ADVANCED PILOT TRAINING

Upset Prevention & Recovery with Integrated Crew Resource Management
Altitude Awareness and Hypoxia | Crew Resource Management | SA/SD
The adverse flight environment is foreign to many pilots. Unfamiliar motions, elevated G levels, as well as hypoxic conditions and unusual flight attitudes create an environment of confusion and information overload that may inhibit a pilot's ability to recover and/or maintain control of the aircraft.

Upset prevention requires specialized training to establish the skill sets required to recover the aircraft when it's outside of the normal flight envelope.

The NASTAR Center’s comprehensive programs utilize training systems that authentically replicate the physiological aspects of adverse flight conditions. This creates a realistic learning environment that transfers to the aircraft during critical situations.

**ADVANCED PILOT TRAINING**

The NASTAR Center’s Advanced Pilot Training programs provide a full range of physiological and academic courses:

- Upset Prevention & Recovery Training (UPRT) with Integrated Crew Resource Management (CRM)
- Situational Awareness (SA) & Spatial Disorientation (SD) Training
- Academics Only Crew Resource Management
- Altitude Awareness & Hypoxia Training
- Water Survival Training

Additional courses include Motion Sickness Desensitization, Aviation Accident Prevention, and the Aviation Safety Program.

*Visit NASTARCenter.com/Civilian for our complete course listing.*
A pilot’s reaction to an upset flight condition is critical to the safe and quick recovery of that aircraft. However, if the physiological stressors of the upset overcome the pilot, the eventual loss of control that follows can be devastating. The “startle factor” and increasing G forces common in an upset hinder and progressively degrade responsiveness, reducing the likelihood of an effective recovery.

The NASTAR Center’s UPRT program utilizes a G-producing flight simulator, incorporating authentic physiological stress into each training flight. During an upset simulation, pilots are subjected to the full stress of G forces and taught how to overcome those physiological stresses. Trainees are able to apply the correct techniques in order to recover the aircraft quickly and safely, while remaining within the stress envelope of the aircraft.

The NASTAR Center’s academics only CRM program teaches flight crew how to make optimal use of all available resources to maintain and improve CRM in the cockpit. NASTAR’s CRM program has identified flight situations which require flight crew to work together, solve problems, and maintain effective CRM while under stress. Pilots and crew are taught how to understand and identify conditions which degrade CRM, communicate effectively, and determine the best course of action to continue a safe flight.
CLASSROOM
Knowledge & Recognition of situations that may lead to an upset
Airplane Aerodynamics
Flight Maneuvering
Lift Vector Management
Energy Management

Techniques for Recovering an Upset Airplane
Nose High, Upright & Inverted, Low Energy
Nose Low, Upright, High Energy
Nose Low, Inverted, Low Energy
Inverted Recoveries
Wake Vortex Recoveries

TRAINING FLIGHTS
High Altitude Upsets, Low Altitude Upsets
High Altitude Stalls
Nose High, Upright & Inverted, High Energy

UPRT WITH INTEGRATED CRM

Our UPRT program integrated with CRM utilizes our full motion, G-producing flight simulator and requires flight crew to work together as a team to recover an upset aircraft. Pilots learn critical CRM skills and the crew, as a whole, learns to identify adverse conditions and determine the best course of action for recovery. Upset simulations are done in a variety of conditions in both VMC and IMC, while also providing the full physiological effects of increasing G forces.

At the core of our UPRT program is the Advanced Training Flight System (ATFS), a G-producing flight simulator. The ATFS is a state-of-the-art, interactive training system used to train personnel in problems associated with upset flight conditions. Pilots fly the ATFS in a variety of upset conditions, several of which are replicated from actual events. Only training in a G-producing simulator can provide the most accurate effects of upset flight conditions and physiological effects of an out-of-control aircraft where G forces are rapidly increasing.
Pilots have been susceptible to loss of Situational Awareness (SA) & Spatial Disorientation (SD) since the beginning of aviation. Nearly one half of all human factor mishaps are due to some form of loss of situational awareness. It is also important to note that 26% of all accidents are attributed to spatial disorientation, and 90% of those SD related accidents result in a fatality.

The NASTAR Center’s SA/SD course provides aviation professionals and general aviation pilots with flights in the GL-2000, a dedicated spatial disorientation training device.

*2008 Nall Report, AOPA Air Safety Foundation

The GYROLAB GL-2000 is a G-producing, full motion, multi-axis flight simulator for pilots to recognize and recover from spatial disorientation. The USAF has trained its pilots on similar devices for many years. The true physiological effects of spatial disorientation can only be realized through the use of such a multi-axis, G-producing simulator.

CLASSROOM

Definitions of SA & SD
Factors affecting a pilot’s ability to maintain SA
Loss of SA and Controlled Flight Into Terrain (CFIT)
Human perception limits, information processing and their impact on aviation
Human Factor errors due to the loss of SA and/or SD
Visual and Vestibular SD Illusions
SD Prevention and Management

GL-2000 FLIGHTS

Visual Illusions
Vestibular Illusions
Gravic & Gyral Illusions
Altitude Awareness Training prepares you to cope with the rigors of high-altitude flight. Only training in an actual altitude chamber provides the most accurate effects of reduced atmospheric pressure, thereby producing the most realistic physiological effects of altitude exposure.

Our Altitude Chamber is FAA-approved and follows the same training doctrine for hypoxia training and rapid decompression as used by the USAF, USN, and FAA.

After completing the academic portion of training, students enter the altitude chamber where they will acquaint themselves with their personal symptoms of hypoxia, loss of acuity and color during night flight, and the physiological effects of a rapid decompression.

Special classes can be provided in the use of NVDs, pressure suits, and high altitude HALO/HAHO training.

The NASTAR Center’s Water Survival program is designed to provide pilots and crew with the knowledge and skills needed to successfully egress from a ditching. Classroom activities and in-water training provide the skills necessary to prepare for aircraft ditching preparation, cabin egress, survival, and rescue in open water.

Prerequisite: This course requires basic swimming/flotation skills.
CONTACT THE
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