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Validating the Joint Doctrine Air Campaign Course Planning Process

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College of the Department of the Navy.

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Abstract

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The USAF's Joint Doctrine Air Campaign Course advocates a five stage planning process for air asset employment at the Operational level. The five stages are: Stage 1, an intelligence preparation of the theater of operations; Stage 2, objective determination; Stage 3, strategy identification; Stage 4, identifying centers of gravity; Stage 5, the air campaign plan.

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Overall, the Allies used a similar process prior to Normandy. The JDACC five stage planning process provides a solid foundation for air asset Operational planning. Each of the stages must be accomplished to effectively employ airpower. There are not any gaps in the framework. These stages are independent of technology, equipment, training and valid regardless of service doctrine. The JDACC planning guide is an excellent tool for Operational planning for both deliberate and crisis action planning. This process is consistent with the planning process outlined in Joint Pub 5-0, Doctrine for Planning for Joint Operations.

Validating the Joint Doctrine Air Campaign Course Planning Process

"...our operations in Normandy are tremendously hampered, and in some cases even rendered impossible, by the following factors: the immensely powerful, at time overwhelming, superiority of the enemy air force. ...Practically our entire traffic - on roads, tracks, and in the open country is pinned down by powerful fighter-bomber and bomber formations, with the result that the movement of our troops is almost completely paralyzed, while the enemy can maneuver freely."[1] Field Marshal Rommel.

Thesis Statement

How did the Allies accomplish this feat? If the Allies were so effective in applying airpower for Normandy, why weren't we equally successful in Korea and Vietnam? The Air Force contends the problems of the past are fixed and they understand Operational level planning. They currently teach how to employ air assets at the Operational level at the Joint Doctrine Air Campaign Course (JDACC) taught at Maxwell AFB. My thesis is the five stage process for Operational level air planning taught by the JDACC is valid and applicable to future to air operations.

Background

Airpower's role in the United States' victory during Desert Storm continues to be subject of considerable debate. The debate generally centers around two different subjects; was the ground war necessary, and is the Joint Force Air Component Commander (JFACC) concept the proper forum for control of air assets?

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[1] Air Interdiction in World War II, Korea, and Vietnam (Washington DC: US Air Force Warrior Studies, Office of Air Force History, 1986), 23.

While both of these topics deserve careful examination and discussion, the most important lesson learned concerns how to plan Operational level air operations. JDACC's goal is to teach "iron majors" from each of the services about the "stubby pencil" Operational level of war aspects of air planning. Officers from the operations, intelligence, logistics, and plans functions attend this course. JDACC's philosophy for Operational planning centers around a single commander responsible for the coordination of all air assets and five planning stages. Stage 1 consists of researching the Operational environment. The air objectives are determined during Stage 2. Stage 3 determines the air strategy while Stage 4 analyzes the Operational centers of gravity (COG). Stage 5 puts the campaign together and implements the air component commander's Operational Design (Appendix 1).[2] This framework was used by the "Black Hole" air planners during Desert Storm. The successful air operations of Desert Storm validated this planning process for the Air Force. I contend that the framework is only valid if it can be applied to other operations. The Air Force thought it understood air operations planning prior to Korea and prior to Vietnam. Post hostilities analysis proved we did not effectively use theater air assets in either conflict. The Allies successfully used their air assets to prepare the Normandy theater of operations. Normandy was similar to our experience in the Persian Gulf. The invasion was preceded by a major air offensive. The World War II Allies were a coalition and needed to meld operations between two or more countries and several flag officers with many different philosophies/doctrines on how to use air power. Let's examine if each of these stages applied to the air operations dedicated for the Normandy invasion are applicable.

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[2] US Air Force, Joint Doctrine Air Campaign Course (JDACC) Planning Guide (Air

Analysis

Stage 1 is an intelligence preparation of the theater. This phase stresses the importance of knowing yourself, your enemy, and the physical characteristics of the theater you will fight in. It is important that the planners understand and take into consideration weather, logistics, political-military affairs, political systems, security arrangements, economic factors, enemy orders of battle, history, and culture. Enemy capabilities and vulnerabilities need to be examined. The course stresses the importance of establishing control of the air first. The Commander-in-Chief's (CINC) objectives help the planners identify the enemy's critical factors and possible friendly direction/axis of attack.

Allied commanders understood the disposition of German forces on the French coast as they planned for Operation OVERLORD. Hitler's Atlantic Wall was a hollow boast. Intelligence revealed most of the coast was slightly fortified. Once the Germans ascertained the landing site, planners thought it would become a reinforcement contest of the Germans by land and the Allies by sea. The landing beaches needed to be free of natural obstacles and fortifications, provide some shelter to the landing forces from the Channel's weather, a port nearby which could be captured rapidly to facilitate a rapid buildup of forces, and be within range of tactical aircraft stationed in England.[3] These factors led to the selection of Normandy.

University, 1992), 1.

[3] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 24.

Solly Zuckerman, an influential British scientist, studied the French transportation system. Intelligence officials knew the French rail system was seriously debilitated even before it came under Allied attack and they knew the Germans were unable to repair the rail system. Intelligence officials determined that the German army was extremely short of motor vehicles which left them dependent upon the French railroads. Inadequate German preparations were identified. The German's failed to construct underwater bridges which would be immune from air attack even though they had noted the Russian successes in protecting their bridges. Neither did the German's decentralize vital railroad maintenance facilities.[4] Mr. Zuckerman concluded that bridges were not a lucrative target but that the French rail system was vulnerable. He proposed the best method to attack the rail system would be to attack marshaling yards and maintenance facilities. Locomotives and rolling stock could be destroyed en masse in the marshaling yards while loss of maintenance, switching, and signaling facilities would steadily degrade the efficiency and capacity of the system. One hundred and one railway centers in France, Belgium and western Germany were identified. Planners thought they could be destroyed over a period of 90 days.[5] Other planners thought the bridges may be good targets.

The success of Operation STRANGLE, the Allies' bridge campaign in Italy, was the basis for the planners to determine which bridges the German's would use to reinforce Normandy. Planners differed on how robust the bridges were to attack and how capable the crews were in attacking the bridges. Planners were particularly interested in the bridges on the Seine, Loire, Marne, and Yonne Rivers (Appendix 2).

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[4] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 27.

[5] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 24.

From the radar installations (critical command and control facilities) between Oostende, Belgium and the Channel Islands the Germans could detect the invasion (Appendix 2). They could direct coastal gun fire against the invasion ships and guide German night fighters against the invading force. Fifty coastal gun batteries containing two to six guns apiece were identified. These guns commanded the sea approaches to the beaches. Similarly the planners were concerned with the *Luftwaffe's* ability to conduct air operations to counter the invasion. They identified those airfields within 130 miles of Normandy that the Germans could use to conduct operations from and added them to the target list.

The Economic Objectives Unit, a small organization of economists whose purpose was to identify lucrative German economic targets, believed the German oil industry was an important target. They postulated striking these targets would reduce the German fuel supply by 50%, reduce strategic and tactical mobility, lower capacity to produce weapons and supplies, slow deliveries, and force the Germans to reduce consumption.[6] They felt the oil industry could be destroyed in a matter of months.[7] The unit identified 14 synthetic oil plants and 13 refineries which accounted for 80% of production and 60% of refining capacity. Lieutenant General Spaatz, commander of the United States Strategic Air Forces, believed these targets were so important that the German's would be forced to defend them. By getting the *Luftwaffe* airborne, the Allies could gain air superiority by destroying the Germans in aerial combat and if they didn't defend them the oil targets would be

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[6] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 8.
[7] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 25.

systematically destroyed. The planners still needed to determine the best way to employ air power in preparation of the invasion.

Stage 2 is used to determine the air objectives. These objectives must flow from the CINC's theater objectives which flow from the national objectives. These objectives need to be clear, concise, attainable, and measurable.[8]

Prime Minister Churchill and President Roosevelt were committed to a cross channel invasion to establish a foothold on the continent. At the Casablanca conference in January 1943, they laid the foundation for what would become Operation POINTBLANK which was the combined bomber offensive (CBO) against Germany. POINTBLANK's objectives were "to conduct joint US-British air offensive to accomplish the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened."[9]

General Eisenhower believed strategic air's mission was to establish and maintain air superiority throughout the campaign (Normandy invasion) and to disrupt German communications in France and western Germany.[10] On April 17, 1944, General Eisenhower listed the following tasks to the Allied Air Forces: to assist the Allied armies in establishing a lodgment; to maintain the combined bomber

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[8] US Air Force, Joint Doctrine Air Campaign Course (JDACC) Planning Guide (Air University 1992), 16.
[9] Barry D. Watts, The Foundation of US Air Doctrine: The Problem of Friction in War (Maxwell AFB, Ala.: Air University Press 1984), 136.
[10] Anneke-Jans Bogardus, "Prelude to Operation Overlord: The Air Campaign," Military Review, March 1994, 64.

offensive; to secure and maintain air superiority; and to attack rail communications in the OVERLORD area.[11] Now they needed a strategy to accomplish the objectives.

Stage 3 determines the air strategy. Strategy is the ways and means of employing military force to accomplish theater objectives or as Clausewitz noted "strategy is the use of engagements for the object of the war." It is the JFACC's plan to use aerospace power in concert with the ground force commander, naval force commander, and special operations force commander to achieve the JFACC's objectives which are based upon the CINC's theater objectives and strategy.[12]

The Allies were divided on the best strategy to accomplish their assigned missions of gaining and maintaining air superiority and isolating the German reserves from the invasion area. Was it best to achieve air superiority by destroying the *Luftwaffe* through destruction of the means of production (Operation ARGUMENT) or to destroy it in aerial combat? Should infrastructure targets be the priority or were the CBO operations sufficient? They were divided on how the battlefield should be isolated: attack the marshaling yards or attack the locomotives and supply columns as they moved to counter the invasion.[13] In March 1944, General Eisenhower called a meeting of his air commanders to form a consensus on how to proceed. General Eisenhower was presented three alternatives; attack the transportation nodes, attack the oil facilities, or attack Germany's heartland.

The Transportation Plan's (first proposed in Jan 1944) primary proponents were Air Chief Marshall Sir Arthur W. Tedder and Solly Zuckerman. They supported

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[11] Walt W. Rostow, Pre-Invasion Bombing Strategy: General Eisenhower's Decision of March 25, 1944 (Austin, Tex.: University of Texas Press, 1981), 6-7.
[12] US Air Force, Joint Doctrine Air Campaign Course (JDACC) Planning Guide (Air University, 1992), 18.

a systematic assault on the railway marshaling centers and repair facilities located in northeastern Europe.

Lieutenant General Spaatz argued for attacks on oil production facilities. General Spaatz believed constant, recurring pressure needed to be applied and that a series of air battles prior to the invasion was required to gain air superiority. He believed the vulnerability and scarcity of Germany's fuel supply, the expense of the machinery to produce synthetic oil, lack of its mobility or ability to be hidden would force the Luftwaffe to fight to defend it. The favorable distance of these targets from the civilian population was another appealing factor.[14] Air Chief Marshal Sir Trafford-Mallory thought one big decisive air battle on the day of the landing was sufficient to gain air superiority and that no other preparation was required.

Air Chief Marshal Sir Arthur Harris favored continuing the attacks on German cities. He felt the bombers were not accurate enough to strike the marshaling yards and bridgeheads. He was concerned with the likelihood of heavy civilian casualties and favored the continued bombing of German cities to attack the will of the Germans.[15]

After hearing the air commander's opinions and taking into account the ground commander's opinions, General Eisenhower gave priority to the Transportation Plan. He felt it would have the most immediate impact on the German's ability to counter the invasion.

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[13] Stephen L. McFarland and Wesley Phillips Newton, To Command the Sky: The Battle for Air Superiority over Germany. 1942-1944 (Washington DC: Smithsonian Institution Press, 1991), 242.

[14] David R. Mets, Master of Airpower, General Carl A. Spaatz (Noavato, California: Presideo Press, 1988)

[15] Anneke-Jans Bogardus, "Prelude to Operation Overlord: The Air Campaign," Military Review, March 1994, 64.

Analyzing centers of gravity, theirs and ours, is done in Stage 4. JDACC uses Clausewitz's definition of center of gravity found in On War. ..."the hub of all power and movement, on which everything depends that is the point against which all our energies should be directed."[16] The JDACC course teaches that Stages 1, 2, and 3 must be complete before you embark on identification of COGs. You must know what the objectives are, what the strategy is, and have enough information about the theater of operations to derive the COGs. These COGs represent those things which we should ultimately direct our efforts towards. It is important to identify the COGs most important to the enemy. It is imperative that we don't assume the enemy thinks the same way we do. Key areas such as leadership, key production, infrastructure, population, and fielded military forces (Colonel John Warden's Five Strategic Rings) need to be examined to determine if COGs exist in each of these key areas. JDACC teaches that COGs exist at all three levels of war.

The intelligence preparation and guidance from General Eisenhower allowed the planners to determine the COGs to attack based upon General Eisenhower's objectives. Lieutenant General Frederick Morgan, Overlord's principle planner said, "The crux of the operation is likely to be our ability to drive off the German reserves (the German Operational COG) rather than the initial breaking of the coastal crust."[17]

The Allies did not directly attack the German leadership; however, they did devise an extensive deception plan to hide the landing site and freeze the German forces in place prior to the invasion. They delayed attacking the German command and control facilities on the coast until the invasion began.

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[16] US Air Force, Joint Doctrine Air Campaign Course (JDACC) Planning Guide (Air University, 1992), 19.
[17] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 23.

General Spaatz thought the COG for gaining air superiority was the existing *Luftwaffe* aircraft and pilots and the best way to attack them was to attack the German's oil production facilities. With air superiority the beaches could be traversed more easily and the invading forces (our COG) would be safe from German air attacks.

The planners thought the infrastructure COGs were the railroad marshaling yards, bridges, and airfields. The planners prioritized which rail centers, bridges, and airfields should be hit first. Planners felt the destruction of rail facilities and bridges would have the most immediate impact on the German's ability to move reserve forces forward to Normandy while destruction of the airfields within approximately 130 miles of the beaches would diminish the German's air efforts to counter the invasion forces (our COG).

Population considerations centered around not killing the French civilians, the very people the Allies were trying to liberate. As the planners looked for lucrative targets they were very concerned with Churchill's reactions to the Transportation Plan. Royal Air Force (RAF) Bomber Command estimated attacking France's rail yards could result in 80,000 to 100,000 casualties (pre-invasion bombing resulted in approximately 6,000 French casualties). Churchill remarked, " Considering they are all our friends, this might be held to be an act of very great severity, bringing much hatred on the Allied Air Forces." He didn't allow the RAF to implement the full plan until his concerns were diminished.[18] Once he was convinced the civilians were safe he gave his full backing to the operation; however, this did not occur until the second week of May. The Americans also thought the German oil targets made for

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[18] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 10.

good targets because they were in the open and removed from population centers. The British were not concerned with German civilian casualties.

Stage 5 ties it all together. The air plan describes the key elements of the application of aerospace power. It harmonizes the aerospace control, force application, and force enhancement roles. Levels of destruction desired are determined, targets are prioritized, level of effort determined, and phasing considerations are outlined.[19] The Allies followed this sequence almost "to a T."

General Eisenhower recognized the need for a single air commander (a JFACC) responsible for integrating the employment of all aerospace forces. Air Marshals Tedder, Harris, Leigh-Mallory, and General Spaatz, each had a different view of how to attack the Germans. This was compounded by very strong personality clashes among these leaders. General Eisenhower was so put out over the lack of a prior decision on how to proceed that he had already threatened to resign.[20] On March 25, 1944, General Eisenhower decided that the Transportation Plan should get priority but agreed that *Luftwaffe* targets and ball bearing factories were also important and would be attacked with the sorties remaining after the transportation targets were allocated sorties. General Eisenhower tasked his deputy, Air Marshal Tedder, to command and directed the effort between Spaatz, Harris, and Leigh-Mallory starting on April 14, 1944.[21]

The air battles of 1943 convinced the American commanders that air superiority was crucial to all tasks. Air superiority was required to ensure effective

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[19] US Air Force, Joint Doctrine Air Campaign Course (JDACC) Planning Guide (Air University, 1992), 22.
[20] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 9.
[21] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 9.

attacks on German industry and infrastructure. Air superiority was essential if the bombers were to contribute to preparation for the landing and the landing itself would be put in jeopardy if it couldn't be conducted without serious interference from the *Luftwaffe*. Eighth Air Force attacks on May 12 decisively proved the Germans would protect the oil facilities. ULTRA code breakers reported the Operations Staff in Berlin ordered the movement of antiaircraft guns from the Eastern Front and from aircraft manufacturing plants to protect synthetic oil. Albert Speer recalled in his memoirs that these attacks on oil meant the end of German armaments production, strangled Luftwaffe training programs, and drastically hindered its operations on every front. The air offensive resulted in the Luftwaffe losing 43% of its fighter aircraft and 20.1% of its pilots in April 1944 and 50.4% of its fighters and 25% of its pilots in May 1944. On the day of the invasion, the Luftwaffe flew only 70 fighter and 30 bomber sorties versus 8,722 by the Americans alone.[22]

General Eisenhower build upon existing air operations.[23] The Combined Operational Planning Committee (COPC), which was formed by General Arnold in June 1943 in anticipation of the Allied invasion, developed Operation ARGUMENT in November 1943. ARGUMENT was a plan to strike at the German aircraft industry. The ARGUMENT target list included facilities which made aircraft components and assembled aircraft.[24] Weather delayed ARGUMENT's first attacks until Feb. 20, 1944. During BIG WEEK (Feb. 20-25, 1944) B-17s and B-24s hammered German air industry targets while the fighter escorts changed the status of

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[22] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 11

[23] General Eisenhower is told by president Roosevelt that he would become the commander of the invasion on December 7, 1943.

[24] Walton S. Moody, "BIG WEEK Gaining Air Superiority over the Luftwaffe," Air Power History, Summer 1994, 17.

the German fighter pilot from the hunter to the hunted because the fighters were no longer tied to the bombers. This operation destroyed 70% of the aircraft buildings which delayed fighter production by two months. By the time production had recovered, Allied efforts on the German oil industry had taken their toll. Lack of fuel grounded hundreds of new aircraft and sharply reduced pilot training. Decreased training increased the training accident rate so that it rivaled combat losses. The Germans dispersed their aircraft manufacturing which increased their reliance on the transportation net and caused a loss of quality control in manufacturing. BIG WEEK demonstrated that the bomber-fighter team had found the way to attack key targets and wear down the defending fighters in the process.[25]

The air planners built on Operation FORTITUDE, the Allied deception plan to hold the German Fifteenth Army at Pas de Calais. Planners developed a "2-for-1" strategy in which two targets outside the invasion area would be struck for every one inside the invasion area to avoid disclosing the actual invasion location. During the first six days of June, 7,018 tons of the 14,230 tons of bombs expended were dropped on the Pas-de-Calais coastal defenses to keep the Germans convinced this area was the invasion site. The German's continued to believe a second landing might be staged at Pas de Calais for a month after the invasion.[26] The Allies used strategic attack missions into the heart of Germany to keep German fighters tied down hundreds of miles from the invasion beaches. The Allied air plan had a devastating impact on the Germans.

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[25] Richard G. Davis, "Pointblank vs Overlord Strategic Bombing and the Normandy Invasion," Air Power History, Summer 1994, 8.
[26] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 24.

Eighty one rail centers were targeted by the Transportation Plan. Fifty one of them were determined to be completely destroyed and required no further attacks. The Allies underestimated the system's capacity and subsequently followed up with attacks on moving trains (named Chattanooga-Choo-Choo) in late May. This sequel operation was so successful that the Germans were forced to suspend daylight rail service in France.

Overall the rail system's capacity was diminished by 60% on D-Day. Post war analysis attributed this to the loss of locomotives which could not be repaired due to the loss of maintenance facilities. The loss of switching and signal facilities at the rail centers resulted in bottlenecks of rail traffic.[27] These attacks accomplished the intended impact on the reserves.

Bombing of the lines of communication began 90 days prior to the invasion. Bombing of airfields 130 miles or less distant from the beachhead began approximately 24 days prior to the invasion while the bombing of the coastal defenses began immediately before the invasion. Planners had determined the bombing would not be effective unless accompanied by naval gunfire.

The Allies implemented air operations similar to Operation STRANGLE to attack the bridges over the Loire, Seine, Marne and Yonne Rivers. This plan consisted of bombing the bridges in three rings beginning farthest from the beaches and moving towards the beaches. These attacks began on May 24th. By D-Day all the bridges on the Sein River south of Paris were destroyed. The Allies were careful

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[27] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 27.

not to bomb north of Paris prior to the invasion to re-enforce the Allied deception plan of Pas de Calais.[28]

The air attacks adversely impacted the German's ability to move reserves forward. The 12th SS Panzer Division was located about 90 miles from Normandy and could have been brought forward except they required Hitler's approval and his staff was reluctant to wake him to ask for permission. Once Hitler was awake, he hesitated to approve the movement. The majority of the movement took place on June 7th when the Allies were able to make air attacks on the advancing forces. The 12th SS arrived weaker as a result. The Seventh Army was short of motor transport and was moved by rail. This trip should have taken a single day but required a week before the troops could be conduct combat operations. The German plans called for the re-enforcement of the Seventh Army with seventeen divisions by June 18th, they were only able to provide five. Rommel stated that the German reserves had "arrived far too late to smash the enemy landing by counterattacks. By the time they arrived the enemy had disembarked considerably stronger forces and himself gone over to the attack."

The five stage process works. I disagree with the Air Force's position that Stages 1 (intell prep), 2 (objective determination), and 3 (strategy) do not need to be done in any particular sequence. Stage 1 is a continuous process. Knowledge of the theater needs to be continually reassessed before and during the operation. Much of it may already be accomplished prior to the outbreak of hostilities because of the deliberate planning processes done by each of the CINC's staffs. Stage 2 needs to be done **first**. Planners must know the objectives prior to planning. Knowing what

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[28] Eduard Mark, "Air Power Against Rommel The Battle to Isolate German Reserve Forces," Air Power History, Summer 1994, 27.

the CINC's objectives are prior to planning ensures coordination, cooperation, and synchronization occurs between air, land, naval, space, and special operations forces. What it is we are doing needs to be clearly understood and needs to be the "touchstone" for the entire planning process. What the objectives are (implied or otherwise) should always be the planners first question.

I also disagree with the USAF's position that Stage 4, identification of centers of gravity, can't be accomplished until after Stages 1, 2, and 3 are accomplished. A by-product of Stage 1 should be the identification of potential centers of gravity both theirs and ours. Our knowledge of a potential adversaries equipment, doctrine, training, and capabilities should highlight those "characteristics, capabilities, or locations from which a military force derives its freedom of action, physical strength, or will to fight" (Joint Pub 1-02). We can identify these centers of gravity independent of the strategy or objectives. The attack priorities for which of the COGs will be attacked and how they will be attacked will flow from the CINC's objectives.

Conclusion

Overall, the JDACC five stage planning process provides a solid foundation for air asset Operational planning. Each of the stages must be accomplished to effectively employ airpower. There are not any gaps in the five stage framework. These stages are required regardless of technology, equipment, training, and are valid regardless of service doctrine. The JDACC planning guide is an excellent tool for Operational planning for both deliberate and crisis action planning. This process is consistent with the planning process outlined in Joint Pub 5-0, Doctrine for Planning for Joint Operations. Doing each stage properly will ensure the proper employment of air assets.

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Appendix 1

This appendixt contains the first 23 pages of the Joint Doctrine Air Campaign Course (JDACC) planning guide. These 23 pages constitute the five stage framework. It is provided to supply the reader with the actual material provided to the JDACC students. The remaining parts of the planning guide are not applicable to this paper.

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JDACC AIR CAMPAIGN PLANNING GUIDE

1. Review the available planning documents and guidance.
    a. Theater campaign plan
        (1) Annex A: Task Organization
        (2) Annex B: Intelligence
        (3) Annex C: Operations
        (4) Annex J: Command Relationships
    b. Intelligence Assessments
    c. Joint Strategic Capabilities Plan
    d. AFSC PUB 1: Joint Staff Officer's Guide 1991
    e. JCS Pub 34): Doctrine for Joint Operations, page 111-5 to III-11
        (1) Appendix C: Campaign Plan Format

2. The AIR **CAMPAIGN PLANNING** PROCESS has five stages. Each stage has a desired product. While presented in a sequential order, the stages are not required to be *COMPLETED* in order. Work on each stage can be going on simultaneously in parallel. However, at some point, the stages must be integrated and the products of each stage must be checked for their coherence with other products. Remember, if you are fighting with allies, and you most assuredly will be, you must take their thoughts, objectives, capabilities, etc. into account in every one of the five stages.

3. Organize to accomplish the remaining items in paragraphs 4 through 20 below. Depending on the effort required, an individual item may be accomplished by one person or by a committee. Individuals may complete multiple items and/or serve on multiple committees if necessary. Each committee should have a chairperson. Some items must be sequential but many can be accomplished simultaneously. Any lists provided as sub-items are not intended to be all inclusive. See Attachment 1 for additional considerations.

STAGE I: COMBAT ENVIRONMENT RESEARCH (SEE Attachment 2)

4. Gather information on the theater of war (combat environment).

a. Determine rules of engagement and political constraints. (Theater campaign plan) (overflight rights, staging bases, interests of countries which are not directly involved,...)

b. Geography. (Description of the key physical characteristics of the country being studied to include: location, size, regional significance, and topography.)

c. Weather

d. Culture

e. Religion.

f. Literature

g. Politics

(1) History

(2) Government

(3) Treaties

(4) Allies

(5) Present situation

(a) Leadership personality and training

(b) Political literature

h. Security arrangements: Treaties, etc.

i. Economy

(1) Economic System

(2) Monetary system - banking, etc.

(3) Government Economic Policy

(4) Trade agreements

(5) Exports

(6) Imports

(7) Assets in foreign countries

(8) Foreign investment in-country

(9) Geology

(10) Industry

(11) Agriculture

(12) Transportation

(a) Roads

(b) Railroads

(c) Ports

(d) Airfields

j. Geopolitical objectives: Regional balance of power

5. Determine capabilities and vulnerabilities of enemy forces to include potential al lies.

a. Doctrine

b. Past war experience

c. Intelligence gathering

d. Weapons of mass destruction

e. Major weapons systems - Numbers and characteristics

(1) Air defense network

(a)C3

(b) EW

(c) SAMS

(d) AAA

(2) Aircraft and sortie generation capability

f. Elite units

g. Personnel - Numbers and level of training

h. Military infrastructure

(1) Command and control facilities

(2) Bases

(3) Supply depots

(4) Major maintenance facilities

(5) Weapons manufacturing

(6) Aircraft shelters

(7) Etc.

i. Resupply and other support - POL, munitions, water, etc.

j. Reinforcement

k. Sanctuaries

6. Determine capabilities and vulnerabilities of friendly forces to include potential allies.

a. Doctrine

b. Past war experience

c. Intelligence gathering

d. Weapons of mass destruction

e. Major weapons systems - Numbers and characteristics

f. Elite units

g. Personnel - Numbers and level of training

h. Military infrastructure

(1)Command and control facilities

(2)Air defense network

(3)Bases

(4)Supply depots

(5)Major maintenance

(6)Facilities

(7)Weapons manufacturing

(8)In-theater beddown constraints

(9)Etc.

i. Strategic mobility - Include analysis of requirements for enroute staging bases.

j. Resupply and other support - POL, weapons, etc.

k. Reinforcement

l. Sanctuaries

7. Gather information on the Five Strategic Rings for enemy and self. Parts of some items may have been covered in paragraphs 4,5, and 6 above.

a. Leadership (see 4g)

(1) Ruling individual or ruling committee/body. (Names, positions, influence)

(2) Political party

(3) Security. Control mechanism (Identity and analyze organizations responsible for maintaining the leadership control of military and general population.)

(4) C3

(5) Other

b. Key production (see paragraph 4i above)

(1) Manufacturing/industry

(2) Agriculture

(3) Petroleum (Determine the primary source of petroleum, oil, and lubricants (POL), whether domestically produced or imported, and extent of stockpiles. Assess the demand, both civil and military. Examine potential vulnerabilities of the production/distribution system.)

(4) Strategic Materials (Search the available data to determine if there is a single commodity, or small group, of such vital importance that destruction of reserves would constitute a decisive factor in the collapse of XXXX's national structure.)

(5) Military Production (Determine the source of military equipment, whether imported or indigenously produced. Analyze the potential vulnerability to determine whether or not any of it's elements should be identified for attack.)

c. Infrastructure (see 4i)

(1) Transportation

(a) Railroads (Assess the relative importance of railways in comparison to other modes of transportation. Include number of potential choke points, availability of rolling stock, and reconstitution potential at a minimum.)

(b) Roads (Assess the relative importance of the road system compared to other modes of transportation. Should include an analysis of ability to utilize excess capability during emergencies and reconstitution potential.)

(c) Shipping (Assess the relative importance of merchant marine shipping, both international and internal, in comparison to other modes of transportation. Include size of the merchant marine, availability of port facilities, and reconstitution potential at a minimum.)

(d) Civil Aviation (Assess the relative importance of air transportation for essential services in comparison to other modes of transportation. Numbers and capabilities of civil aviation assets available, major domestic and international airports, and reconstitution potential at a minimum.)

(e) Pipelines

(2) Power production (Determine the extent of dependency on electrical power in industry. Examine the power network for dispersal/concentration of generating capacity, interconnecting stations, and possible chock points.)

(3) Water processing and distribution

(4) Food storage-and distribution

(5) Fuel storage and distribution

d. Population - demographics (see 4d, 4e)

(1) Shelter (Examine the vulnerability of the populace to deprivation of shelter through attacks on housing structures. Seasonal weather conditions will be a factor.)

(2) Health

(3) Social structure

(4) Food (Examine the degree of self-sufficiency in foodstuffs of country XXXXX. Address the vulnerability of the food supply and distribution system; such as food imports, urban area food stocks and distribution system, and dietary requirements.)

(5) Public Utilities (Assess the vulnerability of the populace to disruption of public utilities.)

(a) Local transportation: (Analyze the prevalence of varying modes of local transportation and it's potential vulnerability, for example, use of mass transit in urban areas.)

(b) Telephone and electricity: (Assess the effect of attacks on the telecommunications and domestic power distribution systems.)

(c) Water supply/sanitation: (Assess the effect of attacks on the water supply and sanitation systems.)

(6) Mass media

(7) Monetary system - banks, etc.

(8) Significant ethnic and socioeconomic breakdown

e. Military forces (see paragraphs or 6 above). Should include individual as well as common capabilities of the army, air force, navy, and marines.

(1) Organization

(2) Importance of each service to national strategy

(3) Military leadership

(4) Military C3

(5) Weapons of mass destruction

(6) Long range weapons

(7) Other major weapons systems

(8) Bases

(9) Equipment

(10) Personnel

(11) Reserves

(12) POL

(13) Maintenance

(14) Munitions

(15) Water

(16) Summarize strengths and weaknesses.

8. Determine enemy objectives and strategy.

STAGE II: OBJECTIVE DETERMINATION (SEE ATTACHMENT 3)

9. Obtain the NCA objectives from the CINC. Should be clear, concise, and as simple as possible. (Theater campaign plan)

a. Determine theater objectives. (Theater campaign plan)

b. Determine air objectives.

STAGE III: STRATEGY DETERMINATION (SEE Attachment 4)

10. Determine the theater strategy. (Theater campaign plan)

11. Develop the air strategy.

STAGE IV: CENTERS OF GRAVITY SELECTION/IDENTIFICATION (SEE Attachment 5)

12. Determine **enemy** centers of gravity within the Five Strategic Rings.

13. Determine friendly centers of gravity within the Five Strategic Rings.

14. Apply friendly capabilities to defend friendly COGs and attack enemy COGs. This involves an analysis of:

a. Enemy capability to attack which will yield air defense requirements.

b. Sorties required to achieve the desired level of destruction on critical targets within the required time frame.

c. Force structure limits on apportionment.

STAGE V: AIR CAMPAIGN PLAN (SEE Attachment 6)

15. In orchestrating aerospace roles and missions, the first air objective is aerospace control (AFM 1-1, page 10-13)

a. Is it a problem in this situation?
b. What level of effort is required to gain/maintain a favorable aerospace situation, aerospace superiority, and/or aerospace supremacy? Quantifiable?

16. Develop a decision tree for targeting with priorities as in 16a and 16b below. Apportionment depends not only on requirements but also on force capabilities as determined by force structure. The results of this step should be: target sets, critical targets within sets (priorities), and phasing based on a specified level of effort with a specified force structure (includes types and numbers of aircraft).

a. Aerospace control

(1) Suppression of enemy air defenses

(2) Offensive air-to-air capability

(3) Offensive air-to-gnd capability

(4) Defensive air-to-air capability

b. Force application

(1) Strategic attack

(2) Interdiction

(3) Close air support

17. Timing. How long will it take to obtain a favorable aerospace situation? Don't forget to consider the ground situation and air synchronization with the ground bat-tie.

18. Close coordination is required with the army, navy, marines, and allies during the entire campaign planning process.

19. Conclusions (Prioritize those centers of gravity you have identified within each general area.)

TABLE OF RELATIVE VALUES

OBJECTIVE	DEGREE OF EFFECT ON NATION	IMMEDIACY OF EFFECT	# OF TARGETS	VULNERABILITY
FIELDED MILITARY FORCES				
POPULATION				
INFRASTRUCTURE				
KEY PRODUCTION				
LEADERSHIP				

20. Recommendations. (Recommend prioritized target sets within each general area based on your analysis. Also list any areas recommended for consideration for which you lacked sufficient data.)

GET ORGANIZED

1. Joint Force Air Component Commander (JFACC): The JFACC has the responsibility of unifying joint and allied air operations for the Joint Force Commander (JFC). The JFACC's authority extends over forces assigned to him by the JFC. The Air Campaign Plan, a subset of the Theater Campaign Plan, is the vehicle the JFACC uses to document his plan for unifying joint/combined aerospace operations. Because the Air Campaign Plan encompasses operations of aerospace weapons systems of other commands, sister services, and allies, the team assigned the task of developing the plan must include representation from all those providing resources to the plan.

   a. Supporting commands: SOF, SPACE, SAC (ACC), and MAC (AMC)

   b. Sister services: USA, USN, and USMC

   c. Allies (May be limited initially by classification)

2. Team leadership: Depends on the desired outcome.

   a. If a completed, executable plan is required then the team leader must be a senior decision maker who will make the hard decisions as they need to be made during the planning process.

   b. If the plan is designed to present options to be selected at a later date then the team leader need only be a senior staff officer who can manage the planning effort.

3. Ad hoc versus standing committee: Members may not all be available at the tasked headquarters. Due to the size and composition of the team and the unique nature of each plan, it may not be possible to establish a set structure or specific, by name team members. With the shrinking size of AF headquarters, peacetime staffs may not have all the disciplines and expertise needed to develop an Air Campaign Plan.

4. Team composition. List of subject matter/functional experts and sources.

   a. DO or XP? Probably a moot point. Each function has its strengths as plan OPR. XP personnel have experience in the process of managing multi-discipline plan development and are in a great position to integrate the Air Campaign Plan into the deliberate and crisis planning process. DO personnel are current and skilled in the application of aerospace power and are in a great position to integrate the Air Campaign Plan into the Air Tasking Order process.

   b. Team composition should be tailored for plan development. The

following list of potential team members is not all inclusive nor is it mandatory that all be included. Team members may be able to cover more than one function as normally not all functions are required simultaneously.

Weapons system technical experts, 3 series regs

Doctrine/strategy experts, 2 series regs

Plans experts, JCS documents Political-military affairs specialists

Intelligence country analyst

Deception plans

Logistics/munitions experts

Theater weather specialist

Modeling/operations research

Public Affairs

Judge Advocate General

Administrative support

Previously mentioned liaison officers from supporting commands, sister services and allied forces.

c. This team composition is designed for planning prior to execution/hostilities. Team composition to monitor and execute the plan would probably change.

d. During planning, subdivide the team into working groups responsible for different stages and parts of developing the campaign.

e. As soon as objectives or missions are identified, a working group can be formed to focus on that area.

Example: Air superiority is always a known requirement and planning can start as soon as potential enemies can be identified. Using Air Estimate of the Situation format, planning can begin on Defensive Counter Air and Offensive Counter Air soon after the team is established.

Example: - If the CINC has provided the land scheme of maneuver in his theater campaign plan, you may be able to begin Interdiction and Close Air Support planning.

5. Work will expand to fill available time. Set a schedule and stick to it. You will never have perfect information and you will always have conflicting information. You must build a plan based on-your professional analysis and gut feel on what is correct. If you don't know and can't find out, make an assumption (document it as an assumption) or use a notional number. Refinement will come later.

STAGE 1, COMBAT ENVIRONMENT RESEARCH

The product of combat environment research is primarily the intelligence preparation of the theater. This stage is mainly supported by the IN function with XP and I-G assistance. Most effort in this stage is focused on gaining information about friendly and enemy capabilities and the environment in which the war will take place. The goal of this stage is to gain an understanding of the theater, the enemy and friendly forces. Intel inputs can begin from results of national assessments and end with use of the CINC's Estimate of the Situation.

1. IN has tremendous amounts of information which can be identified in the "Register of Intelligence Publications" (S).

2. The XP contribution is in the form of friendly information. Available forces, command relations (US and allied), Rules of Engagement, applicable treaties and agreements, base-use rights, overflight rights are examples of information that the XP political-military affairs and forces specialists can provide. Force lists should be available in the JSCP, Crisis Action messages, the AF War and Mobilization Plan and/or the Theater Campaign Plan. At this point in planning, remember that while you are working at the requirements level, forces must be within existing or projected capabilities. Under the regional planning concept, all forces may be available. If you don't like the JCS apportionment, ask for what you need. Treaties and agreements should be on file, individual country rights can be identified through the Embassy chain. (Be sure you have release to go to Air Attaches before going off on your own. The Sec State side of the house may not be read in on the plan yet!)

3. The Logistics contribution is what is in place in theater and what can be sustained due to existing ports, depots, prepo, WRM etc.

4. Using Col Warden's book, The Air Campaign, pp 20-21, as a reference, determine which of the five air superiority cases you plan must deal with. There may be more than one. This will give you a better perspective on potential air operations for defense and offense and be of assistance when developing the aerospace control phase of the air campaign plan.

5. What now remains is to collect, distill, and disseminate as much information about the theater, allies and the enemy as time and resources will allow. From Sun Tzu, Know your enemy AND know yourself. Ideology is an integral part of the decision making process. Your cannot mirror image the enemy strategy, doctrine, and thinking upon our image. We must be aware of the biases and premises that underlie both our decision making and analysis and that of the enemy. Common sense and rationality are not the same in different cultures.

Examples of needed information:

History-Vietnam

Geography-Iran

Weather-Monsoon in SEA

Culture

Religion

Political Systems - Dictator, King, Junta, Demo

Economy

Geopolitical objectives - Regional balance of power Potential strategies

Leadership personality and training Literature - Mein Kampf Forces - Enemy Orders of

Battle Past war experience, doctrine, strategies

War history - Rommel Papers, Futrell's USAF In Korea, Seven Pillars of Wisdom.
Level of the conflict. We must determine the Seriousness of the conflict from both the US, Allied, and enemy position. A war that is limited in our eyes, in that US national existence is not threatened, may be a total war to the enemy (asymmetrical political objectives). It may also be total for an ally but not for the US. This has been a long standing question of our NATO partners. If it is total war, there are no constraints or rules. If we lose we cease to exist so what more can we lose? If we win, who will judge us-there is no penalty if you win.

STAGE II, OBJECTIVE DETERMINATION

The product is a clearly defined objective that can be met through the use of aerospace power.

1. The source of higher level objectives is usually the XP functional area. Example sources are the Joint Strategic Capabilities Plan, a JCS Crisis Action Warning Order, and the CINC's Theater Campaign Plan.

2. The air objectives must be derived from higher level objectives. The air objectives should logically flow from theater objectives to national objectives. If you cannot tie an air objective to either theater or national objectives, reject it as a waste of resources unless you think you have an objective that has been overlooked. In that case, work up channel to gain more guidance. The politicians and statesmen who sanction the resort to war must have the foresight to prescribe the dimensions of the peace after the war is successfully concluded. If they have not, we have the responsibility to go back and seek that vision so we can properly apply aerospace power to achieve that peace. What is "WIN the war"? Clausewitz warns us not to take the first step in war without considering the last. What does the world look like after the war is over? What constitutes success?

3. Remember that just defeating the enemy forces is not the sole object of war.
Also from Clausewitz, War is an act of force to compel our enemy to do our will. Physical force is the means of war: to impose our will on the enemy is the object. The destruction of military forces of the enemy is not and never has been the sole objective of war; it has been merely a means to an end, - merely the removal of an obstacle (part of the means to resist) which lies in the path of overcoming the will to resist. Are there any historic examples of war where after winning, the victor just packed up and went home? Great war, see you next time. No? In every case, the loser had to submit to something he would not peacefully do. Occupation, unconditional surrender, giving up a leader, returning to preconflict boundaries, suffering destruction of military might and inspections of military related industries are but a few examples.

4. Air forces, to contribute the maximum in war, must fight two battles. First they must fight the classic force on force battle that the army and navy understand so well. Once some level of air superiority is obtained, then the air forces can turn to war winning offensive operations: attacks against targets on the ground. Remember that aerospace power can impact all three levels of war and can perform independent, parallel, and supporting operations in sequence or simultaneously. Air objectives at the strategic and operational level need to be spelled out. Air objectives of independent and parallel operations need to be

spelled out. Supporting operations objectives are identified by those we support. In the air campaign plan, the derivation of objectives should be made obvious by listing those objectives at each level: National-Theater-Air. (If there is more than one objective prioritize. Pair-wise comparison.)

STAGE III, STRATEGY IDENTIFICATION

The product of this stage is a clearly defined Air strategy statement. As a very simple working definition of strategy at the theater level, let us say strategy is the ways and means of employing Military force to accomplish theater objectives. Air strategy is the methodology, the how, the JFACC plans to use aerospace power to achieve his air objectives. The air campaign plan is how he communicates, promulgates, articulates this strategy. Strategy at this level uses terms like invade, forward defense, isolate and destroy, surround, envelope, blockade, In a major war, a campaign plan may be only one of a number of campaigns needed to support a strategy to accomplish national objectives.

1. Source of answers again is usually the XP) functional area.

2. National grand strategy and operational strategy must be sought out and documented as the foundation of the air strategy. Again documents are our prime source of strategy statements. The National Security Strategy of the United States, the National Military Strategy Document, and the Joint Strategic Capabilities Plan are all sources of strategy statements and concepts. The theater and/or operational strategy should be available from the theater CINC or designated operational level commander. With luck, the operational strategy can be found in the Theater Campaign Plan.

3. What we are seeking from this review of national and theater strategy is whether there is an independent, parallel and/or supporting air strategy. Does the CINC en-vision use of airpower to attack strategic targets? Does his strategy include or permit sequential air operations or will air superiority and force application missions all occur simultaneously? Again the feed back loop may be needed. If as airmen, you can offer the CINC another way of accomplishing strategic and/or theater objectives then build your case and present it. Without the vision of airmen at the heart of the campaign planning process, air forces at the theater level will be forever relegated to gaining air superiority and providing close air support when there may be a better way to accomplish the objective.

STAGE IV, CENTER(S) OF GRAVITY SELECTION/ IDENTIFICATION

The products of this stage are the enemy centers of gravity (COGs) to attack and friendly (including allies) COGs to defend. This stage lends itself to the problem solving/case method model and requires that your intuitive thinkers go to work. The problem, of course, being the identification of those centers of gravity which will, if successfully attacked, satisfy theater objectives, strategic and/or operational. It is also at this point that the three previous stages must be complete. You must know what the objectives are, what the strategy is, and have enough information to derive COGS. The greatest barrier to selection of the correct COG lies in failure to think of it. The broader and deeper your understanding of the theater of war and the enemy, the greater the likelihood that you will be able to think of the correct COG.

1. IN, DO, and LG are key players during this stage with major contributions coming from intelligence targeteers for enemy COGs and logistics for friendly COGs. Also, try and determine what the enemy is defending as it may be a COG. Remember he may have gone through the same process of determining his vulnerabilities, and will try and defend what he perceives as his Centers of Gravity.

2. What is a Center of Gravity? Enter Clausewitz and his book, On War, to the rescue again. The center of gravity - the hub of all power and movement, on which everything depends that is the point against which all our energies should be directed. Can there be more than one? Yes. And they can be attacked both directly and/or indirectly. Politics, loss rates, Law of War etc. may prevent direct attack and thus force indirect attack. Centers of gravity occur a all three level of war and if successfully attacked, will achieve the objectives at those levels. (At the tactical level may be referred to as key node.)

Examples: That ball bearing factory, that synthetic oil production system, the Egyptian Air Force, the Republican Guards, the Japanese sea and land transportation system, the will of the leader of Japan, the will of the American people. Can anybody think of any more?

3. The potential centers of gravity were categorized by Col Warden into the Five Strategic Rings, known locally as the five rings of death. You could probably make four categories or six. The point is, for analysis purposes, to place all possible target sets in a country into categories. JDACC use a format tool called "Country X as a Subject of Air Attack" to aid in this analysis. The five categories are:
Fielded Military Forces, Population, Infrastructure, Key Production, and Leadership.

4. There is a physical relationship to these categories and they are depicted in this form and order on purpose. Before one can attack the inner rings, one must go through the fielded forces. An Army must defeat the opponent before other COGs can be attacked or before it can impose its will on the leadership or population of a country. An airman can attack any or all of these categories simultaneously or in sequence without ever fighting ground forces and after gaining only limited air superiority. Aerospace power is unique in this aspect. The United States possesses an advantage over 95% of the world in this respect. As an airman don't be afraid to use it. To quote H G Wells, "In the air, all directions lead everywhere." At the center is leadership which controls all outer rings. Leadership needs some examination because of its potential impact on war. An elected leader is different from a King who is different from a Dictator who is different from a Junta. The loss of Roosevelt had no impact compared to the death of Hitler. The most fanatical of our WW II enemies laid down their arms when their Emperor admitted defeat. If you chose to attack the leadership or the will of the leadership, look very closely at the political foundation to determine the best approach.

5. If direct attack of the COG which most likely meet the objective is not possible, then indirect attack may be appropriate. "Death by 10,000 cuts". Direct attack is defined as physically attacking a COG and engaging it in decisive combat. Indirect attack is defined as causing the downfall of the COG by attacking its supporting elements until the COG collapses of its own weight or is completely ineffective. The tangential approach is characterized by attacking targets that force a new COG vulnerability. Forcing reliance on a single LOC or source of supply and then after reliance is at its maximum, destroying the new COG. Attacking the population impacts all other rings. Source of manpower for forces, industry and infrastructure. Source of political and moral support for leadership. Attacking infrastructure impacts population, forces, industry by reducing mobility or electrical power. Attacking communications may cut off leadership from support and forces.

6. Using information gained in Stage I, brainstorm possible target sets within each ring category.

7. List the criteria with which you will measure the advantages and disadvantages of each target set.

Examples: Will destruction of this target satisfy an objective? Can this target be struck by air? Can we afford to attack this target, what is the risk? What will be the impact on US public opinion? World opinion? Principles of War. Tenets of air-power. Can we attack this set with minimal collateral damage?

8. Using decision matrix analysis, select the best centers of gravity to attack. Simultaneous with Center of Gravity selection, you must identify the Battle Damage Assessment criteria/ Measure of Merit/ Essential Element of Information that you want Intel to find so you can determine if your attack is successful in achieving the desired objective.

9. When attacking COGs, attack them as a target system. Air is unique in that it can focus on a COG from raw materials all the way through to enemy combat forces. If POL is the COG, attack it from where it comes out of the ground until it goes into the tank and also force the tank to consume what POL makes it by forcing the tank to move or die. For economy of force, there may be a key element in the COG target set which should be taken out first but, consistent with forces available, additional targets within that set should be struck to stress the whole system, to reduce the impact of an error in your analysis in determining the critical target of the system, and to reduce reconstitution potential. Don't plan on the margin. Hedge your bet by at-tacking as much of the system as you can afford else the fog and friction of war will get you.

10. With the enemy's hat on , do the same process for friendly forces and allied countries. This will tell you what to defend. If it is not a center of gravity, don't waste resources defending it. An analysis of enemy capability will tell you what he can attack and how much defense is necessary. If the enemy cannot attack it, don't waste resources defending it. Principle of the offensive. Defending will only keep you from losing. Offense is needed to win.

STAGE V, THE AIR CAMPAIGN PLAN

The product of this stage is an air campaign plan. Plan content and format will be addressed. During this stage of the process some basic planning philosophies should be applied. Don't plan for best case. Plan for worst case if you can afford the assets. If you cannot, then plan for the most probable case. Don't plan on the margin. The enemy will be a moving target and the fog of war will quickly overwhelm you if you don't have any reserves or options. The bigger the margin, the more fog of war you can stand and the longer you can maintain your plan before you are forced to change it. How much of my strategic attack or preparation of the battlefield assets must I give up when I find out the Scuds are a bigger/tougher problem than I thought?

1. The air campaign plan describes key elements of the application of aerospace power. This guide provides specific questions and sources of answers needed to fill in the plan format. Much of the plan format information has already been identified or created by completion of the previous stages.

2. It harmonizes the aerospace control, force application, and force enhancement roles and integrates the efforts of other services and components that use the air in achieving their objectives or need to conduct combat operations on the surface beyond the Fire Support Coordination Line.

3. It identifies targets, level of destruction desired and is as detailed as time and intelligence will allow.

4. It prioritizes targets-what order to strike and provide guidance on how long to strike to achieve results desired. Is this target important enough to delay attacking another target or a phase until the desired result is achieved or do you move on when the level of effort allocated has been expended no matter what the result?

5. It indicates level of effort to be used on targets if attacks are simultaneous or multiple force application/air superiority missions are going on simultaneously.

6. It indicates the phasing of aerospace control and force application missions in relation to the CINCs theater campaign plan phasing and in relation to each other. Phases are identified by accomplishment of major goals or objectives or where major shifts in apportionment take place. From Counter Air to Strategic Attack to Close Air Support. Sequential is preferable to simultaneous. Lets do another Iraq vice NATO Central Region.

7. The first phase will normally be the aerospace control/counter air mission. If the enemy represents any threat, we must have a self defense capability as soon as we enter the theater of war. From that we move to the need, yes or no, for a strategic air defense system and

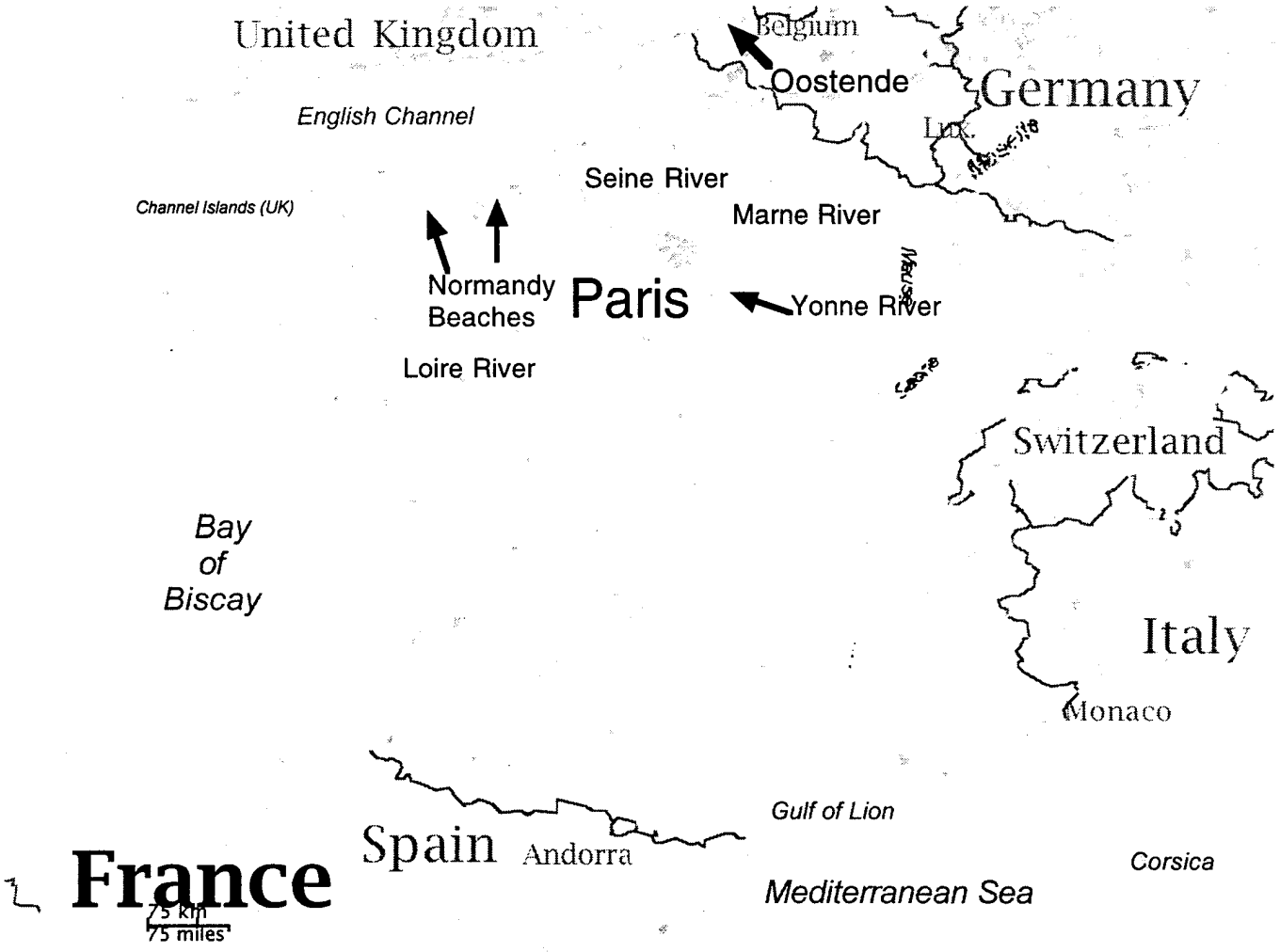
from there to offensive counter air and suppression of enemy air defenses. The result of this analysis will produce numbers and types of aircraft/sorties required to gain and maintain some defined level of theater aerospace control The remaining aircraft/ sorties can then be used for force application missions. The next main question is will there be a strategic attack and how will it be phased. If conditions permit or require a strategic attack phase and other parallel or supporting missions are not required then remaining aircraft/sorties can be devoted to the strategic attack phase until its objectives have been met. Competing demands from other force application missions, Interdiction and Close Air Support will have to be resolved by evaluating their contribution to over all JFC objectives versus Strategic Attack contribution. Interdiction and Close Air Support missions are driven by surface force operations. As surface operations near, Interdiction may be useful in preparing and shaping the battlefield or it may be used deep in enemy territory to achieve force on force related effects at the strategic or operational level Priority and level of effort should support Interdiction first and Close Air Support second. Mission orders and target sets provided by the Joint Targeting Board will assist in developing the Interdiction phase of the air campaign. The level of effort and phasing of supporting operations will be driven by those supported. If amphibious operations are planned, sorties should be made available for Marine Close Air Support use if requested. When the level of effort is determined, it must be redefined into types and numbers of aircraft.

8. Indicates what forces will be required for missions and targets, by service, by aircraft, by ally etc. This is where an understanding of sister service and allied airpower doctrine and capabilities is critical. As you determine level of effort for each aerospace control and force application mission, you need to turn that level of effort into aircraft Model Design Series and numbers desired. These number and the employment concepts will drive the MDS and number of force enhancement mission aircraft. Once the total force posture is known LG and XP must apply do a reality check on force availability, deployment timing, beddown availability and sustainment requirements.

9. General Curtis LeMay when asked for the secret to his success in WW II replied, "I was the only SOB who knew what was going on. I knew because I learned how to use the field or operations order in the Air Corps Tactical School and I used it religiously."

10. Guess what the Campaign plan/Air Campaign format looks like? The same format as the Theater Campaign Plan but with the AIR SPIN. When you reach unified operations, you are taking about aerospace roles and missions. The JDACC air campaign plan format is included in the next section.

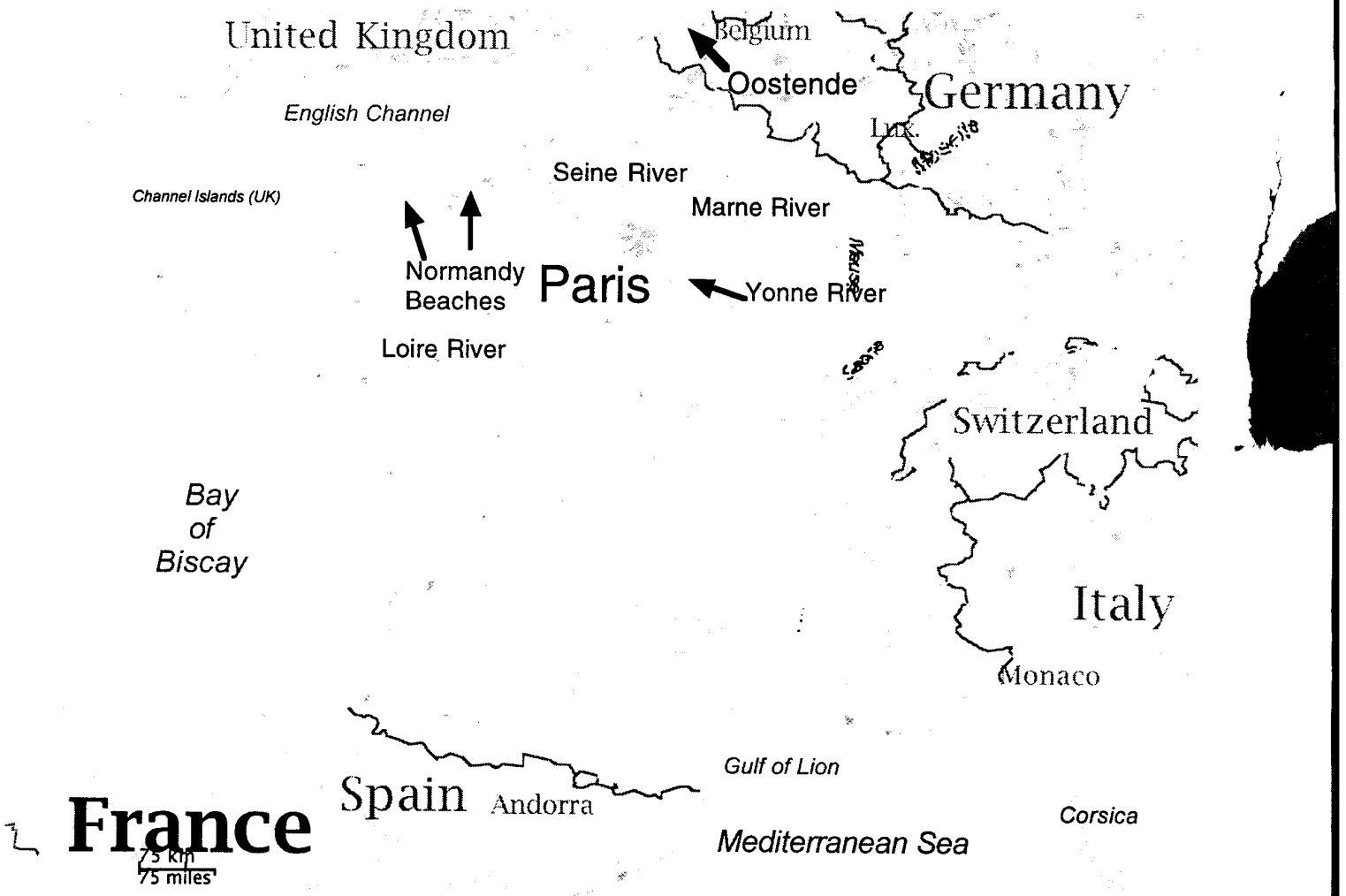
Attachment 2



Bridges targeted by the air planners to disrupt the flow of German reserve forces were on the Loire, Seine, Marne, and Yonne Rivers.

Radar, coastal gun sites, and command and control sites between Channel Islands and Oostende, Belgium needed to be attacked by both naval gunfire and air attacks on D-Day because the invasion force was vulnerable to attack from the sites.

Appendix 2



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