AD-A113 761 ROCKWELL INTERNATIONAL CEDAR RAPIDS IA COLLINS RADIO--ETC F/G 1/3
DELTA ELECTRICAL LOAD ANALYSIS C-141B JACC/CP AIRCRAFT,(U)
MAR 82 G R TAYLOR F09603-80-C-0602
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DELTA ELECTRICAL LOAD ANALYSIS
C-141B JACC/CP AIRCRAFT

A.F. CONTRACT F09603-80-C-0602

CDRL A005

A.F. CONTRACT F09603-81-C-1953

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REV STATUS OF SHEETS																									
	REV	A		A					A																
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

CONTRACT NO. F09603-80-C-0602	ROCKWELL INTERNATIONAL CORPORATION COLLINS RADIO GROUP DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92663 CEDAR RAPIDS, IA 52406
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TECHNICAL REPORT - ELECTRICAL LOAD ANALYSIS

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SIZE	CODE IDENT	DWG NO.
A	13499	649-2800
SCALE	REV	SHEET 2 OF 8

ELECTRICAL LOAD ANALYSIS REPORT

1.0 INTRODUCTION

1.1 The installation of the provisions to accept the JACC/CP Capsule in the C-141B Aircraft causes a change to the electrical loads within the present aircraft power distribution system. The purpose of this report is to furnish a tabulation of the changes to the aircraft power system caused by this installation.

1.2 This installation is designed to utilize power from the presently existing aircraft buses. No new buses were added nor were any existing buses deleted. The electrical wiring diagrams for the system installation are shown on Rockwell drawings 649-2740, 649-2741, 649-2770, 649-2791.

1.3 Installation of provisions for the JACC/CP Capsules consisted of the following power equipments:

QTY	TYPE NUMBER	DESCRIPTION
2 Ea.	635V-1	HF Bandpass Filter
3 Ea.	437S-1C	VHF/FM Antennas
1 Ea.	UPS-192A	Active Antenna System

1.4 The installation of the H.F. Antenna Probe System utilizes the A-C Power provided from the JACC/CP interface van to aircraft and is part of the basic van load on the aircraft power system.

2.0 A-C ANALYSIS

The A-C power for the two (2) HF Bandpass filters, 635V-1, is taken from the A-C NAV Bus No. 1 (115V, 400 Hz, ØA). Protection is by two (2) 2 Amp circuit breakers.

The folloiwng is for information only and is not included as part of the delta analysis. The 115V, 400Hz 3Ø power for the JACC/CP capsule is taken from the aircraft MAIN AC TIE BUS. Protection is by an 80 amp circuit breaker in each phase. Measured A-C usage by the "not updated" capsule is 2530VA from ØA, 4025 VA from ØB and 2760 VA from ØC. Both one KW, HF radios were in transmit. Total JACC/CP power usage is 9315 VA.

The currents drawn by the added components are contained in Table 1.

BUS	EQUIPMENT	NO OF UNITS	MAXIMUM WATTS PER UNIT	OPERATING CONDITIONS AVERAGE WATTS							
				LOADING AND ANCHOR	START AND WARMUP	TAXI	TAKEOFF AND CLIMB	CRUISE	CRUISE COMBAT	EMER-GENCY	LANDING
115VA A-C NAV BUS NO.1 (ØA)	HF 1 BANDPASS FILTER	1	85	0	85	70	70	70	70	0	70
115VAC A-C NAV BUS NO.1	HF2 BANDPASS FILTER	1	85	0	85	70	70	70	70	0	70
115VAC A-C NAV BUS NO. 1	TOTAL INCREASE		170	0	170	140	140	140	140	0	140

TABLE 1

AC POWER LOADING

3.0 D-C ANALYSIS

The D-C power for the added components, three (3) VHF/FM Antennas (437S-1C) and the Active HF Antenna System (UPS-192A), is taken from the MAIN D-C AVIONICS BUS NO. 1. Proection for the FM antennas is a single 7.5 amp circuit breaker and for the UPS-192A, a 1 amp circuit breaker. The currents drawn by the added components are contained in Table 2.

BUS	EQUIP	NO OF UNITS	MAXIMUM AMPERES	OPERATING CONDITIONS AVERAGE AMPERES							
				LOADING AND ANCHOR	START AND WARMUP	TAXI	TAKEOFF AND CLIMB	CRUISE	CRUISE-COMBAT	LANDING	EMERGENCY
MAIN DC AVIONICS BUS NO 1	JACC/CP HF RECEIVE ANT.SYS.	2	0.41	0	0.41	0.41	0.41	0.41	0.41	0.41	0
SAME	JACC/CP VHF/FM										
SAME	#1 ANT	1	1.25	0	1.25	.02	.02	.02	.02	.02	0
SAME	#2 ANT	1	1.25	0	1.25	.02	.02	.02	.02	.02	0
SAME	#3 ANT	1	1.25	0	1.25	.02	.02	.02	.02	.02	0
MAIN DC AVIONICS BUS NO 1	TOTAL INCREASE		4.16	0	4.16	0.47	0.47	0.47	0.47	0.47	0

TABLE 2

D-C POWER LOADING

4.0 SUMMARY

The electrical load changes to the C-141B aircraft power system caused by this installation are insignificant and causes minimum change to the available growth capacity. Additionally the addition of the H.F. Antenna Probes installation per Contract F09603-81-C-1953 does not affect the previous installation of the original "Jackpot" modification.