Attachment 6

Operations Group Chairman's
Factual Report

DCA05MA003

Climb Performance and
Climb Capability Charts

CRUISE

Maximum Cruise Thrust Setting, % N_1 (Packs On)										CF 34-3B1
OAT		Pressure Altitude (Feet x 1000)								
°C	°F	0	5	10	15	20	25	30	36	41
-70	-94	-	-	-	-	-	-	-	92.9	91.0
-65	-85	-	-	-	-	-	-	91.1	94.0	92.1
-60	-76	-	-	-	-	-	89.9	92.1	95.1	93.1
-55	-67	-	-	-	-	87.9	90.9	93.2	95.7	93.7
-50	-58	-	-	-	-	88.9	91.9	94.3	94.9	93.0
-45	-49	-	-	-	87.3	89.9	92.9	95.3	94.2	92.5
-40	-40	80.3	82.9	85.5	88.3	90.9	93.9	94.8	93.8	91.6
-35	-31	81.2	83.8	86.4	89.2	91.9	94.9	94.5	92.8	90.5
-30	-22	82.0	84.7	87.3	90.1	92.8	94.4	93.6	91.7	89.5
-25	-13	82.9	85.6	88.2	91.0	93.8	93.5	92.7	90.7	-
-20	-4	83.7	86.4	89.1	92.0	93.0	92.5	91.7	89.8	-
-15	5	84.5	87.3	90.0	92.9	92.1	91.6	90.8	-	-
-10	14	85.3	88.1	90.9	92.0	91.3	90.9	90.0	-	-
-5	23	86.1	88.9	91.7	91.3	90.6	90.2	89.1	-	-
0	32	86.9	89.8	91.1	90.6	89.8	89.5	-	-	-
5	41	87.7	90.6	90.4	89.9	89.2	88.9	-	-	-
10	50	88.5	89.9	89.7	89.2	88.5	-	-	-	-
15	59	89.3	89.2	89.0	88.6	87.8	-	-	-	-
20	68	88.6	88.5	88.4	87.9	-	-	-	-	-
25	77	87.9	87.8	87.7	87.3	-	-	-	-	-
30	86	87.1	87.1	87.0	-	-	-	-	-	-
35	95	86.4	86.4	86.3	-	-	-	-	-	-
40	104	85.7	85.7	-	-	-	-	-	-	-
45	113	85.0	85.0	-	-	-	-	-	-	-
50	122	84.2	-	-	-	-	-	-	-	-

Figure PER-54 Maximum Cruise Thrust Settings, Flaps Up, Packs On

CLIMB/ALTITUDE CAPABILITY

Maximum Climb Thrust Setting, % N_1 (Packs On)										CF 34-3B1
OAT		Pressure Altitude (Feet x 1000)								
°C	°F	0	5	10	15	20	25	30	36	41
-70	-94	-	-	-	-	-	-	-	93.8	92.4
-65	-85	-	-	-	-	-	-	91.9	95.0	93.5
-60	-76	-	-	-	-	-	90.2	93.0	96.1	94.6
-55	-67	-	-	-	-	88.2	91.2	94.1	97.1	95.1
-50	-58	-	-	-	-	89.2	92.2	95.1	96.4	94.3
-45	-49	-	-	-	87.8	90.2	93.3	96.1	95.7	93.7
-40	-40	80.2	82.9	85.9	88.7	91.2	94.3	95.9	95.0	93.1
-35	-31	81.1	83.8	86.8	89.7	92.1	95.2	95.1	94.3	92.4
-30	-22	81.9	84.7	87.7	90.6	93.1	94.6	94.6	93.7	91.4
-25	-13	82.7	85.6	88.6	91.5	94.0	94.3	93.9	92.7	-
-20	-4	83.6	86.4	89.5	92.4	93.6	93.5	93.0	91.6	-
-15	5	84.4	87.3	90.4	93.3	92.8	92.7	91.9	-	-
-10	14	85.2	88.1	91.2	92.6	91.9	91.8	90.9	-	-
-5	23	86.0	88.9	92.1	91.8	91.0	90.8	89.9	-	-
0	32	86.8	89.8	91.3	90.8	90.1	90.0	-	-	-
5	41	87.6	90.6	90.5	90.1	89.3	89.2	-	-	-
10	50	88.4	89.9	89.7	89.3	88.5	-	-	-	-
15	59	89.1	89.1	89.0	88.5	87.7	-	-	-	-
20	68	88.4	88.4	88.2	87.7	-	-	-	-	-
25	77	87.6	87.6	87.3	86.8	-	-	-	-	-
30	86	86.7	86.7	86.4	-	-	-	-	-	-
35	95	85.9	85.9	85.6	-	-	-	-	-	-
40	104	85.1	85.1	-	-	-	-	-	-	-
45	113	84.4	84.3	-	-	-	-	-	-	-
50	122	83.6	-	-	-	-	-	-	-	-

Figure PER-50 Maximum Climb Thrust Settings, Flaps Up—250 KIAS/0.7M, Packs On

CLIMB CAPABILITY

The all engine 300 foot-per-minute climb ceiling for 250/0.70M is presented in tabular form for ISA, ISA + 5, and ISA + 10 deviations. Data is based on the use of climb thrust with normal air conditioning on, anti-ice off, and weight at altitude.

The altitude capability tables provide maximum cruise thrust limit altitude at a given aircraft gross weight for .74 M, 0.77 M, 0.80 M, and LRC cruise speeds. The maximum cruise thrust limit altitude is that altitude where at a given weight, with maximum cruise thrust, depending on temperature, the selected speed can be maintained in level flight.

The maximum altitude capability is presented in tabulated form as a function of temperature, altitude, and airplane weight. The maximum altitude will usually be limited by one of the following conditions:

- The use of maximum cruise thrust
- The maximum operating limit speed (V_{MO}) or Mach (M_{MO})
- The maneuver capability

The information is presented for airplane weights from 34,000 to 52,000 pounds and temperatures from ISA to ISA + 10.

Example:

46,000 pound weight at altitude

ISA + 10

The maximum altitude achievable with a 300 fpm climb rate is FL370 (.70 Mach climb limit) using climb thrust. At that allotted, only .74 Mach and LRC speeds are available using maximum cruise thrust.

300' CLIMB / CRUISE CAPABILITY						
NORMAL ACUS ANTI-ICE OFF 25% CG		CL-65 CF34-3B1	ALTITUDE			
A/C WEIGHT	OAT	0.70M CLIMB	CRUISE SPEED 0.74M	0.77M	0.80M	LRC
34000	ISA	41000	41000	41000	41000	41000
	+5	41000	41000	41000	39440	41000
	+10	41000	41000	39920	37710	41000
36000	ISA	41000	41000	41000	40380	41000
	+5	41000	41000	40650	38780	41000
	+10	40800	40710	39220	37090	41000
38000	ISA	41000	41000	41000	39710	41000
	+5	40850	41000	39950	38190	41000
	+10	40000	39980	38580	36520	40630
40000	ISA	40800	41000	40490	39030	41000
	+5	40100	40300	39240	37590	40350
	+10	39200	39230	37950	35520	39750
42000	ISA	40050	40570	39800	38470	40150
	+5	39350	39550	38590	36960	39570
	+10	38450	38540	37310	--------	38970
44000	ISA	39250	39800	39100	37890	39370
	+5	38600	38830	37970	36400	38730
	+10	37800	37860	36690	--------	38110
46000	ISA	38500	39080	38470	37310	38610
	+5	37800	38170	37330	35310	37930
	+10	37050	37180	36100	--------	37370
48000	ISA	37750	38420	37840	36710	37860
	+5	37100	37500	36710	33580	37220
	+10	36400	36550	34730	--------	36640
50000	ISA	37000	37760	37200	36090	37190
	+5	36400	36850	36120	31090	36550
	+10	35650	35800	33270	--------	35870
52000	ISA	36200	37100	36580	34940	36490
	+5	35750	36240	34970	--------	35780
	+10	34600	34710	31420	--------	34790

Figure PER-53 300-Foot Climb/Cruise Capability