

1. PF "My Aircraft", QRC?
 2. MEMORY ITEMS *if applicable*
 3. QUICK ACTIONS *if applicable*
- All Engine Failure at Low Altitude
 Emergency Descent
 ENG Tailpipe Fire
 Evacuation
 Smoke/Avionics Vent Smoke/Fumes or
SMOKE AVNCS VENT SMOKE - if required,
 OXY Masks -Verify On/100%/EMERG
 Undue Activation of Alpha Protection
ONE ADR pb – KEEP ON (consider ADR 1)
TWO ADR pbs – OFF
 Unreliable Speed Indication/ADR Check
4. ECAM EXCEPTIONS
- BRAKES HOT** (After Engine Shutdown)
ELEC EMER CONFIG
ENG ALL ENG FLAME OUT
FUEL (L or R) WING TK LO LVL
NAV ADR (1+2, 2+3, 1+3, 1+2+3) FAULT(-300)
SMOKE (FWD or AFT/BULK) CARGO
 SMOKE (With Cargo Door Open)
4. ECAM; or if non-ECAM, QRH
 5. ECAM Follow-up (QRH)
 6. ECAM supplement Manual Contact
 IOC for any temporary revisions.

ALTITUDES

| | |
|--|--|
| Max | 41,000' |
| Max Flap and/or Slat extension | 20,000' |
| Max gear extension | 21,000' |
| APU (25,000' with Jet B or JP4) | 41,000' |
| APU bleed operation | 22,500' |
| A/P on (T/O) & G/A | 100' AGL (with SRS) |
| on (Enroute) | 500' |
| off (APPR) | 250' AGL (Non-ILS) |
| off (APPR) | 160' AGL (CAT I ILS 80' with Cat 2, Cat 3 Single, or Cat 3 Dual on FMA) |
| Takeoff & Landing | -2,000' to 12,500' |
| RVSM (≥FL290) PFD 1&2 ± 200' (±20' ground), ±75' ISIS ±60' with either PFD | |

| | |
|--|----------------------------|
| WIND Max TO and Landing (including gusts) | 50 K |
| Crosswind (including gusts) | 32 K |
| Braking Action | "FAIR" 20 K "POOR" 10 K |
| Autoland (Headwind 35 K) | 20 K |
| Max TO & LDG Vis < 4000 or 3/4 | 15 K |
| Tailwind | 10 K |

| | | |
|-----------------------|-------------------|---------|
| WEIGHTS | -200 | -300 |
| Taxi | 515,656 | 515,656 |
| T/O | 513,600 | 513,600 |
| Landing | 401,200 | 412,200 |
| ZFW | 374,782 | 385,805 |
| Minimum(-200autoland) | 255,733 (271,200) | 266,757 |

| | |
|--|--------------------------------|
| SPEEDS - Max (V_{MO}/ M_{MO}) | 330 / .86 |
| Gear (Gravity Ext. 200) | 250 / .55 |
| Safety Shutoff Hydraulics | 280 |
| Flaps (Max V _{FE}) | 1 240 1+F 215 |
| (PFD no amber =) | 2 196/205 TO/approach 3 186 |
| | Full 180 |
| Turbulence ≥ 20,000' | 260/.78 (.8 -200 chart) |
| < 20,000' | 240 |
| Holding ≤ 6,000' | 200 |
| >6-14,000' | 230(210 if published) |
| >14,000' | 265 |
| Taxi straight 30K, 90° turn 10K Tire 204K | |
| Window/ Wiper Max | 230 |
| Max angle – green dot. Max Rate 250/78 | |
| Alternate descent 290/76 high speed 320/82 | |

Note - *Italic print denotes Chapter 2 memory Item*

| | | | | |
|---|----------------------|---|---|-----------------------------|
| ELECTRICAL- GEN 90 KVA | EMER GEN 5KVA | ENGINES | PW4168A | RR TRENT 772B (-200) |
| Do not reset tripped fuel boost pump/indicating C/B | | Thrust | 68,000# | 72,000# |
| No E&E compartment w/o dispatch/Mx direction | | TO/GA 5min(10-1ENG) | 620°C | 900°C(920°20sec) |
| Aircraft power outlets may be used to recharge iPad EFB battery or serve as a power source. | | MCT | continuous 600°C | 850°C |
| Battery OFF and <25.5V, 20 min. charge | | Starting (air) | 535° C(620°)700°C (850°) | |
| Battery test – off, on, <60amps in <10 seconds | | Max cont. start 5 min. | After 3 5 min. cycles wait 30 min. between subsequent 5 min cycles. | |
| If both main AC buses lose electrical power, the emergency generator is automatically connected | | Do not engage starter >35% N ₂ (-300 only) | | |

HYDRAULICS

Green - Two pumps (one on each engine). Electric pump, manual or automatic, and RAT.
 RAT auto with 2 engine failure, G&B or G&Y low level
 Electric pump for 25 sec after gear lever up & 1 engine
Blue - Engine 1 pump or electric pump (manual).
 Electric pump on -ENG 1 fail & PRIM 1 or 3 off (-200)
Yellow - engine 2 pump or electric pump (manual or automatic). A hand pump is provided for operation of the cargo doors when electrical power is not available.
 Electric pump on with engine 2 fail & flap lever not 0 & G electric not in use. Y on ground for cargo doors
 Electric pump overheat reset on ground only
 Max takeoff brake temp 300° C.
 After gear extension verify no pressure on triple (PM)
 Write-up if same strut brakes differ >150° and any brake is >600° or <60°; or mean temp with other strut differs >200°; or temp >800°
 Alternate Brakes - no antiskid if on accumulators only
 Auto Brakes with normal brakes only. On when wet/slippery, rollout limited, higher approach speeds, crosswind>10k, CAT II/III. DECEL at 80% rate in LO and MED, 100% in MAX)
 Alternate Brake Accumulators (Blue) provide 7 full Applications or parking for 12 hours.
 Landing Gear red arrow- gear not locked down for landing (flaps 3 or full) and altitude ≤ 75 feet

FLIGHT CONTROLS

Normal protections – load factor, attitude- pitch (30,-15), high bank (33/67), high AOA, high speed, maneuver load alleviation, turbulence dampening. Depart normal with multiple failures of redundant systems. 3 modes – Ground, a direct relationship to control surfaces; Flight, commanding roll and pitch rates; and Flare, out of trim condition starts at 100' RA on landing.
 Alternate Law (ALT1 & ALT2) only load factor protection; can be stalled
 Direct Law amber "use man pitch trim", no protections
 Mechanical backup red "man pitch trim only" (-200 Backup Control Module)
 3 PRIMs calculate laws, s/b spoiler operations, protection speeds. Loose PRIM, loose dedicated spoiler
 Side stick malfunction, hold opposite takeover pb>40 sec
 After flap retract, 1+F not available until ≤100k, unless CONFIG 2, 3, or FULL selected 1st
 Outboard aileron 0° at high speed (config 0) (190,300kts)
 OAT>38°C/100°F Flaps 1 on ground

| | | |
|---|---------|---------|
| FUEL | -200 | -300 |
| Total | 244,000 | 172,000 |
| Inners148,400 Outers 12,800 Trim 10,800 Center72,000 | | |
| Trim tank forward transfer pump fail – no trim tank forward when pitch >3° | | |
| Empty center then wing. Transfer from center to wing with JP4 up to 20,000' (-200) | | |
| Transfers (x11 factor) Inner to Engines always first | | |
| Center to Inner when Inner full minus 4400 # (-200) | | |
| Trim aft > FL255 | | |
| Trim fwd: CG at aft target, Inner 8800# (until 11000), < FL245, < 35min to destination, emer elect (-200) | | |
| Outer to Inner at 7700# | | |
| X Feed auto open in electrical emergence configuration | | |

| | | |
|----------------------|------------------|------------------------------|
| CONFIGURATION | Range | Width/Length/Height |
| -200 | 20/238=258 | 6,700nm 60.3m/ 58.37m /17.3m |
| ?? | 20/21/206=247 ?? | |
| -300 | 28/263=291 | 4,900nm 60.3m/63.69m /16.83m |

Reverse thrust is for ground use only.
 No max rev<70k, idle rev OK to stop
 Power-back prohibited
 Flex thrust not authorized on contaminated runway
 Warm up 5 min (<90min on ground, then 3 min), Not >1.15 EPR on both engines with parking brake ON
 4 TL detents TOGA, FLX MCT, CL, IDLE
 THR LK – move thrust levers out of CLor MCT detent
 TOGA LK (alpha floor) – disconnect autothrust
 N₁ mode (rated & unrated) overboosted possible
 N₁ amber > N₁max, red > 100%
 -200 Derate ClimbD2,D1.500 FPM minimum, phases out 31,000-36,000

APU

3 Starter cycles then 60 minutes before 3 more
 ECAM LOW OIL LEVEL still allows 15 hours ops.
 APU bleed valve auto closes ≥25,000', opens<23,000'
 Fire (on ground) auto shutdown and extinguisher
 Master switch off then on resets ECB
 Master off, 2 min cool down if pneumatics in use

PRESSURIZATION/AIR CONDITIONING

Max operating differential -1(-.73 -200) to 9.25 psi
 Safety Relief Valve -.26/8.85
 No external condition air with packs
 Ram air inlet only with differential pressure < 1 psi

MISCELLANEOUS

Crew Oxygen <1,000 psi see chart PH 1.15.3
 LAHSO Aircraft may only conduct LAHSO on the approved runway / hold short combinations, with dry, tailwind<3kts, 1500 & 3 (1000 & 3 with VASI/PAPI)
 ♦ 1st flight in FDML current day, local time item
 Fire test, Batteries (<60a <10sec),
 Alternate Brakes (2400), Flight deck door
 Slides must be armed & checked with ECAM or door indicators before taxi, takeoff, and landing with PAX
 Ferry flight with PAX, Chief Pilot approve, 2 slides min armed with >3 PAX.
 < 28.00 Hg, flight operations not recommended
 Do not pushback unless NW STRG DISC is displayed
 Xwind>20K, full FWD sidestick until 80K, neutral by 100K, 1.1 EPR, stabilize, 1.3 EPR, then TOGA or FLX by 40K ground speed
 Monitor 121.5 whenever radio availability permits
 "Confirmed" QRH Items (4/5) – Thrust Levers (PF moves), Engine Masters., IR Rotary Selectors, All Red Guarded Controls (ALSO Door Slides on the ground)
 Accomplish periodic systems check every hour at or abeam closest flight plan waypoint (AHEFOE A added for RVSM PFD Altimeter crosscheck)
 Thunderstorms T/O ≤1000' AGL, 3nm
 SAT> 0° 10nm/20nm downwind
 SAT≤ 0° 5nm clouds/20nm
 Radar on Capt <2500'
 PBE good for 15 minutes
 Rain repellent inhibited on GND with engines stopped
 Modify Vapp for non-normal, ice accretion, or windshear
 Vapp≥V_{LS}+5 unless CONFIG 3 with ice accretion, then Vapp>V_{LS}+10
 180° turn - 200' pavement width minimum
 Rest Audio - Level Adjust>Room(456 Enter)/-db
 >Save>OK (-200) **TRAINING PURPOSES ONLY**

LIGHTS

Loss of normal electrics – Capt instrument panel, Center instrument panel flood, Lighting, standby compass light, and right dome light, (provided the respective control switch activated).

During a rejected takeoff, the right dome light will illuminate regardless of switch position.

Logo on with main gear struts compressed or flaps 3/full Strobe on when shock absorber not compressed

Cabin Emergency Lights on DC Ess Bus. On if normal electrics fail (AC Bus 1 fails)

Cabin lights on >11,300' cabin altitude

INSTRUMENTS/NAVIGATION

OPEN DES prohibited inside FAF or < 1,000' AGL

NAV (Magnetic) 73° N to 73° S

RMP only to tune VHF3

1 FD off, other must be off. Both off -FPV recommended Auto Callouts 1000(or PM), 500(or PM), 100,50,30,10 IRS tolerance post flight < 5 NM within 2 minutes of stopping (else PH 2h.7.3)

3 A/THR disconnects – match & mash, idle, FCU pb (causes thrust lock). Disengaged for flight if disconnects held for 15 sec.

ECAM & WARNINGS

ECAM underline-independent, box-primary, * secondary RCL for 3 sec. shows previous cleared or cancelled If ECAM control panel fails, still have EMER CANC, ALL, CLR, STS, RCL, and all pbs.

GPWS TERR is based on position on a database map, no radar or radio alt.

TCAS RA - promptly A/P off, F/D's off (PM), notify ATC, adjust V/S to stay in green area. Respect stall, GPWS, W/S. On approach, with CLIMB or INCREASE CLIMB, G/A

OCEANIC

Preflight reminders - FMS POS INIT Check, Clear TROP (after uplinks), Security Form, Check winds, Gross Error 10 minute (2°) SEC F-PLN/IL/LL xing/INCR/NO (e.g. w22/10/4 westbound or w48/10/5) CPDLC ATC COMM/Connect Status/Notification, BIRD (Iceland), CDQX-CZQX (Gander), CZQM (Moncton), CZUL (Montreal), EDYY (Masstricht), EDUU (Karlsruhe), EGGX (Shanwick), EGPX (Scottish), EGTT (London), EISN (Shannon), LFEE (Reims), LPPO (Santa Maria), LSAG-LSAX (Switzerland), KZWW (NY)

Data connect problems – reset ATSU 1

DCL stations – CDG, DUB, FRA, LGW, LHR, MAN, MUC

Santa Maria – 13207, 8825, 6628, 11307, 127.9 (LPLA) NY & Santa Maria require When Able Higher (WAH) Reminders - Offset, Pilot # 1 2000, Pilot #2 ReDispatch Remove Offset (1R, 2R)

DUAL ENGINE FAILURE – QRR

No fuel: RAT MAN-ON, THR LEVERS-IDLE, 230kts/Green Dot

Fuel: RAT-MAN ON, ENG START Selector-IGN, THR LEVERS-IDLE, 300kts/.82

LOSS OF BRAKING

If Autobrake is selected:

1. Brake Pedals - Press

If no braking available:

1. REV – MAX
2. Brake Pedals – Release
3. A/SKID & N/W STRG – OFF
4. Brake Pedals – Press
5. MAX BRK PR – 1000 psi

If still no braking:

1. Parking Brake - Short & Successive Application

REJECTED TAKEOFF “PF”, PM CALLOUTS

(>72K, spoilers auto extend, therefore autobraking) Capt. - **“Reject, My Aircraft”**, thrust levers to idle, max braking and max reverse until assured aircraft can stop on runway, slight forward sidestick, **“This is the Captain, remain seated, remain seated, remain seated.”**

F/O – YOUR AIRCRAFT, NO AUTOBRAKES, monitor deceleration, notify tower, 80, 60

ENGINE FAILURE (T/O) “PF”, PM CALLOUTS

“Engine Failure”, “TOGA” (if desired), TOGA SET, ROTATE, rotate to SRS attitude or 12.5°, POSITIVE RATE, **“Gear up”**, GEAR UP, trim, 100' RA **“Autopilot 1(2)”** (consider TOGA), HEADING or NAV(EO SID), Engine Out Acceleration Altitude, **“Altitude Hold”**, **“Flaps 1”**, FLAPS 1, **“Flaps-Up”**, FLAPS UP, disarm spoilers, Green dot speed, select **“Open Climb”**, **“Speed ___”**(green dot), MCT, MCT SET.

ICING

Engine anti-ice on if ice exists or anticipated, except climb and cruise **below -40° C SAT. Ice exists ≤10° C** (OAT/TAT) and visible moisture (including fog <1 mile) or surface contamination may be ingested OAT≤3°C with Engine anti-ice required, 50% N1 no more frequently than 15 min intervals and prior to takeoff

| Aircraft | Conditions | Periodic Run-up Procedure |
|----------|--|--|
| A330-200 | OAT < 1°C in icing conditions | 50% N1 for 10 seconds every 60 minutes |
| | FZFG and OAT > -7°C to 1°C | 50% N1 for 1 minute every 45 minutes |
| | FZFG and OAT > -20°C to -7°C | 70% N1 for 50 seconds every 45 minutes |
| | FZFG and OAT ≤ 20°C or surface conditions do not permit run-up | Manual engine deicing required |
| A330-300 | Moderate/Severe icing | 50% N1 for 30 seconds every 15 minutes |

To contamination – contact dispatch for more info Landing – No water, wet snow or slush (accumulations of more than ½ inch) or Braking Action NIL No wing anti-ice on ground, or with APU bleed air Wing on at 1st power reduction; off at FAF, but can be used to landing if severe icing, 4 outboard slats Lose electrics ENG valves fail open, wing close Probe/window heat auto on low on ground with 1st engine (no TAT), high with MLG not compressed. Anti ice FAULT is disagreement (wing also low press)

GPWS RECOVERY “PF”, PM CALLOUTS

GPWS “pull up” or “terrain” at night or IMC - do escape THRUST – **“TOGA”** ROLL- A/P disc, roll wings level PITCH – Rotate to full back sidestick CONFIGURATION – Verify speed brakes in; do not alter until terrain clearance assured, climb to safe alt. PM verify actions, CALL OUT FLIGHT PATH, MSA IS __, Advise ATC

WINDSHEAR

Reactive warning, “windshear, windshear, windshear” below 1,300' RA only Unacceptable ±15kts, ±50 FPM, ±5° pitch, ±1 dot Predictive caution, “monitor radar display” or warnings “windshear ahead” (twice on t/o) and “go around windshear ahead” (on approach); reject <V1, TOGA if >V1, and normal G/A or Escape on approach Predictive based on radar moisture movement <2300' with alerts <1500' and caution/warnings <1200'.

WINDSHEAR ESCAPE

“Escape TOGA”, set TOGA ROLL-Wings level PITCH- Rotate to (on T/O roll, no later than 2000' remaining) SRS (if SRS n/a - 17.5°) with full back sidestick. Use a/p if engaged (no a/p if α<α_{prot}) CONFIGURATION- do not alter until no windshear PM verify actions, CALL OUT OMISSIONS, FLIGHT PATH, PIREP TO ATC

CAT II/III APPROACH “PF”, PM CALLOUTS

Initially – Waypoints sequenced, Activate & confirm approach phase, **“Flaps 1”**, FLAPS 1, **“Flaps 2”**, FLAPS 2, cleared approach, select approach and 2nd A/P, **“CAT 3 Dual or CAT 3 Single or CAT 2”**, COURSE ALIVE, verify LOC *, GLIDESLOPE ALIVE, 1½ dots **“Gear Down”**, GEAR DOWN, ½ dot **“Flaps 3, Landing Checklist”**, FLAPS 3, G/S capture, **“Flaps Full”**, FLAPS FULL, verify G/S green, **“Set Missed Approach Altitude”**, auto 1,000, **“Stable”**, auto 500, STABLE, TARGET (+ __), SINK __, 400' RA LAND GREEN/NO LAND GREEN, 100 ABOVE, **“Continuing”**, auto MINIMUMS, **“Go-Around, TOGA”** or **“Landing”**, 10' RA levers idle, PITCH (>7.5°), BANK (>7°), touchdown reversers, SPOILERS/NO SPOILERS, 1/NO REVERSE, NO ROLLOUT, NO AUTO-BRAKES, 80, 60, idle rev, disc A/P>60 (at touchdown if no rollout) G/A if no LAND GREEN <350' or red autoland warning light on approach (200') or no FLARE at 40'. If autoland degraded >1000' OK if by 500', PERF APPR updated & captain aware. Prior to approach, disengage & engage other A/P 1st.

Cat I initially displayed if >5000'

CAT I callout “minimums” (auto) NO CONTACT or “<visual cues> INSIGHT”

RVR falls below minimums after passing OM/FAF, Landing is allowed if conditions permit

RVR **CAT III DUAL AH 200'**

Chart 600 (175m) 600/600/300 (any 2 RVR)

Chart 300 (75m) 300/300/300 (any 2 RVR)

RVR **CAT III SINGLE DH 50'**

Chart 600 (175m) 600/600/300 (TDZ +1)

Chart 300 (75m) 600/400/300 (TDZ +1)

RVR **CAT II**

Chart 1600 (500m) TDZ 1600 TDZ (others advisory)

Chart 1200 (350m) 1200/600/300 TDZ +1

Chart 1000 (300m) 1000/600/300 TDZ + 1

* If four RVR systems are installed, the fourth is the advisory (A) far-end sensor and can be substituted for an inoperative rollout sensor (RO).

Engine-out CAT III (Single - 50' DH), CONF 3, procedures done >1,000', xwind≤15k- idle reverse OK

SOFT GO AROUND “PF”, PM CALLOUTS

“Go-Around, TOGA”, TOGA SET (CHECK MAN TOGA-SRS), **“Climb”**, CLIMB SET, Engage/Ensure NAV unless visual approach, HDG, or component failure, **“Go Around Flaps,”**, FLAPS __, POSITIVE RATE, **“Gear Up”**, GEAR UP, Advise ATC, 100' AFE **“Autopilot 1(2)”**, 400' AFE **“Heading”** __ (if appropriate), if TOGA used and LVR CLB flashing then, **“Climb”**, CLIMB SET, F speed **“Flaps 1”**, FLAPS 1, S speed **“Flaps Up, After Takeoff Checklist”**, FLAPS UP, disarm spoilers, accomplish after t/o flow and checklist

OTHER APPROACHES

Category D, E if ≥ 166kts Non-ILS approach prohibited in Direct Low G/A if > ±5° VOR raw data or if RNAV, when both GPS prim lost, or both NAV accuracy downgrade (if only 1, use other autopilot) or lateral ≥ required RNP value(.3) or (vertical) ≥ 3/4 dot after FAF. Non-ILS - A/P & F/D must be operable if < 1000/3. RNP .3. ND 10 mile scale. Non-ILS use DA or DDA (MDA+50' unless authorized) Authorized Operator VNAV (DA) use DA. (LPV N/A) LDA with G/S coded as LOC. Use ILS procedures, G/S must be operative Callouts Auto – 1000, 500, 100, 50, 30, 10 “Pitch” ≥ 7.5° and “Bank” ≥ 7° “Landing” call when cleared to land, in position to land safely, runway environment will remain in sight “Airspeed” with landing flaps and > -5 or +10 knots “Sink rate” <2500' & >2000fpm; <1000' & >1000fpm “Localizer” / “Glideslope” > ½ dot Non-ILS “Path” Vertical deviation reaches 1/2 dot “Track” Crosstrack error reaches 0.2 [RNAV (GPS)] “VOR” Raw data bearing error reaches 2 1/2 degrees