

FLIGHT SUMMARY REPORT

Flight #: 91-083
Date: 7 May 1991
Sensor Package: Wild-Heerbrug RC-10
High-Resolution Interferometer Sounder
(HIS)
Area(s) Covered: Coastal Central California

Investigator(s): Smith, University of Wisconsin
Flight Request: 91T298

Aircraft #: 709
Julian Date: 127

SENSOR DATA

Accession #:	04217	-----
Sensor ID #:	036	083
Sensor Type:	RC-10	HIS
Focal Length:	6" 153.19 mm	-----
Film Type:	Aerial Color SO242	-----
Filtration:	2.2 AV	-----
Spectral Band:	400-700 nm	-----
f Stop:	4	-----
Shutter Speed:	1/100	-----
# of Frames:	82	-----
% Overlap:	60	-----
Quality:	Excellent	Excellent
Remarks:		

Airborne Science and Applications Program

The Airborne Science and Applications Program (ASAP) is supported by three ER-2 high altitude Earth Resources Survey aircraft. These aircraft are operated by the High Altitude Missions Branch at NASA-Ames Research Center, Moffett Field, California. The ER-2s are used as readily deployable high altitude sensor platforms to collect remote sensing and *in situ* data on earth resources, celestial phenomena, atmospheric dynamics, and oceanic processes. Additionally, these aircraft are used for electronic sensor research and development and satellite investigative support.

The ER-2s are flown from various deployment sites in support of scientific research sponsored by NASA and other federal, state, university, and industry investigators. Data are collected from deployment sites in Kansas, Texas, Virginia, Florida, and Alaska. Cooperative international scientific projects have deployed the aircraft to sites in Great Britain, Australia, Chile, and Norway.

Photographic and digital imaging sensors are flown aboard the ER-2s in support of research objectives defined by the sponsoring investigators. High resolution mapping cameras and digital multispectral imaging sensors are utilized in a variety of configurations in the ER-2s' four pressurized experiment compartments. The following provides a description of the digital multispectral sensor used for data collection during this flight.

High-Resolution Interferometer Sounder

The High-Resolution Interferometer Sounder (HIS) measures upwelling infrared spectral radiance at the aircraft altitude with high absolute accuracy using a passive Michelson interferometer and precision onboard blackbody calibration sources. The instrument has a single nadir staring field of view with observed spectra obtained every six seconds. The spectra cover the range 16.6 microns to 3.3 microns with a spectral resolution of 0.3 to 0.5 cm^{-1} . The primary use of the instrument is as an atmospheric sounder of temperature and water vapor. The spectra also contain important information on trace gases and surface properties. The HIS was developed by the University of Wisconsin at Madison and is a prototype instrument for advanced infrared satellite sounders.

Additional information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research Center, Mail Stop 240-6, Moffett Field, California 94035-1000 (Telephone: (415) 604-6252).

CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-083

Accession # 04217

Sensor # 036

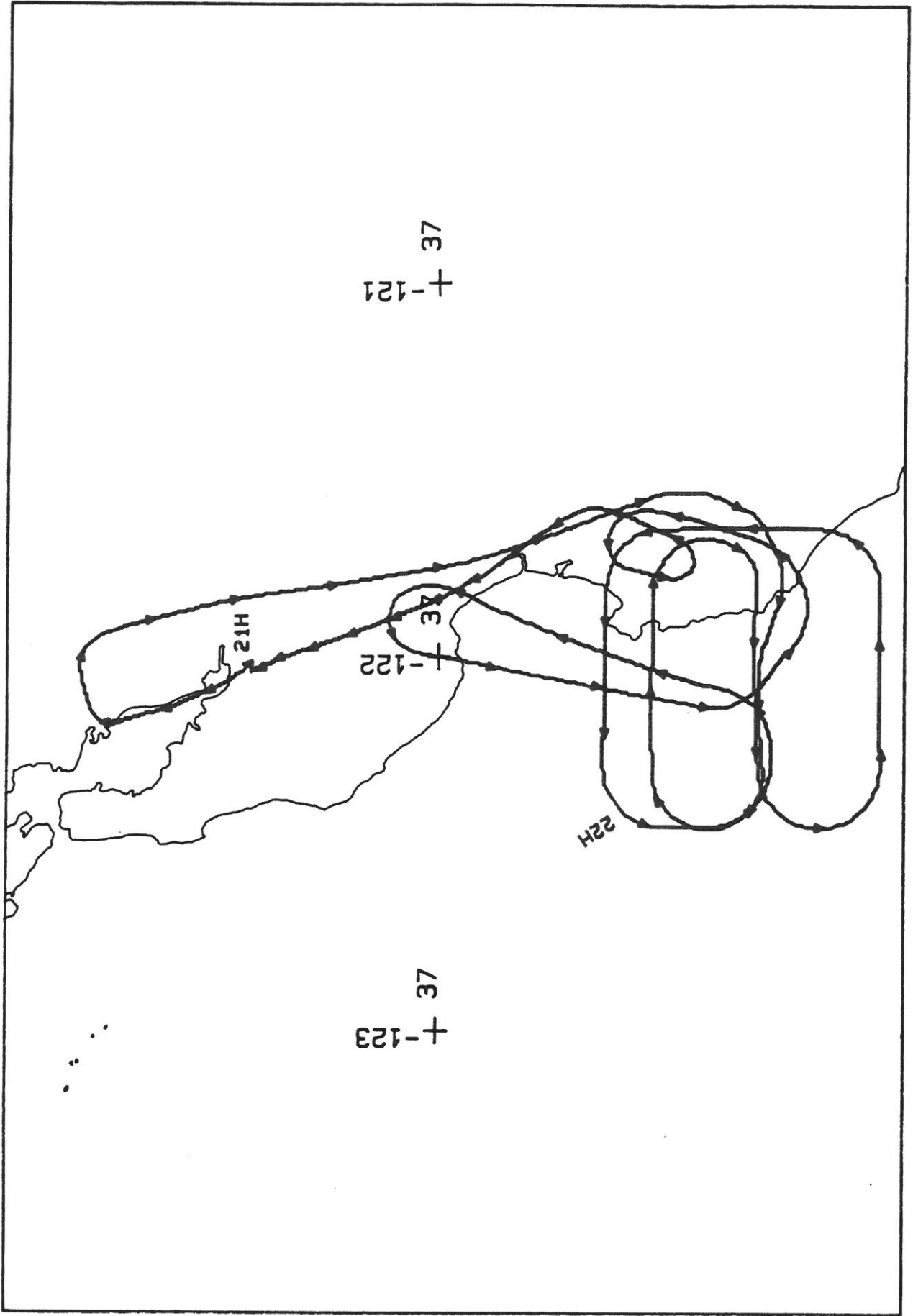
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	7913-7916	21:32:25	21:35:18	65000/19800	20-60% stratus (frames 7913-7914)
B - C	7917-7919	21:36:16	21:38:12	"	Clear; oblique frames in turn
C - D	7920-7923	21:39:09	21:42:02	"	10-70% stratus (frames 7921-7923)
D - E	7924-7926	21:43:00	21:44:56	"	100% stratus (frames 7924-7926); oblique frames in turn; emulsion staining (frame 7926)
E - F	7927-7930	21:45:53	21:48:45	"	20-100% stratus (frames 7927-7930); emulsion stains (frames 7927-7928)
F - G	7931-7932	21:49:42	21:50:40	"	Clear; oblique frame in turn
G - H	7933-7936	21:51:37	21:54:30	"	Clear
H	7937	21:55:27	_____	"	Clear; oblique frame in turn
H - I	7938-7941	21:56:25	21:59:16	"	10-60% stratus (frames 7939-7941)

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Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
I - J	7942-7947	22:00:14	22:05:00	65000/19800	100% stratus (frames 7942-7947); oblique frames in turn
J - K	7948-7953	22:05:57	22:10:43	"	40-10% stratus (frames 7948-7951)
K - L	7954-7956	22:11:40	22:13:34	"	10% stratus (frame 7956); oblique frames in turn
L - M	7957-7962	22:14:31	22:19:16	"	10-70% stratus (frames 7958-7962)
M - N	7963-7968	22:20:13	22:24:57	"	10-100% stratus (frames 7963-7966); oblique frames in turn
N - O	7969-7994	22:25:54	22:49:29	Descending	Clear; oblique and near vertical photography during spiral descent over Salinas and during descent to Moffett Field

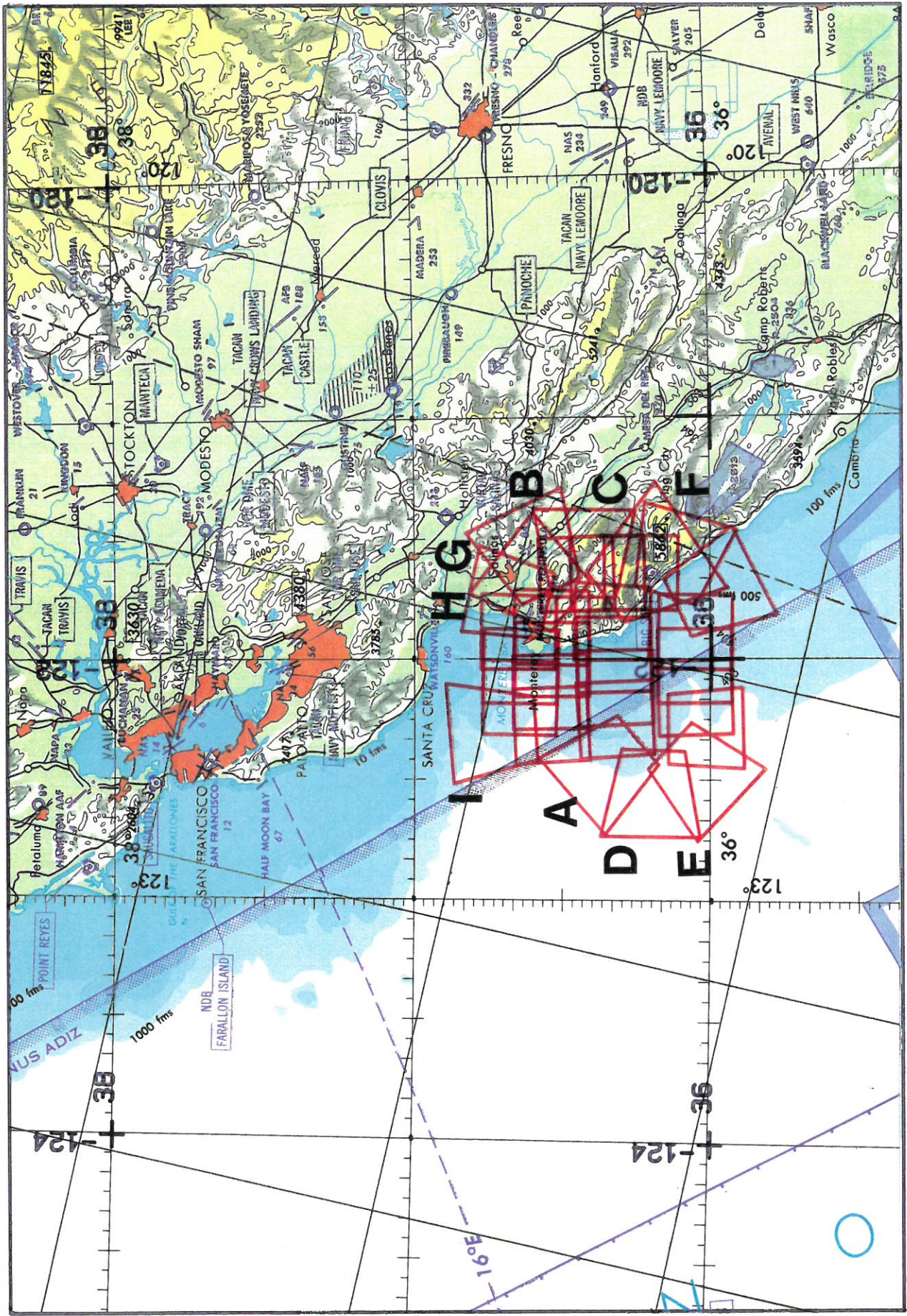


FLIGHT 91-083

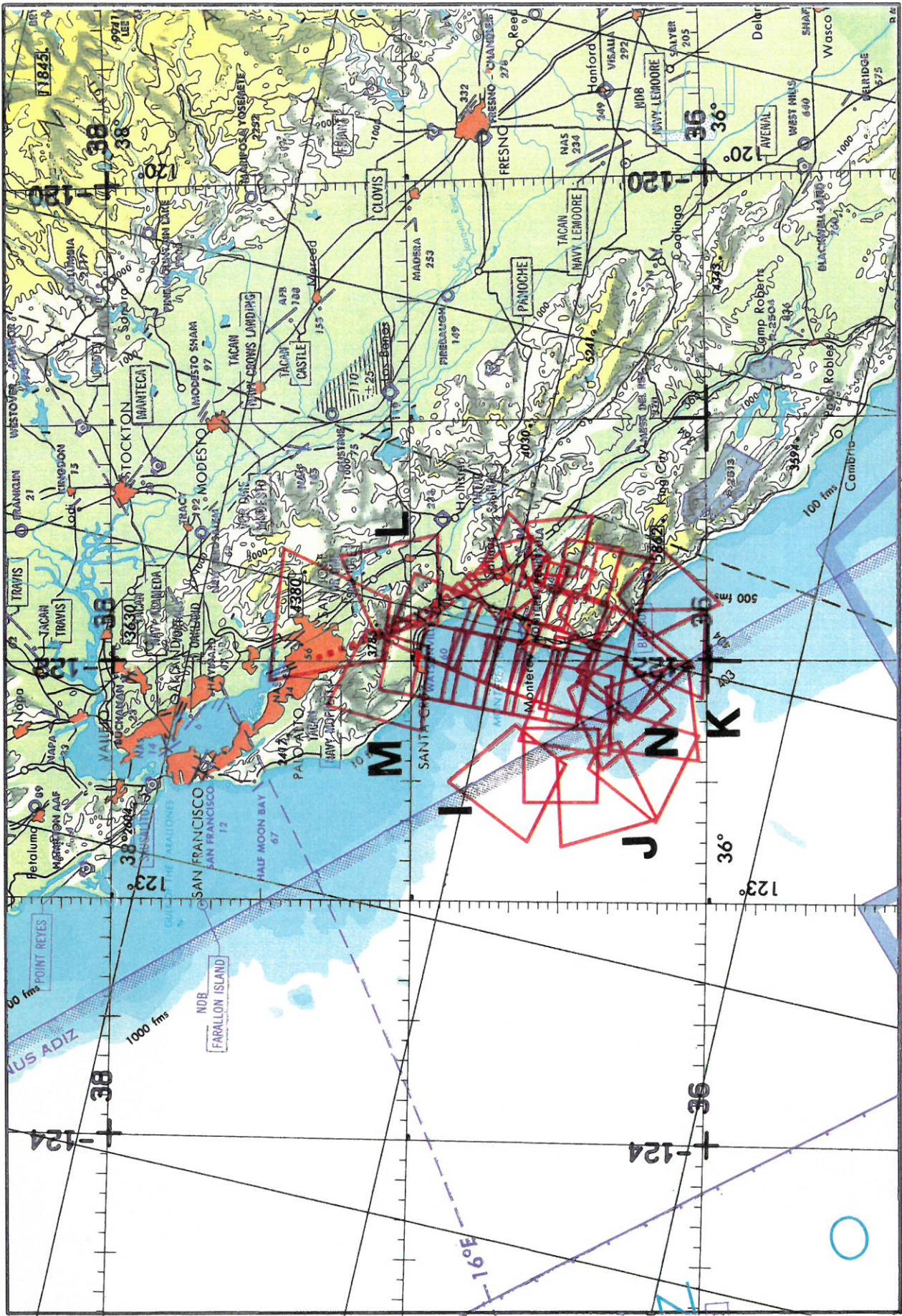
7 May 1991

A/C 709

HIS Functional Check Flight



FLIGHT 91-069 7 May 1991 A/C 709 HIS / RC-10 Accession # 04217 JNC 49



FLIGHT 91-089 7 May 1991 A/C 709 HIS / RC-10 Accession # 04217 JNC 49