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The battle of Al Khafji has been described as the defining moment of Desert Storm. It may also be a defining moment for contemporary airpower doctrine. No other single battle in Desert Storm has more significance for the future of deep attack and operational airpower. The battle exploited precision attack and advanced surveillance systems in halting a major Iraqi offensive. Air forces, supported by ground forces, were able to compel the enemy to avoid large-scale movements and, in many cases, abandon their weapons completely. The Iraqi army?s fear of destruction caused widespread paralysis. The effects of airpower allowed the coalition to reoccupy Kuwait at extraordinarily low cost in terms of casualties. This study is about Khafji?s implications for force structure, and theater interdiction on the modern battlefield. This study looks at those implications by detailing the course of events during the battle, analyzing the battle and the implications of this analysis for force structure and theater interdiction and operational airpower doctrine.

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# THE BATTLE OF KHAFJI:

# IMPLICATIONS FOR AIRPOWER

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## Disclaimer

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

## *About The Author*

Major Jeffrey B. Rochelle received his commission and BS in aeronautical engineering from the United States Air Force Academy in 1982. A graduate of Euro-Nato Joint Jet Pilot Training, Major Rochelle has accumulated over 2600 hours in the F-16 while being stationed at Torrejon AB, Spain, Moody AFB, Georgia and Nellis AFB, Nevada. He is a graduate of the Fighter Weapons School and served as Demonstration pilot and Operations officer for the USAF "Thunderbirds" squadron. Major Rochelle is currently flying F-16s with the 20th Fighter Wing at Shaw AFB, South Carolina. He is married to the former Karen Lee Hartzfeld of London England. They have three children, Nicholas, Kristen and Cameron.

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Most importantly, I want to express my sincerest appreciation to my wife, Karen, children, Nicholas, Kristen and Cameron for their love, patience and understanding when it seemed this paper would never be finished. I could not have done it without your steadfast support.

## *Abstract*

The battle of Al Khafji has been described as the defining moment of Desert Storm. It may also be a defining moment for contemporary airpower doctrine. No other single battle in Desert Storm has more significance for the future of deep attack and operational airpower. The battle exploited precision attack and advanced surveillance systems in halting a major Iraqi offensive. Air forces, supported by ground forces, were able to compel the enemy to avoid large-scale movements and, in many cases, abandon their weapons completely. The Iraqi army's fear of destruction caused widespread paralysis. The effects of airpower allowed the coalition to reoccupy Kuwait at extraordinarily low cost in terms of casualties. This study is about Khafji's implications for force structure, and theater interdiction on the modern battlefield. This study looks at those implications by detailing the course of events during the battle, analyzing the battle and the implications of this analysis for force structure and theater interdiction and operational airpower doctrine.

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# Chapter 1

# Introduction

> *By every measure, our campaign plan is very much on schedule. Now, there's no way that I'm suggesting that the Iraqi Army is close to capitulation and going to give up. I think their actions last night have proven that to all of us.*
>
> General H. Norman Schwarzkopf
> Jan 30 CBS

Al Khafji, a Persian Gulf port city on the border between southern Kuwait and Saudi Arabia, gave its name to what may have been the defining engagement of Desert Storm. The battle of Al Khafji was actually a series of 4 Iraqi armored thrusts into Saudi Arabia beginning on January 29, 1991 when elements of the Iraqi 5th Mechanized Division supported by the 1st Mechanized and 3rd Armored division attacked with three brigade– to battalion-size units.[1] (See Figure 1)

Although one brigade was able to temporarily seize and hold Al Khafji, in truth the Iraqi force was defeated early in the operation, primarily by air strikes, both physically and morally.[2] It was in the face of this harsh reality that Major General Salah Abud Mahmoud, the respected commander of the Iraqi III Corps and the man hand-picked by Saddam Hussein to direct the Khafji offensive, requested permission to terminate the operation. Denied permission by higher headquarters to withdraw on the grounds that he

was fighting the "Mother of All Battles," Mahmoud angrily replied to Baghdad that "The mother is killing her children."[3]

The battle of Al Khafji may have been the defining engagement of Desert Storm.[4] It may also be a defining engagement for contemporary airpower doctrine. There are many tentative conclusions for airmen to draw from the actions of January 29 - February 3 1991. This paper examines those actions their implications, and their significance for operational airpower and Joint doctrine.

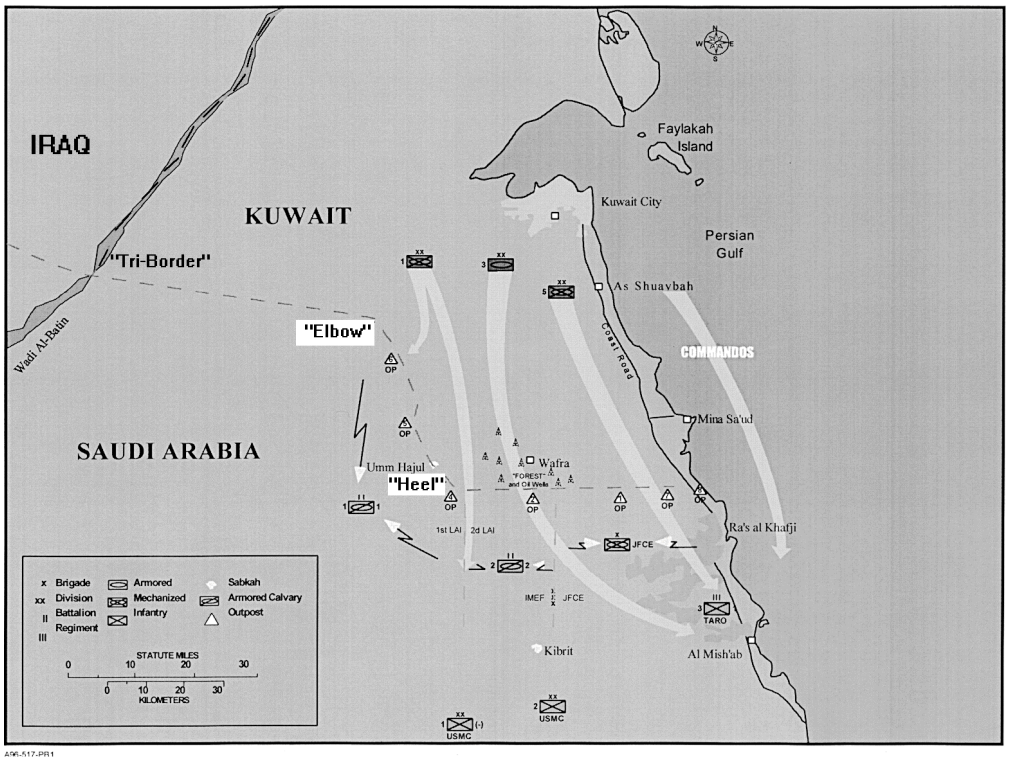


**Figure 1. Iraqi Advance and Attack on Khafji, January 29 1991**

*Source*: Northrup Grumman Corp.

The Battle of Al Khafji is important for airmen because it provides a rare recent example of strong contemporary airpower applied against an advancing enemy ground force and as such, may have important implications for operational airpower. This is

especially relevant as the Air Force is currently experiencing an upheaval in the realm of operational airpower doctrine. The Chief of Staff of the United States Air Force recently organized efforts to codify Air Force operational doctrine in the same manner and style used by the Army in its FM 100-5.[5] The Battle of Khafji is another important data point in the collective airpower experience. Lessons from Khafji should should significantly improve the ability of airpower to defeat enemy armies.

## Overview

This study addresses the question, "What are the implications of Khafji for operational airpower and Joint doctrine? Chapter 2 will look at Khafji in detail to ascertain the course of events, and synthesize the various interpretations about what happened. Chapter 3 will study the Battle of Khafji to reach conclusions and discern areas of analysis . Chapter 4 details the implications of the analysis for operational airpower and joint doctrine particularly as they pertain to interdiction and the battle management of the interdiction effort. Chapter 5 offers the summary and recommendations for operational airpower doctrine.

## Assumptions and Limitations

Research for this study was limited to the data currently available from unclassified sources. This limits the extent to which detailed support can be given to some of the arguments put forth here. However, unclassified evidence from classified sources will be used when possible and relevant. The battle of Khafji occurred six years ago and, surprisingly, we still lack detailed analysis of exactly what happened. Also, the Iraqis have not been forthcoming with details of their strategy and planning efforts. Moreover,

there has been no attempt to declassify and translate the many documents captured from Iraqi units in the Kuwaiti Theater of Operations. Industry under government contract, however, is attempting to extract enemy and friendly ground and air movement information from surveillance system data.[6] This endeavor is a tedious and lengthy process. In the meantime this study and others rely on the best available interpretation of the written documentation by those who were directly involved with the battle of Khafji.

This study makes the assumption that the available unclassified data from primary and secondary sources is adequate to synthesize basic conclusions regarding the impact of airpower in this battle. This study also assumes the relatively short duration of the battle was not indicative of the potential magnitude of the Iraqi operations. Certain conclusions as to Iraqi intentions must be inferred from the available data since there is no way of knowing precisely what the Iraqi strategy actually was. This available data suggests that the duration of the battle of Khafji was an indicator of airpower effectiveness.

# Chapter 3

# The Battle of Khafji

> *If he's going to threaten me, try to frighten, to scare me, that there will be a massive destruction to Iraq, he should also take into consideration that it would be a massive destruction to the American lives, as well. It will be a killing on both sides, not on one side. And we made it clear from the very beginning that it's not going to be a Panama or Grenada or Rambo-like movie. This is going to be a bloody, long , terrible war.*
>
> —Iraqi Foreign Minister Tariq Aziz
> CBS, 7 January 1991

## The Storm Before, The Battle: January 16 through January 29 1991

Desert Storm was originally planned to have four distinct phases. Phase I included attacks on strategic command and control (C2) nodes within Iraq and northern Kuwait. Phase II would suppress the Iraqi integrated air defense system (IADS). Phase III called for the preparation of the battlefield in anticipation of the ground war. Phase IV was the "ground war" or exploitation phase.[7] The overwhelming success of the first air strikes encouraged commanders to accelerate the phasing. By the second week of the war, the first three phases were being conducted simultaneously[8] and air strikes attrited Iraqi forces, disrupted logistical support and eliminated what was left of Saddam's command and control apparatus.[9]

The preponderance of all Coalition air assets attacked targets in Iraq or Northern Kuwait.[10] Attacks in Northern Kuwait followed General Norman Schwarzkopf's priority on destroying the Iraqi Republican Guard. During Phase III, however, Marine Corps planners had expected the air tasking order (ATO) to target Marine air assets on Iraqi forces in the I MEF AOR (Marine Expeditionary Force Area of Responsibility). The I MEF AOR included most of the Kuwaiti border with Saudi Arabia, as shown in Figure 1. Contrary to Marine desires, the ATO did little more than distress the second echelon Iraqi "regulars," or tactical reserves, in central and southern Kuwait. The front-line forces, primarily consisting of conscripts, gained some attention from the air, but not at the level of effort the Marines requested.[11] Complicating the picture was the Tactical Air Control Center's (TACC) priority on Scud hunting (as required by the National Command Authority) which drained away air assets which otherwise could have focused on the Iraqi fielded forces in Kuwait.[12] The net result was that by 29 January, when the enemy attack on Khafji began, some of Iraq's better units, such as the 5th Mechanized Division, were "still intact or undamaged; they were also relatively well supplied, and their morale had not yet been severely eroded."[13]

Coalition planners had also become accustomed to frequent border incursions by Iraqi forces during the first days of the war. Numerous skirmishes and attempted incursions into Saudi Arabia clouded the picture prior to the "Battle of Khafji."[14] Some were artillery raids probing coalition defenses. Some were not incursions at all but rather desertions. There was also a feigned surrender by some 50 Iraqi soldiers who at the last minute went to ground and opened fire in an attempt to inflict US casualties or take prisoners.[15] These numerous but isolated instances of small Iraqi incursions began to

wear thin on the crews of the ABCCC (EC-130 Airborne Command Control and Communications) and JSTARS (E-8 Joint Surveillance Targeting Attack Radar System) as they attempted to respond to every call with appropriate air assets.

By 29 January, TACC personnel believed that Saddam's forces would continue trying to provoke the Coalition into ground attacks against the bulk of the Iraqi forces dug-in along the entire front. The Iraqis apparently believed that "they could inflict serious and politically insupportable casualties on their enemy from defensive positions, and force a favorable end to the war."[16]

The days prior to the battle of Khafji were filled with indicators of large scale Iraqi activity within Kuwait. JSTARS and Marine UAVs (Unmanned Aerial Vehicle) detected large-scale movements of tanks and armored vehicles in central Kuwait.[17] On the night of 22 January, for example, JSTARS sighted over 70 Iraqi vehicles moving toward the Saudi border. Three nights later JSTARS observed 80 more enemy vehicles moving towards the Wafra oil field, just a few miles north of the Saudi frontier.[18] Marine ground commanders requested increased JSTARS coverage in the KTO to better monitor and interpret these activities, but the priority for JSTARS coverage went to SCUDS and the Republican Guards. The time on station and coverage provided by the two prototype E-8s could not meet the demands and prompted the TACC Deputy Commander for Operations, MG John A. Corder, to issue guidance to the theater reiterating the Joint Force Commander's priorities for JSTARS coverage and proper channels for JSTARS support requests.[19]

Regardless of JSTARS priorities, indicators of Iraqi activity continued to mount. Marine and Air Force aircraft were called in on various occasions to attack vehicles

spotted by Marine ANGLICO (Air Naval Gunfire Liaison Company) teams or JSTARS. Furthermore, flights returning from missions in other areas routinely reported movements in the area of southern Kuwait occupied by the 3rd Armored and 5th Mechanized Division. In spite of these and other intelligence activities and reports, there was no coherent effort to investigate and interpret this intelligence within the TACC.[20]

Finally on 25 January, Marine intelligence briefed their commander, General Walt Boomer, that the CIA reported the possibility of a ground attack by the Iraqis into Saudi Arabia and that such attack would be against Marine outposts (OPs) along the border. The Air Staff planners in "Checkmate" passed a similar warning to Riyadh for Gen. Buster Glosson, chief of the air campaign planning cell known as the "Black Hole" and his deputy, LtCol. Dave Deptula.[21] It appears that very little positive action was taken responding to these indications. The most notable action was to move the FSCL from the political border to 5 km inside Kuwait.[22] This gave the ground commander more direct control over the use of air assets in his area of operations. In effect business as usual continued with the focus of the air effort on the Republican Guards and Scud hunting.[23]

## The Battle: January 29-31 1991

The overall Iraqi plan of attack can only be discerned from post-battle intelligence estimates and enemy prisoner of war (EPW) interviews. The data indicates that the primary thrusts into Saudi Arabia were to come at three locations. The attacks would occur nearly simultaneously along the Kuwaiti frontier between the "elbow" and Al Khafji. (See Figure 1) The lightly defended Marine reconnaissance outposts and the abandoned town of Khafji itself were the main thrust of these attacks.

The battle of Khafji appears to have been Saddam's largest attempt to provoke the Coalition into a ground war before the Coalition was ready thereby imposing heavy casualties on American forces. Only Saddam knows for sure but apparently he hoped that US congressional and public opinion would quickly turn against the war. Moreover, prisoners could provide propaganda opportunities and much needed intelligence on Coalition intentions. Probably underlying this strategy was Saddam's belief that he would gain valuable bargaining power by capturing Saudi territory, the port city of Al Mish' ab and the Marines' huge logistics base at Kibrit.[24]

Forces from the Iraqi 5th Mechanized Division and the 3rd Armored Division would comprise the main effort in the attack with the 1st Mechanized Division in support . The 1st Mech. Div. would screen the western flank of the 5th and 3rd divisions as they executed a passage of lines with the first echelon forces along the border. (See Figure 1) Once the 5thMD and 3rdAD executed passage of lines with the front line divisions, they would wheel around to the east and support the main attack on Al Khafji.[25] Once Khafji was secured the force would move further south to capture the Marine ammunition dump and oil fields near Kibrit as well as the major port city of Al Mish' ab.[26]

The battle began when the Iraqis crossed the border in 3 columns on the evening of January 29. (See Figure 1) Each column represented a battalion-sized or larger contingent of armor and mechanized infantry troops. At OP-4, near the "heel" of Kuwait, the 3rd Marine Light Armored Infantry (LAI) Battalion of Task Force SHEPHERD, from the 1st Marine Division, recognized these movements at approximately 2030 hours local time.[27]

Unknown to the Marines, Checkmate, the contingency planning office of the Air Staff in Washington, had received indications of preparations for an Iraqi offensive from national sources and alerted the CENTAF planners at 1900. About a half hour after Checkmate's alert to the theater, Marine pilots reported Iraqi vehicles moving to reinforce the column heading towards OP-4. The TACC directed about twenty A-10 sorties against these reinforcements, destroying and disrupting them before the main body attacked. [28] By 2030 the Iraqis had crossed the berm that ran along the border and engaged the Marines at OP-4. The Marines immediately called for air support but were unable to make radio contact due to extensive Iraqi jamming of Coalition radio frequencies. At about 2130, the Marines were all but surrounded when two Marine F-18s roared overhead. Burning through the jamming, the Marines were able to direct the air strikes against the lead tanks.[29] The ABCCC continued to direct air support to help the close in fight at OP-4 and shortly after 2300 three AC-130H gunships, two F-15Es, two F-16Ls (LANTIRN-equipped) and four A-10s joined the fight.[30] The tide of the battle would soon turn to blunt the attack after nearly five hours of combat.[31]

Soon after the 2030 attack at OP-4 began, elements from the Iraqi 3rd Division advanced from the Wafra oil field towards the Marines at OP-2. The Marines responded with TOW missiles, automatic cannon fire and a call for air support. General Horner, the CENTAF commander and Combined Forces Air Component Commander (CFACC), was advised of the situation facing OP-2 shortly before 2240. Gen. Horner directed the TACC to identify the aircraft available to respond immediately. For the next three hours, A-10s, F-16Ls, A-6s, and AV-8s attacked enemy vehicles in front of OP-2. By 0220 on 30 January, the Iraqis had retreated back toward Wafra.[32]

The success the Coalition forces enjoyed in stopping the western and central incursions at outposts 4 and 2 was not to be repeated in the east. At 1900, approximately the same time as the assault on OP-4 began, artillery fire rained down on the Marine outposts near Khafji. Air attacks soon silenced the artillery but only temporarily. Major Jim Braden, USMC, ANGLICO to 2nd Saudi Arabian National Guard (SANG), witnessed the early actions at Khafji first hand. Major Braden points out that A-6s identified vehicles moving in the blind spot of an outpost nearest Khafji. The blind spot was a depression in the terrain, which hid movements between 3 and 10 kilometers from the outpost. A-6s and A-10s attacked the Iraqi vehicles with some success but it was too little, too late. The Iraqis had achieved a measure of surprise and the outpost was hit and overrun. The ANGLICO teams now had no had to withdraw hastily with cover provided by Cobra helicopters.[33] With the ANGLICOs off the air, an Iraqi battalion-sized column of at least 40 tanks and APCs moved down the coastal road directly towards Khafji. By 2300 they had crossed the border virtually unmolested with their turrets reversed, which to armored combatants is a symbol of surrender. As the Saudi and Qatari troops hesitated, the Iraqis quickly seized their objective. Khafji was captured approximately 0030.[34]

In support of the eastern assault, the Iraqis attempted seaborne raids behind Coalition lines. A flotilla of 15 small Iraqi patrol boats, loaded with commandos, was spotted soon after it departed Kuwait by the US Navy and Royal Navy. Attack aircraft and helicopters destroyed or diverted these forces in short order. The relationship between this maritime effort and the activity along the border was not understood until much later.[35]

It is notable that the report confirming Iraqi tanks had entered Khafji reached the TACC about 0130–although loosely coordinated air strikes had been directed in the vicinity of the border soon after the assault began. The Iraqis lost some 13 vehicles on the coastal road north of Khafji to AC-130 gunships and Marine AH-1 helicopters which had arrived around midnight.[36] General Glosson had checked in with the TACC after midnight to get a quick rundown on the night's activities. He then received the initial reports of the Iraqi troops in Khafji. Glosson immediately notified Gen. Horner who rushed to the TACC and began ordering up more sorties from the Air Force, Navy and Marines and positioned the JSTARS to provide the required surveillance and targeting information. Horner summed up the events at this point by acknowledging that the enemy was able to get "forward elements in town before we really knew what was happening."[37]

While the battle continued within the city of Khafji and along the coastal road north of the town, far to the northwest, near the "elbow," OP-6 came under fire. The attack occurred shortly after 0100. The single LAV company at the outpost, aided immensely by Marine and Air Force CAS, drove off the attackers before dawn.[38]

Fighting at OP-2 and OP-6 did not resume during darkness. At OP-4 however, sporadic Coalition air strikes continued against enemy concentrations massing near the "heel" of Kuwait. Finally at 0720 on 30 January the Iraqis attempted a final assault on OP-4. A-10s and F/A-18s arrived in short order and imposed heavy losses on the enemy for the next hour. The company commander at OP-4 acknowledged that air attacks broke the initial attack.[39] Over the next several hours, as the Iraqis retreated back into Kuwait, they were subjected to even more intense air attacks.[40] In all the Iraqis lost 22 tanks and

armored vehicles at OP-4 and the Marines captured hundreds of prisoners of war. The Marines suffered 11 fatalities and lost 2 vehicles, more than half of the Marine fatalities were due to fraticide.[41]

Despite a tragic friendly fire mishap[42] at OP-4, massive air strikes on the night of 29/30 January were decisive. They enabled US Marine and Saudi units to meet and stop larger and heavier Iraqi ground forces. As Gen. Glosson put it, "Once General Horner started directing things, [airpower] basically destroyed the better part of a division's armor–between 30 and 40 tanks–and made it impossible for [the Iraqis] to reinforce and very quickly severed or cut off those [lead elements] and isolated them. And so you wound up with [a few tanks] into Khafji, and then everything behind it was either headed North or burning."[43]

Now the Coalition was faced with the problem of recapturing Khafji. The Coalition leaders, however, felt no urgency to retake Khafji. The exaggerated importance the American press and public attached to the Iraqi's ability to hold Khafji complicated the issue. Furthermore, the two Marine reconnaissance teams trapped in the city could remain undetected for 48 hours. The Saudis, however, were very concerned that a battalion of Iraqis occupied Saudi territory. The Saudis expressed their willingness to launch a counterattack as early as 0415 on the 30th.[44]

Marine helicopters reported no Iraqi soldier or vehicle activity inside Khafji until daylight on the 30th. This calm would not last long. The enemy reopened the battle with an artillery barrage on Marine and SANG positions at 1000. The Marine DASC (Direct Air Support Center), exercising control of their air assets, immediately directed A-10s and Marine attack aircraft to neutralize those artillery positions.[45]

That afternoon, Commander of the Arab forces, Saudi Prince Khaled bin Sultan arrived at JFC-E (Arab Joint Forces Command-East) headquarters and began the planning for the Saudi-Qatari counterattack to retake Khafji. His first action was to request air support, lots of it, including B-52 strikes to level the city if necessary. Despite Gen. Horner's orders to funnel more aircraft into the area General Khaled suspected that the Marines judged their battle to be more important than his and had withheld air support. This motivated General Khaled to deliver an ultimatum to the TACC. Khaled threatened to pull Saudi air forces out of the Coalition to provide the necessary air support if US airpower did not come at once.[46]

At General Horner's behest, air planners re-tasked some 260-strike sorties to perform CAS on behalf of Saudi-Qatari ground forces.[47] Only an hour after General Khaled's ultimatum, aircraft arrived to support the hastily prepared assault. The JFC-East launched the first counterattack on Khafji at 1800 on 30 January. The attack liberated the twelve stranded Marines but Iraqi forces still controlled parts of the city.[48]

On 30 January, while Coalition aircraft conducted tactical strikes on Iraqi forces in contact with Coalition forces, U-2, JSTARS and Navy/USMC "recce" assets gathered a clearer picture of what was going on behind the leading Iraqi elements. They detected two Iraqi divisions marshaling for a follow-on attack on Al Khafji.[49] The TACC would know these details and respond to them later. For the moment the Coalition ground and air forces focused on the Iraqis in front of them.

During the second night of battle, 30-31 January, Marine commander Lt. Gen. Walter Boomer asked the TACC for B-52 strikes just as Gen. Khaled had done earlier that day. Gen. Horner understood the psychology behind the Marine request given the Marines'

concern over the massing of Iraqi armor within Kuwait and the vulnerability of Khafji, the outposts and particularly their supplies at Kibrit. Later he reflected with some humor that, "[Ground guys] always ask for B-52s first." The CENTAF commander later ordered the bombers to join the battle.[50]

General Horner's change of heart about B-52's actually represented his greater awareness of two concerns, which had matured into major planning factors. First was a growing worry about Iraqi success in penetrating and holding their position. Although Khafji was in Khaled's JFC-E sector, the Iraqi incursion represented a threat to the Marines' right flank. Second, the two Iraqi divisions detected marshaling earlier that day provided an increased threat but also a lucrative target for airpower including the B-52s. After dark, Coalition aircraft took full advantage of their night capabilities rejoining the battle to systematically decimate the two divisions posturing for follow–on attacks.[51]

B-52s dropped armor-sensing mines, AV-8Bs, A-6s and F/A-18s delivered cluster and precision munitions, A-10s and F-16s shot Maverick missiles and F-1s and F-16s dropped combined effects munitions. Often the first aircraft to find a column of Iraqi vehicles would take out the lead and trail vehicles, trapping the rest within their own minefield. Follow-on attacks destroyed the remaining vehicles in short order.[52]

Also after dark on 30 January, JSTARS imagery showed a convoy of about 70 more Iraqi armored vehicles splitting up with two-thirds moving southwest towards the "tri-border" region of Kuwait, Saudi Arabia, and Iraq (See Figure 1) and the remainder heading southeast towards Khafji. These follow–on forces represented a robust reinforcement effort and potential widening of the battle. ABCCC directed B-52s, F-15Es and F-16Ls against the southwestern column while simultaneously directing A-10s

and AC-130s against the southeastern column. Marine A-6s patrolled the area between the two columns along the Kuwaiti border. [53]

During the night of 30/31 January, ABCCC directed a steady stream of A-10s to attack the vehicles on the coastal road approaching Khafji north of the border, while AC-130s and AV-8s hammered the coastal road to the south. Another AC-130 and Cobra helicopters assisted by an ANGLICO team cleaned out vehicles on the outskirts of Khafji itself.[54]

At 0230 the Saudi-Qatari forces, supported by US Marine fire teams, re-entered Khafji. They fought from building to building until daylight. As it dawned on the 31st the Coalition forces believed they had retaken the city. Nothing was moving in from the north nor was anything trying to escape the city. All that was left was to process swarms of surrendering Iraqis as EPWs. The captors noted "the Iraqis in Khafji looked better than we did. These guys were well groomed. They had clean uniforms. They were freshly [shaven.]"[55]

An AC-130, Spirit 03, however, was still on station when it spotted a Frog-7 surface-to-surface missile battery which could pose a threat if fired into Khafji. Spirit 03 quickly destroyed the target but was now out of the cover of darkness and therefore vulnerable. Moments later a "Mayday" was heard as Spirit 03 was hit by a SAM and crashed into the Arabian Gulf killing all aboard.[56]

In spite of the tragic losses, the Coalition succeeded at Khafji. At 1400 on the 31st of January, Headquarters JFC-East reported that Khafji had been retaken and approximately 600 EPWs captured.[57] The Coalition had flown more than 1000 attack sorties in southeastern Kuwait during the battle from 29-31 January.[58] One TACC fighter duty

officer summed it up by saying that JSTARS performance allowed a lot of bombs to be put on a lot of good targets.[59]

## After the Battle: February 1-3 1991

The Iraqi 1st, 3rd, and 5th Divisions were withdrawing in disarray. If they had been able to attack into Saudi Arabia, they might have precipitated a large-scale ground engagement and caused significant Coalition casualties. Instead, by 1 February they were halted and repulsed and it became relatively quiet for the ground forces.

Coalition airpower, however, would fly an additional 554 strike sorties between 1 and 3 February in the southern KTO and further neutralize the Iraqi divisions which were threatening the Saudi frontier between Khafji and the "tri-border" area.[60] The Coalition would destroy a total of 357 tanks, 147 APCs, and 89 artillery pieces just in southeastern Kuwait. By contrast, the previous 13 days of air strikes destroyed only 80 tanks, 86 APCs and 308 artillery pieces throughout the entire theater.[61]

This interdiction battle was fought mostly a night and when the enemy attempted to move. JSTARS tracked Iraqi movements and gave accurate target coordinates to fighters tasked to bomb targets in the KTO. The interdiction effort delayed and disrupted the Iraqi scheme of maneuver such that the 3rd Armored Division, part of the Iraqi main effort, barely got into the fight at all before being repulsed. The air effort effectively eliminated the 5 Armored Division, which eventually had to be withdrawn to Basra. One captured officer said he had witnessed more destruction in 15 minutes of retreat than he had seen in eight years of fighting the Iranians.[62] The Iraqi forces were unable to risk moving at

night to either advance or retreat. They were forced to remain static, abandon their vehicles and weapons and suffer the inevitable onslaught from the air.

## Summary

The "Battle of Khafji," as we have come to know it, was really a combination of three concurrent battles. The Marine outposts fought one battle along the Saudi-Kuwaiti border. These battles represented the initial stages of Iraqi efforts to engage coalition ground forces and to capture the Marines' huge logistics base at Kibrit. US Marines and Coalition close air support (CAS) provided the firepower necessary to smash these efforts over the initial 12 hours of fighting.

The second battle was at Khafji itself where SANG supported by US Marines and CAS defeated the Iraqi forces occupying the abandoned town of Khafji.

The third battle (and most significant in terms operational level effects) was the Coalition air interdiction effort against Iraqi follow−on forces in Kuwait. This battle actually began the week prior to the Iraqi attacks on the Marine outposts and continued on after the SANG retook Khafji until February 3, 1991.[63]

The third battle crippled the Iraqi army and its strategy. Mechanized forces were unable to move by day or night for fear of air attacks. These frustrations inflamed General Mahmoud's already dim view of his prospects for success. General Mahmoud's sentiments were clear when Coalition forces intercepted his transmission to Baghdad that the mother is "killing her children."[646566]

The battle of Khafji defeated Saddam's apparent strategy to provoke the Coalition into a ground war thereby imposing heavy casualties on American forces. Saddam took

no offensive action, except for SCUD launches, for the remainder of the war. His forces were unable to advance or retreat. Movement meant death, but it was not much better to hunker down and dig in. By denying Saddam's strategy, this battle truly had operational effects that reached strategic proportions. The next chapter will analyze the application of airpower during the battles of Khafji and explore the lessons learned for airpower employment.

**Notes**

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[7] Thomas A. Keaney and Eliot A. Cohen, *Revolution in Warfare?: Airpower in the Persian Gulf,* (Naval Institute Press, Annapolis Md., 1995). 6.

[8] Major William R. Cronin, "C3I during the Air War in South Kuwait," *Marine Corps Gazette*, March 1992, 34.

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[10] Cronin, 35.

[11] *Desert Story: Operations; Execution; ATO Planning Guidance for D+2 through D+15*, AFHRA Call No: K239.0472-19;(Secret) Information extracted is unclassified. Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey Summary Report*, (Washington DC, 1993), 49.

[12] Major General John A. Corder, USAF, Air Warfare Center Commander, *Desert Storm: An Overview of the Air Campaign*. (1991) AFHRA call number 168.7306-52.

[13] Major Daniel R. Clevenger, "*'Battle of Khafji:' Airpower Effectiveness in the Desert*, Vol. 1 (U), Air Force Studies and Analysis Agency, July 1996. 5.

[14] ABCCC Documents, 7ACCS, AFHRA Call No. NA-287 Vol. 1. (Secret) Information extracted is unclasified.

[15] Major Jim Braden, USMC, ANGLICO attached to 2 SANG. Interview by Maj. Dan Clevenger, AFSAA, 1996.

[16] Clevenger, 13.

**Notes**

[17] JSTARS End-of-Mission report for 28 Jan 91, Joint STARS Liaison Log Books. AFHRA File No: K215.19-15. (S); CENTAF Tactical Air Control Center Current Operations Log entries. 17 29 Jan 91. AFHRA File No: K215, Vol. 1(S). Information used is unclassified.

[18] Titus, 5.

[19] Corder.

[20] 7th ACCS (ABCCC) TACC Liaison Officer Log, 16 - 31 Jan 91, AFHRA Call No: TF4-12-227, Pt I (S); ABCCC Documents, 7ACCS, AFHRA Call No. NA-287 Vol. 1. (S). Information extracted is unclassified

[21] Perry D. Jamieson, "Lucrative targets: The Air Force and the Kuwaiti Theater of Operations," (unpublished manuscript, forthcoming from the Air Force History Support Office), 114

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[23] Daily Deputy Chiefs of Staff Input to CC (Lt Gen Charles A. Horner), AFHRA Call No: MICFILM 10216 and CENTAF TACC/CC/DO Current Ops Log, AFHRA Call No: NA-287. (S) Major General John A. Corder, USAF, Air Warfare Center Commander, *Desert Storm: An Overview of the Air Campaign*. (1991) AFHRA call number 168.7306-52. Information used is unclassified.

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[26] Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War*, (Boston, Houghton Mifflin Co., 1993), 204.

[27] Gordon and Trainor, 272-279.

[28] Jamieson, 114. JSTARS Liaison Log Books, End of Mission Reports, 29 Jan 91, AFHRA Call No: K215.19-16 through K215.19-20.

[29] Capt Roger L. Pollard. "The Battle for OP-4: Start of the Ground War," *Marine Corps Gazette*, March 1992, 48-51; Gordon and Trainor.,273. "Burning through" refers to the power of a transmitter to overcome the jamming power disrupting same.

[30] Jamieson, 114. JSTARS Liaison Log Books, End of Mission Reports, 29 Jan 91, AFHRA Call No: K215.19-16 through K215.19-20.

[31] Gordon and Trainor, 274.

[32] Jamieson, 114. JSTARS Liaison Log Books, End of Mission Reports, 29 Jan 91, AFHRA Call No: K215.19-16 through K215.19-20

[33] Braden, July 96.

[34]. Jamieson, 117. See also TACC Log Part I, entries for 29/30 Jan 91, AFHRA Call No: TF4-12-227

[35] Titus, 8.

[36] Jamieson, 117. Titus, 11.

**Notes**

[37] Gordon and Trainor, 279.

[38] Titus, 10.

[39] Pollard, 51.

[40] Titus, 11.

[41] Pollard, 48-51.

[42] The vehicles at OP-4 were finally configured with "thermals" for friendly identification after January 29. Pollard, 51.

[43] "The Gulf War," *Frontline*, 12 November 1996, available from http://www.pbs.org/wgbh/pages/frontline/gulf/oral/glosson/2.html

[44] Price T. Bingham, LtCol (ret), "The Battle of Khafji and the Future of Surveillance Precision Strike," (an unpublished article), 1996, 9; Jamieson, 117.

[4545] Ibid., 118.

[46] Khaled with Seale, 362-369.

[47] Titus, 13.

[48] Khaled with Seale, 370-379; Bingham, 10-11.

[49] "Chapter VI-The Air Campaign", available from http://es.rice.edu/projects/Poli378/Gulf/gwtxt_ch6.html, D+12 through D+14 (29-31 January) - The Battle of Al-Khafji; JSTARS Liaison Log Books, End of Mission Reports, 30 Jan 91, AFHRA Call No: K215.19-16 through K215.19-20; (S)TACC Liaison Officer Log, Part I, HRA Call No: TF4-12-227, Part I. Information used is unclassified.

[50] Jamieson, 118.

[51] JSTARS Liaison Log Books, End of Mission Reports, 30 Jan 91, AFHRA Call No: K215.19-16 through K215.19-20; (S)TACC Liaison Officer Log, Part I, HRA Call No: TF4-12-227, Part I. Information used is unclassified.

[52] Ibid.

[53] TACC Log Book, AFHRA Call No: K215.19-52 and TACC Liaison Officer Log Part I and II, AFHRA Call No: TF4-12-227(S), Information used is unclassified; Jamieson, 119.

[54] Braden July 96. Jamieson, 119. Atkinson, 204.

[55] Ibid.

[56] Ibid., 211.

[57] Jamieson, 120. Atkinson, 211

[58] Watts and. Keaney, *et al.* 237, 238. Titus,16.

[59] Bingham, 6.

[60] Watts and Keaney, *et al.*16.

[61] Bingham, 11.

[62] Interviews with Captured Iraqi Officers, HRA Call No: NA-286.

[63] Gordon and Trainor, 287; Titus, 20.

[64]

[65]

[66] Ibid.,283.

# Chapter 2

# Analysis of the Battle of Khafji

> *You really don't know how you're doing against an army until that army tries to perform its function. If it's just sitting there taking the punishment, we know we're hurting it. We really don't know how badly we've hurt it until it starts to move, or until it comes up on the radio so we can hear it talking to other units.*
>
> —General Colin Powell
> Chairman, Joint Chiefs of Staff
> Jan 23, 1991, ABC-TV

This chapter will synthesize the details of the Battle of Al Khafji as laid out in chapter 2 into three areas of analysis. The first area is the overall effect of airpower on Iraqi strategy at Khafji. Next we will take a closer look at air interdiction as the centerpiece of the airpower contribution at Khafji. The third area of analysis is battle management because, despite the overwhelming success of airpower at Khafji, there were serious deficiencies in the Tactical Air Control Center (TACC) responsiveness and flexibility.[1]

## Airpower Overall Impact at the Battle of Al Khafji

To ground forces, the most obvious contribution of Coalition airpower at Khafji was close air support. The effectiveness of CAS was due, in no small part, to the abundance of airborne, and more importantly, ground forward air controllers (FACs) and fire control

teams. Air liaison officers working with Marine and Saudi units, and through ABCCC, were able to direct CAS assets in the early hours of the battle against the initial Iraqi thrusts at the Marine OPs.[2]

At the town of Khafji, however, CAS was unable to defeat the initial assault. The Marines supporting the Saudi-Qatari troops at the border were overrun quickly so the ANGLICO teams also had to make a hasty retreat. Cobra helicopters were the primary source of air support to cover the Marine retrograde.[3] It appears that the Iraqis achieved tactical surprise and were able to overwhelm the few companies of JFC-E and USMC forces in the vicinity of Khafji. Overrun or withdrawing, ANGLICOs were "off the air" for critical periods during the initial encounters with Iraqis at Khafji. Coalition troops were forced into a reactive mode. As such, CAS was not mustered and directed expeditiously nor in sufficient quantity to thwart the invasion.

Upon receiving word of a possible additional assault on the 30th, an ANGLICO team assigned to JFC-East proactively responded by penetrating 5-6 miles inside Kuwait 9-10 miles inland from the coast road. During the evening of the 30th the team, operating beyond the Fire Support Coordination Line (FSCL), repeatedly called in air strikes against hundreds of vehicles marshaling to move south. This operation, which was really interdiction, was a major factor in the disruption of follow-on forces' attack into Khafji on the following day.[4]

Nonetheless the CAS battle, at the time, was the most visible contribution of airpower to the effort at Khafji. It was also interpreted by many to be the most valuable contribution. Lt. Gen. Walt Boomer remarked to his staff the morning of 30 January, "Other than our loss[es], I am not unhappy with last night…I think our air[power]

probably stopped them; so whatever it was they were trying to do, [it] wasn't very successful." He also commented that the success at Khafji was due in large part to the LAV-AT (TOW-equipped antitank variants of the light armored vehicle) as well as Marine AH-64 attack helicopters.[5] General Boomer scarcely acknowledged the contribution of fixed wing assets to the CAS or interdiction efforts which defeated the enemy armored forces. These statements are representative of most ground commanders' observations.

The ground commanders' viewpoint is often dominated by what he observes immediately in front of his forces within his Corps/Division boundaries. For example, on 30 January intelligence reports indicated a 15 mile long armored column from the Iraqi 5th Mechanized Division 30 miles inside Kuwait moving towards Khafji on the coastal highway. Airpower attacked and destroyed the convoy shortly after it was reported so it never reached Khafji. The after action report by the USMC Liaison to the SANG brigade assigned to JFC-E, labeled the intelligence report erroneous and a "frightening false alarm" because the SANG had not witnessed these forces in combat. Yet the same after action report gives great credit to the fact that airpower (CAS) was valuable at Khafji as evidenced by the highly visible USMC Cobra Gunships and "fast movers that were so prevalent."[6] The report, representative of other USMC after-action reports, totally missed the impact airpower had on Iraqi forces that were not yet in direct ground combat. On a higher level, the CENTCOM staff expected a full scale attack by the main forces of the Iraqi 5th Mechanized Division after the initial preparatory engagements by elements of that division. The attack never materialized. In light of the "unexplained" course of events, General Schwarzkopf admitted that he was "perplexed."[7] The major attack did

not materialize because airpower destroyed and disrupted the follow-on forces assembling for the main assault. It seems soldiers rarely perceive the link between the effects of airpower beyond the FSCL and the circumstances at the front.

Clearly, the initial interpretations by ground commanders missed the larger impact of the theater interdiction battle. Much of what could have happened in the attack on Khafji was ameliorated by the fact that enemy forces were halted or defeated by airpower before engaging surface forces.[8] Interdiction of the enemy ground forces hinges on the ability to perceive and interpret the threat arrayed against your forces across an entire theater of operations. Ground commanders find it difficult to "see" so broadly because it is the air commander who controls the preponderance of ISR (intelligence, surveillance and reconnaissance) assets. As a result, the air commander's viewpoint is usually much more comprehensive in terms of both depth and breadth.

The TACC ISR capability contributed greatly to airpower's role in preventing follow-on forces from reaching the battle after the battle began on 29 January. The key to the success of air interdiction at Khafji was the ability to track and target moving vehicles with two prototype E-8 JSTARS platforms. Due in large part to this new capability, we now know that the engagement at Al Khafji was not designed as a "limited attack." Rather, it was a major attack limited as a result of the impact of air strikes on the Iraqi forces attempting to move.[9]

Interdiction efforts began on what were interpreted as isolated convoys and troop movements that were detected by JSTARS in the southern KTO the week prior to the Khafji invasion. During the battle itself and into early February, Coalition airpower flew

over 1500 strike sorties in just under five days to interdict the Iraqi forces attacking Khafji. Destruction of Iraqi equipment quadrupled during this period.[10]

Fixed and rotary wing airpower, supported by Coalition ground forces, stopped or turned back the initial "probes" and systematically dislodged and drove back the probe which had reached Al Khafji. At the same time, reinforcing Iraqi units were turned back both at the border and, in the case of the 3rd Armored Division, within Kuwait as the mechanized forces attempted to move south.[11] A captured Iraqi armor officer from one of the lead tanks stated to his captors that he had requested support from his comrades, but it never came.[12] This testimony bears out the Iraqi soldiers' unwillingness and inability to advance the battle in the face of aerial attack.

Iraqi behavior is the best indicator of airpower effectiveness. JSTARS track data revealed that during the first few days of the battle, Iraqi convoys often consisted of twenty or more vehicles. The Iraqis soon began to limit their movement to groups of three or four vehicles at a time to hopefully minimize chances of being detected and targeted. This meant they could not mount a coherent offensive because they were denied the ability to mass forces and maneuver. The Iraqis were forced to disperse or dig-in once convinced of the danger posed by air attacks to moving vehicles. Furthermore, Iraqi soldiers became reluctant to occupy any vehicles and many realized survival depended on quickly surrendering or fleeing. This behavior explains why so many enemy vehicles were found abandoned when discovered by advancing Coalition ground forces.[13]

Such behavior probably had strategic implications for the enemy's military leadership. Apart from SCUD launches, there were no other offensive actions taken on the part of the Iraqi political or military leadership. As noted in the Gulf War Airpower

Survey, the enemy could no longer mount an effective combat operation nor even provide for the resupply of critical items such as food and water to front-line troops. This deterioration in combat capability and combat support contributed to overall sense of futility and lowered morale among the enemy forces. The operational actions to halt and destroy Iraqi forces en route to Khafji isolated the battlefield. This is the universal testimony of captured Iraqi soldiers of all ranks, who then and later surrendered in droves at first contact with the Coalition ground forces. Airpower did in fact defeat a field army almost single-handedly and Coalition ground forces did indeed play a supporting role. In sum, the strategic effect was the Iraqi army's will to fight was largely destroyed. Riyadh missed the larger significance of this and General Powell was not inclined to believe it at the time.[14] Airpower proved to be dominant as the Coalition ground forces supported the decisive air campaign.[15]

## Interdiction: The Focus of Airpower

The degree to which airpower was decisive in the Gulf seems to confirm what airmen have been saying for decades with respect to interdiction. That is, airpower can truly be dominant in warfare if given the right conditions. This dominance stems from the ability of air and space forces to bypass tactical objectives at the battle front to pursue operational and strategic objectives directly. Moreover, this dominance gave rise to the Coalition strategy of asymmetrical application of force–airpower to defeat surface forces.[16] So what are the conditions required for a successful interdiction campaign?

## Conditions For Successful Interdiction

As Eduard Mark points out in his work *Aerial Interdiction in Three Wars,* there are three necessary conditions for a successful interdiction campaign. They are *air superiority, intelligence, and identifiability*. Eduard Mark also discusses contributory conditions such as concentration, channelization, high rate of consumption, logistical constriction, and sustained pressure. These later conditions are important considerations but they all need not be present or in any particular magnitude for successful interdiction so are, therefore, not as definitive as the former "necessary conditions."[17]

*Air superiority* is the "unimpeded access to the enemy's airspace." An interdictor is not likely to be successful if he has to fight for air superiority while prosecuting the interdiction campaign. *Intelligence* is required about the enemy's LOCs and forces' dispositions to identify appropriate targets. Intelligence is also necessary to maintain awareness on the enemy's efforts to constantly cope with "repairs and efforts at evasion." [18] *Identifiability* is our ability to detect, identify and engage a target and is based on the "inherent nature of the target, the conditions under which the target is engaged and the technology of the attacker." Identifiability is important because the lack of identifiability has plagued airmen and has been the biggest limiting factor to successful interdiction since the beginning of airpower. Identifiability is overcome by our ability to attack a wide variety of targets, at night and in adverse-weather with lethality and precision−notwithstanding that fratricide is still a problem.[19]

Westerman points out Mark's model neglects one other necessary element. The element is *vulnerability* of the intended target to coercion through interdiction.[20] An adversary whose combat operations and resupply system depend on conventional LOCs

may be vulnerable to coercion through airpower. However, an enemy whose combat and support systems operate in a parsimonious manner, as in unconventional warfare, may not be susceptible to interdiction as outlined here. These four conditions then give the military planner criteria by which to establish the likely effects of aerial interdiction on the campaign.

## Halting the Invasion at Khafji

All of these conditions came into play during the Battle of Al Khafji. The coalition enjoyed air superiority and more importantly the Iraqis were denied the benefits of air cover as they joined the attack.[21]

Intelligence and identifiability are achieved through effective battle management systems which find, and identify, and target the adversary's forces. The Iraqis lacked the intelligence the Coalition gained from a vast array of overhead sensors such as TR-1, Rivet Joint, JSTARS and UAVs. These sources contributed to the identifiability of the enemy as they came out of their static defenses and began to move. Once on the move the Iraqi mechanized forces and resupply convoys were subject to air attacks at night and in adverse-weather with lethality and precision. JSTARS surveillance data combined with continuous precision air attacks overwhelmed the Iraqi LOCs, resupply vehicles and armor. Many Iraqi soldiers abandoned their undamaged vehicles in the face of air attack as they realized they had to surrender or desert to survive.

The Iraqi forces proved vulnerable to coercion by Coalition aerial interdiction because they depended on conventional logistics and forces. This was especially so because the terrain and climate denied them any chance to supplement their supplies from

local sources. As conventional mechanized forces, they assembled in mass formations and moved in columns along LOCs. The ability of airpower to dominate in this scenario is apparent now more than ever because of airpower's overwhelming ISR capability. The Iraqi army in Kuwait was never totally cutoff or destroyed as in classical attrition warfare but rather, the Iraqi strategy and therefore its Army, was defeated by coercive effects of airpower. Thus, airpower demonstrated dominance in modern mechanized warfare in the context of these conditions.[22]

In sum, airpower applied under appropriate conditions can isolate the battlefield, halt and defeat advancing surface forces. Joint warfighters must embrace the implications of the primacy of airpower for future conventional warfare if the conditions for success exist. Campaign planners must apply airpower in the context of these conditions to leverage its capabilities to defeat enemy's strategy as was done at Khafji. Combatant commanders must structure their forces to capitalize on the role airpower plays in defeating mechanized forces.

To this point it is clear that airpower had a profound impact on the advancing Iraqi army at Khafji. To say that it was not fully understood at the time is now well accepted. CAS was critical to thwart the preparatory attacks along the border but was only a small part of the overall effect of theater air. It was air interdiction of follow-on forces which prevented a much larger assault and subsequently defeated the Iraqi strategy. As Colin Powell said just days before the attack, "We really don't know how badly we've hurt it until it starts to move, or until it comes up on the radio so we can hear it talking to other units." At Khafji the Iraqi army did just that–unfortunately we still did not realize how badly we hurt it until much later.

## Battlr Management of Theater Airpower

The air effort was not faultless. The days leading up to the battles of Khafji revealed serious command and control problems. As the battle for Khafji was unfolding, Gen. Schwarzkopf and his staff were "perplexed" by what they saw happening along the border in the KTO. There was "no evidence" that Iraq was getting ready to launch a major offensive but, defying military logic, they attacked Saudi Arabia with what appeared to be a single division. General Horner warned his subordinates in the TACC not to allow the initial incursions to divert them from the main effort, the destruction of the Republican Guard. The CENTAF Deputy Commander, Major General Thomas Olsen stated " we [TACC personnel] never thought they were going to do anything." When they did move across the border it "was a wake up call for everybody."[23]

The Coalition failed to pick up the significance of the troop movements and eventually the "probes" along the border and at Khafji.[24] The TACC did not react aggressively to the first warning signs that the Iraqis were moving. Unfortunately, prior to the Khafji attack, Coalition airmen failed to capitalize on their considerable ISR capabilities. According to retired Marine General Bernard Trainor, the TACC controllers "had kind of been lulled into a routine." And when that routine was upset by offensive action on the part of the Iraqis, they just didn't get agitated. People were not flexible. "They were so focused on our offensive operations and so indifferent to the defensive operations that they were slow in getting off the mark until General Glosson and General Horner started to raise the roof with the air controllers." It was business as usual until they were energized by the leadership. [25] General "Buster" Glosson later commented, "this was not the Air Force's best day."[26]

It took the TACC some 4 hours to realize the magnitude of what was happening along the Kuwait-Saudi border. Gen. Horner had left the TACC for the evening not appreciating the severity of the attacks but had ordered some aircraft diverted to support the Marines at approximately 2130 and 2240. Alerted by Gen. Glosson, Horner returned to the TACC after midnight just before reports confirmed that Al Khafji was captured.[27] Now aware of the gravity of the situation, Gen. Horner energized his air controllers into a new course of action to defeat the attacking Iraqis. The question remains, why wasn't the TACC responsive to indications of Iraqi intentions in the days before Khafji fell?

The TACC had put together a robust airborne command and control net combined with near real time intelligence capability via platforms such as E-3 AWACs, EC-130 ABCCC, RC-135 Rivet Joint, TR-1, UAVs and E-8 JSTARS. It was JSTARS that war planners valued most to rapidly confirm the Iraqi unit movements and identify potentially lucrative targets. Although still a prototype, unique JSTARS abilities gave the Coalition an unprecedented look in real time at the enemy army's activities in the field.[28] Airmen expected that this C2 arrangement, connected directly into the TACC, would be able to put all the intelligence indicators together and allow them to prosecute an efficient air war.

Indeed, the JFACC did get indications that "something was up," but from CENTCOM J-2–not the JFACC's elaborate C2 structure. JSTARS had seen Iraqi vehicle movement for days, and there was good evidence from the Marine Corps Pioneer UAV pictures that Iraqi armored vehicles were on the move.[29] Yet little was done in terms of synthesizing and interpreting the available indicators into valid intelligence on the enemy's disposition and possible intentions. The focus in the TACC remained on

SCUDs and the Republican Guards as it had for the previous two weeks. Inertia was difficult to overcome when the static war began to show signs of a change.

The early symptoms of trouble on January 29 came at 1830 hours when Iraqi troops began electronically jamming Marine radios.[30] Jamming made it almost impossible for ground units to talk with ABCCC or TACAIR to coordinate strikes when contact with the enemy became imminent. While the Coalition's land and air forces were caught by surprise, the navies were not. The Iraqi seaborne attack was squelched so quickly that it was not until after the battle that the connection was made between the seaborne commando force and ground assaults on Khafji.[31]

To add insult to injury, the first aircraft did not arrive at the Marine outposts until almost 1 1/2 hours after the initial calls for air support. Although there were aircraft in the area when these calls were made, they could not make contact with the appropriate controlling agency on the ground to get clearance to drop.[32] The aforementioned jamming of Marine radios contributed to the slow response but even this problem could have been ameliorated if the TACC and MARCENT had not moved the FSCL from the political border to 5 km inside Kuwait on 25 January.[33] This FSCL placement restricted the air assets from dropping weapons in an area known to be clear of friendly forces. The FSCL in essence acted as a sanctuary for the enemy until positive control of air assets could be guaranteed by ground forces.[34]

One conclusion from these facts is that Clausewitzian fog and friction should be expected in an organization such as the TACC. The TACC was manned 24 hours a day by over one thousand personnel per shift. Furthermore, the machinations within the TACC are immensely complicated so strict routines are developed to simplify operations.

Routine begets inertia and inflexibility. The JFACC's rigid guidance to focus air efforts on the Republican Guards and SCUDs added more inflexibility to the mix. All of these factors made it very difficult for the TACC to flex with the changing environment. In short fog and friction impeded the TACC.

The fog within the TACC was due in part to slow synthesis and, therefore, lack of interpreted ISR data for the decision makers. Furthermore, the hundreds of people working in the TACC developed considerable inertia over the first 13 days of the war. The sense among the controllers in the TACC was that the enemy "wasn't going to move since they hadn't yet." Operations became routine due to the generally static nature of the enemy and of the focus of the air effort. This fog shrouded the friction intoduced into this system by enemy movements. As a result, fog and friction negated the basic characteristics of airpower–flexibility and responsiveness in the days prior to the invasion of Khafji.

## Summary

The Khafji battles support what airmen have asserted for many years. Airpower can be dominant in warfare if given the right conditions. Airpower at Khafji was decisive in defeating the advancing Iraqi army and the Iraqi strategy. The strategic implications were felt as soldiers met little resistance during the ground war. The Iraqi army and political leadership had lost confidence in their ability and will to fight.

There were, however, shortcomings in the battle management of airpower despite the overwhelming success. The TACC was slow to interpret the intelligence it received from various sources. TACC controllers remained fixed on SCUDs and the Republican

Guards and the direction of the JFACC. The mindset within the TACC was that the enemy was not going to try anything. Operations by D+13 had become almost routine and inertia had taken hold. The result was that once the attack began the TACC was slow to realize the enemy intentions and therefore lacked the sense of urgency and effort required to repulse the intital attacks.

The next chapter delves into the implications of Khafji for force structure, operational airpower and Joint doctrine. It offers a possible solution to overcome the problems associated with the TACC's huge organization, internal processes and routines which created inertia and inflexibility.

**Notes**

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[2] Cohen, *et al.*, 289.

[3] Major Jim Braden USMC, Operation Desert Storm ANGLICO attached to 2nd SANG, interview, with Major Daniel R. Clevenger, AFSAA, July 96.

[4] Eliot A. Cohen, *et al., Gulf War Air Power Survey, "Effects and Effectiveness," Vol II, part 2*, (Washington: GPO, 1993). See also AFHRA Call No. k168.310-22.

[5] Perry D. Jamieson, *Lucrative targets: The Air Force and the Kuwaiti Theater of Operations*, (manuscript forthcoming from the Air Force History Support Office), 120; "Allies claim to Bomb Iraqi Targets at Will," *Washington Post*, 31 Jan 91 a.m.; Capt. Roger L. Pollard, "The Battle for OP-4: Start of the Ground War," *Marine Corps Gazette*, Mar 1992, 48-51.

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[10] Thomas A. Keaney and Eliot A. Cohen, *Revolution in Warfare?: Air Power in the Persian Gulf*, (Annapolis, Naval Institute Press, 1995), 94.

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[13] Bingham, 12.; GWAPS, Vol II, Part 2, 263.

[14] Gordon and Trainor, 288. Bingham, 11.; GWAPS, Vol II, Part 2, 239-40.

[15] Jeffrey Record, *Hollow Victory: A contrary View of the Gulf War,* (Washington, Brassey's, Inc., 1993), 106-114; Draft Air Force Doctrine Document 2, *Global Engagement: Operational Doctrine for the 21st Century Air Force,* 21 Jan 1997*, 53.*

[16] Air Force Doctrine Document 2 (Draft), 47-48.

[17] Eduard Mark, *Aerial Interdiction in Three Wars. Air Power and the Land Battle in Three American Wars,* (Washington, D.C.: Center for Air Force History, 1994) 402-403.

[18] Ibid., 4.

[19] Ibid., 5.

[20] Ed Westerman, Major, USAF, "Interdiction in Limited War: The Seductive Illusion of Aerial Strangulation," (unpublished paper, School of Advanced Airpower Studies, Maxwell AFB, AL, February 1997).

[21] Mark, 402-403.

[22] Also see Col Dennis M. Drew, USAF, Retired, "Desert Storm as a Symbol: Reflections of the Air War in the Desert," *Airpower Journal,* Fall 1992, 4-13.

[23] Maj General (RET) Thomas Olsen, Deputy CENTAF Commander during Desert Storm, Interview by Maj Dan Clevenger, AFSAA, 13 May 1996.

[24] *Gulf War Air Power Survey, Vol II, part 1,* 273.

[25] "The Gulf War" *Frontline* Interview with Bernard E. Trainor availablel at http://www2.pbs.org/wgbh/pages/frontline/gulf/oral/trainor.html;

[26] Ibid.

[27] *Gulf War Air Power Survey, Vol II, part 1,* 273.

[28] Charles A. Horner, General (Ret) CENTAF Commander during Desert Storm, Interview with Maj. Dan Clevenger, AFSAA, The Pentagon, 26 February 1996.

[29] Ibid.

[30] Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War,* (Boston, Houghton Mifflin Co., 1993), 199.

[31] Gordon and. Trainor, 269.

[32] TACC Log entries for 29/30 January 1991, HRA Call No.TF4-12-227, Part I (S) Information used is unclassified; ABCCC Documents, 7 ACCS, HRA Call No. NA-287 v.1..; Titus, 9.

[33] *Gulf War Air Power Survey, "Chronology,"* 190.

[34] Joint Pub 3-03, *Doctrine for Joint Interdiction Operations,* FINAL COORDINATION, December 1996, II-14.

# Chapter 4

# Implications for Operational Airpower and Joint Doctrine

> *If there is one attitude more dangerous than to assume that a future war will be just like the last one, it is to imagine that it will be so utterly different that we can afford to ignore all the lessons of the last one.*
>
> —RAF Marshal Sir John Slessor

The battles of Khafji yield two primary conclusions which have profound implications for operational airpower and Joint doctrine . First and foremost is the reaffirmation of the dominant role airpower assumes in conventional mechanized warfare. The implications of this dominance for force structuring and campaign planning are vast. The second conclusion is that a distributed battle management system could have obviated the Iraqi attacks all together because it is a more responsive and flexible command system.

## Airpower Dominates

From the earliest airpower prophets to the new Air Force Doctrine Directive for Counterland Operations, airmen have declared that airpower can deliver combat power on the enemy when and where needed to attain strategic and operational military objectives. At Khafji, air interdiction and CAS destroyed, or rendered ineffective, significant portions of key enemy surface forces and infrastructure, thereby avoiding a costly ground

war of attrition. Airpower defeated the Iraqi strategy and demonstrated that it can prevent enemy surface units from engaging friendly forces with militarily significant power.[1] In sum, the experiences at Khafji do not bode well for the future of surface mechanized warfare.

At Khafji airpower halted three mechanized and armored divisions. Enemy armor suffered huge losses as it assembled and moved to conduct offensive operations in the face of Coalition air superiority. If mechanized and armored forces are unable to mass on the modern battlefield they cannot attack and defeat enemy surface forces. [2] As one anonymous Russian Army General put it, "The tank is an endangered species when the other side enjoys control of the air."[3]

The implications of the primacy of airpower are vast. In terms of force structure, we must consider how much emphasis we have put on our own mechanized forces. Do we expect our armor to be more survivable then the enemy's? If we do, then we assume that we will control the skies over our surface forces. But if we have air superiority, we need not put our mechanized forces in harm's way since airpower alone may defeat the enemy mechanized forces. Thus, whether or not we have air superiority, armored forces may be in the twilight of their usefulness. Marine General John Sheehan, CINC US Atlantic Command, supports this notion by saying the army should put more emphasis on fast, light units and attack helicopters and should "take risk on the heavy-force side" by putting tank outfits in a "lower readiness category."[4]

Skeptics would denigrate the Desert Storm experience by claiming the desert environment was unique in that it artificially exposed the mechanized forces and made them vulnerable to airpower. Moreover, airpower would not be as successful in a triple

canopy jungle or even a heavily forested theater of operations. This argument neglects the fact that armor would have great difficulty in massing and maneuvering in either the jungle or forest terrain. Mechanized forces move in large formations across relatively open terrain or in convoys along LOCs. On the move, they are very vulnerable to attack.

It appears that armor could maintain some supporting roles in the future conventional warfare but rarely act as the main effort. Airpower on the other hand, can respond much more rapidly to seize the initiative in the critical early phases of a conflict. In the initial phase airpower will probably comprise the main effort to establish an umbrella of protection over our own forces and "halt" the enemy. In so doing, airpower limits the enemy's options and expands our own by isolating the battlefield before surface forces are assembled or engaged.[5] Once air superiority is established over our forces, air superiority is expanded over the enemy to enable our offensive operations. Then, coercive airpower supported by ground forces shape the battlefield and destroy it thereby defeating the enemy's will and capability to fight. The latter obviates the need for the massive armored forces which once dominated modern mechanized warfare. In contrast, the modern battlefield favors lighter, mobile, airborne and air assault forces. This is not to say the mechanized forces are not needed at all. On the contrary, careful consideration must be given as to what our mechanized force structure should be and how to employ such forces in a supporting role and in a survivable manner on the modern conventional battlefield.

## The Problem: Airpower Responsiveness

It is important to study what could have been done differently in the TACC without second guessing the commanders on the scene. The problem at Khafji centered on TACC responsiveness and flexibility to react to dynamic events on the battlefield. Coalition airpower should have maintained the initiative and acted early to interdict enemy operations. Responsiveness, however, is no small order for an organization as huge as the TACC. Allison's Model II/III behavior is inherent is such an organization. Moreover, the complex internal processes and rigid bureaucratic routines lead to the sort of problems identified during the battle of Khafji.

Inertia, rigid JFACC guidance, and slow ISR data interpretation put the TACC controllers into a reactive mode. All these factors grew out of the organizational behavior identified within the TACC. Any improvement in TACC or modern Air Operations Center (AOC)[6] responsiveness must address these deficiencies.

The basic problem within the TACC during Khafji is one of battle management. Specifically, this points to the centralized way the JFACC organization and the AOC prosecute the theater interdiction campaign. The execution of the interdiction plan in a less centralized system may be one solution to the problems identified. Such a decentralized system could be more flexible and, therefore, responsive to a dynamic enemy by providing a focal point for the JFACC's theater interdiction planning, execution and ISR interpretation efforts. A decentralized interdiction "cell" avoids the bureaucratic and organizational inertia which could plague overall AOC operations. Such a "cell" would therefore react quicker and could have enabled the engagement of more follow-on forces and may have prevented the subsequent assault and capture of Khafji.

## Distributed Battle Management

Decentralization of the battle management and execution of theater interdiction efforts via a distributed command and control (C2) structure is a known as Distributed Battle Management (DBM). Such a structure could conceptually do a much more effective job in disseminating relevant information to the right C2 node and shooter, in the right amount, in near-real time. Improving these capabilities would enhance our ability to counter targets such as forces marshaling for a surprise attack, mobile theater ballistic missiles or any other transient target.[7]

DBM does not solve the complex problems inherent in large organizations such as the AOC with its complex internal processes and interactions. Nor does DBM overcome bureaucratic routines within the AOC. DBM does go a long way towards controlling these processes and providing a framework to focus efforts efficiently towards theater interdiction.

Using a DBM concept the JFACC decentralizes authority for execution of a particular mission to the C2 node that is most directly involved with the execution of that mission.[8] This allows the JFACC to maintain focus at the operational level–centralized control of the overall air effort–while the details of mission execution are decentralized to an intermediate C2 node.

There are two overarching requirements for the DBM system. DBM requires intelligence of enemy forces disposition at the pertinent C2 nodes such as JSTARS and ABCCC. The second requirement is for the JFACC's C2 architecture to have the flexibility to permit *engagement authority* to be decentralized to these C2 nodes (e.g. JSTARS/ABCCC). Achieving these two requirements will allow the pertinent C2 node

such as JSTARS to successfully exercise *engagement authority* for theater interdiction via its connectivity to shooters.

JSTARS can direct surface and airborne weapons during attack operations because of its near real time ground situation display. Overhead assets can be used to extend JSTARS coverage and assist in target characterization. When directed, the JSTARS can assume battle management responsibility; detecting ground targets and directing assets against them. JSTARS can provide target and attack information directly to fighters through datalink and/or radio contact[9]

In DBM, the air operations center (AOC) continues to retain centralized control, and delegates engagement authority for time critical targets (TCTs) through assets predesignated in the air tasking order (ATO). The AOC will continue to move C2 assets and shooters from one area of interest to another. The AOC will maintain awareness into the activities of the execution level C2 nodes, like JSTARS, through a common operating picture. The Air Support Operations Center (ASOC) and ABCCC would coordinate employment of assets against TCTs in support of JSTARS with their staff, communications, and data access. They can identify proper attack assets from fighters under their control and hand them off to JSTARS.[10]

DBM of Theater Interdiction may be perceived as a loss of control by the JFACC. On the contrary, it is no different than the degree to which a certain amount of control is "lost" to the execution of DCA (defensive counter air) or CAS by lower echelon C2 nodes on board AWACs or ABCCC. In fact DBM is very similar to the way DCA or CAS missions are conducted today. The AOC allocates sorties towards AWACs for DCA and, similarly, to ABCCC or FACs for CAS. These assets are employed

appropriately by controllers who are directly connected to the battle and are aware of the battlefield situation, dynamics and plan.

## DBM of Theater Interdiction

DBM tries to answer the problem of inertia prevalent in large organizations such as the TACC because it focuses the execution of interdiction into a smaller, lower level entity. Smaller "sub-organizations" are inherently more flexible than their parent organization if empowered appropriately with resources. Small organizations are generally less burdened with the bureaucratic encumbrances of large organizations. Large organizations are more likely to "satisfice" or make decisions based on standard operating procedures. Also, the processes found in large organizations are often slow to adapt in a dynamic environment.[11] Establishing a sub-organization or within the AOC to be the focus of theater interdiction might ameliorate the characteristics of inertia which causes inflexibility in large organizations.

DBM aims to answer the problem posed by rigid JFACC guidance by allowing a lower level C2 node (e.g. JSTARS) to execute the interdiction effort more freely, that is, removed from "minute by minute" JFACC control. Execution based on JFACC intent is not new but engagement authority at the lower echelon is new for interdiction. A high tempo battlefield requires decentralized execution in order to maintain the initiative and to be proactive in accomplishing interdiction objectives. This decentralized execution allows the decision-maker on board the JSTARS, or other similar ground based C2 node, to "what if" the picture he/she sees and considers a broad range of options. Subsequently, the appropriate action is executed in accordance with JFACC intent. Engagement

authority gives the decision-maker the ability to flex and implement the chosen course of action rapidly and efficiently, independent of rigid JFACC guidance.

DBM resolves a large part of the problem posed by the slow ISR data interpretation within the AOC. This lack of information provided to the decision makers prior to the battle of Khafji shrouded the Iraqi intentions. We have proven our ability to transmit immense volumes of information thousands of miles in nano-seconds but getting that information moved within the AOC to the appropriate decision maker takes time. In a DBM environment intelligence pertinent to the interdiction effort is collocated on board the JSTARS or similar C2 node with the decision-makers who need it. There is no question as to where the intelligence needs to go. The decision-maker is provided near real time intelligence from which to analyze trends, enemy intentions and to decide on an appropriate course of action. Thus, DBM provides a vital step toward achieving a greater degree of responsiveness and flexibility in applying airpower and is critical to the successful execution of the interdiction campaign.

The combination of the delegation of engagement authority with near real time intelligence onboard the JSTARS overcomes the effects of inertia, rigid guidance and slow ISR data interpretation to impede the responsiveness of airpower to changes on the battlefield. Engagement authority, delegated to JSTARS, makes it an authentic airborne command, control and communications (ABCCC) platform from which the theater air interdiction effort can be executed with responsiveness, flexibility, and lethality. JSTARS should be adapted to perform this role to make the DBM concept a reality future interdiction operations.

## Planning for Interdiction

Another aspect of the solution to the problem posed by inertia and rigid guidance is the need for a more efficient Joint organization responsible for planning theater interdiction strategy. Effective execution of theater interdiction depends on thorough planning among components. Such an effort could be conducted by means of a Joint theater interdiction coordination cell (JTICC) within the AOC. The JTICC could provide the JFACC with a centralized organization for C2 of the theater interdiction campaign which is not currently provided for in Joint doctrine.[12] The JTICC could serve as such an organization under control of the JFACC. It could be the focal point for planning, coordinating, synchronizing, and monitoring the execution the theater interdiction effort.[13] The JTICC could be built upon the existing structures such as the Army BCD (Battle Coordination Detachment) in the AOC, the Corps Deep Operations Coordination Cell (DOCC) and the CINC's Joint Force Fires Coordinator (JFFC). The cell would consolidate inputs from to ensure synchronization of the interdiction campaign with maneuver. The JTICC could be a key provider for inputs to the Joint Prioritized Target List (JPTL). Since there will "never be enough joint assets to meet interdiction demands" it may be essential to have a JTICC as the central manager for that scarce asset.[14] Such a lean but highly specialized organization overcomes the challenges posed by inertia and rigid JFACC guidance by becoming the JFACC's trusted agent for theater interdiction operations.

Finally, the senior officer representatives to the JTICC are key to overcoming rigid JFACC guidance and inertia because they are subsequently free to execute their synchronized interdiction plan from onboard the JSTARS, or another appropriate C2

node. Decentralization, as shown here with DBM, may enhance our ability to truly synchronize interdiction and maneuver for the first time and enjoy the benefits therein. Continuity and focus may also be maintained by linking planning and execution in this way. It could ensure the strategy remains true to the commander's intent and is not diluted by misinterpretation by those who may not be intimately familiar with the interdiction plan.

## Conclusion

The implications of Khafji are indeed vast for operational airpower. Mechanized warfare appears to have a limited role in some future scenarios. Airpower has achieved primacy among other forms of warfare and airmen must embrace this status. CINCs must structure their forces to leverage airpower to efficiently accomplish their objectives. Joint warfighters will be expected to exploit the capabilities of airpower as the main effort on the battlefield of the future.

In terms of Joint doctrine, we need to explore the possibilities of DBM and JTICC as a means of overcoming Allison's model II/III organizational behavior within the AOC. Decentralized execution via DBM provides flexibility and responsiveness to handle the high tempo battlefield of the future. Establishing an organizational structure to centralize planning for the theater interdiction campaign brings together all the appropriate inputs to the JFACC for the first time. The result is a thorough and truly Joint Strategy and flexible plan for theater interdiction. The execution of the interdiction plan remains true to the commander's intent by linking the JTICC organization with the DBM system.

## Notes

[1] Air Force Doctrine Document 2-1.3, *Counterland Operations*, Second Draft, 18 February 1997, i-vi.

[2] Ibid.

[3] Felker, Edward J. Lt Col USAF, *Oz Revisited, Russian Military Doctrinal Reform in Light of Their Analysis of Desert Storm*, Air University Press, Maxwell AFB Al, 1995, 35; Major Dan Clevenger, *'"Battle Of Khafji:' Air Power Effectiveness in the Desert,"* Vol 1, (U), Air Force Studies and Analysis Agency, July 96, 48-49.

[4] George C. Wilson, "Challenging the Conventional Wisdom: Commander Says the Services Must Reassess Themselves, *The Air Force Times*, April 7, 1997, 28.

[5] William Matthews, "More Cuts to F-22 Program are Likely," *Air Force Times*, May 19,1997, 6.

[6] TACC and AOC are used synonymously throughout this section IAW with current doctrine and terminology. "AOC" is the current doctrinal term for the focal point for theater air operations. There are differences between the TACC in Desert Storm and the modern AOC but they are irrelevant to the purposes of this paper. When referring to events from Desert Storm, the term "TACC" is used. "AOC" is used in all other cases.

[7] LtCol David T. Jones, , "Combat Air Forces Concept of Operations for Command and Control of Time Critical Targets, HQ ACC/DRAC, November 1996, 22.

[8] Ibid., 1.

[9] Ibid., 24.

[10] Ibid., 25.

[11] Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis.* (Harvard University Press: Harper Collins Publishers), 1971.

[12] See Joint Pub 3-03 Doctrine for Joint Interdiction Operations, (Preliminary Coordination).

[13] Adapted from LTC Rick Pena, MAJ Kevin Whitlatch and MAJ Mark Shepperd, Doctrine Note: "New Doctrine on Deep Battle Coordination," (Fort Leavenworth KS, 5 July 1995), 3.

[14] Joint Pub 3-03 Doctrine for Joint Interdiction Operations, (Preliminary Coordination), xii.

# Chapter 6

# Conclusion

> *If you are looking for a bottom line on Khafji, I think you have to look at the output, the results…You stack up a [Coalition] brigade plus versus three [Iraqi] divisions and now you begin to understand the impact of airpower on the Iraqi army in the battle of Khafji.*
>
> —General Horner
> CENTAF Commander during Desert Storm
> 27 February 1996

This study has traced the Battle of Khafji from the events that lead up to the invasion on the evening of 29 January through its conclusion on 3 February 1991. The Battle of Khafji, as we have come to know it, was really a combination of three concurrent battle. The Marine outposts fought one battle along the Saudi-Kuwaiti border. This battle was primarily fought by Coalition CAS which smashed the initial Iraqi efforts. The second battle was at Khafji itself where Coalition ground forces and CAS defeated the Iraqi forces occupying the abandoned town of Khafji. The third battle was the Coalition air interdiction effort against Iraqi follow–on forces. This study shows how this third battle defeated the Iraqi army and its strategy. The Coalition was not forced into a costly ground war and Saddam's army was shown to be impotent in the face of Coalition airpower.

This study of the Khafji battles yields two areas of analysis. First, Khafji supports what airmen have asserted for years. Airpower can be dominant in warfare under the

right conditions. Airpower was decisive in defeating an advancing army at Khafji. The strategic effect was that the military and political leadership lost confidence in their ability and will to fight.

Second, the analysis of the Battle of Khafji shows shortcomings in the battle management of airpower despite the overwhelming success. The mindset in the TACC by D+13 was that the enemy was not going to try anything. Operations became routine and inertia had taken hold. Also, the TACC was slow to interpret the available intelligence and the TACC controllers remained focused on rigid JFACC guidance. The result was a lack of responsiveness and flexibility to the dynamics of the battlefield. Once the attacks began, the TACC was slow to realize the enemy intentions. Moreover, the initial response was tentative and lacked the firepower to repulse the attack on Khafji.

The implications of Khafji are indeed vast for operational airpower. Airpower has achieved primacy among other forms of warfare. CINCs, airmen and all Joint warfighters must embrace this status. American force structure should reflect the dominant role of airpower over mechanized forces. We must leverage airpower on the modern conventional battlefield to win our nation's wars efficiently and decisively.

On the other hand, we need to improve battle management of the theater interdiction effort. Airpower looses its responsiveness and flexibility in an over-centralized system. One solution is to explore the possibilities of a Distributed Battle Management and a formalized theater interdiction organization to plan and execute the CINCs theater interdiction campaign under the JFACC. Such a move would go a long way towards proper employment of airpower as the main effort on the conventional battlefield of the future.

# Conclusion

The implications of the Battle of Khafji must be acted upon by all warfighters. It is important that we understand the magnitude of the effect air interdiction had on the Iraqi army and strategy. As this study has shown, airpower was truly successful in defeating the enemy forces. But, airmen must know the conditions that made air so lethal in Desert Storm and anticipate what may have to be done differently in the next conflict. To be satisfied with the success of the past will doom airpower to failure in the future. Airmen must take these conclusions and learn from them.

First we must accept the dominant role for airpower in fighting the next conflict. This means we must ensure our force structure emphasizes the capabilities we need to fight future wars. This implies force structure and warfighting strategy changes in favor of airpower. To do both requires effort now, not when conflict is imminent. It will be too late if we wait to take action.

As this study points out, there were problems with battle management of airpower. The Air Operations Center organization and over centralization therein is at the heart of the matter. Specifically, the command and control organization as well as the execution process of airpower needs to be refined. These problems must be investigated and resolved. The means of decentralizing execution of the theater interdiction mission is vital to the responsive and flexible application of airpower. We must explore Distributed Battle Management and other possible solutions to the problems encountered in the Air Operations Center as a means of realizing the basic characteristics of airpower–responsiveness and flexibility.

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