FLIGHT SUMMARY REPORT

Flight #: 92-117

Date: 07 July 1992

Sensor Package: Thematic Mapper Simulator (TMS)
Dual HR-732

Area(s) Covered: South Carolina, Georgia Coast

Investigator(s): Handley, USFWS

Aircraft #: 708

Flight Request: 2RZ2037

Julian Date: 189

SENSOR DATA

Accession #:	-----	04414	04415
Sensor ID #:	074	018	019
Sensor Type:	TMS	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:	-----	31	209
% Overlap:	-----	60	60
Quality:	Good	Excellent	Excellent
Remarks:	No video data in Channel 8		

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:

Daedalus Channel	TM Band	Wavelength, μm
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. 92-117

Accession # 04414

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0018	14:48:05	14:51:57	65000/19800	10% cumulus (frames 0009-0018)
C - D	0019-0028	14:54:29	14:56:32	"	10% cumulus (frames 0019-0028)
F	0029-0031	15:07:27	15:07:54	"	10% minor cumulus (frame 0031)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 92-117

Accession # 04415

Sensor # 019

Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
E - F	0001-0002	15:03:24	15:03:38	65000/19800	Clear
F	0003	15:05:01	_____	"	Oblique frame over water
E - G	0004-0020	15:12:29	15:16:07	"	10% cumulus (frames 0006-0010); 10-20% cumulus (frames 0013-0017)
H - I	0021-0041	15:23:59	15:28:17	"	10-20% cumulus (frames 0021-0023); 10-30% cumulus (frames 0030-0041)
I - J	0042-0058	15:28:59	15:32:31	"	10-20% cumulus (frames 0042-0058)
J - K	0059-0081	15:33:25	15:38:11	"	10-30% cumulus (frames 0059-0081)
L - M	0082-0108	15:41:51	15:47:44	"	10-30% cumulus (frames 0082-0108)
N - K	0109-0116	15:56:23	15:57:59	"	10% cumulus (frames 0109-0116); frame 0116 oblique
K - O	0117-0155	15:58:36	16:07:11	"	10% cumulus (frames 0117-0119, 0137-0153)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 92-117

Accession # 04415

Sensor # 019

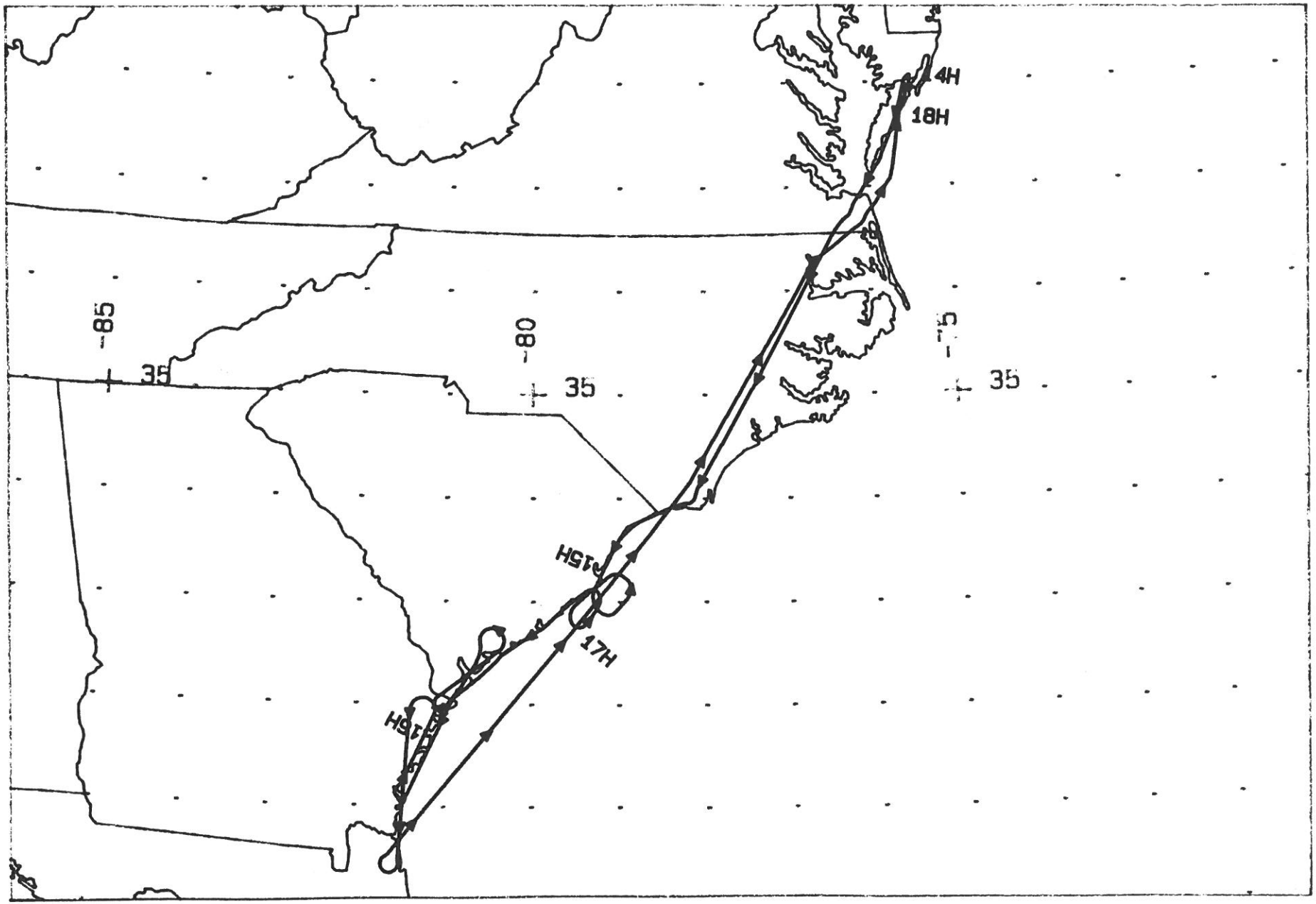
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
P - Q	0156-0186	16:09:25	16:15:44	65000/19800	10% cumulus (frames 0158-0182); 10-50% cumulus (frames 0183-0186)
P - R	0187-0209	16:25:58	16:30:53	"	10-20% cumulus (frames 0187-0209)

TMS SCANNER FLIGHT LINE DATA

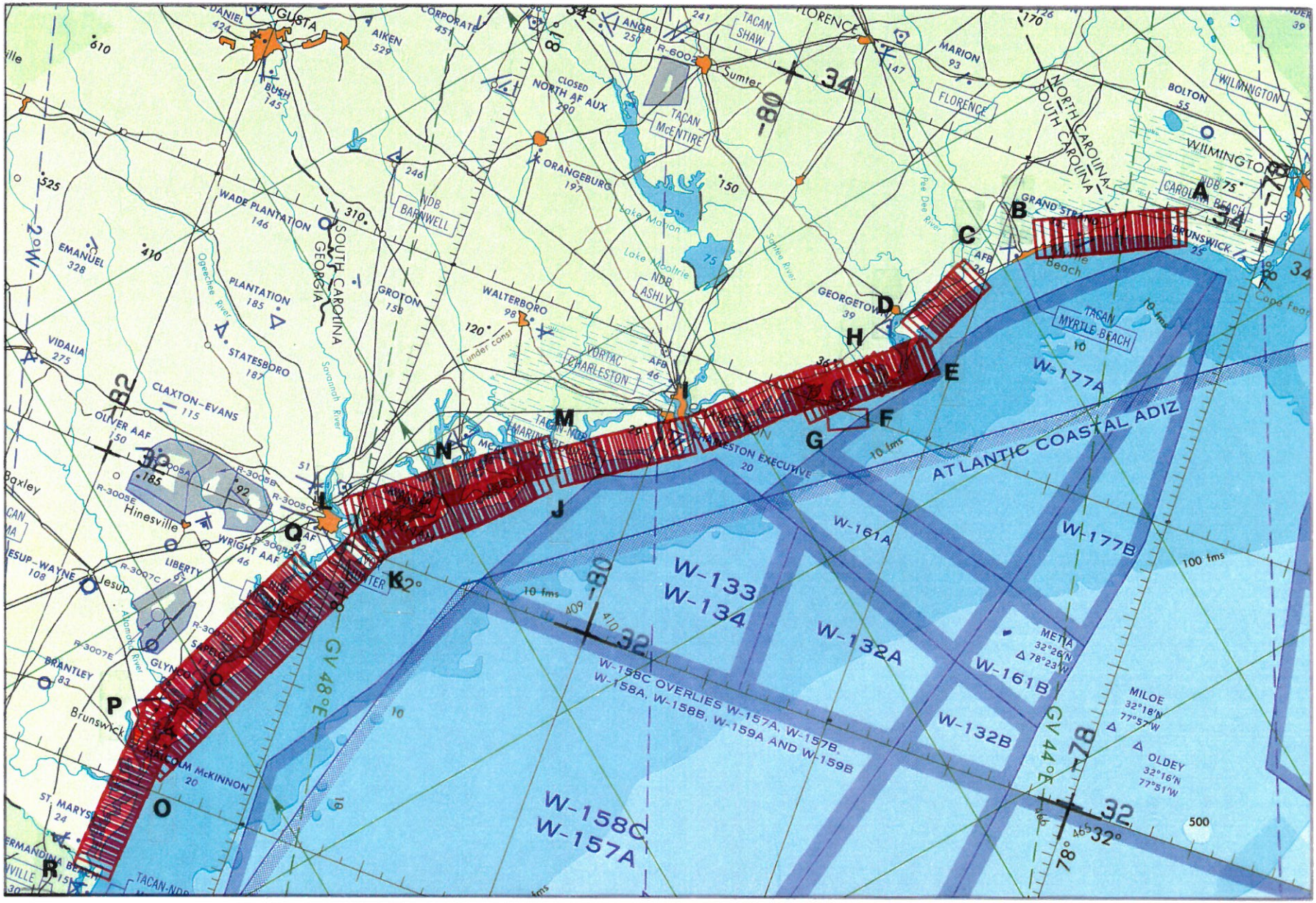
FLIGHT NO. 92-117

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 92-117

Check Points	Actual time (GMT) begin	end	Actual scanline begin	end	Altitude feet/meter	Scan Speed (rps)	total Good scanlines	total Interpolated scanlines	total Repeated scanlines
A-B	14:43:17.Ø	14:48:46.Ø	37843	41950	65ØØØ/19812	12.5Ø	41Ø1	Ø	7
C-D	14:51:51.Ø	14:55:59.Ø	44257	47359	65ØØØ/19812	12.5Ø	31Ø1	Ø	2
E-G	15:11: 4.Ø	15:14:56.Ø	58679	61579	65ØØØ/19812	12.5Ø	29Ø1	Ø	Ø
H-I	15:22:34.Ø	15:26:58.Ø	67297	7Ø599	65ØØØ/19812	12.5Ø	33Ø1	Ø	2
I-J	15:27:22.Ø	15:31:14.Ø	7Ø899	73799	65ØØØ/19812	12.5Ø	29Ø1	Ø	Ø
J-K	15:32:42.Ø	15:36:59.Ø	74899	78113	65ØØØ/19812	12.5Ø	32ØØ	Ø	15
L-M	15:4Ø: 4.Ø	15:46:3Ø.Ø	8Ø423	85250	65ØØØ/19812	12.5Ø	46Ø1	16	211
N-K	15:55: 4.Ø	15:56:32.Ø	91671	92771	65ØØØ/19812	12.5Ø	11Ø1	Ø	Ø
K-O	15:57:12.Ø	16:Ø5:32.Ø	93273	99517	65ØØØ/19812	12.5Ø	62ØØ	Ø	45
P-Q	16:Ø8:46.Ø	16:14:35.Ø	1Ø1948	1Ø63Ø8	65ØØØ/19812	12.5Ø	43Ø1	Ø	6Ø
P-R	16:24:17.Ø	16:3Ø:11.Ø	113585	118Ø14	65ØØØ/19812	12.5Ø	44ØØ	Ø	3Ø



FLIGHT 92-117 7 July 1992 A/C 708 Dual HR-732 / TMS



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