

Professional Lecture: Neutral Buoyancy Testing in Human Spaceflight with Jim Splawn and Jack Stokes

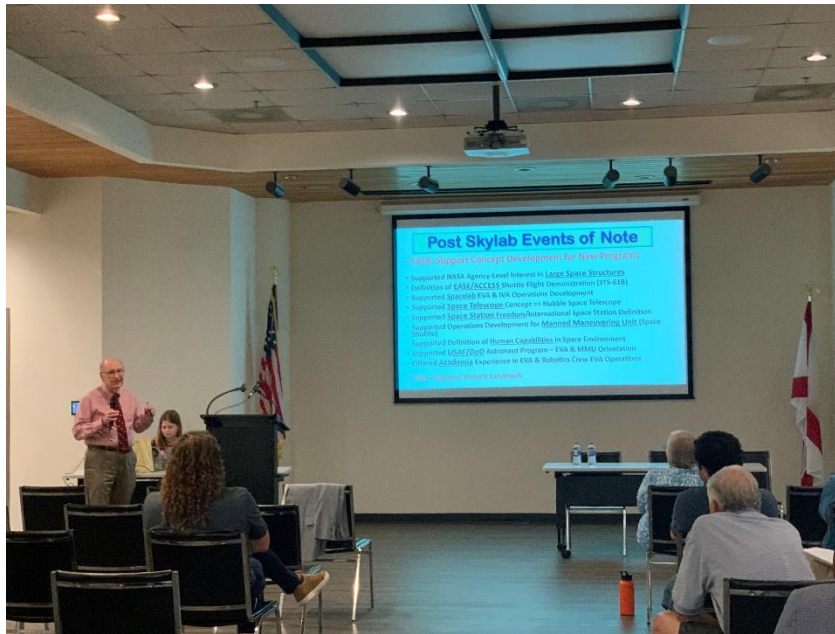
By Tracie Prater

On July 18<sup>th</sup>, AIAA Greater Huntsville Section hosted a professional lecture on neutral buoyancy testing in human spaceflight with NASA retirees Jim Splawn and Jack Stokes. The talk focused on the speakers' work with NASA's neutral buoyancy simulator (NBS) from the late 1960s through 1997 when the facility was decommissioned. The NBS is on the national register of historic places. The facility was used for space mission concept development, crew training, and academic research. It also played a critical role in training crew to save Skylab after the station's heat shield was damaged on ascent to orbit. The recording of the talk made by AIAA GHS is available [here](#). Thanks to the Downtown Huntsville Public Library for hosting the event and our speakers for sharing their time and experiences with the aerospace community.



Speaker Jim Splawn. Photo credit: Bennie Jacks.

**Jim Splawn** was the co-founder of NASA Marshall Space Flight Center's Neutral Buoyancy Simulator in the mid-1960s. The full-scale Skylab hardware was tested in this facility. Jim trained 15 astronauts for the Skylab program (9 for flight and 6 backup). He also helped to develop tools, techniques, and crew training to save Skylab after damage to its heat shield on launch. In 1973, Jim was re-assigned to the Space Shuttle Main Engine. In this talk, he will share his experiences working in the Neutral Buoyancy Simulator and the simulations that enabled the ultimate success of the Skylab program, which paved the way for future habitation platforms like ISS.



Speaker Jack Stokes. Photo credit: Bennie Jacks.

**Jack Stokes** is a native of North Carolina and a graduate of N. C. State University, Mr. Stokes had a career in aerospace as a Human Factors Engineer with the NASA Marshall Space Flight Center. Assignments included involvement in the development of the Lunar Rover, the Skylab space station, the International Space Station, and the cancelled Constellation program. After serving as a NASA on-site coordinator for the Tektite II mission in U.S. Virgin Islands during 1970, he subsequently coordinated and supervised the tests conducted in the Marshall Neutral Buoyancy Simulator from 1975 through 1983. His efforts in large space structures assembly culminated in the EASE/ACCESS flight experiment (STS-61B). Involved with the International Space Station from its inception in 1984, he served in the Space Station Program Office and in the Chief Engineer's Office, experiencing a short interruption at NASA Office of Space Flight, Washington, DC in 1997. Station involvement included establishing station-concept human factors requirements and oversight for the human factors aspects of the two Italian Space Agency-provided modules by the for the International Space Station. Having served as the co-lead for the NASA-level Human Factors Integration Standards (NASA-STD-3000), he was subsequently involved in establishing the ground operator Human Factors Engineering requirements for the now-defunct Constellation Program. Prior to retirement he mentored the Space Launch System (SLS) ground processing pre-launch design including virtual processing design with avatars. His last NASA assignment was to serve as a critical design review independent assessor for the current NASA SLS rocket pre-launch ground operations design. Mr. Stokes has several recognitions including the NASA Silver Snoopy Award and the NASA Exceptional Service Medal. He has several publications and one technical movie relative to human factors engineering in space vehicle design. As a retiree, he remains involved with local outreach within the Huntsville community. He is an active member of the U. S. Space & Rocket Center's Emeritus Docent program.



Jim Splawn and Jack Stokes during audience Q&A. Photo credit: Bennie Jacks.