

EXHIBIT No. A

FCC FORM 442, PAGE 2, PARAGRAPH 4:

FREQUENCY (kHz) (A)	Watts (B)	Watts (C)	(D)	EMISSION (E)	MODULATING SIGNAL (F)	NECESSARY BANDWIDTH (kHz) (G)
3004 ^{2025.4}	400	800	PEAK	2K50J3E	SSB VOICE	2.5
3004	400	800	PEAK	2K50G2D	M-PSK 1800 BAUD	2.5
3004	100	50	MEAN	2K50H3E	AME	2.5
3004	100	50	MEAN	100HA1A	CW	0.1
6550 ^{6551.4}	400	2500	PEAK	2K50J3E	SSB VOICE	2.5
6550	400	2500	PEAK	2K50G2D	M-PSK 1800 BAUD	2.5
6550	100	625	MEAN	2K50H3E	AME	2.5
6550	100	625	MEAN	100HA1A	CW	0.1
11306 ^{11307.4}	400	3200	PEAK	2K50J3E	SSB VOICE	2.5
11306	400	3200	PEAK	2K50G2D	M-PSK 1800 BAUD	2.5
11306	100	800	MEAN	2K50H3E	AME	2.5
11306	100	800	MEAN	100HA1A	CW	0.1
13312 ^{13313.4}	400	4000	PEAK	2K50J3E	SSB VOICE	2.5
13312	400	4000	PEAK	2K50G2D	M-PSK 1800 BAUD	2.5
13312	100	1000	MEAN	2K50H3E	AME	2.5
13312	100	1000	MEAN	100HA1A	CW	0.1
17964 ^{17965.4}	400	5000	PEAK	2K50J3E	SSB VOICE	2.5
17964	400	5000	PEAK	2K50G2D	M-PSK 1800 BAUD	2.5
17964	100	1100	MEAN	2K50H3E	AME	2.5
17964	100	1100	MEAN	100HA1A	CW	0.1

all winter freqs

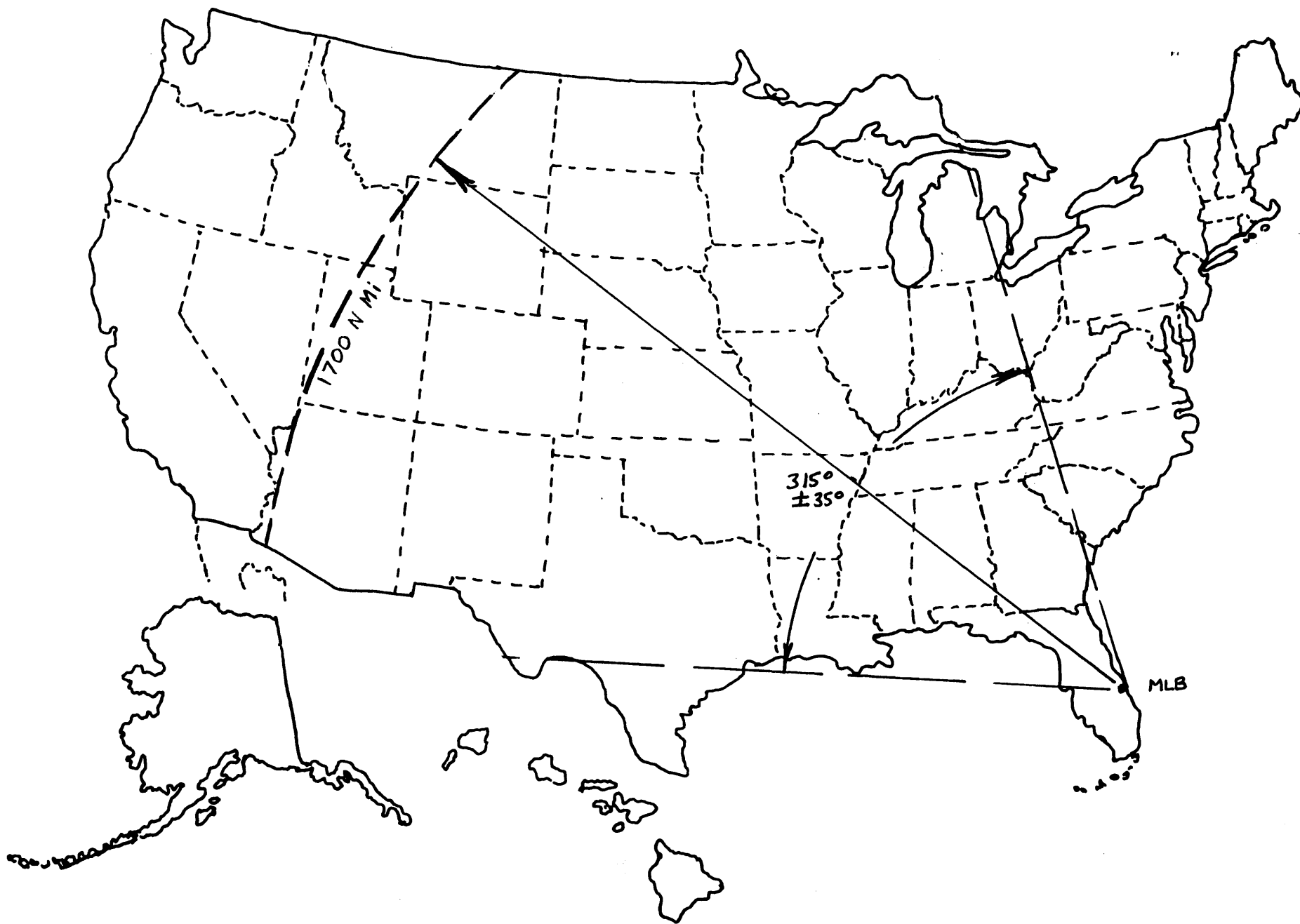


Exhibit B

FLIGHT TEST AND EVALUATION OF HFS900D HIGH FREQUENCY DATA RADIO:

I. PURPOSE:

The purpose of this Flight Test is to perform on-the-air test and evaluation of the operation of the Rockwell Avionics, Collins HFS-900D HF Data Radio (HFDR) in a HF Data LINK (HFDL) application as defined in ARINC Specification 753.

This series of flight tests will evaluate the effects of strong signals, weak signals, and HF signal Propagation on the operation of the HFDR in the air to ground and ground to air role.

II. BACKGROUND:

Historically HF radio equipment has provided air transport category aircraft with long range voice communications for Air Traffic Control and Airborne Operational Control. HF voice continues to be a vital communication medium for the safety, efficiency and regularity of flight across the ocean and remote areas of the world.

A new application for HF radio equipment, HF Data Link (HFDL), has recently been developed. HFDL is one of several communication mediums that provide data capability for the Air Traffic Network (ATN). In addition to short range mediums like VHF Data Link (VDL) and Mode S, there are long range mediums including Satellite Communications (SATCOM) and HFDL. It has been recognized that SATCOM and HFDL have complementary characteristics that enhance the availability and connectivity of air-ground data link communications.

III. TEST PROGRAM:

The HFS-900D is in the design development cycle with testing for FCC Type Acceptance and FAA TSO being conducted at this time. On-the-air flight test and evaluation will be the final proof-of-performance for the equipment.

Two HFS-900D HF Data Radios will be used during these tests, one on the ground and a second in the flight test aircraft.

The ground station will be located at the Rockwell Avionics, Collins Engineering Laboratory, Building #306, 600 John Rodes Blvd., Melbourne, Florida 32934. The airborne station will be the company flight test aircraft, a Cessna type TU206G, call sign N206PD. These flight tests will be conducted within the U.S. in a fan shaped area ranging out to a maximum of 1700 nmi NW (315+&-35 degrees) from Melbourne, Florida. See map - Exhibit B.

The antenna for the ground station will be a Hy-Gain/Telex Model LP1017CA, 17 element Log Periodic antenna mounted atop a self supporting tower 80 feet above the ground level. This antenna will cover 6.2 to 30 MHz frequency band and an inverted-V dipole will be used for the lowest frequency. (NOTE: Antenna is already authorized for fixed flight test operations, see below.)

The airborne station antenna will be a shunt fed wire antenna to the vertical stabilizer fed by a CPL-920 or 490S-1 Antenna Coupler. This antenna is a standard aircraft HF antenna and meets the FAA requirements for airworthiness and installation.

The ground station is licensed under 47 CFR Section 87.303(c) with station call sign KBP9, for operation on 3004, 6550, 11306, 13312, and 17964 kHz. The aircraft Tail Number N206PD is licensed for Section 87.303(c) HF flight test frequencies as well.

IV. OBJECTIVES

The objectives of this series of flight test is to perform on-the-air testing and evaluation and determine two way link performance of the HFS-900D HF Data Radio, which uses a Digital Signal Processor, in the presents of strong signals, weak signals and fading caused by HF signal propagation.

V. BENEFITS TO THE PUBLIC

The Collins HF Data Link system provides the air transport industry and its customers with next generation HF communication equipment, a key component of air traffic management and flight safety. The HF Data (HFDR) provides both voice and data service to the aircraft.

Implementation will provide airlines with the following benefits:

1. All traditional HF modes of operation including USB, LSB, CW, AME, and analog data.
2. ARINC 635/735 standard HFDL modes compatible with the ATN network.
3. Improved Built-in-Test capability.
4. Software dataload capability in accordance to ARINC 615.
5. New ARINC 753 coupler interface to provide improved communication with the coupler.
6. Software developed to DO-178B Level C required for future ATN and FANS operation.

