

FLIGHT SUMMARY REPORT

Flight #: 92-155
Date: 15 September 1992
Sensor Package: Dual Wild-Heerbrug RC-10
Dual Hycon HR-732
Thematic Mapper Simulator (TMS)
Area(s) Covered: Morgan Hill to Prunedale, California

Investigator(s): Functional Sensor Flight

Aircraft #: 708

Flight Request: 92X003

Julian Date: 269

SENSOR DATA

Accession #:	04445	04446	04447
Sensor ID #:	034	026	038
Sensor Type:	RC-10	RC-10	HR-732
Focal Length:	12" 304.66 mm	12" 304.97 mm	24" 609.6 mm
Film Type:	High Definition Aerochrome IR SO-131	Aerial Color SO-242	Panatomic-X Aerographic II 2412
Filtration:	cc.10B	None	Wratten-12
Spectral Band:	510-900 nm	400-700 nm	510-700 nm
f Stop:	4	4	14.2
Shutter Speed:	1/200	1/200	1/75
# of Frames:	6	7	18
% Overlap:	60	60	60
Quality:	Excellent	Excellent	Excellent
Remarks:			

SENSOR DATA continued

Accession #:	04448	-----
Sensor ID #:	039	101
Sensor Type:	HR-732	TMS
Focal Length:	24" 609.6 mm	-----
Film Type:	Panatomic-X Aerographic II 2412	-----
Filtration:	Wratten-12	-----
Spectral Band:	510-700 nm	-----
f Stop:	14.2	-----
Shutter Speed:	1/75	-----
# of Frames:	18	-----
% Overlap:	60	-----
Quality:	Excellent	Good
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 and camera system(s) used for data collection during this flight.

Thematic Mapper Simulator

The Daedalus Thematic Mapper Simulator (TMS) is a multispectral scanner flown aboard the ER-2 aircraft which simulates spatial and spectral characteristics of the seven Landsat-D Thematic Mapper bands. The specific bands are as follows:

<u>Daedalus Channel</u>	<u>TM Band</u>	<u>Wavelength, μm</u>
1	A	0.42 - 0.45
2	1	0.45 - 0.52
3	2	0.52 - 0.60
4	B	0.60 - 0.62
5	3	0.63 - 0.69
6	C	0.69 - 0.75
7	4	0.76 - 0.90
8	D	0.91 - 1.05
9	5	1.55 - 1.75
10	7	2.08 - 2.35
11	6	8.5 - 14.0 low gain
12	6	8.5 - 14.0 high gain

Sensor/aircraft parameters are as follows:

IFOV:	1.25 mrad
Ground Resolution:	81 feet (25 meters) at 65,000 feet
Total Scan Angle:	43°
Swath Width:	8.4 nmi (15.6 km) at 65,000 feet
Pixels/Scan Line:	716
Scan Rate:	12.5 scans/second
Ground Speed:	400 kts (206 m/second)

Information on data tape format, logical record format, and scanner calibration data may be obtained from the NASA-Ames Aircraft Data Facility at (415) 604-6252.

Camera Systems

Various camera systems and films are used for photographic data collection. Film types include high definition color infrared, natural color, and black and white emulsions. Available photographic systems are as follows:

- Wild-Heerbrug RC-10 metric mapping camera
 - 9 x 9 inch film format
 - 6 inch focal length lens provides area coverage of 16 x 16 nautical miles from 65,000 feet
 - 12 inch focal length lens provides area coverage of 8 x 8 nautical miles from 65,000 feet
- Hycon HR-732 large scale mapping camera
 - 9 x 18 inch film format
 - 24 inch focal length lens provides area coverage of 4 x 8 nautical miles from 65,000 feet
- IRIS II Panoramic camera
 - 4.5 x 34.7 inch film format
 - 24 inch focal length lens
 - 90 degree field of view provides area coverage of 2 x 21.4 nautical miles from 65,000 feet

The U.S. Geological Survey's EROS Data Center at Sioux Falls, South Dakota serves as the archive and product distribution facility for NASA-Ames aircraft acquired photographic and digital imagery. For information regarding photography and digital data (including areas of coverage, products, and product costs) contact EROS Data Center, Customer Services, Sioux Falls, South Dakota 57198 (Telephone: (605) 594-6151).

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. 92-155

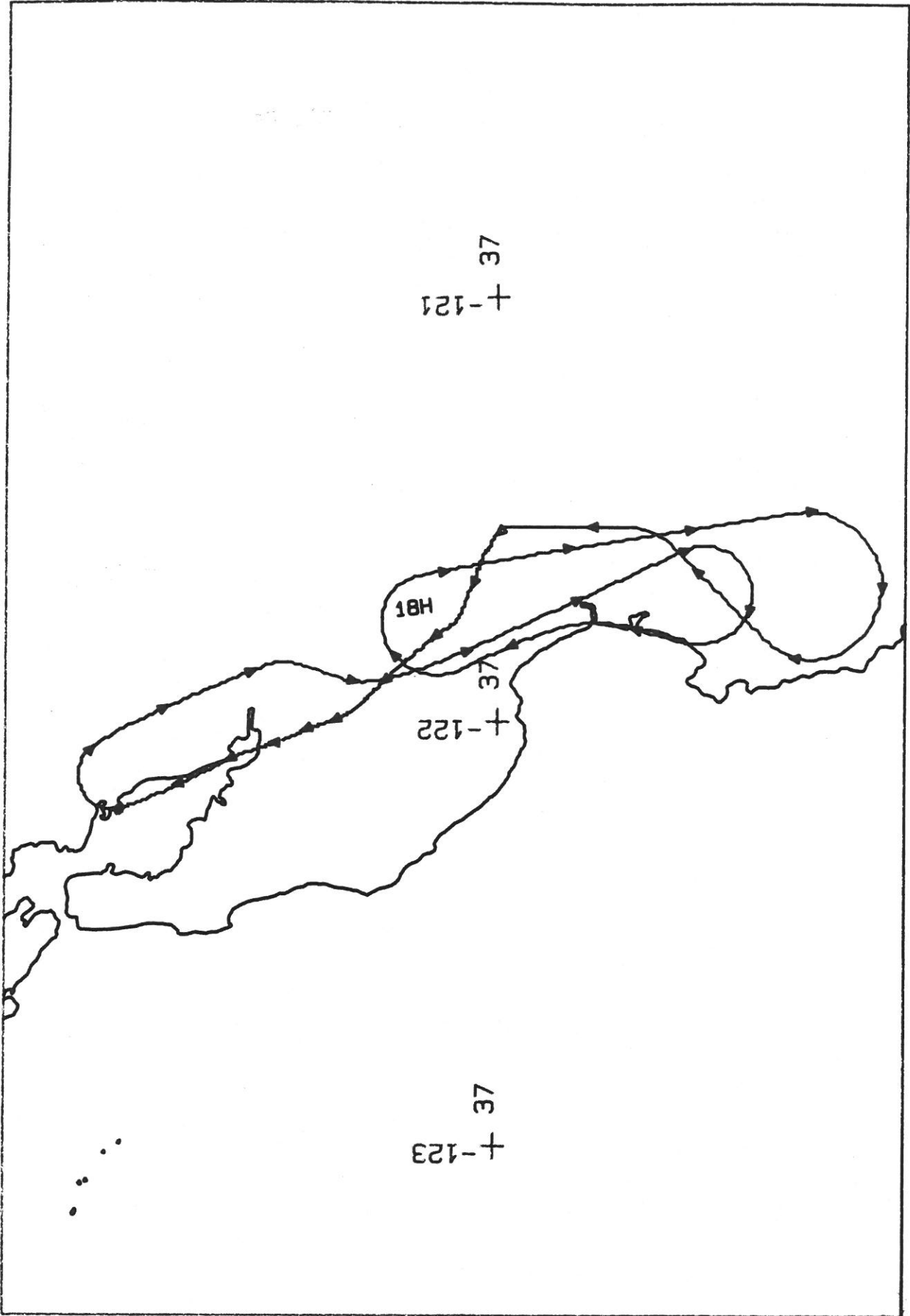
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
Accession # 04445 Sensor # 034 A - B	6414-6419	18:02:13	18:04:36	65000/19800	Clear
Accession # 04446 Sensor # 026 A - B	1752-1759	18:01:15	18:04:08	65000/19800	Clear
Accession # 04447 Sensor # 038 A - B	0001-0018	18:01:20	18:04:23	65000/19800	Clear
Accession # 04448 Sensor # 039 A - B	0001-0018	18:01:18	18:04:21	65000/19800	Clear

TMS SCANNER FLIGHT LINE DATA

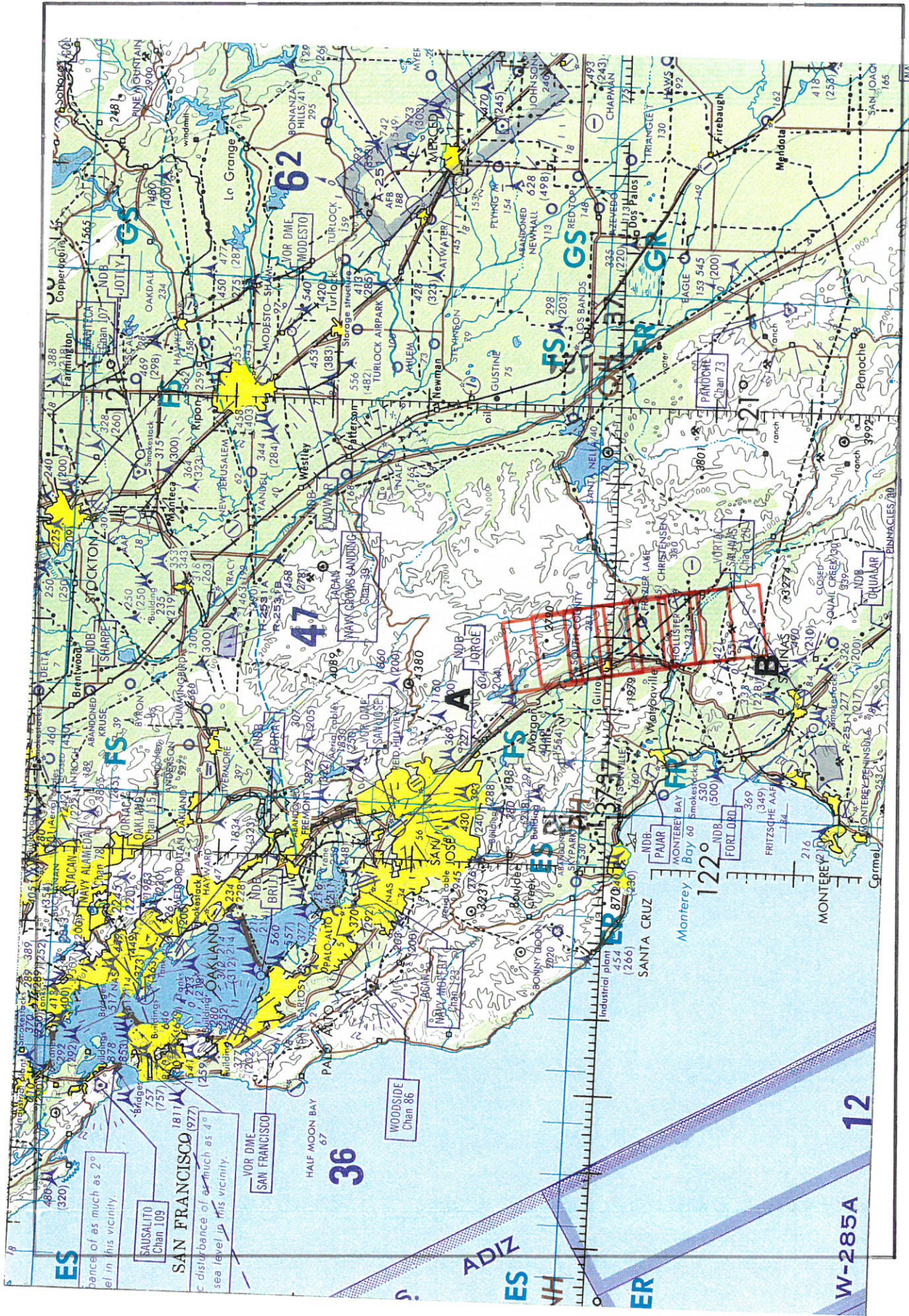
FLIGHT NO. 92-155

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 92-155

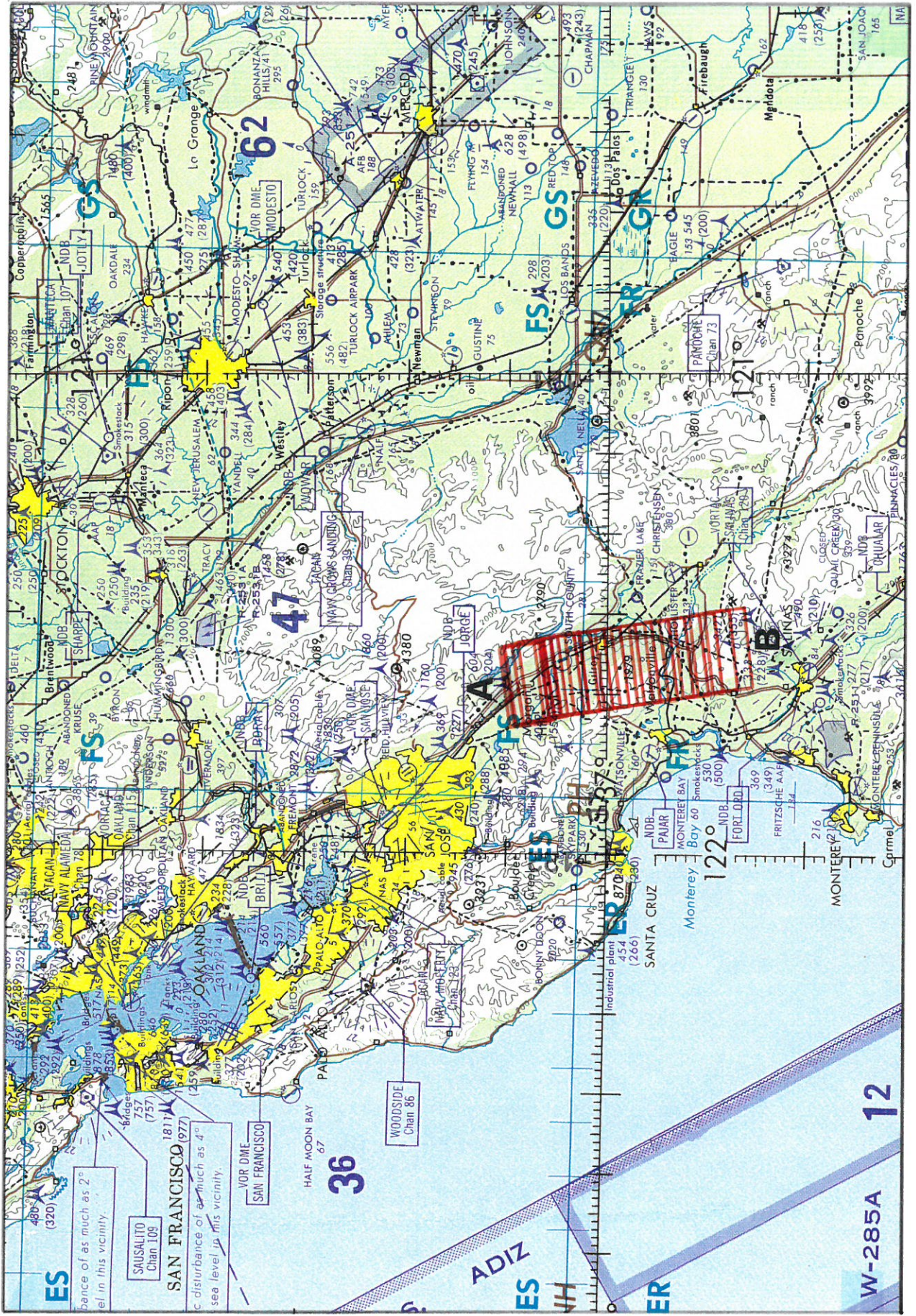
Check Points	A c t u a l t i m e b e g i n	(GMT)	A c t u a l s c a n l i n e b e g i n	e n d	A l t i t u d e f e e t / m e t e r	Scan S p e e d (rps)	t o t a l G o o d s c a n l i n e s	t o t a l I n t e r p o l a t e d s c a n l i n e s	t o t a l R e p e a t e d s c a n l i n e s
A-B	18:01:10.0	18:04:36.0	30502	33070	65000/19812	12.50	2553	0	16



FLIGHT 92-155 15 September 1992 A/C 708 Dual HR-732 / Dual RC-10 / TMS



FLIGHT 92-155 15 September 1992 A/C 708 Dual RC-10 Accession # 04445 & 04446 ONC 6-18



ES
 Sausalito Chan 109
 SAN FRANCISCO (977)
 c-disturbance of as much as 4"
 sea level in this vicinity.

VOR DME
 SAN FRANCISCO
 HALF MOON BAY 07
 36

WOODSIDE
 Chan 86

ADIZ

W-285A
 12

