

# FLIGHT SUMMARY REPORT

**Flight #:** 91-155  
**Date:** 26 August 1991  
**Sensor Package:** Hycon HR-732  
Wild-Heerbrug RC-10  
**Area(s) Covered:** Sierra Nevada

**Investigator(s):** Weber, USDA  
**Flight Request:** 91R104

**Aircraft #:** 706  
**Julian Date:** 238

## SENSOR DATA

<b>Accession #:</b>	04286	04287
<b>Sensor ID #:</b>	038	034
<b>Sensor Type:</b>	HR-732	RC-10
<b>Focal Length:</b>	24" 609.6 mm	12" 304.66 mm
<b>Film Type:</b>	High Definition Aerochrome IR SO131	High Definition Aerochrome IR SO131
<b>Filtration:</b>	cc.10B	cc.20B
<b>Spectral Band:</b>	510-900 nm	510-900 nm
<b>f Stop:</b>	8	4
<b>Shutter Speed:</b>	1/75	1/125
<b># of Frames:</b>	225	339
<b>% Overlap:</b>	60	60
<b>Quality:</b>	Excellent	Excellent
<b>Remarks:</b>		

## 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 descriptions of the camera systems flown onboard the ER-2s.

### 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. 91-155**

Accession # 04286

Sensor # 038

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0052	20:58:55	21:11:15	65000/19800	10% scattered cumulus (frames 0050-0052)
C - D	0053-0094	21:16:45	21:26:40	"	10% cumulus (frame 0053); very thin cirrus (frame 0073, 0081-0083, 0092)
E - F	0095-0116	21:32:39	21:37:39	"	Clear
G - H	0117-0165	21:48:55	22:00:32	"	10-20% scattered cumulus (frames 0163-0165)
I	166	22:04:25	-----	"	20% scattered cumulus
J - K	0167-0225	22:11:19	22:25:22	"	Clear

**CAMERA FLIGHT LINE DATA  
FLIGHT NO. 91-155**

Accession # 04287

Sensor # 034

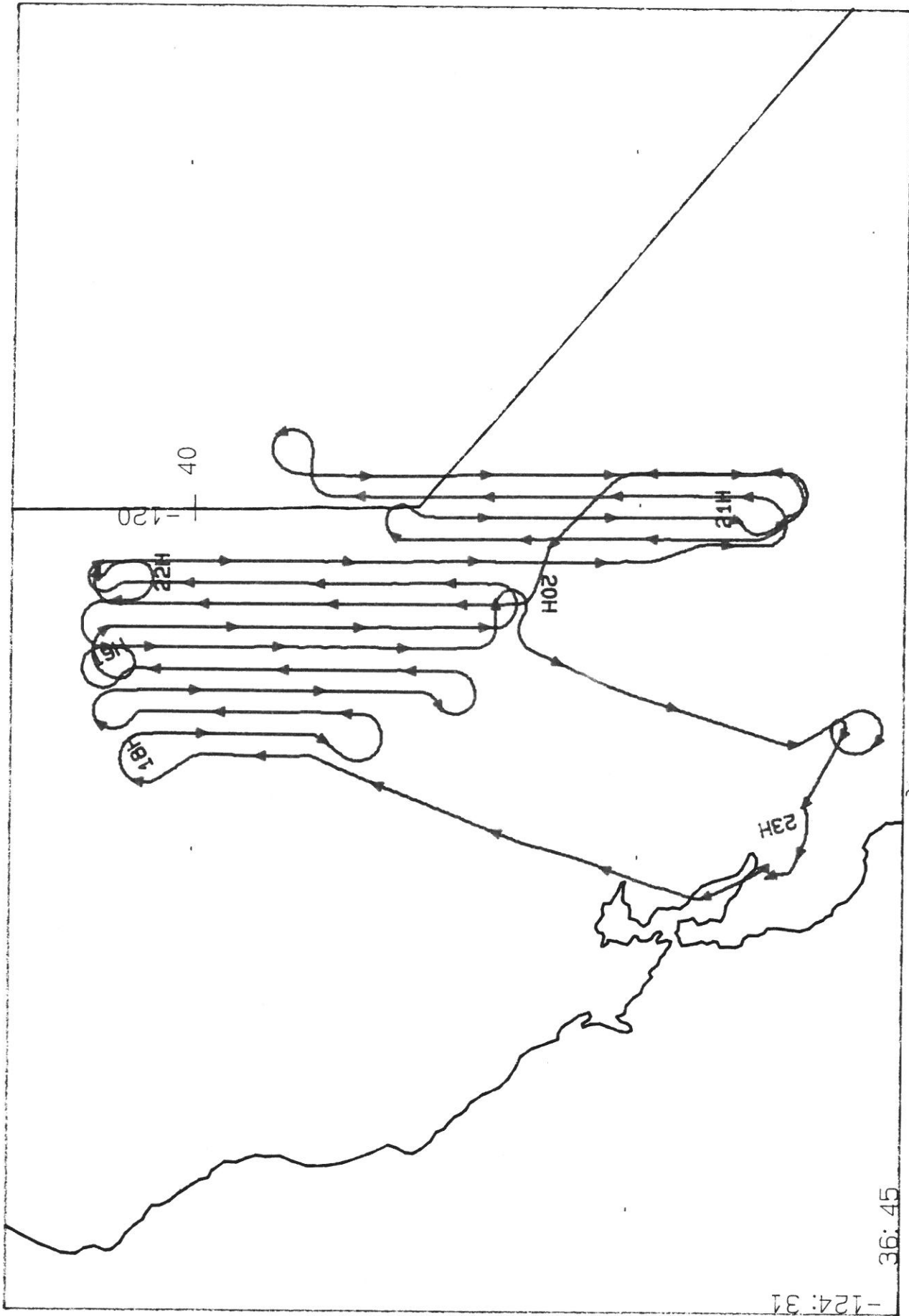
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	3720-3726	17:54:52	17:57:42	65000/19800	Clear
C - D	3727-3739	18:04:11	18:09:54	"	Clear
E - F	3740-3756	18:15:56	18:23:36	"	Clear
G - H	3757-3780	18:28:37	18:39:38	"	Clear
I - J	3781-3804	18:45:53	18:56:54	"	10% cumulus (frames 3793-3801)
K - L	3805-3835	19:07:20	19:21:42	"	10% cumulus (frames 3813-3814, 3816-3817); 10-30% cumulus (frames 3820-3831)
M - N	3836-3860	19:27:53	19:38:59	"	10-20% cumulus (frames 3852-3860)
O - P	3861-3895	19:47:56	20:03:40	"	10% cumulus (frames 3861-3863, 3870-3871, 3877-3878)

**CAMERA FLIGHT LINE DATA  
FLIGHT NO. 91-155**

Accession # 04287

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
Q - R	3896-3923	20:12:07	20:24:37	65000/19800	10% cumulus (frames 3915-3916); 10-30% cirrus and cumulus (frames 3918-3923)
S - T	3924-3942	20:45:47	20:54:22	"	10% cumulus (frames 3924-3925, 3932-3933)
U - V	3943-3969	20:59:52	21:12:06	"	10-20% cumulus (frames 3968-3969)
W - X	3970-3990	21:17:40	21:27:10	"	10% cumulus (frames 3970-3973); thin cirrus (frames 3979-3981); 10-20% cirrus (frames 3984-3985)
Y - Z	3991-4001	21:33:30	21:38:16	"	Clear
1 - 2	4002-4027	21:49:52	22:01:30	"	10% cumulus (frames 4025-4027)
3	4028-4028	22:05:21	22:05:21	"	20% cumulus
4 - 5	4029-4058	22:12:17	22:26:02	"	Clear

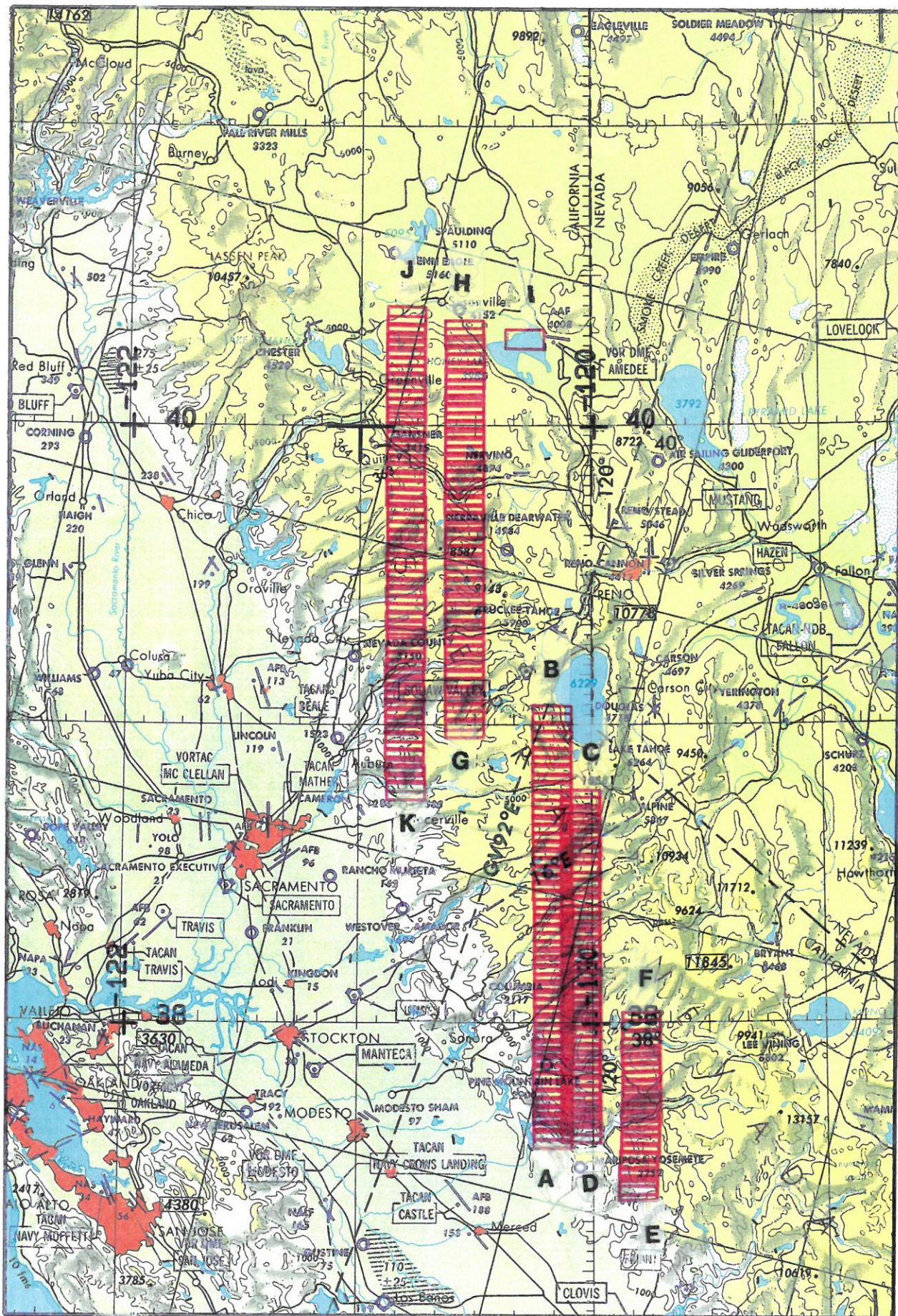


36:45

-124:31

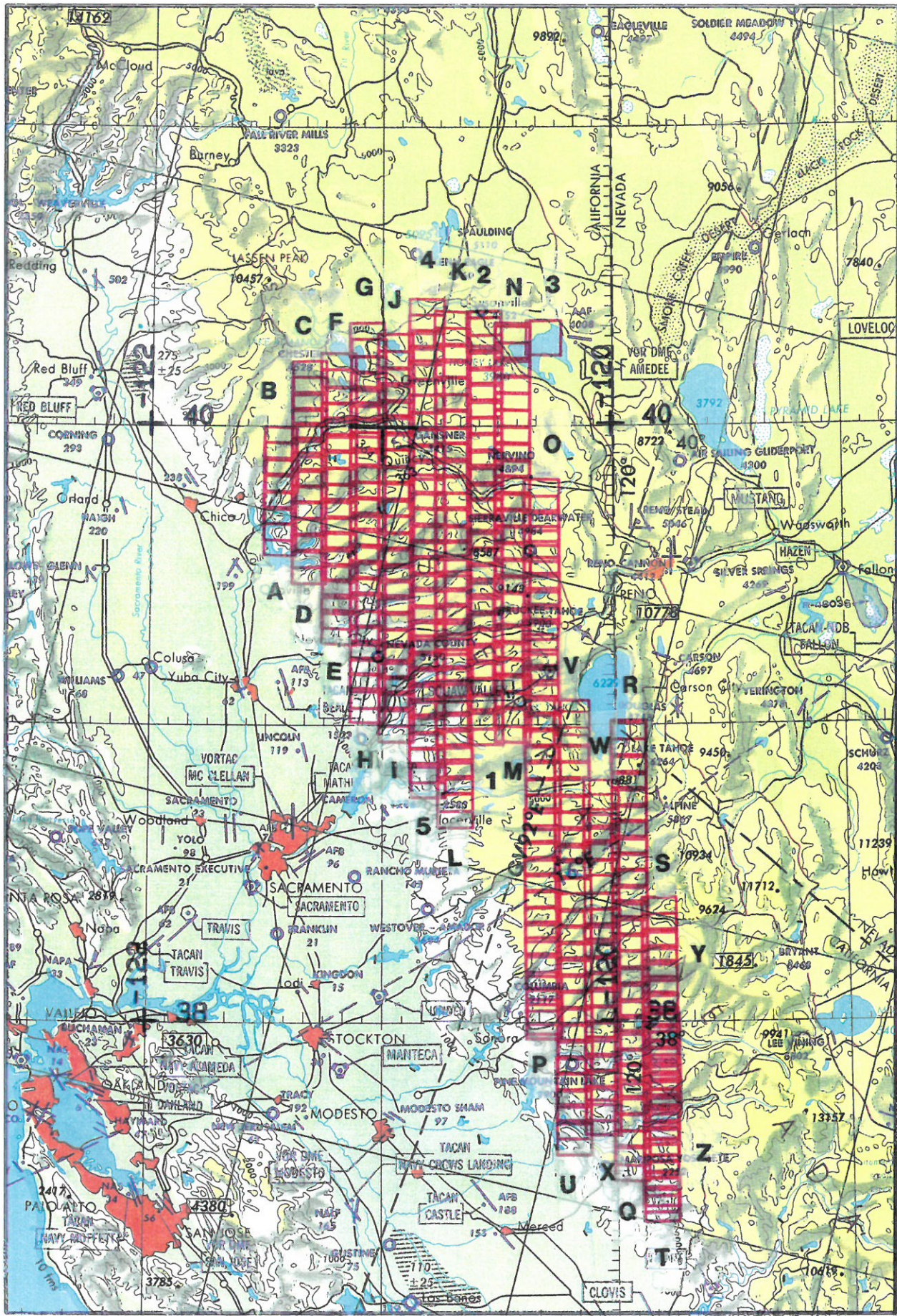
FLIGHT 91-155 DUAL HR-732 / RC-10 <sup>26</sup> 28 AUGUST 1991 A/C 706  
 OVERLAY FOR %CWUSA LAMBERT CONFORMAL PROJECTION: SP1 = 36.3 SP2 = 39.9 CM = -120.9 ROTATED BY 0.0  
 17:30:35 TO 23:11:25 UT SCALE = 1:2.69E+06 TIME TICS EVERY 5.00 MINUTES





FLIGHT 91-155 25 August 1991 A/C 705 HA-752 Accession # 04286 JNC-43





FLIGHT 91-155 26 August 1991 A/C 706 RC-10 Accession # 04257 JNC-43