



Acquisition Research Program:
Creating Synergy for Informed Change

EMERGING PATTERNS IN THE GLOBAL DEFENSE INDUSTRY

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INTRODUCTION

- A SERIES OF PROJECTS
 - ECHOES ACROSS THE POND ... (F-35 consortium, UK Defense Industrial Strategy, EADS KC-30 proposal)
 - NEW PATTERNS OF COLLABORATION & RIVALRY ... (B787, KC-X, Entry Strategies)
 - GLOBAL COOPERATION AND COMPETITION ... (KC-X, A-400M, Nordic Defense Bloc [or not])
- OBJECTIVES
 - UNDERSTANDING A COMPLEX AND CHANGING ENVIRONMENT ... MILITARY, ECONOMIC AND INDUSTRIAL AFFAIRS
 - FINDING NEW EXPLANATORY MODELS



OUTLINE

- THE KC-X DRAMA (CONTINUED)
- C-27 AND GLOBAL AEROSPACE GLOBALIZATION
- RISE OF UNMANNED SYSTEMS (UAVs)
 - UAVs IN CONTEXT: MILITARY AND INDUSTRIAL AFFAIRS
 - INDUSTRIAL PERSPECTIVES
 - RAVEN SMALL UAV AND THE ARMY



KC-X COMPETITION: a Government Politics Perspective

- DRAFT REQUEST FOR PROPOSAL (RfP) OF SEPTEMBER 2009
 - PRICE PER AIRCRAFT EMPHASIS SEEMED TO FAVOR THE BOEING ENTRY
 - CRITICAL RESPONSE FROM NG & EADS
- FINAL RfP NOT MUCH CHANGED
 - THREAT TO NOT RESPOND NOT AS EFFECTIVE AS IN THE EPAST
 - APPEARED TO BE SHAPED BY THREAT OF PROTEST



KC-X SELECTION CRITERIA

Responsive to RfP?
Meets 372 Mandatory Requirements?

Pass-Fail Tests

Total Proposed Price

PRICE ADJUSTMENTS
Warfighting Effectiveness
Fuel Expense
MILCON Expense

Contract Award if TAP difference is $\geq 1\%$

TOTAL ADJUSTED PRICE (TAP)

Non-Mandatory Reqt's Score
(93, 5 Groups)

“Tiebreaker”



PLAYERS: A GOVT POLITICS VIEW

- WTO LITIGATION: vs. US (Boeing), vs. EU (EADS); BOTH COMPLAINTS UPHELD
- CONGRESSIONAL PRESSURE
- INDUSTRIAL PLAYERS
 - NG WITHDRAWS
 - EADS WITHDRAWS AND RECONSIDERS
 - BOEING ENTERS, RECONSIDERS, STAYS IN
 - OTHER BIDDERS: United Aircraft (Russia), Tupolev (Ukraine)
- AWARD (FINALLY) IN 2011



KC-X REMARKS

- ENOUGH TO MAKE ONE WISH DARLEEN DRUYUN HAD GONE UNDETECTED
- HOW CAN AN ACQUISITION SUITABLE FOR FIXED-PRICE CONTRACT TAKE SO DARN LONG?
- A PERFECT STORM OF SYSTEMIC DYSFUNCTIONALITIES: BUREAUCRATIC, LEGAL POLITICAL



C-27 AND GLOBALIZATION IN THE AEROSPACE INDUSTRY

- Upgrade of Fiat G.222 twin-prop, high-wing, rear-ramp small airlifter
- L3 Communications U.S. prime after withdrawal of Boeing
- Lockheed Martin provided technical assistance to Alenia, originally as offset for Italian buy of C-130J Super Hercules
- C-27 has same cockpit, avionics and engines as C-130J
- Original U.S. buy was 75; reduced to 38.



C-27 and Contemporary Military Affairs

IMPACT OF IRAQ AND AFGHANISTAN

- Importance of fixed-wing airlift for convoy replacement and tactical resupply
- ... better suited than C-130s and C-17s

CHANGING US DOCTRINE & POLICY

- TRADOC (Army) considering expanding the role tactical fixed-wing airlift
- C-27J initially to ANG only
- Alenia to convert 18 G.222s to “C-27/G.222” standard for use by Afghan National Army Air Corps



C-27 POLICY CONTEXT

- Italy considers itself in an defense industrial “special relationship” with the U.S.
 - systematic purchase of many U.S. weapon systems
 - Prominent role in F-35 consortium
 - Original C-27 production plans in US
 - C-27/C-130J commonality
- Focus shifted, around 1990, to developing indigenous industry, with champions Finmeccanica and AugustaWestland (part of EADS)
- Finmeccanica is well positioned as a U.S. partner with aggressive U.S. acquisition strategy.
- Lockheed Martin a subcontractor, not partner of Alenia



RISE OF UAVs

- ... WITHIN CONTEMPORARY MILITARY AND INDUSTRIAL AFFAIRS
- ... FROM AN INDUSTRIAL PERSPECTIVE
- ... CONSIDERING CASE STUDIES, SUCH AS RAVEN (SMALL ARMY UAS)



UAVs IMPACT IN CONTEMPORARY MILITARY AFFAIRS

- LIMITED SUCCESS WITH INITIAL DEMONSTRATIONS (e.g., in Vietnam War)
- INCREASED USEFULNESS ... WITH INFORMATION TECHNOLOGY ENHANCEMENTS
- A USEFUL RESPONSE (CONTINUOUS PRESENCE) TO THE TERRORIST-INSURGENT COUNTER RMA
- CURRENT AERIAL “HOTHOUSE” FOR UAVs FAVORABLE FOR DEVELOPMENT



UAVs IN CONTEMPORARY DEFENSE INDUSTRY: IMPLICATIONS OF SMALLER SCALE PROJECTS

- OPENINGS FOR SMALLER FIRMS, LIKE
 - GENERAL ATOMICS
 - FRONTIER AIRCRAFT (now part of Boeing)
- OPENINGS FOR MORE NATIONS
 - ISRAEL
 - SINGAPORE
- FIRM-FINANCED DEVELOPMENT PROJECTS



INDUSTRIAL PERSPECTIVES

- INTERVIEWS WITH ANONYMOUS RESPONDENTS FROM 7 UAV FIRMS ... 6 IN US
- KEY RESPONSES
 - FROM OLIGOPOLY TO COMPETITION
 - LIMITATIONS, TO INCLUDE SEE-AND-AVOID CAPABILITIES
 - NOT SO CHEAP ... SUPPORT TAIL
 - NOT AS EXPENSIVE ... E.G., LESS FLIGHT TRAINING NEEDED



KEY RESPONSES (CONT.)

- CORE COMPETENCY: LONG-ENDURANCE MISSIONS, ESPECIALLY ISR
- UAVs FREQUENTLY OVER-ENGINEERED ... SERVICE SPECS FOR AIR VEHICLES
- SPECIAL ACQUISITION PROCESSES ... SIGNIFICANTLY FASTER
- UAVs' SHORT OPERATIONAL LIFE



KEY RESPONSES

- SMALL UAV FIRMS INSIDE LARGER FIRMS
 - LARGER FIRMS TYPICALLY MORE EXPERIENCED IN DEALING WITH DOD
 - RESULTS DEPEND, *INTER ALIA*, ON LARGER FIRMS' CULTURE ... ESP. RISK TOLERANCE
- EXPORT RESTRICTIONS ONEROUS ... "BANE OF OUR EXISTENCE"



RAVEN SMALL UNMANNED AERIAL SYSTEM (SUAS) ORIGINS

- Late 90s: Special Operations Community interested in man-portable UAV
- FY 98-02 Military Operations in Urban Terrain ACTD focused on identifying technology solutions
- FY02-06 Pathfinder ACTD supported further development into a sophisticated SUAS



RAVEN CHARACTERISTICS

- Modular, rugged “snap-together” construction
- Hand-launched & “deep stall” landed
- Semi-autonomous with GPS navigation
- Wingspan 4.5 feet; Wt 4 lb; Endurance 80 – 100 Min; Range 10 KM; Speed 20 – 70 MPH
- Quiet (battery powered)
- Man-portable ground station controls with analog data links
- Real-time data from EO or IR sensors



RAVEN SUAS ISSUES

- SOCOM facilitated procurement with an Urgent Mission Needs Statement
 - Development of training program nearly concurrent with deployment
- US Army agencies late adopters after initiation of OIF & OEF
 - Many commanders at battalion and below initially skeptical of “model airplane”



RAVEN SUAS FUTURE

- Raven now fully accepted by USA & USMC
- Program now managed by USA PM-UAVS
- A number of product improvements ongoing, including data link upgrades, ongoing
- Low altitude airspace management and deconfliction still a thorny issue



CONCLUDING REMARKS

- Continuing concern over hyper-bureaucratized, -legalized, -politicized acquisition processes in an era of hyper-adaptive warfare
 - Argues for the reform, quick-response methods
 - Raven Case indicates mainstreaming is doable for successful projects along these lines
- C-27 case illustrates increasing globalization
- A coming era of airframe recapitalization, instead of modernization?
- Effects of UAVs will be significant in many dimensions ... not all of which are yet understood

