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THE ATTRACTIVE ALLIANCE PARTNER – THE FUTURE ROLES OF THE ROYAL NORWEGIAN AIR FORCE

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PART 1 – INTRODUCTION

"Quite frankly in this conflict there were a lot of air forces that did not help me because they could not drop precision, they could not fight at night and they could not fight in all kinds of weather."[1]

Presentation

The Royal Norwegian Air Force (RNoAF) contribution to Operation Allied Force was a fighter Immediate Reaction Force (IRF) of six F-16s. The unit was, as the rest of the RNoAF, structured, trained and equipped to conduct defensive counter-air operations. Its operational focus was a legacy from the latter decade of the Cold War when the RNoAF, operating under NATO-doctrine, concentrated heavily on this aspect of air operations. What seemed to be a right choice of strategy and emphasis during the Cold War later turned out to be mostly irrelevant in a post-Cold War campaign in a peace enforcement scenario. Thus, the RNoAF participation in Operation Allied Force ended up being more a political showing of the flag than a substantive military and operational contribution.

Norway's experience in Kosovo raises an important question: should a small air force like the RNoAF specialize or generalize, and if the answer is specialization, what is the most relevant aspect to emphasize? Another issue that arises from the same theme is whether Norway should have an air force that is dedicated to certain niche roles that contribute to the larger NATO alliance, or if priority should be given to a general-purpose air force serving national sovereignty demands.

The ongoing discussions on these issues coincide with the heaviest restructuring of the Norwegian armed forces after World War II, as well as the early phases of the fighter aircraft replacement project for the aging F-16 fleet. Furthermore, increasingly in

the last decade, air power has become the choice for Western policy-makers in dealing with crises occurring in their areas of interest. It was the principal instrument of force in both Operation Desert Storm in 1991 and Operation Enduring Freedom in 2001-02, and the only instrument in Operation Deliberate Force in 1995, Operation Desert Fox in 1998 and Operation Allied Force in 1999.

The RNoAF has traditionally concentrated heavily on counter-air operations in order to secure air superiority in case of an attack on Norway. This operational requirement stemmed from to the need to safely bring in allied reinforcements. The operational scenarios confronting the Norwegian military are dramatically changed after the demise of the Warsaw Pact; in short, there is no imminent threat to Norwegian territory. It is therefore possible to shift the focus from defensive to offensive operations and to concentrate more heavily on what is anticipated to be the most relevant use of air power in the future. If the RNoAF wants to take part in solving future conflicts, or even more seriously: if Norwegians want their air force to remain in-being, they need to shift the focus from air defence to air-to-ground operations equipped with precision-guided munitions (PGM). Thus, this paper will argue that the RNoAF should develop an air-to-ground niche capability to be relevant in future conflicts.

Outline / structure

The discussion on how a small air force like the RNoAF should prepare for future challenges has to be founded in the history of the service and in the realm of the nation's international and security policy. The first part of this paper will be a presentation of the role of the armed forces in Norwegian society, and a discussion on the general aspects of Norwegian security policy with an emphasis on the period after World War II. The role

played by the RNoAF within the realm of security policy will be discussed in order to demonstrate why the service ended up with an exclusively defensive orientation at the end of the Cold War.

Cases of recent uses of air power will be studied to analyze how a small air force should be structured and trained to meet the challenges of the future. The Gulf War, Operation Allied Force in Serbia and Kosovo and the ongoing operations in Afghanistan, Operation Enduring Freedom, are the three cases that will be subjected to analysis. The main purpose of the case studies is to find out to what extent smaller air forces contributed to the total effort and in what kind of air operations they were involved. This paper suggests that air-to-ground capacity was, and will be in the future, the most relevant and wanted "resource" that a small air force can bring to the fight. While this is mostly due to military operational needs, air-to-ground operations also address issues of political significance given the risks involved in them. Participation in them is more than just committing support forces; it is about sharing the risks and dangers involved in power projection.

The last part of the paper will discuss the future challenges for the Norwegian armed forces in terms of combining the requirements for adequate strength in national defence with relevant capabilities when it comes to international commitments. This part will discuss certain deficiencies in the commitments to the NATO Alliance that have been identified and are addressed in the NATO Defence Capabilities Initiative, and link those to the capabilities needed for an adequate future defence of the Norwegian territory.

PART 2 - NORWAY – THE SOCIETAL AND POLITICAL CONTEXT

The Role of the Armed Forces in the Norwegian Society

Given Norway's exposed position, its shared border with Russia, its unfavourable geographical area to population ratio, and an uneven distribution of people and other resources between the South and the North of the country, it is apparent why a full mobilization of all resources available is a central tenet of Norway's defence concept.[2] This "Total Defence Concept" implies general compulsory military service for the male part of the population, and requisition of civilian resources in wartime.[3]

Compulsory military service starts the year a male Norwegian citizen reaches 19 years of age, and lasts to the end of the year in which he turns 44 years old. The service includes a period of initial service (6-12 months), refresher training, and possible additional service in peacetime.[4] Despite the burden of national service on male Norwegian citizens, it has led to certain advantages with regards to Norwegian attitudes towards their defence. Norwegians are well aware of the needs for a defence establishment because military service is an integral part of Norwegian daily life and the fact that every family has someone who is enrolled in the military organization. The attitude toward military defence is generally positive. In 2000, 86 per cent of a representative fraction of the population answered yes to the question whether Norway should have a military defence.[5] Only 7 per cent were negative. In the same poll 70 per cent agreed that NATO helps to safeguard the country.[6] It is obvious that the statement of the Chief of the Defence Norway in 1986 concerning the population's belief in a strong defence still has value:

> It is in Norway a comfort to note that the vast majority of the population for decades have expressed their strong belief in a credible, national defence, and that NATO is the answer to contain expansionism in our part of the world.[7]

While it is obvious that the population and the politicians are clear that Norway needs a military defence, are there any indications that offensive operations might be negatively regarded? The answer to this is no. The Norwegian air force doctrines from World War II and to the late 1970s stressed the need for a capability to strike ground targets, more specifically to conduct air interdiction and offensive counter-air operations. As will subsequently become apparent, the defensive posture taken by the air force, and its emphasis on defensive counter-air operations, is more a result of self-imposed fiscal restrictions than a result of ideological objections to air-to-ground operations held by politicians or the public.

The Norwegian Political Approach to National and International Security

Norway ceded from its union with Sweden in 1905 with considerable military strength in relative terms. Still, the guidelines for foreign policy drawn up by the government formed in 1905 stressed that Norway should refrain from entering external alliances. This policy of neutrality had the broad support of the population. Norway's neutrality through the First World War and the interwar period meant that its defence forces literally withered through the 1920s and 1930s given dramatic reductions in defence spending.[8] Norway sought to maintain its neutrality at the onset of World War II. There was a broad political consensus for this stance.

However, Norwegian territory, coastline and harbours were of strategic importance to both sides in the coming war. Swedish iron ore, shipped through the

Norwegian port of Narvik raised the importance of the lines of communication between Germany and Norway. Hence, the Western alliance placed considerable importance on the question of German ability to use Norwegian waters. Germany was also motivated by their navy's desire for Norwegian bases for the coming war at sea. The German navy had not forgotten how their surface fleet had been trapped in the Baltic during the First World War, and understood that their submarines could have been more effective with more bases in the Atlantic Ocean theatre. In retrospect, it seems clear that there was a race between the two sides over the control of Norway. The Western Allies wanted to control Norwegian harbours and coastline, or in worst case, to disallow German control of it. The Germans' objective was to take direct military control over Norwegian territory and waters. The Germans won the race: early in the morning of the 9th of April 1940 German forces invaded the country. Norway was surprised by an extremely well planned and daring surprise attack.

German troops landed from warships at all the main ports and airborne troops seized the main air bases in the southern part of Norway and opened the way for Luftwaffe fighter and bomber aircraft. The British later landed 30,000 troops in Norway and linked up with the remnants of the Norwegian forces. However, because of German air superiority, the Allied forces were incapable of winning or holding any ground.[9] On the 10th of May 1940 Germany invaded Belgium, the Netherlands and France. The situation on the Western Front later became so critical that the Allies decided to withdraw from Norway. The Norwegian King and the Government left the country on the 7th of June, and on the 9th of June, General Otto Ruge signed the terms of capitulation with the German occupying force.

The Norwegian illusion of repeating its World War I role as an unnoticed, neutral and peripheral state in another major war was broken. The key lesson of April 1940 suggested to Norway that the country might, despite its desire for neutrality, be drawn into a conflict purely because of natural resources and geo-strategic position. Another important lesson was that allied help would be forthcoming only if preparations to receive it were carried out in advance. A key determinant was that Norway had to be master of its own airspace in the early stages of any conflict, if reinforcements were to come at all.[10]

Norway entered the postwar era with a clear ambition of becoming a bridge-builder between the emerging superpowers, the United States and the Soviet Union. Still, it was quite clear that the country was oriented to the western world, and it became even more obvious for the Norwegian public and politicians in 1948 during the crises in Berlin and Czechoslovakia that year. Both World War II and the events of the early Cold War stimulated a fundamental revision of Norwegian defence and security policies. The country needed an alliance to be guaranteed assistance in an eventual future conflict.

The question of Norwegian membership in the North Atlantic Treaty Organization (NATO) was thoroughly debated by the political parties, the national assembly (Storting) and the press. In the end the Storting voted for NATO membership by a wide margin - 130 to 13. Norway signed the Washington treaty as one of the original members on 4 April 1949.[11] Still, Norway's shared border with the Soviet Union made it cautious in its desire for assistance in its local defence. The Norwegians sought to maintain security within the Atlantic Treaty while refraining as much as possible from provoking the Soviet Union.

The country placed several restrictions on its participation in the alliance. The most important was the banning of deployment of foreign troops in Norway, the so-called "base policy." While the "base-policy" prohibited the stationing of allied troops on Norwegian soil in peacetime, it did permit preparations for military support in a crisis situation, allied exercises, and the development of installations to accommodate allied and Norwegian troops in times of war. The guarantee of allied help had to be made credible by preparations for military support in an emergency. The preparations included stockpiling of allied equipment on Norwegian soil, joint and combined exercises on Norwegian territory, and brief visits by NATO air and naval forces.[12] For many years, even this limited NATO participation was challenged by the Soviet Union. However, it was eventually accepted and was generally considered to be an important contribution to stability in Northern Europe.[13]

In short, the Norwegian approach to national and international security through the Cold War was a heavy reliance on NATO in case of an invasion of Norway, balanced by a concern not to provoke the Soviet Union through offensive political and military activity.

The end of the Cold War and the demise of the Warsaw Pact have fundamentally changed the political and military situation in Europe. The Norwegian relationship with Russia is characterized by communication and cooperation even while the political situation there is still uncertain and unpredictable. Uncertainty and instability in and around the Euro-Atlantic area as a result of the breakdown of the Warsaw Pact and the possibility of regional crises at the periphery of the Alliance, means that the potential for armed conflicts is more imminent today than during the Cold War. The Balkan Wars and

other armed conflicts within and in the vicinity of Europe prove that peace cannot be taken for granted. Hence, it is still of vital importance for Norway's security that NATO remains an effective, collective defence alliance.[14] The basic tenet of Norwegian security policy remains unchanged after the end of the Cold War; NATO must play the central role in Europe's new security arrangement.[15]

Within NATO two concerns are evident when it comes to Norwegian security; the first is the relationship with the United States and the second the relationship with the European Union (EU). Norway is completely dependent upon a military guarantee from the USA. Nevertheless, the country remains a member of the European family, despite that the Norwegian population rejected EU membership for the second time on 28 November 1994.[16] As a result, Norway seeks to convince both the US and EU that it must not be neglected in future efforts to develop and transform the security policy configuration. In order to ensure that this objective is met, Norway must take her share of the burdens concerning the defence of Europe and its adjacent areas.

In short, the experience from April 1940 suggests to Norway that the country risks being involved in conflicts because of the strategic importance of its position and resources, and that it needs allied help to maintain its independence. To secure allied help in a crisis, Norway needs to participate on the international arena. Integration assures Norway's role as a player rather than a pawn in the strategic game.

The Traditional Role of the Royal Norwegian Air Force

This section will examine the roles that the Royal Norwegian Air Force has played in the realm of Norwegian defence policy. It will demonstrate that the defensive posture of the air force is not a long-lasting historic trend, but rather the end result of specific procurement policies late in the Cold War and a reflection of the different strategic concepts of NATO.

The RNoAF was created during World War II, though military aviation had been existent for more than 30 years already.[17] The aviation arms of the Navy and the Army were brought together as a result of the Royal Resolution of 10 November 1944.[18] Norwegian squadrons had operated as an integrated part of the Royal Air Force (RAF) during World War II; however, the end of the war and the following demobilization left it in a dilapidated state.[19] Still, the air force had developed considerable knowledge and experience in modern air operations. After the war, the air force was assigned three primary tasks: air defence, tactical support of surface operations, and reconnaissance.[20] Air defence had top priority during the first post-war years, but the air force had a capacity, and an appetite, for offensive anti-surface operations as well.

The first three-year plan for the reconstruction of the Norwegian Armed Forces accepted a dependence on allied assistance in case of an attack. The preconditions for allied help would be adequate advance preparations for its reception together with the establishment of Norwegian air superiority in the early stages of a conflict.[21] From 1948, thus, the main task for the Norwegian air force was to keep the sky free, so that Western allies could successfully intervene.

The signing of the Washington Treaty in April 1949 meant that the Norwegian defence forces would receive more military hardware; ambitious new NATO plans called for a significant build-up of the RNoAF to 150 fighter-bombers, two squadrons of all-weather air defence aircraft, one transport squadron, one of maritime patrol, and one of reconnaissance.[22] The flow of materiel was first and foremost a result of the United States' "Military Assistance Program." The restructuring and reorganization was completed in 1954 when the RNoAF was deemed to be combat ready. The backbone of the air force was the F-84G Thunder jet, an aircraft with a dual capacity for ground attack and air defence.

As the role of nuclear arms gradually increased in prominence in NATO's strategy, it became clear that European air forces had to be able to participate by attacking the enemy's air bases with these weapons.[23] The Commander of the RNoAF in the mid-1950s, General Lambrechts, wanted his aircraft to be equipped with nuclear arms. This caused considerable debate in Norway. Ultimately, it was decided that under no circumstances would nuclear arms be placed on Norwegian soil, but the RNoAF would be trained to employ them in the event of war.[24]

In 1960 the decision was made to equip the RNoAF with 55 F-104Gs in order to enhance the capacity to drop nuclear warheads on Soviet military targets. The Norwegians were still not willing, however, to arm their aircraft with nuclear weapons, and their training and doctrinal thinking remained concentrated on air defence and conventional ground attack operations. As in the case of the "base policy," the challenge for Norway remained a tricky balance of both reassuring and deterring the Soviets, while simultaneously trying to be a trustworthy NATO partner.

As a result of a Soviet military build up in the Kola Peninsula, the Norwegian government announced in 1962 its intention to replace the air force's F-86G aircraft with more modern fighter-bombers. The evaluation of new aircraft types was initially based on an air-to-surface operational requirement aimed at denying incursions on Norwegian territory. However, in 1963 the Defence Research Institute introduced a new criterion.[25] The aircraft's ability to function in a dual role, as both an interceptor and a bomber, became an important factoring in the ongoing evaluation. Ultimately it was determined that the F-5 Freedom Fighter represented the best aircraft for the RNoAF. In 1965 the F-5 was introduced in the RNoAF, and as a result, the operational concept and doctrinal thinking now became focused on offensive counter air operations and interdiction.[26]

However, a watershed for the RNoAF came with the decision in 1975 to acquire F-16 aircraft. For the first time in the Cold War era, the RNoAF had to pay the entire acquisition cost. A thorough analysis of Norwegian requirements was carried out, the conclusion of which was that defensive counter-air as opposed to anti-surface operations should be the principle focus of the RNoAF. "To protect surface forces and above all to secure Norwegian ability to receive allied reinforcements, it was necessary to control the air."[27] This represented a new doctrinal direction of the RNoAF, and a long tradition of offensive counter-surface operations was finally broken.

The new concept, researched and presented by political scientists representing the Ministry of Defence and systems analysts from the Defence Research Institute, was widely accepted both in military and political circles, and the F-16 was introduced in the RNoAF in 1979. In fact, if there was any discussion at all, it was focused on which aircraft type to fit into the concept, and not on the concept itself![28] On the other hand, the

aircraft was very expensive, and financial limitations excluded equipping the aircraft to exploit its multi-role capabilities. This led to an even heavier specialization on defensive counter-air operations.[29]

The end of the Cold War resulted in an existential crisis for the Norwegian defence forces, including the RNoAF. The defensive counter-air posture needed a credible enemy to be relevant, and Russia did not constitute the same threat as the Soviet Union. The demise of the Warsaw-pact and the dissolution of the Soviet Union meant that the RNoAF was forced to re-examine its doctrine. The air force could no longer just point to the east to justify its existence, and NATO doctrines were not enough to explain to the public why Norway should retain its air force. In addition, Norwegian politicians were apprehensive that their alliance partners would be less attentive to the region given the altered strategic situation. Thus, the Norwegian Government's decision to contribute to NATO's Immediate Reaction Forces (IRF) was based on the recognition that Norway risked becoming politically and strategically marginalized, and that the armed forces had to be more externally oriented to be relevant.[30]

The main RNoAF contribution to the IRF forces has been a squadron of F-16 aircraft, equipped and trained for defensive counter-air operations. This defensive orientation was a result of an alliance requirement of air superiority to bring in reinforcements, and fiscal00112 0 04 37 12 (quir97 T02 Tw 12 0 0 8em)Tj12 0 0 12350.21967 Tm(al38m(5(

defensive counter-air capabilities are not the most relevant contribution the RNoAF can bring to the fight in future coalitions.

PART 3, CASE STUDY – THE GULF WAR

> It was the 17,109 precision weapons (especially the 9,297 laser-guided bombs) employed by US forces and the few more delivered by the allied air forces that made all the difference, rather than the plain "iron" bombs that accounted for some 90 per cent of the tonnage dropped on Iraq and Kuwait.[31]

Background

On 8 August 1990, six days after Iraqi troops invaded Kuwait, the President of the United States, George Bush, declared four national policy objectives: to effect the immediate, complete and unconditional withdrawal of all Iraqi forces from Kuwait; to restore Kuwait's legitimate government; to protect the lives of American citizens abroad, and to promote the security and stability of the Persian Gulf.[32] During the succeeding months the United Nations Security Council passed twelve resolutions as the Iraqi occupation continued, culminating on 29 November 1990 with the authorization for the American-led coalition to use all means necessary if Iraqi forces did not leave Kuwait by 15 January 1991.[33] As the ultimatum ran out, the Coalition embarked on an offensive military campaign, code-named "Operation Desert Storm." While the conflict over Kuwait has become a watershed in international relations, being the first post-Cold War crisis, it also defined a new era in the application of air power. The purpose of this part of the paper is to describe Operation Desert Storm from an air power perspective and to examine the contributions of the smaller air forces involved.

Plans: Instant Thunder and Desert Storm

The United States rapidly deployed substantial land- and sea-based air power to the Central Command (CENTCOM) area of responsibility and increased the readiness level of forces outside Southwest Asia as an immediate response to the Iraqi invasion of Kuwait. Simultaneously, a top secret planning cell in the Pentagon, known as "Checkmate" and led by Colonel John Warden, developed a concept plan, "Instant Thunder."[34] The plan was briefed to the United States Commander-in-Chief Central Command (USCINCCENT), General Norman Schwarzkopf, on the 10th of August 1990 and to Lieutenant General Chuck Horner, the Joint Forces Air Component Commander (JFACC) on the 20th of August.[35] While Warden's plan was poorly received by Horner, three of Warden's colleagues remained to work on the JFACC planning staff, and important aspects of Warden's initial work was preserved in the final air campaign plan.

The air campaign was designed to exploit coalition strengths, such as advanced technology including stealth, cruise missiles and precision-guided munitions (PGM), superior command and control (C^2), and ability to operate effectively at night. Further, it was also designed to take advantage of Iraqi weaknesses, including a rigid C^2 network, fixed telecommunications, and an overall defensive orientation. The intention of the first phase of the air campaign was to gain air superiority instantly and to paralyse the Iraqi leadership and command structure by simultaneously striking their centres of gravity: the National Command Authority; the nuclear, biological, and chemical (NBC) warfare capability; and the Republican Guard divisions.[36] Phase II focused on suppressing or eliminating Iraqi ground-based air defences, while Phase III emphasized direct air attacks on Iraqi ground forces in the Kuwait Theatre of Operations (KTO). Phase IV, the ground

campaign to liberate Kuwait, used air attacks and sea bombardment in addition to ground attacks on concentrations of Iraqi forces remaining in the KTO.[37]

The Air War

The air campaign began the night of 16-17 January as US Army AH-64 strike helicopters attacked two Iraqi radar sites to pave the way for following strike aircraft.[38] The first objective for the coalition was to suppress or destroy the enemy's air defence systems. Thus, the following raids, carried out by a combination of F-117A Stealth aircraft and sea-launched Tomahawk cruise missiles, were aimed at Iraqi air defence command, control and communication facilities. These raids were very successfully carried out, and within minutes the Iraqi air defences were "blinded". The F-117A used precision laser-guided bombs, GBU-27, which could penetrate up to five metres of reinforced concrete. The first day the stealth aircraft attacked 31 per cent of the Coalition primary targets.[39]

Attacks with helicopters, F-117As, cruise missiles, F-15E Eagle fighters, and Tornado GR-1 fighter-bombers had devastating effects on Iraqi radar coverage and the C^2 network. This made it easier for following coalition aircraft to conduct powerful air strikes throughout the country. Within hours, key parts of the Iraqi leadership, C^2 network, strategic air defence system, and NBC capabilities were neutralized. By the first morning of the conflict, air attacks on Iraqi forces in the KTO had begun. These would lead to a steady reduction of the Iraqi's combat capability, and make it difficult for them to mass or move forces without coming under heavy coalition air attack. Hundreds of coalition aircraft participated in these missions, while suffering extremely low losses.

While the activity from the Iraqi air defences was low, and few air-to-air fights occurred, the operation was not without risk to aircrews. For example, the Royal Air Force lost five Tornados in the first week of the air war, eventually leading to the withdrawal of the Tornados from low-level raids and reassignment to other tasks in the next phase of the operations.[40] The vulnerability of the low-level attacking aircraft in the first phase of the campaign led the JFACC to order that all coalition aircraft would observe a minimum attack level of about 12,000 feet. While probably improving overall survivability, this tactic also resulted in much less accuracy with unguided weapons. On the other hand, the only factor preventing the coalition commanders from claiming complete air superiority early on was the persistence of some types of Iraqi ground based air defences, including Anti Aircraft artillery (AAA). Nevertheless, air superiority was announced on 22 January 1991.[41] This was a result of the combined effort of air attacks on targets on the ground, such as C^2 nodes, air defence radar and control systems and air bases, as well as extensive use of electronic warfare measures that disrupted the few early-warning and surveillance radars that survived the direct attacks. Another important factor in the attainment of air superiority was the application of new technology. First, the stealth technology in the form of F-117As gave the coalition an opportunity to hit targets without having to dedicate large amounts of resources to the suppression of enemy air defences. Second, the precision-guided munitions, the laser-guided bombs, represented a whole new era of capability in striking and destroying assigned targets. The technology was not new, it was used to a smaller extent in the Vietnam War and in Panama, but this was the first time it was used on such a large scale.

With the achievement of air superiority, the coalition could shift to phase two of the air war; the destruction of strategic military and economic targets inside Iraq and Kuwait. It is, however, important to note that the phases of the air operations overlapped. The attacks on the key strategic targets started while the initial quest for air superiority was still going on, and efforts to maintain air superiority had to continue all through the war.

In short, the results after phases one and two were that the fielded Iraqi Army in Kuwait was isolated from the control of Iraqi leadership in Baghdad, and infrastructure in Iraq was severely degraded.

The third phase of the air operations was designed to prepare the way for the ground offensive. Interdiction operations were vital to remove the Iraqi Army from Kuwait, because the overall objective was to shape the battlefield in favour of the coalition ground forces. The result was that by the beginning of the ground offensive, on 23/24 February 1991, the Iraqi supply system had ceased to function in any meaningful way.[42] According to intelligence reports, precision-guided munitions had the greatest effect, both physically and on Iraqi morale. Furthermore, when the ground operations started, the effectiveness of the interdiction operations presented the Iraqi forces with a serious dilemma: They had to choose between the alternative of hiding from the air attacks, thereby running the risk of being overrun by coalition ground forces, or to stand up and take the fight with the ground forces, and expose themselves for the highly effective coalition air attacks.

The final phase of the air war was the direct support of the ground offensive to liberate Kuwait – close air support (CAS) operations. The CAS operations were very

effective, given coalition air superiority and the positive results of the interdiction operations.

Thus, the air operations can be summarized to two main points; firstly, that the establishment of air superiority increased the coalition's ability to directly attack Iraqi ground targets, and secondly, that the effective application of air power destroyed Iraqi ability to manoeuvre on the ground.

The Coalition and the Roles of the Smaller Air Forces

More than 25 countries participated in the coalition to enforce UN sanctions against Iraq and nine coalition members joined the United States in the Desert Storm air campaign. Still, the Gulf War was definitely first and foremost an American enterprise. The United States was the lead nation, both concerning the definition of strategic objectives sought and the overall military contribution. The United States (all services included) represented 68.2 per cent of the combat aircraft deployed to the theatre, and they flew almost 85 per cent of all the sorties during Desert Storm.[43] They provided almost all close air support, suppression of enemy air defence, bombers, cruise missiles, and all of the coalition's stealth capability. Nevertheless, in some areas, other coalition members contributed disproportionately to the numbers of sorties flown based on the number of aircraft they committed to the air campaign. They flew approximately one third of all defensive counter air sorties and almost 25 per cent of the offensive counter air missions.[44] However, coalition air forces largely participated with forces and roles that reflected their national operational doctrines, based on their Cold War requirements.

The infrastructure provided by the Arab allies was a key factor for the success of the coalition. This permitted the rapid deployment of air forces to the theatre at an early stage of the build-up of forces. In addition, Arab air forces conducted a wide range of combat operations and were full participants in the air campaign.[45] The RAF added capabilities that other coalition forces did not have. The Tornado GR 1/1A strike/interdiction aircraft with JP-223 runway denial munitions was regarded to be of particular importance. While the runway-cratering missions turned out to be very risky, the RAF contribution to the air campaign was second only to that of the United States in variety and scale.[46] The French Air Force deployed the third largest air contingent. Their combat aircraft flew predominantly air interdiction missions, and to a lesser extent defensive and offensive counter-air operations.[47] The Canadian CF-18s first flew combat air patrol missions as a part of the defensive counter-air campaign in the early stages of Operation Desert Storm. Later they shifted to flying escort missions for air strikes into Kuwait and Iraq and finally they participated in air-to-ground missions in the closing days of the war.[48] According to Gimblett and Morin the major contribution of Canadian operations, was that they freed other, better-equipped air forces to provide close air support to the coalition ground assault.[49] The Italian Tornados flew exclusively air interdiction missions, a total number of 135 sorties. All added together, this meant that the air forces of the smaller contributors participated in missions all across the spectrum of air power operations.

Lessons Learned / Conclusions

> The Gulf War was an airman's war. The environment, political objectives and constraints, enemy strategy and forces and the coalition military forces all favoured emphasis on air operations. In this conflict the airmen were ready with highly trained, well equipped, and motivated forces. We quickly gained and maintained the initiative. Air power was lethal to a degree never before conceived and the results were preordained.[50]

General Horner's words serve as proof that the Gulf War was the perfect war for air power. The overall use of air power in Operation Desert Storm was undoubtedly very successful, even though it can be argued that the contributions from the coalition members were mixed. It is likely that the United States could have achieved the same result alone, probably in a few days more, seen from a strictly military operational perspective. Cordesman and Wagner argue that only the RAF provided strike capabilities that matched those of the USAF.[51] On the other hand, the contributions from the other Coalition members were important from a political point of view, and there is no doubt that the Arab coalition members made a great contribution when it came to preparation and bed-down for the coalition aircraft.

New technologies, especially stealth and PGMs, were very important for the outcome of the air operations and Operation Desert Storm in total. One can argue that the standards set by the coalition, and the United States in particular, when it comes to precision and low numbers of coalition casualties, points to the need for Laser Guided Bombs (LGB) and other PGMs. Particularly important for precision requirements was the need to shift to medium altitude strikes in order to reduce aircraft losses. The continuing threat from ground based air defences will probably always force non-stealthy aircraft to deliver weapons from medium to high altitudes. On the first day of Desert Storm, only 229 aircraft were capable of both designating targets with lasers and

autonomously delivering LGB. There were 36 F-117s in theatre at the start of the campaign, thus, of all the precision strike capable aircraft, the stealth force represented approximately 15 per cent.[52] Despite the obvious benefits of stealth, it remains an expensive capability, beyond the ability of most small air forces to acquire and maintain. Thus, when it comes to cost, it is obvious that it will be far more cost effective for a small air force to simply buy precision strike capable aircraft than to purchase stealth technology.

PART 4 – CASE STUDY - OPERATION ALLIED FORCE

Background

The decade of the 1990s was marked by political instability and violent armed conflicts in the Balkan region. During 1998, open conflict between Serbian military and police forces and Kosovar Albanian forces resulted in the deaths of over 1,500 Kosovar Albanians and forced 400,000 people from their homes.[53] The North Atlantic Council met on 28 May 1998, and set out NATO's two major objectives with respect to the crisis in Kosovo. The first was to achieve a peaceful resolution of the crisis by the limited intervention of the international community in the form of Organization for Security and Cooperation in Europe (OSCE) observation teams, in addition to NATO observation flights. The second sought to promote stability and security in neighbouring countries with particular emphasis on Albania and the former Yugoslav Republic of Macedonia.[54] However, the situation in Kosovo deteriorated further, and on 13 October 1998, the North Atlantic Council authorized Activation Orders for air strikes. This decision, combined

with extensive diplomatic efforts, led President Milosevic to comply with the demands of the international community and the air strikes were cancelled. The situation in Kosovo deteriorated again at the beginning of 1999, following a number of acts of provocation on both sides and a Serb massacre of Kosovar Albanians in the village of Racak. NATO issued a warning to both sides in the conflict, and diplomatic efforts culminated in a series of negotiations in Rambouillet and Paris in February and March 1999. While the Kosovar Albanian delegation signed the resulting peace agreement, the talks broke up without a signature from the Serbian delegation.[55] After the negotiations the Serbs moved extra troops and modern tanks into Kosovo, and tens of thousands of people had to flee their homes. Diplomatic efforts to solve the crisis had no effect, and on 23 March 1999 NATO issued orders to commence air operations in order to solve the situation in Kosovo.[56]

The Plan

> The military mission is to attack Yugoslav military and security forces and associated facilities with sufficient effect to degrade its capacity to continue repression of the civilian population and to deter its further military actions against his own people. We aim to put its military and security forces at risk. We are going to systematically and progressively attack, disrupt, degrade, devastate and ultimately destroy these forces and their facilities and support, unless President Milosevic complies with the demands of the international community. In that respect the operation will be as long and difficult as President Milosevic requires it to be.[57]

NATO had three strong interests at stake during the Kosovo crisis. The first was that the Serb aggression directly threatened the peace and stability throughout the Balkans and in Southeast Europe. The crisis might have spilled over into Albania and Macedonia. Potentially, it might have destabilized the entire Balkan and Anaetolian region. Second, the humanitarian crisis emerging as a result of the Serb repression in

Kosovo urged an immediate international response, particularly after the slow reaction in Bosnia a few years earlier. The third interest was that Milosevic's behaviour directly challenged international resolve, and the credibility of NATO in particular. These interests had to be balanced with the need to maintain a positive and cooperative relationship with Russia, which opposed NATO military actions in the region.[58]

NATO's and the United States' interests formed the basis for the strategic objectives for use of force in the conflict. The objectives were to demonstrate the seriousness of NATO's opposition to Belgrade's aggression in the Balkans, to deter the Serbs from continuing and escalating the attacks on civilians, to create conditions to reverse the ethnic cleansing, and to damage Serbia's capacity to wage war against Kosovo in the future or to spread the war to neighbouring countries by diminishing or degrading the ability to conduct military operations.[59]

The development of NATO's plan began as early as in the summer of 1998, and it described five phases for the prosecution of military operations. The first phase was the deployment of air assets into the European theatre. The second phase would establish air superiority over Kosovo and degrade the Serb command and control system and their integrated air defence system over the whole of the Former Republic of Yugoslavia (FRY). The third phase would attack military targets in Kosovo and Yugoslav forces that were providing reinforcements to Serbian forces in Kosovo. The next phase was the conduct of air operations against a variety of high-value military and security force targets throughout the FRY, and the last phase was the redeployment of forces.[60] There was no consideration of options for the employment of ground forces in the theatre, more

due to political considerations over potential casualties than for military operational reasons.[61]

The Coalition / NATO

Operation Allied Force was the first time ever that NATO conducted an offensive campaign against a sovereign nation.[62] It was clear that political factors such as the commitment of the 19 NATO members, the response of the non-NATO international environment, international concern about casualties and collateral damage, and different ties between coalition members and actors in the Balkans played a significant role throughout the campaign. Nevertheless, all the 19 members of NATO officially supported Operation Allied Force. Some made invaluable contributions beyond flight operations by opening their airspace and bases to allied air forces and their support units, and by providing essential services and facilities to forces en route to the operation. Thirteen countries contributed military aircraft to Operation Allied Force, and quite understandably, the United States was the greatest contributor.

France was the second largest contributor in terms of aircraft. They deployed more than 100 aircraft, mostly fighters, and flew more than 2,400 sorties throughout the campaign. During the height of the air campaign, France deployed eight Mirage 2000Ds, 12 Jaguar strike aircraft, six Mirage F1 CTs, three Mirage IV Ps, and several Super Entendards to fly strike sorties. The French were among the few European allies to possess and employ precision-guided munitions.[63]

The German Luftwaffe flew 636 sorties, primarily in support of the SEAD missions. They deployed 14 Tornados to the theatre, ten of which were Tornado

electronic combat and reconnaissance (ECR) and four of which were interdiction and strike Tornados fitted with reconnaissance pods. The Germans did not have PGM at that time, but their AGM-88 HARM[64] anti-radiation missiles and advanced electronic countermeasures allowed them to play an important role in SEAD.[65]

The fourth largest contributor to Operation Allied Force in terms of number of aircraft was Italy. The Italian Air Force deployed 18 IDS (interdiction and strike) Tornados, 4 Tornado ECRs, and several AMX (attack) aircraft, flying 1,081 sorties.[66] Italian Tornado ECRs were "shooters" in the SEAD missions, firing HARMs. The Tornado IDS and AMX were used primarily to fly CAP sorties. In spite of their participation in the operations, the probably greatest Italian contribution came in the form of air bases. Italian air bases served as "forward operating bases" for most of the participating air forces. This was, together with the high value air-to-air refuelling aircraft, a significant factor when it comes to the composition and conduct of the air operations, allowing the aircraft to spend the sufficient amount of time in the target areas.

The RAF was the third largest contributing air force, deploying 45 fixed-wing aircraft. For strike and CAP missions, the RAF deployed 16 Harrier GR7s, seven Sea Harrier FA2s, and three Tornado GR1s. They flew 1,008 strike missions, and they had PGM, which made them able to participate in a higher percentage of those missions than nations that lacked PGM.[67] On the other hand, although both Great Britain and France possessed and employed PGM, their contribution was nonetheless limited, because they lacked all-weather munitions capabilities to address the adverse weather conditions that existed throughout the campaign.

The Royal Netherlands Air Force deployed 18 F-16A aircraft to the theatre of operations. They participated in both strike and CAP missions. The fact that they had forward-looking infrared devices, allowed them to take part in strike missions at night.[68]

The Canadian Air Force deployed 18 CF-18s to the theatre, operating from Aviano in Italy. The Canadian Hornets were equipped with GBU-12 PGMs and were heavily involved in the air-to-ground operations. In addition to this, Canadian pilots also flew 120 sorties in the air-to-air, combat air patrol role. Even during the bombing missions, all CF 18s were armed with both Sidewinder and Sparrow air-to-air missiles, which provided a potent self-defence capability.[69]

The US deployed more than 700 aircraft of the total 1,055, the majority from the USAF, which deployed 214 fighter aircraft, 18 bombers, 25 ISR aircraft, 38 Special Operations and Rescue aircraft, and 43 intra-theatre transport aircraft. Collectively, the U.S. air fleet flew more than 29,000 sorties.[70] The US also delivered the largest number of PGM and all-weather munitions, which because of the restrictive Rules of Engagement (ROE) and changing weather conditions was critically important for the conduct and prosecution of the air war. Almost 500 of the aircraft deployed by the United States were considered support aircraft. Missions like air-to-air refuelling, airborne command and control, electronic warfare and airlift are crucial missions in the conduct of a modern war, and the United States provided the bulk of these capabilities in Operation Allied Force.

The RNoAF contributed to the campaign with 6 F-16As, a part of the Norwegian NATO Immediate Reaction Force. Their mission was "to deploy six aircraft, including two reserve aircraft, for participation in Operation Allied Force. The detachment is to conduct combat air patrol, sweep and escort operations in daylight conditions."[71] The

unit was not trained or equipped to participate in the air-to-ground operations. The mission statement described that they were supposed to fly CAP, sweep and escort missions, but the restrictive ROEs, concern about casualties and difficult weather conditions led the JFACC to choose to use them exclusively for CAP. The Norwegian pilots flew CAP-sorties lasting up to seven hours over the Adriatic Sea, Bosnia and Herzegovina, Albania and Macedonia. The operational significance of these operations was limited to demonstration of political solidarity with the alliance. The squadron showed their ability to deploy rapidly, to sustain a relatively long period of combat-like operations and an ability to operate in a multi-national environment. Nevertheless, Operation Allied Force was a reminder for the RNoAF that if they want to be on the "A-team" and participate in the operations where lives are at stake, a new technological and doctrinal orientation is necessary.

Belgium, Denmark, Portugal and Turkey all contributed with relatively small numbers of F-16 aircraft. Doctrine and equipment meant that these nations' air forces were exclusively involved in defensive counter air operations, or more specifically, CAP in assigned areas of airspace surrounding the actual battle area. In fact, CAP sorties made up roughly 16 percent of all sorties flown, which seems to be a disproportionately large number because the Yugoslav air force ceased to be a factor after the first week of the operation.[72] The reasons for this high percentage were that CAP was all that the F-16 A and B forces were capable of, and that the JFACC had to assign combat operations to all participating air forces for political reasons. "The multinational CAP effort symbolized a unified force to Serbia and provided images of NATO solidarity back home."[73]

The Air War

The air war lasted for 78 days, characterized by a "haphazard", escalatory strategy. NATO flew 38,000 sorties and dropped 23,000 weapons, with only 2 aircraft failing to return to base, and with no combat fatalities.[74] There was a significant disagreement between the Joint Forces Commander, General Clark, and the Joint Forces Air Component Commander, General Short, concerning the enemy strategic centre of gravity. General Short felt that it was Slobodan Milosevic and his ruling elite in Belgrade, while General Clark believed it was the Yugoslav Third Army that was physically carrying out the ethnical cleansing in Kosovo.[75] This difference in approach to the conduct of the air operations can be explained by the fact that General Clark, as the Supreme Allied Commander Europe, had to be aware of all factors that might have an effect on the war at the strategic level, to a greater extent than subordinate commanders. He had to take into consideration the fact that the political leaders "were having to defend the bombing to their domestic publics."[76] General Clark firmly believed that it was a political, legal and moral necessity to target the ground forces in Kosovo that were carrying out the ethnic cleansing. General Short, on the other hand, expressed the views of a traditional air power advocate:

> My job was to stop the killing. I thought I could stop the killing one way, and Wesley Clark told me to do it another way. It was therefore my job to follow his guidance, and continue to try persuading him that there was a better way of doing business. I do not see that as an ethical conflict, but as an air commander I saw air power being used inappropriately and inefficiently.[77]

According to Dalder and O'Hanlon, NATO was in fact waging two separate wars in the Balkans the first month of Operation Allied Force; first a tactical air campaign in Kosovo, and second a strategic effort to turn the pressure on Milosevic.[78]

The tactical operations were aimed at the forces causing the carnage in Kosovo. This proved to be very difficult. Even though the NATO attack aircraft used precision munitions and had a wide range of intelligence, surveillance and reconnaissance sources available, it was difficult to find and hit the dispersed and camouflaged elements of the Third Army. Bad weather was another limiting factor for the efficiency of attacking aircraft, and so was Serb deception, including "dummy-sites." Hence, NATO aircraft did not destroy many Third Army tanks; they were simply too difficult to find. This was improved towards the end of the campaign, due to cooperation between Kosovo Liberation Army (KLA) troops and NATO aircraft. The KLA ground troops were to a certain extent able to draw out and fix the Serb land forces and thereby make them easier targets for the attacking aircraft. Nevertheless, General Short's conclusion was that this part of the campaign was a dead-end on the way to reaching the strategic objectives. The Third Army was too difficult to hit, and taking out dispersed army units in Kosovo would not, in his mind, solve the problems that NATO was there to deal with.[79]

The strategic operations included attacks on the strategic command, communication and logistics networks that Milosevic used to control and supply the military and internal security forces on the ground in Kosovo. It also included the state-controlled media, Milosevic's instrument to mobilize resources and to control what the people of the FYR knew about the situation in Kosovo. Critical lines of communication including bridges, road and rail routes, re-supply chains and military manufacturing capability were attacked in order to inhibit the flow of reinforcements and re-supplies to the forces in Kosovo. Yet another target set was the command and control points critical

to the Yugoslav force's ability to conduct operations in Kosovo, as well as the petroleum production and reserves used to fuel Milosevic's war machine.

A limiting factor on the efficiency of the strategic air operations was that they were influenced by political restrictions on collateral damage and coalition casualties. The requirement for all 19 nations to agree on targets for at least their own national air assets, slowed down the process significantly. "Political micro-management continued throughout the campaign and horse-trading to side-step political blocks on targets remained a significant preoccupation for General Wesley K. Clark."[80] Nevertheless, the intensity of the strategic air operations was heavily increased after NATO's fiftieth anniversary summit 23-25 April 1999, where the heads of states of the major contributing countries discussed the efficiency of the campaign so far.[81]

The increased "freedom of operation" for the military commanders when it comes to targeting and the fact that NATO had air superiority made the final weeks of the operations similar to the demonstration of air power's efficiency in Operation Desert Storm. NATO was carrying out operations against targets across the spectrum from the political leadership to the fielded forces in Kosovo. The question was how long Milosevic could take it. Finally, the Serb dership to evic0199 Tm(politet62.97746 488.2 tetyai)T, NATO ha

Lessons Learned / Conclusions

NATO intervened in Kosovo to halt a humanitarian catastrophe and restore stability in a strategic region lying between Alliance member states. Despite strains, the Alliance held together during 78 days of air strikes in which more than 38,000 sorties - 10,484 of them strike sorties - were flown, without a single Allied fatality. After first targeting the Federal Republic of Yugoslavia's air defences, NATO gradually escalated the campaign using the most advanced precision-guided systems and trying to avoid civilian casualties to the greatest extent possible.[83] Target selection was reviewed at multiple levels of command to ensure that it complied with international law, was militarily justified, and minimized the risk to civilian lives and property.

Although press releases during the operation recognized the contributions of all participating air forces, the truth was that the United States shouldered a disproportionately large share of the effort. The Europeans certainly made some important contributions to combat operations: Germany and Italy played a major role in the SEAD campaign, and the British, Canadians and French joined the United States in delivering PGMs. Nevertheless, most of the European allies lacked the capabilities that would let them operate effectively within the scope of NATO's consensus. Political expectations on the efficiency of air power, the concern for casualties and collateral damage and the fact that, again, the greatest threat for coalition aircraft was ground based air defence, pointed to the need for precision-guided munitions.

> You will not be able to drop a bomb in the future unless it is laser-guided, Global Positioning Satellite guided or with some other cosmic guidance that has not been invented yet. The days of dropping gravity bombs, like I grew up with in South East Asia, where it took 80 F-105s or F-4s to drop a bridge, because most of them missed, does not happen anymore.[84]

Thus, the experience from Operation Allied Force suggests that small air forces risk being marginalized into ever shrinking roles without some attention to precision weapons delivery. Additionally, Operation Allied Force was a reminder to the RNoAF that it risks being marginalized even in a non-precision battle, given its emphasis on DCA and the relatively low probability of air-to-air engagements in a theatre like Kosovo.

PART 5 – CASE STUDY - OPERATION ENDURING FREEDOM

> The war in Afghanistan offers a blueprint for fighting future wars-through a mix of agility and lethality, with small groups of special forces on the ground wielding high-tech targeting devices linked to precision-guided munitions in the sky.[85]

Background

If the Gulf War was a watershed in international affairs in the beginning of the 1990s, the tragic events of 11 September 2001 must be characterized as a shift of paradigm in the beginning of the new century. There are two reasons for this: the devastating potential of asymmetric operations against an industrialized and democratic society was graphically revealed, and secondly, the terrible actions showed that it is possible to hit the population- and political centres of the most powerful state in the world, namely the United States, with devastating effect.

The response from the international community was relatively unequivocal; those terrible acts must be countered. The NATO members reacted quite promptly. Article 5 of the Washington Treaty was invoked for the first time ever and, at the request of the United States; NATO undertook several measures, both individually and collectively.

The measures included the enhancement of intelligence sharing and co-operation with Allies and other states subject to increased terrorist threats, the deployment of selected Allied assets in NATO's area of responsibility that are required to directly support operations against terrorism, the deployment of elements of its Standing Naval Forces Mediterranean to the Eastern Mediterranean in order to provide a NATO presence and demonstrate resolve, and the deployment of elements of its NATO Airborne Early Warning force to support air surveillance of US airspace.[86] In addition to this, several states committed military forces to the US-led military actions against terrorism, starting in Afghanistan to remove or crush the threat from the Al-Qaeda network operating from their bases in the country.

The Plan

It early became clear that Osama Bin Laden and the Al Qaeda terrorist organization were responsible for the attacks on the World Trade Center and Pentagon. On the 20th of September the United States and Great Britain demanded that the Taliban regime in Afghanistan apprehend Bin Laden and Al Qaeda's senior leadership and turn them over to the United States. The Taliban refused to do this, and the planning of military action, Operation Enduring Freedom, commenced. The military operations were planned as an integrated part of a larger campaign against terrorism including diplomatic efforts, intelligence gathering, the freezing of financial assets and the arrest of known terrorists in a wide range of countries.[87]

The overall objective of the campaign was, and still is, to eliminate terrorism as a force in international affairs. The intent was to achieve this through the attainment of immediate and long-term objectives. The immediate objectives were to bring Osama Bin Laden and other Al Qaeda leaders to justice, to prevent them from posing a future terrorist threat, to ensure that Afghanistan ceases to harbour and sustain international terrorism and to require sufficient change in the leadership in Afghanistan to ensure that the country's links to international terrorism are broken. The first long-term objective was to do everything possible to eliminate the threat posed by international terrorism. The second was to deter states from supporting or harbouring terrorist groups and the third to reintegrate Afghanistan as a responsible member of the international community.[88]

The intent of the military operations derived from the political goal was to seek to raise the cost for foreign terrorists who had chosen Afghanistan from which to organize their activities and for the Taliban regime that tolerated terrorist presence in the country. This was to be achieved through air-to-ground operations and the use of Special Forces against areas under Taliban and terrorist control following a removal of the threat from air defences and Taliban aircraft.[89] The attacks on the ground based air defences and aircraft would be conducted with the intent to create the necessary freedom to operate on the ground and in the air for coalition forces. Command facilities for forces that were known to support terrorist elements was yet another initial target set. In addition to those initial targets, the intention was also to hit critical terrorist sites, such as training camps, as early in the campaign as possible.

The Coalition

The United States started building a coalition for the operations against terrorism already on September 12, 2001. The terrorist acts were not only regarded as an attack on the United States, it was an attack on the entire free world. Thus, the United States had no significant problems getting support and building a coalition for the military operations to come. To date "literally hundreds of countries have contributed in a variety of ways – some militarily, others diplomatically, economically and financially."[90]

Today there are approximately 11,000 foreign military troops in Afghanistan, including nearly 6,000 from countries other than the United States. Within the United States Central Command's (CENTCOM) area of responsibility there are more than 17,000 troops deployed from 17 nations.[91] Besides the United States, Great Britain and Canada are the most significant contributors to Operation Enduring Freedom. Great Britain has deployed the largest naval task force since the Falklands War in 1982, and they have also provided the only coalition Theatre Land Attack Missile (TLAM) platforms.[92] Canada contributed the first naval task group to arrive in the CENTCOM area of responsibility, and they currently have approximately 2,250 personnel there.[93]

When it comes to the Norwegian contributions so far, their mine clearing vehicles and personnel have been responsible for clearing Kandahar airfield and its surroundings, Norwegian Special Operations Forces (SOF) forces have been conducting the full spectrum of SOF missions throughout the operation, and C-130 aircraft have conducted a large number of tactical airlift and cargo transport missions. The F-16 aircraft that have been offered to the coalition are currently still in Norway, on hold, waiting to be

deployed to Manas air base in Kyrgyzstan to replace other air defence aircraft following a force rotation.[94]

The United States is by all means the greatest contributor of forces to Operation Enduring Freedom. This holds true also when it comes to air forces. As of 17 December 2001, two months into the operation, USAF had flown more than 7,100 sorties, representing 45-46 per cent of all missions flown. United States Navy aircraft contributed a further 45-46 per cent of the sorties, which means that the coalition partners conducted just 8-10 per cent.[95] The main reason for the high US percentage is that the projection of force to the region is challenging, and even the Americans have had difficulties in moving forces there. Another factor is that the weapons used in the

h operation have been PGMs and that the 007 Tc -0.0007 T8e Am 125 432.9599 Tm(erica)Tj0.0017 Tc -0.001

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The number of sorties has been far lower than even in Kosovo. By the 7th of November the number of attack sorties over Afghanistan had climbed to only 120 a day.[98] Still, on the same day the United States Chairman of the Joint Chiefs of Staff (CJCS), General Myers, stated: "Essentially we have air supremacy over Afghanistan."[99] The coalition did not face any opposition from enemy aircraft, and high and medium altitude SAM-systems as SA-2 and SA-3 did not inhibit the attacks to any considerable extent because many of them were already blinded or physically destroyed after the initial attacks. The only ground based systems to constitute any threat throughout the campaign have been short-range, portable surface-to-air missile systems and anti aircraft artillery. "There's always the possibility of these manned portable surface-to-air missiles. But the tactics that we'll utilise will keep us out of their range."[100]

The targeting and striking of targets was not easy even though the coalition had air supremacy. It was, and still is, difficult to hit an enemy who was hiding underground, in caves and tunnels. Basically, there are three important steps in this targeting and striking process: First, to find the location, second to confirm that the location really is a target, and third to actually hit the confirmed target.

An intelligence, surveillance and reconnaissance system (ISR) is the key to the first step. In this campaign, the Americans have accelerated this process through linking different ISR resources together in a network. The purpose of the network is to have a properly mixed force of space-based sensors, manned and unmanned airborne assets, and sensors and soldiers on the ground to overcome camouflage, concealment, and deception techniques. The second step, to confirm that the location found by sensors really constitutes a target, becomes very important in a scenario like Afghanistan where the

non-combatant population is intermingled with irregular combatants. Ground forces, in particular SOF, play a significant role in both identifying and forcing the enemy out into the open.[101] This represents a shift in the *modus operandi* of air and ground forces. Traditionally air strikes have supported the efforts of a ground manoeuvre force, while now ground forces are supporting the air operations.[102] Thus, the ground operations have so far been characterized by the search for and tracking of Taliban and Al-Qaeda forces. This has called for more SOF rather than regular army units. Success in the campaign has also hinged to a certain extent on the Afghan United Front, as a semi-regular fighting force capable of tying down Taliban forces along fixed lines. Thus, the Afghan United Front has been operating in concert with both US aircraft and coalition SOF.[103]

In striking targets, the third step, precision-guided munitions have again proved their value. It is difficult to strike enemies that are hiding underground, in tunnels and caves. These facilities are called "hard and deeply-buried targets" (HDBTs), and are widely used by both the Taliban and Al Qaeda forces. A family of weapon systems is needed to hit and destroy those targets, including Lockheed Martin BLU 116B Advanced Unitary Penetrator Warheads, FMU-157 Hard Target Smart Fuzes and AGM 86D Conventional Air-Launched Cruise Missiles. By the 7th of December 2001, two months into the campaign, more than 72 per cent of the total USAF tonnage dropped comprised precision guided munitions, and USAF sources reported that they had destroyed or damaged nearly 75 per cent of the planned targets it engaged up to the same date.[104]

The networking of assets has gone far beyond the linking of ISR resources. In Operation Enduring Freedom the US has taken the opportunity to accelerate and test the implementation of "Network Centric Warfare" (NCW). The term, coined by US Navy,

refers to an approach to the conduct of warfare that derives its power from the effective linking of sensors, information systems and weapons. The USAF Chief of Staff, General Jumper, has expressed that "he wants to be able to pass data directly from sensors to weapons, for example from a laser rangefinder to a JDAM, to reduce the possibility of human errors."[105] Another way to present the idea of NCW is stated by the USAF Secretary, James Roche. He says: "The goal, known as Network Centric Warfare, is to give pilots a high-resolution picture of the battlefield from sensors on the ground, in the air and in space, so they can dispatch smart weapons to their targets."[106] Even though it still is a long way to go before the vision of a fully integrated military system is achieved, the operation in Afghanistan is a step in that direction. The fielding of Link-16 is an example when it comes to the USAF. The link-system ties together ISR assets, ground-based forward air controllers, and shooters, not just to speed up communication, but to improve the accuracy of data and communication as well. For US coalition partners, this advance means that there are even higher premiums on interoperability. The contributing nation has to be at a high technological level to be able to plug into the network and share information with US assets.

Lessons Learned / Conclusions

> Army Gen. Tommy Franks, commander-in-chief of CENTCOM designated a set of "preferred munitions" and platforms that were to be used in strikes to limit collateral civilian damage. According to CENTCOM and Air Force sources, these munitions were, in order of rough preference: Lockheed Martin Hellfire (AGM-114), Raytheon laser Maverick (AGM-65), AGM-130 laser-guided bombs (LGB), and JDAM.[107]

As stated above the importance of precision-guided weapons is, once again, proven in Operation Enduring Freedom. Approximately 70 per cent of individual weapons delivered in Afghanistan were precision-guided; hence the percentage of those weapons exceeds by far any other major conflict.[108] Accordingly, Operation Enduring Freedom is yet another example that any air force that has ambitions of playing a role in a future operation needs to include PGMs in their arsenals.

Another important factor to take away from the operations in Afghanistan is the progress being made concerning the networking of assets, thereby enhancing the battle space awareness at all levels of the military organization. NCW has been under way for some years already, but the full implementation has not been foreseen before 2015. Yet, Operation Enduring Freedom in Afghanistan has accelerated the implementation process. A wide range of sensors and weapon systems are now sharing information to a large extent, due to the increased fielding of link-systems.

Conclusions, Three Case Studies

The Gulf War showed that the air forces that plan to conduct air-to-ground operations in an environment with dense ground based air defences have to seriously consider implementing precision-guided weapons. This will enhance the ability to hit targets from higher altitudes, and to keep the numbers of casualties low. Furthermore, precision-guided weapons reduce the risk of collateral damage compared to conventional "dumb bombs" simply because of the higher probability of hitting the target.

Again, in Operation Allied Force political expectations on the efficiency of air power, the concern for casualties and collateral damage and the fact that the greatest

threat for coalition aircraft was ground based air defence systems, pointed to the need for precision-guided munitions. Even though some of the NATO nations made valuable contributions, the capability gap between the US and the rest of NATO seemed to have widened since the Gulf War. Most of the contributing air forces lacked the capability to deploy PGMs, and were, as a consequence, employed in peripheral roles in the air campaign.

Operation Enduring Freedom is still unfolding. The efforts to deny safe-havens for terrorists in Afghanistan have been conducted since the 7th of October 2001, and the US-led coalition has been successful so far, despite some difficulties to find and allocate targets. The most important features of Operation Enduring Freedom, seen from a military operational point of view, are the implementation of Network Centric Warfare, the significant and enhanced interaction between ground forces and attack aircraft, and the, again, increasing number of precision-guided munitions relative to other types of ammunition. As a comparison, precision guided munitions constituted a little less than 10 per cent of all munitions dropped from aircraft in Operation Desert Storm. In Operation Allied Force the percentage was approximately 35, and so far in Operation Enduring Freedom it is close to 70 per cent.

The three case studies suggest that current and future employment of air power will involve air-to-ground operations to a greater extent that air-to-air-operations. Additionally, coalition operations will generally be fought for limited objectives, and there will be an increasing emphasis on force protection and limiting collateral damage. Thus, development of a PGM capability has to be seriously considered if the RNoAF wants to play an active and significant role in future coalition operations.

PART 6 – NATO AND NATIONAL DEFENCE

The Norwegian Approach to International Operations

Norway has participated in a considerable number of international peace support operations (PSOs) under the auspices of the UN and, more recently, NATO since World War II. More than 55,000 Norwegian military personnel have participated in such operations.[109] On the other hand, Norway's defence doctrine has been, and still is, focused on the need to ensure continued stability and a credible territorial defence capability in the northernmost part of the Alliance. Hence, Norwegian contributions to international crisis management have been generated from a system that is first and foremost geared towards the rapid activation of mobilization units armed and trained for territorial defence. To date, this has been sufficient and successful in peacekeeping operations, for example in Lebanon from 1978 to 2000.

However, the RNoAF has not been a significant participant in any combat operations in the Post-Cold War period. This is due to the fact that the air force focused exclusively on air-to-air operations during the last part of the Cold War. The principle threat to offensive air operations has stemmed from ground based air defence, and short-range systems in particular. Under these conditions, there is little an air force, organized doctrinally for DCA, can contribute. This, again, points to the fact that the RNoAF needs to develop additional capabilities, either instead of, or in addition to, air-to-air operations. This seems to have been fully recognized in national political circles:

> The main objective of the White Paper is for the Norwegian Armed Forces, in the future, to be able to respond rapidly with more relevant and capable forces for international crisis management and, simultaneously, to retain the ability to sustain over a longer period of time in on-going military operations.[110]

Defence Capabilities Initiative

Security policy development and military conflicts in the 1990s proved that the NATO alliance was not fully prepared for the Post-Cold War environment.[111] The conflicts revealed technological and economical gaps between the US and Europe, which meant that Europe became even more dependant on the US for its security interests. In Operation Allied Force in Kosovo in 1999, 70 per cent of all firepower was American. Just 10 per cent of the European aircraft were capable of delivering precision weapons, and only a few European countries had precision bombs. In addition to this, the NATO countries were almost totally dependent on the US concerning suppression of enemy air defence, air-to-air refuelling, reconnaissance, early warning and night operations.[112] This issue was of considerable concern during the NATO Summit in Washington in 1999, and as a result, NATO initiated the Defence Capabilities Initiative (DCI) in order to ensure that all NATO members make the necessary investment in key technologies and essential capabilities.[113]

The Norwegian response to DCI is a White Paper called "Adapting Norway's Armed Forces to the Requirements of International Operations."[114] In Norway, as in most NATO countries, DCI coincided with a major restructuring process in the armed forces. DCI, in effect represents a shift in focus from the strict defence of the Norwegian territory to power projection and expeditionary operations.[115] Norwegian policy is now to ensure that decisions are in line with what the Alliance aims have established in the DCI; in other words, that they contribute towards enhancing interoperability within the alliance.

As a consequence of the White Paper Norway established an "Armed Forces Task Force for International Operations," consisting of more than 3,500 personnel from all services and branches of the Norwegian Armed Forces. "It will be capable of fulfilling both NATO Article 5 and non-Article 5 missions and tasks, with priority to the former in case of conflicting needs."[116] In addition to being part of NATO's force structure, the Task Force may also contribute to international peace support operations under the auspices of other organisations, in particular the United Nations. The air force portion of the Task Force includes approximately 1,000 personnel and consists of one fighter squadron (12 F-16s), one maritime patrol aircraft, two transport aircraft, one helicopter unit (four Bell 412 SP) and one surface-to-air missile unit. On the other hand, even though the DCI outlines the quality demands for the participating forces in NATO operations, essentially it fails to address the question of which specific capabilities RNoAF combat aircraft should possess. Additionally, the Norwegian White Paper states how many aircraft and personnel the RNoAF contribution will consist of and that its primary role will be air defence, while mentioning vaguely that the RNoAF in the future should develop an air-to-ground capability.[117]

PART 7 – CONCLUSIONS / RECOMMENDATION

> What I want from you is six first rate airplanes that are just as good as mine, or very close to it…I want you to make a contribution, because I want you to share the risk.[118]

As Lieutenant General Short indicates, contribution to coalitions in international crises is not just about numbers. Burden sharing in coalition warfare means the sharing of risk. A major future challenge for the Norwegian Armed Forces in general, and the RNoAF as the focus of this paper, is to provide meaningful and relevant contributions to

future NATO operations. The preservation of security today is significantly different from what it was shortly after World War II when Norway joined NATO. Then, the relations between the superpowers affected Norway directly, and all the Norwegian governments in the postwar period strove for a maximum reduction of tension in the northern areas. The political transformations that have taken place in Europe since 1990 have made NATO less important as an Alliance against a conspicuous threat. On the other hand, Norway still views the Alliance as a crucial security arrangement for the future, both as a platform for facing uncertain developments and as a framework for the development of new patterns of cooperation and preservation of security in Europe. Norway seeks to maintain its security through participation in efforts to stabilize other parts of NATO's area of interest than the northern region. Thus, the security challenge to Norway remains the same, how to remain a player as opposed to a pawn in international security affairs.

After World War II the Norwegian air force has operated within the realm of NATO plans and doctrine. The first 30 years of the Cold War the RNoAF was equipped and trained for a wide spectrum of combat air operations, including air-to-ground operations. However, the RNoAF entered the Post-Cold War era with a defensive counter-air posture. This orientation was a result of the process of purchasing F-16 fighter aircraft in the mid-1970s. Strategic military analysis and scarce resources ended the multi-role capability of the air force. With the end of the Cold War, the limitations of this niche role created an existential crisis for the RNoAF. The defensive counter-air posture needed a credible enemy to be relevant, and Russia no longer constituted the same threat as the Soviet Union had.

Three major operations conducted in the immediate post Cold War environment have provided valuable indications for Norwegian planners reassessing the role of the RNoAF. Being conducted in a nearly perfect environment for air power, Operation Desert Storm turned out to be close to the picture that air power advocates had painted since Douhet. The most significant features of the air war were the effectiveness of stealth aircraft and precision-guided munitions. As a small air force with scarce resources, acquisition of stealth aircraft has been unrealistic for the RNoAF. The effectiveness and relatively low cost of PGMs suggest a more attainable option however.

Operation Allied Force in 1999 was a case where the true contribution of many countries to coalition air operations was at the political and strategic level. The primary contribution of some of the alliance and coalition partners was access to infrastructure and airspace. However, at the operational and tactical levels many of the same trends first observed in the Gulf War remained apparent. The US provided the main parts of the robust air campaign, with only a few NATO partners able to fill niche roles. Case in point, Norway participated with F-16As, trained and equipped for air defence operations. The absence of air-to-air engagements, and the limitation of the Norwegian operations, made their participation a political showing of the flag, and not a salient operational contribution.

Currently, the US, supported by a number of coalition partners, is carrying out operations in Afghanistan to remove the threat from terrorism. Significant lessons so far are the importance of co-operation between ground forces and aircraft, and the improved battle-space awareness and speed of operations brought about by Network Centric Warfare. Operation Enduring Freedom has again highlighted the growing importance of

precision-guided munitions in a modern war. The air operations, carried out from heights above the coverage of enemy air defences, have been effective to a great extent because of the use of PGMs.

The Defence White Paper No. 38, "Adapting Norway's Armed Forces to the Requirements of International Operations," as well as NATO's DCI calls for a re-examination of the doctrine and equipment of the RNoAF. The conclusions of the White Paper and the premise of the NATO initiatives are in line with the conclusions of this study: Norway bases its security policy on NATO membership and the forward defence of its interests. As such, burden sharing and risk sharing in out-of-area military operations are important aspects of this policy. To take its share of the risks involved in air operations, the RNoAF needs a force that is technologically and doctrinally capable of being on the first team on the first night of the operation. The three case studies leave no doubt that air-to-ground operations are more relevant in current scenarios than defensive counter-air operations. They have also demonstrated that precision-guided munitions are prerequisites for participation in coalition air-to-ground operations in the future. Thus, to be an attractive alliance partner, the RNoAF needs to acquire precision-guided munitions and develop doctrines for modern air-to-ground operations.

ENDNOTES

[1] Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo," in From Manoeuvre Warfare to Kosovo, ed. John Olsen, (Trondheim: The Royal Norwegian Air Force Academy, 2001), p. 277.

[2] General Fredrik Bull-Hansen, The Strategic Position and Defence Challenges of Norway, (Oslo: Forsvarets overkommando, 1986), p. 10.

[3] An example of the requisition of civilian resources in wartime is that some large helicopter companies operating off shore in peacetime will contribute to the tactical lift capacity of the armed forces by mobilizing 80-100 helicopters. *Ibid.*, p. 2.

[4] The Royal Norwegian Ministry of Defence, Norwegian Defence – Facts and Figures (Oslo: Forsvarsdepartementet, 2002), p. 49.

[5] *Ibid.*, p. 47.

[6] *Ibid.*, p. 48.

[7] Bull-Hansen. The Strategic Position and Defence Challenges of Norway, p. 22.

[8] Geir Atle Ersland, et al, Forsvaret – Fra Leidang til Totalforsvar, (Oslo: Gyldendal Norsk Forlag ASA, 1999), pp. 86-87.

[9] James L. Stokesbury, A Short History of Airpower, (London: Robert Hale, 1986), pp. 164-165.

[10] Øistein Espenes and Nils Naastad, "The Royal Norwegian Air Force – A Multipurpose Tool During the Cold War," Air Power History, Spring 2000, p. 43.

[11] Utenriksdepartementet. http://odin.dep.no/odin/engelsk/norway/foreign/032005-990413/index-dok000-b-n-a.html

[12] Michael Kevin Mahon, Defending Norway and the Northern Flank: Analysis of NATO's Strategic Options, (United States Naval Post Graduate School, Monterey, California, 1985), pp. 22-25.

[13] Utenriksdepartementet http://odin.dep.no/odin/engelsk/norway/foreign/032005-990413/index-dok000-b-n-a.html.

[14] Luftforsvaret, Norsk Luftmiltær Doktrine, HFL 95-1, Oslo, 1999, Part I, Chapter 4. http://www.mil.no/luftforsvaret/doktrine/hfl_95_del_1.htm#_Sikkerhetspolitisk_utvikling_globalt

[15] Utenriksdepartementet http://odin.dep.no/odin/engelsk/norway/foreign/032005-990413/index-dok000-b-n-a.html.

[16] *Ibid*.

[17] The Royal Norwegian Air Force, Marinens og Hærens Flyvåpen. http://www.mil.no/luft/start/historie/article.jhtml?articleID=7016

[18] *Ibid*.

[19] The aircraft that was in the possession of the RNoAF by the end of WW II were few in numbers and generally in a bad state. In addition to this, a large number of veterans left the air force for civilian jobs.

[20] Espenes and Naastad. The Royal Norwegian Air Force – A Multipurpose Tool During the Cold War, p. 42.

[21] *Ibid*., p. 43.

[22] *Ibid*., p. 43.

[23] *Ibid*., p. 44.

[24] *Ibid*., p. 45.

[25] *Ibid*., p. 46.

[26] *Ibid*., p. 47.

[27] *Ibid*., p. 47.

[28] *Ibid*., pp. 47-48.

[29] *Ibid*., p. 48.

[30] *Ibid*., p. 49.

[31] Edward N. Luttwak, "Air Power in US Military Strategy," in The Future of Air Power in the Aftermath of the Gulf War, eds. Richard H. Shultz Jr. and Robert L. Pfaltzgraff Jr., (Maxwell, Alabama: Air University Press, 1992), p. 20.

[32] Shaun Clarke, Strategy, Air Strike and Small Nations, (Fairbairn: Air Power Studies Centre, 1999), p. 55.

[33] Dilip Hiro, Desert Shield to Desert Storm: The Second Gulf War, (London: Paladin, 1992), p. 538.

[34] United States Department of Defense, Gulf War Air Power Survey, Volume V, Part II, (Washington: DOD, 1993), p. 13.

[35] *Ibid*., Volume V, Part II, pp. 17-29

[36] According to Canadian doctrine, there is always just one centre of gravity, while American doctrine allows planners to define more than one at each level of war.

[37] United States General Accounting Office, Operation Desert Storm – Evaluation of the Air Campaign, (Washington: GAO, 1997) GAO/NSIAD-97-134. http://www.fas.org/man/gao/nsiad97134/app_05.htm

[38] United States Department of Defense. Gulf War Air Power Survey. Volume V, Part II, p. 157. Note: The commitment to hostilities occurred almost an hour before the impact of the weapons from the helicopters, with the launching of Tomahawk TLAM cruise missiles aimed at Baghdad.

[39] John Pimlott and Stephen Badsey, The Gulf War Assessed, (London: Arms and Armour Press, 1992), pp. 113-114.

[40] *Ibid*., p. 114.
The losses were due to the fact that the Tornados attacked enemy airfields in low-level missions using the JP-233 runway-cratering bomb. This was, of course, very dangerous because of the high density of ground based air defence systems deployed to defend the airfields.

[41] *Ibid*., p. 115.

[42] Pimlott and Badsey. The Gulf War Assessed, pp. 116-118.

[43] United States General Accounting Office, Operation Desert Storm – Evaluation of the Air Campaign. GAO/NSIAD-97-134.

[44] Richard P. Hallion, "Critical Aerospace Capabilities for Coalition Operations," in From Manoeuvre Warfare to Kosovo?, ed. John A. Olsen, (Trondheim: The Royal Norwegian Air Force Academy, 2001), p. 154.

[45] Gulf War Air Power Survey, Volume V, Part I, p. 42.

[46] *Ibid*., Volume V, Part I, p. 42.

[47] *Ibid*., Volume V, Part I, pp. 295-299.

[48] *Ibid*., Volume V, Part I, p. 43 and pp. 292-294.

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[51] Anthony H. Cordesman and Abraham R. Wagner, The Lessons of Modern War – Volume V: The Gulf War, (Boulder: Westview Press, 1996), p.376.

[52] Gulf War Air Power Survey, Volume V, Part I, pp. 20-32.

[53] The North Atlantic Treaty Organization, Operation Allied Force. http://www.nato.int/kosovo/all-frce.htm

[54] *Ibid*.

[55] *Ibid*.

[56] The North Atlantic Treaty Organization, Operation Allied Force. http://www.nato.int/kosovo/all-frce.htm

[57] General Wesley Clarke, Press Conference by Secretary General, Dr. Javier Solana and SACEUR, Gen. Wesley Clark. NATO Head Quarters, Brussels, 25 March 1999 at 15.00 Hours.

[58] United States Department of Defense, Report to Congress, Kosovo/Operation Allied Force After Action Report. (Washington, DOD, 2000), pp. 4-5.

[59] *Ibid*., p. 8.

[60] *Ibid*., pp. 8-9.

[61] *Ibid*., p. 9.

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[63] John Peters et. al., European Contributions to Operation Allied Force – Implications for Transatlantic Cooperation, (RAND Publications, 2001), pp. 18-21. http://www.rand.org/publications/MR/MR1391/

[64] HARM: High Velocity Anti radiation Missile.

[65] John Peters. European Contributions to Operation Allied Force – Implications for Transatlantic Cooperation, p. 21.

[66] *Ibid*., p. 22.

[67] *Ibid*., pp. 22-23.

[68] According to US Air Force historian Dr. Richard P. Hallion, the JFACC, Lieutenant General Michael Short, specifically mentioned the RNLAF as an example of how a small air force can be a large force multiplier in a coalition. Richard Hallion. Critical Aerospace Capabilities for Coalition Operations, p. 158.

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[72] John Peters. European Contributions to Operation Allied Force – Implications for Transatlantic Cooperation, p. 30.

[73] *Ibid*., p. 30.

[74] *Ibid*., p. 23.

[75] Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo," in From Manoeuvre Warfare to Kosovo, ed. John A. Olsen, p.261.

[76] Wesley Clark, Waging Modern War – Bosnia, Kosovo and the Future of War, (New York: Public Affairs, 2001), p. 241.

[77] Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo," in From Manoeuvre Warfare to Kosovo, ed. John A. Olsen, p. 268.

[78] Ivo H. Daalder and Michael E. O'Hanlon, Winning Ugly – NATO's War to Save Kosovo, (Washington D.C.: Brookings Institution Press, 2000), p. 136.

[79] Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo," in From Manoeuvre Warfare to Kosovo, ed. John A. Olsen, pp. 258-265.

[80] Shaun Clarke. Strategy, Air Strike and Small Nations, p. 62.

[81] Daalder and O'Hanlon. Winning Ugly – NATO's War to Save Kosovo, pp. 137-140.

[82] Shaun Clarke. Strategy, Air Strike and Small Nations, p.63.

[83] Only approximately 35% of the ordnance used in Operation Allied Force was precision guided, but as in Operation Desert Storm these weapons had an impact that represented more than sheer numbers. The precision-guided munitions reduced the risk of collateral damage and allowed the NATO aircraft to attack from altitudes above the reach of ground based air defence systems.

[84] Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo," in From Manoeuvre Warfare to Kosovo, ed. John A. Olsen, p. 274.

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[86] Lord George Robertson, Statement to the Press on Implementation Of Article 5 of the Washington Treaty following the 11 September Attacks against the United States, NATO Headquarters, Brussels, 4 October 2001. http://www.nato.int/docu/speech/2001/s011004b.htm

[87] United States President, George W. Bush Jr., Presidential Address to the Nation, 7 October 2001,p. 1. http://www.whitehouse.gov/news/releases/2001/10/20011007-8.html

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[91] *Ibid*., p.1.

[92] *Ibid*., p. 4.

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[100] *Ibid*., p. 2.

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