

JANNAF S&MBS, RNTS and NDES Community Meets at Newport Harbor

A total of 118 propulsion industry representatives recently convened in Rhode Island for the 38th Structures & Mechanical Behavior Subcommittee (S&MBS), 25th Rocket Nozzle Technology Subcommittee (RNTS), and 16th Nondestructive Evaluation Subcommittee (NDES) joint meeting, which was held from 20-22 March 2007 at the beautiful Hyatt Regency Newport Hotel and Spa on the waters of Newport Harbor. Mr. Stuart F. Bridges of the Air Force Research Laboratory's Space and Missile Propulsion Division at Edwards Air Force Base, California, served as the Joint Meeting Chairman. Dr. Robert R. Little of the Army Research, Development and Engineering Command at Redstone Arsenal and Mr. Donald R. Wickham of the Ogden Air Logistics Center at Hill Air Force Base, Utah, presided as S&MBS and NDES Chairman, respectively.

Over 50 papers were presented in 12 technical sessions. Focus topics for this meeting included rocket nozzle design, modeling and analysis; ply lift investigations of the Space Shuttle Reusable Solid Rocket Motor (RSRM) nozzle; components for solid rocket motor control and thrust management; service life of solid rocket motors; rocket nozzle materials and erosion rate reduction; and rocket nozzle material properties, testing, and characterization. A large group of papers reported the latest developments in solid rocket motor health monitoring techniques, including the use of embedded sensors and other nondestructive techniques to assess chemical and structural changes in propellant grains over time. RNTS featured a large group of papers on ceramic matrix and other novel materials being investigated for low- and no-erosion nozzle throats. Much of this work has been funded under the DoD's Integrated High Payoff Rocket Propulsion Technology (IHPRT) initiative. ATK Launch Systems presented its progress on an Integrated Vehicle Health Management System (IVHM) for large motors and space boosters.

The working panels of the respective JANNAF subcommittees also met throughout the week. The RNTS Nozzle Design, Test and Evaluation Panel proceeded with the next steps to establish a consolidated industry subscale test motor catalog/database. A standardized format for reporting test motor data was approved by the panel, and points of contact were established for each of the organizations that will be solicited for their test motor configuration data.

A lively discussion occurred among members from the NDES and SMBS attendees to come to a common agreement on what the capabilities are for the various types of NDE tests, what the analysts need to know from these NDE techniques and what defects/anomalies should be determined. After several hours of exchanges, a smaller group met to develop a needs and capabilities document for the participants. The various panels serving under S&MBS met with efforts continuing on common analysis tools through another analytical problem set, proceeding with writing a draft fracture analysis document, continuing joint sponsorship of IVHM workshops with MSS and LPS, and moving towards standardization of linear coefficient of thermal expansion for propellants.

On Wednesday evening, most of the JANNAF participants took part in a buffet dinner reception catered by the Hyatt. There was plenty of good food and a good time had by all. The dinner reception was one of just a number of networking opportunities available throughout the week. A networking room with daily morning and afternoon refreshments was provided for participants who wanted to take a break from the paper sessions.

The technical steering committees of NDES, RNTS, and S&MBS are investigating the possibility of combining their meeting with another JANNAF subcommittee grouping for a larger, combined meeting that will more effectively use the increasingly limited travel funds available from its participating organizations. As a result, the next meeting of the NDES/RNTS/S&MBS may short-cycle or long-cycle by a few months from the nominal 18-month meeting schedule. More details will be provided by CPIAC as they become available. The CD-ROM proceedings of the Rhode Island meeting, designated JSC CD-48, are now available by contacting CPIAC Customer Service at 410-992-7300, ext. 212 or 211.

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