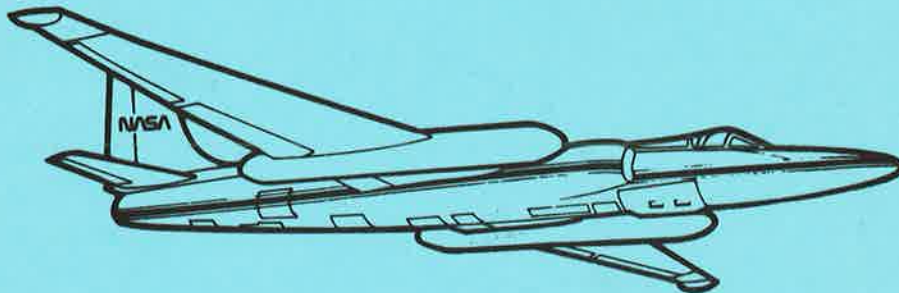
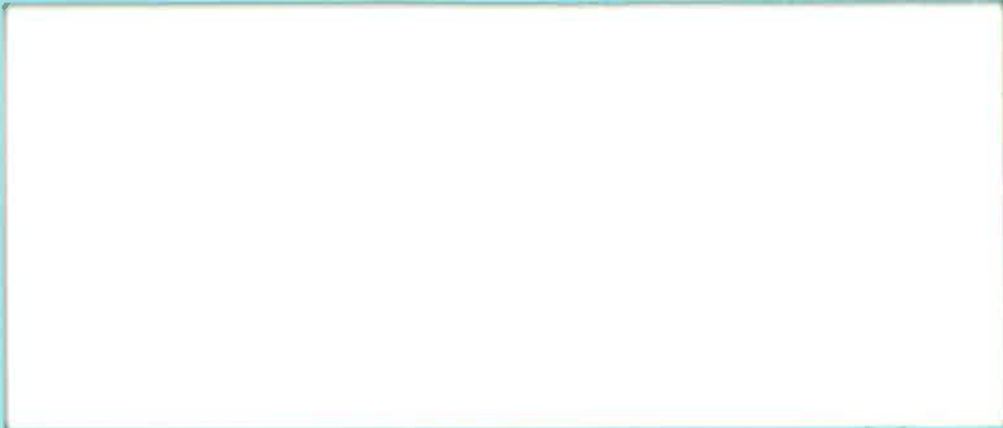


**SCIENCE AND APPLICATIONS AIRCRAFT DIVISION
AIRBORNE SCIENCE AND APPLICATIONS PROGRAM**

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70.4
F58



**ER-2
FLIGHT SUMMARY REPORT**

NASA

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035-1000

**Aircraft Data Facility
NASA-Ames Research Center
Mail Stop 240-6
Moffett Field, California 94035-1000
(415) 604-6252 • FTS 464-6252**

FLIGHT SUMMARY REPORT

Flight #: 90-084
Date: 25 May 1990
Sensor Package: Dual Hycon HR-732
 Wild Heerbrug RC-10
 Thematic Mapper Simulator (TMS)
Area(s) Covered: Southern California Coast

Investigator(s): Yoha, Dept. of Conservation

Aircraft #: 709

Flight Request: 90R255

Julian Date: 145

SENSOR DATA

	04028	04029	04030	-----
Accession #:	04028	04029	04030	-----
Sensor ID #:	026	018	019	074
Sensor Type:	RC-10	HR-732	HR-732	TMS
Focal Length:	12" 304.97 mm	24" 609.6 mm	24" 609.6 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	High Definition Aerochrome IR SO-131	Aerial Color SO-242	-----
Filtration:	cc.10B	cc.20B	None	-----
Spectral Band:	510-900 nm	510-900 nm	400-700 nm	-----
f Stop:	4	8	8	-----
Shutter Speed:	1/200	1/75	1/75	-----
# of Frames:	117	155	155	-----
% Overlap:	60	60	60	-----
Quality:	Excellent	Excellent	Excellent	Fair
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.

Thematic Mapper Simulator

The Daedalus Thematic Mapper Simulator (TMS) is a high altitude 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:	1.3 mrad
Ground Resolution:	91 feet (28 meters at 70,000 feet)
Total Scan Angle:	43 ^o
Swath Width:	9.0 nmi (16.6 km at 70,000 feet)
Pixels/Scan Line:	716 (750 following rectification)
Scan Rate:	12.5 scans/second
Ground Speed:	400 kts (206 m/second)

NOTE: 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 or FTS 464-6252.

CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-084

Accession # 04028

Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	3008-3017	17:32:21	17:36:01	65000/19800	Clear
C - D	3018-3026	17:40:04	17:43:26	"	Clear
E - F	3027-3049	17:47:20	17:52:35	"	Clear
G - H	3045-3049	17:55:23	17:57:16	"	Clear
I - J	3050-3072	18:00:44	18:10:16	"	Clear
K - L	3073-3085	18:14:53	18:20:04	"	Clear
M - N	3095-3097	18:29:00	18:29:32	"	Clear
O - R	3098-3120	18:42:02	18:51:46	"	Clear
S - U	3121-3138	18:55:33	19:03:00	"	Clear

CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-084

Accession # 04029

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0015	17:32:03	17:35:28	65000/19800	Clear
C - D	0016-0031	17:39:47	17:43:17	"	Clear
E - F	0032-0055	17:47:04	17:52:39	"	Clear
G - H	0064-0072	17:54:50	17:56:47	"	Clear
I - J	0073-0112	18:00:28	18:09:55	"	Clear
K - L	0113-0135	18:14:35	18:19:55	"	Clear
M - N	0151-0153	18:28:43	18:29:12	"	Clear
O - P	0154-0156	18:41:45	18:42:13	"	Clear
Q - R	0157-0166	18:49:05	18:51:15	"	Clear
S - T	0167-0178	18:55:17	18:57:55	"	Clear

NOTE: Camera's clock off 7 hours (written data has been corrected)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-084

Accession # 04030

Sensor # 019

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0015	17:32:04	17:35:29	65000/19800	Clear; light struck (frames 0002, 0015); processing residue (frame 0009)
C - D	0016-0031	17:39:48	17:43:18	"	Clear; light struck (frames 0017, 0031)
E - F	0032-0055	17:47:05	17:52:40	"	Clear; light struck (frame 0033)
G - H	0064-0072	17:54:51	17:56:48	"	Clear; light struck (frame 0072)
I - J	0073-0112	18:00:29	18:09:56	"	Clear; light struck (frames 0074, 0112); emulsion abrasion (frame 0098)
K - L	0113-0135	18:14:37	18:19:56	"	Clear; light struck (frame 0114)
M - N	0151-0153	18:28:44	18:29:13	"	Clear; light struck (frames 0152-0153)
O - P	0154-0156	18:41:46	18:42:15	"	Clear; light struck (frames 0155-0156)
Q - R	0157-0166	18:49:06	18:51:16	"	Clear; light struck (frames 0158-0166)
S - T	0167-0178	18:55:18	18:57:57	"	Clear; light struck (frames 0168, 0178)

NOTE: Camera's clock off 7 hours (written data has been corrected)

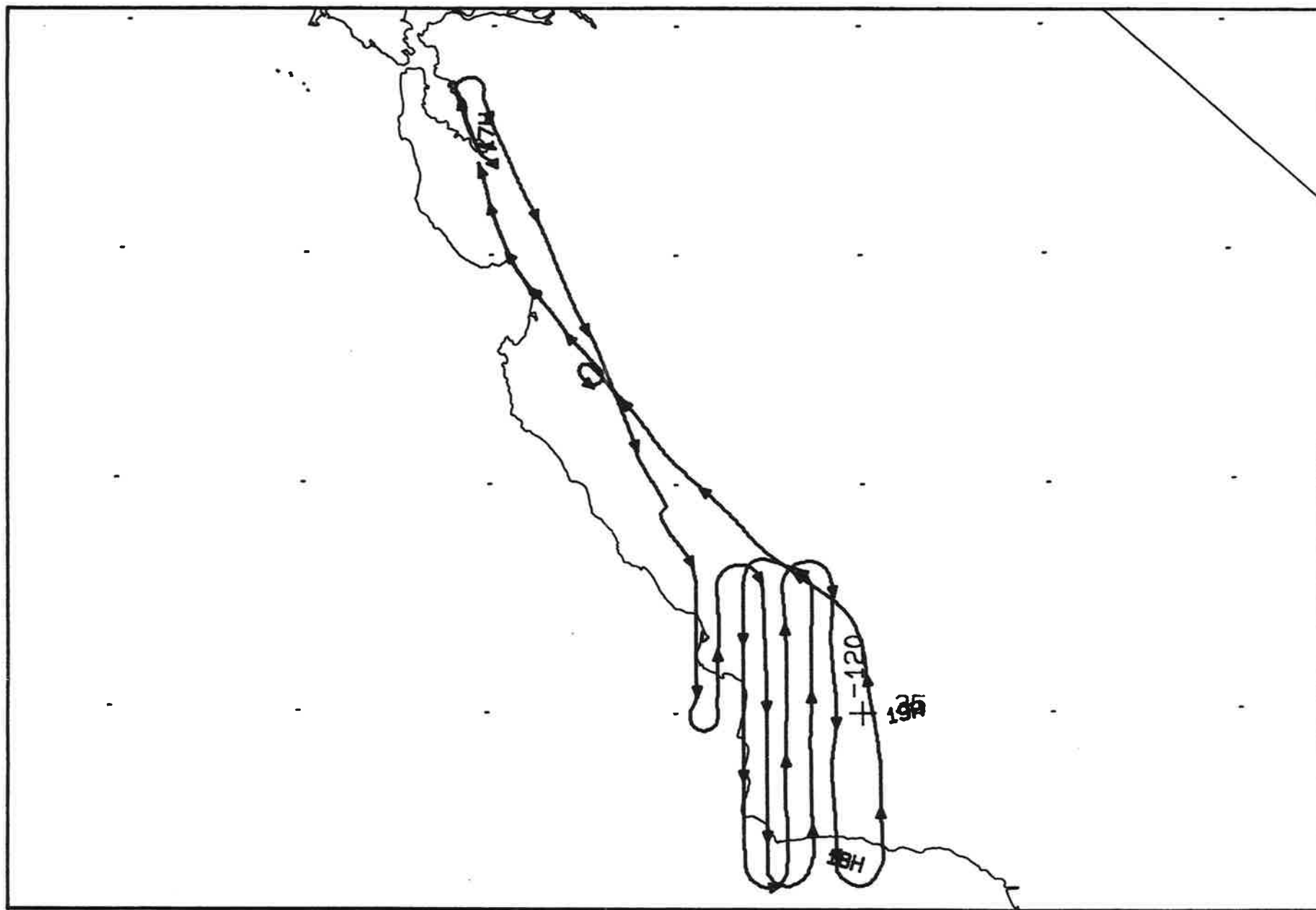
SCANNER FLIGHT LINE DATA

FLIGHT NO. 90-084

DAEDALUS FLIGHT DATA

FLIGHT NUMBER: 90-084

Check Points	Actual Time (GMT)		Actual Scanline		Altitude feet/meter	Scan Speed (rps)	Total Good Scanlines	Total Interpolated Scanlines	Total Repeated Scanlines
	Begin	End	Begin	End					
A-B	17:31:58.0	17:35:37.0	30798	33588	65000/19812	12.50	2779	0	12
C-D	17:39:48.0	17:43:07.0	36650	39328	65000/19812	12.50	2668	0	11
E-F	17:47:01.0	17:52:45.0	42168	46518	65000/19812	12.50	4350	0	—
G-H	17:54:24.0	17:56:49.0	47778	49667	65000/19812	12.50	1889	0	—
I-J	18:00:27.0	18:09:58.0	52315	59660	65000/19812	12.50	7227	0	119
K-L	18:14:31.0	18:20:19.0	63018	67414	65000/19812	12.50	4396	0	—
M-N	18:28:34.0	18:29:22.0	73661	74271	65000/19812	12.50	575	0	36
O-R	18:41:41.0	18:51:31.0	83613	91091	65000/19812	12.50	7215	0	264
S-U	18:55:20.0	19:02:32.0	93877	99459	65000/19812	12.50	5282	0	301

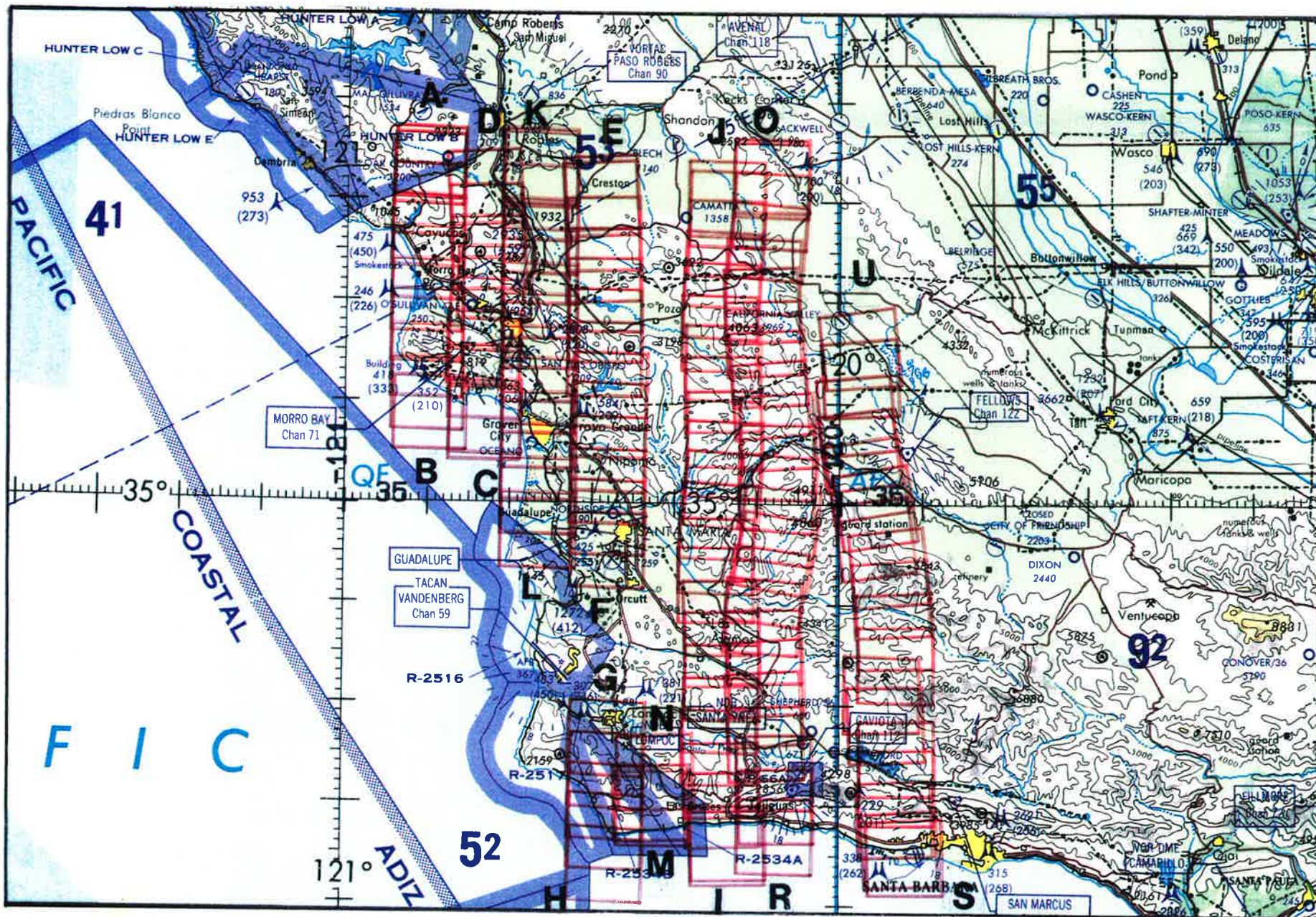


FLIGHT 90-084

25 May 1990

A/C 709

Dual HR-732 / RC-10 / TMS



FLIGHT 90-084

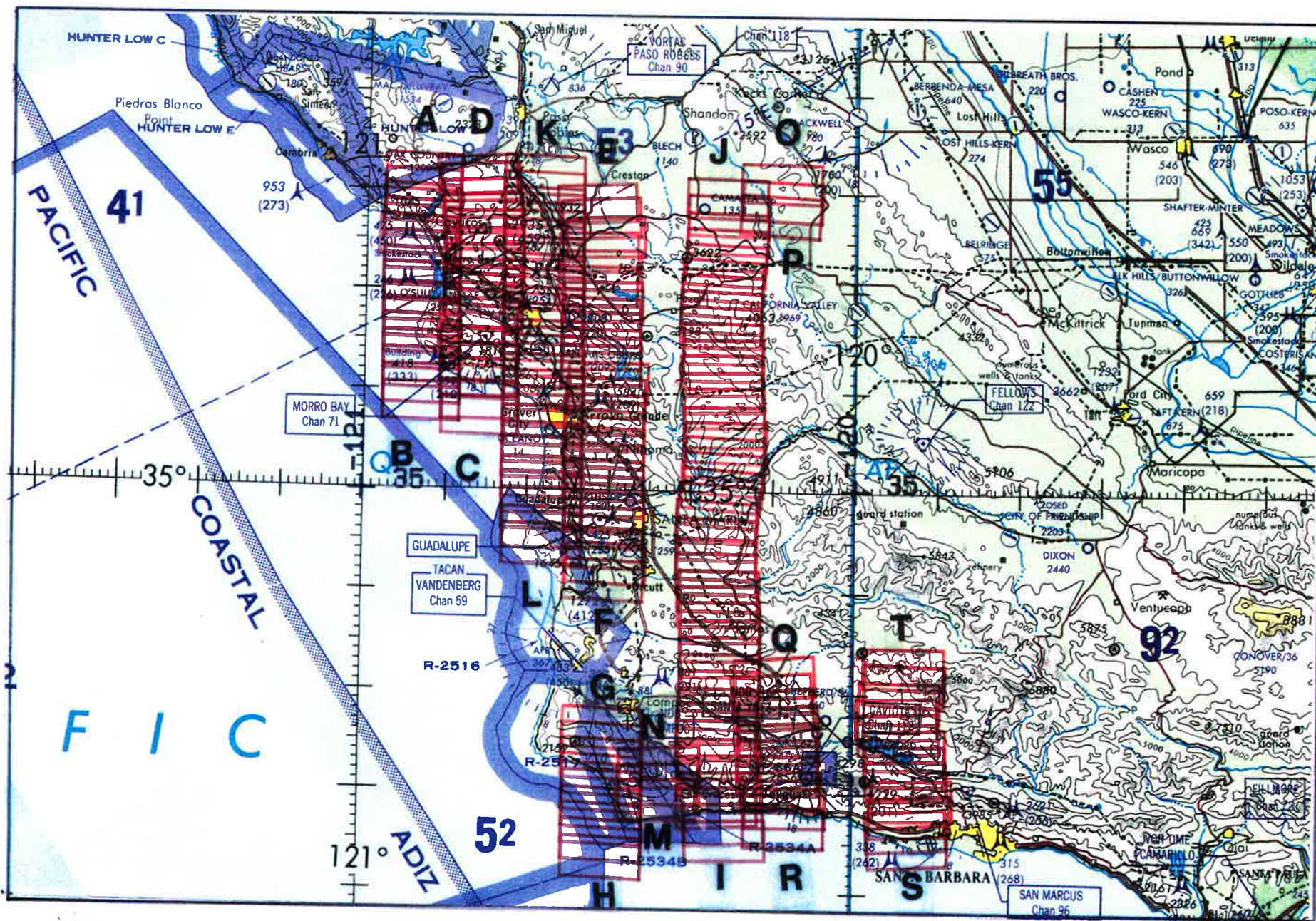
25 May 1990

A/C 709

RC-10 / Dual HR-732 / TMS

ACC.04028

ONC 6-18



FLIGHT 90-084

25 May 1980

A/C 709

Dist 101 MP-732 / RC-10

Accession # 04029
AND 04030

ONC 6-18