

Counterinsurgency Aircraft An Analysis of Two Alternatives

ISPA/SCEA Presentation

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Preview

- Purpose/Reason for COIN Specific Aircraft
- Background
- Davis' Criteria & Conclusion
- Peeler's Extension/Next Step
- Acquisition Avenue/Alternatives
- Analysis of Alternatives
- Recommendation

Reason for COIN Aircraft

- Quick acquisition of COIN a/c for GWOT
- Equip/Train others to counter insurgency
- Provide traits/char not currently available
- Affordable in mass quantities
- FID Training w/ a/c in US inventory
- Affordable a/c for TW nations

Purpose of the Paper(s)

- Stimulate the debate
- Qualify & Quantify Davis' advocacy
- Possibility & Affordability
 - Davis argued desirability
- Provide map for viable avenue to procure
- Alternative to ACC fighter a/c procurement

Background

- Arthur D. Davis' paper
 - “Back to Basics: An Aviation Solution to COIN Warfare”
- Argued the desirability of a COIN a/c
- Looked at History
- Analyzed Current Situation
- Provided Criteria for such an a/c
- Suggested the T-6A Texan II as alternative

Davis' Criteria

A COIN a/c should have the following characteristics:

- Off-the-shelf technology
- Long range & loiter capability
- STOL capability
- Ability to operate from austere airfields
- Diverse weapons-carrying capability
- Good navigation & fire-control systems
- Good pilot visibility
- Speed & maneuverability at low-to-med altitudes
- Ability to absorb ground fire with a high degree of survivability

Peeler's Extension/Next Step

- Investigate possibility of procuring COIN a/c
- Do so w/understanding of Air Force politics
- Provide: (qualify and quantify)
 - Methodology (how this can be done)
 - Cost (what are the costs)
 - Procurement off-the-shelf
 - O&M / O&S based on combo of actuals & analogy
- Decision Quality Data for COIN Options

Acquisition Avenue

- ACC buys fighter a/c (not viable)
- Not going to buy slow CAS/FID/GWOT a/c
- SOCOM has acquisition authority **AND**
SOCOM has GWOT/FID/SOF responsibility
- Couple these to get avenue to buy COIN a/c

Acquisition Alternatives

- 1) Do Nothing
- 2) Stand Up an Organic SPO for R&D
- 3) Buy COTS suited for COIN Mission
- 4) Continue *status quo* (*ad hoc* platforms)

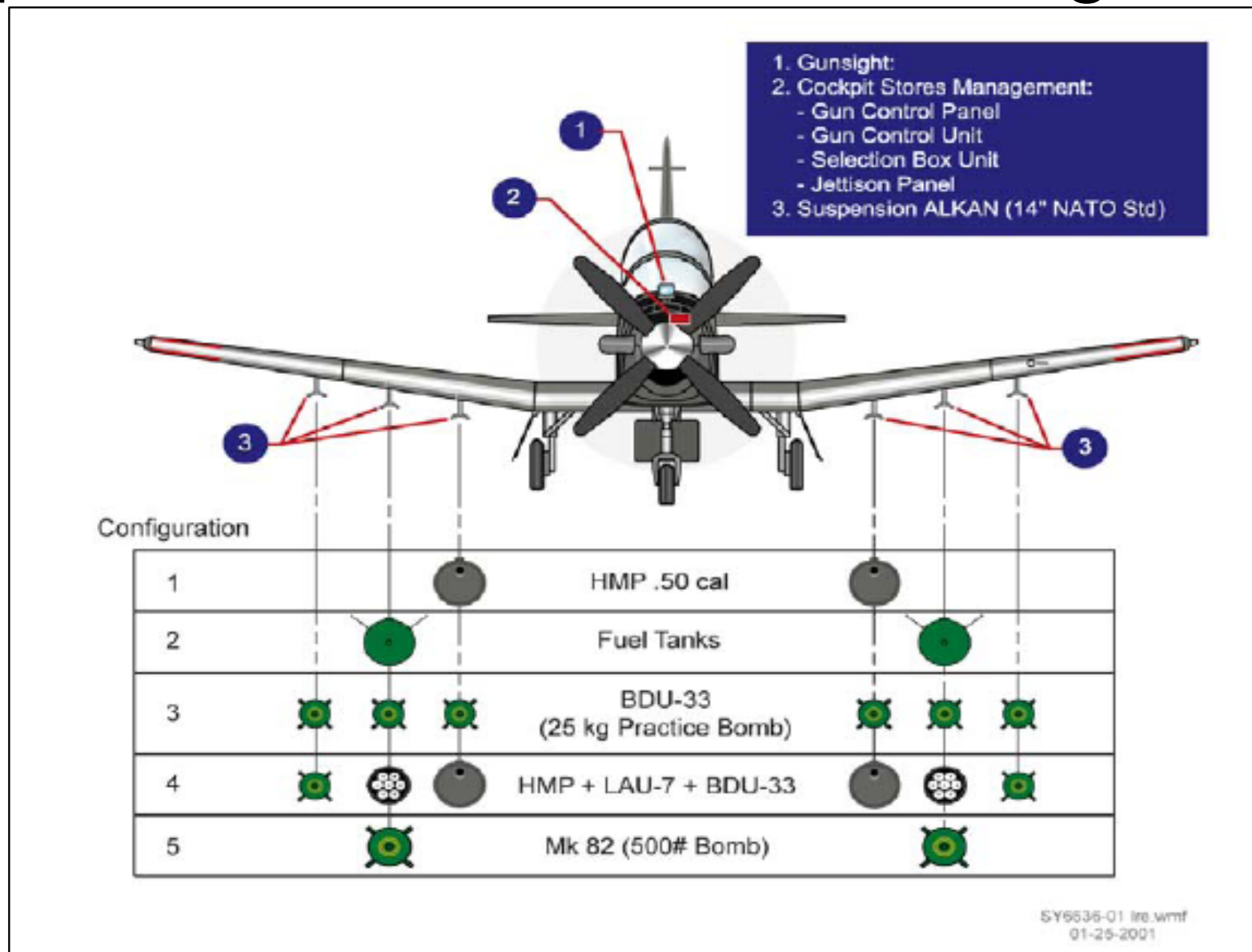
Analysis of Platforms

- Raytheon T-6A/B/NTA Texan II
- Stavatti SM-27S/SM-27T Machete

- Performance
- Ability to meet Davis' 9 Criteria
- Cost

- Compared to past and present CAS a/c

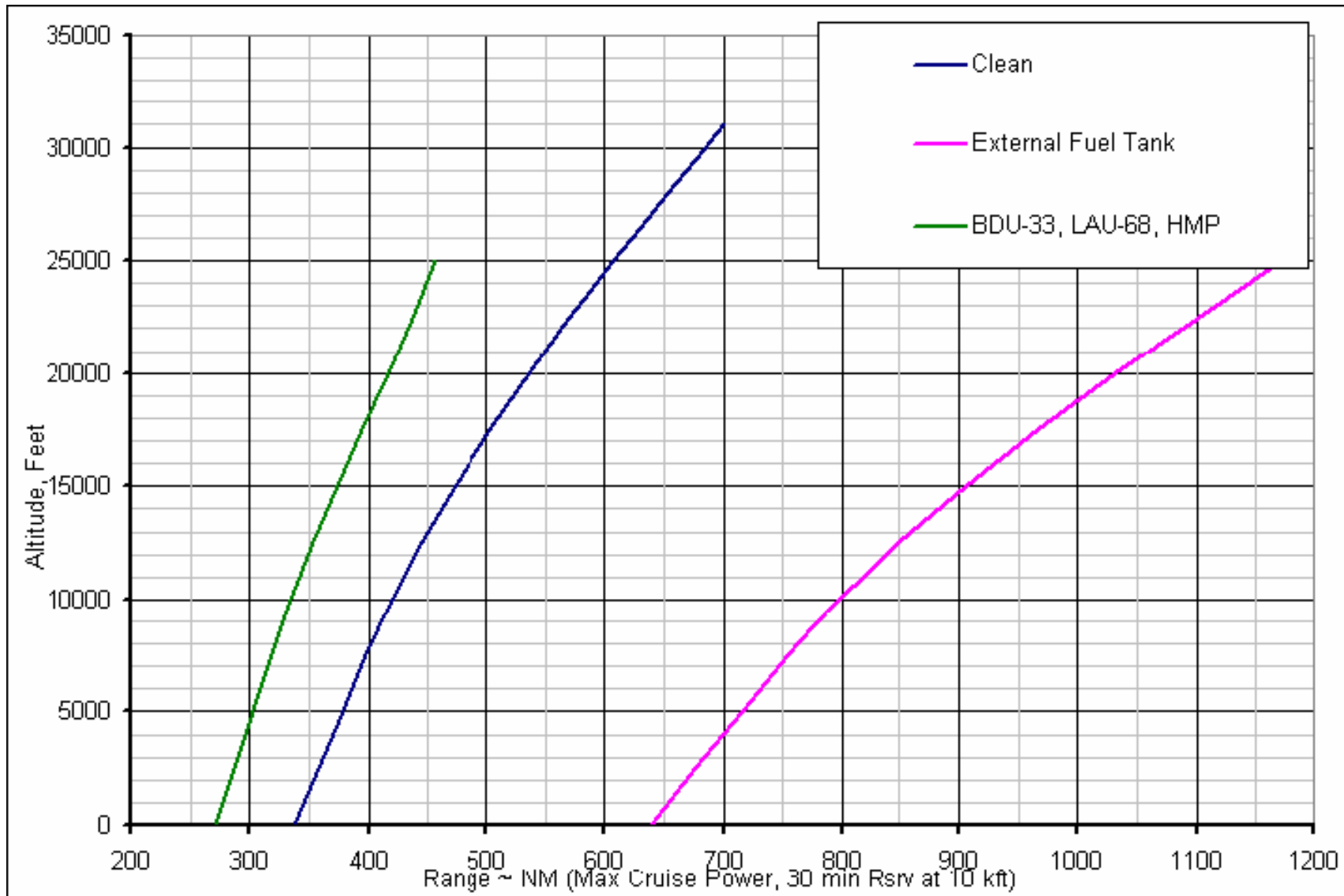
Typical T-6A NTA Stores Configuration



Raytheon T-6A NTA



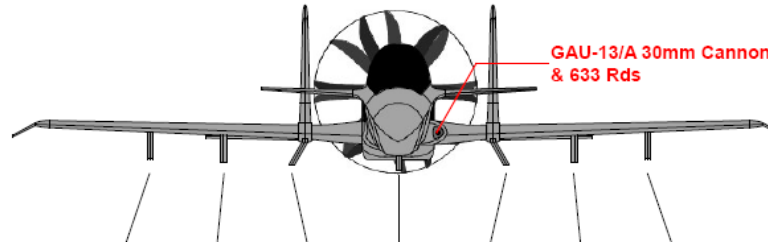
T-6A NTA Range/Altitude



Stavatti Machete



SM-27 Stores Configuration



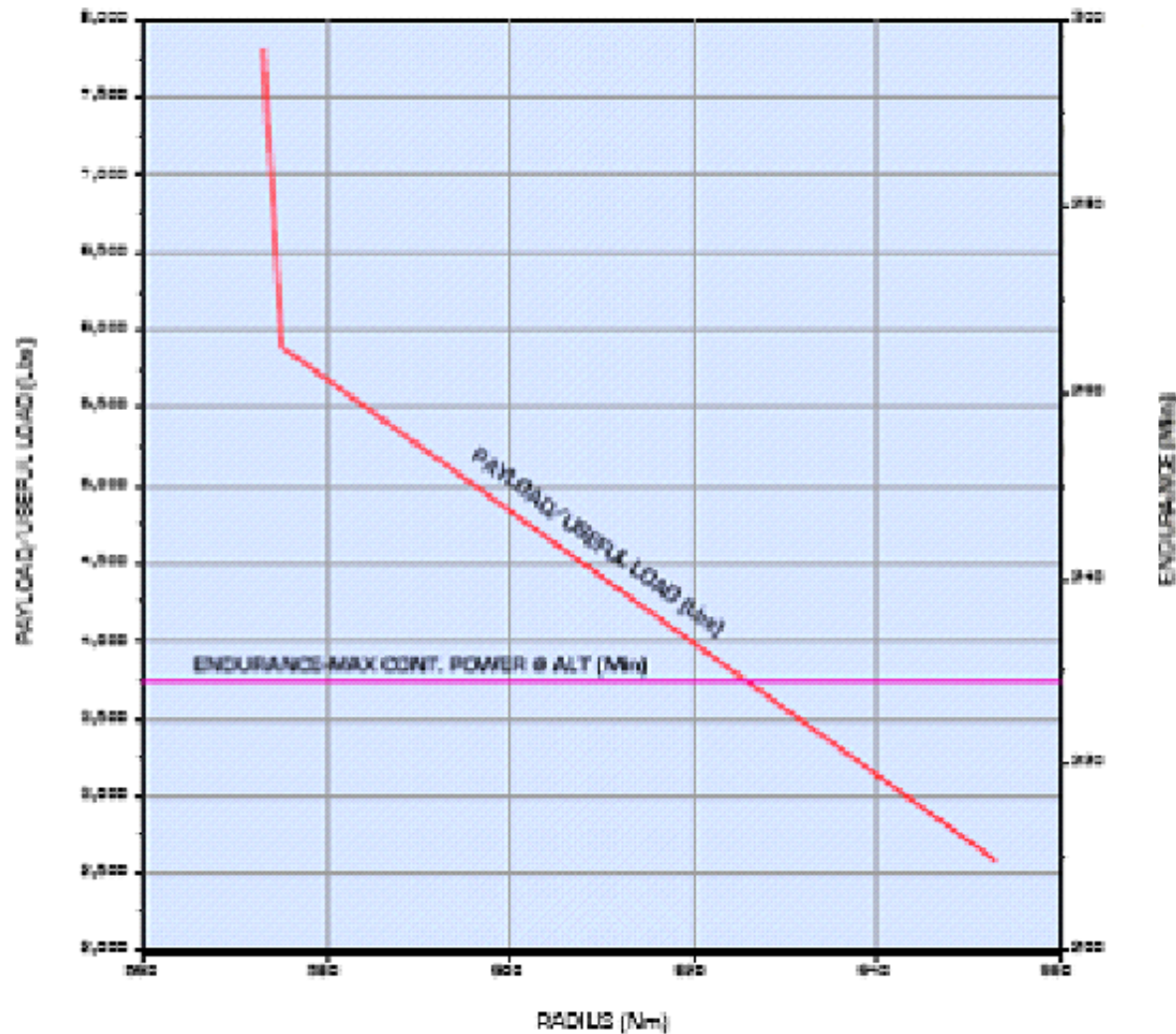
STATION NUMBER	1	2	3	4	5	6	7
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AIM-9 Sidewinder	✕	✕				✕	✕
AGM-65 Maverick	⊗	⊗	⊗		⊗	⊗	⊗
GBU-38 JDAM/Mk.82	⊗⊗	⊗⊗	⊗	⊗⊗	⊗	⊗⊗	⊗⊗
GBU-32 JDAM/MK.83	⊗	⊗	⊗	⊗	⊗	⊗	⊗
GBU-31 JDAM/Mk.84		⊗	⊗		⊗	⊗	
GBU-24 PAVEWAY III		⊗	⊗		⊗	⊗	
CBU-105/115 SFW	⊗	⊗⊗	⊗	⊗	⊗	⊗⊗	⊗
CBU-107 PAW	⊗	⊗⊗	⊗	⊗	⊗	⊗⊗	⊗
AGM-154 JSOW	⊐	⊐	⊐		⊐	⊐	⊐
LAU-131/A Rocket Pod	●●	●●●	●●		●	●●●	●●●
M134D Gun Pod	⊙	⊙	⊙	⊙	⊙	⊙	⊙
ALQ-184(V)9 ECM Pod	⊖	⊖	⊖	⊖	⊖	⊖	⊖
150 U.S. Gallon Tank		○	○		○	○	
230 U.S. Gallon Tank		○	○		○	○	

Hardpoint Rating @ 7.5g	1,000 lbs	2,500 lbs	2,500 lbs	1,000 lbs	2,500 lbs	2,500 lbs	1,000 lbs
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SM-27 Payload to Combat Radius

PAYLOAD/COMBAT RADIUS
SM-27S/T MACHETE™
Including 20 Minute On-Station/Combat Allocation



MANUFACTURER AIRCRAFT PROFILED	STAVELAND SM-27 MACHETE™	ROYAL CANADIAN T-6A TEXAN II	DOUGLAS A-1E SKYRAIDER	FAIRCHILD A-10A THUNDERBOLT II
Crew	1 to 2	2	1	1
Powerplant(s)	1 x PW127G	PT6A-68	1 x R-3350-26WB	2 x TF34-GE-100
Max Power (SHP) / Thrust (LBS)	2,920 SHP	1,100 SHP	3,050 HP	18,130 LBS
Span (ft)	43.0	33.4	50.8	57.5
Length (ft)	34.0	33.3	38.8	53.3
Height (ft)	12.0	10.7	15.8	14.7
Wing Area (sq ft)	194	175.3	400	506
MTOW (lbs)	15,500	6,500	25,000	50,000
Empty Weight (lbs)	7,120	4,709	12,313	24,959
External/War Load (lbs)	5,250	2,300	8,000	16,000
Internal Fuel (lbs)	6,600	1,163	NO DATA	10,700
Internal Fuel (USG)	400	164	NO DATA	1,646
Stores Stations (No.)	7	6	15	11
Internal Gun	1 x 30mm KCA	None	4 x 20mm	1 x 30mm GAU-8
Maximum Speed @ SL (Kts)	350	316	276	381
Maximum Speed @ ALT (Kts)	403	316	297	380
Maximum Cruise @ ALT (Kts)	360	230	164	336
Stall Speed @ SL (Kts)	97	74	NO DATA	NA
Max Climb Rate @ SL (ft/Min)	7,050	4,500	2,300	6,000
Service Ceiling (ft)	44,000	35,000	31,168	45,000
Tactical Radius, Internal Fuel (nm)	700	400+	NO DATA	540
Ferry Range, Internal Fuel (nm)	1,530	900	1,300	2,130
Max Range, External Tanks (nm)	3,600	1,125	NO DATA	2,454
Wing Loading (lbs/sq ft)	75	37.1	62.5	99
Power/Weight or Thrust/Weight	5 lbs/SHP	5.9 lbs/SHP	8.1 lbs/HP	0.37 to 1
Load Limits (g)	7.5	7.5	NO DATA	7.33
Takeoff Distance (ft)	1,678	1,775	NO DATA	4,000
Landing Distance (ft)	2,081	1,900	NO DATA	2,000
Flyaway Cost (Millions USD)	6 to 9	4 to 7	NO DATA	18

Recommendation

- Almost a dead heat wrt cost
- **T-6A Texan II** already in production
- SM-27 Machete still on the drawing boards
 - Either a good pick for USSOCOM purposes
- The A-1 Skyraider or the OV-10 Bronco still better for the FAC/CAS/FID/COIN mission

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Questions / Discussion

- Agree/Don't Agree with Need
- Add/Delete Performance Criteria
- Disagree with Platform Alternatives
- Argue with Performance Analysis

- More to do...
 - How to better do/equip FID/FAC/CAS
 - Cultivate relations w/countries need in GWOT