

Survivability

Papers Presented at the AIAA SciTech Forum and Exposition
2020

Orlando, Florida, USA
6-10 January 2020

ISBN: 978-1-7138-1114-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 34922 Uwytkug'Xcmg{'Ftkxg.'Uwky'422, Reston, VA 20191, USA.

TABLE OF CONTENTS

SURVIVABILITY - ORBITAL DEBRIS ISSUES

SOME THOUGHTS ON SATISFYING SPACECRAFT PASSIVATION REQUIREMENTS.....	1
<i>William P. Schonberg</i>	
HYPERVELOCITY IMPACT VULNERABILITY ASSESSMENT FOR A 6U CUBESAT BUS	8
<i>Joshuah Hess</i>	
FRACTIONATED SPACECRAFT SURVIVABILITY FOLLOWING A CATASTROPHIC EXPLOSION.....	15
<i>Joshuah Hess</i>	
VENUS SAMPLE RETURN MISSION CONCEPT DEVELOPMENT	26
<i>Kevin Carpenter, Samuel L. Basinait, James Bilello, Javid Bayandor</i>	

SURVIVABILITY - AEROSPACE STRUCTURES AND MATERIALS

PREDICTING HYDRODYNAMIC RAM DAMAGE IN BONDED COMPOSITE TANKS USING PROGRESSIVE DAMAGE FAILURE ANALYSIS	37
<i>Teddy Sedalor, David C. Fleming</i>	
BUILDING BLOCK APPROACH FOR DETERMINATION OF BALLISTIC LIMIT OF COMPOSITE PANELS USING PERIDYNAMICS	54
<i>Olaf Weckner, Fernando Cuenca, Stewart Silling</i>	
EFFICIENT, TUNABLE HYDRODYNAMIC RAM TEST FACILITY	69
<i>Marc C. Ramsey, Rachel Gilmore, Adam Goss, Brian Barlow</i>	
MODELING NONLINEAR HEAT TRANSFER FOR PIN-ON-DISC SLIDING SYSTEM.....	84
<i>Brian Boardman, Richard Uber, William Baker, Anthony N. Palazotto</i>	
COMPOSITE MATERIAL FOR HIGH-SPEED PROJECTILE OUTER CASING.....	106
<i>Andrew Beard, Anthony N. Palazotto</i>	

SURVIVABILITY - GENERAL CONSIDERATIONS

SURVIVABILITY AND DAMAGE MODELING OF ADVANCED MATERIALS	123
<i>Derek Spear, Anthony N. Palazotto, Ryan Kemnitz</i>	
BALLISTIC LIMIT SHOT DEPENDENCY TESTING IN COMPOSITE MATERIALS.....	135
<i>Michael P. Keane, Andrew J. Lingenfelter, Michael Walker, Raymond R. Hill</i>	
STATIC AND DYNAMIC MODELING OF MIL-STD-1760 UMBILICAL SEPARATION USING EMPIRICALLY DETERMINED FRICTION COEFFICIENTS	152
<i>Adam Nesmith, Joshua C. DeWitt, Andrew J. Lingenfelter</i>	

Author Index