Exhibit # 1 for FCC Form 442
September 14, 1999

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Parameters for the SCI-1000 as planed for use in the Boeing "X" band radar tests:

Frequency Band:	8 – 12 GHz (we will only use 2 GHz within this band)
Transmit Power:	+20 dBm (100 mwatts) max
Duty Cycle:	15% max
Antenna Gain:	16 dBi (at 10 GHz)

The SCI1000 radar uses a linear FM homodyne (LFMH) architecture. A LFMH radar utilizes a continuous frequency sweep to collect its information which means that the frequency of the transmitted signal is constantly changing.

Our normal operating mode produces a frequency sweep rate of 2 GHz in 8 ms and we repeat this sweep at a max rate of 100 Hz. For the calculations below, assume that we are constantly sweeping the 2 GHz in a sawtooth fashion (no reset time). This would be the worst case from a power perspective. At this time, we cannot give the exact start and stop frequencies that we will be using, although they will most likely center around 10 GHz. This is why we want to keep the 8 – 12 GHz band open.

During the 8ms frequency sweep, the SCI1000 has switches that modulate the transmitted waveform. A short burst of transmitted power is radiated and then shut off to allow the received energy to be collected. This process is continuously repeated during the frequency sweep creating a duty cycle that lowers the average radiated power.

The following calculations use the numbers and assumptions from above:

Peak transmit power:	+20 dBm (100 mwatts)
Average transmit power:	+11.8 dBm (15 mwatts)
Power density (@ 10' from antennas):	0.0005 mwatt/cm^2

Concept of Operations

Ground Checkouts

After the system is installed (radar in cabin, antennas and amplifiers in nose), ground checkouts and calibrations will be performed. This will include placing calibration targets in front of the nose at a range of 10' – 30'. During these checks the radar system will be operated in its normal operating mode. This is the same mode as that to be used during the dynamic measurements.

Dynamic Measurements

Prior to flight, the radar system will be powered up and, if possible, calibrated. The transmitter will be blanked during travel to the measurement location and then the radar system will be placed in its normal operating mode. The system will remain in this mode until the data acquisition is complete. The transmitter will again be blanked during the return trip to base.

EXHIBIT #2

INSTRUCTION AND MAINTENANCE MANUAL

FOR

PYRAMIDAL HORN ANTENNAS

EMCO MODEL 3160

The Electro-Mechanics Company

Part Number: 399185
Revision: A

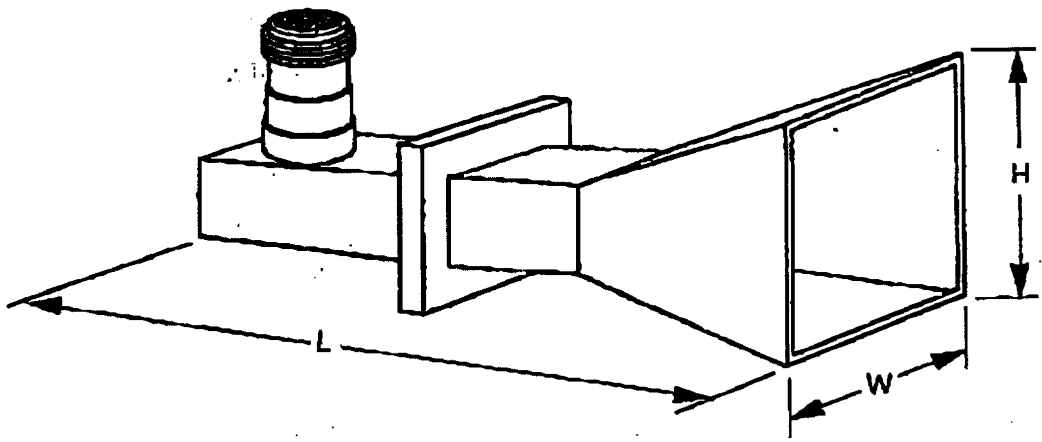
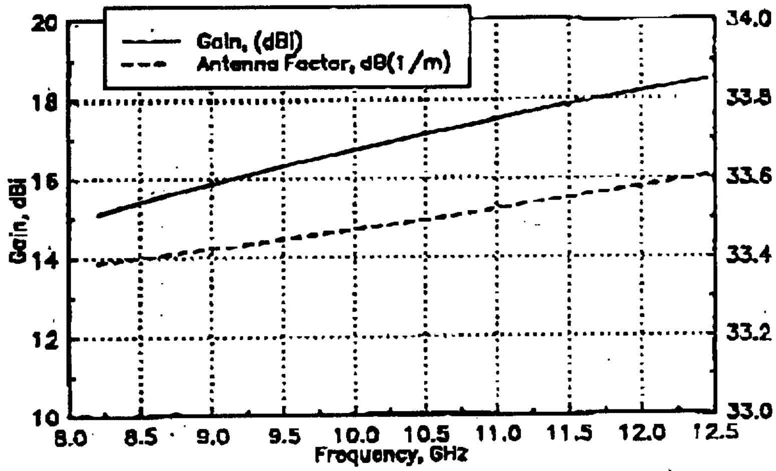


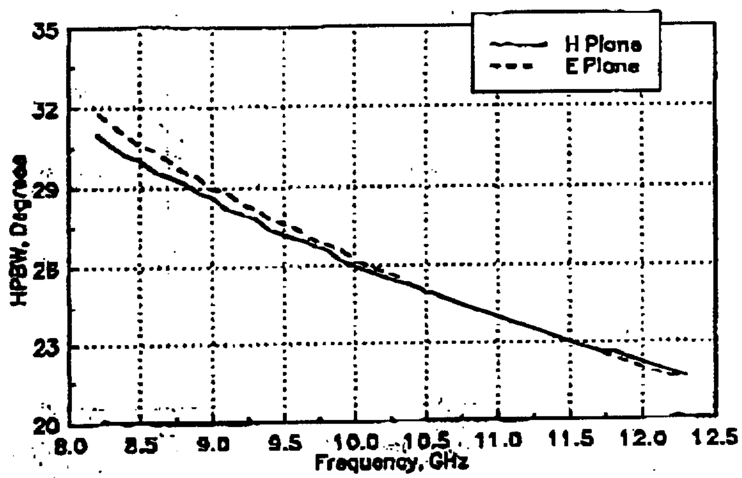
Figure 1: Pyramidal Horn Antenna Reference Drawing

TABLE II
MECHANICAL SPECIFICATIONS

Model	Height H, cm	Width W, cm	Length L, cm	Weight kg	Construction
3160-01	62.6	46.9	103.2	25.000	Welded
3160-02	52.8	39.6	88.3	10.000	Welded
3160-03	34.0	26.0	62.2	4.545	Welded
3160-04	23.5	17.5	53.3	2.273	Welded
3160-05	15.7	11.6	36.2	1.620	Welded
3160-06	11.6	8.6	30.5	0.795	Welded
3160-07	7.6	5.8	22.9	0.426	Invest. Cast
3160-08	5.1	3.8	15.9	0.284	Invest. Cast
3160-09	3.5	2.7	10.5	0.114	Electro-formed
3160-10	2.5	1.8	9.5	0.057	Electro-formed



(a)



(b)

Figure B-7: (a) Gain and Antenna Factor, and (b) HPBW of EMCO Model 3160-07

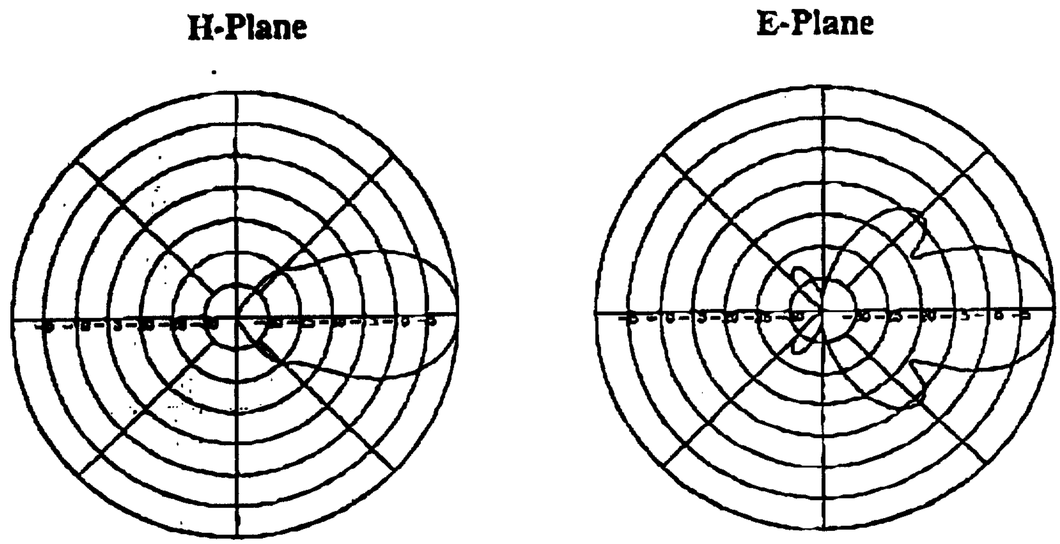


Figure D-7: EMCO Model 3160-07 Antenna Pattern at 10.3 GHz

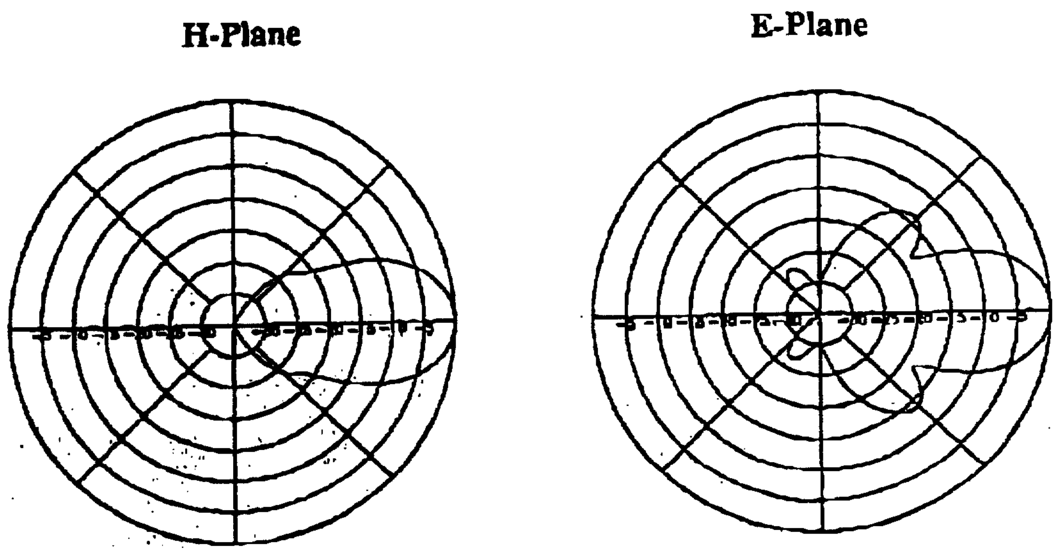


Figure D-8: EMCO Model 3160-08 Antenna Pattern at 15.2 GHz

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Purpose:

The intent of this Program is to map the Radar Cross Section (RCS) of an aircraft in flight using a radar system also in flight. This will be developed into a Low Observables (LO) Supportability tool and incorporated into a Prognostic and Health Management (PHM) program for LO aircraft.

Scope:

The intent is to transmit and receive Radar Frequencies (RF) for the purpose of creating a 2d image, building data bases for long term trend analysis, and real time mission assessment of an airborne aircraft. The information will be generated for the purpose of improved reliability & maintainability features of fleet service aircraft. New technologies present opportunities that were unavailable to predecessor aircraft. Using state of the art radar software and hardware techniques, Sensor Concepts Incorporated (SCI) has developed the SCI-1000 radar system. This portable ground based radar system is specifically designed for performing RCS measurements in field environments. It is the program desire to develop this system into an air based measurement tool.

Definitions:

The SCI-1000 will provide microwave imaging for evaluation of an article's backscatter properties. The radar unit operates over the 0.2-18.0 GHz frequency range in four bands and utilizes a linear FM homodyne architecture which provides excellent sensitivity with low transmit power (100 millaWatts) while maintaining a high speed data collection capability with speeds in excess of 100 chirps per second.

The SCI-1000 radar system consists of a radar unit that is housed in single 19" rack mount style enclosure. A field ruggedized portable computer controls the radar unit via a single interface cable and includes a high speed DSP to handle data acquisition under the Windows 95 operating system. The operating system, control software and data storage is stored on a removable Iomega 1 Gbyte JAZ drive. The radar and computer units run on 120 VAC and together draw less than 300 watts of power in normal operation.

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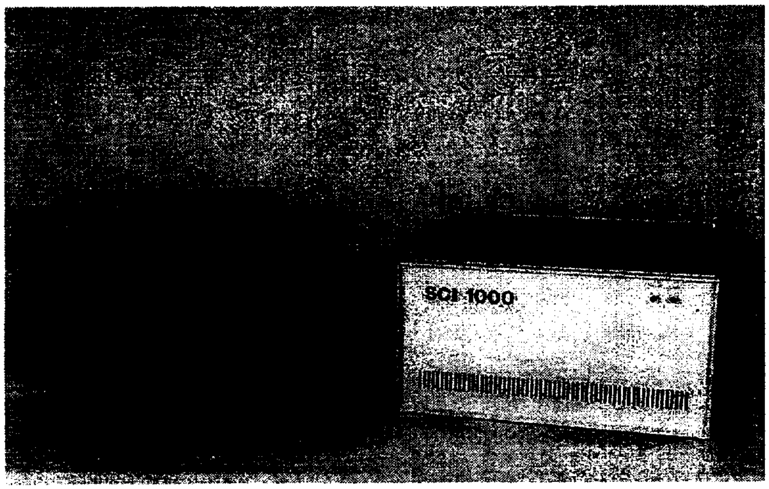

Figure 1 The SCI-1000 Radar System

Included with the SCI-1000 radar system are extensive data acquisition and reduction software tolls to aid users in analyzing the radar data. Real-time diagnostics are used in surveying potential measurement sites for clutter as well as performing before/after treatment assessments on targets. Imaging tools help pinpoint trouble areas on targets and motion compensation algorithms are available for analyzing data that is collected under less than desired conditions. Flexible calibration routines help to provide high quality data products even in the most demanding environments. All of the above features are contained within a simplified graphical user interface that is easy to use with only minimal training, yet maintains access to low level functions for use by experts.

SCI-1000	SYSTEM SPECIFICATIONS
RADAR	0.2 – 18.0 GHz in four bands (0.2 – 2.0 / 2.0 – 8.0 / 8.0 – 12.0 / 12.0 – 18.0) Linear FM homodyne receiver Integrated hardware gating Chirp times down to 820 microsec for 4 GHz of bandwidth 12 bit / 10 MHz A/D
COMPUTER	Ruggedized Fieldworks portable computer 166 MHz Pentium processor PCI/ISA bus 128 Mbytes of onboard RAM Removable 1 Gbyte Iomega JAZ disk for operating system and data Windows 95 operating system Labview based Graphical User Interface Onboard Analog Devices 21060 DSP

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MECHANICAL	SIZE: 20" x 17" x 9" (Radar) 16" x 15" x 5" (Computer) WEIGHT: <50 lbs. (Radar) <25 lbs. (Computer) POWER: 120V/2A for both units
DATA ACQUISITION	Maximum of 4096 frequencies per chirp (Dependent on measurement scenario) Maximum of 4 GHz of bandwidth per chirp (Dependent on measurement scenario) (max of 1.8 GHz in the 0.2 – 2.0 GHz band) Up to 50 frequency chirps per second (Dependent on measurement scenario) Software gating to eliminate unwanted clutter Real-time diagnostic mode to ensure measurement quality RCS vs. frequency/downrange plots Magnitude or Phase 2 independent plots with memory for comparison Flexible calibration options Mie series With and without background subtraction Downrange correction (r4) Custom Several measurement modes supported Linear SAR (1D/2D) ISAR Static (vs. time) User definable setups for repetitive measurements
DATA REDUCTION	Tightly integrated with data acquisition for seamless transition Traditional rectangular plots RCS vs. aspect/time RCS vs. frequency RCS vs. downrange Multiple plots on one graph for comparison Versatile imaging options Processing Windowing, Zero padding and Data filtering Plotting 2-D/3-D intensity plots, image comparisons, Global RCS, Global downrange and Overlays

The Aircraft chosen to house the radar system is a King Air from the King Air Special Projects Group (KASP). Boeings King Air Special Projects Group modifies, certifies airworthy, and operates turboprop aircraft as low-cost flying laboratories to acquire Engineering research data as part of risk reduction processes for emerging airborne navigation and targeting systems. A unit of Flight Test Engineering, KASP is located at Lambert - St. Louis International Airport in St. Louis, Missouri.

KASP presently utilizes two Beechcraft aircraft - a Super King Air 300 and a King Air E90. Both aircraft have been modified to provide effective, low-cost, flight test data gathering capability.

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Phase I Configuration

The KASP personnel will install the SCI-1000 unit in the cabin of the Super King Air 300. Cabling will be routed through the pressurized bulkhead prior to installation of the unit and Antennas (transmit and receive) will be mounted just aft of the radome.

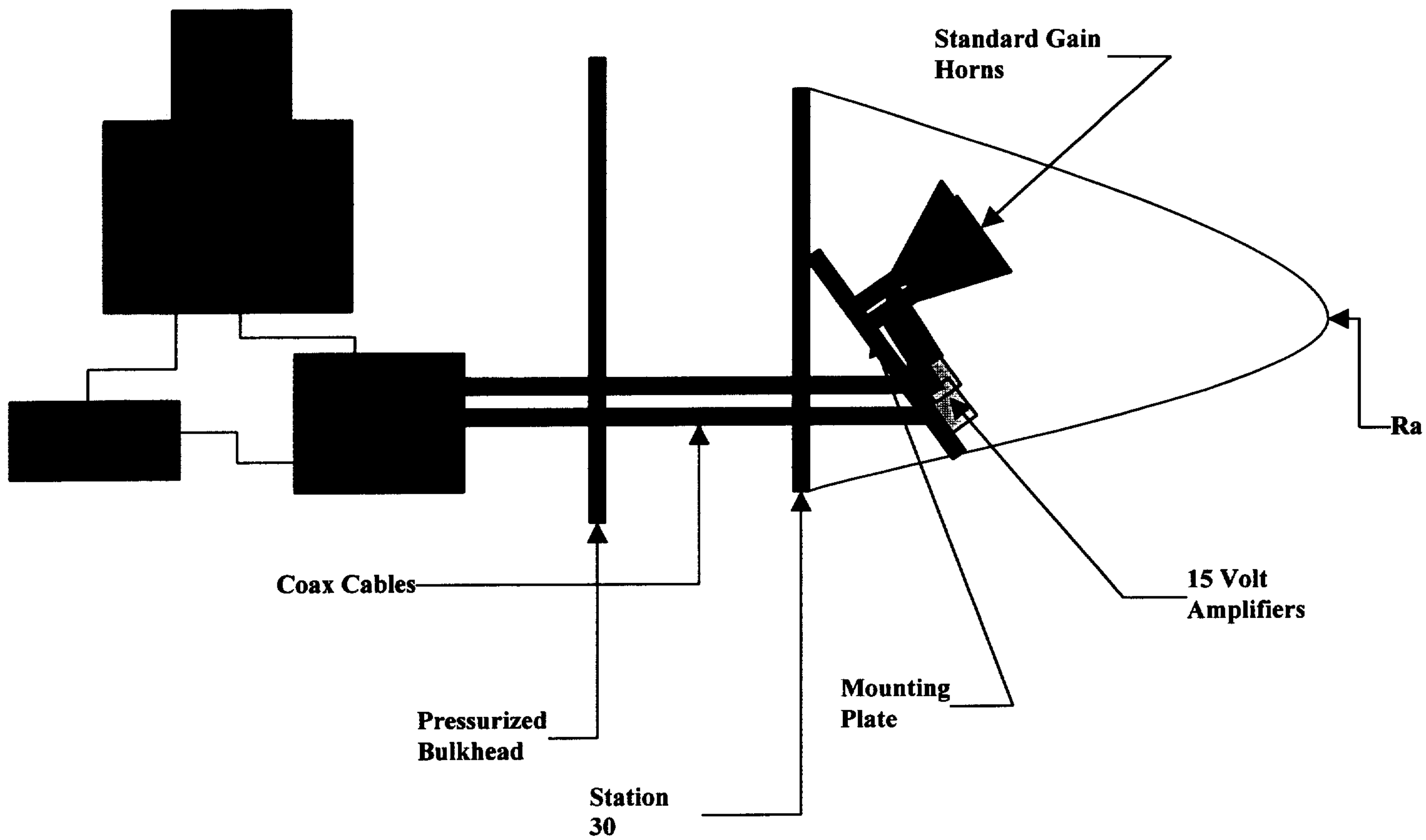

Figure 5 SCI-1000 Configuration Diagram in the Super King Air

An engineer from SCI who will utilize the data acquisition and measurement diagnostics features of the software program to get RCS backscatter from a target aircraft will operate the unit via the computer interface. The flight configuration for the test involves the Super King Air 300 with the SCI-1000 radar unit installed to fly at an approximate distance of 300 ft from a target King Air. The target aircraft will fly above the Super King Air and remain at a steady flight for all measurements. The figure below illustrates the intended flight profile.

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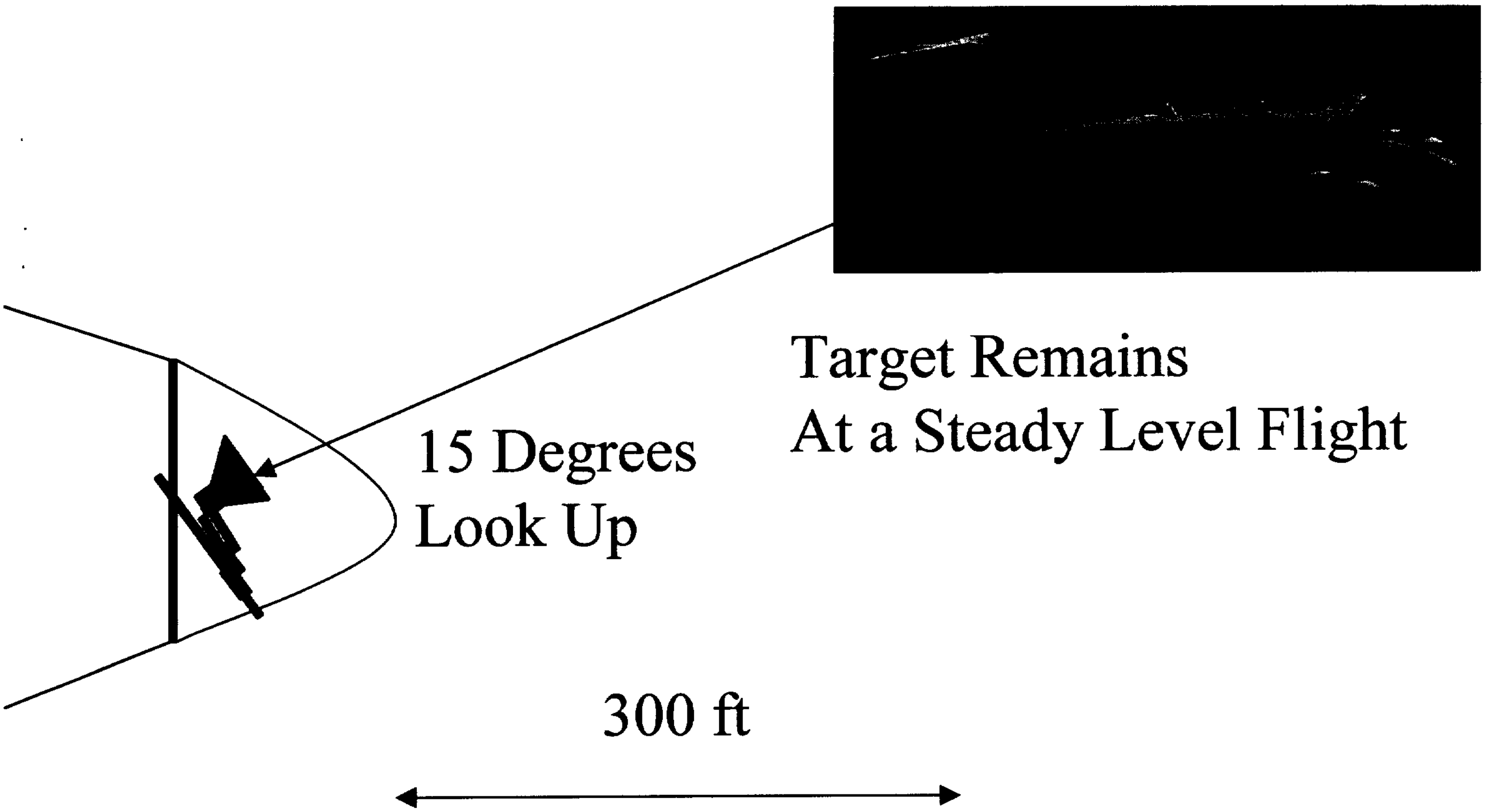
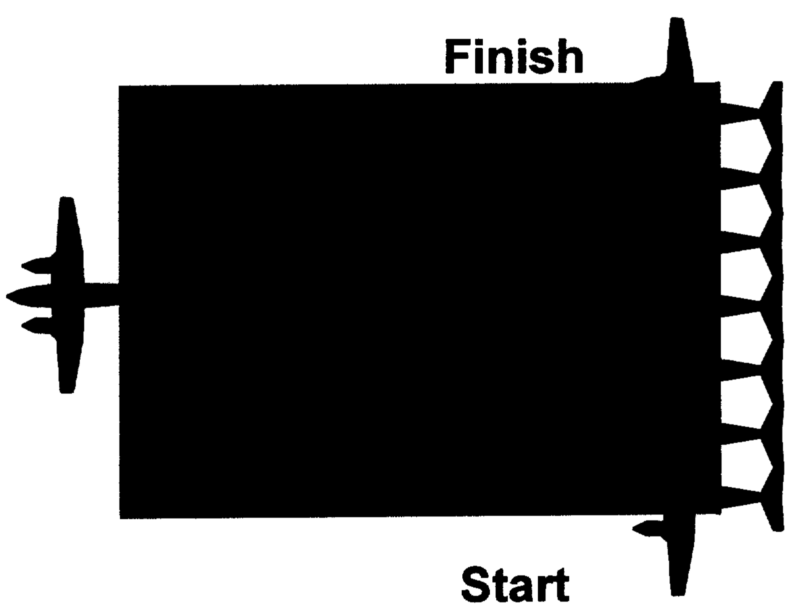


Figure 6 Flight Configuration

The Super King Air will perform the sweep of the target aircraft by moving from left to right while the SCI-1000 is transmitting and receiving X-band RF (8.0 – 12.0 GHz) of the aft sections of the target. Upon finishing the maneuver the data collected will be processed and analyzed real-time, adjustments made if necessary, and the whole process will repeat. In flight measurement time is expected to be about 2 hours.



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Scheduling

The first flight is scheduled to begin on December 6th 1999 with follow on in January 2000. In addition further testing to incorporate S, C and Ku Bands may occur later in the year 2000.

Success Criteria

The overall objective is "to see if we can see something" first, assessing the feasibility of low power airborne imaging.