

OCT 21 1994

B/L: 554.50, 554.75
SYS: TACAN

Critical Item: Control Transfer Group (2 Items Total, one per site)
 Find Number: Unit 4
 Criticality Category: 1

SAA No:	29CL01-030	System/Area:	TACAN/TALS
NASA		PMN/	U72-1317-01/
Part No:	None	Name:	Control Transfer Group
Mfg/	E-Systems/	Drawing/	T.O.31R4-2TRN26-2/
Part No:	003743-10	Sheet No:	3-36

Function: Provides transfer function for receiver/transmitter units, measures/monitors, receiver/transmitter parameters and distributes power and signals.

Critical Failure Mode/Failure Mode No:

- 1) Fail to distribute power and signals/29CL01-030.011.
- 2) Fail to transfer/29CL01-030.012.

Failure Cause: Discrete component failure.

Failure Effect: Each failure could result in loss of antenna control and RF monitors resulting in loss of azimuth signal to the Orbiter. Each failure could cause loss of life and/or vehicle. Detection method is system alarm. Time to effect is immediate from 250 nautical miles to 20 nautical miles.

ACCEPTANCE RATIONALE

Design:

- All controls are housed in an environmentally controlled enclosure to prevent premature component failure due to heat and corrosion.
- This system has design features that shield against unwanted RF and lightning strikes.
- The control transfer group is all solid state utilizing state-of-the-art CMOS integrated circuits. The design contains built in self-test and calibration features.
- The TACAN AN/TRN-26 is a portable tactical air navigation system designed for use at remote landing strips and forward operating areas by the US Air Force.

*Attachment
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Test:

- TACAN activation is required T-3 hours before the start of Ground Launch Sequence. This activation will provide assurance that the system is functioning as required.
- OMRS File VI requires a system validation test prior to each use of TACAN for Orbiter landing.
- NSTS 07700, Vol. X, requires an annual validation test that verifies proper reception of signal by in flight aircraft to determine ground interference and system alignment quality.

Inspection:

- Prior to TACAN activation a pre-operation checkout (inspection) is performed per OMI Z3109-A.

Failure History:

- Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in PRACA database. The PRACA database was researched and no failure data was found on this component in the critical failure mode.
- The GIDEP failure data interchange system has been researched and no data on this item was found.

Operational Use:

- Correcting Action:

There is no action which can be taken to mitigate the failure effect.

- Timeframe:

Since no correcting action is available, timeframe does not apply.

*Attachment
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