



## Employment Techniques

The AH-64D Apache Longbow is capable of fighting as a team, platoon, or company

Techniques include:

- Close Combat Attack
- Deliberate Attack
- Hasty Attack
- Armed Reconnaissance
- Aerial Security



## Manned Unmanned Teaming Level 2 (MUMT-2)

The MUMT-2 system provides the AH-64D Apache with the capability to receive video from the Upper Receiver (UR) and simultaneously transmit and receive video from the Air to Air to Ground (AAG) System.

- MUMT-2 enables the crew to:
  - Transmit ownship video and metadata
  - Relay UAS video and metadata from the UR
  - Transmit up to two simultaneous, or independent sources, to include MTADS, MPD, DVR playback
  - Provide an acquisition source for a wingman, team members, or ground elements
- Transmission range is limited by the number of transmitted sources and the quality of video chosen (high quality = lower ranges)

1-82 Attack Reconnaissance Battalion

M-1415  
Honeycutt Rd  
Fort Bragg, NC  
28310

LTC Andrew Reiter  
CSM Ronald Evans  
CW4 David McNish  
Phone: 910-643-4184



**Wolfpack Publishing Co.**  
"Known the World Over"

# 1-82 Attack Reconnaissance Battalion



*If You Call One Wolf... You get the Pack*



LTC ANDREW REITER  
CSM RONALD EVANS  
CW4 DAVID MCNISH

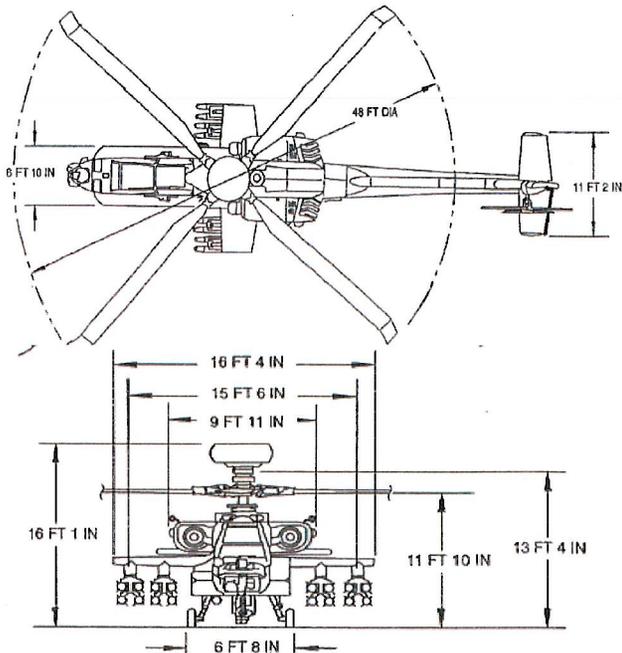
# AH-64D Apache Longbow

## General Characteristics

Crew: 2 (Pilot and co-pilot/gunner)  
 Length: 58ft  
 Height: 16ft 4in  
 Empty Weight: 11,500lbs  
 Combat Load Weight: 18,000 lbs  
 Max Takeoff Weight: 23,000 lbs  
 Cruise: 110-120 knots  
 Loiter: 70 - 80 knots  
 Powerplant: Two General Electric T700-GE-701 Engines

## Performance

VnE: 197 knots at Sea Level  
 Max Cruise: 143 knots  
 Combat Radius: 260 Nautical Miles  
 Ferry Range: 1,000 Nautical Miles  
 Service Ceiling: 21,000ft  
 Rate of Climb: 2,500 ft/min



## Armament

### M230E 30mm Chain Gun

-Maximum 1,200 rounds; or 300 rounds with Extended Range Fuel System (ERFS)  
 -625 Rounds per Minute



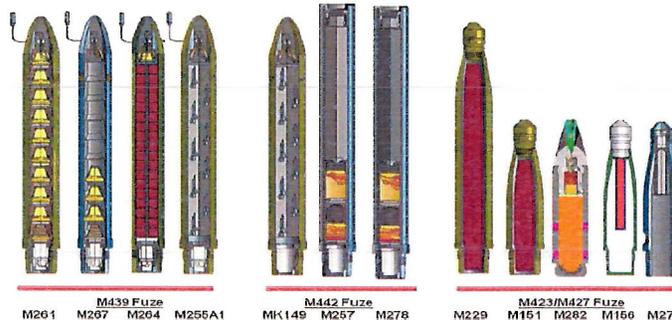
-Fires High Explosive Dual Purpose anti-personnel and anti-material round

### Aerial Rocket Systems

-2.75 inch Hydra Rocket Family consists of 16 variants comprised of six major warhead types mated to a common rocket motor



-Hydra 70 rockets can be fired in direct and indirect modes



### AGM 114 Hellfire Missiles

-Highly accurate precision guided munition (PGM)  
 -Available in semi-active laser (Figure 1) and millimeter wave radio frequency (MMW) (Figure 2)

Fig. 1



Fig. 2



## Sights and Sensors

### Modernized Pilot Night Vision Sensor

-(MPNVS) is the primary sensor used for night flying

MPNVS

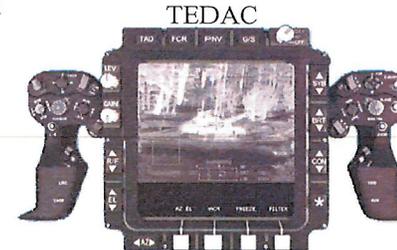


MTADS

### Modernized Targeting and Designation System (MTADS)

-TADS is the primary sight used by the CPG

-CPG interfaces with MTADS via the MTADS Electronic Display Control (TEDAC)



### Fire Control Radar (FCR)

-Used to detect, locate, classify, and prioritize threats

-FCR is capable of detecting stationary and moving targets

FCR



### Integrated Helmet and Display Sight System (IHADSS)

-IHADSS provides head protection, sensor pointing, weapons ballistic calculations and communications

-The Helmet Display Unit (HDU) provides display of TADS/PNVS composite video or symbology to crewmembers for day or night



## Employment Techniques

The RQ-7Bv2 Shadow mission is to support the Ground Commander's Reconnaissance, Surveillance, and Target Acquisition (RSTA) plan and provide near-real time intelligence data throughout the range of military operations.

- NAI and TAI surveillance
- Route, area, and zone reconnaissance
- Intelligence preparation of the battlefield
- Situation development
- Target acquisition
- Indirect fire weapons
- Rear area security
- Combat search and rescue
- Battle Damage Assessment (BDA)
- NBC Posture/Status reporting



127th EN BN, TUAS Platoon

Building C-4513  
Gruber Road  
Fort Bragg, NC  
28307

CW2 Bradley Courson, PL  
WO1 Eric Hauser, Ops Tech  
SFC Jeremy Kuryla, PSG  
Phone: 910-396-1944



1st Brigade  
127th Engineer Battalion  
82nd Airborne Division  
Tactical Unmanned Aerial System  
RQ-7Bv2 TCDL Shadow Platoon



CW2 Bradley Courson, PL  
WO1 Eric Hauser, Ops tech  
SFC Jeremy Kuryla, PSG

## RQ-7Bv2 TCDL Shadow

### General Characteristics

**Crew:** 2 (Aircraft Operator and Payload Operator)

**Length:** 12 ft

**Height:** 3 ft 2 in

**Wingspan:** 21 ft 5 in

**Empty Weight:** 335 to 372 lbs

**Max Takeoff Weight:** 467 lbs

**Airspeed:** 65-110 knots

**Engine:** AR74-1102 Fuel Injected System  
Runs on AVGAS 100 Low-Lead

### Performance

**Max Commanded Airspeed:** Dependent on Temp and Pressure Altitude.

**Signal Radius:** 30 km with Portable Ground Data Terminal

125 km with Universal Ground Data Terminal

**Service Ceiling:** 16,000 ft MSL

**Rate of Climb:** 500 ft / min for planning



### Tactical Common Data Link (TCDL)

The TCDL system is a secure data link designed to send encrypted data and streaming video to ground stations at high speeds. The data link uses two Ku Band uplinks for payload and vehicle control, and one Ku Band downlink for sending imagery, video, and other sensor information.

### Manned Unmanned Teaming (MUMT)

TCDL Shadow will allow future growth and connectivity with other platforms. Combat Aviation Brigades are currently being fielded Shadows as OH-58D Armed Reconnaissance Squadrons are inactivated.

Levels of Interoperability (LOI)

LOI 2 - Monitor - Allows receipt (video and metadata) of AV

LOI 3 - Control - Allows complete control of Payload

LOI 4 - Allows complete control of the AV and Payload except for takeoffs and landings

LOI 5 - Allows complete control of the AV and Payload to include during takeoffs and landings

During all times the Universal Ground Control Station will monitor AV to ensure that if an emergency occurs that they will take back control immediately. Air Worthiness Release dated 31Oct2014 the RQ-7Bv2 interaction with AH-64 is limited to LOI 2.

### Payload Packages

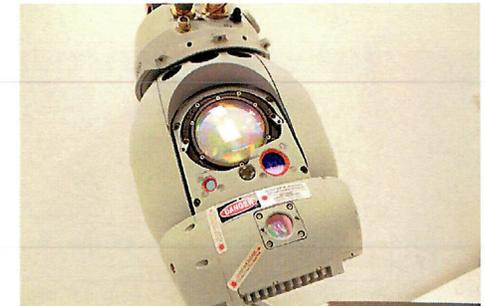
#### **Plug-in Optronic Payload (POP) 300**

- Electro-optical gyro-stabilized system with Day TV, Near-IR, and Laser Pointer



#### **Plug-in Optronic Payload (POP) 300D**

- Electro-optical gyro-stabilized system with Day TV, Near-IR, Laser Pointer, and Laser Range Finder / Designator (LRFD)
- 5KM slant distance max recommended designation distance



#### **Communication Relay System (CRS)**

- Allows communication between Shadow operators and Ground Unit or as a Relay between two Ground Units
- FM - Single Channel, Frequency Hopping, Plain Text, Cipher Text capable