

# Regaining Control Of The Modernization Process

CSC 1992

SUBJECT AREA Logistics

## EXECUTIVE SUMMARY

Title: Regaining Control of the Modernization Process

Author: Major R.A. Arnold, United States Marine Corps

Thesis: A difference in perception of risk affects the ability of commanders to make informed decisions about force modernization. Differences stem from institutional and entrenched ideas about procurement and require change to restore responsiveness and ensure the fleet is equipped for modern warfare.

Background: A difference in perception prompted the writing of this paper. My experience leaves me with a perception that the risk attached to helicopter operations is reaching unacceptable levels. A fundamental breakdown in communications between decision-makers who establish policy and operators in the field who execute policy, have inhibited the modernization process. The mission tasks of the helicopter community are expanding without commensurate investment in technology.

The examples of the AH-1W Night Targeting System and the reorganization of Marine Aircraft Groups are presented to illustrate the differences that exist in perception concerning these programs. Three factors are discussed that influence internal Marine Corps decision-making: a failure to recognize the changing nature of the battlefield, a reliance on pilots to fill the gap between technology shortfalls and expanding mission requirements, and an institutional approach to systems acquisition.

The current aviation plan is reviewed and defended as the best short-term solution to the modernization plan, but only if it can be executed. A change to the AVPLAN is presented to increase its viability and provide the Marine Corps with a mission capability not presently programmed. Decision-making theory is briefly discussed to provide insight into the acquisition process; aspects presented include: satisficing behavior, incrementalism, and bureaucratic politics.

The institutional structure of the Department of the Navy is presented as a major impediment to the modernization of the helicopter fleet. It is suggested that broadening the process to the DOD level and integrating Marine programs into DOD programs could assist in resolving current impasses.

Recommendations: Acknowledge that the current acquisition system is both unresponsive and inefficient and advocate bold and sweeping changes. Seek compromise on the MV-22 to accelerate its production and institute changes to remove the bias towards upgrade approaches to acquisition.

# Report Documentation Page

Form Approved  
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>1992</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-1992 to 00-00-1992</b>	
4. TITLE AND SUBTITLE <b>Regaining Control Of The Modernization Process</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>United States Marine Corps, Command Staff College, Marine Corps University, 2076 South Street, Marine Corps Combat Development Command, Quantico, VA, 22134-5068</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>28</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

## REGAINING CONTROL OF THE MODERNIZATION PROCESS

Thesis Statement. A difference in perception of risk affects the ability of commanders to make informed decisions about force modernization. Differences stem from institutional and entrenched ideas about procurement and require change to restore responsiveness and ensure the fleet is equipped for modern warfare.

### I. A DIFFERENCE IN PERCEPTION

- A. Perspective and Perception
- B. Risk Assessment
- C. Unacceptable Risk in Helicopter Operations
- D. The UH-1N as an Example
  - 1. Cockpit preparation
  - 2. Lack of Tactical Navigation Aids
  - 3. Comparison with Fixed-wing Aircraft
  - 4. Expanding Mission Requirements
  - 5. The view of Decision-makers

### II. WE ALL SHARE THE SAME GOAL

- A. We are all Marines
- B. My Intent

### III. AN ILLUSTRATION OF THE DIFFERENCE IN PERCEPTION

- A. The AH-1W Night Targeting System
  - 1. Requirements
  - 2. Limitations of NTS
  - 3. The Difference in Perception

### IV. A SECOND ILLUSTRATION: REORGANIZATION

- A. Compositing
  - 1. East Coast Groups
  - 2. West Coast Groups
- B. Will Investment be made in Facilities
- C. Southwest Asia worked well

### V. INSTITUTIONAL CHARACTERISTICS

- A. Nature of the Battlefield
- B. Technology Shortfalls
- C. Institutional Paranoia

### VI. THE CURRENT AVIATION PLAN

- A. We Live with Past Decisions
- B. The Plan must be Executed
- C. We must Correct the Process for the Future

### VII. DECISION-MAKING

- A. Satisficing Behavior
- B. Incrementalism
- C. Bureaucratic Politics
  - 1. Budget Bargaining
  - 2. The MV-22 Fight: Congress v. SECDEF

### VIII. IS THE NAVY OUR FRIEND

- A. Navy Priorities
- B. The Navy View of the Budget

- IX. JOINT OPERATIONS
  - A. A DOD Problem
  - B. An Aging Fleet
  - C. A Credible Capability
  
- X. BROADENING THE PERSPECTIVE
  - A. Broaden the Prespective to a DOD Perspective
  - B. Integration of Research and Development
  - C. Apply Proven Concepts
  
- XI. ADJUSTMENTS TO THE AVIATION PLAN
  - A. A Replacment for the UH-1N
  - B. A Continuing Requirement
  - C. Being Realistic
  - D. Proposal for Acquisistion
  - E. Politics are Key
  
- XII. THE MODERNIZATION OF MARINE HELICOPTERS
  - A. A Bridge between Constituencies
  - B. Sister Service Support
  - C. Funding Changes

REGAINING CONTROL OF THE MODERNIZATION PROCESS

by Major Roy A. Arnold

A DIFFERENCE IN PERCEPTION

An aspect often overlooked in the interpretation of high level decisions is the influence that perspective and perception have on decision-making. Differences of perspective are perhaps easiest to understand. A squadron or battalion commander is concerned with mission requirements today and tomorrow. Headquarters Marine Corps is by necessity, concerned with mission requirements not only today, but ten years from today. Headquarters is forced to assess competing requirements over time, accepting risk when resources preclude covering both the needs of today and the projected needs of tomorrow.

Risk assessment and acceptance are appropriate tools at every level of command. Acceptance of risk is not ignoring risk. It means the deliberate recognition of a problem beyond the capability of the commander to resolve. When risk is

identified the commander must develop a plan to limit its impact on mission accomplishment. The scope of assessment is set by where you sit in the decision chain and therefore how you perceive a particular risk. The commander for whom a risk is a primary day-to-day concern will view it differently, and assign it more importance, than a superior for whom the risk is only one of many that affect the various units under his command.

A difference in perception prompted the writing of this paper. My experience leaves me with a "perception" that the risk attached to helicopter operations is reaching unacceptable levels. Further, that this view is not shared by headquarters, nor is the frustration of the fleet pilot even understood.

That a difference exists in perception between a pilot and headquarters is by itself not a surprising fact; but the extent of that difference is such that I find it disturbing. For example, when General Gray visited Southwest Asia he was surprised when told AH-1W's were not equipped for night anti-mechanized missions; his "perception" was that night-fighting systems had been in the fleet for some period of time.<sup>1</sup> This represents a fundamental breakdown in communications between the decision-maker who establishes policy and the operator in the field who must execute the policy.

To illustrate the frustration within the helicopter community, let me present a typical example. A UH-1N crew preparing for a mission requiring night vision goggles (NVG), walks to the aircraft (that may be older than they are) carrying cardboard, duct-tape, an assortment of paper maps, chemlights,

flashlights, and other paraphernalia. In the next few minutes they will use the cardboard to extend the glareshield to reduce the reflection of light from cockpit instruments, use the duct-tape to cover light sources not suppressed by blue-light kits, and strategically place maps and other mission essential items where they will not interfere with control of the aircraft.

The UH-1N has no tactical navigation aids to assist in mission completion. A map and stop watch will get the crew and passengers to the objective, this requires one of the pilots to concentrate solely on navigation and a scan largely inside the aircraft. At terrain flight altitudes, a second set of eyes outside the aircraft can mean the difference between life and death; the crew and passengers assume a risk to offset a lack of technology.

The need for a modern platform has been identified for well over a decade without a replacement being programmed; the explanation is always one of fiscal constraint.<sup>2</sup> Yet while taxiing to the runway, the UH-1N crew will more than likely pass night attack AV-8B's or F-18D's equipped with state of the art navigation, nightvision, survivability, and targeting systems. To the helicopter crew this makes it hard not to feel that they and their passengers are "second-class citizens" more expendable than their fixed-wing counterparts.

Even when the community gets a "new" aircraft, the disparity in approach to modernization as compared to the fixed-wing community is striking. The AH-1W is the community's newest aircraft. I fly the AH-1W and find people amazed when I tell them that this "new" aircraft can't autonomously fire its

primary weapons system, the HELLFIRE missile;3 that I have no range finding capability other than my eyes and a map study; and that the AH-1W is the only attack helicopter in the world produced in the 1980's which has no fire control system for gun or rocket delivery; when I pull the trigger it's based on preflight study of ballistic tables, good old Kentucky windage and experience.

The frustration is compounded when, without the benefit of investment in technology, aircrew are tasked with expanded mission tasking: maritime interdiction, gas and oil platform operations, and military operations in urban terrain. All represent new challenges to be conquered solely through reliance on aircrew innovation. A recent statement that the fiscal constraints of the 90 `s would require imagination and innovation to meet coming challenges is not well received by a community that has already been doing just that for the last decade.

From the perspective of the cockpit it seems decision-makers are not aware of the degree of risk crews have come to accept as a daily matter of course, nor the growing feeling that the envelope has expanded as far as possible with aircraft essentially designed for the permissive environment (by todays standards) of Vietnam.

The view of decision-makers is quite different. The 1990's are viewed as a period when the helicopter community will undergo unprecedented modernization. The modernization plan revolves around the acquisition of the MV-22 as a replacement for the CH-46. The remainder of the plan continues the goal of reducing the types of aircraft operated by the Marine Corps, upgrading remaining aircraft to better operate at night and

in adverse weather, and reorganizing Marine Aircraft Groups for combat.<sup>4</sup> These seem admirable goals that should be supported by the fleet, but the truth is that the plan is viewed with some reservation. Why?

#### WE ALL SHARE THE SAME GOAL

Before answering that question I need to point out that fleet pilot and decision-maker are first and foremost, Marines. We share the common goal of sustaining the Marine Corps reputation as the nations primer fighting force. Nothing in my remarks should be taken as an indication that I believe individual Marines have forsaken that commitment. My exposure to those involved in force modernization leaves me convinced that the system is doing its best to meet the needs of the fleet. Having said that, however, doesn't change the fact that the aircraft we fly today and for the projected future are not what they should be. I hope to reconcile the disparity between the intent of the acquisition system and the reality of the state of the fleet.

#### AN ILLUSTRATION OF THE DIFFERENCE IN PERSPECTIVE

This is a complex problem and it is difficult to know where to begin; let me start by sketching an example of how a program can be viewed quite differently according to where you sit. The AH-1W, as mentioned earlier, is without a night fighting capability to autonomously fire either the TOW or HELLFIRE missile at night.<sup>5</sup> The fleet stated an operational requirement for systems to solve this problem: a Helicopter Night Vision system to assist in flying the aircraft and acquiring targets,

and a laser designator for HELLFIRE engagements. The fleet saw the main requirement as a FLIR with repeater scopes in both cockpits to allow for navigation and terrain avoidance during tactical maneuvering, as well as the ability to acquire and identify targets.

The Night Targeting System (NTS) currently funded in the AVPLAN limits the FLIR picture to the gunners telescopic sight unit (TSU) and because of the small dimensions of the sight, to a one inch by one inch picture. The NTS can only be used when the gunner places his face in the TSU, the pilot has no ability to use the NTS for navigation, terrain avoidance, or target identification. Additionally, the small screen limits resolution, making target identification problematic. The feeling is that the aircraft would have to close to ranges that place it in a high probability kill zone before we could break-out targets from background clutter and positively identify a hostile; not to mention the fact that the pilot in command cannot confirm that the gunner is engaging the right target. 6

This sets the stage for the difference in perception. The decision-maker believes the fleets needs are met by NTS and is committed to fielding the system. Criticism that might endanger the systems funding is discouraged. The fleet on the other hand is faced with a dilemma; while NTS is deficient in nightfighting capability, it does provide the laser designator and range finder desperately needed. The fleet pilot is concerned that if NTS is cancel led he gets no enhanced capability, but also concerned that if NTS is fielded he will never see the true nightf ighting system that was the original cause

for the program. This is probably an overly pessimistic perception, but it is important that decision-makers know it exists and that the expectations of the fleet, realistic or not, are not being met.

#### A SECOND ILLUSTRATION: REORGANIZATION

Reorganization of Marine Aircraft Groups to enhance combat readiness is another aspect of the AVPLAN that can be viewed differently according to where you sit. At face value, compositing helicopter groups to provide the full range of assault support would seem a great idea; and if this were a perfect world with unlimited resources, it would make great sense. Indeed, on the east coast, MAG-26 and MAG-29 have enjoyed this organizational concept for years. However, east coast groups reside on the same airfield and therefore share much of the infrastructure (simulators, test-cells, warehouses, air traffic control, etc..) necessary to sustain operations. The west coast groups due to their size, require separate facilities and are unable to benefit from the consolidation of infrastructure. The cost of duplicate facilities would represent a significant investment.

The concern is that reorganization will be instituted without necessary facilities being in place, thereby requiring fleet units to operate in austere conditions, at greater cost, and with no guarantee that out-years will see resources made available to bring facilities up to standard. There is ample historical precedent to make the concern a real one, this wouldn't be the first time the Marine Corps absorbed the cost of reorganization internally.

Additionally, one has to ask the basic question, why? MAG-16 and MAG-26 were both task organized for Southwest Asia ( a concept I thought was a Marine Corps selling point stressing our flexibility ) and did exceptionally well.<sup>7</sup> At a time of dwindling resources, should we divert assets to address a marginal gain in an area where we are already successful? I feel we should look on this area as one where we can economize and husband our resources for more pressing problems.

#### INSTITUTIONAL CHARACTERISTICS

This leads us back to the question of why this situation exists. I believe that problems with helicopter modernization stem from three causes:

A failure to recognize the changing nature of the battlefield.

A reliance on pilots to fill the gap between technology shortfalls and expanding mission requirements.

An institutional approach to systems acquisition.

#### NATURE OF THE BATTLEFIELD

Marines may recognize that the battlefield is changing, but they have not made the connection to its impact on mission requirements. The tempo of Marine Expeditionary Unit (MEU) operations results in short term focus on known missions, primarily battalion level tactics supported from amphibious shipping. Prior to Desert Storm, operations above the division level held little relevance for most Marines. Marine Expeditionary Force (MEF) operations translate to increased time, space, and sustainment issues that differ from battalion operations and must be addressed in both our concept of the

battlefield and in the systems we procure. The Marine sector of the battlefield in Operation Desert Storm extended from assembly areas south of the Kuwaiti border to the northern suburbs of Kuwait City, from the shores of the Persian Gulf to Kuwait's far western border: an area of 10,000 square miles. Deficiencies in helicopter survivability, navigation, range, and night-fighting capabilities constrained commanders in the employment of helicopters on the battlefield.

#### TECHNOLOGY SHORTFALLS

Second, Marines are famous for making due with less and never saying a mission is beyond their capability. In the helicopter community, this meant that while mission requirements changed drastically in the 1980's, the equipment to support the changes was not forthcoming; commanders dealt with the shortfalls by asking pilots to press the envelope and accept greater risks. Pilots did press the envelope and completed their assigned missions, but the fleet also sustained losses in airframes, passengers and crews which I believe in part could have been saved with appropriate investment in technology.

I realize this is a strong statement, but it is one that I feel is justified. A review of accident statistics shows that pilot error continues as a leading cause of helicopter accidents. To the layman, a finding of pilot error would seem to be definitive, the pilot made a mistake causing the aircraft to crash. The problem is the pilot not the aircraft. To a safety officer, a finding of pilot error is only a starting point for further investigation, pilot error only describes

the endstate, it doesn't explain why the "error" was made. When you place pilots in a low altitude, high threat environment, require that they navigate by map, do it at night on NVG's, operate at maximum range, and do it with aircraft designed for Vietnam, you have to ask yourself why more "errors" aren't made. There is a point where human capability is exceeded and no amount of training will substitute for providing the pilot with technology to bring the mission back to an acceptable risk level.

#### INSTITUTIONAL PARANOIA

Last, and related to our desire to do more with less, and a very real paranoia that if we ask for too much we won't get anything, is the Marine Corps approach to system acquisition. Institutional in its reflection of the points made above, weapon systems are bought with known deficiencies with the hope that upgrades will be funded in the future. This worked in the past but represents a gamble that the "balloon" won't go up before problems are fixed with block upgrades. The AH-1W is a perfect example: bought without a night targeting system or laser designator, it was recognized as deficient when purchased; block upgrades (NTS) are planned, but the balloon did go up in August 1990 and Marines went to war tactically constrained.

#### THE CURRENT AVIATION PLAN

The news is not all bad. The current AVPLAN has the potential to meet the majority of the fleets needs if executed as planned. My initial perception of a large disconnect between the fleet and headquarters was not entirely justified. It has

to be recognized that we are living with decisions and concepts of procurement which predate the individuals involved in today's decision-making. I think all would have preferred a modernization program that stressed state-of-the-art aircraft development vice block upgrades to 1950's and 1960's technology, but periodic decisions over the years, taken for reasons I will explore in a minute, give us the reality we have to deal with today. If the plan is executed as written it will go a long way to meeting my concerns about force capabilities. It is not perfect and I will address one major change that I think is needed, but it will give pilots a better ability to manage risk and meet the needs of the Marine on the ground.

The paramount need is that the plan be executed; and at present, that is far from assured. Second, but I believe no less important, is that we recognize the institutional features which have gotten us into this situation and make sweeping and bold changes to ensure that Marines in the future do not find themselves trapped in the same situation. Our goal should be a longrange plan to stress state-of-the-art development and to minimize the block upgrade approach that is the current stock and trade of the procurement program.

FY 92 ROTARY WING AVPLAN (DISTRIBUTION OF SQUADRONS)												
Type A/C(#)	91	92	93	94	95	96	97	98	99	00	01	GOAL
CH-53E (16)	5		6									6
CH-53D (12)	4		3									0
MLR (12)							1	2	3	5	8	18
CH-46E (12)	15						13	12	11	10		0
AH-1W (18)	6											6
UH-1N (9)	6											6

#### DECISION-MAKING

The Marine Corps approach to procurement is not the only factor that must be explained to understand the current state of affairs, a broader discussion of decision-making is required. A "rational" decision-making process where all possible alternatives are evaluated and the option that best attains the stated objectives chosen is a rare occurrence in any organization, civilian or military. In the case of the Marine Corps, three primary influences act to limit the decision-making process: satisficing behavior, incrementalism, and bureaucratic politics.

#### SATISFICING BEHAVIOR

Satisficing behavior is something we practice in daily life. It's the practice of accepting the first option that appears to meet the requirements of a particular problem. We recognize that a better option might exist, but since the

solution we have is perceived to be satisfactory, we stop the search for a better answer. How many times have each of us gone to the toolbox looking for a particular screwdriver and settled for the first one we find. We accept a solution that is less than ideal because it offers immediate satisfaction of our needs. I believe this explains the Marine Corps preference for getting its hands on anything new regardless of shortcomings, putting it into immediate service (satisficing our needs), and accepting that future upgrades will be required.

#### INCREMENTALISM

Incrementalism refers to a step-by-step, rather than a comprehensive approach to change. Organizational policy will seldom change with incremental decision-making, the focus is on means vice ends. The military is particularly susceptible to incrementalism because of its organization and personnel policies. Organization compartmentalizes functions and places full responsibility for the success or failure of decisions in the hands of a few. Faced with uncertainties or unclear goals, those charged with decision-making will often opt for limited and measured changes to proven and successful policies. Personnel assignment practices add fuel to the fire by limiting the time an individual is in a position to affect change. Human nature, faced with the constraints of time, will focus on what is thought to be achievable within given time limitations. We all want to be "successful" during our tours and so avoid solutions we know will be finished by our replacements. We are driven to leave a "clear desk."

#### BUREAUCRATIC POLITICS

Bureaucratic politics plays a large role in procurement decisions. The bureaucratic politics model holds that "...decisions and actions result from political games played by individuals and groups in positions that give them legitimacy and power to affect policy on particular issues."<sup>8</sup> An example would be the politics of Congress; a Senator or Congressman doesn't oppose another's "special" project, not because of the merits of the project, but because it will earn him equal treatment for his "special" projects. The same holds true, at a lower level, for other budgetary bargaining that takes place in Washington.

The Marine Corps has been caught in the middle of an Executive v. Legislative battle over the MV-22 that falls into the category of budget bargaining. The MV-22 complicated the entire equation of force modernization by pitting its Congressional supporters against Secretary of Defense Cheney. Secretary Cheney decided early in his tenure to kill the MV-22 program on affordability grounds. The result is the reluctant continuation of MV-22 development at uneconomical rates and resistance in Congress to any helicopter initiatives that could weaken the case for MV-22 production. The Marine Corps faces an unclear budgeting picture with regard to MV-22, and those uncertainties cascade to affect other programs resulting in the type of incremental decision-making mentioned earlier.

#### IS THE NAVY IS OUR FRIEND?

The United States Navy is also a problem for long-term helicopter modernization. In discussions with those involved in programming, the consensus was that all things considered, the state of the helicopter fleet is a direct result of internal Department of the Navy priority decisions: decisions that place helicopters somewhere along with amphibious shipping and minesweepers in priority, in other words at the bottom of the list.

The Navy has long viewed the budget as essentially a fixed

division of resources between the Army, Air Force and the Navy, with the Marine Corps being funded out of the Navy portion of the pie.<sup>9</sup> The belief is, that regardless of merit, increases to support Marine unique programs divert resources from competing Navy programs. The Navy can accept funding for F-18's, and to a lesser extent AV-8's, because they see roles for those aircraft in defense of the fleet and power projection missions. Helicopters on the other hand fit only peripherally into maritime strategy requirements of an essentially blue water navy. <sup>10</sup>

The Navy is not completely to blame for the current state of affairs. Marines have become so accustomed to a lack of Navy support for helicopters that we build it into our procurement strategies. We accept up front that funding will be a hard fought battle and adjust our goals before the battle even begins.

#### JOINT OPERATIONS

The problem of modernizing Marine helicopters is not an isolated Marine Corps problem; it is a Department of Defense problem. Single service operations are a thing of the past. In an era of declining resources, joint operations preserve military capability and protect United States interests at lower cost. MAGTF's by virtue of their forward deployed presence will contribute to Joint Task Forces (JTFs) with increasing frequency as joint doctrine is tested and refined; they must deliver the full range of capabilities that doctrine tells joint planners they possess. The failure to successfully perform on the battlefield will lead to a reassessment of

Marine Corps missions and roles. The United States cannot afford to maintain units with limited utility.

At present the workhorse of the fleet, the CH-46 is on its last legs and the MV-22 planned as a replacement is far from assured. The UH-1N, as old and tired as the CH-46, has no planned replacement; the AH-1W is deficient and has no follow on planned other than additional upgrades. In short, we have a fleet of aging helicopters unable to perform on the battlefield without unacceptable risk to crews and passengers. Unless action is taken that restores mission capability to Marine helicopters, operational commanders will be constrained on the battlefield and deprived of tactical and operational mobility. In turn, joint planners will be forced to question the Marine Corps utility for a wide range of missions as our counterparts in the Air Force and Army continue to widen the gap in modernization. 11

If Marines are to bring a credible capability to the joint arena, a comprehensive modernization program must be instituted to correct the current state of helicopter aviation. The problem, of course, is how to achieve this modernization during a time of force drawdowns and reduced defense spending.

#### BROADENING THE PERSPECTIVE

The solution to this seemingly contradictory state of affairs is to broaden the traditional Marine perspective to a Department of Defense (DOD) perspective. The same pressures acting on the Marine Corps also act on the other services. The reduction in the proposed B-2 bomber fleet, the restriction of the Army's Comanche program to research and development,

the cancellation of the Navy's A-12 program, all provide ample evidence that business as usual is over when it comes to procurement. Change provides as many opportunities as it does challenges to the status quo. The traditional acquisition of systems with narrow service applications must give way to an acquisition concept that develops core technologies for adaptation to a wider range of applications. The Marine Corps cannot continue to operate helicopters that no one else operates in significant numbers, not only are they less capable, they are increasingly expensive to operate and maintain.

Integration can go beyond a DOD perspective to include other government agencies and civilian aerospace companies. A national rotary-wing (to include tilt-rotor technology) research and development center operated under the auspices of DARPA (Defense Advanced Research Projects Agency), could leverage private and governmental investments in R&D to keep American industry on the cutting-edge and ensure competitiveness with foreign industry.

Concepts proven as effective in the management of various programs could be compared for application on a wider basis. For example, the Marine Corps concept of "necking-down," could be applied across service lines to arrive at a national fleet that would truly be efficient and sustainable.

#### ADJUSTMENTS TO THE AVIATION PLAN

The current AVPLAN can solve many of the problems confronting rotary-wing aviation, but only if executed. There is still resistance to the MV-22, and without it, the modernization program folds like a house of cards. A compromise

solution is needed to resolve the current impasse, restore certainty to the program and allow full scale production. I said earlier that the plan needed one adjustment, and I believe that adjustment can both bridge a capabilities gap in the current plan and also serve as a venue for compromise in the MV-22 budget battle.

The element missing from the current AVPLAN is a replacement for the UH-1N. There are several reasons for the absence of a replacement. Decision-makers are betting that VMAO will be developed rapidly after the MV-22 is fielded and will be suitable for both the AH-1W and UH-1N missions. Second, the most likely replacement for the UH-1N, the H-60, comes close to meeting the needs of a medium lift replacement and it is feared would weaken the MV-22 case if fielded.<sup>12</sup>

I believe that even with the MV-22, the Marine Corps will continue to have a requirement for a utility helicopter with 21st century capabilities. The MV-22 although identified in Congress as a medium lift replacement is actually much more than an improved CH-46. Its range and self-deployability will give it an operational reach that MAGTF Commander's, Commander's of Joint Task Forces, and CINC's have never had before, it will change how we think about strategic closure and revolutionize maneuver warfare from the sea. Its strength lies in its speed and range, but coming into the LZ, it is still a target with a 90 foot wing-span.<sup>13</sup> The mission scenarios that MAGTF's can expect to be tasked with will require platforms more suitable for restricted and low profile insertion and extractions for which the MV-22 is ill suited. NEO operations

in built-up areas, gas and oil platform operations, maritime interdiction, all would be more suitable for an H-60 type aircraft.

We also need to be realistic, the only way that VMAO will be built is if it is a joint service program; given the difficulty with selling the MV-22, it seems a supreme gamble to believe VMAO will be fielded before 2020. Given that time frame, even if a decision were made to go to an all tilt-rotor fleet, H-60's procured in the 90's would have enjoyed a full service life.<sup>14</sup>

I would propose that the AVPLAN be modified to reflect the acquisition of H-60's to replace all UH-1N's and two squadrons of CH-46's. This would create a fleet of about 140 aircraft.<sup>15</sup> The manufacturer indicates that since numerous versions are already in service and production, that the Marine Corps could begin receiving aircraft as fast as funding was made available. How does the Marine Corps get the funding?

ALTERNATE AVPLAN (DISTRIBUTION OF SQUADRONS)												
TYPE	A/C(#)	91	92	93	94	95	96	97	98	99	00	GOAL
CH-53E	(16)	5	6									6
CH-53D	(12)	4	3									0
MLR	(12)							1	2	3	5	16
CH-46E	(12)	15						13	12	10	9	0
AH-1W	(18)	6										6
UH-1N	(9)	6			5	4	3	2	1			0
H-60	(A)(9)	0			1	2	3	4	5			6
H-60	(L)(12)	0								1	2	2

Politics are a key to the solution. Political judgment has dictated a smaller military for the future, yet the survival imperative of political incumbents has covered the downside by supporting the modernization of the remaining force. The key is to strike while the iron is hot and take advantage of the possibilities presented by the changes in progress. An acquisition plan presented to Congress consolidating all DOD rotary-wing requirements and providing for common management, would I think find wide support given the current Congressional fixation with jointness.

The modernization of Marine helicopters can be achieved by integration of Marine requirements with existing DOD programs. This approach also serves the secondary, but no less important role, of assisting in the maintenance of an

industrial base capable of expansion should reconstitution become necessary. Scales of economy could be achieved with fewer types of aircraft and production lines could be kept open for parts support and modernization upgrades.

The MV-22 could benefit from this approach. A new acquisition plan that bridges the current positions of the various political constituencies by adopting the MV-22 for multi-service missions, while at the same time moving the Marine Corps to a fleet of helicopters in common with the other services, might be the necessary instrument with which the Secretary could accept compromise.

To garner the support of the other services the Marine Corps would endorse and advocate the consolidation of DOD programs along the lines already mentioned. The Marine Corps would commit to joint development of a tilt-rotor attack variant for the Army and the Marine Corps, commit to joint development of a heavy lift replacement that would meet the needs of all services, and commit to a light utility variant of the tilt-rotor that would meet the needs of all services. The Marine Corps must realize that joint development is the future and that we are too small a service to carry out independent development.

Finally, I would propose that we advocate a change in how programs are funded. Procurement dollars should be administered at the DOD level, services should budget for operations and maintenance alone. This would remove the Navy from a veto position over initial procurement decisions and force programs to stand alone on the merits of how they contribute to CINC and DOD mission requirements.

The MV-22 would go into full production with the Marine

Corps receiving a smaller fleet than originally proposed and the Army, Navy, and Air Force revalidating the requirements they had previously identified. The mission of the MV-22 would be expanded from the Marine unique over-the-horizon assault to include the mission of intra-theater operational mobility for the JTF.

If the Marine Corps accepted this plan, it would have a modern helicopter fleet with sophisticated survivability, navigation, and night fighting capability. Additionally, it would benefit from the scales of economy that accrue when operating systems which are part of a fleet of thousands. Finally, the MV-22 would stand a better chance of full scale production if it is presented as part of a comprehensive DOD plan vice a unique Marine plan.

The variance between the expectations of the fleet and the ability of decision-makers to fill those expectations is unsatisfactory. Decision-makers driven by a budget process out of control, constrained by bureaucratic politics (both internal and external), and trying to make the best of a bad situation, have been conditioned and "socialized" to accept as normal, a procurement timeframe that spans decades. This is not acceptable. A solution must be found to make the process more responsive and efficient. The rapidly declining budget will make it harder and harder to justify and explain, why an aircraft that is still in initial production requires funding to field upgrades.<sup>16</sup>

In closing, the Marine Corps is a vital part of the defense establishment and must be modernized to contribute to the

National defense; helicopter modernization is a major part of that effort.

#### ENDNOTES

1. General Grey, 29th Commandant of the Marine Corps.
2. A conceptual platform identified as VMAO is planned as a possible replacement for the UH-1N. It remains a concept and is currently not in development, earliest introduction to the fleet would occur after 2010.
3. The HELLFIRE missile is laser designated and at present the AH-1W hasn't been equipped with a designator.
4. Marine Corps Bulletin 3125: The Marine Aviation Plan (AV-PLAN); draft update 1992.
5. The TOW missile is optically guided by the AH-1W gunner. The telescopic sight unit (TSU) which the gunner uses to guide the missile is not night enhanced.
6. The issue of fratricide figures in this issue. Until the pilot in command can visually see what the gunner is aiming at he will be dependent on verbal descriptions and a general orientation provided by a cursor in the Heads Up Display (HUD).
7. It should be noted that MAG-26's peacetime organization still required task organization for the given mission and joined units after arrival in Southwest Asia. There were few significant problems.
8. James H. Dixon and Associates, National Security Policy Formulation: Institutions, Processes, and Issues. (Washington, D.C.: National defense University, 1984), p.144
9. Refer to graphics pg 27.
10. For example, Secretary of the Navy Garrett has directed that a study be conducted to determine the feasibility of incorporating Marine F-18 squadrons into Carrier Air Groups on a permanent basis.
11. The Army and Air Force both receive funding from USC INC-SOC to equip helicopters for Special Operations missions
12. The manufacturer has developed a version that incorporates the modernized features of the Seahawk with the combat capabilities of the Blackhawk.
13. Refer to the graphics on page 28.
14. A 20 year service life is used for current budget calculations
15. Includes training aircraft, reserve aircraft, and pipeline aircraft.
16. The AH-1W is in production and has numerous upgrades in development that would require major retrofit programs.

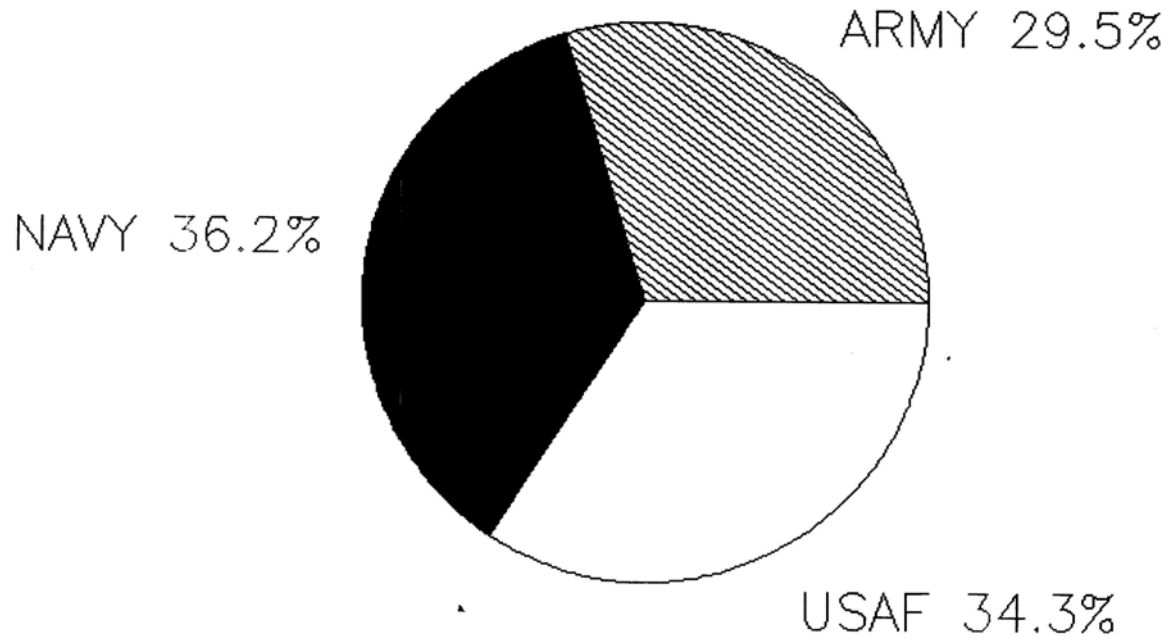
#### BIBLIOGRAPHY

1. Collins, D.M. "Safety vs. Professionalism" Marine Corps Gazette. January 1987.
2. Dixon, James H. and Associates. National Security Policy Formulation: Institutions, Processes, and Issues. Washington, D.C.: National defense University, 1984.
3. Ette, J.P. "Reflections on Marine Aviation" Marine Corps Gazette. May 1987.
4. Smith, K.A. "Aviation Safety: The Story gets Worse" Marine Corps Gazette. May 1991.
5. Utgoff, Kathleen P. and Stephen M. Gates. Aviation Accidents: Suggested Analyses and Preliminary Findings, Marine Corps Operations Analyses Group
6. Viotti, Paul R. and Mark V. Kauppi. International Relations Theory: Realism, Pluralism, Globalism. New York: Macmillian Publishing Company, 1987.

#### DOCUMENTS

1. Marine Corps Bulletin 3125: The Marine Aviation Plan (AVPLAN) for Fiscal years 1989-1998. 1989.
2. Marine Corps Bulletin 3125: The Aviation Plan (AVPLAN) for fiscal year 1989-1998: Draft update. 1992.

# DEFENSE BUDGET AUTHORITY



FY 92

# CH-53E & MV-22 RELATIVE SIZE COMPARISON

