MAE UAVs

Naval UAV Offsite Conference
20 May 1998
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Background

◆ The Navy has a Medium Altitude Endurance (MAE) Requirement; See CNO Memo of 18 Oct 95, and Naval Requirements Memo of 1 Feb 96.

◆ Debate over how The Navy would use Predator to fulfill its MAE requirement went on for many months; finally, a Marinization Study was completed on 1 Oct 1996. The CNO made the decision to not go forward with a fully marinized Predator system as the solution for the Navy’s MAE requirement; but to use data receipt and positional control of the Air Forces Predator systems.

◆ On 29 Jan 97 a letter to congress was signed by ASN RDA & DARO stating that based on the results of the marinization study that, “The Navy has decided not to develop a launch and recovery capability for the Predator UAV from CV/CVN and LHA/LHD class ships.”

◆ The Navy has re-examined its earlier decision against marinizing Predator several times.
Navy’s Medium Altitude Endurance (MAE) Unmanned Aerial Vehicle (UAV) Requirements

- **NAVAL REQUIREMENTS MEMORANDUM -- 1 FEB 96**
  - 500NM RANGE
  - 24 HOURS ENDURANCE (ON STATION TIME)
  - EO/IR PAYLOAD
  - SAR
  - DIRECT REAL-TIME RECEIPT OF IMAGERY
  - SATCOM FOR BEYOND LINE OF SIGHT OPERATIONS
  - MISSION PLANNING INTEGRATION WITH TAMPS
  - ABILITY TO RETASK UAV FROM SHIPS AND ASHORE
  - INTEGRATION OF CHBDL FOR LINE OF SIGHT OPERATIONS
  - INTEGRATION WITH JSIPS, TEG, DIWS, AND TMPCU SYSTEMS
  - COMPLIANCE WITH GLOBAL COMMAND AND CONTROL SYSTEM
  - LAUNCH AND RECOVERY FROM LHA/D & CV/CVN CLASS SHIPS
  - AUTOMATIC LAUNCH & RECOVERY CAPABILITY WITH SHIP MOTION SENSING
  - HEAVY FUEL ENGINE
  - CORROSION RESISTANCE, ADAPTABLE & COMPATIBLE WITH SHIPBOARD ENVIRONMENT
  - ELECTROMAGNETIC INTERFERENCE SHIELDING

- **CURRENT PREDATOR SYSTEM:**
  - CAN MEET 6 OF THESE REQUIREMENTS (NOT QUITE 24 HOURS ENDURANCE AT 500NM)
  - 5 MORE WILL BE ACHIEVED THROUGH THE TCS
  - THE REMAINING 5 WILL ONLY BE ACHIEVED THROUGH MARINIZATION MODIFICATIONS
How Many Predator Systems?

- During the Predator ACTD, USACOM identified three (3) Predator systems as the answer for Navy operations in support of a two MRC scenario.
- A system consists of 4 air vehicles, 1 ground control station, 1 Trojan Spirit II (or Naval equivalent), and 60-65 personnel (Air Force numbers)
How Much?

- Predator systems at $25-30M per systems.
- Marinization costs according to the feasibility study:
  (Based on : 3 systems =12 air vehicles, 12 CV/CVN ship alts)
  - NRE (RDT&E): $10,563K
  - Air Vehicle: $508K \times 12 = 6,096K
  - Ship: $1,760K \times 12 = 21,120K
- Manpower: $3.1M per system per year
- OMN: $2M per system per year
- BOTTOM LINE: It will take at least $120M to procure a marinized Predator program for the Navy, plus an additional $15M per year for MPN and OMN.
Pro/Cons

◆ Pro’s

- Fill important Warfighting requirement
  - Significant TAC RECCE advance
- Proven capability of Predator
- Congressional support
- TCS compatibility

◆ Con’s

- Cost of the base system plus marinization modifications
- Limited to big deck ships; principally CV/CVNS.
- Navy MAE requirement can be partially satisfied by Air Force Predators
- Developmental risks: Heavy fuel engine and other Marinization requirements.
- Survivability in Medium to High threat environment.
Recommendation & Decision

❖ Stay with Current Plan.
  ● Work on Predator CONOPS with Air Force.
  ● Use Predator and/or Predator Surrogate UAVs at Fallon.
  ● Stress importance of Tactical Control System (TCS).
BACKUP

THE REFERENCES

◆ 13 JAN 95 ADM BOORDA MEMO
◆ VCNO LETTER OF 18 OCT 95; NAVY REQUIREMENTS FOR UNMANNED AERIAL VEHICLES (UAVS)
◆ VCNO & ACMC MEMO OF 1 FEB 96; NAVAL UNMANNED AERIAL VEHICLE (UAV) REQUIREMENTS
◆ MARINIZED MAE UAV MISSION NEEDS STATEMENT (MNS); APR 96 (IN STAFFING)
◆ RADM BENNITT'S MSG
◆ PREDATOR MARINIZATION FEASIBILITY STUDY; 1 OCT 96
◆ ASN RDA & DARO LETTER TO CONGRESS ON PREDATOR MARINIZATION; 29 JAN 97
◆ CINCLANTFLT MSG 27 FEB 97; VTOL UAV VISION
◆ THE NAVY’S UAV PROGRAM OF RECORD; VADM PILLING’S CONGRESSIONAL TESTIMONY, APR 97.
◆ THE NAVAL POSITION ON TACTICAL UAV REQUIREMENTS; 22 MAY 97
◆ CNO RESPONSE TO ADM LOPEZ MSG
◆ PREDATOR ORD
OPTIONS

- **STAY WITH CURRENT PLAN.** WORK ON PREDATOR CONOPS WITH AIR FORCE AND PREDATOR SURROGATE UAVS.

- **SEEK ORGANIC PREDATORS FOR NAVY.** GO AHEAD WITH COST BENEFIT ANALYSIS, AND PREDATOR FLIGHT DEMONSTRATION ABOARD CV/CVN SHIP.

- **SEEK NEW MAE SOLUTION.** EXAMPLE -- FOCUS ON VTOL TUAV. FROM THE VTOL TUAV EVOLVE A VTOL UAV WHICH CAN SUPPORT THE MAE TYPE REQUIREMENTS FOR STRIKE WARFARE.