



NOAA file

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL ENVIRONMENTAL SATELLITE, DATA,
 AND INFORMATION SERVICE
 Washington, D.C. 20233

October 16, 1984

IC 10-153

E/SP4:HS

TO: Distribution
 FROM: *for* *E. F. Conlan* E/SP4 Edward F. Conlan
 SUBJECT: Monthly Satellite and Command/Control
 System Summary - Landsat 4/5

The attached is the Landsat 4/5 Monthly Summary for September 1984.

Distribution:

- E - J. McElroy
- E - J. Glover
- Ex1 - W. Bishop
- Ex2 - M. Courain
- E/MB - B. MacGill
- E/MB3 - J. Johnson
- E/SP - R. Koffler
- E/SP - W. Callicott
- E/SP1 - J. Koeppen
- E/SP2 - J. Hussey
- E/SP4 - G. Alicea
- E/SP4 - H. Warriner
- E/SPD - W. Eskite
- E/SPD1 - D. Miller
- E/SPD2 - E. Mowle
- E/SPD3 - A. Schwalb
- E/S0 - G. Vaeth
- E/S01 - T. Karras
- E/S02 - R. Vollmers
- E/S03 - G. White
- E/ER - R. Keating
- E/ER1 - K. Hodgkins
- E/ER2 - A. Jackson

- NASA/HDQRS - B. Schardt
- DOI/EDC - A. Watkins
- ECAC - R. Larson

Action	
Info	<input checked="" type="checkbox"/>
Watkins	<input checked="" type="checkbox"/>
Landis	<input checked="" type="checkbox"/>
Metz	<input checked="" type="checkbox"/>
Byrnes	<input type="checkbox"/>
Rohde	<input checked="" type="checkbox"/>
Admin.	<input type="checkbox"/>
DP&DB	<input checked="" type="checkbox"/>
CSB	<input checked="" type="checkbox"/>
TD&AB	<input checked="" type="checkbox"/>
Pettinger	<input type="checkbox"/>
Alaska	<input type="checkbox"/>
Technicolor	<input type="checkbox"/>
NOAA	<input checked="" type="checkbox"/> <i>(see cc)</i>

(distributed 10-23-84)



LANDSAT
SATELLITE & COMMAND/CONTROL SYSTEM SUMMARY
SEPTEMBER 1984

ORBITAL CHARACTERISTICS	LANDSAT 4	LANDSAT 5
International Designation	1982-072A	1984-021A
Launch Date	7/16/82	3/01/84
Operations Began	MSS 7/20/82	4/06/84
	TM 8/17/82	4/06/84
Days Operational (this period)	30	30
Orbit Angle	98.2257	98.2386
Average Altitude	KM 699.60	699.62
	Miles 434.66	434.66
Precession Rate (Minutes/Month)	-0.264	-0.324
Orbit Nodal Period (Minutes)	98.88	98.88
Equation Crossing Time (Descending)	09:37 AM	09:42
	(Ascending) 09:37 PM	09:42
Last Orbit Adjust	July 26	AUGUST 22
Next Orbit Adjust	October	November
Hydrazine Remaining	472.00 lbs	496.17 lbs
 SENSOR STATUS		
Multi-Spectral Scanner	Operational	Operational
Thematic Mapper	Operational	Operational
 DOMESTIC SCENES ACQUIRED		
Multi-Spectral Scanner	239	2428
Thematic Mapper	0	3218
 SPACECRAFT STATUS OVERVIEW		
Attitude and Orbit		
MACS	Operational	Operational
Power Module	Operational	Operational
Communications & Data Handling		
C&DH	Operational	Operational
Narrow Band Recorder # 1	Marginal	Operational
Narrow Band Recorder # 2	Operational	Marginal
Signal Cond & Control Unit	Operational	Operational
Digital Processing Unit	Operational	Operational
Power and Thermal		
Modular Power Subsystem	Operational	Operational
Power Distribution Unit	Operational	Operational
Solar Array Drive	Operational	Operational
Solar Panel # 1	Operational	Operational
Solar Panel # 2	Operational	Operational
Solar Panel # 3	Failed	Operational
Solar Panel # 4	Failed	Operational
Operational Solar Array Offset	- 31 Degrees	0 Degrees
Transmitters		
Unified S-Band	Operational	Operational
S-Band	Operational	Operational
X-Band	Failed 2/15/83	Operational
Ku-Band	Operational	Operational
Global Positioning System	Off	On (Test)

LANDSAT 4 MAJOR ANOMALIES

STANDARD TELEMETRY AND COMMAND COMPONENTS CENTRAL UNIT (CU-B)

FUNCTION: Provides direct command, telemetry and clock interface to the Command and Data Handling Components and to all other spacecraft subsystems via the multiplexed data bus.

FAILED: 29 October, 1982

IMPACT: Failure of CU-A would terminate the mission.

WIDEBAND COMMUNICATIONS SYSTEM X-BAND TRANSMISSION LINK

FUNCTION: Receives digital data from the Thematic Mapper and MultiSpectral Scanner sensors and transmits to ground stations.

FAILED: X-Band Unit B 22 September, 1982
X-Band Unit A 14 February, 1983

IMPACT: Unable to receive Thematic Mapper data except thru TDRSS.

SOLAR ARRAY PANELS

FUNCTION: Provide power to the spacecraft and batteries during spacecraft daylight periods.

FAILED: SA Panel # 4 22 May, 1983
SA Panel # 3 26 July, 1983

IMPACT: Not enough power available to support the MSS mission and also receive Thematic Mapper data thru TDRSS.

NARROW BAND TAPE RECORDER

FUNCTION: Record telemetry thruout the orbit

FAILED: Narrow Band Recorder #1 Numerous servo errors cause the data to be unreliable for MSS scene processing. NBTR #2 is now used for areas where MSS processing is requested.

IMPACT: Loss of Narrow band Recorder #2 will cause the failure of capability to process foreign scenes for domestic use.

LANDSAT SATELLITE & COMMAND/CONTROL SYSTEM SUMMARY (CON'T) SEPTEMBER 1984

REMARKS:

LANDSAT 5: Landsat 5 continues to support the full MSS and TM mission. No systematic changes were noted in the MSS instrument during this period. Minor changes were made in the radiometric calibration to correct for high radiance striping.

LANDSAT 4: Landsat 4 continues to support the current MSS mission. No systematic changes were noted in the MSS instrument during this period.

		S	X	
		B	B	
GROUND STATION STATUS AND CAPABILITIES		A	A	C
		N	N	M
U.S.		D	D	D
	NOAA Transportable Ground Station, Greenbelt	X	X	OPERATIONAL
	NASA GSTDN Goldstone, California	X	X	OPERATIONAL
*	NASA GSTDN (Other)		X	OPERATIONAL
	TDRSS White Sands, New Mexico (Ku Band)	X	X	TESTING

* S-Band Telemetry and Command Capability Only

INTERNATIONAL

	Argentina, Mar del Plata	X		OPERATIONAL
	Australia, Alice Springs	X	+	OPERATIONAL
	Brasil, Cuiaba	X	X	+ OPERATIONAL
	Canada, Prince Albert	X	X	+ OPERATIONAL
	India, Hyderabad	X	X	+ OPERATIONAL
	Indonesia	X		OPERATIONAL
	Italy, Fucino	X	X	+ OPERATIONAL
	Japan, Tokyo	X	X	+ OPERATIONAL
	Spain, Maspalomas Island	X		OPERATIONAL
	South Africa, Johannesburg	X		OPERATIONAL
*	Sweden, Kiruna	X	X	+ OPERATIONAL
	Thailand, Bangkok	X		+ OPERATIONAL

+ Capability to record MSS data for U.S. domestic use.

* Monday thru Friday recording support for domestic U.S. use.