Introducing the Javelin: The 21st Century Jet Trainer
The modern battlefield complexities of an Integrated Operating Environment are bringing a change in the focus of Fighter Pilot Training and Qualification.

- The affordability of new trainer aircraft is crucial in view of growing public and budgetary pressures on Ministries of Defense and Air Forces to reduce training budgets and enhance cost effectiveness.
- The complexity of the modern battlefield and the sophisticated technology of fourth and fifth generation fighter aircraft is bringing a change in the focus of fighter pilot training and qualification - from aircraft performance and handling to integrated training with the complex systems that are installed in today’s fighter aircraft.
- Fourth and fifth generation fighter aircraft require pilots who can master both aircraft handling and complex systems simultaneously.
Budget Constraints Demand Breakthrough Solutions

Introducing the Javelin Trainer, A Truly Innovative Approach.

The Javelin breakthrough offers:

- Performance & configuration tailored to new training needs.
- Light weight (7,250 lbs / 3,300 kg) advanced platform.
- Extensive use of COTS – including two very efficient new turbofan engines, and many aircraft systems.
- Utilization of virtual training technologies similar to 4th and 5th generation avionics.
- Result = Significant reduction in acquisition cost & direct operating cost.

Truly A 21st Century Aircraft

An Optimized New Design, Instead of a Legacy Configuration

- The Javelin is a twin engine, jet aircraft targeted for multiple applications:
  Javelin Mk-20, Basic (Phase 2+) trainer.
  Javelin Mk-30, Advanced trainer. A derivative of the Javelin Mk-20, with more powerful engines and enhanced avionics, embedded simulation and Virtual Training System (VTS).

- The commonality reduces the Non-Recurring (NRE) development cost per unit, and creates advantages to scale.

Safety Features:

- Twin engine safety.
- 0-0 ejection seats.
- Excellent single engine performance.
- Level 1 flight handling characteristics.

0-0 Ejection Seats
Storage
Fuel Tank
(280 gallons)
(1060 L)
2 Turbofan
Jet Engines
Elevators
Dual aft body strakes
Flaps
Ailerons
Military Avionics
HUD Repeater
0-0 Ejection Seats
Military Avionics
Trailing Link
Landing Gear
Landing Edge Flaps
Leading Edge Flaps
Nose Chines
Ice Protection
HUD
Javelin Mk-20:
- Basic (Phase 2+) trainer with enhanced performance compared to competitors.

Javelin Mk-30:
- Advanced trainer derivative of the Mk-20, with more powerful engines, enhanced avionics, embedded simulation and Virtual Training System.

**The Javelin Family of Trainers**

A Twin Engine, Transonic Aircraft, With Multiple Applications:

**Javelin MK-20**

- Basic Training Plus:
  - Primary Jet Aircraft Handling
  - Basic Mission Management
  - Potential to Extend Syllabus
  - WSO Training
  - TurboProp LCC

**Javelin MK-30**

- Advanced Training:
  - Advanced & Lead-in Performance
  - A/A & A/G Tactics
  - Cognitive Skills & System Management

**Comprehensive Training Solution**

- Virtual Training Systems (VTS)
- Mission Planning & Debriefing System (MPDS)
- Simulators
- Knowledge System & Training Management
- Pilot Evaluation System

**Commonality of Airframe**

Supports Smooth Transitioning

**Training Solution**
Training students in a platform with speed, radius, and rhythm representative of fast jets vastly increases training effectiveness versus turboprop trainers.

Cognitive skills are gradually achieved through exposure to digital cockpit avionics and Hands on Throttle and Stick (HOTAS) operation.

Screening and streaming: Earlier identification of students who have the cognitive skills for advanced training occurs at a quicker pace.

Smother transitions to advanced jet platforms result in minimized retraining, thus reducing waste by eliminating redundancy.

The Javelin Mk-20 gives military flight training units the option to EXTEND THE BASIC TRAINING SYLLABUS TO MORE THAN 180 HOURS by downloading tasks from the Advanced Training Platform!
IAI’s expertise in virtual training systems is embedded in the Javelin product line, allowing aircrews to train in the operation of advanced sensors and systems without investing in expensive hardware.

**VTS via Smart Data Link**
- Airborne simulated A/A Radar.
- Airborne simulated RWR.
- Airborne simulated Tactical scenarios and Electronic Warfare.
- Airborne simulated weapon A/A & A/G.
- Airborne simulated systems.
- ACMi type debriefing.
- Mid Air Collision alert.

**Military Architecture:**

**Basic Features:**
- Accumulating features for Advanced & Lead in Trainer
- Accumulating features for WSO Training
  - (Virtual) A/G Radar Operation, (Virtual) EO weapon operation, (Virtual) Targeting Pod operation.

**Weapon System Officers (WSO) Training Advantages**
- Learn how to operate sensors, such as air-to-ground radar and Forward Looking Infra Red (FLIR).
- Embedded simulation and virtual training systems.
- Eliminates the need for installing expensive systems on the aircraft.

**Improved Training Tools for the Instructor**
- Insertion of simulated airborne targets and/or ground-to-air threats.
- Real time ground monitoring of trainee in solo flights.
- In depth briefing and debriefing aids.

**Compatibility with Modern Fighters**

**Mk-30 Cockpit**

**Virtual Training System (VTS) Basic Features**

**Mk-30 Cockpit**

**F-16 Cockpit**
The Javelin allows air force flight academies and other providers of military training services the following economic advantages:

- Enhanced basic flight training (phase 2+) in an acquisition cost and life cycle cost which is competitive with existing Turbo Prop trainers.
- Advanced and lead in fighter training (phase 3 and 4) in an acquisition cost and life cycle cost which is less than half of existing and non-entrant advanced jet trainers.
- Greatly increased potential to transfer training tasks (“down load”) from costly platforms.

- Use as a companion trainer, lowering the direct cost of the operational aircraft.
- Eliminates re-training needed to switch aircraft (as in turbo prop + jet).
- Smooth transition between phases due to maximization of commonality.
- Produces pilots who have trained at a speed, radius, and rhythm commensurate with their skill level.

Other Benefits of the Javelin Mk-20/30:

- Reduced Ground Support.
- Utilization of virtual training suit fitted to customer / level.
- Enable saving in the operational platforms (Qualification and Training).

THE JAVELIN MK-20 AND MK-30 OFFERS A COMPETITIVELY PRICED DESIGN WHICH CAN ADEQUATELY MEET ANY AIR ARM’S TRAINING NEEDS.
Israel Aircraft Industries, Ltd (IAI)
IAI has over 40 years of experience in developing, manufacturing, upgrading, and maintaining both military and civilian aircraft, as well as developing sophisticated avionics systems and simulators for trainer, combat, and transport airplanes and helicopters.

Aviation Technology Group (ATG)
ATG is the developer and manufacturer of high performance military and civil aircraft for domestic and international customers. ATG offers highly competitive products by integrating new technology and off-the-shelf systems into modular platforms.