

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

June 24, 2020

Attachment 11 – American Airlines Quick Reference Handbook [Excerpts]

OPERATIONAL FACTORS/HUMAN PERFORMANCE

DCA19LA134

A319/320/321

Revision 2 Instructions & Highlights

Revision Number: 2 Issue Date: 15 JAN 19

Add Sheet

~~Destroy Sheet~~

All other

On the Record of Revisions page Rev-1 annotate this revision number, the date you revised the manual, and your initials.

General Changes:

This revision includes a complete reprint of the QRH and incorporates the following:

- the addition of the A321NX.
- a complete rewrite of the FMGC reset procedures to align with the manufacturer guidance.

Procedure Changes:

Page QA-8 - Smoke/AVIONICS SMOKE/Fumes - Updated step 10 to read “CRG AFT (FWD) ISOL VALVE (if installed)” to account for aircraft equipped with forward cargo heat.

Page QA-14 - Page QA-40 - Unreliable Speed Indication/ADR Check - Revised procedure to incorporate A321NX and reorganize for three types of aircraft: those with BKUP SPD/ALT pb (A321NX), those with “BUSS EQUIP” placard, and those without BUSS.

Page Index-5 - ECAM Advisory Conditions and Recommendations - Incorporated A321NX information into the ECAM advisory table.

Page EE-2 - ENG DUAL FAILURE/ENG ALL ENGINES FAILURE - Expanded optimum relight speed for better readability and added the optimum relight speed for the A321NX, per manufacturer guidance. Added pitch attitude for optimum relight speed on the A321 sharklet aircraft, per manufacturer guidance. Added glide speed for the A321NX.

Page EE-4 - ENG DUAL FAILURE/ENG ALL ENGINES FAILURE - Removed “(CONF 3 and Gear Down)” to make note more general to account for aircraft in CONF 2, per manufacturer guidance. Removed all references to CONF 3 to account for aircraft in CONF 2, per manufacturer guidance.

Page 27 - FMGC Resets (General) - Revised introductory paragraphs to clarify the objectives of the FMGC resets and added a “mini-table of contents” to facilitate finding the proper checklist.

Page 28 - Page 34 - FMGC Resets (General) - Updated all FMGC reset procedures with manufacturer guidance.

Page 35 - MCDU Locked or Blank - Updated procedure per manufacturer guidance.

Page 42 - Ditching - Revised the evacuation command step “PA....This is the captain. Evacuate. Evacuate. Evacuate.” to reduce ambiguity. Added step to activate the EVAC COMMAND pb, per manufacturer guidance.

Page 44 - Ditching - Added step to instruct crews to make the PA: “Flight attendants prepare for ditching.

Page 50 - After Engine Shutdown - Added ENG (1 or 2) CTL SYS FAULT, ENG (1 or 2) FADEC HI TEMP, and ENG (1 or 2) FUEL LEAK to the conditions that would result in an engine shutdown.

F/CTL SPLR FAULT

Note: If heavy vibrations are felt, CONF 3 may be used for landing in order to reduce the buffeting.

1. If one or more spoilers are fully extended:
 - a. Current Flight Level may **not** be maintained due to increased drag. Maintain a cruise Flight Level as high as possible.
 - b. Whenever possible, target green dot speed +10 kt to minimize fuel consumption. However, if buffet is encountered at green dot speed +10 kt, increase speed to fly out of buffet condition.
 - c. Depending on the failed spoiler position, the AP may **not** have enough authority to counteract the roll induced by spoiler runaway.
2. Approach considerations:
 - In clean configuration, if VLS is above $V_{FE\ NEXT}$, deselect A/THR, decelerate to $V_{FE\ NEXT}$, and select CONF 1 when below $V_{FE\ NEXT}$.
 - When established at CONF 1, the A/THR can be reengaged and managed speed may be used.
3. F/CTL SPLR FAULT checklist complete, and
 - ☛ Consider [Non-Routine Landing Considerations at the end of the OD section \(blue pages\)](#).
 - ☛ If required, see [ETOPS System Failures on page 109](#).

Rudder Jam

[Condition: 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.]

1. Rudder Position Check
[Use the ECAM F/CTL Page for a visual check.]
2. Approach Considerations:
 - a. Avoid landing with crosswind from the side where the rudder is deflected.
 - b. Maximum crosswind 15 Kts
 - c. AUTO BRK Do **not** use
 - d. Landing CONF Use Normal CONF
 - e. Speed and trajectory Stabilize ASAP

When on the ground:

 - f. Differential braking Use ASAP

Note: Do **not** use asymmetric reverse thrust.

 - g. Nosewheel steering Use below 70 Kts
3. Rudder Jam Checklist complete, and
 - ☛ Landing distance procedures apply (see A320 Land iPad application if available or Performance Manual Chapter 6 Emergency/Abnormal).

Sidestick/Rudder Pedals Stiff

[Even if the autopilot is disengaged, the sidesticks and /or rudder pedals may be stiff. This may affect either:

- Both sidesticks (CAPT and FO) at the same time, but **not** the rudder pedals, or
- One sidestick and the rudder pedals at the same time.

The piloting technique remains the same, however extra force on the sidesticks and/or the rudder pedals may be required.]

1. Autopilot Disengagement Confirm
2. Transfer of control Consider
Note: In case of engine failure, be prepared to apply extra force on the rudder pedal.
3. Landing Considerations:
 - a. For decrab and rollout be prepared to apply extra force on rudder pedal.
4. Sidestick/Rudder Pedals Stiff Checklist complete.

Stabilizer Jam

*[Condition: 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.]*

1. AP 1 and 2 OFF
2. Manual Pitch Trim Check

The pitch trim wheel may **not** be fully jammed, and the force needed to move it may be higher than usual.

a. Choose one:

◆ Manual trim is **available**:

- (1) ECAM F/CTL Page Display
[Use for elevator position reference.]
- (2) Manual Trim Use
 - (a) Elevator Maintain at the zero position
- (3) Stabilizer Jam Checklist complete.

◆ Manual trim is **not available**:

- (1) Approach considerations:
 - (a) For landing Use Flaps 3
Note: Do **not** select CONF FULL. Selecting CONF FULL may degrade handling qualities.
 - (b) GPWS LDG FLAP 3 ON

Note: Approach is limited to CAT I minimums.

- (2) Stabilizer Jam Checklist complete.

- ☛ Landing Distance Procedures apply (see A320 Land iPad application if available or Performance Manual Chapter 6 Emergency/Abnormal).
- ☛ Consider [Non-Routine Landing Considerations at the end of the OD section \(blue pages\)](#).

Overweight Landing

Note: Perform an Overweight Landing when a condition causes it to be safer to land overweight than to continue flight until at or below maximum certificated landing weight. Declare an emergency as required by “Overweight Landing”, FOM >Landing >Non-Normal/Emergency.

1. LDG CONF Determine
Use ECAM flap setting, if required for non-normal operations. In all other cases:

- CONF FULL is preferred for optimized landing performance.
- If the aircraft weight is above the maximum weight for go-around given in the tables on [page 101](#), use CONF 3 for landing and CONF 1 for go-around.

Note: At very high weights, V_{FE} CONF1 is very close to V_{LS} clean. To select CONF1, deselect A/THR, decelerate to (or slightly below) V_{LS} and select CONF1 when below V_{FE} .
When established at CONF1, A/THR can be re-engaged.

2. LDG DIST Check
a. Choose one:

- ◆ Non-normal landing distance corrections **required**:
(1) Landing Distance Procedures apply (see A320 Land iPad application if available or Performance Manual Chapter 6 Emergency/Abnormal).
- ◆ Non-normal landing distance corrections **not required**:
(2) Refer to A320 Land iPad application or Performance Manual, Inflight Landing Data Tables.

3. Choose one:

◆ **APU BLEED available:**

- a. APU BLEED ON

Caution

If ENG 1 FIRE pb is pushed, do **not** use the APU bleed.
If ENG 2 FIRE pb is pushed, do **not** use the APU bleed unless the X BLEED is selected to SHUT.

◆ **APU BLEED not available:**

- a. PACK 1 and 2 OFF

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

4. Approach Considerations:

- In final stages of approach, reduce Target Speed to V_{LS} .
- Reduce speed to reach V_{LS} at runway threshold.
- Touch down as smoothly as possible (maximum V/S at touchdown 360 ft/min).

5. Landing Considerations:

- At main landing gear touchdown, use max available reverse thrust.
- After nose wheel touchdown, apply brakes as necessary.

[Maximum braking may be used after nose wheel touchdown, but if landing distance permits, delay or reduce braking to take full benefit of the available runway length.]

- After landing, BRK FAN ON (If necessary).

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

6. Make an “overweight landing” AML entry after landing. Refer to FOM >Landing >Non-Normal/Emergency, for required items.
7. Overweight Landing Checklist complete.

Wind Component

Tower/ATIS wind = Magnetic METAR/TAF wind = True

Kts. ↓	↓ Crosswind (Degrees off Nose/Tail) ↓																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
4	0	0	1	1	1	2	2	2	3	3	3	3	3	4	4	4	4	4	4
6	0	1	1	2	2	3	3	3	4	4	5	5	5	5	6	6	6	6	6
8	0	1	1	2	3	3	4	5	5	6	6	7	7	7	8	8	8	8	8
10	0	1	2	3	3	4	5	6	6	7	8	8	9	9	9	10	10	10	10
12	0	1	2	3	4	5	6	7	8	8	9	10	10	11	11	12	12	12	12
14	0	1	2	4	5	6	7	8	9	10	11	11	12	13	13	14	14	14	14
16	0	1	3	4	5	7	8	9	10	11	12	13	14	15	15	16	16	16	16
18	0	2	3	5	6	8	9	10	12	13	14	15	16	16	17	17	18	18	18
20	0	2	3	5	7	8	10	11	13	14	15	16	17	18	19	19	20	20	20
22	0	2	4	6	8	9	11	13	14	16	17	18	19	20	21	21	22	22	22
24	0	2	4	6	8	10	12	14	15	17	18	20	21	22	23	23	24	24	24
26	0	2	5	7	9	11	13	15	17	18	20	21	23	24	24	25	26	26	26
28	0	2	5	7	10	12	14	16	18	20	21	23	24	25	26	27	28	28	28
30	0	3	5	8	10	13	15	17	19	21	23	25	26	27	28	29	30	30	30
32	0	3	6	8	11	14	16	18	21	23	25	26	28	29	30	31	32	32	32
34	0	3	6	9	12	14	17	20	22	24	26	28	29	31	32	33	33	34	34
36	0	3	6	9	12	15	18	21	23	25	28	29	31	33	34	35	35	36	36
38	0	3	7	10	13	16	19	22	24	27	29	31	33	34	36	37	37	38	38
40	0	3	7	10	14	17	20	23	26	28	31	33	35	36	38	39	39	40	40
42	0	4	7	11	14	18	21	24	27	30	32	34	36	38	39	41	41	42	42
44	0	4	8	11	15	19	22	25	28	31	34	36	38	40	41	43	43	44	44
46	0	4	8	12	16	19	23	26	30	33	35	38	40	42	43	44	45	46	46
48	0	4	8	12	16	20	24	28	31	34	37	39	42	44	45	46	47	48	48
50	0	4	9	13	17	21	25	29	32	35	38	41	43	45	47	48	49	50	50
	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
	↑ Tailwind (Degrees Off Nose) ↑																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
	↑ Headwind (Degrees Off Nose) ↑																		

Wind Limitations

A319/320/321 Takeoff and Manual Landing

Component	Visibility	Limitation	
		Takeoff	Landing
Any (including gusts)	All	50 knots	50 knots
Crosswind (including gusts)	≥ 4000 or $\frac{3}{4}$	35 knots	35 knots
	< 4000 or $\frac{3}{4}$		15 knots
Tailwind	All	10 knots (A320 IAE/ A321 IAE)	10 knots (non-sharklet)
		15 knots (All A319s and CFM A320/CFM A321)	15 knots (sharklet)

A319 Auto Landing

Component	Visibility	Limitation
Headwind (including gusts)	All	20 knots (two engines)
		15 knots (single engine)
Crosswind (including gusts)	≥ 4000 or $\frac{3}{4}$	20 knots (two engines)
		10 knots (single engine)
	< 4000 or $\frac{3}{4}$	15 knots (two engines)
		10 knots (single engine)
Tailwind	All	5 knots Sharklet 10 knots Non-Sharklet (If landing elevation below 5750' MSL and in CONF FULL. Otherwise 5 knots.)

A320 and A321 Auto Landing

Component	Visibility	Wind
Headwind (including gusts)	All	30 knots (except A321NX) 15 knots (A321NX)
Crosswind (including gusts)	≥ 4000 or $\frac{3}{4}$	20 knots (except A321NX) 10 knots (A321NX)
	< 4000 or $\frac{3}{4}$	15 knots (except A321NX) 10 knots (A321NX)
Tailwind	All	10 knots

Runway Condition - Landing Crosswind Limit

Runway Condition	Braking Action FAIR	Visibility Less than $\frac{3}{4}$ Mile or RVR less than 4000 on the runway of intended landing	Braking Action POOR
Maximum Crosswind Component (Including Gusts)	20 Knots	15 Knots	10 Knots