

QUICK REFERENCE HAND BOOK

A319/A320/A321



IMPORTANT

SCOPE

The QRH contains some specific procedures which are not displayed on the ECAM.

As a general rule, the procedures displayed on the ECAM are not provided in the QRH (refer to FCOM 3.02).

TASK SHARING FOR ABN/EMER PROC

For all abnormal/emergency procedures, the task sharing is as follows :

PF – Pilot flying – Responsible for :

- Thrust levers
- Flight path and airspeed control
- Aircraft configuration (request configuration change)
- Navigation
- Communications

PNF – Pilot non flying – Responsible for :

- ECAM or checklist reading
- Execution of required actions on PF request
- Engine master switches and ENG FIRE pb (with consent of PF)

ECAM CLEAR

DO NOT CLEAR ECAM WITHOUT CROSS-CONFIRMATION OF BOTH PILOTS.

ABN/EMER PROC INITIATION

Procedures are initiated on pilot flying command.

No action will be taken (apart from audio warning cancel through MASTER WARN light) until :

- The appropriate flight path is established, and
- The aircraft is at least 400 feet above the runway, if a failure occurs during takeoff, approach, or go-around. (In some emergency cases, provided the appropriate flight path is established, the pilot flying may initiate actions before this height).

NORMAL CHECKLIST

Normal C/L are initiated by the PF and read by the PNF.

The PF shall respond after having checked the existing configuration. When both pilots have to respond, "BOTH" is indicated.

CODE	DESIGNATION
R 0001	MSN : 163 = 164 = 168 = 169 = 179 = 348 = 362 = 363 = 424
0002	Mod : 20268 = (20268+25800)
0003	Mod : 25205 = 26111 = 26999 = 28382 = 30241 = 30631 = 30635 = 26485
0004	STD = Mod : 24105 = (24105+31897) = (24105+31896)
0008	STD = Mod : (22562+25072)
0009	Mod : 20268+25225+IAE V2500 = V2527 = V2527E
0010	STD = Mod : 25072 = (22562+25072) = (25072+28160+28917) = (22562+25072+28160+28917)
0011	IAE : V2522 = V2524 = V2527 = V2527E = V2527M = V2530 = V2533
0012	Mod : (23208+24077+25410) = (23208+24077+26017) = (23208+24077+25410+26017)
R 0015	Mod : (24105+24215+24588+24794+28238) = (24105+24215+24588+24794+28238+32090)
0018	Mod : 21678+21706+21766+21768+21858
0019	Mod : 20268 = (20268+25800)
0020	Mod : (20268+25530) = (20268+25530+25800) = (20268+25800+27727) = (20268+25530+25800+27727)
0021	Mod : (20268+24404) = (20268+24404+25800) = (20268+25800+27727) = (20268+24404+25800+27727)
0022	Mod : 20268 = (20268+25800) = (20268+24404+25502) = (20268+24404+25502+25800)
0023	Mod : (20268+24405) = (20268+24405+25800) = (20268+25800+27727) = (20268+24405+25800+27727)
0024	Mod : 20268 = (20268+25800) = (20268+24405+25501) = (20268+24405+25501+25800)
0026	Mod : (20268+25647) = (20268+25647+ACA)
0028	Mod : 26877 = 27698 = 27740 = 27753 = 28738 = 28739 = 30163
0029	Mod : 20268 = (20268+25647+ACA)
0030	STD = Mod : 25072 = (22562+25072) = (28160+28917) = (25072+28160+28917) = (22562+25072+28160+28917)
0035	Mod : (20268+28238) = (20268+25800+28238)
0036	Mod : 20268 = (20268+25225+28399)+IAE V2500 = V2527 = V2527E
0037	Mod : (22013+27846+28479+28721) = (22013+27846+28479+28960) = (22013+27846+28721+28916) = (22013+27846+28916+28960) = (22013+27846+28479+32011) = (22013+27846+28916+32011)
0039	Mod : 26017 = (22562+26017) = (22562+25072+26017) = (26017+28160+28917) = (22562+25072+28160+28917) = (22562+26017+28160+28917)
0040	Mod : (22013+25419) = (24105+25419) = (24701+25419)
R 0041	Mod : 22562 = (22562+28160+28917) = (22562+28160+28916+28917)
0043	Mod : 21678+21706+21766+21767+21768+21858
R 0044	Mod : (22013+24215+24794) = (22013+24215+24588+24794) = (24105+24215+24588+24794) = (24215+24588+24794+28160) = (22013+24215+24588+24794+32090) = (24105+24215+24588+24794+32090) = (24215+24588+24794+28160+32090)
0046	Mod : (28160+28916) = (22562+25072+28160+28916)
0050	Mod : (22562+28160) = (22562+25072+28160)
0052	Mod : 24215 = 24588 = 25534 = (24215+28160+28917) = (24588+28160+28917) = (25534+28160+28917)
0054	Mod : 24404 = 24405 = 25530 = 27640

CODE	DESIGNATION
0055	Mod : (22013+24215) = (22013+24588) = (22013+25534) = (24105+24215) = (24105+24588) = (24105+25534) = (28160+24215) = (28160+24588) = (28160+25534)
0056	Mod : (28160+28916) = (22562+25072+28160+28916)
0057	Mod : 20268 = (20268+25225+28399)
0058	CFM 56-5-A4 = A5 = B5 = B6 = IAE V2522 = V2524
R 0059	Mod : (24215+24588+24794) = (24215+24588+24794+28917) = (24215+24588+24794+32090) = (24215+24588+24794+28160+28917) = (24215+24588+24794+28160+28917+32090)
R 0060	Mod : (22013+24215+24588+24794+28652) = (22013+24215+24588+24794+28652+32090)
0061	Mod : (20268+24044+25647) = (20268+24044+25647+ACA)
0062	Mod : 28258 = 30470 = 26438 = 27624 = 23888
0063	Mod : (28258+30206) = (30206+30470) = (26438+30206) = (27624+30206) = (23888+30206)
0064	Mod : 26999 = 27646 = 30631 = 30635 = 26485
0065	Mod : (21678+26999) = (21678+27646) = (21678+30631) = (21678+30635) = (21678+26485)
0066	Mod : 30020 = (23208+24077+25410+26017+30020)
0067	MSN : 313 = 325 = 345 = 375 = 419 = 421 = 438 = 445 = 459 = 466 = 497 = 537
0068	Mod : (22562+28160+28916) = (25888+28160+28916)
0069	Mod : 22562 = 25888 = (22562+28160+28917) = (25888+28160+28917)
0070	Mod : 25888 = (25888+28160+28917)
R 0071	Mod : (25205+28916) = (26111+28916) = (26485+28916) = (26999+28916) = (28382+28916) = (30241+28916) = (30631+28916) = (30635+28916) = (26999+28479) = (26999+28702) = (28382+28479) = (28382+28702)
R 0072	Mod : (28160+28479) = (28160+28916)
R 0073	Mod : (28160+28479) = (28160+28916) = (22562+25072+28160+28479) = (22562+25072+28160+28916)
R 0074	Mod : (22562+28160+28479) = (22562+28160+28916) = (25888+28160+28479) = (25888+28160+28916)
R 0075	Mod : (25888+28160+28479) = (25888+28160+28916) = (22562+25072+25888+28160+28916)
R 0076	Mod : (22562+28160+28479) = (22562+28160+28916)
R 0077	Mod : (20268+24946+26965) = (20268+24946+27773) = (20268+26760+26965) = (20268+26760+27773) = (20268+26965+32150) = (20268+26965+32238) = (20268+26965+32239) = (20268+26965+32311) = (20268+27773+32150) = (20268+27773+32238) = (20268+27773+32239) = (20268+27773+32311)
R 0078	Mod : 20268 = (20268+25951) = (20268+24946+25951+26965) = (20268+24946+25951+27773) = (20268+25951+26760+26965) = (20268+25951+26760+27773) = (20268+25951+26965+32150) = (20268+25951+26965+32238) = (20268+25951+26965+32239) = (20268+25951+26965+32311) = (20268+25951+27773+32150) = (20268+25951+27773+32238) = (20268+25951+27773+32239) = (20268+25951+27773+32311)
R 0079	Mod : 20268+V2527E = (20268+25951) = (20268+24946+25951+26965) = (20268+24946+25951+27773) = (20268+25951+26760+26965) = (20268+25951+26760+27773) = (20268+25951+26965+32150) = (20268+25951+26965+32238) = (20268+25951+26965+32239) = (20268+25951+26965+32311) = (20268+25951+27773+32150) = (20268+25951+27773+32238) = (20268+25951+27773+32239) = (20268+25951+27773+32311)
R 0080	Mod : 20268 = (20268+24077)
R 0081	Mod : 20268 = (20268+24077) = (20268+24077+25647)

	CODE	DESIGNATION
R	0082	Mod : (22013+20047) = (22013+20047+US)
R	0083	Mod : (27498+20057) = (27498+20059) = (27498+30067) = (31891+20057) = (31891+20059) = (31891+30067)
R	0084	Mod : (21678+26999+27531) = (21678+27531+27646) = (21678+27531+30631) = (21678+27531+30635) = (21678+26485+27531)
R	0085	Mod : (24215+32090) = (24588+32090) = (25534+32090) = (24215+28160+28917+32090) = (24588+28160+32090+28917) = (25534+28160+28917+32090)
R	0086	Mod : (22013+24215+32090) = (22013+24588+32090) = (22013+25534+32090) = (24105+24215+32090) = (24105+24588+32090) = (24105+25534+32090) = (28160+24215+32090) = (28160+24588+32090) = (28160+25534+32090)
R	0087	Mod : (32090+32499) = (28160+28917+32090+32499)
R	0088	Mod : (24215+32090+32499) = (24588+32090+32499) = (25534+32090+32499) = (24215+28160+28917+32090+32499) = (24588+28160+28917+32090+32499) = (25534+28160+28917+32090+32499)
R	0089	Mod : (22013+24215+32090+32499) = (22013+24588+32090+32499) = (22013+25534+32090+32499) = (24105+24215+32090+32499) = (24105+24588+32090+32499) = (24105+25534+32090+32499) = (28160+24215+32090+32499) = (28160+24588+32090+32499) = (28160+25534+32090+32499)
R	0090	Mod : 20268+22013+24044+24077
R	0091	Mod : (20268+24077+24105+25647) = (24077+24105+ACA = CMM = MXA)
R	0092	Mod : 20268+24077+24105+28342
R	0093	Mod : 20268+22013+24044+24077+31607
R	0094	Mod : 20268+24077
R	0095	Mod : 20268+22013+24044+24077+25647) = (20268+22013+24044+24077+25647+ACA)
R	0096	Mod : (20268+24077+25647) = ACA = CMM
R	0097	Mod : (20268+24077) = (20268+24044+24077)
R	0098	Mod : 20268+23208+24077+24105+25404
R	0099	Mod : 20268+23208+24077+24105+25404+28342
R	0100	Mod : (20268+23208+24077+24105+25404+25647) = (23208+24077+24105+25404+ACA = CMM = MXA)
R	0101	Mod : 20268+22013+23208+24077+25404
R	0102	Mod : 20268+22013+23208+24044+24077+25404
R	0103	Mod : (20268+22013+23208+24044+24077+25404+25647+ACA) = (20268+22013+23208+24044+24077+25404+25647)
R	0104	Mod : 20268+22013+23208+24077
R	0105	Mod : 20268+22013+23208+24044+24077
R	0106	Mod : 20268+23208+24077+24105+25404+25410+26017
R	0107	Mod : (20268+23208+24077+24105+25404+25647) = (20268+23208+24077+24105+25404+25647+ACA)
R	0108	Mod : (20268+23208+24077+24105+25404+25410) = (20268+23208+24077+24105+25404+25410+26017)
R	0109	Mod : 20268+23208+24077+24105+25404+28342
R	0110	Mod : 20268+22013+23208+24044+24077+25404+31607
R	0111	Mod : 20268+23208+24077+25404+28160
R	0112	Mod : 20268+23208+24077+25404
R	0113	Mod : (20268+23208+24077+25404+25647+26017+28160+ACA) = (20268+23208+24077+25404+25647+26017+28160)
R	0114	Mod : (20268+23208+24077+ACA = CMM)
R	0115	Mod : 20268+23208+24077+25404+26017+28160

	CODE	DESIGNATION
R	0116	Mod : 20268+23208+24077+24946+25404+27773+28160
R	0117	Mod : 20268+23208+24077+24946+25404+27773
R	0118	Mod : (20268+23208+25404) = (20268+24077+25404) = (20268+23208+24077+25404)
R	0119	Mod : 20268+23208+24077+25404+28160
R	0120	Mod : 20268+23208+24077+MXA
R	0121	Mod : (20268+23208) = (20268+23208+24077)
R	0122	Mod : 20268 = (20268+24077)
R	0123	Mod : 20268 = (20268+24077) = (20268+25647)
R	0124	Mod : (20268+25647) = ACA = CMM
R	0125	Mod : 20268 = (20268+24044) = (20268+24077) = (20268+24044+24077)
R	0126	Mod : 20268 = (20268+24077)
R	0127	Mod : (20268+22013+24077) = (20268+22013+26401)
R	0128	Mod : (20268+22013+24044+24077+25647) = (20268+22013+24044+24077+25647+ACA)
R	0130	Mod : 20268+24077+24105+25647
R	0131	Mod : 20268 = (20268+24077)
R	0133	Mod : (20268+24077+24105+28238) = (20268+24077+24105+25647+ACA)
R	0134	Mod : 31896 = 31897 = 32401 = 32402 = 32475 = (31896+32332+32475)
R	0135	Mod : (20268+24077+24105+25647) = (20268+24077+24105+25647+ACA)
R	0136	Mod : (20268+23208+24077+24105+25404) = (20268+23208+24077+24105+25404)
R	0137	Mod : 20268+23208+24077+24105+25404
R	0138	Mod : (20268+23208+24077+25404+25647+28160) = (20268+23208+24077+25404+25647+28160+ACA)
R	0139	Mod : (20268+25647) = (20268+25647+ACA)
R	0140	Mod : (20268+24044+25647) = (20268+24044+25647+ACA)
R	0141	Mod : 20268 = (20268+25800)
R	0142	Mod : (20268+25647) = (24077+ACA = MXA)
R	0143	Mod : (20268+V2533) = (20268+31607+V2530)
R	0144	Mod : (20268+21678+25404) = (20268+21678+25404+28160+28917)
R	0145	Mod : 20268+21678+25404+28160
R	0146	Mod : 20268+21678+25404+25647
R	0147	Mod : 20268+21678+24044+25404
R	0148	Mod : (20268+21678+24044+25404+25647) = (20268+21678+24044+25404+ACA)
R	0149	Mod : 20268+21678+25404+25647+28160
R	0150	Mod : (20268+21678+25404+25647) = (20268+21678+25404+MXA)
R	0151	Mod : 20268+21678+25404+28342
R	0152	Mod : (24645+28479) = (24645+28702) = (24645+28916)
R	0153	Mod : 24215 = 24588 = (24215+24588) = (24215+32090) = (24588+32090) = (24215+24588+32090)
R	0155	Mod : (24215+24588+24794) = (24215+24588+24794+32090)
R	0156	Mod : (24105+24215+24588+24794) = (24215+24588+24794+28160) = (24105+24215+24588+24794+32090) = (24215+24588+24794+28160+32090)
R	0157	Mod : 22013+24215+24588+24794
R	0158	Mod : (22013+24794+28652) = (22013+24215+24588+24794+28652)
R	0159	Mod : 32090 = (22013+24215+24588+24794+32090)
R	0160	Mod : (24794+32090) = (22013+24215+24588+24794+28652+32090)

CODE	DESIGNATION
R 0161	Mod : $24215 = 24588 = 25534 = (24215+24588) = (24215+25534) = (24215+24588+25534) = (24215+24588+28917) = (24215+28160+28917) = (24588+28160+28917) = (25534+28160+28917) = (24215+24588+28160+28917)$
R 0162	Mod : $(22013+24215) = (22013+24588) = (22013+25534) = (24105+24215) = (24105+24588) = (24105+25534) = (24215+28160) = (24588+28160) = (25534+28160) = (22013+24215+24588) = (24105+24215+24588) = (24215+24588+28160)$
R 0163	Mod : $(24215+32090) = (24588+32090) = (25534+32090) = (24215+24588+32090) = (24215+24588+25534+32090) = (24215+28160+28917+32090) = (24588+28160+28917+32090) = (25534+28160+28917+32090) = (24215+24588+28160+28917+32090)$
R 0164	Mod : $(22013+24215+32090) = (22013+24588+32090) = (22013+25534+32090) = (24105+24215+32090) = (24105+24588+32090) = (24105+25534+32090) = (28160+24215+32090) = (28160+24588+32090) = (28160+25534+32090) = (22013+24215+24588+32090) = (24105+24215+24588+32090) = (24215+24588+28160+32090)$
R 0165	Mod : $20268+21678+24946+27773$
R 0166	Mod : $20268+21678+24946+25404+27773$
R 0167	Mod : $(20268+21678+24946+25404+27773+28160) = (20268+21678+25404+25951+27773+28160) = (20268+21678+25404+27773+28160+32238)$
R 0168	Mod : $20268+21678+24946+25404+27773+28160$
R 0169	Mod : $20268+21678+24044+25404+31607$
R 0170	STD = Mod : $31896 = 31897 = (28238+31896) = (28238+31897)$
R 0171	Mod : $(20268+24946+26965) = (20268+24946+27773) = (20268+25951+26965) = (20268+25951+27773) = (20268+26760+26965) = (20268+26760+27773) = (20268+26965+32150) = (20268+26965+32238) = (20268+26965+32239) = (20268+26965+32311) = (20268+27773+32150) = (20268+27773+32238) = (20268+27773+32239) = (20268+27773+32311)$
R 0172	Mod : $(20268+25647) = (20268+ACA = MXA)$
R 0173	Mod : $(20268+25647) = (20268+ACA)$
R 0174	Mod : $(20268+24044+25647) = (20268+24044+ACA)$
R 0175	Mod : $25888 = (22562+25072+25888) = (25888+28160+28917)$
R 0176	STD = Mod : $(28160+28917) = (28160+28916+28917)$
R 0177	Mod : $30020 = (23208+24105+30020)$
R 0178	Mod : $(22013+24215) = (22013+24588) = (22013+25534) = (22013+24215+24588)$
R 0179	Mod : $(22013+24215+24588+24794+30422) = (22013+24215+24588+24794+30422+32090)$
R 0180	Mod : $(22013+27846+28479+28721) = (22013+27846+28479+28960) = (22013+27846+28721+28916) = (22013+27846+28916+28960) = (22013+27846+28479+32011) = (22013+27846+28916+32011) = (22013+28479+30439+32011) = (22013+28479+30439+32456)$
R 0181	Mod : $(20268+21678+24946+25404+27773) = (20268+21678+24946+25404+27773+28160+28917)$

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R

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
AIR COND PRESS	PRESS AUTO SYS 1	Norm	Norm	Norm
	MAN PRESS CTL	Inop	Inop	Inop (1)
	RAM AIR	Norm	Norm	Norm
	PACK VALVE 1	Norm	Closure inop	Closure inop
	PACK VALVE 2	Closure Inop	Closure Inop	Closure Inop (1)
	AVIONIC VENT	Norm	Norm	Partial
	AFT CRG ISOL VALVE	Norm	Inop	Inop
APU	ECB – STARTER	Norm (3)	Inop	Inop (1)
	FUEL LP VALVE	Norm	Norm	Norm
	FUEL PUMP	Norm	Norm	Norm
COM	VHF 1	Norm	Norm	Norm
	RMP 1	Norm	Norm	Norm
	ACP (Capt., F / O)	Norm	Norm	Norm
	CIDS	Norm	Norm	Norm
	INTERPHONE	Norm	Norm	Norm
	CVR	Norm	Inop	Inop
	LOUDSPEAKER 1	Norm	Norm	Norm
EIS	PFD 1	Norm	Norm	Norm (2)
	ND 1	Norm	Inop	Inop
	ECAM upper disp.	Norm	Norm	Norm (2)
	DMC 1 or 3	Norm	Norm	Norm (2)
	SDAC 1, FWC 1	Norm	Norm	Norm (2)
	ECAM cont. panel	Norm	Norm	Norm

- (1) Restored, when the speed is below 100 knots.
 (2) Lost, when the speed is below 50 knots.
 (3) For APU start only.



CONT'D

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
EMER EQPT	CREW OXY	Norm	Norm (4)	Norm (4)
	PAX OXY mask release (auto + man)	Norm	Inop	Inop
	SLIDES ARM/WARN	Norm	Norm	Norm
FLT INS	CLOCKS	Norm	Norm	Norm
FIRE	ENG 1 LOOP	A only	A only	A only
	ENG 2 LOOP	B only	B only	B only
	APU LOOP	Inop	Inop	Inop (1)
	CARGO SMOKE DET	Channel 1	Inop	Inop
	ENG FIRE EXT.	Bottle 1 only	Bottle 1 only	Bottle 1 only
	APU FIRE EXT.	Squib A only	Squib A only	Squib A only
	CARGO FIRE EXT.	Inop	Inop	Inop (1)
	APU AUTO EXT.	Inop	Inop	Inop (1)
FLT CTL	ELAC	N° 1 only	N° 1 + N° 2	N° 1 + N° 2 (3)
	SEC	N° 1 only	N° 1	N° 1 (3)
	FCDC	N° 1 only	Inop	Inop
	SFCC	N° 1 only	N° 1 only	N° 1 only
	Flaps pos ind	Norm	Norm	Norm (2)
FMGS	FMGC (NAV FUNCTION)	N° 1 only	Inop	Inop
	MCDU	N° 1 only	Inop	Inop
	FAC	N° 1 only	Inop	Inop
	FCU	ch 1 only	ch 1 only	ch 1 only
FUEL	LP VALVE	Norm	Norm	Norm
	FQI channel 1	Norm	Inop	Inop
	X FEED VALVE	Norm	Inop	Inop
	TRANSFER VALVE	Norm	Inop	Inop

- (1) Restored, when speed is below 100 knots.
 (2) Lost, when speed is below 50 knots.
 (3) Lost 30 seconds after last engine shutdown.
 (4) Crew oxygen valve control inoperative.



CONT'D

R

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
HYD	FIRE VALVES	Norm	Norm	Norm
ICE – RAIN	WING A.ICE	Norm	Inop	Inop
	ENG A.ICE VALVE	Open	Open	Open
	CAPT PITOT	Norm	Norm	Norm (1)
	CAPT AOA	Norm	Inop	Inop
	RAIN REPELLENT (Capt)	Norm	Norm	Norm
L/G	LGCIU SYS 1	Norm	Norm	Norm
	BRK PRESS IND	Norm	Norm	Norm
	PARK BRK	Norm	Norm	Norm
LIGHTS	EMER CKPT	Norm	Norm	Norm
	EMER CAB	Norm	Norm	Norm
NAV	IR	N° 1 only (2)	N° 1 only (2)	N° 1 only (2)
	ADR	N° 1 only	N° 1 only	N° 1 only
	ADF	N° 1 only	Inop	Inop
	VOR-MMR	N° 1 only	N° 1 only	N° 1 only (1)
	DME	N° 1 only	Inop	Inop
	VOR/DDRMI	Norm	Norm	Norm (1)
	ATC	N° 1 only	Inop	Inop
	STBY HORIZON	Norm	Norm	Norm
	STBY COMP (LT)	Norm	Norm	Norm
	STBY ALTI (VIB)	Norm	Inop	Inop

- (1) Lost, when speed is below 50 knots.
 (2) IR2 and IR3 are lost 5 minutes after failure of the main generators.
 But, if IR3 replaces IR1 (ATT-HDG selector at CAPT3), IR3 remains supplied.



CONT'D

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
PNEU	ENG 1 BLEED	Norm	BMC 1 inop	BMC 1 inop
	ENG 2 BLEED	BMC 2 inop	BMC 2 inop	BMC 2 inop
	APU BLEED	Inop	Inop	Inop (1)
	X BLEED (man ctl)	Norm	Inop	Inop
PWR	FADEC	A + B (2)	A + B (2)	A + B (2)
PLT	IGNITION	A only	A only	A only
	HP FUEL VALVE closure	Norm	Norm	Norm
MISC	MECH HORN	Norm	Norm	Norm

- (1) Restored, when speed is below 100 knots.
- (2) Channels A and B are self-powered above 12 % N2. If N2 is below 12 %, only Channel A is powered.

ELEC EMER CONFIG Summary

C R U I S E	MAX SPD 320 KT		
	ALTN LAW : PROT LOST		
	ONLY CAPT PITOT AND AOA HEATED		
	FUEL : CTR TK UNUSABLE.		
L A N D I N G	NAV : MCDU BACK UP NAV COM : VHF1, ATC1, RMP1 only ILS1, VOR1, GPS1 (if MMR is installed) only		
	LANDING CONF	APPROACH SPEED	LANDING DIST
	Use FLAP 3	VAPP = VREF + 10 KT/140 KT	Multiply by 1.9

A P P R	CAT 1 ONLY		
	MINIMUM RAT SPEED 140 KT		
	SLATS FLAPS SLOW		
	• When L/G down : USE MAN PITCH TRIM.		

L A N D I N G	FLARE : Only 2 spoilers per wing. Direct law		
	SPOILERS : Only 2 per wing NO REVERSER		
	BRAKING : NORMAL without antiskid MAX BRK PR 1000 PSI		
	NO NOSEWHEEL STEERING		

G A	Increased fuel consumption
----------------	----------------------------

ACTUAL LANDING DISTANCES (m) (for contaminated runways, refer to 4.03)										
WEIGHT (1000 KG)	40	44	48	52	56	60	64	68	72	76
DRY runway	750	740	750	800	830	860	900	960	1040	1130
WET runway	900	900	920	990	1050	1110	1170	1240	1320	1400

CORRECTIONS	+ 1000 ft above SL	+ 10 kt tailwind
DRY runway	+ 3 %	+ 20 %
WET runway	+ 4 %	+ 26 %

The method for approach speed computation is given in the QRH 2.31.

ENG FIRE on ground

- THR LEVERS IDLE
Full reverse may be used to stop the aircraft.

● WHEN A/C IS STOPPED :

- PARKING BRK ON
- ENG MASTER (affected engine) OFF
- ENG FIRE P/B (affected engine) PUSH
- AGENT 1 + 2 DISCH
- 2 ND ENG MASTER OFF

The following items are not displayed on the ECAM, if the APU is not running :

- ATC (VHF 1) NOTIFY
- CABIN CREW (PA) ALERT

● IF EVAC RQRD :

- EVAC COMMAND ON
- APU MASTER SW OFF
- BAT 1 + 2
(If time permits before leaving aircraft) OFF

Batteries are left ON until leaving the aircraft to ensure cabin communications.

NOTE : *Keep the batteries on for at least 10 seconds, after switching the 2nd ENG MASTER to OFF, to allow the fuel LP valves to close completely.*

SMOKE/TOXIC FUMES REMOVAL

Use the smoke removal procedure if there is dense smoke, toxic fumes (smell), or if smoke generation cannot be stopped.

- OXY MASK/GOGGLE .. ON/100%/EMERG
- SEAT BELTS/NO SMOKING ON

● If fuel vapors :

- CAB FANS ON
- PACK 1+2 OFF

● If no fuel vapor :

- CAB FANS OFF
- PACK FLOW HI
- LDG ELEV 10000 FT/MEA
- DESCENT (FL 100 or MEA or minimum obstacle clearance altitude INITIATE
- ATC NOTIFY

R
R
R
R

● At FL100 or MEA :

- PACK 1+2 OFF
- MODE SEL MAN
- MAN V/S CTL FULL UP
- RAM AIR ON

● If cockpit window opening required :

- MAX SPD 200 KT
- HEADSETS ON
- COCKPIT WINDOW OPEN

CAUTION

Due to increased noise level, pay particular attention to visual warnings.

SMOKE/AVNCS SMOKE

LAND ASAP

IF PERCEPTIBLE SMOKE APPLY IMMEDIATELY :

- OXY MASK/GOGGLE . ON/100 %/EMERG
- CAB FANS OFF
- BLOWER OVRD
- EXTRACT OVRD
- GALLEY & CAB OFF
- FAULTY EQUIPT (if identified) ISOLATE

● **IF DENSE SMOKE, at any time of the procedure :**

- DESCENT for smoke removal INITIATE
 - SMOKE/TOXIC FUMES REMOVAL ... APPLY
 - ELEC EMER CONFIG CONSIDER
- Refer to end of procedure to set ELEC EMER CONFIG.*

■ **IF AIR COND SMOKE SUSPECTED :**

- APU BLEED OFF
- BLOWER AUTO
- EXTRACT AUTO

Note : When both BLOWER and EXTRACT are in the OVRD position, a single pack may not be able to maintain the cabin pressure.

- PACK 1 OFF

● **If smoke persists :**

- PACK 1 ON
- PACK 2 OFF
- CRG FWD (AFT) ISOL VALVE ◁* ... OFF

● **If smoke still persists :**

- PACK 2 ON
- BLOWER OVRD
- EXTRACT OVRD
- SMOKE/TOXIC FUMES REMOVAL
..... CONSIDER



SMOKE/AVNCS SMOKE (CONT'D)

■ IF CAB EQUIPMENT SMOKE SUSPECTED :

● If smoke persists:

- EMER EXIT LIGHT ON
- BUS TIE OFF
- GEN 2 OFF

● If smoke still persists, or before L/G extension :

- GEN 2 ON
- BUS TIE AUTO
- SMOKE/TOXIC FUMES REMOVAL
..... CONSIDER

● IF AVIONICS SMOKE WARNING STILL PERSISTS AFTER 5 MINUTES :

- ELEC EMER CONFIG SET

● IF SMOKE DISAPPEARS WITHIN 5 MINUTES :

- NORMAL VENTILATION RESTORE

TO SET ELEC EMER CONFIG

- EMER ELEC GEN 1 LINE OFF
- EMER ELEC PWR MAN ON

● WHEN EMER GEN AVAIL :

- APU GEN OFF
- GEN 2 OFF

ELEC **EMER CONFIG**

APPLY ECAM PROCEDURE

HYD B + Y SYS LO PR Summary

C R U I S E	MAX SPD 320/.77		
	MANEUVER WITH CARE Flight controls remain in normal law.		
	LANDING CONF	APPROACH SPEED	LANDING DIST
	NORM	VAPP = VREF	Multiply by 1.1 (or 1.2 if CONF 3 is used)

A P P R	SLATS SLOW / FLAPS SLOW	CAT 1 ONLY
	L/G GRAVITY EXTENSION	

L A N D I N G	FLARE : Only one ELEV and two spoilers per wing.	
	SPOILERS : Only 2 per wing	REVERSER : Only N°1
	BRAKING : NORMAL	
	NO NOSEWHEEL STEERING	

G A	NO GEAR RETRACTION. Increased fuel consumption
--------	--

ACTUAL LANDING DISTANCES (m) (for contaminated runways, refer to 4.03)										
WEIGHT (1000 KG)	40	44	48	52	56	60	64	68	72	76
DRY runway	750	740	750	800	830	860	900	960	1040	1130
WET runway	900	900	920	990	1050	1110	1170	1240	1320	1400

CORRECTIONS	+ 1000 ft above SL	+ 10 kt tailwind
DRY runway	+ 3 %	+ 20 %
WET runway	+ 4 %	+ 26 %

The method for approach speed computation is given in the QRH 2.31.

HYD G + B SYS LO PR Summary

C R U I S E	SPD BRK DO NOT USE		
	MAX SPD 320/.77		
	MANEUVER WITH CARE		
	ALTN LAW : PROT LOST		
	LANDING CONF	APPROACH SPEED	LANDING DIST
	Use FLAP 3	VAPP = VREF + 25 KT	multiply by 1.5

A P P R	SLATS JAMMED / FLAPS SLOW CAT 1 ONLY		
	ATHR OFF		
	GPWS LDG FLAP 3 ON		
	For Flaps extension : SPD SEL VFE NEXT – 5KT		
	When in landing CONF : DECELERATE TO CALCULATED VAPP		
	L/G GRAVITY EXTENSION		
	● WHEN L/G down : USE MAN PITCH TRIM		

L A N D I N G	FLARE : Only one ELEV and two spoilers per wing. No ailerons. A/C slightly sluggish – Direct law	
	SPOILERS : Only 2 per wing	REVERSER : Only N°2
	BRAKING : ALTERNATE	
	NO NOSEWHEEL STEERING	

G O A R O U N D	NO GEAR RETRACTION. Increased fuel consumption		
	● For circuit : MAINTAIN SLATS/FLAPS CONFIGURATION Recommended speed : MAX SPD – 10 KT		
	● For diversion : SELECT CLEAN CONFIGURATION		
	If Slats at zero : Normal operating speeds If Slats not at zero : Recommended speed MAX SPD – 10 KT		

ACTUAL LANDING DISTANCES (m) (for contaminated runways, refer to 4.03)										
WEIGHT (1000 KG)	40	44	48	52	56	60	64	68	72	76
DRY runway	750	740	750	800	830	860	900	960	1040	1130
WET runway	900	900	920	990	1050	1110	1170	1240	1320	1400

CORRECTIONS	+ 1000 ft above SL	+ 10 kt tailwind
DRY runway	+ 3 %	+ 20 %
WET runway	+ 4 %	+ 26 %

The method for approach speed computation is given in the QRH 2.31.

HYD G + Y SYS LO PR Summary

C R U I S E	MAX SPD 320/.77 MANEUVER WITH CARE ALTN LAW : PROT LOST		
	LANDING CONF	APPROACH SPEED	LANDING DIST
	Use FLAP 3	VAPP = VREF + 25 KT	multiply by 2.3

A P P R	SLATS SLOW / FLAPS JAMMED CAT 1 ONLY GPWS FLAP MODE OFF		
	For Flaps extension : SPD SEL VFE NEXT – 5KT When in landing CONF : DECELERATE TO CALCULATED VAPP Stabilize at VAPP before L/G down, to be trimmed for approach. L/G GRAVITY EXTENSION		

L A N D I N G	FLARE : PITCH AUTHORITY REDUCED (No stabilizer). MAN TRIM Unusable Only 1 spoiler per wing – Direct law	
	SPOILERS : Only 1 per wing	NO REVERSER
	BRAKING : BRK Y ACCU PR ONLY (7 applications) MAX BRK PR 1000 PSI	
	NO NOSEWHEEL STEERING	

G O A R O U N D	NO GEAR RETRACTION. Increased fuel consumption		
	● For circuit : MAINTAIN SLATS/FLAPS CONFIGURATION Recommended speed : MAX SPD – 10 KT		
	● For diversion : ● If Flaps at zero : SELECT CLEAN CONFIGURATION Normal operating speeds ● If Flaps not at zero : MAINTAIN SLATS/FLAPS CONFIG Recommended speed : MAX SPD – 10 KT		

ACTUAL LANDING DISTANCES (m) (for contaminated runways, refer to 4.03)										
WEIGHT (1000 KG)	40	44	48	52	56	60	64	68	72	76
DRY runway	750	740	750	800	830	860	900	960	1040	1130
WET runway	900	900	920	990	1050	1110	1170	1240	1320	1400

CORRECTIONS	+ 1000 ft above SL	+ 10 kt tailwind
DRY runway	+ 3 %	+ 20 %
WET runway	+ 4 %	+ 26 %

The method for approach speed computation is given in the QRH 2.31.

LOSS OF BRAKING

- **IF AUTOBRAKE IS SELECTED :**
 - BRAKE PEDALS PRESS
- **IF NO BRAKING AVAILABLE :**
 - REV MAX
 - BRAKE PEDALS RELEASE
 - A/SKID & N/W STRG OFF
 - BRAKE PEDALS PRESS
 - MAX BRK PR 1000 PSI
- **If STILL NO BRAKING :**
 - PARKING BRAKE SHORT AND SUCCESSIVE APPLICATIONS

EGPWS ALERTS

CAUTION

During night or IMC conditions, apply the procedure immediately. Do not delay reaction for diagnosis.

During daylight VMC conditions, with terrain and obstacles clearly in sight, the alert may be considered cautionary. Take positive corrective action until the alert ceases or a safe trajectory is ensured.

■ **"PULL UP" – "TERRAIN TERRAIN PULL UP" – "TERRAIN AHEAD PULL UP"**

Simultaneously :

- AP OFF
- PITCH PULL UP
Pull up to full back stick and maintain.
- THRUST LEVERS TOGA
- SPEED BRAKES LEVER CHECK RETRACTED
- BANK WINGS LEVEL or adjust
For "TERRAIN AHEAD PULL UP" only, in addition to climbing, and if the crew concludes that turning is the safest way of action, a turning maneuver can be initiated.

● **When flight path is safe and GPWS warning ceases :**

Decrease pitch attitude and accelerate.

● **When speed is above VLS and vertical speed is positive :**

Clean up aircraft as required.

■ **"TERRAIN TERRAIN" – "TOO LOW TERRAIN" :**

Adjust the flight path or initiate a go-around.

■ **"TERRAIN AHEAD" :**

Adjust the flight path. Stop descent. Climb and/or turn, as necessary, based on analysis of all available instruments and information.

■ **"SINK RATE" "DON'T SINK" :**

Adjust pitch attitude and thrust to silence the alert.

■ **"TOO LOW GEAR" – "TOO LOW FLAPS" :**

Correct the configuration or perform a go-around.

■ **"GLIDE SLOPE" :**

Establish the airplane on the glideslope, or switch OFF the G/S mode pushbutton, if flight below the glideslope is intentional (non precision approach).

TCAS WARNINGS

■ Traffic advisory : "TRAFFIC" messages

- Do not maneuver based on a TA alone.
- Attempt to see the reported traffic.

■ Preventive resolution advisory : "MONITOR VERTICAL SPEED" message

- Maintain or adjust the vertical speed, as required, to avoid the red area of the vertical speed scale.
- Attempt to see the reported traffic.
- Notify ATC.
- When "CLEAR OF CONFLICT" is announced :
Resume normal navigation in accordance with ATC clearance.

■ Corrective resolution advisory : All "CLIMB" and "DESCEND" or "MAINTAIN VERTICAL SPEED MAINTAIN" or "ADJUST VERTICAL SPEED ADJUST" type messages.

- Respond promptly and smoothly to an RA.
- AP (if engaged) OFF
- BOTH FDs OFF
- Adjust the vertical speed, as required, to that indicated on the green area of the vertical speed scale.

NOTE : Avoid excessive maneuvers while aiming to keep the vertical speed just outside the red area of the VSI, and within the green area. If necessary, use the full speed range between V_{0max} and V_{max} .

- Respect stall, GPWS, or windshear warning.
- Attempt to see the reported traffic.
- Notify ATC.
- When "CLEAR OF CONFLICT" is announced :
 - . Resume normal navigation in accordance with ATC clearance.
 - . AP/FD can be re-engaged as desired.

● GO AROUND procedure must be performed when an RA "CLIMB" or "INCREASE CLIMB" is triggered on final approach.

NOTE : Resolution Advisories (RA) are inhibited below 900 feet.

ENG DUAL FAILURE

LAND ASAP

- ENG MODE SEL IGN
- THR LEVERS IDLE
- OPTIMUM RELIGHT SPD 300 KT

In case of a speed indication failure (volcanic ash), the pitch attitude for optimum relight speed is -4.5° (for weights above 50000 kg/110000 lb, add 1° for each 10 000 kg/22 000 lb).

At 300 knots, the aircraft can fly up to about :

- . 2 NM/1000 feet at 50 000 kg/110 000 lb
- . 2.2 NM/1000 feet at 60 000 kg/132 000 lb
- . 2.4 NM/1000 feet at 70 000 kg/154 000 lb

- EMER ELEC PWR (if EMER GEN not in line) MAN ON
- VHF1/HF1 $\triangleleft$ */ATC1 USE

Notify traffic control of the nature of the emergency, and state intentions.

If there is no contact with air traffic control, switch to code A7700, or transmit a distress message on one of the following frequencies : VHF 121.5 MHz, HF 2182 KHz or 8364 KHz.

- FAC 1 OFF THEN ON

The aircraft is out of trim due to right aileron upfloat.

Resetting FAC 1 permits rudder trim recovery, even if no indication is available.

● IF NO RELIGHT AFTER 30 SEC :

- ENG MASTERS OFF 30 S/ON

● IF UNSUCCESSFUL :

- APU (IF AVAIL) START

If the APU is available, it may be started when below FL 250, and the APU BLEED used for engine start below FL 200.

- APU BLEED ON
- ENG MASTERS OFF 30 S/ON

Start one engine at a time.

- OPTIMUM SPEED G DOT

Green dot is displayed on the Captain's PFD. It represents the best lift-to-drag ratio.

● EARLY IN APPR (If ditching is foreseen, apply the DITCHING procedure, instead of the following) :

- CAB SECURE ORDER
- FOR LDG USE FLAP 3

As only blue hydraulic power is available, only the slats will extend, and operating times noticeably increase.

● AT 5000 FT AGL :

- L/G GRVTY EXTN
- TARGET SPEED 150 KT

● AT TOUCHDOWN :

- ENG MASTERS OFF
- APU MASTER SW OFF
- EVAC INITIATE
- BAT 1 +2

(If time permits before leaving aircraft) OFF

Batteries are left ON, until leaving the aircraft, to ensure cabin communications.

NOTE : *Keep batteries on for at least 10 seconds, after switching the ENG MASTERS to OFF, to allow complete closure of the fuel LP valves.*

CFM Eng. : 56-5-B5/B6/B7/B8

Mod = STD

A319 + E2

DITCHING

PREPARATION

- CABIN CREW NOTIFY
 - ATC/TRANSPONDER NOTIFY/AS RQRD
 - GPWS SYS OFF
 - SEAT BELTS/NO SMOKING ON
 - CABIN and COCKPIT PREPARE
 - . Loose equipment secured.
 - . Survival equipment prepared.
 - . Belts and shoulder harness locked.
 - LDG ELEV SELECT 00
 - V BUGS SET
 - BARO SET
- Omit the normal approach and landing checklist.

APPROACH

- L/G LEVER..... UP
 - If engines running :
 - SLATS and FLAPS MAX AVAIL
 - If engines not running :
 - FOR LDG USE FLAP 3
 - USE RUDDER WITH CARE
 - MIN RAT SPEED 140 KT
- ENG MODE SEL NORM
- CABIN REPORT OBTAIN

BEFORE DITCHING

- CAB PRESS MODE SEL CHECK AUTO
- BLEED (ENGs and APU) OFF
- DITCHING pushbutton ON
- BRACE FOR IMPACT ORDER

Touch down with approximately 11° pitch attitude, and minimum aircraft V/S.

JUST BEFORE DITCHING

- ENG MASTERS OFF

AFTER DITCHING

- ATC (VHF 1) NOTIFY
- FIRE pushbutton (ENGs and APU) PUSH
- AGENTS (ENGs and APU) DISCH
- EVACUATION INITIATE

R

EMER DESCENT

IMMEDIATE ACTIONS

- CREW OXY MASKS ON

Set the oxygen diluter selector to the N position.

NOTE : With the oxygen diluter selector left at 100%, oxygen quantity may be insufficient to cover the entire emergency descent profile.

The recommendation is to descend with the AP engaged :

- . Turn the ALT selector knob and pull.
- . Turn the HDG selector knob and pull.
- . Adjust the target SPD/MACH.

- THR LEVERS (if A/THR not engaged) IDLE
- SPD BRK FULL

Extension of the speedbrakes will significantly increase Vls.

To avoid AP disconnection and automatic retraction of the speedbrakes, due to possible activation of angle of attack protection, allow the speed to increase before starting to use the speedbrakes.

WHEN DESCENT ESTABLISHED

EMER DESCENT FL100, or minimum allowable altitude.

- SPEED MAX/APPROPRIATE

CAUTION

Descend at the maximum appropriate speed. If structural damage is suspected, use the flight controls with care and reduce speed as appropriate.

Landing gear may be extended below 25,000 feet. Speed must be reduced to VLO/VLE.

NOTE : The recommendation is to descend with the autopilot engaged.

Use of the autopilot is also permitted in EXPEDITE mode (<4).

- SIGNS ON
- ENG MODE SEL IGN
- ATC NOTIFY

To save oxygen, set the oxygen diluter selector to the N position. With the oxygen diluter selector left at 100 %, oxygen quantity may be insufficient to cover the entire emergency descent profile.

● IF CAB ALT > 14000 feet :

- PAX OXY MASKS MAN ON

Confirm passenger masks released.

FORCED LANDING

PREPARATION

- CABIN CREW NOTIFY
- ATC/TRANSPONDER NOTIFY/AS RQRD
- OXYGEN CREW SUPPLY (if not required) OFF
- GPWS SYS OFF
- SEAT BELTS/NO SMOKING ON
- GALLEY/COMMERCIAL  OFF
- CABIN and COCKPIT PREPARE
- . Loose equipment secured
- . Survival equipment prepared
- . Belts and shoulder harness locked.
- LDG ELEV SET
- V BUGS SET
- BARO SET
- Omit normal approach and landing checklist.

APPROACH

- R – RAM AIR ON
- If engines running :
 - R – L/G lever DOWN
 - SLATS AND FLAPS MAX AVAIL
- If engines not running :
 - R – FOR LDG USE FLAP 3
 - L/G GRVTY EXTN DOWN
 - USE RUDDER WITH CARE
 - MIN RAT SPEED 140 KT
 - GND SPLR ARM
 - ENG MODE SEL NORM
 - CABIN REPORT OBTAIN

BEFORE LANDING

- BRACE FOR IMPACT ORDER

JUST BEFORE TOUCHDOWN

- ENG MASTERS OFF

AFTER TOUCHDOWN

- When aircraft has stopped :
 - PARKING BRK ON
 - ATC (VHF1) USE
 - FIRE pushbutton (ENGs and APU) PUSH
 - AGENTS (ENGs and APU) DISCH
 - EVACUATION INITIATE

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CABIN OVERPRESSURE

Apply the following procedure (not displayed on ECAM) in case of total loss of the cabin pressure control leading to overpressure.

- PACK 1 or 2 OFF
- BLOWER + EXTRACT OVRD
Cabin air is extracted overboard.
- ΔP FREQUENTLY MONITOR

● **If $\Delta P > 9$ PSI**

- PACK 1 + 2 OFF
- LAND ASAP

Before 10 minutes from landing :

- PACK 1 + 2 OFF
- BLOWER + EXTRACT AUTO

CAUTION

Check that ΔP is zero before opening the doors.

AIR DUAL BLEED FAULT

R

Do not apply this procedure if ENG BLEED 1 was lost due to :

- . LEAK on side 1
- . ENG 1 FIRE
- . Start Air Valve 1 failed open.

MAX FL 200

Descend rapidly to FL 200 to recover the bleed supply from the APU.

– APU START

Start the APU during the descent.

● AT OR BELOW FL 200 :

● If ENG 2 BLEED loss due to :

LEAK on side 2 or
ENG 2 FIRE or
Start Air Valve 2 failed open

- X BLEED SHUT
- PACK2 (if above FL 150) OFF
Only if PACK 1 is available.
- WING A.ICE OFF
APU BLEED must not be used for wing anti-ice.
- APU BLEED ON

AVOID ICING CONDITIONS

LOW ENERGY WARNING

The "SPEED SPEED SPEED" synthetic voice is triggered every 5 seconds whenever the aircraft energy goes below a threshold under which thrust shall be increased to recover a positive flight path angle.

– THR LEVERS PUSH

Increase the thrust until the warning disappears.

LANDING WITH SLATS OR FLAPS JAMMED

– LANDING CONF CONF 3

■ **Repeat the following until landing configuration is reached :**

– SPEED SEL VFE NEXT – 5 KT

Decelerate towards VFE NEXT – 5 KT, but not below VLS. If turbulence, the pilot may decide to decelerate to a lower speed (not below VLS) to avoid VFE exceedance.

NOTE : . Autopilot may be used down to 500 feet AGL. As it is not tuned for abnormal configurations, its behavior can be less than optimum and must be monitored.

. Approach with selected speed is recommended.

. A/THR is recommended, except in the case of a G+B SYS LO PR warning.

. OVERSPEED warning and VLS, displayed on the PFD, are computed according to the actual flaps/slats position.

. VFE and VFE NEXT are displayed on the PFD according to the FLAPS' lever position. If not displayed, use the placard speeds.

. If VLS is greater than VFE NEXT (overweight landing), FLAPS lever can be set to the next required position while speed is reduced to follow VLS reduction, as surfaces extend. The VFE warning threshold should not be triggered.

In this case, disconnect the A/THR. A/THR can be re-engaged when landing configuration is established.

As speed reduces through VFE NEXT :

– FLAPS LEVER ONE STEP DOWN

● **When landing configuration is established :**

– DECELERATE TO CALCULATED APPROACH SPEED IN FINAL APPROACH

FOR GO AROUND

R The table on page 2.05 provides the MAX SPEEDS for abnormal configurations.

■ **IF SLATS FAULT**

● **FOR CIRCUIT**

– MAINTAIN SLAT/FLAP CONFIGURATION

– Recommended speed : MAX SPEED – 10 KT

● **FOR DIVERSION**

– SELECT CLEAN CONFIGURATION

Recommended speed for flaps retraction is between MAX SPEED - 10 KT and MAX SPEED.

– Recommended speed : MAX SPEED – 10 KT

■ **IF FLAPS FAULT**

● **FOR CIRCUIT**

– MAINTAIN SLAT/FLAP CONFIGURATION

– Recommended speed : MAX SPEED – 10 KT

● **FOR DIVERSION**

● **If Flaps jammed at 0**

– SELECT CLEAN CONFIGURATION

NOTE : *Recommended speed for slats retraction is between MAX SPEED - 10 knots and max speed of actual slat/flap position.*

– NORMAL OPERATING SPEEDS

● **If Flaps jammed > 0**

– MAINTAIN SLAT/FLAP CONFIGURATION

– Recommended speed : MAX SPEED – 10 KT

NOTE : . *In case of go-around with CONF FULL selected, the L/G NOT DOWN warning is triggered at landing gear retraction.*

. *In some cases, MAX SPEED - 10KT may be a few knots higher than the VFE. In this situation, pilots may follow the VFE.*



LANDING WITH SLATS OR FLAPS JAMMED (cont'd)

MAX SPEED					
Flaps Slats	F = 0	0 < F ≤ 1	1 < F ≤ 2	2 < F ≤ 3	F > 3
S = 0	NO LIMITATION	215 kt	200 kt	185 kt	177 kt (Not allowed)
0 < S ≤ 1	230 kt				
1 < S ≤ 3	200 kt		200 kt	185 kt	177 kt
S > 3	177 kt		177 kt	177 kt	177 kt

CAUTION

For flight with SLATS or FLAPS extended, fuel consumption is increased. Refer to fuel flow indication.

As a guideline, determine the fuel consumption in clean configuration at same altitude without airspeed limitation (e.g. from ALTERNATE FLIGHT PLANNING tables) and multiply this result by 1.6 (SLATS EXTENDED) or 1.8 (FLAPS EXTENDED) or 2 (SLATS and FLAPS EXTENDED) to give the fuel consumption required to reach the destination in the current configuration.

F/CTL RUDDER JAM

Rudder jamming may be detected by undue (and adverse) pedal movement during rolling maneuvers.

This is because the yaw damper orders can no longer be sent to the rudder, but are fed back to the pedals.

Use the ECAM F/CTL page for a visual check of the rudder position.

FOR APPROACH

- AVOID LANDING WITH CROSSWIND from the side where the rudder is deflected.
- MAX CROSSWIND 15 KT
- FOR LANDING USE NORMAL CONF
- SPEED and TRAJECTORY STABILIZE ASAP

ON GROUND

- DIFFERENTIAL BRAKING USE ASAP

Do not use asymmetric thrust reverse.

Use nosewheel steering handle below 70 knots.

STABILIZER JAM

The system may not detect a stabilizer jam when the pitch trim wheel is jammed. The flight control normal law remains active in this case and there is no ECAM warning.

- AP OFF
- MAN PITCH TRIM CHECK

The pitch trim wheel may not be fully jammed, the force needed may be higher than usual.

● IF MAN TRIM AVAIL :

- TRIM FOR NEUTRAL ELEV

If man pitch trim is available, trim to maintain the elevator at the zero position (indications on ECAM F/CTL page).

APPR PROC

● IF MAN TRIM NOT AVAIL :

- FOR LDG USE FLAP 3

Do not select configuration full, so as not to degrade handling qualities.

- GPWS LDG FLAP 3 ON

CAT 1 ONLY

GRVTY FUEL FEEDING

– ENG MODE SEL IGN

AVOID NEGATIVE G FACTOR

● **DETERMINE GRAVITY FEED CEILING :**

Depending on when the fuel pumps have failed, the flight altitude must be limited to the following value :

Flight conditions at the time of gravity feeding	Gravity feed ceiling
Flight time above FL300 greater than 30 minutes (Fuel deaerated)	Current FL*
Flight time above FL300 lower than 30 minutes (Fuel non deaerated)	FL 300*
Aircraft flight level never exceeded FL300 (Fuel non deaerated)	FL150* or 7000 ft above takeoff airport whichever is higher

* For JET B, gravity feed ceiling is FL100 in all cases.

DESCEND TO GRVTY FEED CEILING (if applicable).

● **WHEN REACHING GRVTY FEED CEILING :**

– FUEL X FEED OFF

● **IF NO FUEL LEAK AND FOR AIRCRAFT HANDLING :**

If no fuel leak and for flight with only one engine running, this engine being fed by gravity, the following applies.

– FUEL X FEED ON

– BANK ANGLE . . . 1 DEG WING DOWN ON LIVE ENGINE SIDE

– RUDDER TRIM USE

● **WHEN FUEL IMBALANCE REACHES 1 000 kg (2200 lbs) :**

– BANK ANGLE 2 or 3 DEG WING DOWN
ON LIVE ENG SIDE

FUEL IMBALANCE

– FOB CHECK

Compare the FOB+FU with the FOB at departure. If the difference is significant, or if the FOB+FU decreases, suspect a fuel leak.

– CAUTION

A fuel imbalance may indicate a fuel leak.

Do not apply this procedure, if a fuel leak is suspected. Refer to the FUEL LEAK procedure.

– FUEL X FEED ON

● **On the lighter side and in the center tank :**

– FUEL PUMPS OFF

● **When fuel is balanced :**

– FUEL PUMPS (WING + CTR) ON

– FUEL X FEED OFF

FUEL LEAK

A fuel leak may either be detected by :

- R . The fact that the sum of the FOB and the F. USED is significantly less than the FOB at departure or decreases, or
 - . Passenger observation (fuel spray from engine or wing tip), or
 - . Total fuel quantity decreasing at an abnormal rate, or
 - . A fuel imbalance, or
 - . A tank emptying too fast (leak from engine, or a hole in a tank), or
 - R . A tank overflowing (due to a pipe rupture in a tank), or
 - R . An excessive fuel flow, (leak from engine), or
 - R . A fuel smell in the cabin
- If visibility permits, a visual check from the cabin may permit to identify the source of the leak.

WHEN A LEAK IS CONFIRMED

LAND ASAP

■ LEAK FROM ENGINE :

- R – THR LEVER (of affected engine) IDLE
 - ENG MASTER (of affected engine) OFF
 - R – FUEL X FEED USE AS RQRD
- The crossfeed valve can now be selected open for re-balancing, or to allow use of the fuel from both wings. Do not restart the engine.*

■ LEAK NOT FROM ENGINE or LEAK NOT LOCATED

- FUEL X FEED MAINTAIN CLOSED
- The crossfeed valve must remain closed to prevent the leak from affecting both sides.*
- DESCEND TO GRVTY FUEL FEEDING CEILING (FL 100 IF JET B)
- See the GRVTY FUEL FEEDING procedure.*
- ENG MODE SEL IGN
- ALL TK PUMPS (when gravity ceiling is reached) OFF
- In almost all cases, switching the pumps off will prevent any further loss of fuel.*
- All pumps must be switched off, even if the leak is from one wing only, as there are some failures on one side that will result in fuel loss from the other side.*
- AVOID NEGATIVE G FACTOR

— CAUTION —

- R Do not open the WING X-FEED, even if requested by another ECAM
- R procedure.
- R Do not apply the fuel IMBALANCE procedure :
- R Even with a fuel imbalance of one wing full/one wing empty, there is no
- R special procedure required for approach and landing

● If one engine flames out when there is still fuel in the feeding tank :

- LEAK FROM ENGINE proc APPLY
- ALL TK PUMPS ON

NOTE : The flameout is due to air suction from a leak from the engine.

FOR LANDING

— CAUTION —

- Notify the ATC, and do not use reverse.

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DOUBLE PROBE HEAT FAILURE

● If icing conditions cannot be avoided :

- One of affected ADRs OFF
- F/CTL ADR DISAGREE

DISPLAY UNIT FAILURE

■ AFFECTED DU IS BLANK or DISPLAY IS DISTORTED :

- DU (affected) AS RQRD
The DU can be switched off.
- ECAM/ND XFR (if ECAM DUs affected) USE
Transfer SD to the F/O or CAPT ND.
- PFD/ND XFR (if EFIS DUs affected) USE

■ DIAGONAL LINE ON THE AFFECTED DU :

- EIS DMC SWITCHING AS RQRD

● IF UNSUCCESSFUL :

- DU (affected) OFF THEN ON

NOTE : ND display may disappear, in case too many waypoints and associated information are displayed. Reduce the range, or deselect WPT or CSTR, and the display will automatically recover after about 30 seconds.

■ INVERSION OF EWD AND SD :

- ECAM UPPER DISPLAY OFF THEN ON
The action on the EIS DMC SWITCHING selector produces the same effect.

ECAM SINGLE DISPLAY

Only the EWD is available. No SD on the other DUs.

■ To call a SYS page :

- PRESS AND MAINTAIN SYS page key on the ECP.

■ OVERFLOW ON THE STATUS page :

- PRESS AND MAINTAIN STS KEY ON ECP
First page of the STATUS is displayed.
- RELEASE IT, THEN PRESS IT AGAIN WITHIN 2 SECONDS
Second page of the STATUS is displayed.
- CONTINUE UNTIL THE OVERFLOW ARROW DISAPPEARS
When the STS key is released for more than 2 seconds, EWD is displayed again.

L/G GRAVITY EXTENSION

- GRAVITY GEAR EXTN handcrank PULL AND TURN
Rotate the handle clockwise 3 turns until reaching the mechanical stop, even if resistance is felt.
- L/G lever DOWN
- GEAR DOWN indications (if available) CHECK

NOTE : 1. Depending on aircraft speed, the display may show the landing gear doors in the amber transit position.
 2. In the event of gravity extension caused by the failure of both LGCIUs, landing gear position indications on the ECAM are lost. LDG GEAR lights the ON LDG control panel remain available, if LGCIU1 is electrically-supplied.
 3. The LGCIU 2 FAULT or BRAKES BSCU CH 1(2) FAULT warning may be spuriously triggered after a gravity extension.
 4. If the three green downlock arrows are not on, it is possible that the handcrank is not at the mechanical stop. Check that the handcrank is firmly against the mechanical stop.

CAUTION

Nosewheel steering is lost.

■ If successful :

Do not reset the free-fall system : This will avoid such undesirable effects as further loss of fluid, in the event of a leak, or possible landing gear unlocking, in the event of a gear selector valve jamming in the UP position.

NOTE : The free-fall system may be reset in flights used for training. If the green hydraulic system is available, resetting the free-fall system allows the landing gear doors to be closed and the nosewheel steering to operate.
 The flight crew should not reset the free-fall system on the ground after flight.

■ If unsuccessful :

- LDG WITH ABNORMAL L/G procedure APPLY

LDG WITH ABNORMAL L/G

PREPARATION

- CABIN CREW NOTIFY
- ATC NOTIFY
- GALLEY OFF

. Consider fuel reduction to a safe minimum.

● If NOSE L/G abnormal

- CG location (if possible) AFT
 - . 10 PAX from front to rear + 4 %.
 - . 10 PAX from mid to rear + 2.5 %.

● If one MAIN L/G abnormal

- FUEL IMBALANCE CONSIDER
 - . Open the fuel X-FEED valve and switch off the pumps on the side with landing gear normally extended.
- OXYGEN CREW SUPPLY OFF
- SEAT BELTS/NO SMOKING ON
- CABIN and COCKPIT PREPARE
 - . Loose equipment secured.
 - . Survival equipment prepared.
 - . Belts and shoulder harness locked.

APPROACH

- GPWS SYS OFF
- L/G LEVER CHECK DOWN
- GRVTY GEAR EXTN handcrank TURN BACK TO NORMAL
- AUTOBRAKE DO NOT ARM
- EMER EXIT LT ON
- CABIN REPORT OBTAIN

● If one or both MAIN L/G abnormal

- A/SKID & NW STRG OFF
- MAX BRAKE PR 1000PSI
- GROUND SPOILERS DO NOT ARM

BEFORE LANDING

- RAM AIR ON
- BRACE FOR IMPACT ORDER



Cont'd

LDG WITH ABNORMAL L/G (cont'd)

FLARE, TOUCHDOWN AND ROLL OUT

Engines should be shut down sufficiently early to ensure fuel is shut off before the nacelles impact, but sufficiently late to ensure adequate hydraulic supplies for the flight controls. Engine pumps continue to supply adequate hydraulic pressure for 30 seconds after first engine shutdown.

– REVERSE DO NOT USE

● If NOSE L/G abnormal

– NOSE MAINTAIN UP

*After touchdown, keep the nose off the runway by use of the elevator.
Then, lower the nose onto the runway before elevator control is lost.*

– BRAKES (compatible with elevator efficiency) APPLY

– ENG MASTERS OFF
Shutdown the engines before nose impact.

● If one MAIN L/G abnormal

– ENG MASTERS OFF
At touchdown, shut down both engines.

– FAILURE SIDE WING MAINTAIN UP
Use roll control, as necessary, to maintain the unsupported wing up as long as possible.

– DIRECTIONAL CONTROL MAINTAIN
Use rudder and brakes (maximum 1000 psi) to maintain the runway axis as long as possible.

● If both MAIN L/G abnormal

– ENG MASTERS OFF
Shut down the engines in the flare, before touchdown.

– PITCH ATTITUDE (at touchdown) NOT LESS THAN 6°

WHEN A/C STOPPED

– ENG (all) and APU FIRE pushbutton PUSH

Pressing the ENG FIRE pb shuts off the related hydraulic pressure within a short time.

– ENG (all) and APU AGENT DISCH

– EVACUATION INITIATE

Announce : "PASSENGER EVACUATION" via the P.A. system, and press the EVAC COMMAND pushbutton.

All emergency and passenger doors may be used to evacuate the aircraft.

R

F/CTL ADR DISAGREE

If one ADR is faulty, or has been rejected by the ELAC, and if there is a speed or alpha disagreement between the 2 remaining ADRs, alternate law becomes active, and protections are lost.

– AIR SPD X CHECK

■ IF SPD DISAGREE :

Refer to the ADR CHECK PROC paper procedure to determine the faulty ADR.

– FAULTY ADR OFF

■ IF NO SPD DISAGREE :

– AOA DISCREPANCY

F/CTL ALTN LAW

(PROT LOST)

– MAX SPEED 320 KT

ADR CHECK PROC

Use this procedure :

- Following an ADR DISAGREE, if there is a speed disagree (16 knots minimum) between the remaining ADRs ;
- In case of erroneous speed/altitude, which can be suspected, either by :
 - Speed discrepancies (between ADR 1, 2, 3, and standby instruments).
 - Fluctuating or unexpected increase/decrease/permanent indicated speed, or pressure altitude.
 - Abnormal correlation of the basic flight parameters (speed, pitch attitude, thrust, climb rate).
 - Abnormal AP/FD/ATHR behavior.
 - STALL warning, or OVERSPEED warnings, or a Flap RELIEF ECAM message, that contradicts with at least one of the indicated speeds.
 - Rely on the stall warning that could be triggered in alternate or direct law. It is not affected by unreliable speeds, because it is based on angle of attack.
 - Depending on the failure, the OVERSPEED warning may be false or justified. Buffet, associated with the OVERSPEED VFE warning, is a symptom of a real overspeed condition.
 - Inconsistency between radio altitude and pressure altitude.
 - Reduction in aerodynamic noise with increasing speed, or increase in aerodynamic noise with decreasing speed.
 - Impossibility of extending the landing gear by the normal landing gear control.

To determine the correct ADR, refer to the :

- UNRELIABLE SPEED INDICATION procedure to fly the target pitch and thrust setting (Refer to the QRH 2.15), or
- SEVERE TURBULENCE procedure, if in cruise, to set a thrust and deduce the correct speed indication (Refer to the QRH 5.01).
- FAULTY ADR OFF

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UNRELIABLE SPEED INDICATION

Unreliable airspeed indication may be caused by a radome destruction or frozen pitots.

CAUTION

If the failure is due to radome destruction, the drag will increase and therefore N1 must be increased by 5 %. Fuel flow will increase by about 27 %.

IMMEDIATE ACTIONS

- AP/FD OFF
- A/THR OFF
- FLAPS MAINTAIN CURRENT CONFIG
- SPEEDBRAKES CHECK RETRACTED

NOTE : If failure is detected while in CONF FULL and go-around is initiated, select CONF 3.

- L/G UP WHEN AIRBORNE

IMMEDIATE PITCH ATTITUDE AND THRUST GUIDANCE

■ With slats extended :

- THRUST LEVER MCT
- PITCH ATTITUDE 12.5°

■ In clean configuration :

- THRUST LEVER CLB
- PITCH ATTITUDE below FL 100 10°
- PITCH ATTITUDE above FL 100 5°

Respect the Stall warning, if in alternate law.

Ground speed variations can provide valuable short-term information at low altitude.

The FPV is unreliable, if the altitude information is affected. In other cases, it is a valuable aid in establishing a safe flight path.

WHEN FLIGHT PATH IS STABILIZED

- PROBE WINDOW HEAT ON
- ATTITUDE/THRUST ADJUST

Adjust attitude and thrust, according to the table below.



UNRELIABLE SPEED INDICATION (CONT'D)

FLIGHT PHASE		WEIGHT (1000 kg)	FLT LEVEL	PITCH ATT	N1
TAKE OFF					TO or FLX
ACCELERATION and CONF CHANGE	F	below 45 45 to 55 55 to 65 above 65		21° 17° 15° 13°	CL
	S	below 45 45 to 55 55 to 65 above 65		16° 13° 10° 9°	CL
CLIMB Climb profile : · 250 kt below FL 200 · 275 kt from FL 200 to 320 · M 0.76 above FL 320	250 kt	below 45 above 45	0 to 50	15° 12°	CL
	250 kt	below 45 above 45	50 to 100	13° 11°	
	250 kt	below 45 above 45	100 to 150	11° 9°	
	250 kt	below 45 above 45	150 to 200	9° 8°	
	275 kt		200 to 250 250 to 320	5.5° 4.5°	
	.76		above 320	4°	
CRUISE	250 kt	below 55 above 55	0 to 200	1.5° 3°	*
	275 kt	below 55 above 55	200 to 320	1° 2.5°	*
	.76	below 50 from 50 to 65 above 65	above 320	1.5° 2.5° 3°	*

* In cruise, initially set the pitch attitude and adjust N₁, to maintain approximate level flight with the pitch attitude held constant. When time permits, set an accurate N₁ from QRH 5.01 "SEVERE TURBULENCE" and adjust attitude to maintain level flight.



UNRELIABLE SPEED INDICATION (CONT'D)

FLIGHT PHASE		WEIGHT (1000 kg)	FLT LEVEL	PITCH ATT	N1
DESCENT Descent profile : · M 0.76 above FL 320 · 275 kt from FL 320 to 200 · 250 kt below FL 200	.76	below 45 from 45 to 55 above 55	above 350	– 2.5° – 1.5° – 0.5°	IDLE
	.76	below 45 from 45 to 55 above 55	350 to 320	– 4° – 3° – 2°	
	275 kt	below 45 from 45 to 55 above 55	320 to 200	– 3.5° – 2° – 1°	
	250 kt	below 45 from 45 to 55 above 55	200 to 100	– 2° – 1° 0°	
	250 kt	below 45 from 45 to 55 above 55	below 100	– 3° – 1.5° – 0.5°	
APPROACH	(STABILIZED)				
	IN CLEAN TO SELECT FLAPS 1 (equivalent to green dot)	below 45 45 to 55 55 to 65 above 65	LEVEL OFF	5.5°	43 % 47 % 52 % 56 %
	IN CONF 1 TO SELECT FLAPS 2 (equivalent to S speed)	below 45 45 to 55 55 to 65 above 65	LEVEL OFF	7.0°	44 % 49 % 53 % 58 %
	IN CONF 2 TO SELECT FLAPS 3 (equivalent to VLS + 10)	below 45 45 to 55 55 to 65 above 65	LEVEL OFF	8.0°	45 % 51 % 55 % 60 %
	IN CONF 3 TO SELECT FLAPS FULL (equivalent to VLS + 10)	below 45 45 to 55 55 to 65 above 65	LEVEL OFF	7.0°	51 % 56 % 61 % 65 %
	IN CONF FULL (equivalent to VLS + 10)	below 45 45 to 55 55 to 65 above 65	LEVEL OFF	5.0°	54 % 60 % 65 % 70 %

- Notes :**
1. The N1 given for approach is that required for level flight in the given configuration before the configuration change is initiated.
 2. To decelerate between stabilized points, N1 should be reduced towards idle and the attitude adjusted to maintain level flight.
 3. When the attitude required for level flight equals that given for the next stable point, set the N1 appropriate to that point.



UNRELIABLE SPEED INDICATION (CONT'D)

FLIGHT PHASE	WEIGHT (1000 kg)	FLT LEVEL	PITCH ATT	N1
FINAL APPROACH				
IN CONF FULL (equivalent to $V_{LS} + 10$)	below 45 45 to 55 55 to 65 above 65	DESCENT AT - 3° GRADIENT	2.0°	42 % 47 % 51 % 55 %
IN CONF 3 (equivalent to $V_{LS} + 10$)	below 45 45 to 55 55 to 65 above 65	DESCENT AT - 3° GRADIENT	4.5°	36 % 41 % 44 % 48 %

NAV FM/GPS POS DISAGREE

This message is triggered when either one of the FM positions differs from either of the GPS positions by more than 0.5 minutes of latitude or longitude.

- A/C POS CHECK

The following procedure is not displayed on the ECAM

■ **If the message occurs at takeoff initiation, or in ILS/LOC approach (LOC green) :**

- DISREGARD it.

■ **If the message occurs in climb, cruise, or descent :**

- CHECK the navigation accuracy using raw data.
 - . If the check is positive : NAV mode and ND ARC/ROSE NAV may be used.
 - . If the check is negative : HDG/TRK mode and raw data must be used.
- When possible, compare the FM position versus the GPIRS position on the POSITION MONITOR page.
 - . If one FM position agrees with the GPIRS position on the POSITION MONITOR page, use the associated FD/AP.
 - . If not, deselect the GPS, and revert to basic information.

■ **If the message occurs during a non precision approach**

- Overlay approach : SELECT HDG or TRK, and use raw data
- GPS or RNAV approach : GO AROUND or fly visual, if visual conditions are met.

ADR 1+2+3 FAULT

This procedure is not displayed on the ECAM. Only dual ADR warnings are displayed, in case of a triple ADR failure.

- ADR (all) OFF
- STBY INST (ALT + ASI) USE

NOTE : Disregard ECAM actions for AIR DATA SWTG and ATC, since these have no effect in case of a total loss of ADRs.

F/CTL ALTN LAW (PROT LOST)

NOTE : The STALL WARNING is lost.

- MAX SPEED 320/.82
- See the following table for the IAS/M relationship for .82.

FL	390	370	350	330	310	290	280 and below
MAX SPD	252	265	278	290	305	315	320

- WHEN L/G DN : DIRECT LAW

At landing gear extension, control reverts to direct law in pitch, as well as in roll.

NOTE : Use manual control of cabin pressurization (Refer to 3.02.21) :

- MODE SEL MAN
- MAN V/S CTL AS RQD

STATUS

MAX SPEED 320/.82

RUD WITH CARE ABV 160 KT

At slats' extension, full rudder travel authority is recovered.

APPR PROC :

- **FOR L/G GRVTY EXTN (not on the ECAM) :**

- GRVTY GEAR
EXTN handcrank PULL AND TURN
- L/G LEVER DOWN
- WHEN L/G DN : DIRECT LAW
- FOR LDG USE FLAP 3
- GPWS LDG FLAP 3 ON
- APPR SPD V_{REF} + 10 KT
- CAT 1 ONLY

- **DURING FINAL APPR**

- V/S CTL FULL UP
- LDG DIST X 1.2

NOTE 1 : In case of a go-around, respect maximum speed 215 knots in CONF 1+F, due to the loss of flap auto retraction to CONF 1.

CAUTION

Check that ΔP is at zero before opening doors.

INOP SYS

ATT LIMIT
OVSP LIMIT
ALPHA LIMIT
ADR 1+2+3
WINDSHEAR DET
RUD TRV LIM 1+2
A/THR
AP 1+2
GPWS

Other inop sys :
See below

Other inoperative systems

CAB PR 1+2

ATC ALTI MODE

TCAS 
L/G RETRACT

RAT automatic extension is lost.

R

NAV IR ALIGNMENT IN ATT MODE

If IR alignment is lost, the navigation mode is inoperative (red ATT flag on the PFD, and red HDG flag on the ND).

Aircraft attitude and heading may be recovered by applying the following procedure. The aircraft must stay level, with constant speed for 30 seconds.

- MODE SELECTOR ATT
ALIGN light on for 30 seconds.
ATT MODE displayed on the CDU.
- LEVEL A/C ATTITUDE HOLD
- CONSTANT A/C SPEED MAINTAIN
- DISPLAY SYS switch AFFECTED SYS
- DISPLAY DATA switch HDG

Depending on the CDU keyboard installed, an "H" may be written on the "5" key :

■ **If "H" is written on the "5" key :**

- H KEY PRESS
Degree marker, 0 decimal point, ENT and CLR lights come on.
- A/C HEADING ENTER

■ **If "H" is not written on the "5" key :**

- A/C HEADING ENTER
Enter the aircraft's magnetic heading on the CDU keyboard.
Then, press the ENT key to enter data.
Example : To enter a heading of 320°, dial 3, 2, 0, 0 then press ENT.
Heading will be displayed on the associated ND.
"HDG---ATT MODE" will be displayed on the CDU.
Due to IR drift, the magnetic heading has to be periodically crosschecked and updated with standby compass, if required.

R

ENG RELIGHT (in flight)

- MAX ALTITUDE See below
- ENG MASTER (affected) OFF
- THR LEVER (affected) IDLE
- MAN START pushbutton OFF

Autostart is recommended in flight. Be aware that, contrary to an autostart on ground, the crew must take appropriate action in case of an abnormal start.

- ENG MODE SEL IGN
- X BLEED OPEN
- WING A. ICE (for starter assist) OFF
- ENG MASTER (affected) ON

Engine light up must be achieved within 30 seconds after fuel flow increases.

- ENG PARAMETERS (N2, EGT) CHECK

If the START FAULT ENG STALL warning is triggered, although engine parameters are normal, disregard the warning.

■ When idle reached :

- ENG MODE SEL NORM
- TCAS MODE SEL  check TA/RA

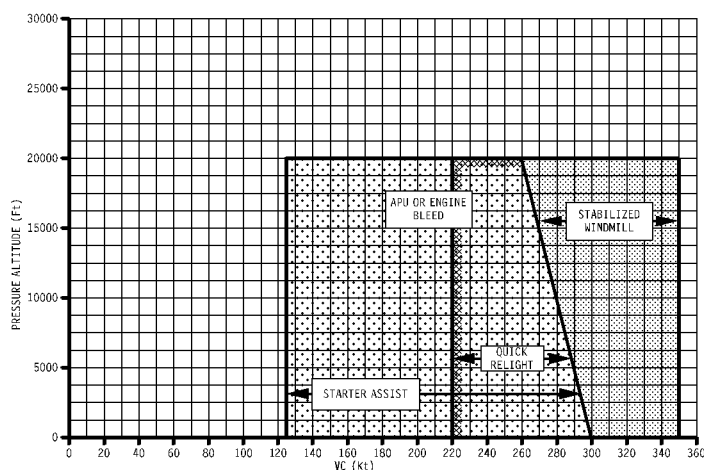
Check that the selector is at TA/RA since, if the ENG SHUT DOWN procedure has been applied, the TCAS mode selector may have been set at the TA position.

- Affected SYS RESTORE

■ if no relight :

- ENG MASTER (affected) OFF

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ENG 1(2) STALL

- **N2 between 50 % and IDLE :**
 - ENG MASTER (affected engine) OFF
 - ENG 1 (2) **SHUT DOWN**
- **N2 above IDLE (title and procedure not displayed on ECAM) :**
 - **On ground :**
 - ENG MASTER (affected engine) OFF
 - **In flight :**
 - THR LEVER (affected engine) IDLE
 - ENG PARAMETERS (affected engine) CHECK
 - **Abnormal**
 - ENG MASTER (affected engine) OFF
 - ENG 1 (2) **SHUT DOWN**
 - **Normal :**
 - ENG A.ICE (affected engine) ON
 - WING A.ICE ON
 - THR LEVER (affected engine) SLOWLY ADVANCE
 - **If a stall recurs :**
 - THR LEVER (affected engine) REDUCE
 - **If a stall does not recur :**
 - Continue engine operation.

APPROACH WITH ONE ENGINE INOPERATIVE

*For performance reasons, do not extend flap full until established on a final descent to landing.
If a level off is expected during final approach, perform the approach and landing in CONF 3.*

ENG TAILPIPE FIRE

CAUTION

External fire agents can cause severe corrosive damage and should, therefore, only be considered after having applied following procedure :

- MAN START OFF
- ENG MASTER (affected) OFF
- AIR BLEED PRESS ESTABLISH
- ENG MODE SEL CRANK
- MAN START ON
- **When burning has stopped :**
 - MAN START OFF
 - ENG MODE SEL NORM

HIGH ENGINE VIBRATION

The ECAM's VIB advisory ($N1 \geq 6$ units, $N2 \geq 4.3$ units) is mainly a guideline to induce the crew to monitor engine parameters more closely.

VIB detection alone does not require engine shutdown.

NOTE : 1. High engine vibrations may be accompanied by cockpit and cabin smoke, and/or the smell of burning. This may be due only to compressor blade tip contact with associated abradable seals.

2. High $N1$ vibrations are generally accompanied by perceivable airframe vibrations.
High $N2$ vibrations can occur without perceivable airframe vibrations.

■ If no icing conditions :

- ENG PARAMETERS CHECK
Check engine parameters and especially EGT ; crosscheck with the other engine.
Report in the maintenance log.

● If rapid increase above the advisory :

- THRUST LEVER (affected engine) RETARD
Flight conditions permitting, reduce $N1$ to maintain the vibration level below the advisory threshold.

Note : If the VIB indication does not decrease following thrust reduction, this may indicate other engine problems. Apply the adequate procedure.

■ If icing conditions :

An increase in $N1$ vibrations in icing conditions, with or without engine anti-ice, may be due to fan blades and/or spinner icing.

- A/THR OFF
- ENGINE ANTI-ICE CHECK

If ENG ANTI-ICE is off, switch it ON at idle fan speed, one engine after the other at an approximate 30-second interval.

- THRUST LEVER (one engine at a time) .. INCREASE THRUST
Increase thrust to a setting compatible with the flight phase. The VIB level will return to normal after ice is shed, despite a slight increase during acceleration.
Resume normal operation.

NOTE : When vibrations above the advisory level have been experienced during the flight, and if possible, shut down the engine after landing, for taxiing.

OVERWEIGHT LANDING

Automatic landing is certified up to MLW, but has been demonstrated in flight up to MTOW. In determining the best course of action, the flight crew may consider the option to perform an automatic landing, provided the runway is approved for automatic landing.

– LDG CONF DETERMINE

When an overweight landing has to be performed after an operational turnback, refer to the FCOM to find the approach and landing configuration given as a function of the approach climb limiting weight.

NOTE: For weights greater than 68000 kg (or 150 000 lb), S speed is greater than VFE CONF 2 (200 knots). Consequently, on the FCU, the crew must select a speed below 200 knots before setting FLAPS 2. When in FLAPS 2, the crew can use managed speed again.

– LDG DIST CHECK

– PACK 1 and 2 OFF or supplied by APU

Selecting packs OFF (or supplied from APU) will increase the maximum thrust available from the engines in the event of a go-around.

● In the final approach stages

– TARGET SPEED VLS

Reduce the selected speed on the FCU to reach VLS at runway threshold.

Touch down as smoothly as possible (Maximum V/S at touchdown 360 ft/min)

● At main landing gear touchdown

– REVERSE THRUST USE MAX AVAILABLE

● After nosewheel touchdown

– BRAKES APPLY AS NECESSARY

Maximum braking may be used after nose wheel touchdown. But, if landing distance permits, delay or reduce braking to fully benefit from the available runway length.

● Landing complete

– BRAKE FANS (<*) ON

Be prepared for tire deflation, if temperatures exceed 800° C.

= L

IAE V2522N2524

Code : 0058 : CFM 56-5-A4/A5/B5/B6 or

COCKPIT WINDSHIELD/WINDOW CRACKED

- MAX FL 230
- CAB PRESS MODE SEL MAN
- MAN V/S CTL AS RQRD

Set the cabin altitude, according to the table below.

ΔP =	FL	100	150	200	230
5 PSI	CABIN ALTITUDE	0	3000	6000	8000

● When starting the final descent :

- CAB PRESS MODE SEL AUTO

COCKPIT WINDSHIELD/WINDOW ARCING

- Affected WINDOW/WINDSHIELD ANTI ICE C/B PULL
- In case of electrical arcing, pull the circuit breaker of the affected window/windshield heating system :*

. ANTI ICE L WSHLD C/B AF10

. ANTI ICE/WINDOWS L C/B X14

. ANTI ICE R WSHLD C/B AF03

. ANTI ICE/WINDOWS R C/B W14

VOLCANIC ASH ENCOUNTER

Accomplish the following, while making a 180° turn.

- ATC NOTIFY
- A/THR OFF
- THRUST (conditions permitting) DECREASE
- CREW OXYGEN MASKS ON/100%
- CABIN CREW NOTIFY
- PASSENGER OXYGEN AS RQRD
- ENG ANTI ICE ON
- WING ANTI ICE ON
- PACK FLOW HI
- APU START
- ENGINE PARAMETERS MONITOR
- AIRSPEED INDICATIONS MONITOR

If airspeed is unreliable or lost, use the UNRELIABLE SPEED INDICATION procedure (2.15).

Note : . If both engines flame out and speed indications are lost, use the DUAL ENGINE FAILURE procedure (1.16) to get the optimum relight speed.

. In case of engine failure, switch off the wing anti-ice before engine restart.

R
R

BOMB ON BOARD

IF POSSIBLE, LAND AND EVACUATE THE AIRCRAFT IMMEDIATELY.

If it is not possible to land and evacuate the aircraft within 30 minutes, apply the following procedures :

COCKPIT PROCEDURES

Background

To avoid the activation of an altitude-sensitive bomb, the cabin altitude should not exceed the value at which the bomb has been discovered.

To reduce the effects of the explosion, the aircraft should fly as long as possible with approximately 1 PSI differential pressure, to help the blast go outwards. 1 PSI differential pressure corresponds to a 2500 feet difference between the aircraft and the cabin altitude.

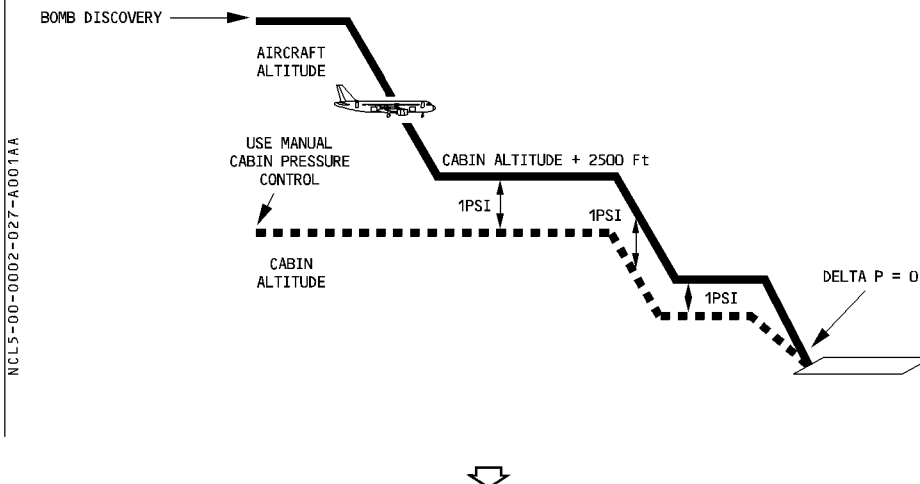
These conditions are achieved by using the manual pressure control.

Procedure

The following procedure assumes that it is initiated during climb or cruise :

- First, maintain the cabin altitude.
- While maintaining the cabin altitude, descend the aircraft to the cabin altitude + 2500 feet and maintain delta P at 1 PSI.
- During further steps of descent, maintain delta P at 1 PSI.
- For landing, reduce the differential pressure to zero, until the final approach.

If flight conditions are different, the crew should adapt the procedure, bearing in mind the above-mentioned principles (background paragraph).



BOMB ON BOARD (Cont'd)

- AIRCRAFT (if climbing) LEVEL OFF
- CABIN PRESS MODE SEL MAN
- CAB ALT MAINTAIN
- CABIN CREW NOTIFY
- ATC/COMPANY OPERATIONS NOTIFY
- FUEL RESERVES DETERMINE

Keep in mind that when flying at cabin altitude + 2500 feet, the fuel consumption in CONF 1, with landing gear down, will be about 2.1 times that consumed in clean configuration.

- NEXT SUITABLE AIRPORT DETERMINE
- FCU SPEED SELECTION KNOB PULL AND TURN

Select the most appropriate speed, taking into account the time to destination, the fuel consumption and the fact that low speed could reduce the consequences of possible structural damage, if the bomb explodes.

- DESCENT TO CAB ALT + 2500 FEET or MEA or minimum obstacle clearance altitude INITIATE
- AVOID SHARP MANEUVERS
- CAB ALT MAINTAIN

● When at CAB ALT + 2500 FEET :

- 1 PSI DELTA P MAINTAIN
- GALLEY/COMMERCIAL (<*) OFF
- FLAPS (fuel permitting) AT LEAST CONF 1

For landing, use normal configuration.

- LANDING GEAR (fuel permitting, except for flight over water) DOWN

● For any other steps of descent :

- 1 PSI DELTA P MAINTAIN

● During approach :

- CABIN PRESS MODE SEL AUTO

● When aircraft on ground and stopped in a remote area (if possible) :

- EVACUATION INITIATE

Avoid exits and exiting on the same side as the bomb ; avoid exits and exiting near the bomb.



R

BOMB ON BOARD (Cont'd)

CABIN PROCEDURES

CAUTION

The least risk bomb location for aircraft structure and systems is CENTER OF THE RH AFT CABIN DOOR.

– EOD PERSONNEL ON BOARD CHECK

Announce "Is there any EOD personnel on board?". By using the initials, only persons familiar with EOD (Explosive Ordnance Disposal) will be made aware of the problem.

– BOMB DO NOT OPEN, DO NOT CUT WIRES, SECURE AGAINST SLIPPING, AVOID SHOCKS

Secure in the attitude found and do not lift before having checked for an anti-lift ignition device.

– PASSENGERS LEAD AWAY FROM BOMB

Move passengers at least 4 seat rows away from the bomb location. If other seats are full, these passengers should sit on the floor in protected areas. Passengers near the bomb should protect their heads with pillows, blankets etc. and sit in the brace position. All passengers must remain seated with seatbelts on and, if possible, head below the top of the head rest. Seat backs and tray tables should be in their full upright position.

– BOMB CHECK NO ANTI LIFT DEVICE

To check for an anti-lift switch or lever, slide a string or stiff card (such as the emergency information card) under the bomb, without disturbing the bomb.

If the string or card cannot be slipped under the bomb it may indicate that an anti-lift switch or lever is present and that the bomb cannot be moved.

If a card is used and can be slid under the bomb, leave it under the bomb and move together with the bomb.

If it is indicated that an anti-lift device is present, it may be possible to move the bomb together with the surface on which the bomb is located, such as a shelf or seat cushion.

If it is not possible to move the bomb then it should be surrounded with a single thin sheet of plastic (e.g. trash bag), then with wetted materials, and other blast attenuation materials such as seat cushions and soft carry-on baggage. Move personnel as far away from the bomb location as possible.

● If the bomb can be moved :

PLACE THE BOMB AS CLOSE TO THE CENTER OF THE RH AFT CABIN DOOR AS POSSIBLE.

– PASSENGERS MOVE/ADVISE

Move passengers at least 4 seat rows away from the least risk bomb location (RH aft cabin door). If other seats are full, these passengers should sit on the floor in protected areas towards the front of the aircraft.

Passengers near the bomb should protect their heads with pillows, blankets etc. and sit in the brace position.

All passengers must remain seated with seatbelts on and, if possible, head below the top of the head rest. Seat backs and tray tables should be in their full upright position.



BOMB ON BOARD (Cont'd)

- RH AFT CABIN DOOR SLIDE DISARM
- LEAST RISK BOMB LOCATION (LRBL) PREPARE

Build up a platform of solid baggage against the door up to about 25 cm (10 in) below the middle of the door.

On top of this, build up at least 25 cm (10 in) of wetted material such as blankets and pillows.

Place a single thin sheet of plastic (e.g. trash bag) on top of the wetted materials. This prevents any possible short circuit.
- BOMB MOVE TO LRBL

Carefully carry in the attitude found and place on top of the wetted materials in the same attitude and as close to the door structure as possible.
- LEAST RISK BOMB LOCATION COMPLETE

Place an additional single thin sheet of plastic over the bomb.

Build up at least 25 cm (10 in) of wetted material around the sides and on top of the bomb. DO NOT PLACE ANYTHING BETWEEN THE BOMB AND THE DOOR AND MINIMIZE AIRSPACE AROUND THE BOMB.

The idea is to build up a protective surrounding of the bomb, so that the explosive force is directed in the only unprotected area into the door structure.

Fill the area around the bomb with seat cushions and other soft materials such as hand luggage (saturated with water or any other inflammable liquid) up to the cabin ceiling, compressing as much as possible. Secure the LRBL stack in place using belts, ties, or other appropriate materials. The more material stacked around the bomb, the less the damage will be.

USE ONLY SOFT MATERIAL. AVOID USING MATERIALS CONTAINING ANY INFLAMMABLE LIQUID AND ANY METAL OBJECTS WHICH COULD BECOME DANGEROUS PROJECTILES.
- EVACUATION/DISEMBARKATION EXECUTE

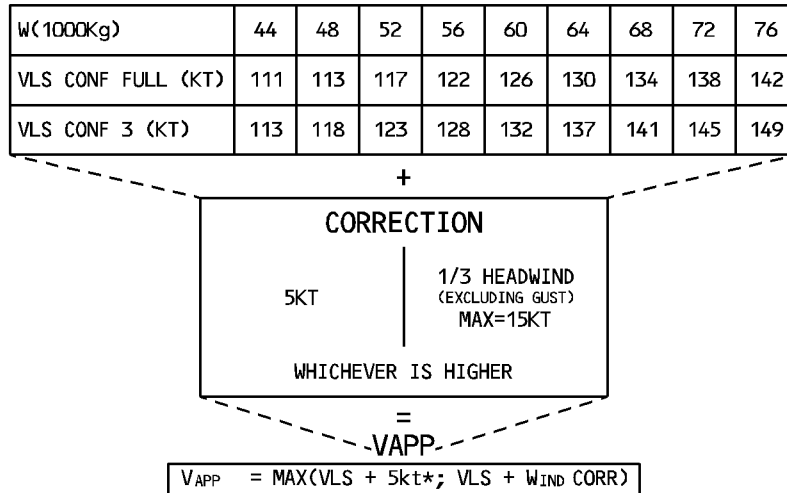
Evacuate through normal and emergency exits on the opposite side of the bomb location. Do not use the door just opposite the bomb.

Use all available airport facilities to disembark without delay.

VAPP DETERMINATION

● NORMAL CONFIGURATION (OR NO $\Delta VREF$)

The FMGS performs the following VAPP computation for landing in normal configuration (CONF 3 or CONF FULL). These VAPP also apply for failure cases without $\Delta VREF$.



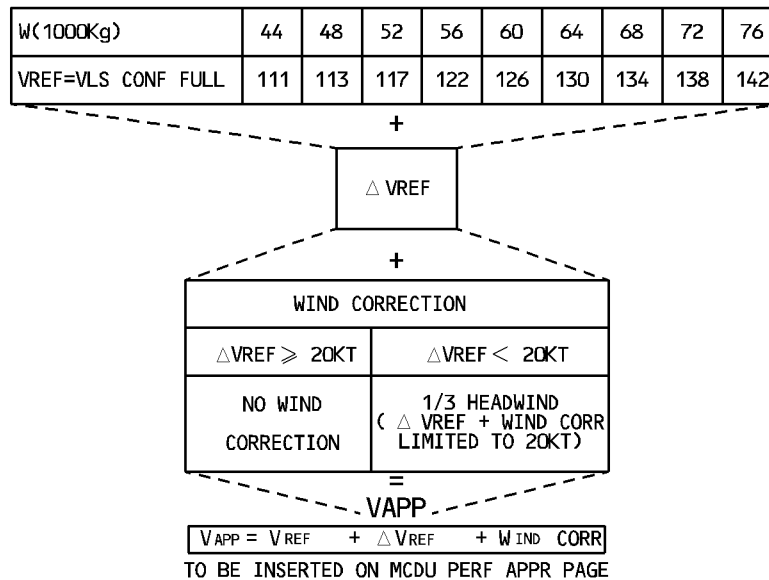
NCL5-00-0002-031-A180AA

The 5 knot increment is required when the A/THR is used, or when an autoland is performed.

NOTE : * – In case of ice accretion, Vapp must not be lower than :

- VLS + 5 knots in CONF FULL
- VLS + 10 knots in CONF 3
- In case of gusty crosswind greater than 20 knots, Vapp should be at least VLS + 5 knots.

● ABNORMAL/EMERGENCY CONFIGURATION (WITH $\Delta VREF$)



NCL5-00-0002-031-B180AA

CFM Eng. : 56-5-B6

Mod : 20268

A319-112

LDG CONF – APPR SPD – LDG DIST CORRECTIONS FOR FAILURES		FLAPS LEVER POSITION FOR LDG	APPR SPD : INCREMENT TO V_{REF} (Δ V_{REF})	MULTIPLY LDG DIST CONF FULL BY
ELEC	EMER ELEC CONFIG	3	10	1.9
	DC EMER CONFIG	NORM (1)	–	1.6
	DC BUS 1 + 2	NORM (1)	–	1.6
	DC BUS 2	NORM (1)	–	1.1
	DC ESS BUS / AC BUS 1	NORM (1)	–	Negl.
FLT CTL	ALTN LAW/DIRECT LAW ELAC 1 + 2/ STAB JAM/ L + R ELEV FAULT	3	10	1.2 *
	L(R) ELEV FAULT	3	15	1.2 *
	One SPLR FAULT (except n° 5)	NORM (1)	–	1.1
	Two or three SPLR FAULT	NORM (1)	–	1.1
	More than three SPLR FAULT	NORM (1)	–	1.2
	SEC 1 or 3 FAULT	NORM (1)	–	1.1
	SEC 2 FAULT	NORM (1)	–	Negl.
	SEC 1 + 3 FAULT	NORM (1)	–	1.2
	SEC 1 + 2 or 2 + 3 FAULT	NORM (1)	–	1.1
	SEC 1 + 2 + 3 FAULT	3	10	1.4
FLAPS/ SLAPS	FLAPS and SLATS at zero	1	60 (APPR) 50 (THRESHOLD)	1.7 *
	0 < FLAPS < 1 : Slats < 1 Slats ≥ 1	3	45	1.6 *
		3	25	1.35 *
	1 ≤ FLAPS < 2 : Slats < 1 Slats ≥ 1	3	30	1.4 *
		3	15	1.2 *
	2 ≤ FLAPS < 3 : Slats < 1 Slats ≥ 1	3	25	1.35 *
		3	10	1.15 *
	FLAPS = 3 : Slats < 1 1 ≤ Slats ≤ 3 Slats > 3	3	25	1.35 *
		3	10	1.15 *
		3	5	1.1 *
	FLAPS > 3 : Slats < 1 1 ≤ Slats ≤ 3 Slats > 3	Not allowed		
		FULL	10	1.15 *
		FULL	5	1.1 *
HYD	BLUE or YELLOW or GREEN	NORM (1)	–	1.1
	GREEN + BLUE	3	25	1.5
	GREEN + YELLOW	3	25	2.3
	YELLOW + BLUE	NORM (1)	–	1.1
BRK	ANTI SKID	NORM (1)	–	1.4
	AUTO BRK FAULT	NORM (1)	–	1.2
NAV	IR 1+2+3 FAULT	3	10	2.1
	DUAL IR FAULT DUAL ADR FAULT ADR 1 + 2 + 3 FAULT	3	10	1.2 *
ENG	REV UNLOCK with buffet	1 **	55 (APPR) 40 (THRESHOLD)	1.75 *
	REV UNLOCK with buffet	3 **	10	1.2 *

* Refer to 2.33 – MULTIPLE FAILURES.

R ** Landing configuration as recommended by the ECAM.

- (1) If CONF 3 is used when “NORM” is indicated in the table, multiply the resulting landing distance by an additional factor of 1.1.

USE OF THE TABLE

Δ VREF accounts for corrections due to the failure and to the required landing configuration.

LDG DIST factor must be applied to the actual landing distance of CONF FULL.

FOR A SINGLE FAILURE

- Determine the required LDG CONF to be selected.
- Determine the Δ VREF.
- $VAPP = VREF + \Delta VREF + \text{WIND CORRECTION}$
R (Refer to QRH page 2.31)
- Determine the LDG DIST factor.

FOR MULTIPLE FAILURES

- Use the lowest LDG CONF.
- Use the highest Δ VREF to compute VAPP.
- Multiply the landing distance factors together, except when all failures are indicated by an asterisk (*). In this case, the highest factor has to be taken.

Example :

FLAPS FAULT (F < 3, S ≥ 1)	LDG CONF 3	Δ VREF = 10 KT	LDG DIST × 1.15*
BRK ANTI SKID	NORM CONF	Δ VREF = 0	LDG DIST × 1.4
TOTAL	LDG CONF 3	Δ VREF = 10 KT	LDG DIST × 1.61
ALTN LAW	LDG CONF 3	Δ VREF = 10 KT	LDG DIST × 1.2*
FLAPS FAULT (F < 1, S ≥ 1)	LDG CONF 3	Δ VREF = 25 KT	LDG DIST × 1.35*
TOTAL	LDG CONF 3	Δ VREF = 25 KT	LDG DIST × 1.35

R TRIPPED C/B RE-ENGAGEMENT

R In flight, do not re-engage a circuit breaker that has tripped by itself,
R unless the Captain (using his/her emergency authority) judges it
R necessary for the safe continuation of the flight. This procedure should
R be adopted only as a last resort, and only one re-engagement should be
R attempted.

R On ground, do not re-engage any wing tank fuel pump circuit breaker.
R For all other circuit breakers, if the flight crew coordinates the action with
R maintenance, they may re-engage a tripped C/B, provided the cause of
R the tripped C/B is identified.

COMPUTER RESET

When a digital computer behaves abnormally, as a result of an electrical transient, for example, the Operator can stop the abnormal behavior by briefly interrupting the power supply to its processor.

The flight crew can reset most of the computers in this aircraft with a normal cockpit control (selector or pushbutton). However, for some systems, the only way to cut off electrical power is to pull the associated circuit breaker.

PROCEDURE

To perform a computer reset :

- Select the related normal cockpit control OFF, or pull the corresponding reset button or circuit breaker.
- Wait 3 seconds if a normal cockpit control is used, or 5 seconds if a circuit breaker is used (unless a different time is indicated).
- Select the related normal cockpit control ON, or push the corresponding reset button or circuit breaker,
- Wait 3 seconds for the end of the reset.

WARNING

Do not reset more than one computer at the same time, unless instructed to do so.

COMPUTER RESET TABLE

The computers most prone to reset are listed in the table below, along with the associated reset procedure or FCOM reference, when applicable.

Specific reset procedures included in OEB or Temporary revisions are not referenced in this table and, when issued, supercede this table.

- On ground, almost all computers can be reset and are not limited to the ones indicated in the table.

The following computers are not allowed to be reset in specific circumstances :

- . ECU (Engine Control Unit on CFM engines), or EEC (Electronic Engine Control on IAE engines), and EIU (Engine Interface Unit) while the engine is running.
- . BSCU (Brake Steering Control Unit), if the aircraft is not stopped. (Refer to 3.04.32).
- In flight, as a general rule, the crew must restrict computer resets to those listed in the table, or to those in applicable TRs or OEBs. Before taking any action on other computes, the flight crew must consider and fully understand the consequences.

CAUTION

Do not pull the following circuit breakers :

- SFCC (could lead to SLATS/FLAPS locked).
- ECU or EEC, EIU.

Also refer to the FCOM 3.04.24.

NOTE : In the table's "reset" column, the "if applicable" note signifies that, depending on the computer standard, the reset procedure may no longer be necessary. If this is the case, the reset procedure is removed from the applicable FCOM section.

ATA	System malfunction or ECAM Warning/Caution	Affected system	Reset
21	VENT AVNCS SYS FAULT	AEVC	On ground only : – Pull C/B Y 17 on 122VU. – Wait 1 second before pushing the C/B.
	AIR PACK 1(2) REGUL FAULT	PACK CONTROLLER 1(2)	Refer to the FCOM 3.02.21, if applicable.
22	AUTO FLT YAM DAMPER 1(2) FAULT	FAC 1(2)	Refer to the FCOM 3.02.22, if applicable.
	WINDSHEAR DET FAULT or REAC W/S DET FAULT (◀)	FAC 1 + 2	
	AUTO FLT FCU 1(2) FAULT	FCU	On ground, or in flight : – Pull the C/B B05 on 49VU for FCU1, or M21 on 121VU for FCU2. – Push it after 5 seconds. – CHECK the displayed targets, and the barometer reference, and correct them if necessary.
	AUTO FLT FCU 1+2 FAULT	FCU	On ground or in flight : – Reset FCU 1 and 2 successively : – Pull the C/B B05 on 49VU for FCU1. – Push it after 5 seconds. – Pull the C/B M21 on 121VU for FCU2. – Push it after 5 seconds. – CHECK the displayed targets, and the barometer reference, and correct them if necessary. FCU targets are synchronized on current aircraft values, and displayed as selected targets. – RE-ENTER the barometer altimeter setting value, if necessary.
	One MCDU locked, or blank Both MCDU locked, or blank FMGC malfunction	MCDU FMGC FMGC	Refer to the FCOM 4.06.20

ATA	System malfunction or ECAM Warning/Caution	Affected system	Reset
23	COM CIDS 1+2 FAULT	CIDS	<u>On ground, or in flight :</u> – Pull the C/Bs in the following order : G01 on 49VU, M05 on 121VU, G02 on 49VU, M05 on 121VU. – Wait 10 seconds, then – Push the C/Bs in the following order : M05, M06, G01, G02.
	Uncommanded EVAC horn activation	CIDS	<u>On ground, or in flight :</u> Press the EVAC SHUT OFF pushbutton . IF UNSUCCESSFUL : – Pull the C/Bs in the following order : G01 on 49VU, M05 on 121VU, G02 on 49VU, M06 on 121VU. – Wait 10 seconds, then : – Push the C/Bs in the following order : M05, M06, G01, G02.
	Frozen RMP	RMP	Refer to the FCOM 3.04.23.
	FAP freezing	Tape reproducer	<u>On ground only :</u> – Pull the tape reproducer/ PRAM C/B F07 on 2000VU (cabin). – Wait 10 seconds before pushing the C/B.

ATA	System malfunction or ECAM Warning/Caution	Affected system	Reset
26	SMOKE LAV + CRG DET FAULT	SDCU	On ground only : – Pull C/B C06 on 49VU, and C/B T18 on 122VU. – Wait 10 seconds before pushing both C/Bs.
27	F/CTL ELAC 1(2) FAULT F/CTL ALTN LAW F/CTL ELAC 1(2) PITCH FAULT	ELAC	– Refer to the FCOM 3.02.27, if applicable.
	ELAC or SEC malfunction	ELAC or SEC	WARNING : Do not reset more than one computer at a time. . It is possible to reset the flight control computers in flight, even if not requested by the ECAM, provided only one reset is performed at a time: For the ELAC only, the reset is not recommended in case of uncommanded maneuvers during the flight.

ATA	System malfunction or ECAM Warning/Caution	Affected system	Reset
30	ANTI ICE L(R)/WINDSHIELD (WINDOW)	WHC	Refer to the FCOM 3.02.30, if applicable.
31	<u>FWS</u> FWC 1(2) FAULT	FWC	On ground, or in flight : Pull, then push, the C/B of the affected FWC: – FWC 1. E2 or F01 (<*) ON 49VU – FWC 2. Q7 ON 121VU
32	Braking malfunction	BSCU	Refer to the 3.04.32 or OEB 50, if applicable.
	<u>L/G</u> LGCIU 1(2) FAULT	LGCIU 1(2)	On ground only : LGCIU 1 : Pull C/B Q34 on 121VU, then C09 on 49VU. Then push C/B C09 and C/B Q34. LGCIU 2 : Pull then push C/B Q35 on 121VU.
38	Failure messages on the CIDS FAP in the cabin	Vacuum System Controller	On ground, or in flight : – Pull C/B 35 MG on 2001VU, aft cabin, – Wait 30 seconds, then push C/B 35 MG.
70	<u>ENG</u> IGN A+B FAULT	FADEC and EIU	Refer to the FCOM 3.02.70, if applicable.
	<u>ENG</u> 1(2) FADEC A(B) FAULT	FADEC	Refer to the FCOM 3.02.70, if applicable.

ECAM ADVISORY CONDITIONS

SYSTEM	CONDITIONS	RECOMMENDED ACTION
CAB PRESS	CAB VERTICAL SPEED V/S > 1800 ft/min	CPC changeover may be attempted : MODE SEL MAN Wait 10 seconds, then : MODE SEL AUTO
	CAB ALTITUDE altitude ≥ 8800 ft	MODE SEL MAN Manual pressure control
	CAB DIFF PRESS ΔP ≥ 1.5 psi in phase 7	LDG ELEV MAN ADJUST If unsuccessful : MODE SEL MAN Manual pressure control
ELEC	IDG OIL TEMP T ≥ 147°C	Reduce IDG load, if possible (GALLEY or GEN OFF). If required, restore when the temperature has dropped. Restrict generator use to a short time, if the temperature rises again excessively.
FUEL	Difference between wing fuel quantities greater than 1500 kg (3307 lb)	FUEL MANAGEMENT CHECK If a fuel leak is suspected, refer to the FUEL LEAK procedure. For limitations, see 3.01.28.
	Fuel temp greater than 45°C in inner cell or 55° in outer cell	GALLEY OFF
	Fuel temp lower than – 40°C in inner or outer cell	Consider descending to a lower altitude, and/or increasing Mach to increase TAT.
APU	FLAP OPEN Flap not fully closed when APU master switch is at off.	
	EGT > EGT MAX – 33°C (inhibited during APU start)	
	OIL QTY (message LOW OIL LEVEL pulsing)	If there is no oil leak, then the remaining oil quantity allows normal APU operation for about 10 hours.

ECAM ADVISORY CONDITIONS (Cont'd)

SYSTEM	CONDITIONS	RECOMMENDED ACTION
ENG	OIL PRESS P < 16 PSI	- If oil pressure is between 16 and 13 psi (advisory), continue normal operation. - If oil pressure is below 13 psi (red indication), without the ENG OIL LO PR ECAM warning, continue normal engine operation (it can be assumed that the oil pressure transducer is faulty). In both cases, monitor other engine parameters, especially oil temperature and quantity.
	OIL PRESS P > 90 PSI	Closely monitor other engine parameters for symptoms of engine malfunction. If high oil pressure is not accompanied by other abnormal indications, operate the engine normally for the remainder of the flight. Record high oil pressure, and corresponding N2 readings, for maintenance action.
	OIL TEMP T > 140°C	An oil temperature increase during normal steady-state operations indicates a system malfunction, and should be closely monitored for other symptoms of engine malfunction. <i>Note : If the OIL TEMP increase follows thrust reduction, increasing thrust may reduce oil temperature.</i> In addition, an oil temperature increase could be related to the IDG oil cooling system. To reduce oil temperature increases before limits are reached, the following is recommended : 1. Low Speed - Increase engine speed to increase fuel flow, and thereby cool IDG oil. 2. High Speed - Reduce generator load, or turn off generator. If oil temperature continues to rise, mechanically disconnect IDG.
	OIL QTY < 3 qt	If oil quantity is low at a high power setting, expect level increase after power reduction.
	NAC TEMP ≥ 240°C	Monitor engine parameters and crosscheck with other engine.
	VIBRATION N1 ≥ 6 units N2 ≥ 4,3 units	Refer to the HIGH ENGINE VIBRATION procedure. <i>Note : The advisory threshold may be decreased by a MCDU procedure at the level of vibration reached during the last flight.</i> <i>If this function has been activated, the N1 and N2 VIB indication will respectively pulse below 6 and 4.3.</i>

CFM Eng. : All

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R

SAFETY EXTERIOR INSPECTION	
PF	PNF
	* WHEEL CHOCKS CHECK IN PLACE * L/G DOORS CHECK POS. * APU AREA CHECK

PRELIMINARY COCKPIT PREP	
PF	PNF
	ENG MASTERS CHECK OFF ENG MODE SEL CHECK NORM L/G lever CHECK DOWN WIPERS OFF BAT CHECK/AUTO EXT PWR ON APU FIRE CHECK/TEST APU START EXT PWR AS RQRD * COCKPIT LIGHT AS RQRD * PARKING BRAKE ON * ACCU/BRAKES PRESS CHECK ALTN BRAKING CHECK FLAPS CHECK POSITION * SPD BRK LEVER CHECK RET AND DISARMED PROBE/WINDOW HEAT AUTO APU BLEED ON AIR COND panel SET ELEC panel CHECK VENT panel CHECK * ECAM RECALL PRESS * ECAM OXY PRESS/HYD QTY/ENG OIL QTY CHECK EMER EQPT CHECK C/B panels CHECK * EXT. WALKAROUND PERFORM

COCKPIT PREPARATION	
PF	PNF
* GEAR PINS & COVERS CHECK OVERHEAD PANEL * ALL WHITE LIGHTS EXTINGUISH * RCDR GND CTL ON CVR TEST EVAC AS RQRD * ADIRS NAV EXTERIOR LIGHTS AS RQRD * SIGNS SET LDG ELEV AUTO * PACK FLOW AS RQRD BAT CHECK ENG FIRE CHECK/TEST AUDIO SWITCH NORM PA (3rd occupant) RECEPT MAINT PANEL CHECK RMP SET * AIRFIELD DATA OBTAIN * ATC CLEARANCE OBTAIN * ACARS  INITIALIZE * FMGS INITIALIZATION : ENGINE & AIRCRAFT TYPE CHECK DATABASE VALID CHECK NAVAID DESELECTION AS RQRD F-PLN INITIALIZATION COMPLETE ALIGN IRS PRESS F-PLN A COMPLETE AND CHECK WINDS CLB/CRZ INSERT F-PLN CHECK SEC F-PLN AS APPROPRIATE RADIO NAV CHECK * FMGS DATA INSERTION : ZFCG, ZFW, BLOCK FUEL INSERT TAKEOFF DATA INSERT PRESET SPEEDS AS RQRD	

Cont'd

. When both pilots are seated :

GLARESHIELD :

* BARO REF SET
 * FD CHECK ON
 * ILS AS RORD
 * ND mode and range SET
 * VOR/ADF sel AS RORD
 * FCU SET

LATERAL CONSOLE :

OXY MASK TEST

PF INSTRUMENT PANEL :

PFD-ND brightness ADJUST
 LOUDSPEAKER SET
 * PFD-ND CHECK

CTR INSTRUMENT PANEL :

* STBY INSTRUMENTS CHECK
 * CLOCK CHECK/ADJUST
 * A/SKID N/W STRG ON

PEDESTAL :

ACP1 CHECK
 * WEATHER RADAR SET
 SWITCHING PANEL NORM
 * ECAM STATUS CHECK
 * LDG ELEV (ECAM) CHECK AUTO
 * THRUST LEVERS CHECK IDLE
 * ENG MASTER CHECK OFF
 * ENG MODE SEL CHECK NORM
 PARKING BRAKE PRESS CHECK
 GRAVITY GEAR EXTN CHECK STOWED
 ACP2 CHECK
 ATC SET
 * FUEL QTY CHECK
 * TAKEOFF BRIEFING PERFORM

GLARESHIELD :

* BARO REF SET
 * FD CHECK ON
 * ILS AS RORD
 * ND mode and range SET
 * VOR/ADF sel AS RORD

LATERAL CONSOLE :

OXY MASK TEST

PNF INSTRUMENT PANEL :

PFD-ND brightness ADJUST
 LOUDSPEAKER SET
 * PFD-ND CHECK

PEDESTAL :

* FMGS DATA CONFIRMATION :

AIRFIELD DATA CONFIRM
 ATC CLEARANCE OBTAIN
 IRS ALIGN CHECK
 GROSS WEIGHT INSERTION CHECK
 TO DATA CALCULATE/CHECK
 F-PLN A and B CHECK
 * ATC CODE SET
 * FUEL QTY CHECK

BEFORE PUSHBACK or START

PF

LOADSHEET

TO DATA ENTER/REVISE
 SEAT BELTS ADJUST
 MCDU PERF TO

BEFORE START C/L DOWN TO THE LINE

NW STRG DISC CHECK AS RORD
 WINDOWS/DOORS CHECK
 THR LEVERS IDLE
 PARKING BRAKE AS RORD
 BEFORE START C/L BELOW THE LINE

PNF

. CHECK (CM1)

TO DATA CHECK
 SEAT BELTS ADJUST
 MCDU F-PLN
 EXT PWR CHECK OFF

PUSHBACK/START CLEAR OBTAIN
 WINDOWS CHECK
 BEACON ON

ENGINE START	
PF	PNF
ENG MODE SEL IGN/START ANNOUNCE "STARTING ENGINE 2" MASTER SW 2 ON START VALVE N2 IGNITER FUEL FLOW EGT N1 OIL PRESS START VALVE CLOSE . 50 % N2 CFM . 43 % N2 IAE ENG IDLE PARAMETERS CHECK ANNOUNCE "STARTING ENGINE 1" REPEAT THE START SEQUENCE	

AFTER START	
PF	PNF
ENG MODE SEL NORM APU BLEED OFF ECAM STATUS CHECK ECAM DOOR PAGE CHECK ANNOUNCE "CLEAR TO DISCONNECT" AFTER START C/L	GND SPLRS ARM RUD TRIM ZERO FLAPS SET PITCH TRIM SET ENG ANTI ICE AS RQRD WING ANTI ICE AS RQRD APU MASTER SW OFF

TAXI	
PF	PNF
R NOSE LIGHT TAXI . Taxi clearance obtained : PARKING BRAKE OFF THRUST LEVERS AS RQRD BRAKES CHECK FLT CTL CHECK . ATC clearance obtained : FLT INST & FMA CHECK TO BRIEFING CONFIRM CABIN REPORT BEFORE TO C/L DOWN TO THE LINE	TAXI CLEARANCE OBTAIN ELAPSED TIME AS RQRD BRAKES PRESS CHECK O FLT CTL CHECK AUTO BRAKE MAX ATC CLEARANCE CONFIRM TO DATA CHECK FMGS F-PLAN/SPD CHECK FCU ALT/HDG SET FD CHECK ON FLT INST & FMA CHECK RADAR and PREDICTIVE WINDSHEAR SYSTEM  AS RQRD ATC CODE CONFIRM/SET TO CONFIG PRESS TO MEMO CHECK NO BLUE

R

BEFORE TAKEOFF	
PF	PNF
APPROACH PATH CLEAR OF TRAFFIC CHECK	BRAKE TEMP (if fans  running) CHECK
CABIN CREW ADVISE	BRAKE FANS (if fans  running) OFF
THRUST BUMP  AS RORD	TAKEOFF/LINE UP CLEAR OBTAIN
EXTERIOR LIGHTS SET	ENG MODE SEL AS RORD
SLIDING TABLE  STOW	TCAS  TA or TA/RA
BEFORE TO C/L BELOW THE LINE	ATC (if no AUTO position) ON
	PACKS 1 + 2 AS RORD
	SLIDING TABLE  STOW

TAKEOFF	
PF	PNF
ANNOUNCE "TAKEOFF"	
BRAKES RELEASE	
THRUST LEVERS FLEX/TOGA	
When thrust set, captain places hands on thrust levers until V1	
CHRONO START	CHRONO START
ANNOUNCE FMA	PFD/ND SCAN
. Below 80 KT :	N1 (EPR) CHECK
. At 100 KT :	ANNOUNCE "POWER SET"
ANNOUNCE "CHECKED"	PFD/ENG parameters SCAN
. At V1 :	ANNOUNCE "100 KT"
. At VR :	ANNOUNCE "V1"
. When V/S positive :	ANNOUNCE "ROTATE"
ORDER "GEAR UP"	ANNOUNCE "POSITIVE CLIMB"
	L/G UP
	GRND SPLRS DISARM
	EXTERIOR LIGHTS SET
A/P AS RORD	
ANNOUNCE FMA	ANNOUNCE "GEAR UP"
. At thrust reduction alt. :	
THRUST LEVERS CL	ONE PACK ON
ANNOUNCE FMA "CLB.SRS"	
. At acceleration alt :	
ANNOUNCE FMA "CLB/OP CLB or CLB/CLB"	
. At F speed :	
ORDER "FLAPS 1"	FLAPS 1 SELECT
	CONFIRM/ANNOUNCE "FLAPS 1"
. At S speed :	
ORDER "FLAPS 0"	FLAPS 0 SELECT
	CONFIRM/ANNOUNCE "FLAPS 0"
	2ND PACK ON

AFTER TAKEOFF	
PF	PNF
	APU BLEED/MASTER SW AS RORD
	ENG MODE SEL AS RORD
	TCAS  TA/RA
	ANTI ICE AS RORD
AFTER TO/CLIMB C/L DOWN TO THE LINE	

STD or Mod : 22013 + 24044

CLIMB			
PF		PNF	
MCDU	PERF CLB	MCDU	F-PLN
FCU/FMGS	SET IF AP ON	FCU/FMGS	SET IF AP OFF
. At transition altitude :			
BARO REF	SET/X CHECK	BARO REF	SET/X CHECK
AFTER TO/CLIMB C/L BELOW THE LINE			
RADAR TILT	ADJUST	ENG ANTI ICE	AS RQRD
. At 10000 feet :			
EFIS OPTION	ARPT	LAND LIGHTS	OFF
RADIO NAV	CHECK	SEAT BELTS	AS RQRD
		ECAM MEMO	REVIEW
SEC F-PLN	AS RQRD	OPT/MAX ALT	CHECK

CRUISE	
PF	PNF
ECAM MEMO/SYS PAGES	REVIEW
FLIGHT PROGRESS	CHECK
FUEL	MONITOR
NAV ACCURACY	CHECK
RADAR TILT	ADJUST
CABIN TEMP	MONITOR

DESCENT PREPARATION	
PF	PNF
LDG ELEV	CHECK
FMGS	PREPARE
APPR BRIEFING	PERFORM
	GPWS LDG FLAP 3 AS RQRD
	DESCENT CLEARANCE OBTAIN
	ANTI ICE AS RQRD

DESCENT	
PF	PNF
DESCENT	INITIATE
ANNOUNCE	FMA
MCDU	PROG/PERF DESCENT
DESCENT	MONITOR
SPEEDBRAKES	AS RQRD
RADAR TILT	ADJUST
. When cleared to altitude :	
BARO REF	SET/X CHECK
. At 10000 feet :	
EFIS OPTION	CSTR
ILS pushbutton	AS RQRD
RADIO NAV	SELECT/IDENT
NAV ACCURACY	CHECK
	FMA CHECK
	MCDU F-PLN
	BARO REF SET/X CHECK
	ECAM STATUS CHECK
	LAND LIGHTS AS RQRD
	SEATBELTS AS RQRD
	ILS pushbutton AS RQRD

ILS APPROACH	
PF	PNF
Initial approach : SEAT BELTS ON/AUTO Approx 15 NM from touchdown : APPR PHASE ACTIVATE or set green dot POSITIONING MONITOR RADAR TILT ADJUST APPR C/L Intermediate/Final approach : When cleared for ILS approach : APPR PRESS BOTH AP ENGAGE At green dot : ORDER "FLAPS 1" CHECK OR SET S SPEED * TCAS  TA or TA/RA FMA CHECK FMA ANNOUNCE LOC CAPTURE MONITOR ANNOUNCE "LOC*"	ENG MODE sel AS RQRD NAV ACCURACY MONITOR FLAPS 1 SELECT CONFIRM/ANNOUNCE "FLAPS 1" GO AROUND ALT SET FLAPS 2 SELECT CONFIRM/ANNOUNCE "FLAPS 2" CHECK OR SET F SPEED * L/G DOWN SELECT GRND SPLRS ARM AUTO BRAKE AS RQRD CONFIRM/ANNOUNCE "GEAR DOWN" FLAPS 3 SELECT CONFIRM/ANNOUNCE "FLAPS 3" ECAM WHEEL PAGE CHECK FLAPS FULL SELECT CONFIRM/ANNOUNCE "FLAPS FULL" CHECK OR SET VAPP * A/THR CHECK SPD or OFF WING A. ICE (if not required) OFF EXTERIOR LIGHTS SET SLIDING TABLE  STOWED LDG MEMO CHECK NO BLUE CABIN REPORT OBTAIN (CM1) CABIN CREW ADVISE FLT PARAMETERS CHECK Announce any deviation in excess of : V/S : 1000 feet/mn IAS : speed target + 10 kt ; VAPP – 5 knots ILS : 1 dot Max deviation allowed : 500 ft AGL : 1 dot LOC/GS 300 ft AGL : 0.5 dot LOC ; 1 dot GS PITCH : 2.5° nose down ; 10° nose up BANK : 7°
At 2000 feet AGL ORDER "FLAPS 2" CHECK OR SET F SPEED * When FLAPS 2 ORDER "GEAR DOWN" When L/G down, below V_{FE} ORDER "FLAPS 3" When FLAPS 3, below V_{FE} : ORDER "FLAPS FULL" CHECK OR SET VAPP * SLIDING TABLE  STOWED CABIN REPORT OBTAIN (CM1) CABIN CREW ADVISE LDG C/L ANNOUNCE ANY FMA MODIFICATION	GO AROUND ALT SET FLAPS 2 SELECT CONFIRM/ANNOUNCE "FLAPS 2" CHECK OR SET F SPEED * L/G DOWN SELECT GRND SPLRS ARM AUTO BRAKE AS RQRD CONFIRM/ANNOUNCE "GEAR DOWN" FLAPS 3 SELECT CONFIRM/ANNOUNCE "FLAPS 3" ECAM WHEEL PAGE CHECK FLAPS FULL SELECT CONFIRM/ANNOUNCE "FLAPS FULL" CHECK OR SET VAPP * A/THR CHECK SPD or OFF WING A. ICE (if not required) OFF EXTERIOR LIGHTS SET SLIDING TABLE  STOWED LDG MEMO CHECK NO BLUE CABIN REPORT OBTAIN (CM1) CABIN CREW ADVISE FLT PARAMETERS CHECK Announce any deviation in excess of : V/S : 1000 feet/mn IAS : speed target + 10 kt ; VAPP – 5 knots ILS : 1 dot Max deviation allowed : 500 ft AGL : 1 dot LOC/GS 300 ft AGL : 0.5 dot LOC ; 1 dot GS PITCH : 2.5° nose down ; 10° nose up BANK : 7°
At DH + 100 feet (or MDA/MDH + 100) : At DH (or MDA/MDH) : ANNOUNCE "LANDING" or "GA/FLAPS"	MONITOR OR ANNOUNCE "ONE HUNDRED ABOVE" MONITOR OR ANNOUNCE "MINIMUM"

* PF FOR AUTO APPR, PNF FOR MAN APPR

NON PRECISION APPROACH (MANAGED GUIDANCE) NON ILS APPROACH IN NAV DATA BASE, AND, NAV ACCY CHECK POSITIVE	
PF	PNF
Initial approach :	ENG MODE SEL AS RQRD
SEAT BELTS ON/AUTO	
Approx 15 NM from touchdown :	
APPR PHASE ACTIVATE or set green dot	NAV ACCURACY MONITOR
POSITIONING MONITOR	
RADAR TILT ADJUST	
APPR C/L	
Intermediate/Final approach :	
When cleared for approach :	
APPR PRESS	
At green dot :	
ORDER "FLAPS 1"	FLAPS 1 SELECT
	CONFIRM/ANNOUNCE "FLAPS 1"
CHECK OR SET S SPEED *	
ND MODE RANGE AS RQRD	TCAS  TA or TA/RA
FMA ANNOUNCE	ND MODE RANGE AS RQRD
	FMA CHECK
At S speed :	
ORDER "FLAPS 2"	FLAPS 2 SELECT
	CONFIRM/ANNOUNCE "FLAPS 2"
CHECK OR SET F SPEED*	
When FLAPS 2	
ORDER "GEAR DOWN"	L/G DOWN SELECT
	GRND SPLRS ARM
	AUTO BRAKE AS RQRD
	CONFIRM/ANNOUNCE "GEAR DOWN"
When L/G down, below V_{FE}	
ORDER "FLAPS 3"	FLAPS 3 SELECT
	CONFIRM/ANNOUNCE "FLAPS 3"
	ECAM WHEEL PAGE CHECK
When FLAPS 3, below V_{FE} :	
ORDER "FLAPS FULL"	FLAPS FULL SELECT
	CONFIRM/ANNOUNCE "FLAPS FULL"
CHECK OR SET VAPP*	
After the FAF :	FINAL APP CHECK
	GA ALTITUDE SET
	A/THR CHECK SPD or OFF
POSITION/FLT PATH MONITOR	WING A. ICE (if not required) OFF
SLIDING TABLE  STOW	EXTERIOR LIGHTS SET
	SLIDING TABLE  STOW
	LDG MEMO CHECK NO BLUE
CABIN REPORT OBTAIN (CM1)	
CABIN CREW ADVISE	
LDG C/L	
ANNOUNCE ANY FMA MODIFICATION	FLT PARAMETERS CHECK
	Announce any deviation in excess of :
	V/S : 1000 ft/mn
	IAS : speed target + 10 kt ; VAPP – 5 kt
	PITCH : 2.5° nose down ; 10° nose up
	BANK : 7°
At MDA + 100 ft :	MONITOR OR ANNOUNCE . . . "ONE HUNDRED ABOVE"
At MDA/MDH	
ANNOUNCE "LANDING" or "GA/FLAPS"	MONITOR OR ANNOUNCE "MINIMUM"
AP (if applicable) OFF	

* PF FOR AUTO APPR, PNF FOR MAN APPR

NON PRECISION APPROACH (SELECTED GUIDANCE) NON ILS APPROACH NOT IN NAV DATA BASE, OR, NAV ACCY CHECK NEGATIVE	
PF	PNF
Initial approach : SEAT BELTS ON/AUTO Approx 15 NM from touchdown : APPR PHASE ACTIVATE or set green dot POSITIONING MONITOR RADAR TILT ADJUST APPR C/L Final approach : At green dot : ORDER "FLAPS 1" CHECK OR SET S SPEED * ND MODE RANGE AS RQRD At S speed : ORDER "FLAPS 2" CHECK OR SET F SPEED * When FLAPS 2 ORDER "GEAR DOWN" When L/G down, below V_{FE} : ORDER "FLAPS 3" When FLAPS 3, below V_{FE} ORDER "FLAPS FULL" CHECK OR SET VAPP* At the FAF : SET FPA TO FINAL APPROACH PATH* After the FAF : SET GA ALTITUDE ON FCU* POSITION/FLT PATH CHECK/ADJUST SLIDING TABLE STOW CABIN REPORT OBTAIN (CM1) CABIN CREW ADVISE LDG C/L ANNOUNCE ANY FMA MODIFICATION At MDA + 100 ft : At MDA/MDH : ANNOUNCE "LANDING" or "GA/FLAPS" AP (if applicable) OFF	ENG MODE SEL AS RQRD NAV ACCURACY MONITOR FLAPS 1 SELECT CONFIRM/ANNOUNCE "FLAPS 1" TCAS TA or TA/RA ND MODE RANGE AS RQRD FLAPS 2 SELECT CONFIRM/ANNOUNCE "FLAPS 2" CHECK OR SET F SPEED * L/G DOWN SELECT GRND SPLRS ARM AUTO BRAKE AS RQRD CONFIRM/ANNOUNCE "GEAR DOWN" FLAPS 3 SELECT CONFIRM/ANNOUNCE "FLAPS 3" ECAM WHEEL PAGE CHECK FLAPS FULL SELECT CONFIRM/ANNOUNCE "FLAPS FULL" CHECK OR SET VAPP* A/THR CHECK SPD or OFF WING A. ICE (if not required) OFF EXTERIOR LIGHTS SET SLIDING TABLE STOW LDG MEMO CHECK NO BLUE CABIN REPORT OBTAIN (CM1) FLT PARAMETERS CHECK Announce any deviation in excess of : V/S : 1000 ft/mn IAS : speed target + 10 kt ; VAPP – 5 kt PITCH : 2.5° nose down ; 10° nose up BANK : 7° MONITOR OR ANNOUNCE "ONE HUNDRED ABOVE" MONITOR OT ANNOUNCE "MINIMUM"

* PF FOR AUTO APPR, PNF FOR MAN APP

R

LANDING	
PF	PNF
At 20 feet :	
FLARE PERFORM	ATTITUDE MONITOR
THRUST LEVERS IDLE	
At touchdown :	
REV MAX	ANNOUNCE "GRND SPLRS"
BRAKES AS RQRD	ANNOUNCE "REVERSE GREEN"
At 70 knots :	
REV IDLE	ANNOUNCE "70 KT"
At taxi speed :	
REV STOW	
Before 20 knots :	
AUTOBRK DISENGAGE	

GO AROUND	
PF	PNF
THRUST LEVERS TOGA	
ANNOUNCE "GO AROUND-FLAPS"	
ROTATION PERFORM	FLAPS RETRACT ONE STEP
ANNOUNCE FMA	ANNOUNCE "POSITIVE CLIMB"
ORDER "GEAR UP"	L/G UP
	ANNOUNCE "GEAR UP-FLAPS"
	NAV or HDG SELECT
At GA thrust red. altitude :	
THRUST LEVERS CL	
At GA accel altitude :	
SPEED MONITOR	FLAPS RETRACT ON SCHEDULE

AFTER LANDING	
PF	PNF
PF at night, PNF by day	
LAND LIGHTS	RETRACT
GRND SPLRS DISARM (signal for PNF to commence after landing items)	FLAPS RETRACT
	ENG MODE SEL NORM
	ATC (if no AUTO position) STBY/OFF
	TCAS MODE SEL  STBY
	ANTI ICE AS RQRD
	APU START
	RADAR OFF/STBY
	PREDICTIVE WINDSHEAR  OFF
	BRAKE TEMP CHECK
AFTER LDG C/L	

PARKING	
PF	PNF
PARKING BRK ON	ANTI-ICE OFF
ENG MASTER 1, 2 OFF	APU BLEED ON
GROUND CONTACT ESTABLISH	SLIDE DISARMED CHECK
BEACON LT OFF	ELAPSED TIME  STOP
EXTERIOR LIGHTS AS RQRD	FUEL PUMPS OFF
SEAT BELTS OFF	IRS PERFORMANCE CHECK
PARKING BRK AS RQRD	STATUS CHECK
DUs DIM	BRAKE FAN () OFF
PARKING C/L	DUs DIM

SECURING THE AIRCRAFT	
PF	PNF
PARKING BRK CHECK ON	OXY CREW SUPPLY OFF
ADIRS (1+2+3) OFF	EXTERIOR LIGHTS OFF
	MAINT BUS SW AS RQRD
	APU BLEED OFF
	APU MASTER SW OFF
	EMER EXIT LIGHT OFF
	NO SMOKING OFF
	EXT PWR AS RQRD
	BAT 1 + 2 OFF
SECURING THE A/C C/L	

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R

SPEEDS

OPERATING SPEEDS (KT)					
W (1000 KG)	F	S	Green dot FL < 200*	VLS CONF 3	VREF
44	123	161	173	113	**
48	128	168	181	118	113
52	133	175	189	123	117
56	139	181	197	128	122
60	143	187	205	132	126
64	148	194	213	137	130
68	153	200	221	141	134
72	157	205	229	145	138
76	161	211	237	149	142

- * Above FL200 add 1 knot per additional 1000 feet
 ** VREF is limited by VMCL = 111 knots

CFM Eng. : 56-5-B6

Mod : 20268

LANDING DISTANCE WITHOUT AUTOBRAKE

The actual landing distance is the distance to come to a complete stop from a point 50 ft above the landing surface. No margin is included in this distance.

CONFIGURATION 3

ACTUAL LANDING DISTANCE (METERS)											
WEIGHT (1000 KG)		40	44	48	52	56	60	64	68	72	76
RUNWAY CONDITION	DRY		750	770	810	860	900	950	1000	1090	1290
	WET		920	960	1040	1120	1190	1260	1340	1420	1610
	COVERED WITH	6.3 MM (1/4INCH) WATER	1280	1330	1440	1570	1670	1780	1890	2030	2280
		12.7 MM (1/2INCH) WATER	1220	1270	1370	1480	1580	1670	1770	1890	2120
		6.3 MM (1/4INCH) SLUSH	1250	1300	1400	1490	1570	1670	1780	1890	2030
		12.7 MM (1/2INCH) SLUSH	1200	1250	1340	1430	1510	1590	1690	1800	2020
		COMPACTED SNOW	1210	1250	1330	1400	1460	1530	1590	1660	1810
		ICE	2840	2910	3040	3180	3290	3400	3530	3680	3980

CORRECTIONS

	CORRECTION ON ACTUAL LANDING DISTANCE							
	dry runway	wet runway	runway covered with					
			1/4 inch water	1/2 inch water	1/4 inch slush	1/2 inch slush	compacted snow	ice
per 1000 ft above SL	+ 3 %	+ 4 %	+ 4 %	+ 4 %	+ 5 %	+ 4 %	+ 3 %	+ 4 %
per 10 kt headwind	No correction for headwind due to wind correction on approach speed							
per 10 kt tailwind	+ 19 %	+ 26 %	+ 29 %	+ 27 %	+ 28 %	+ 25 %	+ 22 %	+ 35 %
2 reversers operative	-4 %	-8 %	-14 %	-12 %	-13 %	-12 %	-9 %	-27 %
Per 5 kt speed increment (and no failure) add 8% (all runways)								

NOTE : – THE ABOVE DISTANCES ARE GIVEN FOR USE IN FLIGHT
 – BEFORE DEPARTURE REFER TO FCOM

CFM Eng. : 56-5-B6

Mod : 20268
OCTO 18.0.0 AD112A04

LANDING DISTANCE WITHOUT AUTOBRAKE

The actual landing distance is the distance to come to a complete stop from a point 50 ft above the landing surface. No margin is included in this distance.

CONFIGURATION FULL

ACTUAL LANDING DISTANCE (METERS)												
WEIGHT (1000 KG)			40	44	48	52	56	60	64	68	72	76
RUNWAY CONDITION	DRY		750	740	750	800	830	860	900	960	1040	1130
	WET		900	900	920	990	1050	1110	1170	1240	1320	1400
	COVERED WITH	6.3 MM (1/4INCH) WATER	1220	1240	1270	1360	1440	1530	1620	1730	1850	1940
		12.7 MM (1/2INCH) WATER	1170	1180	1220	1300	1380	1460	1540	1630	1740	1840
		6.3 MM (1/4INCH) SLUSH	1190	1210	1240	1320	1390	1460	1530	1630	1730	1840
		12.7 MM (1/2INCH) SLUSH	1150	1160	1200	1270	1340	1410	1480	1570	1660	1760
		COMPACTED SNOW	1170	1180	1200	1270	1330	1380	1430	1500	1570	1630
		ICE	2510	2530	2580	2700	2800	2900	3000	3130	3260	3390

CORRECTIONS

	CORRECTION ON ACTUAL LANDING DISTANCE							
	dry runway	wet runway	runway covered with					
			1/4 inch water	1/2 inch water	1/4 inch slush	1/2 inch slush	compacted snow	ice
per 1000 ft above SL	+ 3 %	+ 4 %	+ 4 %	+ 3 %	+ 5 %	+ 4 %	+ 3 %	+ 4 %
per 10 kt headwind	No correction for headwind due to wind correction on approach speed							
per 10 kt tailwind	+ 20 %	+ 26 %	+ 29 %	+ 26 %	+ 27 %	+ 25 %	+ 23 %	+ 36 %
2 reversers operative	-3 %	-6 %	-12 %	-10 %	-11 %	-10 %	-9 %	-25 %
Per 5 kt speed increment (and no failure) add 8% (all runways)								

NOTE : – THE ABOVE DISTANCES ARE GIVEN FOR USE IN FLIGHT
– BEFORE DEPARTURE REFER TO FCOM

CFM Eng. : 56-5-B6

Mod : 20268
OCTO 18.0.0 AD112A04

AUTOLAND LANDING DISTANCE WITH AUTOBRAKE

CONFIGURATION 3

R

ACTUAL LANDING DISTANCE (METERS)								CORRECTIONS (%) ON LANDING DISTANCE			
WEIGHT (1000 KG)			40	50	60	70	80	PER 1000FT ABOVE SL	2 REV. OP.	PER 10KT TAIL WIND	PER 10KT HEAD WIND
RUNWAY CONDITION	MODE										
DRY		MED	1100	1250	1370	1500	1640	+ 3	0	+13	-2
		LOW	1680	1920	2130	2350	2580	+ 3	-4	+15	-2
WET		MED	1160	1360	1530	1720	1930	+ 4	-4	+19	-3
		LOW	1680	1920	2130	2350	2580	+ 3	-3	+15	-2
C O V E R E D	6.3 MM (1/4 INCH)	MED	1520	1810	2100	2410	2740	+ 4	-16	+23	-4
	WATER	LOW	1650	1910	2190	2510	2850	+ 4	-8	+22	-3
	12.7 MM (1/2 INCH)	MED	1420	1680	1930	2200	2520	+ 4	-13	+21	-4
	WATER	LOW	1560	1800	2050	2330	2640	+ 4	-5	+20	-3
R E D	6.3 MM (1/4 INCH)	MED	1460	1730	1990	2270	2570	+ 5	-15	+23	-4
	SLUSH	LOW	1620	1860	2090	2380	2700	+ 5	-7	+20	-3
	12.7 MM (1/2 INCH)	MED	1380	1630	1860	2110	2380	+ 5	-13	+21	-4
	LUSH	LOW	1550	1780	1980	2230	2510	+ 5	-5	+19	-3
W I T H	COMPACTED	MED	1390	1570	1710	1860	2030	+ 4	-10	+17	-3
	SNOW	LOW	1670	1900	2100	2310	2530	+ 4	-4	+16	-2
	ICE	MED	3120	3450	3750	4100	4480	+ 4	-26	+31	-5
		LOW	3210	3550	3860	4210	4600	+ 4	-26	+31	-5

CONFIGURATION FULL

R

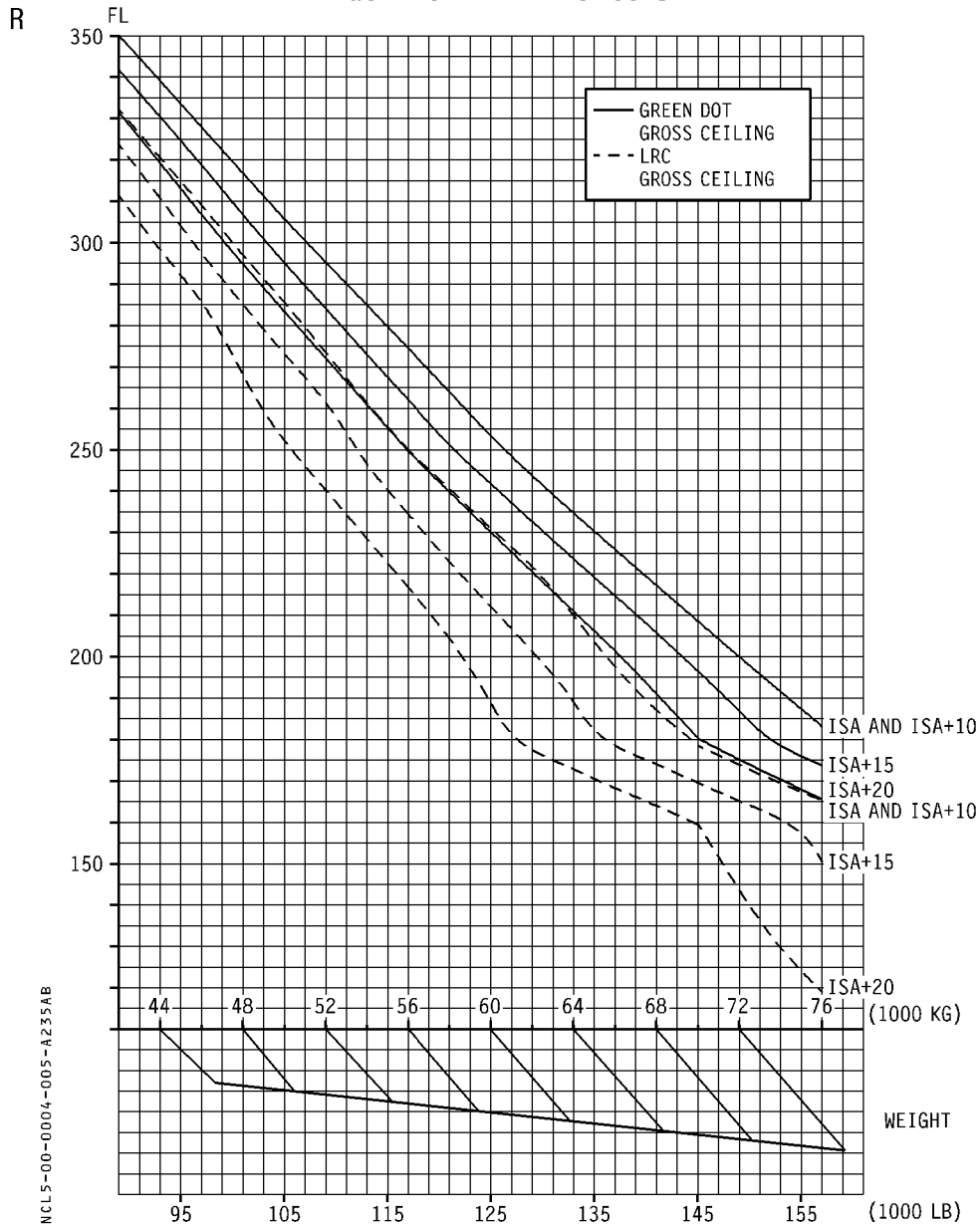
ACTUAL LANDING DISTANCE (METERS)							CORRECTIONS (%) ON LANDING DISTANCE				
WEIGHT (1000 KG)			40	50	60	70	80	PER 1000FT ABOVE SL	2 REV. OP.	PER 10KT TAIL WIND	PER 10KT HEAD WIND
RUNWAY CONDITION		MODE									
DRY		MED	1110	1240	1340	1440	1560	+ 3	0	+12	-2
		LOW	1620	1810	1990	2170	2360	+ 3	-4	+14	-2
WET		MED	1150	1310	1440	1580	1750	+ 4	-2	+17	-3
		LOW	1620	1810	1990	2170	2360	+ 3	-3	+14	-2
C O V E R E D	6.3 MM (1/4 INCH) WATER	MED	1430	1660	1870	2090	2360	+ 4	-13	+22	-4
		LOW	1570	1780	1970	2200	2470	+ 4	-6	+21	-3
E R R O R	12.7 MM (1/2 INCH) WATER	MED	1360	1570	1750	1970	2200	+ 4	-11	+20	-4
		LOW	1510	1710	1880	2090	2320	+ 4	-4	+19	-3
D I S T R I B U T E	6.3 MM (1/4 INCH) SLUSH	MED	1390	1590	1790	1990	2230	+ 5	-12	+21	-4
		LOW	1540	1750	1920	2110	2340	+ 5	-5	+20	-3
W I T H	12.7 MM (1/2 INCH) SLUSH	MED	1340	1530	1700	1900	2110	+ 5	-11	+20	-4
		LOW	1490	1680	1850	2020	2230	+ 4	-4	+18	-3
T H E	COMPACTED SNOW	MED	1360	1510	1620	1740	1880	+ 4	-9	+16	-3
		LOW	1600	1790	1950	2130	2310	+ 4	-4	+16	-2
	ICE	MED	2740	3010	3250	3530	3840	+ 4	-23	+32	-5
		LOW	2810	3080	3340	3620	3940	+ 4	-23	+32	-5

NOTE : – MAX MODE IS NOT RECOMMENDED AT LANDING

– THE TABLES TAKE INTO ACCOUNT THE APPROACH SPEED INCREMENT LINKED TO HEADWIND AND AUTOLAND. FOR ANY EXTRA SPEED INCREMENT OF 5 KNOTS (AND NO FAILURE) INCREASE LANDING DISTANCE BY 6 % (ALL RUNWAYS).

ONE ENGINE OUT MAX ALTITUDE

GROSS CEILING at LONG RANGE and GREEN DOT SPEEDS
Pack Flow Hi – Anti ice OFF



CORRECTIONS

		ISA	ISA + 10	ISA + 15	ISA + 20
R	LONG RANGE	ENGINE ANTI ICE ON	– 300 FT	– 1800 FT	– 2700 FT
		TOTAL ANTI ICE ON	– 700 FT	– 4300 FT	– 5000 FT
	GREEN DOT	ENGINE ANTI ICE ON	– 200 FT	– 1200 FT	– 1400 FT
		TOTAL ANTI ICE ON	– 1000 FT	– 3200 FT	– 4000 FT

ONE ENGINE OUT

R

GROSS FLIGHT PATH DESCENT AT GREEN DOT SPEED										
MAX. CONTINUOUS THRUST PACK FLOW HI ANTI-ICING OFF				ISA CG=33.0%		DISTANCE (NM) INITIAL SPEED(KT)		TIME (MIN) FUEL(1000KG) LEVEL OFF (FT)		
INIT. GW (1000KG)	INITIAL FLIGHT LEVEL									
	230	250	270	290	310	330	350	370	390	
48						158 30 194 .8 32100	230 43 196 1.1 32300	269 49 198 1.2 32400	294 53 200 1.3 32400	
50					78 15 196 .4 30800	207 39 198 1.0 31200	258 48 200 1.2 31300	290 53 202 1.4 31400	313 57 204 1.4 31400	
52					169 32 200 .9 30000	241 45 202 1.2 30200	279 51 204 1.4 30300	307 56 206 1.5 30300	329 59 208 1.5 30400	
54				82 16 202 .5 28700	209 39 204 1.1 29100	260 48 206 1.3 29200	292 54 208 1.5 29300	317 58 210 1.6 29300	337 61 212 1.6 29400	
56				172 33 206 1.0 28000	242 45 208 1.3 28100	281 52 210 1.5 28200	310 57 212 1.6 28300	332 61 214 1.7 28300	352 64 216 1.8 28400	
58			102 20 208 .6 26700	217 41 210 1.2 27000	267 50 212 1.5 27200	301 56 214 1.6 27300	326 60 216 1.7 27300	347 63 218 1.8 27300	365 66 220 1.9 27400	
60			179 34 212 1.1 25900	248 47 214 1.4 26100	289 54 216 1.6 26200	318 59 218 1.8 26300	341 63 220 1.9 26300	361 66 222 1.9 26400	378 68 224 2.0 26400	
62		105 20 214 .7 24700	223 43 216 1.4 25000	274 52 218 1.6 25100	307 57 220 1.8 25200	335 62 222 1.9 25300	356 65 224 2.0 25300	374 68 226 2.0 25400	392 71 228 2.1 25400	
64		169 32 218 1.1 24000	242 46 220 1.5 24200	285 53 222 1.7 24300	315 59 224 1.9 24300	339 63 226 2.0 24400	360 66 228 2.1 24400	379 69 230 2.1 24400	395 71 232 2.2 24500	
66	68 13 220 .5 22800	206 39 222 1.3 23200	261 49 224 1.6 23300	296 55 226 1.8 23400	324 60 228 2.0 23500	347 64 230 2.1 23500	366 67 232 2.1 23600	384 69 234 2.2 23600	400 72 236 2.2 23600	
68	154 30 224 1.0 22200	233 44 226 1.5 22400	277 52 228 1.8 22500	308 57 230 1.9 22600	333 62 232 2.1 22700	355 65 234 2.1 22700	373 68 236 2.2 22700	389 70 238 2.3 22700	405 72 240 2.3 22800	
70	197 38 228 1.4 21500	255 48 230 1.7 21600	292 55 232 1.9 21700	320 60 234 2.0 21800	343 63 236 2.2 21800	361 66 238 2.2 21900	380 69 240 2.3 21900	396 71 242 2.3 21900		
72	227 43 232 1.6 20700	272 51 234 1.8 20900	306 57 236 2.0 20900	331 61 238 2.2 21000	351 65 240 2.2 21000	372 68 242 2.3 21100	389 70 244 2.4 21100	405 72 246 2.4 21100		
74	250 47 236 1.8 20000	291 55 238 2.0 20100	320 60 240 2.2 20100	342 63 242 2.3 20200	363 66 244 2.4 20200	381 69 246 2.4 20200	398 72 248 2.5 20300	412 74 250 2.5 20300		
CORRECTIONS			DISTANCE		TIME	FUEL		LEVEL OFF		
ENGINE ANTI ICE ON			+ 2 %		+ 3 %	+ 7 %		- 100 ft		
TOTAL ANTI ICE ON			+ 7 %		+ 8 %	+ 10 %		- 700 ft		

CFM Eng. : 56-5-B5/B6

Code : 0020
11-3-08F0A319-112 CFM56-5B6/P DA23500010C6KC330 0 018590
0 0 3 .0 .00 0 02 1.000 1.000 0 CL-NO-0-00-04-06-230

ONE ENGINE OUT

R

LONG RANGE CRUISE - 1 ENGINE OUT						
MAX. CONTINUOUS THRUST LIMITS PACK FLOW HI ANTI-ICING OFF			ISA CG=33.0%	N1 (%) FUEL FLOW (KG/H)	MACH IAS (KT)	
WEIGHT (1000KG)	FL100	FL150	FL190	FL210	FL230	FL250
48	75.8 .459 1951 254	79.2 .494 1849 248	81.8 .521 1782 243	82.5 .528 1727 236	84.0 .547 1724 235	85.0 .558 1697 230
50	76.6 .465 2001 257	79.9 .498 1897 251	82.4 .525 1829 244	83.5 .537 1798 240	84.8 .554 1788 238	85.8 .564 1760 233
52	77.8 .474 2072 262	80.9 .506 1964 255	83.0 .528 1876 246	84.5 .546 1873 245	85.5 .558 1844 240	86.7 .571 1834 236
54	79.0 .484 2149 268	81.9 .514 2031 259	83.9 .536 1946 250	85.3 .553 1940 248	86.2 .563 1907 242	87.4 .573 1890 237
56	79.8 .489 2205 271	82.8 .521 2095 263	84.8 .544 2019 254	86.0 .558 1998 250	87.1 .570 1980 245	88.4 .582 1981 241
58	80.4 .493 2253 273	83.3 .524 2143 264	85.7 .552 2091 257	86.6 .561 2056 252	87.8 .574 2045 247	88.5 .568 1977 234
60	80.9 .496 2297 275	83.8 .527 2189 265	86.3 .556 2150 259	87.3 .567 2124 254	88.4 .576 2105 248	88.5 .540 1960 223
62	81.6 .501 2353 278	84.4 .530 2243 267	86.8 .559 2207 261	88.1 .574 2201 257	88.6 .566 2117 244	
64	82.4 .508 2422 281	85.1 .537 2314 271	87.5 .564 2271 263	88.6 .575 2257 258	88.6 .545 2102 234	
66	83.2 .515 2490 285	85.9 .544 2389 275	88.1 .569 2343 266	88.7 .564 2254 253		
68	84.0 .521 2556 288	86.7 .551 2463 278	88.7 .572 2401 267	88.7 .547 2242 245		
70	84.6 .524 2611 291	87.3 .556 2526 280	88.7 .562 2393 262	88.7 .499 2213 223		
72	85.0 .527 2659 292	87.8 .559 2583 282	88.7 .548 2382 256			
74	85.4 .528 2704 293	88.3 .562 2644 284	88.7 .521 2364 243			
ENGINE ANTI ICE ON △FUEL = + 3 %				TOTAL ANTI ICE ON △FUEL = + 6 %		

ONE ENGINE OUT

R

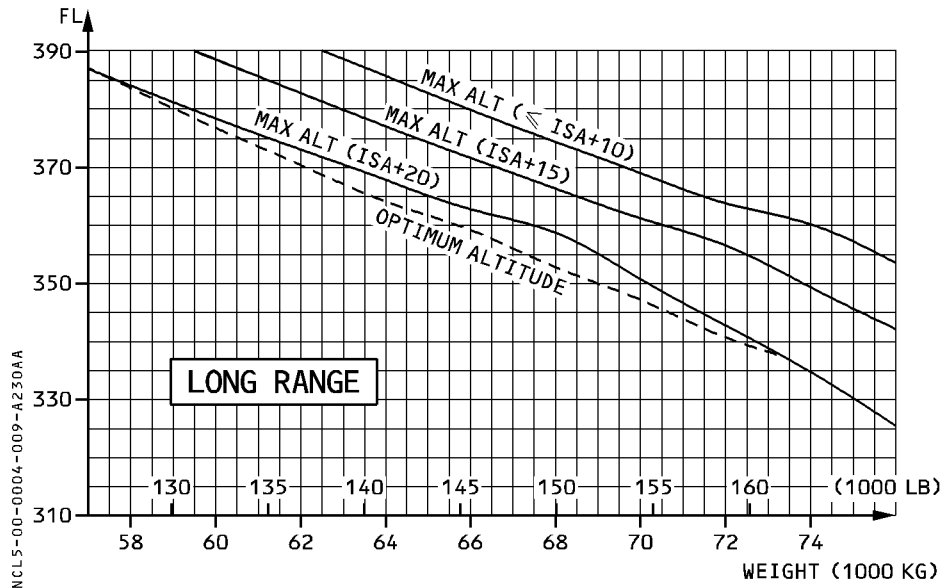
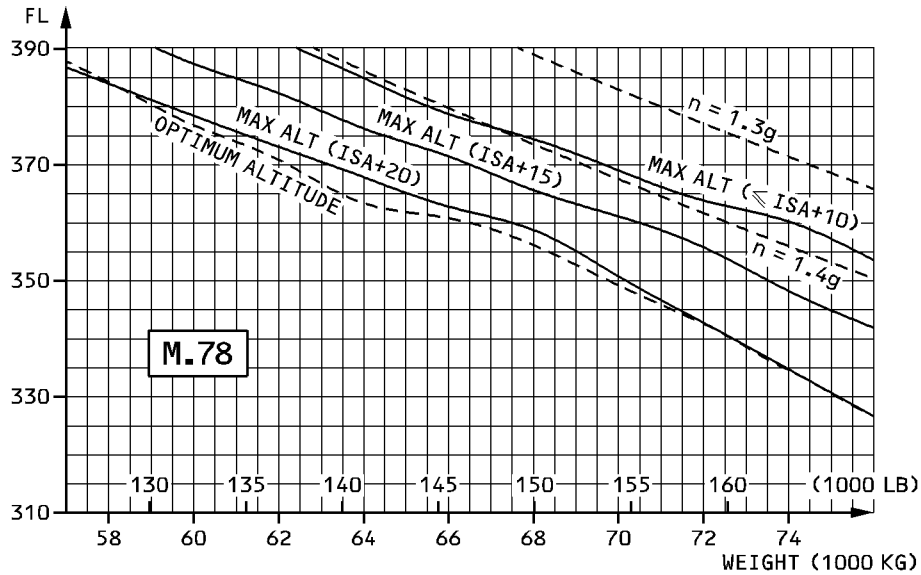
IN-CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING - 1 ENGINE OUT									
CRUISE : LONG RANGE - DESCENT : M.78/300KT/250KT - IMC PROCEDURE : 110KG (6MIN)									
REF. INITIAL WEIGHT = 50000 KG				ISA		FUEL CONSUMED (KG)			
PACK FLOW HI				CG = 33.0 %					
ANTI-ICING OFF				TIME (H.MIN)					
AIR							CORRECTION ON		
DIST.	FLIGHT LEVEL						FUEL CONSUMPTION		
(NM)	100	150	200	220	240	250	FL100 FL150	FL200 FL220	FL240 FL250
200	1360 0.47	1155 0.45	1019 0.43	976 0.43	933 0.42	914 0.42	7	6	6
300	2028 1.07	1757 1.05	1568 1.02	1509 1.01	1451 1.00	1427 1.00	12	12	13
400	2692 1.28	2356 1.24	2114 1.21	2039 1.19	1967 1.18	1936 1.17	16	18	20
500	3352 1.49	2952 1.44	2658 1.40	2565 1.38	2479 1.36	2442 1.35	21	24	26
600	4011 2.10	3546 2.03	3198 1.59	3089 1.56	2989 1.54	2944 1.53	26	30	33
700	4667 2.31	4136 2.23	3735 2.17	3608 2.15	3495 2.12	3443 2.11	30	36	39
800	5321 2.51	4724 2.42	4270 2.36	4125 2.34	3998 2.30	3939 2.29	35	41	46
900	5972 3.12	5310 3.02	4803 2.55	4638 2.53	4498 2.48	4432 2.48	39	47	52
1000	6620 3.33	5893 3.22	5333 3.14	5148 3.12	4994 3.07	4921 3.06	44	52	58
1100	7265 3.55	6473 3.42	5860 3.33	5655 3.31	5488 3.25	5407 3.24	48	57	64
1200	7907 4.16	7049 4.02	6384 3.51	6158 3.50	5979 3.43	5891 3.42	52	63	70
1300	8546 4.37	7623 4.22	6905 4.10	6659 4.09	6466 4.02	6371 4.00	56	68	76
1400	9185 4.58	8195 4.42	7423 4.29	7156 4.28	6951 4.20	6849 4.19	61	73	82
ENGINE ANTI ICE ON △FUEL = + 2.5 %					TOTAL ANTI ICE ON △FUEL = + 5.5 %				

CFM Eng. : 56-5-B5/B6

Code : 0020
FLIP23F A319-112 CFM56-5B6/P DA3610 03301 001011 0300250 7801 .0
0100 110 0300350 50 0 100100 35100 18590 CL-GQ-04-08-230

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ALL ENG MAX/OPT ALTITUDES



NCL5-00-0004-009-A230AA

T or L

CFM Eng. : 56-5-B5/B6

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CORRECTIONS	ENGINE ANTI ICE	TOTAL ANTI ICE
ISA	Max. Alt.: - 200 FT Opt. Alt. : - 300 FT	Max. Alt.: - 400 FT Opt. Alt. : - 300 FT
ISA + 10	Max. Alt.: - 1200 FT Opt. Alt. : - 200 FT	Max. Alt.: - 2300 FT Opt. Alt. : - 300 FT
ISA + 15	Max. Alt.: - 1400 FT Opt. Alt. : - 400 FT	Max. Alt.: - 3200 FT Opt. Alt. : - 1600 FT
ISA + 20	Max. Alt.: - 3000 FT Opt. Alt. : - 3000 FT	Max. Alt.: - 5500 FT Opt. Alt. : - 5000 FT

Code : 0020

ALL ENGINES

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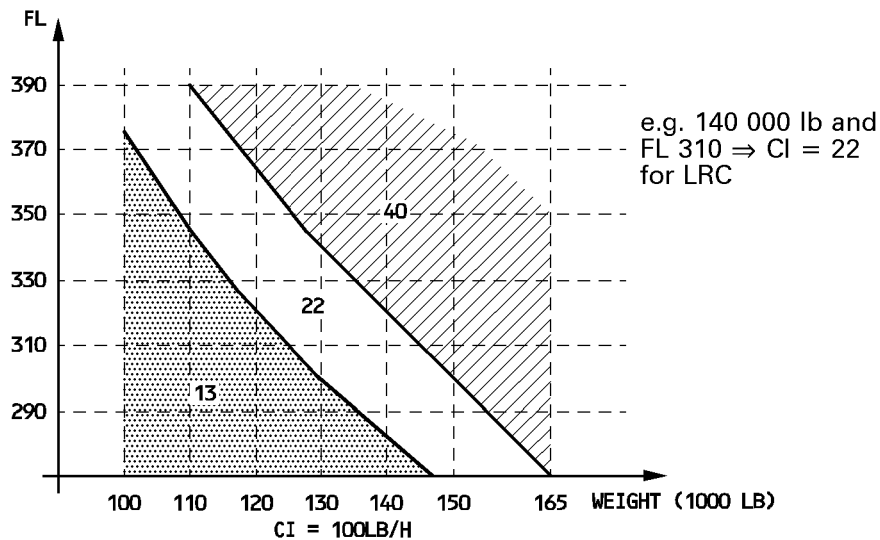
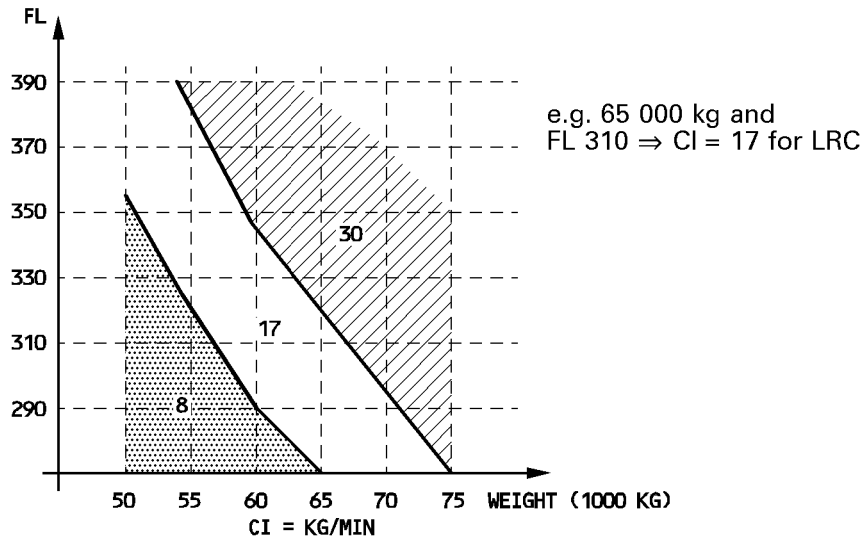
IN-CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING									
CRUISE M.78 - DESCENT M.78/300KT/250KT - IMC PROCEDURE 110KG (6MIN)									
REF. INITIAL WEIGHT = 55000 KG				ISA		FUEL CONSUMED (KG)			
NORMAL AIR CONDITIONING				CG = 33.0 %					
ANTI-ICING OFF				TIME (H.MIN)					
AIR	FLIGHT LEVEL						CORRECTION ON		
DIST.							FUEL CONSUMPTION		
(NM)	290	310	330	350	370	390	FL290 FL310	FL330 FL350	FL370 FL390
200	967 0.35	905 0.35	851 0.35	801 0.36	759 0.36	726 0.36	0	0	2
400	2117 1.01	1984 1.02	1867 1.02	1764 1.02	1679 1.02	1619 1.02	4	6	12
600	3262 1.27	3057 1.28	2878 1.28	2720 1.29	2592 1.29	2503 1.29	8	12	22
800	4402 1.53	4125 1.54	3883 1.55	3670 1.56	3497 1.56	3377 1.56	12	18	31
1000	5538 2.19	5188 2.20	4883 2.21	4613 2.22	4394 2.23	4242 2.23	16	24	40
1200	6671 2.45	6247 2.46	5877 2.48	5551 2.49	5286 2.50	5098 2.50	19	29	47
1400	7799 3.11	7302 3.12	6867 3.14	6485 3.16	6171 3.16	5947 3.16	23	34	55
1600	8924 3.37	8353 3.39	7851 3.40	7413 3.42	7051 3.43	6788 3.43	26	39	62
1800	10044 4.03	9399 4.05	8830 4.07	8336 4.09	7924 4.10	7622 4.10	29	44	68
2000	11161 4.29	10441 4.31	9805 4.33	9254 4.36	8792 4.37	8447 4.37	32	48	74
2200	12275 4.55	11479 4.57	10777 5.00	10167 5.02	9653 5.04	9266 5.04	35	53	80
2400	13384 5.21	12513 5.23	11743 5.26	11075 5.29	10510 5.30	10080 5.30	38	57	86
2600	14492 5.47	13543 5.49	12706 5.52	11977 5.55	11361 5.57	10889 5.57	41	61	91
2800	15599 6.12	14570 6.16	13665 6.19	12875 6.22	12206 6.24	11691 6.24	43	64	97
3000	16702 6.38	15594 6.42	14620 6.45	13769 6.49	13047 6.51	12488 6.51	46	68	102
LOW AIR CONDITIONING ΔFUEL = - 0.6 %				ENGINE ANTI ICE ON ΔFUEL = + 3 %			TOTAL ANTI ICE ON ΔFUEL = + 6 %		

CFM Eng. : 56-5-B5/B6

Code : 0020
FLIP23F A319-112 CFM56-5B6/P DA3610 03301 000011 0250300 .7800
.00200 110 0300350 55 0 100 20 20 18590 CL-G0-04-10-230

COST INDEX

Cost index for long range cruise Mach depends on the actual gross weight and the flight level and wind. It can be approximated by the following graphs (no wind, ISA) :



NCL5-00-0004-011-A001AA

ALL ENGINES

R

DESCENT - M.78/300KT/250KT									
IDLE THRUST NORMAL AIR CONDITIONING ANTI-ICING OFF			ISA CG=33.0%		MAXIMUM CABIN RATE OF DESCENT 350FT/MIN				
WEIGHT (1000KG)	45				65				IAS (KT)
FL	TIME (MIN)	FUEL (KG)	DIST. (NM)	N1	TIME (MIN)	FUEL (KG)	DIST. (NM)	N1	
390	16.1	208	101	68.2	17.7	173	108	IDLE	241
370	14.6	177	90	69.4	16.9	169	102	IDLE	252
350	12.9	136	77	71.5	16.2	165	97	IDLE	264
330	12.1	125	71	IDLE	15.6	161	92	IDLE	277
310	11.7	123	68	IDLE	15.0	157	88	IDLE	289
290	11.2	120	64	IDLE	14.4	154	83	IDLE	300
270	10.6	116	60	IDLE	13.6	149	77	IDLE	300
250	10.1	112	56	IDLE	12.9	144	72	IDLE	300
240	9.8	110	54	IDLE	12.5	141	69	IDLE	300
220	9.1	105	49	IDLE	11.6	134	63	IDLE	300
200	8.5	98	45	IDLE	10.8	125	57	IDLE	300
180	7.8	90	40	IDLE	9.8	114	51	IDLE	300
160	7.1	80	36	IDLE	8.9	101	45	IDLE	300
140	6.3	68	31	IDLE	7.9	86	39	IDLE	300
120	5.6	57	27	IDLE	6.9	71	33	IDLE	300
100	4.8	47	22	IDLE	6.0	57	28	IDLE	300
50	1.7	12	7	IDLE	2.1	15	9	IDLE	250
15	.0	0	0	IDLE	.0	0	0	IDLE	250
CORRECTIONS		LOW AIR CONDITIONING		ENGINE ANTI ICE ON		TOTAL ANTI ICE ON		PER 1° ABOVE ISA	
TIME		-		+ 7 %		+ 8 %		+ 0.3 %	
FUEL		- 1 %		+30 %		+ 60 %		+ 0.9 %	
DISTANCE		-		+ 7 %		+ 8 %		+ 1 %	

ALL ENGINES

R

ALTERNATE PLANNING FROM DESTINATION TO ALTERNATE AIRPORT									
GO-AROUND : 80 KG - CLIMB : 250KT/300KT/M.78 - CRUISE : LONG RANGE									
DESCENT : M.78/300KT/250KT - VMC PROCEDURE : 60 KG (4MIN)									
REF. LDG WT AT DEST. = 50000 KG NORMAL AIR CONDITIONING ANTI-ICING OFF				ISA CG = 33.0 %		FUEL CONSUMED (KG)			
						TIME (H.MIN)			
AIR DIST. (NM)	FLIGHT LEVEL						CORRECTION ON FUEL CONSUMPTION (KG/1000KG)		
	100	150	200	250	290	330	FL100 FL150	FL200 FL250	FL290 FL330
40	483 0.12						2		
60	642 0.16	611 0.16					3		
80	801 0.20	754 0.20	751 0.19				5	4	
100	961 0.25	896 0.23	879 0.22				6	5	
120	1120 0.29	1039 0.27	1006 0.26	1000 0.25			7	7	
140	1280 0.33	1182 0.31	1134 0.29	1113 0.28	1119 0.27		8	7	9
160	1441 0.37	1326 0.34	1262 0.33	1227 0.31	1222 0.30	1231 0.30	10	8	10
180	1601 0.41	1469 0.38	1390 0.36	1341 0.34	1325 0.33	1326 0.33	11	9	11
200	1762 0.45	1612 0.42	1519 0.40	1454 0.37	1428 0.36	1421 0.36	12	10	12
220	1923 0.49	1756 0.46	1647 0.43	1568 0.40	1532 0.39	1516 0.39	13	11	13
240	2084 0.53	1900 0.49	1776 0.47	1682 0.44	1635 0.42	1611 0.42	14	12	13
260	2246 0.57	2044 0.53	1904 0.50	1796 0.47	1738 0.45	1706 0.45	16	13	14
280	2407 1.01	2188 0.57	2033 0.53	1911 0.50	1842 0.48	1801 0.47	17	14	15
300	2569 1.05	2332 1.00	2162 0.57	2025 0.53	1945 0.51	1896 0.50	18	15	16
320	2732 1.09	2477 1.04	2291 1.00	2139 0.56	2049 0.54	1991 0.53	19	15	17
340	2894 1.13	2621 1.08	2420 1.04	2254 0.59	2152 0.57	2087 0.56	20	16	18
360	3057 1.17	2766 1.11	2550 1.07	2368 1.02	2256 1.00	2182 0.59	22	17	19
380	3220 1.21	2911 1.15	2679 1.11	2483 1.05	2360 1.03	2278 1.02	23	18	20
400	3384 1.25	3056 1.19	2809 1.14	2598 1.09	2464 1.07	2373 1.05	24	19	21
420	3548 1.28	3201 1.22	2939 1.17	2713 1.12	2568 1.10	2469 1.08	25	20	21
440	3712 1.32	3346 1.26	3069 1.21	2828 1.15	2672 1.13	2565 1.11	26	21	22
460	3876 1.36	3492 1.30	3199 1.24	2943 1.18	2776 1.16	2661 1.14	28	22	23
480	4040 1.40	3637 1.33	3329 1.27	3058 1.21	2880 1.19	2757 1.17	29	22	24
500	4205 1.44	3783 1.37	3460 1.31	3173 1.24	2984 1.22	2853 1.20	30	23	25
LOW AIR CONDITIONING △FUEL = - 3 %			ENGINE ANTI ICE ON △FUEL = + 4 %			TOTAL ANTI ICE ON △FUEL = + 6 %			

CL-N0-04-13-230

CFM Eng. : 56-5-B5/B6

Code : 0020
FLIP23F A319-112 CFM56-5B6/P DA3520 03301.000010 0250300 .7801 .0
0000 60 80300300 50 0 100100 40100 18590

FLIGHT WITHOUT CAB PRESS

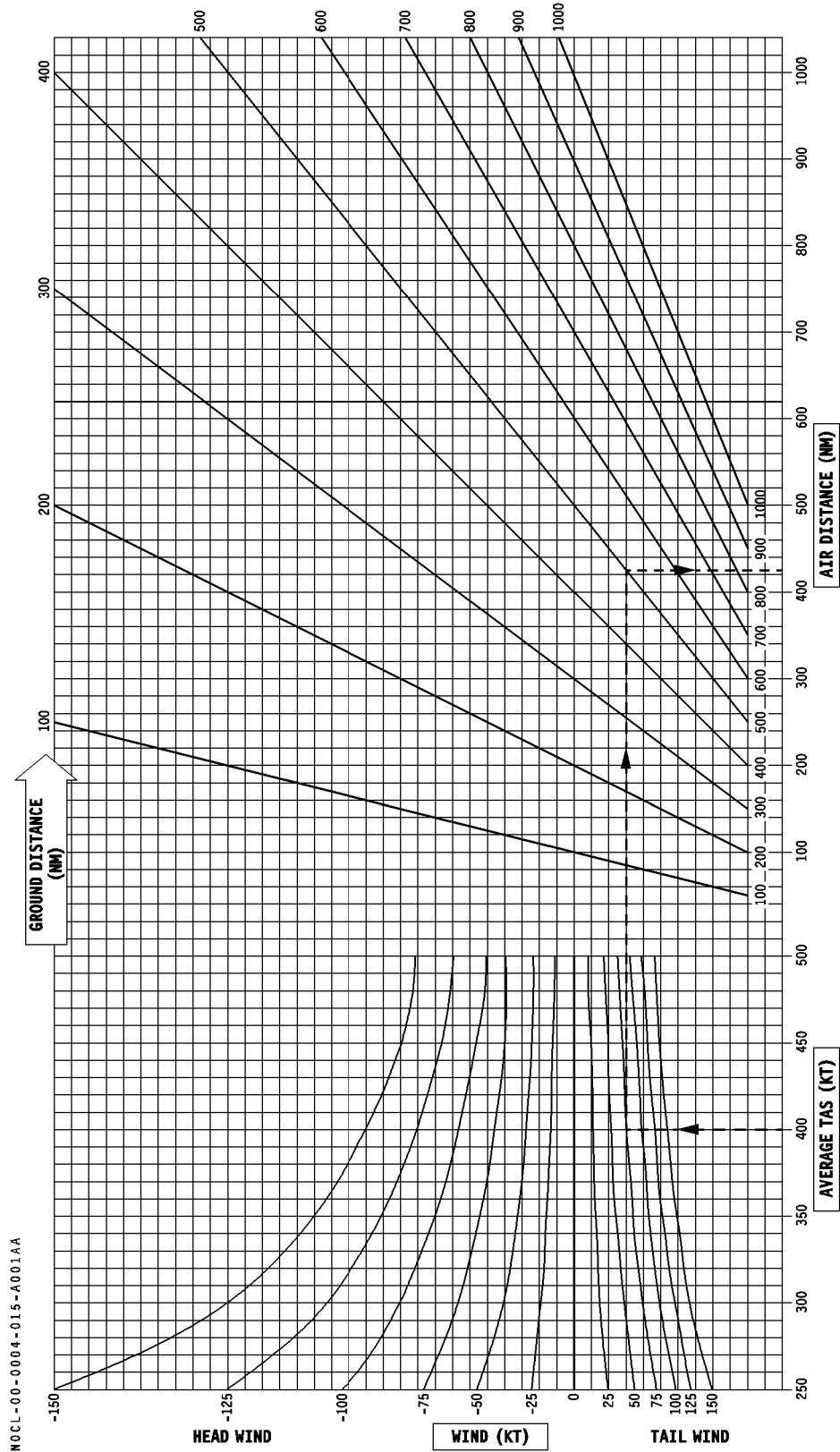
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IN CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING							
CRUISE : LONG RANGE - DESCENT : 250KT							
IMC PROCEDURE : 110 KG (6MIN)							
FL100							
NORMAL AIR CONDITIONING			ISA		FUEL CONSUMED (KG)		
ANTI-ICING OFF			CG = 25.0%		TIME (H.MIN)		
AIR DIST. (NM)	INITIAL WEIGHT (1000KG)						
	45	50	55	60	65	70	75
40	314 0.15	310 0.15	307 0.15	305 0.15	305 0.15	306 0.15	310 0.15
60	463 0.19	467 0.19	471 0.19	474 0.18	478 0.18	484 0.18	491 0.18
80	612 0.24	623 0.23	635 0.22	642 0.22	651 0.22	661 0.22	673 0.21
100	760 0.29	780 0.28	798 0.26	811 0.26	824 0.25	838 0.25	855 0.25
120	908 0.33	936 0.32	962 0.30	979 0.29	997 0.29	1016 0.29	1036 0.28
140	1056 0.38	1092 0.37	1125 0.34	1147 0.33	1169 0.32	1192 0.32	1217 0.32
160	1204 0.43	1247 0.41	1288 0.38	1315 0.37	1342 0.36	1369 0.35	1398 0.35
180	1351 0.47	1403 0.45	1451 0.42	1483 0.40	1514 0.40	1546 0.39	1579 0.38
200	1499 0.52	1558 0.50	1613 0.45	1651 0.44	1686 0.43	1722 0.42	1760 0.42
220	1646 0.56	1713 0.54	1776 0.49	1818 0.48	1858 0.47	1899 0.46	1940 0.45
240	1793 1.01	1867 0.59	1938 0.53	1986 0.51	2030 0.50	2075 0.49	2121 0.49
260	1939 1.06	2021 1.03	2101 0.57	2153 0.55	2202 0.54	2251 0.53	2301 0.52
280	2086 1.10	2175 1.08	2262 1.01	2320 0.59	2373 0.57	2427 0.56	2481 0.55
300	2232 1.15	2329 1.12	2424 1.05	2487 1.02	2545 1.01	2602 1.00	2661 0.59
320	2378 1.20	2483 1.16	2586 1.09	2654 1.06	2716 1.04	2778 1.03	2841 1.02
340	2524 1.24	2636 1.21	2747 1.13	2821 1.10	2887 1.08	2953 1.07	3020 1.06
360	2669 1.29	2789 1.25	2909 1.17	2988 1.13	3058 1.12	3129 1.10	3199 1.09
380	2815 1.34	2942 1.30	3070 1.21	3154 1.17	3229 1.15	3304 1.14	3379 1.13
400	2960 1.38	3095 1.34	3230 1.25	3321 1.21	3400 1.19	3479 1.17	3558 1.16
420	3105 1.43	3247 1.39	3391 1.29	3487 1.25	3570 1.22	3654 1.21	3737 1.19
440	3250 1.48	3399 1.44	3551 1.33	3653 1.28	3741 1.26	3828 1.24	3916 1.23
460	3394 1.52	3551 1.48	3711 1.37	3819 1.32	3911 1.30	4003 1.28	4094 1.26
480	3539 1.57	3703 1.53	3870 1.41	3985 1.36	4081 1.33	4177 1.31	4273 1.30
500	3683 2.02	3854 1.57	4030 1.45	4150 1.39	4251 1.37	4351 1.35	4451 1.33
520	3827 2.06	4005 2.02	4189 1.50	4316 1.43	4421 1.40	4525 1.38	4629 1.37
540	3970 2.11	4156 2.06	4347 1.54	4481 1.47	4590 1.44	4699 1.42	4807 1.40
AIR CONDITIONING OFF ΔFUEL = - 3 %			ENGINE ANTI ICE ON ΔFUEL = + 3 %		TOTAL ANTI ICE ON ΔFUEL = + 5.5 %		

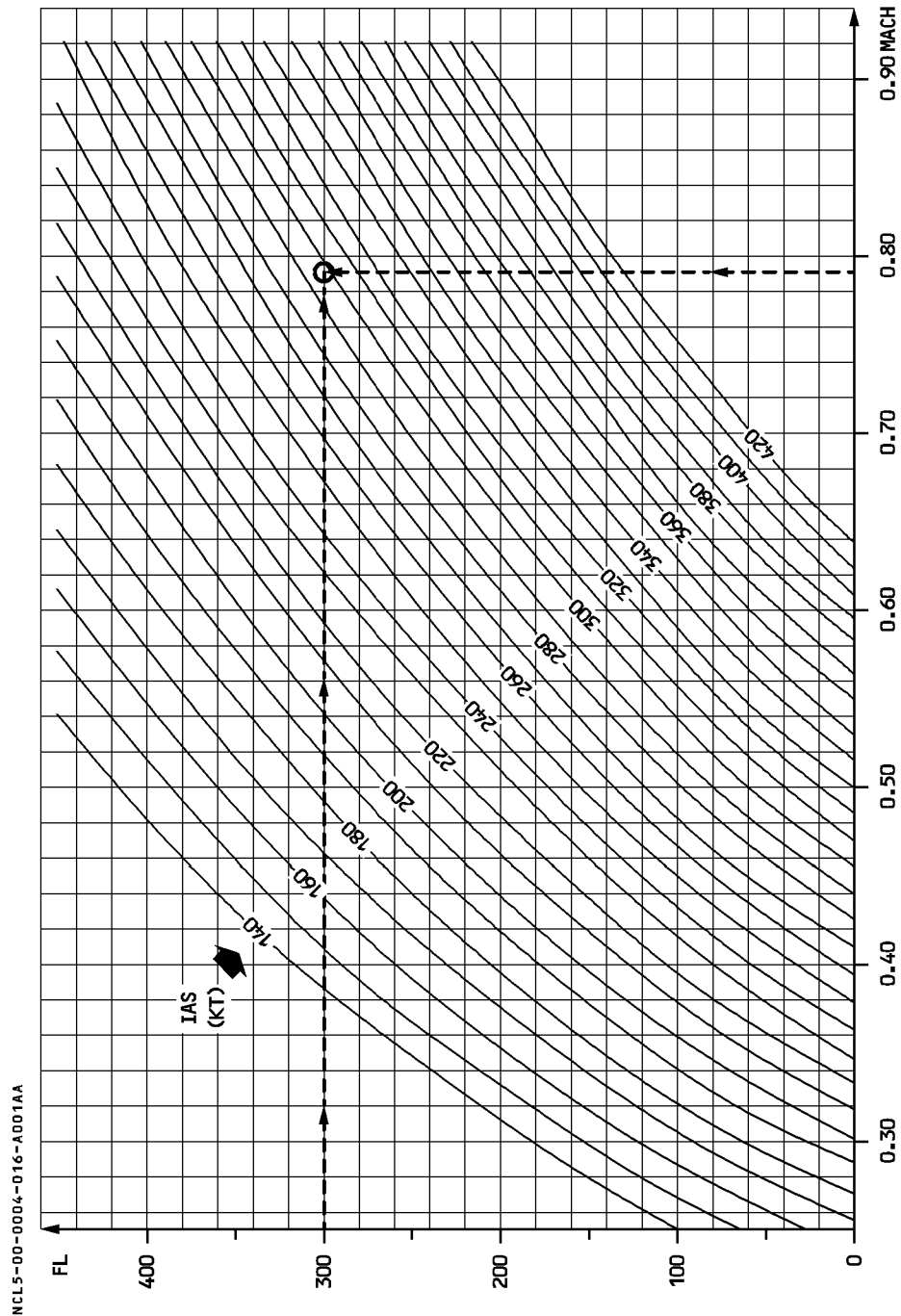
CFM Eng. : 56-5-B5/B6

Code : 0020
FLIP231 A319-112 CFM56-5B6/P DAC CL-N0-04-14-230

GROUND DISTANCE - AIR DISTANCE CONVERSION



IAS - MACH CONVERSION



CONTENTS

SEVERE TURBULENCE	5.01
HYD ARCHITECTURE	5.02
FLT CTL ARCHITECTURE	5.03
REQUIRED EQUIPMENT FOR CAT2 AND CAT3	5.04

R

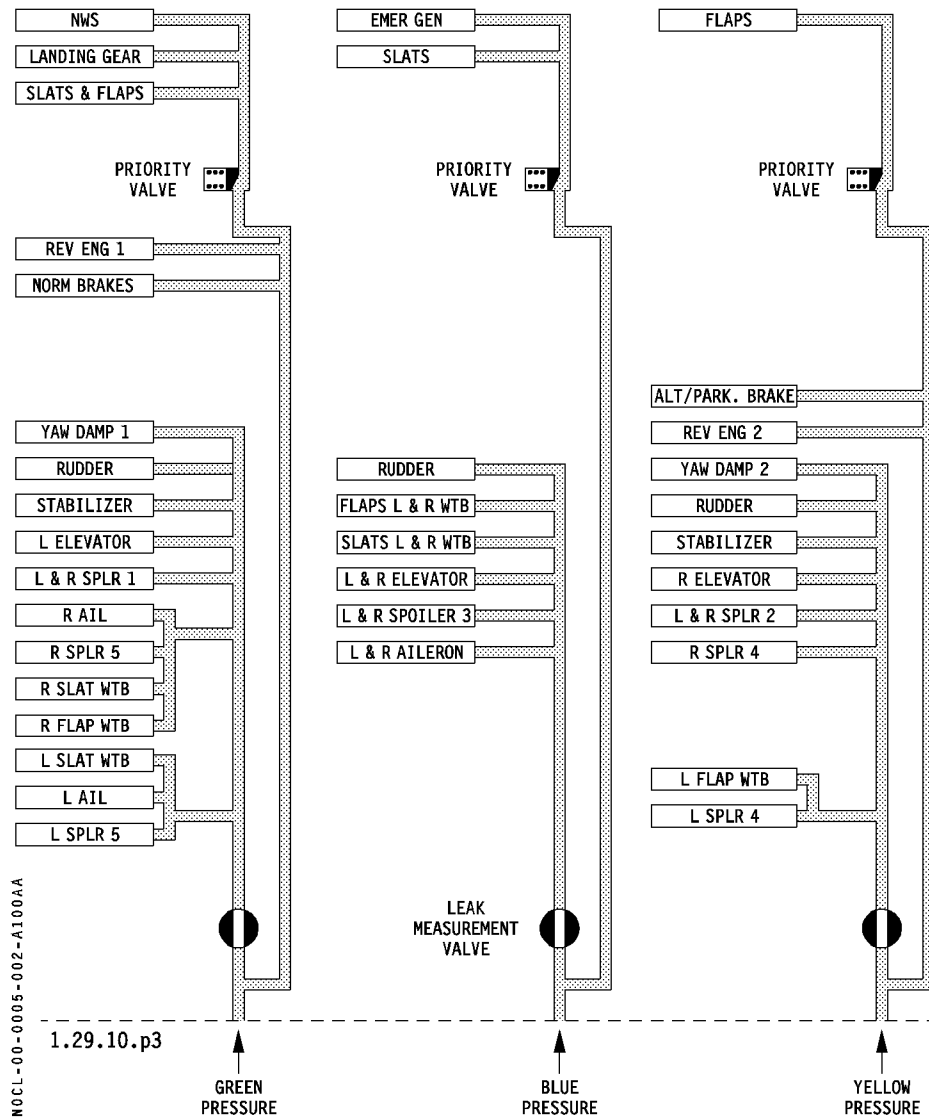
SEVERE TURBULENCE

SPEED AND THRUST SETTING FOR RECOMMENDED TURBULENCE SPEED

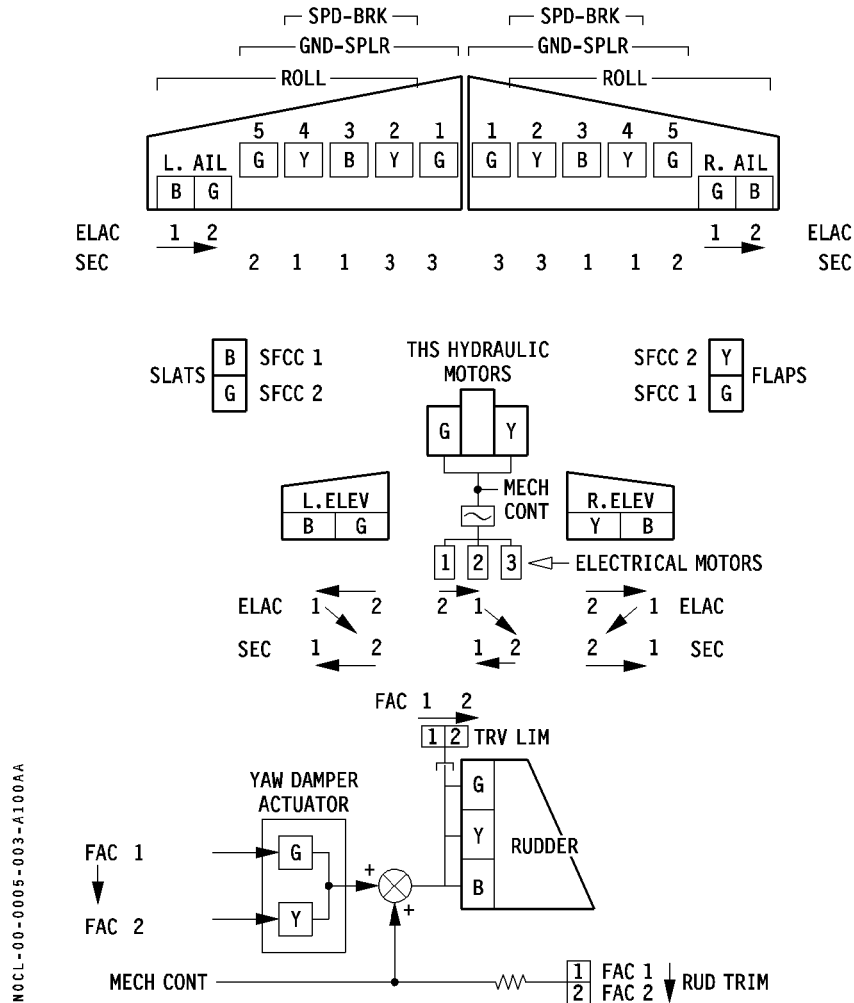
FLIGHT LEVEL	SPD or Mach	WEIGHT (1000 kg)							
		40	44	48	52	56	60	64	68
		N1 %							
390	0.76	77.9	78.8	79.8	81	82.3	–	–	–
370	0.76	77	77.8	78.6	79.4	80.4	81.7	83	–
350	0.76	76.7	77.3	77.9	78.7	79.4	80.3	81.3	82.5
330	0.76	76.9	77.3	77.8	78.4	79	79.7	80.6	81.4
310	275	76.3	76.7	77.1	77.6	78.1	78.9	79.6	80.3
290	275	74.8	75.3	75.7	76.2	76.8	77.3	78	78.7
270	275	73.3	73.7	74.2	74.8	75.3	75.9	76.6	77.2
250	275	72	72.5	72.9	73.4	73.9	74.5	75.2	75.9
200	250	64.6	65.2	65.9	66.6	67.4	68.3	69.2	70.3
150	250	61	61.6	62.2	62.8	63.5	64.3	65.2	66.1
100	250	57.8	58.6	59.2	59.8	60.4	61	61.8	62.6
50	250	53.9	54.5	55	55.7	56.5	57.3	58.2	59.2

- SEATBELT SIGN ON
- NO SMOKING SIGN ON
- AUTO PILOT KEEP ON
- A/THR (when thrust changes become excessive) . DISCONNECT
- **FOR APPROACH :**
- A/THR in managed speed USE

HYD ARCHITECTURE



FLT CTL ARCHITECTURE



NOCL-00-0005-003-A100AA

Mod : 22013 or 24105 or 26334 or 26335

→ Arrows indicate the control reconfiguration priorities

G B Y indicates the hydraulic power source for each servo control

REQUIRED EQUIPMENT FOR CATII AND CATIII

	FMA CAPABILITY →	CAT 2	CAT 3 SINGLE	CAT 3 DUAL
	EQUIPMENT ↓			
R	AP/FD	1 AP ENGAGED	1 AP ENGAGED	2 AP ENGAGED
	AUTOTHRUST	0	1	1
	FMA	1	2	2
	A/THR CAUTION	0	1	1
	ELECTRICAL SUPPLY SPLIT	0	0	1
	FAC	1	1	2
	ELAC	1	1	2
	YAW DAMPER/RUDDER TRIM	1/1	1/1	2/2
	PFD DUs	2	2	2
	FLIGHT WARNING COMPUTER	1	1	2
	BSCU CHANNEL	1*	1*	1
	ANTISKID	1*	1*	1
	NOSEWHEEL STEERING	1*	1*	1
	RADIO ALTIMETER	1 (displayed on both sides)	2	2
	ILS RECEIVER	2	2	2
	BEAM EXCESSIVE DEVIATION WARNING	1 for PNF	2	2
	ATTITUDE INDICATION (PFD1/PFD2)	N° 1 + N° 2	N° 1 + N° 2	N° 1 + N° 2
	ADR/IR	2/2	2/2	3/3
	AP DISCONNECT PB	2	2	2
	"AP OFF" ECAM WARNING	1	1	2
	"AUTOLAND" LIGHT	1	1	1
	RUDDER TRAVEL LIMIT SYSTEM	1 required for autoland with crosswind higher than 12 kt		
	WINDOW HEAT (L or R windshield)	1 for PF		
	WINDSHIELD WIPERS OR RAIN REPELLENT (if activated)	1 for PF		
	ND DUs	1	2	2
	AUTO CALLOUT FUNCTION	one is required for autoland	1	1
	ATTITUDE INDICATION (STBY)	1	1	1
	DH INDICATION	1 for PNF		

* For automatic rollout, one is required. For autoland without automatic rollout, none is required.

Note : . Failure of antiskid or nosewheel steering mechanical parts are not monitored for LDG capability.

- . Electrical power supply split : device ensuring that both FMGCs are powered by independent electrical sources (AC and DC).
- . DH indication and auto callout "hundred above" and "minimum" are only announced if a manual entry is performed on MCDU.
- . Flight crews are not expected to check the listed equipment before approach. When an ECAM or local caution occurs, the crew should use the list to confirm the landing capability.
- . On the ground, the list of equipment determines what category of approach the aircraft is able to perform at next landing.

BEFORE START

COCKPIT PREP.COMPLETE (BOTH)
GEAR PINS and COVERS.REMOVED
SIGNS.ON / AUTO
ADIRS.NAV
FUEL QUANTITY._____ KG.LB
TO DATA._____ SET
BARO REF._____ SET (BOTH)
WINDOWS/DOORS.CLOSED (BOTH)
BEACON.ON
THR LEVERS.IDLE
PARKING BRAKE.AS RQRD

AFTER START

ANTI ICE	AS RQRD
ECAM STATUS	CHECKED
PITCH TRIM	SET
RUDDER TRIM	ZERO

BEFORE TAKEOFF

FLIGHT CONTROLS CHECKED (BOTH)
FLT INST CHECKED (BOTH)
BRIEFING CONFIRMED
FLAP SETTING CONF – (BOTH)
V1. VR. V2/FLX TEMP _____ (BOTH)
ATC SET
ECAM MEMO TO NO BLUE

. AUTO BRK MAX
. SIGNS ON
. CABIN READY
. SPLRS ARM
. FLAPS TO
. TO CONFIG NORM

CABIN CREW	ADVISED
ENG MODE SEL	AS RQRD
PACKS	AS RQRD

AFTER TAKEOFF / CLIMB

LDG GEAR	UP
FLAPS	RETRACTED
PACKS	ON
BARO REF	SET (BOTH)

APPROACH

BRIEFING CONFIRMED
ECAM STATUS CHECKED

SEAT BELTS ON
BARO SET (BOTH)
MDA/DH SET (BOTH)
ENG MODE SEL AS QRDR

LANDING

CABIN CREW	ADVISED
A/THR	SPEED/OFF
ECAM MEMO	LDG NO BLUE
. L/G DOWN . SIGNS ON . CABIN READY . SPLRS ARM FI APS SFT	

AFTER LANDING

FLAPS	RETRACTED
SPOILERS	DISARMED
APU	START
RADAR	OFF/STBY

PARKING

APU BLEED	ON
ENGINES	OFF
SEAT BELTS	OFF
EXT LT	AS RQRD
FUEL PUMPS	OFF
PARK BRK and CHOCKS	AS RQRD

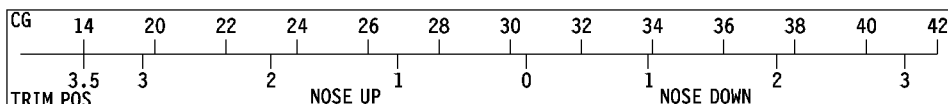
Consider HEAVY RAIN

SECURING THE AIRCRAFT

ADIRS	OFF
OXYGEN	OFF
APU BLEED	OFF
EMER EXIT LT	OFF
NO SMOKING	OFF
APU AND BAT	OFF
Consider COLD WEATHER	

ON GROUND EMER / EVACUATION

- | | | |
|---|--|------------|
| | – AIRCRAFT/PARKING BRK | STOP/ON |
| | – ATC (VHF 1) | NOTIFY |
| R | – ΔP | CHECK ZERO |
| R | <i>If not zero, MODE SEL on MAN, V/S CTL FULL UP</i> | |
| | – ENG MASTER 1 and 2 | OFF |
| | – CABIN CREW (PA) | NOTIFY |
| | – FIRE P/Bs (ENG and APU) | PUSH |
| | – AGENTS (ENG and APU) | AS RQRD |
| R | – EVACUATION | INITIATE |



THIS TABLE GIVES, FOR EACH AIRCRAFT INCLUDED IN THE MANUAL, THE CROSS REFERENCE BETWEEN :

- THE MANUFACTURING SERIAL NUMBER (MSN) WHICH APPEARS IN THE LIST OF EFFECTIVE PAGES
- THE REGISTRATION NUMBER OF THE AIRCRAFT AS KNOWN BY AIRBUS INDUSTRIE.

MSN	REGISTRATION

1068	F-GTFM
1145	00-SSF

LIST OF EFFECTIVE PAGES (LEP)

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

-----EFFECTIVITY-----

```

O .00      001 REV033
           ALL

R O .01      001 REV036 LIST OF CODES
R O .02      001 REV036 LIST OF CODES
           ALL

N O .02A     001 REV036 LIST OF CODES
           ALL

N O .02B     001 REV036 LIST OF CODES
           ALL

N O .02C     001 REV036 LIST OF CODES
           ALL

R O .03-     001 REV036 LIST OF TEMPORARY REVISIONS
           ALL

R O .04-     001 REV036 CROSS REFERENCE TABLE
           ALL

R O .06-     001 REV036 LIST OF EFFECTIVE PAGES
           ALL

R O .07-     001 REV036 LIST OF MOD/MP/SB
           ALL

R 1 .00      001 REV036
           ALL

1 .01      210 REV033 M:21678+21706
1 .02      100 REV032 M:21678
           ALL

R 1 .03      200 REV036 CODE 0065
R 1 .04      325 REV032 M:21285+21678+25404/CFM
           ALL

N 1 .05      331 REV036 M:20268+21678+25404/56-5-B6
N 1 .06      001 REV036
           ALL

N 1 .07      001 REV036 STD OR 24105 OR 30020
N 1 .08      200 REV036 CODE 0083
           ALL

N 1 .09      001 REV036 STD=M:(31276+32013)
N 1 .10      145 REV036 M:20268/56-5-B6
           ALL

N 1 .11      146 REV036 M:20268/56-5-B6
N 1 .12      134 REV036 M:20268/56-5-B6
           ALL

N 1 .13      001 REV036
N 1 .14      100 REV036 M:26526
           ALL

N 1 .15      105 REV036 CODE 0028
N 1 .16      020 REV036 STD/56-5-B5/B6/B7/B8
           ALL

N 1 .17      001 REV036
N 1 .18      001 REV036
           ALL

N 1 .19      001 REV036
           ALL

R 2 .00      310 REV036 CODE:0044
           ALL

N 2 .00A     001 REV036
           ALL

R 2 .01      110 REV032 M:24794
R 2 .02      001 REV036
           ALL

R 2 .03      210 REV032 CODE 0162
R 2 .04      002 REV036 CODE 0170
           ALL

2 .05      001 REV032 CODE 0004
2 .06      001 REV034
           ALL

R 2 .07      001 REV034
R 2 .08      100 REV036 20024
           ALL

R 2 .09      001 REV036
R 2 .10      001 REV034
           ALL

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LIST OF EFFECTIVE PAGES (LEP)

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

-----EFFECTIVITY-----

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R 2 .11      110 REV036 24645
R 2 .12      001 REV034
                ALL

R 2 .13      001 REV035
R 2 .14      001 REV036
                ALL

      2 .15      001 REV035
      2 .16      035 REV035 56-5-B5/B6/B7
                ALL

      2 .17      035 REV035 56-5-B5/B6/B7
      2 .18      035 REV035 56-5-B5/B6/B7
                ALL

R 2 .19      100 REV035 CODE:0003
R 2 .20      001 REV036
                ALL

R 2 .21      001 REV036 STD:M:31896+32332
R 2 .22      160 REV035 CODE 0054/CFM 56-5-B
                ALL

R 2 .23      025 REV036 CFM
R 2 .24      025 REV035 CFM ALL
                ALL

R 2 .25      065 REV035 CODE:0058/=L
R 2 .26      001 REV036 STD=24105
                ALL

      2 .27      001 REV035
      2 .28      001 REV035
                ALL

      2 .29      001 REV035
      2 .30      001 REV035
                ALL

N 2 .31      180 REV036 20268/CFM 56-5-B6
N 2 .32      201 REV036
                ALL

R 2 .33      115 REV036 24105
R 2 .34      001 REV035
                ALL

      2 .35      001 REV035
      2 .36      001 REV035
                ALL

N 2 .37      102 REV036 24771
N 2 .38      101 REV036 24613+22013+24613
                ALL

N 2 .39      001 REV036 STD
N 2 .40      100 REV036 22562
                ALL

N 2 .41      025 REV036 CFM
                ALL

      3 .00      001 REV024
                ALL

R 3 .01      200 REV036 CODE 0040
R 3 .02      001 REV034
                ALL

      3 .03      001 REV034
      3 .04      001 REV028 STD:M:22013+24044
                ALL

R 3 .05      001 REV036
R 3 .06      001 REV036
                ALL

      3 .07      001 REV032
      3 .08      001 REV032
                ALL

R 3 .09      100 REV036 25863
R 3 .10      001 REV035
                ALL

      4 .00      001 REV024
                ALL

R 4 .01      190 REV030 M:20268/CFM 56-5-B6
R 4 .02      180 REV036 20268/CFM 56-5-B6
                ALL

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LIST OF EFFECTIVE PAGES (LEP)

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

M ---PAGE--- SEQ --REV-- ----VALIDATION CRITERIA-----

-----EFFECTIVITY-----

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R 4 .03      180 REV036  20268/CFM 56-5-B6
R 4 .04      190 REV034  20268 CFM 56-5-B6
                     ALL

4 .05      235 REV030  CODE:0020 CFM 56-5-B5/B6 T=L
4 .06      230 REV030  CODE:0020 56-5-B5/B6
                     ALL

4 .07      230 REV031  CODE 0020/CFM 56-5-B5/B6
4 .08      230 REV030  CODE:0020/56-5-B5/B6
                     ALL

4 .09      230 REV035  CODE:0020 56-5-B5/B6/T=L
4 .10      230 REV030  CODE:0020/56-5-B5/B6
                     ALL

4 .11      001 REV024
4 .12      230 REV030  CODE:0020/56-5-B5/B6
                     ALL

4 .13      230 REV030  CODE:0020 56-5-B5/B6
4 .14      230 REV033  CODE:0020/56-5-B5/B6
                     ALL

4 .15      001 REV024
4 .16      001 REV024
                     ALL

5 .00      001 REV035
                     ALL

R 5 .01      145 REV036  MOD:20268 CFM 56-5-B5/B6
R 5 .02      100 REV025  M:22013:24105:26334:26335
                     ALL

5 .03      100 REV024  M:22013:24105:26334:26335
5 .04      001 REV033
                     ALL

7 .01      130 REV035  24105
                     ALL

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M

V	REV	MOD	MP	TITLE	VALIDITY
T		SB			

. 035A 20024 FUEL- INSTALL A CENTRE TANK SYSTEM-
ALL

N 036 20059 AIR CONDITIONING - CARGO COMPARTMENT -
VENTILATION - INSTALL SYSTEM IN AFT
COMPARTMENT -
ALL

. 035A 20268 WINGS-WING TIP FENCES-INTRODUCE WING
TIPS INCLUDING FENCES-
ALL

N 036 21206 NAVIGATION - ADIRU - PROVIDE
COMMUNITY FOR CFM AND IAE ENGINES -
ALL

. 035A 21285 ENGINE CONTROLS-MODIFY POWER SUPPLY
FOR HP FUEL SOLENOID
ALL

. 035A 21678 ELECTRICAL POWER-AC/DC ESSENTIAL POWER
DISTRIBUTION-PROVIDE PROVISIONS FOR
ETOPS-
ALL

. 035A 21706 AIR CONDITIONING - VENTILATION CONT.
ISOLATION VALVES - CHANGE POWER SUPPLY
FOR ETOPS -
ALL

. 035A 22536 NAVIGATION - INSTALL A BENDIX TCAS II
COLLISION AVOIDANCE SYSTEM
ALL

. 035A 22562 AIRBORNE AUXILIARY POWER UNIT -
INTRODUCE APIC APS-3200
ALL

. 035A 23208 LANDING GEAR - WHEELS AND BRAKES -
INTRODUCE BSCU STD 6
ALL

. 035A 23901 LANDING GEAR - WHEELS AND BRAKES -
INTRODUCE MODIFIED ALTERNATE BRAKE
DISTRIBUTION DUAL VALVE
ALL

M					
V	REV	MOD	MP	TITLE	
T		SB			VALIDITY
.	035A	24064	.....	AUTO FLIGHT-FMS-INTRODUCE FMGC A320/321 B1 STD WITH OPTIONS AND 400 KILOWORDS FOR CFM 56 VERSIONS ALL	
.	035A	24077	.....	LANDING GEAR - BSCU - TWIN WHEEL - INTRODUCE A320/A321 STD 6 VERSION 60C ALL	
.	035A	24105	.....	FUSELAGE - REAR FUSELAGE - ADAPT SECTION 17/19 STRUCTURE TO A319 DEFINITION ALL	
.	035A	24215	.....	AUTO FLIGHT - FAC - INSTALL TWO FACS P/N BAM 0509 ALL	
.	035A	24588	.....	AUTO FLIGHT-FAC-INTRODUCE FAC P/N BAM 510 ALL	
.	035A	24613	.....	FLIGHT CONTROLS - ELAC - INTRODUCE ELAC STD P/N L69 ALL	
.	035A	24645	.....	LANDING GEAR-MLG-LGCIU-INTRODUCTION OF STANDARD UNIT P/N A4C ALL	
N	036	24771	.....	COMMUNICATIONS-CIDS-INTRODUCE MODIFIED DIRECTOR POWER SUPPLY PRINCIPLE ALL	
.	035A	24794	.....	AIR CONDITIONING-COCKPIT AND CABIN TEMPERATURE CTRL-INTRODUCE MODIFIED TEMPERATURE SENSOR P/N-02.0N MIXER UNIT ALL	
.	035A	24946	.....	LANDING GEAR - MLG - MESSIER - INTRODUCE BRAKES P/N C202253 ALL	

M	V REV	MOD MP	TITLE	VALIDITY
T		SB		
.	035A 25199	.....	FLIGHT MANAGEMENT AND GUIDANCE SYSTEM- INSTALL FMGC ON A320/321 (CFM 56-5A/5B) ALL	
.	035A 25287	.....	POWERPLANT - GENERAL - INSTALL ON A319 ENGINE RATED VERSION OF CFM 56-5B6 23500 LBS ALL	
.	035A 25404	.....	EXHAUST-THRUST REVERSER CONTROL AND INDICATING-ACTIVATE ADDITIONAL THRUST REVERSER LOCK CONTROL ALL	
.	035A 25419	.....	ICE AND RAIN PROTECTION-WINDSHIELD RAIN PROTECTION-DEACTIVATION OF RAIN REPELLENT SYSTEM ALL	
.	035A 25530	.....	ENGINE - COMBUSTION SECTION - INTRODUCE DOUBLE ANNULAR COMBUSTOR ON CFM56-5B6 (CFM56-5B6/2) ALL	
.	035A 25800	.....	POWER PLANT-GENERAL-INTRODUCE CFM56-5B/P ALL	
.	035A 25863	.....	AUTO FLIGHT - FCU - DEFINE FLIGHT DIRECTOR ENGAGEMENT IN CROSSED BARS AT GO AROUND ALL	
N 036	26000	.....	NAVIGATION-ADIRS-INTRODUCE HONEYWELL ADIRU 4 MCU STD WITH HARDWARE P/N AD09 ALL	
N 036	26001	.....	NAVIGATION-ADIRS-INTRODUCE HONEYWELL 4 MCU P/N AC09 ALL	
.	035A 26526	.....	NAVIGATION - GPWS - ACTIVATE ENHANCED FUNCTIONS OF THE EGPWS ALL	

M					
V	REV	MOD	MP	TITLE	
T		SB			VALIDITY
.	035A	26968	.....	AUTO FLIGHT-FMGC-INTRODUCE FMGC CAMO102 FOR A319 AUTOLAND AND GPS/ACARS FOR CFM ENGINES ALL	
.	035B	26999	.....	NAVIGATION - MMR - INSTALL COLLINS MMR PROVIDING ILS AND GPS FUNCTION 00-SSF	
.	035A	27276	.....	FLIGHT CONTROLS-ELAC SYSTEM-INTRODUCE ELAC SOFTWARE "L80" ALL	
.	035A	27498	.....	ELECTRICAL POWER - GENERAL - AC-DC MAIN DISTRIBUTION - INSTALL AC-DC SHEDDABLE BUSBARS ALL	
.	035A	27646	.....	NAVIGATION - MMR - INSTALL SEXTANT MMR PROVIDING ILS (FM IMMUNE) ALL	
.	035A	27698	.....	NAVIGATION - TCAS - INSTALL ALLIED 34-1177 10 SIGNAL TCAS COMPUTER P/N 066-50000-2220 (WITH CHANGE 7.0) ALL	
.	035A	27723	.....	PNEUMATIC-ENGINE BLEED AIR SUPPLY SYSTEM-INTRODUCE NEW TEMPERATURE CTL THERMOSTATS (SERIAL AND RETROFIT) ALL	
.	035A	27727	.....	ENGINE -COMBUSTION SECTION- INTRODUCE CFM56-5B DAC II PIP ENGINES ALL	
.	035A	28164	.....	LANDING GEAR - WHEELS AND BRAKES - INSTALL CARBON BRAKES TYPE SEPCARB III PLUS - MESSIER BUGATTI ALL	
.	035A	28382	.....	NAVIGATION - MMR - ACTIVATE GPS PRIMARY FUNCTION (HYBRID) IN SEXTANT MMR (WITH HONEYWELL OR LITTON ADIRU) ALL	

318/319/320/321 QRH
VOLUME : 3 QUICK REFERENCE HANDBOOK
LIST OF MOD/MP/SB AFFECTING THE MANUAL REVISION : 036

M
V REV MOD MP TITLE
T SB VALIDITY

N 036 31395 FLIGHT CONTROLS - ELAC SYSTEM -
27-1135 02 INTRODUCE ELAC STD L81
ALL