

FLIGHT SUMMARY REPORT

Flight #: 92-127
Date: 28 June 1992
Sensor Package: Dual HR-732
Area(s) Covered: NE Coast

Investigator(s): Handley, USFWS
Flight Request: 2RZ2037

Aircraft #: 708
Julian Date: 180

SENSOR DATA

Accession #:	04411	04412
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:	379	383
% Overlap:	60	60
Quality:	Excellent	Excellent
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 or FTS 464-6252.

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. 92-127

Accession # 04411

Sensor # 018

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Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0015	14:28:56	14:32:09	65000/19800	Clear
C - D	0016-0021	14:36:30	14:37:39	"	Clear
E - F	0022-0042	14:41:35	14:46:10	"	Clear
F - G	0043-0112	14:54:25	15:10:10	"	Clear
H - I	0113-0134	15:16:22	15:21:09	"	Clear
J - K	0135-0144	15:23:39	15:25:42	"	Clear
L - M	0145-0160	15:40:04	15:43:28	"	Clear
N - O	0161-0177	15:50:09	15:53:47	"	10% cumulus (frames 0161-0165, 0171-0177)
P - Q	0178-0197	15:58:14	16:02:33	"	10% minor cumulus (frames 0178-0180, 0195-0196)

**CAMERA FLIGHT LINE DATA
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Accession # 04411

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
R - S	0198-0246	16:08:29	16:19:24	65000/19800	10% minor cumulus (frames 0201-0205; 10-40% cumulus (frames 0209-0243)
T - U	0247-0283	16:24:49	16:33:00	"	10-50% cumulus (frames 0247-0273)
V - W	0284-0296	16:41:58	16:44:42	"	10-30% cumulus (frames 0284-0296)
L - X	0297-0323	16:47:14	16:54:40	"	10% thin cirrus and cumulus (frames 0298-0300, 0305-0307, 0314-0320)
X	0324-0326	17:00:51	17:03:34	"	Clear
X - Y	0327-0339	17:08:39	17:11:08	"	10-20% cumulus (frames 0327-0329)
Z - 1	0340-0351	17:16:27	17:22:35	"	Clear
2 - 3	0352-0379	17:16:27	17:22:35	"	10-40% cumulus (frames 0371-0379)

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 92-127**

Accession # 04412

Sensor # 019

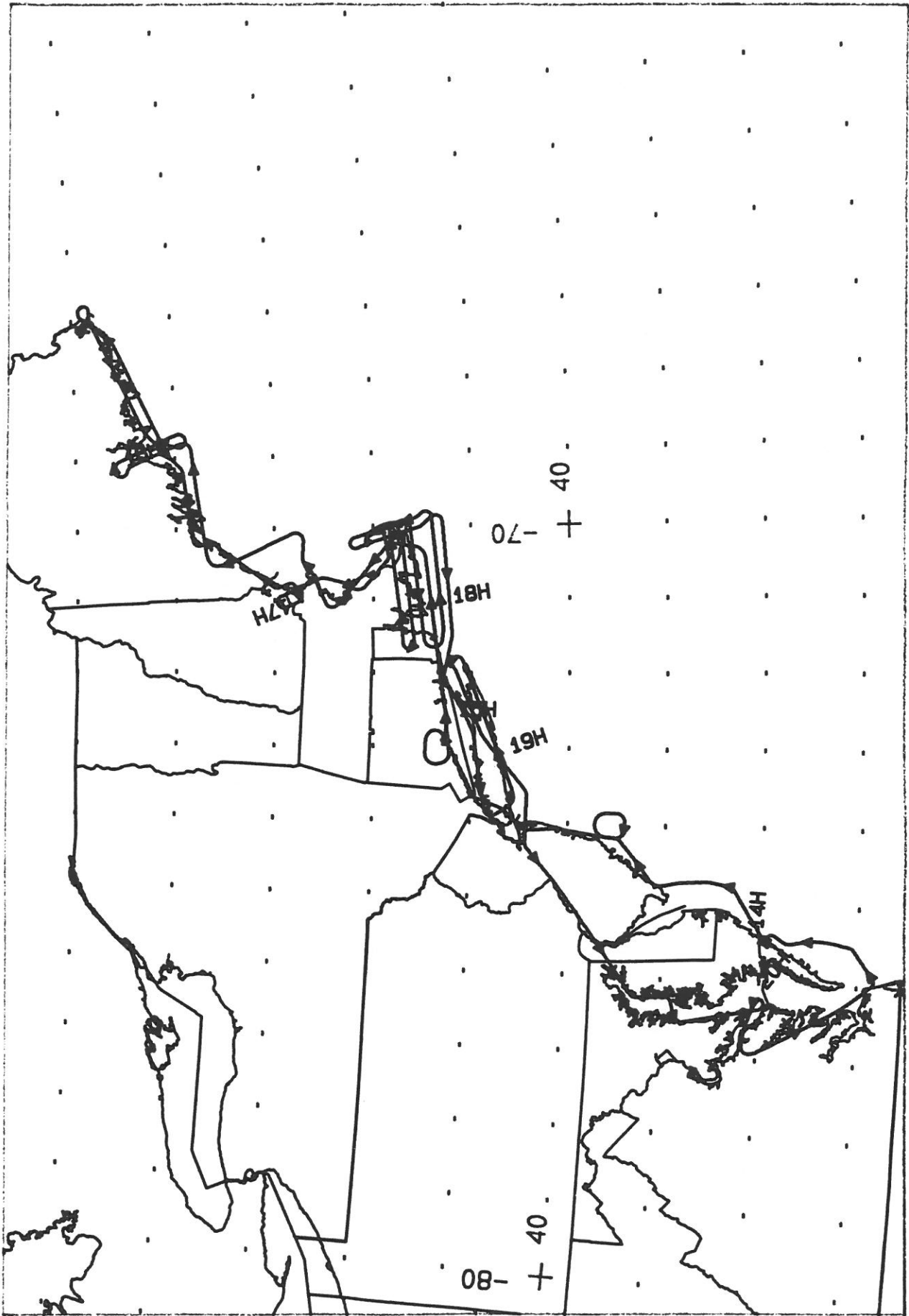
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
3 - 4	0001-0011	17:28:10	17:30:27	65000/19800	10% cumulus (frames 0001-0002, 0009-0011)
5 - 6	0012-0049	17:33:55	17:42:20	"	10-20% cumulus (frames 0012-0025, 0027-0031)
7 - 8	0050-0092	17:46:01	17:55:35	"	10% cumulus (frames 0075-0082, 0090-0092)
9 - 10	0093-0119	18:02:26	18:08:20	"	10% minor cumulus (frames 0101-0102)
11 - 12	0120-0138	18:11:38	18:15:44	"	Clear
13 - 14	0139-0162	18:18:41	18:23:55	"	Clear
15 -16	0163-0191	18:27:01	18:33:23	"	Clear
17 - 18	0192-0206	18:37:52	18:41:03	"	Clear

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FLIGHT NO. 92-127**

Accession # 04412

Sensor # 019

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
18 - 19	0207-0256	18:42:27	18:53:36	65000/19800	Clear; minor cumulus (frame 0256)
20 - 21	0257-0310	18:58:17	19:10:20	"	10% cumulus (frames 0275-0287)
22 - 23	0311-0330	19:13:49	19:18:08	"	10% minor cumulus (frames 0329-0330)
24 - 25	0331-0339	19:28:14	19:30:03	"	10-20% cumulus (frames 0335-0339)
26 - 27	0340-0344	19:49:02	19:49:17	"	Clear
28 - 29	0345-0374	19:53:14	19:59:48	"	10% cumulus (frames 0362-0369)
30 - 31	0375-0383	20:03:11	20:05:00	"	Clear

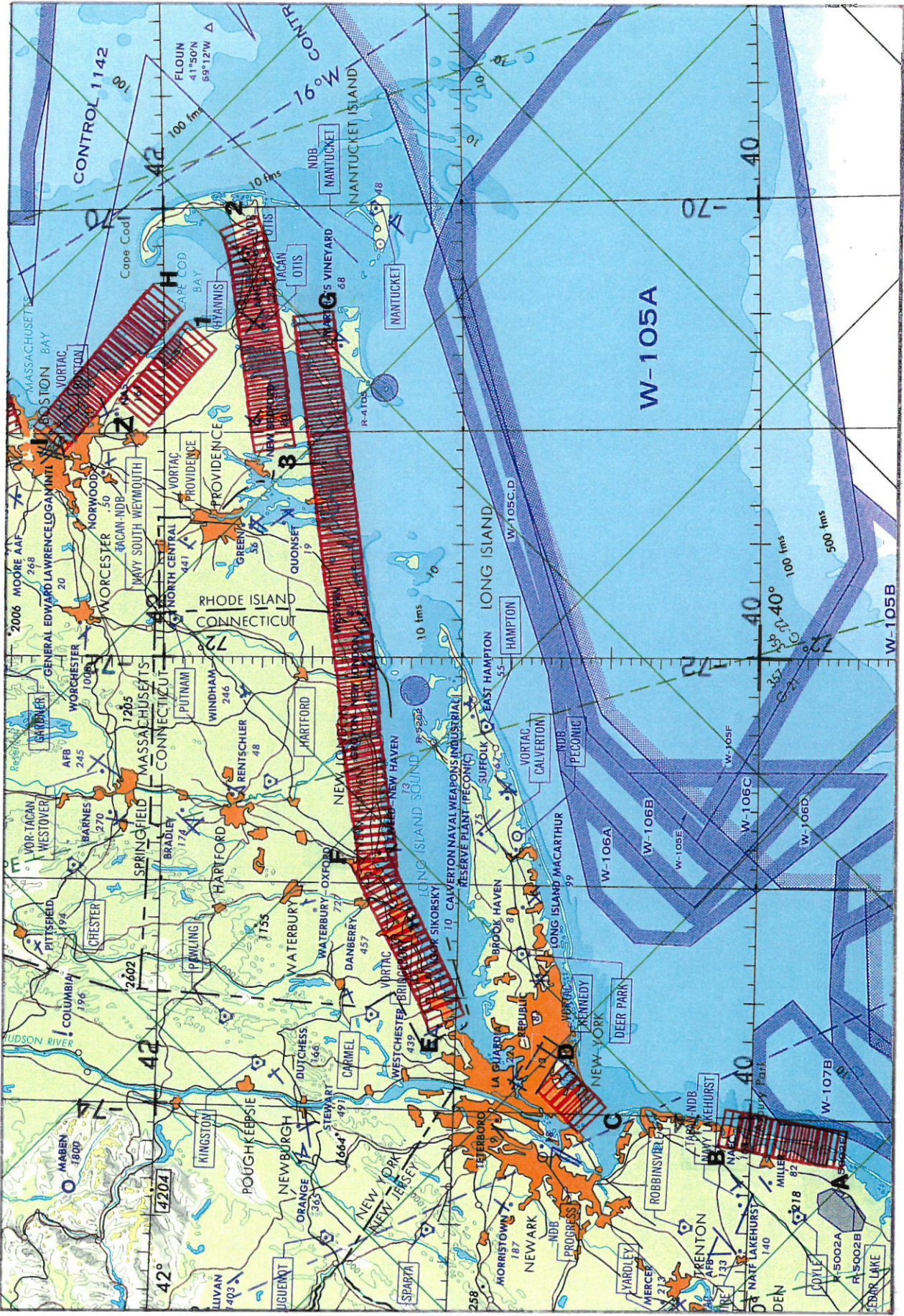


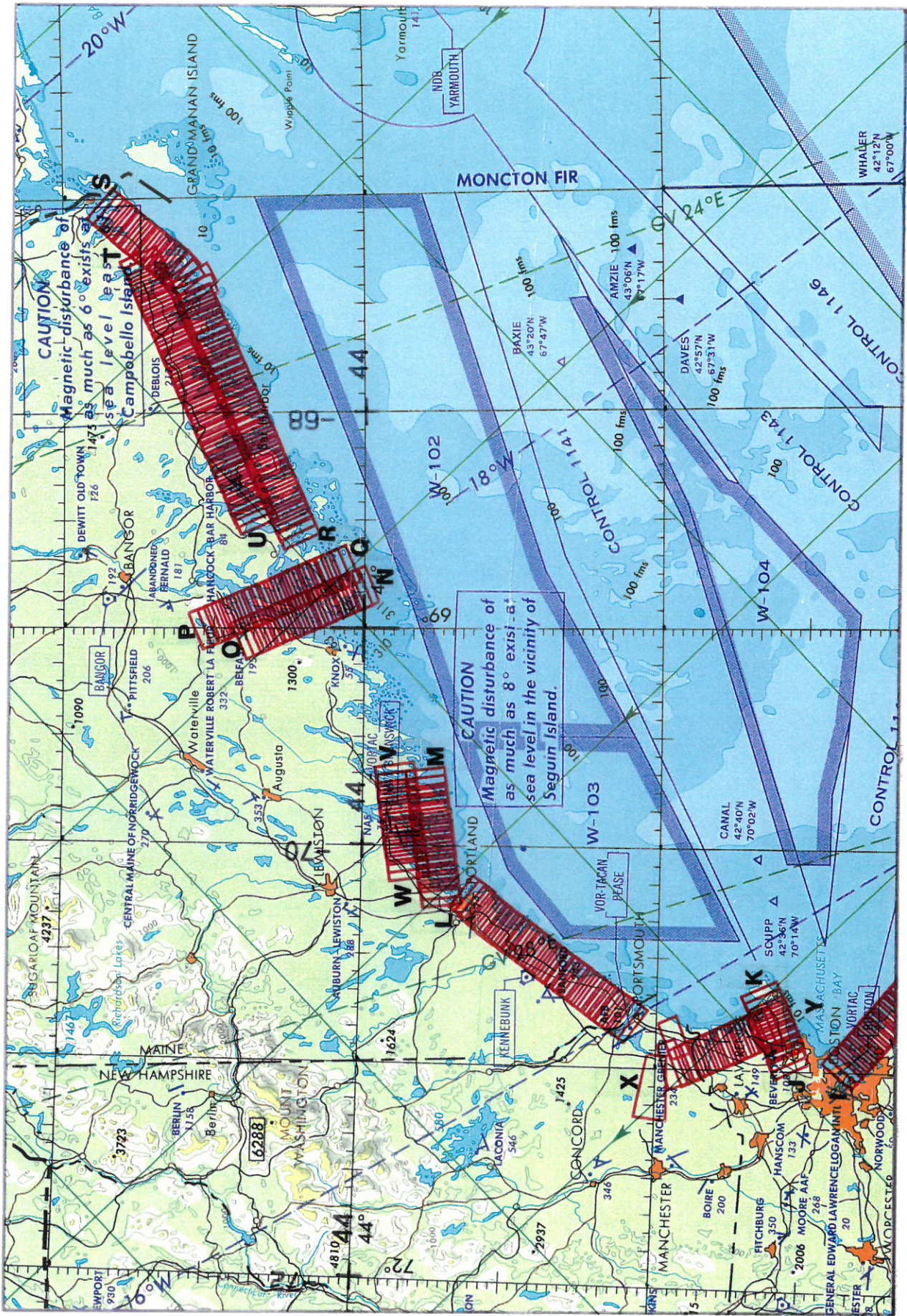
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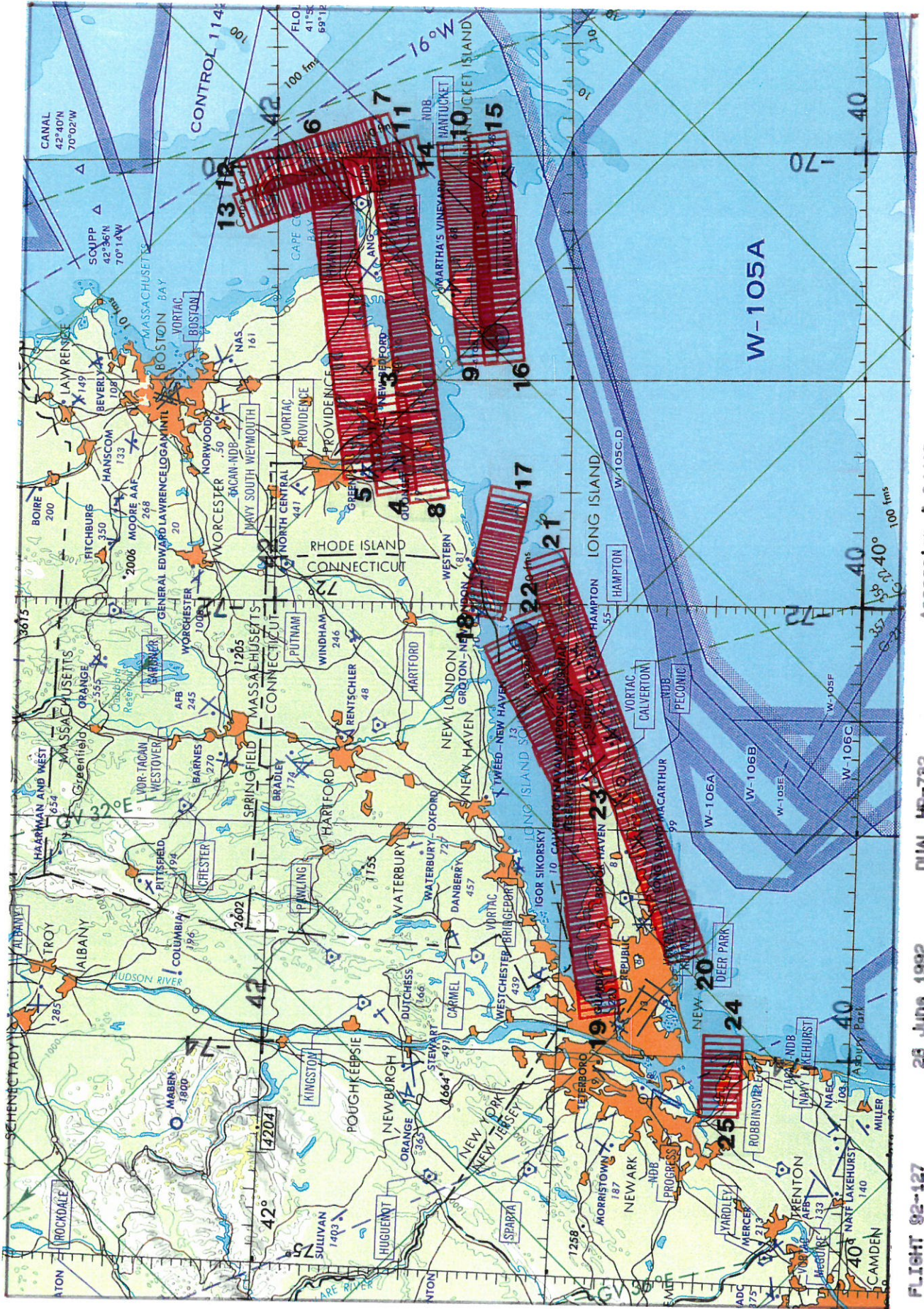
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Due1 HR-732 / TMS







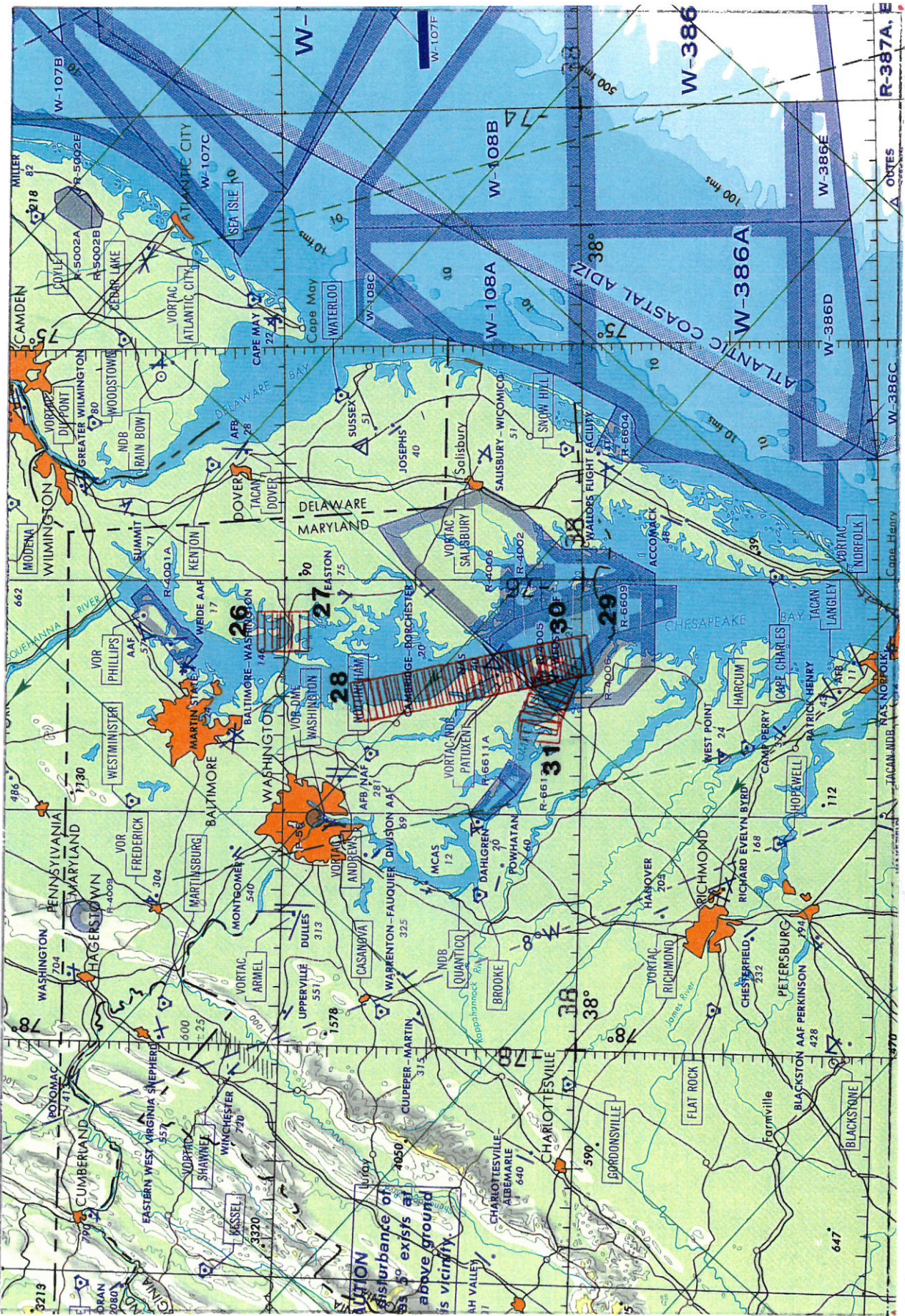
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DUAL HR-732

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