

FLIGHT SUMMARY REPORT

Flight #: 90-090
Date: 11 June 1990
Sensor Package: Dual Hycon HR-732
Area(s) Covered: Sierra Nevada

Investigator(s): Weber, USFS
Flight Request: 90R258

Aircraft #: 709
Julian Date: 162

SENSOR DATA

Accession #:	04033	04034
Sensor ID #:	018	019
Sensor Type:	HR-732	HR-732
Focal Length:	24" 609.6 mm	24" 609.6 mm
Film Type:	High Definition Aerochrome IR SO-131	High Definition Aerochrome IR SO-131
Filtration:	cc.20B	cc.20B
Spectral Band:	510-900 nm	510-900 nm
f Stop:	8	8
Shutter Speed:	1/75	1/75
# of Frames:	641	205
% Overlap:	60	60
Quality:		
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.

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

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-090**

Accession # 04033

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0032	17:38:12	17:45:36	65000/19800	Clear
C - D	0033-0082	17:48:43	18:00:25	"	Clear
E - F	0083-0155	18:04:05	18:21:23	"	Clear
G - H	0156-0182	18:27:02	18:32:52	"	Clear
I - J	0183-0221	18:36:01	18:45:10	"	Clear
K - L	0222-0269	18:50:29	19:01:47	"	Clear
M - N	0270-0292	19:08:04	19:13:21	"	10% minor cumulus (frames 0290-0292)
O - P	0293-0302	19:15:11	19:17:21	"	Clear
Q - R	0303-0308	19:25:56	19:27:08	"	Clear
S - T	0309-0324	19:31:08	19:48:10	"	Clear
T - U	0325-0376	19:54:09	20:08:09	"	10% minor cumulus (frames 0327-0334, 0336-0337); 10-20% cumulus (frames 0345-0351)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-090

Accession # 04033

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
V - W	0377-0436	19:54:09	20:08:09	65000/19800	10% minor cumulus (frames 0403-0406, 0413-0414); 10-30% cumulus (frames 0422-0429); 10% minor cumulus (frames 0432-0433)
X - Y	0437-0487	20:12:53	20:24:50	"	10% minor cumulus (frames 0443-0444); 10-20% cumulus (frames 0457-0462); 10% minor cumulus (frames 0485-0487)
Z - 1	0488-0539	20:29:34	20:41:50	"	10-50% cumulus (frames 0499-0510); 10% minor cumulus (frames 0523-0526)
2 - 3	0540-0590	20:48:22	21:00:23	"	10-20% cumulus (frames 0557-0563, 0577-0583); 10% minor cumulus (frames 0585-0586)
4 - 5	0591-0615	21:08:51	21:14:37	"	10-50% cumulus (frames 0591-0593); 10% minor cumulus (frames 0595-0597)
6 - 7	0616-0634	21:20:40	21:25:00	"	10% minor cumulus (frames 0627-0628, 0630-0631)
8 - 9	0635-0641	21:28:29	21:29:55	"	10% minor cumulus (frames 0635-0637)

NOTE: Clock annotation on film set to Pacific Daylight Time, add 7 hours for GMT. Times listed on this data sheet are GMT.

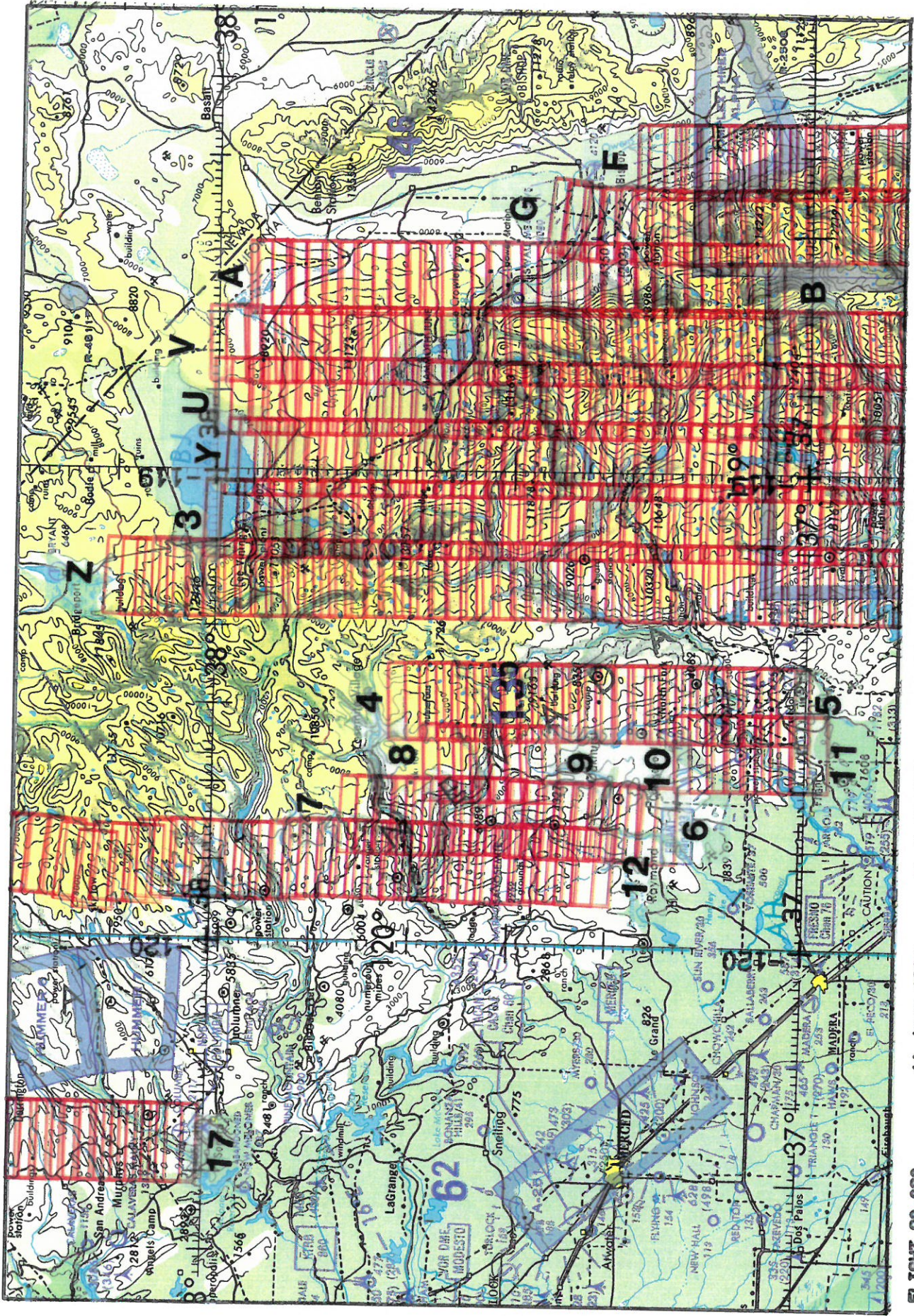
**CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-090**

Accession # 04034

Sensor # 019

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
10 - 11	0001-0008	21:32:10	21:33:50	65000/19800	Light struck (frame 0008)
12 - 13	0009-0081	21:41:15	21:58:08	"	Light struck (frames 0010 and 0081); "soft" focus (frame 0039); 10-50% cumulus (frames 0023-0051); 10% cumulus (frames 0053-0055)
14 - 15	0082-0120	22:07:15	22:16:27	"	Light struck (frames 0083 and 0120); 10-30% cumulus (frames 0109-0113); 10% cumulus (frames 0115-0117)
16 - 17	0121-0205	22:21:37	22:41:40	"	Light struck (frame 0122); 10-40% cumulus (frames 0121-0128); 10-20% cumulus (frames 0130-0132); 10% cumulus (frames 0136-0138); stepwedge overprint (frame 0205)

NOTE: Camera's clock inoperative -- times taken from Nav. Data



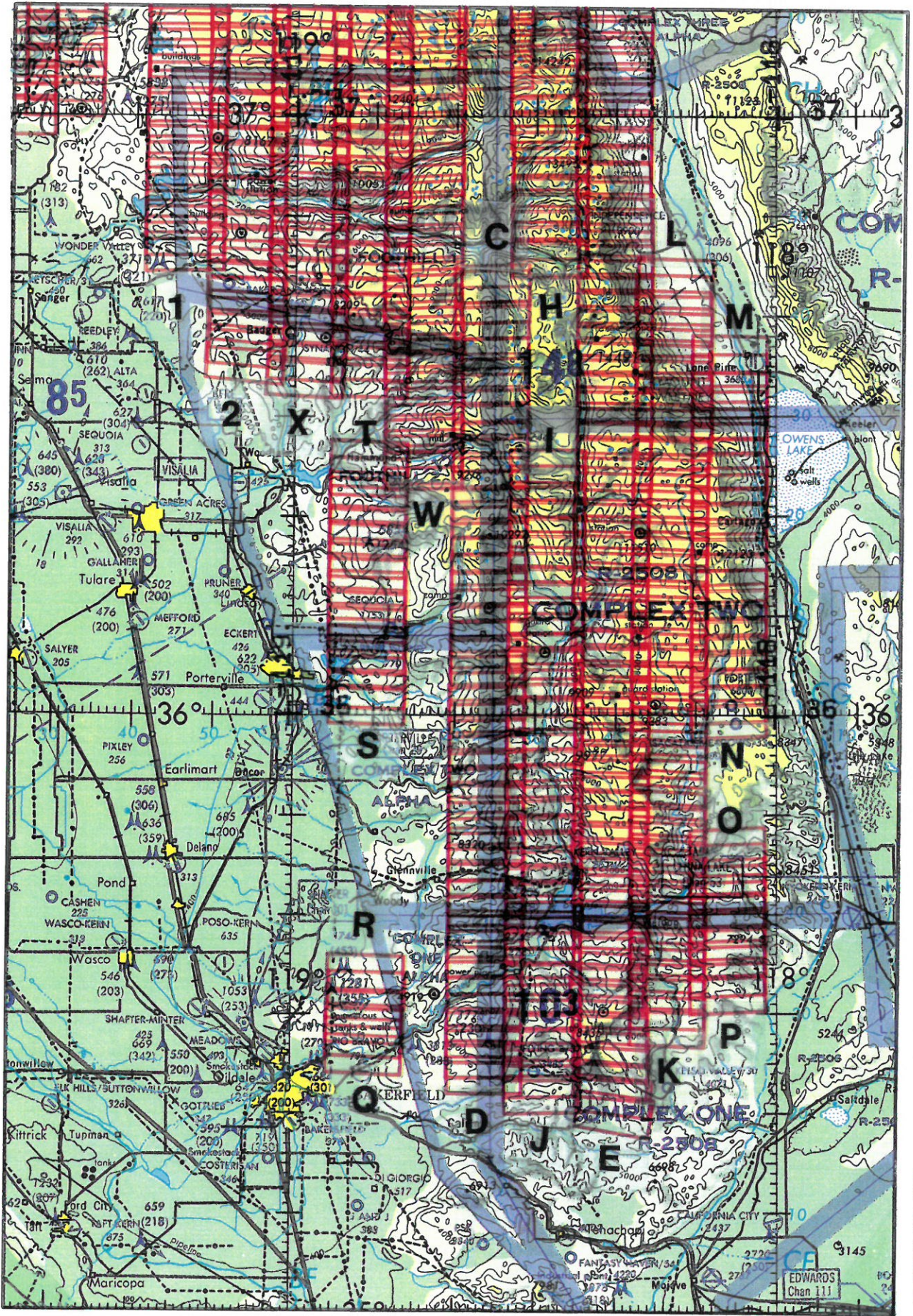
FLIGHT 90-090

11 June 1990

Dual HR-732

Accession # 04033 & 04034

ONC 6-1B



ONC 6-18

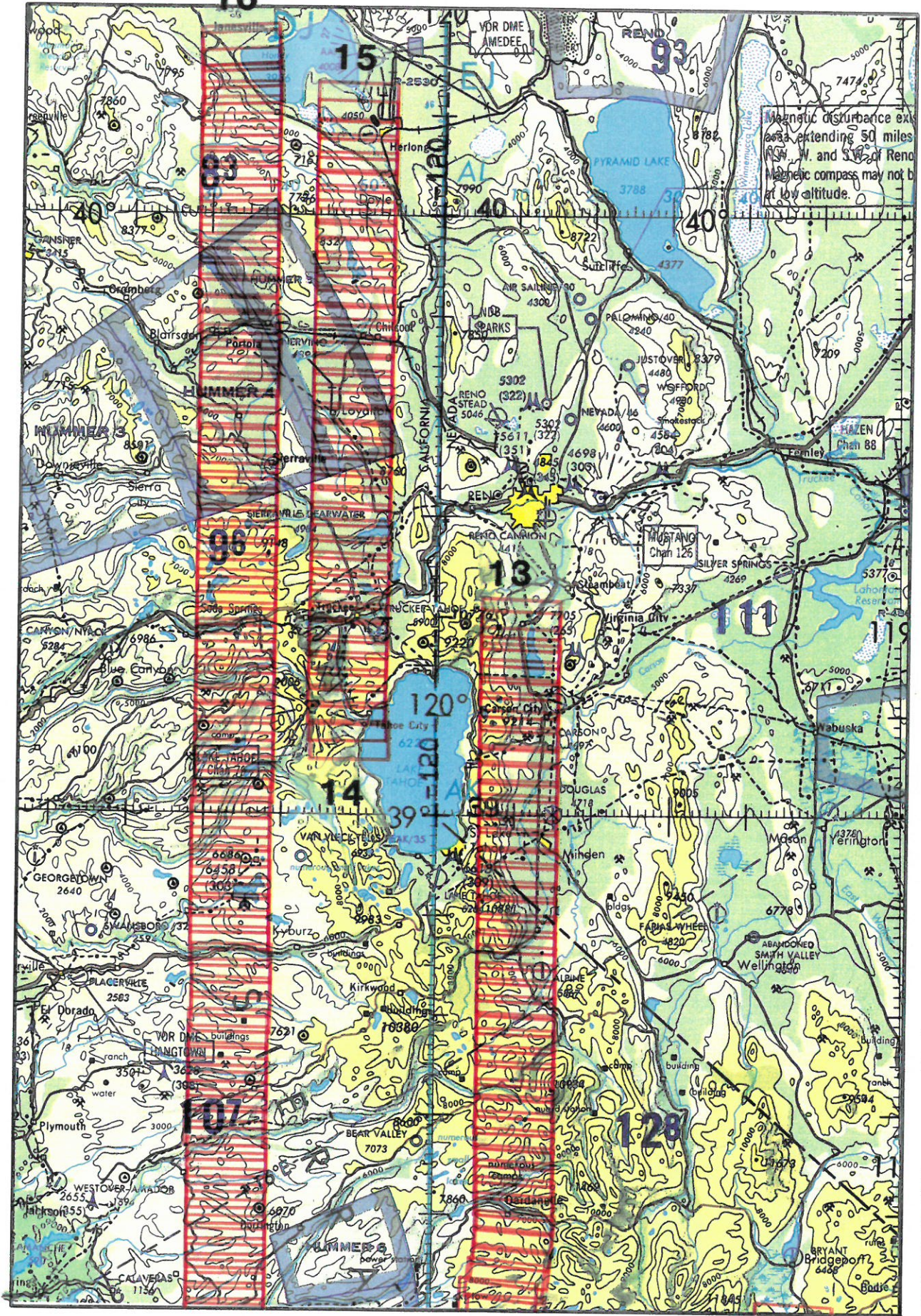
Accession # 04093 & 04094

Dual HF-752

11 June 1990

FLIGHT 90-090

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Magnetic disturbance exclusion area extending 50 miles SW, W, and SE of Reno. Magnetic compass may not be used at low altitude.

CNC 6-16

Accession # 04033 & 04034

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