FLIGHT SUMMARY REPORT

Flight #: 91-039

Date: 9 December 1990

Sensor Package: Wild-Heerbrug RC-10
Thematic Mapper Simulator (TMS)

Area(s) Covered: Louisiana

Investigator(s): Dunbar, Army Corps of Engineers **Aircraft #:** 708

Flight Request: 91R260 **Julian Date:** 343

SENSOR DATA

Accession #:	04175	-----
Sensor ID #:	034	101
Sensor Type:	RC-10	TMS
Focal Length:	12" 304.66 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	-----
Filtration:	cc.10B	-----
Spectral Band:	510-900 nm	-----
f Stop:	4	-----
Shutter Speed:	1/100	-----
# of Frames:	451	-----
% Overlap:	60	-----
Quality:	Excellent	Good
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 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)

NOTE: 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 FLIGHT LINE DATA
FLIGHT NO. 91-039

Accession # 04175

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	2334-2420	16:05:46	16:44:56	65000/19800	Clear
C - D	2421-2458	16:48:13	17:05:18	"	Clear
E - F	2459-2496	17:09:09	17:25:55	"	Clear
G - H	2497-2531	17:30:40	17:46:20	"	Clear
I - J	2532-2565	17:52:21	18:07:09	"	Clear
K - L	2566-2587	18:14:45	18:24:13	"	Clear
M - N	2588-2609	18:27:56	18:37:35	"	Clear
O - P	2610-2631	18:40:36	18:49:52	"	Clear
Q - R	2632-2666	18:53:07	19:08:45	"	Clear
S - T	2667-2704	19:11:48	19:28:50	"	Minor smoke obscuration (frames 2679-2681)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-039

Accession # 04175

Sensor # 034

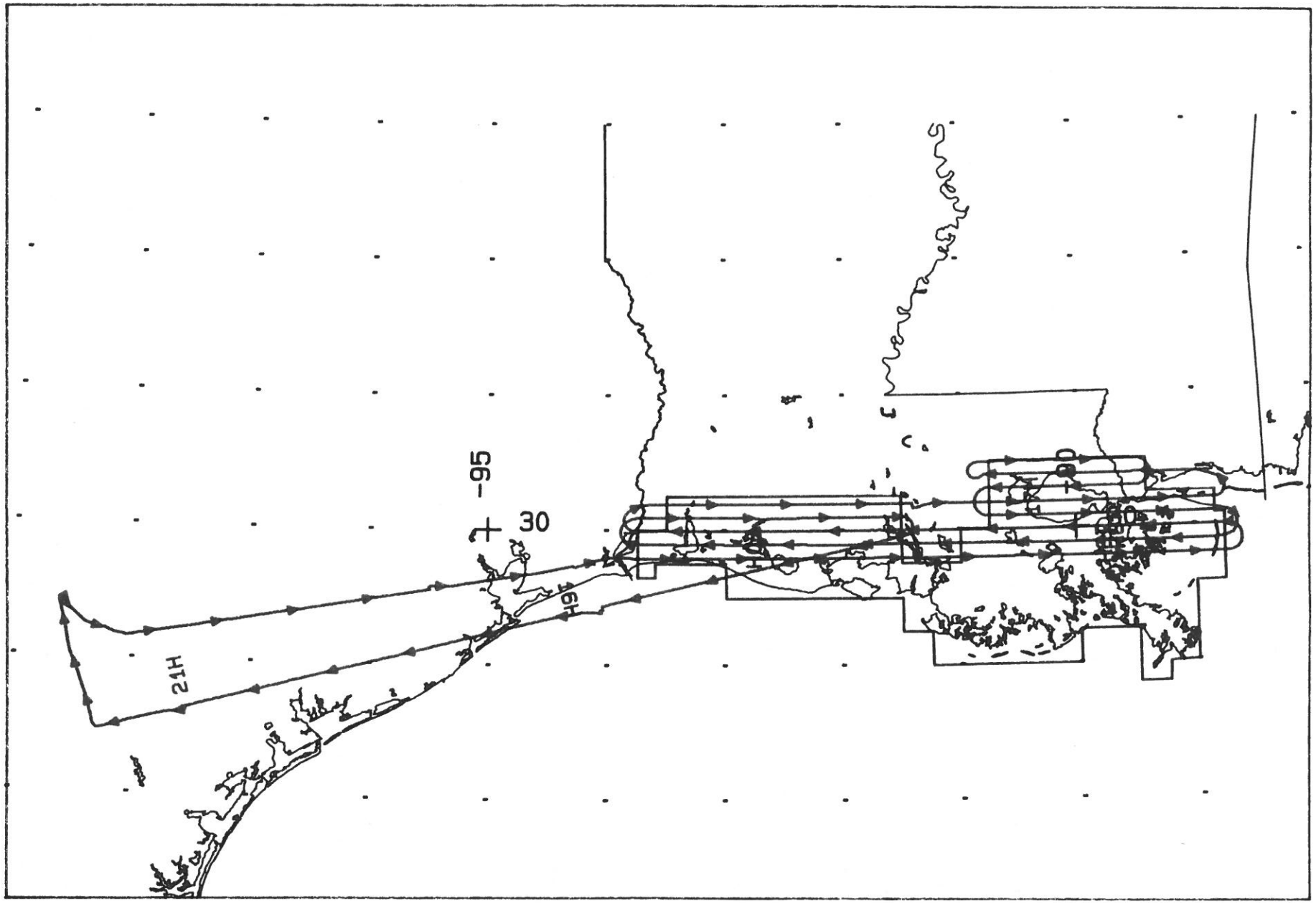
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	2705-2743	19:32:45	19:49:56	65000/19800	Moderate smoke obscuration (frames 2711-2713); thin cirrus (frames 2734-2737)
W - X	2744-2779	19:54:55	20:10:40	"	Clear
____	2780-2784	20:10:56	20:12:38	"	Clear; oblique frames

SCANNER FLIGHT LINE DATA

FLIGHT NO. 91-039

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 91-039

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	16:05:37.0	16:37:48.0	30033	50033	65000/19812	12.50	19970	0	31
B	16:37:48.0	16:44:56.0	50034	54471	65000/19812	12.50	4439	0	0
C-D	16:48: 2.0	17:05: 8.0	56402	67036	65000/19812	12.50	10631	0	4
E-F	17:08:59.0	17:25:58.0	69429	79988	65000/19812	12.50	10558	0	3
G-H	17:30:29.0	17:46:20.0	82800	92661	65000/19812	12.50	9847	0	15
I-J	17:52:11.0	18:07:17.0	96299	105701	65000/19812	12.50	9401	0	2
K-L	18:14:38.0	18:24:11.0	110271	116213	65000/19812	12.50	5941	0	2
M-N	18:27:46.0	18:37:36.0	119441	124563	65000/19812	12.50	6110	0	13
O-P	18:40:28.0	18:49:52.0	126347	132200	65000/19812	12.50	5850	0	4
Q-R	18:52:37.0	19:03:46.0	134121	143963	65000/19812	12.50	9839	0	4
S-T	19:11:41.0	19:28:50.0	145774	156451	65000/19812	12.50	10673	0	5
U-V	19:32:40.0	19:49:42.0	158841	169447	65000/19812	12.50	10600	0	7
W-X	19:54:43.0	20:12:42.0	172563	183754	65000/19812	12.50	11184	0	8



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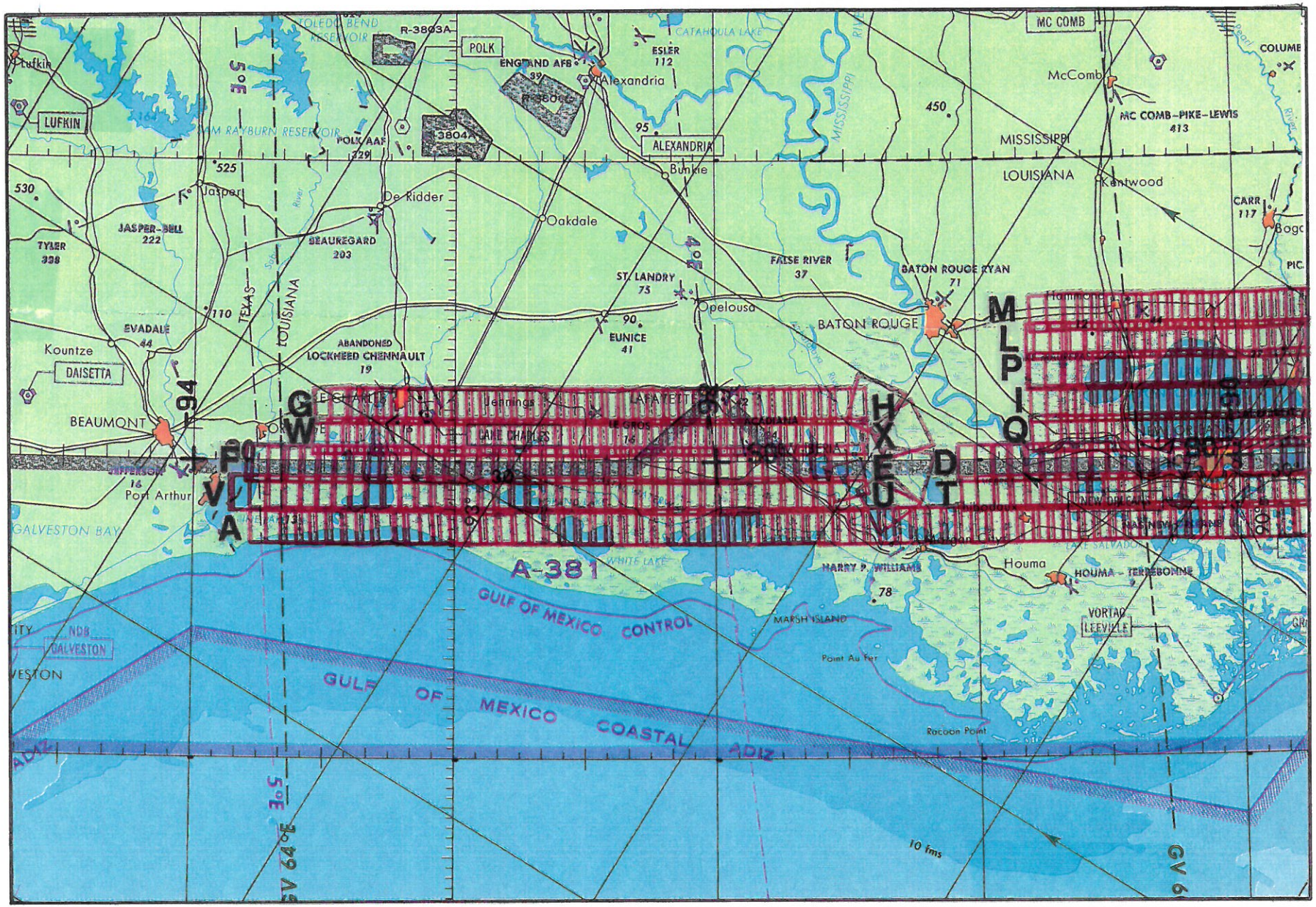

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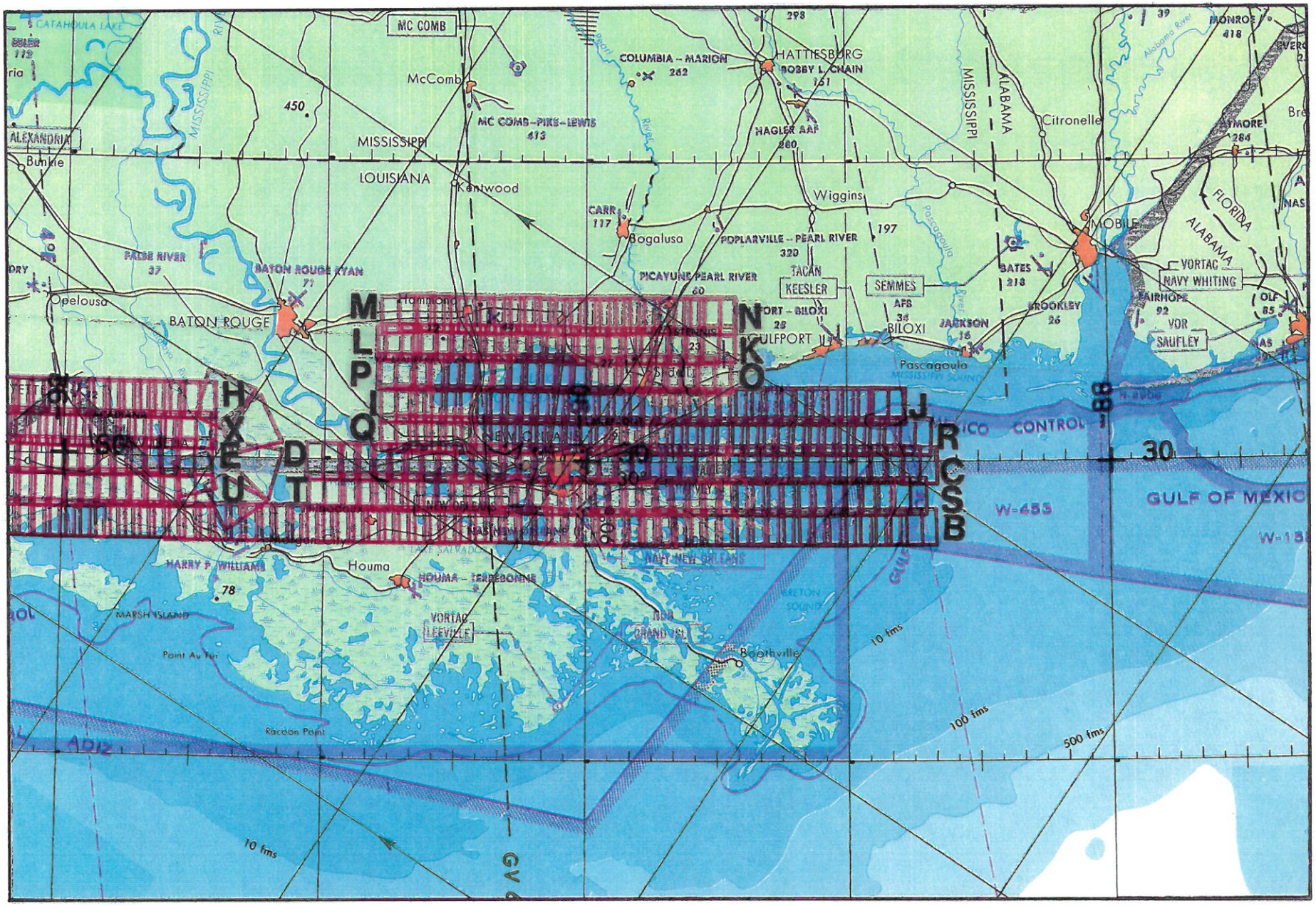

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