



TRAIN FOR WHEREVER THE MISSION TAKES YOU

COMMERCIAL
SPACE
TRAINING AND RESEARCH



THE NASTAR

A large, blue, illuminated sign for the Nastar Center. The sign is mounted on a building and features the word "NASTAR" in large, blue, outlined letters. Below "NASTAR", the word "CENTER" is written in smaller, red, outlined letters. A yellow starburst graphic is positioned between the "A" and "R" of "NASTAR". The sign is set against a blue sky with a large, dark, circular object (possibly a planet or moon) visible in the background.

NASTAR
CENTER

R CENTER

The National AeroSpace Training & Research Center



Pictured: STS-400-25

The National AeroSpace Training And Research (NASTAR) Center (est. 2007) is the premier air and space training and research facility for optimizing human performance in extreme environments.

The NASTAR Center is the first FAA approved center that meets the training requirements (14 CFR § 460.5) for commercial human spaceflight and recognized as the leader in development and delivery of commercial space training. Over 500 people have trained for Space at The NASTAR Center.

THE NASTAR CENTER PROVIDES

- **Realistic launch, reentry, emergency abort flight profiles**
- **Medical screening, training, research, and test services**
- **Access to world-class flight simulation equipment and environments**
- **High-fidelity flight profile modeling, simulation, and test capability**
- **Safe, controlled setting supports medical and flight data collection**
- **Closest “on-Earth” experience to actual spaceflight**

SPACE TRAINING

ONE DAY ORBITAL PROGRAM

The Orbital Space Flight Training program is designed to provide training for those Crew and Passengers who wish to participate in an orbital, vertical launch & recovery space flights.

Training includes academic training followed by flights in the FAA Approved STS-400 High Performance Human Centrifuge, where you'll experience a vertical rocket launch, with rapid vertical acceleration pushing you into space. During your training flights in the STS-400, you'll experience the same elevated G forces as an actual orbital space flight and you'll experience the stunning visuals of outer space.

TWO DAY SUBORBITAL PROGRAM

The Suborbital Flight Training program is designed to provide training for those Crew and Passengers who wish to participate in a Suborbital horizontal launch and reentry.

Training includes academic training followed by flights in the FAA Approved STS-400 High Performance Human Centrifuge, where you'll experience a drop from a Carrier Ship at 50,000 ft., followed with rocket motor ignition, with rapid horizontal acceleration into an angular acceleration turn to vertical, pushing you rapidly into suborbital space. The angular acceleration turn of the Sub-Orbital Flight Profile combines simultaneous high levels of +Gz and +Gx acceleration vectors for launch, and +Gz for re-entry. During your training flights in the STS-400, you'll experience the same elevated G forces as an actual sub-orbital space flight and you'll experience the stunning visuals of outer space.

ADVANCED SPACEFLIGHT TRAINING

The Advanced Space Flight Program is the 1 Day Orbital Space Flight Training Program, and/or the 2 Day SubOrbital Space Flight Training Program combined with our High Altitude Training Program. The Advanced Space Flight Program will extend your stay at the NASTAR Center by one additional day.

Training includes high altitude physiology academic training, followed by 3 Flights in a FAA Approved, High Altitude (Hypobaric) Chamber. You'll physically experience the effects of a low pressure environment including your symptoms of Hypoxia, loss of color vision, followed by a Rapid Decompression experience.

Trainees leave with the knowledge and experience of the physiological effects of high altitude, but more importantly they understand the "how" and "why" of hypoxia and recognition of their personal hypoxia symptoms. While inside the altitude chamber, Trainees will practice the recovery techniques used to recover from hypoxia, hyperventilation, hypercapnia and rapid decompression.

NING



SPACE PILOT/CREW FLIGHT PROGRAM

The Space Pilot/Crew Flight Program is a 4 Day customizable program that provides Space Pilots and Space Crew with the knowledge and skills necessary to maintain safety of the vehicle and passengers during flight. The program includes:

- Launch G forces in Gz and Gx Vectors in the STS-400.
- Reentry G forces in Gz and Gx Vectors in the STS-400.
- Emergency Escape/Abort forces in Gx Vectors in the STS-400.
- Spatial Disorientation/Situational Awareness Training in a SD Simulator.
- High Altitude (Hypoxia) and Rapid Decompression Training.
- Upset Prevention and Recovery Training
- Water Survival, Underwater Egress Training (add two additional days)

RESEARCH &

The NASTAR Center offers flexible access to our cutting-edge simulation equipment and expert staff for a variety of research and testing needs. Cockpits, flight profile development (nominal and off-nominal), and medical and flight data capture are supported. Rapid-turnaround internal Institutional Review Board (IRB) is available for human subject research projects.

RESEARCH AREAS

- **Human Factors & Human Systems Interaction**
- **Learning & Training Methodologies**
- **Stress, Cognition & Human Performance**
- **Sensory Physiology & Motion Perception**



& TESTING

MEDICAL DATA AVAILABLE

ECG (12 lead)

Heart Rate or Pulse

Galvanic Skin Response

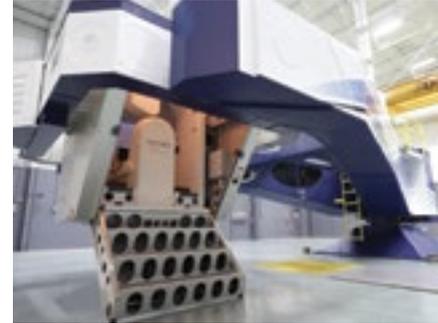
Blood Pressure
Respiration
Pneumograph

Infrared (IR) CCTV

Multi-Channel Audio

STS-400 HUMAN CENTRIFUGE

High performance human centrifuge replicates characteristics of air/space craft. Features interchangeable cockpit modules and programmable flight profiles.



HIGH ALTITUDE CHAMBER

Used to recognize hypoxia (lack of oxygen) from increasing altitude and to simulate rapid decompression (R/D) from sudden loss of cabin pressure.



SPATIAL DISORIENTATION

4+2 motion-platform aircraft simulator is used to test/train for a full range of physiological flight effects. Cockpits and flight profiles can be configured to replicate specific aircraft.



UPSET PREVENTION AND RECOVERY TRAINING

Multi-axes centrifuge-based device used to teach upset prevention & recovery and spatial disorientation for pilots to feel what it's like to recover an out of control aircraft.



WATER SURVIVAL/UNDERWATER EGRESS

Configurable water trainer used to practice emergency water landing, ditching, and abort techniques for a variety of land and water-based scenarios. Training is held at an offsite location.





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