

|                   |                              |                           |             |            |
|-------------------|------------------------------|---------------------------|-------------|------------|
| SUBSYSTEM         | CCTV                         | SHUTTLE CCTV FAILURE MODE | PREPARED BY | M. Kravitz |
| UNIT              | Pan/Tilt Unit (PTU)          | & EFFECTS ANALYSIS        | DATE        | 8-20-86    |
| ASSY. DWMG.       | 2294822-502, 503, 504        |                           | REVISED     | 7-17-81    |
| QUANTITY/LOCATION | 1/MULTIPLE (CARGO BAY STACK) |                           |             |            |

FUNCTION: The PTU will move in the Pan right or left direction in response to a command.

| ITEM    | FAILURE MODE   | FAILURE CAUSE  | FAILURE EFFECT ON END ITEM   | FAILURE DETECT FLIGHT/GROUND   | CORRECT ACTION TIME AVAIL/REQ            | CRIT'Y: | HAZARDS/REMARKS |
|---------|--|--|--|--|--|---------|-----------------|
| 2.4.3.2 | Loss of azimuth (pan) drive due to a mechanical failure. | (1) Motor Failure.<br>(2) Gear Head Failure.<br>(3) Gear Box Failure.<br>(4) AZ Bearing Failure. | Loss of travel in the pan right or left direction.<br><br><u>Worst Case:</u><br>Loss of mission critical video.                              | FLI-<br>(1) Scene Information from camera mounted on PTU as observed on TVM appears stationary in response to pan commands.<br>(2) May observe lack of movement of PTU through the crew cabin window.<br>(3) May use TVM in conjunction with another camera to observe suspect PTU.<br>BND-<br>Scene information from camera mounted on PTU as observed on TVM appears stationary in response to pan commands. | None                                     | 2/2     |                 |
|         |  |  | <u>Worst Case (if video is not mission critical, for B &amp; C cameras only):</u> Unable to verify PIB door aft bulkhead latches are closed. | Same as above  | None. (Usage of EVA tools is available.) | 3/1R    |                 |

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ATTACHMENT -  
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