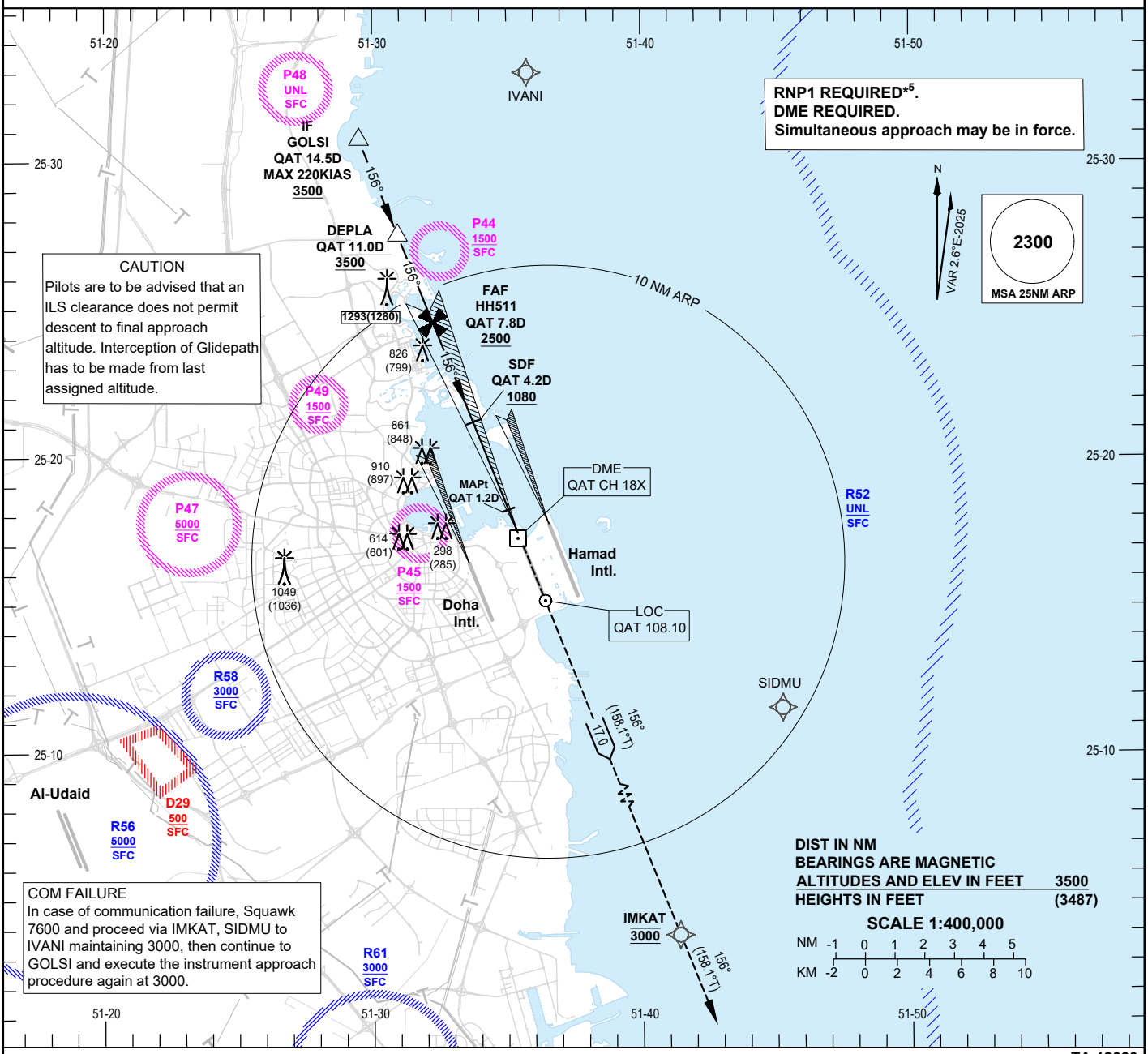
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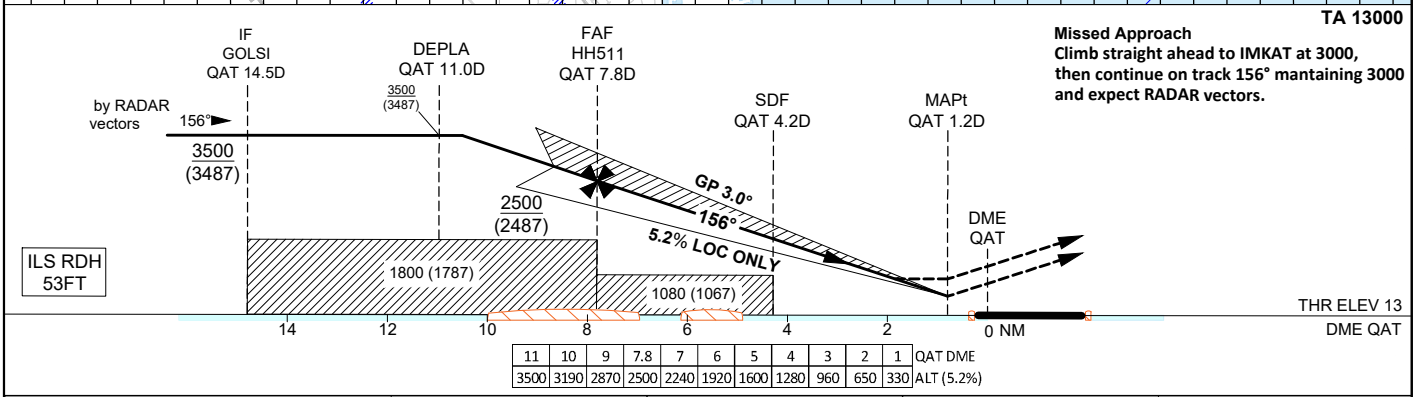
INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 16R - ELEV 13

DOHA RADAR NORTH	121.100 / 121.625	DOHA DIRECTOR WEST	123.875 / 119.225
DOHA RADAR SOUTH	120.675 / 119.150	HAMAD TWR WEST	118.025 / 118.225
DOHA APP EAST	124.775 / 120.600		
DOHA APP WEST	119.725 / 125.125		

DOHA/Hamad Intl. (OTHH)
ILS RWY16R CAT II & III
ACFT CAT A B C D





OCA (OCH)		A	B	C	D
Straight in Approach	ILS CAT I	188(175)	200 (187)	220 (207)	262 (249)
	ILS CAT II	84 (71)	96 (83)	114 (101)	135 (122)
	LOC ONLY	490 (477)			
Circling		620 (607)		1260 (1247)	

1. QAT DME Zero Ranged to TDZ.
2. Expect RADAR vectors to establish on final approach course at GOLSI (IF).
3. Expect Glide Path intercept at DEPLA at 3500 (3487).
4. CAT IIIA and CAT IIIB Approved.
5. *RNP 1 required in the Missed Approach.
6. In case of Missed Approach inform ATC immediately.

LOC ONLY Approach: MAPt at QAT 1.2D							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

INSTRUMENT APPROACH CHART- ICAO

DOHA/Hamad Intl.(OTHH)
ILS RWY 16R CAT II & III
ACFT CAT A B C D

AERONAUTICAL DATA TABULATION

TABULAR DESCRIPTION

ILS approach to RWY16R from GOLSI (IF)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Recom. Navaid	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	GOLSI	-	-	-	-	-	+3500	-220	-	-
2	CF	DEPLA	-	156 (158.2)	QAT	3.5	-	+3500	-	-	-
3	CF	HH511	-	156 (158.2)	QAT	3.2	-	+2500	-	-	-
4	CF	THR 16R	-	156 (158.2)	QAT	7.6	-	-	-	-3.00 / 53	-
5	TF	IMKAT	-	156 (158.2)	-	17.0	-	@3000	-	-	RNP 1
6	FM	IMKAT	-	156 (158.2)	-	-	-	-	-	-	RNP 1

Waypoint & Fix/Point list

Waypoint/Fix/Point	Coordinates
GOLSI (IF) - BRG 155.56° / 14.48 NM QAT	253047.17N 0512929.86E
DEPLA - BRG 155.56° / 11.00 NM QAT	252732.66N 0513056.00E
HH511 (FAF) - BRG 155.56° / 7.81 NM QAT	252434.64N 0513214.60E
Final approach descent angle (LOC Only) - 3.00°	-
QAT 4.2D (SDF LOC Only) - BRG 155.56° / 4.20 NM QAT	252112.84N 0513343.68E
QAT 1.2D (MAPt LOC Only) - BRG 155.56° / 1.20 NM QAT	251825.11N 0513457.67E
IMKAT (MATF)	250138.57N 0514220.38E

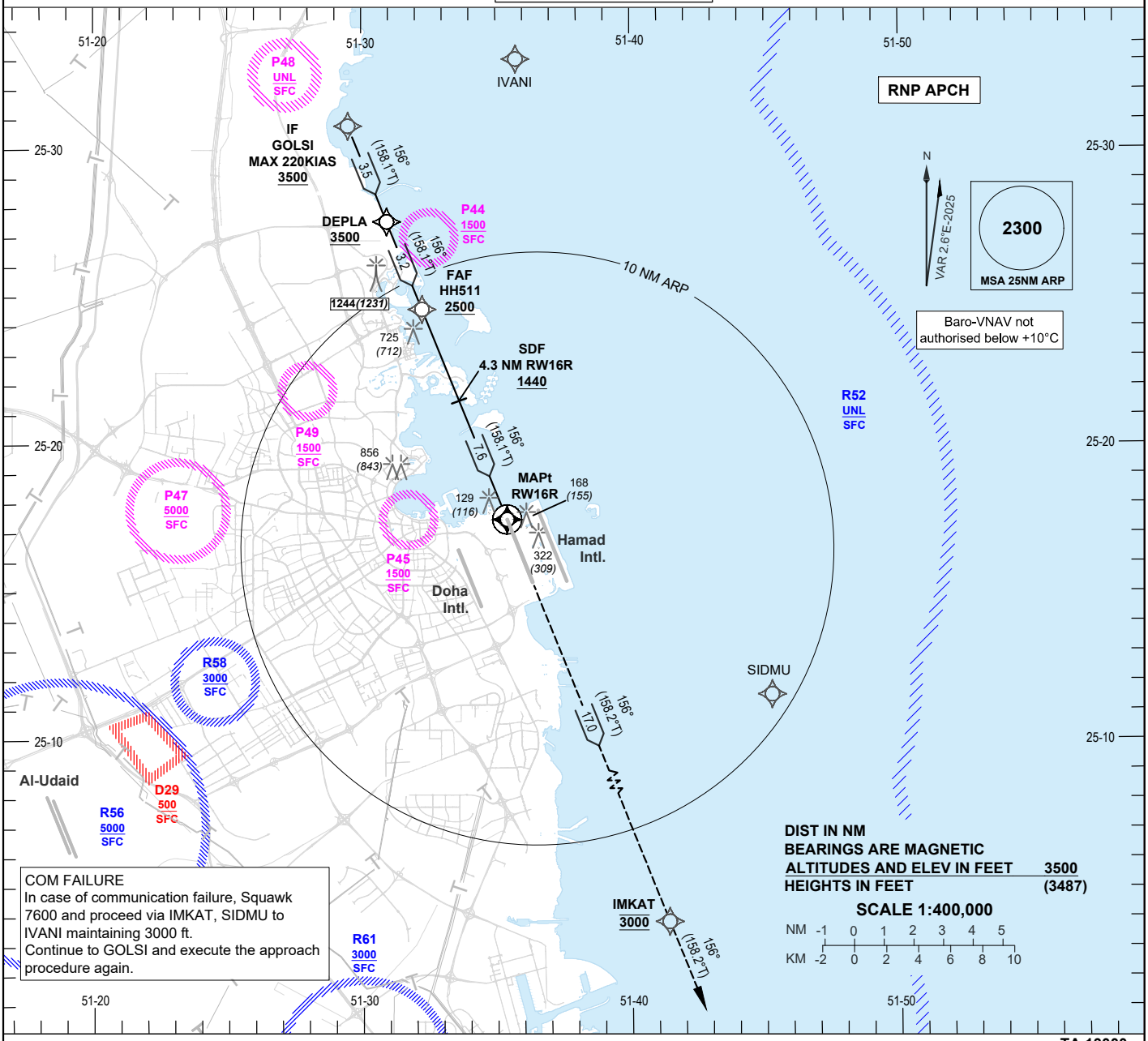
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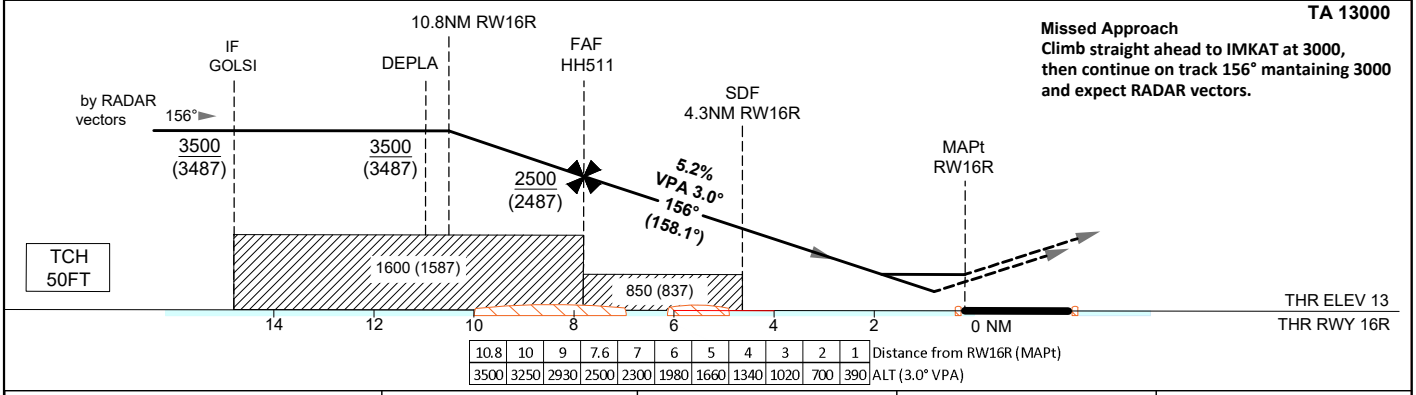
INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 16R - ELEV 13

DOHA RADAR NORTH	121.100 /121.625
DOHA RADAR SOUTH	120.675 /119.150
DOHA APP EAST	124.775 /120.600
DOHA APP WEST	119.725 /125.125
DOHA DIRECTOR WEST	123.875 /119.225
HAMAD TWR WEST	118.025 /118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY16R
ACFT CAT A B C D





TA 13000

Missed Approach
Climb straight ahead to IMKAT at 3000, then continue on track 156° mantaining 3000 and expect RADAR vectors.

OCA (OCH)		A	B	C	D
Straight in Approach	LNAV/VNAV	367 (354)	380 (367)	388 (375)	398 (385)
	LNAV	490 (477)			
Circling		620 (607)		1260 (1247)	

1. Expect RADAR vectors to establish on final approach course at GOLSI (IF).
2. In case of Missed Approach inform ATC immediately.

Approach: MAPt at RW16R							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART-ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 16R
ACFT CAT A,B,C,D

TABULAR DESCRIPTION

RNP RWY 16R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation (°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	GOLSI	-	-	-2.6	-	-	+3500	-220	-	RNP APCH
2	TF	DEPLA	-	156 (158.1)	-2.6	3.5	-	+3500	-	-	RNP APCH
3	TF	HH511	-	156 (158.1)	-2.6	3.2	-	+2500	-	-	RNP APCH
4	TF	RW16R	Y	156 (158.1)	-2.6	7.6	-	-	-	-3.00 / 50	RNP APCH
5	TF	IMKAT	-	156 (158.2)	-2.6	17.0	-	@3000	-	-	RNP APCH
6	FM	IMKAT	-	156 (158.2)	-2.6	-	-	-	-	-	RNP APCH

WAYPOINT LIST

RNP RWY 16R

Waypoint Identifier	Coordinates
GOLSI	253047.17N 0512929.86E
DEPLA	252732.66N 0513056.00E
HH511	252434.64N 0513214.60E
RW16R	251727.52N 0513523.07E
IMKAT	250138.57N 0514220.38E

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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 34L - ELEV 13

DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP EAST	124.775 / 120.600
DOHA APP WEST	119.725 / 125.125
DOHA DIRECTOR WEST	123.875 / 119.225
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
ILS RWY34L CAT II & III
ACFT CAT A B C D

CAUTION
Pilots are to be advised that an ILS clearance does not permit descent to final approach altitude. Interception of Glidepath has to be made from last assigned altitude.

DME REQUIRED.
RNP1 REQUIRED
Simultaneous approach may be in force.

COM. FAILURE
In case of communication failure, Squawk 7600 and proceed via GOLSI, EGNUG to MUXED maintaining 3000 then continue to IMKAT and execute the instrument approach procedure again.

2300
MSA 25NM ARP

VAR 2.6°E-2025

GOLSI 3000
1293(1280)
336° (338.2°T) 16.6
10 NM ARP
LOC HJJ 111.9
DME HJJ CH 56X
EGNUG
Hamad Intl.
Doha Intl.
861 (848)
910 (897)
614 (601)
298 (285)
1049 (1036)
161 (148)
HJJ 1.2D (MAPt)
FAF HH811 HJJ 7.8D 2500
PASID HJJ 11.0D 3500
IF IMKAT HJJ 14.9D MAX 220 KIAS 3500
MUXED
Al-Udaid

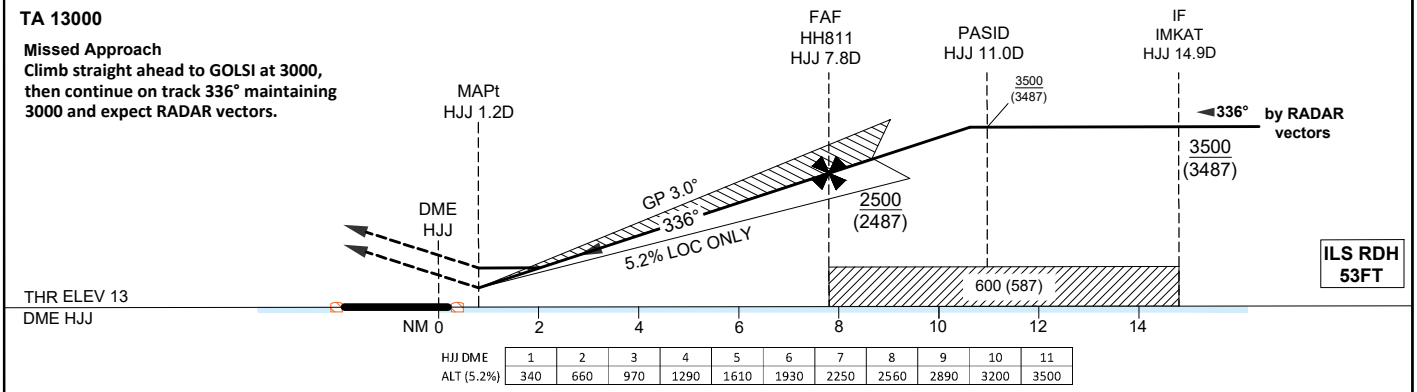
P48 UNL SFC
P44 1500 SFC
P49 1500 SFC
P47 5000 SFC
P45 1500 SFC
R58 3000 SFC
D29 500 SFC
R56 5000 SFC
R61 3000 SFC
R52 UNL SFC

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET 3500
HEIGHTS IN FEET (3487)

SCALE 1:400,000
NM -1 0 1 2 3 4 5
KM -2 0 2 4 6 8 10

TA 13000

Missed Approach
Climb straight ahead to GOLSI at 3000, then continue on track 336° maintaining 3000 and expect RADAR vectors.



HJJ DME	1	2	3	4	5	6	7	8	9	10	11
ALT (5.2%)	340	660	970	1290	1610	1930	2250	2560	2890	3200	3500

OCA (OCH)		A	B	C	D
Straight in Approach	ILS CAT I	186 (173)	198 (185)	215 (202)	229 (216)
	ILS CAT II	81 (68)	93 (80)	108 (95)	135 (122)
	LOC ONLY	340 (327)			
Circling		620 (607)		1260(1247)	

1. Simultaneous approach may be in force.
2. HJJ DME Zero ranged at TDZ
3. Expect RADAR vectors to establish on final approach course at IMKAT (IF).
4. Expect Glide Path intercept at PASID at 3500 (3487).
5. CAT IIIA and CAT IIIB Approved.
6. *RNP 1 required in the Missed Approach.
7. In case of Missed Approach inform ATC immediately.

LOC ONLY Approach: MAPt at HJJ 1.2D							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

INSTRUMENT APPROACH CHART- ICAO

DOHA/Hamad Intl.(OTHH)
ILS RWY 34L CAT II & III
ACFT CAT A B C D

AERONAUTICAL DATA TABULATION

TABULAR DESCRIPTION

ILS approach to RWY34L from IMKAT (IF)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Recom. Navaid	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	IMKAT	-	-	-	-	-	+3500	-220	-	-
2	CF	PASID	-	336 (338.2)	HJJ	3.9	-	+3500	-	-	-
3	CF	HH811	-	336 (338.2)	HJJ	3.2	-	+2500	-	-	-
4	CF	THR 34L	-	336 (338.2)	HJJ	7.6	-	-	-	-3.00 / 53	-
5	TF	GOLSI	-	336 (338.2)	-	16.6	-	@3000	-	-	RNP 1
6	FM	GOLSI	-	336 (338.2)	-	-	-	-	-	-	RNP 1

Waypoint & Fix/Point list

Waypoint/Fix/Point	Coordinates
IMKAT (IF) - BRG 335.57° / 14.89 NM HJJ	250138.57N 0514220.38E
PASID - BRG 335.57° / 11.00 NM HJJ	250515.69N 0514045.07E
HH811 (FAF) - BRG 335.57° / 7.84 NM HJJ	250812.13N 0513927.55E
Final approach descent angle (LOC Only) - 3.00°	-
HJJ 1.2D (MAPt LOC Only) - BRG 335.57° / 1.20 NM HJJ	251423.39N 0513644.20E
GOLSI (MATF)	253047.17N 0512929.86E

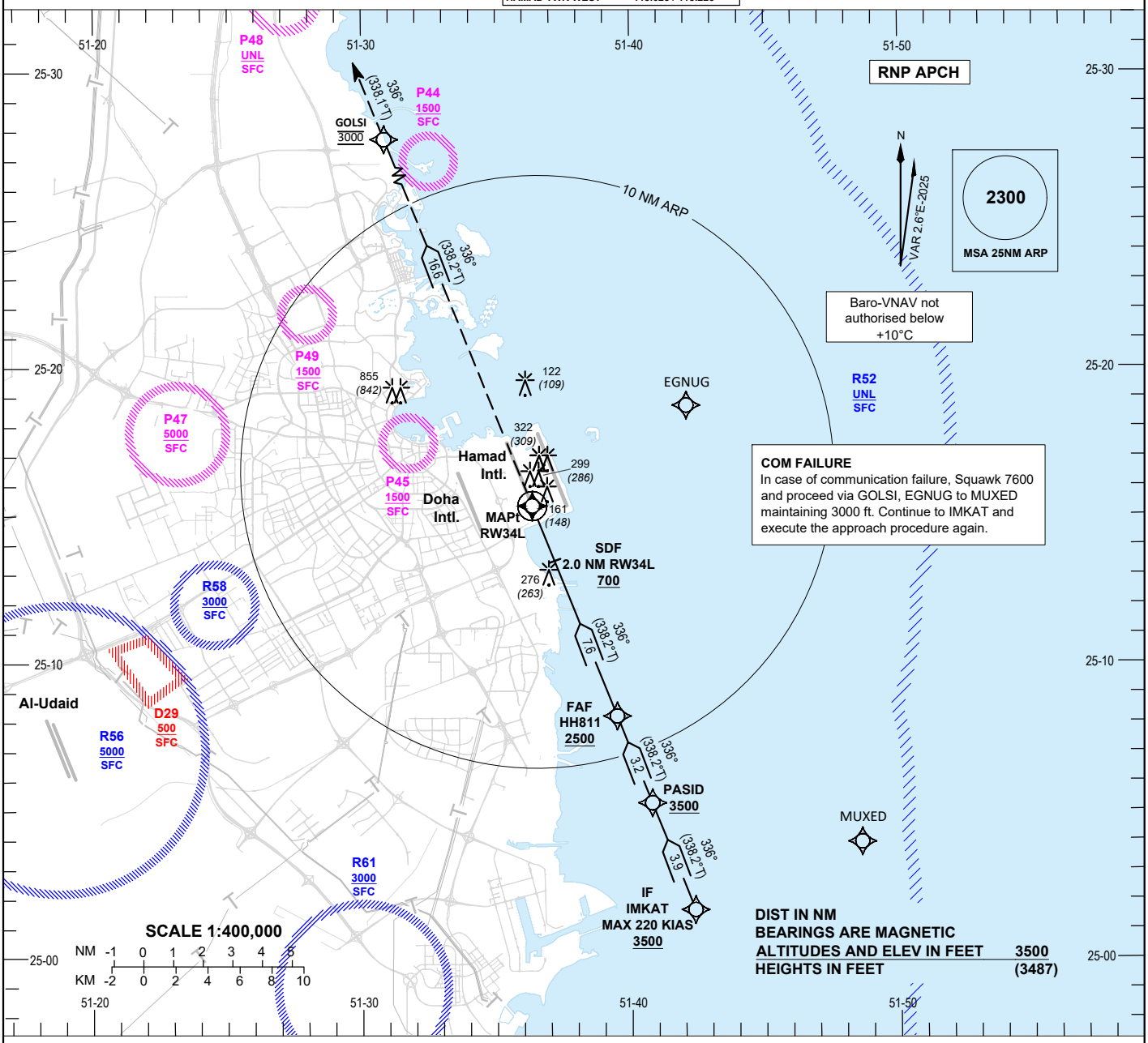
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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 34L - ELEV 13

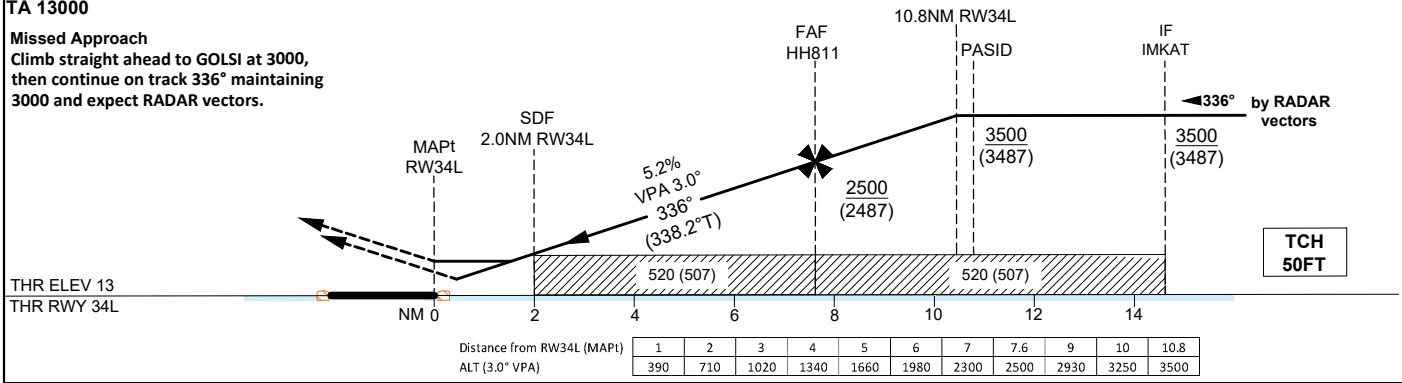
DOHA RADAR NORTH	121.100 / 121.625
DOHA RADAR SOUTH	120.675 / 119.150
DOHA APP EAST	124.775 / 120.600
DOHA APP WEST	119.725 / 125.125
DOHA DIRECTOR WEST	123.875 / 119.225
HAMAD TWR WEST	118.025 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY34L
ACFT CAT A B C D



TA 13000

Missed Approach
Climb straight ahead to GOLSI at 3000, then continue on track 336° maintaining 3000 and expect RADAR vectors.



Distance from RW34L (MAPt)	1	2	3	4	5	6	7	7.6	9	10	10.8
ALT (3.0° VPA)	390	710	1020	1340	1660	1980	2300	2500	2930	3250	3500

OCA (OCH)		A	B	C	D
Straight in Approach	LNAV/VNAV	330 (317)	340 (327)	360 (347)	390 (377)
	LNAV	500 (487)			
Circling		620 (607)		1260 (1247)	

1. Expect RADAR vectors to establish on final approach course at IMKAT (IF).
2. In case of Missed Approach inform ATC immediately.

Approach: MAPt at RW34L							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART-ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34L
ACFT CAT A,B,C,D

TABULAR DESCRIPTION

RNP RWY 34L

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation (°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	IMKAT	-	-	-2.6	-	-	+3500	-220	-	RNP APCH
2	TF	PASID	-	336 (338.2)	-2.6	3.9	-	+3500	-	-	RNP APCH
3	TF	HH811		336 (338.2)	-2.6	3.2	-	+2500	-	-	RNP APCH
4	TF	RW34L	Y	336 (338.2)	-2.6	7.6	-	-	-	-3.00 / 50	RNP APCH
5	TF	GOLSI	-	336 (338.2)	-2.6	16.6	-	@3000	-	-	RNP APCH
6	FM	GOLSI	-	336 (338.1)	-2.6	-	-	@3000	-	-	RNP APCH

WAYPOINT LIST

RNP RWY 34L

Waypoint Identifier	Coordinates
IMKAT	250138.57N 0514220.38E
PASID	250515.69N 0514045.07E
HH811	250812.13N 0513927.55E
RW34L	251519.32N 0513619.56E
GOLSI	253047.17N 0512929.86E

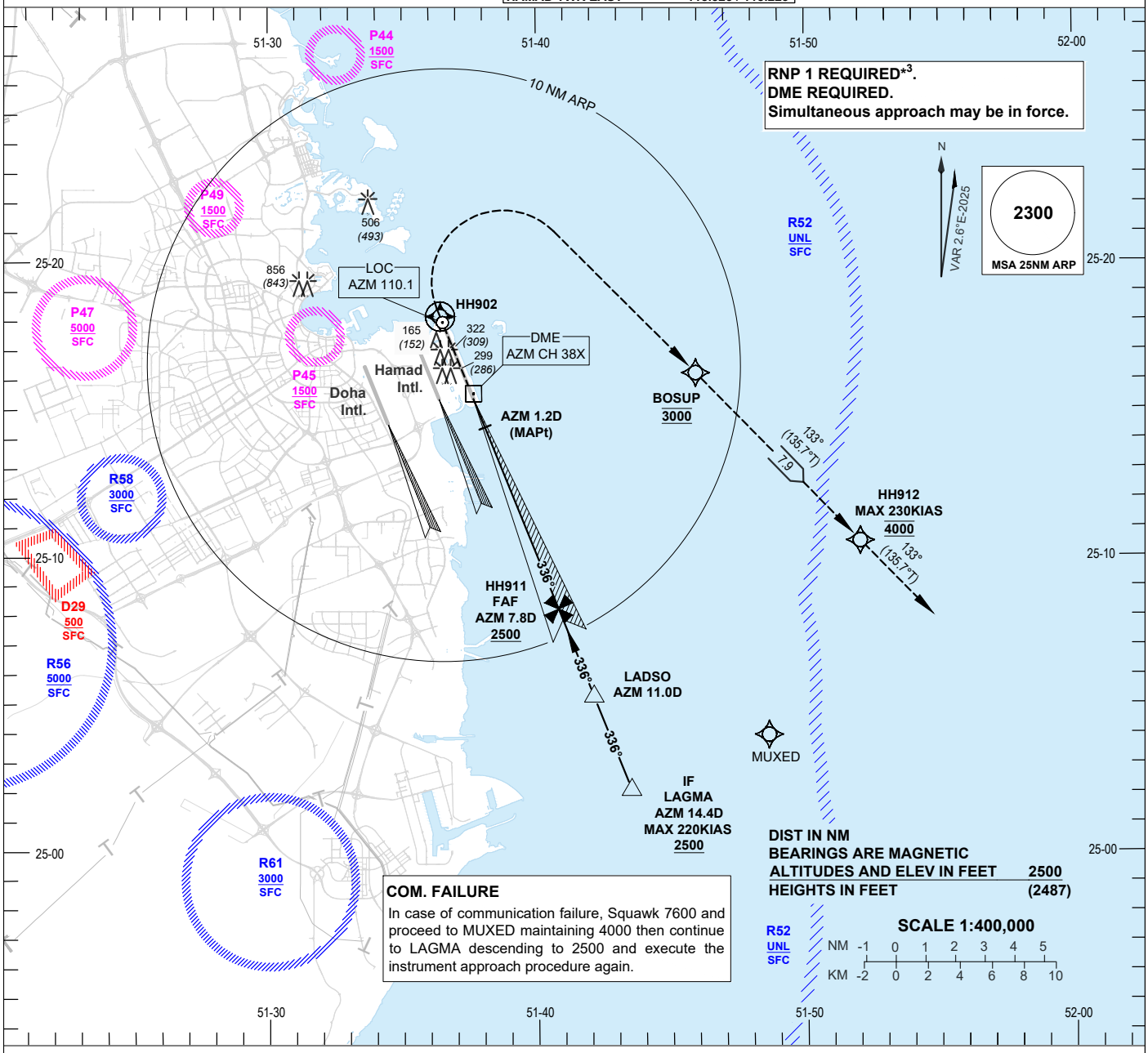
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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 34R - ELEV 13

DOHA RADAR NORTH	121.10 / 121.625
DOHA RADAR SOUTH	120.675 / 119.15
DOHA APP EAST	124.775 / 120.60
DOHA DIRECTOR EAST	119.40 / 121.125
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
ILS RWY34R CAT II & III
ACFT CAT A B C D



COM. FAILURE

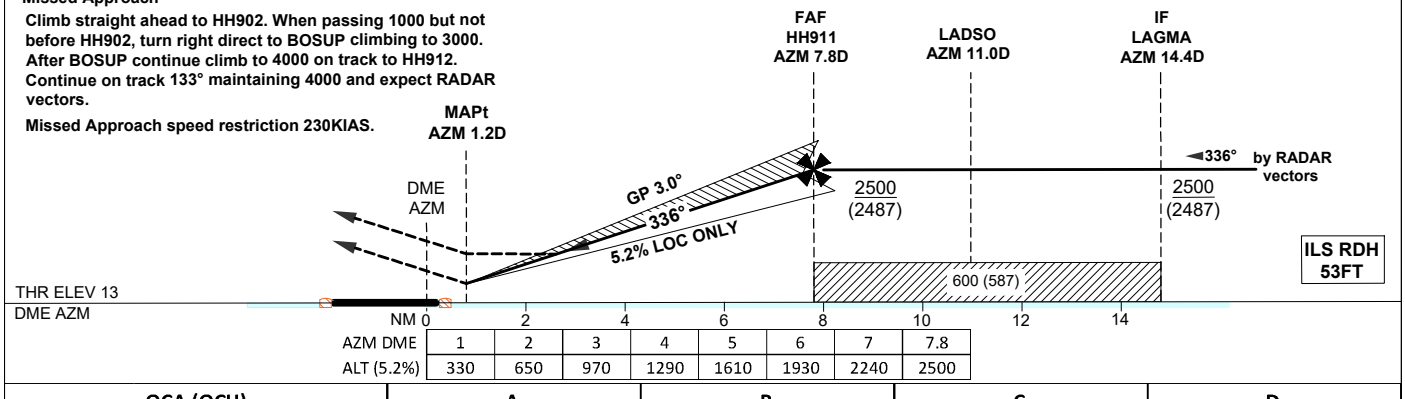
In case of communication failure, Squawk 7600 and proceed to MUXED maintaining 4000 then continue to LAGMA descending to 2500 and execute the instrument approach procedure again.

TA 13000

Missed Approach

Climb straight ahead to HH902. When passing 1000 but not before HH902, turn right direct to BOSUP climbing to 3000. After BOSUP continue climb to 4000 on track to HH912. Continue on track 133° maintaining 4000 and expect RADAR vectors.

Missed Approach speed restriction 230KIAS.



AZM DME	1	2	3	4	5	6	7	7.8
ALT (5.2%)	330	650	970	1290	1610	1930	2240	2500

OCA (OCH)		A	B	C	D
Straight in Approach	ILS CAT I	205 (192)	215 (202)	226 (213)	239 (226)
	ILS CAT II	134 (121)	144 (131)	155 (142)	171 (158)
	LOC ONLY	340 (327)			
Circling		620 (607)		1260 (1247)	

1. AZM DME Zero Ranged to TDZ.
2. CAT IIIA and CAT IIIB Approved.
3. *RNP 1 required in the Missed Approach.
4. In case of Missed Approach inform ATC immediately.

LOC ONLY Approach: MAPt at AZM 1.2D							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART- ICAO

DOHA/Hamad Intl.(OTHH)
ILS RWY 34R CAT II & III
ACFT CAT A B C D

AERONAUTICAL DATA TABULATION

TABULAR DESCRIPTION

ILS approach to RWY34R from LAGMA (IF)

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Recom. Navaid	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAGMA	-	-	-	-	-	+2500	-220	-	-
2	CF	LADSO	-	336 (338.2)	AZM	3.4	-	-	-	-	-
3	CF	HH911	-	336 (338.2)	AZM	3.2	-	+2500	-	-	-
4	CF	THR 34R	-	336 (338.2)	AZM	7.6	-	-	-	-3.00 / 53	-
5	CF	HH902	Y	336 (338.2)	DOH	-	-	-	-	-	RNP 1
6	CA	-	-	336 (338.2)	-	-	-	+1000	-	-	RNP 1
7	DF	BOSUP	-	-	-	-	R	@3000	-	-	RNP 1
8	TF	HH912	-	133 (135.7)	-	7.9	-	@4000	-	-	RNP 1
9	FM	HH912	-	133 (135.7)	-	-	-	-	-230	-	RNP 1

Waypoint & Fix/Point list

Waypoint/Fix/Point	Coordinates
LAGMA (IF) - BRG 335.58° / 14.39 NM AZM	250204.62N 0514325.78E
LADSO - BRG 335.58° / 11.00 NM AZM	250514.36N 0514202.65E
HH911 (FAF) - BRG 335.58° / 7.81 NM AZM	250812.41N 0514044.34E
Final approach descent angle (LOC Only) - 3.00°	-
AZM 1.2D (MAPt LOC Only) - BRG 335.58° / 1.20 NM AZM	251422.04N 0513801.77E
HH902 (MATF)	251807.32N 0513622.55E
BOSUP (MATF)	251611.22N 0514552.22E
HH912 (MATF)	251030.07N 0515158.20E

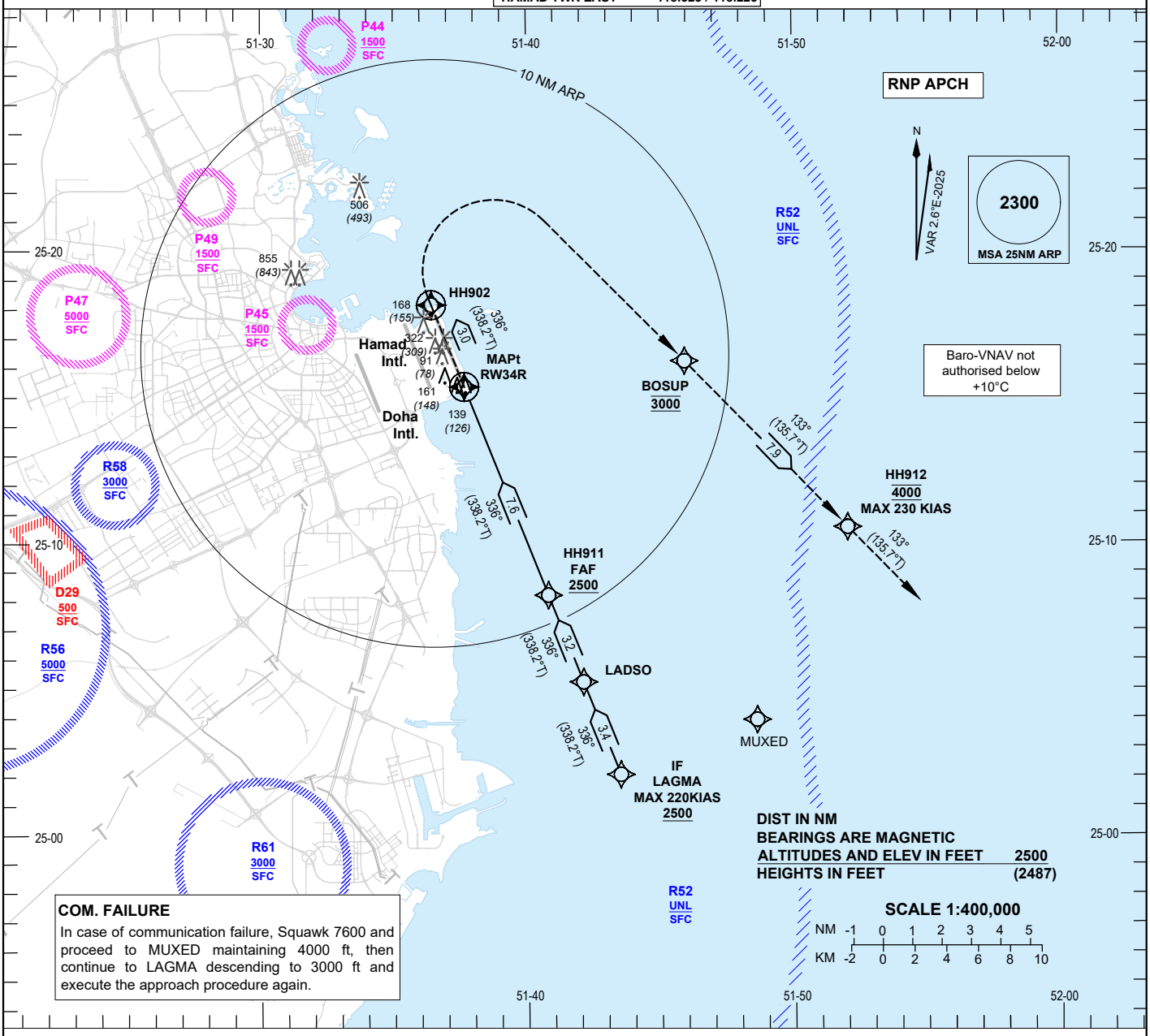
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INSTRUMENT APPROACH CHART - ICAO

AD ELEV 13
HEIGHTS RELATED TO THR RWY 34R - ELEV 13

DOHA RADAR NORTH	121.10 / 121.625
DOHA RADAR SOUTH	120.675 / 119.15
DOHA APP EAST	124.775 / 120.60
DOHA DIRECTOR EAST	119.40 / 121.125
HAMAD TWR EAST	118.525 / 118.225

DOHA/Hamad Intl. (OTHH)
RNP RWY34R
ACFT CAT A B C D



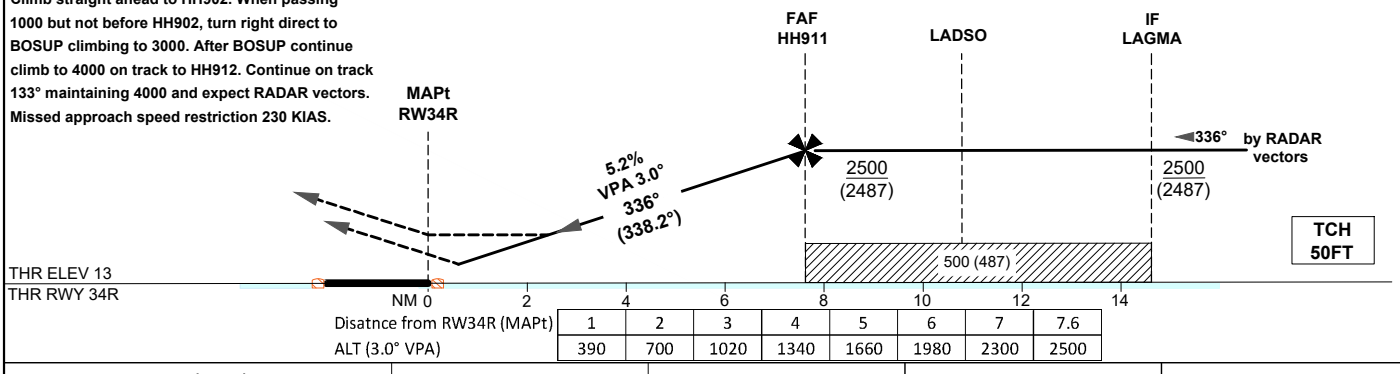
COM. FAILURE

In case of communication failure, Squawk 7600 and proceed to MUXED maintaining 4000 ft, then continue to LAGMA descending to 3000 ft and execute the approach procedure again.

TA 13000

Missed Approach

Climb straight ahead to HH902. When passing 1000 but not before HH902, turn right direct to BOSUP climbing to 3000. After BOSUP continue climb to 4000 on track to HH912. Continue on track 133° maintaining 4000 and expect RADAR vectors. Missed approach speed restriction 230 KIAS.



Disatnce from RW34R (MAPt)	1	2	3	4	5	6	7	7.6
ALT (3.0° VPA)	390	700	1020	1340	1660	1980	2300	2500

OCA (OCH)		A	B	C	D
Straight in Approach	LNAV/VNAV	290 (277)	300 (287)	320 (307)	340 (327)
	LNAV	440 (427)			
Circling		620 (607)		1260 (1247)	

1. Expect RADAR vectors to establish on final approach course at LAGMA (IF)
2. In case of Missed Approach inform ATC immediately.

Approach: MAPt at RW34R							
Speed	KT	80	100	120	140	160	180
Time	MIN:SEC	Timing Not Authorized					
RATE OF DESCENT	FT/MIN	420	530	640	740	850	960

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INSTRUMENT APPROACH CHART- ICAO

DOHA/Hamad Intl.(OTHH)
RNP RWY 34R
ACFT CAT A B C D

TABULAR DESCRIPTION

RNP RWY 34R

Serial Num	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Magnetic Variation (°)	Distance (NM)	Turn Direction	Altitude (ft)	Speed (kt)	VPA(°)/ TCH(ft)	Navigation Specification
1	IF	LAGMA	-	-	-2.6	-	-	+2500	-220	-	RNP APCH
2	TF	LADSO	-	336 (338.2)	-2.6	3.4	-	-	-	-	RNP APCH
3	TF	HH911	-	336 (338.2)	-2.6	3.2	-	+2500	-	-	RNP APCH
4	TF	RW34R	Y	336 (338.2)	-2.6	7.6	-	-	-	-3.00 / 50	RNP APCH
5	TF	HH902	Y	336 (338.2)	-2.6	3.0	-	-	-	-	RNP APCH
6	CA	-	-	336 (338.2)	-2.6	-	-	+1000	-	-	RNP APCH
7	DF	BOSUP	-	-	-2.6	-	R	@3000	-	-	RNP APCH
8	TF	HH912	-	133 (135.7)	-2.6	7.9	-	@4000	-	-	RNP APCH
9	FM	HH912	-	133 (135.7)	-2.6	-	-	-	-230	-	RNP APCH

WAYPOINT LIST

RNP RWY 34R

Waypoint Identifier	Coordinates
LAGMA	250204.62N 0514325.78E
LADSO	250514.36N 0514202.65E
HH911	250812.41N 0514044.34E
RW34R	251519.65N 0513736.41E
HH902	251807.32N 0513622.55E
BOSUP	251611.22N 0514552.22E
HH912	251030.07N 0515158.20E

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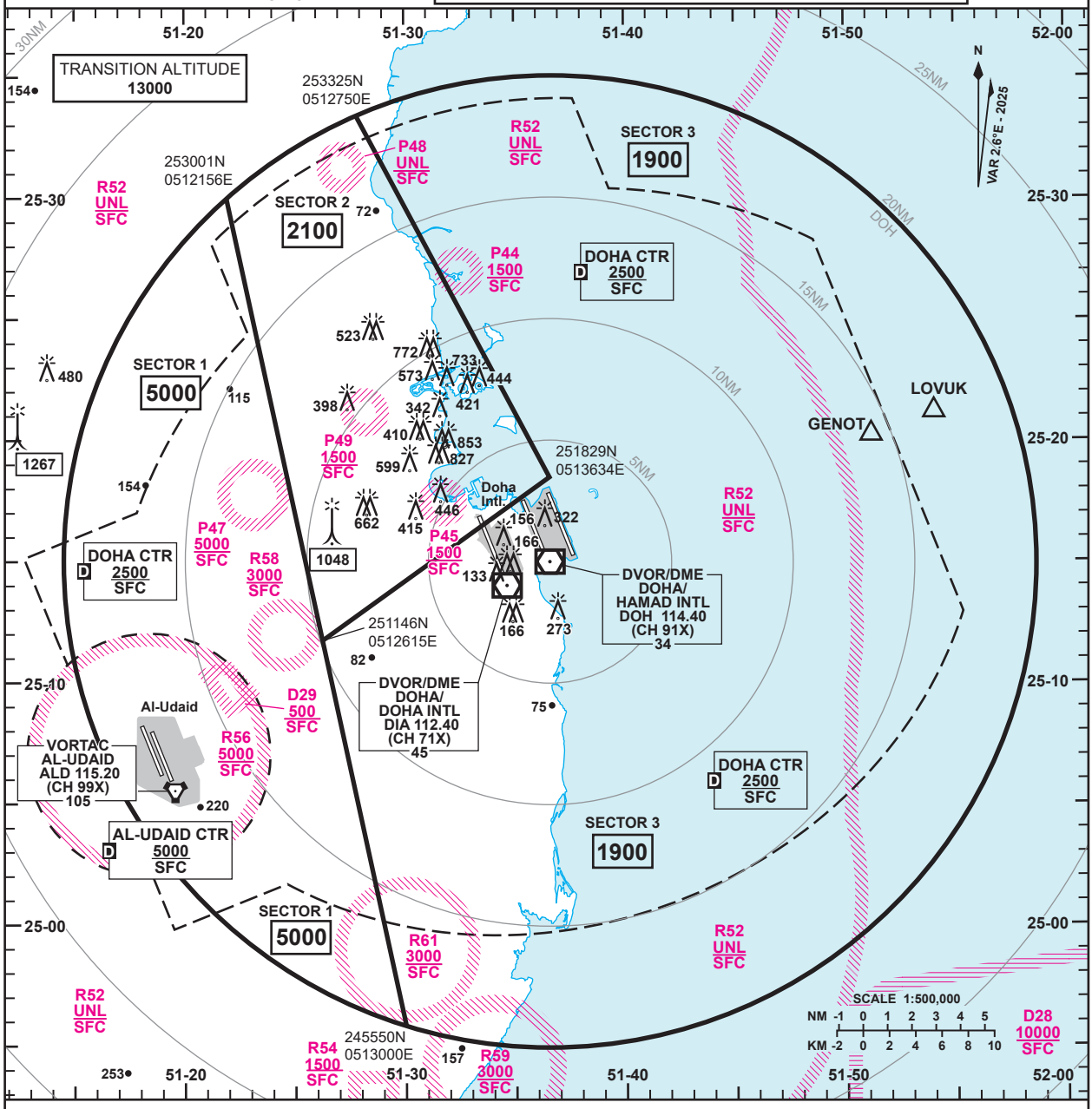
ATC SURVEILLANCE MINIMUM ALTITUDE CHART - ICAO

AD ELEV 13FT

DIST IN NM
BEARINGS ARE MAGNETIC
ALTITUDES AND ELEV IN FEET

DOHA RADAR NORTH	121.100 / 121.625	DOHA DIRECTOR WEST	123.875 / 119.225
DOHA RADAR SOUTH	120.675 / 119.150	DOHA DIRECTOR	124.050 / 121.775
DOHA APP EAST	124.775 / 120.600	HAMAD TWR EAST	118.525 / 118.225
DOHA APP WEST	119.725 / 125.125	HAMAD TWR WEST	118.025 / 118.225
DOHA DIRECTOR EAST	119.40 / 121.1250	HAMAD ARR INFORMATION	126.825

DOHA/ Hamad Intl. (OTHH)



LOSS OF COMMUNICATION PROCEDURES

Initial Approach

Continue visually or by means of an appropriate approved final approach aid. If not possible proceed at **2100**, or last assigned level if higher to **GENOT** if runway 34R is in use or **LOVUK** if runway 16L is in use.

Intermediate and Final Approach

Continue visually or by means of an appropriate final approach aid. If not possible follow the Missed Approach Procedure to **GENOT** if runway 34R is in use or **LOVUK** if runway 16L is in use.

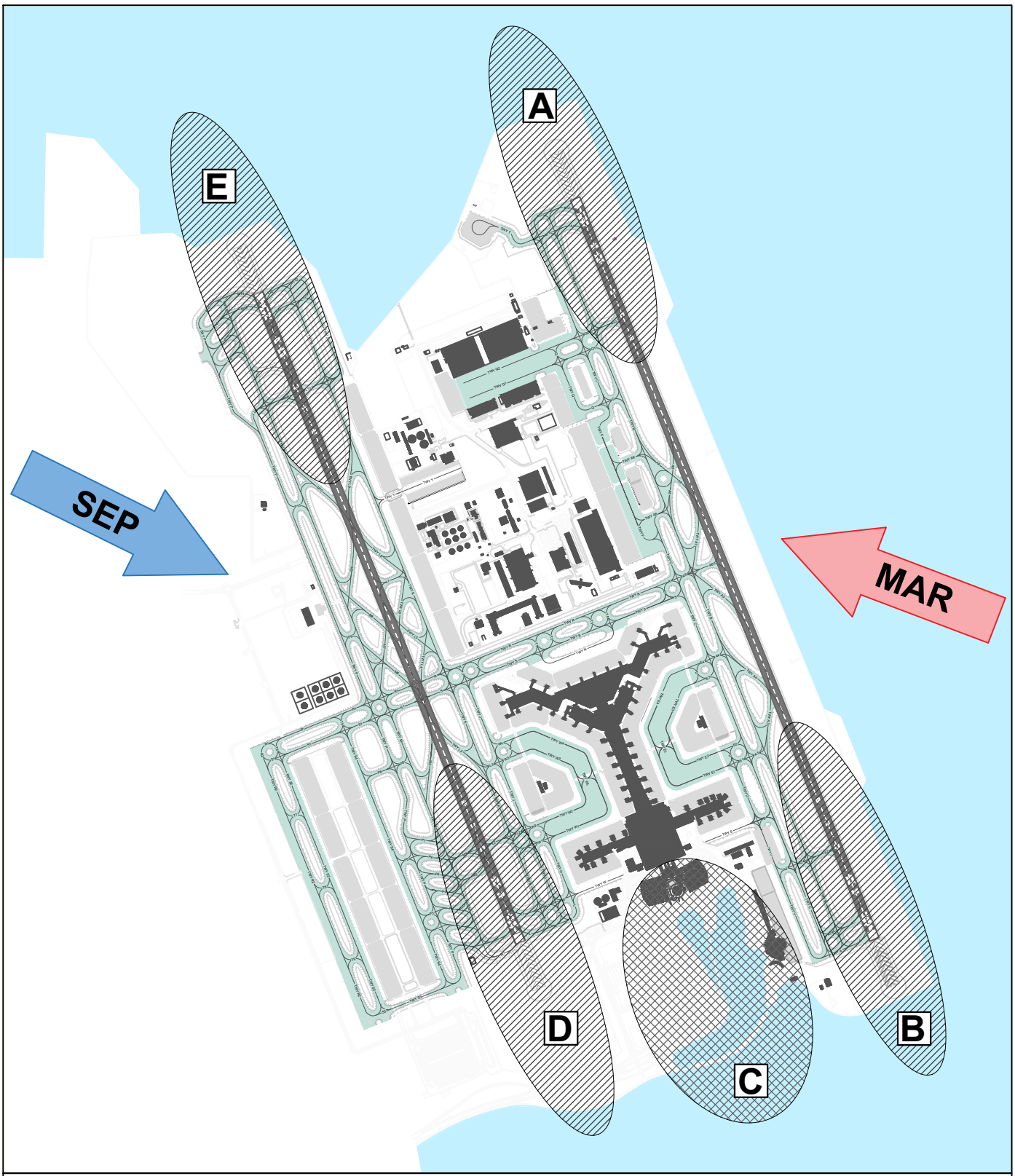
GENERAL INFORMATION

1 - Levels shown are based on QNH.
2 - The minimum levels shown within the ATC Surveillance Minimum Altitude Area (SMAA) provides 300m of obstacle clearance over all obstacles within the SMAA and within a 3NM buffer area.
3 - The minimum levels shown within the ATC Surveillance Minimum Altitude Area (SMAA) provide separation from all Danger, Prohibited and Restricted areas within the SMAA.
4 - SMAA do not constitute controlled airspace.
5 - **This chart may only be used for cross-checking of altitudes assigned when in receipt of an ATC Surveillance service.**

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BIRD CONCENTRATION

HAMAD Intl.
OTHH



Areas with concentrations of birds

- A Elevated Runway Approach Lights + part of the runway 16L
- B Elevated Runway Approach Lights + part of the runway 34R
- C Emiri Terminal + Terminal lagoon + part of the sea and landscaping area
- D Elevated Runway Approach Lights + part of the runway 34L
- E Elevated Runway Approach Lights + part of the runway 16R

Additional Information:

- The direction of migratory birds North West to South East in September and from South East to North West in March.
- The concentration of birds in area B is higher than in area A due to the location of migration birds (seagull + cormorants) in winter season (September - March).
- The concentration of birds in area D is higher than in area E due to high activity of birds (pigeon and sparrow) during dusk and dawn time.

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