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B-52 AIRCRAFT ON THE CENTRAL FRONT

BY

LIEUTENANT COLONEL JAMES D. HARFORD

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) B-52 Aircraft on the Central Front		5. TYPE OF REPORT & PERIOD COVERED Study Project
7. AUTHOR(s) Lt Col James D. Harford		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS U. S. Army War College Carlisle Barracks, PA 17013		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Same		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE March 1989
		13. NUMBER OF PAGES 53
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution is unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The use of heavy bomber aircraft, specifically the B-52, in the Airland Battle provides commanders greater capabilities and flexibility. This study shows that B-52 use in the NATO region is consistent with the demands of operational art, Airland Battle, and basic aerospace doctrine. The study shows B-52 capabilities and explains a new employment option designed to capitalize on the unique abilities of the B-52 as opposed to more traditional fighter aircraft. Because the B-52 would be integrated into NATO operations, the question of operational control of the B-52 force is considered. The theater (Continued)		

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USAWC MILITARY STUDIES PROGRAM PAPER

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B-52 AIRCRAFT ON THE CENTRAL FRONT

AN INDIVIDUAL STUDY PROJECT

by

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21 March 1989

UNCLASSIFIED

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regards military doctrine, command & control systems (ICR)

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B-52 AIRCRAFT ON THE CENTRAL FRONT

CHAPTER I

INTRODUCTION

The purpose of this paper is to propose the aggressive use of heavy bomber aircraft on the North Atlantic Treaty Organization (NATO) central front. The bomber, of course, has a long history of use in warfare and is thought of in two basic contexts. These are B-52 use on nuclear alert and in conventional operations.

Conventional operations are those that employ only non-nuclear weapons and do not include any sets of the Strategic Integrated Operational Plan (SIOP). "Conventional" operations more closely approximate the "tactical" operations undertaken by fighter bomber aircraft as opposed to the "strategic" operations one normally associates with heavy bomber operations against "strategic" targets such as cities and war production capabilities of factories deep in the enemy's heartland. Conventional operations as addressed in this paper apply to wartime theater activities. This paper will examine the usage of bombers in a conventional role in NATO scenarios. The focus will further narrow to B-52s in the NATO central region.

There are some basic reasons for this particular set of parameters. First, the B-52 has been, and is now, largely capable of carrying conventional weapons and provides an instant resource. The B-52 provides a good frame of reference; if the argument applies to B-52s then the B-1B and B-2, with their added

capabilities, can also do the job. The B-52 is currently the only bomber ready for the conventional mission and by the end of fiscal year 1989 there will be four conventional only B52G squadrons. This will provide 69 dedicated B-52s. Up to the entire B-52 fleet of 263 aircraft could be used based on desired SIOP coverage. Second, the NATO central region is the most demanding of conventional war settings and provides the greatest challenge to military planners desiring to defeat an enemy who is smart, capable, and superior in numbers. This is the tough arena in which this paper proposes B-52s be employed. U.S. Army Airland Battle is inextricably interwoven into the study because B-52 use has larger application to Airland Battle Doctrine utilization.

An example of a possible B-52 operation that could be used in NATO follows. A single B-52 or flight of B-52s would take off from a forward location in NATO with a very large fuel load and bomb load. This/these aircraft would then proceed at very low altitudes, either across the central front or around the front where the defenses are light, and fly for extended ranges low level avoiding enemy threats to strike their targets and return to base. Even in an all low level operation the B-52 could operate at 3,000 to 4,000 nautical mile ranges without air refueling. The ranges are, of course, dependent on initial fuel loading, added fuel consumption caused by drag of external stores, and actual altitude and airspeeds flown.

The paper will discuss doctrinal issues involving B-52 conventional utilization, then show various possible B-52 uses to include a new employment option under development by Strategic Air Command (SAC). The next area that will be examined is the contentious issue of command and control of B-52 forces. There are other ancillary considerations that B-52 employment on NATO's central front engenders and these will be touched on. Finally, specific recommendations will be offered. The need to capitalize on all of the United States' military war fighting assets in austere budgeting times points to the need to intelligently examine the integration of a capable weapon system in the NATO environment.

CHAPTER II

DOCTRINE

The purpose of military forces in battle is to win. Doctrine provides the basic framework to fashion the victory. This chapter will develop a doctrinal approach to show why B-52 use in NATO's central front provides war winning capability.

VON CLAUSEWITZ

Before discussing any specific notions about B-52 aircraft, some words from the acknowledged master of the art of war are in order to set the conceptual stage. Carl von Clausewitz said the best strategy is to be very strong, if not in general, then at the decisive point.¹ He further states superiority or strength at the decisive point is not really possible without taking the enemy by surprise.² These key points should be kept in mind as this paper examines utilization of B-52 forces. His words apply to air power as well as to land power.

Von Clausewitz also had this to say about economy of force. "Always ensure all forces are involved in the campaign and ensure no parts are idle. When the time for action comes, the first requirement should be that all parts must act: even the least appropriate task will occupy some of the enemy's forces and reduce his overall strength."³ B-52s are part of the United States' total air power strength. Good sense requires that

Clausewitz's doctrinal advice be followed and B-52s be included in "the time for action."

Von Clausewitz's thoughts on the offensive battle have application for the air commanders. "The main feature of an offensive battle is the outflanking or bypassing of the defender--that is, taking the initiative."⁴ A proposed scheme of B-52 use in NATO takes this principle to good effect as will be demonstrated in Chapter III.

HART

Having brought up the subject of outflanking in offensive battle, some thoughts of B. H. Liddell Hart are in order. He is the author of the strategy of the indirect approach and is of somewhat more modern origins than von Clausewitz. Hart postulates that the essence of strategy is not so much as to seek battle as to maneuver for the advantageous situation. This dovetails very nicely with the premise of U.S. Army Airland Battle.⁵ Hart states "dislocation is the aim of strategy."⁶ "Hart goes on to say dislocation can be accomplished in one or more ways: upsetting the enemy's dispositions; separating his forces; endangering his supplies; and endangering his lines of approach or retreat."⁷ These forms of dislocation, while thought of by Hart as essentially ground force actions, are well suited to air power and have been historical objectives since airplanes first began harassing ground forces. The B-52 provides yet another weapon system in addition to the more conventional assets

of tactical air power. Again, the unique B-52 characteristics will be discussed in Chapter III.

AIR FORCE DOCTRINE

Having discussed some general aspects of war making, it is time to look at what U.S. Air Force doctrine has to say about air power application to defeat the enemy and how B-52 utilization might fit in the scheme. This is important to bring out as the U.S. Air Force has historically clung to its doctrinal tenets in force building and operational planning.

The Air Force states that air power has unique characteristics of speed, range, and flexibility which allow the air forces to apply power against all enemy structural elements.⁸ It is these very characteristics that the B-52 so well exhibits in addition to the destructive fire power that no other aircraft in the world can match.⁹

The U.S. Air Force recognizes 12 principles of war in AFM 1-1, Basic Aerospace Doctrine; but this short study will only address those that more directly apply to B-52 use in NATO. These are offensive, surprise, timing and tempo, and unity of command.¹⁰ Offensive dictates seizing the initiative and implies, for air forces, that one can penetrate to the target without having to first defeat enemy air defenses in detail. Surprise, as von Clausewitz has said, is an attack at a time, place, and manner for which the enemy is not prepared. Timing and tempo is execution of operations at a time and rate to

optimize the use of friendly forces or adversely affect enemy forces. Unity of command means giving only one commander the authority and responsibility to perform the mission tasking.¹¹ The U.S. Air Force takes great stock in insisting that air forces are applied as a total entity under centralized control.

These principles apply to all kinds of air operations, of course, but they are particularly significant when matched against B-52 capabilities. Chapter III will discuss these multiple B-52 capabilities. The upshot of this AFM 1-1 discourse is to ensure the reader is aware that B-52 application in NATO is consistent with Air Force basic doctrine and provides added war fighting power.

The Air Force manual on tactical air operations, AFM 2-1, points out that the fundamental principle governing the priority of the five combat employment functions of counter air, close air support (CAS), air interdiction (AI), tactical air reconnaissance, and tactical airlift is to "neutralize the enemy threat having the most profound and continuing influence on the total mission of the area command."¹² (emphasis added) Lest there be any confusion, B-52 utilization does not automatically imply strategic employment. Tactical air operations do not exclude any aircraft due to size or range. The B-52 is merely considered a quite large tactical bomber in the context of a NATO conventional war.

The combat employment functions of counter air (air superiority), CAS, and AI will be important elements throughout

the remainder of this paper because B-52 usage impacts all three. The Soviets, like us, stress the vital need for air superiority. They are convinced that the success of the offensive is a team air and ground effort that hinges on the success of the air superiority effort.¹³ Because so many of our limited air assets will be engaged in the air superiority battle, the aircraft available for both CAS and AI will be quite limited.¹⁴

The impact on the loss of AI capability in the early and continuing campaigns could be critical. Recent conventional wars have demonstrated several air power lessons. First, the high effectiveness of air weapons when properly applied has been confirmed. Second, and key to our need for AI assets, is that the proper application of air power is against targets that are beyond the reach or capacity of other weapon systems. Fixed wing aircraft should be focused on theater efforts against highly profitable target arrays such as airfields and infrastructure. Finally, a crucial lesson is the high lethality of anti-aircraft defenses. Countermeasures to allow air operation in the air defense environment have been found to ameliorate the problem to some extent, but they absorb already scarce air (and army) assets from the direct offensive.¹⁵ B-52s in NATO would provide yet another asset to continue the AI campaign. A new SAC employment option provides the way to accomplish it while returning other tactical air assets back to the air superiority effort.

AIRLAND BATTLE

It should be obvious to the informed reader that the discussion on U.S. Air Force doctrine implies a team effort. The Air Force is not contemplating a "solo" war. The U.S. Army Field Manual 100-5, Operations is an excellent document that brings to life the need for ground and air coordination.

The Soviets clearly have their own version of the Airland Battle and they see the "air operation" as integral to the strategic offensive operation and a joint operation on an operational-strategic scale. It is instructive to note what the Soviets--the potential adversary--include as components of the "air operation." Included are: air operations by air armies of operational-strategic and strategic air forces (emphasis added); frontal and naval aviation; attacks by missile troops using cluster munitions against airfields, anti-aircraft, and command and control facilities; and action by ground forces of the fronts (Soviets). Involved are aviation, ground fire support, and troops.¹⁵ The "air operation" would include the following targets or actions: aircraft on the ground and in the air; aircraft carriers; missiles; command and control; logistics sites; and area mining and denial.¹⁷ The Soviets appear to have a good appreciation of the need for joint operations, targeting priorities, and the use of long range (strategic) aviation assets in the conventional battle.

FM 100-5 supplies the U.S. Army and its supporting aviation assets parallel guidance for joint offensive operations. In the

general guidance to theater commanders to concentrate strength against vulnerabilities at the decisive time and place, FM 100-5 calls for AI to be synchronized to support the overall campaign and its supporting major operations on the ground.¹⁸ The campaign plan should synchronize the land, sea, and air effort into a cohesive and synergistic whole.¹⁹

B-52 operations, like any other fires asset or force element must be synchronized in the AI effort if its full capabilities are to be effective. FM 100-5 calls for attacks in depth with air delivered weapons to break up the enemy's operational continuity in the overall maneuver battle.²⁰ These deep operations must be synchronized with the whole operation to get the desired results.²¹ B-52s, with their range and flexibility, offer an ideal weapon to deliver deep in a fully synchronized package that allows for the deep battle. This provides additional aircraft availability for the air superiority battle. Additionally, CAS can be provided by CAS capable aircraft not needed for the deep battle due to B-52 use.

As a point of clarification, it is important to realize that B-52s are not envisioned as CAS assets. The previously mentioned anti-aircraft threat has seen to that. Also, the demonstrated need to strike deep would predicate B-52 use in AI roles--roles that are ideal for longer range aircraft.

FM 100-5 further encourages AI actions with these words: "exploit the devastating fire power of air power to disrupt momentum. . . attack not only those enemy forces in contact, but

those enemy forces held in reserve or rear echelons as well."22 And more; "air forces are normally more efficiently used to attack in depth those targets whose destruction, disruption, or delay will deny the enemy the time and space to employ forces effectively."23 Airland doctrine clearly calls for air power's use deep in order to effect the overall success of the maneuver campaign. Air power is successful in this task because fire power concentration produces leverage; can deny access to critical maneuver areas; can be used to deceive the enemy; and can destroy the enemy's will and capacity to fight.24 The B-52 is capable of impressive fire power concentration.

The B-52's long range also makes it most useful in the AI role of attacking command--probably the most obvious enemy center of gravity in any battle scenario. Command can be attacked in any of these three spheres: information, decision, and communication. Normally the decision sphere is the most important and is the hardest to attack due to its distance from most fires. (The more centralized the decision apparatus, the further from the front one can expect it to be.)25

Airland Battle doctrine does hinge on deep attack but there is a subset of Airland Battle thought that also needs to be introduced. Follow On Forces Attack (FOFA) is that subset.

FOLLOW ON FORCES ATTACK

The FOFA concept presented to NATO by General Bernard Rogers in 1982 is responsive to NATO concerns inherent in the alliance's

defensive posture. These are vulnerability to surprise, lack of reserves, little operational depth for maneuver, and insufficient combat units.²⁶ FOFA emphasizes deep strike due to its identification of echeloned follow-on forces as the main threat to NATO.²⁷ FOFA can be considered not so much a unique doctrine as a refinement of deep strike. The concept uses surface-to-surface missiles and aircraft against fixed and moving targets. FOFA focuses on enemy air superiority targets. This counter air role is highly emphasized due to the dependence of NATO on air superiority and CAS during the first days of a NATO conflict.²⁸

Other principal objectives of FOFA are: attriting Soviet second echelon forces as they advance; delaying the forward Soviet thrust; and interdicting lines of communication.²⁹ Other writers suggest Soviet command and control (as was previously pointed out) as the first priority of FOFA targeting to overload centralized control at the operational-strategic level.³⁰

As can be seen, there seems to be no particular shortage of target types. The issue becomes one of air assets to do the job. A study by the Office of Technology Assessment (U.S. Congress) stresses the known NATO need for first priority to attack enemy air assets.³¹ This means only limited aircraft will be available for FOFA targets that are not considered counter air. Only about 550 aircraft are available for deep strike in NATO thus reducing the capability to augment NATO initial defensive posture (FOFA) and to gain air superiority.³² The B-52 can help in redressing this problem. If the additional 69 B-52 aircraft are counted,

then other FOFA target types may be covered that otherwise would not have been possible.

It should be noted that the main weight of FOFA operations falls in the 70 to 500 km range.³³ The longer distances are relatively long range for attack aircraft. The B-52 easily has long range--and at low altitudes--so as to avoid the air defense threat by flying circuitous routing. Further, the use of B-52s in the FOFA role will supply the high fire power needed to bring Army fire power emphasis and Air Force doctrine closer together.³⁴

Having discussed how B-52s could be used consistent with doctrine, it is appropriate to examine B-52 capabilities. The next chapter will discuss generic B-52 conventional capabilities, the new SAC employment option, and possible new B-52 systems and weapons.

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CHAPTER III
B-52 UTILIZATION

Doctrine is, of course, important in laying down a basis to employ the force, but capabilities must be factored in if doctrine is to have meaning. This chapter will discuss B-52 employment capabilities and utilization options. It will also suggest some possible new systems that could make the B-52 an even more capable NATO conventional asset.

GENERAL

Flexibility, range, speed, and destructive power are all characteristics of air power that enhance combat capability and provide a means to execute Airland Battle initiative.

The B-52 provides all the above to the theater commander. By adding B-52s to the NATO air inventory, the commander can capitalize on the added elements of force accomplished by blending different weapon systems together on the battlefield. By using B-52 capabilities where best applied, one can use all air assets to better effect.

What can the B-52 do? In the next paragraphs this discussion will list those capabilities the B-52 possesses. The B-52 has excellent navigation capabilities to enable it to operate either in "formation" or autonomously. It can fly at low level altitudes from take-off to landing with its on-board navigation system and two navigators. It has superior on-board

radar and terrain avoidance radar to allow the two crew pilots to fly the aircraft at 300 ft. and below, day or night, in all weather conditions.² To further enhance both navigation and strike capabilities the crew can employ the Electro-optical Viewing System (EVS) using either Forward Looking Infrared (FLIR) or Steerable Television (STV). In addition, the crew can use low light vision goggles, if available, to aid in keeping very low altitudes in higher threat areas. It should be noted that this ability to stay low is the greatest aid in operating in high threat areas.

To further aid penetration capabilities, crews are trained on emission control procedures (EMCON) to reduce the aircraft signature. This practice runs the gamut from "radio out" to all emitters off to include radar and doppler.

Tactics such as ± two second timing on target and simultaneous attack on a target from many directions adds significantly to the ability of the bomber force. Bear in mind this combination of aircraft system, current crew training capabilities, and tactics allows the B-52 to operate autonomously with a good to excellent probability of penetration in the confused NATO conventional battlefield. This capability can also be employed around the clock. General Momyer, Commander Seventh Air Force, has said the most profound difference between the North Vietnam interdiction campaign in 1965-68 and 1972 was the use of the B-52 at night and during marginal weather conditions.³

FOFA needs very high performance from employment aircraft. The following are capabilities deemed necessary for success: fast reaction and high fire power; high speed low level attack; highly accurate navigation and high target probability of kill (p_k); a good payload to range ratio; and active and passive self defense. The B-52 employs all these. Navigation has been discussed. The B-52 routinely flies low level at speeds up to 390 knots.⁴

The B-52 can also react quickly in a number of ways. Its high fuel load and long range allows the aircraft to loiter. Loitering allows target changes if required and also provides flexibility. Additionally, the aircraft can be quickly re-targeted en route. This provides for true autonomous operations. The B-52 has Air Force Satellite Communication (AFSATCOM) terminals, Have Quick anti-jam radios, and secure voice equipment to allow quick, secure connectivity.

The need for rapid re-targeting is demonstrated by the requirement to destroy Soviet pre-positioned equipment and supplies that prepare Soviet theaters of strategic military action (TSMA) before Soviet "breakout."⁵ Indeed, future Soviet troop reductions make pre-positioned supply hardening and dispersal quite likely.⁶ In the fast moving early NATO battle it will be very useful to have an aircraft system behind the enemy lines, able to be re-targeted at developing or newly identified Soviet logistics targets.

The B-52 can provide a very good package with its current weapon suite. Below is a list of the more important weapons the B-52 employs. The B-52 can carry 51 Mk 82 (500 lb.) or M117 (750 lb.) bombs. It can carry up to 18 Mk 84 (2,000 lb.) bombs. Of interest is its ability to carry cluster bomb units (CBU). It can carry 51 CBU 52s or 30 CBU 89 anti-armor mine bombs.⁷ This equates to over 38,000 lbs. of fire power per aircraft. This kind of fire power makes the B-52 an excellent area target bomber that would take many fighter sorties to equal (i.e., airfields, marshalling yards, troop concentrations, anti-armor area mining). These characteristics can enable a single bomber to carry what could require an entire squadron of fighter-type aircraft and simultaneously create a favorable Airland Battle tempo by destroying enemy LOCs, forcing the enemy into difficult terrain, and/or destroying enemy forces.⁸

While it has been mentioned several times that B-52s should not operate on the forward line of own troops (FLOT), they can be useful in the rear battle against Soviet Operational Maneuver Groups (OMGs) that have penetrated to the NATO rear areas. The author contends these highly mobile forces will likely be somewhat less densely organized in air defenses than the normal Soviet first echelon forces. OMGs will be in something of a state of confusion themselves due to the fog of war and reduction of centralized command and control. B-52 area attacks against OMG forces in movement would be devastating. Army commanders might even be able to use B-52s in flank protection during

counter attacks against the OMG the way Patton and Quesada operated in WWII.⁹

Point bombing can also be accomplished using tactics that cannot be discussed in this format. However, it is this author's opinion that point bombing without precision standoff munitions is wasteful. Putting a string of weapons on a "point" target strikes this observer as wasting the excellent area bombing ability of the B-52 and also wasting the other 50 bombs that were not needed for the target and consequently "missed." Point bombing can be done by the B-52 quite well and the aircraft can certainly carry more than one weapon. The current ability of modified B-52Gs to carry 8 AGM 84 Harpoon anti-ship missiles is a case in point.¹⁰

The B-52 also possesses good self defense capability. Its on-board electronic countermeasures (ECM) suite provides both active and passive ECM capabilities. Its active ECM can counter a range of Soviet systems to penetrate air defenses successfully and its passive warning systems can allow developing threats to be bypassed entirely. SAC's EMCON training aids the overall ECM effort. To further aid ECM, aircrews are trained in low level air refueling to provide longer range (if required) closer to the threat. This is a passive form of ECM because it denies the enemy the ability to see the operation on radar.

The B-52 ECM capability helps the overall air and ground effort. Self contained ECM and autonomous operation saves the air component commander from having to provide expensive

suppression packages in support of B-52 deep strike/FOFA operations. These assets then can be provided to other aspects of the air effort. For example, it was not unusual in the high threat areas of North Vietnam to employ 39 aircraft (recon, CAP, flak suppression, SAM suppression, ECM, rescue, tanker, etc.) to place 12 strike aircraft with bombs over the target.¹¹ Because the B-52 does not need to go through the FLOT to get to its targets (long range allows on "end run"), the ground component commander can save army organic ground based systems to use for his own execution of the deep maneuver battle. He also gets use of the tactical air AI and BAI assets and helicopter aircraft that would have been used to support a suppression of enemy air defenses (SEAD) corridor for the B-52(s) to fly through.

STRATEGIC AREA OF RESPONSIBILITY (SAR)

The B-52 doesn't need to go through the FLOT--its long range capabilities provide this luxury. Due to this particularly useful ability, SAC has developed an employment option that could prove useful to the theater commander and capitalizes on the abilities of long range aviation. This is the SAR concept.

Fighters do some things very well, such as: maneuverability, carrying precision weapons, operations at the FLOT, operations with support packages, and influencing the battle. Bombers, on the other hand, have their own unique characteristics. These are: long range, heavy payloads, operation beyond range of friendly fighters, autonomous

operation, and the ability to influence the war.¹² The SAR concept is merely a new employment concept to stress the unique bomber capabilities--it is not an "accept or reject proposition--it is a tool available to the theater CINC.

Currently, NATO's targeting scheme for B-52s is called Concentrated Aerial Bombardment with B-52s (CABB). CABB with SAR offers a new ability of using B-52s in support of FOFA.¹³ CABB employs B-52s in force packages with tactical air forces (TAF) to attack selected targets in prioritized campaigns by using B-52 fires against pre-identified and preplanned targets.

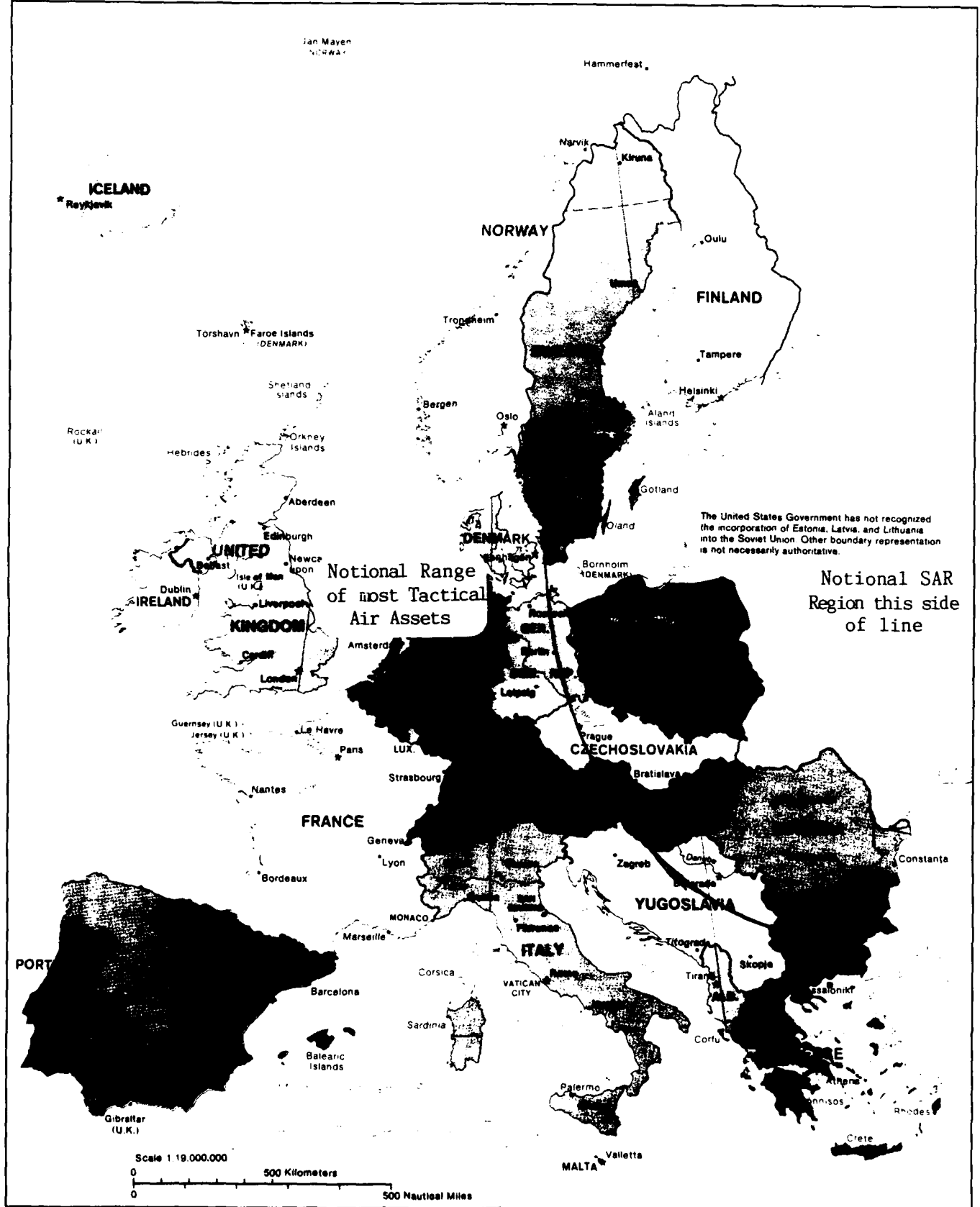
SAR, however, is a geographic area normally beyond the range of the TAF force. This dovetails with B-52 autonomous operations. See Figure 1 for a notional area in the NATO theater. The area to the east of the line is the SAR. The line can move either east or west depending on theater CINC desires.¹⁴ In this respect it is much like an Air Force Fire Support Coordination Line.

SAR does not imply that B-52s will not operate with the TAF. As was pointed out earlier, B-52G capabilities allow it to reach a target base that might not be viable for TAF forces. It is interesting to note that conventionally armed B-52s can hold at risk a portion of the target sets uncovered by the withdrawal of the Intermediate Range Nuclear Force (INF) force structure.¹⁵

In the SAR concept the theater CINC will determine the SAR area, select the SAR target base, and control the SAR bomber

FIGURE 1
 STRATEGIC AREA OF RESPONSIBILITY (SAR) EXAMPLE

Europe



force.¹⁶ This implies that at least a portion of SAC B-52s will be totally committed to theater CINC long range efforts.¹⁷

SAR offers TAF and air refueling assets back to the theater CINC for other employment and uses B-52s against a more suitable target base. Whereas TAF assets attack across the FLOT, B-52s attack deeper targets from the flanks without air refueling. In the future, using standoff munitions, B-52s attacking from the flank can offer another way to attack targets too lethal to reach by coming across the FLOT.¹⁸ In war, the shortest distance to a goal may not be a direct line. As one authority writes on airfield attack, "if airfield attack, a highly defended target, is deemed necessary, one should look for a flank or weak spot that will permit attack in detail."¹⁹ This is the essence of SAR--and Hart's indirect approach.

SAC sees three key elements in the SAR concept as necessary for employment. The first is the need for pre-identification of a target base. Preplanned targets or sorties would be accomplished with units maintaining a package for planning and crew study. The frag order would be theater CINC developed and all targets theater CINC designated.²⁰ In this way aircrews would be prepared for the initial campaign. It should be noted that crews also would be able to adjust and plan for short notice targeting.²¹

The second key element is theater basing. The B-52 has the ability to operate in small numbers from smaller airfields. What would be needed is approximately one million sq. ft. of parking

ramp and access to fuel (about 500,000 gal.). A runway at least 9,000 ft. by 147 ft. with steel planking on the runway shoulders for the tip gear and 75 ft. wide taxiways can handle B-52 operations. While the peacetime runway Load Capacity Number (LCN)--load bearing capability--for B-52s is LCN 123, it is known that B-52s can operate off of an LCN 90 rated runway for a long time without destroying the runway. There are a significant number of airfields the B-52 could use in Europe in wartime that meet the above criteria.²²

The third key element is pre-positioned supplies. This, of course, presents the biggest challenge. However, if certain stocks such as bombs are pre-positioned, their operations can get underway immediately and be sustained in the critical early days of the battle. The ability to fly the mission without aerial refueling further implies sufficient fuel on hand for sortie support.²³

SAR, while an excellent concept, could be improved with better weapons and aircraft systems. The next section will briefly touch on improvements.

POSSIBLE NEW SYSTEMS/WEAPONS

The SAR concept provides a new, valuable tool for the theater CINC, but could be even more valuable with weaponeering, targeting, and navigation improvements.

One of the best ways to counter improved enemy air defenses is standoff attack to operate outside enemy air defenses. There

are three sets of new technologies that could combine for improved capability. These are millimeter (mm) wave radars for high resolution and low jamming; better sub-munitions guidance using mm wave and infra-red sensors and sophisticated electronics; and better warhead capabilities such as self-forging fragments and mines.²⁴

New weapon systems that will be available in the near term increase sortie effectiveness and the numbers of targets the bomber can attack.²⁵ The Tactical Munitions Dispenser (TMD) is being deployed and will allow delivery of a new family of sub-munitions to include Combined Effects Munitions (CEMs) against soft area targets, air delivered mines against LOCs, Direct Airfield Attack Cluster Munitions (DAACM), and sensor-fused weapons against armored vehicles.²⁶

Standoff capabilities will improve with HAVE NAP, a medium range missile with a very small Circular Error Probable (CEP). The B-52 can carry three of these.²⁷ The B-52 will carry the AGM 136 Tacit Rainbow. This is a long range anti-radiation cruise missile for air defense suppression. It can loiter and is used in support of either TAF or bomber operations. The B-52 can carry 30 AGM 136s.²⁸

The B-52 is also receiving Global Positioning System (GPS). This will improve navigation and weapon accuracy by as much as 87 percent.²⁹ GPS also can eliminate the need for target acquisition by aircraft sensors thus further improving penetrativity by better EMCON.³⁰

Possible longer term future capabilities include B-52 lethal self-defense capabilities. In addition to the tail guns the B-52 already uses, future options include the high speed anti-radiation missile (HARM) and the Advanced Medium Range Air to Air Missile (AMRAAM). HARM would be most useful to destroy radar directed threats and AMRAAM could defend against look-down/shoot-down Soviet fighters from a distance (well beyond visual range).³¹

Command and control enhancements, while not directly connected to the B-52, will significantly enhance B-52 strike abilities. The Joint Surveillance and Target Attack Radar Systems (J-STARS) will look deep for enemy armor, etc. and transmit its data real-time to air and ground commanders so the B-52 force can be employed on a more timely basis--re-targeted en route if need be.³² The Air Command and Control System (ACCS) will be used for the planning and execution of air operations to include FOFA. ACCS will allow the collection and evaluation of intelligence data for immediate processing, for decision making, and for tasking.³³

The last two systems involved command and control capabilities. This leads to the next chapter that briefly examines command and control considerations. Where should the B-52 force fit in the NATO command structure?

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CHAPTER IV
COMMAND AND CONTROL (C²) CONSIDERATIONS

The FOFA and deep strike objective is to disrupt, delay, and/or destroy enemy forces as far to the enemy's rear as possible. The SAR concept recognizes this by employing B-52s in those areas beyond NATO tactical fighter range in a fluid geographic area designated by the theater commander. It is this feature of SAR that ties to the final discussion point--that operational control of the B-52 force in theater needs to be under the operational control (OPCON) of the theater commander.¹ There are some very good factors that make this OPCON desirable.

A C² system should combine the following attributes: Centralization of strategic planning; decentralization of the direction of military forces; communications linking significant decision makers and commanders for plans development and execution; and real-time operational monitoring to permit evaluation of operations.² With a force capability as complex and far ranging as the B-52, the above C² system is required and only the theater commander can supply all the attributes to tie them together as OPCON using his/her air component commander as the execution agent.

The very range of the AI effort places operations at the theater level to ensure the FOFA effort is tied to the theater commander's vision of the battle. AI transcends the central front and impacts all fronts. One of AI's central aims is to

cause dislocation of the enemy offensive effort. "Dislocation" is the aim of strategy--dislocation in the enemy commander's mind. The B-52 is a means to bring this about using the indirect approach. This is the sphere of the theater commander.³

The very nature of the B-52 to be able to fly maritime and flank attack missions also mitigates its use to centralized control. Only the theater commander with his full picture of the developing battle can decide whether his limited supply of B-52s should be used in maritime operations or be used to influence the theater in the joint attack/defense on the NATO flanks or elsewhere in the theater.

The range of the B-52 will probably exclude the use of most local and theater based reconnaissance and target acquisition assets for its target base. Deep targeting and flank operations will require the extensive use of national intelligence assets that will be most appropriately used at the theater level. Additionally, Air Force Satellite Communications (AFSATCOM) and High Frequency (HF) transceivers on B-52 conventional aircraft will allow for very rapid and timely re-targeting capability once airborne. Near-real-time intelligence arriving at the theater command is most easily decided upon in a timely manner by the theater commander in sufficient time to change targets on B-52 sorties already en route. Ground Positioning Satellite (GPS) systems on conventional B-52s make this capability even better and provides the commander great flexibility.

The long range attack capability of the B-52 further allows other theater assets to be freed to perform other aspects of the theater air effort. Employment of the B-52, for example, allows simultaneous FOFA attack and Offensive Counter Air (OCA) attacks with limited resources. Without the long range B-52, the OCA battle will almost certainly take priority to the detriment of early FOFA operations. B-52s can release "long range" tactical fighter assets to pure OCA operations while B-52s perform the FOFA operations. This decision, however, is one that must be made at the theater level.

Another aspect, often overlooked, is the value of B-52s in a deception role. The theater commander can use B-52s to influence enemy thought patterns and thus influence the NATO maneuver battle/campaign. For example: heavy FOFA operations in a certain sector of the NATO front could well hide the fact that the maneuver battle will take place in another sector.

Lastly, the B-52, due to its large carrying capability can replace many tactical fighter sorties for a given load on target. This trade off decision is one that must be made at the theater level due to limited assets and the competing demands from the entire theater.

All the above require a theater perspective as the minimum level of OPCON to orchestrate a coherent effort in the Airland Battle. While controlled as a theater asset, there clearly must be coordination to at least the Tactical Air Control Center (TACC) level to ensure fires are placed in coordination in

accordance with the priorities of the theater commander.⁴ The TACC is the operational level in a deployed Air Force.⁵

The TACC's AI and deep strike attack efforts are guided by the theater (joint) commander and support land, air, or sea objectives. The air component commander performs the execution function. The planning requires detailed integration with all deep attack efforts, especially counter air.⁶ The Battlefield Coordination Element (BCE) is the Army coordination element at the TACC. Its most important function is to ensure that land and air operations are synchronized.⁷ The BCE observes planning and execution for all air activities, including B-52, to the full depth of theater operations.⁸ This means the TACC, through the BCE, can keep the theater commander informed so he can capitalize on B-52 targets, timing, deception, etc. to impact the entire maneuver battle. This is particularly true with the fielding of Army systems such as Lance or ATACMS. The well accepted principle of centralized control and decentralized execution still applies and fits well in the current NATO command structure. The experience of C² air operations in South East Asia when B-52s stayed under SAC proved inadequate--and this was a war with air superiority.⁹ As Air Marshal Tedder wrote "Air Warfare cannot be separated into little packets; it knows no boundaries on land or sea other than those imposed by the radius of action of the aircraft; it is unity and demands unity of command."¹⁰

The SAR concept envisions conventional B-52s "chopping" to the theater commander. In Europe, the focus of this paper, this would be to Supreme Allied Commander Europe (SACEUR). Day to day operations would be controlled by Allied Command Europe (ACE) comprised of AFNORTH, AFCENT, and AFSOUTH (Allied Forces North, Central, and South respectively). ACE would decide regional war fighting and campaign priorities. Since the importance and size of the Central Region make it the most probable avenue of attack (center of gravity for enemy forces), this becomes a "theater" in its own right. This sub-level theater command is CINCENT.¹¹ CINCENT then decides the campaign goals for his theater in coordination with ACE planning. CINCENT becomes the centralized control for B-52 assets in his theater.¹² Allied Air Forces Central Europe (AAFCE) is the air component for CINCENT and employs the various air power options based on CINCENT overall guidance and SACEUR planning. AAFCE executes through the two Allied Tactical Air Forces (ATAF) that correspond to the Northern and Central Army Groups of CINCENT.¹³ In this sequence, B-52 operations are fully integrated into the current command/control system and are included in the TACC process with Army fire coordination included via the BCE.

Regardless of what improvements could be made to the overall NATO command arrangements, it is vital that B-52 operations be fully integrated into the theater campaign plan and the best way for that to occur is for deployed B-52s to "chop" to the theater CINC for him to use as necessary. The use of air power must be

reviewed at the theater level--what are the theater objectives and regional campaigns?14 SAC, under the SAR concept, will augment the theater staff with heavy-bomber experts who are also "chopped" to the theater. The air component commander then ensures this unique asset is best employed in consonance with correct air power doctrine and aircraft capabilities. General Momyer had this to say on the organization for theater warfare. "There is no way to assign a theater commander the responsibility for the conduct of all operations in furtherance of his assigned mission, and then not give him complete authority to control forces. In other words, the theater commander must have the authority to determine what forces would be shifted from one mission to another and not the component commands."15

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CHAPTER V
ANCILLARY CONSIDERATIONS

Now that it is clear that B-52s in a NATO conventional role could be quite useful and, in fact, fit with Airland Battle doctrine, other factors need to be at least looked at. All won't have answers, but some thought ought to be spent considering those ancillary areas that could affect either the success or the implementation of B-52 use in NATO operations. This discussion is far from being all inclusive but the author believes the most important aspects are discussed.

BASING

Basing is a key element of aircraft wartime employment and must be considered, as well, for B-52s. The following discussion highlights the most important aspects of the subject as regards B-52 aircraft.

The B-52 is capable of very long range and could operate at great distances from the SAR. It should be obvious that SAR operations, that is flying around the flanks and deep strikes, require long range. While the B-52 is air refuelable, one of the major benefits of the SAR concept is to release tankers to the TAF. Therefore, air refueling for B-52s should be minimized.

This implies forward basing for operations. If the distance from target to base--including circuitous routing--is long, then fuel requirements at takeoff will increase along with decreased

ordinance loading or air refueling will be required.¹
Concomitantly, long distances will decrease sortie rate for the force structure available. The theater commander will want and need to squeeze as many sorties as possible out of his available B-52 force.²

Chapter III demonstrated the minimum runway and ramp considerations for the B-52 SAR concept. It would not be understating the problem to say that while these requirements are certainly much less than needed for peacetime, they are significant nonetheless.

NATO will be pressed heavily for all available runway and ramp space during any conventional conflict. Even though B-52 operations will be decentralized with only a few aircraft and crews at a given location, they take up a great deal of space that might be needed for C-17s, C-130s, fighters, etc. The infrastructure needed for heavy bombing operations is substantial. The bomb storage and loading alone will present interesting problems.

Last, the presence of B-52s will draw Soviet interest. If the bases are too close to the FLOT they will become instant Soviet air operations targets.³ This would disrupt operations, attrit the limited B-52 force needlessly, and require air defense measures that eat up air assets--the very thing SAR is attempting to improve.

Suitable bases need to be identified. This process can't wait for the war to begin. Heavy resource demands and the

attendent confusion resulting from the initial shock of battle will probably prevent the most effective basing decisions and siting.

SUPPORT

Bluntly, B-52 operations are resource intensive. They require lots of maintenance, large amounts of fuel, and a relatively long time to "turn" (generate a new sortie) in relation to fighter aircraft. Some thought needs to be given as to how and to what level of priority sustainment actions will be undertaken to support SAR operations. There will be many competing users of the limited logistics base during a conventional NATO war and B-52s will be just one of many in line for the fuel, bombs, and parts.

It should be addressed early on that many sorties will be flown with degraded systems. SAC aircrews are trained to do this but are not as well trained in terms of "battle damage assessment." Aircrews need to understand what limitations maintenance crews will be working under and just what kind of "fixes" they can expect to see in order to get the sortie off.

FORCE STRUCTURE

SAC is structured to maintain its nuclear mission. The manpower and personnel are set based on x number of aircraft pulling alert, x number of crews training, and x number of staff and maintenance supporting the wing mission.

If SAC is really serious about the SAR mission, some internal wing restructuring will be needed to support the deployed force autonomous operations that SAR entails. SAR implies sufficient maintenance, staff and aircrews to maintain the high wartime sortie rates. SAC and Air Force need to seriously examine whether additional personnel are needed to support a deployed decentralized operation vice a centralized operation.

When a wing splits into, for example, three autonomous units, the efficiency of centralized staff and maintenance are lost. How, for example, do the two wing intelligence officers cover three widely separated locations?

The aircrew crew ratio (crews to aircraft) must be carefully examined. The high conventional sortie ratio requirement is greater than the peacetime ratio. Current manpower constraints may well preclude any required increases so work arounds will need to be developed. Much can be learned from the TAF. The TAF has lived with mobility and autonomous operations for years.

TRAINING

The SAR concept is unique to SAC and entails new procedures, techniques, and environments. The author has held the position of Chief, Training Programs Division, Directorate of Training, Deputy Chief of Staff for Operations, Headquarters SAC. A catalog of what the author deems necessary in the training arena to ensure success follows. Much of the training recommended has

been initiated in varying degrees. The issue becomes one of degree and frequency.

Aircrews and wing support staff will need to seriously enter into autonomous mission planning training. This is not the "kick the tires, light the fire" type of planning, but actual package development and mission planning using the actual hardware and software that will be deployed. Tied to this is the need for SAC crews and staff to become intimately familiar with TACC operations and interoperability. Training in TACC procedures and flight in a TACC directed environment is necessary to ensure smooth, effective operations.

While SAC trains at Red Flag, these exercises do not really support SAR autonomous operations training. Night conventional exercises on the Nelles AFB complex of ranges need to increase to hone aircrew skills. Also, more access to other ranges that can support this training is needed.

SAC bomber units, in general, need to practice more of the actual mobility and readiness considerations. Units should deploy in the autonomous mode more often to ensure all facets of the SAR operation can be accomplished from the forward deployed base. Also in this context, more effort is needed to ensure these are actual "bare base" exercises. This is the best way to avoid "assuming away" problems.

More effort needs to be expended in practicing actual C² considerations. Increased command post and flying exercises, particularly in the actual theater, can vastly improve efficiency

and train crews and staff in the unique procedures and C² arrangements that exist in NATO.

In regard to the last item, SAC aircrew and staff personnel need to learn Army doctrine and procedures. Since the SAR concept is to support Airland Battle Doctrine, it follows that its practitioners should be familiar with Airland Battle and its supporting units and equipment. This education will go a long way towards building a strong and effective joint airland team.

These considerations should begin to be worked to ensure the SAR concept is executable given the resources available. Additionally, many of the issues will require time and effort-- commodities that will be in very short supply if SAR were actually implemented to support the theater commander.

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CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

Having discussed doctrinal and practical ramifications of using the B-52 in NATO and supporting Airland Battle doctrine, it is apparent that B-52s have much to offer the NATO theater commander.

Given the considerable capabilities of the B-52 and its availability by the supporting command, SAC, the B-52 should be fully integrated into NATO planning for conventional operations. Steps should be taken by the Air Staff, Army, and NATO to bring B-52 utilization more fully into the conventional force structure. Given a NATO war, B-52s should immediately be deployed and used. B-52 use should be automatic, not just an option to be considered.

Given the flexibility that the Strategic Area of Responsibility concept provides the theater commander and SAC B-52 forces, plans should be made to include this concept in addition to CABB in the theater commander's B-52 employment options. The ancillary considerations this paper discussed as regards SAR should be examined and work begun on implementing the actions. For example, arranging appropriate basing for SAR employment is a long lead action that needs extensive staffing and, to some degree, funding. These actions need to be integrated into appropriate Operations Plans to include logistics and mobility annexes.

The dedicated B-52 conventional force needs to be given to the theater commander as soon as the NATO war begins. Other B-52 assets should be supplied consistent with SIOP requirements and National Command Authority decisions. Change of Operational Control (CHOP) arrangements need to be formalized now to avoid confusion in the event of deployment. This will allow SAC to train its aircrews in the procedures to be followed in NATO. There should be no question on full OPCON to the NATO theater commander, Supreme Allied Commander, Europe (SACEUR). He already has the infrastructure in place to employ the air component-- adding the B-52 force should present no difficulties. If we are serious about joint operations and true operational art, there can be no other decision than to go full OPCON of B-52 forces to SACEUR.

Finally, in order to ensure SAC's SAR forces are ready, the training actions discussed under ancillary considerations also need to be worked. The money may not be available to work all the training, but the effort needs to be made to gain as much joint training, education, and interactivity as possible to make the B-52 CHOP in wartime as smooth and effective as possible.

The B-52 has been around a long time as a "strategic" bomber. It can and should be around even longer as a key member of the Airland Battle team.

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