

NORTHROP GRUMMAN

DEFINING THE FUTURE

BQM-74 Series: The Legacy Continues

NDIA Targets 2006

John VanBrabant
Manager, Aerial Targets Business Development
Integrated Systems Western Region
Northrop Grumman Corporation

Legacy of Unmanned Aerial Vehicles



OQ-2

OQ-19/SD-1

RP-76

NORTHROP



BQM-74



RQ-4B Global Hawk
USN/USAF



BQM-74F



X-47A Pegasus



RQ-8A Fire Scout



MQ-8B Fire Scout
USA/USN



X-47B N-UCAS
USN



Combat Dawn

Combat Scope



Compass Arrow



BQM-34



Firebolt



RQ-4A Global Hawk



BQM-145A



RMAX



KillerBee



AQM-34 SPA



M324



E-Hunter



RQ-5A Hunter



Hunter II



MQ-5B Hunter

1940

1950

1960

1970

1980

1990

2000

2004

2005

2010

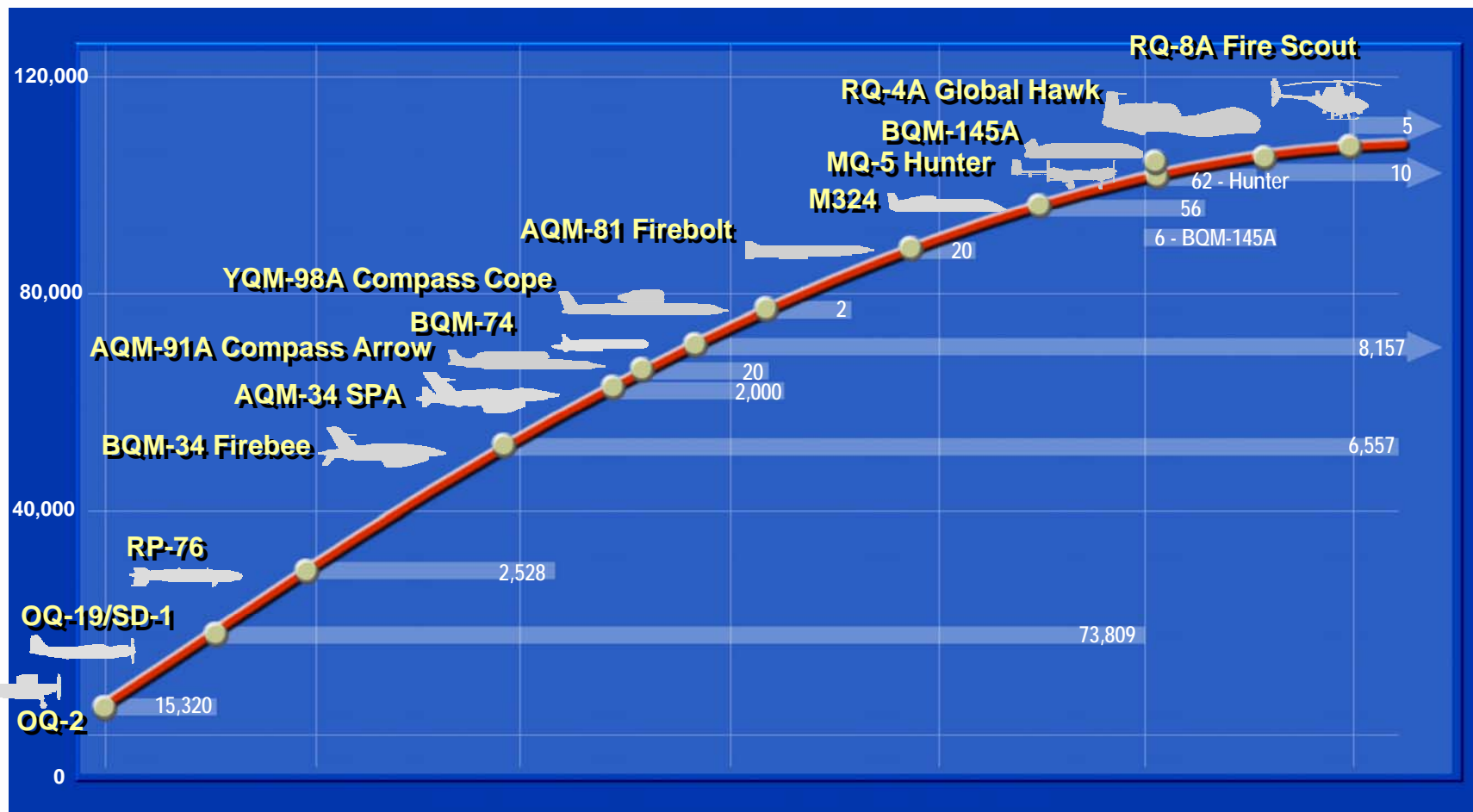
2015

Unmanned. Unmatched.

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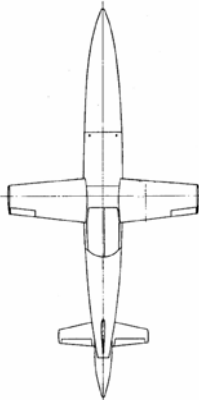
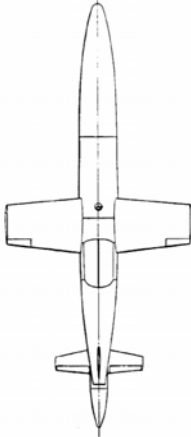
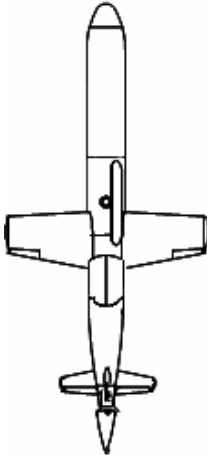
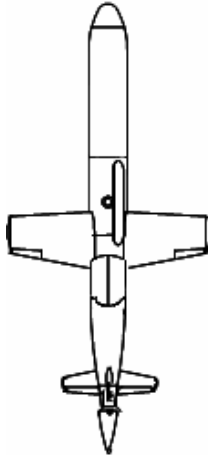
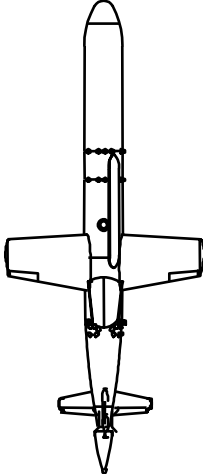
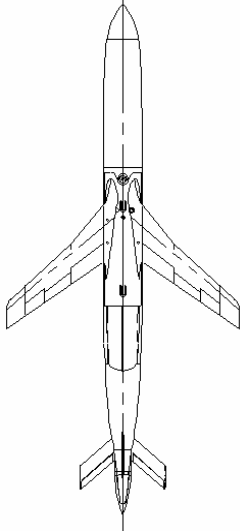
DEFINING THE FUTURE™

> 100,000 Unmanned Vehicles Delivered

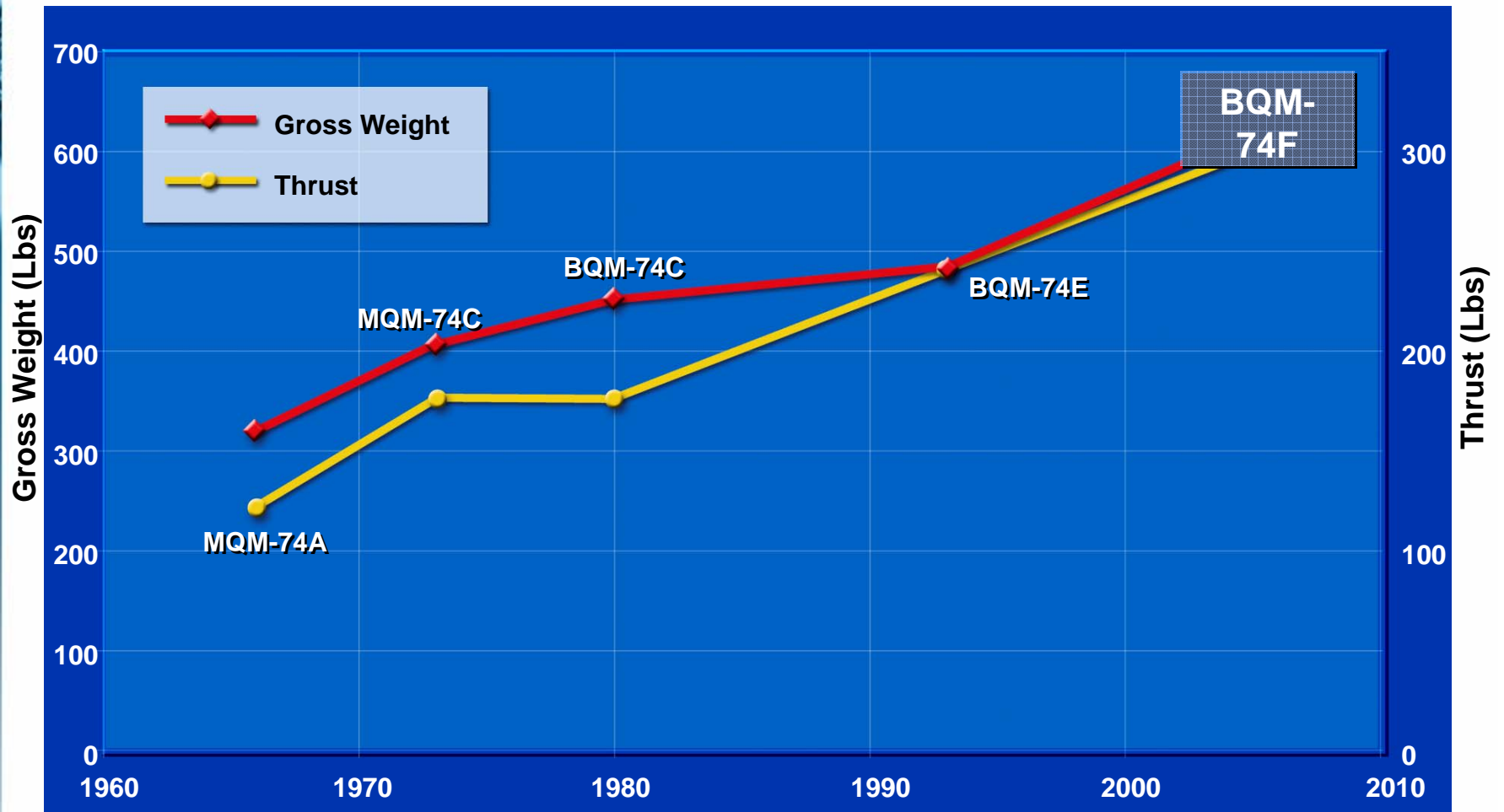


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BQM-74F Evolution

MQM-74A 1966	MQM-74C 1973	BQM-74C 1980	BQM-74E 1991	BQM-74ER 1996	BQM-74F 2006
					
<ul style="list-style-type: none"> •121 Lb Thrust •316 Lb GFW •GL Only •Analog Avionics 	<ul style="list-style-type: none"> •180 Lb Thrust •454 Lb GFW •GL Only •Analog Avionics 	<ul style="list-style-type: none"> •190 Lb Thrust •438 Lb GFW •AL & GL •1st Generation Digital Avionics •30 Ft LAC •Flight Profiles 	<ul style="list-style-type: none"> •240 Lb Thrust •454 Lb GFW •AL & GL •2nd Generation Digital Avionics -1997 •7 Ft LAC •Weaves •Flight Profiles 	<ul style="list-style-type: none"> •240 Lb Thrust •480 Lb GFW •AL & GL •2nd Generation Digital Avionics -1997 •7 Ft LAC •Weaves •Flight Profiles 	<ul style="list-style-type: none"> •300 Lb Thrust •625 Lb GFW •AL & GL •3rd Generation Digital Avionics •7 Ft LAC •Weaves •Flight Profiles

MQM/BQM-74 Growth to BQM-74F



BQM-74E Subsonic Aerial Target

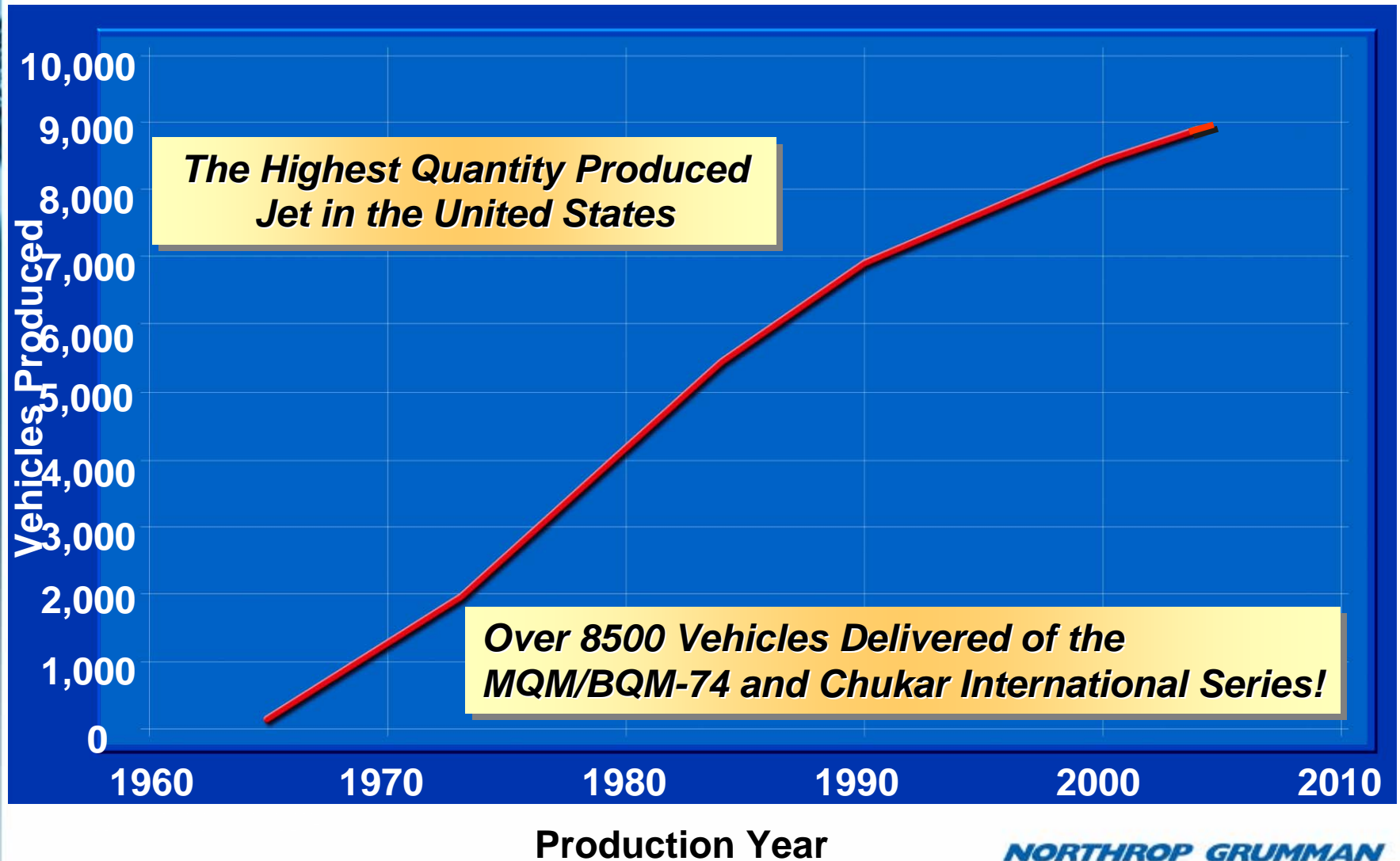
Workhorse of the Fleet

BQM-74E USN Deliveries	
FY06	FY07
60	60

- 10+ years legacy of on time deliveries to the U. S. Navy
- 1965-present over 8500 BQM-74 Series Targets have been delivered worldwide
- Conducting 250 operations/year supporting the warfighter



MQM/BQM-74 and Chukar Production



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Worldwide Targets Experience



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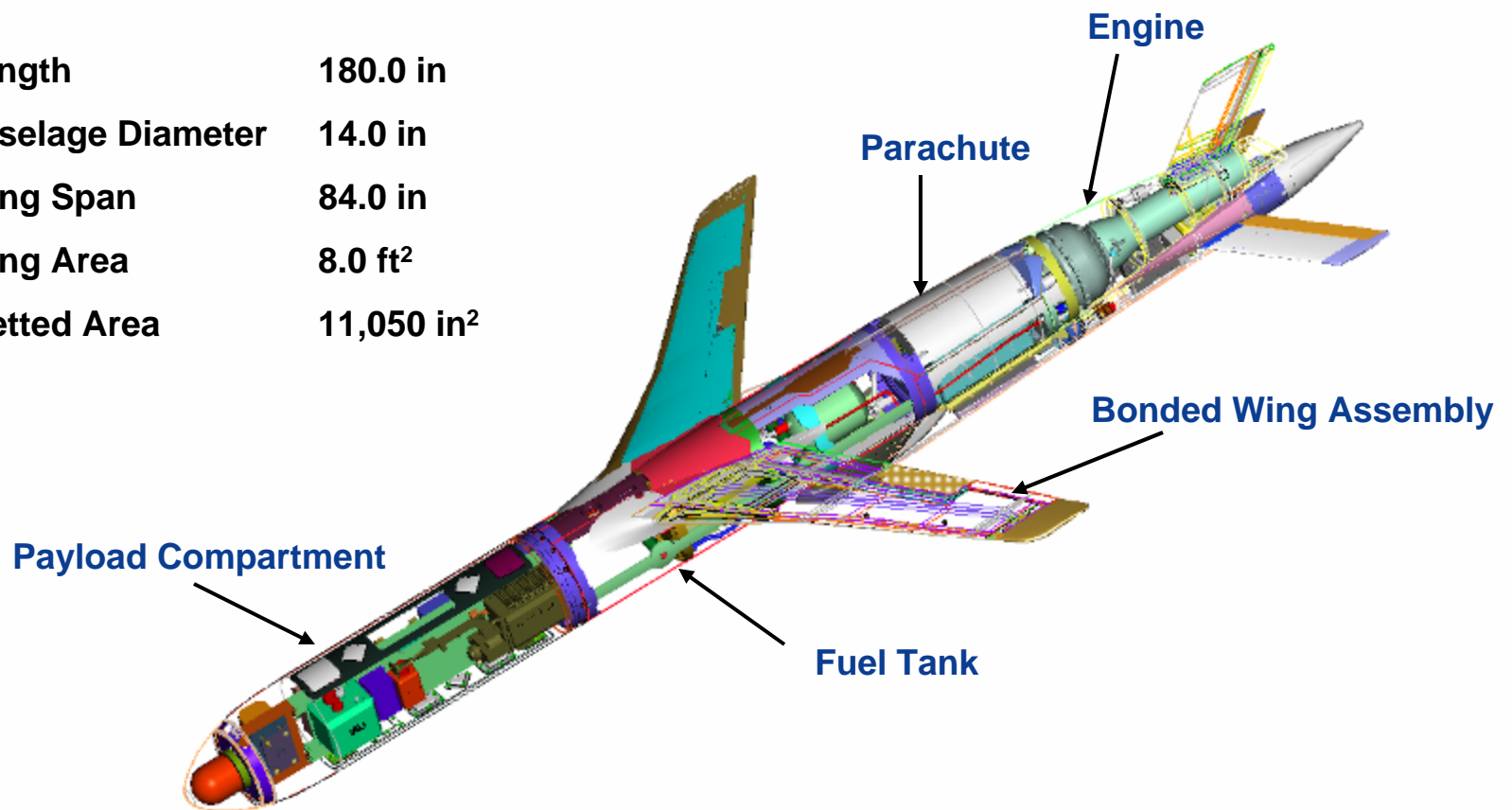
BQM-74F Enhanced Aerial Target

- **BQM-74E/Chukar Capability PLUS...**
- **Increased Speed, Range, Maneuvers & Payload Capability**
- **Modernized Support Equipment (PC Based)**
- **Modernized Mission Planning (PC Based)**

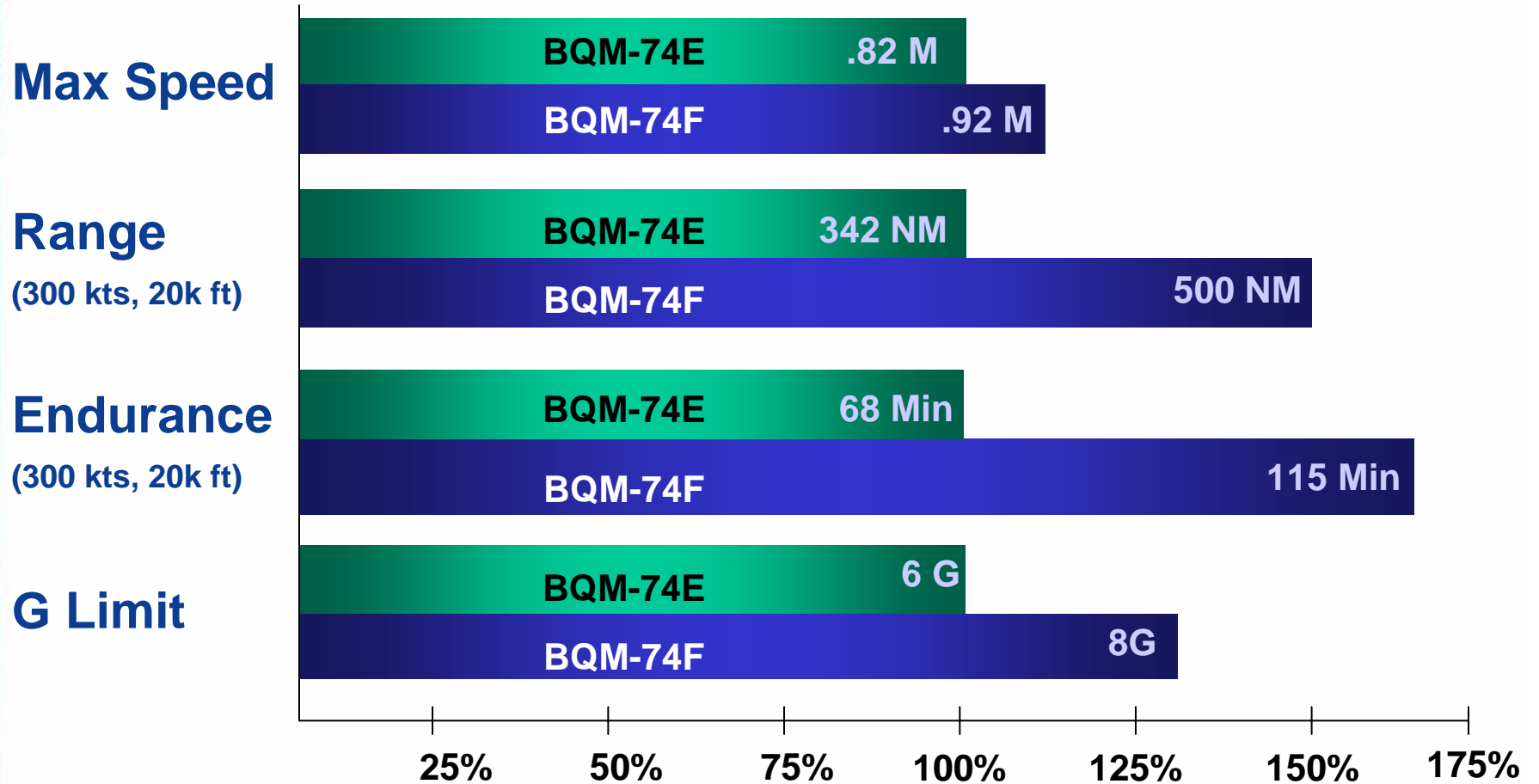


BQM-74F Cut Away View

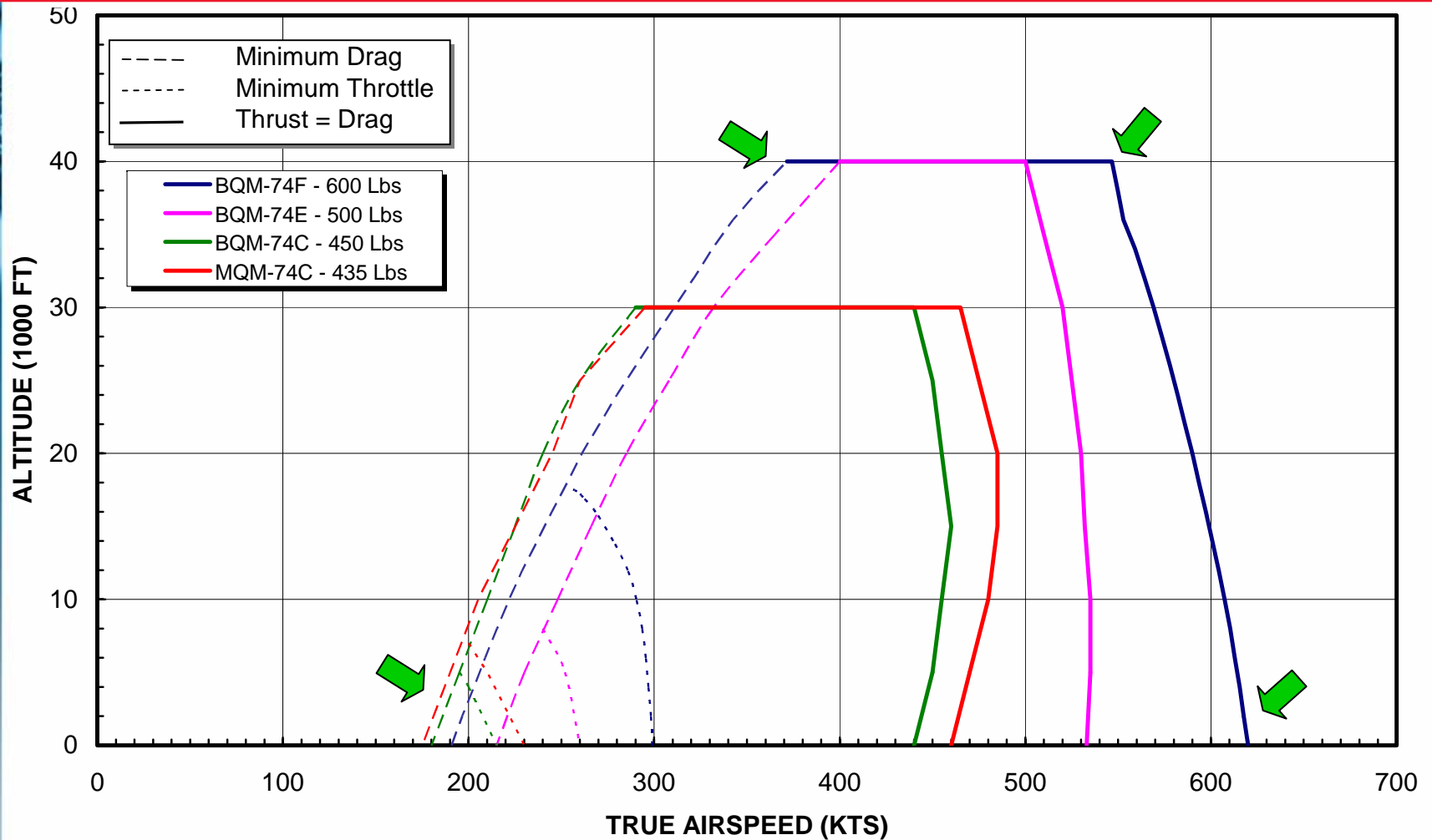
Length	180.0 in
Fuselage Diameter	14.0 in
Wing Span	84.0 in
Wing Area	8.0 ft ²
Wetted Area	11,050 in ²



BQM-74F vs BQM-74E Requirements



Speed-Altitude Envelopes

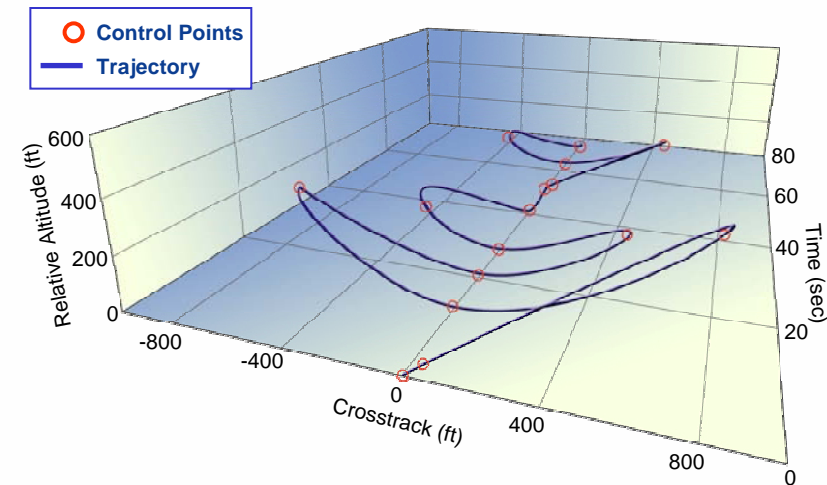
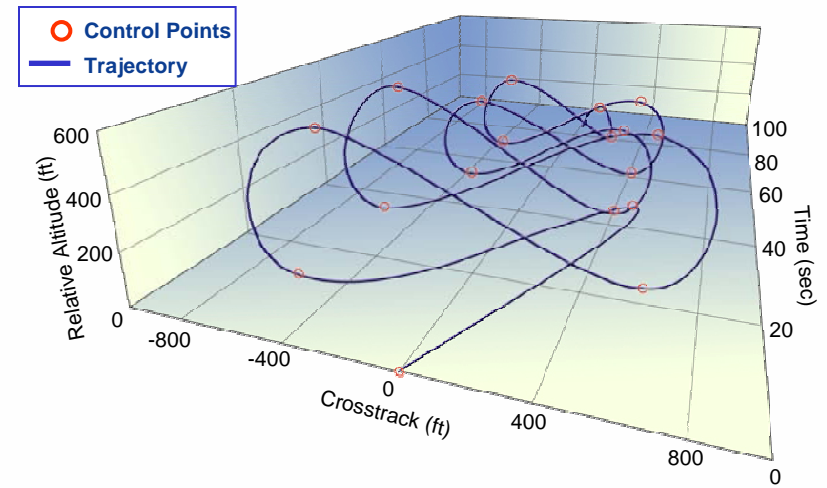


BQM-74F Provides Significant Increase in Performance

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BQM-74F Weave Maneuvers

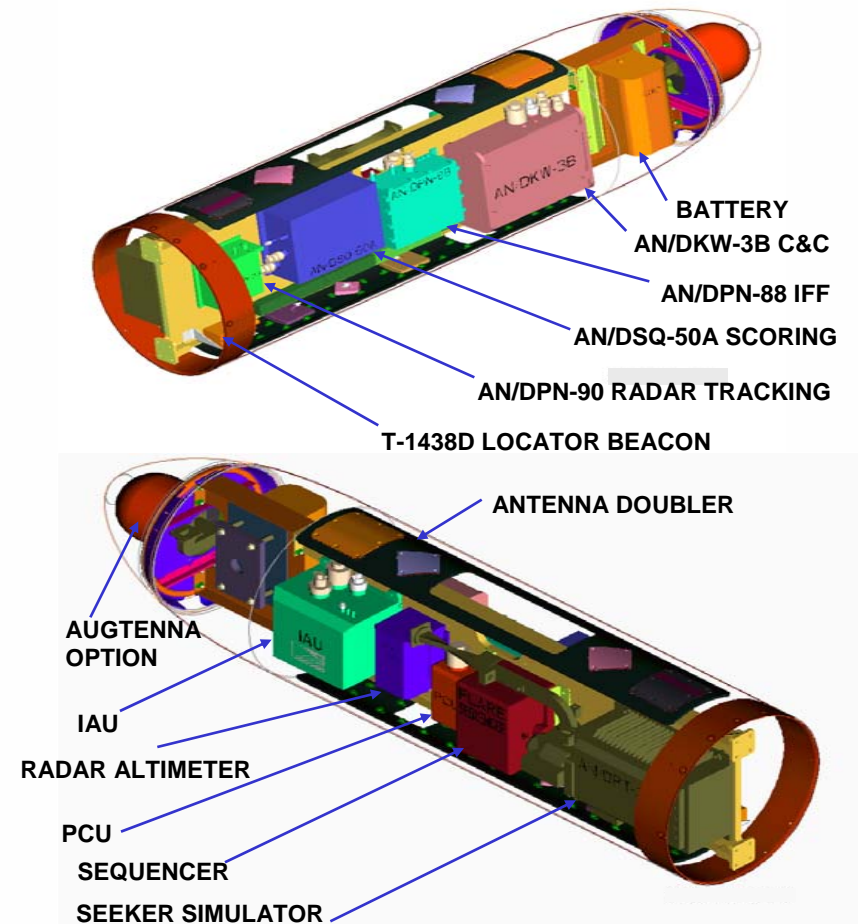
- Programmable High-G Maneuvers in 3D Space
- G-Levels Up to 6 Gs
- Cruise and Engagement Altitudes Down to 7 Feet
- Radar Altimeter with Inertial Aiding Allows Unlimited Roll Attitude
- User Defined Trajectories Using PC Based Weave Planner, Plus 5 Fixed Weave Maneuvers
- Downrange Defined Relative to Distance Traveled or Time from Engagement
- Developed and Demonstrated on BQM-74E, 99-02



The BQM-74F Accurately Replicates Threat Terminal Maneuvers

BQM-74F Mission Payload Capabilities

- **Power Capacity: 2,000 Watts**
- **Payload Volume/Weight: ~ 5 ft³/100lbs**
- **Command and Control Systems**
 - AN/DKW-3B(V), SNTC
- **Radar Altimeter: RT/1378**
- **Scalar Scoring: AN/DSQ-50A**
- **RCS Augmentation**
- **RCS Reduction @ 10GHz Nose-on**
- **IR Augmentation**
 - Flares, Plumers
- **Locator/ID Mission Equipment**
 - IFF AN/DPN-88
 - Range AN/DPN-90(V)
 - Recovery T-1438/D
- **Seeker Simulator: AN/DPT-2B**
- **ECM: ULQ-21 Suite**
- **Growth Capability in Payload Bay**



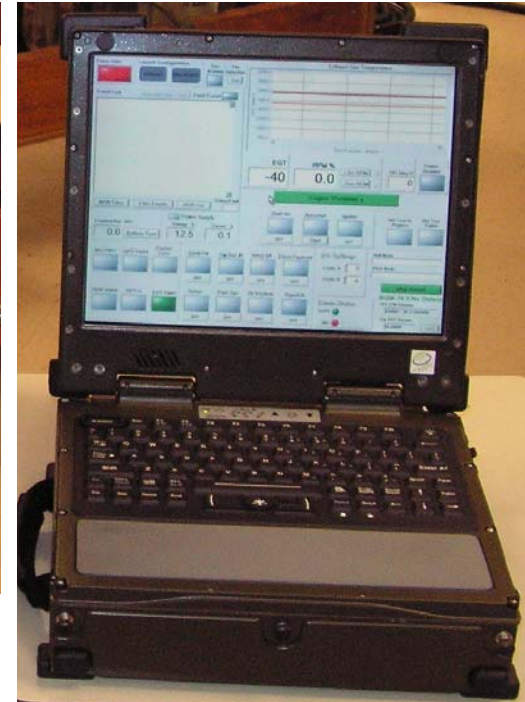
**Rapidly Reconfigurable
Payloads**

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Modernized Support Equipment



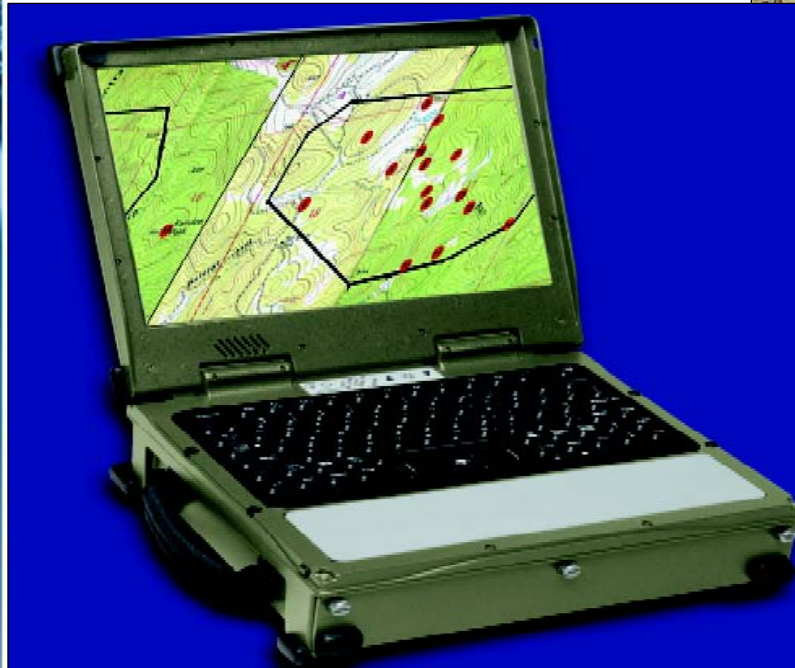
Ground Support Power Supply (GSPS)



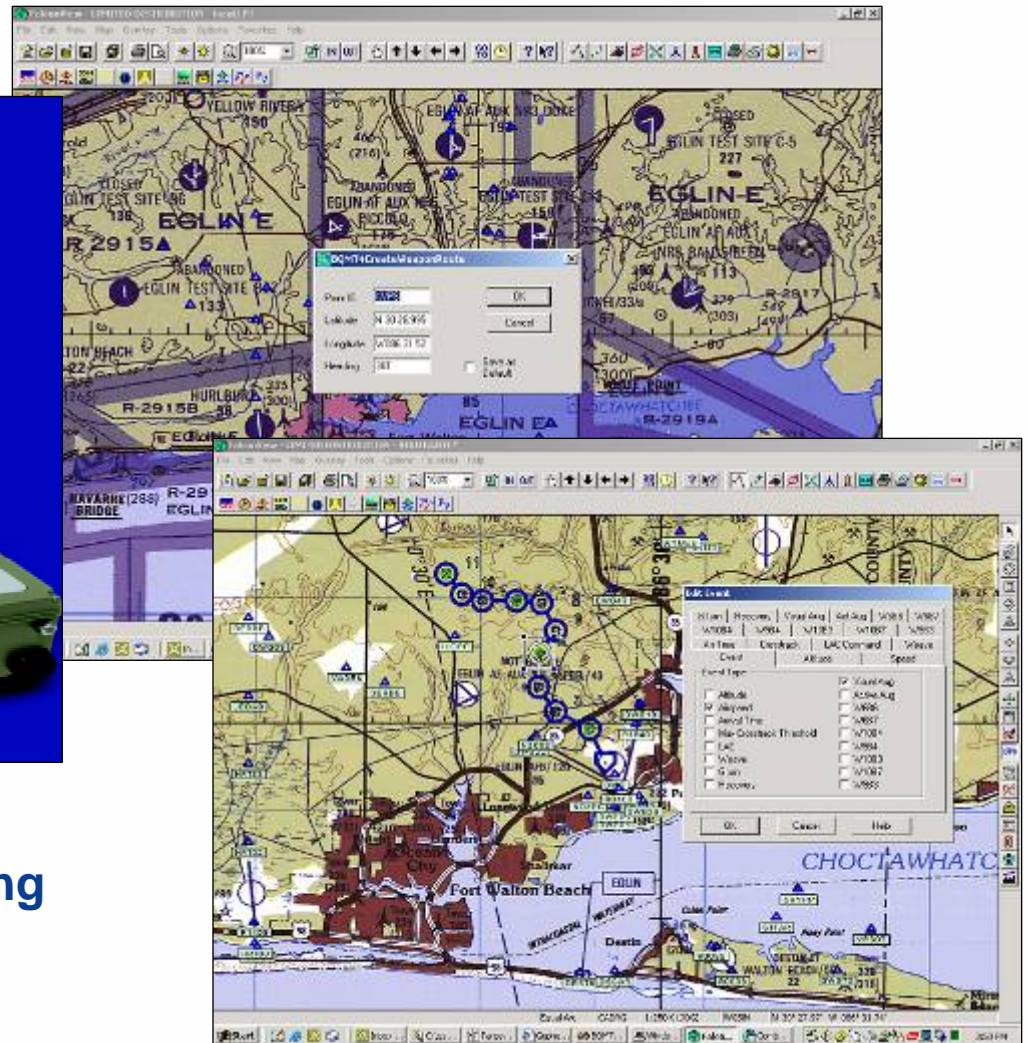
Computer Console

Integrated Test Set Provides User Friendly PC Based System Test Capability and Increased Ground Power for Payloads

PFPS Mission Planning Toolset



**BQM-74F Integrated Test Set
Hosts PFPS for Mission Planning
and Vehicle Loading**



BQM-74F Integrated Product Team Members

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Williams International

BAE SYSTEMS



**Aerospace Systems
Coast Precision
FXC/Guardian Parachute
Mandaree
Performance Plastics**

**Rozendal Associates
Senior Aerospace Composites
Sensor Systems
Smiths Aerospace
Solid Concepts
Viable Power Conversion**

100T-AS-5099

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BQM-34 FIREBEE •

BQM-74E •

BQM-74F •

CHUKAR III

TARGETS

NORTHROP GRUMMAN CORPORATION