Design and Production of Equipment for Military Training
In addition to comprehensive training solutions, we provide training systems for military commands and training contractors. Our capabilities include design, manufacture and maintenance of a full range of advanced simulation-based training equipment, from full flight simulators to weapons systems trainers to highly specialized training systems.
Boeing C-17 Weapons Systems Trainers

FlightSafety has designed and manufactured C-17 weapons systems trainers and loadmaster flight training devices for Boeing and the United States Air Force Air Mobility Command. We have manufactured and delivered 31 C-17 weapons systems trainers and one cockpit systems simulator to Boeing and the USAF.

This heavy payload weapons systems trainer is equipped with FlightSafety’s electric control loading and motion system. The C-17 weapons systems trainers incorporate the VITAL visual system with an extended field of view and databases for special maneuvers training such as air refueling and operations in and out of unimproved landing zones.
Rotorcraft and Tilt-Rotor Training and Equipment

Our expertise in simulation technology enables us to meet government and military rotor and tilt-rotor training objectives worldwide. We pioneered many of the engineering techniques – such as physics-based blade-element modeling of both main and tail rotors – that ensure the highest fidelity in all stages of flight. Our simulators feature SimIGR (Improved Ground Reactions), which provides a level of ground reaction simulation that exceeds Level D requirements, improving simulator performance and enhancing customer training.
UH-60 BLACK HAWK

We offer UH-60A/L pilot training on our BLACK HAWK Level D simulator at West Palm Beach, featuring our exclusive VITAL visual system, which allows for night vision goggle (NVG) training and realistic visual cues. Our BLACK HAWK maintenance training includes initial and update plus advanced programs such as Electrical/AFCS/Stabilator, Flight Control Rigging and Hydraulics Systems. Technicians use a complete range of UH-60 mock-ups plus a full-scale maintenance trainer.
As part of a joint FlightSafety/Bell Helicopter/Boeing team, we were the first company to successfully design, manufacture and deliver full motion flight simulators for tilt-rotor training. We built and delivered the first four MV-22 full flight simulators and flight training devices for the U.S. Marine Corps.

In addition, we delivered the first four CV-22 simulators to the U.S. Air Force at two locations to support its tilt-rotor training mission. CV-22 No. 5 delivered to Mildenhall AFB UK in 2013 and CV-22 No. 6 has been delivered within the U.S.

**MV-22/CV-22 Osprey**

As part of a joint FlightSafety/Bell Helicopter/Boeing team, we were the first company to successfully design, manufacture and deliver full motion flight simulators for tilt-rotor training. We built and delivered the first four MV-22 full flight simulators and flight training devices for the U.S. Marine Corps.
HH-60G Pave Hawk

In support of the USAF Special Operations Wing’s mission to train mission-ready special operations and combat search and rescue, FlightSafety successfully produced the first of its kind full flight simulator that included two gunner stations. This unique design provided a highly desired solution to the USAF allowing them to train as they fight. The port and starboard gunner stations set just aft of the flight deck crew as in the actual aircraft. The simulator is a complete full flight device with FlightSafety’s award-winning six degrees of freedom electric motion base.

The flight deck visual is a large cross-cockpit viewing system driven by our industry-leading VITAL image generation equipment. Each gunner station has a hemispheric dome for a realistic field of vision. The VITAL visuals for the gunner domes utilize the exact same database as the flight deck, adding extraordinary realism to this remarkable full flight simulator.
AH-1Z and UH-1Y Venom

Together with the prime contractor for the U.S. Marine Corps’ new H-1 helicopters, FlightSafety produced the Viper (aka Super Cobra) and the Venom (Huey) flight simulator devices. The UH-1Y incorporates the VITAL visual system with a wraparound, cross-cockpit viewing display allowing the pilot and copilot to train simultaneously.

For the AH-1Z, the USMC requested a device with a single cockpit as the aircraft. Previous devices built by others used two separate cockpits; one each for the rear and front seat pilots. A joint design effort with the prime contractor was initiated and FlightSafety built a hugely successful simulator solution for the Marines. The device replicates the aircraft, allowing the pilots to engage the simulated threats with all the crew coordination they experience in the helicopter. Additionally, all of the H-1 simulators allow the Marine aircrews to train with their own issue night vision goggles.
Mobile Combat Tactics Trainer

Our Mobile Combat Tactics Trainer provides an advanced system with the capacity to train multiple flight and ship crews at the same time, under the same conditions and in the same airspace. The system’s networking capabilities allow military units to conduct mission type-specific training, combat exercises or other customized training events and mission rehearsal in shared virtual airspace with real-time interaction among all networked simulators and a Battlemaster Control Station.

The flight trainer can be built to match virtually any aircraft in the military inventory and is reconfigurable with type/model series. It is equipped with our VITAL visual system that includes state-of-the-art digital projection, a worldwide database of geo-specific visual training libraries, an accurate representation of the aircraft’s instrumentation layout with easy-to-use touch screens and high-fidelity control loading for enhanced realism.
**Battlemaster Control Station**

Our Battlemaster Control Station’s easy-to-operate, widely available software controls every aspect of training. From the PC-based control modules, instructors can create and modify customized training scenarios.

**Mobile, Flexible**

The entire system can be operated from inside a trailer, portable container or fixed training site, and is capable of being networked with other high-fidelity flight training devices.
The mission of Flight School XXI is to provide a turnkey type training operation in support of the U.S. Army’s initial entry level and graduate-level flight training and simulations in support of professional military education courses and pre-deployment training. Individual and crew training are conducted in a synthetic environment and collective training in a real-time interactive computerized battlefield.

FlightSafety and the others involved in Flight School XXI entered into a service contract with the United States Government. The team built the facility, manufactured the simulators and now supports and maintains the equipment and provides administrative services.

FlightSafety has designed and manufactured more than 38 flight simulators for Flight School XXI to date. They include training devices for the Bell TH-67 Creek, Bell TH-1H (HUEY II), Sikorsky UH-60A/L/M BLACK HAWK, and Boeing CH-47F. FlightSafety is responsible for the operation and maintenance of the TH-67 simulators.
Support Systems Training

In addition to pilot and maintenance training and training systems for government and military aircraft, FlightSafety offers a broad range of support missions. We can design customized training to meet your specific needs.
Enhanced ATARS Vision Systems

We integrate advanced visual systems that present highly detailed, texture-enhanced scenes in simulators used for Air Force pilots under Aircrew Training and Rehearsal Support (ATARS). Modernization and sustainment upgrades incorporating our VITAL visual system have significantly improved training in a variety of more than 20 devices, including multiple simulators for AC-130 Gunship, HC-130, MC-130, HH-60G, UH-1N and U-28.
Our VITAL visual system was selected as the replacement for the C-130 ATS simulators. FlightSafety delivered 10 VITAL systems for this important program. Deliveries of the VITAL systems included the system’s comprehensive Display Management System (DMS). DMS offers a complete auto-calibration capability that ensures the color, intensity and geometry properties of the multichannel displays are maintained at the highest fidelity for every training sortie.
We conduct training under the U.S. Air Force TSA II Omnibus Program for two HC-130P Combat Search and Rescue Weapons Systems Trainers for the Air Force Special Missions Command and Air Force Reserve Command. FlightSafety Simulation Systems in Broken Arrow, Oklahoma, is responsible for the design and manufacture of the trainers. They are qualified to the Air Force equivalent of a Federal Aviation Administration Level D flight simulator.
Guns and Rescue

We were awarded a Guns and Rescue contract by the U.S. Air Force to modify and upgrade several WSTs, including one AC-130U, one MC-130E, two MC-130Hs, one MC-130P and two UH-60Gs. The modifications and upgrades include items such as Link-16 concurrency for training and live feeds, Link-16 courseware, incorporation of CSU-II, ROVER and M2MSA into Link-16, new IOSs, flight-deck ambient lighting and updating the 65000 Data Transfer System simulation to receive current PFPS data.
We received a contract to design and manufacture three advanced-technology aircraft simulators for the Canadian Forces Contracted Flying Training and Support Program (CFTS). Allied Wings, a consortium of Canadian companies led by Kelowna Flightcraft Limited of British Columbia, was awarded the CFTS program contract by the Canadian Government. As a sub to Atlantis Systems International of Brampton, Ontario, a member of the consortium, FlightSafety produced two full flight simulators and one Level 5 FTD training device for the Raytheon King Air C-90 and Bell 412 for CFTS.