A CASE STUDY OF MANNED STRATEGIC BOMBER ACQUISITION: THE B-70 VALKYRIE

THESIS

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THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Systems Management

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September 1990

Preface

This thesis provides information for people faced with the dilemma of procurring another manned strategic bomber, whether they be Air Force officers, Government officials, or taxpayers. I believe important knowledge can be gained from remembering this bomber program of thirty years ago. I found the topic fascinating, and have tried to make this work as interesting to read as it was to research.

I am indebted to my thesis advisor, Major John A. Stibravy, for his assistance and recommendations. My thesis reader, Dr John B. Wyatt, III, also devoted his time reviewing my work and generously offering me new insight and perspectives. Also, I wish to thank Systems Acquisition Management Department Head Lt Col Curtis R. Cook for his assistance in the research.

Most of all, I thank Mr Robert S. McNamara for his consent to the interview, which is the centerpiece of the research. I am truly honored by his involvement in this project. His patience and willingness to help will not be forgotten. Thanks also go to his secretary, Ms Jeanne Moore, for her assistance.

Finally, I wish to thank my dear wife Tracey for her confidence and support during these months.

Gary Beatovich

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Abstract

This research compiled a complete and chronological history of the political actions surrounding the North American B-70 Valkyrie bomber program, from its beginnings in 1954 to the rollout of the first prototype, in May 1964. This history was analyzed for significant events, and those events analyzed for their causes and impacts. With this information, lessons were found which can be applicable to current or future bomber acquisitions. An initial literature review showed that this compiled history did not previously exist, and that existing literature contained allegations and theories that needed resolution. The analysis showed ICBM programs took priority over defense dollars in 1959, leading to the program's first cancellation. Later, another Administration determined there was no need for the aircraft, either as a bomber or as an upgraded, reconnaissance-strike vehicle. Events unrelated to strategic mission requirements were found to have played a significant role in Presidential and Congressional support of the program. Also, issues and theories found during the literature review were found to be inaccurate. Finally, lessons still applicable for today's Air Force were cited and discussed.

A CASE STUDY OF MANNED STRATEGIC BOMBER ACQUISITION: THE B-70 VALKYRIE

I. Introduction

General Issue

Since the late 1950s, the United States Air Force has attempted to procure a manned strategic bomber to replace or complement the B-52. These attempts have often led to controversy and clashes between Congress, the Defense Department, and the Air Force (35:7-8).

From 1955 through the mid 1960s, the Air Force sought to acquire the North American B-70 Valkyrie bomber. The B-70, and its derivative the RS-70, "...precipitated a fight so intense as to lead to a Constitutional crisis" (34:244). After ten years and $1.5 billion, the Air Force received only two prototype XB-70 airframes, which lacked the complex weapons and navigation systems. Figure 1 shows the first XB-70 at its rollout ceremony on 11 May, 1964.

The B-70 program has been referred to as "...one of the most protracted and bitter struggles ever to take place in the field of defense equipment" (47:1055), and "...a prime example of how defense dollars can go astray" (21:90).

> Seldom in the course of military development have opinions been so conflicting as in the planning of this revolutionary aircraft; seldom have the responsible planners been so perplexed when faced with the pros and

cons; and seldom have the budget authorities been so consistent in cutting then reawarding the funding for a program. (50:982)

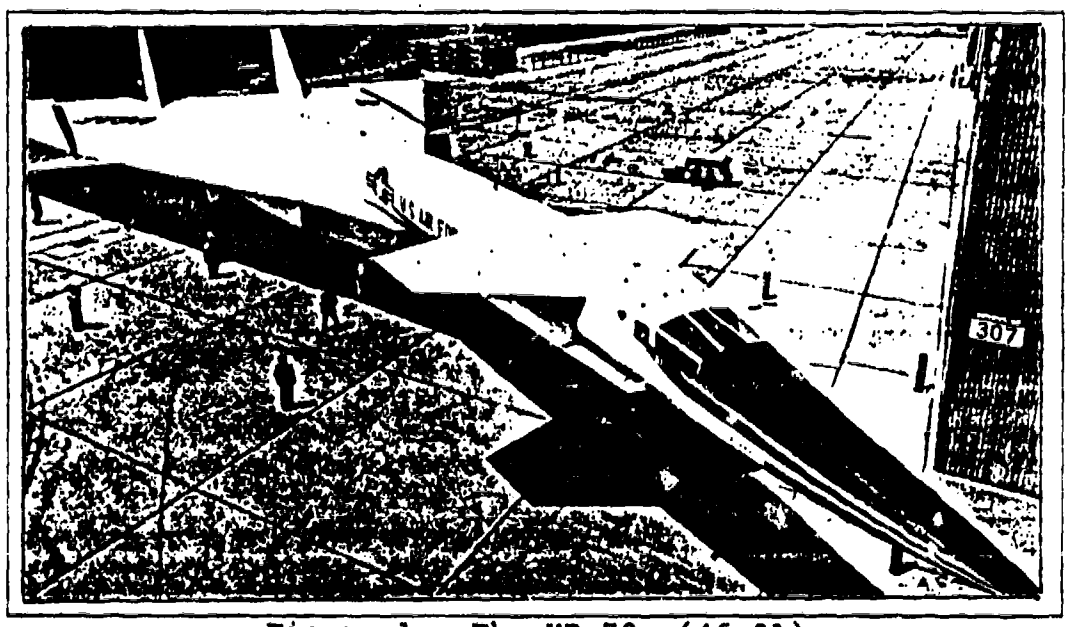

Figure 1. The XB-70 (46:91).

From the mid 1960s through the early 1980s, the Air Force managed the procurement of the B-1 bomber and its derivative, the B-1B. This was also a controversial weapons system. The B-1 was cancelled by the Carter Administration in 1977, then restored in 1981 by the Reagan Administration. After a twenty year effort and $28 billion, the Air Force received 100 B-1B aircraft into their inventory. As the B-1B reached operational status, members of the General Accounting Office (GAO) and Congress stated the airplane

could not perform its intended mission, and that the Air Force had mismanaged the program. (35:5,226)

Currently, the Air Force is attempting to bring into its inventory the B-2 "stealth" bomber. Like its forerunners, this airplane has become a center of controversy (35:6-7). Given the difficulties experienced with the two previous attempts to procure a manned strategic bomber, the Air Force should be especially concerned with proper management of the B-2, or any future bomber program.

Since acquisition programs can often apply lessons learned from earlier programs to improve the management of their program, the Air Force should examine the events of the two previous bomber programs. By researching these programs and examining their difficulties, lessons might be identified, which the Air Force could apply to other bomber acquisitions.

The B-1/B-1B acquisition story has been published in a 1988 book titled Wild Blue Yonder, by Nick Kotz. However, no published source has adequately researched and documented the B-70 story.

Specific Problem

No one has sufficiently researched and concisely documented the actions of the Air Force, Congress, and the Defense Department during the B-70 bomber program, and analyzed their respective actions for lessons applicable to future bomber programs.

Results of Initial Literature Review

An initial literature review was conducted in the early stages of this thesis to verify the need for the research and confirm availability of the data. Although several published sources describe the B-70 story, this review identified deficiencies with existing literature. Some questions remain unanswered. No sources were found that covered the political history in a thorough, chronological manner. Additionally, because of security classification or other sensitivities, some data was not available at the time these earlier sources were written.

For this literature review, the most useful sources were: Aviation Week (periodical) which provided almost weekly status on the B-70 issues from its Washington correspondent; North American XB-70A, by Steve Pace; Wild Blue Yonder, by Nick Kotz; and Lt Col Charles Screws' Air War College thesis An Analysis of Department of Defense Position on Manned Strategic Vehicles. The literature review showed that these works, even combined, fell short of answering some significant questions regarding the B-70 program. No source was found that reported whether specific agreements were reached between the President and the Congress during private sessions. No source addressed the impacts of the secret A-11 aircraft (Pace suggests it may have played a critical role in the procurement decision (46:19-22)). Finally, no source thoroughly addressed the

impacts to the national defense of not procuring the B-70. In order to adequately document the history of the B-70 program, these issues must be addressed. Furthermore, for ease of reading and research, this history should be presented in a concise, chronological manner.

Research Objectives

The primary purpose of this research is to compile the history of the B-70 program in a concise and complete document. This thesis is designed to increase the public awareness of the B-70 bomber program, and bring to light lessons which can be useful in the acquisition of a future bomber.

To provide new information, the following issues must be addressed:

1. Identify what factors contributed to the cancellation of the B-70 bomber.

2. Assess the impacts of not producing the B-70.

3. Determine what impacts the secret A-11 aircraft had upon the procurement/cancellation of the B-70.

4. Learn what agreements, if any, were reached during the White House Rose Garden meeting between Congressman Carl Vinson and President Kennedy.

5. Analyze the B-70 program, and search for and identify potential lessons which the Air Force could apply to current or future bomber acquisition programs. The first four objectives must be satisfied before the this fifth objective can be addressed.

Research Questions

To meet the objectives of this research, the following investigative questions must be answered:

a. Why did the Air Force and Congress want the B-70 and why did the Defense Department not want it?

b. What events and actions took place between the Air Force, the Defense Department, and Congress during the life of the B-70 program?

c. What specific events took place that caused to the B-70's cancellation?

d. Could the events and situations which cancelled the B-70 occur again for future bomber programs?

Scope

This thesis describes and examines the B-70 Valkyrie bomber program from its beginnings in 1954 to the rollout of the first aircraft in 1964. The emphasis is on the political history, meaning the actions and events which occurred in Congress, the Air Force, and within the Executive Branch. The time frame was selected because the most important events of the B-70 program occurred within this period. By showing that the fate of the B-70 was determined before the first aircraft took to the air, or even rolled out of its hangar, two conclusions will be evident to the reader. First, the program's cancellation was not based upon performance. Second, the reader will better appreciate the importance of the earliest phases of weapons system acquisition; sometimes the most significant actions and decisions occur during this time. Although

meaningful events took place beyond the time covered (most notably all flights and the crash of the second XB-70 in 1966), this thesis will show they did not contribute to the program's cancellation.

Limitations

This research was primarily limited by the passing of time. The events under analysis occurred approximately thirty years ago. Over this length of time, deaths and memory can be significant disadvantages to research.

Where published material was not available, interviews were necessary. However, over the thirty years, some key figures have died, and therefore could not be interviewed. For example, for information on Carl Vinson's 1962 meeting with President Kennedy and Robert McNamara, only the three men were present, and today only McNamara is surviving. Many Kennedy books were researched, but none described this meeting in specific details. Also, no biography or memoirs were found concerning Vinson. Therefore, the information acquired for this subject area was limited solely to the McNamara interview.

Information gathered through interview is limited to the memory of the subject. However, since no sources were found which contradicted information gathered during the interview, Mr McNamara's statements were accepted as fact.

Importance of this Research

According to Emory, in his book Business Research Methods, research is "...a systematic inquiry aimed at providing information to solve problems" (14:10). This research attempts to provide information useful in satisfying some future problem. That problem is the lack of past experiences to draw upon for decision making during Air Force bomber acquisition.

The thinking required for the decision making process is "...based, consciously or unconsciously, upon recollections of past experiences" (18:6).

> No two events in our lives or in the course of history are ever exactly alike, but recurring patterns of resemblance often make it possible for us to act with the confidence that comes from the recognition of the familiar. (18:6)

Neustadt and May wrote, "...the use of history can stimulate imagination: Seeing the past can help one envision alternative futures" (45:xv). Past experiences, even from the remote past, can provide references useful in future decisions (45:232).

Emory agrees that personal experiences are useful to the decision making process, and adds that decision makers suffer when a decision must be made in an area where we have had little or no first-hand knowledge (14:3). Therefore, decision-makers involved in bomber acquisition for the Air Force are handicapped if they do not have knowledge or the experience of previous, similar endeavors.

It is the goal of this research to in some way provide information to supplement the missing experience base of program managers involved with bomber acquisition.

This research should not be used as an analogy for all future bomber programs. The B-70 bomber was cancelled, and this research found that decision to be correct. However, this research does not recommend that all future bomber programs should be cancelled as well. Since using analogies to help in decision making often substitutes for careful thinking, it is critical that current events or other circumstances have not made an analogy inappropriate (45:89). Neustadt and May state that analogies can be dangerous if the differences and likenesses, knowns and unknowns, have not been carefully separated, examined, and reexamined to "...gain some protection against supposing that a problem is what it used to be when, in reality, conditions have changed" (45:66).

Thesis Chapter Overview

This thesis is organized in the following manner. Chapter 1 presents an introduction to the research project. Chapter 2 will explain the methodology used in conducting the research. Chapter 3 is dedicated to presenting the history of the B-70 program based upon existing literature. Chapter 4 contains the research findings comprised of the investigation and resolution of issues identified in Chapter 3, and the analysis of the B-70 for possible lessons.

Chapter 5 will present the conclusions and recommendations resulting from the research.

Chapter Summary

This chapter provided an introduction to, and reasons behind this research effort. The chapter began with a discussion of difficulties experienced by the Air Force during some previous bomber acquisitions, leading up to the current B-2 program. Next, the specific problem was addressed. This was followed by a summary of findings from an initial literature review, which verified that the need for this research exists. Next, the research process was broken down into the research objectives and specific questions to be answered. Finally, the importance of this research effort was addressed.

II. Research Design and Methodology

Introduction

This thesis is a case study. According to Harold Stein's introduction to American Civil-Military Decisions: A Book of Case Studies,

> a case study ...is a detailed account, from the perspective of a somewhat hypothetical neutral observer, of a series of events that illuminate the process by which a decision--or group of decisions--is made....(62:3)

This thesis provides an unbiased description of the events, followed by an investigation for new information, resolution of issues, and possible lessons.

This research has two purposes:

1. Compile the political history of the B-70 program in a concise and complete form.

2. Analyze the B-70 program, and search for and identify potential lessons which the Air Force could apply to current or future bomber acquisition programs.

Research Design

To accomplish these research objectives, a two-phased approach was used. Phase One supported the first objective, and Phase Two supported the second.

Phase One. This phase consisted of a compilation of the historical, political facts surrounding the B-70 acquisition program. It was conducted using a combination of literature review and interview. As described in the first chapter, an initial review identified problems and

issues using existing literature. The remainder of Phase One focused on addressing these issues, using the following procedures:

Literature Review. The literature review was designed to compile information already researched. Most of the literature review was performed using the resources at the AFIT Library. This library was selected primarily for its easy availability to AFIT students and its adequate resources. When materials could not be obtained at the AFIT library, the Wright-Patterson Technical Library (WRDC/ISL), the Wright State University Library, and the Dayton Public Library were used. These libraries were selected due to their proximity to the AFIT school.

The first step in the library research was to search for material dedicated to the subject of the B-70 aircraft. The only books found were Steve Pace's 1984 book, North American Valkyrie XB-70A, and Ed Rees' 1960 book, The Manned Missile. Pace discussed the political events only in his first chapter, and in summarized, insufficient detail. Rees' book was apparently aimed at gaining support for the recently cutback B-70 program, and was not considered an unbiased source. Also, the book is limited by the time it was published, since several key events occurred after 1960.

The only other source dedicated to the B-70 program was Lt Col Charles Screws' 1965 Air War College thesis An Analysis of Department of Defense Position on Manned Strategic Vehicles. Although this was a good source for

Congressional testimonies, it did not address any impacts of the program cancellation nor mention several key events.

A search was conducted of the Defense Technical Information Center (DTIC) under the titles B-70, XB-70, and Supersonic Aircraft. Although numerous technical documents were identified, no documents were found dealing with the program's political history.

After searching for books, periodical articles dealing with the B-70 were sought by searching the subject index in the Reader's Guide to Periodical Literature. This index identified the articles from Aviation Week, Time, Newsweek, and other popular news magazines.

As stated in Chapter 1, a primary source of data was the periodical Aviation Week, from 1957-1965. This periodical was selected because it provided routine news stories from their Washington correspondent on the B-70 status, and it was readily available at the AFIT Library. To avoid potential bias, other periodicals and newspapers covering the issues and events were used. Air Force Times, Air Force Magazine, and Armed Forces Journal provided more insight to the Air Force's perspective of the same events. These sources were also selected based on their accessibility at the AFIT Library.

Another important source was the New York Times newspaper. This was chosen because the AFIT Library maintains an index of articles by subject, and several articles had been written about the B-70 controversy. The

New York Times provided satisfactory news coverage of events, although not as detailed as a periodical.

The next step in the first phase was to find materials which contained information about the B-70 program, but did not deal solely with this subject. For example, books about Presidents Kennedy and Eisenhower, Robert McNamara, the B-1 bomber, the Soviet military, U.S. defense policies, and weapons acquisition were found, and their indexes examined for B-70 references.

Of these sources, the most useful ones were Alain Enthoven's How Much is Enough?, and Thomas Coffey's Iron Eagle. The former contains some unique perspectives on the B-70 program, and the latter is a biography of General Curtis E. LeMay, who fought diligently in favor of the B-70.

One additional source for information was used: the United States Air Force Museum's research department. This was selected because of the museum's well known archives, its association with the B-70 program (the only remaining XB-70 aircraft is on display at the museum), and its proximity to AFIT. Among the files were found various newspaper clippings, magazine articles, and photographs.

Personal Interview. An interview was required to obtain information not available from secondary sources.. Individuals involved in past events can perhaps be the only sources with whom to check recent analogies and issues (45:241).

Robert S. McNamara (Secretary of Defense, 1961-1968) was selected for interview for two reasons. First, he appeared to be a prominent figure in the B-70 program during the initial literature review, and therefore had in-depth knowledge regarding the reasons the B-70 was cancelled. Second, he was the only source of information regarding the 1962 White House meeting between the President and Congressman Vinson.

The interview addressed the issues identified by the initial literature review. He was specifically questioned about the role of the A-11 airplane in the B-70 cancellation, and any specific agreements reached between the White House and the Congress during private discussions.

The first step in securing the interview was a formal, written requests from the AFIT/LS Dean, shown in Appendix A. Any further steps in the interview process were dependent upon the initial responses. Once Mr McNamara's office responded with the consent to be interviewed, an appropriate time was established and the interview took place in his Washington D.C. office. The interview was recorded.

Phase Two. The purpose of this phase was to analyze the material compiled in Phase One. Specifically, key characteristics of the B-70 program history were analyzed for their causes. Once a suitable list of these causes was assembled, the next and final step was determining their applicability towards current or future bomber programs.

This last step was accomplished by examining current newspaper articles and personal interviews.

Newspaper Articles. News stories were examined for information regarding the current B-2 bomber program, and specifically, the reasons behind attempts to cancel it. The objective was to determine if the causes of the B-70's cancellation were similar to those which may lead to the B-2's cancellation.

Personal Interviews. Robert McNamara was questioned about bomber acquisition today relative to events in the B-70 era. Specifically, he was asked about parallels between the B-70 program and the current B-2 bomber program.

Also, Lt Col Curtis Cook, Head of the AFIT Systems Acquisition Management Department, was questioned about the accuracy of the findings. He was selected for interview because he is resident at AFIT, easily accessible, and knowledgeable on weapons acquisitions. Specifically, he was asked whether the lessons described in Chapter 5 are applicable in modern-day bomber acquisitions.

Chapter Summary

This chapter described the research process conducted during this thesis. The two phased approach, including the method of conducting the literature review and interviews, was explained. The next chapter presents the results of Phase One.

III. Discussion of Literature

Introduction

This chapter provides a history of the North American B-70 bomber program from its beginnings in 1954 to the rollout of the first plane, in May 1964. This review is based upon previously documented information, found during the literature review process described in Chapter 2.

Overview of the B-70

The North American B-70 was, according to Miller, "...perhaps the most imaginative and sophisticated airplane ever designed" (42:30). Intended to replace the B-52 as the primary U.S. bomber, the B-70 would significantly outperform any other bomber in the world (15:244). It was designed to fly continuously at 2,000 mph (three times the speed of sound) at altitudes over 70,000 feet, and attack predetermined targets with nuclear bombs (15:244). It was 189 feet long, with huge delta wings and forward canards (42:20). It was powered by six giant 30,000 pound thrust engines, "boxed" beneath the main fuselage (42:20). Its top weight of 275 tons made it the heaviest airplane ever built (46:10). The B-70 also represented over 1000 patents and thousands of technical innovations (46:10). "She is so unlike previous aircraft that comparisons are almost meaningless," wrote Hunter (22:157).

Comparisons of the B-70's capabilities to those of other American bombers are shown graphically in Figures 2 and 3. Figure 2 compares the altitude performance, and Figure 3 compares the speed performance. As these figures show, the B-70's performance far surpasses the capabilities of the other bombers. It is important to recognize that the B-58's Mach 2 capability was for "dash" weapons delivery only, while the B-70 was designed to sustain a Mach 3 airspeed throughout its mission.

Figure 4 shows the B-70 design in scale drawing. Figure 5 shows a photograph of the first aircraft, the XB-70, taken in 1964.

The B-70's costs were as staggering as its performance. The average cost of a single B-70 (based on a 250 plane program) would be over $24.5 million, more than three times the cost of a B-52 it was replacing (54:35). Engineering and design costs were estimated to come to $1.3 billion. Construction costs would be at least $750 million (42:20).

Environment

Before discussing the beginning of the B-70 program, it is important to summarize the military, political, and technological environment of the early 1950s. Thus, the reader will gain a better understanding of the reasons why the B-70 came into existence at all.

President Dwight Eisenhower was in office, and the "Cold War," underway against the Soviets since the late

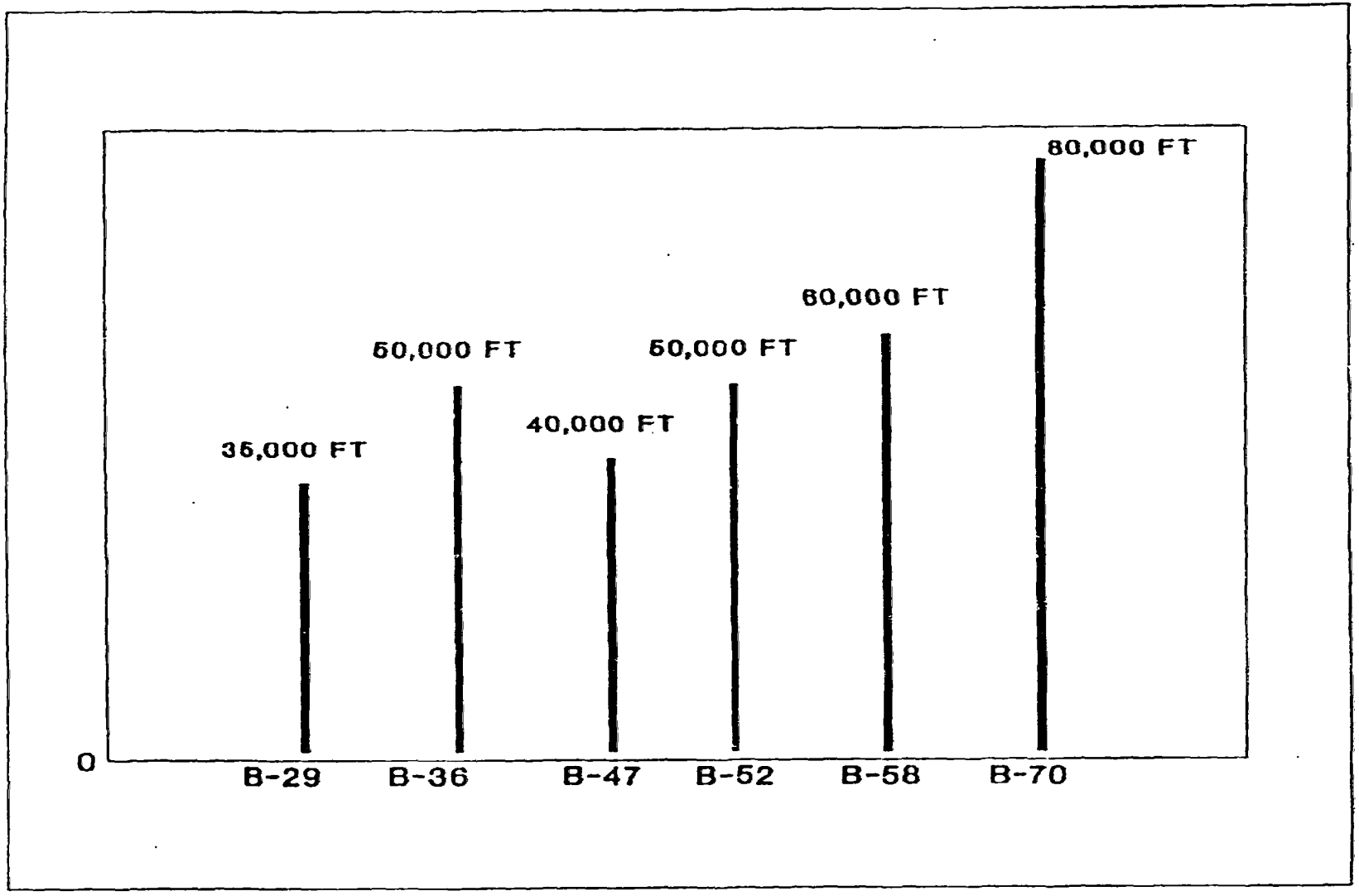

Figure 2. Comparison of B-70 Altitude Capability and that of other American Bombers (17:234-235).

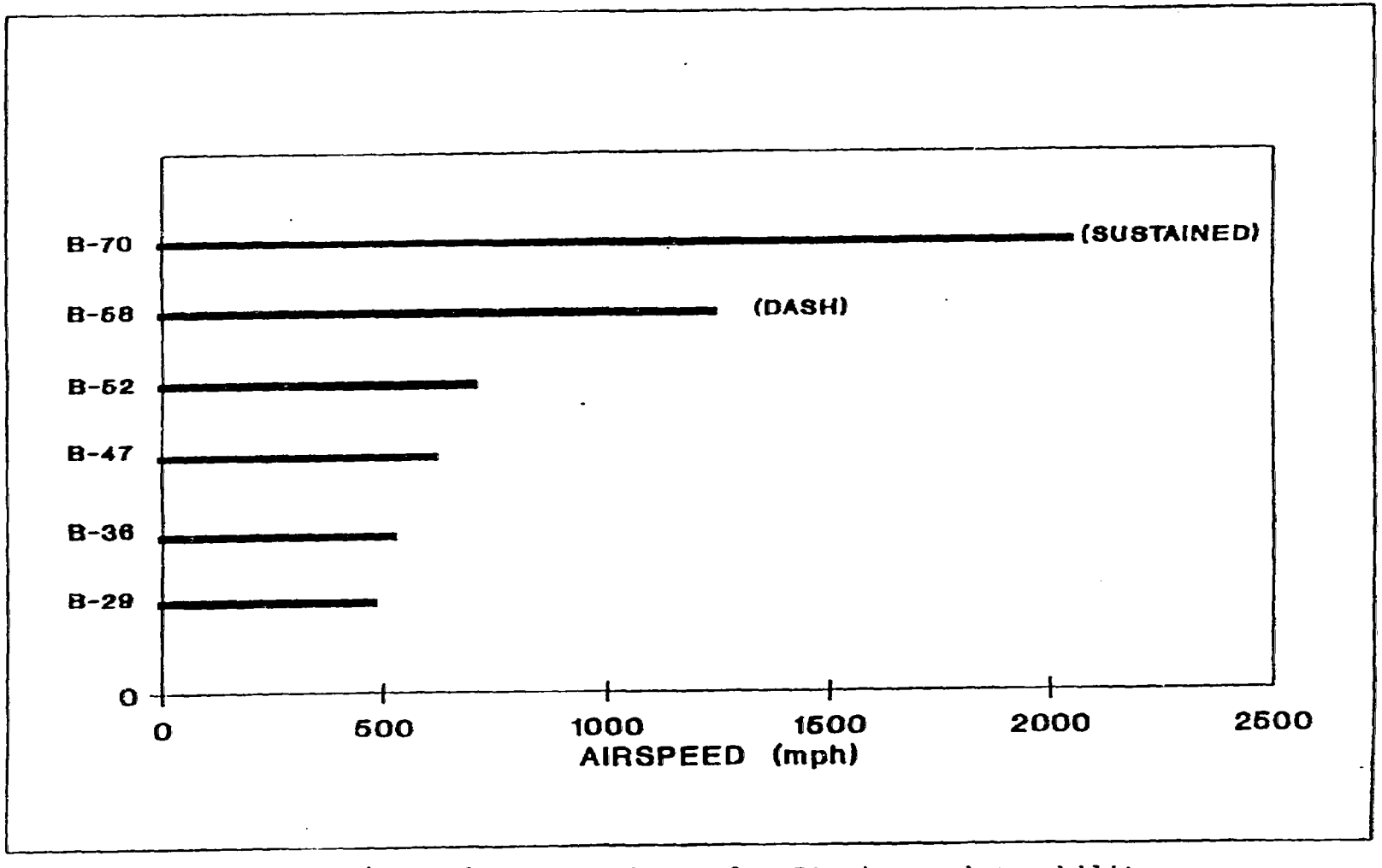

Figure 3. Comparison of B-70 Airspeed Capability and that of other American Bombers (17:234-235).

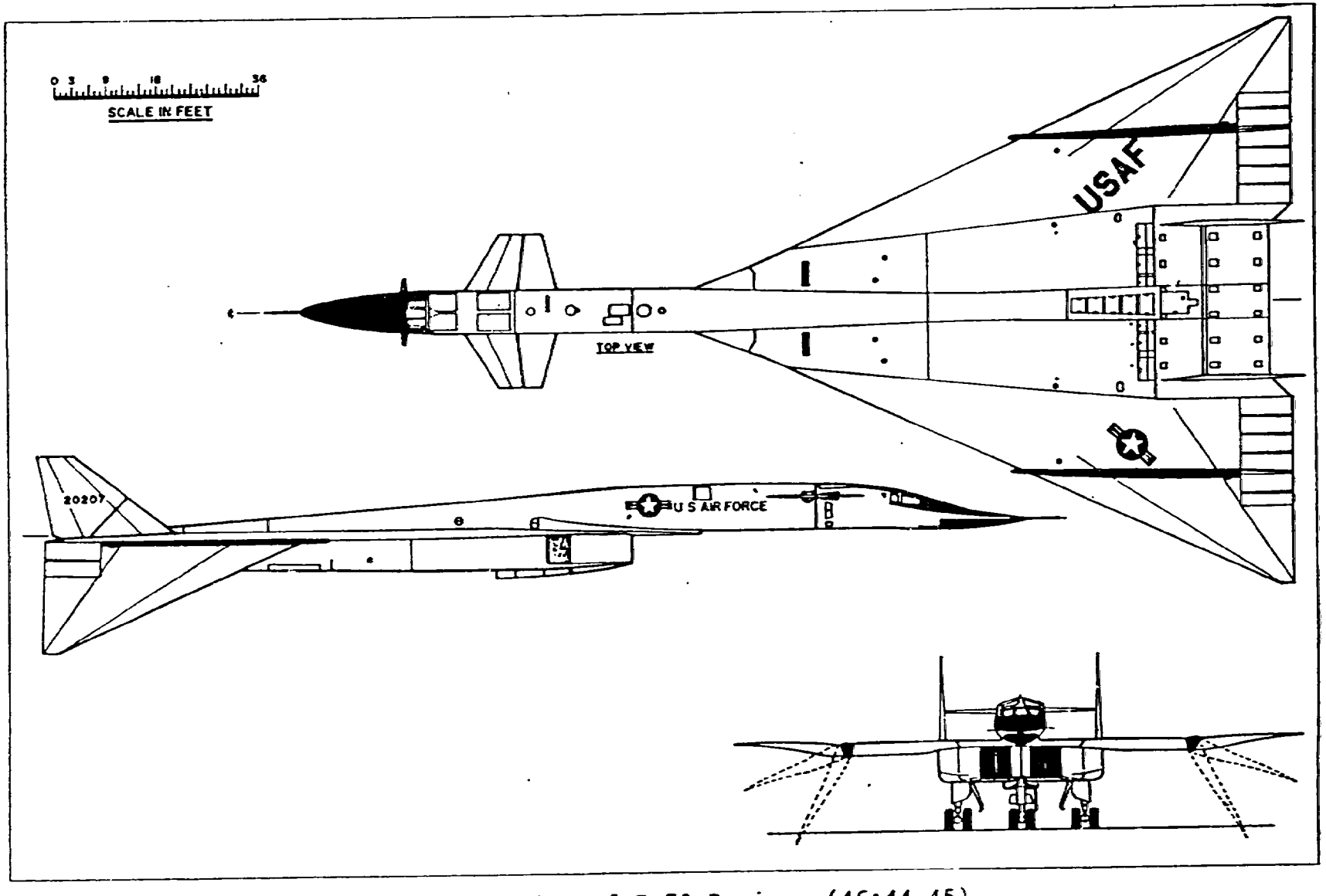

Figure 4. Scale Drawing of B-70 Design (46:44-45).

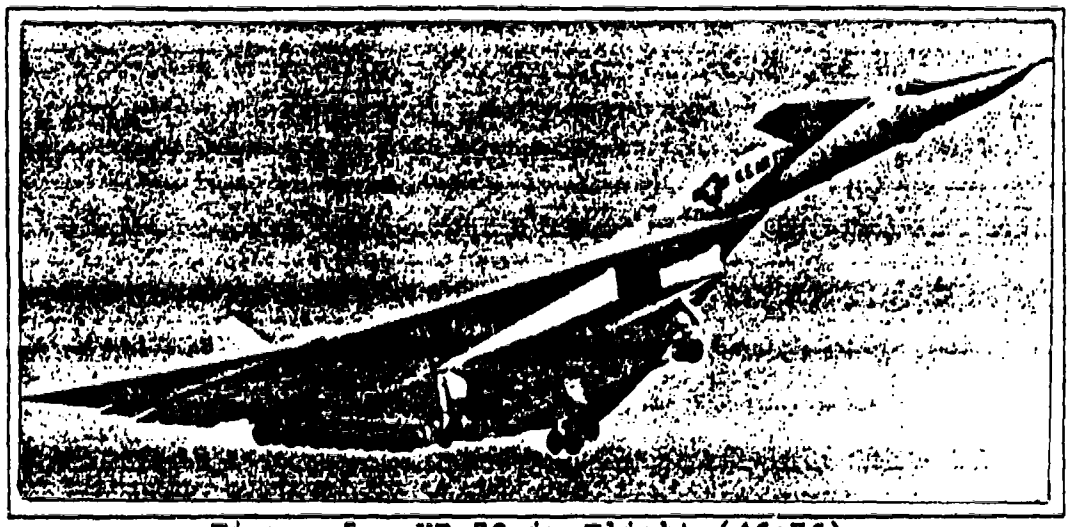

Figure 5. XB-70 in Flight (46:76).

1940s, fueled military buildups on both sides. Eisenhower aimed at remaining militarily ahead of the Russians, but at the same time, operating within budgets that reflected the nation's economic status (56:47). This meant that, at times, choices would be made regarding which weapons systems to procure, and which to abandon. Strategically, Eisenhower's position was to rely mainly on manned bombers, and remain cautious concerning intercontinental missile deployment, considering this a "volatile new technology" (56:55). Even as missile technology matured, the country would maintain a "mix" of strategic weapons systems, both bombers and ICBMs (56:55).

The office of the Secretary of Defense, although established in 1947, did not possess the authority to enforce weapons acquisition policy. Throughout the 1950s,

each service generally ran its own acquisition programs with very little interference from the Defense Department. (16:13)

The nation amassed an arsenal of atomic and hydrogen weapons, with the primary delivery vehicle being the B-52 bomber (56:121-2). The Air Force's Strategic Air Command (SAC) was handed the responsibility for the nation's strategic planning. The newly developed Atlas and Titan ballistic missiles were expected operational by 1960 (56:55). The medium-range B-47 bomber was being phased out (56:55), and the giant, long-range B-36 bomber was to be retired from the Air Force in 1959 (36:55). Additionally, the next generation ICBMs, Minuteman and Polaris, were progressing in advanced development (56:55).

Fueled by cold war-inspired funding, the country made impressive technological advancements. Futuristic, revolutionary aircraft designs were conceived. The technology behind an aircraft's military capability was measured in terms of altitude, speed, and range (15:250). Efforts began towards a nuclear-powered airplane, and other concepts that promised aircraft flying farther, faster, and higher than any previously. According to Kotz, "...The nation's military, scientific, and industrial leaders felt there were few limits to what mankind could achieve in weaponry, given the time and resources." (35:33)

During the mid 1950s, the United States believed the Soviets had made considerable gains in manned bomber

programs. This, it was believed, could lead to the U.S. falling behind the Soviets in bomber technology and numerical production. (49:57) Although this "bomber gap" turned out to be nonexistent, the effects were real: regardless of the development of missile technology, the U.S. would maintain a strong, modern manned bomber force (49:57). A supersonic bomber, the B-58, would come into service as the B-47 was retired (56:122). Also, the Government began funding research and development for advanced bomber concepts, with nuclear propulsion or exotic chemical fuels, such as boron (46:10).

Since the lifespan of the B-52 was not envisioned much beyond the late 1960s, the Air Force began looking for a new, long-range bomber to become the nation's strategic centerpiece (35:30). Progress seemed to indicate this next bomber would be a large, high flying Mach 3 aircraft, and certainly brought into the strategic inventory as soon as technology permitted (76:470).

Project Beginnings

The B-70 program actually started in 1953, as aeronautical experts began preliminary studies for advanced intercontinental bomber designs (51:5). One year later, in 1954, Air Force General Curtis E. LeMay, commander of the Strategic Air Command, officially defined mission requirements for a new, advanced jet bomber (46:10). His objective was a plane combining the range and payload of the B-52 with

supersonic speed of the B-58 (46:10). A half-million dollars was authorized from the FY 1954 budget to investigate technological possibilities for a B-52/B-58 replacement in the 1965-1975 time period (5:18). The new, top secret project was designated WS-110A (WS for Weapon System) and was pursued separately by Boeing and North American (46:11). Both contractors trying for the new bomber contract found little success designing a plane to meet LeMay's requirements (35:31). The first design submittals described a large aircraft with huge external fuel tanks on the wingtips to allow for the long range capability. After using the fuel from these tanks, they would be jettisoned and the plane could then achieve a supersonic "dash" into the target area. Each of these massive wingtip fuel tanks would weigh approximately 190,000 pounds when fully fueled. In 1956, after examining these initial design concepts, General LeMay firmly rejected both contractor's proposals. "Back to the drawing boards," he said, "These aren't airplanes--they're three-ship formations!" (46:12)

In March 1956, a secret research paper by A.J. Eggers and C.A. Syvertson described an aerodynamic phenomenon called "compression lift," where a supersonic vehicle could increase lift by riding its own shock wave (47:1056). This phenomenon could be used to extend the plane's range (47:1056). North American discovered this paper during a routine periodical search (46:12). Eggers and Syvertson

then collaborated with North American engineers and designers to produce a proposal for the WS-110A featuring "compression lift" principles (47:1056). This breakthrough and others made it both feasible and practical to fly at supersonic speeds for the entire mission, not just a "dash" capability. Referring to compression lift, Dr Hugh L. Dryden, then director of the now defunct National Advisory Committee for Aeronautics, stated "...a strange and wonderful thing happened. It was as if the pieces of a jig-saw puzzle began falling into place." (52:5)

After the first rejections, both contractors continued work on the WS-110A project, and both made significant technological breakthroughs (35:31). In late 1957, the revised designs were resubmitted (46:14).

On October 4, 1957, the Russians placed their Sputnik satellite in orbit. America's leadership in technology and military strength was suddenly in question. As a result of the immediate Sputnik panic, President Eisenhower signed an additional $2 billion defense spending bill, which Kotz called, "the first concrete effect of Sputnik on American defense" (35:29). These extra funds would aide significantly the Air Force's new strategic bomber program. (35:29-30)

In December 1957, two weeks after the signing of the additional $2 billion defense bill, North American's design for a Mach 3 intercontinental bomber (featuring compression lift) was selected over Boeing's for the WS-110A program

(7:13). Boeing, whose B-17, B-29, B-47, and B-52 made them the recognized bomber experts, filed a protest over the decision. A special Congressional inquiry, however, found the decision sound (46:14-15). The principle factor of the decision to select North American's design was the compression lift feature (46:14-15).

One month after the selection, a contract was signed with North American for 12 test aircraft, plus a delivery of fifty bombers to SAC. The Air Force was planning for an eventual strength of 250 of the new bombers. (35:31)

1958

In February 1958, the WS-110A project was officially designated the B-70, with first flight due in Dec 1961, and SAC deliveries scheduled for 1964 (46:15).

When the Eisenhower Administration cancelled the nuclear-powered aircraft program in 1958, the B-70 became the Air Force's only new bomber program. The Air Force therefore increased the priority of the program and accelerated its schedule by eighteen months. (46:15) The program allowed for no prototype airplanes; instead, thirteen test aircraft would be produced, most of which would eventually enter the Air Force inventory (6:26).

Also that year, the Department of Defense Reorganization Act of 1958 was passed. This authorized the Secretary of Defense to "run the Pentagon" (34:38). The Secretary could now assign the development, production, and

operational use of weapon systems for any of the service branches. However, by custom, the services still dominated the policy and decision making in the significant areas (34:38). This legislation provided the groundwork for expanding the role of the Defense Secretary in the management of defense acquisition programs (16:13).

In March 1958, North American and SAC held a "name the plane" contest. Out of 20,000 entries, the winner was T/Sgt Francis W. Seiler, who's entry won him $500 and a trip to Hollywood. The Strategic Air Command's next mainstay would be called "Valkyrie," after the mythical Norse maidens who flew the skies deciding the outcomes of battles. (71:11) During the following few months, battles would begin over the B-70 itself, with outcomes determined by Congress and the President.

1959

While the Air Force was accelerating the B-70 program, a Strategic Missile Evaluation Committee had been studying the feasibility of an ICBM carrying a thermonuclear warhead (47:1056). The ICBM had developed faster than expected (21:91), and the Defense Department found their ICBM programs eating up such huge sums of money that new manned aircraft programs had to be critically reappraised (47:1057). According to Pike,

> When the B-70 first came under fire in 1959, the realization that the United States could not support every multi-billion dollar defense program in sight,

> and stay solvent, was occurring to the civilian authorities in the Department of Defense. (47:1057)

As a result of this reappraising, another North American program, a Mach 3 interceptor designated the F-108, was cancelled in September 1959 (46:17). Since North American had intended to share supersonic research and development (R&D) costs between the two programs, this immediately added $150 million to the costs of the B-70 (47:1056).

In December 1959, the Eisenhower Administration took the lead from a special study which questioned the utility of the manned bomber compared to the ICBM (46:17). Since the U.S.S.R. was developing its own ICBMs, some considered the manned bomber obsolete; the Air Force could not possibly launch its fleet of bombers in time to avoid destruction by missile. Also, the U.S. ICBM programs had been making great progress, while the B-70, "...trying to revolutionize the bomber in one mighty leap, ran into predictable technological snags" (35:32). Furthermore, the Cold War was experiencing a "thawing," marked by Soviet Premier Khrushchev's visit to the United States (51:5). The Eisenhower Administration then made moves to terminate the B-70 program (6:26). The FY 1960 budget was trimmed by $25 million, and the FY 1961 budget was slashed from $365 million to only $75 million (5:17). This resulted in a trimmed and stretched out program, where only two experimental airplanes would be built (6:26). One airplane would

be a prototype, designated XB-70, stripped of all complex bombing, navigation, and radar subsystems, and flight tested a year later than scheduled (47:1057). The second aircraft, designated YB-70 and upgraded with the navigation and bombing equipment, would be flown a year later (6:26).

This move created an uproar among bomber proponents, who now saw only a bleak future for the program (52:5). Although officially only "trimmed and stretched out," many feared the program restructure would eventually kill the B-70 altogether (6:27).

> When the B-70 prototype flies...without these vital subsystems its achievement will be as hollow as its empty airframe. This will, of course, give its critics even more grounds to abolish the program because it obviously has not produced a truly useful vehicle. (19:21)

To the Air Force and other bomber advocates, the decision to downgrade the importance of the B-70 indicated the Administration had internally decided the manned aircraft vs. ICBM issue, and had favored the missile (6:26). Robert Hotz, editor of Aviation Week, called this move "...one of the most dangerous decisions made in this country during the past decade" (19:21).

Questions were raised regarding the overall future of the manned bomber. There were no longer any new programs on the horizon. The production lines for the B-52 and B-58 were scheduled to shut down in 1962 (51:5). Also, the Martin Company, proven and successful bomber manufacturers, abandoned manufacturing aircraft altogether (51:5).

President Eisenhower's cutback of the B-70 seemed to indicate the Administration's decision to eventually replace all manned strategic aircraft with ballistic missiles (51:5). However, as Eisenhower moved to make ICBM development the country's highest defense priority, the Air Force's highest priority programs were still additional B-52s and the B-70 (35:42). According to Kotz, the Air Force was reluctant to adopt a missile based strategy because "the bomber represented the heart of the Air Force's guiding military doctrine, the overriding importance of strategic air power" (35:32).

At the Pentagon, in the Air Force, and in Congress, lines were drawn between advocates of manned bombers and missileers (51:5).

1960

The B-70 issue quickly developed into one of the hottest weapons issues ever (5:17). Legislators, who had substantial aviation industry in their home states, led in the attack upon the B-70 cutbacks (51:5). Senator Henry M. Jackson of Washington, where Boeing stood to lose a $200 million B-70 subcontract, said, "This is another example of reducing our security for purely budgetary reasons" (1:22). California's Senator Clair Engle, where North American Aviation was headquartered, termed the President's decision, "a blunder that might have grave national security consequences" (35:55).

The politics now commonly associated with large scale defense programs were just emerging in 1960, as the size of military projects was increasing. Replacing the several hundred B-52s with B-70s promised to be at least a $6 billion effort, with more jobs and profits at stake than for any previous government project. (35:50)

In 1959, Congress passed Public Law 86-149, which increased their control over acquisition of large defense programs (16:68). Congress passed additional legislation in 1960 which gave the House and Senate Armed Services Committees (HASC and SASC) increased influence in the annual defense budget (52:5). Prior to 1960, the Committees only authorized funding for military construction projects. But recognizing the growing size of appropriations for ships, aircraft, and missiles, the Committee members succeeded in working legislation that permitted them authorization of these programs as well. (40:1)

> With contracts involving billions of dollars, the fate of entire companies, the economic welfare of communities, and the careers of ambitious politicians all hinged on winning key defense projects. (35:50)

Early in 1960, the Senate conducted its own investigation into the need for the new bomber, chaired by then Senator Lyndon Johnson (69:800). On January 11, General Thomas S. White, then Air Force Chief of Staff, stated that he would testify against the Administration's cutback of the program (51:1). During the hearings, General White stated that he was concerned about some officials'

testimonies "... which present the overall philosophy that manned aircraft have ceased to be of value" (58:128). General White said he "accepted" the President's decision, but argued strongly in favor of full development and deployment of the B-70 (51:1). Air Force General Nathan Twining, Chairman of the Joint Chiefs of Staff, testified that if the B-70 was not procured, the United States would have no bombers in 1967, due to rapid advances in bomber technology making the B-52 and B-58 obsolete (35:62). General LeMay, "passionately convinced the Air Force needed a new bomber," (70:120) argued that ballistic missiles could not serve all the needs of deterrence and security (69:800). LeMay believed in an assortment of weapons systems, manned bombers together with ICBMs, which would allow flexibility.

> Our problem is not one of killing our opponents. Our problem is one to keep our opponents from killing Americans and our allies.... If we just want to kill our opponents, that is a very simple problem. It calls for a lot less weapons ....(58:132)

It is not the purpose of this thesis to resurface the debates of manned bombers vs. missiles as strategic weapons. However, since these arguments played a significant role in the story of the B-70, a summary is now included for completeness. Although different viewpoints were aired at various times during the B-70 debates, they are consolidated together next.

> Missiles were not considered tested weapons, whereas the manned bomber had virtually won the Second World

War. The bomber was proven reliable and effective in actual wartime situations. (32:32)

Missiles are inflexible. Unlike bombers, they cannot be converted to conventional (non-nuclear) military roles. This was especially significant since nuclear disarmament talks were underway with the Soviets. If nuclear weapons were eventually "outlawed," then the nation's military strength would rest upon its ability to deliver conventional weapons. (54:66)

Airplanes performed better than missiles where precise weapons delivery was required. This is most significant when considering hardened targets such as missile sites. (54:56)

The manned aircraft allows for human judgement and decision during the attack. Only an airplane can search out hidden or mobile targets. Missiles cannot be used against targets whose precise location was unknown. (56:129)

Airplanes are recallable after launch, allowing for firm verification of the impending attack before counterattack. This is known as "positive control." (61:34)

Bombers are vulnerable on the ground to surprise missile attack. The important point is not that they can be kept on airborne alert or launched after warning, but rather they must be in order to survive. (15:244)

Missiles are invulnerable to interception by Soviet fighters. (15:244)

Missiles are more cost effective, costing less than aircraft to maintain and support. (47:1058)

The bomber requires far greater time, even though it may be travelling at Mach 3, to reach its target. The missile can strike in fifteen or twenty minutes. (15:244)

In addition to the previous arguments, the ability of an aircraft to even penetrate Soviet airspace fell under scrutiny in mid 1960. During the late 1950s, Americans believed the Soviets had no surface-to-air missile (SAM) nor

interceptor aircraft capable of reaching an aircraft at 80,000 ft altitude (49:39). However, on May 1, 1960, Soviet SAMs brought down a U-2 reconnaissance aircraft overflying the USSR, while it was near this altitude (4:182). The celebrated Francis Gary Powers U-2 "spy incident" caused a reevaluation of the B-70's vulnerability to radar detection and SAMs. Critics argued that the airplane's skin friction at Mach 3 would make an easy target for a heat seeking missile, and the bomber's size would be easily picked up on radar (61:34). Some foresaw an impenetrable Soviet Union by the years the B-70 was scheduled to become operational (35:35).

But advocates of the B-70 used the Soviet defenses for their own arguments. Experts estimated it would cost over $40 billion for the Russians to upgrade their defenses to counter the $10 billion B-70 (54:61). Many agreed with Ed Rees, who wrote,

> If the B-70 accomplished nothing else but obligated the Soviets to a $40 billion defense expenditure, an expenditure that would not increase her offensive strength against the United States homeland by one warhead, it will have proved a superb tradeoff. (54:61)

In July 1960, the Preparedness Investigating Sub-Committee of the Armed Services Committee of the United States Senate released the following findings (59:3):

> 1. There is a need for a manned bomber with supersonic speed and intercontinental range.
>
> 2. ICBM development does not preclude the necessity for continued development and use of manned systems.

3. The Nation has the resources available to build the B-70.

4. The technology the B-70 requires is at hand and is not dependent upon a technological breakthrough.

5. Unless an operational supersonic bomber is developed now, there will be no replacement for the B-52 at the time it enters obsolescence.

6. Experience shows that stretching out a program only increases costs and loses valuable time.

With the B-70 need reaffirmed, Congress restored its funds, and also voted $184 million more than the President's budget called for (69:801). Although Congress appropriated the additional funds for the plane, there was nothing requiring the President to so spend it (5:17). "Congress appropriates military funds out of Government revenues based on DoD requests, and then the DoD reallocates as it wills," wrote Pike (47:1058). This allowed the Executive Branch to "impound," or simply not spend, any funds it considered excessive. (This was not the first time this issue had arisen. In 1949, the Truman Administration had impounded $615 million appropriated by Congress for the purchase of airplanes (40:1).) These controversial procurement powers of the Legislative vs. the Executive Branches would haunt the B-70 program for years to come.

Later that same year, Time magazine's senior military correspondent published a book about the B-70 and its predicaments. Titled The Manned Missile, it strongly advocated full development of the aircraft, stating, "The

B-70 by every rule of logic and reason of security should be built" (54:70). The author later was employed by North American (52:5).

Meanwhile, as Congress was investigating the need for the B-70, the issue had also become an important item in the 1960 Presidential campaign. The Democratic candidate, John F. Kennedy, was campaigning in California in support of the airplane, which would provide jobs at the North American manufacturing plant. (35:62-63)

Although the Administration was against pursuing the B-70 as a full weapons system, $155 million in additional funds were released (35:64). President Eisenhower's reason for releasing the money "at the height of the uproar" was that the U.S. was taking a series of steps to cope with the Soviet actions following the May U-2 affair (51:5). However, others saw its timing, the very day before the Presidential election, as a last minute attempt to win California votes for Republican candidate Richard M. Nixon (51:5). The Republicans took California by only 30,000 votes, and many attribute the victory directly to the B-70 decisions (51:5).

The $155 million again restructured the program such that now one XB-70 and two YB-70s would be built, followed by twelve fully operational B-70s (46:19).

Although the B-70 had played an important role in the election, with the victorious Democrats strongly advocating

the new bomber, within a month of taking office, the Kennedy Administration dropped its plans to revive the B-70 (51:5).

1961

In January 1961, as part of his final State of the Union Message to the Congress, outgoing President Eisenhower stated, "the bomber gap of several years ago was always a fiction..." (67:14). Secret U-2 reconnaissance photographs had revealed that the U.S. was actually far ahead in bomber production (49:59). As the new Administration was given access to these facts, the future of the B-70 program once again was in doubt.

Although the Department of Defense Reorganization Act of 1958 increased the authority of the Defense Secretary, it was not until 1961 that the was fully exercised. New Secretary of Defense Robert S. McNamara believed in active management, and with the authority vested in the office, he played a major role in weapon acquisitions. (16:13)

The Administration compared the cost and effectiveness of the B-70 to other weapons systems. New Secretary of Defense Robert S. McNamara believed in selecting a weapon systems by "...dealing not with absolutes but with comparatives" (58:40). According to McNamara:

> We must always take into account not only the planned capabilities of the proposed weapon system, but also its full cost in comparison to the cost and effectiveness of other weapon systems which can do the same job, perhaps in somewhat different ways. (58:40)

McNamara also questioned the Air Force position that the B-52 would be obsolete by the late 1960s. He believed the plane could be used into the 1970s, using stand-off weapons, thus eliminating the need to penetrate Soviet airspace. (37)

Furthermore, McNamara questioned the technical feasibility of the airplane's role as the Air Force described it. At 80,000 feet, traveling at Mach 3, the B-70 would indeed be a "manned missile," incapable of finding mobile or hidden targets; limited to predetermined targets of known position. The B-70 appeared to lack the flexibility generally attributed to manned bombers. Finally, McNamara believed the high flying, supersonic B-70 would be more easily detected by Soviet radar than the current B-52. (58:41-42)

In March 1961, shortly after assuming office, President Kennedy released an official statement that America's forthcoming ICBM capability "...makes unnecessary and economically unjustifiable the development of the B-70 as a full weapons system...." (46:20). The Administration received heavy criticism for this decision, since Kennedy had supported the B-70 during campaigning, and Vice-President Johnson had chaired the Senate Investigation that had urged its full production (40:1).

Secretary of Defense McNamara's plan for the B-70 now reduced it to four prototype airplanes designed to investigate problems of long-range operations at prolonged

supersonic speed (50:983). The Eisenhower budget for FY 1962 was trimmed from $358 million to $220 million, which compares to the Air Force requested $575 million (30:27).

During the spring of 1961, the Air Force again sought to reinstate B-70 funding by going before the Congress. Secretary of the Air Force Eugene Zuckert warned Congress that reliability of ICBM systems had not yet been proven. "We must guard against overdependence, or overconfidence," he testified before the Senate Armed Services Committee. (33:32) Defense Secretary McNamara, testified that he was "...adamant against any acceleration of the B-70 program..." (30:27), and stated that he would refuse to spend any additional funds above the President's budget (47:1059). Additionally, the Committees heard testimony about other benefits of developing the B-70: commercial applications for a supersonic transport, and a recoverable first stage for orbital launches. In most cases, both the Air Force and the Defense Department agreed that these applications were not practical. (30:27)

The House and Senate Armed Services Committees concurred with the Administration's plans and appropriated only $220 million, refusing pleas from the Air Force to increase funding and develop the B-70 as a full weapons system (27:26). House Armed Services Committee Chairman Carl Vinson agreed that the President's plan allowed for an orderly development of the aircraft -- providing an opportunity to test the technical feasibility of the B-70

and its related subsystems while also preserving an option of full production if it proved necessary (27:26). When the defense budget went to the Appropriations Committees, for the first time in 25 years it did not include any funds for production bomber buys (29:26).

However, before the final appropriations were passed, two important events took place. First, East/West tension increased drastically as situations in Berlin worsened. In August, the Berlin Wall was constructed through the city, dividing it between East and West. Fears grew that there would be a U.S./Soviet military showdown. (74:22)

Second, and probably more significantly, was the July Soviet Airshow at the Tushino Airfield. Following their recent achievement of putting the first man in space (Yuri Gagarin, April 1961) this airshow was designed to show that Russia was unquestionably the world leader in aerospace technology. The Soviets proudly paraded their latest achievements in military aircraft. Among the aircraft demonstrated was a Mach 2.5 medium bomber larger than the B-58, and a giant supersonic heavy bomber (NATO code-named Blinder and Bounder, respectively). Several key members of Congress became convinced that the U.S. must increase spending for bomber programs in order to stay abreast of the aircraft developments demonstrated at Tushino. (75:32)

As a result of this apparent Soviet military buildup in bomber aircraft and the Berlin crisis, increased appropriations were introduced in Congress. General LeMay, now

Air Force Chief of Staff, was once again called upon to testify. Regarding the B-70, he asked for an additional $200 million for 1962 funds, and $500 million for the following year. After the hearings, the House Committee stated the Defense Department was not wise in cancelling production of the B-58 and B-52 bombers, while at the same time restricting the development of the B-70. They also stated the first use of available funds should go towards accelerating the B-70 program. (29:26)

Meanwhile, in light of the Berlin crisis, the Administration was also looking at the defense budget situation. On July 31, President Kennedy formally asked Congress to increase the defense funds for several programs, but not for any bomber programs. (74:22)

Congress approved the President's requests, and went one step farther. The defense budget would include an additional $180 million for the B-70, and also voted $514.5 million for continuation of the B-52 and B-58 production lines. (73:30)

Based upon Congress' insistence on funding the B-70, Defense Secretary McNamara undertook another investigation into the program. In January of 1962, McNamara testified before the House Armed Services Committee, stating,

> We have again restudied the role of the B-70 in our future strategic retaliatory forces and again have reached the conclusion that the B-70 will not provide enough of an increase in our offensive capabilities to justify its very high cost....(9:373)

Despite the warnings that he was defying the wishes of Congress and ignoring the requirements of the Air Force, McNamara announced that he would again impound the additional B-70 funds authorized by Congress, as well as the funds for further bomber production (43:293). The B-70 program once again was reorganized, reducing it to one XB-70, and two YB-70s, and a schedule slip of another year (46:20).

1962

Robert McNamara's refusal to spend the appropriated bomber funds infuriated many important members of Congress. It seemed likely that some sort of showdown would occur between the Defense Department and the Legislature when the B-70 program was brought before Congress for the FY 1963 budget. (43:293)

With the prospects of the B-70 bomber ever replacing the B-52 as the SAC mainstay looking bleak, the Air Force worked with North American Aviation to develop additional capabilities for the Valkyrie. It was hoped that added capabilities and flexibility would finally interest the Administration. (35:73-4)

In 1962, the Air Force proposed a new project: a reconnaissance-strike version of the aircraft, designated the RS-70 (46:21). The RS-70 was designed to overfly and scan the enemy territory during or after a nuclear exchange, identifying and attacking any targets not destroyed by the

first salvo of missiles. By processing reconnaissance data within an airborne strike vehicle, targets could be immediately attacked, instead of wasting precious time waiting for the next round of missiles. Advanced computerized radar would direct airborne missiles to their targets. (15:245-6) The Air Force and North American were proposing a program of 60 operational aircraft by 1969, at an estimated cost of $50 million each, with another 150 airplanes delivered in 1970 (46:21). For this RS-70, the Air Force's FY 1963 request totaled $573.8 million, compared to only $171 million allocated according to the President's budget (31:29).

The Administration did not support the new and improved B-70. First of all, Robert McNamara did not believe the technology required for such a mission even existed, especially the radar system (9:377). He argued that as the RS-70 flew at 70,000 feet and 2,000 miles per hour, the proposed radar would be seeing new areas at a rate of 100,000 square miles per hour or 750 million square feet per second (34:222). The technology required to gather, process, and display this data would not be available by the time the RS-70 required it.

Second, even if it was feasible, what overall contribution would the RS-70 make? In its intended mission, the RS-70 would be hunting for the last few surviving and unlaunched Soviet missile sites (15:247). General Maxwell Taylor, former Chairman of the Joint Chiefs, questioned the

overall importance of overflying Soviet targets looking for residual weapons, after each country had already exchanged several thousand megatons of nuclear firepower. "Is it worth several billion dollars of national resources?" he asked (15:246).

In February, General LeMay went to Capitol Hill to present his case for pursuing the RS-70. Although the House and Senate Armed Services Committees had agreed with the President's "cut-back" B-70 program the previous year, this time they would side with the Air Force.

The House Armed Services Committee was chaired by eighty-four year old Carl Vinson of Georgia. Vinson had served in Congress forty-eight years, longer than any other member. Through seniority, he had amassed great political instinct and power. He was known as the "Swamp Fox" for his cunning and slyness, "Uncle Carl" for his elderly country man persona, and "Admiral Vinson" for his strong control of defense programs. (64:19) In March 1980, he would become the first living person to have a Navy warship commissioned in his name (41:58).

Vinson was not dispelled by McNamara's opinion that much of the equipment for the RS-70 had yet to be developed. In fact, he used it as an argument to fund the project. "It is for this very reason that we need the larger program for the RS-70," Vinson said on the House floor (72:20). He said he was concerned that the manned bomber, despite being the only proven strategic weapon, "...appears to be destined to

become the forgotten weapon in our arsenal" (43:293). Although he was angry at the President's decision to de-emphasize the manned bomber role, his real crusade concerned the President's Constitutional authority to do so.

Vinson had agreed with the President's B-70 plan just the previous year. However, he was now concerned about the eroding powers of the Legislative Branch. "To any student of government," his Committee report stated, "it is eminently clear that the role of the Congress in determining national policy has deteriorated over the years" (40:19). The previous year, Congress had added $525 million for B-52/B-58 procurement, and "...not one penny has been spent." The same was true for the B-70 funds. Using the RS-70, Vinson now sought to address "...a question more fundamental than whether this weapon system or any other should be adopted as a part of our military establishment" (40:1).

Vinson's House Armed Services Committee voted the President's request $171 million, then voted an additional $320 million, totalling $491 million (31:29). Furthermore, the Committee's appropriation "directed, ordered, mandated, and required" the Air Force Secretary to spend the money and accelerate the RS-70 program (31:29). The Committee report stated:

> If this language constitutes a test as to whether Congress has the power to so mandate, let the test be made and let this important weapons system be the field of trial. Perhaps this is the time to re-examine the role and function of Congress, and discover whether it

is playing the part that the Founding Fathers ordained that it should. (40:19)

On March 1, Vinson's directive was approved unanimously by the Committee. It would be an amendment for the defense appropriations bill, to be voted on later by the entire House. But Carl Vinson's challenge angered some other members of Congress. Members of the House Appropriations Committee believed their committee dictated how funds were to be spent. They felt Vinson's committee was exceeding its proper role, and doing so at the expense of the Appropriations Committee. (40:1,19)

Vinson stated his basis for the argument: "The Constitution grants the Congress the exclusive power to raise and support and make rules for the military forces. The language of the Constitution is clear" (40:1) Constitutional experts, however, believed the Executive Branch would win this challenge if it went to the courts: the only way Congress can enforce its will on the President was by impeachment or refusal to provide appropriations (40:19). However, any tangle with Vinson and the Congress, win or lose, would be costly in the future (60:348). Kennedy wanted to avoid a fight (52:5).

The President and Secretary McNamara, as well as Air Force officials, carefully avoided public statements concerning Congress' challenge. McNamara did, however, take his technical arguments to the public. In a press conference, he outlined his reasons against the RS-70. This

was taken by some to be a public attack upon the strategic and technological competency of General LeMay's Air Force. Others were concerned about classified material being released in an attempt to win the American people over to the Administration's side. On March 21, statements were made by both Democrats and Republicans from the House floor. (72:19)

> Those of us on the Committee on Armed Services have been unable to get our story over to the public because we are under the compulsion of security.
>
> The presentation which Mr. McNamara made to us, every page of it marked top secret, was given out almost in toto the next day....
>
> Having failed for two years to convince the Committee in top-secret sessions of the soundness of his position, the Secretary of Defense elected to take this complex issue to the people in an apparent attempt to have it decided on the front pages of the newspapers....

That same day, which was the eve of the House vote on the defense bill amendment, a meeting took place at the White House. President Kennedy had invited Carl Vinson for a personal chat in the Rose Garden. During this meeting, Vinson agreed to withdraw the language "directing" the spending of funds. (35:75) He also cut back the additional allocations from $320 million to $52 million extra (31:29). In exchange, the Defense Department would initiate an immediate reinvestigation of the necessity for the RS-70/B-70 (20:18). Under the agreement, the President would spend more on the RS-70 program if this new review warranted an increase (3:1). Furthermore, if technological

developments advanced faster than expected, the Administration would request and expend larger funds (3:1).

This appeared to be a big victory for the President (3:1). According to Mollenhoff, the Administration's promise to restudy the program was essentially "...a promise of no value, for Defense Secretary McNamara had been studying the RS-70 from the time he had taken office, and his only conclusion had been that the whole program should be cut back and probably killed" (43:296). Vinson, on the other hand, saw it as a victory for Congress. He told the House he had not intended to push the fight to a Constitutional showdown, but rather force the Pentagon to respect and respond to Congressional actions (3:1). Meanwhile, President Kennedy stated at a press conference that neither side had won or lost. "The country was the winner," he said, "because such a conflict had been averted" (3:1).

The clash with the House had been settled, but three months later, the Senate voted, by a 99 to 1 margin, $491 million to support the RS-70 (31:29). A Senate/House committee determined a compromise and the Congress passed its budget with $362 million appropriated for the RS-70 (26:16).

1963

Robert McNamara had appointed Dr. Joseph V. Charyk, Undersecretary of the Air Force, to conduct the RS-70

restudy (9:380). On January 30, 1963, he went before the House Armed Services Committee with the results of this "...most detailed and exhaustive review ..." (39:67). McNamara opened by stating the issue was not the future of manned bombers in an era of missiles. Instead, it was only whether the B-70/RS-70 would add enough to the country's strategic strength to justify its high cost. (39:67)

The review did not justify an accelerated RS-70 program, but McNamara stated he would spend $50 million of the extra $192 million appropriated in order to further develop sensor components (39:67). The RS-70 remained programmed for three test aircraft.

In February of 1963, General LeMay returned to the House Armed Services Committee and resumed his battle for the RS-70 (9:411). LeMay stated he was not opposed to missiles; however, he felt the flexibility of a manned bomber force was essential (9:411). He asked for an expansion of the program to five aircraft instead of the three currently programmed for. The Committee concurred with LeMay's arguments, calling the Defense Department's increasing emphasis on missiles over bombers "...a most dangerous course of action..." (9:411).

Committees in both the House and Senate approved $363.7 million on top of the President's budget for the RS-70 program (32:26). This expansion would increase the program from three to five aircraft, with the last two upgraded with

full RS-70 reconnaissance features. Again, however, Robert McNamara stated he would not spend additional funds (32:26).

In California, the first XB-70 aircraft encountered significant technical problems. Severe corrosion occurred between different grades of stainless steel and other materials in the airframe. Also, North American found difficulty sealing microscopic holes in the fuel cells. These problems were forcing the plane's first flight to be delayed well into 1964. (24:254)

Meanwhile, the President had made commitments towards a civilian supersonic transport (SST) program. This could provide valuable research and development data for possible future military applications. (13:25) Furthermore, the Administration and SAC were now considering concepts for a different bomber which would satisfy McNamara's criticisms of the B-70. It would penetrate Soviet air defenses by flying at low altitudes, under the radar networks. (21:90)

In May, Robert McNamara announced plans to cancel the RS-70 program outright (13:25). In light of the new proposals for the National SST project and assurance that another advanced bomber program was in work, the Congress was now willing to concede. The RS-70's main advocate in Congress was no longer able to rally his fellow representatives for his cause. Carl Vinson had recently made a number of enemies in the House. He had strongly endorsed an enlarged and more powerful House Rules Committee in 1962, a move that turned many of his House supporters against him.

Combined with his earlier controversial operations of the Armed Services Committee, his power in the House was diminishing. (57:25) (Later that year, Carl Vinson announced that after fifty years in the U.S. House of Representatives, he would not seek reelection (64:19).) Against the Swamp Fox's recommendations, the House reversed its decision and withdrew $314.3 million allocated for expanding the RS-70 program (57:25).

> Political background of the near-unanimous RS-70 vote was a desire by many conservatives in Congress to get even with Chairman Carl Vinson.... Representative Vinson could rally so few votes that he went out of town rather than witness certain defeat.... (57:25)

Without the support of the House, the program would not receive its necessary funding. The RS-70 only received $52.9 million after a House and Senate compromise, leaving the program with three aircraft (46:21). Aviation Week announced on July 1, 1963 that the battle between McNamara and Congress over the B-70/RS-70 was finally over, with McNamara victorious (57:25).

Since the allocated money was far short of the funding required to keep the program going, the RS-70 project was scrapped, and the B-70 concept was reduced to two XB-70 airplanes (46:21).

1964

In February 1964, Congress used FAA and NASA funds from the National SST project to provided additional funding for

the XB-70. This funding increased the number of aircraft to three. (25:26) "However, unable to force expansion of their B-70 program, LeMay, Vinson, and other backers finally began to ease off the B-70 project themselves" (21:90). They began to give their support to the new concept of the slower, more conventional low-level attack bomber that addressed McNamara's concerns about the high-altitude, easy-to-destroy B-70 (21:90). In March 1964, citing lack of funding for an adequate test program for three aircraft, General LeMay recommended removing the third XB-70 from the program, and continuing with only two aircraft (25:27). During the following Department of Defense appropriations hearings, LeMay testified, "I feel that the B-70 program is dead" (58:29).

On May 11, 1964 the first XB-70 aircraft was rolled out of its Palmdale, California hangar (46:22). Since the program cost $1.5 billion and produced only two test airplanes, the rollout was "visible evidence of a humiliating defeat for the bomber men" (21:90). In fact, the rollout was under official boycott by the Air Force and the DoD (21:90). As Newsweek described the situation:

> The first public showing of the 2000 mph B-70 would seem a triumphant moment for the Air Force's big-bomber men and their friends in Congress. For five years they doggedly fought first Eisenhower and then Kennedy Administration efforts to kill the giant delta-winged superbomber as an unneeded frill in the age of missilery. Yet neither Air Force Chief of Staff Gen Curtis LeMay, HASC Chairman Carl Vinson, nor a host of their vociferous B-70 backers even planned to visit ... this week when the first B-70 was scheduled to be

rolled out. The California rollout shaped up as more of a wake than a celebration. (21:90-91)

Impacts of B-70 and its Cancellation

Since the B-70/RS-70 represented such a large contract and a significant addition to our military strength, its development and cancellation had sizeable military and economical impacts. What follows are some of the impacts to North American, the U.S. strategic capabilities, and the Soviet Union.

Impacts on North American Aviation. Although cancelling the B-70/RS-70 program represented an enormous loss to North American, the company was kept alive through other contracts. The company was awarded contracts for the Apollo capsule, rocket boosters, Minuteman ICBMs, and the eventually procured bomber, the B-1B. (35:54)

Impacts on U.S. Strategic Strength. It is difficult to assess the impacts to the U.S. strategic strength from the B-70 cancellation. Once the B-70 was cancelled, other strategic weapons were developed or modified to compensate for the cancellation. Since costs were estimated to be only about half that of a new bomber program, an upgraded B-52 was brought into service with an air launched cruise missile capability (35:166,171). Also, the Air Force proceeded to develop the low-altitude penetrating bomber, which entered the strategic inventory in the late 1980s as the B-1B.

However, the literature review did not find any recent sources who stated the B-70/RS-70 should have been procured, or that our strategic strength has been in jeopardy as a result of its cancellation. Enthoven wrote in 1971:

> ...few people today would claim that we should have gone ahead with either program. Nearly everyone now agrees that to have done so would have been a terrible waste.... (15:249)

And as Robert McNamara wrote in 1968, "Despite the enormous controversy and criticism when development was cancelled, I think there now is general agreement that the decision was sound." (38:92)

Impacts on the Soviet Union. As with any new strategic weapon system, development and possible procurement of the B-70 bomber caused activities within the defense structure of the country the weapon is designed to be used against. In this case, the Soviet Union began various programs because of the perceived B-70 threat.

By 1960, the Soviets had foreseen America's next generation bomber, one capable of flying at three times the speed of sound, at 80,000 feet (4:180). In order to counter this threat, they developed an interceptor aircraft of unprecedented capabilities: the MiG-25 (4:180). The design was based primarily on high-speed, high-altitude capability, with less emphasis on maneuverability (66:74). The Russians developed in a relatively short time and at relatively little cost (4:181) an airplane that was to become the fastest combat aircraft ever put into front-line service

(66:74). When the MiG-25 was tracked by the West flying at 80,000 feet and Mach 3.2, the U.S. feared that the Soviets had achieved an extremely high technological level (4:108). As a result, the Americans now pushed for rapid development "on the most urgent basis" of a new air-superiority fighter capable of meeting the MiG-25's performance (4:181). It was not until 1975, when the West analyzed and examined the MiG-25 flown by Soviet defector Victor Belenko, that they realized the aircraft was not a fighter, only an interceptor (4:181).

Although the B-70 was cancelled by 1964, the Soviets, "...whether because of simple bureaucratic inertia, apprehensions that the Americans might reverse themselves, or for occult reasons of their own..." proceeded to build the MiG-25 (8:14). Despite being designed and deployed to "...shoot down nonexistent bombers (8:226)," the Soviets' efforts were not wasted. The existence of the MiG-25 and the American perceptions of its formidable capabilities strongly influenced a national decision not to overfly the U.S.S.R. with the SR-71 reconnaissance aircraft (4:185). "Through the MiG-25, the Russians caused us to deny ourselves for years vast amounts of intelligence..." (4:185).

In addition to defending against the supersonic bomber, the Soviets were also apparently interested in possessing a similar aircraft. In 1982, the Frunze Central Club of Aviation and Cosmonautics, in Moscow, staged an exhibition

of works from the Sukhoi Aircraft Bureau. One photograph was displayed of a large bomber prototype, remarkably similar to the North American B-70 (23:227). Figure 6 shows this photograph below a photograph of the XB-70 aircraft. Roughly two-thirds the size of the Valkyrie, this aircraft was almost certainly designed for supersonic cruise, perhaps even matching the B-70's Mach 3 capability (44:210). Like the B-70, the Soviet plane used large, fixed canards, and engines enclosed in an under-fuselage "box," within which the landing gear retracted (23:227). According to Howard Moon, this airplane first flew in 1972, and may have been used in 1982 to break old B-58 air records (44:210-15).

Conclusions

This summary of the B-70 Valkyrie history covers the program from its beginnings to the rollout of the first aircraft in 1964. Two aspects of the program are most evident. First, the B-70 was cancelled, and never brought into the Air Force inventory as the B-52 replacement. Second, it featured a "rollercoaster" program history, with inconsistent, unpredictable actions and reactions from the Congress and the Executive Branch.

Although many events occurred during those ten years, four key events stand out. They are:

1. The 1959 program cutback by President Eisenhower
2. The Kennedy Administration's program restructure in 1961

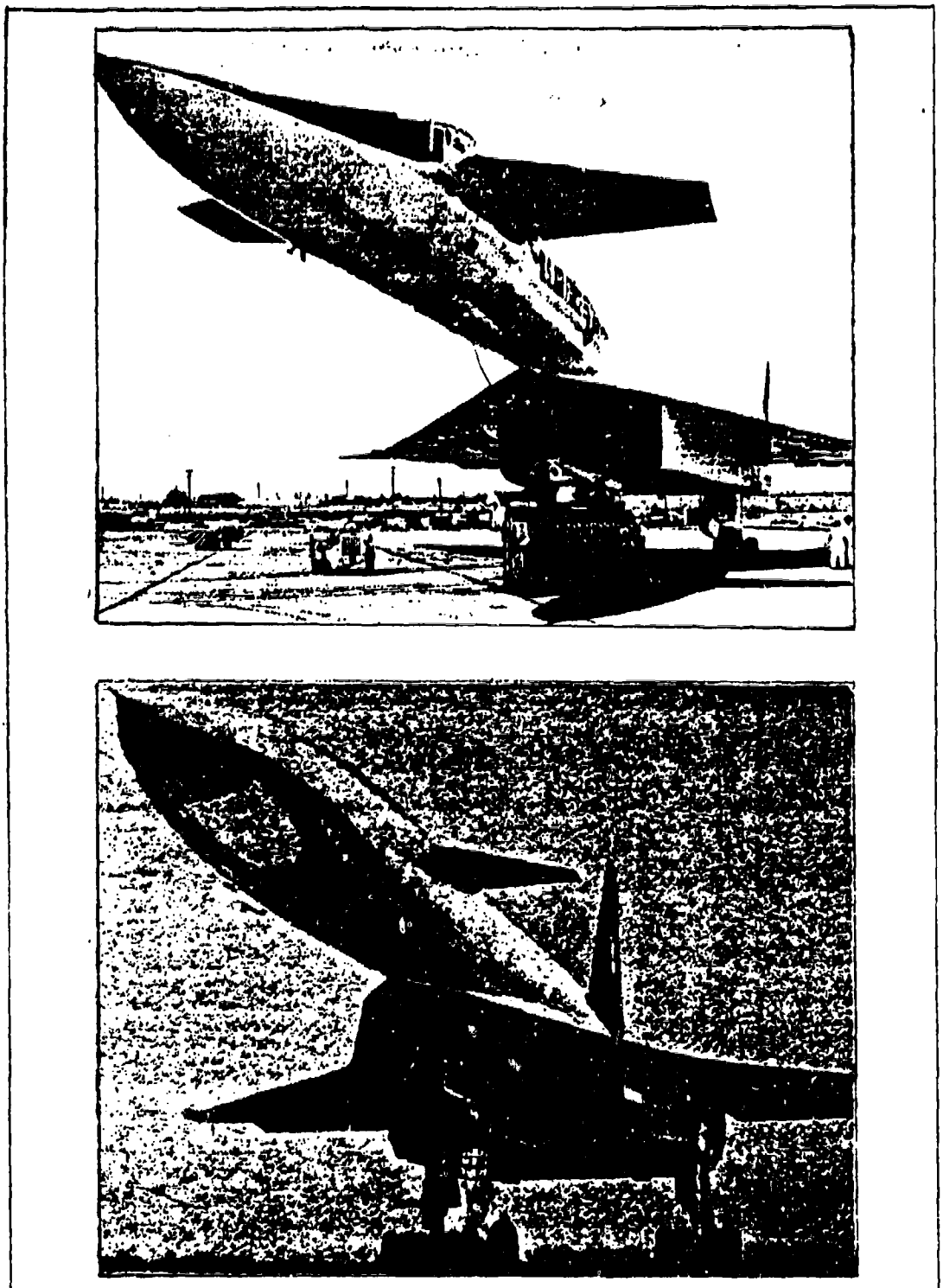

Figure 6. Photographs of XB-70, top (46:23), and Unidentified Soviet Bomber, bottom (23:227).

3. The refusal of both Administrations to spend program funds authorized by Congress, which would have accelerated or expanded the program

4. Congress' withdraw of the Constitutional challenge to direct the President to spend authorized funds

The causes and effects of each of these key events are addressed in Chapter 4, Findings and Analysis.

Finally, this summary of B-70 program history was compiled using published material. During the literature review process, some discrepancies and ambiguities were discovered when comparing accounts by different authors. Sources differed in their accounts and theories of what contributed to the B-70 cancellation, and how significant those factors were. These key points and issues are also addressed in the next chapter, Findings and Analysis.

Chapter Summary

This chapter summarized the history of the North American B-70 bomber program from its conceptions in the early 1950s to the rollout of the first aircraft in 1964. The chapter began with an overview of the B-70 aircraft. Overviews were also provided of the technical and political environments of the time. The chapter included a discussion of impacts of the program's cancellation to the United States and the Soviet Union. The chapter ended with a reference to the conflicting or inconclusive information found during the literature review, which will be addressed

in Chapter 4. The next chapter, Findings and Analysis, is composed of the results of Phase Two of the research.

IV. Findings and Analysis

Introduction

The purpose of this chapter is to analyze the history of the B-70 bomber program outlined in Chapter 3, and report the findings of the research conducted during this thesis.

From Chapter 3, two important characteristics of the B-70 program (and its RS-70 derrivative) were identified. First, the program was eventually cancelled, with the Air Force not acquiring a Mach 3 bomber to replace the B-52. Second, for a number of years the B-70 effort was a programatic "rollercoaster," marked by inconsistent actions, directions, and funding support at the highest levels of the Government.

This chapter will begin by analyzing how the program was cancelled, and why the inconsistent Government actions occurred. It will then address some of the conflicting or speculative information gathered during the literature review process. Finally, it will draw some lessons and conclusions from the B-70 program history and analyze why modern-day bomber programs could or could not encounter similar experiences.

Program Cancellation

Many things contributed to the eventual cancellation of the B-70 Valkyrie bomber. The underlying cause of the cancellation, however, was a lack of available funding for

the nation to pursue the B-70 and all other propsed defense programs. This funding constraint required defense programs to be scrutinized for their costs and contributions to the defense of the country. Comparing this information provided the basis to cancel, cutback, delay, accelerate, or expand various weapons systems. Lack of unlimited funds was the reason that a decision was required whether the B-70 was to be cancelled. Technical difficulties, decreasing threat, vulnerabilities of bombers, and cheaper alternatives combined to make the supersonic bomber less desirable than the ICBM.

Chapter 3 identified the following four major factors in the history of the B-70/RS-70 aircraft:

1. The 1959 program cutback by President Eisenhower

2. The President Kennedy's 1961 program restructure

3. The refusal of both Administrations to spend program funds authorized by Congress, which would have accelerated or expanded the program

4. Congress' withdraw of the Constitutional challenge to direct the President to spend authorized funds

The first factor was the most drastic setback in the program. When the Administration changed, especially from Republican to Democratic, the program had an opportunity to recover. However, the second factor reflects the new Administration's agreement with the previous Administration's decision. The third factor provided the means

for the Administration to refuse Congressional mandate, while the fourth marked the end of a challenge to that means.

Of these four factors, the first is the most significant. It is important to recognize that the B-70 bomber as a full weapon system was cancelled in December 1959 by the Eisenhower Administration. At that time, the program was downgraded from a weapon system to an experimental program. The program never recovered from this action. With the exception of the $155 million in restored funds resulting from the U-2 affair and/or the Presidential election, the program was not endorsed by an Administration (neither the Kennedy nor the Eisenhower Administration). For this reason, the first factor, the 1959 cutback, is the most significant of the four. Each of these four factors is separately addressed next.

1959 Program Cutback. Unlike the trend of thinking at the time, this was not the result of an "either missiles or bombers" decision by the Administration. Chapter 3 shows that since the early 1950s, neither the Executive nor the Congress desired to convert the nation's bomber force into a missile force. Instead, both the Eisenhower Administration and the Kennedy Administration believed in a mixed force of bombers and missiles. Eisenhower's cutback, rather, was the result of a decision by the Administration to support either missile systems or supersonic bombers. President Eisenhower's defense budget policies did not allow for

support of both. The Administration's appraisal of the B-70 program reflected:

1. Technical difficulties encountered with the B-70
2. Decreasing threat ("thaw" in Cold War)
3. Vulnerabilities of manned bombers
4. Promises of missile systems

Based upon these facts, the Eisenhower Administration made ICBM systems a higher priority than the supersonic bomber. Driven by the objective of trimming unnecessary, costly, and risky programs in order to support higher priorities, the B-70 bomber was cancelled, leaving it an experimental program. This action was little different than the way the Administration evaluated and subsequently cancelled other programs, such as the F-108 interceptor and the nuclear powered airplane program.

1961 Restructure. This decision represented the new Administration's determination that the potential benefits of the new bomber, in either of its configurations, did not warrant reversing the previous Administration's decision. Again, this was not a "missiles vs. bombers" issue, but a determination of whether the supersonic bomber was necessary enough, in light of current strategic planning, to justify its high cost.

Chapter 3 explains that this restructure (following Eisenhower's 1960 program expansion) again reduced the program to an experimental one. After this restructure, the

Administraion did not reverse its position, and the program was not accelerated nor expanded, despite the desires and actions of Congress and the Air Force.

While the Eisenhower Administration's cutback was primarily a cost-saving maneuver, the Kennedy Administration's restructure was based more upon strategic need and the benefits of the airplane compared to its costs. The reasons for this action are as follows. Note the similarity to the reasons for the Eisenhower cutback.

1. Decreasing threat (non-existing bomber gap)
2. Technical problems (actual and predicted)
3. Vulnerabilities of manned bomber
4. Adequate missile and bomber forces already available to perform mission

As stated in Chapter 3, the Kennedy Administration cancelled its plans to revive the B-70 as a weapons system upon learning that the bomber gap was a fiction. As the Soviet's bombers looked less threatening, the President believed the current missile capabilities of the U.S. coupled with the existing B-52 fleet was sufficient deterrent strength for the country. Although Air Force leadership testified that the B-52 would be obsolete by the late 1960s, Secretary McNamara believed the plane could still be used as a strategic deterrent force for some years beyond (37). Furthermore, the B-70 was prone to the same weaknesses as the B-52. For these reasons, the Kennedy

Administration decided the B-70 bomber's benefits did not justify its very high cost.

The Impoundment of B-70 Funds. This factor was significant because it provided the mechanism for the Executive Branch to refuse the directives of the Congress. Had it not been for the impoundment authority of the President, Congress would have most probably continued the allocation of funds, and the program would have been accelerated and/or expanded.

Withdraw of Congressional Challenge. As described in Chapter 3, the Congress, led by Representative Carl Vinson, was prepared to define the limits of the President's authority to withhold funds appropriated by Congress. An ammendment to the defense budget was prepared requiring the President to spend RS-70 funds. On the eve of the crucial House vote on the ammendment, the President and Vinson met at the White House. The next day Vinson removed his challenging language from the bill. This meeting stands as a critical event in the history of defense system acquisition. Vinson's challenge would have settled (either by judicial resolution or by political precedent) the Constitutional law issue of Executive discretionary power versus Legislative mandate over defense dollars. In other words, does the Legislature require or permit the Executive to spend defense funds? This, in turn, might have begun an adversarial relationship between President Kennedy's Administration and the Congress. Had Vinson and the

Congress pursued this challenge, the B-70 bomber program may have been expanded, eventually reaching full production. Instead, this meeting was a crushing blow to hopes of resurrecting the aircraft as a weapons system.

Surprisingly, the events and discussions which took place at this critical meeting were not found during the literature review process. What actually took place at this meeting? Were any compromises or tradeoffs negotiated between the two men?

For these answers, Robert McNamara was interviewed, as described in Chapter 2. According to the former Secretary of Defense, he was also present at this White House meeting.

First, some background is presented on the positions of the parties. Article I, Section 8 of the United States Constitution grants the Legislative Branch the power "To raise and support Armies..." while Article II, Section 2 states the President is "Commander in Chief of the Army...." The Kennedy Administration believed that the Executive Branch did not have the authority to decide not to spend funds that Congress had appropriated for the raising of armies, but it did have the power to decide whether to spend funds appropriated for equiping those armies (37). Since the B-70/RS-70 was not raising the army but equiping the army, the President's view was that he had the authority to decide which weapons to procure (37).

Meanwhile, HASC Chairman Carl Vinson maintained that the President did not have this power. He believed the

nation needed the new bomber, and since the Congress was Constitutionally empowered to "raise and support" the armies, he believed the Congress could order the President to spend the B-70 funds. These were their respective, conflicting viewpoints when President met with Carl Vinson in the White House Rose Garden on March 20, 1962.

Mr McNamara stated that no agreements or compromises actually occurred. Instead, both the President and Mr Vinson stated their views and rationale, and both maintained their respective, inflexible positions. According to Mr McNamara, the President stated the country didn't need the RS-70, and as Commander in Chief, he would not spend the money. Vinson responded saying the country did need the RS-70, and Congress Constitutionally had the power to equip the armies, and could therefore order the expenditure of funds. (37)

Mr McNamara said that both President Kennedy and Chairman Vinson recognized there was no way to resolve the conflict other than litigation before the Supreme Court. Furthermore, they both believed that resolving this type of conflict between two equivalent branches of the Government was not the intended function of that court. Vinson and President Kennedy agreed they should not confront the court with this issue. "I led those troops up that hill, and by God, I'll turn them around and lead them down!" Vinson promised. The following day, the Armed Services Committee removed the controversial language from the ammendment. (37)

Once the President had reaffirmed his power to withhold appropriated funds, there remained practically no possibility of expanding the RS-70 program.

The Inconsistent Support

This is what was defined earlier as the "rollercoaster" history of the B-70/RS-70. In December 1959, the B-70 budget was slashed and the program was reduced to experimental only, against the desires of Congress. Less than one year later it was again expanded to a weapons system status. A few months later it was reduced again to an experimental stage, this time with the concurrance of the Congress. A few months later Congress appropriated hundreds of millions of dollars to accelerate and expand the program. This erratic pattern repeats throughout the history of the program. General LeMay believed this inconsistent direction had profound effects on the program. "It has been going up and down funding wise for years....This is what killed the B-70 program," LeMay told Congress (58:30). Why this inconsistent support? From Chapter 3, two reasons can be found, which are described next.

Events Driving Decisions. The key factor in the history of these reversals, cutbacks, and accelerations is that events, not strategic mission requirements, seemed to drive the actions of the President and the Congress. As McNamara testified in 1962, the strategic objective of the United States was to provide and maintain the forces needed

to insure security at the least possible overall cost. Upon reviewing the inconsistent support the B-70 program received, it appears this objective, and whether the B-70 was a requirement of this objective, was not the only consideration relating to the development and procurement of the new aircraft.

The following list identifies six sample events from Chapter 3 that caused Congress or the President to alter their course of action regarding the B-70/RS-70 programs:

1. 1960 Presidential Election
2. U-? Spy Incident
3. Tushino Airshow
4. Berlin Crisis
5. Possible Erosion of Legislative Powers
6. President's promises for civilian SST and new bomber programs

After President Eisenhower had decided against the B-70 bomber as a weapons system, he released $155 million in 1960 to expand the program allowing for twelve operational bombers. His official rationale was the U-2 incident; however, Kotz and others believed it was due more to concern over the imminent Presidential election, and attempts to win California electoral votes. Regardless of which is true, the fact remains that the program was expanded due to a reaction to an event, not necessarily related to the strategic mission need for the system. Similarly, in 1961,

the House and Senate Armed Services Committees agreed with the President's reorganized B-70 program, which again reduced it from a full weapons system status. However, when the Russians unveiled their new bomber advancements, and threatened the peace in Berlin, Congress reacted by appropriating an additional $180 million for the B-70.

In 1962, appropriations for RS-70 funds were fueled primarily by Congress' frustrations over the President's refusal to spend the previous budget's bomber funds. Congress, led by Carl Vinson, wanted the President to acknowledge their authority and respect their desires for the B-70 and other bomber programs.

Finally, in 1963, the House reversed its $314 million RS-70 appropriation when President Kennedy promised a civilian SST and an alternate bomber program.

These examples illustrate how the Congress and the President changed their viewpoints of the B-70 bomber as a result of events unrelated to the question of whether the plane was necessary for the strategic objectives of the country. It is important to note that the Air Force's viewpoint, which did not change throughout the B-70/RS-70 controversy, was based only upon strategic mission requirements.

Conflicting Opinions of Individuals. Another important aspect of the B-70 program was that the key decision makers did not agree on the overall need for the B-70. Had the Administration, the Congress, and the Air Force all

concurred, then it is logical that either the program would have been cancelled or the airplane produced. Seldom in the course of the B-70's history were these organizations in agreement, and thus the debates and questions of whether the B-70 would eventually be procurred continued year after year.

Robert McNamara was questioned about these differing viewpoints. According to Mr McNamara, no organization had access to information that the others did not. Therefore, the differing positions were all based upon the same facts, and were the result of different opinions and judgements. The individuals involved agreed upon the strategic objective: deterring agresssion against the U.S. by means of assured destruction of the enemy. Yet these people held different views regarding whether this particular weapon system was required to meet that objective. Within each organization, Mr McNamara said, there were individuals both in favor of and opposed to the B-70 program. (37)

Furthermore, some of these individuals simply changed their minds over time and in reaction to events. The positions of individuals changed over time such that only Air Force leadership remained consistent in its support of the B-70/RS-70. Lyndon Johnson, Carl Vinson, and John Kennedy are examples of key players whose opinions changed over time. According to Fox, this changing of positions leads to frequent changes in program funding and support (16:19).

Unsubstantiated Information

As stated in Chapter 3, during the literature review process, various theories were encountered regarding why the B-70 bomber program was cancelled. The following theories were found to be unsubstantiated.

Soviet Air Defenses. Some authors believe that advancements in Soviet air defenses significantly contributed to the B-70's demise. According to Polmar in Strategic Weapons, "A primary factor in the demise of the B-70 was the increasing bomber defense of the Soviet Union" (48:24). Also, according to Barron in MiG Pilot, "Ultimately the Americans concluded that missiles eventually would be so lethal that Soviet air defenses could not be penetrated by high-altitude bombers. Therefore the United States cancelled the B-70 bomber." (4:182-3)

However, it must be noted that the original Eisenhower 1959 B-70 cutback took place prior to Francis Gary Powers and the U-2 being shot down over Russia. When the B-70 first lost its status as a full weapons system, experts still believed 70,000 ft altitude was essentially invulnerable, as evidenced by the continued U-2 flights. Since the event which caused the U.S. to reconsider the security of high altitude Soviet penetration had not yet happened, it can be concluded that Soviet SAM advancements played no significant role in the Eisenhower 1959 cutback of the B-70.

Furthermore, although the Kennedy Administration did cite Soviet air defenses as a reason for their decision against the B-70, it was only one of several bomber vulnerabilities. Penetrating the Soviet airspace was considered to be a drawback; however, it was not the primary reason for the Administration's program restructure. In fact, it was not until 1963-64 that the low-flying Advanced Manned Strategic Aircraft (AMSA, which later became the B-1 bomber) was initiated.

The low altitude bomber was considered to be more survivable than the B-70 against the improving Soviet defenses, and this was a reason for the Air Force and Congress abandoning their B-70 support. However, the Administration had already cancelled and abandoned the Valkyrie years earlier.

Role of the A-11/SR-71. In his book about the XB-70, Steve Pace proposed that another aircraft was funded instead of the B-70 program. On February 29, 1964, President Johnson announced the existence of a secret 2,000 mph jet aircraft, designated the A-11 (53:1) (see Appendix C for New York Times headline). Pace suggested that the Lockheed A-11 aircraft (which eventually became the YF-12 and SR-71) could have been a major cause of the cancellation of the B-70 program. Pace cited that the B-70 and the A-11 were both designed for Mach 3, high-altitude flight. The A-11 had been flying secretly since April 1962, two years prior to the B-70's rollout. Furthermore, when the President

announced the A-11's existence, the first XB-70 flight was still two months away. "This, of course, put the B-70 program at a disadvantage...." (46:22) and ".. may have been responsible for the demise of both the North American F-108 and B-70" (46:19).

When questioned about this theory, Robert McNamara denied any connection between the two programs. The two aircraft had totally different purposes; one for intelligence gathering, and the other for bombing. "The existence of one had nothing to do with the continuation or cancellation of the other," he said. Based on this information, it is concluded that the A-11/SR-71 program did not contribute to the B-70 cancellation. (37)

Role of Robert McNamara. Pace also wrote, "...more than anything, or anyone, it was Robert McNamara who contributed to the death of the B-70" (46:22). Yet again, it must be noted that Eisenhower's 1959 downgrading the B-70 to only an experimental program was done before McNamara assumed office of Secretary of Defense. Furthermore, in 1960, the Eisenhower Administration had also withheld funds Congress had authorized for the B-70 program.

In 1962, Robert Hotz wrote, "Mr McNamara deserves no special blame for the current plight of this program as these fluctuations began three years ago" (19:21). It cannot be concluded that McNamara's refusal to spend appropriated funds was a more significant event than the same action by the Eisenhower Administration. Finally, when

comparing the four factors listed ealier, it cannot be concluded that McNamara's actions contributed more than the other items listed. In fact, compared to the original 1959 cutback of the program, McNamara's actions seem even less significant.

Relevance of the B-70 to Future Bomber Programs

Although this thesis represents the first attempt to chronologically and completely record the history of the B-70 Valkyrie bomber program through 1964, its more significant contribution is to provide information for current or future Air Force programs. The following is a compilation of lessons from the B-70 bomber program which are relevant to current or future bomber acquisition programs.

Change in Technological Perspective on Bombers. Prior to the cancellation of the B-70 program, airspeed and altitude were considered key measurements of effectiveness for strategic bombers. Therefore, the B-70's higher altitude and supersonic airspeed capabilities by definition made it a better bomber than the B-52. "When something faster comes along I want it," General LeMay told Congress (58:29).

However, by the mid 1960s, the Air Force and strategic planners began to recognize that evading the enemy did not necessarily mean flying higher and faster. The B-1 bomber program, which originated when the B-70 was being cancelled,

proposed a plane designed to fly much lower and slower than the B-70, and more effectively avoid Soviet defenses. The B-1B, now in the Air Force inventory, can not encroach upon the B-70's altitude and airspeed capabilities. Yet, the B-1B is considered a more technologically advanced and effective bomber. In today's Air Force, where the "stealth" bomber is under development, high speed and high altitude are no longer considered key measurements of the effectiveness of a bomber. The B-70 program marks the turning point in the philosophy where higher and faster implied better.

This illustrates how the standards by which technical superiority is measured can change over time. What might be considered omnipotent attributes for a bomber at one time, might not be regarded as useful in future times.

Soviet Reaction to B-70 Cancellation. The B-70 program shows that Soviet defense programs do not always mirror the status of the corresponding American programs. During the 1960s, it was estimated that the Soviets would need to spend over $40 billion to upgrade their defenses in order to counter the B-70 threat. It is unknown how much they did actually spend to defend against the proposed Mach 3 bomber. However, it is known that they continued development and production of the MiG-25 interceptor and their own supersonic bomber programs, despite the cancellation of the B-70.

Ben Rich, Executive Vice President and General Manager of Lockheed's Advanced Development Projects, better known as

the "Skunk Works," refers to this as a "virtual defense" or a "virtual threat." By manufacturing a prototype, the U.S. can demonstrate a new capability. This demonstration creates a percieved threat. Once proven, the capability can be conceivably produced in the desired quantity at will. Therefore, the existence of a functional prototype alone, can be sufficient to cause the Soviets to develop systems to counter this capability. (55)

If an objective of a weapons system is to bleed the Soviet economy through wasteful spending, it might not be necessary for the U.S. to actually produce that weapon in quantity.

Additionally, a Soviet counter-program may have negative impacts on the United States. The MiG-25, although produced to shoot down the B-70, prevented the U.S. from using the SR-71 to gather intelligence over Russia. Further, the U.S. reacted to the MiG-25 with a costly fighter program of its own. This proves that compelling the Soviets to spend rescurces on defense programs can have adverse causal effects.

Robert McNamara was also questioned about this aspect of the B-70, and its implications on future bomber acquisitions. In his opinion, it is likely the Soviets would expend funds defending against a new bomber, only if there is a known defense against it. However, if one of the benefits of a new weapons system is that there is no known

way to defend against it, then there is little chance of the Soviets spending funds to counter it. (37)

Soundness of the Decision. The B-70 program demonstrates that programatic leadership at the highest levels of Government can be wrong when predicting obsolesence of strategic systems. General Twining testified to Congress that the B-52 would be obsolete by the late 1960s. Senator Johnson's committee strongly urged production of the B-70, believing that without a supersonic bomber, "...there will be no replacement for the B-52 at the time it enters obsolescence" (59:3). Yet, thirty years after these statements, the B-52 is still in operational service, and will probably be used into the next century.

Regarding American strategic strength, it is impossible to know what would have happened had the B-70 been produced as the B-52 replacement. However, history has proven that without the B-70 as a weapon, this country's strategic posture was not weakened to the point of inviting an agressor to attack. Chapter 3 notes that current experts concur that the decision not to acquire the B-70 was correct.

Reoccurrance of Events. Can the situations and events which caused the B-70 bomber program to be cancelled or inconsistently supported occur again? These two areas are important for future programs for the following reasons. Cancellation would obviously conflict with the Air Force's objective of bringing the plane into service. Erratic or

inconsistent high level activities remove program stability, making program management extremely difficult and contributing to cancellation. Each of these areas will be addressed next.

Cancellation. As stated earlier, the overall contributing factor to the B-70 cancellation was budget constraints. Certainly today's Air Force experiences similar funding restrictions.

> Resources available to the organization are normally insufficient for all the programs that are desired by the organization, so compromise and prioritization of programs is an absolute necessity. (12)

When budget constraints forced choices to be made between weapon systems, the B-70 was examined for its costs and strategic benefits. The following is a summary of the reasons behind the 1959 program cutback and the 1961 restructure:

1. Technical difficulties
2. Decreasing threat
3. Insufficient advantages over existing bombers
4. Requirements could be met by existing or less expensive systems

Each of these concerns are still applicable today (11). For example, current newspaper articles (a sample is included in Appendix D) refer to the B-2 bomber acquisition. They cite the decrease in the Soviet threat and budget constraints as reasons for not acquiring the new bomber

(63:4). Further, its stealth capabilities, which will provide its advantages over existing bombers, are the key to its success (11).

Impoundment of Funds. If a modern-day Administration decided to oppose a bomber program endorsed by the Congress, the mechanism used during the B-70 program would not be applicable.

Perhaps the most significant difference between the B-70 program era to today's bomber acquisitions is the Impoundment Control Act of 1974, or simply the Impoundment Act (included in Appendix B). This Act, signed by President Richard Nixon, gave Congress the power to approve the impoundments of the President. Once a President notifies Congress of his intentions not to spend part of an appropriation, both the House and Senate must specifically approve the action. If either body disapproves it or takes no action, the President must make available the funds as originally intended. If the President continues to refuse to spend the funds, the Comptroller General may sue in Federal Court. With this Act now in effect, a President who disagrees with the level of spending or the priorities being proposed has only one option: to veto the bill in its entirety. (10:81-83)

Inconsistent Funding. One cause of the inconsistent support was the differing opinions of the decision makers. During the interview, Mr McNamara stated he believes the B-70 and the current B-2 program are almost identical in

this regard (37). In each case, there is no disagreement over the objective of strategic deterrence (37). However, there is a difference of opinion, within the various organizations, about how best to meet this objective and with what equipment (37).

The prime cause of the erratic support of the B-70 was that events, not necessarily strategic mission requirements, drove the decisions and funding actions of the Congress and the President. Should events dictate Congressional or Presidential actions, then it is conceivable a modern program will experience these same fluctuations.

Although it is feasible that there will be greater stability in a bomber program if all actions and directives are based solely on strategic requirements, more research must be conducted before this can be concluded as fact. However, the B-70 is an example of how decisions made in reaction to events increase the program instability.

Chapter Summary

This chapter analyzed the history of the B-70 Valkyrie bomber program. Key events from the program were cited, and their causes noted. The reasons for the bomber's cancellation were also stated. Unsupported theories and statements found during the literature review process were also addressed. Finally, the events of the B-70 history were analyzed to provide lessons for future bomber programs.

V. Conclusions and Recommendations

Summary of Research

This thesis compiled an accurate, complete, and chronological history of the political actions surrounding the North American B-70 Valkyrie bomber program. This history was analyzed for significant events, and those events analyzed for their causes. With this information, lessons were found which are applicable to modern-day bomber acquisitions.

Summary of Findings

The B-70 bomber program was cancelled in 1959 by the Eisenhower Administration due to its desire to support ICBM systems instead of a supersonic bomber. This decision was required because of funding constraints on defense programs.

The program was cancelled again in 1961 after the Kennedy Administration determined existing B-52 and ICBM capabilities made the supersonic bomber unnecessary.

The key factors in the B-70 program history are:

1. The 1959 program cutback by President Eisenhower

2. The Kennedy Administration's program restructure in 1961

3. The refusal of both Administrations to spend program funds authorized by Congress, which would have accelerated or expanded the program

4. Congress' withdraw of the Constitutional challenge to direct the President to spend authorized funds

Summary of Lessons

This thesis found the following to be exemplary lessons from the B-70 bomber program:

1. Technical measures of bomber superiority can change over time

3. Soviet counter-programs do not always mirror the status of their corresponding American programs

4. Driving the Soviets to spend resources on counter-programs may have negative impacts to the U.S.

5. Programatic leadership at the highest levels of U.S. Government can be wrong when predicting weapons obsolesence and strategic strength

6. If a new bomber program encounters the following concerns, it is in danger of cancellation:

   a. Technical difficulties

   b. Reduction in threat

   c. Insufficient advantages over existing bombers

   d. Requirements met by existing or less expensive systems

7. The President can no longer impound funds without the consent of the Congress. If Congress favors a new bomber program, it will receive funding as allocated.

Additionally, it must be noted that program instability was introduced into the B-70 as a result of decisions being made based upon other than mission requirements. It is possible, although unproven, that if decisions are made based upon strategic mission requirements, then more stability will be given to the program.

Recommended Further Research

Further research is necessary in the following areas:

Impacts of the Impoundment Act of 1974. How can a President prevent the production of weapon systems against an advocating Congress? How many programs since 1974 have been cancelled despite being supported by the mojority of Congress? The B-70 program cancellation relied heavily on the power of the Executive to impound funds. Do modern-day Presidents have an alternate means?

Proportionality in Counter-systems. It was predicted that the Soviets would need to spend $40 billion to defend against a $10 billion B-70 fleet. The Soviets developed and produced the MiG-25 to counter the B-70, and the U.S. eventually only spent $1.5 billion on the bomber. Currently, the B-2 bomber, the most expensive airplane in history, is being designed for a specific mission, but what does that mission cost the U.S.S.R? If a weapon is designed to counter an enemy threat, then the costs should be relatively equal, or else cost itself becomes a weapon, driving the enemy to wasting money. Are weapons and their counter systems propotional in cost?

The "Virtual Defense." How does a prototype create the perception of a threat to the Soviet Union, and vice versa? Under what circumstances is a full weapon system necessary?

An Analogy for the B-2 Bomber. As stated in Chapter 1, it is dangerous to consider this research an analogy for future programs without first examining the differences in

circumstances and their impacts to its true relavance. Neustadt and May, in their book Thinking in Time, describe procedures for studying the likenesses, differences, knowns, and unknowns, of two events, and determining whether analogy is appropriate. If the situations between the B-70 and the B-2 bomber are similar, then this research can be used for an analogy.

Chapter Summary

This chapter summarized the research conducted, the findings, and briefly described the lessons learned. Finally, recommended additional areas of research were listed.

Appendix A:

Letter Requesting Interview with Robert S. McNamara

Shown on the following page is a copy of the letter requesting an interview with former Secretary of Defense Robert S. McNamara. The letter was signed by the Dean of the School of Systems and Logistics, Colonel Richard S. Cammarota.

Robert S. McNamara
1455 Pennsylvania Avenue NW
Washington DC 20004

Dear Mr. McNamara

One of our graduate students, Captain Gary Beatovich, is conducting thesis research involving the B-70 bomber program. After some initial research, two issues remain unaddressed by published literature. They are:

1. What role, if any, did the existence of the A-11 aircraft (later the YF-12 and SR-71) play in the cancellation of the B-70? Steve Pace, in his 1984 book, Valkyrie, writes that the A-11 aircraft may have played an important role.

2. How did the Executive Branch convince Congress to cease its attempts to "direct" the Defense Department how to spend authorized defense funds? In 1962, the House of Representatives, led by HASC Chairman Carl Vinson, prepared a bill that would not only authorize funds to the B-70 program, but also "ordered, mandated, and required" DoD to spend them. This would have led to Constitutional questions of whether Congress has the power to mandate what programs are purchased. However, according to Nick Kotz's 1988 book Wild Blue Yonder, on the eve of the House vote, President Kennedy and Carl Vinson met in the White House Rose Garden and "settled their differences." The bill never went through. What agreements were reached that cause Vinson to change his mind about his bill? And how was the Executive Branch prepared to answer the challenge?

In order to adequately conduct the research, would you please consent to a brief interview to address the previous questions? We will schedule it at a time and place of you convenience, preferably in March or April 1990.

If an interview is not appropriate, would you please identify some other individual who can address these questions? Thank you for your help.

Sincerely

RICHARD S. CAMMAROTA, Colonel, USAF
Dean
School of Systems and Logistics

Appendix B:

Impoundment Control Act of 1974

The following pages contain a copy of the Impoundment Control Act of 1974. As stated in Chapter 4, the enactment of this Act makes it nearly impossible for a modern-day Administration to delay or cancel a bomber program strongly endorsed by the Congress. The authority to withhold authorized funds from the B-70 program allowed the President to prevent the acceleration or expansion of the B-70 program.

IMPOUNDMENT CONTROL ACT OF 1974
(2 U.S.C. § § 681-688)

§ 681. Disclaimer

Nothing contained in this Act, or in any amendments made by this Act, shall be construed as –

(1) asserting or conceding the constitutional powers or limitations of either the Congress or the President;

(2) ratifying or approving any impoundment heretofore or hereafter executed or approved by the President or any other Federal officer or employee, except insofar as pursuant to statutory authorization then in effect;

(3) affecting in any way the claims or defenses of any party to litigation concerning any impoundment; or

(4) superseding any provision of law which requires the obligation of budget authority or the making of outlays thereunder.

(Pub. L. 93-344, Title X, § 1001, July 12, 1974, 88 Stat 332.)

§ 682. Definitions

For purposes of § § 682 to 688 of this title –

(1) "deferral of budget authority" includes –

(A) withholding or delaying the obligation or expenditure of budget authority (whether by establishing reserves or otherwise) provided for projects or activities; or

(B) any other type of Executive action or inaction which effectively precludes the obligation or expenditure of budget authority, including authority to obligate by contract in advance of appropriations as specifically authorized by law;

(2) "Comptroller General" means the Comptroller General of the United States;

(3) "rescission bill" means a bill or joint resolution which only rescinds, in whole or in part, budget authority proposed to be rescinded in a special message transmitted by the President under § 683 of this title, and upon which the Congress completes action before the end of the first period of 45 calendar days of continuous session of the Congress after the date on which the President's message is received by the Congress;

(4) "impoundment resolution" means a resolution of the House of Representatives or the Senate which only expresses its disapproval of a proposed deferral of budget authority set forth in a special message transmitted by the President under § 684 of this title; and

(5) continuity of a session of the Congress shall be considered as broken only by an adjournment of the Congress sine die, and the days on which either House is not in session because of an adjournment of more than 3 days to a day certain shall be excluded in the computation of the 45-day period referred to in paragraph (3) of this section and in § 683 of this title, and the 25-day periods referred to in § § 687 and 688(b)(1) of this title. If a special message is transmitted under § 683 of this title during any Congress and the last session of such Congress adjourns sine die before the expiration of 45 calendar days of continuous session (or a special message is so transmitted after the last session of the Congress adjourns sine die), the message shall be deemed to have been retransmitted on the first day of the succeeding Congress and the 45-day period referred to in paragraph (3) of this section and in § 683 of this title (with respect to such message) shall commence on the day after such first day.

(Pub. L. 93-344, Title X, § 1011, July 12, 1974, 88 Stat 333.§

§ 683. Rescission of budget authority

(a) Transmittal of special message

Whenever the President determines that all or part of any budget authority will not be required to carry out the full objectives or scope of programs for which it is provided or that such budget authority should be rescinded for fiscal policy or other reasons (including the termination of authorized projects or activities for which budget authority has been provided), or whenever all or part of budget authority provided for only one fiscal year is to be reserved from obligation for such fiscal year, the President shall transmit to both Houses of Congress a special message specifying –

(1) the amount of budget authority which he proposes to be rescinded or which is to be so reserved;

(2) any account, department, or establishment of the Government to which such budget authority is available for obligation, and the specific project or governmental functions involved;

(3) the reasons why the budget authority should be rescinded or is to be so reserved;

(4) to the maximum extent practicable, the estimated fiscal, economic, and budgetary effect of the proposed rescission or of the reservation; and

(5) all facts, circumstances, and considerations relating to or bearing upon the proposed rescission or the reservation and the decision to effect the proposed rescission or the reservation, and to the maximum extent practicable, the estimated effect of the proposed rescission or the reservation upon the objects, purposes, and programs for which the budget authority is provided.

(b) Requirement to make available for obligation

Any amount of budget authority proposed to be rescinded or that is to be reserved as set forth in such special message shall be made available for obligation unless, within the prescribed 45-day period, the Congress has completed action on a rescission bill rescinding all or part of the amount proposed to be rescinded or that is to be reserved.

(Pub. L. 93-344, Title X, § 1012, July 12, 1974, 88 Stat 333.)

§ 684. Disapproval of proposed deferrals of budget authority

(a) Transmittal of special message

Whenever the President, the director of the Office of Management and Budget, the head of any department or agency of the United States, or any officer or employee of the United States proposed to defer any budget authority provided for a specific purpose or project, the President shall transmit to the House of Representatives and the Senate a special message specifying –

(1) the amount of budget authority which he proposed to be deferred;

(2) any account, department, or establishment of the Government to which such budget authority is available for obligation, and the specific projects or governmental functions involved;

(3) the period of time during which the budget authority is proposed to be deferred;

(4) the reason for the proposed deferral, including any legal authority invoked by him to justify the proposed deferral;

(5) to the maximum extent practicable, the estimated fiscal economic and budgetary effect of the proposed deferral; and

(6) all facts, circumstances, and considerations relating to or bearing upon the proposed deferral and the decision to effect the proposed deferral, including an analysis of such facts, circumstances, any consideration in terms of their application to any legal authority and specific elements of legal authority involved by him to justify such proposed deferral, and [to] the maximum extent practicable, the estimated effect of the proposed deferral upon the objects, purposes, and programs for which the budget authority is provided.

A special message may include one or more proposed deferrals of budget authority. A deferral may not be proposed for any period of time extending beyond the end of the fiscal year in which the special message proposing the deferral is transmitted to the House and the Senate.

(b) Requirement to make available for obligation

Any amount of budget authority proposed to be deferred, as set forth in a special message transmitted under subsection (a) of this section, shall be made available for obligation [if] either House of Congress passed an impoundment resolution disapproving such proposed deferral.

(c) Exception

The provisions of this section do not apply to any budget authority proposed to be rescinded or that is to be reserved as set forth in a special message to be transmitted under § 683 of this title.

(Pub. L. 93-344, Title X, § 1013, July 12, 1974, 88 Stat. 334.)

[Ed. Note: Unconstitutionality of Legislative Veto Provisions

Subsection (b) provides for one House of Congress to block action by the President. A similar "legislative veto" was declared unconstitutional in *Immigration and Naturalization v. Chadha*, 1983, 10 S. Ct. 2784.

§ 685. Transmission of messages: publication

(a) Delivery to House and Senate.

Each special message transmitted under § 683 or § 684 of this title shall be transmitted to the House of Representatives and the Senate on the same day, and shall be delivered to the Clerk of the House of Representatives if the House is not in session, and to the Secretary of the Senate if the Senate is not in session. Each special message so transmitted shall be referred to the appropriate committee of the House of Representatives and the Senate. Each such message shall be printed as a document of each House.

(b) Delivery to Comptroller General

A copy of each special message transmitted under § 683 or § 684 of this title shall be transmitted to the Comptroller General on the same day it is transmitted to the House of Representatives and the Senate. In order to assist the Congress in the exercise of its functions under § § 683 and 684 of this title, the Comptroller General shall review each such message and inform the House of Representatives and the Senate as promptly as practicable with respect to –

(1) in the case of a special message transmitted under § 683 of this title, the facts surrounding the proposed rescission or the reservation of budget authority (including the probable effects thereof); and

(2) in the case of a special message transmitted under § 684 of this title, (A) the facts surrounding each proposed deferral of budget authority (including the probable effects thereof) and (B) whether or not (or to what extent), in his judgment, such proposed deferral is in accordance with existing statutory authority.

(c) Transmission of supplementary messages

If any information contained in a special message transmitted under § 683 or § 684 of this title is subsequently revised, the President shall transmit to both Houses of Congress and the Comptroller General a supplementary message stating and explaining such revision. Any such supplementary message shall be delivered, referred, and printed as provided in subsection (a) of this section. The Comptroller General shall promptly notify the House of Representatives and the Senate of any changes in the information submitted by him under subsection (b) of this section which may be necessitated by such revision.

(d) Printing in *Federal Register*

Any special message transmitted under § 683 or § 684 of this title, and any supplementary message transmitted under subsection (c) of this section, shall be printed in the first issue of the *Federal Register* published after such transmittal.

(e) Cumulative reports of proposed rescissions, reservations, and deferrals of budget authority

(1) The President shall submit a report to the House of Representatives and the Senate, not later than the 10th day of each month during a fiscal year, listing all budget authority for that fiscal year with respect to which, as of the first day of each month –

(A) he has transmitted a special message under § 683 of this title with respect to a proposed rescission or a reservation; and

(B) he has transmitted a special message under § 684 of this title proposing a deferral.

Such report shall also contain, with respect to each such proposed rescission or deferral, or each such reservation, the information required to be submitted in the special message with respect thereto under § 683 or § 684 of this title.

(2) Each report submitted under paragraph (1) shall be printed in the first issue of the *Federal Register* published after its submission.

(Pub. L. 93-344, Title X, § 1014, July 12, 1974, 88 Stat 335.)

§ 686. Reports by Comptroller General

(a) Failure to transmit special message

If the Comptroller General finds that the President, the Director of the Office of Management and Budget, the head of any department or agency of the United States, or any other officer or employee of the United States –

(1) is to establish a reserve or proposes to defer budget authority with respect to which the President is required to transmit a special message under § 683 or § 684 of this title; or

(2) has ordered, permitted, or approved the establishment of such a reserve or a deferral of budget authority; and that the President has failed to transmit a special message with respect to such reserve or deferral, the Comptroller General shall make a report on such reserve or deferral and any available information concerning it to both Houses of Congress. The provisions of § § 682 to 688 of this title shall apply with respect to such reserve or deferral in the same manner and with the same effect as if such report of the Comptroller General were a special message transmitted by the President under § 683 or § 684 of this title, and for purposes of § § 682 to 688 of this title such report shall be considered a special message transmitted under § 688 or § 684 of this title.

(b) Incorrect classification of special message

If the President has transmitted a special message to both Houses of Congress in accordance with § 683 or § 684 of this title, and the Comptroller General believes that the President so transmitted the special message in accordance with one of those sections when the special message should have been transmitted in accordance with the other of those sections, the Comptroller General shall make a report to both Houses of the Congress setting forth his reasons.

(Pub. L. 93-344, Title X, § 1015, July 12, 1974, 88 Stat 336.)

§ 687. Suits by Comptroller General

If, under § 683(b) or § 684(b) of this title, budget authority is required to be made available for obligation and such budget authority is not made available for obligation, the Comptroller General is hereby expressly empowered, through attorneys of his own selection, to bring a civil action in the United States District Court for the District of Columbia to require such budget authority to be made available for obligation, and such court is hereby expressly empowered to enter in such civil action, against any department, agency, officer, or employee of the United States, any decree, judgment, or order which may be necessary or appropriate to make such budget authority available for obligation. The courts shall give precedence to civil actions brought under this section, and to appeals and writs from decisions in such actions, over all other civil actions, appeals, and writs. No civil action shall be brought by the Comptroller General under this section until the expiration of 25 calendar days of continuous session of the Congress following the date on which an explanatory statement by the Comptroller General of the circumstances giving rise to the action contemplated has been filed with the Speaker of the House of Representatives and the President of the Senate.

Appendix C:

Announcement of Secret A-11 Aircraft

On February 29, 1964, President Johnson anncunced the existence of a Mach 3, high altitude jet aircraft, which had been flying in total secrecy. During the research for this thesis, a theory was encountered which attributed the some of B-70's cancellation to the A-11. That theory is addressed in Chapter 4. The next page shows the front page headlines from the New York Times following the announcement. It is important to recognize that this announcement was made more than two months before the first XB-70 rollout.

The New York Times.

LATE CITY EDITION
U. S. Weather Bureau Report (Page 31) forecasts
Fair and windy today and tonight. Fair tomorrow.
Temp. Ranges: 46—31; yesterday: 41—30

SECTION ONE

NEW YORK, SUNDAY, MARCH 1, 1964. THIRTY CENTS

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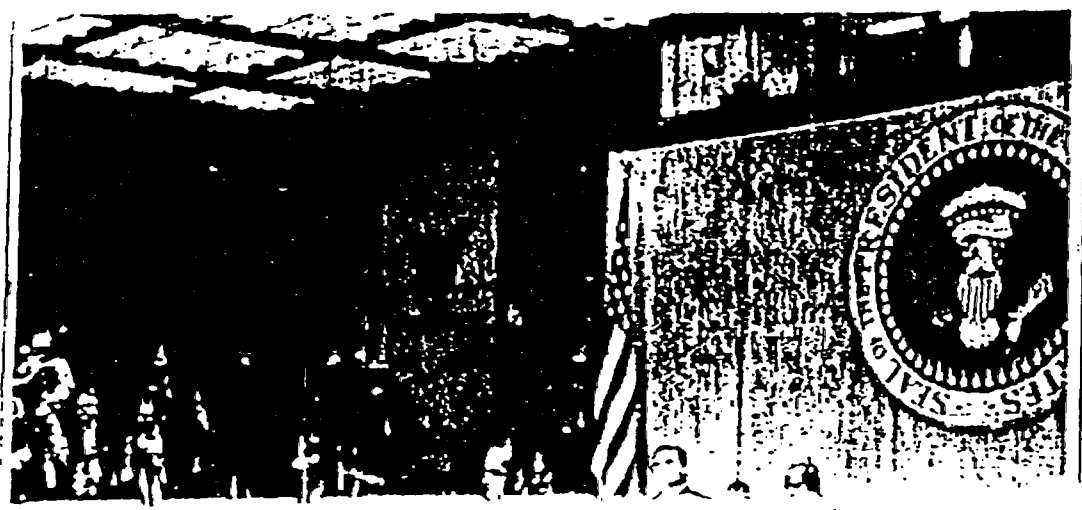
95

Secret Supersonic Jet Announced by President at News Conference

The experimental A-11 interceptor, which is capable of flying more than 2,000 miles an hour in sustained flight



JOHNSON REVEALS A 2,000-M.P.H. JET; SEES MAJOR GAINS

President Opposes Easing Rights Bill

Special to The New York Times

WASHINGTON, Feb. 29 — President Johnson said today that he was fully committed to the civil rights bill as it passed the House of Representatives, and that he hoped it would clear the Senate without amendment.

Reports that he was willing to compromise on the controversial public accommodations sections of the measure, he said at his news conference, were "strictly Republican in origin." [Question 16, Page 44.]

Mr. Johnson also announced that he had chosen Mrs. Frankie Muse Freeman, a former assistant attorney general of Missouri, as the first woman member of the Federal Civil Rights Commission. [Opening statement.]

Mrs. Freeman, who is as-

Continued on Page 44, Column 8

FIVE-YEAR SECRET

President Says Plane Has Commercial and Military Application

Transcript of news conference is printed on Page 44.

By JACK RAYMOND
Special to The New York Times

WASHINGTON, Feb. 29— The United States has developed, *in unusual secrecy, an advanced* experimental jet airplane capable of flying more than 2,000 miles an hour in sustained flight and at an altitude of more than 70,000 feet.

President Johnson disclosed the secret at his news conference today and identified the plane as the A-11. He said its performance "far exceeds that of [illegible]

Appendix D:

Current B-2 Status

At the present time, the future of the B-2 "stealth" bomber is still undecided. Chapter 5 of this thesis showed that the issues and concerns which terminated the B-70 program are still applicable for a modern-day bomber program, such as the B-2. On the next page is just one example of a newspaper story which verifies that cost, threat, technology, and mission are still critical to the fate of a bomber production decision. It is also interesting to note that one argument for procuring the B-2, to "bleed the Soviet economy," was also used thirty years earlier for the B-70 program.

B-2 emerges as a symbol of new budget dilemmas

By Jim Stewart
COX NEWS SERVICE

WASHINGTON — Here is the dilemma of the B-2 bomber:

The Warsaw Pact has evaporated. The Soviet Union remains a superpower, but is crumbling from within. Surveys show Americans have tired of providing $300 billion a year to the military and want to spend more on schools, roads and health care. Now comes the Air Force asking for assurance it can have $75 billion to buy 132 strategic B-2 bombers.

What is Congress to do?

As the realities of the new world order become clearer, the B-2 is emerging as a symbol for all the difficult questions the nation faces in rearranging its finances. What weapons can we do without? How much security is enough?

The coming weeks are critical for the B-2 as new cost estimates and studies are released. A confrontational hearing looms in the House of Representatives.

Other weapons face unusual scrutiny this year as well — new generations of attack submarines, frigates and fighter aircraft — but it is the B-2 that has moved to center stage in the defense debate.

It is the single costliest weapon in the Pentagon's budget. At $530 million each, and climbing, the B-2 is the most expensive aircraft ever built. When operation and support costs are added, it literally becomes the billion dollar bomber.

Another factor is the plane's mission. Resembling a bizarre creation from a Star War's work shop, the black, stringray-shaped B-2 is many things to many people.

The B-2 bomber — at center stage in funding debate

ANALYSIS

It is described as a "penetrating bomber." Its stealth technologies enable it to elude radar detection to make strikes deep within the Soviet Union against both mobile and fixed targets.

More recently, B-2 supporters have emphasized the plane's conventional warfare capabilities as well.

And there is the argument that the plane's pre-eminent mission all along was to bleed the Soviet economy. Supporters said it would force the Russians to spend billions to update their air defense measures.

How the Pentagon defines the plane's role in future U.S. strategy will weigh heavily with Sen. Sam Nunn (D-Ga.), chairman of the Senate Armed Services Committee. Nunn favors building the B-2, but has not disclosed how many he thinks we should have.

Critics will be looking to Defense Secretary Dick Cheney — a longtime B-2 devotee — to show how the B-2 will fit in with the missions of other U.S. bombers, a fleet of 100 B-1Bs and 234 aging B-52s.

Also to be considered is the question of the B-2's impact on a strategic arms reduction treaty. It would restrict the number of air, land and seaborne nuclear weapons for each superpower.

Nearly everyone outside the Pentagon agrees on one point: the Air Force will not get all of the 132 B-2s it wants.

"The mood of the industry right now clearly reflects low expectations for the B-2 program," said Wolfgang Demisch, who monitors the aerospace industry for UBS Securities Inc. He noted sagging stock prices for Northrop Corp., the prime contractor for the B-2, and Hexcel Corp., which manufacturers the honeycombed composite parts critical to the plane's radar-evading ability.

Demisch and a growing number of legislators believe the Air Force will eventually get 15 to 50 B-2s.

The bottom figure essentially means stopping the B-2 in its tracks. Over the past several years, Congress has appropriated $23 billion for the B-2, and is already committed to buying 15 of the aircraft.

■ **JIM STEWART** is military affairs writer in the Washington bureau of Cox Newspapers.

(63:4)

Bibliography

1. "Air Force Pares B-70 Plan to Bone," New York Times, 108: 22 (2 December 1959).

2. "B-70 Program Gets Refueled by $155 Million," Air Force Times, 21: 18 (5 November 1960).

3. Baker, Russell. "B-70 Dispute Ends as Vinson Yields on Fund Demand," New York Times, 111: 1 (22 March 1962).

4. Barron, John. MiG Pilot. New York: Reader's Digest Association, Inc., 1980.

5. "Battle Lines Drawn in B-70 Issue: President vs. Legislators-Military," Air Force Times, 20: 17 (30 January 1960).

6. Butz, J. S., Jr. "Budget Cuts Force Stretchout of B-70," Aviation Week and Space Technology, 71: 26-28 (7 December 1959).

7. "Chemical Bomber," Time, 71: 13 (6 January 1958).

8. Cockburn, Andrew. The Threat; Inside the Soviet Military Machine. New York: Random House, 1983.

9. Coffey, Thomas M. Iron Eagle. New York: Crown Publishers, 1986.

10. Collender, Stanley E. The Guide to the Federal Budget. Washington DC: Urban Institute, 1990.

11. Cook, Lt Col Curtis R. Department Head, Systems Acquisition Management, School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson AFB OH, Personal Interview, WPAFB OH, 19 July 1990.

12. D'Angelo, Anthony P. "Federal Financial Management and Budgeting Systems," Readings in AMGT 602, Federal Financial Management. School of Systems and Logistics, Air Force Institute of Technology (AU), WPAFB OH, 9 July 1990.

13. "Death Knell for RS-70," Aviation Week and Space Technology, 78: 25 (13 May 1963).

14. Emory, C. William. Business Research Methods (Third Edition). Homewood IL: Irwin, Inc. 1985.

15. Enthoven, Alain C. and K. Wayne Smith. How Much is Enough? New York: Harper and Row, Publishers, Inc. 1971.

16. Fox, J. Ronald and James L. Field. The Defense Management Challenge: Weapons Acquisition. Boston: Harvard Business School Press, 1988.

17. "Gallery of USAF Weapons," Air Force Magazine, 43: 234-235 (September 1960).

18. Gray, Wood. Historian's Handbook. Boston: Houghton Mifflin Company. 1964.

19. Hotz, Robert. "A Dangerous Decision," Aviation Week and Space Technology, 71: 21 (7 December 1959).

20. -----. "Thorns in the Rose Garden," Aviation Week and Space Technology, 76: 18 (26 March 1962).

21. "Humiliating Triumph," Newsweek, 63: 90-91 (18 May 1964).

22. Hunter, Mel. Strategic Air Command. New York: Doubleday & Co. 1961.

23. Jane's All the World's Aircraft 1982-33. London: Jane's Publishing Company, 1982.

24. Jane's All the World's Aircraft 1963-64. London: Jane's Publishing Company, 1983.

25. Johnsen, Katherine. "Bomber Funds Win Early Approval," Aviation Week and Space Technology, 80: 26-27 (24 February 1964).

26. -----. "Congress Agrees on $362 Million for RS-70," Aviation Week and Space Technology, 77: 16 (30 July 1962).

27. -----. "House Committee Adds Bombers to Budget," Aviation Week and Space Technology, 74: 26 (8 May 1961).

28. -----. "House Unit Approves Extra RS-70 Money," Aviation Week and Space Technology, 78: 24 (4 March 1963).

29. -----. "House Votes Bomber Increase," Aviation Week and Space Technology, 75: 26-7 (3 July 1961).

30. -----. "Senate Group Joins Bomber Drive," Aviation Week and Space Technology, 74: 27 (15 May 1961).

31. -----. "Senate Votes Full RS-70 Funds," Aviation Week and Space Technology, 76: 29 (18 June 1962).

32. -----. "Senate Votes $363.7 Million Extra for RS-70," Aviation Week and Space Technology, 78: 26 (22 April 1963).

33. -----. "USAF Opens Congressional Drive for B-70," Aviation Week and Space Technology, 74: 32 (17 April 1961).

34. Kaufman, William W. The McNamara Strategy. New York: Harper and Row Publishers, 1964.

35. Kotz, Nick. Wild Blue Yonder. New York: Pantheon Books, 1988.

36. "Last B-36 is Grounded," New York Times, 108: 55 (13 February 1959).

37. McNamara, Robert S., Secretary of Defense 1961-1968. Personal Interview. Washington DC, 23 March 1990.

38. McNamara, Robert S. The Essence of Security. New York: Harper and Row Publishers, 1968.

39. "McNamara Views Strategic Aircraft Role," Aviation Week and Space Technology, 78: 67-71 (11 February 1963).

40. "McNamara Wary on B-70 Conflict," New York Times, 111: 1,19 (9 March 1962).

41. "Milestones," Time, 117: 58 (15 June 1981).

42. Miller, Jay. "B-70 Fails to Perform," Air Force Times 41: 20 (29 December 1980).

43. Mollenhoff, Clark R. The Pentagon. New York: G.P. Putnam's Sons, 1967.

44. Moon, Howard. Soviet SST: the Technopolitics of the Tupolev-144. New York: Orion Books, 1989.

45. Neustadt, Richard E. and Ernest R. May. Thinking in Time. New York: Free Press, 1986.

46. Pace, Steve. North American Valkyrie XB-70A. Blue Ridge Summit PA: Aero Publishers, 1984.

47. Pike, Iain. "B-70: State-of-the-Art Improver," Flight International, 85: 1055-1062 (25 June 1964).

48. Polmar, Norman. Strategic Weapons. New York: Crane, Russak and Company, 1982.

49. Powers, Francis Gary and Curt Gentry. Operation Overflight. New York: Tower Publications, 1970.

50. "Premier of the North American XB-70A," Interavia, 19: 982-984 (July 1964).

51. Raymond, Jack. "Air Chief Scores B-70 Cut," New York Times, 109: 1 (12 January 1960).

52. -----. "B-70 Stirs a Wide Ranging Controversy," New York Times. 111: 5 (11 March 1962).

53. -----. "Johnson Reveals a 2,000 mph Jet," New York Times. 113: 1 (1 March 1964).

54. Rees, Ed. The Manned Missile. New York: Duell, Sloan, and Pearce, 1960.

55. Rich, Ben, Executive Vice President and General Manager, Advanced Development Projects, Lockheed Aeronautical Systems Company. "Skunk Works." Address to AFIT students. Air Force Institute of Technology (AU), Wright-Patterson AFB OH, 20 July 1990.

56. Roherty, James M. Decisions of Robert S. McNamara. Coral Gables FL: University of Miami Press, 1970.

57. "RS-70 Victor: McNamara," Aviation Week and Space Technology, 79: 25 (1 July 1963).

58. Screws, Lt Col Charles B. An Analysis of the Defense Position on Manned Strategic Vehicles. Thesis, Air War College, Maxwell AFB AL, 1965 (M-32983-NC).

59. "Senate Preparedness Committee Urges B-70 Development," Army, Navy, Air Force Journal, 97: 3 (16 July 1960).

60. Sorenson, Theodore. Kennedy. New York: Publishers Inc., 1965

61. Spaatz, Gen Carl. "The Case for the B-70 in an Age of Missiles," Newsweek, 57: 34 (17 April 1961).

62. Stein, Harold. American Civil-Military Decisions. Birmingham: University of Alabama Press, 1963.

63. Stewart, Jim. "B-2 Emerges as a Symbol of New Budget Dilemmas," Dayton Daily News, 113: 4 (12 April 1990).

64. "Swamp Fox at Eighty," New York Times, 112: 19 (19 November 1963).

65. Swisher, Robert R. and Charles R. McClure. Research for Decision Making. Chicago: American Library Association, 1984.

66. Taylor, John W.R. "Gallery of Soviet Aerospace Weapons," Air Force Magazine, 73: 74 (March 1990).

67. "Text of Eisenhower's Final State of the Union Message," New York Times, 110: 14 (13 January 1961).

68. "Top Secret Chemical Bomber," Science Newsletter, 72: 195 (28 September 1957).

69. Tosti, Col C. "Does the USAF Need the Mach 3 Bomber?" Interavia, 16: 800-802 (June 1961).

70. Trewhitt, Henry L. McNamara. New York: Harper and Row Publishers, Inc. 1971

71. "T/Sgt Seiler Wins $500 for Naming B-70 Valkyrie," Army Navy Air Force Journal, 95: 11 (5 July 1958).

72. Witze, Claude. "Trial By Press Conference," Air Force Magazine, 45: 16-20 (April 1962).

73. Wilson, George C. "Defense Budget Approved," Aviation Week and Space Technology, 75: 30 (14 August 1961).

74. -----. "Kennedy Asks More Aircraft, Missile Funds," Aviation Week and Space Technology, 75: 22-3 (31 July 1961).

75. -----. "Senate Moves Toward More Bomber Funds," Aviation Week and Space Technology, 75: 32-3 (24 July 1961).

76. Zuckert, Eugene. "The Service Secretary: Has He a Useful Role?" Foreign Affairs, 66: 458-472 (April 1966).

Vita

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	September 1990	Master's Thesis

4. TITLE AND SUBTITLE
A CASE STUDY OF MANNED STRATEGIC BOMBER ACQUISITION: THE B-70 VALKYRIE

5. FUNDING NUMBERS

6. AUTHOR(S)
Gary Beatovich, Captain, USAF

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Air Force Institute of Technology
WPAFB OH 45433-6583

8. PERFORMING ORGANIZATION REPORT NUMBER
AFIT/GSM/LSR/90S-2

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release;
distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

This research compiled a chronological history of the North American B-70 Valkyrie bomber program, from its beginnings to the rollout of the first prototype in May 1964. This history was analyzed for significant events, and those events analyzed for their causes and impacts. With this information, lessons were found which can be applicable to current or future bomber acquisitions. An initial literature review showed that this compiled history did not previously exist, and that existing literature contained theories which needed resolution. The analysis showed ICBM programs took priority over defense dollars in 1959, leading to the B-70's first cancellation. The following Administration determined there was no need for the air craft, either as a bomber or as a reconnaissance-strike vehicle. Events unrelated to strategic mission requirements played a significant role in Presidential and Congressional support of the program. Issues and theories found during the literature review were found to be inaccurate, and lessons applicable for today were cited and discussed.

Keywords:

14. SUBJECT TERMS
Strategic Weapons, Air Force Procurement, Bomber Aircraft, Supersonic Aircraft, Theses. (SLD)

15. NUMBER OF PAGES
112

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL