When many people think of a military flight simulators they envision the bulbous enclosure on the gigantic hydraulic legs.

Sure, motion platforms are one type of flight simulator. But, there's a vast range of trainers that are not that complex and not that expensive. There are trainers available that fit right into your standard classroom or even in your offices. These 'right-sized' trainers can meet your training needs and your budget.

There's Many Training Options with Right-Sized Flight Simulators

Sophisticated training is possible with just a small cockpit enclosure, realistic controls and instruments, and motion cueing to emulate the feel of flight. For example, the DTT trainer shown on this page is from the Air Force Research Laboratory (AFRL). The simple cockpit shell is filled with virtual instrument displays and high-fidelity controls. The trainer uses a sophisticated F-16 flight model coupled to wrap around monitors and ACME's Dynamic Motion Seat for cueing. It's a convincing, right-sized, right-priced F-16 trainer. AFRL used this trainer to conduct extensive pilot training testing. It's been digitally linked to other simulators too allowing the pilot in this trainer to 'fly' with or against pilots in the same training facility or across the country. It has even been used to fly simulated missions virtually alongside real aircraft flying actual missions.

The U.S. Air Force Academy is using a similar but simpler cockpit system with ACME's motion seat to train cadets in their Systems Engineering classes and to evaluate pilot training tasks.

Right-sized simulators can accomplish a range of training tasks. Smaller simulators with motion seats are invaluable for instrument flight trainers where the pilot learns to feel the aircraft but to trust the instruments. Or, smaller trainers can be used for ingress or egress trainers teaching maintenance and flight crews to safely enter and exit the cockpit. Smaller part-task-trainers can train tasks like switchology, and coupled with motion can emulate the challenges of seeing some instruments or controls while under heavy maneuvers . Another excellent option for right-sized trainers is for emergency procedures or aircraft malfunctions. With a motion seat, the crew can feel many flight malfunctions such as hung ordnance or dangerous vibrations Or, the trainer could emulate flight control malfunctions like split flaps or jammed speedbrakes. Each of these training tasks can be achieved with the right-priced simulator with motion cueing.

the right–sized trainer

AFRL's DTT Sim and ACME True Q® Motion Seat

Simple cockpit powered by sophisticated flight model and realistic motion cueing makes a powerful trainer in a small footprint. A capable, right-sized trainer like the DTT can be a great match for your training and budget needs.

a right-sized trainer for the right-sized jet

Affordable attack aircraft jets meet the right mission needs at the right price.

Light attack jets are perfect candidates for smaller, right-sized simulators. Simulators with simple cockpits, affordable image systems, excellent controls coupled with sophisticated flight models and motion cueing can hit the sweet spot between cost and capability. With right-priced trainers, customers can afford to conduct realistic training while reducing the flight hours on their jets. And, with right-sized trainers, defense forces can put their trainers right in the flight offices and save on simulator infrastructure costs.

Realistic motion cueing is a critical capability for right-sized, attack jet trainers. These jets operate down low where earth-effects and vibrations from thermals can shake the jet. Light attack jets are also in the range of ground fire. So, feeling the hits is vital in the training to practice ground fire evasions. And, feeling the weapons separate from the jet is an important cue when focused, eyes outside on the target and diving on the target at speed. Practice that in the trainer too.

F-15 Cockpit and ACME True Q® Motion Seat

Open cockpit provides easy access to crews and instructors but provides immersive training environment when paired with realistic motion cueing the simulates the feel of the fighter jet in flight. This type cockpit with motion might be perfect for light attack aircraft trainers.

The light attack jet market is booming. A wide range of choices are available now. There's PC-9s , AT-6 Wolverines, A-29 Super Tucanos, and even the new Scorpion. The US Air Force is even considering a demonstration fly-off for new attack jets. It makes good sense:

right-priced training for light attack aircraft

the right motion seat for the right-priced, right-sized light attack aircraft trainer

Ultra-Realistic True Q® Fighter Motion Seat

This is ACME's motion seat that emulates the Martin-Baker ejection seat in the T-6 light jet. It includes all the cushions, harnesses, buckles, levers, handles, restraints and more. Plus, the entire motion seat is built inside the seat. It mounts to the cockpit bulkhead and includes the vertical height motor, just like in the aircraft.

Use the motion cues to training cues. Excellent motion seats can provide all these cues and more for light attack pilots.

It's all about training realism at the right price. A small, sophisticated trainer might be perfect!

ACME's True Q® Dynamic Motion Seats could provide an excellent foundation in a right-priced light attack jet trainer. The seat looks and feels just like the actual aircraft ejection seat and includes all the motion components inside the seat. And, it provides that full range of cues needed for realistic training.

Crews can buckle right into the True Q® seat just as they would in the aircraft. Pitch, roll and yaw are just a start to the cueing capability. The motion seat can include vertical and horizontal acceleration cues too and vibrations and buffets. Special effects like the feel of flaps or gear extending are possible. So are ground taxiing cues like surface textures, skids, or even flat tires. You can even feel the jet taxiing over the expansion joints between concrete sections of the flight line. It's that sophisticated!

The Right Motion Seat is Available for Any Light Attack Jet Trainer

ACME has a full range of motion seats available – we can help get the right seat to match your light-attack jet. We can provide an ultra-fidelity seat like the one shown that looks, feels, and functions just like the aircraft seat. ACME has six different, Commercial-Off-The-Shelf (COTS) motion seat designs ready--no engineering development costs required. Or, we can custom-tailor seats to meet specific aircraft or mission needs.

Many light jets have a pilot and an observer or weapon officer in the cockpit. The same arrangement is easily possible in a small trainer. ACME's motion seats support the tandem crew trainer with a special, cost-reducing capability. A single True Q® motion seat computer can drive two ACME motion seats in the same trainer. This advantage reduces overall acquisition and long-term support costs.

ACME can help with the right motion seat for your right-sized, right-priced, light attack trainer. The motion seat provides exceptional cueing capability as key component in the trainer.