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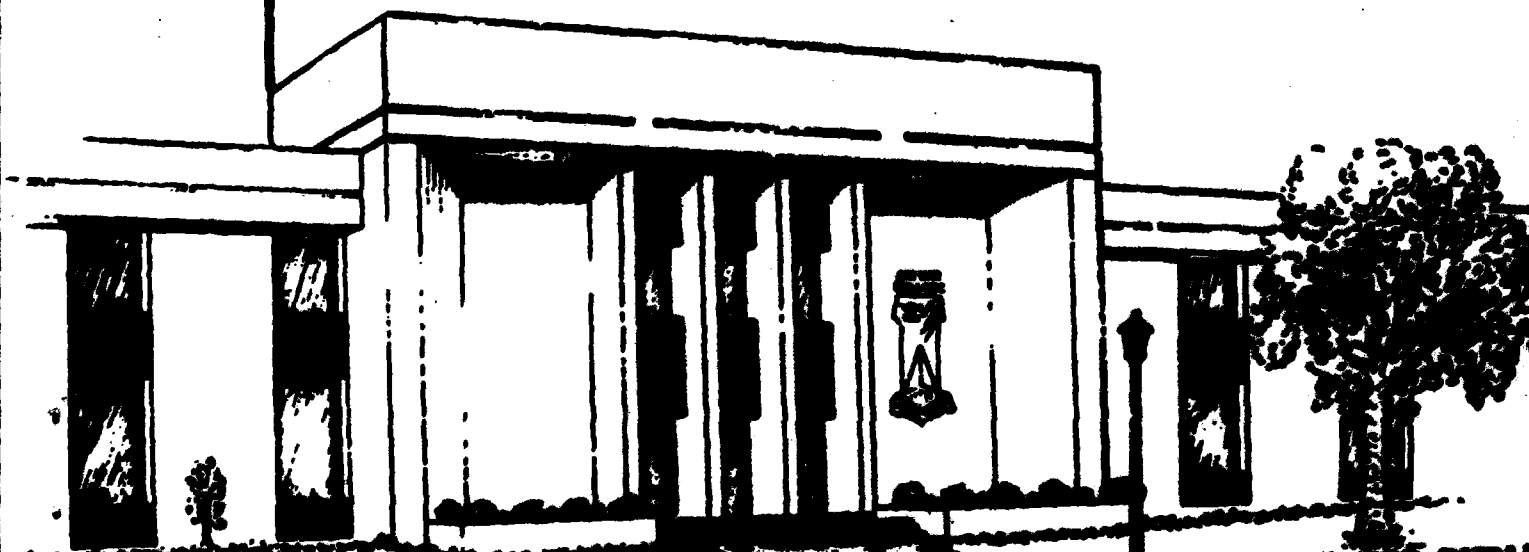
RESEARCH REPORT

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THE FIRST 71: A LOOK AT THE ACADEMY PERFORMANCE
OF THE FIRST 71 AIR FORCE ACADEMY GRADUATES
SELECTED FOR GENERAL

LT COL ROBERT A. LOWE

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AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

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OF THE FIRST 71 AIR FORCE ACADEMY GRADUATES
SELECTED FOR GENERAL

by

Robert A. Lowe
Lieutenant Colonel, USAF

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A RESEARCH REPORT SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE RESEARCH
REQUIREMENT



Research Advisor: Colonel Ronald L. Morey

MAXWELL AIR FORCE BASE, ALABAMA

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AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: The First 71: A Look At The Academy Performance
Of The First 71 Air Force Academy Graduates
Selected For General

AUTHOR: Robert A. Lowe, Lieutenant Colonel, USAF

→ this report

Reviews previous studies comparing performance at the United States Air Force Academy with graduate performance on active duty. Compares academic order of merit, graduation order of merit, military order of merit, cadet leadership positions held and age at graduation for the first 71 Academy graduates selected for Air Force general to discover possible predictors of general officer potential. The findings validate Academy academic and military performance measures as predictors and demonstrate that increased age at graduation is not statistically relevant. Future studies are recommended as the graduate general officer pool increases to optimize the selection of cadets entering the Academy and validate the Academy training environment.

BIOGRAPHICAL SKETCH

Lieutenant Colonel Robert A. Lowe graduated from the United States Air Force Academy in 1971 and received his pilot wings in 1972 at Williams AFB. His first operational assignment was to Pope AFB, North Carolina, as a C-130 pilot. In 1976 he was reassigned to Laughlin AFB, Texas, as a T-37 instructor pilot. He then assumed the duties of air operations staff officer, T-39 pilot, and DCS/Plans executive officer at Headquarters Air Training Command, Randolph AFB, Texas, from 1978 to 1981. Next he attended Armed Forces Staff College, followed by an assignment to the "Typhoon Chasers" at Andersen AFB, Guam, as a WC-130 instructor pilot and squadron chief pilot. From 1983 to 1987 he returned to the Air Force Academy where he successively served as commander of Cadet Squadron 14, commander of Cadet Group 4, and commander of the 94th Airmanship Training Squadron. Colonel (select) Lowe has an M.S. degree from the University of Utah in Human Resource Management and is a graduate of the Air War College Class of 1988.

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CHAPTER I

INTRODUCTION

In December 1978, Harold W. Todd, '59, pinned on the stars of an Air Force Brigadier General, thus becoming the first United States Air Force Academy graduate to be promoted to the general officer ranks. Since the first Academy class graduated in 1959, there have been 29 graduation classes and over 20,000 graduates have been commissioned in the Air Force. (9:350) Today, Academy graduates make up approximately 12 percent of the active duty Air Force officer corps. (9:350,3:1) In mid 1987, each of the first seven graduating classes (1959-1965) had produced generals and Academy graduate generals numbered 71 out of the 2409 lieutenants commissioned in the Air Force from those classes. Promotion to general in the Air Force is extremely competitive, with less than 1.5 percent of those colonels eligible earning stars. (10:1)

Several previous studies have compared performance at the Academy with graduate performance while on active duty. A strong correlation between promotion through colonel and Academy class standing has been identified. Does this relationship hold true for general officer selection from the classes of 1959-1965? Are there better cadet performance indicators for general officer potential?

This research study explores several key variables from the cadet careers of the first 71 Academy graduates promoted to general (Figure 1) in an attempt to answer these questions. The cadet variables considered include: Academic Order of Merit, Graduation Order of Merit, Military Order of Merit, leadership position held during first class (senior) year and cadet age at graduation. The results of this research may be helpful in evaluating the validity of the various Academy cadet evaluation standards as possible predictors of graduate general officer potential.

FIGURE 1

ACADEMY GRADUATES PROMOTED TO GENERAL

NAME AND CLASS	PROMOTION LIST DATES		
	BRIGADIER GEN.	MAJOR GEN.	LIEUTENANT GEN.
1959			
Robert B. Beckel	7/79	11/81	
Henry D. Canterbury	12/81	12/84	
Michael P.C. Carns	12/80	12/84	4/87
Richard E. Carr	1/84	12/87	
John M. Davey	12/84	12/87	
Robert S. Delligatti	12/84	12/87	
Larry D. Fortner	1/84	12/86	
Albert A. Gagliardi	12/84		
Richard B. Goetze	1/84	11/85	
David M. Goodrich	12/82	12/86	
Bradley C. Hosmer	12/81	11/82	12/86
Wayne O. Jefferson	12/81	11/85	
Hansford T. Johnson	12/80	11/82	
Charles L. May Jr.	12/82	12/87	
Robert C. Oaks	7/79	11/82	12/86
James M. Rhodes Jr.	12/84		
Harold W. Todd	12/78	11/81	
Charles P. Winters	1/84		

FIGURE 1 (CONTINUED)

ACADEMY GRADUATES PROMOTED TO GENERAL

NAME AND CLASS	PROMOTION LIST DATES		
	BRIGADIER GEN.	MAJOR GEN.	LIEUTENANT GEN.

1960

Anthony J. Burshnick	12/81	12/84	
Wilfred L. Goodson	12/81		
Richard G. Head	12/82		
John M. Loh	12/82	12/84	
Dale W. Thompson Jr.	12/85	12/87	
Earl S. VanInwegen	1/84		
Denis L. Walsh	12/85		
Ronald W. Yates	12/82	12/84	

1961

Marcus A. Anderson	12/82	11/85	
Stuart R. Boyd	1/84		
George L. Butler	1/84	12/86	
Harold N. Campbell	1/84	12/86	
Thomas A. LaPlante	12/81	11/85	
Richard C. Milnes II	12/84		
Hanson L. Scott	12/86		
Richard D. Smith	1/84	12/86	
Kenneth E. Staten	12/85		
Charles R. Stebbins	12/84		

FIGURE 1 (CONTINUED)

ACADEMY GRADUATES PROMOTED TO GENERAL

NAME AND CLASS	PROMOTION LIST DATES		
	BRIGADIER GEN.	MAJOR GEN.	LIEUTENANT GEN.
Dale C. Tabor	1/84	12/87	
James P. Ulm	12/86		
William T. Williams	12/84		
Frank E. Willis	1/84		
1962			
Robert M. Alexander	12/85	12/87	
Robert H. Baxter	1/84		
Michael J. Butchko	12/86		
Gerald A. Daniel	12/85		
Frederick A. Fiedler	12/85		
George B. Harrison	12/85	12/87	
Paul E. Landers Jr.	12/85		
George W. Larson II	12/84	12/87	
David J. Pederson	12/86		
Peter D. Robinson	12/86		
David H. Roe	12/84		
Ervin J. Rokke	1/84		
Henry Viccellio Jr.	1/84	12/86	

FIGURE 1 (CONTINUED)

ACADEMY GRADUATES PROMOTED TO GENERAL

NAME AND CLASS	PROMOTION LIST DATES		
	BRIGADIER GEN.	MAJOR GEN.	LIEUTENANT GEN.
1963			
John L. Borling	12/86		
Lawrence E. Day	12/86		
Ronald R. Fogleman	12/84	12/86	
James L. Jamerson	12/86		
Richard J. O'Lear	12/85		
Ralph R. Rohatsch	12/86		
Sam W. Westbrook III	12/85		
1964			
Stephen B. Croker	12/86		
Robert E. Dempsey	12/86		
Thomas E. Eggers	12/85		
James W. Evatt	12/85		
Richard E. Hawley	12/85		
Jay W. Kelley	12/86		
Michael D. Pavich	12/86		
Alan V. Rogers	12/85	12/87	
Robert V. Woods	12/85		
1965			
Howell M. Estes III	12/86		
Michael E. Ryan	12/86		

CHAPTER II

LITERATURE REVIEW

A study entitled Air Force Academy Measures of Performance as Predictors of Promotion Potential was conducted by Colonel Kenneth H. Fleming in the early 1980's. This study focused on the first twelve Academy classes (1959-1970) and their promotion to major or lieutenant colonel (if applicable) based on the following variables:

"...parent's status (military or civilian), verbal aptitude and math aptitude scores upon entry to the Academy, order of merit academically and militarily at the Academy, rated status in the Air Force (pilot, navigator, or support), academic level of achievement in the Air Force (college, master's, or PhD), military schooling in residence (Squadron Officers School or Air Command and Staff) and whether or not the officer has combat experience." (4:218)

Colonel Fleming's study concluded:

"The academic and leadership performance measures used at the Academy are excellent predictors, on average, of promotion potential. Leadership is larger for promotion to major, but both are equal to lieutenant colonel. An advanced degree is the other large predictor. Rated status is neutral to major, but negative and significant for navigators to lieutenant colonel. Combat and parental status are both significant but small contributors, and military school in residence is not significant." (4:220)

Lieutenant Colonel Jerry M. Barucky, Academy Director of Graduate Evaluation, conducted a recent study entitled

'82 Graduates' Performance Assessed. In this study, supervisor surveys were sent to 725 supervisors of the 830 Air Force officers who graduated from the Academy in the class of 1982. One of the major conclusions revealed:

"USAF A PERFORMANCE IS POSITIVELY RELATED TO EARLY ACTIVE DUTY PERFORMANCE: As has been suggested in other studies, cadets who ranked high in the Academy's competitive environment tend to continue that pattern on active duty. The survey results show that those who were rated highest by their supervisors--had also been rated significantly higher in the Academic and Military Orders of Merit at USAFA than those graduates who had received lower supervisory ratings." (1:25)

Lieutenant Colonel Barucky's study also appears to show that Military Order of Merit is a more accurate predictor than Academic Order of Merit for early active duty performance. (1:25)

Colonel Ron Lanman, a graduate of the Academy class of 1959, made two studies relating Graduation Order of Merit (class standing) with promotion success. The first study, Can Class Standing Predict Promotion Success?...or, So What If You Were First In The Class?, looked at the Academy class of 1959 twenty years after graduation. Colonel Lanman found that the upper quarter in Graduation Order of Merit was promoted to colonel at three times the rate of the lower quarter. However, the promotion rate to colonel of the lower quarter of the class of 1959 was approximately twice the Air Force average promotion rate. This is not

unrealistic when one considers that 306 cadets started training with the class in 1955 and only 206 were commissioned in 1959, an attrition of 32.7 percent. The study concluded that when grouping the class by Graduation Order of Merit in tenths rather than quarters, order of merit was a significant indicator of promotion success through colonel for the top 20 percent and an indicator of nonselection for colonel for the bottom 10 percent of the class. (5:13-14)

In a follow up study: Order Of Merit and Promotion. A Second Look, Colonel Lanman made the same analysis for the class of 1960 and combined the results with the class of 1959 study to form a larger sample. He found that the upper quarter in Graduation Order of Merit for both classes was promoted to colonel at a significantly higher rate (72%) than the middle two quarters (52% and 46%). The middle two quarters were promoted to colonel at a significantly higher rate than the lower quarter (28%). The number of graduates promoted to colonel formed nearly a 1:2:3:4 ratio from lower to upper quarters. Of significant note was the 55 percent retention rate through twenty years of service for the classes of 1959 and 1960 as compared to about sixteen percent for the Air Force average retention. Another interesting observation from Colonel Lanman's study showed that the number one graduate from each of the first five Academy classes ('59-63) was promoted early to colonel. The

study concluded that there is a direct positive correlation between Graduation Order of Merit and promotion to colonel and retention for 20 years or more of service. (6:10-12)

CHAPTER III

METHODOLOGY

Data Sources

Data for this research were attained from several sources. The primary source of information was the Academy Educational Research-Association of Graduates computer data base. Additional information sources included the Association of Graduates Office, the Academy Office of Awards and Graduate Programs, General Officer Biographies published by the Secretary of the Air Force Office of Information, the Register of Graduates, the Polaris yearbooks for Academy classes '59-65, the Academy Office of Special Collections, and the Academy Office of the Registrar.

Assumptions and Limitations

By necessity, this research applies assumptions and limitations to the data in order to conduct the research and analyze the data and draw conclusions within the time and resources available. The primary assumption is that information from Academy records is correct. For the purpose of this research, any cadet career variable present in over 50 percent of the graduate generals will be

in over 50 percent of the graduate generals will be considered significant. A variable present in more than 60 percent will be considered highly significant. These are arbitrary assumptions deemed necessary for this project by the author and are based on reasoning rather than scientific rationale.

Limitations include the time available for data collection, the difficulty associated with the plowing of new research ground and the poor availability of early Academy graduate records. For example, several key items for the first class year of the class of 1965 were not posted to their individual records!

The eleven Academy graduates promoted to Brigadier General on the December 1987 promotion list have not been included in this study due to the release of that list after research had been completed. In addition, the three Air National Guard and one Air Force Reserve Academy graduate generals have not been included in this study due to the difference between active duty Air Force and Guard and Reserve promotion criteria.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Academic Order of Merit

The weakest Academy measurement of cadet performance as a predictor of graduate promotion to general was Academic Order of Merit. The Academy determined Academic Order of Merit for the graduating classes '59-65 by computing the academic average on a 4.0 scale with quality point adjustments for course difficulty, then rank ordering the cadets.

Figure 2 summarizes the Academic Order of Merit standing for graduate generals by quarter. Although not as strong a predictor of success to general as other factors, the fact that 53 (74.6%) of the 71 graduate generals finished in the top half of their class, academically, cannot be ignored. An unexplained anomaly with the class of 1964 also became apparent--the seven generals from that class rank decidedly lower within their class academically. In fact, while only six graduate generals ranked in the bottom quarter in Academic Order of Merit, three of that number were from the class of 1964, an extremely disproportionate number! It is interesting to note that the first two graduate generals (an admittedly very small

sample) from the class of 1965 also ranked in the lower half of their class academically.

None of the graduates selected for general thus far finished number one in their class Academic Order of Merit. However, an interesting side note was provided by looking at the nine '59-65 graduates selected as Rhodes Scholars. Four were promoted to general: Hosmer '59, Baxter '62, Roe '62 and Westbrook '63, one died on active duty, two resigned from the Air Force, one was medically retired and one is an active duty Air Force Colonel.

FIGURE 2
ACADEMIC ORDER OF MERIT FOR GRADUATES
PROMOTED TO GENERAL

CLASS	RANK BY QUARTER			
	1	2	3	4
1959	9	5	3	1
1960	3	4	1	0
1961	7	4	2	1
1962	8	3	2	0
1963	3	3	1	0
1964	2	2	2	3
1965	0	0	1	1
TOTAL (71)	32	21	12	6

GRADUATION ORDER OF MERIT

Graduation Order of Merit is a class ranking based on a weighted combination of academic and military ratings. For the graduating classes of 1959-1965, academics composed 70 percent and military ratings 30 percent of the Graduation Order of Merit. This order of merit is used to determine the graduation order and subsequent military dates of rank of graduates much like promotion numbers for active duty promotion increments. For example, when members of a class are promoted to major in the primary zone, they are assigned promotion line numbers corresponding to their Graduation Order of Merit. In an Air Force career exceeding 20 years, substantial differences in Graduation Order of Merit can translate to several months difference in dates of rank among graduates of the same Academy class who are promoted "on time" to each successive rank.

An analysis of the Graduation Order of Merit by quartile is displayed in figure 3. This measurement appears to have somewhat more validity as a predictor of graduate general officer potential than Academic Order of Merit. Three of the graduate generals finished number one in their class in Graduation Order of Merit. The percentage of graduate generals who finished in the top quarter of their class (53.3%) exceeds the 50 percent floor required to

qualify for designation as a "significant" variable in this research.

As a comparison, Maureen Mylander made a similar survey of 233 West Point graduate general officers in August of 1973. She found that 50.2 percent ranked in the top third of their graduating class, 31.3 percent ranked in the middle third and 18.5 percent finished in the bottom third. (7:343) Converting Graduation Order of Merit for the first 71 Air Force Academy graduate general officers reveals a much stronger correlation: 66.2 percent graduated in the top third, 22.5 percent in the middle third and 11.3 percent in the bottom third.

FIGURE 3

GRADUATION ORDER OF MERIT FOR GRADUATES PROMOTED TO GENERAL

CLASS	CLASS RANK BY QUARTER			
	1	2	3	4
1959	10	6	1	1
1960	5	3	0	0
1961	9	3	1	1
1962	8	3	2	0
1963	4	2	1	0
1964	2	3	1	3
1965	0	0	1	1
TOTAL (71)	38	20	7	6

MILITARY ORDER OF MERIT

All cadets in the classes of '59-65 received a military rating each semester based on inputs from their cadet chain of command, peers within their class and squadron, and an evaluation by their Air Officer Commanding (officer in charge of a cadet squadron, usually an active duty Air Force captain or major). This Military Order of Merit appears to be the most reliable indicator of future success to general officer. Only one of the graduating general officers finished number one in his class in Military Order of Merit. The percentage of graduate generals who finished in the top quarter of their class (62%) exceeds the 60 percent requirement for qualification as a highly significant predictor variable for this research. Similarly, graduating in the bottom quarter of Military Order of Merit would appear to be a highly significant predictor of "non selection" to general officer in that only one of the over 2400 graduates commissioned in the first seven classes did so and achieved general officer rank.

FIGURE 4
MILITARY ORDER OF MERIT FOR GRADUATES
PROMOTED TO GENERAL

CLASS RANK BY QUARTER

CLASS	1	2	3	4
1959	10	3	4	1
1960	7	1	0	0
1961	7	4	3	0
1962	7	4	2	0
1963	6	1	0	0
1964	5	3	1	0
1965	2	0	0	0
TOTAL (71)	44	16	10	1

CADET LEADERSHIP POSITIONS

During their first class (senior) year, Academy cadets serve as officers in the Cadet Wing and take an active role in the leadership of the Wing. Today there are 40 squadrons and 4 groups; during the years of the classes of '59-'65, there were 24 squadrons divided into 4 groups. Cadet "promotion lists" coincide with the two academic semesters of the first class year. Cadet ranks range from unranked through cadet colonel for the Wing Commander, Vice Wing Commander and Group Commanders. An average cadet could expect to attain the rank of cadet captain. Figure 5 shows the highest rank as a cadet for graduate generals. A strong correlation exists between cadet rank held and promotion to general. Tragically, the first class leadership ranks for the class of 1965 were not recorded in the official Academy cadet records, so only 69 graduate generals are listed. Of the graduate generals, four were cadet colonels and 16 were cadet lieutenant colonels. The number who served at squadron commander equivalent rank or above (major for '59, lieutenant colonel for '60-'65) is particularly striking--25 of the 69 or more than 36 percent. Additionally, 39 of 69 (56.5%) served as a cadet major or above, qualifying as a "significant" variable for this research effort.

FIGURE 5
HIGHEST FIRST CLASS CADET RANK HELD
FOR GRADUATE GENERALS

	COLONEL	Lt. COLONEL	MAJOR	CAPTAIN	LIEUTENANT
CLASS					
1959	1	1	5	6	5
1960	1	5	1	1	0
1961	1	2	3	6	2
1962	0	3	7	3	0
1963	1	3	2	0	1
1964	0	2	1	6	0
1965	UNKNOWN-----				
TOTAL*	4	16	19	22	8
(69)					

*First class rank for the class of '65 was not available from cadet records.

AGE AT GRADUATION

An extra six months to one year of maturity at the early stages of an Academy and Air Force career provided by prior enlisted service, prep school, or college experience might appear to be a great advantage. This perceived advantage is highlighted by the fact that the four former Cadet Wing Commanders who were later promoted to general graduated at the somewhat advanced age of 22.96 years, on average. However, this assumption about the importance of slightly increased age does not hold true for all graduates promoted to general. Average age for graduates promoted to general varied slightly by class from 22.14 years ('63) to 23.5 years ('65) and averaged 22.40 years. The by-class average graduation age for all cadets of the classes '59-'65 is 22.46 years (Figure 6). There is not enough of a difference between these two groups to be statistically relevant.

FIGURE 6

AVERAGE AGE AT GRADUATION FOR GRADUATE GENERALS

	AVERAGE AGE AT GRADUATION FOR GRADUATE GENERALS	AVERAGE CLASS AGE
CLASS		
1959	22.51 years	22.64 years
1960	22.54 years	22.58 years
1961	22.34 years	22.45 years
1962	22.25 years	22.43 years
1963	22.14 years	22.47 years
1964	22.37 years	22.43 years
1965	23.50 years	22.37 years
WEIGHTED AVERAGE: 22.40 years		WEIGHTED AVERAGE: 22.46 years

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

These research findings appear to validate Academy academic and military performance measurements as predictors for future promotion to general in the Air Force. All Academy performance variables explored appeared to have some predictive merit. However, the significance of each variable as a predictor varied widely and future studies are needed to validate these results with an increased pool of graduate general officers. The most significant predictor variables in rank order are:

1. MILITARY ORDER OF MERIT (TOP QUARTER).
2. CADET LEADERSHIP POSITION WITH THE RANK OF MAJOR OR ABOVE.
3. GRADUATION ORDER OF MERIT (TOP QUARTER).
4. ACADEMIC ORDER OF MERIT (TOP QUARTER).

Slightly increased age at graduation was an insignificant variable. Graduating in the bottom quarter of Military Order of Merit proved to be a highly significant predictor of "non selection" to general officer. One of the most disturbing facts uncovered by this research is the poor recordkeeping of cadet performance by the Academy. It is

extremely difficult to research cadet records from early classes and the fact that the first class records from the class of 1965 were not completely recorded is disturbing. No one Academy office appears to have both the tasking and the resources to maintain these important historical records.

The Air Force has often been criticized for an institutional disregard for history and this situation certainly adds more fuel to the fire. An Academy focal point should be established and given the necessary manpower and funding to preserve the Academy's history and provide a solid foundation to build tradition upon. Action must be taken now to consolidate and safeguard cadet records to allow meaningful future studies of successful graduates.

A perennial challenge for the Academy since its inception has been the maturation and motivation of cadets to enable them to take full advantage of the professional military and educational opportunities provided by the Academy. An Academy education is not inexpensive. Anything that the Academy can do to maximize the Academy experience and increase the graduates' contribution to the Air Force should be pursued. As the number of Academy graduate general officers grows, the Academy should actively study the cadet historical data of successful graduates to help optimize the Academy experience.

The message from this research to cadets is

clear--there is strong evidence to support the contention that a successful cadet career lays the cornerstone for a most successful Air Force career. There are no guarantees; success as a cadet does not assure promotion to general. However, this research effort appears to show that the cadet who coasts through the Academy "in idle" is not likely to change his performance substantially when he joins the operational Air Force.

This study raises many more questions than it answers and should serve as a springboard for future studies of graduates who have achieved flag rank. Consideration should be given to surveying and interviewing graduate generals in future research studies on this subject. Such methods could provide subjective information not obtainable by the research methods used in this project.

APPENDIX

RESEARCH FALLOUT

In addition to the information in this research paper on Academy performance, the following observations on the active duty Air Force careers of the 71 graduate general officers are offered:

-65 (92%) are pilots, 2 have a navigator rating and 4 are non-rated (NOTE: An average of 74.6% of the classes of '59-'65 attained a pilot rating.) (11:5)

-64 (90%) attended a Senior Service School in residence. Of the attendees, 23 (36%) attended Air War College, 22 (34%) attended National War College, 10 (16%) attended the Industrial College of the Armed Forces, 5 (8%) attended a foreign Senior Service School, 3 (5%) attended Navy War College and 1 (2%) attended Army War College.

-27 (38%) served at least one tour at the Air Force Academy.

-70 (99%) have a Master's Degree and 7 (10%) also have a PhD.

-63 (89%) served a Headquarters Air Force or higher tour in the rank of colonel or below.

• -34 (48%) were an aide or executive officer for a
• general at some time during their careers.

BIBLIOGRAPHY

1. Barucky, Lieutenant Colonel Jerry M. and Jensen, Harold E.
Evaluation of USAFA Graduates' Performance at Squadron Officers School (SOS). Directorate of Graduate Evaluation, USAF Academy Office of Admissions, 1986.
2. Beishke, Captain John J. Jr. and Lipsey, Captain James R.
Career Progression to General Officer in the United States Air Force. Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1977.
3. Burlage, John and Bush, Ted. "Amendment Sought to Ease Officer Retention." Air Force Times, 25 January 1988.
4. Fleming, Colonel Kenneth H. "Air Force Academy Measures of Performance as Predictors of Promotion Potential." Psychology in the Department of Defense. USAF Academy Department of Behavioral Sciences and Leadership, 1982.
5. Lanman, Colonel Ron. "Can Class Standing Predict Promotion Success?...or, So What If You Were First in the Class?" Checkpoints. USAFA Association of

Graduates, 1987.

6. Lanman, Colonel Ron. "Order Of Merit and Promotion, A Second Look." Checkpoints. USAF Academy Association of Graduates, 1981.
7. Mylander, Maureen. The Generals. First printing. New York: The Dial Press, 1974.
8. Newman, Major General Aubrey S. What Are Generals Made Of? Presidio Press. Novato, California, 1987.
9. 1987 Register of Graduates. Association Of Graduates, USAF Academy, Colorado, 1987.
10. Officer Career Planning Guide. MAC/DPD, MACRF 30-1.
11. Statistical Summaries of USAFA Cadets & Graduates. USAF Academy/RRE, June, 1981.