

MICHAEL R. GRABOIS

1202 Sandy Plains Ln, Houston, TX 77062 ♦ Mobile: 832-723-0674 ♦ mgrabois@gmail.com

SUMMARY

Award-winning engineer with effective communication, leadership, interpersonal, and problem-solving skills. Over 20 years of experience in training, mission operations, safety, technical writing, and multi-disciplinary systems engineering. Equally comfortable in individual and team-based projects. Highly organized. Able to manage multiple, high-priority assignments simultaneously. Able to evaluate hardware and learn a system quickly.

PROFESSIONAL EXPERIENCE

Science Applications International Corporation (SAIC), Houston, TX 2018-present

EVA Safety Operations Engineer

- Safety & Mission Assurance
 - Responsible for identifying EVA safety hazards/risks, identifying appropriate controls, assuring the implementation of said controls, performing periodic EVA readiness assessments, and assuring the incorporation of EVA Safety requirements into new hardware/payload designs for both International Space Station Extravehicular Mobility Unit (EMU) operations and Exploration EMU (xEMU) suits for the Human Lander System lunar vehicles.
 - Participating in real-time monitoring and execution of EVAs performed on the ISS.

General Electric Oil & Gas, Houston, TX 2013 to 2016

Lead Technical Trainer, Global Training, Drilling & Surface

- Technical Training
 - Conducted technical training in classroom and laboratory environments on the operations, maintenance, and troubleshooting of electrical, communications, mechanical, and hydraulic components of oil & gas drilling hardware products.

United Space Alliance (USA), Houston, TX 1988 to 2011

Training Engineer, Space Shuttle Systems Training section, Vehicle Systems Division, 1995-2011

Design Engineer, Ascent Flight Design branch, Shuttle Flight Design & Dynamics Division, 1988-1995

- Leadership
 - Led a team of engineers in designing and implementing a curriculum for training astronauts and flight controllers on the operational use of the Space Shuttle's Life Support, Thermal, Electrical, Hydraulic, Mechanical, and Caution & Warning systems in both individual and team settings. Received 10+ NASA Group Achievement Awards for instructor teams.
 - Mentored junior instructors in the various simulators, and served on certification boards as Subject Matter Expert. Nominated for USA Employee of the Month Award for Leadership.
 - Developed and presented material at high-level multi-discipline technical meetings such as the Flight Techniques Panel and the Columbia Accident Investigation Board.
 - Selected as the instructor for the final Space Shuttle mission in recognition of high technical competency and superior instructional skills.
 - Experienced in working with cross-functional team of instructors, flight controllers, engineers, and external customers.
- Training and Operations
 - Spent over 20 years in highly organized safety culture with risk management activities and continuous training, where each employee knows he has the obligation to raise awareness of potentially unsafe conditions.
 - Displayed in-depth knowledge of multi-discipline Space Shuttle systems and broad knowledge of other systems for astronaut and flight controller training, demonstrating the interaction of complex systems. Subject matter expert in operations, limitations, malfunctions, and emergency training.
 - Created, oversaw, coordinated, scheduled, monitored, and managed the logistics of the training program for new astronauts as a member of the Astronaut Candidate Working Group for 10+ years. Team received USA Employee of the Month Award for Quality.
 - Worked with students of varying levels of knowledge and experience, from new hires to senior managers. Customized teaching to the student using classroom lectures, computer-based trainers, and the creative use of various simulators, as appropriate.
 - Supported Flight and Training Managers with all aspects of hardware and mission training, from simulation to documentation to scheduling.

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- Certified as console operator in two different flight controller positions for ascent and orbit operations. Simultaneously trained 3 different flight controller console positions for ascent, orbit, and entry phases of flight.
- Certified Space Shuttle flight controller engineers by creating a variety of failure scenarios and evaluating their performance and problem-solving skills against established guidelines. Afterwards, provided detailed debriefs on performance, both verbally and through formal certification reports.
- Assisted flight controllers in developing pre-flight and real-time trajectory, timeline, requirements, risk management procedures and technical reviews, and other mission planning and analysis products in the Plan/Train/Fly environment.
- Designed and developed computer-based training material in multiple formats, including Sharepoint, PowerPoint, and HTML, and worked with the programmer to ensure the proper look and feel of the finished product.
- Reduced Space Shuttle crew errors and helped ensure mission safety, success, and hazard mitigation by frequently revising, reviewing, and improving operational procedures and Flight Rules.
- Wrote and evaluated requirements for the next-generation training facilities at the NASA Johnson Space Center, and developed flight controller training curriculum for post-Shuttle era as member of Mission Operations team.
- Created, tested, and verified Space Shuttle ascent software parameters and Mission Control launch processor inputs for aborts and orbit insertion portions of the Shuttle's ascent trajectory.
- Technical Writing
 - Created and maintained training documents for a wide range of subjects including software user guides, crew operation manuals, systems-level hardware overviews, flight procedures rationale handbooks, instruction manuals, study guides, and a Mission Control position console handbook.
 - Maintained document quality assurance and tracking using Documentum
 - Revamped, rewrote, and updated the Shuttle Mission Simulator Systems Console Handbook as book manager for 10+ years. Received NASA Space Flight Awareness Award for creation of electronic console handbook.
 - Translated engineering requirements as author of numerous Support Requirements to upgrade and update simulators based on new Shuttle hardware capabilities, and followed through design review, testing, verification, evaluation, and implementation. Received USA Employee of the Month Award for Safety, and received numerous NASA Group Achievement Awards for technical teams.
 - Retrieved information from 1960s-era documents as member of "Apollo Lessons Learned" knowledge capture project, then reformatted and presented it using modern techniques. Authored and presented paper describing knowledge capture project at the International Astronautical Congress in Daejeon, Republic of Korea in 2009. Paper published in *Acta Astronautica* in 2011.
- Human/Machine Interaction
 - Designed and tested new cockpit displays for proposed Shuttle software upgrades for the Cockpit Avionics Upgrade project, resulting in a 50% decrease in both crew workload and error rate. Team twice received USA Employee of the Month Awards for Teamwork.
 - Experienced in Shuttle cockpit hardware layout and design, from limitations of existing hardware to human factors influencing upgrades.
 - Provided expertise in crew/hardware interaction during upgrades, helping with switch nomenclature and layout, engineering drawings, cockpit display design, and procedure development based on the approved processes and standards.
 - Designed cockpit displays for Shuttle and Orion spacecraft, and an MCC Console display.

AWARDS AND HONORS

- NASA Space Flight Awareness Award (both Solo and Team), one of NASA's highest awards, presented to employees for dedication to quality work and flight safety.
- United Space Alliance company-wide Employee of the Month Awards for Quality, Teamwork (twice), and Safety. Nominated for award for Leadership.
- Rockwell Sustained Superior Performance Award.
- Numerous NASA Group Achievement Awards.

EDUCATION

- The University of Houston at Clear Lake. Master of Science in Physical Sciences
- The University of Texas at Austin. Bachelor of Science in Aerospace Engineering