

PRE-START

- 1 MIC Switch ON
- 2 THROTTLES L / R *check both are* OFF
- 3 FUEL-CONF TANK Switch STOP TRANS
- 4 INLET RAMP - L / R Switches AUTO
- 5 FUEL QTY IND Knob *set* TANK I
- 6 OXYGEN Switch ON
- 7 ENGINE GEN - L / R Switches ON
- 8 EMER GEN Switch AUTO
- 9 ENGINE CONTROL - L / R Switches ON
- 10 ENGINE MASTER - L / R Switches ON
- 11 JET FUEL STARTER Switch ON
- 12 AIR CONDITIONING ECS Switch AUTO
- 13 BLEED VALVES Knob *set to BOTH*

If Ext Power is used wait until it is connected

R-ENGINE START

then flip switch to NORM

- 1 JET STARTER FUEL Lever PULL
- 2 JFS READY LIGHT *wait until is* ON
- 3 **AMAD FIRE Switch** **TEST**

AMAD Fire message should play twice

- 4 R-THROTTLE Finger Lift PULL
- 5 RPM RIGHT-ENG *wait until* 26%
- 6 **AMAD FIRE Switch** **TEST**

AMAD & Engine L/R Fire message should play twice

- 7 RIGHT THROTTLE.....*push to* IDLE
- 8 RPM RIGHT-ENG *wait until* 68%
- 9 R GEN Caution Light *check it goes* OFF
- 10 RIGHT ENGINE RAMP..... *check it falls* DOWN
- 11 UTIL - HYD PC2*pressure* >3000 & <3400
- 12 **AMAD FIRE Switch** **TEST**

AMAD, ENGINE & AB BURN THRU L/R should play twice

Switch Brakehold ON if there are no wheel chocks

L-ENGINE START

- 1 JFS READY LIGHT *verify it is back* ON
- 2 L-THROTTLE Finger Lift PULL
- 3 RPM LEFT-ENG *wait until* 26%
- 4 LEFT THROTTLE.....*push to* IDLE
- 5 RPM LEFT-ENG *wait until* 68%
- 6 L GEN Caution Light *check it goes* OFF
- 7 LEFT ENGINE RAMP *check it falls* DOWN
- 8 UTIL - HYD PC1*pressure* >3000 & <3400

After left engine start, check JSF light went OFF

POST ENGINE START

- 1 **SEAT - EJECTION SEAT** *comms check with WSO* **ARM**
- 2 AIRCRAFT CANOPY CLOSE & LOCK
- 3 MPDs, HUD, UFC, RadiosON / As Desired
- 4 EXT & INTR Light Knobs *set* AS REQ
- 5 **WARNING LIGHTS TEST Switch** **ON**
- 6 RADAR IFF Mode Switches *set* AS REQ
- 7 JTIDS Knob *set* AS REQ
- 8 **INS Knob** *(set to store if possible) coords on kneeboard* **ALIGN GC**
- 9 UFC PP EGI *enter coords* PP-EGI
- 10 NAV FLIR Switch STBY
- 11 TF RDR Switch STBY
- 12 RDR ALT Switch ON
- 13 RADAR Knob *set* STBY
- 14 FUEL - CONF TANK Switch NORMAL
- 15 CAS - YAW / ROLL / PITCH Switches ON
- 16 CAS - T/O TRIM Button *press until* ON
- 17 STBY ATTITUDE Indicator Uncage
- 18 STBY ALTIMETER *baro pressure* SET
- 19 FUEL QTY IND Knob *set* CONF TANK
- 20 BINGO FUEL Needle *set* AS REQ
- 21 MPDs & MPCD *program* AS REQ

BEFORE TAXI / TAXI

- 1 FLT INSTRUMENTS CHECK
- 2 FC SURFACES & SPEEDBRAKE CHECK
- 3 FLAPS Extend / Retract CHECK
- 3 AAR FUEL SLIPWAY Door CHECK
- 4 LANDING TAXI LIGHT Switch TAXI
- 5 PITOT/ENG HEAT Switches *set* AS REQ
- 6 **INS Knob** *Make sure alignment finished (GC OK on HUD)* **NAV**
- 7 WHEEL CHOCKS*request to* REMOVE
- 8 HOLDING BRAKE Switch OFF
- 9 TOE BRAKES CHECK
- 10 NOSE WHEEL STEERING CHECK

EXT LIGHTS	POSITION	FORMATION	STROBE	LAND/TAXI
FIELD: START,TAXI	ON	AS REQ.	ON	AS REQ.
FIELD: RWY ENTRY		@ NIGHT		LAND
AIR REFUEL-NIGHT	ON, BRIGHT		OFF	OFF
LANDING NIGHT	ON, BRIGHT			LAND

* Vertical Tail Flood Light ON at night on field or formation flying

During Air Refueling also place radar on STBY, and MASTER ARM switch to SAFE

SAFETY STEPS IN RED

TO BE PERFORMED BY BOTH PILOT & WSO

BEFORE TAKEOFF

- 1 HOLDING BRAKE Switch ON
- 2 INLET RAMP - L / R Switches AUTO
- 3 SEAT - EJECTION ARMED
- 4 FC SURFACES & SPEEDBRAKE CHECK
- 5 FLAPS Switch EXTENDED
- 6 CAS - T/O TRIM Button *press until* ON
- 7 AIRCRAFT CANOPY CLOSED & LOCKED
- 8 UFC - IFF Menu *set* AS REQ
- 9 FUEL - CONF TANK Switch NORMAL
- 10 RADAR Knob *set* ON
- 11 PITOT/ENG HEAT Switches *set* AS REQ
- 12 WARNINGS / CAUTIONS *check all* OFF
- 13 INS Knob *check is in* NAV
- 14 HOLDING BRAKE Switch OFF

TAKEOFF

once centered on runway

- 1 TOE BRAKES HOLD
- 2 RPM L/R-ENG $\geq 82\%$
- 3 WARNINGS / CAUTIONS *check all* OFF
- 4 TOE BRAKES RELEASE
- 5 THROTTLES L / R MIL or MAX
- 6 CONTROL STICK *at rot speed* PULL 1/2
- 7 PITCH ATTITUDE *maintain* 12 deg

See Tech Info Kneeboard for rotation & takeoff speeds

- 8 LANDING GEAR *when airborne* UP
- 9 FLAPS Switch *when airborne* RETRACT
- 10 CONTROL STICK - TRIM FWD

DESCENT CHECKS

- 1 MASTER ARM Switch SAFE
- 2 STBY ALTIMETER *baro pressure* SET
- 3 TF RDR Switch OFF
- 4 PITOT/ENG HEAT Switches *set* AS REQ
- 5 EXT & INTR Light Knobs *set* AS REQ

LANDING CHECKS

- 1 LANDING GEAR *below 250 knots* DOWN
- 2 FLAPS Switch *below 250 knots* EXTEND
- 3 UTIL - HYD ALL *pressure* >3000 & <3400
- 4 LANDING TAXI LIGHT Switch LANDING

LANDING CHECKS Cont...

- 5 ANTI-SKID Switch NORM
- 6 HOLDING BRAKE Switch OFF
- 7 UFC - TACAN & ILS *set* AS REQ

See Tech Info Kneeboard for approach & sinkrate speeds

AFTER LANDING

- 1 SEAT - EJECTION SAFE
- 2 SPEED BRAKE RETRACTED
- 3 FLAPS Switch RETRACTED
- 4 RADAR Knob *set* STBY
- 5 LANDING TAXI LIGHT Switch TAXI
- 6 JTIDS Knob *set* OFF
- 7 CAS - T/O TRIM Button *press until* ON
- 8 PITOT/ENG HEAT Switches *set* AS REQ

SHUTDOWN

- 1 HOLDING BRAKE Switch ON
- 2 JTIDS Knob *set* OFF
- 3 INS Knob *set* OFF
- 4 NAV FLIR Switch OFF
- 5 TF RDR Switch OFF
- 6 RDR ALT Switch OFF
- 7 RADAR Knob *set* OFF
- 8 INLET RAMP - L / R Switches EMER
- 9 CAS - T/O TRIM Button *press until* ON
- 10 CAS - YAW / ROLL / PITCH Switches OFF
- 11 STBY ATTITUDE Indicator Cage
- 12 FUEL QTY IND Knob *set* TANK I
- 13 MPDs, HUD, UFC OFF
- 14 EXT & INTR Light Knobs *set* OFF
- 15 AIRCRAFT CANOPY OPEN
- 16 LEFT THROTTLE *pull to* OFF
- 17 RIGHT THROTTLE *15 secs after INS OFF pull to* OFF
- 18 OXYGEN Switch OFF
- 19 ENGINE GEN - L / R Switches OFF
- 20 EMER GEN Switch OFF
- 21 ENGINE CONTROL - L / R Switches OFF
- 22 ENGINE MASTER - L / R Switches OFF
- 23 AIR CONDITIONING ECS Switch OFF

PRE-START

- 1 CIPHER TEXT/TONE Switches set AS REQ
- 2 CRYPTO Switch NORM
- 3 MIC Switch ON
- 4 EMERG LANDING GEAR IN
- 5 ARRESTING HOOK UP
- 6 EMERG BRAKE IN
- 7 COMMAND SELECTOR VALVE NORM

POST ENGINE START

- 1 SEAT - EJECTION SEAT *comms check with PILOT* ARM
- 2 AIRCRAFT CANOPY CLOSE & LOCK
- 3 VOLUMEN Knobs set As Desired
- 4 EW - RWR/ICS Switch COMBAT
- 5 EW - PODS Switch STBY
- 6 EW - ICS Switch AUTO
- 7 TGT FLIR - TGP Switch STBY
- 8 LASER Switch SAFE
- 9 NUCLEAR CONSENT Switch SAFE
- 10 STBY ATTITUDE Indicator Uncage
- 11 STBY ALTIMETER *baro pressure* SET
- 12 OXYGEN Switch ON
- 13 TEWS - ICS Switch ON
- 14 TEWS - RWR Switch ON
- 15 TEWS - EWWS Switch ON
- 16 CMD - MODE Knob STBY
- 17 INTR Light Knobs set AS REQ
- 18 WARNING LIGHTS TEST Switch ON
- 19 MPDs, UFC, Radios ON / As Desired

After pilot initiates alignment can enter coordinates

- 20 UFC PP EGI *coords on kneeboard* enter coords PP-EGI
- 21 MPDs & MPCDs program AS REQ
- 22 MPD - PACS Page setup AS REQ

BEFORE TAXI / TAXI

- 1 FLT INSTRUMENTS CHECK
- 2 FC SURFACES & SPEEDBRAKE CHECK
- 3 FLAPS Extend / Retract CHECK
- 4 AAR FUEL SLIPWAY Door CHECK

BEFORE TAKE OFF

- 1 SEAT - EJECTION ARMED
- 2 COMMAND SELECTOR VALVE As Brief
- 3 FC SURFACES & SPEEDBRAKE CHECK
- 4 FLAPS Switch EXTENDED
- 5 AIRCRAFT CANOPY CLOSED & LOCKED
- 6 UFC - IFF Menu set AS REQ
- 7 TGT FLIR - TGP Switch STBY
- 8 WARNINGS / CAUTIONS check all OFF

AFTER TAKE OFF

- 1 TGT FLIR - TGP Switch ON
- 2 CMD - MODE Knob ON
Countermeasures Dispenser manual recommended

DESCENT CHECKS

- 1 CMD - MODE Knob OFF
- 2 STBY ALTIMETER *baro pressure* SET
- 3 TGT FLIR - TGP Switch OFF

LANDING CHECKS

- 1 LANDING GEAR *below 220 knots* DOWN
- 2 FLAPS Switch *below 250 knots* EXTEND
- 3 UFC - TACAN & ILS set AS REQ

AFTER LANDING

- 1 SEAT - EJECTION SAFE
- 2 COMMAND SELECTOR VALVE NORM
- 3 UFC - IFF Menu set OFF
- 4 UFC - TACAN & ILS set OFF

SHUTDOWN

- 1 EW - RWR/ICS Switch TRAINING
- 2 EW - PODS Switch OFF
- 3 EW - ICS Switch OFF
- 4 STBY ATTITUDE Indicator Cage
- 5 OXYGEN Switch OFF
- 6 TEWS - ICS, RWR, EWWS Switches OFF
- 7 INTR Light Knobs set OFF
- 8 MPDs, UFC, Radios OFF
- 9 AIRCRAFT CANOPY OPEN

AIRBORNE

1000 ft = 305 m 1nm = 1,9 km

F4	F-4E	12 17	M1	Mirage F1	12 16	KL	JF-17	23 37	SB	MiG-29	123 23
F5	F-5E	2 4	M2	M-2000C	12 19	FT	Su-17	2 2		Su-27/33	12 25
	F-5E-3	2 4	M5	M-2000C-5	123 20	19	MiG-19	2 3		Su-30	123 23
14	F-14 A/B	123 56	37	AJS-37	2 4	21	MiG-21	12 4		J-11A	123 25
15	F-15 C/E	123 24	51	B-1B	-B- --	23	MiG-23/27	12 12	62	Tu-22	-B- --
16	F-16 A/C	123 24	52	B-52H	-B- --	24	Su-24	2 2	65	Tu-95	-B- --
18	F-18 A/C	123 24	S3	S-3B	-A- --	25	MiG-25	12 26		Tu-142	-B- --
18	AV-8B+	2 4	E2	E-2C	-A- --	31	MiG-31	12 26		Tu-160	-B- --
TO	TORNADO	2 4	E3	E-3A	-A- --	34	Su-34	123 23	EW	A-50	-A- --

1 SARH, 2 IR, 3 ARH - SUPPORTED MISSILES FOLLOWED BY THE MAX LAUNCH RANGE (nm, "ACE" AI). B - BOMBER, A - AWACS

SURFACE TO AIR

NAVAL

77	AN/FPS-117	-EWR/-	CT	CV La Combattante	F 03/07
HK	MiM-23 Hawk	C 25/++	Y1	CR Ticonderoga	C 55/++
PT	MiM-104 Patriot	C 48/++	DE	Arleigh Burke	C 57/++
GP	Gepard	F 02/10	49	FR Oliver Hazard Perry Class	C 50/++
VL	M163 Vulcan	F 02/05	UK	CV CV-59 Forrestal	
RD	Roland	C 06/20	48	CV CVN-70 Vinson	
NS	NASAMS AIM-120	C 06/35		CV CVN-71 Roosevelt	
RA	Rapier	F 06/10		CV CVN-72 Lincoln	F 08/13
EW	Nebo 1L13 / 55G6	-EWR/-		CV CVN-73 Washington	C 06/16
2	SA-2 Guideline S-75	C 28/++		CV CVN-74 Stennis	
	P-19 Flat Face	-SR/-		CV CVN-75 Truman	
3	SA-3 Goa S-125	C 13/++		CV LHA-1 Tarawa	F 08/13
5	SA-5 Gammon S-200	C 73/++	N4	VE Grisha / Albatros	C 08/17
6	SA-6 Gainful Kub	C 22/26		CV Kuznetsov	C 09/20
8	SA-8 Gecko Osa	C 09/16		FR Rezky	C 08/17
10	SA-10 Grumble S-300	C 46/++	NS	VE Molniya	F 04/09
	SA-12 Gladiator S-300V	C 46/++	N3	CR Moskva	C 47/++
11	SA-11 Gadfly Buk	C 23/++	N9	CR Pyotr Velikiy	C 74/++
13	SA-13 Gopher Strela-10M	F 05/12		FR Neutrashimy	C 09/20
15	SA-15 Gauntlet Tor	C 09/20	H2	DE Type-052B	C 27/48
S9	SA-19 Grison Tunguska	F 05/12	H9	DE Type-052C	C 64/++
AA	ZSU-23-4 Shilka	F 02/07	H6	FR Type-054A	C 35/++
H7	HQ-7 Red Banner	F 10/18	HS	TT Type-071	F 04/09
FC	SON-9 Fire Can	F 02/05		SS Type-093	F 04/09

- SAM'S MAX FIRING RANGE (nm) AND ALTITUDE (X1000 ft ABOVE GROUND LEVEL) ++ CAN HIT ABOVE 50.000 ft

NAVAL LEGEND: CV CARRIERS, CR CRUISERS, DE DESTROYERS, FR FRIGATE, TT TRANSPORT, VE CORVETTE, SS SUBMARINE

EFFECTIVE COUNTERMEASURES: C - CHAFF F - FLARES E - EVASIVE MANEUVERING (AAA/OPTICAL SAM)

DENOTES BLUE COALLITION AIRPLANES/SAMS/SHIPS RADAR

DENOTES RED COALLITION AIRPLANES/SAMS/SHIPS RADAR

△ AIRBORNE RADARS ARE MARKED WITH A TRIANGLE

▽ SURFACE (SHIPBORNE) RADARS ARE UNDERLINED WITH A BOAT SYMBOL

○ RADARS TRACKING AND GUIDING A MISSILE ARE MARKED WITH A FLASHING CIRCLE

- Operating weight (basic weight plus crew) *with lantirn pods ~40,000* 37,500 lbs
- Takeoff Gross weight (op weight + full int & centerline fuel + lantirn pods) 68,000 lbs
- Max gross weight 81,000 lbs
- Max speed (High Alt) 1,434 KCAS / Mach 2.5+
- Max speed (Low Alt) 782 KCAS / Mach 1.2
- Combat Radius *ferry range of 2400 nm* 687 NM
- Service Ceiling *at around 45,000 lbs and drag index 0* 50,000 ft
- Rate of Climb *and two engines max thrust* 25,000 ft/min

NORMAL TAKE OFF SPEEDS WITH CFT

GROSS WEIGHT-LB	ROTATION/NOSEWHEEL LIFT-OFF/TAKEOFF SPEEDS (KCAS)	
	MAX THRUST	MILITARY THRUST
55,000	125/146/170	130/141/159
60,000	130/151/175	135/146/163
65,000	140/161/182	145/155/171
70,000	155/171/192	155/163/180
75,000	160/177/196	160/168/187
81,000	167/184/202	167/173/195

ONE-HALF STICK APPLIED OVER A PERIOD OF 1 SECOND STARTING AT THE ROTATION

SPEED LISTED ABOVE AND 12° PITCH ATTITUDE HELD AFTER ROTATION

NORMAL LANDING SPEEDS WITH OR WITHOUT CFT - FULL FLAPS

GROSS WEIGHT-LB	LANDING SPEEDS AND SINKRATE (@21 UNITS AOA)	
	APPROACH SPEED (KCAS)	ALLOWABLE SINKRATE (FPM)
45,000	165	504
50,000	175	468
55,000	184	432
60,000	191	402
65,000	199	372
70,000	207	348

add 14-15 knots if flaps are retracted

SYSTEMS LIMITATIONS

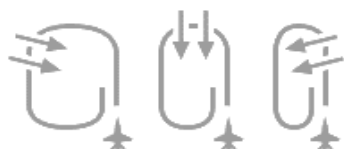
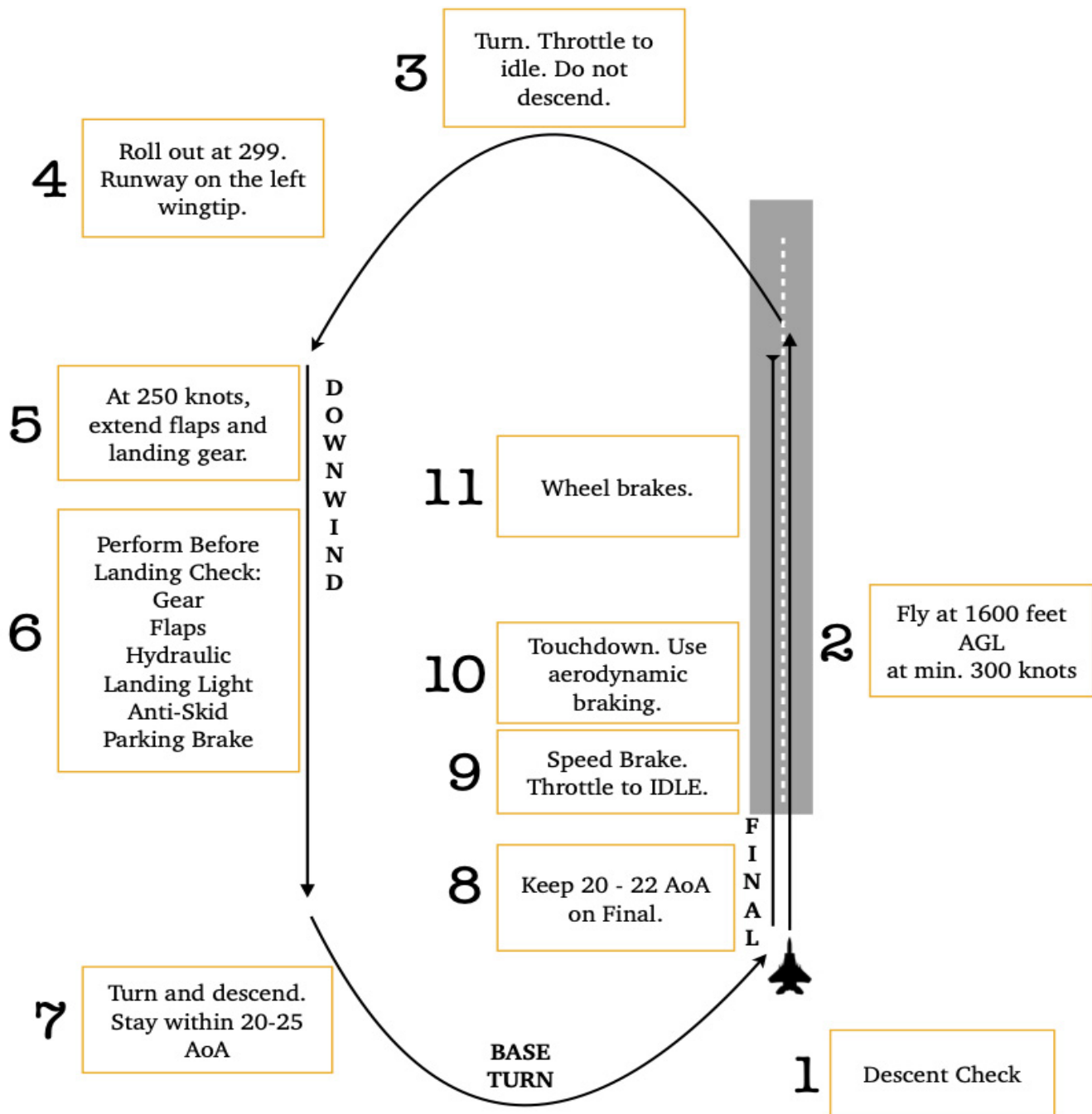
	AIRSPEED	LOAD FACTOR
LANDING GEAR EXTENSION/RETRACTION OR FLIGHT WITH GEAR EXTENDED	300 KCAS (AIR-TO-AIR MISSILES WITHOUT PODS) 250 KCAS (ANY CONFIG)	1.25 g 2.0 g
FLAPS DOWN	250 KNOTS	0.0 TO +4.0G Load Factor
INLETS EMERG POSITION	ABOVE 0.95 MACH	-1.0 to +4.0g
TIRES	NOSE - 210 KNOTS MAIN - 227 KNOTS	N/A N/A

*tire blowout
if higher*

when landing dont activate wheelbrakes over 100 knots

* AIRCRAFT CONFIGURATION FOR TABLES: FULL FLAPS, GEARS DOWN, ALL DRAG INDEXES, CENTER OF GRAVITY 25% OF MAC

ENGINES (2) f100-PW-229, U.S. STANDARD DAY, 1966



DOWNWIND LEG @ 1-1.5 nm ABEAM THE RUNWAY, CORRECTED FOR CROSSWIND

TIGHTEN OR LOOSEN THE BREAK TURN DEPENDING ON CROSSWIND DIRECTION AND STRENGTH

CORRECT THE ABEAM, NOT THE BASE TURN:

ADD OR SUBTRACT 0,1 NM FOR EVERY 10 KTS OF CROSSWIND COMPONENT

NOTE: ABEAM THE RUNWAY \neq ABEAM THE TACAN

See Tech Info Kneeboard for approach & sinkrate speeds

THERE ARE **NO** STANDAR AND UNANIMOUSLY ACCEPTED PATTERN ALTITUDE AND APPROACH SPEED

ATC AND PUBLISHED PROCEDURES ALWAYS OVERRULE THE WATHEVER IS SUGGESTED ABOVE OR CONSIDERED "COMMON"