

Attachment 3

To Operations/Human Performance Group Factual Report

DCA11IA040

Quick Reference Checklist (QRC)

A320 EMERGENCY QRC

FLY THE AIRPLANE – SILENCE THE WARNING – CONFIRM THE EMERGENCY

ENGINE TAILPIPE FIRE

CAUTION: Do not push ENG FIRE switch.

- Manual start switch Off
- Engine master switch Off
- Bleed air pressure Establish
- Beacon switch On
- Engine mode selector Crank
- Manual start switch On

When fire is out:

- Manual start switch Off
- Engine mode selector Normal

----- **CHECKLIST COMPLETE** -----

DRIFTDOWN

- Autopilot Engage
- Autothrust Off
- Thrust lever FLX/MCT
- Airspeed Green dot
- FCU altitude Set
- Open descent Initiate
- Heading As required
- ATC Advise

----- Refer to Reference Action FM page 15.30.2 -----

SMOKE/FIRE/FUMES

- Oxygen masks and regulators On, 100%
- Crew and flight attendant communications Establish
- Cabin fans switch Off
- Blower switch Override
- Extract switch Override
- Galley/galley and cabin switch Off
- Cabin signs On
- Descent Initiate

WARNING: Do not delay descent or diversion to find the smoke source.

----- Refer to Reference Action FM page 15.50.3 -----

ENGINE SURGE/STALL

- Thrust lever Idle
- ENG 1(2) STALL Irregular Procedure Accomplish

----- **CHECKLIST COMPLETE** -----

AIRSPEED/MACH UNRELIABLE

- Autopilot Disengage
- Autothrust Off
- Flight directors Off
- Attitude, thrust Adjust
 - Below thrust reduction altitude ... 15°, TO/GA
 - Above thrust reduction altitude 10°, CL
 - Above 10,000 feet MSL 5°, CL

----- Refer to Reference Action FM page 15.20.1 -----

DISPLAYS BLANK - CAPTAIN'S SIDE

Capt PFD, ND, & E/WD are blank. Other screens may be blank.

- AC ESS FEED switch ALTN

If PFD and ND are not recovered:

- Standby instruments Use

----- **CHECKLIST COMPLETE** -----

EMERGENCY DESCENT

- Oxygen masks and regulators As required
- Crew communications Establish
- FCU altitude (safe altitude/10,000) Set

If structural integrity in doubt:

Limit airspeed and avoid high maneuvering loads.

- FCU expedite button Push
- Heading As required
- Target speed Confirm, .80M/340 KIAS
- Thrust Confirm, idle
- Speed brakes Extend
- Transponder 7700
- ATC Advise

----- Refer to Reference Action FM page 15.30.3 -----

EVACUATION

- ATC Advise
- Parking brake Set
- Dome light switch Bright
- Differential pressure Check zero
 - If not zero, MODE SEL to MAN, MAN V/S CTL to UP.
- Engine master switches Off
- Evacuation Announce, initiate
- Engine and APU fire switches Push

Illuminated fire switch(es):

- Agent switch(es) Push
- Sliding windows, escape lines As required

----- **CHECKLIST COMPLETE** -----

BEFORE START CHECKLIST

CHALLENGE [F]	RESPONSE
■ Departure briefing	Complete [C]
■ FMGCs, radios	Programmed, set, verified [C, F]
■ ADIRS	Nav, aligned [C]
■ Fuel panel	Pumps on, crossfeed closed [C]
■ Fuel qty, distribution	___ lbs, cleared with ___ lbs [C], Verified [C, F]
■ Cabin signs	On [C]
■ Oxygen check	Complete [C, F]
■ Engine master switches	Off [C]
■ Parking brake	Set, pressure normal [C]
■ Altimeters	___ In/hPa, set [C, F]
■ Airspeed	Gross wt ___, flaps ___, (V ₁) ___, (V _R) ___, (V ₂) ___, set [C, F]
FINAL ITEM	
■ NW STRG DISC message	Displayed/not required [C]
CHECKLIST COMPLETE	

BEFORE PUSHBACK CHECKLIST

CHALLENGE [F]	RESPONSE
■ Sliding windows	Closed, locked [C, F]
■ Doors, slides	Closed, armed [C]
■ Cabin preparation	Complete [C]
CHECKLIST COMPLETE	

BEFORE TAKEOFF CHECKLIST

CHALLENGE [F]	RESPONSE
■ Control check	Complete [C, F]
■ Engine anti-ice	On/off [C]
■ Autobrakes	___ Planned, ___ indicated, detent [C]
■ Flaps	___ Max [C]
■ Engine mode selector	___ Normal/ignition start [C]
MANIFEST CHANGES	
■ TOW change	___, speeds ___ Checked [F], Set [C, F]
■ Trim	___ % Zero, set [F]
■ FMGCs	Runway ___, (dep) ___, (trans) ___, set [F], Set [C]
■ EGPWS, radar displays	Terrain/weather [C, F]
■ PWS	___ Auto [F]
■ Thrust	___ Flex / TO/GA EPR, set [C]
■ FCU	Managed speed, heading ___/nav, altitude ___, set [C]
■ Takeoff configuration	___ Normal [F]
■ ECAM status check	Complete [F]
FINAL ITEMS	
■ Cabin notification	Complete [F]
■ Transponder	Traffic [F]
■ Takeoff memo	Green [F]

AFTER TAKEOFF CHECKLIST

(To be checked ALLOUD by the pilot monitoring)	
■ Landing gear	Up
■ Flaps	Up
■ ECAM memo	Checked
CHECKLIST COMPLETE	

APPROACH DESCENT CHECKLIST

(To be checked ALLOUD by the pilot monitoring)	
■ Approach briefing	Complete
■ FMGCs, radios	Programmed, set for approach
■ EGPWS, radar displays	Terrain/weather
■ ECAM status check	Complete
■ Autobrakes	Lo/med/off
TRANSITION LEVEL	
■ Altimeters	___ In/hPa, set
CHECKLIST COMPLETE	

FINAL DESCENT CHECKLIST

(To be checked ALLOUD by the pilot monitoring)	
■ Cabin notification	Complete
■ Landing gear	Down, 3 green lights
■ Spoilers	Armed
■ Flaps	___ Planned, ___ indicated
CHECKLIST COMPLETE	

PARKING CHECKLIST

CHALLENGE [F]	RESPONSE [C]
■ Parking brake	Set, pressure normal/off
■ Slides	Disarmed
■ Engine master switches	Off, fuel flow zero
■ Engine mode selector	Normal
■ Radar	Off
■ PWS	Off
■ Spoilers	Disarmed
■ Transponder	Standby
■ Emergency exit lights	Off
■ Anti-ice	Off
■ Fuel pumps	Off
■ ADIRS	Off
CHECKLIST COMPLETE	

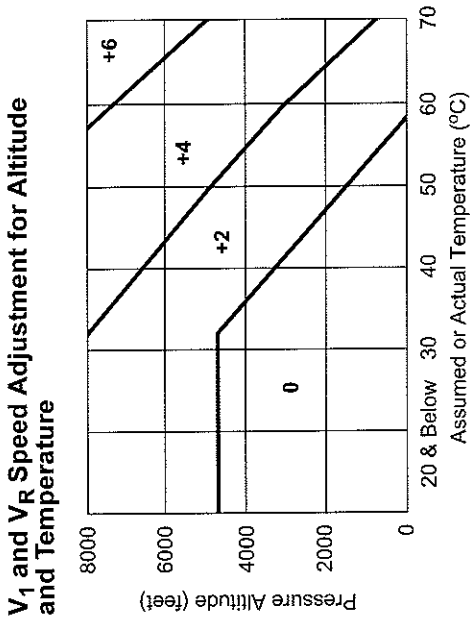
REFER TO THE NORMALS CHAPTER TO SECURE THE AIRPLANE

Note: If speed is in the shaded region, apply adjustments (if applicable), then check V_{MIN} and use the higher value.

Flaps 1			
Gross Weight (1000 pounds)	Speed (knots)		
	V_1	V_R	V_2
190.0	156	163	163
198.0	155	162	162
198.0	154	161	161
198.0	153	160	160
198.0	152	159	159
198.0	151	158	158
198.0	150	156	157
198.0	149	155	156
198.0	148	154	155
198.0	147	153	154
198.0	146	152	154
198.0	145	151	153
198.0	144	150	152
198.0	143	149	151
198.0	142	148	150
198.0	141	147	149
198.0	140	146	148
198.0	139	145	147
198.0	138	144	146
198.0	137	143	145
198.0	136	142	144
198.0	135	141	143
198.0	134	140	142
198.0	133	139	141
198.0	132	138	140
198.0	131	136	139
198.0	130	135	138
198.0	129	134	137
198.0	128	133	136
198.0	127	132	135
198.0	126	131	134
198.0	125	130	133
198.0	124	129	132
198.0	123	128	131
198.0	122	127	130
198.0	121	126	129
198.0	120	125	128
198.0	119	124	127
198.0	118	123	126
198.0	117	122	125
198.0	116	121	124
198.0	115	120	123
198.0	114	119	122
198.0	113	117	121
198.0	112	116	120
198.0	111	115	119
198.0	110	114	118
198.0	109	113	117
198.0	108	112	116
198.0	107	111	115
198.0	106	110	114
198.0	105	110	116

Flaps 2			
Gross Weight (1000 pounds)	Speed (knots)		
	V_1	V_R	V_2
190.0	162	162	164
198.0	161	161	163
198.0	160	160	163
198.0	158	158	162
198.0	157	157	161
198.0	156	156	160
198.0	155	155	159
198.0	154	154	158
198.0	153	153	157
198.0	152	152	156
198.0	151	151	156
198.0	150	150	155
198.0	149	149	154
198.0	148	148	153
198.0	147	147	152
198.0	146	146	151
198.0	145	145	150
198.0	144	144	148
198.0	143	143	147
198.0	142	142	146
198.0	141	141	145
198.0	140	140	144
198.0	139	139	143
198.0	138	138	142
198.0	137	137	141
198.0	136	135	140
198.0	135	134	139
198.0	134	133	138
198.0	133	132	137
198.0	132	131	136
198.0	131	130	135
198.0	130	130	134
198.0	129	129	133
198.0	128	127	132
198.0	127	126	131
198.0	126	125	130
198.0	125	124	129
198.0	124	123	128
198.0	123	122	127
198.0	122	121	126
198.0	121	120	125
198.0	120	119	124
198.0	119	118	123
198.0	118	117	122
198.0	117	116	121
198.0	116	115	120
198.0	115	114	119
198.0	114	113	118
198.0	113	112	117
198.0	112	111	116
198.0	111	110	115
198.0	110	110	114
198.0	109	108	113
198.0	108	107	112
198.0	107	106	111
198.0	106	105	110

Flaps 3			
Gross Weight (1000 pounds)	Speed (knots)		
	V_1	V_R	V_2
190.0	156	156	157
198.0	155	155	156
198.0	154	154	155
198.0	153	153	154
198.0	152	152	153
198.0	151	151	153
198.0	150	150	152
198.0	149	149	151
198.0	147	147	150
198.0	146	146	149
198.0	145	145	148
198.0	144	144	147
198.0	143	143	146
198.0	142	142	146
198.0	141	141	145
198.0	140	140	144
198.0	139	139	143
198.0	138	138	142
198.0	137	137	141
198.0	136	136	140
198.0	135	135	139
198.0	134	134	138
198.0	133	133	137
198.0	132	132	136
198.0	131	131	135
198.0	130	130	134
198.0	129	129	133
198.0	128	128	132
198.0	127	127	131
198.0	126	126	130
198.0	125	125	129
198.0	124	124	128
198.0	123	123	127
198.0	122	122	126
198.0	121	121	125
198.0	120	120	124
198.0	118	117	123
198.0	116	116	122
198.0	115	115	121
198.0	113	113	120
198.0	112	112	118
198.0	110	110	117
198.0	109	109	116
198.0	107	107	115
198.0	106	106	114
198.0	104	104	113



V-speed Slope Adjustment

If required, adjustment will be displayed on the ACARS RWY DATA return message.

V_1 / V_R / V_2 Forward CG Adjustment

If CG is forward (less than 25%), increase V_1 , V_R , and V_2 by 2 knots.

V_1 / V_R / V_2 Minimum (knots)

Pressure Altitude (feet)	Flaps 1	Flaps 2	Flaps 3
	$V_1/V_R/V_2$ Minimum ¹		
8000	109/113/113	107/111/113	106/110/113
6000	111/115/116	109/113/116	109/113/116
4000	114/118/119	112/117/119	112/116/119
2000	117/121/122	115/119/122	114/119/122
SL	118/122/123	116/120/123	115/120/123

¹ For narrow runways, increase V_1 , V_R , and V_2 by 3 knots.

Temperature Conversions

°C	°F	°C	°F
-25	-13	15	59
-20	-4	20	68
-15	5	25	77
-10	14	30	86
-5	23	35	95
0	32	40	104
5	41	45	113
10	50	50	122

A320 LANDING DISTANCE NORMAL CONFIGURATION

This chart is for normal landings (i.e., no failures affecting approach configuration/speed or stopping capability). For landing distance with failures, see Flight Manual Landing Performance chapter, Approach/Landing Corrections for Failures.

Note: For detailed correlations between braking action reports, μ , and runway contamination types, see FOM.

Condition(s):

- Both engines operating
- Max reverse thrust
- $V_{APP\ MAN}$
- Touchdown within first 1000'
- Zero wind
- Standard temperature
- V_{LS} at threshold
- Ground spoilers

Step 1 - Obtain Actual Landing Distance

			Gross Weight (1000 pounds)							Add for Reverser(s) Inoperative
Flaps	Braking Action	Autobrake Setting	≤ 110.0	120.0	130.0	140.0	150.0	160.0	170.0	
			Actual Landing Distance (feet)							
Full	Dry	Lo	4800	5200	5500	5900	6200	6500	6900	0
		Med	3300	3500	3700	3900	4200	4400	4600	0
		Off (Max Manual)	2300	2400	2500	2700	2900	3200	3500	140
	Good (Wet)	Lo	4800	5200	5500	5900	6200	6500	6900	60
		Med	3300	3600	3800	4100	4300	4600	4800	0
		Off (Max Manual)	2800	3000	3200	3400	3700	3900	4100	420
	Medium (Snow)	Lo	4800	5200	5500	5900	6200	6500	6900	60
		Med	3700	3900	4200	4400	4700	4900	5100	490
		Off (Max Manual)	3600	3800	4000	4300	4500	4700	4900	530
	Poor (Ice)	Lo	5700	6100	6500	6900	7300	7700	8100	1940
		Med	5400	5800	6300	6700	7100	7400	7800	2100
		Off (Max Manual)	5400	5800	6200	6600	7000	7400	7800	2090
3	Dry	Lo	5200	5500	5900	6200	6600	7000	7300	0
		Med	3500	3700	3900	4200	4400	4600	4800	0
		Off (Max Manual)	2400	2500	2600	2900	3200	3500	3800	150
	Good (Wet)	Lo	5200	5500	5900	6200	6600	7000	7300	60
		Med	3600	3800	4100	4400	4700	5000	5300	40
		Off (Max Manual)	3000	3200	3500	3700	4000	4300	4500	510
	Medium (Snow)	Lo	5200	5500	5900	6200	6600	7000	7300	60
		Med	3900	4100	4400	4700	4900	5200	5400	630
		Off (Max Manual)	3800	4000	4300	4500	4800	5000	5300	620
	Poor (Ice)	Lo	6100	6600	7100	7500	8000	8400	8800	2630
		Med	6000	6400	6900	7300	7800	8200	8600	2700
		Off (Max Manual)	5900	6400	6800	7300	7700	8200	8600	2690

Step 2 - Obtain Adjusted Landing Distance

Adjustment(s)	Gross Weight ≤ 140,000 pounds				Gross Weight > 140,000 pounds			
	Braking Action				Braking Action			
	Dry	Good (Wet)	Medium (Snow)	Poor (Ice)	Dry	Good (Wet)	Medium (Snow)	Poor (Ice)
For each 1000 feet above SL	150	190	200	420	180	230	240	490
For each knot of tailwind	80	90	90	180	90	110	100	220
For each knot above V_{LS}	70	80	80	120	90	90	100	140
For autoland (Med autobrakes)	600	600	600	600	600	600	600	600

Step 3 - Obtain Required Landing Distance using scale (15% safety margin)

