

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

A320 **MINIMUM EQUIPMENT** **REQUIREMENT FOR VARIOUS** **OPERATIONS**

DOCUMENT NUMBER: OPSENGG/MERVO/320/M/02

EDITION NO.01

REV NO.00

REVISION DATE: 15 Jan, 2025

EFFECTIVE DATE: 16 Jan, 2025

This is a controlled document. Any copy/print from intranet shall be considered as uncontrolled from the date of copy/print

INTENTIONALLY LEFT BLANK

 PAKISTAN International Airlines Great People to Fly With	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT# OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

0.1 APPROVAL SHEET

Activity	Name	Designation		Date
Prepared by:	Engr.M Farhan Khan	DGM Operations Engineering		15-Jan-2025
Reviewed by:	Capt.Vaqas Javed	Chief Pilot Technical(Operations)		16-Jan-2025
Approved by:	Capt.Asif Gilani	Chief of Flight Operations/DFO		16-Jan-2025

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

0.2 REVISION RECORD

Editionnumber	Revisionnumber	Revision date
01	00	15-Jan-25

0.3 REVISION SUMMARY

REV 00 : Initial Issue

Chart	Nature of Change
	NIL

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

0.4 TABLE OF CONTENTS

Chapter No.	CONTENTS	PAGE No.
0.1	Approval Sheet	3
0.2	Revision Record	4
0.3	Revision Summary	4
0.4	Table of contents	5
0.5	List of Effective Pages	6
0.6	Introduction	7
0.7	Relevant Position Holders	7
1	Minimum Equipment Requirement for RVSM operations	8
2	Minimum Equipment Requirement for RNAV/RNP operations	9
3	Minimum Equipment Requirement for Low Visibility operations	11

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

0.5 LIST OF EFFECTIVE PAGES

Chapter No.	CONTENTS	PAGE NOS.	REVISION No.	DATE
0	COVERPAGE	1	00	15 Jan 2025
0	APPROVALSHEET	3	00	15 Jan 2025
0	REVISIONRECORD	4	00	15 Jan 2025
0	REVISIONSUMMARY	4	00	15 Jan 2025
0	TABLEOFCONTENTS	5	00	15 Jan 2025
0	LEP	6	00	15 Jan 2025
0	INTRODUCTION	7	00	15 Jan 2025
0	RELEVANT POSITION HOLDERS	7	00	15 Jan 2025
1	Minimum Equipment Requirement for RVSM operations	8	00	15 Jan 2025
2	Minimum Equipment Requirement for RNAV/RNP	9-10	00	15 Jan 2025
3	Minimum Equipment Requirement for Low Visibility	11-12	00	15 Jan 2025

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT# OPSENGG/MERVO/320/M/02	Chapter#0 Date:15 Jan 2025
	PRELIMINARY PAGES	Edition-01 Rev:00

0.6 INTRODUCTION

This A320 Minimum Equipment Requirement for Various Operations serves as a quick reference for having minimum equipments requirement for some specific operations.

Crew is advised to check the Flight Plan Route and then check list provided in this document for relevant specific operations (if required). References of the particular list being used are also given there. This is **REQUIRED** to refer latest updated version of the referred document to have actual requirement for that particular operations.

0.7 RELEVANT POSITION HOLDERS

DGM Operations Engineering (Custodian of Document– No hardcopy will be issued)

Distribution:

All A320 crew shall refer to controlled soft copy on iPad and relevant office holders shall refer to controlled soft copy on corporate intranet.

Chief of Flight Operations

Chief Pilot Technical (Operations)

Chief Pilot Training

Chief Pilot Standards & Inspection

Chief Pilot Safety / GM Safety

GMCC

Dy. Chief Pilot A320

A320 Operations Engineer

	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#1 Date:15 Jan 2025
	MINIMUM EQUIPMENT REQUIREMENT FOR RVSM	Edition-01 Rev:00

MINIMUM EQUIPMENT REQUIREMENT FOR RVSM OPERATIONS

The minimum navigation equipment required for RVSM operations are:

- 2 ADRs + 2 DMCs
- 1 transponder
- 1 Autopilot function
- 1 FCU channel (for altitude target selection and OP CLB/OP DES mode engagement)
- 2 PFD functions (for altitude indication)
- 1 FWC (for altitude alert function)

Reference:

1. A320 MEL /chapter HOW TO USE / REDUCED VERTICAL SEPARATION MINIMUM(RVSM)
2. AFM/NORM-34 Reduced Vertical Separation Minimum(RVSM)
3. FCOM/PRO-SPO-50 Reduced Vertical Separation Minimum(RVSM)

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#2 Date:15 Jan 2025
	MINIMUM EQUIPMENT REQUIREMENT FOR RNAV	Edition-01 Rev:00

MINIMUM EQUIPMENT REQUIREMENT FOR RNAV / RNP OPERATIONS

RNAV 10

The minimum navigation equipment required to enter RNAV 10 airspace is:

- Two FMGCs (or one FMGC and one BACK UP NAV)
- Two MCDUs
- Two IRS
- Two NDs (the temporary display of ND information via the PFD/ND sw is permitted on PM side)
- One GPS if the flight time outside radio navaid coverage is longer than:
 - 6.2 hr from the time of IRS ground alignment, or
 - 5.7 hr from the time of the last FM position update

RNAV 5

The minimum navigation equipment required to enter RNAV 5 airspace is:

- One FMGC
- One MCDU
- One GPS or one DME receiver to update FM position
- Two NDs (the temporary display of ND information via the PFD/ND sw is permitted on PM side)
- One IRS

RNAV1/RNAV2

The minimum navigation equipment required to enter RNAV1/RNAV2 airspace is:

- One FMGC
- One MCDU
- One GPS or one DME receiver to update the FM position
- Two IRS
- One FD in NAV mode
- Two NDs (the temporary display of ND information via the PFD/ND sw is permitted on PM side)

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#2 Date:15 Jan 2025
	MINIMUM EQUIPMENT REQUIREMENT FOR RNAV	Edition-01 Rev:00

Reference:

1. A320 MEL/chapter HOW TO USE /PERFORMANCE-BASED NAVIGATION(PBN)
2. FCOM/PRO-SPO-51 RNAV 10 / RNP 10 - Required RNAV 10 Equipment
3. FCOM/PRO-SPO-51 RNAV 5 / BRNAV - Required RNAV 5 Equipment
4. FCOM/PRO-SPO-51 RNAV 1 RNAV 2 / P-RNAV - Terminal RNAV - Required RNAV 1(2) Equipment
5. FCOM/PRO-SPO-51 RNP 4 - Required RNP 4 Equipment
6. FCOM/PRO-SPO-51 RNP 2 in Oceanic and Remote Continental Area - Required RNP 2 in Oceanic and Remote Continental Area Equipment
7. FCOM/PRO-SPO-51 RNP 2 in Domestic Area - Required RNP 2 in Domestic Area Equipment
8. FCOM/PRO-SPO-51 RNP 1 / Terminal RNP 1 - Basic RNP 1 - Required RNP 1 Equipment
9. FCOM/PRO-SPO-51 RNP APCH / RNAV(GNSS) - Required RNP APCH Equipment
10. For aircraft with the RNP AR capability, Refer to FCOM/PRO-SPO-51 RNP AR / RNAV(RNP) - Required RNP AR Equipment

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT# OPSENGG/MERVO/320/M/02	Chapter#3 Date:15 Jan 2025
	MINIMUM EQUIPMENT REQUIREMENT FOR LVO	Edition-01 Rev:00

MINIMUM EQUIPMENT REQUIREMENT FOR LOW VISIBILITY OPERATIONS

CAT II / III

The minimum navigation equipment required for CAT II / CAT III are given below:

REQUIRED EQUIPMENT FOR CAT II AND CAT III APPROACH AND LANDING

Required Equipment	CAT II	CAT III Single	CAT III Dual
AP	1 AP engaged	1 AP engaged	2 AP engaged
AP disconnect P/B	2	2	2
Autothrust	0	1	1
ILS or MLS Receiver	2	2	2
Attitude Indication	N°1+N°2+STBY	N°1+N°2+STBY	N°1+N°2+STBY
PFD/ND Displays	2/1	2/2	2/2
Radio Altimeter	1 (But two display)	2	2
Auto Callout Radio Altimeter	1 ⁽³⁾	1	1
DH Indication	1 ⁽¹⁾	1 ⁽¹⁾	1 ⁽¹⁾
-			
Flight Warning Computer	1	1	2
"AP OFF" warning	1	1	2
"AUTOLAND" light	1	1	1
Rain Repellent (if activated) or Windshield Wipers	1 ⁽²⁾	1 ⁽²⁾	1 ⁽²⁾
Windshield Heat	1 ⁽²⁾	1 ⁽²⁾	1 ⁽²⁾
Nosewheel steering	1 ⁽⁵⁾	1 ⁽⁵⁾	1
Antiskid	1 ⁽⁵⁾	1 ⁽⁵⁾	1
BSCU Channel	1 ⁽⁵⁾	1 ⁽⁵⁾	1
Beam Excessive Deviation	1 ⁽¹⁾	2	2
FMA	1	2	2
"A/THR OFF" caution	0	1	1
Rudder Travel Limit	1 ⁽⁴⁾	1 ⁽⁴⁾	1 ⁽⁴⁾
Yaw Damper/Rudder Trim	1/1	1/1	2/2
ELAC	1	1	2
ADR/IR	2/2	2/2	3/3
FAC	1	1	2
Hydraulic Circuit	2	2	3
FMGC Electrical Supply Split	0	0	1

⁽¹⁾ One unit required for the PM.

⁽²⁾ One unit required for the PF.

⁽³⁾ Required only for autoland.

⁽⁴⁾ Required only for autoland with crosswind above 12 kt.

⁽⁵⁾ Required only for autoland rollout.

Note:

1. Compliance with CAT II approach and landing criteria has been demonstrated with CAT II and CAT III performance quality ILS/MLS beam only.
2. Compliance with CAT III approach and landing criteria has been demonstrated with CAT II and CAT III performance quality ILS/MLS beam only.

 PAKISTAN International Airlines <i>Great People to Fly With</i>	A320 MINIMUM EQUIPMENT REQUIREMENT FOR VARIOUS OPERATIONS DOCUMENT#OPSENGG/MERVO/320/M/02	Chapter#3 Date:15 Jan 2025
	MINIMUM EQUIPMENT REQUIREMENT FOR LVO	Edition-01 Rev:00

Reference:

1. A320 MEL chapter HOW TO USE
2. AFM/NORM-22-PA Required Equipment for CAT II and CAT III Approach and Landing
3. QRH/OPS Required Equipment for CAT2 and CAT3