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SPACE TRANSPORTATION SYSTEM (STS)

(Emergency Support)

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Launch Date: Ongoing (Operational Date - September 29, 1988)
Projected SC Life/DSN Support: 10 years/10 years

Project Responsibility: Johnson Space Center (JSC) (Flight)

Source: PID July 1979
Sponsor: NASA

A. MISSION DESCRIPTION

The Space Transportation System (STS) is a manned reusable launch vehicle (Shuttle) used to carry into space nearly all of the nation's payloads for military, private industry, universities, research organizations, and foreign governments and organizations.

B. FLIGHT PROFILE

The STS is launched from the Eastern Test Range (ETR). Solid launch rocket engines are separated and recovered downrange for reuse. Landings take place at the ETR or at Edwards Air Force Base.

C. COVERAGE

1. Coverage Goals

Coverage will be provided by the DSN for the STS during emergencies that would prevent communications between the shuttle and the White Sands TDRSS receiving station. Emergency support would be provided by the DSN's 26-meter subnetwork.

2. Network Support

The support provided by the DSN is indicated in the following table:

<u>System</u>	<u>Goldstone</u>				<u>Canberra</u>				<u>Madrid</u>		
	12	14	15	16	42	43	45	46	61	63	66
S-band TLM				E				E			E
S-band CMD				E				E			E
S-band TRK				E				E			E

NOTE: E = Emergency

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<u>System</u>	<u>Uplink (MHz)</u>	<u>Downlink (MHz)</u>	<u>Polarization</u>
S-band TLM	--	2041.9	
	--	2106.4	
S-band CMD	2217.5	--	
	2287.5	--	
S-band TRK	2217.5	2041.9	
	2106.4	2287.5	

E. SUPPORT PARAMETERS

The support parameters for the Telemetry, Command, and Support Systems are listed below:

(1) Telemetry

Data Streams	1
Format	PM (FM P/B)
Subcarrier Frequency	N/A
Bit Rates	64, 96, 128, 192, 1024 kb/s
Record	1024 kb/s

(2) Command

Format	Baseband
Subcarrier Frequency	N/A
Bit Rate	72 kb/s, 32 kb/s

(3) Support

Uplink Power	2 kW
Antenna Rate	High
Antenna Angle Rate	Required
Antenna Autotrack	Required
Doppler Rates	Moderate
Range Format	Major tone
Recording	
. Analog	Required
. Digital	Required

F. TRACKING SUPPORT RESPONSIBILITY

The allocation of responsibilities for tracking support is listed in the following table.

<u>Mission Phase</u>	<u>Support Responsibility</u>
Launch and Landing	KSC
Flight	JSC/TDRS
TDRSS Emergency	DSN

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