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UNITED STATES AIR FORCE  
NAVIGATOR RATED MANAGEMENT:  
CURRENT FORCE IMBALANCE ISSUES  
AS THEY RELATE TO RETENTION PROPENSITY

GRADUATE RESEARCH PAPER

Quintin H. Hartt, Jr., Captain, USAF

AFIT/GMO/XO/96J-2

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UNITED STATES AIR FORCE NAVIGATOR RATED MANAGEMENT:  
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GRADUATE RESEARCH PAPER

Presented to the Faculty of the Graduate School of  
Logistics and Acquisition Management  
of the Air Force Institute of Technology  
Air University  
in Partial Fulfillment of the Requirements for the  
Degree of Master of Air Mobility

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Quintin H. Hartt, Jr.

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### **Abstract**

This graduate research paper investigates the issues surrounding the current imbalance of navigator manning and its possible relationship to any navigator retention trends. The paper examines two aspects; the first tracing officer personnel policy history and those factors related to the current manning environment, and the second centering on classical retention theory. The final section of this paper discusses the application of the predictors of turnover.

Four investigative questions established in Chapter 1 are addressed: (1) What is the historical significance of Air Force personnel policy and what issues surround its evolution? (2) What is the nature of the current navigator force imbalance and how does it support/not support the strategic vision for flying operations? (3) How do perceptions in the career field align with current human resource management theory on employee turnover? and (4) How can the Air Force enhance its retention efforts to help develop a stronger more effective rated force for the future?

Although no empirical conclusions can be made by applying data and observations to the turnover predictors, the paper concludes there is potential for the navigator career field to experience lower retention patterns.

UNITED STATES AIR FORCE NAVIGATOR RATED MANAGEMENT:  
CURRENT FORCE IMBALANCE ISSUES  
AS THEY RELATE TO RETENTION PROPENSITY

**I. Overview**

**Introduction**

“The Air Force will have navigators and Specialized Undergraduate Navigator Training (SUNT) forever” (Peppe, 1992: 2). This comment comes from the chief of the rated management section at Headquarters Air Force during the last revalidation of the navigator career field. Through a lengthy investigation, Air Force leaders appear to have accepted the idea that, for the conceivable future, there will be a navigator career field. However, there are some notable difficulties in manning this requirement, and current Air Force rated (navigator) management policies may only be tactical solutions to a strategic problem.

The navigator career field has been in existence since the introduction of air power into the military. The functions have changed over time and the titles have had several names: observer, bombardier, and navigator. Through its evolution, much like that of maritime counterparts, the navigator career field has been considered something of an ancillary function. As such, it appears easier prey to the budget ax than other career

fields. This is not to say that continual reviews of career fields are not needed, that is good management. Reviews of the career field have coincided with changing navigational technology which has an ameliorating effect over time in replacing this expensive human resource requirement.

Measures to rightsize the military to peacetime manning levels have caused great consternation and sacrifice in the Air Force. The recent drawdown was coupled with directions from Congress to maintain an officer-to-enlisted ratio not higher than those experienced in 1990 (Rutherford, 1991). Except for the pilot force, many career fields in the Air Force took a hard hit complicating the officer-enlisted ratio mandate. One of the career fields was that of the navigator field (Olinto, 1995a).

### **Description of the Problem**

The current problem with the navigator career field is that there are not enough navigators in the right year groups to fill Air Force crewmember requirements (Olinto, 1995b). In total, as of the winter of 1995, the Air Force had 350 empty cockpit positions that would normally be filled by company-grade navigators. This void is primarily blamed on the drawdown and simultaneous production cessation during the SUNT move from Mather AFB CA to Randolph AFB TX (Olinto, 1995a). Due to these factors, the Air Force now has 46 percent of its navigator force in the company grade ranks where 67 percent of the flying requirements lie and 54 percent of the navigator force resides in the field grade ranks where only 33 percent of the requirements are (Olinto, 1995b). This

imbalance has been the impetus for the Air Force to implement several personnel policies to backfill the empty seats.

According to Headquarters Air Force, “during the height of the force structure drawdown, the personnel community offered many navigators the opportunity to career broaden by temporarily releasing them to support officer requirements. Concurrently, force reduction initiatives designed to meet congressionally mandated end strength goals and limited navigator accessions have severely reduced cockpit manning in many weapon systems” (AFPC, 1995: 1). Subsequently the Air Force was forced to implement two new policies. First, “Air Force navigators actively flying in undermanned weapon systems can expect to remain in flying positions until reaching their third flying gate” (AFPC, 1995: 2). The second policy returns those officers released for career broadening assignments with less than 12 years of flying service back to the cockpit. These navigator manning policies and competition for promotion with their other rated counterparts (pilots), could have a negative effect on navigators’ decisions to remain in the Air Force. If this does turn out to be the case, then the Air Force will have an even more difficult problem in the long run--deeper shortages in already critically-manned year groups.

If the Air Force does not monitor navigator force retention and mitigate the causal agents of turnover theory, force planners may find themselves with an unanticipated voluntary separation pattern. Of special note is the 1977 through 1979 period, known as the “captains’ revolt” (Thie, 1994). During this post-drawdown period the Air Force

experienced its lowest voluntary retention rate among rated officers (Thie, 1994: 239). During the “captains’ revolt” the navigator cumulative continuation rate for the 11-14 year groups reached almost 30 percent. This means that of 100 navigators entering their 11th year of flying, only 30 would remain by the 14th year.

### **Statement of and Approach to the Problem**

Since its inception, the Air Force has had to ride a roller coaster of manning levels as prescribed by the executive branch and congressional mandates. Once again, the Air Force finds itself on the downhill side of manning restructure with a shortfall in rated officers. This is primarily caused by policies implemented to comply with post cold war drawdown end strength and rated production cessation (Olinto, 1995a). This paper traces and compiles officer management policies which led to the present navigator imbalance. The paper then reviews contemporary turnover theory and applies it to the current navigator situation.

### **Investigative Questions**

The following questions aided in formulating the construct of this study:

1. What is the historical significance of Air Force personnel policy and what issues surround its evolution?
2. What is the nature of the current navigator force imbalance and how does it support/not support the strategic vision for flying operations?

3. How do perceptions in the career field align with current human resource management theory on employee turnover?
4. How can the Air Force enhance its retention efforts to help develop a stronger more effective rated force for the future?

### **Need for Resolution**

Current manning for navigators is in an imbalance. The imbalance is characterized by having too many field grade navigators on the staffs and not enough company grade navigators in the cockpit. Because of this imbalance some navigators must remain flying for their first 12 years of service. In addition others in staff and career broadening assignments have been required to return to the cockpit. While these policies may or may not have an impact on navigators' officer professional development (OPD), the Air Force will not know for sure until promotion board trends become evident.

A historical study and application to contemporary turnover theory may help avert voluntary separations by navigators in those critically manned year groups caused by the drawdown patterns. If there is an increase in navigator turnover, the Air Force may encounter a situation in the near future that will complicate both pilot and navigator staffing. In addition to a predicted navigator shortfall below total requirements in FY97, there is a predicted pilot shortfall in FY98 (Department of the Air Force, 1995). To preserve the smaller force and provide sufficient rated requirements it may be beneficial to stabilize the navigator force. Historically navigators have been less subject to the

“outside pull” (or lure of ready civilian employment) than pilots have. By stabilizing the rated force through mitigation of turnover factors that affect the navigator career field, the Air Force may help ensure force readiness in the base force environment.

### **Methodology and Background**

This paper is primarily an archival review of officer management. Subsequent to the review it applies available relevant data to contemporary personnel management theory as it relates to retention. Although historical publications on rated management are few and far between, two primary works cover officer personnel management over time. The first reference chronicles Air Force officer personnel policies from 1944 to 1973 (Mitchell, 1991). During this thirty year period, Dr. Mitchell summarizes personnel policies as the Air Force evolved and discusses their fit into the context of the time period. The study begins with General Arnold’s vision of a diverse officer corps composed of many specialties. This direction contradicted the pre-WWII vision of a pilot-dominated Army Air Corps regular force structure. Strapped with the responsibility for sending what was soon to be an independent service into the future, the air staff made considerable changes in force structure. The development of Air Force officer policy was based on a loose-fitting set of staff guidelines embodied in the Officer Personnel Act of 1947.

The second historical reference covers the development, implementation and review of the Defense Officer Personnel Management Act (DOPMA) of 1980 (Rostker,

1993). This act also centers on officer management, but with respect to the current law. The act was meant to standardize officer management across the Department of Defense (DoD) and serve as a functional model for personnel planners. Unfortunately it was a static model, unable to accommodate the dynamics of swings in Air Force manning end strength as seen in the most recent drawdown period (Rostker, 1993: 43).

Current periodicals and journals supplied information to fill in gaps created by the two primary historical references. The *Air Force Times*, *Air Force Magazine*, *Airman Magazine*, *Air University Review*, *Combat Crew*, *Flying Safety*, *Armed Forces Journal International*, *TIG Brief*, and the *Navigator Magazine* (now out of publication) were valuable sources of information aiding in the review of historical navigator issues.

In the context of how the current imbalance issues evolved from the post cold war drawdown, numerous point papers, issue papers, briefings, messages, staff summary sheets and memorandums were collected from HQ AF and the Air Force Personnel Center (AFPC). These documents gave an account of some of the issues surrounding the drawdown; in particular, the decision to revalidate the navigator career field and cut navigator accessions to zero for over a year and a half (Headquarters United States Air Force, 1990). Interestingly enough, the current shortfalls in navigator cockpit fills were being discovered as early as 1992 and were addressed with indirect action via volunteers to fill those vacancies (Wendling, 1993).

In conjunction with periodicals and other documents, the paper used conversations with navigators and an interview with a navigator general officer to generate a picture of

opinions held in the field. The navigators in the Air Force appear to have profound concerns about the officer professional development (OPD) implications of recent policy implementation. Real or perceived, these concerns are causing many navigators to evaluate their commitment to an Air Force career. As many navigators have matured in the Air Force, they have gained insight into some of the long-standing issues that keep the pilot and navigator force from becoming a cohesive, cooperative, team. The interview with the senior navigator official revealed an interesting view both from a historical and cultural change perspective. In addition, Air Force Pamphlet 36-2630, the *Officer Professional Development Guide*, was reviewed to help establish the Air Force perspective on career field progression.

Contemporary retention or turnover theory was explored and a new work by Hom and Griffeth (Hom and Griffeth, 1995) was used in conjunction with the primary studies of the 1980s and 1990s that express the human resources field views on employee turnover. Hom and Griffeth capture and summarize the most popular theoretical views. From these studies the paper establishes turnover and its importance to the manager. Consequences of turnover affect the organization in both positive and negative ways. Both situations are addressed in the context of navigator manning, but more importantly the issues surrounding any navigator propensity for separation are compared with empirical findings and turnover models. The meta-analytic review (Hom and Griffeth, 1995) of empirical studies to date help support the validity of some of the tenets for turnover models and their predictive ability.

In conjunction with turnover model tenets, the paper includes data collected from the Air Force Personnel Center (AFPC). Historical retention and promotion data, demographic data, quality of life surveys, and officer separation feedback surveys help quantify and qualify the navigator issues as they apply to meta-analytic views of contemporary turnover thought. As a result of examining these data, this paper may help explain why navigators may express displeasure with the organization, for those individuals may be exhibiting behavior consistent with that of turnover process models.

In addition to reviewing theories in turnover, the paper suggests some general methods of turnover reduction that could aid the Air Force if it wants to retain these officers. Compensation practices, demographic diversity and inter-role conflict comprise the collective approaches outlined by Hom and Griffeth

### **Scope and Limitations**

The scope of this study includes current navigator manning issues and their impact on individual intentions to remain in the Air Force. Major issues are current Air Force navigator assignment policy and their impact on OPD in conjunction with various long standing perceptions that these two new issues may impact. To obtain a representative view of the lineage of personnel policy and its affect on the navigators, a study of the history for this career field was made. Although this study dealt primarily with navigator issues, the paper also examined rated management and non-rated management to assist in evaluating how the navigator fits into overall officer personnel policy.

This study is limited to archival references. No primary research in any quantitative or qualitative form was conducted due to time and resources. The last chapter suggests areas for additional research which could assist managers in evaluating the context of this research study.

## II. Personnel Management Review

### Introduction

Throughout history, the Air Force has gone through cyclical stages in manning (Thie, 1994: 237). These peaks and valleys have been accentuated by reactive personnel policies during surge and reduction in force (RIF) periods. During any congressionally mandated drawdown period the service has had difficult problems with retention and morale in the officer ranks (Thie, 1994: 226). The post cold-war drawdown is no different in that, among the rated ranks, only navigators were eligible for the RIF. In addition, the post-RIF era could be marked by lower retention (Garton, 1995: 5). Of particular note are repeated historical references to poor officer morale and retention in post drawdown most likely aided by constant revision of military personnel policy during the review period (Mitchell, 1991, Rostker, 1993; Thie 1994).

Rated management is defined as “maintaining the rated inventory (pilots and navigators) at a level sufficient to meet flying and non-flying rated requirements and provide career broadening opportunities for leadership development.” (HQ USAF/DPXOF, 1995). This appears to serve as a good working definition for historical reference. To gain a better understanding of rated management, this chapter chronicles the evolution of officer management from the Army Air Forces (AAF), to the birth of the Air Force as a separate and coequal service in the late 1940s, through the turbulent years

of the Korean and Vietnam eras, the Reagan era build-up, and finally the post cold-war drawdown.

### **The Formative Years**

Since the Civil War the United States has used air power in military conflict. The first “flyers” were observers. These observers flew in balloons and reported battlefield situations to commanders. From balloon aviation the military progressed to what we now know as manned flight. Flying took on a mechanized appearance in World War I. During this time period Army personnel trained as pilots to fly combat aircraft. The post-WWI era saw the emergence of the Army Air Corps as a distinct branch within the United States Army.

The Army Air Corps, made up predominately of pilots, relied on other Army branches to supply any services such as administration, munitions, transportation, etc. In addition, because of the Army Reorganization Act of 1920 and the National Defense Act of 1926, all Air Corps general officers, flying unit commanders, and 90 percent of the regular commissionees had to be pilots (Mitchell, 1991: 8). It was not until World War II that the corps took on a different look. In 1942, all air actions were centralized under the Army Air Forces (AAF) and one commanding general. Air power was put on a parallel footing with the Army Ground Forces and the Army Service Forces.

The resulting reorganization placed increased demands on the air arm for more diverse management and operational skills beyond simple flying. The new AAF

expanded to 275 officer specialties. For example, a routine bombing mission required over 500 specialties ranging from pilots, navigators, and bombardiers to clerical administration (Mitchell, 1991: 7). With the end of WWII came planning for the post-war era.

General Henry H. Arnold, commanding general of the AAF in 1944, grappled with the problems of a limited regular officer corps consisting mostly of pilots and the need for more diverse skills in the AAF or a new independent arm. General Arnold first learned to fly from the Wright brothers in 1911. From his initial induction into flying through WWII, he saw air power technology grow rapidly. His vision of the future held that technology was an all-important facet of the AAF's position as the premier air force in the world. Additionally, he saw the need for a diverse cadre of officers in the air forces to manage the future. During a staff meeting, General Arnold offered a view of personnel policies for the future:

The AAF must give more thought to technological developments in planning its future activities. The phase during which exclusive pilot management was essential is drawing to a close....Regulations limiting the responsibilities and career possibilities of non-rated personnel must be changed. Every opportunity must be given to skill and abilities needed for a well rounded organization if the United States is to maintain its air leadership. (Mitchell, 1991:11)

Clearly, General Arnold was addressing issues far beyond those of personnel, but this train of thought emphasizes the change from a pilot-only orientation to one of technical skill, managerial ability, and leadership.

In 1944, air staff members began to turn their attention to post-war planning. Under the guidance of General Arnold, plans began to emerge. Their basic framework was limited by law to the number of regular commissions. In turn the staff made an important decision that made the allocation ratio of those regular commissions 70 percent rated and 30 percent non-rated. The ratio was derived from calculations on wartime losses of rated personnel, mostly pilots. This decision helped ensure the continued dominance of the rated officer (pilot) in the core ranks for any conceivable future period, despite the concept of diversity in the ranks (Mitchell 1995; Rostker, 1993; Thie, 1994).

The air board considered the structure of the new and soon to be independent Air Force. The basic army structure of corps was dismissed in favor of a new system that placed all officers in a single group called Officers of the Line of the Air Force. The Army system was rejected ostensibly because the air board viewed it as “uneconomical, excessively compartmented, and a system that divided an officer’s loyalty between the corps and the larger service” (Mitchell, 1991). In addition, there were perceptions among some Air Corps officers of promotion inequity under the Army system (Mitchell, 1991).

In this new aggregation of line officers were placed administrative groups called career fields. Officers were placed in one of the original 12 career fields. For example, all those in the flying career field were rated officers. Within each field, an officer could advance through a notional career progression structure that included command and staff billets. The entire system was centrally managed by the Air Staff supposedly to aid in parity among the new career fields (Mitchell, 1991). Nevertheless, the Air Staff

continued to grapple with the personnel structure issues in conjunction with the post war demobilization manning high of almost 400,000 officers to the drawdown low of just over 40,000 (Thie, 1994).

### **The Air Force and the Officer Personnel Act of 1947**

The Air Force officially won its independence on September 18, 1947, via the National Security Act of 1947. In the same year, Congress enacted the Officer Personnel Act of 1947 (OPA). The OPA is generally held to have attempted to establish uniformity among the services and to change ways in which services handled wartime mobilization and post-war demobilization. In conjunction with standardization, the OPA changed officer promotions from a seniority system to a selection (“up-or-out”) system with time in service limitations. This was an attempt at invigorating the services by eliminating promotion on seniority alone and ensuring a vibrant young and upwardly mobile officer corps prepared for mobilization (Rostker, 1993). The OPA created specified numbers of regular officers in each permanent grade of colonel and below: colonels, 8 percent; lieutenant colonels, 14 percent; majors, 19 percent; captains, 23 percent; and 18 percent for first and second lieutenant each (Mitchell, 1991). This pretty much settled the Air Force dilemma on officer force structure, at least in the aggregate.

As the post WWII drawdown came to a close, attention began settling on how to manage the officer corps. With post-war budgets, planners began to concentrate on supporting the primary mission, flying. By keeping rated accessions at what was deemed

acceptable levels, the Air Force chose to live with a shortage of non-rated officers for a while, but this also produced retention problems in the non-rated force (Mitchell, 1991: 76). Subsequently, in 1949 the Air Force found itself unable to secure legislation to bring more officers through the ROTC pipeline and turned to the reserve forces for help. They provided three-year tours for those who volunteered for active duty and this helped fill the void in the ranks. The austere budget of 1950 made all this work a moot point.

Another RIF was pursued as the Truman administration cut the military budget by one third. Along with this reduction it limited the number of rated officers. This time 5,000 reserve officers had to be eliminated and ironically most of those reservists who had accepted the active duty offer in 1949 were pilots. To hurriedly met deadlines for the budget, the Air Force convened a board and defined the requirements in just three months. The end result was the loss of 5,000 pilots, some of whom had barely 60 days to separate.

The years surrounding 1949 characterize the beginning of the Cold War when the Soviet Union detonated its first nuclear device and just one year later the communists of north Korea charged across the 38th parallel. This period marks the build-up of armed forces across the board. Partial national mobilization ensued after the communist Chinese crossed the border and decimated the 8th Army. The Air Force now found itself having to support a build-up from 58 wings to 95 wings.

Also created with the OPA was an option for the armed services to invoke a privilege to promote officers to higher rank when necessary by way of a temporary

promotion. But, evidently Congress later thought this provision too liberal for the services to possess and passed the Officer Grade Limitation Act of 1954 (OGLA).

The OGLA of 1954 “imposed statutory limits on the number of regular and reserve officers who could serve in the grades of major and above”(Rostker, 1993: 5).

Unfortunately, with the build-up of forces through the late 1950s, the Air Force consistently pressed the limits due to over-accommodation of the rated force and was finally forced to seek congressional relief in 1959 (Mitchell, 1991:175). This law set the stage for personnel management reform that began in earnest with the Bolte commission.

The Bolte Commission first met in 1960 to study the OPA of 1947. Comprised of seven retired flag officers, it outlined a new promotion system for all the services. The Bolte report recommended a “new system to achieve uniformity whenever practicable in officer career management systems”(Rostker 1993: 6). Through this uniformity the report outlined three significant changes.

First, all promotions would be aggregated into one system of temporary and permanent promotions where any promotion in effect would be temporary until such time that a vacancy occurred in the permanent rank structure. Secondly, the proposal recommended that promotion eligibility be based on time-in-grade and not time-in-service. This idea created the concept of promotion zones giving managers flexibility to advance service members based on merit. The last of the major provisions was a re-work of the OGLA. A new sliding scale was developed for each service branch based on a hypothetical number of regular officers. Should the service breach the base, a declining

scale was applied to those non-regular active duty members, thereby allowing the services flexibility in periods of turbulence (Mitchell, 1991: 172). Although the Bolte bill never passed Congress when submitted successively from 1961 to 1966, it serves as the foundation for what DoD now uses as the baseline for personnel planning: the Defense Officer Personnel Act of 1980 (Rostker: 1993).

### **Defense Officer Personnel Management Act of 1980**

Concerned with the opinion that DoD was top heavy in rank and troubled by continual grade relief actions, Congress directed a new personnel system study (Rostker, 1993: 6). Like the OPA of 1947, DOPMA was an attempt by Congress to equalize and standardize the Department of Defense personnel policies (Thie, 1994). DOPMA specifies the number of field grade officers above captain through the officer grade limitation table. This table slides up or down as the end strength of the services changes. This is what this paper refers to as the “DOPMA shift.” This act is significantly different from previous systems in that these levels represent legal goals to be met (Rostker, 1993). Figure 1 below illustrates the officer manning difficulties that DOPMA has being a static model in a dynamic period of increase or decrease.

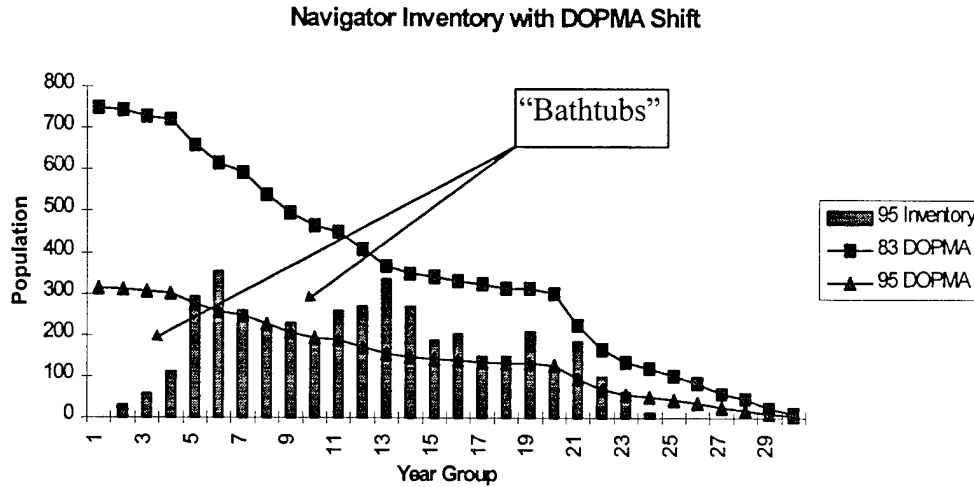


Figure 1. The “Bathtub” Effect. (Data for inventory: Wiseman, 1995) (DOPMA lines: Rostker: 1993)

The two lines represent a DOPMA Curve for 1995 (lower curve) and 1985 (upper curve) based on Air Force navigator accessions for those respective years. The gray vertical bars represent actual navigator manning starting with the 1995 year group at year one. The curves are derived from an ideal profile of the average career span of an officer corps. That is, given the “up-or-out” promotion system and associated retention predictions DOPMA establishes percentages for each year group over a typical officer career path. If a service or career field is assessing at a certain rate, those are the billet goals for said group. If end strengths change for those groups and accessions are adjusted, as in a drawdown or build-up, then there is an instantaneous change in the curve and the group will be over or under the DOPMA-mandated strength for that billet (Rostker, 1993). Figure 1 illustrates this point; the manning bars are below the line

commensurate with 1985 presumably due to lower than DOPMA promotion rates and subsequent attrition.

To meet these end strength goals, personnel changes in accessions and separations may occur. This is not to say that the model is invalid, because over time it will return to its optimum shape. This method has proven to be the best for shaping and it “is consistent with the workings of the promotion system, the internal organization of military units, the desired ratio of junior to senior personnel, the military pay system, minimization of total cost of military personnel, and the provision of the right experience mix” (Rostker, 1993: 36). The “bathtub” or “trough” created by personnel adjustments will take approximately 20 years to work itself through and therein lies the immediate difficulty.

As the “bathtub”, created in the years immediately following an end strength reduction, moves forward, more senior officers will have to assume jobs “traditionally” filled by junior officers for about 10 years of adjustment. This shift could have an adverse affect on morale that even higher pay as a result of promotion may not alleviate (Rostker, 1993:37). Conversely, in the second decade, junior officers may have to fill higher grade billets for which they may be under-qualified. The DOPMA shift could also create illusions of overages in certain year groups as the curve moves downward. This situation may help explain some of the current issues being addressed in the rated management community, and in particular the navigator career field.

## **Current Navigator Manning**

Because of the current drawdown, the Air Force finds itself in a predicament of shortages in navigators and pilots residing in the appropriate year groups for a given career progression. The force end strength reduction and DOPMA have created a “bathtub” effect, as illustrated below in Figure 2. Not only did the Air Force senior leadership at the time cut navigator production to help achieve congressional goals, but they stopped it in total for about 18 months. The Air Force plan now is to increase accessions to 300 per year (still below what some believe is the actual requirement for sustainment) and roll back those navigators in the 11-15 year groups that appear to be in excess by the DOPMA curve (Callander, 1995: 3). In fact, those officers are actually below the DOPMA line for the year group in which they entered. The reason for the sub-goal attainment is not clear, but can presumably be due to poor promotion rates since retention in those year groups appears fairly constant. In addition, the small “bathtub” created between the 7 through 11 year groups was created by the officer separation initiatives in the drawdown; RIF, Voluntary Separation Incentives (VSI), or Selective Service Bonus(SSB).

The effect of manning below sustainment requirements can actually be seen in Figure 2-2. By the turn of the century the Air Force will be short over 700 navigators. The requirements for navigators include flying positions, staff positions, and OPD positions such as professional military education and Air Force Institute of Technology advanced academic degree requirements. Other major assumptions for the inventory are

that there is no participation in loss programs (early retirement, selective early retirement, or VSI/SSB), production will remain at 300 per year, and that the 1991-1992 cumulative continuation rate (CCR) will remain at 64 percent (Air Force, 1995).

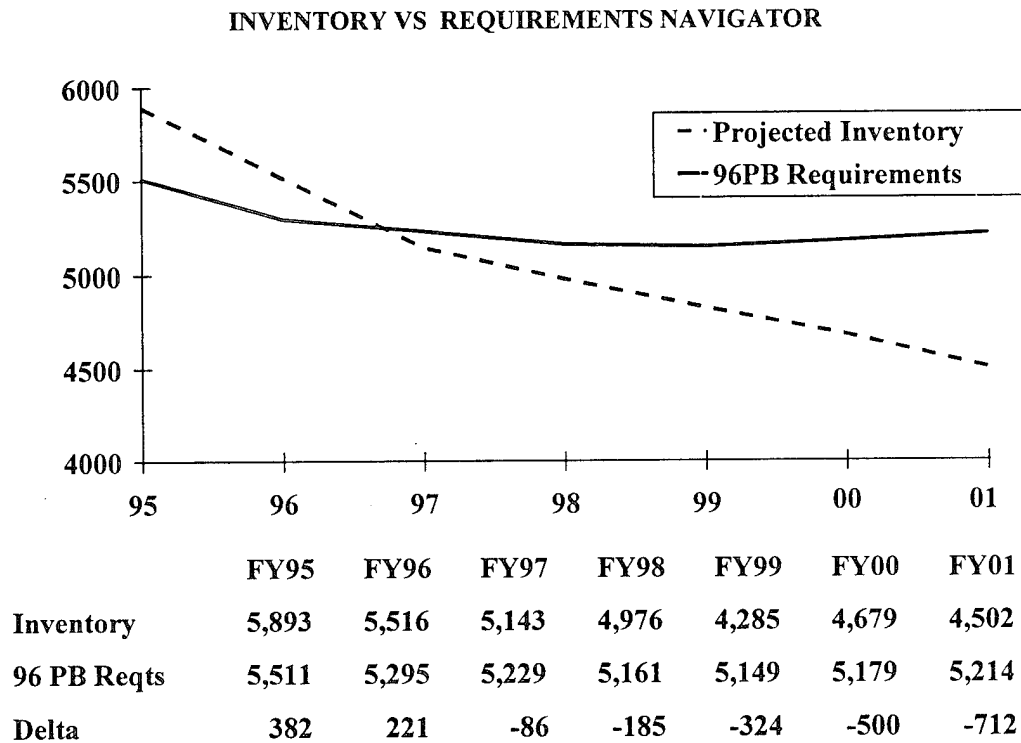


Figure 2. Navigator Inventory Vs Requirements  
(Headquarters United States Air Force, 1995)

The continued production of 300 navigators per year will sustain a force of about 4,200 (Callander, 1996: 72). The problem with this figure is that as far as the Air Force can see, to the end of the Future Years Defense Plan, there is a requirement for at least 5,000 navigators (Air Force, 1995). It is true though that as aircraft requiring navigators are retired, like the C-141 or F-15E, then those positions will no longer be needed as

technology will have replaced the navigator (Callander, 1996: 72). This begs the question as to what to do with those navigators as the last generation of aircraft requiring navigator crewmembers do disappear.

### **Summary**

Since before the dawn of the Air Force in 1947, DoD has tried to control personnel turbulence in many ways. It appears inevitable the Air Force is going to have to react to the mandates of executive and legislative branches and adjust personnel policies as the service deems appropriate. With time and a relatively calm era to let the current personnel management system react, the DoD can return to some equilibrium. The DOPMA does give some flexibility, with congressional oversight and approval, to the commanders so they might react to those interests that best suit the Air Force and its people to ensure our national security.

### **III. Overview of Classic Turnover Theory**

#### **Introduction**

In the preceding chapter, this paper discussed the evolution of officer management and the current manning situation. This chapter discusses classic retention theories against which to measure navigator retention difficulties in the near future. Retention correlates to turnover. Low retention rates equate to high turnover rates and vice versa. For the retention theory section of this paper this retention/turnover relationship remains the same and the terminology may be used interchangeably. It is important to manage turnover in the organization. Turnover management is a careful balance of enticing good performers to stay and poor performers to leave. This managerial field of study remains at the forefront of the academic material with over 1000 studies conducted over the past 10 years (Hom and Griffeth, 1995: 3).

#### **Turnover**

Turnover in the workplace has been of great concern to managers primarily because of the costs to the organization (Hom and Griffeth, 1995). In the case of the Air Force, associated costs could include recruiting costs, the cost of training a replacement, separation costs, and lost productivity costs. This subject should be of great concern to the Air Force in light of the associated costs of turnover in a reduced budgetary period

and the drawdown to a base force. If the Air Force could reduce voluntary turnover rates in a career field that costs a lot of time and money to replace, then those funds saved could also help fund force modernization.

Turnover is routinely referred to as “voluntary cessation of membership in an organization by an individual who receives monetary compensation for participating in that organization”(Hom and Griffeth, 1995). There are several aspects to this definition, but primarily its voluntary nature pertains to this discussion. A voluntary separation from an organization is the preferred measure of turnover (Price, 1977). This measurement discounts those separations that the organization probably had no control over, i.e. non work-related behavioral antecedents such as following a spouse's career. This leaves only those actions an organization can institute that would mitigate “avoidable” turnover (Abelson, 1987). In Figure 3 Hom and Griffeth combine the two actors, the organization and the employee, into a taxonomy examining the interaction between the two.

In addition to turnover’s ability to be avoidable and voluntary, turnover can be characterized as functional or dysfunctional (Hom and Griffeth, 1995). Functional turnover occurs when good performers remain with the organization and poor performers leave. Conversely, dysfunctional turnover occurs when good performers leave and poor performers stay. This notion of functionality can positively and negatively effect an organization. Although functionality may not help in predicting turnover, it may help in evaluating personnel system components. The manager could analyze promotion or merit

pay in such a way that it answers the question, does the program encourage good performers to stay and low performers to move on?

		Employee's Control	
		Voluntary	Involuntary
Organization's Control	Avoidable	Better pay elsewhere Better working conditions elsewhere Problem with superior Better form to work for else	Dismissal Layoff Forced retirement
	Unavoidable	Move to another location (follow spouse) Mid-career change Stay home to care for spouse	Severe medical disability Death

Figure 3. Taxonomy of Turnover Availability (Hom and Griffeth, 1995)

For the remainder of this paper, retention will constitute that turnover in an organization that is both voluntary and avoidable. In addition the paper assumes this voluntary/avoidable turnover is dysfunctional. To highlight this point, when characterizing the separating population of the 1991 Officer Separation Feedback Survey Report (voluntary separations) the researchers remarked that, “separating officers who responded to the survey were solid performers” (AFMPC, 1991: 2). In addition, the separating officers’ commanders were asked to rate the separating officers’ job performance. Figure 4 shows the results indicating that 92 percent were rated in the top half of their peer group and 70 percent in the top third. Therefore the definition attribute

of dysfunctionality should be valid. To paraphrase, the population of officers voluntarily separating from the Air Force consists predominately of those officers the Air Force would want to retain.

### Where do you feel the separating officer compares in terms of job performance?

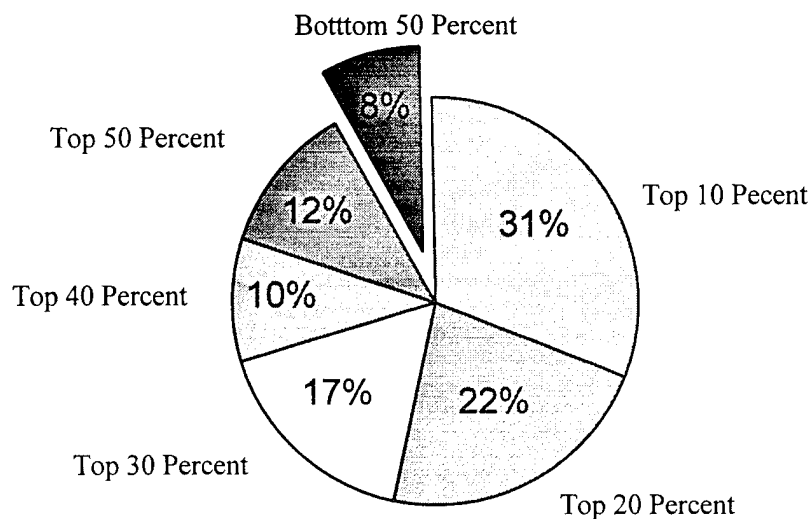


Figure 4. Commander Ratings of Separating Officers. (AFMPC, 1991: 2)

The following chapter segments review several turnover theories, in particular, Porter and Steers' Met Expectation Model (Porter and Steers, 1973) and Price's Turnover Model (Price, 1977). These authors' fields of disciplines are different and should give a good overview of the literature since Porter and Steers are psychologists and Price is a sociologist. The goal here is to show that even though these classic models are from

different disciplines, the basic factors are similar. To provide an even broader perspective of the disciplines, this chapter also reviews a meta-analysis presented by Hom and Griffeth. Generally, this meta-analysis quantitatively evaluates and integrates prior research studies to arrive at a synthesis of the research field. After establishing these basic factors that interact to form turnover theory, this paper can apply data to the factors relating to the possibility of a turnover pattern for navigators.

### **Porter and Steers**

Porter and Steers noted that job satisfaction was the main antecedent to a decision to leave a job (Porter and Steers, 1973). They reviewed and cited 14 studies that confirm the job satisfaction correlate and derive four different factors that affect overall job satisfaction: “organization-wide factors, immediate work environment factors, job content factors, and personal factors” (Porter and Steers, 1973: 152). To explain the process of how these factors influence turnover, Porter and Steers illustrated that “met expectations” was the mechanism used by these factors to affect overall satisfaction (Porter and Steers, 1973) (See definition of Expectancy Theory, Appendix A).

“Met expectations” is the difference in what a person finds out about these factors after having accepted a position in the organization, and what the person had anticipated those factors to be (Porter and Steers, 1973). Some view this approach as too simplistic to apply to turnover (Hom and Griffeth, 1995). Even though characterized as simplistic, it re-appears as a baseline theory in much literature.

To further explain, each employee has certain positive and negative expectations centered on the four factors. If the organization fails to meet an individual's expectations, then the chances of turnover increase. To summarize, Porter and Steers asserted this causal flow:

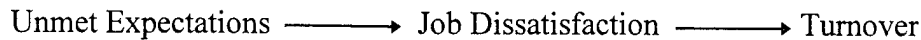


Figure 5. Met Expectations Process (Hom and Griffeth, 1995).

After having established the central role of job satisfaction, Porter and Steers continue with the four factors as the “roots of such satisfaction” (Porter and Steers, 1973: 154).

Organization-wide factors include two tenets that are outside the individual or work group environment: pay and promotion, and organization size. Pay has two confines: “the wage rate and the perceived equity of the company wage structure” (Porter and Steers, 1973: 154). Promotion also has two confines: the rate of promotion and the perceived equity of the organizational promotion system (Porter and Steers, 1973: 155). As for organization size, Porter and Steers concluded that while one study weakly supported the idea as a direct contributor, it did not have great value in predicting turnover.

The next factor is the immediate work environment. Sub-factors under this factor are “supervisory style, work unit size, and the nature of peer group interaction” (Porter and Steers, 1973: 157). Supervisory style dealt with satisfaction in supervisor relations,

equitable treatment from supervisors, recognition and feedback from supervisors, and managerial experience. While considering unit size among blue collar workers, Porter and Steers said that the larger the unit the higher the propensity for turnover (Porter and Steers, 1973: 158). The last tenet of the immediate work environment is peer group interaction. Basically, individual interaction with peers can provide support and association within the peer group. If the interaction does not happen, alienation may occur and increase the propensity for turnover (Porter and Steers, 1973: 159).

The third factor is job content. There are four sub-factors to this tenet also: “the overall reaction to job content, task repetitiveness, job autonomy, and role clarity” (Porter and Steers, 1973: 161). Of these four sub-factors, role clarity has the most relevance to this discussion. This postulate requires effective communication between the supervisor and employee so that the individual's expectations equate to the real requirements for the job. If the individual is unclear as to the actual job requirements, resulting ambiguity increases the chance of withdrawal behavior (Porter and Steers, 1973: 164).

The final factor of the met expectations model is personal factors. This premise has five sub-factors germane to the individual: “age, tenure with the organization, similarity of job with vocational interest, personality characteristics, and family considerations” (Porter and Steers, 1973: 164). For the first two, age and tenure, the basic correlation is that as an individual ages and/or gains tenure in an organization he or she will exhibit less tendency to withdraw (Porter and Steers, 1973: 165-166). Next, the closer an individual's job is to his or her interests, the less likely he or she is to withdraw (Porter and Steers,

1973: 166). The fourth sub-factor of personality characteristics states that individuals with personality needs in an extreme range are likely to have an increased tendency to withdraw if those needs are not met (Porter and Steers, 1973: 165-166). And last, family considerations such as size and responsibility will weigh in a person's decision to withdraw (Porter and Steers, 1973: 166).

To sum up Porter and Steers' met expectations model, if an individual's perceived expectations with regard to the factors outlined here are not met, then the circumstances will have a tendency to increase the chances that the individual will withdraw from the organization, resulting in turnover.

### **Price**

Price's model is an attempt to sort and classify existing literature on personnel turnover. By synthesizing previous research, he was able to identify three groupings of the factors believed to identify behaviors consistent with personnel turnover: determinants, intervening variables, and correlates. Determinates have a causal nature in relationship to turnover (Price 1977: 67). The intervening variables are a filter or mediator between the determinants and turnover. Last, correlates do not have causal relationships as do determinants, but indicate a correlation between variables (Price, 1977, 24).

Price identified nine determinants: pay, integration, centralization, instrumental communication, formal communication, routinization, professionalization, upward

mobility, and distributive justice (Price, 1977). The first five he characterized as being strong determinants and the last four as weak.

The first determinant discussed was pay. Succinctly Price said that, “given successively higher amounts of pay will probably produce successively lower amount of turnover” (Price, 1977: 68). The next determinant integrated into the model is integration. Price is alluding to the extent to which an individual embodies him or herself in the human interactive relationships within the organization. The third determinant of centralization refers to the degree of autonomy an individual is allowed to exercise in the workplace; the higher degree of autonomy, the lower the turnover rate. The fourth determinant in the model is instrumental communication. Instrumental communication is characterized as formal communication from a supervisor to an employee about the individual’s role in the organization which helps reduce ambiguity (Price, 1977: 74). Therefore the impact is as the level of instrumental communication increases the turnover rate will decrease. In contrast, the fifth determinant of formal communication refers to general organizational directives at the disposal of the individual.

Price begins his litany of weak determinants with routinization which is “the degree to which role performance in a social situation is repetitive” (Price, 1977: 88). The more routine a job is the higher the incidence of turnover. The seventh determinant in the model is professionalization. Price defines this as ‘the extent to which an occupation is based on knowledge and a service organization’ (Price, 1977: 88). If a higher degree of

professionalization exists then the likelihood of turnover decreases. The next determinant in the model is upward mobility. In short, this refers to promotion opportunities. As an individual perceives greater opportunities for promotion then propensity for turnover decreases. The final determinant in the Price model is distributive justice or inequity. This concept refers to the distribution of sanctions in the organization and its perceived equity. For this determinant, if the individual perceives equity in programs such as pay within a peer group then the less likely the individual is to resign from the organization.

For the intervening variables, Price codified two: satisfaction and opportunity (Price, 1977). Satisfaction is a product of the nine determinants in the Price model. Satisfaction precedes opportunity as individuals will not necessarily seek opportunity, or alternatives outside the organization, if they perceive satisfaction (Price, 1977).

Six strong correlates and three weak correlates are presented in the Price model (Price, 1977). Of these correlates only age and length of service are pertinent to this discussion. The other correlates are not issues that affect the officer corps.

### Price Turnover Model

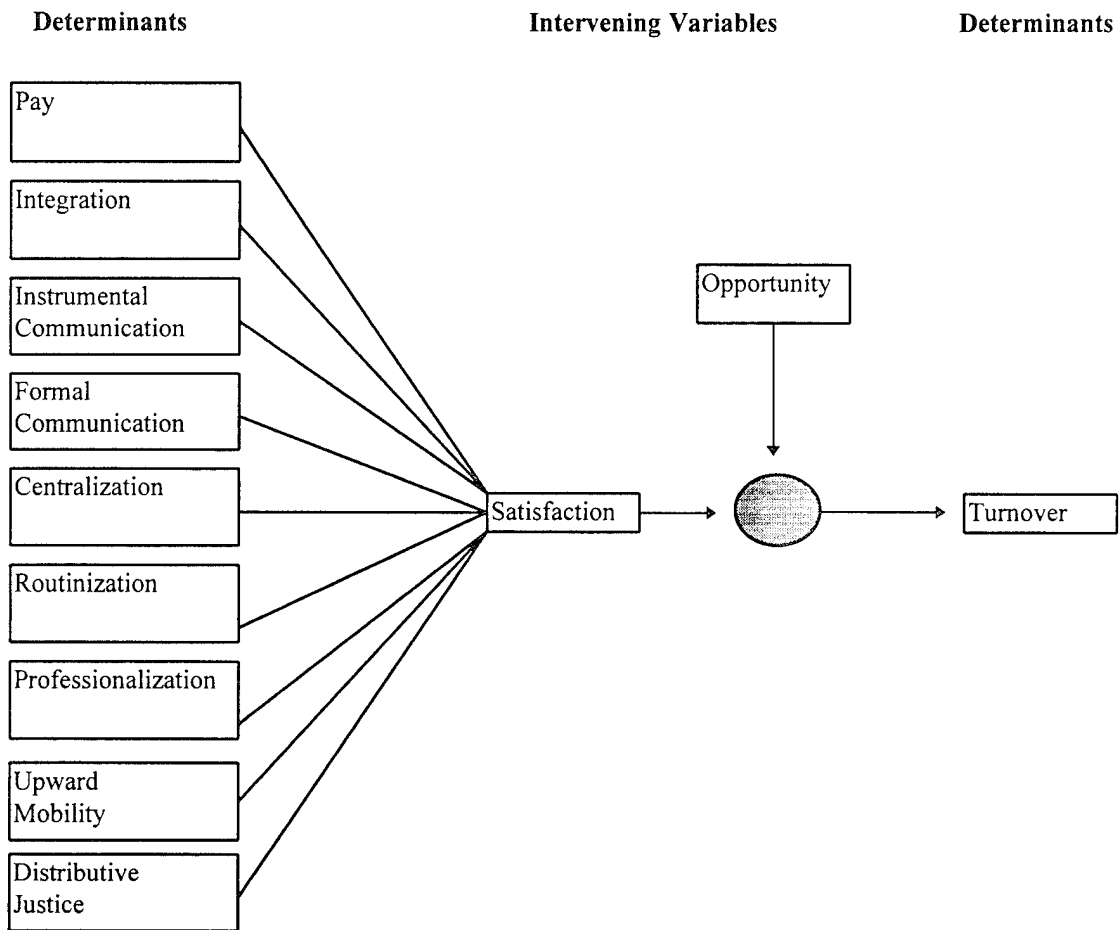


Figure 6. Price Turnover Model (Price 1977: 84)

### **Commonalties**

There are similarities in the sub-factors in both models. Their basic differences appear not to be in the fact that these same factors exist and that there is an interactive relationship among them, but how they interact. The importance of these factors is that by mitigation of these factors, relative satisfaction can increase and therefore turnover can be reduced. For the purposes of this paper it is not necessarily relevant how they interact.

Both models include pay as a causal factor and both speak of the rate of pay to satisfy basic needs and the perceived equity in pay relative to others in the work environment. Promotion is another commonality in both models. While Porter and Steers established it as a well-supported determinant, Price thought it weakly supported. In either view it does have some effect on turnover as the individual perceives his or her ability to progress satisfactorily in the organization and that satisfaction is a subjective evaluation by the individual. Both theories viewed organization size as a weak determinant or causal factor. The realm of personal interaction is addressed in both models also: supervision and leadership, role clarity and communication, group relations, and company climate. Finally, personal attributes or demographic factors were both interjected into the two models. A noteworthy comment about demographics is that both models agree on their relative contribution as a predictor is weak. Whether any of these determinants or causal agents are weak or strong could be mitigated in the aggregate if a majority of the factors are evaluated by the individual as being negative.

## **Meta-Analysis**

Meta-analysis is a contemporary statistical research technique used to analyze and summarize findings of a large number of separate research projects. The use of this technique involves gathering the data on previous studies and deriving a synthesis or integration for the entire body of studies. By doing so, the researcher hopes to identify the modifiers and variables that have caused differences in individual study analyses and quantify the correlation of the entire population of studies. Hom and Griffeth determined the relative correlation for the predictors presented in Table 1. The meta-analysis categories in this figure represent most of those categories chosen as commonalities in the previous section of this chapter and are not all inclusive.

Table 1 is divided into 3 categories; overall satisfaction, organization and the work environment, and demographic. The first category represents an analysis of overall satisfaction to turnover. Hom and Griffeth commented that a study (Steel and Ovalle, 1984) found a higher correlation between overall satisfaction and retention in the military when compared to similar civilian studies (Hom and Griffeth, 1995). The sub categories were discussed earlier in this chapter.

The second category of organization and work environment includes pay practices, leadership or supervision, peer group relations, role states, company climate, and promotions. Pay practices includes distributive justice or pay equity. As discussed earlier in the Price model, this is the perception that those in a peer group receive the same opportunities for pay and allowances based on an equal level of performance.

Predictor	k	N	Mean r	Corrected Mean r
<b>Job Satisfaction</b>				
Job Satisfaction	78	27,543	-.17	-.19
Met Expectations	8	1,435	-.12	-.13
<b>Organization &amp; Work Environment</b>				
<b>Pay Practices</b>				
Compensation/ Salary	7	3,763	-.06	-.06
Pay Satisfaction	16	4,094	-.03	-.04
Distributive Justice/Pay Equity	9	4,110	-.07	-.07
<b>Leadership or Supervision</b>				
Participation	5	1,584	-.08	-.08
Leader-Member Exchange	3	161	-.21	-.23
Supervisory Satisfaction	14	3,002	-.10	-.10
Leader Communication	8	5,185	-.11	-.11
<b>Peer Group Relations</b>				
Cohesion	3	412	-.12	-.14
Integration	4	3,394	-.08	-.10
Coworker Satisfaction	11	1,313	-.10	-.10
<b>Role States</b>				
Role Clarity	3	391	-.21	-.24
Role Conflict	2	224	.15	.16
<b>Company Climate</b>				
Centralization	4	2,506	.08	.09
<b>Promotional Opportunities</b>				
Promotions	24	8,999	-.14	-.15
Promotion Satisfaction	13	3,276	-.12	-.14
Promotion Opportunity	8	4,878	-.09	-.10
<b>Demographic</b>				
Age	29	12,356	-.12	-.12
Tenure	36	12,106	-.16	-.17

Note: k = the number of samples; N = the number of employees.  
Mean r = average correlation across all studies (weighted for sample size); Corrected mean r = average correlation across all studies which has been corrected for measurement errors.

Table 1. Meta-Analysis (Hom and Griffeth, 1995: 38-40).

In the next sub-category, leader-member exchange may need some clarification. Leader-member exchange “represents the interdependence between superiors and subordinates” and include the other factors in this sub-category (Hom and Griffeth, 1995: 42). The peer group relations category is self explanatory. The fourth sub-category of role states has a predominate factor termed role conflict. Role conflict is the degree (clarity) to which a person perceives his or her role in the organization. The next sub-category is company climate and its degree of decision making authority as explained by the Price model.

The last sub-category in organization and work environment is promotion. This sub-category is characterized by the degree of “satisfaction about promotion and perceived opportunities for promotion” (Hom and Griffeth, 1995: 43). The last category of demographics was explained in the Price model also. The categories and their antecedents to turnover (predictors) were selectively taken from Hom and Griffeth’s entire meta-analysis. The time span or exact number of studies used in the meta-analysis was not specified, however Hom and Griffeth did state they used “previous turnover meta-analysis and narrative reviews to identify relevant studies” (Hom and Griffeth, 1995: 36).

The information presented below gives empirical evidence to the validity of the models using these predictors of turnover. For each factor, the farther away from  $\pm .00$  the value of the corrected mean  $r$  the more statistical significance and correlation that particular factor has with turnover. The values of the mean are in the 95 percent

credibility interval. In addition, the majority of the factors are negatively correlated while only four are positively correlated. A negative correlation is when the organizational behavior increases, turnover behavior decreases. For example, if the perception of role clarity increases for an individual the turnover behavior for that individual will decrease. A positive correlation means that as the organizational behavior increases, turnover behavior increases also. Another example is if centralization increases which results in lost autonomy for the individual, then turnover behavior will increase in kind.

### **Summary**

Turnover should be of concern to the manager who wishes to control costs in the organization. In addition to overt costs, an individual who is not exhibiting withdrawal behavior will probably be more productive. Turnover, for purposes of this paper, was considered to be voluntary, avoidable, and dysfunctional. In defining turnover as such, the negative effects would be more apparent.

The two models reviewed in this chapter represented classical turnover theory and demonstrated the nature and process of turnover behavior. In particular, perceptions associated with met expectations will be the mechanism by which turnover behaviors manifest themselves in the Porter and Steers model. For the Price sociological process model, the determinants outlined are the causal agents for this turnover theory. Both models have merit and serve as a baseline for other models.

Meta-analysis was included to show a contemporary technique to quantify past studies. By quantifying these studies into one correlation factor, the predictor can be assessed for its relative predictive capability. Having established the underlying predictors of turnover theory, and their empirical validity, the paper now moves to its final stage by applying narrative data to these predictors.

## **IV. Applications of Turnover Theory**

### **Introduction**

The previous chapters outlined the history of officer personnel management and classic turnover theory. Chapter 2 answered the first two investigative questions proposed in paper: “What is the historical significance of Air Force personnel policy and what issues surround it involvement?” and “What is the nature of the current navigator force imbalance and how does it support/not support the strategic vision for flying operations?” This chapter matches data and observations to the predictors of turnover theory. The application of turnover theory should provide the answer the third question: “How do perceptions in the career field align with current human resource management theory on employee turnover?”

### **Application of Turnover Theory**

Turnover theory presents many variables that affect an individual's decision to separate from an organization. Within the two classic theories discussed and the meta-analytic studies outlined, seven variables or determinants have commonality and correlation. No single predictor appears to have great predictive ability when it stands alone, but it is this paper's assertion that in some combinations they will aid in predicting turnover. This section applies these predictors to existing data and observations to

demonstrate how they may affect the retention rate for navigators. Two of the primary resources outside of data were the 1991 Officer Separation Feedback Survey and the 1995/1990 Quality of Life Survey (AFMPC, 1991, AFPC 1995, and AFPC 1990). The results of these surveys are generally reported by rated and non-rated, or pilot and other-than-pilot. Because of the historical ambiguity of navigators that more closely aligns them with non-rated or other-than-pilot categories, this paper will use the responses of non-rated if they are not specifically annotated as navigator (Mitchell, 1991: 345).

Job Satisfaction. Job satisfaction has the third highest correlation in Table 1. This is interpreted as “dissatisfied employees (presumably, reacting to poor working conditions) more readily abandoned their present employment” (Hom and Griffeth, 1995: 39). In general, 80 percent of the respondents to the separation survey were satisfied with their Air Force experiences (AFMPC, 1991). The other-than-pilot category held slightly lower at 77 percent. In addition, job responsibility and job challenge were ranked by a higher percentage of non-pilots as moderate to major determinants to separation (AFMPC, 1991). Job satisfaction is generally defined as satisfaction with the vocational component of the job (Gray and Smeltzer, 1989.) For example, a pilot is satisfied with flying the airplanes, a communications officer is satisfied with managing communications or a navigator is satisfied with navigation duties. The 1990 survey reported that officers are generally satisfied with their jobs (AFMPC, 1990). As for “met expectations,” there is no category for a response to this factor, but met expectation is a relative satisfaction of precognition.

Compensation, Pay Satisfaction and Distributive Justice. Table 1 shows a lower direct correlation between organization turnover factors and compensation, pay satisfaction and pay equity. Hom and Griffeth believe that previous studies possibly underestimated the impact of this category since studies generally considered compensation in a single company (Hom and Griffeth, 1995). Pay and allowances was a moderate to major determinant in over one third of the separating officers in the separation survey (AFMPC, 1991). Overall, 70 percent of officers in the 1990 survey reported compensation as adequate with a slight downward trend in this perception. This category was not addressed in the 1995 survey.

Distributive justice (discussed in Chapter 3) is also a modest predictor of turnover (Hom and Griffeth, 1995). This determinant is not addressed in any surveys. Although not addressed, in conversations with many navigators and articles presented in periodicals, there appears to be some dissatisfaction with the distributive equity of the Aviation Continuation Pay (ACP). ACP is commonly referred to as the "pilot bonus" because it is only the pilots who receive this bonus. It is paid to officers who have completed their training commitment and they must be in a critical aviation specialty. A critical aviation specialty is an aircraft weapon system or other designated aeronautical specialty in which a current shortage exists (McAllister, 1994). The current authorization allows up to \$12,000 per year through the 14th year of service to each eligible aviator.

The bonus is targeted as a retention tool to counter the effects of airline hiring (McAllister, 1994). Currently the bonus is offered to all pilots and no navigators. This

same situation occurred in 1980 when an aviator bonus passed the Senate for both pilots and navigators, but the House of Representatives removed the navigators. The reason for removal was that the navigator force had a slightly better retention statistic, approximately 10 percent (Navigator Bonus Cut, 1981 and AFPC, 1996b). Currently both pilots and navigators have approximately the same retention rate (AFPC, 1996).

To justify the authorization, the Air Force uses the cost to recruit and train an aviator. For a hypothetical illustration the following narrative will use approximate costs. If it costs \$1,000,000 to train a pilot, then to fund an approximately \$42,000,000 program the Air Force must retain 42 additional pilots per year for the program to pay for itself. The same logic can be used with navigators, who cost less to train, but would require a smaller program authorization. A navigator costs approximately \$600,000 to train. The program would cost \$19,000,000 per year. If the Air Force saved 31 navigators per year it would cover the cost of the program. For both programs, only training costs are considered. Recruitment, operational seasoning, productivity, separation costs and other intrinsic costs, such as morale, have not been factored into the formula. If they were it would reduce the number of aviators required to cover the cost of the programs. In reverence to the non-rated other-than-pilot categories, this same condition and justification could apply. This situation creates a distinction between all categories and pilots that could contribute to a correlated predictor of turnover. To sum up this section, generally the question of compensation is viewed favorably. The ACP on the other hand,

has created another rift in the rated force as demonstrated by concern over distributive justice or inequity (Mitchell, 1991).

Leadership and Supervision. Leadership and supervision include leader-member exchange, supervisory satisfaction, and communication. This predictor had the highest correlation when compared to other predictors, especially the all encompassing leader-member exchange factor. Each of the surveys had sections referring to this predictor.

The 1991 separation survey had quality of Air Force leadership ranked fourth highest in considerations for the decision to separate. Quality of immediate supervisor was marked as a moderate to major determinant by non-pilots 3:1 over pilot responses (AFMPC, 1991). Half the pilots and over one third of the other-than-pilots ranked this as a determinant. The 1990 Survey of Air Force Life and the 1995 Quality of Life Survey both remark on the high level of leader oriented influences as a determinant to separate (AFMPC, 1991, 1995).

Peer Group Relations. This predictor consists of cohesion, integration, and coworker satisfaction. Relative satisfaction of this factor reduces turnover. Meta-analysis revealed a moderate correlation for peer group relations when compared to other categories.

The 1991 separation survey revealed that 20 percent of the other-than-pilot respondents considered this factor a moderate to major determinant in their decision to leave the Air Force (AFMPC, 1991). Quality of coworkers appears again in the 1990

survey as the fifth highest ranking influence on a career decision for officers, but does not break this statistic out into rated or other.

Role Status. “Clear perceptions about one’s role in the organization” (Hom and Griffeth, 1995). Meta-analysis showed a higher degree of correlation as compared to the other factors and that role clarity reduced turnover. Role overload and conflict increased turnover. There is no direct correlation to this predictor in any of the surveys. However, history shows ambiguity in the navigator role (Mitchell, 1991). In addition, there were several reviews of the navigator career field and attempts to eliminate it (Mitchell, 1991).

For all intents and purposes the Air Corps, Army Air Forces, and the Air Force when referring to rated officers were referring to pilots (Mitchell, 1991). “The words pilot, rated, commander, and generalist were used almost interchangeably. Conversely, other-rated officers were also referred to as rated, but more often as other rated, non-pilot rated, rated-other-than-pilot, specialist, and not infrequently, as non-rated” (Mitchell, 1991: 345).

In 1950, an Air Staff committee recommended that other-rated officers be eliminated and those duties performed by cross-trained pilots. This attempt basically ignored the facts derived from a similar experiment in WWII and failed just the same (Mitchell, 1991). The reasons cited were that pilots did not want to perform duties they considered lower prestige and the difficulties in maintaining qualification and proficiency in the two different jobs (Mitchell, 1991). Again, in 1990, the Air Staff undertook a review of the navigator career field by direction of the Chief of Staff in order to eliminate

navigators production (Headquarters United States Air Force, 1990). The Air Force stopped navigator production for over a year and now produces navigators at a rate of 300 per year. Also, as late as 1994, the Air Force continued to put pilots in navigator positions. The idea once again failed partly due to lack of interest by the pilot force. The role status of the navigator appears to be in continual review.

Another role clarity issue is that of command. Not until 1974 and a revision to Title 10 of the US Code could a navigator legally command a flying unit (Mitchell, 1991). Command is a central tenet for career progression (AFPC, 1995b). Ever since the Army Air Corps only pilots could command flying units. This was a landmark decision for navigators with high initial emphasis on placing navigators in command billets (10 Navs Head Flight Units, 1975). But, the emphasis appears to have waned.

Company Climate. The factors discussed here includes centralization, (the autonomy of decision making discussed in Chapter 3) and supportiveness (Hom and Griffeth, 1995). These predictors were considered distant causes and weak determinants (Hom and Griffeth). The separation survey had no direct category in relation to this subject, but the report did have the lack of say in the assignment process ranked high among factors of separation by both pilot and other-than-pilot categories (AFMPC, 1991).

Promotion Opportunities. This category had a negative correlation in Table 1. As satisfaction with promotions increases, turnover behavior decreases. In addition, this is the largest and most well annotated section in the surveys. This factor appears to be one

of the easiest to quantify and has the most data. Promotions, promotion opportunity, and promotion satisfaction interact with many other of the factors of turnover. For example, as you progress through the ranks the salary increases with this additional responsibility.

Figures 7 through 12 have the promotion statistic for line officers promoted to major, lieutenant colonel, and colonel distributed by pilots, non-rated, and navigator. In general, as the grade increases, the disparity in the promotion rate for navigators also increases. For major, the promotion rates have usually held within ten percent for each category and are converging for both “in the primary zone” (IPZ) and “below the primary zone” (BPZ) statistics. The lieutenant colonel IPZ rate has held within 15 percent of all categories with the navigators consistently below all others and a divergence over the past three years. The BPZ rate for this grade does appear to run somewhat lower. The colonel IPZ category is parallel to the lieutenant colonel in that there is a 15-20 percent difference and a divergence of selection rates over the past two years. The colonel BPZ category mirrors the lieutenant colonel category with the navigators being promoted at a much lower rate than the overall line.

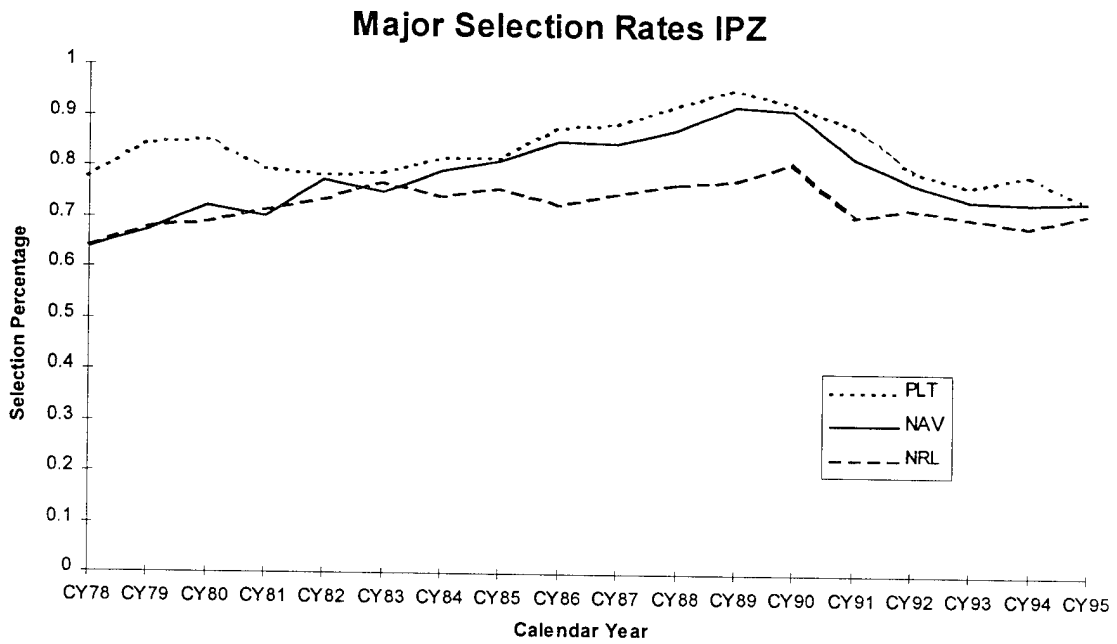


Figure 7. Major IPZ Promotion Rates (Wiseman, 1995).

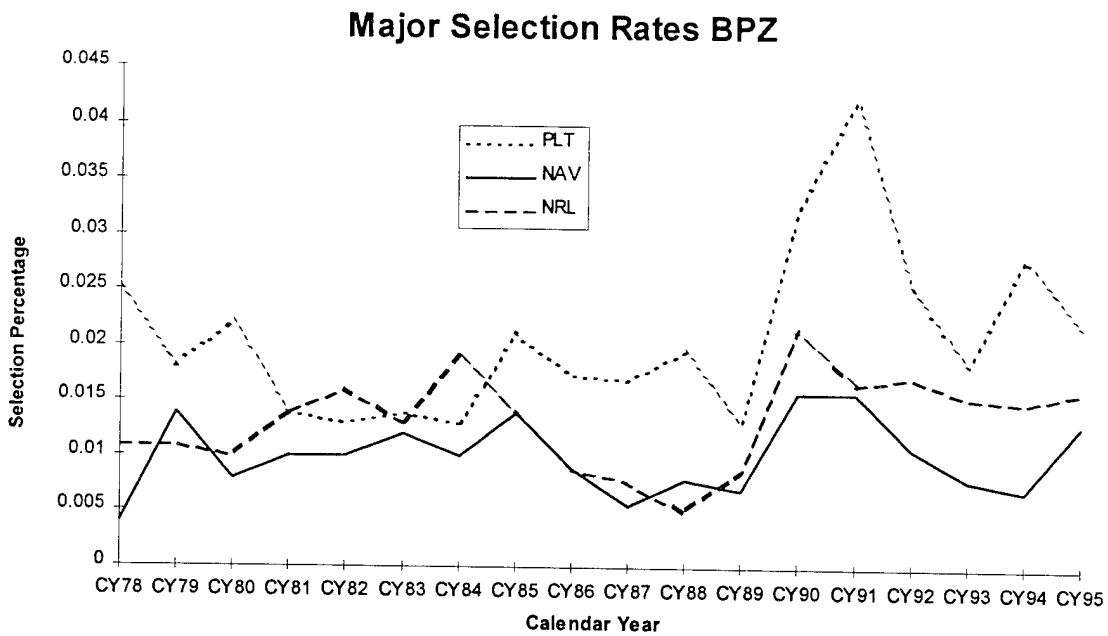


Figure 8. Major IPZ Promotion Rates (Wiseman, 1995).

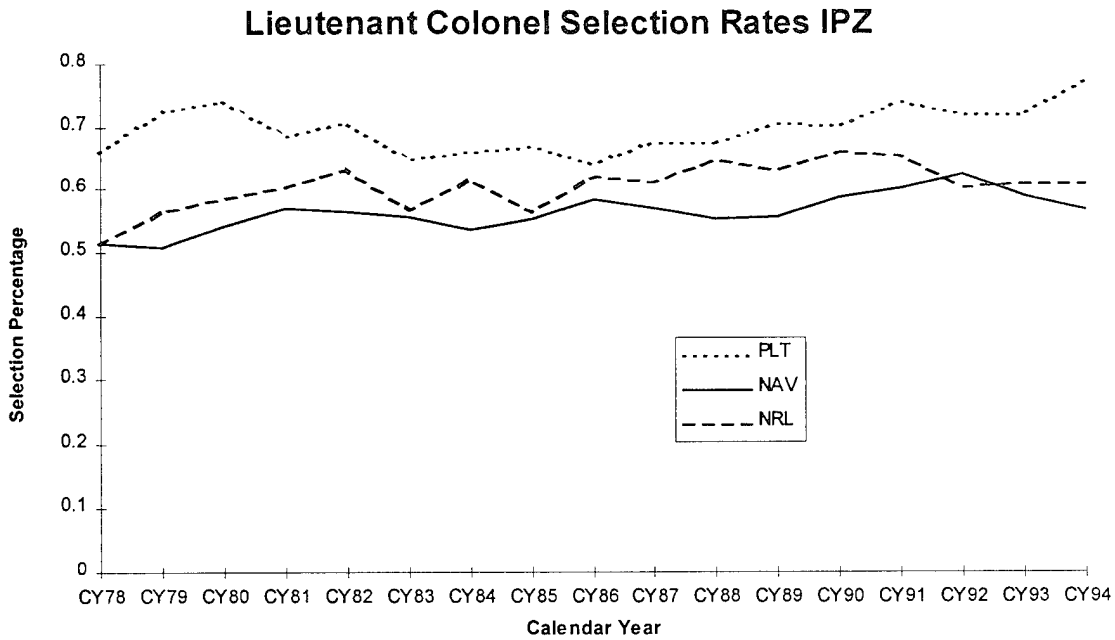


Figure 9. Lieutenant Colonel IPZ Promotion Rates (Wiseman, 1995).

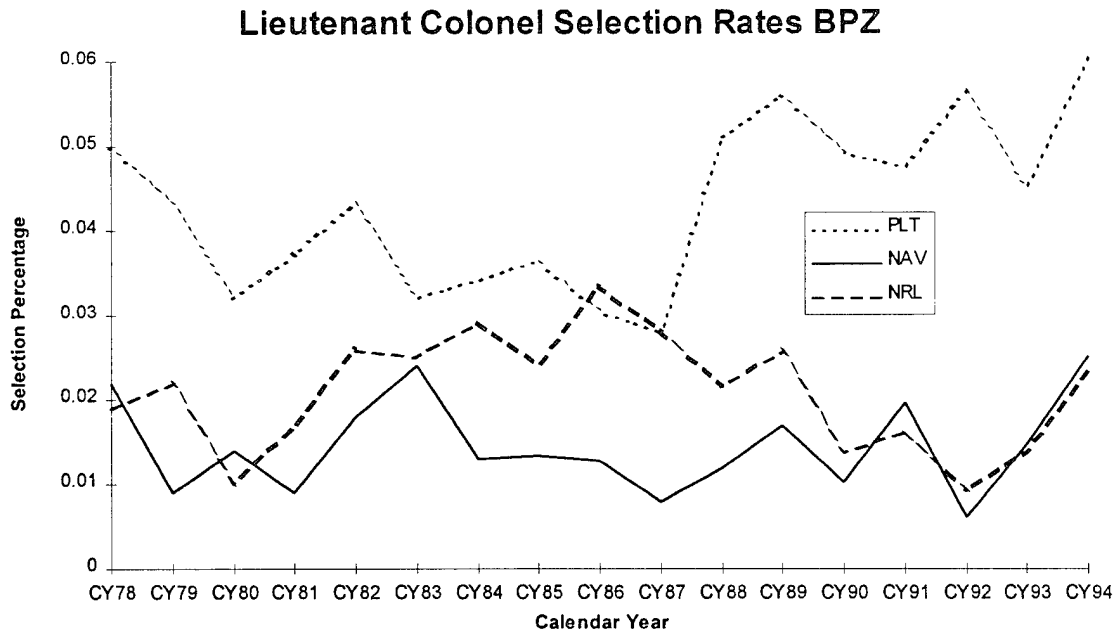


Figure 10. Lieutenant Colonel BPZ Promotion Rates (Wiseman, 1995).

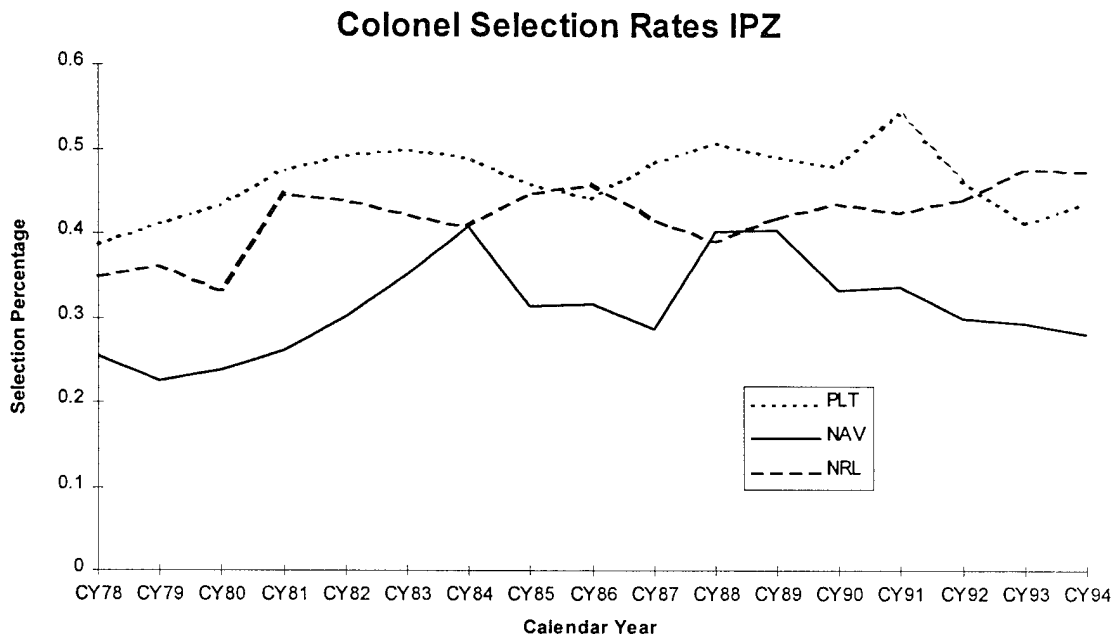


Figure 11. Colonel IPZ Promotion Rates (Wiseman, 1995).

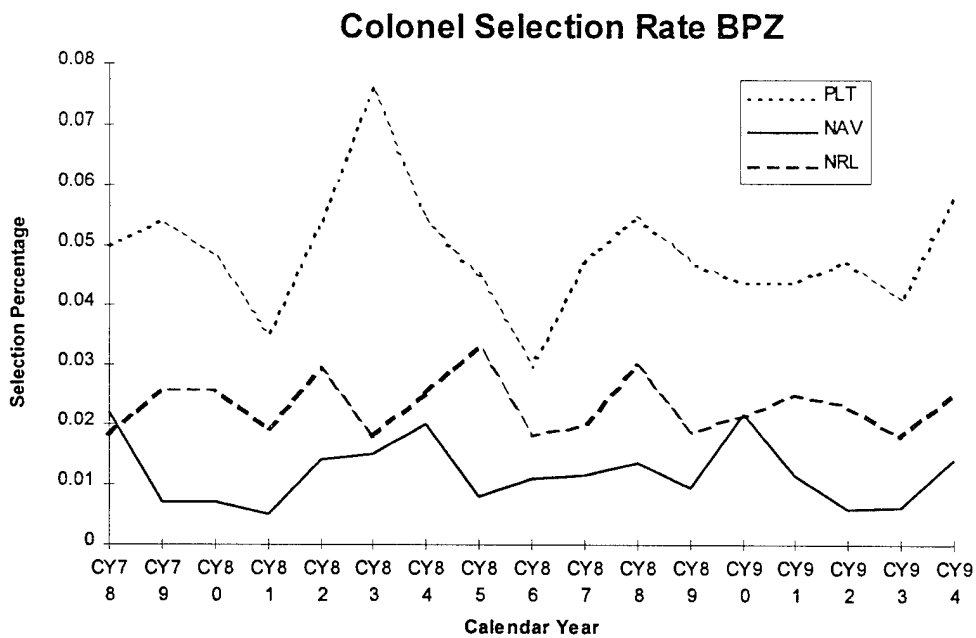


Figure 12. Colonel BPZ Promotion Rates (Wiseman, 1995).

From a historical standpoint, the first promotion of a navigator to general officer was in 1965 and the second not until 1969 (Mitchell, 1991). Neither had command experience, but made their rank in staff positions. In 1980 there were 26 general officers who wore navigator wings in the Air Force; the highest rank was lieutenant general (The Generals, 1980). At that time there were 10,125 navigators or 10.37 percent of the total officer corps (AFPC, 1996). In 1995 there were three general officers who were navigators; the highest rank was major general and he was medically disqualified from flying after 9 years of flying. Also, there were 5,971 navigators in the inventory making them 7.48 percent of the officer corps.

The surveys comment heavily on this topic. The 1995 survey reported less than half the rated and non-rated believe the promotion system is fair and equitable or that job performance is the most important factor of promotions (AFMPC, 1995). Other than pilots, officers generally disagree with the proposition that they will be promoted as high as their demonstrated potential, ability, or interests allow (AFMPC, 1995). The separation survey reported that the other-than-pilot category ranked promotion opportunity as a moderate to major consideration for separation (AFMPC, 1991).

Demographics. These factors are mentioned because they can help define the target population for retention efforts (Hom and Griffeth, 1995). Figure 7 shows a moderate correlation in the decision to separate when compared to other categories. Concurrently, the 1990 survey confirms that around the 9 year point in an officer career a shift occurs in the attitudes towards separation (AFMPC, 1990). Figure 1 illustrates that the Air Force

has a shortage of navigators with less than 9 years of service, but this is a result of the non-production of navigators. If the Air Force does not retain the already limited navigators in these volatile year groups, then more of them from more senior grades will have to return to cockpit duties at a point where they are traditionally career broadening and possibly reduce the chances of advancement. In short, this factor could be an antagonist to the shortage situation.

### **Summary**

In the application section of this chapter the paper addresses inputs from data and surveys. Although there is no conclusive evidence, inference could lead one to believe that there are some turnover predictors that may align themselves with navigator issues and perceptions. Promotion opportunity, distributive justice, and role clarity could weigh in the navigator's decision to separate.

## **V. Conclusions and Recommendations**

### **Introduction**

After applying the data, observations and perceptions to the predictors of turnover the paper offers conclusions and culminates with recommendations for improving navigator retention and areas of future research.. This last chapter will answer the fourth investigative question: “How can the Air Force enhance its retention efforts to help develop a stronger more effective rated force for the future?”

### **Conclusions**

There is no empirical evidence to positively associate the current navigator manning imbalance with turnover. However, the current manning imbalance could affect one or more of the predictors of turnover and consequently affect retention.

There are several issues associated with the navigator manning imbalance. First, the Air Force must fill its cockpit requirements to ensure Air Force readiness. Second, extending the younger navigators’ flying requirements creates a perception of diminished promotion opportunities by cutting off the traditional route of progression outside flying operations. Third, returning field grade navigators to the cockpit may hinder their promotion opportunities in a similar perception to those of the company grade navigators.

The last two issues are not easy, but it does give rise to the perceived impact and a subsequent evaluation of the navigator intentions to remain in the Air Force.

The younger, lower tenured navigators may have a greater inclination to seek employment elsewhere. The field grade navigators may likely try to ride this “bathtub” out. But, if the younger navigators do exhibit dissatisfaction and make the separation decision, then the Air Force will be creating a self-feeding retention fire. If company grade retention becomes a real issue, then the Air Force will be forced to backfill the empty slots with more field graders because the training pipeline is too long to react quickly to assess more navigators. This will leave voids in the staffs where the navigator has traditionally been able to gain experience and rank. Without career broadening experience at the right time in career progression there could be promotion repercussions that would reduce the pool of eligibles to backfill empty cockpit requirements.

Unfortunately the Air Force does not have the authorizations to fund the removal of navigators from the cockpit (Peppe, 1991). The life cycle costs for aircraft modernization extend past the useful life of most aircraft that need navigators. Therefore, the Air Force must recognize and mitigate retention issues before they manifest themselves.

Another option is to reduce the requirements, but the Air Force is already reducing navigator requirements (Olinto, 1995a). Although the Air Force position is that navigator retention is currently sufficient, the classic turnover theory predictors possibly point to harder times in navigator retention.

## Recommendations

For the Air Force to intercept any irreversible retention trend it must mitigate the factors of turnover. There are administrative tools that require no funding authorizations that could go a long way in retiring old paradigms associated with the navigator career field. But first, Air Force leadership must recognize the possibility of a problem.

Specifically, to enhance leader-member exchange, Air Force leadership could be more embracing of the career field and their view of its strategic importance and future role. At the 1995 Airlift Tanker Association Convention the staff briefed that navigators were getting the short end of the stick and there was nothing to be done (Navigator Shortage, 1995). This exhibits a lack of concern for the career field and strains what the research demonstrates as a correlate of turnover. The Air Force could develop and publish a strategic plan for the career field so that both the service and the officers affected could make informed decisions. This is one way the Air Force could align itself with contemporary methods of turnover reduction by mitigating "met expectations" theory. (Home and Griffeth, 1995).

Administratively the Air Force could introduce a board charge and/or promotion folder inserts to mitigate the possible negative promotion effects in the career field (AFI 36-2501, 1995). These tools are designed to give information to board members on the needs of the Air Force for officers with specific skills (AFI 36-2501). This would be the first step in blocking any adverse promotion opportunities for those field grade navigators forced to return to the cockpit and send a signal to other navigators as to Air Forces

intentions. The opposite side of the coin for this issue is that promotions are a zero sum game. If navigators were given some preferential treatment at promotion boards, then some other category will not get promoted. But, this is similar to the techniques used to effect racial and sexual equity in the Air Force.

There is a positive light to field grade navigators returning to the cockpit. As stated before, the navigator career progression has traditionally been outside that of flying. Therefore, most navigators have gotten out of the operations track and have left a void of field grader navigators in the line units. Now, the younger navigators will have some guidance and experience to fall back on (mentoring). However, there is a caution that coincides with this approach. If the Air Force is not discriminating enough to place those navigators competitive for promotion in positions of responsibility back in the line unit, then this could further exacerbate morale and retention problems if these field graders do not progress while highly visible to the company grade navigators.

As far as the bonus goes, it would only cost at most 1/3 that of the pilot bonus. There is no direct "outside pull" from economic conditions such as airline hiring, but there is a slight correlation between civilian economic conditions and navigator retention (Schuman, 1982). Not only might there be an increase in retention, but the mitigation of distributive justice would surely raise morale and further the cohesion of what is supposed to be an integral team.

For future areas of research the Air Force could first attempt to gather data on navigator perceptions and culture. As mentioned in earlier sections of the paper there

does not appear to be a lot of data pertaining particularly to navigators. Data on this career field is masked in either the pilot or non-rated line data.

Another area for future research could include career field specific determinants of turnover. With accurate, focused data the force planners may be able to better utilize navigators and plan their future and the future of the Air Force.

A third area of future research is the actual costs of turnover. As the civilian sector has been downsizing their organization of increase profitability, they have found little to no efficiencies due to the cost of separation (Stone, 1996).

## **Summary**

Since 1947 the Air Force has instituted many personnel policies from the original Air Force structure to the ebb and flow of personnel during and after eras of hostilities. Personnel policy has evolved into the current model used in the Defense Officer Personnel Management System that frames the force to the Department of Defense. Although a good static model, its attributes do not allow for the flexibility needed in times of mobilization or drawdown.

Air Force personnel policies instituted to comply with the congressionally-mandated post cold-war drawdown created an imbalance in the navigator force. Company grade navigators must remain in the cockpit longer than has been traditional and field grade navigators are being returned to the cockpit to fill a void left by the personnel policies. The perceptions in the navigator field are that these actions will have

an adverse impact on an already down trodden officer professional development and subsequent promotion rate. This could in turn have an adverse effect of retention.

Classic retention theory outlines a myriad of contributing factors or determinants of turnover. These determinants are used to try and predict those behaviors that an individual may exhibit before a decision to separate from the organization. Although the statistical evidence shows weak to moderated correlation between these predictors and turnover, in the aggregate they constitute many interacting variables that go into the cognitive decision of turnover.

When applying the basic predictors of turnover to the navigator career field, there is a lack of hard, substantiated, empirical evidence that would show a propensity to separate. Only one predictor with a moderate correlation, promotion opportunity, had data to point the reader in a particular direction. Air Force retention surveys and quality of life surveys, like many of the available reports, do not address the navigator career field. Those reports do however generally support the findings of classical retention theory.

In total, an empirical conclusion can not be made without more data. For future research a survey of the navigator career field may help planners head off any downward retention trend in the navigator force. In addition, a published strategic vision for this career field, that appears to be waning as a result of technology and adverse personnel policies, may go a long way in satisficing some concerns in the field.

In a conversation with a senior Air Force officer, he commented on the need for a cultural change. This change would have to take place in the navigator force as well as on the part of the Air Force. For the navigator, he or she will have to change the perception of non-competitiveness. To aid in accomplishing this they must continue to “jump off the bench and into the game” (Wehrle, 1995). There is the basic perception that to progress, the navigator must get out of flying as early as possible. This perception has flourished since the Air Force beginnings when opportunities for command were limited by law and the navigator truly was not as competitive (Wehrle, 1995). If all those that are truly competitive for promotion and positions of responsibility are getting out of flying, who is left and what chances of promotion do they really have (Wehrle, 1995)? To change this perception will be a big hurdle for the Air Force, as any cultural change is. For the Air Force, it must ensure that officers are being promoted as officers and not as specialties. The promotion results do not reflect homogeneity in the rate of promotion when broken out into specialty.

For as far out as the Air Force can see, there will be navigators. This integral part to the combat force is in such a state of decline that it could affect readiness in those weapon systems that require the navigator.

As professional airmen, we owe it to the American people to be able to articulate the rationale for the way we allocate our resources. Our ability to meet this obligation depends on a common frame of reference. Without proper guidance our decisions can be incoherent, often lacking a rational linkage to long-range goals. Therefore, the decisions we make today must not only support current national security objectives, but foster our vision for the future as well.

Dr Sheila E. Widnall, Secretary of the Air Force  
General Ronald R. Fogleman, Chief of Staff, United States Air Force  
("Air Force Executive Guidance," 1995)

## Appendix A: Definitions

Aviator Career Incentive Pay (ACIP): "Flight Pay." Incentive pay for pilots and navigators to remain in flying positions for specific lengths of time (gates) in exchange for continuous flight pay through specific years of service.

Aviator Continuation Pay (ACP): The "pilot bonus." A bonus payment designed to retain pilots through their fourteenth year of commissioned service. Pilots who completed their initial ADSC, have less than 13 years of service, and are o-5 or below are eligible; annual payment of up to \$12,000 per year.

Below the Primary Zone (BPZ): Those officers who are in the years groups one two years prior to the primary zone of promotion.

Bonus Take Rate: The percentage of pilots in a particular eligibility cohort who elect to take the CAP.

Cumulative Continuation Rate (CCR): The product of multiple year retention rates. For example, the 6-11 year CCR is the percentage of officers entering their 6th year of service that will complete 11 years of service given existing retention rates.

Equity Theory: A theory that contends that motivation is related to how fairly employees feel the outcome of their work is judged compared to that of other employees. It assumes that when employees perceive that they are not being treated fairly, they will act to remedy the situation. Inequities occur whenever people feel that the rewards or inducements for the work or contributions are unequal to the rewards that others appear to have received for similar work.

Expectancy Theory: A process theory first established by Victor Vroom in 1964 stating that a person's motivation to behave in a certain way is determined by (1) the outcomes the person sees as desirable, and (2) the person's belief that these desired outcomes can be attained.

In the Primary Zone (IPZ): Those officers who have the requisite time in grade for promotion to a specific grade.

Line Officer: The largest group of officers in the Air Force generally broken down in rated and non-rated. To distinguish, non-line officers are those in profession vocations such as doctors, dentists (who are doctors also), chaplains, attorneys, etc.

Navigator: A rated officer with the aeronautical rating of navigator. This includes navigators, weapon system officers, and electronic warfare officers.

Officer Professional Development (OPD): the goal of OPD is to develop a well-rounded, professionally competent officer corps, to meet current and future mission requirements.

Rated Management: Maintaining the rated inventory (Pilots and Navigators) at a level sufficient to meet flying and non-flying rated requirements and provide career broadening opportunities for leadership development.

Rated Officer: those service members possessing a valid rating code and an aviation service code.

Total Active Rated Service (TARS): The expected man-years of utilization for the average pilot or navigator after completing initial flying training given existing retention rates. It equals the sum of the CCRs for years of service 1 through 28.

Turnover: The voluntary, avoidable, and dysfunctional cessation of membership in an organization by an individual who receives monetary compensation for participating in that organization.

Trained Personnel Requirement (TPR): The number of pilot or navigator training candidates, by commissioning source, needed to meet Undergraduate Flying Training production requirements.

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## Vita

Captain Quintin H. Hartt, Jr. was born on 9 February 1960 in Alexandria, Louisiana. He graduated from Holy Savior Menard Central High School in 1978 and entered undergraduate studies at Louisiana Tech University in Ruston, Louisiana. He graduated, earning a Bachelor of Arts degree in Finance in the winter of 1985. He received his commission on 21 May 1986 through the Reserve Officer Training Corps program at Louisiana Tech University.

After graduating from Specialized Undergraduate Navigator Training in July 1987 and C-141B qualification training at Altus AFB, Oklahoma, in October 1987, he reported to McGuire AFB, New Jersey, as a C-141 navigator. While flying for the 30th Military Airlift Squadron, Captain Hartt performed duties as scheduler, tactician, instructor, and squadron standardization and evaluation navigator.

His second assignment was to Altus AFB, Oklahoma as a C-141 Combat Crew Training School instructor. His tenure with the 57th Airlift Squadron and 97th Air Mobility Wing included flying as the AMC Command Crew navigator and serving as wing executive officer and squadron flight commander. In February 1995, he entered the School of Logistics and Acquisition Management, Air Force Institute of Technology as part of the Advanced Study of Air Mobility (ASAM) program. His next assignment is to the Air Mobility Command Deputy Commander for Operations Staff. Captain Hartt and his wife, Peggy, have three children, Alexandra, Quintin, III, and Meagan.

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**13.-ABSTRACT (Maximum 200 words)**

This graduate research paper investigates the issues surrounding the current imbalance of navigator manning and its possible relationship to any navigator retention trends. The paper examines two aspects; the first tracing officer personnel policy history and those factors related to the current manning environment, and the second centering on classical retention theory. The final section of this paper discusses the application of the predictors of turnover. Four investigative questions established in Chapter 1 are addressed: (1) What is the historical significance of Air Force personnel policy and what issues surround its evolution? (2) What is the nature of the current navigator force imbalance and how does it support/not support the strategic vision for flying operations? (3) How do perceptions in the career field align with current human resource management theory on employee turnover? and (4) How can the Air Force enhance its retention efforts to help develop a stronger more effective rated force for the future? Although no empirical conclusions can be made by applying data and observations to the turnover predictors, the paper concludes there is potential for the navigator career field to experience lower retention patterns.

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2. Do you believe this research topic is significant enough that it would have been researched (or contracted) by your organization or another agency if AFIT had not researched it?  
a. Yes      b. No

3. **Please estimate** what this research would have cost in terms of manpower and dollars if it had been accomplished under contract or if it had been done in-house.

Man Years \_\_\_\_\_ \$ \_\_\_\_\_

4. Whether or not you were able to establish an equivalent value for this research (in Question 3), what is your estimate of its significance?

- |                       |                |                         |                       |
|-----------------------|----------------|-------------------------|-----------------------|
| a. Highly Significant | b. Significant | c. Slightly Significant | d. Of No Significance |
|-----------------------|----------------|-------------------------|-----------------------|

5. Comments (Please feel free to use a separate sheet for more detailed answers and include it with this form):

\_\_\_\_\_  
Name and Grade

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Position or Title

\_\_\_\_\_  
Address