

<b>Fiscal Year:</b>	FY 2008	<b>Task Last Updated:</b>	FY 03/17/2009
<b>PI Name:</b>	Holden, Kritina Ph.D.		
<b>Project Title:</b>	Human Factors Assessment of Vibration Effects on Visual Performance During Launch		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>	ADVANCED HUMAN SUPPORT TECHNOLOGIES		
<b>Program/Discipline--Element/Subdiscipline:</b>	ADVANCED HUMAN SUPPORT TECHNOLOGIES--Space human factors engineering		
<b>Joint Agency Name:</b>	<b>TechPort:</b>	No	
<b>Human Research Program Elements:</b>	(1) <b>SHFH</b> :Space Human Factors & Habitability (archival in 2017)		
<b>Human Research Program Risks:</b>	(1) <b>HSIA</b> :Risk of Adverse Outcomes Due to Inadequate Human Systems Integration Architecture		
<b>Space Biology Element:</b>	None		
<b>Space Biology Cross-Element Discipline:</b>	None		
<b>Space Biology Special Category:</b>	None		
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<b>Zip Code:</b>	77058-3607	<b>Congressional District:</b>	22
<b>Comments:</b>			
<b>Project Type:</b>	FLIGHT	<b>Solicitation / Funding Source:</b>	Directed Research
<b>Start Date:</b>	05/01/2008	<b>End Date:</b>	09/30/2010
<b>No. of Post Docs:</b>		<b>No. of PhD Degrees:</b>	
<b>No. of PhD Candidates:</b>		<b>No. of Master' Degrees:</b>	
<b>No. of Master's Candidates:</b>		<b>No. of Bachelor's Degrees:</b>	
<b>No. of Bachelor's Candidates:</b>		<b>Monitoring Center:</b>	NASA JSC
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<b>Flight Program:</b>	Shuttle		
<b>Flight Assignment:</b>	STS-119, STS-128 NOTE: Start date is 5/1/2008 (instead of 10/1/2008) per B. Woolford/JSC (5/09) NOTE: End date will be 09/30/2010 (instead of 12/31/2009), per B. Woolford/JSC (4/17/2009) NOTE: End date will be 12/31/2009 (instead of 9/30/2011), per B. Woolford/JSC (4/2009)		
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Thompson, Shelby ( Lockheed Martin, Houston, TX ) Ebert, Doug ( Wyle Integrated Science and Engineering Group ) Adelstein, Bernard ( NASA Ames Research Center ) Root, Philip ( NASA Johnson Space Center ) Jones, Jeff ( NASA Johnson Space Center )		
<b>Grant/Contract No.:</b>			
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

Task Description:	<p>The primary objective of the of Human Factors Short Duration Bioastronautics Investigation (SDBI) 1904 is to determine visual performance limits during operational vibration and g-loads, specifically through the determination of minimal usable font sizes using Orion-type display formats. Currently there is little to no data available to quantify human visual performance under these extreme conditions. Existing data on shuttle vibration magnitude and frequency is incomplete, does not address seat and crew vibration in the current configuration, and does not address human visual performance. There have been anecdotal reports of performance decrements from shuttle crews, but no structured data has been collected.</p> <p>The SDBI is a companion effort to the Detailed Test Objective (DTO) 695, which will measure shuttle seat accelerations (vibration) during ascent. Data from the SDBI will serve an important role in interpreting the DTO vibration data. SDBI 1904 plans to collect data during the ascent phase of three shuttle missions. Both SDBI1904 and DTO 695 are low impact with respect to flight resources, and combined they represent an efficient and focused problem solving approach.</p> <p>The SDBI and DTO data will be correlated to determine the nature of perceived visual performance under varying vibrations and g-loads. This project will provide:</p> <ul style="list-style-type: none"><li>• Immediate data for developing preliminary human performance vibration requirements</li><li>• Flight validated inputs for ongoing and future ground-based research</li><li>• Information of functional needs that will drive Orion display format design decisions</li></ul>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	<p>Data from Visual Performance will also provide insight into displays for workers who read displays under extreme vibration such as pilots or race car drivers.</p>
Task Progress:	<p>New project for FY2009.</p>
Bibliography Type:	<p>Description: (Last Updated: 10/29/2023)</p>