AIR WAR COLLEGE

RESEARCH REPORT

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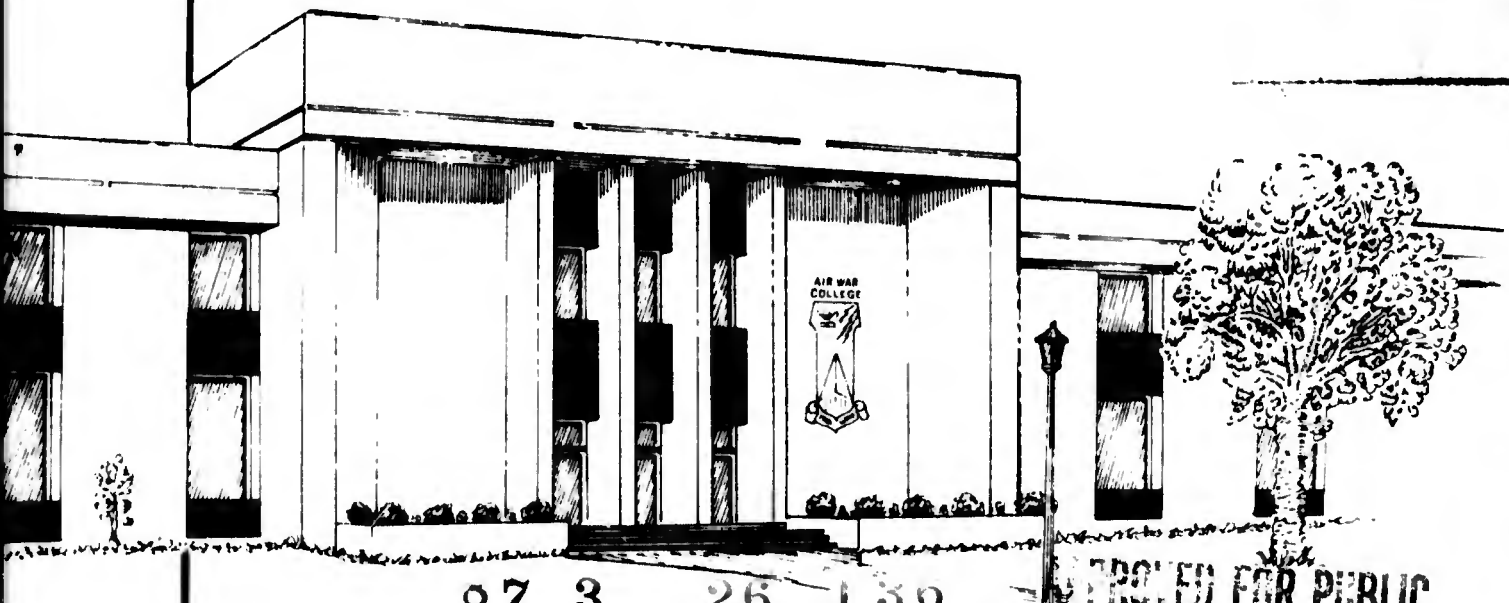
IMPROVING AIR FORCE PILOT CAREER OPPORTUNITIES--"DUAL TRACK" REVISITED

By COLONEL JAMES D. GRAHAM, JR.



AIR UNIVERSITY
UNITED STATES AIR FORCE
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IMPROVING AIR FORCE PILOT CAREER OPPORTUNITIES--"DUAL TRACK" REVISITED

by

James D. Graham, Jr.
Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE RESEARCH

REQUIREMENT

Research Advisor: Colonel Thomas F. Seebode

MAXWELL AIR FORCE BASE, ALABAMA

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AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: Improving Air Force Pilot Career Opportunities--Dual Track Revisited

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Remarks on past staff efforts and research studies introduce a discussion of an updated proposal to carefully evaluate a "dual track" career path for Air Force pilots. "Dual track" is defined as alternative career choices; either to follow a command/management track career or a "career pilot" track, performing only flying-related duties. A cost analysis and outline of the concept are evaluated in a series of implications. The potential exists to improve warfighting skills and readiness and at the same time save a *conservatively estimated* $46 billion over a 20 year period in pilot training/experiencing cost avoidance alone. The lack of a viable personnel plan and officer force structure model, and institutional bias are seen as major drawbacks to a new evaluation of the "dual track" concept. Recommendations to evaluate this proposal--and other alternative solutions are proposed.

BIOGRAPHICAL SKETCH

Colonel James D. Graham, Jr., (M.A., Ball State University) has been interested in force structure and retention issues since his close association with rated retention issues began in1978. Commander of three squadrons, his most recent assignments were as Executive Officer and Chief of Policy and Doctrine, Deputy Chief of Staff (DCS) Plans, Headquarters Military Airlift Commmand (MAC); Assistant for Programs to the Assistant Secretary of the Air Force (MRA&I) and Chief, Long Range Planning, Headquarters USAF, DCS/Manpower and Personnel. Prior to enlisting in the Air Force, he was a faculty member at Ball State, Southern Illinois (Carbondale) and Kansas Universities. He is a Distinguished Graduate of both the U.S. Air Force Officer Training School and Squadron Officer School. He has completed the national security management program of the Industrial College of the Armed Forces and is a graduate of the Armed Forces Staff College, Class 67, and the Air War College, class of 1986.

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INTRODUCTION

Pilot Retention Trends

Once again the United States Air Force is another cycle of poor pilot retention. The pilot retention rate of seven to eleven-year pilots dropped to 59 percent at the end of Fiscal Year 1985--the lowest mark since 1983 (6). While not as critical as the all time low average of 29 percent, recorded in1979, or the 42 percent rate posted in1980 (see Table I on page 2), the trend is clearly moving the wrong direction (6). At least three times since the mid 1960s, we have experienced serious pilot retention problems.

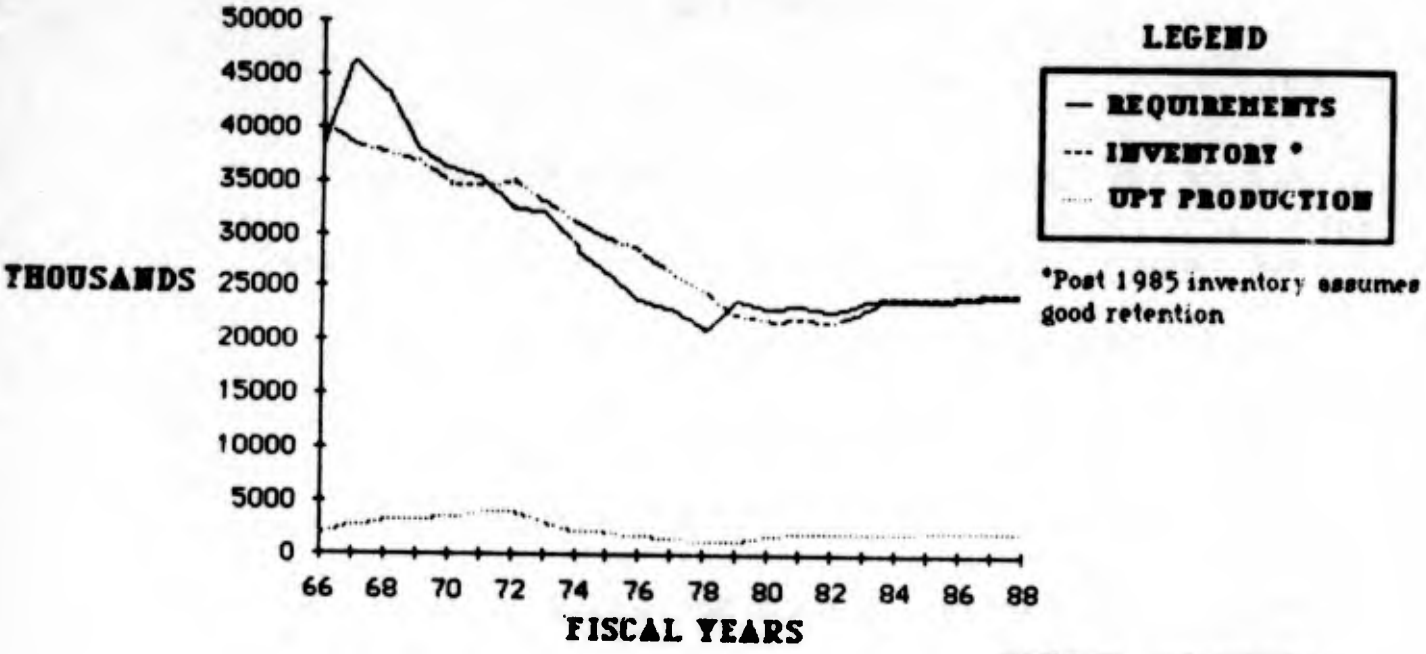
This paper was not conceived as a "rehash" of previous studies and experiences or as a discussion of the overall phenomenon of Air Force pilot retention. The intent is to concentrate on developing one potential solution that addresses three of the top five reasons stated for the Air Force's continuing pilot retention problem. The stated reasons for the increasing exodus, albeit in different order, are a hauntingly familiar refrain to those who have dealt with this problem previously: (1) desire to fly for a career; (2) unrealistic career progression hurdles;

TABLE 1

ACTIVE AIR FORCE PILOT TRENDS

(LIEUTENANT COLONEL & BELOW)

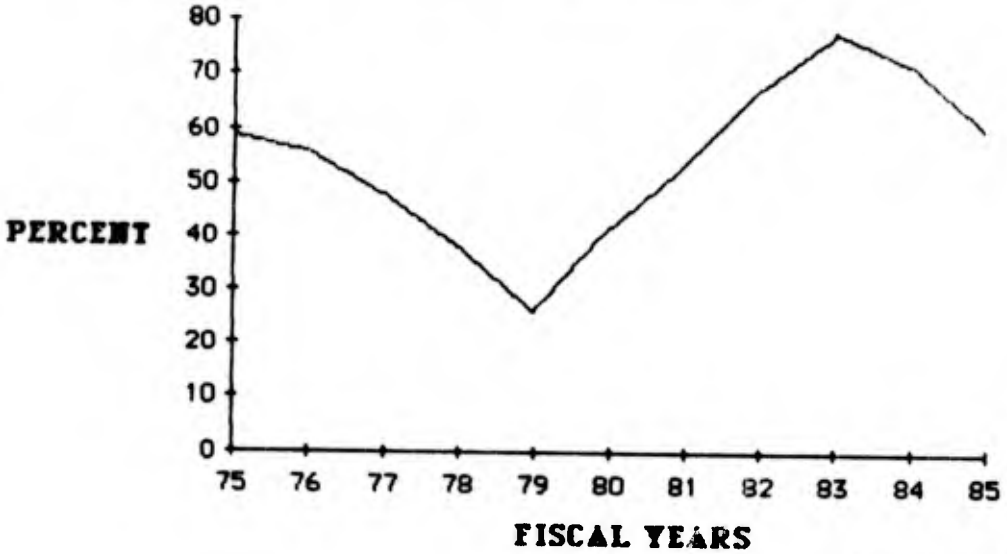
History and Post-1985 Forecast



SOURCE: AF/DPPTF

AIR FORCE PILOT CONTINUATION RATE

(6-11 YEAR GROUP)



SOURCE: HQ MAC/DPXPA

(3) increased private sector opportunity; (4) Air Force personnel policies and (5) erosion of benefits (56).

Misperceptions

Serving as the pilot retention "point man" in the late 1970s provided the author a unique vantage point to observe events and the decision process. In his opinion, the senior leadership's preoccupation with the temporary expedient of resolving pay issues during the late 1970s, has led directly to the situation we find ourselves in today. This was due in part to an understandable generation gap (57), as the senior leadership viewed monetary increases as a motivator. Although the pay issue was important, that course of action was adopted while disregarding many of the other obvious low- or no-cost potential solutions.

The "bottom line" of the author's comprehensive comparison of airline and Air Force pilot life styles and his examination of the pilot retention problems of the late 1970s was "twice the pay for one half the work--with fewer "irritants" (48). Interestingly though, the senior leadership, all having experienced the Great Depression of the 1930s, incorrectly perceived the major causes only as "twice the pay." This was due to their different value system, characterized by a deeply ingrained preoccupation with money (57). The Air Force monetary solution,

achieved in 1980, provided significant increases in basic pay for all members and an additional 50 percent increase in aviation career incentive pay for rated members. According to the motivation expert Arthur Witkin, that solution was not entirely correct. He views pay not as a motivator, but as a potential dissatisfier (18). Pay raises were necessary then to make up for serious losses of buying power due to inflation, but pay initiatives alone were insufficient to permanently resolve members' career concerns.

Ironically, it is many of those other dissatisfiers and irritants that were identified in the late 1970s (48), but ignored for the most part in the solution, that are the reasons for the increasing pilot exodus today (56). It is very convenient to blame all of our problems on the nation's commercial airlines' continuing and long-term need for military-trained pilots (10). Unfortunately, as often as not, "push" from Air Force policies and practices is as much a factor as the "pull" attraction from the private sector (48).

Purpose

The purpose of this research is to focus on one potential solution to lessen the "push" factor behind voluntary pilot resignations. The Air Force needs to even out the chronic sine wave created by the periodic

surpluses and shortages of pilots experienced since the end of World War II. This paper will examine the cost of a pilot; review a previously proposed alternative dual career track for pilots; examine both the professional and cost implications of such a scheme; then state conclusions and propose recommendations.

The paper also includes both an extensive list of references and a bibliography which catalogs all relevant writing on various "career" or "dual track" pilot proposals found both in the author's extensive collection of retention documents and from the Air University Library.

The Impetus

In 1978, at the request of General William G. Moore, Jr., Commander-in-Chief, Military Airlift Command (MAC), and his Deputy Chief of Staff for Personnel, then Brigadier General James I. Baginski, the author was asked to develop a proposal for a "career pilot", or more popularly referred to as a "dual track" system for pilot officers. The "dual track" is a pilot force composed of two groups (or tracks) of pilot officers. One track mirrors our current "up-or-out" officer personnel management system, composed of pilots aspiring to leadership positions. The other track is composed of professional pilots--who perform only flying-related duties for their entire career. This request was made due to the past (47,

54), and continuing (55), interest in such a program on the part of many younger Military Airlift Command pilots. Although the author developed such a proposal (49), the idea was not original at this point in Air Force history. The Army Air Corps had significant numbers of both enlisted and flight officer pilots during World War II. The famous "Doolittle Report" of 1946 also made similar recommendations--but when reading the report, one must substitute the word "pilot" for "technician" (1:27).

Today, limited duty officer programs exist in various forms. The Army has a large group of warrant officers in aviation and technical specialties. The Navy maintains a significant limited duty officer program in technical specialties, with promotion potential to commander. The large numbers of former enlisted members now being commissioned in the Air Force with at least eight years of prior service, is creating the Air Force's own *de facto* limited duty officer program. These officers will have about 20 years of service before becoming eligible for promotion to major. They must have ten years of commissioned service to become eligible for retirement as a commissioned officer. As their retirement eligibility occurs at approximately the same time as their promotion eligibility to major, they tend to have a somewhat limited career in the commissioned officer ranks.

The MAC "dual track" proposal of 1978, was never evaluated due to strenuous opposition from key quarters in the Air Force Manpower and Personnel community. That opposition was based specifically upon the Air Force Personnel Plan and the officer force structure model, referred to here as TOPLINE. Ironically, *The Road Ahead*, an officer force distribution model developed in the early 1960s (later replaced by TOPLINE), proposed that the overwhelming majority of Air Force officers would spend their entire careers in one specialty (34:47-48).

The Road Ahead went out the window during the Vietnam War era when the U.S. military adopted the questionable personnel policy requiring only a one year tour in the combat zone (4:204-205). This policy required extensive transition and retraining programs for Air Force pilots to insure that virtually all served a combat tour, regardless of their combat proficiency in a particular aircraft. While this policy did insure that most pilots served a combat tour and minimized individual risk exposure, it failed to enhance combat leadership, minimized in-country expertise and degraded overall warfighting effectiveness.

In late 1979, the author also developed a fully coordinated (MAC staff position) costing formula for airlift pilots (51). Reassignment prevented the author from formerly integrating the "dual track" pilot

concept with the startling cost data developed. The need for the integration of costs into the "dual track" pilot concept is both apparent and immediate. There are many potentially detrimental impacts, mandated by the Gramm-Rudman-Hollings deficit reduction actions, on the potential future viability of practically all Air Force people and programs.

Assumptions

The author assumes reader familiarity with basic Air Force officer personnel management concepts; basic motivational theories; the underlying reasons--both internal dissatisfiers and external attractions--for the periodic pilot retention crises and concerns; the personnel life cycle; the Defense Officer Personnel Management Act (DOPMA) of 1980 and the DOPMA Technical Corrections Act of 1981.

CHAPTER II

DETERMINING THE COST OF A MILITARY PILOT

Pilots Are Expensive

The military pilot is the most expensive human resource trained in the free world (possibly with the exception of pilot astronauts). Air Force pilots are a more critical and expensive resource than commonly thought. In the author's opinion, until recently the Air Force has undervalued their cost. This was perhaps conditioned by references to old cost data. For example in the early 1960s (before the oil crisis of the early 1970s), Air Force Manual 172-3A listed the cost of undergraduate pilot training (UPT), at $74,210 (25:11). By Fiscal Year (FY) 1980, the cost of UPT had soared to $256,000 (51). Although frequently cited as the cost to train a pilot, UPT cost (as illustrated in Table 2, page 12), is only a fraction of the total outlay required to produce a fully trained and experienced combat-ready pilot. The Air Force and the nation, as a consequence of the recently passed Gramm- Rudman-Hollings deficit legislation, can no longer afford must retain more experienced pilots for full careers.

The author's costing formula calculated pilot training and experiencing costs for the three primary MAC aircraft (51). The critical factor

driving MAC flying hour availability is that peacetime strategic airlift capability is a byproduct of the aircraft commander upgrade program. MAC maintains a 4.0 crew ratio in the strategic airlift fleet (4 crews per airplane--2.0 active duty and 2.0 in the Reserve Associate program). Fully one half of the active duty and reserve pilots must be qualified aircraft commanders. Thus, the entire peacetime MAC strategic airlift flying hour program is driven by the necessity to produce adequate numbers of qualified aircraft commanders to perform MAC's wartime mission. The higher the voluntary loss rate for pilots, the more intense the flow through the cockpits. For costing purposes with the above rationale, MAC assumes that the aircraft would fly empty (and be Operations and Maintenance [O&M]-funded) if no cargo was available.

This cost (a mixture of fixed, variable and opportunity costs), is a national cost; not necessarily an Air Force or MAC cost. Most MAC flying hours are paid for by its many customers, both military and civilian, through the Airlift Services Industrial Fund (ASIF). ASIF funding pays for the entire cost of providing that airlift service to the customer. Only MAC's strategic airlift training aircraft at Altus Air Force Base Oklahoma are O&M-funded. The rest are ASIF-funded. Although C-130 training is

rated distribution and training management (RDTM)-driven, some tactical airlift hours are also ASIF-funded.

Using Fiscal Year (FY) 1980 dollars, the average cost of an experienced C-130 aircraft commander who voluntarily separates (what the Air Force replaces with an inexperienced, untrained recruit), was calculated at $1,756,909 in 1979. The average cost of a C-141 aircraft commander totalled $3,813,331 and the average cost of a C-5 aircraft commander was $5,072,152 (51). The MAC formula (abbreviated here) to arrive at these cost figures is arrayed in Table 2. According to estimates made in 1979 at the University of Southern California School of Medicine, a fully trained medical doctor cost a maximum of $125,000 (53)--or one thirtieth (1/30) the cost of an experienced C-141 pilot (51).

Costs Included

The average costs to train and experience a MAC pilot *included:* Acquisition; formal training courses (consisting of flying hour costs; direct training permanent party pay/allowances; nonpersonnel costs; indirect base operating support [BOS]; student pay/temporary duty [TDY] per diem; school travel and a prorata share of the numbered Air Force and Major Air Command [MAJCOM] support cost); standard permanent change of station (PCS) costs, with C-130 adjustments for overseas

Table 2

MAC (DOD) PILOT TRAINING INVESTMENT COSTS (FY 88 DOLLARS)

TRAINING COST FACTORS	C-130	C-141	C-5 (From C-141)
Acquisition (USAFA/ROTC/OTS Avg)	$ 24,623	$ 24,623	$3,569,746
UPT	256,000	256,000	--
Survival (Water/Basic)	4,400	4,400	--
PCS HHG Shipment	12,236	3,893	3,893
Initial Qual - Altus & Little Rock Plus Phase II (Airdrop) for C-130 Copilot	53,275 48,222	94,853	197,263
Simulator Maintenance Cost (Continuation Training)	1,768 (1.7 yrs • 16 hrs/yr • $65 per hour)	4,672 (2 yrs • 32 hrs/yr • $73 per hour)	5,312 (2 yrs • 32 hrs yr • 83 per hr)
SOS	12,359	12,359	--
Experience (Continuation Training)	1,186,182 (1.7 yrs • 409 hrs/yr • $1,706 per hour)	3,113,218 (23 mos • 526 prog per copilot/yr • $3,088/hr)	782,600 (100 hrs • $7,826/hr)
AC Upgrade (Plus Phase II Airdrop for C-130 AC)	32,879 48,222	55,728	117,075
AC UPGRADE TOTAL COST	1,680,166	3,569,746	4,675,889
ADDITIVES			
Two Year's Simulator Maintenance	2,080	4,672	--
Two Year's Currency • 8.6 hrs/yr	29,343	53,114	134,607
Instructor Qualification	45,320	43,286	89,512
AC PLUS INSTRUCTOR COST	1,756,909	3,670,818	4,900,008
TRAINING COST FACTORS			
Airdrop	--	39,452	--
Air Refueling	--	103,061	172,144
AVERAGE COSTS (Fixed, Variable, & Opportunity Costs)	$1,756,909	$3,813,331	$5,072,152

SOURCES: HQ MAC/DPXPA, ACM, DOO, DOT

assignments; simulator/flying continuation training and currency requirements, which are computed using a simulator hour and flying hour cost. The simulator cost is composed of maintenance and utilities factors. The flying hour cost includes aviation petroleum, oil and lubricants (POL), depot maintenance, base maintenance/ supplies, and replenishment spares (51).

Costs Excluded

The average costs, as calculated in Table 1, are extremely conservative as many of the "sunk" costs such as bases, facilities and aircraft were *excluded*. We also excluded instructor's pay while in continuation training; pilot/co-pilot pay; allowances and BOS other than during the time in formal training; retirement costs for the entire period; in unit training such as combat readiness, and for the C-130 Adverse Weather Delivery System (AWADS). Also excluded were training costs for auxiliary modes of delivery, i.e. Low Altitude Parachute Extraction System (LAPES); Special Operations Low Level (SOLL); High Altitude Low Opening (HALO) parachuting delivery technique; night operations; etc. Costs we included reflected continuation and currency requirements only, not the total number of annual hours an individual pilot needs. These costs and any other considerations can only add to the total (51).

Comparisons

For both comparison and purposes of confirmation, Major Fleming calculated the cost of a fully trained and experienced mission ready fighter pilot (F-4E) at $2,735,283 (31:Table III) in calendar year 1980. The costs of a Strategic Air Command (SAC) bomber or tanker pilot, while not calculated, would be roughly comparable to MAC pilot training/ experiencing costs. But any of these costs are dependent upon how many "seasoning" or "aging" flying hours were acquired in smaller aircraft. In late1983, the author, in conjunction with another project, ran the MAC pilot costing formula once again. The costs had remained stable over the four years due to the decline in fuel prices. The C-130 pilot still cost just over $1.7 million (M), the C-141 pilot cost had increased slightly to $3.9M and the C-5 pilot cost ranged between $4.6M and $6.4M--depending upon from what aircraft the pilot had transitioned to the C-5 (50).

Why We Need To Extend Pilot Careers

For most military members, life cycle costs (acquisition, training, sustainment, separation, retirement) are much higher than conventional thinking usually takes into account. It is not automatically more cost effective to retain a non-pilot member on active duty until retirement eligible. Pilot costs are different in that they are primarily "up front". A

pilot's retirement costs, although substantial, are almost inconsequential when balanced against pilot training/experiencing costs.

As pointed out by Major Schroetel in 1977, life cycle costs are a crucial cost factor for all other military members; but programs which "extend pilot careers" can save significant dollars (40:62). Whoever conceived the "whole man" concept certainly did not calculate the incredibly high cost of the pilot resource.

Few, if any corporations would spend that magnitude of specialized training dollars and then allow that person to do other than what they were trained to do. With the exception of People Express, the airlines do not follow this practice. The pilot on flying status permanently in airline management ranks is rare indeed (48). People Express has a unique philosophy. Each pilot (and every other employee) has a stake in the company, owns stock, accepts a lower salary and is expected to perform managerial duties--as well as fly. To date, over 400 pilots have left People Express (58); as compared to almost a zero voluntary resignation rate at other major national carriers (48). Some of these pilots may have resigned due to the lower pay. With the two-tiered pay systems now in place at most major airlines, lower pay is the norm for more junior airline employees. Whether military or civilian,

pilots would rather be flying (11). The departed People Express pilots would make an interesting motivational survey target. Airline pilot "training" (in actuality transition) costs are infinitesimal in comparison to military pilot costs (48). If the American public knew what military pilots really cost, they would insist that pilots spend their entire careers in the cockpit.

CHAPTER III

THE CAREER PILOT--AN ALTERNATIVE TO TOPLINE

Background

In 1978, the author developed a "career" or "professional" pilot concept. That proposal was further developed in two academic studies and proposals by Majors Fleming (31) and Garrett (32). Although less comprehensive than the previously mentioned studies, Captain Ross (14) is the latest "career pilot" advocate to appear in print. To the author's knowledge, no computer modeling of the pilot force by either proponents or opponents of a "dual track" system has been accomplished. Sophisticated attitudinal survey techniques might indicate other modifications necessary for a new concept of Air Force pilot force management.

The Congress has recognized the need to change the military management concept of the pilot resource by amending the FY 80 Defense Appropriation Bill to require five percent of Air Force UPT and undergraduate navigator (UNT) classes to be warrant officers (49). The Congress actually referred to this as a "professional pilot force" (60). The problem was that the Congress confused the issues of *salary savings* and *training costs.* The Army warrant officer helicopter pilot program wash-out rate at the time was one and one half times greater for

non-college graduates. The Air Force estimated that it took 90 UPT inputs to achieve 80 pilots (60). In contrast the warrant officer program as conceived by Congress would need 110 inputs to achieve those 80 pilots (60)--a most expensive training scheme. This proposal eventually faded away after vigorous opposition from both the Air Force and the Navy. Today's fiscal constraints and Gramm-Rudman-Hollings implementation, combined with the elephant-like institutional memory of those on Capitol Hill, could bring a rebirth of such warrant officer proposals again.

It is important to remember that the continuing interest in a "career" or "professional" pilot in MAC has always "bubbled up" from the line pilots and their commanders (47, 54). The issue surfaces anytime MAC pilots are queried as to their career aspirations (55). The author is unaware of quantified interest levels today in such a program in either MAC or the other flying MAJCOMs.

"Dual track" is not a MAC-only issue. The then Vice Commander of Tactical Air Command (TAC), Lieutenant General Robert C. Mathis, told the author, during a brief discussion in September of 1979, that he felt that some fighter pilots wanted to fly their entire careers and then still have the opportunity to compete to be a wing commander. That kind of a

career pilot program, with no opportunity to acquire necessary command and management skills prior to assuming higher responsibilities, is an impossibility in any scheme. General Mathis' perception was countered recently by another fighter pilot. He relates that the majority of fighter pilots (70%) would like to fly for an entire career--neither expecting nor desiring to command (63).

Sophisticated surveys could probe the interest (or lack thereof) in such a program. Such a survey might highlight the significant differences between, and distinct characters, of each MAJCOM. In fact, the Air Force might want--and need--different policies in each MAJCOM rather than the current centralized management of the pilot resource. This concept is much more feasible with the modern data processing and communications equipment now at the Air Force's disposal.

The Concept

The original concept (49), as developed in 1978, conceived a "dual track" pilot force with both a "command-leadership-management" (henceforth referred to as the "command") track and a "career pilot" track. Table 3 (page 21), illustrates a slight modification of the original 1978 concept. Pilots would be recruited and trained, then serve their initial seven year rated service commitment. After five years of cockpit

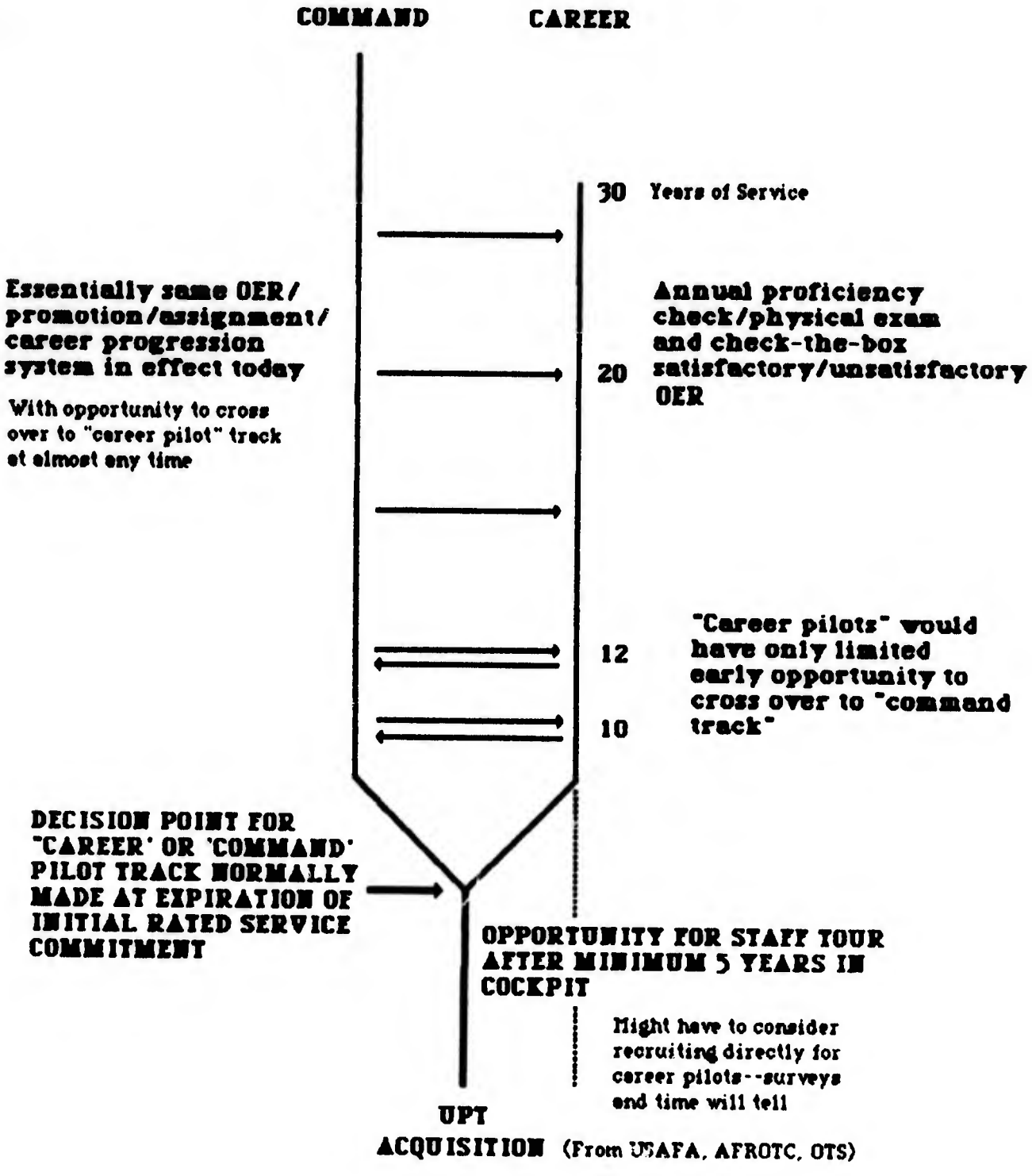
experience, pilots would be given the opportunity for a staff or rated supplement tour. This would allow some actual experience in both systems before making a career track decision. Upon completion of their initial rated service commitment, the pilots could elect to enter the "command" track--or could apply to become a "career pilot."

The "command" track would be identical to the present "whole man" (or as popularly referred to as the "every man Chief of Staff") concept--with emphasis on support and headquarters command and staff duties as well as rated duties in preparation prior to assuming positions of leadership in the Air Force. This tremendous emphasis placed on the "whole man" trained in science, management and politics with broad "generalist" backgrounds has been a common theme in most of the technologically advanced nations (2:133). There is no question that a portion of the force must possess those qualifications. The question is, "Just how large a portion?" The Air Force should be able to determine that portion through sophisticated computer force modeling techniques.

The original proposal called for a "career pilot" track limited to approximately 30 percent of the force with the option being exercised upon completion of the initial rated service commitment (whatever the length). Given today's improved computer force modeling capability, or

TABLE 3

'DUAL TRACK' PILOT PROPOSAL DIAGRAM



experience after implementation, that percentage could vary either direction. For example, Lieutenant General Druen, a former commander of the Air Force Military Personnel Center (AFMPC), thinks only a few of the pilots would actually have to be on what would become the "command track" (46).

"Career pilots" would perform only cockpit tasks and flying-related leadership and supervisory duties. There would be absolutely no advanced degree or formal professional military education (PME) requirements or eligibility, as we currently know it. That prohibition would not preclude intensive experimentation and practice with individual or small formation fighter, tanker or transport tactics. This concept might actually produce a reservoir of more experienced, professional airmen and better tacticians.

The initial screening and selection process to produce career pilots would rely on possession of a college degree. During the World War II build-up, there simply were not enough college degrees to go around (41:46). Today, a college degree is much like the high school diploma of 40 years ago. The portion of the comment on the 1959 demise of the Aviation Cadet program (for pilots), that "The man who lived, breathed and dreamed flying but lacked the finances or interest in a university

education, could no longer be recruited as a pilot" (41:47) is not totally valid anymore. Growth of American colleges and universities and in related government assistance programs has made a university education available to a larger segment of our youth. But many people still do live, breathe and dream flying--and that is what "career pilots" would be all about.

As Major Miller so aptly points out, it is best to separate the pilot and officer selection process as good officers do not necessarily make good pilots--and vice versa (37:29). The Aviation Cadet program was cancelled due to an Air Force policy decision to require a college degree prior to commissioning (46). The Aviation Cadet program had some extremely positive retention features and will be commented on later.

The original concept "married" "career pilots" to their weapons system for the life of that system. Although in some cases this "marriage" may be neither practical nor desirable, a partial "career pilot" force would reduce the necessity for frequent permanent-change-of-station moves, another significant potential cost savings. "Career pilots" who lose their flight status would be separated from the Air Force. The Air Force could adopt a "loss of license" insurance program similar to that

used by the airlines (48), or provide a a scaled medical retirement to pilots released with less than 20 years of service.

Effectiveness evaluations would be simplified for "career pilots". Today's extensive officer effectiveness reports (OERs), could be replaced with an annual flying proficiency examination such as is done anyway, and a simple check-the-appropriate-box "satisfactory/ unsatisfactory" OER form. This could eliminate much of the current administrative burden in the flying squadrons and on the personnel system.

Options

Several options for a "career pilot" rank structure were examined. One was a limited rank structure that featured slower promotions than that for pilots on the "command track." This scheme guaranteed phased proficiency promotion to major during the 14th year. An option for 25 percent opportunity to lieutenant colonel during the 19th year was considered. This option would have required a "reach-back" provision for flow back to the "command" track after promotion board selection. We also examined track switches, flowing both directions, at the 12 and 17 year points with a 10 percent selection opportunity--again by board evaluation. Computer force modeling could provide the optimum scheme(s) (49).

The second concept was for a rank freeze at captain (O-3). The third concept was for a return to the World War II Flight Officer with a revival of the blue bar, or some entirely new insignia, denoting this unique status (49). This option might have a particular appeal to fighter pilots (63). Adoption of the flight officer option would require a dramatic change to 40 years of Air Force policy and tradition.

Past Heritage

A rich, but a far less well known part of our Air Force and Army Air Corps heritage were the 33,000 flight officers trained during World War II (39:45). They were neither commissioned or enlisted. More than one third of the World War II pilots were enlisted members (41:45). After the pilot force reached maximum strength in 1944, both the flight officer and enlisted pilot programs were terminated as there were no more training slots available. Pilots in both the enlisted and flight officer programs were eventually either discharged or assimilated into the officer corps (32:7).

While researching this aspect in official documents, the author could find only four older Army Air Corps directives in the Air University archives that even referred to the flight officer program (20, 21, 22, 26). It is almost as if the Air Force at some point simply tried to erase this part

of our heritage from official memory. However, tantalizing tidbits occasionally still appear in other sources. (41:47) In his biography, Brigadier General Chuck Yeager mentions his transition from enlisted to flight officer to officer pilot status (3:13). A guest editorial (a "Terry and the Pirates" cartoon strip) in a recent *Air Force Magazine* also highlighted this significant aspect of our past Air Force heritage (9). One of the author's former supervisors was extremely proud of his past service as a flight officer pilot during World War II. In fact, his tremendous enthusiasm for the virtues of that program led us to suggest the flight officer option (45).

The military pay system would need some revision to make the flight officer rank option work. "Career pilot" pay for any of the rank structures adopted would have to keep pace with their promoted "command" track contemporaries--commensurate with their cockpit and flying-related responsibilities. Adjustments would also have to be made to the Aviation Career Incentive Act of 1974 as a non-decreasing flat rate of flight pay would be necessary for "career pilots". The pay adjustment for "career pilots" could be achieved with increasingly higher levels of flight pay for increasing longevity as a "career pilot".

These are some of the basic considerations for such a program should the Air Force ever be interested in implemention. There are advantages and disadvantages to any program and the implications of such a proposal need to be examined.

CHAPTER IV

IMPLICATIONS OF "DUAL TRACK"

Advantages

The "career pilot" program has some clear advantages to the Air Force:

1. It addresses three of the top five reasons always given for pilots leaving the service: The desire to fly for a career, unrealistic career progression hurdles of the "up-or-out" system and Air Force personnel policies and assignment system (31:43, 56, 63). It also enhances and reinforces the number one reason (found on any survey) for staying in the Air Force--job satisfaction (28, 30, 35). Major Bonen's survey of Squadron Officer School, Air Command and Staff College, and Air War College students also found that most officers "identified more closely with members of their career specialty or work unit" (30:lx).

By having had most needs satisfied in their youth, some of today's young people simply are not as driven to aspire to higher status (16). A percentage of them are in the Air Force now. Their security needs are a driving factor today--particularly the need to lesson "uncertainty" (44). Tom Watson, Jr., found job security "the greatest employee concern" at IBM (5A:14). Salancik and Pfeffer report that "turnover was highest

among executives in industries with competitive environments and unstable market conditions" (15:15). Uncertainty, competitiveness and instability are all present to some degree in today's Air Force and are exacerbated by the "up-and-out" system. A "career pilot" program could capitalize on these factors by creating a career opportunity where advancement is not the sole visible means of success. A "career pilot" option could serve to enhance both pilot and warrior status, and self-esteem (31:43). This is particularly true if a distinctly unique category (such as flight officer) is established.

One problem the Air Force has created with the emphasis on advanced degrees and completion of professional military education programs as a criteria for promotion is that we have raised expectations higher than can ever be reasonably achieved. As the Rand Corporation has observed, "in the effort to select the people who are the most trainable [high quality to compete well in the "up-or-out" system] the Air Force may be selecting those who are least retainable" (23:11). By relying on the "up-or-out system" of officer force management, the Air Force reinforces the bureaucratic image and confuses its people as to their true roles. It does this by insisting that all pilot officers be both warrior and bureaucrat. It may have better leaders and pilots--or poorer leaders and

poorer pilots and warriors as a result-- depending upon one's view of the "up-or-out" system. A "career pilot" program might do more to put the emphasis on *warrior* than PROJECT WARRIOR ever will.

2. It would use the college degree as the initial screening process.

3. It has the potential to increase pilot retention--given sufficient interest on the part of pilots and the senior leadership.

4. Variations of a "career pilot" have worked extremely well in foreign Air Forces that have the Western tradition of the "whole man" concept--particularly in the Royal Air Force and the Luftwaffe (59). Both Majors Fleming (31:45-54) and Garrett (32) discuss these programs in great detail. The Canadians use a selective continuation program which seems to work well for them (59).

5. Lieutenant Colonel Phipps, in his insightful treatise on cohesion, emphasizes the importance of unit stability to achieve an effective combat force (12:2). Warriors need to be a part of cohesive units. "Career pilots" would provide that stable nucleus around which to build cohesion and better morale in our flying squadrons. They would be the respected "old heads" and role models young pilots turn to for advice or tips on pilotage. There is some question in the author's mind as to the

amount of genuine respect granted the "continued" or "passed-over" officers in the Air Force's flying squadrons today. "Career pilots" might be of particular value in MAC's strategic airlift units where the airlift "system" seems to reinforce individual, rather than unit, or even crew, cohesion. The concept might also lessen the built-in "Achilles heel" of all active duty strategic airlift retention efforts--the Reserve Associate program's appeal to active duty pilots (48).

6. "Career pilots" would go a long way towards reducing force structure imbalances and solving the Air Force's recurring pilot experience and extensive pilot absorption problems, especially in the hard core of the pilot force.

> A correlary benefit of increasing the experience level of the pilot force is the benefit accruing from improved flying safety. The Sabre Wings study showed that experience and increased judgement were significant in the combat record of older pilots in comparison to younger pilots. This study also showed that the flying accident rate of younger pilots was about four times higher than that of older pilots (32:21).

7. A "career pilot" program would be a significant help to Air Force personnel planners in avoiding force imbalances. From the author's Pentagon experience in personnel plans, neither the personnel plan nor TOPLINE have been serious tools for the personnel manager for at least ten years. Whatever eventually replaces TOPLINE as a model could be filled out past the initial rated service commitment

with "career pilots" rather than creating new "humps" by increasing UPT production to meet future pilot shortages.

8. Reducing the flow through rated and support /staff duties could increase career prospects for selected support officers. The concept would also create better career opportunities for the "command track" pilots.

9. A "career pilot" program also has the potential to increase a pilot's commitment to the choice he or she makes as a career option. Just the mere existance of a "career pilot" option might produce a more dedicated and firmly committed "command track" pilot, while filling the larger security need of the "career pilot."

Potential Cost Avoidance

A "dual track" pilot program has the potential to save dramatic amounts of dollars. The conservative estimate of the average cost to train a fully combat-ready pilot in today's Air Force averages over $3 million per pilot. Assuming a constant 66 percent pilot overall voluntary cumulative continuation rate (7 points better than the September 1985 six to eleven year rate [see Table I]); and assuming ten to twelve years of actual rated assignments per pilot over a career; it takes at least three pilots to insure 20 years of actual pilot time in the

cockpit. This also takes into account an adequate force structure to provide for the "up-or-out" system-driven periodic rotations out of the cockpit to perform staff duties. Given that scenario, the potential dollar savings in a current pilot force of 25,975 (including colonels), is enormous--regardless of the percentage allowed to pursue a "career pilot" track (43).

For example, using the estimate of $3 million-a-copy pilots, a 30 percent (7,792), career pilot force could result in a cost avoidance of at least $46.7 billion in FY85 dollars over a 20 year period--just in replacement training and experiencing costs. That figure could skyrocket should the Air Force experience another bout with even worse pilot retention. That figure does not include cutting back UPT production capacity and bases. If a program was established to entice pilots to serve up to 30 years, the potential cost avoidance could increase by at least one third--not including savings from the retirement account. As a large share of pilot training costs is fuel-related, any significant jump in the cost of fuel would magnify the savings accordingly. For example, if pilots cost $3.5 million each, the 20 year cost avoidance for that 30 percent would jump to over $50.6 billion.

"Career pilots" with their stability would also reduce PME, training (requalification) and permanent change of station moving costs. Aggregate savings are dependent upon the percentage of participants, the improved retention rate percentage, and the actual cost of their training and experiencing.

Obstacles To A "Dual Track" Program

Significant obstacles have to be overcome to implement a "dual track" program for pilots. As with most obstacles, potential solutions are available. Adequate impetus for change may be difficult to find if complacency about the current system has crept into the senior leaderships' view. "Complacency is the most natural and insidious disease of large corporations" (5A:72).

1. Fundamental and far-reaching changes to tradition and the Air Force officer personnel management system are needed. We have lived with the All Volunteer Force (AVF) concept for 13 years. The majority of our personnel programs were conceived during the days of transition from conscription to that of the AVF. Most of our more senior personnel managers came into the force and worked programs during the conscription era and the post-Vietnam period of force draw-down. Many of those programs still reflect that mindset.

We have yet to develop the necessary military adaptation of the market mentality needed to compete in the "high tech" sector of the AVF (61:28). Consequently, we always seem to prefer changes at the margin--"bandaids" if you will. The fact is, we have been putting bandaids on the bandaids for years now. For yers aviators and the technical specialties have suffered from this "bandaid" approach of only fixing the most pressing portion of problems.

One result is a bewildering variety of interwoven, often conflicting and always complex pay regulations. Recently the General Accounting Office published a report which said this lack of "an intellectual foundation" in the area of military compensation "has let Pentagon leaders recommend changes in different pays and allowances without considering the effects upon other compensation programs" (8). The American military today has what is essentially still a Civil War rank and organizational concept imposed upon a near 21st Century technological base. Industry separates salary and rank within the hierarchy. Technicians may draw high salaries for their unique and expensive-to-acquire skills, but they have little or no rank, or say, within the organization. The perceptive General Doolittle saw this problem coming in 1946; "technicians who, unless they qualify should

not be placed in command positions" (1:27). In the author's opinion, at least a portion of the Air Force's pilot inventory, could certainly be considered the ultimate technician force.

Today's technological Air Force must promote in order to raise pay. Hence, too much rank in a high technology military service diminishes the prestige of rank overall (in the author's opinion). Margiotta notes the same trend. He states that the impact of technology on the military has diluted "the importance of rank and seniority, it shifts emphasis away from a charismatic, heroic leadership style. . . " (36:24). Captain (USN) Bickel, et al in their landmark study of cohesion arrived at the same basic conclusion. Senior officers today, driven by our reliance on technology and the resultant shift to the management ethos, seem to be more bureaucrat than warrior (29:vi).

2. A "career pilot" option would decrease the leadership/management candidate pool by whatever percentage base is agreed upon for that portion of the pilot force. The Air Force may be incurring a significant portion of our voluntary pilot resignations as a consequence of having no "career pilot" option to offer. A pilot who separates today is lost to the active force leadership/management candidate pool anyway, and is under no obligation to join the Air Reserve Forces (ARF).

However, we can not make good force structure decisions without good pilot sampling.

3. DOPMA might require modification, but a new proposal could remedy the problem. Given the magnitude of the potential dollar savings, Congress would be a willing partner. Better that we design our own program than have the Congress design one for us.

4. There is a potential for rivalry between the two pilot corps. A "select in" system after completion of the initial rated service commitment would minimize this factor. It would promote collegiality and a true sense of the professional pilot warrior by focusing competition into being the best and most professional aviator rather than fostering the sometimes divisive competition for promotion. Thus "career pilots" could increase the professional warfighting capability of the Air Force by enhancing the proficiency of a designated portion of the pilot force.

5. There is a potential for cockpit stagnation. One of the Air Force's main selling points is early responsibility. "Career pilots" could dominate flight examiner and instructor crew positions due to their stability and experience. Provisions could be made to divide responsibilities proportionately. The "command track" pilot force must be monitored to avoid limiting rated opportunity and seasoning.

6. There is also the potential for promoting the concept of "job" over "institution". By visibly nurturing the primacy of flying and fighting, and giving the pilots on both tracks better security and opportunity, institutional values could be enhanced. This proposal might do more to reinforce the concept of "institution" than anything we have done--by simply offering the option. The institution might have the opportunity to regain control of the pilots, rather than the pilots controlling the institution--as often seems to be the case depending upon the acuteness of our retention concerns.

7. There is also the potential problem of more frequent support and overseas assignments for the "command track" pilot. We could reduce some of the over 5,600 pilot rated position identifier slots on our staffs (43), and fill some of them with qualified support officers--or navigators. This potential problem is manageable. If true rated expertise is necessary, navigators are a much less costly resource to put in many of those staff positions. This is by no means a reflection upon navigator abilities or professionalism, but a simple recognition of fiscal reality.

8. There is no enthusiasm for a "career pilot" program in the Air Force personnel community. Given the demise of the personnel plan

and TOPLINE, there is little rational basis for this opposition. But the opposition is deep and vocal, still wrapped securely in the shrouds of TOPLINE and the personnel plan. This "numerative, rationalist approach to management" as described by Peters and Waterman has dominated the Air Force since at least the MacNamara era of the early 1960s.

> It teaches us that well-trained professional managers can manage anything. It seeks detached, analytical justification for all decisions. It is right enough to be dangerously wrong, and it has arguably led us seriously astray (5:29).

Compounding the problem is the fact that in the author's experience many senior leaders perceive no problems with the "up-or-out" system as they have been extremely successful within that system. They have no empathy for and cannot identify with the continued captain or passed-over major. As a result, the personal views of many high level commanders are in opposition to the "dual track" concept. Thus, the senior leadership and the personnel community mutually reinforce each other's views. Another passage from *In Search of Excellence* typifies the bureaucratic response to any new idea:

> We have watched too many line managers [commanders] who simply want to get on with their job but are deflated by central staffs that can always find a way to "prove" something won't work, although they have no way of quantifying why it might work. The central staff plays it safe by taking the negative view; and as it gains power, it stamps all verve, life, and initiative out of the company [military service] (5:31). [Brackets by the author].

CHAPTER V

THE DILEMMA

We have a dilemma with a continuous undercurrent from young pilots who would like to see a career pilot program and a personnel community saying that a "career pilot" force would not work. Part of this dilemma stems from the Air Force's institutional inability to recognize and understand the underlying causes of our retention problems or to make any kind of accurate projections as to what type of force model might work. To date, we have more often than not treated symptoms--not the disease. When our young pilots say one thing, they often mean something else. The Air Force has not been perceptive enough to pick up on this phenomenon. We simply don't understand enough about the follow-on generations, and they may not understand themselves (57).

The senior leadership contends with at least two, maybe three distinct groups in the Air Force. The 60s, or so-called "Spock" generation, the "me first" 70s generation and perhaps a younger, more pragmatic group (7), that is influenced by the others. The 26 year olds like the "career pilot" idea--or so they say. How will they feel at 35 or 40 when they are out-ranked by their contemporaries? That could create a

potential morale problem.

Would a separate and distinct insignia ameliorate that problem? How many pilots, after carefully evaluating the limitations of the career pilot force, would opt for that status? No one feels secure advocating such a course as there is no way to guarantee the outcome. The concept is rejected with faulty data and assumptions based on past experience or personal perceptions. Past experience and personal perceptions are not always relevant when dealing with these new generations and their different expectations.

The Air Force needs to define the ideal composition of its pilot force structure. Then it must apply to its advantage the available relevant information on a host of factors including: pilot force structures, physiological changes that occur over time in aviators, motivation, dedication, job satisfaction, values, sociological changes, etc., which influence individual career decisions of a broad spectrum of pilot officers in today's Air Force. What follows is a partial list of necessary questions that must be answered:

1. What is the ideal compositon and age distribution of the pilot force?

2. Is the "whole man" concept giving the Air Force that?

3. Does it provide adequate warfighting experience in the cockpit?

4. Is it cost effective?

5. What are the trade offs between experience and age?

6. How long can (or should) a pilot fly and what what are the physiological parameters of each weapons system?

7. What impact would an active duty "career pilot" progam have on the ARF?

8. What impact does geographic and weapons system stability have on unit cohesion and combat effectiveness?

9. What are the average pilot's career goals and how do they change over time?

10. How important are pay and benefits and what is the relationship between the two and with ?

11. Do pilots want more free time to develop their "quality of life"?

12. Is prestige a factor of rank or pay--or both?

13. What percentage of pilots still aspire to more rank and responsibility?

14. What percentage of pilots just want to fly?

These are just some of the areas that must be probed. With proper understanding, impetus and direction, resolution of this dilemma is possible.

CHAPTER VI

CONCLUSIONS

The Costs Are Too High To Ignore

Fully trained and experienced military pilots are too expensive a resource in today's complex world to be dealt with in a "business-as-usual manner," or with a"draft-era" mentality. Given their multi-million dollar training investment cost, it is neither in the best interest of the Air Force nor for the fiscal responsiblity of the nation to allow any military pilot to opt out of any military obligation after only seven years of flying service. Neither is it cost effective to release a pilot from active duty as long as that pilot is performing satisfactorily in grade.

If a dual track system for pilots proves feasible, such a program should be mandated simply due to the military pilot's high training/ experiencing investment cost. With a 30 percent career pilot force, a conservative estimate of potential cost avoidance in pilot replacement training costs alone (over 20 years) is at least $46 billion. This is particularly relevant when the training investment cost is so critically dependent upon the cost of a flying hour. Flying hour cost is critically dependent upon the cost of fuel, a variable over which the Air Force has no control (except to use more simulator time). The initial training/

experiencing cost of 30 percent of our pilots goes up about $3.9 billion with each $500,000 incremental increase in the cost of an individual pilot. The only reason training costs have remained relatively stable is the five year decline in the price of fuel. Sooner or later that trend line will ascend again.

Towards A New Personnel Plan

The Air Force needs a new personnel plan and officer force model. A reevaluation and updating of the Air Force personnel system could serve to increase pilot job satisfaction and retention. There are serious institutional issues that must be dealt with including the end of a 40 year Air Force tradition of line officer-only pilots. That is a fundamental change of direction from the "whole person" concept. The current "up-or-out" system, and its "whole person" concept, currently acts to erode the security needs of many pilots over time--*particularly for those who actually joined the Air Force to fly and fight.* The People Express experiment in the private sector with "manager pilots" does not seem to be a total success, if evaluated in light of more than 400 voluntary resignations to date.

A personnel system that reinforces and fosters security needs leading to a full career of service to the nation can pay big dividends in

warfighting ability, readiness, and fiscal responsibility. A "dual track" career path for pilots might be a part of that new personnel plan.

Why We Need To Examine "Dual Track"

The only grounds for dismissal or release of pilots before 20 years of rated service in the total Air Force should be for reasons of a medical nature or for malfeasance or incompetence. We now have a *de facto* "career pilot" force of sorts in the ARF. The solid record of ARF units in head-to-head competition against active duty units, just in 1985, speaks for itself. ARF aircrews won TAC's GUNSMOKE competition, MAC's VOLANT RODEO competition and SAC's refueling competition (43A). The ARF record, compiled by their version of "career pilots," proves that geographic stability and high-time experience in a weapons system are crucial to pilot proficiency, unit cohesion, and ability to perform the mission. However, there is no program that requires the pilot leaving active duty voluntarily to serve with an ARF unit.

There are many potentially positive features of a limited and highly selective "career pilot" option. Dependent upon survey results and actual experience, "career pilots" might be larger portion of the force than conventional thinking would suggest. A "career pilot" option could improve retention, cohesion, unit identification, provide a more

professional and experienced core flying force, improve career prospects for support and flying officers, vastly increase respect for the professional warrior, put an end to the U.S. military policy of promoting to pay, and save billions of dollars over time. This is a unique program that actually has the potential to *simultaneously improve warfighting while saving billions of dollars.*

Although but a dim memory in a time of extreme national emergency, the Air Force has previously relied extensively on professional pilots, both enlisted and flight officer. The renowned aviation pioneer, innovator a founding father of our Air Force, General Doolittle, was thinking of a similar concept 40 years ago. Another interesting and compelling fact is that every single war college and command and staff college study and article which has seriously addressed this issue since the mid-1960s, is supportive of such a program, or an evaluation of alternatives. These are included in either the list of references or the bibliography. Disagreements are only in the finite details of the particular scheme and manner of implemention, not with the concept. Enough studies exist to suggest that the present pilot force management system has not worked as well as some Air Force leaders think it has.

Field commanders have written to MAJCOMs asking for consideration for a "career pilot" option (47, 54). General officers at Headquarters USAF have questioned the continuing wisdom of "up-or- out" (62) as have other thoughtful writers (17:7). Lieutenant General Druen thinks that some form of the Aviation Cadet program is still viable (46). Careful attention to the "dual track" pilot proposal is warranted by the institution in the form of a thorough, sophisticated, unbiased examination.

Currently, the Air Force is hampered by serious limitations to achieve such a goal in that the personnel community has neither TOPLINE nor a current personnel plan to follow as an evaluation "roadmap". The recommendations that follow could help resolve this fundamental management issue concerning the most expensive part of our force.

CHAPTER VII

RECOMMENDATIONS

An Agenda

The Air Force must first determine whether the current pilot force structure provides the correct pilot force composition; if the system is working and if it could be more cost effective. If the answer to any of those questions is "no", the "career pilot" proposal might then be determined to be a viable option for a specified portion of the force. Prior to taking any actions, the personnel community must be directed to produce a new market-oriented, realistic, accurate, *flexible, responsive and usable* personnel plan. TOPLINE, or a derivative, must also be recreated in a workable fashion in order to accurately model the officer force. Such analysis must be done without bias--and the Air Force senior leadership must insure that their guidance does not bias the result. The human tendency is to make changes at the margin. There have been more "bandaids" over the years than the system can stand. We need a new comprehensive personnel plan. It is a tough challenge--but "doable" with the right leadership, direction, and composition of the team picked to write the new plan. Only then can an accurate, practical course be charted.

Careful, sophisticated sampling of the force is a necessity. If we don't know how the young pilots think, how their views may change over time and what they really aspire to professionally, it will be impossible to devise a new personnel system that can achieve any long-term goals. That is crucial if the Air Force, as an institution, decides to try to implement a "career pilot" program for a selected and perhaps not as limited portion of the force as we currently think. One of the major problems now is that the author's analysis of the typical responses to current survey questions almost always finds those answers situational. They are clearly based within the confines of the current "up-or-out" system.

If surveys are not a chosen methodology, or prove inconclusive for either case, perhaps the easiest way to probe Air Force pilot's sentiments is to devise an extremely limited "career pilot" program, and see what reaction it gets over time. Depending upon the results, the experiment could always be expanded or terminated.

The author's intuitive feeling is that in order to negate the appearance of career stagnation, we would be better off with an entirely new and distinctive insignia and separate rank structure for "career

pilots." True stagnation occurs when performing the same job with higher rank (42:26), a not uncommon occurrence in our Air Force. Lieutenant Colonel Henjum's findings concerning job enrichment and job enlargement could be applied to "career pilots," enhancing job satisfaction, perceptions of status and morale considerably (33).

At some point in time, as illustrated in Figure 3 (page 21), the decision for the "career pilot" option must be irrevocable. Completion of the twelfth year of rated service may be the optimum cut off point. At that point, "career pilots" may be too far behind the command and management experience power curve to compete. The "command track" pilot should be able to opt for career pilot status at any time--much like many college deans reclaim their tenured status as a professor and return to the classroom.

More "Bandaids"

If for some reason--after careful, honest analysis--the Air Force decides that a "dual track" system for pilots is not feasible, there are some other actions (more of those unfortunate "bandaids") that might help lengthen pilot careers:

Due to their prohibitive cost, pilots are most definitely a national resource. Earlier Federal Aviation Administration studies are conscious of

this fact (19, 24). Airline hiring is not going to decrease, and may grow in the future (52). There is an advantage for the Air Force if pilots serve for a minimum 20 year career. It is advantageous for the airlines that they have a stable source of mature, well-trained, experienced pilots to whom they can pay slightly lower salaries and also avoid high retirement cost obligations. A cooperative program could be forged between the services and the major airlines guaranteeing a military pilot (if physically qualified) a cockpit seat with an airline upon completion of 20 years of service. The trend seems clear as the airlines are hiring older pilots anyway (10). The certainty of future job security might prove a powerful institutional motivator for the Air Force.

A cut in headquarters rated staff authorizations to more realistic numbers could reduce the overall need for pilots. That could enhance morale and job satisfaction through the providing of more responsibility to both rated and support officers, and noncommissioned officers. It would allow pilots to spend more time in the cockpit and also help reduce the flow through the structure. If rated expertise is truly necessary, navigators are a significantly more cost effective resource for this purpose. The Air Force could train support officer operations specialists if necessary.

A return to some form of the Aviation Cadet program, using the college degree as an initial screening process, might do wonders for pilot retention. Lieutenant Colonel O'Sullivan's research in 1965 found that aviation cadets had a 27 percent higher overall retention rate than Air Force Reserve Officer Training Corps graduates (38:28). Generational differences may alter that contrast in the 1990s and beyond. Surveys and experience may discover and/or confirm that we don't want to start "career" and "command" track pilots in the same program.

The recent Air Force policy change to increase the initial rated service commitment after graduation from UPT from six to seven years was an excellent one (13). However, that decision does not go far enough. Because of those multi-million dollar pilot training and experiencing costs, the Air Force should exact a minimum 20 year (or whatever is determined to be optimum length) flying career for all military-trained pilots *somewhere* in the total Air Force. It is not as cost-effective for the ARF to send pilot candidates to UPT. It is to the advantage of both the active force and the ARF that the ARF has a pilot pipeline through the active force (50). Incentives to extend pilot careers to their optimum length would be extremely cost effective. Adoption of this policy would

solve the potential negative cost effectiveness trend of lower retention among female Air Force pilots when compared to male retention rates.

Although unpopular with the Air Force senior leadership, and the compensation office in the personnel community, a simple career bonus program could be extremely cost effective. A 1977 study by the Center for Naval Analysis concluded that bonuses would retain more pilots at a lower cost than across-the-board flight pay increases (27:i). It would be difficult for a pilot to resist a one-time $100,000, $150,000, or $200,000 (whatever-it-takes), tax free bonus to sign on for 20 years (or more) of service at the completion of the seventh year of rated service. Just keeping pilots and other career service people on active duty past the 20 year point could have a dramatic impact on improving rated experience levels and in reducing retirement outlays. The expenditure of a maximum of $200,000 to save a minimum outlay of $6,000,000 is cost-effective in any analysis.

Ironically, the author did much of the ground-work for the aviator bonus program eventually adopted by the Navy. The Air Force wasn't interested, but the Navy was. There are some potential problems with bonuses--but they are solvable. The one-time career commitment bonus would be a better program than the Navy's "temporary" three to

six year plan. There is no question though, that despite the necessity of frequent trips to Capitol Hill to insure continuation of their bonus program, the Navy is in a better pilot inventory position today than they would be without that bonus authority. An Air Force "one-time" career bonus would be much easier to administer.

Certain mission areas such as strategic airlift or UPT instruction have had historical poor pilot retention problems. Given current shrinking pilot inventories, if proposed solutions cannot stem the present, or future, pilot exodus; the strategic airlift mission could be assumed by ARF aircrews (if the Air Force requires a minimum of 20 years of rated service) and the entire UPT mission contracted out. A combined support force of active duty and reservists or guardsmen could man the MAC headquarters and command posts and maintain the equipment. A small cadre of active duty pilots (insurance against nonmobilized contingencies) could fly some exercises and some routine training missions. This position, while extreme (and frought with readiness implications), would at least preserve our ability to respond adequately in a general war scenario--given adequate advance warning. Some of MAC's normal special assigned airlift missions (SAAM), and channel missions, would have to be contracted to private carriers.

Their Heart In The Air Force. . .

To conclude briefly, a "dual track" system appears to be a concept promising enough to warrant further investigation. It appears that many of the Air Force's chronic pilot inventory management problems could be eased by a "career pilot" program for a selected portion of the force. *It is a rare program indeed that has the potential to improve warfighting capability and save billions of dollars at the same time.* A "career pilot" program could reinforce the higher security needs of many of our pilots. To paraphrase the late Tom Watson, Sr's (the Founder of IBM) philosophy; "career pilots" would have their heart in the Air Force and the Air Force in their heart (5A:68-71).

The author cannot hold out much realistic hope for institutional acceptance, or even evaluation, of such a program. Despite the consistent and constant interest in a dual track pilot management system for the Air Force on the part of some of our pilots and despite the success of similar programs in foreign air forces; interest at higher levels of the Air Force is not sufficient today to ask for an evaluation. It will clearly take some type of crisis to force more high-level involvement and "top down" guidance for this program to be evaluated, accepted or implemented by our institution.

Despite the continuing long-term interest in the concept of a "career pilot", nothing will occur:

(1). Until pilot retention problems (and the attraction of continued airline pilot hiring well into the 21st Century [52]), drives manning and/or readiness to a critical state (which could very easily happen this time as we began the last retention crisis with a healthy pilot surplus [see Table 1]), and;

(2). Until the Air Force understands the complex interrelationships between the payoffs of good retention in combat; the resulting improved readiness and warfighting capabilities and the dramatically reduced training investment cost losses, and;

(3). Until the Air Force fully understands both the recruiting and retention realities of the modern marketplace, given the AVF environment, and;

(4). Until the senior leadership demands a realistic, flexible and *usable* personnel plan, and;

(5). Until the Air Force achieves an institutional understanding of the newer generations serving with us today, and effects new policies to face the tough challenges ahead; there is little realistic chance of a United States Air Force "dual track" pilot force becoming a reality.

"'Professional' management today sees itself often in the role of a judge who says 'yes' or 'no' to ideas as they come up. . . . A top management that believes its job is to sit in judgement will inevitably veto the new idea. It is always 'impractical.'" John Steinbruner makes a similar point commenting on the role of staffs in general: "It is inherently easier to develop a negative argument than to advance a constructive one."

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LIST OF REFERENCES

Books

1. Doolittle, James H. Lieutenant General, USAAC. The Report of the Secretary of War's Board on Officer-Enlisted Man Relationships. (The "Doolittle Report"). Washington D.C.: Infantry Journal Press, 1946.

2. Huntington, Samuel P. "Power, Expertise and the Military Profession." The Professions in America. Kenneth S. Lynn, ed. Boston, MA: Houghton Mifflin Company, 1965.

3. Janos, Leo and Yeager, Chuck. Yeager. New York, N.Y.: Bantam Books, 1985.

4. Palmer, Bruce, Jr. General, USA. The 25 Year War. Lexington, Kentucky: The University Press of Kentucky, 1984.

5. Peters, Thomas J., and Waterman, Robert H. In Search of Excellence: Lessons From America's Best Run Companies. New York, NY: Harper and Row, Publishers, 1982.

5A. Watson, Thomas J., Jr. A Business And Its Beliefs. New York, NY: McGraw Hill Book Company, 1963.

Articles and Periodicals

6. "AF Pilot Retention Declines." Air Force Times, 3 February 1986, p. 9.

7. Brody, Michael. "Meet Today's Young American Worker." Fortune, 11 November 1985, p. 90.

8. Budahn, D.J. "GAO Says Military Pay System Lacks Structure." Air Force Times, 3 February 1986, p. 4.

9. Caniff, Milton. "Terry and the Pirates" cartoon strip. A Guest Editorial in Air Force Magazine, September 1985, p. 4.

10. Career Pilot Job Report.(s). Future Aviation Professionals of America. Monthly publication. (Any Issue).

11. Ginovsky, John. "Why AF Pilots Resign." Air Force Times, 10 November 1980, p. 1.

12. Phipps, Jeremy J.J. Lieutenant Colonel, UKA. "Unit Cohesion: A Prerequisite For Combat Effectiveness." National Security Affairs Issue Paper Series 82-3. National Defense University, Fort Lesley J. McNair, Washington D.C.: 1982.

13. Pilot Commitment Upped to Seven Years." Airman, in "On Final". September 1985, p. 2.

14. Ross, Charles E. Captain, MANG. "A Dual-Track Career System for Pilots." Air University Review. July-August 1985, pp. 95-99.

15. Salancik, Gerald R. and Pfeffer, Jeffrey. "Who Gets Power--And How They Hold On To It." Organizational Dynamics. Winter, 1977, pp. 2-21.

16. Sheehy, Gail. "Introducing the Postponing Generation--The Truth About Today's Young Men." Esquire. October, 1979, p. 25.

17. Vought, Donald B. Lieutenant Colonel, USA, (Ret). "Farewell to Arms: A Perspective on Retirement." Military Review. February 1980, p. 2.

18. Witkin, Arthur. "How Bosses Get People to Work Harder." U.S. News and World Report. 29 January 1979, p. 63.

Official Documents

19. A Study to Determine Feasibility of Establishing a National Program for Training Skilled Aviation Personnel. U.S. Department of Commerce. Economic Development Administration, Washington D.C., September 1967.

20. Designation of Aviation Service Officers. Army Air Corps Regulation 35-21, Washington D.C.: Department of War, 29 May 1942.

21. Eligibility for Appointment as Flight Officers in the Army of the United States. Army Air Corps Regulation 35-3, Washington D.C.: Department of War, 21 January 1943.

22. Flying Status of Nonrated Officers and Warrant Officers and of Retired Officers. Army Air Corps Regulation 35-8, Washington D.C.: Department of War, 10 March 1942.

23. Rand Symposium on Pilot Training and the Pilot Career: Final Report. Prepared for United States Air Force PROJECT RAND, Santa Monica, CA: December 1970.

24. Report of the Aviation Human Resources Study Board on Manpower Requirements of the Civil Aviation Industry (Project Long Look). Washington D.C.: U.S. Department of Transportation. Federal Aviation Agency, Washington D.C.: September 1964.

25. The Road Ahead. (A Management Plan For Optimum Distribution of the Officer Force). Headquarters United States Air Force Directorate of Personnel Plans, Washington D.C.: 1963.

26. System for Selection of Flight Officers as Second Lieutenants, Army of the United States. Army Air Corps Regulation 35-8, Washington D.C.: Department of War, 12 November 1942.

27. The Navy's Pilot Shortage: A Selective Bonus and Other Actions Could Improve Retention. General Accounting Office, Washington D.C.: February 1980.

Unpublished Material

28. Anderson, Kenneth A. Lieutenant Colonel, USAF. Retention Survey: Class of 1980. Air War College research study, Air University, Maxwell AFB AL: April, 1980.

29. Bickel, Michael D. Captain, USN, et al. Cohesion in the U.S. Military. Industrial College of the Armed Forces research study, National Defense University, Fort McNair, Washington D.C.: May, 1982.

30. Jonen, Anne C. Major, USAF. Professionalism" From Lieutenants to Colonels--A 1981 Attitudinal Assessment Among SOS, ACSC, and AWC Students. Air Command and Staff College research study, Air University, Maxwell AFB AL: May, 1981.

31. Fleming, Thomas O., Jr. Major, USAF. Pilot Specialists: The Potential for Dual Track Management of Air Force Pilots. U.S. Army Command and General Staff College research study, Fort Leavenworth, KS: June 1980.

32. Garrett, Roger C. Major, USAF. Pilot Specialists in the USAF: What Can We Learn From the Royal Air Force? Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1980.

33. Henjum, Joseph, Jr. Lieutenant Colonel, USAF. The Impact of Horizontal Job Diversification on Individual Motivation and Performance. Air War College research study, Air University, Maxwell AFB AL: March 1974.

34. Herres, Robert T. Major, USAF. "The Road Ahead" and Air Force Executive Development. Air Command and Staff College research study, Air University, Maxwell AFB AL: June, 1965.

35. Lee, Robert E. Lieutenant Colonel, USAF. Air War College Class of 1981 Retention Survey. Air War College research study, Air University, Maxwell AFB AL: April 1981.

36. Margiotta, Franklin D. Colonel, USAF. Future Challenges to Military Leadership: An Agenda. First Draft Working Paper for a Seminar Discussion at Royal Roads Military College, Canada, National Defense University, Fort Lesley J. McNair, Washington D.C.: 1981.

37. Miller, Ralph L. Major, USAF. Proposed Modernization of the USAF Pilot Selection System. Air Command and Staff College research study, Air University, Maxwell AFB, AL: March 1983.

38. O'Sullivan, David G. Lieutenant Colonel, USAF. The Pilot Deficit in the Late '60s and Early '70s. Air War College research study, Air University Maxwell AFB, AL: April 1965.

39. Porter, David L. Lieutenant Colonel, USAF. An Officer Resource for the 70's: The Warrant Officer. Air War College research study, Air University, Maxwell AFB, AL: April 1971.

40. Schroetel, Albert H. Major, USAF. A Cost Comparison of Alternative Personnel Management Systems for USAF Officers. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1977.

41. Tompkins, Gary R. Major, USAF. The Pilot Officer in the USAF. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1972.

42. Wilson, Conrad L. Lieutenant Colonel, USAF. The Strategic Air Command's Deterrent Force's Morale. Air War College research study, Maxwell AFB, AL: April 1972.

Other Sources

43. Alfano, Joseph. Captain, USAF. Telephone Interviews With Action Officer in Headquaters United States Air Force, Directorate of Personnel Plans, Analysis Division, Washington D.C.: 29 and 30 January 1985.

43A. Booth, Billy C. Colonel, USAFR. Interview with Reserve Advisor to Air University Commander, Maxwell AFB AL: 24 March 1986.

44. Daab, Ford. Lieutenant Colonel, USAF and Tavernise, Emilio G. Major, USAF. Background Paper on The Pilot. Headquarters United States Air Force XOOJ and XOOTD, Washington D.C.: 1979.

45. Donnell, Robert E. GS-15 (Lieutenant Colonel, USAF [Ret]). Series of Personal Interviews with the Director of Personnel Plans, Headquarters Military Airlift Command, Scott AFB, IL: February through July of 1978.

46. Druen, Walter D. Lieutenant General, USAF (Ret). Telephone Interview With Former AFMPC Commander (and Former Aviation Cadet) 25 February 1986.

47. Field Comments on Rated Retention Symposium Action Items. Letter from the Commander, 317th Tactical Airlift Wing to Headquarters Military Airlift Command DCS/Personnel, Scott AFB, IL: 11 October 1979.

48. Graham, James D., Jr. Major, USAF. A Look at the Competition. Headquarters Military Airlift Command, DPXPA Briefing (outlining contrasts between USAF/airline pilot careers/lifestyles, etc.) Scott AFB, IL: 1978.

49. _____. "Career Pilot" Force Update. Headquarters Military Airlift Command, DPXPA Point Paper, Scott AFB, IL: 1979.

50. _____. Lieutenant Colonel, USAF. MAC Total Force Mix Criteria. Headquarters Military Airlift Command, XPPD Briefing, Scott AFB, IL: February 1984.

51. _____. Major, USAF. Pilot Training Investment Costs. Headquarters Military Airlift Command, DPXPA, Background Paper, Scott AFB, IL: 1979.

52. _____. Two Pilot Certification Impact on AF Pilot Retention. Headquarters United States Air Force, MPXXX, Staff Summary Sheet, Washington D.C.: 23 July 1981.

53. Jones, James L. Colonel, USAF (Ret). Telephone Interview with the Director of Administrative Services, University of Southern California, Los Angeles, CA: 23 July, 1979.

54. Kuyk, Charles F.G., Jr. Major General, USAF. Letter to CINCMAC outlining desires of young pilots for a full flying career, Headquarters 22nd Air Force, Travis AFB, CA: 1 November 1978.

55. Martinez, Randy J. Captain, USAF. European Spread-The-Word Trip Report. Headquarters Military Airlift Command, DPXPA, Scott AFB, IL: June 1985.

56. _____. MAC Pilot Retention: Discussion of the Most Common Reasons for Separating from the Air Force. Headquarters Military Airlift Command, DPXPA, Point Paper, Scott AFB, IL: Undated (1985).

57. Massey, Morrison, Doctor. What You Are Now is Where You Were When. Movie found in DOD 5040.2-C-3, Catalog of Audiovisual Products, Vol III. June 1985.

58. People Express profile on NBC Nightly News, 3 February 1986.

59. Rabata, Dan. Major, USAF. Memorandum for the Record summarizing interviews with the British, Israeli, Canadian and West German Air Attaches as a part of PROJECT AIR FORCE 2000, Headquarters United States Air Force, MPXXX, Washington D.C.: 9 February 1982.

60. Reintroduction of Warrant Officers (Flight Training Test). Headquarters United States Air Force, MPXXX, Background Paper, Washington D.C.: 18 October 1979.

61. Rogers, Alan V. Colonel, USAF. Air Force 2000 Draft Manpower and Personnel and Training (MPT) Chapter. Headquarters United States Air Force MPXXX letter to AF 2000 People Panel Members, Washington D.C.: 18 February 1982.

62. Taylor, Robert C. Major General, USAF. Up-Or-Out Policy. Memorandum for Lieutenant General Anderson (AF/XO) from AF/XOO, Headquarters United States Air Force, Washington D.C.: 27 March 1979.

63. Weidman, James D. Colonel, USAF. Personal Interview With a Senior Fighter Pilot, Air War College, Air University, Maxwell AFB, AL: 28 January 1986.

BIBLIOGRAPHY

Books

Binkin, Martin and Kyriakopoulos, Irene. Youth or Experience? Manning the Modern Military. Washington D.C.: The Brookings Institution, 1979.

_____ Paying the Modern Military. Washington D.C.: The Brookings Institution, 1981.

Herzberg, Frederick; Mausner, Bernard and Snyderman, Barbara. The Motivation to Work. New York, N.Y.: John Wiley and Sons, Inc., 1959.

Huntington, Samuel P. The Soldier and the State: The Theory and Politics of Civil-Military Relations. Cambridge, MA: Harvard University Press, 1957.

Lawler, Edward E. III. Motivation in Work Organizations. Monterey, CA: Brooks/Cole Publishing Co., 1973.

Leavitt, Harold J. Managerial Psychology. (Third Edition). Chicago: University of Chicago Press, 1972.

Millett, Allan R. and Trupp, Anne F. editors. Manning the American Armed Forces: Problems and Prospects. Columbus, OH: The Mershon Center of the Ohio State University, May 1981.

Articles and Periodicals

Almanac Issue. Defense 85. September, 1985.

Donohoe, Cathryn; Kotz, Nick and Nathan, Nancy B. "Where Have all the Warriors Gone?" The Washingtonian. July 1984, p. 80.

Gates, Ed. "Putting Up-Or-Out in Perspective." Air Force Magazine. April 1979, p. 64.

"Honeymoon Over for Volunteer Armed Forces?" U.S. News and World Report. 10 June 1985, p. 55.

Lowery, John. "Second Chance to Fly." The (Air Force) Times Magazine. 2 April 1979, p. 14.

"Materialism is Big on U.S. Campuses." Post-Dispatch (St Louis). 21 January 1980, p. 1.

"Number of Officers in Each Major Career Field." Table in Air Force Magazine. May 1985, p. 191.

Piloting Careers. Future Aviation Professionals of America. Monthly publication.

"Pilot Retention." Letter to the Editor (name withheld). Aviation Week and Space Technology. 5 February 1979, p. 70.

"Salary Survey." Professional Pilot. April 1979, p. 37.

Quinn, Jane Bryant. "You and Your Credit." U.S. Air. September, 1979, p. 67.

"Who'll Fight For America?" Time. 9 June 1980, p. 24.

"Who Gets Ahead in America Today." Psychology Today. July 1979, p. 28.

Official Documents

Military Compensation Background Papers: Compensation Elements and Related Manpower Cost Items Their Purpose and Legislative Background. Third Quadrennial Review of Military Compensation, Washington D.C.: Office of the Secretary of Defense, August 1976.

Profile of American Youth - 1980 Nationwide Administration of the Armed Services Vocational Aptitude Battery. Office of the

Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics), Washington D.C.: Department of Defense, March 1982.

Tan, Hong W. and Ward, Michael P. The Retention of High-Quality Personnel in the U.S. Armed Forces. Report prepared for the United States Air Force PROJECT RAND by the Rand Corporation, Santa Monica, CA: February 1985.

The Evolution of Military Officer Personnel Management Policies: A Preliminary Study with Parallels from Industry. Report prepared for the United States Air Force PROJECT RAND, Santa Monica, CA: August 1978.

Unpublished Materials

Cosnowski, Walter J. Major, USAF. A Pilot Specialist Track Analysis. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1979.

Cromer, DeJoan and Julicher, Mark R., Captains, USAF. An Examination of the Effects of Economic Conditions on Pilot Retention. Air Force Institute of Technology School of Systems and Logistics graduate thesis, Wright-Patterson AFB, OH: September 1982.

Graham, James D., Jr. Major, USAF. Military Pilot Compensation. Armed Forces Staff College staff study, Norfolk Navy Base, VA: June 1980.

Harrell, Travis E. Major, USAF and Rhame, Robert L. Major, USAF. Instructor Pilot Retention in Air Training Command: A Survey Analysis. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1979.

Horner, Lyle. Major, USAF. Meeting the Nation's Need for Pilots in the Next Decade. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1979.

Knudson, Steven R. Captain, USAF. Retention of MAC Strategic Airlift Pilots: An Analysis of the Strategic Airlift Aircrew Survey. Air

Force Institute of Technology School of Engineering thesis, Wright-Patterson AFB OH: September 1978.

Lapham, George B. Lieutenant Colonel, USAF. Pilot Specialization, A Call For Action. Air War College research study, Air University, Maxwell AFB AL: April 1978.

Max, Karl J. Major, USAF. Is a Limited Duty Officer Program Feasible in the Air Force? Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1970.

McGurk, Thomas D. Major, USAF. Pilot Retention Improvement: The Rated Officer Procurement Progam. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1979.

Mikolajcik, Thomas R. Major, USAF. Retention--An Economic Problem. U.S. Army Command and General Staff College research study, Fort Leavenworth, KS: May 1979.

Pearce, Frank M. Major, USAF. Officer Prestige and Motivation. Air Command and Staff College research study, Air University, Maxwell AFB, AL: May 1976.

Poplin, James F. Captain, USAF. An Analysis of the Economic Benefits Received by the Airline Industry from Prior Military Training of Airline Pilots. School of Systems and Logistics graduate thesis, Air Force Institute of Technology, Wright-Patterson AFB, OH: August 1971.

Porter, Ronald G. Major, USAF. Pilot Retention: The Impact of Values. Air Command and Staff College research study, Air University, Maxwell AFB, AL: March 1983.

Rhodes, John D. Major, USAF. An Annotated Bibliography on Pilot Retention. Air Command and Staff College research study, Air University, Maxwell AFB, AL: April 1980.

Study of Officer's Personnel Act of 1947 and of USAF Implementation of That Act. Air War College study, Air University, Maxwell AFB, AL: December 1949--CONFIDENTIAL.

Welser, William III. Major, USAF. U.S. Air Force Officer Retention--A Plan for the Eighties. Armed Forces Staff College research study, Norfolk, VA: 3 May 1982.

Wray, Robert E. The Pilot Retention Problem--A Possible Solution. Professional Military Comptroller Course, Leadership and Management Development Center, Air University, Maxwell AFB, AL: February 1979.

Other Sources

Aircrew Initiative Survey. Headquarters Military Airlift Command IGIOA staff summary sheet, Scott AFB, IL: 2 March 1979.

Aircrew Activity Seminar Ground Rules and Results. Headquarters Military Airlift Command, DPXPA Briefing Slides, Scott AFB, IL: July 1985.

Aviation Officer Career Survey. Briefing Slides from Chief of Naval Operations-sponsored survey (OP-01 and OP-05), Headquarters United States Navy, Washington D.C.: 1979.

Dopler, Ed. To Fly and Fight Takes Airlift Might--Believe It. Headquarters United States Air Force XOOTA Briefing, Washington D.C.: Undated (1985).

Graham, James D. Jr. Major, USAF. Airline Prognosis/Influence on MAC Pilot Attrition. Headquarters Military Airlift Command, DPXPA Point Paper, Scott AFB, IL: 7 September 1979.

_____. Critical Skills--The Future Retention Challenge. Headquarters USAF, MPXXX Briefing originally presented to the 1981 Defense Science Board Summer Study, Washington D.C.: July 1981.

———— Pilot Retention Newsletters. Headquarters Military Airlift Command, DPXPA, Scott AFB, IL: 13 June, 6 July, 2 August, 31 August, 1 October, 1 November, 3 December, 26 December 1979.

———— *Random Thoughts on Retention.* Headquarters Military Airlift Command, DPXPA, Point Paper, Scott AFB, IL: January 1979.

———— Lieutenant Colonel, USAF. Random Thoughts on Retention II. Headquarters Military Airlift Command, XPE, Point Paper, Scott AFB, IL: November 1984.

———— The Elements of Mission Effectiveness and Their Synergisms. Headquarters Military Airlift Command, XPE, Point Paper, Scott AFB, IL: November 1984.

Martinez, Randy J. Captain, USAF. MAC Status Reports on Retention Initiatives. Headquarters Military Airlift Command, DPXPA, letter to to Headquarters USAF Military Personnel Center, MPCMR, Scott AFB, IL: 18 April 1985.

———— 2 July 1985.

Officer Career Management. United States Air Force Inspection and Safety Center (AFISC/IGD/IGA) Staff Summary Sheet, Norton AFB, CA: Undated (1979).

Skull Session on Squadron Flying Officer Turbulance. Headquarters Military Airlift Command Special Assistant for Mission Effectiveness Briefing, Scott AFB, IL: 1985.

Tavernise, Emilio G. Major, USAF. Retention. Headquarters United States Air Force XOOJ Staff Summary Sheet to CSAF. Washington D.C.: 21 November 1978.

Thomson, David L. Colonel, USAF. Retention "Tidbits" Newsletter. Headquarters Air Training Command, DCS/Personnel, Randolph AFB TX: 13 September 1979.

GLOSSARY

AFMPC	Air Force Military Personnel Center
ARF	Air Reserve Forces (Air Force Reserve and Air National Guard)
AVF	All Volunteer Force
AWADS	Adverse Weather Delivery System
BOS	Base Operating Support
DCS	Deputy Chief of Staff
DOPMA	Defense Officer Personnel Management Act of 1980
MAC/DPXPA	Headquarters MAC Directorate of Personnel Plans Analysis Branch
FY	Fiscal Year
GUNSMOKE	TAC's tactical fighter competition
HALO	High Altitude Low Opening (parachute technique)
IGI	The Inspector General's Directorate of Inspection
LAPES	Low Altitude Parachute Extraction System
MAC	Military Airlift Command
MAJCOM	Major Air Command
AF/MPXXX	Headquarters USAF Directorate of Personnel Plans Long Range Planning Branch
SAF/MRA&I	Assistant Secretary of the Air Force for Manpower, Reserve Affairs and Installations

OER	Officer Effectiveness Report
PCS	Permanent Change of Station (move)
PME	Professional Military Education
POL	Petroleum, Oil, Lubricants
RDTM	Rated Distribution and Training Management
SAAM	Special Assignment Airlift Mission
SAC	Strategic Air Command
SOLL	Special Operations Low Level
TAC	Tactical Air Command
TDY	Temporary Duty
UNT	Undergraduate Navigator Training
UPT	Undergraduate Pilot Training
VOLANT RODEO	MAC's annual airlift competition
AF/XO	Headquarters USAF DCS/Plans and Operations
AF/XOO	Headquarters USAF Directorate of Operations
MAC/XPPD	Headquarters MAC Directorate of Programming and Policy, Policy and Doctrine Division