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HOW AIR POWER WON THE GULF WAR

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Exercise Solo Flight

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HOW AIR POWER WON THE GULF WAR

When Saddam Hussein invaded Kuwait in August of 1990, he set off a chain reaction that would result in one of the most coordinated counter-offensives by coalition forces in history. Saddam's Army moved fast and set up defensive forces within Kuwait. As this invasion took shape, the United States began preparations to liberate the Kuwaiti people and force the Iraqi invaders back into their own territory. No one could have predicted the sheer force the US and their allies were about to bring to bear. The Allies were able to establish bases in neighbouring Saudi Arabia and transport a tremendous amount of equipment and personnel to these bases. By the New Year, the Allies were all set and the push back of the Iraqis had begun. In comparison to historical wars, the liberation of Kuwait was over relatively quickly with the entire operation taking just 6 months, 3 weeks and 5 days from invasion to liberation. While the coalition approached this issue with a total force concept, there was really one dimension that won the war. Some may argue that the swift moving ground offensive is what won the war in Iraq but that is simply not a valid statement. Without the successes of air power during the initial phases of Operation Desert Storm and throughout the entire campaign, the outcome would have been a lot different. The strategic and tactical employment of air power, during the Gulf War, was the dimension responsible for the overall victory. This paper will breakdown the employment of the different aspects of air power capability and highlight their contribution to the fight. It will also highlight the effectiveness of well-planned, strategic targeting. Finally, the focus will shift to the ground war and how the land forces moved virtually uninhibited, by Iraqi forces, into Kuwait thanks to the work done by air power.

Air Power

When discussing the effects of air power throughout the Desert Shield and Desert Storm phases of the Gulf War, it is important to realize that the effects being discussed are not solely Air Force but instead relate to the air power capabilities of all the services, Navy, Marine, Air Force and Army. This section will breakdown how the different aspects of air power capabilities contributed in their own way to the lopsided victory as well as look at the one limiting factor that caused delays to the entire air operation.. These aspects include strategic airlift, electronic warfare, fighter force, bombing and, tactical aviation. Due to the length of this paper, each section will only highlight the most effective assets that were used during the war.

Strategic Airlift. When discussing strategic airlift it is important to note that the conversation includes the heavy lifters as well as the air-to-air tankers. Operation Desert Shield kicked off on the 7th of August 1990 and within the first 30 days, US Transport Command and Military Airlift Command were responsible for moving over 72,000 tonnes and 91,000 personnel into bases in Saudi Arabia.¹ During this phase of the operation, the Allied Forces relied heavily on strategic carriers such as the C5 Galaxy, KC141 Star Lifter and, CC130 Hercules, to move the stores required to air bases in the Middle East. Air-to-air tankers were also instrumental in the deployment ensuring the heavy lifters could make the 8,000 miles across the air bridge into the war zone. As Desert Shield transformed into Desert Storm, the inter theatre transport capability turned into intra theatre as CC130 cargo planes moved troops and equipment into Rafha airport in Saudi Arabia at a rate of 1 aircraft every 10 minutes for 14 days straight.² By the time the war was over the airlift capability of air power was responsible for moving over 478,000 tonnes of

¹ William R. Tefteller, *Strategic Airlift Support for U.S. Forces Deployment to Operation Desert Shield*. (Washington DC, The Industrial College of the Armed Forces, 1991) p 1-3

² "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

cargo, 456,000 combat troops with over 13,500 sorties.³ Considering the war was just shy of 7 months, this was truly a remarkable feat. Allied forces were able to amass a substantial ground force along the Iraqi front at a rate that caught the enemy by surprise. Air-to-air refueling tankers provided 24/7 assistance to the fighters and bombers, enabling them to project deep into Iraqi territory. Without this capability, the allies' timelines would have substantially increased thus opening the ground forces up to attack.

Electronic Warfare The electronic warfare capability of air power was still in its infancy and under development but extremely important in ensuring the allied fighters had a safe ingress and egress route while delivering their bombs on target. Arguably, this was the first time that EW took on such an important role in a warfighting scenario. After invading Kuwait, Saddam established a layered air defence network that included surface to air missiles (SAMs) and anti-aircraft artillery (AAA). The SAMs were designed to take out higher aircraft using radar technology while the AAA were responsible for the lower aircraft.⁴ The way that the coalition countered this was with a layered attack of their own. A combination of strike aircraft as well as F4 Phantoms carrying the high speed anti radar missile (HARM), that would attack Iraqi radars the moment they were turned on, made short work of the SAM sites.⁵ Once the SAM sites were all but disposed of, the allies countered the AAA by both attacking the AAA sites and by simply ingress and egressing enemy territory above the range of the AAA.⁶ In the beginning Saddam Hussein and his military appeared to be in a good position after the invasion, in terms of air

³ William R. Tefteller, *Strategic Airlift Support for U.S. Forces Deployment to Operation Desert Shield*. (Washington DC, The Industrial College of the Armed Forces, 1991) p 16.

⁴ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

⁵ Jesse M. Baker, *Desert Storm and The New American Way of War: Implications for Air Force 2020*, (Maxwell Air Force Base, Alabama, School of Advanced Air and Space Studies, June 2012) p 19-22

⁶ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

defence. However, the coalition's plan for suppression of enemy air defence (SEAD) was just too powerful. The employment of older platforms in the F111 and F4 aircraft combined with the newer F16WWs and JSTAR aircraft introduced the world to the air power capability of electronic warfare and paved the way for allied victory in Iraq. The EW assets delivered a capability that could not be matched by the ground forces. They enabled a freedom of movement for allied air assets that was critical to gaining air superiority.

Fighter Force. When the air war started in January 1990, the plans for a phased approach were short lived. The speed at which the allies were able to advance caught even them by surprise. In order to claim full air superiority, the coalition had to not only complete the SEAD offensive but also needed to make sure that the Iraqi air force was annihilated. This meant that the allies had to conduct SEAD activities in conjunction with taking out the air-to-air threat. For this the coalition used a variety of aircraft. The Iraqi Air Force was virtually irrelevant throughout the entire Desert Storm phase of the war. The allies were able to attrite the Iraqi air force at such a rate that Saddam's forces fled to Iran. In all the Iraqi Air Force only lasted a total of 25 days of Desert Storm. During that time coalition aircraft shot down 35 Iraqi fighters with no confirmed losses in the air-to-air combat regime. 109 Iraqi aircraft escaped to Iran and 151 were destroyed by coalition forces on the ground.⁷ The counter air offensive was so successful that the Iraqi pilots became demoralized as every time they would go to take off they were shot down.⁸ Coalition aircraft destroyed enemy aircraft both in the air and on the ground as their bombs penetrated hardened shelters, originally deemed impenetrable by the Iraqis. With this type

⁷ Benjamin S. Lambeth, *The Winning of Air Superiority in Operation Desert Storm*, (RAND, Santa Monica CA, 1993) p 4

⁸ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

of success, Saddam's ground forces were left without the all-important capability of close air support.

Only 25 days into the campaign and the Iraqi military was reduced to a single dimension, that being ground forces. Once the ground war started, the allies' close air support (CAS) was also extremely effective. Assets such as the A10 hit enemy targets with pinpoint accuracy and struck fear into the hearts and minds of enemy ground forces. A captured Iraqi tank commander told his interrogators that they feared the A10 the most because of its accuracy. He went on to state that when they knew the A10s were in the area they feared for their lives because they never knew if they were being targeted until it was too late.⁹ The fear instilled by these aircraft undoubtedly left the Iraqi forces all but paralyzed and unable to fight. The CAS ability is further proof that air power was responsible for this victory.

Bombing. The bombing capability of air power also played a key role in the allied victory as well. Bombs dropped from both fighter assets as well as strategic assets, such as the B52, wreaked havoc deep behind enemy lines. F117 Stealth bombers were able to penetrate deep into enemy territory and take out precision targets, the value of which will be discussed later in this paper. The F117 was one of the most effective aircraft ever used in a bombing campaign. While the F117s represented only 2.5% of the total coalition aircraft, they successfully took out more than 30% of the strategic targets in the first evening of offensive operations.¹⁰ The accuracy of the strategic bombing campaign was like nothing witnessed before. During this bombing campaign, the allies were able to take out a single target effectively using one precision guided

⁹ *Ibid*

¹⁰ Richard G. Davis, *Decisive Force Strategic Bombing in the Gulf War*, (Air Force History and Museums Program, 1996) p. 6

bomb where in World War II it took 3,000 and in Vietnam it took 300.¹¹ This degree of accuracy allowed coalition aircraft to bomb multiple targets on a single sortie and thanks to the stealth technology of the F117, they could do so avoiding Iraqi radar. The F117 was only one piece of the bombing campaign however it was the most effective tactical asset, especially out of the gate.

The B52 was another key aircraft in the bombing campaign. Unlike the F117, the B52 was a strategic asset that was capable of flying all the way from the US, drop their bombs and return back home after the mission was complete. In fact, the first attack aircraft used in the war were seven B52s that launched out of Barksdale Arizona. The aircraft flew into the theatre of operation, released their air launch cruise missiles (ALCM) and returned back to the United States.¹² There are many advantages of operating in this manner. First the infrastructure and logistical support required to assist these operations do not need to be moved and more importantly, there is virtually no risk of the enemy taking these out on the ground. One of the main goals of the employment of the B52s was to strike fear into the hearts and minds of the Iraqi soldiers through a physiological campaign that was a welcome side effect to the bombing campaign. This was successful as captured Iraqi soldiers would testify that the B52 was the most feared bomber in the coalition arsenal.¹³ Arguably one of the most important missions that the B52 took part in was the counter mine operations. During these operations, the B52s would bomb an entire mine field in order to cause the mines to ignite making it clear for the allied forces to pass. Up to 10 percent of all B52 operations were counter mine.¹⁴ Even though the B52 operations were not perfect, they were vital to achieving the goals set out by the commanders.

¹¹ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

¹² James A. Winnefeld, Preston Niblack, Dana J. Johnson, *A League of Airmen US Air Power in the Gulf War*, (Santa Monica CA, RAND, 1994) p. 167

¹³ James A. Winnefeld, Preston Niblack, Dana J. Johnson, *A League of Airmen US Air Power in the Gulf War*, (Santa Monica CA, RAND, 1994) p. 168

¹⁴ *Ibid*, p. 168

Whether taking out strategic targets, mine fields, army vehicles, or just attack the Iraqi soldiers will to fight, the bombing capability of air power was crucial to the success of the mission.

Tactical Aviation. When discussing tactical aviation, the focus is on those attack and support helicopters that deliver an effect, normally to land forces on the ground near the front line. One of the most effective assets was the Apache helicopter equipped with the Hellfire missile. Like the B52 bombers, the Apache helicopters were part of the first wave of attacks on Iraqi forces at the beginning of the campaign. Eight Apaches launched attacks on Iraqi radar outlets, destroying them and providing an initial dent in the Iraqi Air Defence armour.¹⁵ The Apache was a very effective aircraft that did a great deal of damage to the Iraqi army, especially their armoured vehicle and tank divisions. During the 100 hour ground offensive, the Apaches destroyed over 1,170 targets including 278 tanks, 235 armoured vehicles and 121 artillery batteries.¹⁶ This capability of air power was yet another example of how total dominance in the air won the war for the coalition. With the ability to see out ahead of the advance provided by helicopter operations, coalition land forces were able to move through Saddam's armies without resistance.

Weather effects on the Air Operation. The allied air operations were able to basically operate against the Iraqi Air Force and Air Defence unimpeded but they were not able to beat Mother Nature. During the initial seven days of the operation, the majority of the sorties planned were lost due to weather. Normally this would have put the coalition plan way behind schedule, but due to the lack of effectiveness of the Iraqi forces coupled with the dynamic planning and

¹⁵ United States General Accounting Office, *Operation Desert Storm: Apache Helicopter was Considered Effective in Combat but Reliability Problems Persist*, (Washington DC, April 1992) p. 21

¹⁶ United States General Accounting Office, *Operation Desert Storm: Apache Helicopter was Considered Effective in Combat but Reliability Problems Persist*, (Washington DC, April 1992) p. 16

targeting capabilities of the allies, the plan was able to get back on schedule relatively quickly.¹⁷ Air power was so effective that its employment was able to overcome even obstacles outside of their control.

Strategic Targeting

Unlike previous wars, the coalition planners had precision guided munitions at their disposal capable of inflicting significant damage with a single bomb. As previously mentioned, the allies were able to take out a target with one bomb where it previously took hundreds or thousands. When selecting the targeting packages, planners looked at infrastructure that was key to supporting the Iraqi mission and also attacked their will to fight. These targeting packages included national leadership, military and civilian command and control structures, electronic power generation, oil refineries , nuclear biological and chemical weapons, military logistic lines of communication and, scud missiles and launchers.¹⁸ One by one the coalition forces destroyed these key infrastructure pieces within Iraq, crippling not only the Iraqi military but also hampering the Iraqi peoples way of life. In doing this, the coalition was able to attack any type of support that the Iraqi people had for the invasion of Kuwait. In order to ensure that the momentum of these operations was kept in their favour and would not shift back to Saddam leadership instructed that collateral damage was to be minimized. The planners shifted focus to ensure that only infrastructure and vehicles vice soldiers and personnel. Pilots were told that if they did not have a clear shot at a target that they were to bring their bombs home.¹⁹

¹⁷ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

¹⁸ Richard G. Davis, *Decisive Force Strategic Bombing in the Gulf War*, (Air Force History and Museums Program, 1996) p. 52

¹⁹ "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

Scud Missiles. Of these targets, the scud missiles were hard to uncover and destroy. Scud missiles were considered to be Saddam's most potent weapons and for that reason was one of the most important targets. This fact resulted in allied forces having to focus a great deal of assets in the hunt and split them away from other targets. Coalition forces were working hard to track and kill these assets, so much so that they dedicated over twenty-two percent of strategic air missions were dedicated to the scud hunt.²⁰ While the bombing campaign did not have the same success that the other aspects of the bombing campaign in terms of destruction and attrition of Iraqi scud hardware, they were successful in limiting Saddam's desire to use them. Once the bombing started, Saddam dispersed these high value targets throughout the county so that they were not easily attacked.²¹ This meant that the launchers were not at the ready and able to be used short notice which in turn reduced the amount that they could be employed against allied troops and assets. The scud hunt was a perfect example of how the effectiveness of air power extended beyond destroying targets into the psychological aspects. Saddam was so scared of losing the strategic asset of scud launchers he hid them instead of used them rendering them virtually ineffective.

The Ground War

By the time the ground war started, the air assets had inflicted serious damage to the Iraqi ground forces. Aerial attacks from bombers ensured that the ground forces were able to move freely into Kuwait and push the Iraqis back to Iraq. During an interrogation of one of the Iraqi ground commanders, American personnel asked why the commander was not employing artillery against them. The commander replied that the air assets had destroyed all of the artillery in his

²⁰ Richard G. Davis, *Decisive Force Strategic Bombing in the Gulf War*, (Air Force History and Museums Program, 1996) p. 60-63

²¹ *Ibid*, p 60-63

division and when he asked for assistance from a neighbouring division he was informed that the neighbouring division's artillery was also destroyed by allied air power.²² This coupled with the fact that the land forces were able to accomplish their mission in only 100 hours is proof that air power won this war.

Conclusion

From the moment the decision was made to step in and drive the Iraqis out of Kuwait, air power was front and centre in the planning and execution. Air power systematically destroyed key infrastructure including command and control structures, communication facilities and power production plants, crippling basic necessities of life for the Iraqi people. Air power also rendered Iraqi Air Forces useless and sent Iraqi Army forces running back into Iraq. Even though the allied forces were not able to destroy scud missiles completely, the successes of the bombing campaign and effectiveness of electronic warfare assets made Saddam limit the employment of his most valuable resource. The most important win for air power in the campaign, that set the tone for the entire conflict, was the psychological war. Air power destroyed the Iraqi combatants' desire to be in the fight therefore when ground campaign started, the enemy was quick to surrender. There is no arguing the fact that the allied ground forces moved swiftly through the remains of the Iraqi Army at the end of the campaign prior to the coalition declaring victory in the war. What is argued is whether or not air power won the war single handily. This paper has shown that air power was solely responsible for the majority of key target destruction and the attrition of enemy forces resulting in decayed capability or surrender. Without a doubt, it can be stated unequivocally that air power was the key to allied victory.

²² "USAF Air Superiority of Desert Storm," You Tube video 35:44 posted by Documentary Tube, 16 January 2014, <https://youtu.be/P5TMmQ-QwsY>

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