

Aircraft Research Instrumentation
Sabreliner N307D - Project # 9-760
Airborne Exhaust Studies
Loren Nelson

RAF-Supplied Instrumentation:

- I. Airborne Data System.
 - A. Acquisition. Sabreliner ADS (Motorola 68000 based), Kennedy Model 9800 Tape Drives.
 - B. Display: Hewlett-Parkard Model 2113E Computer (1000 series), HP Model 9885M Floppy Disk Drive, HP Model 9876A Printer, HP85 (terminal), and Panasonic Model WV-5362 Twin Video Monitor.

- II. Aircraft Position, Velocity and Attitude.
 - A. Litton LTN-51 INS (Inertial Navigation System) located in the cabin. SN - 663.
 - B. LORAN C, Advanced Navigation Inc., ANI-7000.

- III. Static Pressures.
 - A. Rosemount Model 1501 Digital Pressure Transducer - Fuselage Port (PSFD). SN - 1501AT01.
 - B. Rosemount Model 1201F1 Pressure Trans. - Fuselage Port (PSF). SN - 812.
 - C. Rosemount Model 1201F1 Pressure Trans. - Cabin (PCAB). SN - 940.

- IV. Dynamic Pressures.
 - A. Rosemount Model 1221F1VL - Fuselage (QCF). SN - 49.
 - B. Rosemount Model 1221F1VL - Radome (QCR). SN - 145.

- V. Temperatures.
 - A. Rosemount Type 102 Non-deiced Sensor -- Rosemount Model 510BF Amplifier - Fuselage Mount (TTF). SN - 2351.
 - B. Rosemount Type 102 Deiced Sensor -- Rosemount Model 510BF Amplifier - Fuselage Mount (TTFH). SN - 27581.

- VI. Dew Point and Humidity.
 - A. EG&G Model 137-C3 Dew Point Hygrometer - Fuselage Mount (DPB). SN - 1025.
 - B. General Eastern Model 1011 Dew Point Hygrometer - Fuselage Mount (DPT). SN - 11493.
 - C. NCAR Modified Cryogenic Hygrometer - Inlet Mounting (VCRH). SN - 701/36. Sensors for inlet temperature and pressure.

VII. Flow Angle Sensors.

- A. Nose Radome Flow Sensing Configuration.
 - 1. Attack - Rosemount Model 1221F1VL Differential Pressure Transducer (ADIFR). SN - 108.
 - 2. Sideslip - Rosemount Model 1221F1VL Differential Pressure Transducer (BDIFR). SN - 90.

VIII. Cloud Physics and Aerosol Sensors.

- A. Particle Measuring Systems Model 260X - Right Wing (R1,2) and Left Wing (R3-R7, R9-R10).
- B. Particle Measuring Systems Model FSSP - Left Wing. (R1,2; R8; R11). Delany probe, SN-12.
- C. Particle Measuring Systems Model 300X FSSP - Right Wing (R3-R11).
- D. TSI CN counter, Model 3760. Inside cabin, with bypass pump and measurements of pressure and flow rate.

IX. Air Chemistry.

- A. Experimental dye-chemiluminescence ozone detector, with associated measurements of flow and temperature.

XI. Photography.

- A. PULNIX Model CCD Video Camera Module - Cockpit Forward looking with GE Video Recorder, Date/Time Recording, with an audio record of inter-aircraft communications.
- B. Video camera viewing avionics gauges in the cockpit, centered on the EGT, RPM, EPR, and fuel flow gauges.

User-Supplied Instrumentation:

- I. Ophir radiometric thermometer, two units (changed between R4 and R5).
- II. Ophir infrared hygrometer and pressurization equipment.
- III. Ice crystal sampling rod with event-marker switches.