



**DEPARTAMENTO “SEGURIDAD OPERACIONAL”
SUBDEPARTAMENTO “LICENCIAS”
SECCIÓN EVALUACIONES**

**“EXAMEN DE DIFERENCIAS
PIPER CHEYENNE I/IA, II/IIXL, T1040”
“PA-31T”**

A.- Operations Limitations

1.- Speed limitations (KIAS)

	I/IA	II	IIXL	T1040
Va	177		184	183
Vne	240	242		227
Vmo	240	242		227
Vfe 15°	171	181		174
Vle/Vlo (Extension)	154	153		156
Vlo (Retraction)	141	139		142
Vmca	85	91		87
Vs	84	86		
Vso	72	75	77	78
Vx	99	96	95	87
Vy	123	121	116	123
Vsse	105	113		118
Vxse	104		113	108
Vyse	110	113		118
V ₁	90		91	
Vapp (flaps 40°)	102	98	104	109

2.- Fuel (U.S. GAL)

	I/IA	II	IIXL	T1040
Tipo a Utilizar	JET-A			
Capacidad Total	374			366
Capacidad Utilizable	366			358
Presión Combustible (PSI)				
Mínima	5			
Máxima	50			

3.- Weight (Lbs)

	I/IA	II	IIXL	T1040
Máximo TAKE-OFF	8.700	9.000	9474	9000
Baggage FWD	300	300	300	300
Baggage AFT	200	200	200	
Baggage AFT w/ 10 & 11 seats				100
Baggage AFT w/o 10 & 11 seats				440

4.- Start

30	Seconds	On	1	Minute	Off
30	Seconds	On	1	Minute	Off
30	Seconds	On	30	Minutes	Cooling

CHEYENNE I/IA

OPERATING CONDITION		OPERATING LIMITS								
POWER SETTING	SHP	TORQUE (1)		MAXIMUM OBSERVED ITT °C	Ng (2)		Np (1)		OIL PRESSURE PSIG (3)	OIL TEMPERATURE °C (4)
		2.200 RPM	2.000 RPM		RPM	%	RPM	%		
TAKE-OFF	500	1.194	38,6	700	38.100 – 101,5		2.200 – 100		80 to 100	10 to 99
MAX CONTINUOUS SINGLE-ENGINE EMERGENCY	500	1.194	38,6	700	38.100 – 101,5		2.200 – 100		80 to 100	10 to 99
MAX CLIMB (8)	455	1.194	38,6	685	-----		2.200 - 91		80 to 100	0 to 99
MAX CRUISE	455	1.194	38,6	685	-----		2.200 - 91		80 to 100	0 to 99
IDLE (5)	-----	-----	-----	660	-----		-----		40 (MIN)	-40 to 99
STARTING (6)	-----	-----	-----	1.090	-----		-----		-----	-40 (MIN)
ACCELERATION (6)	-----	1.500	48,5	-----	38.500 – 102,6		2.420 – 110		-----	0 to 99
MAX REVERSE (7)	200	497	16,0	700	38.100 – 101,5		2.068 - 94		80 to 100	0 to 99

- (1) Maximum permissible sustained torque is 1.194 Lb-ft (38,6 psig). Np must be set so as not exceed power limitations.
- (2) For every 10°C below -30°C ambient temperature, reduce maximum allowable Ng by 2,2%
- (3) Normal pressure is 80 to 100 psig at gas generator speeds above 27.000 rpm (72%) with oil temperature between 60-70°C. Oil pressure below 80 psig are undesirable and should be tolerated only for the completion of the flight, preferably at reduce power setting. Oil pressure below normal should be reported as an engine discrepancy and should be corrected before next takeoff. Oil pressures below 40 psig are unsafe, and require that either the engine be shutdown or a landing be made as soon as possible, using the minimum power required to sustain flight.
- (4) For increase oil service life, an oil temperature between 74 y 80°C is recommended. A minimum oil temperature of 55°C is recommended for fuel heater operation at takeoff power. Oil temperatures of 104°C are allowable for periods not to exceed 5 minutes.
- (5) At 50% RPM (Ng) minimum, advance power lever as required to maintain temperature within this limit.
- (6) These values are time-limited to two seconds.
- (7) Reverse limited to ground operation only. Torque and rpm should be within limits to give 200 SHP maximum.
- (8) Maximum normal operating power, top of green arc on propeller tachometer and engine torque gage.

CHEYENNE II

OPERATING CONDITION		OPERATING LIMITS						
POWER SETTING	SHP	TORQUE (1)		MAXIMUM OBSERVED ITT °C	Ng (2) RPM %	Np (1) RPM %	OIL PRESSURE PSIG (3)	OIL TEMPERATURE °C (4)
		2.201 RPM	2.000 RPM					
TAKE-OFF	620	1.484	-----	750	38.100 – 101,5	2.200 – 100	80 to 100	10 to 99
MAX CONTINUOUS SINGLE-ENGINE EMERGENCY	620	1.484	-----	750	38.100 – 101,5	2.200 – 100	80 to 100	10 to 99
MAX CRUISE (8)	620	-----	1.628	750	38.100 – 101,5	2.000 - 91	80 to 100	10 to 99
ECONOMY CRUISE	620	-----	1.628	695	-----	2.000 - 91	80 to 100	0 to 99
MAX CLIMB (8)	620	-----	1.628	710	-----	2.000 - 91	80 to 100	0 to 99
IDLE	-----	-----	-----	660 (5)	-----	-----	40 (MIN)	-40 to 99
STARTING	-----	-----	-----	1.090 (6)	-----	-----	-----	-40 (MIN)
ACCELERATION	-----	2.100 (6)	@2.420 RPM	850 (6)	38.500 – 102,6	2.420 – 110	-----	0 to 99
MAX REVERSE (7)	200	508	@2.068	750	31.530 – 84	2.068 - 94	80 to 100	0 to 99

(1) Maximum permissible sustained torque is 1.628 Lb-ft (53 psig). Np must be set so as not exceed power limitations.

(2), (6), (7) y (8) Same restriction for Cheyenne I/IA, II, IIXL y T1040.

(3) Same restriction for Cheyenne I/IA, II y T1040.

(4) For increased service life of the engine, an increase oil service life, an oil temperature between 74 y 80°C is recommended. A minimum oil temperature of 55°C is recommended for fuel heater operation at takeoff power.

CHEYENE IIXL

OPERATING CONDITION		OPERATING LIMITS					
POWER SETTING	SHP	TORQUE (1) LB/FT	MAXIMUM OBSERVED ITT °C	Ng RPM (2) %	Np RPM (1) %	OIL PRESSURE PSIG (3)	OIL TEMPERATURE °C (4)
TAKE-OFF	620	1.714	805	38.100 – 101,5	1.900 – 100	85 to 105	10 to 99
MAX CONTINUOUS SINGLE-ENGINE EMERGENCY	620	1.714	805	38.100 – 101,5	1.900 – 100	85 to 105	10 to 99
MAX CRUISE (8)	620	1.714	805	38.100 – 101,5	1.900 – 100	85 to 105	10 to 99
ECONOMY CRUISE	-----	-----	-----	-----	-----	-----	-----
MAX CLIMB (8)	500	1.382	805	38.100 – 101,5	1.900 – 100	85 to 105	0 to 99
IDLE	-----	-----	685 (5)	-----	-----	40 (MIN)	-40 to 99
STARTING	-----	-----	1.090 (6)	-----	-----	-----	-40 (MIN)
ACCELERATION	-----	2.400	850 (6)	38.500 – 102,6	2.090 – 110	85 to 105	0 to 99
MAX REVERSE (7)	200	655	805	38.100 – 101,5	1.815 – 95,5	85 to 105	0 to 99

(1) Maximum permissible sustained torque is 1.714 Lb-ft (48.7 psig). Np must be set so as not exceed power limitations.

(2), (5), (6), (7) y (8) Same restriction for Cheyenne I/IA, II, IIXL y T1040.

(3) Normal pressure is 85 to 105 psig at gas generator speeds above 27.000 rpm (72%) with oil temperature between 60-71°C. Oil pressure below 85 psig are undesirable and should be tolerated only for the completion of the flight, preferably at reduce power setting. Oil pressure below normal should be reported as an engine discrepancy and should be corrected before next takeoff. Oil pressures below 40 psig are unsafe, and require that either the engine be shutdown or a landing be made as soon as possible, using the minimum power required to sustain flight.

(4) Same Cheyenne II.

CHEYENNE T1040

OPERATING CONDITION		OPERATING LIMITS						
POWER SETTING	SHP	TORQUE (1)		MAXIMUM OBSERVED ITT °C	Ng RPM (2)	Np RPM (1)	OIL PRESSURE PSIG (3)	OIL TEMPERATURE °C (4)
		2.202 RPM	2.000 RPM					
TAKE-OFF	500	1.194	38,6	700	38.100 – 101,5	2.200 – 100	80 to 100	10 to 99
MAX CONTINUOUS SINGLE-ENGINE EMERGENCY	500	1.194	38,6	700	38.100 – 101,5	2.200 – 100	80 to 100	10 to 99
MAX CLIMB (8)	455	1.194	38,6	685	-----	2.200 - 91	80 to 100	0 to 99
MAX CRUISE (8)	455	1.194	38,6	685	-----	2.200 - 91	80 to 100	0 to 99
IDLE (5)	-----	-----	-----	660	-----	-----	40 (MIN)	-40 to 99
STARTING (6)	-----	-----	-----	1.090	-----	-----	-----	-40 (MIN)
ACCELERATION (6)	-----	1.500	48,5	-----	38.500 – 102,6	2.420 – 110	-----	0 to 99
MAX REVERSE (7)	200	655	21,2	700	38.100 – 101,5	2.112 - 96	80 to 100	0 to 99

(2) Same Cheyenne I/IA