April 1, 2010

CNATRA Single Engine Jet Log Instructions

1. Complete the top section with appropriate departure airfield frequencies and cruise data. Note TAS and Mach in the airspeed block. Note fuel flow in pounds per hour and pounds per minute in the fuel flow block. Leave the "time off" block blank.

2. Complete the destination airfield data including elevation and frequencies. Note both UHF and VHF frequencies if they are available.

3. Complete the route of flight section.

   2861 pounds as usable fuel (guage fuel will include an additional 74 pounds unusable fuel).
   Use 200 pounds for start/taxi/takeoff (STTO), this fuel is accounted for on back of form, don't count it twice. Usable fuel at lift off (start of climb) will be 2661 pounds.
   The first leg will be your climb leg noting distance to top of climb and fuel remaining at level off.
   Adjust climb fuel/distance/time for takeoff from high altitude airfields.
   Plan on zero winds aloft for cruise. Correct for winds on day of flight if required.
   Don't plan on an enroute descent. Maintain the filed altitude to the destination IAF.
   Leave the ETA/ATA column blank.

4. Complete the alternate airfield data and route of flight to the alternate section. The "FUEL" block should be the estimated fuel remaining at the destination field divided by the fuel flow at the planned cruising altitude. This is your "DRAFT" fuel remaining for flight to the alternate and, when added to the estimated time enroute to the destination, will provide accurate fuel on board data for the DD-175.

5. On the back of the jet log complete the fuel plan. Reserve fuel will be the CTW-1 SOP mandated minimums of 400 pounds on deck fuel instructor, day & weather better than 3000' / 3 miles or 500 pounds minmum on deck fuel student solo, night or weather less than 3000 / 3. The current CTW-1 fuel planning card provides for approach fuels of either 200# (short approach / pattern) or 250# (long penetration). Assume worst case.

6. Route of flight to the alternate:

   a. Last Cruising Alt - Route of flight to the alternate should be Destination IAF to Alternate IAF, at the altitude filed on the DD-175.

   b. MAP to IAF - Route of flight to the alternate is destination airfield to alternate IAF. Choose the most appropriate cruising altitude based on distance, direction of travel, terrain height and the alternate IAF altitude. Include the fuel required to climb to the desired cruise altitude in your calculations.

   c. BINGO - Route of flight is direct from field to field. Use the BINGO profile numbers in the blue pages of the PCL. The NATOPS bingo includes 300# reserve fuel. Add 100# more fuel to meet CTW-1 reserve requirements, day & good weather or 200# for student solo, night or weather less than 3000 / 3.

7. Complete the facilities section for the destination and alternate airfields. Note runway lengths, lighting, etc. Approach entries should be weather minimums vice MDA's and DH's. Additional data is at your discretion.

8. Waypoints: Note waypoints you plan to use on the cross-country. These may be the departure runway, en route NAVAIDS and fixes, IAF's, and destination / alternate airfields or runways.

SINGLE ENGINE JET FLIGHT LOG

CNATRA-GEN 3760/1 (REV.) S/N0197LLCF19482

DEP ELEV	CLNC DELIV	GND CONT	TOWER
ATIS	TIME OFF	TAS MACH	LBS PH LBS PM

CLEARANCE

DEPARTURE

DEST ELEV		APC CONT		TOWER		GND CONT		
ROUTE TO	IDENT CHAN	CUS	DIST	ETE	ETA ATA	LEG FUEL	EFR AFR	NOTES
Totals								FRCST ALT

ALTERNATE		ROUTE	ALTITUDE	TIME	FUEL
ALT ELEV		APC CONT	TOWER	GND CONT	

FUEL PLAN

1 CLIMB/ROUTE DEST IAF		6 START/TAXI	
2 ROUTE ALT IAF (IF REQUIRED)		7 TOTAL REQUIRED (4, 5 & 6)	
3 APPROACHES		8 TOTAL ABOARD	
4 TOTAL (1,2 &3)		9 SPARE FUEL (8-7)	
5 RESERVE		(not less than 10% of #4 or 20 min flight)	

FUEL TO ALTERNATE

	REQUIRED		APPROACH		RES		TOTAL
LAST CRUISING ALTITUDE		+		+		=	
MAP TO IAF		+		+		=	
BINGO (includes 300# resv)		+	Additional Reserve			=	

CHECKLIST	DESTINATION	ALTERNATE	WAYPOINTS
RWY LENGTH			1
LIGHTING			2
FUEL			3
ILS			4
LOC			5
ASR			6
PAR MINS			7
TAC MINS			8
ARR GEAR			9
NOTAMS			10
FUEL PACKET			
FLASHLIGHT, WALLET, ETC			

REFERENCE INFORMATION

CTW-1 STANDARD T-45 FUEL PLANNING DATA

Actual performance will vary with prevailing temperature, winds, drag index and varying gross weight.

For initial planning only.

Total usable fuel (JP-8/JET A+) …… 2,861 lbs
Start/Taxi/Take off …… 200
Penetration …… 200
GCA …… 250
Reserve (20 min @ 10,000 ft MSL) …… 300
Low level (360 KGS @ 12K GW=6.6 LB/NM=2,375 PPH//300 KGS=5.0 LB/NM=1,500 PPH)

JP-4 = 6.5 LB/GAL JP-5 = 6.8 LB/GAL JP-8 (JET A+) = 6.7 LB/GAL

Climb Out (13K GW, 250 KIAS to 10K, 300 KIAS to .75 IMN)

Altitude	KIAS	NM	Time	Fuel Used (lbs)
5,000	250	04	0+01	60
10,000	250	08	0+02	110
15,000	300	14	0+03	180
20,000	300	22	0+04	240
25,000	300	32	0+05	320
30,000	283/.75	44	0+07	380
35,000	253/.75	60	0+09	460
40,000	225/.75	91	0+13	570

En route (Optimum Cruise @ 12K GW)

Altitude	#/NM	IMN	CAS	#/HR	TAS
5,000	4.76	.38	230	1,195	250
10,000	4.35	.42	230	1,138	262
15,000	3.88	.46	230	1,102	282
20,000	3.42	.51	230	1,073	310
25,000	3.09	.56	230	1,055	340
30,000	2.82	.61	230	1,047	370
35,000	2.58	.68	230	997	380

Normal descent (12K GW IDLE W/SPD BRAKES IN)

Altitude	IAS	NM	Time	Fuel Used (lbs)
5,000	250	10	2+30	19
10,000	250	20	4+30	36
15,000	250	31	6+30	57
20,000	250	41	8+30	66
25,000	250	52	10+30	79
30,000	250	64	12+15	90
35,000	235	74	14+00	100
40,000	209	84	15+30	108

Fuel Planning Data JMPS Data, Standard Day, No Wind, Max Range Cruise

Climb from Sea Level **Cruise** @ 50 % Fuel Weight ~ 1400 Lbs

Altitude	Distance	Fuel	Time	FF	IMN	CAS	TAS	#/NM	NM/Min
1000	0	12	0	1240	0.36	230	235	5.28	3.92
2000	1	23	0	1226	0.36	230	238	5.15	3.97
3000	2	34	1	1209	0.37	230	242	5.01	4.03
4000	3	46	1	1194	0.37	230	245	4.9	4.08
5000	**4**	**57**	**1**	**1181**	**0.38**	**230**	**248**	**4.79**	**4.13**
6000	5	69	1	1175	0.39	230	251	4.68	4.18
7000	5	81	1	1171	0.40	230	255	4.59	4.25
8000	6	93	1	1166	0.40	230	259	4.50	4.32
9000	7	105	1	1162	0.41	230	263	4.42	4.38
10000	**8**	**117**	**2**	**1159**	**0.42**	230	**267**	**4.32**	**4.45**
11000	9	129	2	1145	0.43	230	271	4.23	4.52
12000	10	141	2	1132	0.43	230	274	4.13	4.57
13000	12	153	2	1125	0.44	230	278	4.05	4.63
14000	13	166	2	1117	0.45	230	282	3.96	4.7
15000	**14**	**178**	**3**	**1104**	**0.46**	230	**285**	**3.89**	**4.75**
16000	16	191	3	1101	0.47	230	291	3.78	4.85
17000	17	204	3	1095	0.47	230	296	3.70	4.93
18000	19	218	3	1087	0.49	230	302	3.60	5.03
19000	20	231	4	1081	0.50	230	307	3.52	5.11
20000	**22**	**244**	**4**	**1074**	**0.51**	230	**313**	**3.43**	**5.21**
21000	24	259	4	1064	0.52	230	317	3.36	5.28
22000	26	275	4	1060	0.53	230	322	3.29	5.37
23000	28	290	5	1053	0.54	230	328	3.21	5.47
24000	31	305	5	1047	0.55	230	333	3.14	5.55
25000	**33**	**320**	**5**	**1042**	**0.56**	230	**338**	**3.08**	**5.63**
26000	36	335	6	1038	0.57	230	343	3.03	5.72
27000	38	350	6	1032	0.59	230	349	2.96	5.82
28000	41	365	7	1029	0.60	230	354	2.91	5.9
29000	43	380	7	1023	0.61	230	359	2.85	5.98
30000	**46**	**395**	**7**	**1019**	**0.62**	230	**364**	**2.80**	**6.07**
31000	49	410	8	1018	0.63	230	369	2.76	6.15
32000	53	427	8	1017	0.64	230	375	2.71	6.25
33000	56	443	9	1015	0.65	230	380	2.67	6.33
34000	60	459	9	1013	0.67	230	385	2.63	6.42
35000	**63**	**474**	**10**	**1008**	**0.68**	**230**	**390**	**2.58**	**6.5**
36000	64	480	10	994	0.70	230	394	2.52	6.57
37000	69	510	11	996	0.70	226	394	2.53	6.57
38000	74	530	11	1002	0.71	222	394	2.54	6.57
39000	80	550	12	1006	0.71	218	394	2.55	6.57
40000	**91**	**570**	**13**	**1020**	**0.72**	**215**	**395**	**2.58**	**6.58**
41000	100	580	14	1030	0.73	212	399	2.58	6.65

BINGO: Clean No Wind

Fuel shown includes 300 pounds for landing.

Miles	*Fuel*																			
1	*305*	**26**	*424*	**51**	*532*	**76**	*628*	**101**	*715*	**126**	*799*	**151**	*872*	**176**	*938*	**201**	*1002*	**226**	*1066*
2	*310*	**27**	*429*	**52**	*536*	**77**	*632*	**102**	*719*	**127**	*802*	**152**	*874*	**177**	*940*	**202**	*1004*	**227**	*1068*
3	*314*	**28**	*433*	**53**	*540*	**78**	*635*	**103**	*722*	**128**	*805*	**153**	*877*	**178**	*943*	**203**	*1007*	**228**	*1071*
4	*319*	**29**	*437*	**54**	*544*	**79**	*639*	**104**	*725*	**129**	*808*	**154**	*880*	**179**	*945*	**204**	*1009*	**229**	*1073*
5	*324*	**30**	*442*	**55**	*547*	**80**	*642*	**105**	*729*	**130**	*811*	**155**	*882*	**180**	*948*	**205**	*1012*	**230**	*1076*
6	*329*	**31**	*446*	**56**	*551*	**81**	*646*	**106**	*732*	**131**	*814*	**156**	*885*	**181**	*950*	**206**	*1014*	**231**	*1078*
7	*334*	**32**	*450*	**57**	*555*	**82**	*649*	**107**	*736*	**132**	*816*	**157**	*887*	**182**	*953*	**207**	*1017*	**232**	*1081*
8	*338*	**33**	*455*	**58**	*559*	**83**	*653*	**108**	*739*	**133**	*819*	**158**	*890*	**183**	*955*	**208**	*1019*	**233**	*1083*
9	*343*	**34**	*459*	**59**	*563*	**84**	*656*	**109**	*742*	**134**	*822*	**159**	*893*	**184**	*958*	**209**	*1022*	**234**	*1086*
10	*348*	**35**	*463*	**60**	*567*	**85**	*660*	**110**	*746*	**135**	*825*	**160**	*895*	**185**	*961*	**210**	*1025*	**235**	*1089*
11	*355*	**36**	*468*	**61**	*571*	**86**	*663*	**111**	*749*	**136**	*828*	**161**	*898*	**186**	*963*	**211**	*1027*	**236**	*1091*
12	*358*	**37**	*472*	**62**	*575*	**87**	*667*	**112**	*752*	**137**	*831*	**162**	*901*	**187**	*966*	**212**	*1030*	**237**	*1094*
13	*362*	**38**	*476*	**63**	*578*	**88**	*670*	**113**	*756*	**138**	*834*	**163**	*903*	**188**	*968*	**213**	*1032*	**238**	*1096*
14	*367*	**39**	*480*	**64**	*582*	**89**	*674*	**114**	*759*	**139**	*837*	**164**	*906*	**189**	*971*	**214**	*1035*	**239**	*1099*
15	*372*	**40**	*485*	**65**	*586*	**90**	*677*	**115**	*762*	**140**	*840*	**165**	*909*	**190**	*973*	**215**	*1037*	**240**	*1101*
16	*377*	**41**	*489*	**66**	*590*	**91**	*681*	**116**	*766*	**141**	*843*	**166**	*911*	**191**	*976*	**216**	*1040*	**241**	*1104*
17	*382*	**42**	*493*	**67**	*594*	**92**	*684*	**117**	*769*	**142**	*846*	**167**	*914*	**192**	*979*	**217**	*1043*	**242**	*1107*
18	*386*	**43**	*498*	**68**	*598*	**93**	*688*	**118**	*772*	**143**	*849*	**168**	*917*	**193**	*981*	**218**	*1045*	**243**	*1109*
19	*391*	**44**	*502*	**69**	*602*	**94**	*691*	**119**	*776*	**144**	*851*	**169**	*919*	**194**	*984*	**219**	*1048*	**244**	*1112*
20	*396*	**45**	*506*	**70**	*606*	**95**	*695*	**120**	*779*	**145**	*854*	**170**	*922*	**195**	*986*	**220**	*1050*	**245**	*1114*
21	*401*	**46**	*511*	**71**	*609*	**96**	*698*	**121**	*783*	**146**	*857*	**171**	*924*	**196**	*989*	**221**	*1053*	**246**	*1117*
22	*406*	**47**	*515*	**72**	*613*	**97**	*702*	**122**	*786*	**147**	*860*	**172**	*927*	**197**	*991*	**222**	*1055*	**247**	*1119*
23	*410*	**48**	*519*	**73**	*617*	**98**	*705*	**123**	*789*	**148**	*863*	**173**	*930*	**198**	*994*	**223**	*1058*	**248**	*1122*
24	*415*	**49**	*524*	**74**	*621*	**99**	*709*	**124**	*793*	**149**	*866*	**174**	*932*	**199**	*996*	**224**	*1060*	**249**	*1124*
25	*420*	**50**	*528*	**75**	*625*	**100**	*712*	**125**	*796*	**150**	*869*	**175**	*935*	**200**	*999*	**225**	*1063*	**250**	*1127*