FLIGHT SUMMARY REPORT

Flight Number: 94-031

Calendar/Julian Date: 14 January 1994 • 14

Sensor Package: Wild-Heerbrug RC-10
Hycon HR-732
Large Area Collectors (LACs)
Aerosol Particulate Sampler (APS)

Area(s) Covered: Gulf Coast/East Texas

Investigator(s): U.S. Fish and Wildlife Service **Aircraft #:** 706

SENSOR DATA

Accession #:	04681	04682	-----	-----
Sensor ID #:	076	039	100	024
Sensor Type:	RC-10	HR-732	LACs	APS
Focal Length:	12" 304.89 mm	24" 609.6 mm	-----	-----
Film Type:	Aerochrome IR SO-193	High Definition Aerochrome IR SO-131	-----	-----
Filtration:	Wratten 12	None	-----	-----
Spectral Band:	510-900 nm	510-900	-----	-----
f Stop:	11	8	-----	-----
Shutter Speed:	1/300	1/75	-----	-----
# of Frames:	197	116	-----	-----
% Overlap:	60	60	-----	-----
Quality:	Excellent	Excellent	-----	-----
Remarks:	Camera clock offset 6.8 seconds from navigation data			

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(s) and camera(s) used for data collection during this flight.

Aerosol Particulate Sampler

The Aerosol Particulate Sampler (APS) has been developed and is operated by Dr. Guy Ferry of the NASA-Ames Research Experiments Branch. The sampler is a non-imaging sensor designed to gather high altitude dust particles for laboratory research.

Large Area Collectors

The Large Area Collectors (LACs) are flown on NASA high altitude ER-2s in support of the NASA-Johnson Space Center Cosmic Dust Program. The LACs are used to collect comparatively unaltered cosmic dust from the stratosphere at ER-2 flight altitudes of 65,000 feet or higher. Sufficient quantities of extraterrestrial materials are collected to allow chemical and mineralogical compositions of individual particles to be determined. Study of these materials whose sources may be comets, asteroid collisions, planetary impacts, and meteorite ablation provide valuable information about the origin and history of the solar system.

Additional information regarding the Large Area Collectors may be obtained from Michael E. Zolensky, NASA-Johnson Space Center, SN2, Houston, Texas 77058 (Telephone: 713-483-5128).

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).

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). Additional information regarding ER-2 acquired photographic and digital data is also available through the Aircraft Data Facility.

CAMERA FLIGHT LINE DATA
FLIGHT NO. 94-031

Accession # 04681

Sensor # 076

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0764-0771	16:37:32	16:40:38	65000/19800	Clear
C - D	0772-0780	16:50:57	16:54:31	"	Clear
D - E	0781-0791	17:00:08	17:04:51	"	Clear
F - G	0792-0805	17:15:58	17:21:50	"	Clear
G - H	0806-0817	17:22:37	17:27:18	"	Clear
I - J	0818-0829	17:59:44	18:04:37	"	Clear
K - L	0830-0839	18:41:09	18:45:18	"	Clear
M - N	0840-0856	18:56:18	19:03:31	"	Clear
O - P	0857-0887	19:18:37	19:32:32	"	Clear
Q - R	0888-0901	19:36:30	19:42:33	"	Clear
S - T	0902-0912	19:46:29	19:51:08	"	Clear

CAMERA FLIGHT LINE DATA
FLIGHT NO. 94-031

Accession # 04681

Sensor # 076

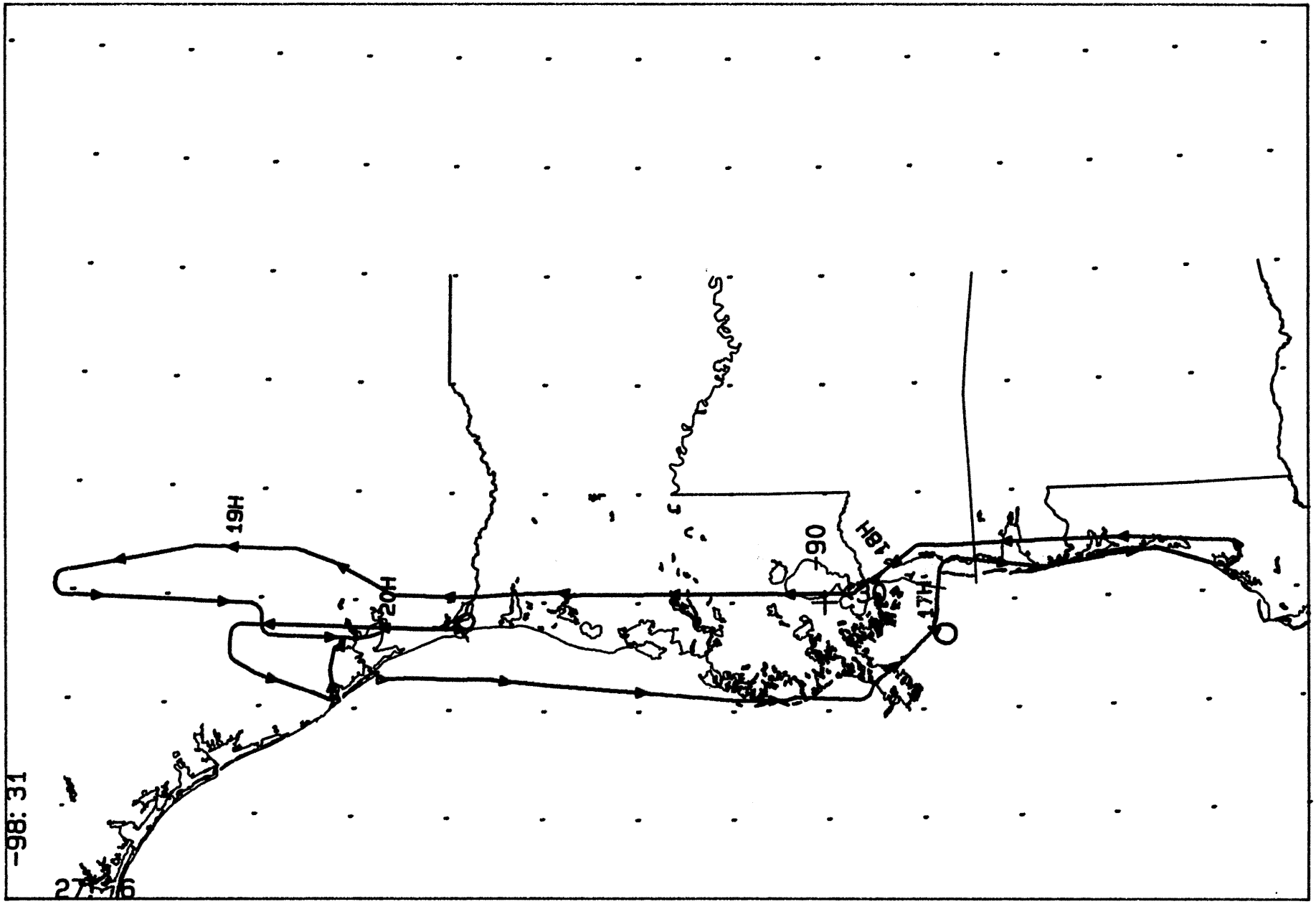
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
S - U	0913-0945	19:58:13	20:13:04	65000/19800	Clear
U	0946-0949	20:13:32	20:14:56	"	Clear; oblique frames in turn
U - V	0950-0952	20:15:24	20:16:20	"	Clear
V	0953-0954	20:16:48	20:17:16	"	Clear; oblique frames
V - W	0955-0960	20:17:44	20:20:03	"	Clear; oblique (frames 0959-0960)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 94-031

Accession # 04682

Sensor # 039

Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
A - B	0001-0014	16:37:24	16:40:35	65000/19800	Clear
C - D	0015-0030	16:50:49	16:54:28	"	Clear
D - E	0031-0050	17:00:00	17:04:37	"	Clear
F - G	0051-0075	17:15:50	17:21:38	"	Clear
G - H	0076-0095	17:22:28	17:27:04	"	Clear
I - J	0096-0116	17:59:34	18:04:23	"	Clear
APS ON/OFF TIMES 16:38/20:14					



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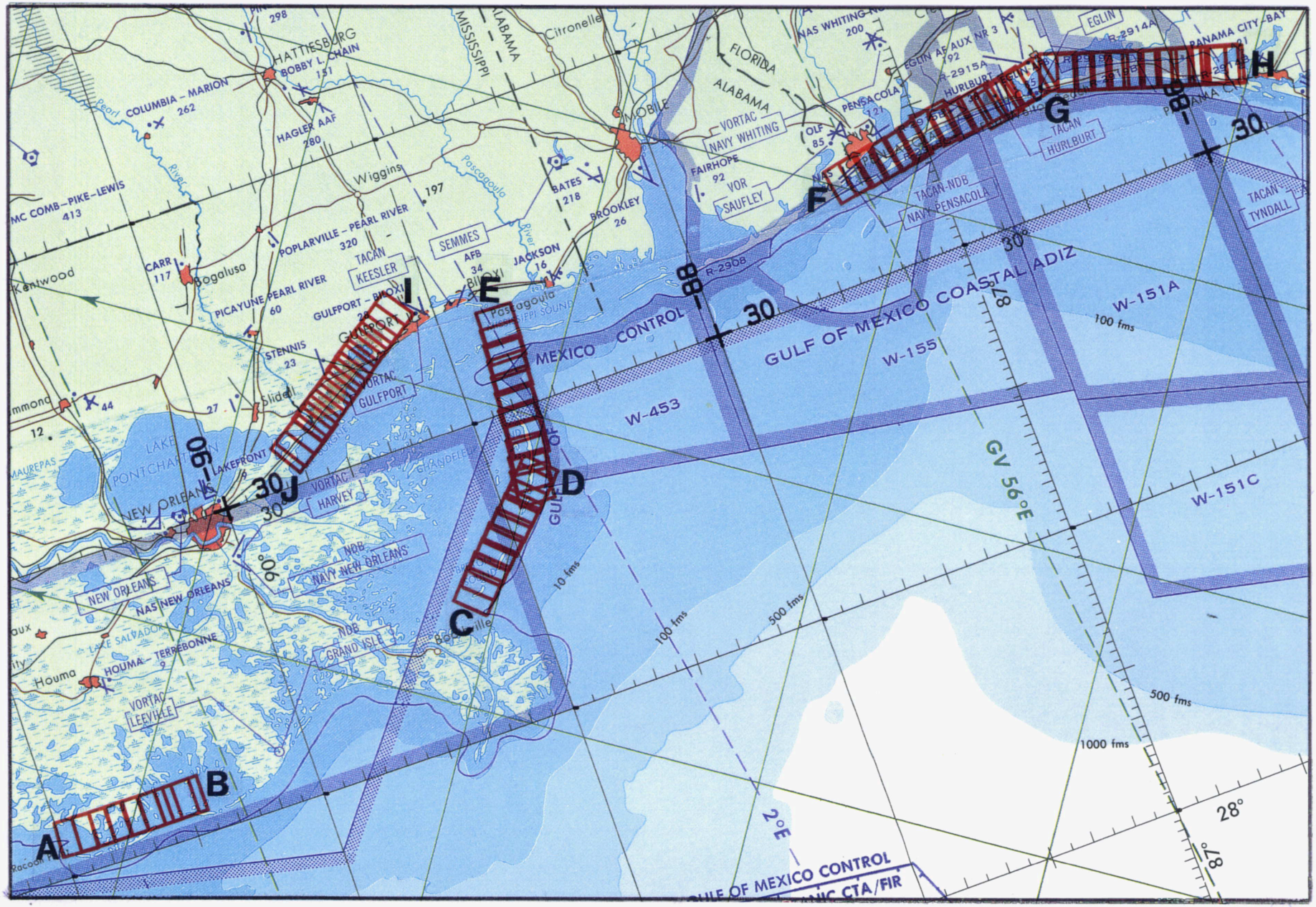
OVERLAY FOR MGULFM LAMBERT CONFORMAL PROJECTION: SP1 = 28.8 SP2 = 30.3 CM = -91.9 ROTATED BY 0.0

16: 10: 00 TO 20: 45: 30 UT SCALE = 1: 5.53E+06 TIME TICS EVERY 10.00 MINUTES



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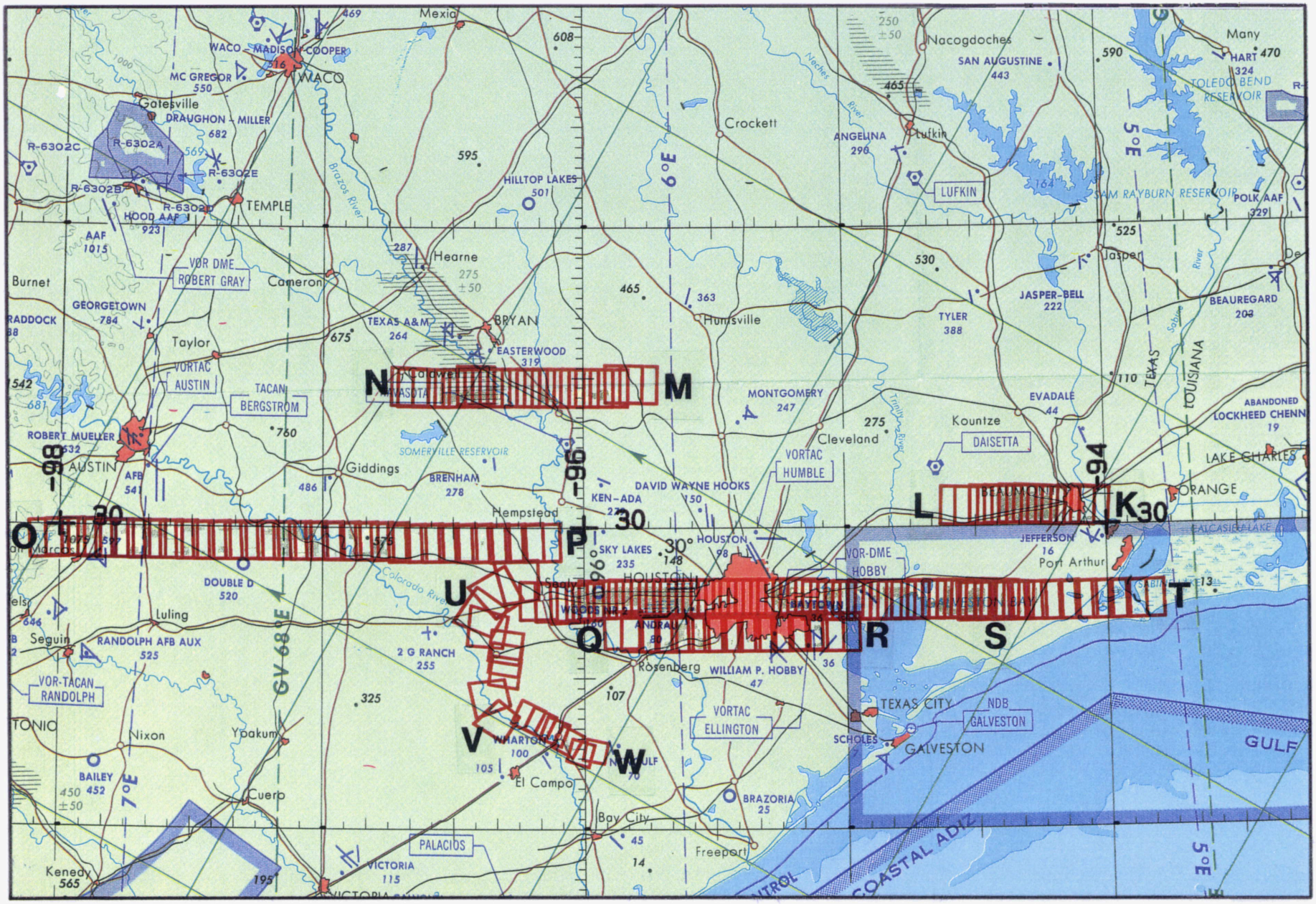

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