AER.1F-104S/ASAM-6CL-1

MINISTERO DELLA DIFESA
COSTARMAEREO - ROMA

FUNCTIONAL

CHECK FLIGHT

CHECKLIST

F-104S/ASA-M

SERIES AIRCRAFT

ALENIA (A0019)

Commanders are responsible for bringing this checklist to the attention of all personnel cleared for operation of the aircraft.

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1 December 1996

Insert latest changed pages. Destroy superseded pages.

LIST OF EFFECTIVE PAGES

Note: The portion of the text affected by the changes is indicated by a vertical line in the outer margin of the page.

Dates of issue for original and changed pages are:

Original ..... 0 ..... 1 December 1996

Total number of pages in this publication is 70 consisting of the following:

Page No.	* Issue
Title	0
A	0
i thru v	0
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* The asterisk indicates pages changed, added or deleted by the current change.

Additional copies of this publication may be obtained from:
- FA activities, as directed by specification ILA-NL-9004-0001-00B00
- COSTARMAEREO activities, as directed by specification AER.00-00-8

FOREWORD

This checklist is part of the Technical Order System. The pilot is required to operate the aircraft according to the appropriate checklist.

Latest Data

Pilot has to take personal care of having the latest issue of the CL and its changes. For the latest data refer to the LOAP AER.1F-104S/ASAM-01. If you have any question about the date of issue, check with your supply personnel.

Contents

Checklist consists of more parts. The pages of the different parts bear an additional identification letter to the normal numbering (i.e. A-1).

Changes

Pen and ink changes are normally not authorized unless expecially stated by an Interim Supplement. Basic issues of checklist is updated by changes. Until the issue of a regular change, Interim Changes are used for urgent revisions.

Binders

Binders are issued by your supply personnel to hold and protect the checklist.

Your Cooperation

With your cooperation it is possible to achieve an improvement of the checklist and to correct any possible mistake. Proposals should be forwarded as directed by specification AER.00-00-4.

MODIFICATIONS NOT INCORPORATED IN THIS MANUAL

All modifications which are applicable to this manual, but whose information has not yet been introduced are listed below:

PTD No.	MINISTRY OF DEFENCE DOCUMENT (PTA)	DATE	TITLE
None			

FURTHER MODIFICATIONS INCORPORATED IN THIS MANUAL

Further modifications, not yet formally approved at the cut-off date of the checklist current issue, but which for opportunity reasons have been incorporated in the checklist, are identified and temporarily listed below:

PTD No.	TITLE
None	

OPERATIONAL AND SAFETY SUPPLEMENTS INCORPORATED IN THIS MANUAL

All former Operational and Safety Supplements which have been incorporated in this manual are listed below:

NUMBER	DATE	TITLE
None		

LIST OF INCORPORATED PTA

This list contains only the modifications affecting the contents of this checklist. Following embodiment of a modification in all affected aircraft, the corresponding number will not be deleted from the list, but the information regarding the pre-modification configuration will be deleted from the checklist.

MINISTRY OF DEFENCE DOCUMENT		COMPANY DOCUMENT			
PRESCRIZIONE TECNICA APPLICATIVA (PTA)		PRESCRIZIONE TECNICA DITTA (PTD)			TITLE
NO.	DATE	NO.	DATE	CLASS	
None					

CHAPTERS

Systems & Engine

DATE..... FLT.....

PILOT.....

A/C CONFIGURATION.....

AIRCRAFT		ENGINE	
M.M.	H	S/N	H

PILOT EXT./INT. INSPECTION.....

BEFORE TAKEOFF

TANKS
FLAPS
TRIMS
SPEED BRAKES
EJECTION PINS
SEAT BELT
INERTIAL REEL
CANOPY
OXYGEN
RADIOS

PRECAUTIONARY PARTIAL POWER PATTERN

HIGH KEY ..... 16000 FT AGL

FLAPS ..... TAKEOFF

LDG GEAR ..... UP

AIRSPEED ..... 260 KIAS

ENGINE..... 82% RPM

SPEED BRAKES ..... AS NEC

"G"	MAX
	MIN

FUEL	TAKEOFF	LANDING

IN ALIGN STATUS

GROUND

IN ALIGNMENT

NOTE

IN alignment may be also performed after engine start.

IN FULL G.C. ..... STATUS 3 (≤ 4 min/OAT + 20° C)
STATUS 1 (≤ 8 min/OAT + 20° C)

GPS

NOTE

GPS switch on/alignment may be carried out in any on-ground or in-flight phases.

GPS ..... HSI flag out of view (< 5 min)
STATUS 4 SAT (≤ 12 min)

ENGINE START

PLD ☐

F/F ..... (425 - 800 PPH)

EGT..... (≤ 705° C)

COMBUSTION..... (≤ 15" or ≤ 20% RPM)

FIXED FREQ RESET BUTTON – PRESS..... CHECK LIGHT OUT

ANTI ICE "ON-OFF" AT 80% RPM..... (≤ 5")

EMER NOZZLE ..... (3 - 4) FORCE..... (≤ 50 lbs)

MAIN BUS TRANSFER .....

APC VANE (FLAPS UP)

RH..... SHAKER.....

KICKER (APC METER 5).....

LH..... SHAKER.....

ALTIMETER

ELECT (QNH)..... (FIELD ± 100)

CONTROLS .....

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
IDLE							
		66-68%	120-500	8-9	700 - 1600	≥12	2800 - 3200

AUXILIARY AIR INLET DOORS

ENGINE AIR INLET DOORS OPEN (≤ 5") AND LIGHT ON

ENGINE AIR INLET DOORS CLOSE AND LIGHT OFF

DURING TAXI

STEERING .....

BRAKES

ANTISKID ON ..... OFF .....

STBY ATTITUDE INDICATOR ..... (−5°)

ATTITUDE INDICATOR .....

LINE UP POINT

ENGINE CHECK

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
MIL							
		≤105.5%	≤688	1.5 - 4		Pld ±5	2800 - 3200

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR (CHOP) MIL ⇒ IDLE (Time < 1″)

F/F ..... (425 - 800 PPH)

NO STALL EVIDENCE.....

THR (BURST) IDLE ⇒ MIL (Time < 1″ – FLAPS UP or TAKEOFF)

CIT.....

RPM .....

TIME < 10″ .....(< 1% ROLL BACK)

THR (RETARD) MIL ⇒ IDLE (Time ~ 5″ – FLAPS UP or TAKEOFF)

DECELERATION/THROTTLE LINKAGE.....

A/B CHECK

THR MILITARY

CIT.....

RPM .....(≤ 105.5%)

EGT.....(≤ 688° C)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR MIL ⇒ Min A/B

A/B LIGHT ..... (≤ 3")

Min A/B NOZZLE..... (4 - 6)

RPM DROP..... (≤ 5%)

THR Min A/B ⇒ Max A/B

RPM ..... (≤ 105.5%)

EGT..... (≤ 688° C)

Max A/B NOZZLE.....(7.5 - 9.5)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

FLIGHT

ACCELERATE UP TO 340 KIAS

AUXILIARY AIR INLET DOORS

LIGHT OUT .....(270 - 290 KIAS)

CLIMBING TO 39000 FT

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
FULL A/B							
		≤105.5%	≤688	7.5-9.5		Pld ±5	2800 - 3200

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

OXYGEN SYSTEM

NORMAL ..... 100%.....

TEST MASK ..... EMER .....

DAMPERS ON

AUTOPILOT

ENGAGE SWITCH ON .....

DISENGAGE SWITCH .....

> 8000 FT	0.9M	A/P and DAMPERS ON

MACH HOLD

MACH VARIATION ..... (< ± 0.03 M)
SHORT PITCH PERIOD OSC. ..... (<0.2 "G")

0.9M ~ 2000 FT/min	A/P and DAMPERS ON

ALTITUDE HOLD

MAX CORRECTION ..... (<0.85 "G")
ALTITUDE VARIATION ..... (< ± 130 FT)

DAMPERS ON

CONTROL STICK STEERING

AUTOPILOT ON .....
PITCH HANDLING < ± 66° ..... (Δ < ± 2°)
ROLL HANDLING 7° - 66° ..... (Δ < ± 3°)

> 10000 FT	≤ 0.9M	A/P OFF and DAMPERS ON

DAMPERS

ROLL DAMPER OFF-ON .....
PITCH DAMPER OFF-ON .....
YAW DAMPER OFF-ON .....

CONTROLS

AILERONS .....
STABILIZER .....
RUDDER .....

> 10000 FT	> 0.9M	A/P OFF and DAMPERS ON

TRIM

LATERAL .....
DIRECTIONAL .....
LONGITUDINAL .....

YAW OSCILLATIONS

YAW OSCILLATIONS ..... (< ± 1/4 BALL)

IF

> 25000 FT	0.95 - 0.98M	FLAPS UP OR TAKEOFF

YAW OSCILLATIONS ..... (< ± 1 BALL)

> 20000 FT	A/P and DAMPERS ON

DISENGAGE LIMITER

CSS ROLL (4.5 "G" LEVEL TURN)

A/P OFF ..... (3.4 - 4.4 "G")

AUTO PILOT DISENGAGED LIGHT ON .....

CSS PITCH (RATE 5 - 10°/sec.)

A/P OFF .....

AUTO PILOT DISENGAGED LIGHT ON .....

20000 - 30000 FT	0.9M

SPEED BRAKES OUT ..... (Time ≤ 4")

30000 FT	0.9M	A/P and DAMPERS ON

STANDARD TURN

TURN SWITCH ON (ROLL 30 - 40°) ..... ($\Delta < \pm 5°$)

TURN SWITCH OFF.....

FLIGHT INSTRUMENTS

HSI .....

STBY COMPASS ..... ($\Delta \pm 10°$)

ATTITUDE INDICATOR .....

STBY ATTITUDE INDICATOR ..... ($\Delta < \pm 3°$)

ALTIMETER ($\Delta \pm 100$ FT) ELECT..... PNEU.....

RATE OF CLIMB ..... ($\Delta \pm 100$ FT/min)

ACCELEROMETER .....

30000 FT ANT SWITCH-DIV
ALTIMETER-ELECT (1013.2 mb)

IFF

MODE 1..... MODE 2 .....

MODE 3/A ..... MODE EMER .....

MODE C..... (GCI = ALT $\pm$ 150 FT)

30000 FT STATION RANGE > 50NM

UHF

MAIN TX..... RX .....

CHANNEL FREQUENCY INDICATOR.....

EMER TX..... RX .....

COCKPIT CONDITIONING

MAN.....

AUTO..... (CAB. PRESS. ALT ≤ 500 FT)

SUPERSONIC RUN

39000 FT	0.86M/275 KIAS	MILITARY

A/B OPERATIONS

THR MILITARY RPM..... EGT .....

THR MIL ⇒ Min A/B

A/B LIGHT UP..... (Time ≤ 5")

RPM DROP..... (≤ 5%)

THR Min A/B ⇒ Max A/B

RPM..... EGT .....

THR Max A/B ⇒ Min A/B (Stable Operation).....

THR Min A/B ⇒ MIL

A/B LIGHT OFF..... (Time ≤ 3")

STABILIZED CIT.....

CALCULATE OAT.....(Card D-1)

39000 FT	ALTITUDE HOLD (RECOMMENDED)

1.1 ⇒ 1.8 MACH TIME

INITIAL FUEL AT 1.1M.....

TIME TO ACCEL. UP TO 1.8M.....(Card D-2)

ABOVE 1.6M

A/C YAW TRIM

FULL TRIM ..... (< 1/2 BALL)

39000 FT ACCELERATE UP TO 2.0M OR CIT 121° C

2.0 M INSTRUMENT READING							
CIT	SLOW	MACH	RPM	EGT	NOZ	F/F	OIL
			≤105.5%	≤688			

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT values is ≤ 678° C.

CLIMB 41500 FT 2.0M

SLOW LIGHT OUT AT 39000 - 41000 FT

RPM MAX.....(≤ 105.5%)

41500 FT	ACCELERATE UP TO 2.2M OR CIT 153° C

2.2 M INSTRUMENT READING							
CIT	SLOW	MACH	RPM	EGT	NOZ	F/F	OIL
			≤105.5%	≤688			

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT values is ≤ 678° C.

RPM LOCK-UP

THR ⇒ IDLE (EQUAL TO MILITARY RPM)

LOCK-UP LIGHT OUT ..... (1.35 - 1.45 M)

39000 FT	250 - 260 KIAS FLAPS UP OR TAKEOFF

THR MILITARY

CIT.....

RPM .....

EGT .....

THR (CHOP) MIL ⇒ IDLE .....

THR (BURST) IDLE ⇒ MIL ..... (Time < 12")

THR (RETARD) MIL ⇒ IDLE (Time 5").....

> 25000 FT	240 - 270 KIAS

IDLE DESCENT

F/F ..... (425 - 800 PPH)

TRIGGER

(Δ EGT) .....

(Δ F/F) .....

34000 FT	≥ 0.98 M/ ≥ 348 KIAS	MILITARY
ALTIMETER (1013.2 mb)	OAT = STD DAY ± 10° C	

CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
	≤105.5%	≤688		≥4000	Pid±5	2800-3200

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

34000 FT	COCKPIT TEMP SWITCH-AUTO RHEOSTAT-COLD

COCKPIT PRESSURIZATION

CABIN PRESSURE ALTITUDE..... (11700 - 15700 FT)

THROTTLE IDLE (Time 1″ - 2″)

CABIN PRES. ALT. INCREASE..... (< 500 FT after 5″)

34000 FT

ELECTRICALLY HEATED WINDSHIELD

WINDSHIELD DEFOG SWITCH

ON ..... OFF .....

34000 FT	≤ 295 KIAS

RAIN REMOVER

RAIN REMOVER SWITCH

ON ..... OFF .....

< 35000 FT	300 - 350 KIAS	FLAPS UP 1 "G"

FUEL LOW LEVEL

FUEL LOW LEVEL LIGHT ON ..... (1025 - 1525 lbs)

10000 FT	SUBSONIC

RAM AIR SCOOP

OPEN

CABIN PRESSURE DUMP.....

AIR CONDITIONING OFF.....

RADAR BLOWER START.....

AIRFLOW IN.....

CLOSE (PROPER STOWING)

RESTORED PRESSURE.....

AFTER LANDING

180-120 KIAS

DRAG CHUTE ..... (Time < 5")

ANTI SKID ON .....

BRAKES .....

STEERING .....

PARKING AREA

IN

RECORD IN TERMINAL ERROR

RNG ..... BRG .....

NOTE

Refer to AER.1F-104S/ASAM-6CF-1 for IN terminal error values.

GPS

RECORD GPS TERMINAL ERROR

RNG..... (≤ 0.3 NM/95% CEP)

APC & BLC

DATE..... FLT.....

PILOT.....

A/C CONFIGURATION .....

AIRCRAFT		ENGINE	
M.M.	H	S/N	H

PILOT EXT./INT. INSPECTION.....

BEFORE TAKEOFF

TANKS
FLAPS
TRIMS
SPEED BRAKES
EJECTION PINS
SEAT BELT
INERTIAL REEL
CANOPY
OXYGEN
RADIOS

PRECAUTIONARY PARTIAL POWER PATTERN

HIGH KEY ..... 16000 FT AGL

FLAPS ..... TAKEOFF

LDG GEAR ..... UP

AIRSPEED ..... 260 KIAS

ENGINE..... 82% RPM

SPEED BRAKES ..... AS NEC

"G"	MAX
	MIN

FUEL	TAKEOFF	LANDING

IN ALIGN STATUS

GROUND

IN ALIGNMENT

NOTE

IN alignment may be also performed after engine start.

IN FULL G.C. ..... STATUS 3 (≤ 4 min/OAT +20° C)
STATUS 1 (≤ 8 min/OAT +20° C)

GPS

NOTE

GPS switch on/alignment may be carried out in any on-ground or in-flight phases.

GPS ..... HSI flag out of view (<5 min)
STATUS 4 SAT (≤ 12 min)

ENGINE START

PLD [ ]

F/F ..... (425 - 800 PPH)

EGT ..... (≤ 705° C)

COMBUSTION ..... (≤ 15" or ≤ 20% RPM)

FIXED FREQ RESET BUTTON – PRESS ..... CHECK LIGHT OUT

ANTI ICE "ON-OFF" AT 80% RPM ..... (≤ 5")

EMER NOZZLE ..... (3 - 4) FORCE ..... (≤ 50 lbs)

MAIN BUS TRANSFER .....

APC VANE (FLAPS UP)

RH..... SHAKER.....

KICKER (APC METER 5) .....

LH..... SHAKER.....

ALTIMETER

ELECT (QNH)..... (FIELD ± 100)

CONTROLS .....

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
IDLE							
		66-68%	120-500	8-9	700 - 1600	≥12	2800 - 3200

AUXILIARY AIR INLET DOORS

ENGINE AIR INLET DOORS OPEN (≤ 5") AND LIGHT ON

ENGINE AIR INLET DOORS CLOSE AND LIGHT OFF

DURING TAXI

STEERING .....

BRAKES

ANTISKID ON ..... OFF .....

STBY ATTITUDE INDICATOR ..... (−5°)

ATTITUDE INDICATOR .....

LINE UP POINT

ENGINE CHECK

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
MIL							
		≤105.5%	≤688	1.5 - 4		Pld ±5	2800 - 3200

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR (CHOP) MIL ⇒ IDLE (Time < 1″)

F/F ..... (425 - 800 PPH)

NO STALL EVIDENCE.....

THR (BURST) IDLE ⇒ MIL (Time < 1″ – FLAPS UP or TAKEOFF)

CIT.....

RPM .....

TIME < 10″ .....(< 1% ROLL BACK)

THR (RETARD) MIL ⇒ IDLE (Time ~ 5″ – FLAPS UP or TAKEOFF)

DECELERATION/THROTTLE LINKAGE.....

A/B CHECK

THR MILITARY

CIT.....

RPM.....(≤ 105.5%)

EGT.....(≤ 688° C)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR MIL ⇒ Min A/B

A/B LIGHT..... (≤ 3")

Min A/B NOZZLE..... (4 - 6)

RPM DROP..... (≤ 5%)

THR Min A/B ⇒ Max A/B

RPM..... (≤ 105.5%)

EGT..... (≤ 688° C)

Max A/B NOZZLE.....(7.5 - 9.5)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

FLIGHT

ACCELERATE UP TO 340 KIAS

AUXILIARY AIR INLET DOORS

LIGHT OUT .....(270 - 290 KIAS)

FLAPS TIME

29000 FT ≤ 295 KIAS RPM 90%

FLAPS UP ⇒ TAKEOFF

LE ..... (≤ 10″) TE..... (≤ 7″)

FLAPS TAKEOFF ⇒ UP

LE ..... (≤ 10″) TE..... (≤ 7″)

TRIM .....(< 1 inch) S/S .....(≤ 1/2 inch)

29000 FT ≤ 240 KIAS RPM 90%

FLAPS TAKEOFF ⇒ LAND

LE ..... (≤ 8″) TE.....(≤ 13″)

FLAPS LAND ⇒ TAKEOFF

LE ..... (≤ 8″) TE..... (≤ 13″)

TRIM .....(< 1 inch) S/S .....(≤ 1/2 inch)

> 24000 FT	SUBSONIC	A/P-OFF

PRELIMINARY APC CHECK

SLOW PITCH

METER..... PITCH RATE.....

RAPID PITCH (UP TO SHAKER OPERATION)

METER..... PITCH RATE.....

APC CHECK

28000 - 30000 FT	LDG-UP	A/P-OFF

STALL APPROACH SPEED

MAINTAIN 1 "G"

DECREASE SPEED 1 KIAS/SEC

FLAPS-UP (Refer to Card D-3 for shaker/kicker speed ranges)

FUEL .....

SHAKER SPEED ..... APC METER .....

KICKER SPEED ..... APC METER .....

NOTE

Refer to Card D-5 for test altitudes other than 28000-30000 ft.

FLAPS-TAKEOFF (Refer to Card D-4 for shaker/kicker speed ranges)

FUEL .....

SHAKER SPEED ..... APC METER .....

KICKER SPEED ..... APC METER .....

NOTE

Refer to Card D-5 for test altitudes other than 28000-30000 ft.

FLAPS-LAND (RPM >92%) (Refer to Card D-6 for shaker speed ranges)

FUEL .....

SHAKER SPEED ..... APC METER .....

NOTE

Refer to Card D-7 for test altitudes other than 28000-30000 ft.

29000 FT	LDG-UP	FLAPS-UP	A/P-ON

APC KICKER

MAINTAIN 1 "G"

OPERATE CSS

A/P-OFF..... (KICKER OPERATION)

AUTO PILOT DISENGAGED LIGHT ON .....

19000 FT A/P-OFF	0.75M	LDG-UP	FLAPS-UP

ACCELERATED STALL APPROACH

INCREASING "G" IN WIND UP TURN

MACH NUMBER DECREASING

BUFFET.....

SHAKER OPERATION.....

LATERAL INSTABILITY.....

KICKER OPERATION.....

BLC

10000 TO 15000 FT	220 KIAS	RPM 92%

FLAPS TAKEOFF ⇒ LAND

TRIM ..... (< 1 inch) S/S..... (< 1/2 inch)

10000 TO 15000 FT	160-180 KIAS	RPM 95%

FLAPS LAND

THR 95% ⇒ IDLE

TRIM..... (< 1 inch)

IF BLC REQUIREMENTS ARE NOT REACHED, REPEAT CHECKS AT AN ALTITUDE < 8000 FT.

350 - 400 KIAS A/P-OFF

ROLLS

360° ROLL (n ≥ 1 "G" FULL STICK DEFLECTION)

RH..... LH.....

≤ 260 KIAS

LANDING GEAR OPERATION

LDG UP ⇒ DOWN..... (Time ≤ 6")

LDG DOWN ⇒ UP..... (Time ≤ 7")

12000 FT LDG — UP	≤ 200 KIAS	FLAPS-TAKEOFF

LDG WARNING HORN

DESCENT TO 9000 FT RPM ≤ 90%

WARNING HORN AND LIGHT ON

AT (9000 - 11000 FT).....

THR 90% ⇒ MIL

WARNING HORN AND LIGHT OFF.....

THR RETARD FROM MIL

WARNING HORN AND LIGHT ON..... (RPM ≥ 95%)

DIVE INCREASING SPEED

WARNING HORN AND LIGHT OFF.....(210 - 230 KIAS)

AFTER LANDING

180-120 KIAS

DRAG CHUTE ..... (Time < 5")

ANTI SKID ON .....

BRAKES .....

STEERING .....

PARKING AREA

IN

RECORD IN TERMINAL ERROR

RNG ..... BRG .....

NOTE

Refer to AER.1F-104S/ASAM-6CF-1 for IN terminal error values.

GPS

RECORD GPS TERMINAL ERROR

RNG ..... (≤ 0.3 NM/95% CEP)

Avionic

DATE..... FLT.....

PILOT.....

A/C CONFIGURATION.....

AIRCRAFT		ENGINE	
M.M.	H	S/N	H

PILOT EXT./INT. INSPECTION.....

BEFORE TAKEOFF

TANKS
FLAPS
TRIMS
SPEED BRAKES
EJECTION PINS
SEAT BELT
INERTIAL REEL
CANOPY
OXYGEN
RADIOS

PRECAUTIONARY PARTIAL POWER PATTERN

HIGH KEY ..... 16000 FT AGL

FLAPS ..... TAKEOFF

LDG GEAR ..... UP

AIRSPEED ..... 260 KIAS

ENGINE..... 82% RPM

SPEED BRAKES ..... AS NEC

"G"	MAX
	MIN

FUEL	TAKEOFF	LANDING

IN ALIGN STATUS

GROUND

IN ALIGNMENT

NOTE

IN alignment may be also performed after engine start.

IN FULL G.C. ..... STATUS 3 (≤ 4 min/OAT +20° C)
STATUS 1 (≤ 8 min/OAT +20° C)

GPS

NOTE

GPS switch on/alignment may be carried out in any on-ground or in-flight phases.

GPS ..... HSI flag out of view (< 5 min)
STATUS 4 SAT (≤ 12 min)

ENGINE START

PLD |

F/F ..... (425 - 800 PPH)

EGT ..... (≤ 705° C)

COMBUSTION ..... (≤ 15" or ≤ 20% RPM)

FIXED FREQ RESET BUTTON – PRESS ..... CHECK LIGHT OUT

ANTI ICE "ON-OFF" AT 80% RPM ..... (≤ 5")

EMER NOZZLE ..... (3 - 4) FORCE ..... (≤ 50 lbs)

MAIN BUS TRANSFER .....

APC VANE (FLAPS UP)

RH..... SHAKER.....

KICKER (APC METER 5).....

LH..... SHAKER.....

ALTIMETER

ELECT (QNH)..... (FIELD ± 100)

CONTROLS .....

	CIT	RPM	EGT	NOZ	F/F -	OIL	HYDR 1 & 2
IDLE							
		66-68%	120-500	8-9	700 - 1600	≥12	2800 - 3200

AUXILIARY AIR INLET DOORS

ENGINE AIR INLET DOORS OPEN (≤ 5°) AND LIGHT ON

ENGINE AIR INLET DOORS CLOSE AND LIGHT OFF

RADAR SETTING (≥ 80% RPM)

MODE SEL – (A/A)

RANGE SWEEP – (40 NM) .....

MEMORY – (12 O'CLOCK) .....

ERASE INTENSITY – (FULL CLOCKWISE) .....

CURSOR INTENSITY – ADJUST TO PAINT HORIZON LINE AND AZIMUTH CURSOR

ANTENNA TILT – (FULL UP) .....

IF GAIN – (FULL DECREASE) .....

VIDEO PED – ADJUST TO PAINT ANT. TURN AROUND

IF GAIN – (INCREASE UP TO 50%) .....

ANTENNA TILT – (DETENT) .....

MODE SEL – SBY (REDUCE RPM) .....

DURING TAXI

STEERING .....

BRAKES

ANTISKID ON ..... OFF .....

STBY ATTITUDE INDICATOR ..... (–5°)

ATTITUDE INDICATOR .....

LINE UP POINT

ENGINE CHECK

	CIT	RPM	EGT	NOZ	F/F	OIL	HYDR 1 & 2
MIL							
		≤105.5%	≤688	1.5 - 4		Pld ±5	2800 - 3200

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR (CHOP) MIL ⇒ IDLE (Time < 1")

F/F ..... (425 - 800 PPH)

NO STALL EVIDENCE.....

THR (BURST) IDLE ⇒ MIL (Time < 1" – FLAPS UP or TAKEOFF)

CIT.....

RPM .....

TIME < 10" .....(< 1% ROLL BACK)

THR (RETARD) MIL ⇒ IDLE (Time ~ 5" – FLAPS UP or TAKEOFF)

DECELERATION/THROTTLE LINKAGE.....

A/B CHECK

THR MILITARY

CIT.....

RPM.....(≤ 105.5%)

EGT.....(≤ 688° C)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

THR MIL ⇒ Min A/B

A/B LIGHT..... (≤ 3")

Min A/B NOZZLE..... (4 - 6)

RPM DROP..... (≤ 5%)

THR Min A/B ⇒ Max A/B

RPM..... (≤ 105.5%)

EGT..... (≤ 688° C)

Max A/B NOZZLE.....(7.5 - 9.5)

NOTE

For engine PRE AER.2J-J79GE19-148 the EGT value is ≤ 678° C.

FLIGHT

ACCELERATE UP TO 340 KIAS

AUXILIARY AIR INLET DOORS

LIGHT OUT .....(270 - 290 KIAS)

LOW LEVEL SUBSONIC

NAVIGATION

IN STEER MODE SELECTED

FLY-TO

OVER A WPT ⇒ FLY-TO

IN/CDU AND HSI .....

OTF

OVER A WPT PERFORM OTF

IN/CDU (DO NOT ACCEPT).....

NOTE

If error compared with elapsed time is excessive, accept fix and record value (refer to AER.1F-104S/ASAM-6CF-1).

MARK

PERFORM A MARK POINT ACQUISITION

IN/CDU ..... N ..... E .....

FLY-TO MARK POINT

IN/CDU AND HSI .....

TCN STEER MODE SELECTED	STATION RANGE ≤ 50 NM

HSI RANGE ..... (≤ ± 1 NM)

HSI BEARING ..... (± 2°)

GPS STEER MODE SELECTED

OVER A WPT ⇒ FLY-TO

IN/CDU AND HSI .....

30000 FT 0.9M A/P and DAMPERS ON	IN STEER MODE SELECTED

AUTOPILOT NAV

SELECT A WPT ON IN/CDU

BEARING ACQUISITION..... (ROLL 21° - 28°)

NAV DISENGAGEMENT..... (~ 10NM)

A/P..... (HEADING HOLD)

NASARR R21G M1/ASAS/A.C.

30000 FT SUBSONIC

GROUND MAPPING

G M S		
	PRESENTATION	RESOLUTION
80		
40		
20		
10		

RESOLUTION AGAINST TARGET
AT DISTANCE ≥ 75 NM .....

G M P			
		PRESENTATION	RESOLUTION
ROLL ± 15°	80		
	40		
PITCH ± 15°	80		
	40		

350 KIAS	PEAK ALTITUDE > 1000 FT ABOVE MEAN LEVEL

CONTOUR MAP AND TERRAIN AVOIDANCE

START APPROACH TO THE PEAK AT A DISTANCE OF 20NM AND ALTITUDE OF 750 FT ABOVE PEAK

CM MODE

TEST ALTITUDE (QNH).....

RNG SWEEP (20NM).....

SCAN (NARROW).....

CLEAR. PLANE (750).....

PRESENTATION THRESHOLD POINT ..... (14 - 10 NM)

ALTITUDE..... DISTANCE .....

RNG SWEEP (10 NM).....

PRESENTATION THRESHOLD POINT ..... (7.5 NM)

ALTITUDE..... DISTANCE .....

PRESENTATION THRESHOLD POINT ..... (7.5 - 2.5 NM)

ALTITUDE..... DISTANCE .....

NOTE

Refer to Card D-8 for CM tolerances.

CLEAR. PLANE (1000).....

	PRESENTATION
CLIMB	
DESCENT	
BANK (± 15°)	
PITCH (± 10°)	

TEST ALTITUDE (MEAN ALTIT. MEASURED
DURING CM MODE) QNH.....

TA MODE

RNG SWEEP (20 NM).....
PRESENTATION
THRESHOLD POINT ..... (14-10 NM)
CLEAR. PLANE SELECTED.....
ALTITUDE.....
DISTANCE.....

RNG SWEEP (10 NM).....
PRESENTATION
THRESHOLD POINT ..... (7.5-2.5 NM)
CLEAR. PLANE SELECTED.....
ALTITUDE.....
DISTANCE.....

NOTE

Refer to Card D-8 for TA tolerances.

CLEAR. PLANE (1000)..... RNG SWEEP (20 NM).....

	PRESENTATION
CLIMB	
DESCENT	
BANK (± 15°)	
PITCH (± 10°)	

FLY-BY THE PEAK AND NOTE THE PEAK ALTITUDE READING ON ALTIMETER.....

AIR TO AIR

FIGHTER	30000 FT 0.9 M
TARGET	30000 FT 0.7 M
TAIL ATTACK	

MRAAM MODE (DVRI)

RNG SWEEP (10 NM) ..... SCAN (WIDE).....

AZIMUTH CURSOR ON TARGET.....

BLIND ACQUISITION MANEUVER

DITHER OPERATION.....

DITH LIGHT ON .....

LOCK-ON.....

STEERING DOT INSIDE ASE CIRCLE

IN-RANGE LIGHT ON..... (4 - 7 NM)

R MAX/TARGET COINCIDENCE..... ($\Delta \pm 0.5$ NM)

MAX ASE CIRCLE AT 2.5 - 4.5 NM .....

BREAKAWAY EVENTS ..... (0.5 - 1.5 NM)

FIGHTER	30000 FT 0.9 M
TARGET	31000 FT 0.7 M
TAIL ATTACK	

AIM - 9L (SLAVE) MODE

RNG SWEEP (10 NM)..... SCAN (NARROW).....

TARGET

DETECTION (NM)..... RETENTION .....

PRESENTATION DURING ROLL (± 15°) .....

CLOSING MANEUVER TO TARGET

LOCK-ON OPERATION.....

STEERING DOT INSIDE ASE CIRCLE.....

MAXIMUM RANGE

IN RANGE LIGHT ON .....

ANALOG BAR 6 O'CLOCK.....

RANGE..... (2 - 4 NM)

MINIMUM RANGE

IN RANGE LIGHT OFF.....

ANALOG BAR 9 O'CLOCK.....

RANGE..... (0.5 NM)

BREAKAWAY EVENTS .....

OPTICAL SIGHT

FIGHTER	30000 FT 0.9 M
TARGET	31000 FT 0.7 M
TAIL ATTACK	

OPTICAL SIGHT (NORMAL) ..... (AIM-9 MODE).....

LOCK-ON	
APPROACH	ANALOG BAR (3 - 9 O'CLOCK)
RANGE (2 - 4 NM)	ANALOG BAR (6 O'CLOCK)
	IN RANGE LIGHT ON
RANGE (0.5 NM)	ANALOG BAR (9 O'CLOCK)
	IN RANGE LIGHT OFF

FIGHTER-LEVEL FLIGHT	8000 FT
ANTENNA TILT ~ −5°	

MTI/MTT MODE

CLUTTER DECREASING		
RNG SWEEP	A/A	AMTI
10		
20		

FIGHTER/TARGET	CO-ALTITUDE	SUBSONIC

RADAR (AMTI)..... RNG SWEEP (10 NM).....

SCAN (NARROW)..... AIM-9 MODE.....

VISUAL ACQUISITION MANEUVER

RNG GATE (DETENT).....

ACTION/REJECT PRESSED/RELEASED .....

LOCK-ON OPERATION ..... (AUTOMATIC)

AFTER LANDING

180-120 KIAS

DRAG CHUTE ..... (Time < 5")

ANTI SKID ON .....

BRAKES .....

STEERING .....

PARKING AREA

IN

RECORD IN TERMINAL ERROR

RNG ..... BRG .....

NOTE

Refer to AER.1F-104S/ASAM-6CF-1 for IN terminal error values.

GPS

RECORD GPS TERMINAL ERROR

RNG .....(≤ 0.3 NM/95% CEP)

CIT VALUE Vs OAT CONVERSION TABLE

OAT	SPEED – MACH NO.						
	.92	.93	.94	.95	.96	.97	.98
	CIT	CIT	CIT	CIT	CIT	CIT	CIT
−44	−6	−5	−4	−3	−2	−1	0
−46	−8	−7	−6	−5	−4	−3	−2
−48	−10	−9	−8	−7	−6	−5	−4
−50	−13	−12	−11	−10	−9	−8	−7
−52	−15	−14	−13	−12	−11	−10	−9
−54	−17	−16	−15	−14	−13	−12	−11
−56	−20	−19	−18	−17	−16	−15	−14
−58	−22	−21	−20	−19	−18	−17	−16
−60	−24	−23	−22	−21	−20	−19	−18
−62	−27	−26	−25	−24	−23	−22	−21
−64	−29	−28	−27	−26	−25	−24	−23
−66	−32	−31	−30.5	−30	−29	−28	−27
−68	−34.5	−34	−33	−32	−31.5	−30.5	−30

NOTE

CIT value shall be recorded at stabilized Mach number.

TIME LIMIT TO ACCELERATE FROM 1.1 MACH TO 1.8 MACH (SECONDS)

- CLEAN AIRCRAFT
- 15000 LBS + FUEL CORRECTION

FUEL lbs	OAT AT 39000 FT												
	−68	−66	−64	−62	−60	−58	−56	−54	−52	−50	−48	−46	−44
3100	127	129	132	135	139	142	146	150	155	160	165	170	176
3200	128	130	133	136	140	143	147	151	156	161	166	171	177
3300	129	131	134	137	141	144	148	152	157	162	167	172	178
3400	130	132	135	138	142	145	149	153	158	163	168	173	179
3500	131	133	136	139	143	146	150	154	159	164	169	174	180
3600	132	134	137	140	144	147	151	155	160	165	170	175	182
3700	133	135	138	141	145	148	152	156	161	166	171	177	184
3800	134	136	139	142	146	149	153	157	162	167	173	179	186
3900	135	137	140	143	147	150	154	159	164	169	175	181	188
4000	136	138	141	144	148	151	156	161	166	171	177	183	190
4100	137	139	142	145	149	153	158	163	168	173	175	185	192
4200	138	140	143	147	151	155	160	165	170	175	181	187	194
4300	139	141	144	149	153	157	162	167	172	177	183	189	196

AUTOMATIC PITCH CONTROL

- FLAPS – UP
- LDG – UP

CLEAN A/C 15000 LBS + FUEL CORRECTION			TIP TANKS 15500 LBS + FUEL CORRECTION		
FUEL lbs	SHAKER	KICKER	FUEL lbs	SHAKER	KICKER
1600	207÷219	182÷194	1600	197÷209	178÷190
1800	208÷220	184÷196	1800	198÷210	180÷192
2000	210÷222	185÷197	2000	199÷211	181÷193
2200	211÷223	186÷198	2200	200÷212	182÷194
2400	213÷225	187÷199	2400	202÷214	183÷195
2600	214÷226	188÷200	2600	203÷215	184÷196
2800	215÷227	189÷201	2800	204÷216	185÷197
3000	217÷229	191÷203	3000	205÷217	186÷198
3200	218÷230	192÷204	3200	206÷218	187÷199
3400	219÷231	194÷206	3400	207÷219	189÷201
3600	220÷232	195÷207	3600	208÷220	190÷202
3800	222÷234	196÷208	3800	210÷222	191÷203
4000	224÷236	197÷209	4000	211÷223	192÷204
4200	225÷237	198÷210	4200	212÷224	193÷205
4400	226÷238	199÷211	4400	213÷225	194÷206
4600	227÷239	200÷212	4600	214÷226	195÷207
4800	229÷241	202÷214	4800	215÷227	196÷208
5000	230÷242	203÷215	5000	216÷228	198÷210
5200	231÷243	204÷216	5200	218÷230	199÷211
5400	232÷244	205÷217	5400	219÷231	200÷212

AUTOMATIC PITCH CONTROL

- FLAPS – TAKEOFF
- LDG – UP

CLEAN A/C 15000 LBS + FUEL CORRECTION			TIP TANKS 15500 LBS + FUEL CORRECTION		
FUEL lbs	SHAKER	KICKER	FUEL lbs	SHAKER	KICKER
1600	172÷184	161÷173	1600	167÷179	157÷169
1800	173÷185	163÷175	1800	168÷180	158÷170
2000	175÷187	164÷176	2000	169÷181	159÷171
2200	176÷188	165÷177	2200	170÷182	160÷172
2400	177÷189	166÷178	2400	171÷183	161÷173
2600	178÷190	167÷179	2600	172÷184	162÷174
2800	180÷192	168÷180	2800	173÷185	163÷175
3000	181÷193	169÷181	3000	174÷186	164÷176
3200	182÷194	170÷182	3200	175÷187	165÷177
3400	183÷195	171÷183	3400	176÷188	166÷178
3600	184÷196	172÷184	3600	177÷189	167÷179
3800	185÷197	173÷185	3800	178÷190	168÷180
4000	186÷198	175÷187	4000	179÷191	169÷181
4200	187÷199	176÷188	4200	180÷192	170÷182
4400	188÷200	177÷189	4400	181÷193	171÷183
4600	189÷201	178÷190	4600	182÷194	172÷184
4800	190÷202	179÷191	4800	183÷195	173÷185
5000	191÷203	180÷192	5000	184÷196	174÷186
5200	192÷204	181÷193	5200	185÷197	175÷187
5400	193÷205	182÷194	5400	186÷198	176÷188

EFFECT OF ALTITUDE ON AUTOMATIC PITCH CONTROL BOUNDARY SPEEDS

- ALL EXTERNAL STORE CONFIGURATIONS
- SUBTRACT VALUES SHOWN FROM 28000-30000 FEET SPEEDS

FLAPS UP OR TAKEOFF - SHAKER OR KICKER								
KIAS *	TEST ALTITUDE (FEET)							
	14000 to 16000	16000 to 18000	18000 to 20000	20000 to 22000	22000 to 24000	24000 to 26000	26000 to 28000	28000 to 30000
140 to 160	1	1	1	1	1	0	0	0
160 to 180	2	2	1	1	1	1	0	0
180 to 200	3	2	2	2	1	1	0	0
200 to 220	4	3	3	2	2	1	1	0
220 to 240	5	4	3	3	2	2	1	0
240 to 260	6	5	4	3	3	2	1	0
260 to 280	7	6	5	4	3	3	1	0

* Speed from Card D-3 or D-4

1. Determine 28000-30000 feet APC speed for test gross weight, configuration and boundary
2. Enter left side of chart at appropriate speed range and read across to test altitude range
3. Subtract value shown from speed obtained in Step 1

AUTOMATIC PITCH CONTROL

- FLAPS – LAND
- LDG – UP

CLEAN A/C 15000 LBS + FUEL CORRECTION		TIP TANKS 15500 LBS + FUEL CORRECTION	
FUEL lbs	SHAKER	FUEL lbs	SHAKER
1600	150÷162	1600	148÷160
1800	151÷163	1800	148÷160
2000	152÷164	2000	149÷161
2200	153÷165	2200	150÷162
2400	154÷166	2400	151÷163
2600	155÷167	2600	152÷164
2800	157÷169	2800	153÷165
3000	158÷170	3000	154÷166
3200	159÷171	3200	155÷167
3400	160÷172	3400	156÷168
3600	161÷173	3600	157÷169
3800	162÷174	3800	158÷170
4000	163÷175	4000	159÷171
4200	163÷175	4200	160÷172
4400	164÷176	4400	161÷173
4600	165÷177	4600	162÷174
4800	166÷178	4800	163÷175
5000	167÷179	5000	164÷176
5200	168÷180	5200	165÷177
5400	169÷181	5400	166÷178

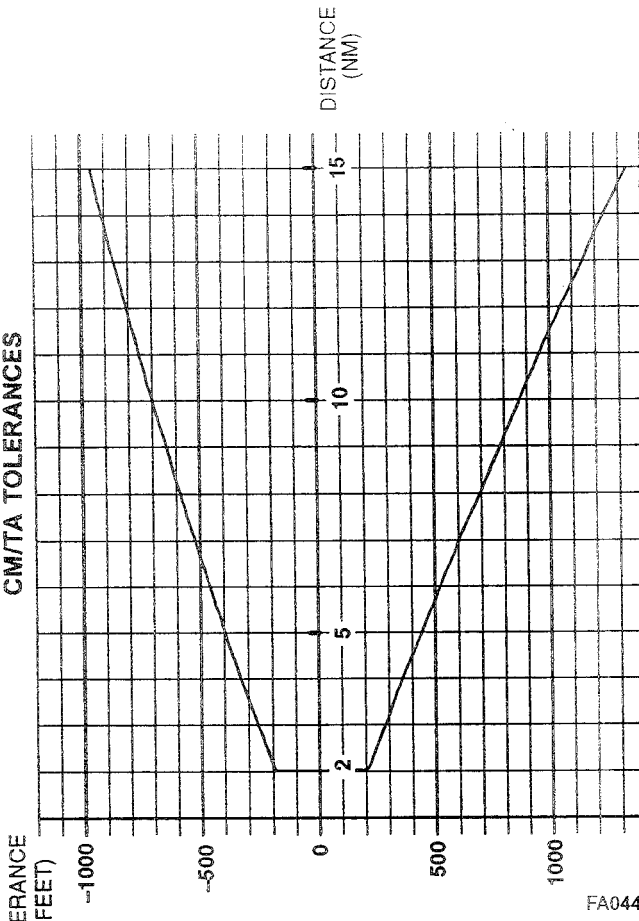
EFFECT OF ALTITUDE ON AUTOMATIC PITCH CONTROL BOUNDARY SPEEDS

- ALL EXTERNAL STORE CONFIGURATIONS
- SUBTRACT VALUES SHOWN FROM 28000-30000 FEET SPEEDS

LAND FLAPS - SHAKER								
TOP VALUE FOR 100% RPM BOTTOM VALUE FOR 95% RPM								
KIAS *	TEST ALTITUDE (FEET)							
	14000 to 16000	16000 to 18000	18000 to 20000	20000 to 22000	22000 to 24000	24000 to 26000	26000 to 28000	28000 to 30000
140 to 150	9 5	5 4	3 3	2 2	2 2	1 1	0	0
150 to 160	5 3	3 2	2 2	2 1	1 1	1 1	0	0
160 to 170	3 3	2 3	2 3	2 2	2 2	1 2	1 1	0
170 to 180	4 5	4 5	3 5	3 4	3 4	2 3	1 2	0
180 to 190	6 8	5 8	5 7	4 6	4 6	3 5	2 3	0
190 to 200	8 11	8 10	7 9	6 8	5 7	5 6	2 3	0
200 to 210	11 15	10 13	9 12	8 11	7 9	6 6	3 3	0

* Speed from Card D-6

1. Determine 28000-30000 feet APC speed for test gross weight, configuration and boundary
2. Enter left side of chart at appropriate speed range and read across to test altitude range
3. Subtract value shown from speed obtained in Step 1


CM/TA TOLERANCES
TOLERANCE (FEET)
-1000
-500
0
500
1000
2
5
10
15
DISTANCE (NM)
FA0440

IN/CDU MISSION DATA BASE LOADING

WPT	IDENT	LAT	LONG	ALT	TCN

ENGINE J79-GE-19 = MAX RPM 105.5%
(PRE AER.2J-J79GE19-148)

RPM TOLERANCE: 1%					
CIT (°C)	RPM (%)	EGT (°C)	CIT (°C)	RPM (%)	EGT (°C)
−30	95.5	568-618	+25	101.0	652-678
−25	96.0	580-628	+30	101.5	647-675
−20	96.5	592-639	+35	102.0	642-670
−15	97.0	604-649	+40	102.5	637-665
−10	97.5	617-660	+45	103.0	632-659
−5	98.0	628-670	+50	103.5	627-654
0	98.5	641-678	+55	104.0	622-649
+5	99.0	653-678	+60	104.5	622-644
+10	99.5	662-678	+65	104.1-105.5	
+15	100.0	662-678	+70	104.5-105.5	
+20	100.5	657-678	>70	104.5-105.5	

RPM > 105%
EGT : 622-638

MINIMUM PERMISSIBLE
RPM = 92.6%

ENGINE J79-GE-19 = MAX RPM 105.5%
(POST AER.2J-J79GE19-148)

RPM TOLERANCE: 1%					
CIT (°C)	RPM (%)	EGT (°C)	CIT (°C)	RPM (%)	EGT (°C)
−30	95.5	584-624	+25	101.0	664-688
−25	96.0	594-634	+30	101.5	658-686
−20	96.5	606-646	+35	102.0	654-682
−15	97.0	616-656	+40	102.5	648-676
−10	97.5	628-668	+45	103.0	644-672
−5	98.0	638-678	+50	103.5	640-666
0	98.5	650-688	+55	104.0	634-662
+5	99.0	660-688	+60	104.5	634-656
+10	99.5	672-688	+65	104.1-105.5	
+15	100.0	672-688	+70	104.5-105.5	
+20	100.5	668-688	>70	104.5-105.5	

RPM > 105%
EGT : 634-650

MINIMUM PERMISSIBLE
RPM = 92.6%