A320 MINIMAL NORMAL PROCEDURES
ONLY FOR SIMULATOR USE

If engines are already running, only entries with * must be executed on this page

PRELIMINARY COCKPIT PREP (done by PM)

ENG MASTERS ....CHECK OFF
ENG MODE SEL......................CHECK NORM
* L/G LEVER............................... CHECK DOWN
* WIPERS ....OFF
BAT .... ON
APU MASTER .... ON
APU START .... ON

(Cont'd)
COCKPIT LIGHT .... AS RQRD
* PARKING BRAKE...ON
* FLAPS .... CHECK 0
* SPD BRK LEVER CHECK RET AND DISARMED
When APU is on (this takes some time):
APU BLEED ....ON

COCKPIT PREPARATION (first section done by PF)

OVERHEAD PANEL:
* ALL WHITE LIGHTS ....EXTINGUISH
ADIRS..NAV
STROBE..AUTO
BEACON ....OFF
* Remaining EXTERIOR LIGHTS .... AS RQRD
* SIGNS .... ON/AUTO
* EMER EXIT LIGHTS................................ARMED
LDG ELEV..AUTO
PACK FLOW ....NORM

FMGS INITIALIZATION (according to Setup Table):
INIT A PAGE
* MCDU..INIT
* FROM/TO [1R] ....ENTER
* ALTN [2L] .... ENTER IF RQRD
* FLT NBR [3L]...ENTER
* COST INDEX [5L] ....ENTER
* CRZ FL [6L]..ENTER
ALIGN IRS [3R]..PRESS
INIT B PAGE
Horizontal slew key (right arrow) ....PRESS
FUEL DATA UPLINK [3R] ....PRESS

(Cont'd)
F-PLN PAGE
* MCDU...F-PLN
* LAT REV at origin [1L] ....PRESS
* DEPARTURE [1L].....................................PRESS
* RWY ..SELECT (use vertical slew keys IF RQRD)
* SID ....SELECT IF RQRD
* TMPY F-PLN [6L]......................................PRESS
* TMPY F-PLN .... CHECK CORRECT
* TMPY INSERT [6R] ....PRESS
* LAT REV at DEST [6L]...............................PRESS
* ARRIVAL [1R]...PRESS
* RWY ..SELECT (use vertical slew keys IF RQRD)
* STAR ....SELECT IF RQRD
* TMPY F-PLN [6L]......................................PRESS
* TMPY F-PLN........................ CHECK CORRECT
* TMPY INSERT [6R] ....PRESS

PERF PAGE
* MCDU.. PERF
* V1 [1L], VR [2L], V2 [3L]...........................ENTER
* FLAPS [3R] ....ENTER
* FLEX TO TEMP [4R].................ENTER IF RQRD

When both pilots are seated (from here on every pilot has separate instructions):

PF	PM
GLARESHIELD: BARO REF .... SET QNH/X CHECK * FD......................................CHECK ON * LS ....OFF * ND MODE ....ARC or NAV * ND RANGE .... 20 or 40 * VOR/ADF sel...................................... AS RQRD * FCU CLB ALT...SET CTR INSTRUMENT PANEL: A/SKID N/W STRG .... ON PEDESTAL: * THR LEVERS...............................CHECK IDLE RADIO PANEL .... ON * XPNDER ………………..SBY/SYS1/ALT REP:ON	GLARESHIELD: BARO REF ....SET QNH/X CHECK * FD......................................CHECK ON * LS ....OFF * ND MODE ....ARC or NAV * ND RANGE ....20 or 40 * VOR/ADF sel...................................... AS RQRD

BEFORE START

PF	PM
MCDU..................................... PERF TO	MCDU ....F-PLN
THR LEVERS................................CHECK IDLE	BEACON ....ON
PARKING BRAKE ....CHECK ON	XPNDER .... AUTO

ENGINE START (skip if already running)

PF	PM
ENG MODE SEL...................................IGN/START	
"START ENGINE 2" ....ANNOUNCE	
ENG MASTER 2 .... ON	
When IDLE is reached (AVAIL indication):	
N1 .... ~19,5%	
N2............................ ~58,5% CHECK	
EGT .... ~390°C	
FUEL FLOW..........~275 kg/h	
ENG IDLE PARAMETERS ....CHECK	
"START ENGINE 1" ....ANNOUNCE	
REPEAT THE START SEQUENCE	
ENG MODE SEL...NORM	
APU BLEED ....OFF	
	APU MASTER...OFF

AFTER START

PF	PM
	GND SPLRS ....ARM
	RUD TRIM...ZERO
	PITCH TRIM .... SET
	FLAPS.. SET

TAXI

PF	PM
NOSE LIGHT .... TAXI	TERR ON ND..ON
PARKING BRAKE ....OFF	AUTO BRAKE .... MAX
THRUST LEVERS .... AS RQRD	FD..CHECK ON
	ATC CODE.....................................CONFIRM/SET
TO BRIEFING ....CONFIRM	
	TO CONFIG PB ....PRESS
	TO MEMO .... CHECK NO BLUE

BEFORE TAKEOFF

PF	PM
NOSE LIGHT ....T/O	TCAS MODE SEL................................ TA or TA/RA
LDG LIGHT .... ON	TCAS TILT .... ABOVE
	PACKS 1 + 2 .... AS RQRD

TAKEOFF	
PF	PM
BRAKES...RELEASE SIDESTICK .... FULL FORWARD THRUST LEVERS ....FLX/TOGA Advance THRUST LEVERS to ~50% N1, wait until both engines stabilize at approx 50% N1, then advance LEVERS to FLX/MCT or TOGA notch	
When thrust set, captain places hands on thrust levers until V1	
DIRECTIONAL CONTROL ....USE RUDDER FMA......................................ANNOUNCE	CHRONO .... START PFD/ND..SCAN N1 .... CHECK "THRUST SET" .... ANNOUNCE PFD/ENG parameters....................................SCAN
Below 80 KT, when N1 reaches setting: .... SIDESTICK .... RELEASE GRADUALLY	
At 100 KT:...	"REACHING 100 KT" .... ANNOUNCE
"CHECKED" ....CONFIRM/ANNOUNCE SIDESTICK ....NEUTRAL	
At V1:	"GO" .... ANNOUNCE
At VR: .... Rotate with 3°/s to 15° pitch, maintain pitch until airborne and FD stabilized, then follow SRS command by the FD	"ROTATE".. ANNOUNCE
When V/S positive (VSI >0 fpm and RA >0): .... "GEAR UP"...COMMAND	"POSITIVE CLIMB"............................. ANNOUNCE L/G .... UP GND SPLRS ....DISARM NOSE LIGHT ....OFF RWY TURNOFF LIGHT...................................OFF
A/P... AS RQRD FMA...................................ANNOUNCE	"GEAR UP" .... ANNOUNCE
At thrust reduction altitude (see MCDU PERF or FMA THR "LVR CLB" indication):	
THRUST LEVERS ....CLB	ONE PACK...ON
At F speed (if FLAPS 2): "FLAPS 1" ....COMMAND	AIRSPEED ABOVE F SPEED.................... CHECK FLAPS...1 "FLAPS 1" ....CONFIRM/ANNOUNCE
At S speed: "FLAPS 0" ....COMMAND	AIRSPEED ABOVE S SPEED .... CHECK FLAPS...0 "FLAPS 0" ....CONFIRM/ANNOUNCE 2ND PACK ....ON TCAS MODE SEL...TA/RA

CLIMB	
PF	PM
<u>PF</u> IF AP ON, <u>PM</u> IF AP OFF	
FCU/FMGS ....SET	
At transition altitude (see PFD BARO REF indication):	
BARO REF .... SET STD/X CHECK	BARO REF.............................. SET STD/X CHECK
At 10000 feet:	
EFIS OPTION .... ARPT RADIO NAV...CHECK	LAND LIGHTS ....OFF SEAT BELTS... AS RQRD ECAM MEMO ....REVIEW OPT/MAX ALT.. CHECK

DESCENT PREPARATION

PF	PM
	LANDING DATA .... PREPARE
	ENTER DESTINATION DATA:
	MCDU ....PERF
	NEXT PHASE [6R] .PRESS until PERF APPR page
	QNH [1L].. ENTER
	MCDU ....F-PLN
APPR BRIEFING ....PERFORM	

DESCENT

PF	PM
DESCENT .... INITIATE	
FMA...ANNOUNCE	FMA..CHECK
DESCENT ....MONITOR	TCAS TILT .... BELOW
SPEEDBRAKES .... AS RQRD	ATC CODE.....................................CONFIRM/SET
At transition altitude (see PFD BARO REF indication):	
BARO REF............................. SET QNH/X CHECK	BARO REF............................. SET QNH/X CHECK
	ECAM STATUS..CHECK
At 10000 feet:	
EFIS OPTION ....CSTR	LAND LIGHTS .... ON
	SEAT BELTS...ON
LS .... AS RQRD	LS...AS RQRD

APPROACH

PF	PM
Initial approach:	
Approx 15 NM from touchdown:	
FCU SPEED..200-220 kt	
HDG&VS/TRK&FPA ....As RQRD	
(When your approach chart requires a specific Flight Path Angle, switch to TRK&FPA)	
ACTIVATE APPR PHASE [6L].....................PRESS	
POSITIONING......................................MONITOR	
DESCENT ....MONITOR	
SPEEDBRAKES ....AS RQRD	
Final approach:	
APPR... AS RQRD	
BOTH AP................... ENGAGE IF ILS APPROACH	
At green dot:	
"FLAPS 1" ....COMMAND	AIRSPEED BELOW V_{FEnext}...........................CHECK
	FLAPS.. 1
	"FLAPS 1" .... CONFIRM/ANNOUNCE
FCU SPEED .... CHECK OR SET S SPEED*	
FMA...ANNOUNCE	FMA..CHECK
LOC AND G/S CAPTURE......................MONITOR	FCU (GO AROUND ALT)................................ SET
ND MODE AND RANGE......................... AS RQRD	ND MODE AND RANGE ....AS RQRD
At 2000 feet AGL (ILS)/At S speed (NON PREC.):	
"FLAPS 2" ....COMMAND	AIRSPEED BELOW V_{FEnext}...........................CHECK
	FLAPS.. 2
	"FLAPS 2" .... CONFIRM/ANNOUNCE
FCU SPEED ....CHECK OR SET F SPEED*	

APPROACH (Cont'd)	
When FLAPS 2: "GEAR DOWN" ....COMMAND	L/G .... DOWN GND SPLRS .... ARM AUTO BRAKE ....AS RQRD "GEAR DOWN" .... CONFIRM/ANNOUNCE
When L/G down, below V$_{FEnext}$: "FLAPS 3" ....COMMAND	AIRSPEED BELOW V$_{FEnext}$...........................CHECK FLAPS.. 3 "FLAPS 3" .... CONFIRM/ANNOUNCE
When FLAPS 3, below V$_{FEnext}$: "FLAPS FULL".......................................COMMAND	AIRSPEED BELOW V$_{FEnext}$...........................CHECK FLAPS..FULL "FLAPS FULL" .... CONFIRM/ANNOUNCE
FCU SPEED ....CHECK OR SET VAPP*	A/THR ....CHECK SPD or OFF RWY TURNOFF LIGHT.....................................ON NOSE LIGHT ....TAXI LDG MEMO ....CHECK NO BLUE
ANNOUNCE ANY FMA MODIFICATION **At MDA/MDH:** AP..............OFF IF NON PRECISION APPROACH	FLT PARAMETERS ....CHECK

* PF for AUTO APPROACH, PM for MAN APPROACH

LANDING	
PF	PM
At 100 feet: FLARE......................PERFORM (Reduce sink rate) **At 20 feet ("Retard" Callout):** THRUST LEVERS ....IDLE **At touchdown:** REV ....MAX BRAKES.. AS RQRD **At 70 knots:** REV ....IDLE **At taxi speed (after rollout):** REV ....STOW RUNWAY.. LEAVE	ATTITUDE.. MONITOR

GO AROUND	
PF	PM
THRUST LEVERS ....TOGA "GO AROUND – FLAPS" ....ANNOUNCE ROTATION ....PERFORM FMA.......................................ANNOUNCE "GEAR UP"...COMMAND	 FLAPS...ONE STEP UP "POSITIVE CLIMB"...............................ANNOUNCE L/G .... UP "GEAR UP – FLAPS"............................ANNOUNCE GND SPLRS .... DISARM AUTO BRAKE .... OFF RWY TURNOFF LIGHT.................................... OFF NOSE LIGHT .... OFF
At GA thrust reduction altitude (see MCDU PERF or FMA THR "LVR CLB" indication):	
THRUST LEVERS ....CLB **At GA acceleration altitude:** SPEED ....MONITOR	FLAPS........................RETRACT ON SCHEDULE

AFTER LANDING	
PF	PM
<u>PF</u> AT NIGHT, <u>PM</u> BY DAY LAND LIGHTS ....RETRACT	
GND SPLRS ....DISARM	
	FLAPS.. 0
	TCAS MODE SEL...STBY
	APU...START

PARKING	
PF	PM
PARKING BRAKE .... ON	APU BLEED... ON
ENG MASTERS ....OFF	
BEACON ....OFF	FUEL PUMPS .... OFF
EXTERIOR LIGHTS............................... AS RQRD	XPNDER .... SBY
SEAT BELTS ....OFF	

SECURING THE AIRCRAFT	
PF	PM
PARKING BRAKE ....CHECK ON	
ADIRS ....OFF	EXTERIOR LIGHTS .... OFF
	RADIO PANEL .... OFF
	APU BLEED.. OFF
	APU MASTER... OFF
	EMER EXIT LIGHTS .... OFF
	NO SMOKING... OFF
	BAT.. OFF