

# T-50 Golden Eagle

MOST EFFECTIVE ADVANCED JET TRAINING SYSTEM  
FOR 4<sup>TH</sup> AND 5<sup>TH</sup> GENERATION FIGHTERS

Today's Trainer for  
Tomorrow's Fighters

**LOCKHEED MARTIN**  
*We never forget who we're working for™*



**KAI** KOREA AEROSPACE  
INDUSTRIES, LTD.

## T-50 Golden Eagle



### Tomorrow's Fighter Pilots Need an Advanced Jet Trainer . . . Today

The era of 5th generation fighters has arrived. And so has the next generation advanced jet trainer T-50 Golden Eagle. It is specifically developed to train pilots on 4<sup>th</sup> and 5<sup>th</sup> generation fighters. The 4<sup>th</sup> and 5<sup>th</sup> generation frontline fighters such as advanced F-16 Fighting Falcon, Eurofighter, F-22 Raptor and the new F-35 JSF will require pilot skills that yesterday's trainers cannot support. The T-50 delivers a total advanced training system that will bridge the gap between basic flight training and high performance, next generation fighters.

### Global Training Requirements

The T-50 Training System has been developed to meet the global advanced training requirements where the growing gap between the current trainer and new and future fighter aircraft is increasingly becoming a serious concern. From the onset of the development program, emphasis has been given that this concern is not limited only to Republic of Korea Air Force (ROKAF) but is a universal concern so broad and demanding requirements have been developed to support many major air forces' training needs around the world.

### T-50 Total Training System

T-50 is the only fast jet trainer program that provides a total integrated training solution which includes the T-50 Advanced Jet Trainer (AJT) and Lead In Fighter Trainer (LIFT), comprehensive Ground Based Training System (GBTS) and Integrated Logistics Support (ILS) using all the latest technologies for the 21st century fighter pilot training.

### T-50 Partnership

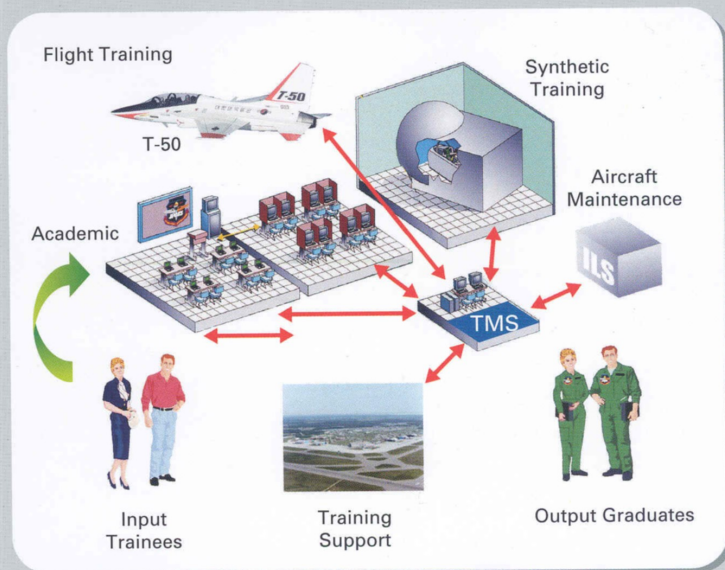
The T-50 Golden Eagle emerged from the joint development team of Korea Aerospace Industries (KAI) and Lockheed Martin Aeronautics Company. This successful partnership is rapidly making KAI one of the top 10 aerospace companies in the world and has resulted in an all new trainer to smoothly take pilots from basic trainer to the new high performance fighters.



## A Complete... Fully Integrated Training System

The T-50 Golden Eagle is much more than an advanced jet trainer. The aircraft is a key element of a totally integrated training system for developing razor-sharp, 21st century fighter pilots. The system combines aircraft, simulators, computer learning and integrated logistics support to maximize training effectiveness. Just as the T-50 heads the class in training technology, so does the fully integrated ground-based training system developed with a total commitment to producing top-notch pilots.

- **Academic Courseware**  
Modern Computer Based Training/ Instruction enhances student learning
- **Synthetic Training**  
High-fidelity Operational Flight Trainer (OFT) and Full-Mission Trainer (FMT) devices allow effective demonstration of complex / high risk fighter maneuvers before getting into the aircraft
- **Embedded Training Features**
  - Air-to-Air and Air-to-Ground Missions
  - Simulated Systems and Weapons
  - Weapons Scoring and Event Marking
  - Mission Planning and De-briefing System
- **Training Management System (TMS)**  
For multiple syllabi, computer-aided scheduling, individual student progress tracking, etc.
- **Training System Support Center (TSSC)**  
Central facility for keeping and updating training aids
- **Aircraft Maintenance Training (AMT)**  
A similar system is provided for specific maintenance crew training.



## Integrated Logistics Support

The T-50 team – consisting of ROKAF, KAI, Lockheed Martin, General Electric and international suppliers – has extensive experience in world-class, worldwide logistics support of its products. This includes all aspects of support required to assimilate new aircraft and operate it at high, sustained sortie rates over a long service life.

The T-50 brings together extensive experience in world-class, worldwide logistics support of its products. This includes logistics planning, site surveys, base- and depot-level repair shops, spares provisioning and replenishment, support equipment, electronic technical manuals and portable maintenance readers, technical services, logistics management and future upgrade programs, plus maintenance technician training and training equipment described above. Individual customer needs are readily accommodated.

# Today's Trainer for

## High Performance

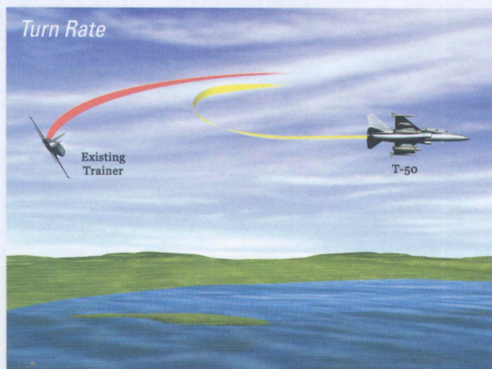
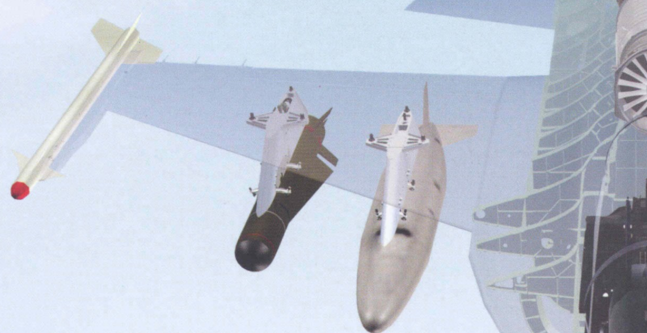
- Supersonic (M1.5)
- 14 deg/sec Sustained Turn Rate @ 15kft, Transonic Region
- High Thrust to Weight Ratio
- 40,000 ft/min Rate of Climb (Sea Level)
- Less than 2 minutes to reach 30,000 ft from Brake Release

## Excellent Handling Quality

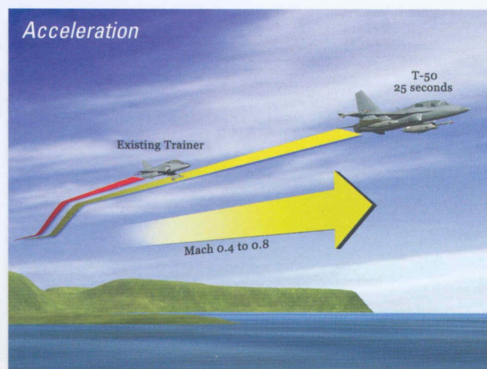
- Level 1 Handling Qualities Across the Flight Envelope
- Automatic AoA, G and Roll Rate Limiting for Care-free Maneuvering
- No Deep Stall
- Excellent Departure Prevention with Automatic Anti-Spin Logic
- Relaxed Static Stability Airframe with Automatic Stability Augmentation
- Coupled "Active" Side-stick Controllers

## In-Every-Effort Safety

- Dual Redundant Digital FADEC
- Auxiliary and Emergency Power System
- Triple Redundant Digital Flight Control System
- Ground Avoidance Advisory Function
- Built-in-Test, On-condition Maintenance
- Digital Anti Skid System, Arresting Hook
- 600 knots Proven Zero-zero Tandem Ejection Seat
- 300 knots Bird-Strike Resistance



The T-50's faster turn rate and smaller turn radius provide superior maneuverability.



T-50 can accelerate from M0.4 to M0.8 in just 25 seconds, about 1/4<sup>th</sup> the time it takes for existing trainer.

# Tomorrow's Fighters

## State-of-the-Art Technology

- Digital Glass Cockpit
- HOTAS, Active Stick
- Head-Up Display (HUD)
- Digital Fly-by-Wire
- Night Vision Goggle / Night Vision Instrument System Compatible
- On-Board Oxygen Generating System (OBOGS)
- Integrated Multi-Function Probe (IMFP)

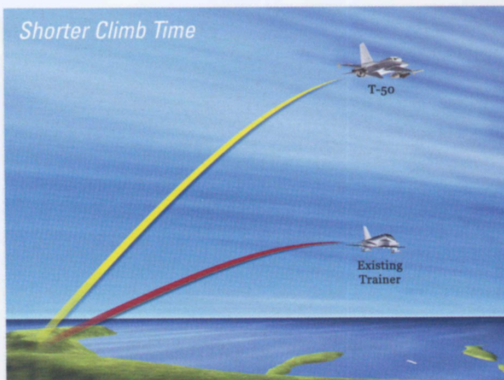
## Proven Reliable F404-GE-102 Engine

- More than 11 million flight hours
- Full Authority Digital Engine Control (FADEC)
- Engine Thrust 17,700 lb
- Low Bypass Turbofan with After Burner
- Exceptional Stall Free Operation
- No Throttle Restrictions thru Engine Envelope

## Fighter Compatibility (LIFT)

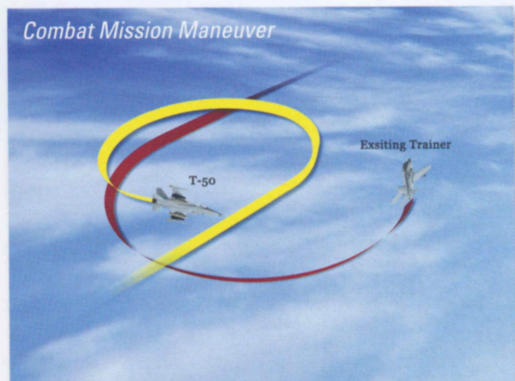
- Air-to-Air, Air-to-Ground Weapons
- Fire Control Radar
- Internal Mounted Gun
- 10,500 lb Store Capability with 7 Hard Points
- Combat Mode Avionics
- All Weather Operation

Shorter Climb Time



The main features of the T-50 is its high energy incomparable with other trainers. T-50's initial climb rate reaches about 40,000 ft/min.

Combat Mission Maneuver

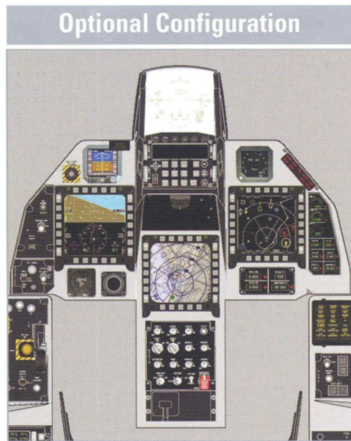


The T-50 high energy features can perform combat mission maneuvering that enable a true advantage in operational training.

## Modern Digital Glass Cockpit



T-50 Cockpit

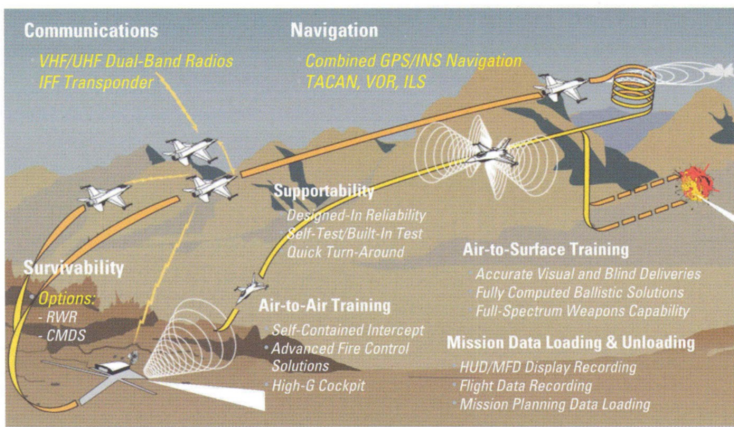


Optional Configuration

Similar to Advanced Fighter Cockpit Familiarity Promotes Quick Transition to Fighters.

- Color Multi-Function Displays (MFD)
- Integrated Up-Front Controls
- Hands-On Throttle and Stick (HOTAS)
- Electronic Standby Flight instrumentation
- Martin Baker MK KR16K Zero-Zero
- Programmable Coupled Control Stick
- Backup Throttle
- Wide Field-of-View HUD

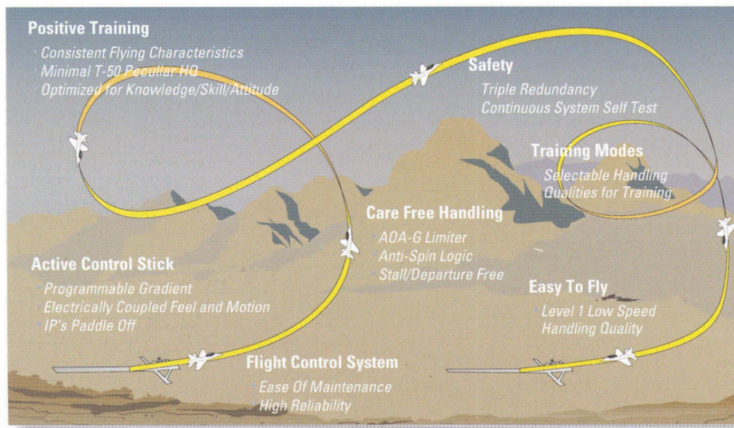
## T-50 Modern Avionics



Students will learn to use fighter controls and displays to develop systems management and “out-of-the-cockpit” thinking with a cockpit and avionics that sharpen their situational awareness skills.

- Common Fighter Missions Expandable Architecture
- Fully Integrated, Controllable Mux
- Optimized for Pilot Vehicle Interface
- Embedded Built-in-Test and Diagnostics
- Supports Multirole and Advanced Aircrew Training Profiles

## T-50 Digital Flight Control System



The fly-by-wire flight control system was designed by the same engineering talent that has produced the world's best full-authority electronic flight controls evidenced by the systems on the original F-16, evolution to the advanced F-16, the F-22 and the F-35.

## T-50 Derivatives

**T-50**  
Advanced Jet Trainer

- High Energy aircraft (Supersonic)
- High Training Effectiveness
- Glass Cockpit
- Digital Fly-by-Wire
- State of the Art Avionics

**T-50**  
Lead-In Fighter Trainer

- Multi-mode Radar
- Swing Role Capability
- Intercept / CAS Mission
- Weapons
- AIM 9 / AGM 65
- CBU-58 - MK 82,83,84 etc
- LAU-3 / 68 - 20mm Gun

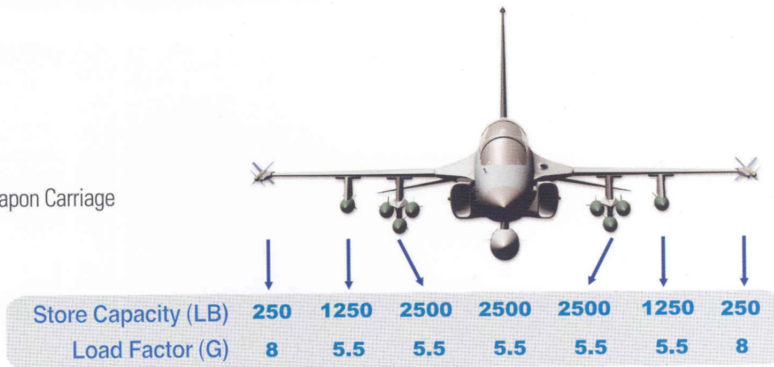
**A-50**  
Light Attack Aircraft

- Upgraded Radar
- RWR / CMDS
- Data Link
- Precision Bombs
- GPS / INS Bomb
- NVIS (Night Vision Imaging System)

*Building the Dream with KAI  
Fly Actively Toward the Future*

## Store Capacity

- 7 Hard Points
- Total 10,500 Pounds Weapon Carriage



## A-50 Weapon Capabilities

**Air-to-Air Missiles**

- AIM-84M/S SIDEWINDER
- AIM-9X/P SIDEWINDER

**Air-to-Ground Missiles**

- AGM-65 MAVERICK

**General-Purpose Weapons**

- MK-82 500-lb LDGP
- BLU-119 2000-lb LDGP
- MK-82 SNAKEYE 500-lb HDGP
- MK-84 2000-lb LDGP
- MK-83 1000-lb HDGP

**Mission-Equipment**

- INTERNAL WEAPON (200 195)
- Datalink (Internal)

**Guided Weapons**

- GBU-38 JDAM 500-lb
- GBU-31 (v3) JDAM 2000-lb (BLU-109 WARHEAD)
- GBU-32 JDAM 1000-lb (MK-83 WARHEAD)
- GBU-31 (v1) JDAM 2000-lb (MK-84 WARHEAD)

**Rocket/Gun Pods**

- LAU-3A/5003 ROCKET POD
- LAU-68/131 ROCKET POD

**Fuel Tank**

- 150-gal. EXTERNAL TANK

**Dispensers**

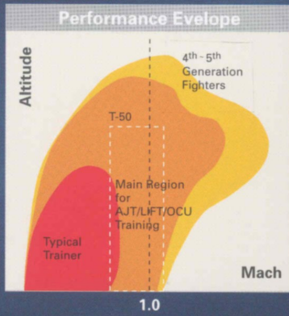
- CBU-67/88/71 CLUSTER MORTAR
- MK-25 ROCKEYE II CLUSTER MORTAR
- GBU-102/104/105 WICMD

**Offensive/Defensive Training Systems**

- AGTS
- ACM POD

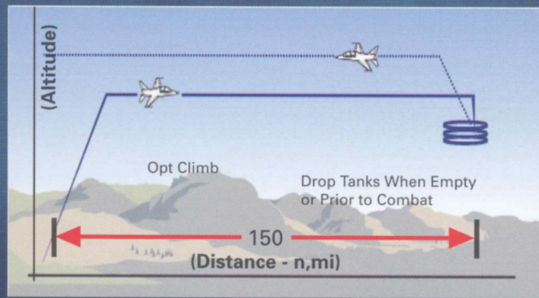
## T-50 Key Advantages ..... Revolutionary Approaches

### Superior Aircraft Performance



T-50's wide performance envelope with extensive excess energy, high sustained turn rates, rapid climb rates, and long sortie duration provides unparalleled flexibility to perform a wide variety of training missions. No other AJT or LIFT can compete with T-50 maneuvering characteristics which are essential parts of modern training environment.

### Swing Role Capability Combat Air Patrol/Close Air Support Mission



### One Platform for both AJT/LIFT Training Mission

A single trainer type for both AJT & LIFT lowers Life Cycle Cost (LCC) and maximizes training effectiveness without the effect of negative learning.



### Newly Developed System

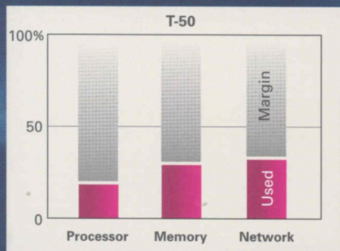
T-50 is the only supersonic jet trainer developed today. Its features, aircraft characteristics, and growth potential are modern and superior from existing trainers which are being modified or upgrades from a 20-30 year old design.

### Secured Program for Next 30-40 Years

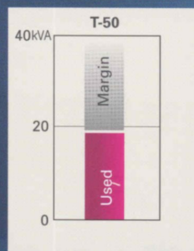
Total T-50 order for the ROKAF is 132 aircraft and last T-50 aircraft delivery to ROKAF will continue through 2014. Considering more than 30+ years ROKAF operation and high probability of international customers, T-50 is the right solution for the air forces who plan to maintain their air superiority using 4<sup>th</sup> and 5<sup>th</sup> generation fighters for decades to come.

### Growth Potential

#### Avionics Upgrade Margin



#### Electrical Power Margin



- Use Open System Architecture for Flexibility and Growth
- Understand Where Next-Generation Fighters Are Moving

### F-16 Commonality

Aircraft	Hardware	48%
	LRU	40%
Support Equipment	O-Level	45%
	I-Level	43%

T-50 high commonality support package with F-16 fighter ensures not only to lighten the burden of acquisition cost, but also to increase the interchangeability and supportability.

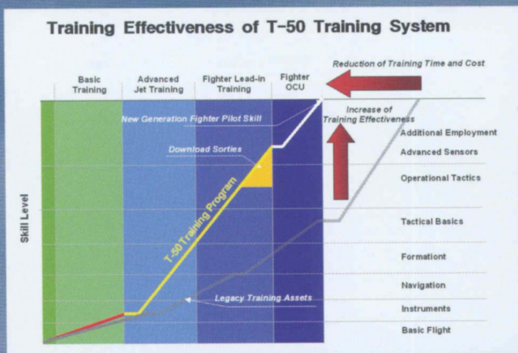




**T-50 Can Produce Better Skilled Pilot in Most Cost Effective Way.**

Savings are realized from lower direct O&S cost, manpower and training flight hours reduction, and operational conversion unit (OCU) download.

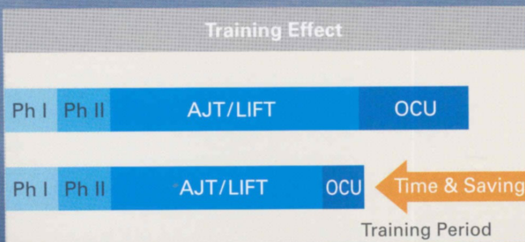
**Training Effectiveness**



**T-50 Training System Increases Skill Level and Reduces Training Time**

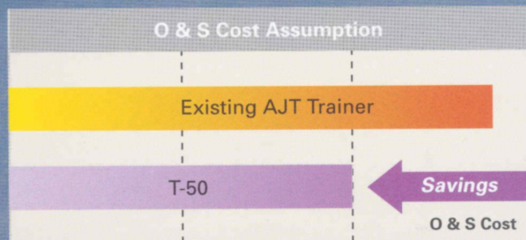
Due to its fighter-like performance and high energy management along with its distinctive training features such as embedded training & de-briefing system and sophisticated GBTS, T-50 training system significantly reduces the Operational Conversion Unit (OCU) training requirements.

**OCU Download Comparison**



LIFT training is optimized in a supersonic aircraft with afterburner and 4<sup>th</sup> & 5<sup>th</sup> Generation Fighter flight characteristics.

**Lower O & S Cost Comparison**



O & S cost assumption includes fuel consumption, direct operation & maintenance cost, and direct man hour.

T-50 Golden Eagle

# KOREA AEROSPACE INDUSTRIES, LTD. T-50 GOLDEN EAGLE

Annotations refer to the T-50 trainer.  
Items specific to the T-50 lead-in fighter trainer (LIFT)  
are identified accordingly.

Airframe fixed fuel capacity - 2,710 liters.  
Maximum external fuel tank capacity - 1,710 liters.  
Maximum total fuel capacity - 4,420 liters.

Missile launch rail - LIFT

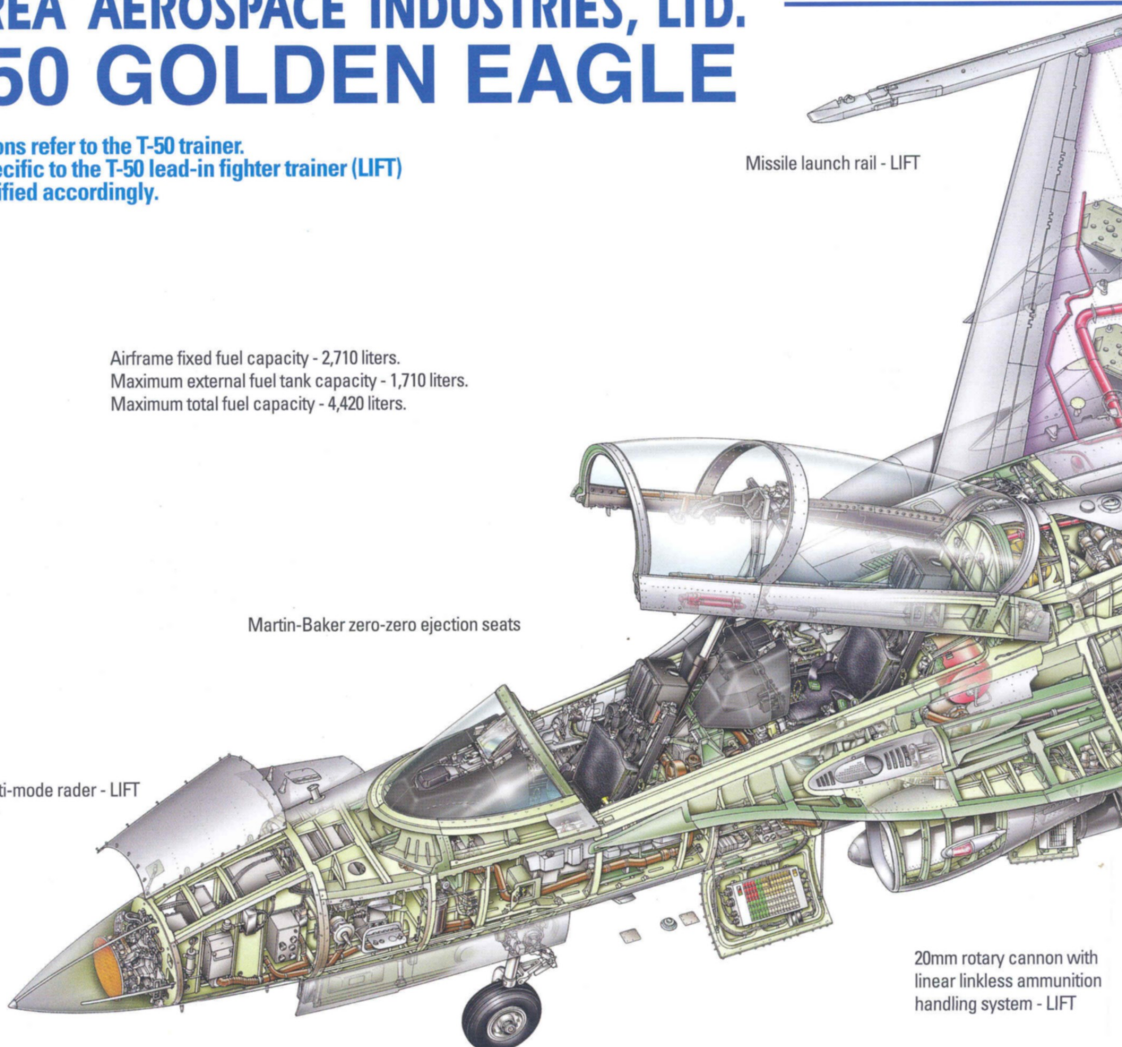
Martin-Baker zero-zero ejection seats

APG-67 multi-mode radar - LIFT

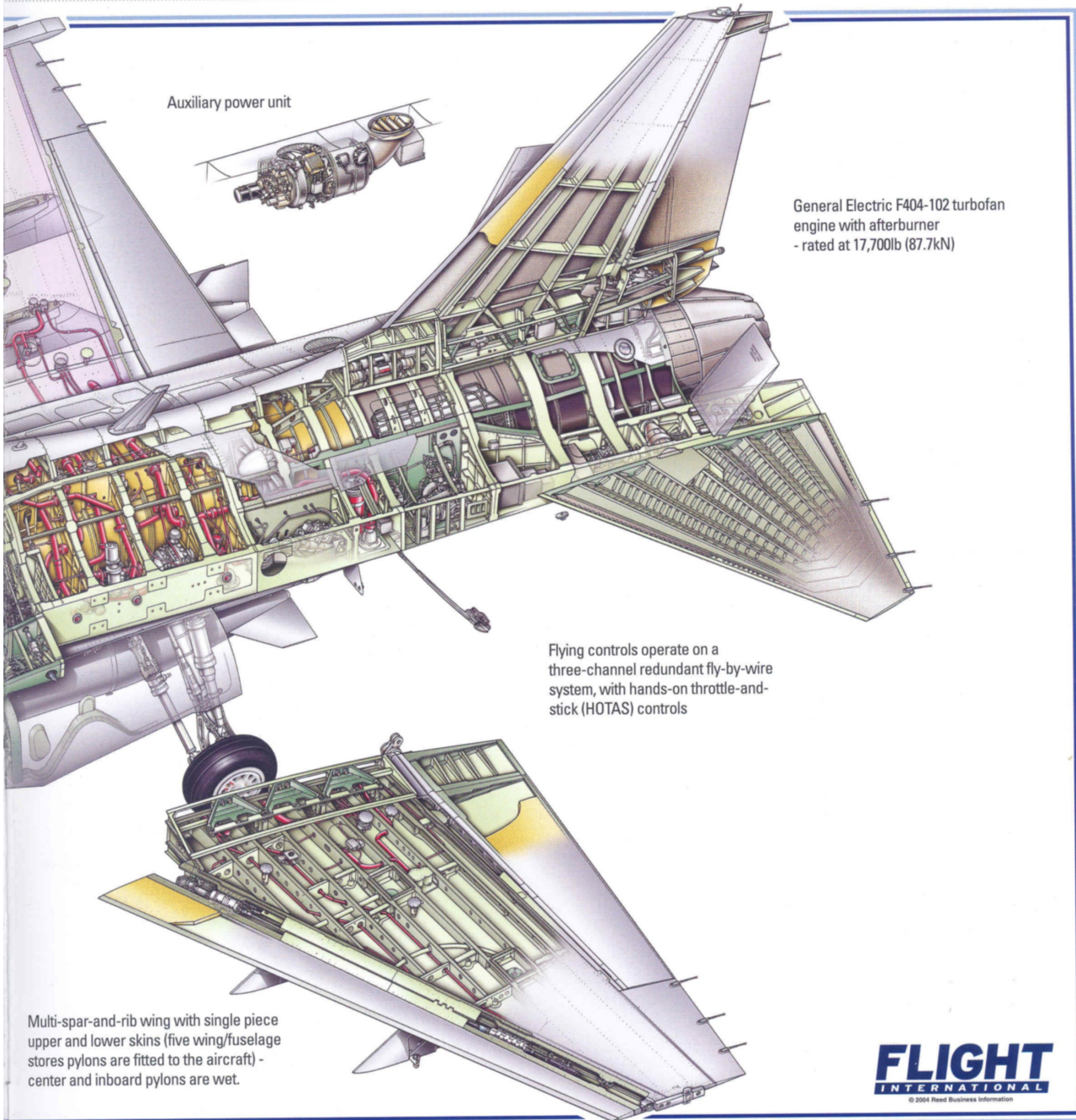
20mm rotary cannon with  
linear linkless ammunition  
handling system - LIFT


Machined aluminium-alloy  
fuselage construction with  
etched aluminium alloy skins

Onboard oxygen generating system (OBOGS)  
with onboard inert gas generation system  
(OBIGGS) provisions



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THE RIGHT CHOICE FOR TOMORROW'S  
TRAINER AIRCRAFT  
WITH OUTSTANDING PERFORMANCE AND TRAINING EFFECTIVENESS

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