

→ THORNTON

CR NO. G0128	PCIN 05006	CR RECEIPT DATE: 8-17-78	ECP NO. ----	CCB DATE TBD
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CREW RELATED GFE CHANGE DISTRIBUTION SHEET

TITLE/DESCRIPTION

Addition of Exercise Equipment for Shuttle OFT Flights

EVALUATION REQUIRED DATE:

9-6-78

ORIGINATOR/PRESENTER:

C. R. Booher

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.

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* MANDATORY EVALUATION REQUIRED

PCIN 05006	SPACE SHUTTLE PROGRAM	PAGE 1 OF 2
CR NUMBER G0128 01-GFIS-007	CREW RELATED GFE CHANGE REQUEST	INITIATED BY: SE4/ C. R. Booher
CHANGE TITLE: Addition of Exercise Equipment for Shuttle OFT Flights		
CHANGE PROPOSALS/REQUESTS IDENT. NO.	DOCUMENTS AFFECTED	
<p>DESCRIPTION OF CHANGE: Exercise equipment in the form of a Teflon tread-mill and a mini-gym isokenetic exerciser is to be installed in the Orbiter mid-deck on the seat mounting brackets on the LiOH cabinet doors for the OFT missions. The treadmill will be built in-house to Skylab specifications and the mini-gym will be an "off-the-shelf" procured unit which is then modified to a Skylab-type of configuration inhouse.</p> <p>Documentation for this program will consist of a specification and assembly drawing (S/AD) for each of the units only. No program requirements document (PRD) or separate interface control documents (ICD's) are contemplated for this program.</p> <p>It is anticipated that a total of six systems will be fabricated yielding one flight system, one flight backup system, two training systems to support the water immersion facility, and other simulator applications as needed, one system for use in the Bldg. 37 Cardiovascular Laboratory to gather preflight baseline data, and one system for use in the astronaut gymnasium. The flight weight of each system will be approximately 14 lbs. The Mini-Gym exerciser is manufactured by Mini-Gym, Inc., in Independence, Missouri.</p> <p>The two Mini-Gyms currently on order will be utilized for the systems to be placed in the gym and the Cardiovascular Laboratory.</p>		
<p>REASON FOR CHANGE: Requirement recognized by both crew and Life Sciences personnel to provide an inflight exercise capability.</p>		

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SYSTEM ELEMENT(S) AFFECTED: <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <input checked="" type="checkbox"/> ORBITER <input type="checkbox"/> PAYLOADS </div> <div> <input type="checkbox"/> LAUNCH AND LANDING <input type="checkbox"/> SYSTEM SOFTWARE <input type="checkbox"/> OPERATIONS </div> </div>						
CHANGE IMPACT: <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <input type="checkbox"/> PILOT OPERATIONAL EQUIPMENT <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 checked="" type="checkbox"/> CREW PROCEDURES & OPS HANDBOOK </div> <div> <input type="checkbox"/> ICD'S <input type="checkbox"/> FACILITIES <input type="checkbox"/> FLIGHT OPERATIONS <input type="checkbox"/> GROUND OPERATIONS <input checked="" type="checkbox"/> SIMULATORS & TRAINERS <input type="checkbox"/> SOFTWARE <input type="checkbox"/> PAYLOADS <input type="checkbox"/> OTHER (SPECIFY) <input checked="" type="checkbox"/> STOWAGE LIST </div> </div>						
WEIGHT IMPACT: 14 lb.	SCHEDULE IMPACT: None	COST PER FLIGHT IMPACT: approx. \$6K				
DDT & E COST IMPACT:	FY 78 5K	FY 79 30K	FY 	FY 	REMAINDER 	TOTAL
IMPACT DESCRIPTION: <p>Stowage weight and volume will have to be incorporated.</p> <p>An electrical interface to provide power for the Mini-Gym instrumentation may be required.</p>						
IMPACT OF NONINCORPORATION: Possible inflight degradation fo Shuttle crewmembers physiological well-being.						
RECOMMENDATION/REMARKS						
FORWARDING AUTHORIZATION: <div style="margin-top: 10px;"> <u>Clitis R. Roacher</u> PREPARED BY </div> <div style="margin-top: 10px;"> <u>William H. Bush</u> ENDORSED BY CCB MEMBER/SYSTEMS CONTRACTOR </div>					CCB PLANNING DATE <div style="margin-top: 10px; text-align: center;"> <u>8-9-78</u> DATE <u>8/10/78</u> DATE </div>	

PCIN

05006

SPACE SHUTTLE PROGRAM
CREW RELATED GFE CHANGE EVALUATION

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OFFICE:

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:

SCHEDULE IMPACT:

COST PER FLIGHT IMPACT:

DDT & E COST
IMPACT:

FY

FY

FY

FY

REMAINDER

TOTAL

IMPACT DESCRIPTION:

IMPACT OF NONINCORPORATION:

RECOMMENDATION:

CHANGE PROPOSALS EVALUATED

APPROVED BY:

SIGNATURE

DATE

G0128

ATTACHMENT 1

PCIN 05006

OFT Exerciser System

C. R. Booher

8/9/78

MILESTONES		CY 19 78												CY 19 79												CY 19 80												
1	NEED DATE (Training Units) →	J	F	M	A	M	J	J	A	S	O	M	D	J	F	M	A	M	J	J	A	S	O	M	D	J	F	M	A	M	J	J	A	S	O	M	D	
2	Engineering Div authorization																																					
3	Δ Design complete																																					
4	PDR																																					
5	Prototype units fabricated																																					
6	Engineering/science/crew evaluation																																					
7	CDR																																					
8	Flight units fabrication																																					
9	Flight/training systems delivery																																					
10																																						
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