

FLIGHT SUMMARY REPORT

Flight #: 91-159
Date: 12 September 1991
Sensor Package: Wild-Heerbrug RC-10
Dual Hycon HR-732
Area(s) Covered: Eastern Oregon

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

Aircraft #: 709
Julian Date: 255

SENSOR DATA

Accession #:	04300	04301	04302
Sensor ID #:	026	038	039
Sensor Type:	RC-10	HR-732	HR-732
Focal Length:	12" 304.97 mm	24" 609.6 mm	24" 609.6 mm
Film Type:	High Definition Aerochrome IR SO131	High Definition Aerochrome IR SO131	High Definition Aerochrome IR SO131
Filtration:	cc.10B	cc.10B	cc.10B
Spectral Band:	510-900 nm	510-900 nm	510-900 nm
f Stop:	4	8	8
Shutter Speed:	1/200	1/75	1/75
# of Frames:	372	413	228
% Overlap:	60	60	60
Quality:	Good	Excellent	Excellent
Remarks:		Film scratches and emulsion damage from magazine jam frames 0388-0413	

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. 91-159**

Accession # 04300

Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	8500-8515	18:00:01	18:07:03	65000/19800	Clear
C - D	8516-8527	18:12:11	18:17:20	"	Clear
E - F	8528-8534	18:23:08	18:25:56	"	Clear
G - H	8535-8565	18:35:24	18:49:02	"	Clear
I - J	8566-8593	18:52:20	19:04:57	"	Clear
K - L	8594-8624	19:12:15	19:25:51	"	Clear
M - N	8625-8652	19:29:27	19:41:40	"	Clear
O - P	8653-8683	19:49:32	20:03:08	"	Clear
Q - R	8684-8714	20:09:48	20:23:24	"	Clear
S - 2	8715-8745	20:26:24	20:39:49	"	Clear

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-159**

Accession # 04300

Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	8746-8773	20:43:28	20:55:40	65000/19800	Clear
W - X	8774-8802	21:01:25	21:14:04	"	Clear
Y - Z	8803-8826	21:17:38	21:27:57	"	Clear
1 - 2	8827-8854	21:33:29	21:45:40	"	Clear
3 - 4	8855-8871	21:51:19	21:58:23	"	Clear

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-159**

Accession # 04301

Sensor # 038

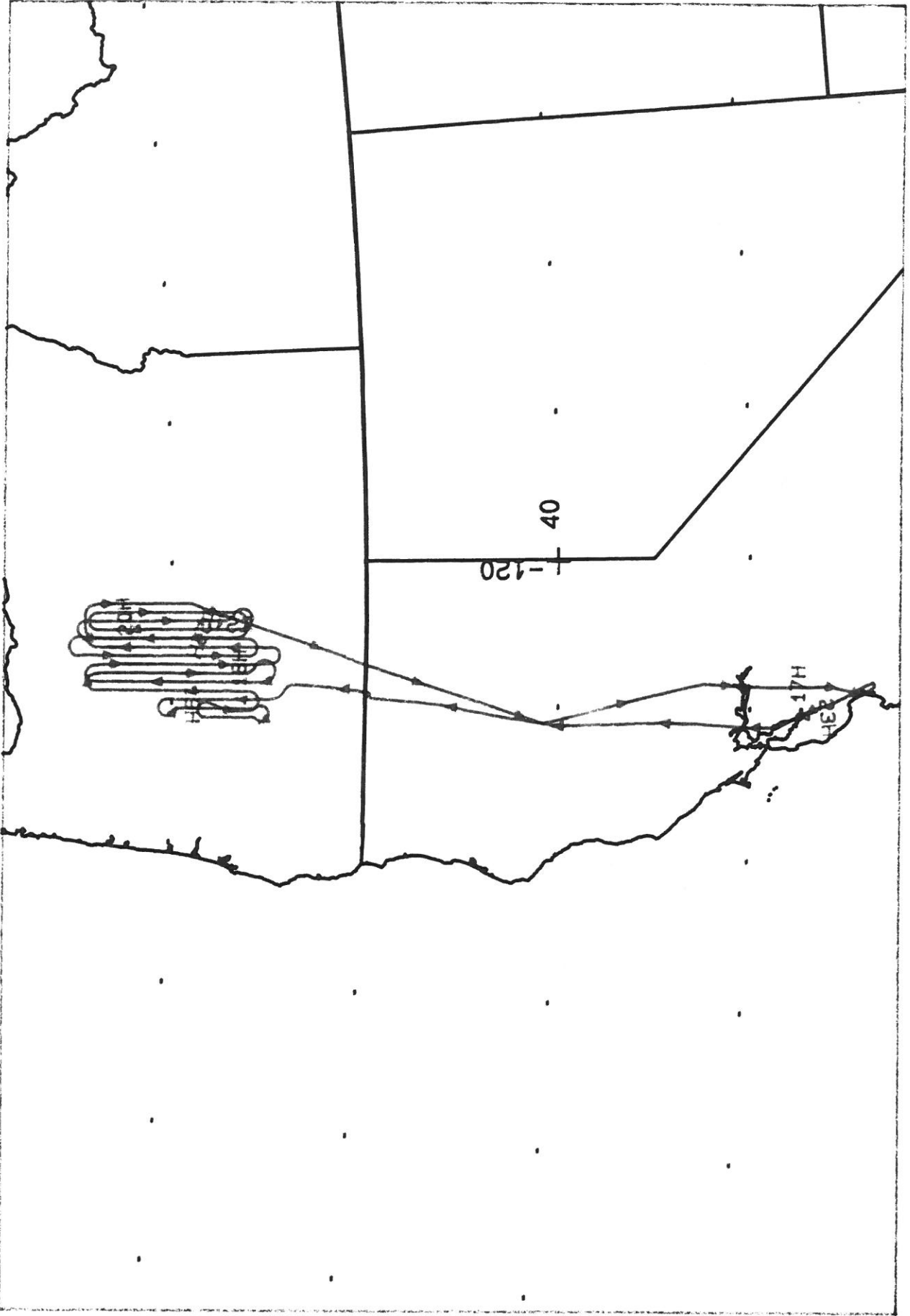
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		START	END		
A - B	0001-0030	17:58:52	18:05:56	65000/19800	Clear
C - D	0031-0052	18:11:03	18:16:10	"	Clear
E - F	0053-0065	18:21:59	18:24:54	"	Clear
G - H	0066-0122	18:34:21	18:47:59	"	Clear
I - J	0123-0175	18:51:12	19:03:52	"	Clear
K - L	0176-0232	19:11:11	19:24:49	"	Clear
M - N	0233-0283	19:28:24	19:40:35	"	Clear
O - P	0284-0340	19:48:29	20:02:07	"	Clear
Q - R	0341-0397	20:08:45	20:22:22	"	Clear
S - T	0398-0413	20:25:21	20:29:00	"	Clear

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-159**

Accession # 04302

Sensor # 039

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	0001-0050	20:43:22	20:55:18	65000/19800	Clear
W - X	0051-0103	21:00:48	21:13:29	"	Clear
Y - Z	0104-0147	21:17:02	21:27:31	"	Clear
1 - 2	0148-0198	21:32:53	21:45:04	"	Clear
3 - 4	0199-0228	21:50:43	21:58:44	"	Clear

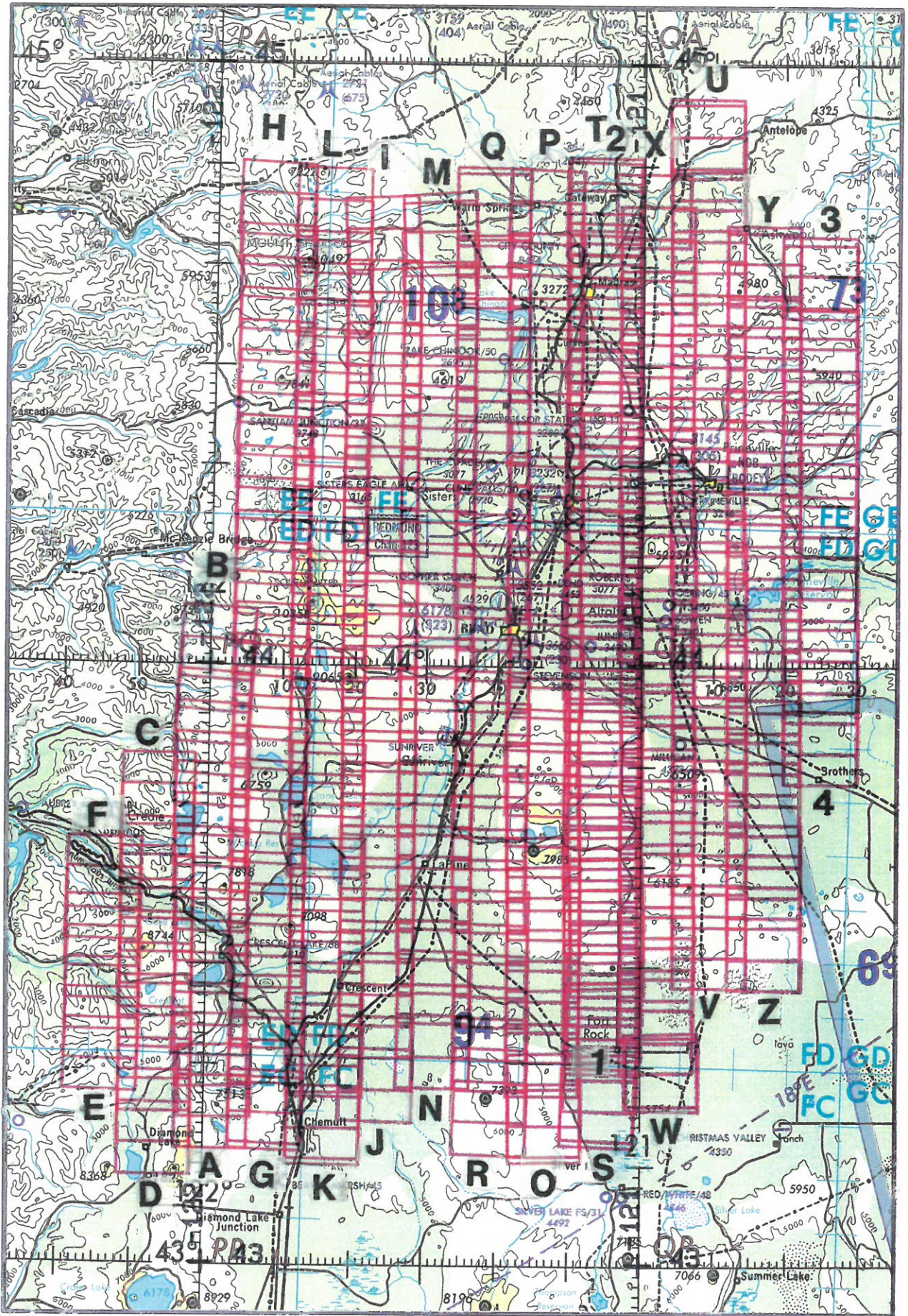


FLIGHT 91-159

12 September 1991

A/C 709

Duel HR-732 / RC-10



ONC F-16

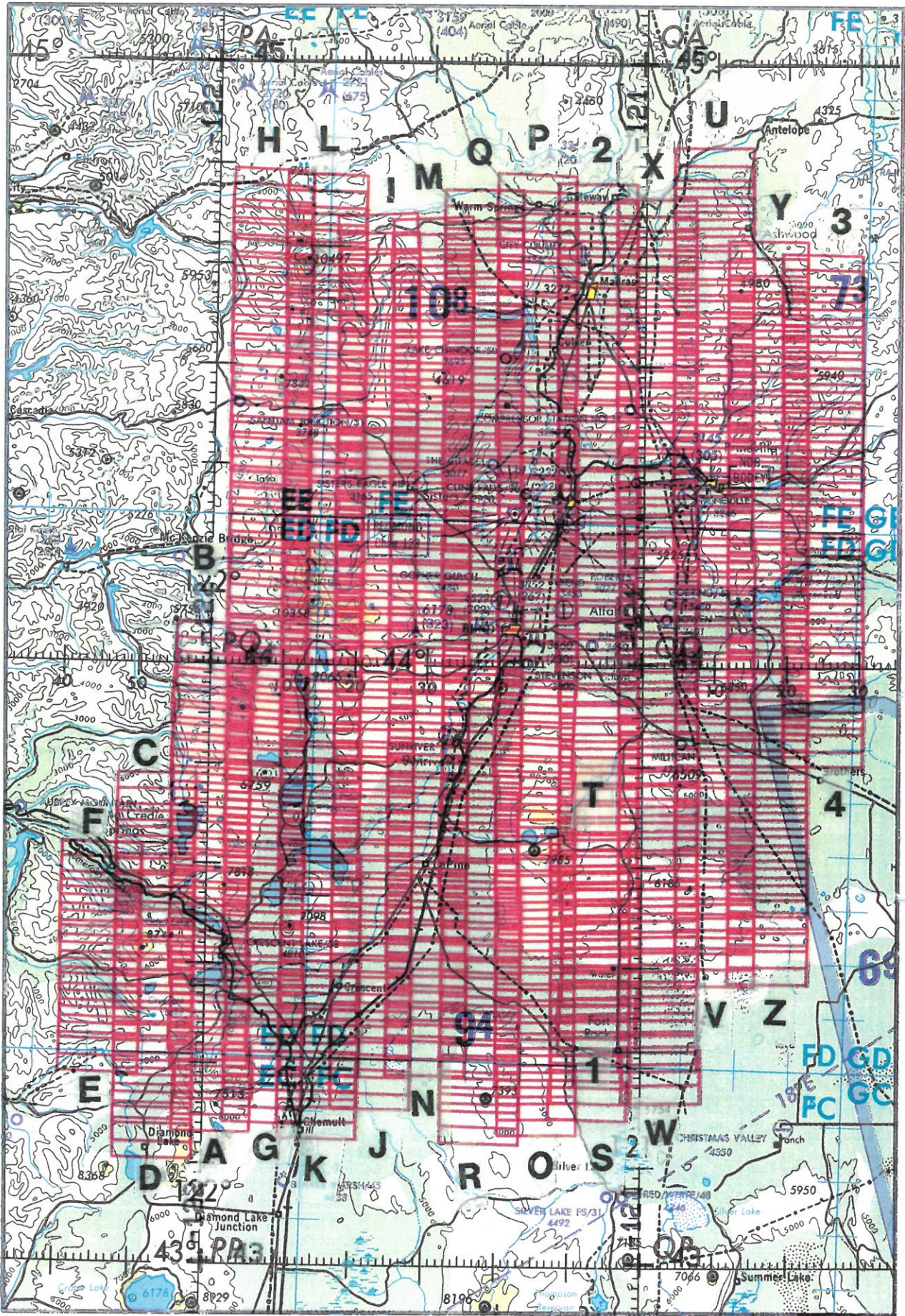
Accession # 04900

FC-10

A/C 706

12 September 1991

FLIGHT 91-153



FLIGHT 91-159 12 September 1991 A/C 709 DUAL HR-732 Accession # 04501 G # 04302 ONC F-16