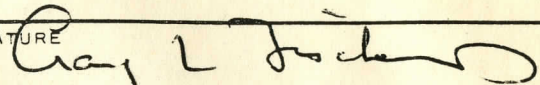


## MEMORANDUM

Lyndon B. Johnson Space Center



REFER TO: SD2/81-123	DATE JUN 1 1981	INITIATOR SD2/CLFischer:jbw:6-1-81:4731	ENCL
TO: SD/Chief, Medical Sciences Division		CC ✓ CB/Dr. Thornton SD3/Dr. Johnson SD3/Dr. Bungo	
FROM: SD2/Chief, Medical Operations Branch		SIGNATURE  Craig L. Fischer, M.D.	

SUBJ: Deletion of Teflon "Treadmill" for STS-2

I have discussed the teflon "treadmill" with Dr. Thornton and Dr. Johnson and neither wish to support this particular concept for use on STS-2. However, Dr. Thornton is quite convinced an updated version of the Thornton-Whitmore treadmill should fly on the forthcoming STS missions.

He has presented to me the scientific bases for his recommendation and I concur.

In order to further evaluate the need for a treadmill concept on STS missions, I have arranged for Dr. Thornton to present a Seminar on Exercise Physiology with emphasis on the analysis of exercise modes. A notice of this meeting will arrive separately.

A copy of the Change Request deleting the "treadmill" is attached.





# Routing Slip

Mail Code	Name	Action
		Approval
		Call me
		Concurrence
		File
		Information
		Investigate and Advise
		Note and Forward
		Note and Return
		Per Request
		Per Phone Conversation
		Recommendation
		See me
		Signature
		Circulate and Destroy

ACTION  
P Johnson

@ Fischer

Do we want to  
go to bat for Treadmill  
essay for next mission?

Name	<i>[Signature]</i>	Tel. No. (or Code) & Ext.
Code (or other designation)	26 MAY 81	Date



NO. G0577	PCIN 15277	CR RECEIPT DATE: 5-15-31	ECP NO. ----	CCB DATE TBD
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## CREW RELATED GFE CHANGE DISTRIBUTION SHEET

### TITLE/DESCRIPTION

ADJUSTMENT TO STS-2 CREW EQUIPMENT QUANTITIES BASED ON STS-1 EVALUATIONS

### EVALUATION REQUIRED DATE:

6-5-31

### ORIGINATOR/PRESENTER:

H. RAY

### PRIMARY EVALUATOR:

C. MENDEL

The attached change proposal is forwarded for your evaluation and recommendations. Submit your evaluation to LV/CMO on JSC form 954D. THOSE MARKED FOR "MANDATORY EVALUATION REQUIRED" ARE EXPECTED TO RESPOND. ALL OTHER EVALUATIONS SUBMITTED WILL BE CONSIDERED FOR IMPACT ASSESSMENT. FOR CHANGE PROCESSING INFORMATION, CALL X3731.

### DISTRIBUTION:

CB/J. W. Young	FE/R. E. Ernull	SE/W. H. Bush
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EA/A. C. Bond	LT/K. F. Hecht	WT5/W. F. Meek
EC/W. W. Guy	LV/R. E. Lindeman	ZR1/Lt. Col. John Francis
* EC/H. L. Stutesman (5)	LV/B. Birdow (3)	
* ED8/H. Kuehnel	LV/D. R. Sciortino	
* ED8/J. A. Taylor	LV/B. Kunecki	
EE2/O. L. Graham	MC/H. B. Statz	NASA HEADQUARTERS:
EE2/W. C. Morgan	MC2/R. C. Stults	MB-6/J. Marsh
EE2/P. Coan	ME/S. C. Jones	
* EE2/M. Engert	* ME/L. R. Fisher	KENNEDY SPACE CENTER
ES5/R. L. Johnston	ME/J. R. Goodman	VT-VPD-2/A. Montgomery
* ES5/L. J. Leger	NA/B. J. McCarty	SP-FGS/D. Moja
* EW/G. C. Franklin	NB5/R. Steele	VT-SOD-1/C. Sperrn
EW/W. W. Petynia	NB5/R. W. Glanville	
* EW2/C. D. Perner	ND5/C. D. Martin	BOEING-HOUSTON
* EW3/G. Rysavy	NS2/P. E. Westerfield	HS-02/B. Price (4)
FA/R. G. Rose	<u>SD/S. L. Pool</u>	

\* MANDATORY EVALUATION REQUIRED



IN 15277 CR NUMBER G0577	<b>SPACE SHUTTLE PROGRAM</b> <b>CREW RELATED GFE CHANGE REQUEST</b>	PAGE 1 OF 4 INITIATED BY: LB/H. A. Ray																								
CHANGE TITLE: Adjustment to STS-2 Crew Equipment Quantities Based on STS-1 Evaluations																										
CHANGE PROPOSALS/REQUESTS IDENT. NO.	DOCUMENTS AFFECTED Flight Manifest																									
<p>DESCRIPTION OF CHANGE:</p> <p>Revise the STS-2 crew equipment complement as itemized in the additions and deletion below:</p> <p><u>Deletions</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Name</th> <th style="text-align: center; border-bottom: 1px solid black;">Qty. Deleted</th> <th style="text-align: center; border-bottom: 1px solid black;">Wt. (lbs) Deleted</th> <th style="text-align: left; border-bottom: 1px solid black;">Comments</th> </tr> </thead> <tbody> <tr> <td>Binoculars</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.21</td> <td>Deleted on STS-1; not needed.</td> </tr> <tr> <td>Portable Desk</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8.02</td> <td>One carried on STS-1; not used.</td> </tr> <tr> <td>Inflight Restraint Device (long)</td> <td style="text-align: center;">2</td> <td style="text-align: center;">.08</td> <td>Delete 2 of 6; Proposed velcro additions will replace function.</td> </tr> <tr> <td>EVVA Light Assy.</td> <td style="text-align: center;">1</td> <td style="text-align: center;">6.50</td> <td>One man EVA for repair contingency.</td> </tr> <tr> <td>One g IVA Footwear</td> <td style="text-align: center;">2</td> <td style="text-align: center;">6.00</td> <td>Not required; STS-1 comments.</td> </tr> </tbody> </table>			Name	Qty. Deleted	Wt. (lbs) Deleted	Comments	Binoculars	1	1.21	Deleted on STS-1; not needed.	Portable Desk	2	8.02	One carried on STS-1; not used.	Inflight Restraint Device (long)	2	.08	Delete 2 of 6; Proposed velcro additions will replace function.	EVVA Light Assy.	1	6.50	One man EVA for repair contingency.	One g IVA Footwear	2	6.00	Not required; STS-1 comments.
Name	Qty. Deleted	Wt. (lbs) Deleted	Comments																							
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Inflight Restraint Device (long)	2	.08	Delete 2 of 6; Proposed velcro additions will replace function.																							
EVVA Light Assy.	1	6.50	One man EVA for repair contingency.																							
One g IVA Footwear	2	6.00	Not required; STS-1 comments.																							
<p>REASON FOR CHANGE:</p> <p>Evaluation of STS-1 has determined that several items of crew equipment were not used and were not needed for successful completion of the mission. STS-1 also, proved several systems functioned well enough that some contingency equipment is considered unnecessary. Additional data is now available on other systems which allows reduction in quantities of contingency crew equipment.</p>																										



PCIN 15277

SPACE SHUTTLE PROGRAM  
CREW RELATED GFE CHANGE

PAGE 2 OF 4

30577

OFFICE:  
LB

## CHANGE IMPACT:

- ☐ SAFETY  
☐ PERFORMANCE  
☐ RELIABILITY  
☐ MAINTAINABILITY  
☐ PRODUCIBILITY  
☐ BALANCE & STABILITY  
☐ GSE  
☐ SPARES

- ☒ CREW RELATED GFE  
☐ FACILITIES  
☒ FLIGHT OPERATIONS  
☐ GROUND OPERATIONS  
☒ SIMULATORS AND TRAINERS  
☐ SOFTWARE  
☐ PAYLOADS  
☐ OTHER (SPECIFY)  
☒ STOWAGE

## WEIGHT IMPACT:

-125.4 lbs.

## SCHEDULE IMPACT:

NONE

## COST PER FLIGHT IMPACT:

NONE

DDT & E COST  
IMPACT:

FY

FY

FY

FY

REMAINDER

TOTAL

## IMPACT DESCRIPTION:

Stowage configuration must be updated to reflect additions and deletions. Crew procedures must be revised to reflect deletions.

## IMPACT OF NONINCORPORATION:

A number of unnecessary crew equipment items will be flown and the benefit of weight reduction will not be realized.

## RECOMMENDATION:

## CHANGE PROPOSALS EVALUATED

## APPROVED BY:

Hilary A. Ray

SIGNATURE

5/4/81  
DATE



PCIN 15277

SPACE SHUTTLE PROGRAM  
DOCUMENT CONTINUATION SHEET

PAGE 3 OF 4

OFFICE:

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DOCUMENT:

DATE

<u>Name</u>	<u>Qty. Deleted</u>	<u>Wt. (lbs) Deleted</u>	<u>Comments</u>
IVA Foot Restraints	1 pr.	4.74	Not required on STS-1; Retain 1 of 2 pair for potential RMS OPS.
Crewmember Helmet liner assy.	2	3.54	Not used on STS-1.
Portable Restraint Sys.	1	1.67	Deleted 1 of 2. Not used on STS-1.
Aft Flight Station Restraint Sys.	1	8.50	Delete 1 of 2. Not needed on STS-1; may need one for RMS.
Data Acquisition Camera	1	1.69	Delete 1 of 2. Third camera onboard for NOSL could provide redundancy.
Polaroid CRT Camera Equip.	1	8.50	Not used on STS-1. Teleprinter proven reliable.
Lightweight Headset	2	0.66	Mini headset adequate.
Air Sample Bottle Assembly	4	3.50	Retain Sorbent Filters only.
Treadmill Assy.	1	5.00	Not used on STS-1.
Pantry Food	1	10.00E	STS-1 Crew Comments.
Leak Detector	1	3.50	No cabin leakage problems on STS-1.
FOMO Fix Foam Dux Seal Aluminum Tape Duct Tape	1	6.27	No cabin leakage problem on STS-1.
3 pt. Latch Tools	4	32.00	Delete 4 of 8.
Tube Cutter Assy.	1	1.70	Delete backup tool.
Centerline Latch Tools	2	23.00	Delete 2 of 4
Total Wt.		126.77 lbs.	

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SPACE SHUTTLE PROGRAM  
DOCUMENT CONTINUATION SHEET

PAGE 4 OF 4

15277

OFFICE:  
LB

DOCUMENT:

DATE

Additions

<u>Name</u>	<u>Qty.</u> <u>Added</u>	<u>Wt. (lbs)</u> <u>Added</u>	<u>Comments</u>
Trash Container	1	1.27	Needed for Teleprinter.
Mini Headset	1	.11	Spare to replace lightweight Deletion
Total Wt.		1.38 lbs.	



PCIN 15277	<b>SPACE SHUTTLE PROGRAM</b> <b>CREW RELATED GFE CHANGE EVALUATION</b>				PAGE / OF /	
G0577					OFFICE:	

**CHANGE IMPACT:**

<input type="checkbox"/> SAFETY <input type="checkbox"/> PERFORMANCE <input type="checkbox"/> RELIABILITY <input type="checkbox"/> MAINTAINABILITY <input type="checkbox"/> PRODUCIBILITY <input type="checkbox"/> BALANCE & STABILITY <input type="checkbox"/> GSE <input type="checkbox"/> SPARES	<input type="checkbox"/> CREW RELATED GFE <input type="checkbox"/> FACILITIES <input type="checkbox"/> FLIGHT OPERATIONS <input type="checkbox"/> GROUND OPERATIONS <input type="checkbox"/> SIMULATORS AND TRAINERS <input type="checkbox"/> SOFTWARE <input type="checkbox"/> PAYLOADS <input type="checkbox"/> OTHER (SPECIFY) <input type="checkbox"/> STOWAGE
--	--

<b>WEIGHT IMPACT:</b>		<b>SCHEDULE IMPACT:</b>			<b>COST PER FLIGHT IMPACT:</b>	
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<b>DDT &amp; E COST IMPACT:</b>	FY	FY	FY	FY	REMAINDER	TOTAL
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**IMPACT DESCRIPTION:**

**IMPACT OF NONINCORPORATION:**

**RECOMMENDATION:**

<p><b>CHANGE PROPOSALS EVALUATED</b></p>	<p><b>APPROVED BY:</b></p>  <div style="display: flex; justify-content: space-between;"> <div style="width: 60%; border-top: 1px solid black; text-align: center;">SIGNATURE</div> <div style="width: 35%; border-top: 1px solid black; text-align: center;">DATE</div> </div>
--	--