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CF-18s IN COMBAT FROM IRAQ TO LIBYA: THE STRATEGIC DIVIDEND OF FIGHTERS

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JCSP 37

Master of Defence Studies

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JCSP 37 - PCEMI 37

MASTER'S OF DEFENCE STUDIES DISSERTATION

CF-18s IN COMBAT FROM IRAQ TO LIBYA: THE STRATEGIC DIVIDEND OF FIGHTERS

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Submitted 26 May 2011

Word count: 17,853

Compte de mots: 17,853

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ABSTRACT

Since acquiring the CF-18 in the mid-1980s, the Hornet has conducted combat operations in Iraq, Kosovo, and now Libya which have all resulted in significant strategic benefits for Canada. The 1991 war in Iraq came after decades of peacekeeping cultivated a public opinion which initially restrained the government from dogmatically employing fighter resources in an offensive manner. Thus, the Mulroney government used a cautious approach to warm the public to Canada's international responsibilities and the strategic impact of fighters. During the Kosovo Air Campaign eight years later, CF-18s were not politically restrained and they again achieved strategic benefits without a single casualty. The current CF-18 operation over Libya was initiated with unprecedented political and public consensus, showing that the primacy of fighters is now well entrenched in the minds of the government and the public. However, the CF-18 did not deploy to Afghanistan which has perplexed those in the fighter community considering there has been a profusion of close air support required there. This paper will examine these operations and show that the historical decision to deploy CF-18s has, in fact, reflected a consistent emphasis on the strategic benefit of fighters in spite of the Afghanistan aberration. This study also reveals that CF-18 operational lessons have often been deferred which has brought the Fighter Force precariously close to irrelevance, counter to the government's customary emphasis on the political expediency of this niche capability. As the debates continue regarding the F-35 acquisition, this paper will highlight the requirement for the government and the public to appreciate the historic basis and the contemporary relevance of the strategic dividend of fighters.

ACKNOWLEDGEMENTS

This paper could not have been completed without the help of many individuals. I would like to sincerely thank the following active and retired officers who were kind enough to grant me interviews: Lieutenant-General Fred Sutherland, CMM, CD (Ret'd); Lieutenant-General Lloyd Campbell, CMM, CD (Ret'd); Lieutenant-General Ken Pennie, CMM, CD (Ret'd); Lieutenant-General Steve Lucas, CMM, CD (Ret'd); Lieutenant-General Angus Watt, CMM, CD (Ret'd); Lieutenant-General Marcel Duval, CMM, CD; Major-General Yvan Blondin, OMM, CD; Colonel Don "Fang" Matthews, MSM, CD (Ret'd); Lieutenant-Colonel Jim "Gyro" Grecco, CD (Ret'd); Lieutenant-Colonel Sylvain "Gogo" Ménard, CD; and Major Dave "Stoner" Stone, CD. They all took time out of their very busy schedules and were refreshingly candid, honest and informative. Their input was essential to fill the holes in the academic literature and provided me with great insight into the workings at the strategic level of the Canadian Forces.

Most importantly, I would like to acknowledge my advisor, Dr. Richard Goette, who provided continuous and valuable feedback on my submissions while urging a few much needed course adjustments along the way. He manages to act as an objective and well respected academic, while advocating and supporting air power and air power theories at the same time. Without his sage guidance, this paper would not have been possible. He is a credit to the military academic institution.

LIST OF ABBREVIATIONS

3PPCLI – 3rd Battalion, Princess Patricia's Canadian Light Infantry

AAA – Anti-Aircraft Artillery

AIM – Air Intercept Missile

CAOC – Combined Air Operations Centre

CAS – Close Air Support

CATGME – Canadian Air Task Group – Middle East

CD – Canadian Forces Decoration

CDS – Chief of Defence Staff

CF – Canadian Forces

CMM – Commander of the Order of Military Merit

COIN – Counter Insurgency

DoD – Department of Defence

EPAF – European Participating Air Forces

FLIR – Forward Looking Infrared

GPS – Global Positioning System

GWOT – Global War on Terror

HMCS – Her Majesty's Canadian Ship

ISAF – International Security Assistance Force

JDAM – Joint Direct Attack Munition

KLA – Kosovo Liberation Army

LGB – Laser Guided Bomb

MP – Member of Parliament

MSM – Meritorious Service Medal

NATO – North Atlantic Treaty Organization

NEO – Non-combatant Evacuation Operation

NORAD – Northern Aerospace Defence

NVG – Night Vision Goggle

OAF – Operation Allied Force

OEF – Operation Enduring Freedom

OPEC – Organization of the Petroleum Exporting Countries

PGM – Precision Guided Munition

RCAF – Royal Canadian Air Force

SAM – Surface to Air Missile

TFA – Task Force Aviano

UHF – Ultra-High Frequency

UN – United Nations

UNPROFOR – United Nations Protection Force

US – United States

CHAPTER 1 – INTRODUCTION

Canada is a country with a very rich history of fighter aviation spanning the First World War to the operation currently underway in Libya. Canadian fighter aviators have consistently demonstrated incredible courage, professionalism, resiliency and adaptability. They have done so in spite of difficult periods owing to insufficient funding and an inconsistent national security strategy. The attention that fighter aviation receives from historians, the media, and the general public reflects the mystique of air power and the incredible cost of modern aircraft. From the exploits of the earliest biplanes to the ongoing debates regarding Canada's F-35 acquisition, fighter aviation has captured the imagination of Canadians while at the same time casted doubt regarding its utility.

The pre-eminence of fighters in Canada historically stemmed from the country's economic and geopolitical standing after the Second World War with Cold War imperatives hastening the expansion of North Atlantic Treaty Organization (NATO) forces in Europe. After an incredible post-war demobilization from 165,000 all ranks to 12,200, the Royal Canadian Air Force (RCAF) soon became a government priority.[1] Original post-Second World War RCAF plans called for a modest "balanced" force of bombers, fighters, maritime patrol, air transport, and tactical air power aircraft. However, due to domestic and alliance pressures, by the early 1950s the RCAF had become focused

[1] Leslie Roberts, *There Shall Be Wings: A History of the Royal Canadian Air Force* (Toronto: Clarke, Irwin & Company Limited, 1959), 237; Brereton Greenhous and Hugh A. Halliday, *Canada's Air Forces: 1914-1999* (Montreal: Art Global, 1999),122.

on fighters, both in terms of aircraft composition and identity.[2] According to the *1949/50 Defence White Paper*:

> Canada is unable to support the immense production and maintenance burden of a large strategic bomber force. The Canadian Air Force is concentrating on developing jet-fighter interceptor squadrons, employing the latest and best jet fighters available.[3]

By the end of 1953, 12 squadrons were divided amongst four fighter wings in England, France, and Germany which according to historians Brereton Greenhous and Hugh Halliday, "…constituted the largest RCAF fighter force ever assembled."[4] For the decades that followed, Canada attempted to develop its own fighter aircraft with few successes and juggled a mixed fleet with inconsistent political mandates to fulfill its domestic defence and alliance commitments.[5] A controversial project was launched in the late 1970s to replace three platforms with a single 'off the shelf' multirole aircraft.[6]

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[2] For a comprehensive examination of the emphasis on fighters after the Second World War see: Bruce P. Barnes, "'Fighters First:' The Transition of the Royal Canadian Air Force, 1945-1952" (Master's thesis, Royal Military College of Canada, 2006).

[3] National Defence, *1949/50 Defence White Paper*.

[4] Greenhous and Halliday, *Canada's Air Forces: 1914-1999* (Montreal: Art Global, 1999), 132.

[5] Canada produced the Canadair Sabre, and the CF-100 Canuck (designed specifically for the demands of the country's geography, climate and aerospace defence mission). The CF-105 Arrow was a failed attempt to produce a state of the art fighter interceptor aircraft to replace the CF-100 Canuck; Canada's 'mixed fleet' of jet fighters included the de Havilland Vampire (1948-58), Canadair Sabre (1950-70), CF-100 Canuck (1951-81), McDonnel Banshee (1955-62), CF-104 Starfighter (1961-87), CF-101 Voodoo (1961-87), CF-5 Freedom Fighter (1968-95). They were all very unique aircraft with different roles and capabilities.

[6] Greenhous and Halliday, *Canada's Air Forces: 1914-1999* (Montreal: Art Global, 1999), 151. The CF-18 was to replace the CF-101 Voodoo, CF-104 Starfighter, and the CF-5 Freedom Fighter. More on the procurement of the CF-18 can be found in Lieutenant Colonel Frank L. Boyd's, "The Politics of Canadian Defense Procurement: The New Fighter Aircraft Decision" (Paper presented to the Conference on The Canadian Defence Industrial Base: Domestic and International Issues and Interests, Queen's University, 1987).

The CF-18 was selected and has since provided Canada with an offensive military capability which the government has used to gain a "seat at the international table."[7]

Over the last two decades, Canada's use of fighter aircraft as an instrument of foreign policy has been influenced to a degree by younger generations of isolationists and a very reactive acquisition process. However, the government has recognized the clear strategic benefits of applying offensive air power on the international stage. Since Canada acquired the CF-18, it has conducted combat operations in three theatres: Iraq, Kosovo, and now Libya. However, for the last ten years fighters have not deployed to Afghanistan in spite of the need for close air support in a complex Counter Insurgency (COIN) campaign. Their absence in this particular theatre has called some to question if fighter aircraft have lost favour with the military and/or political leadership. Although it seems like an odd blip in the radar of fighter employment, there is a logical explanation. This paper will show that Canada has consistently used the CF-18 to achieve strategic benefits and that the primacy of fighter aircraft thus remains deeply entrenched in the minds of government and, increasingly, the public.

It is important to note that Canadian Air Force history has been poorly documented over the last few decades. In the past, full time historians actively chronicled peacetime and combat operations; however, today with less people and budgets stretched thin, few historians remain loyal to the task. Unit historical reports tend to be a broad brushed overview of activities reflecting a high operational tempo with priorities lying elsewhere. As a result, there is a paucity of academic literature on

[7] Joel Sokolsky, "A Seat at the Table: Canada and its Alliances," *Armed Forces and Society* 16, no. 1 (Fall 1989), 12, 33.

modern CF-18 operations and as systems become increasingly complex, fighter activities are clouded in greater secrecy. This unclassified paper therefore relies extensively on interviews with key officers both retired and currently serving to paint as full a picture as possible within an unclassified forum. In particular, the decision not to send CF-18s to Afghanistan was largely made behind closed doors with little documentation or paper trail. Additionally, with operations ongoing in Libya, interviews and news reports were the only references available at the time of writing. Modern Canadian fighter operations offer a fruitful field of study that would be greatly enhanced if more airmen and airwomen would take the time to put pen to paper in their particular areas of expertise.

The following chapters will provide a comprehensive examination of the CF-18 in combat to show that their employment has been non-partisan and has exposed the military to low operational risk while achieving high strategic benefits. In Chapter 2 CF-18 participation in the 1991 Persian Gulf War will be explored to show that their full potential was held back by an unclear and indecisive political mandate. However, this deployment also gradually reintroduced Canadians to the warrior spirit of the modern fighter pilot and challenged the idea of Canada as a "peacekeeping nation." It was the first modern example that Canada must be willing to dip its hands in the metaphorical "bucket of blood" if it is to gain a "seat at the table" on the international stage.[8] It was also the first operation where early signs that Canada's front line fighter was beginning to fall behind other western air forces in their evolution towards precision capabilities. In Chapter 3 the subsequent willingness to send fighters into the Balkan conflict will be examined and show that precision air power maintained favour amongst the public,

[8] *Ibid.*, 12, 33.

politicians and military strategists alike. It will demonstrate that Canada did not have the capability to project its Fighter Force rapidly throughout the world, but once in theatre, they punched well above their weight. The Kosovo Air Campaign was a political success for Canada, but upon closer examination it showed the aging CF-18 fleet was not keeping pace with technology, thereby justifying a long overdue mid-life upgrade. Chapter 4 will examine the impact of the terrorist attacks against the United States on 11 September 2001 – a singular event which fundamentally changed homeland and aerospace defence strategies while giving the army its first war since Korea. It will look at Canada's contribution to the war in Afghanistan and will answer why, out of over a thousand close air support aircraft and with Canadian troops in contact, CF-18s were left to watch from the sidelines. It will dispel the conspiracy theories which have circulated blaming personal biases for the fighter community's conspicuous absence. It will show in the end that CF-18s would not have provided the government with any more strategic dividends – a prerequisite for using a very costly military capability. In Chapter 5 the latest CF-18 combat operation in Libya will be identified as a textbook example of Canada's 'set-piece' deployment of ships and fighters when the government is disinclined to have boots on the ground. The political consensus and rapid deployment of CF-18s to conduct the third Canadian bombing campaign in 20 years shows that Canada has come a long way since its cautious approach in Iraq and now has the ability to force project almost as fast as an aircraft carrier battle group.

Each chapter will outline the relevant events, political and public opinion, and identify lessons learned which relate to the relevance and viability of the Fighter Force and its ability to fulfil its mandated role for government. The concluding chapter will

recommend ways to ensure the Canadian Fighter Force remains relevant and ready for future operations thereby securing Canada's "seat at the international table." It will not propose a justification for acquiring the F-35 or any other specific "next generation fighter," but rather outline the conditions which must be met for the Canadian government to effectively use its fighter aircraft to achieve strategic inroads in the international community. It will identify how the Canadian Forces can position itself to be relevant and ready when called on by the government.

CHAPTER 2 – FIRST GULF WAR

Operation Desert Storm, the 1991 Persian Gulf War, may have been "the mother of all battles" for Saddam Hussein, but for western militaries it was a watershed event which established the primacy of precision weapons.[9] It also demonstrated that modern air power could shape the battlefield, giving ground commanders the freedom to manoeuvre without prohibitive interference. After an overwhelming air superiority and interdiction operation, it took just four days for Coalition forces to cause the Iraqi Republican Guard to capitulate. It was legitimized by the United Nations (UN) and came at an opportune time for the United States to demonstrate the utility of their incredibly advanced and increasingly costly military. For Canada, it had been four decades since the military's last offensive operation in Korea and it was the first time the media would bring almost real time graphic reports to the livingrooms of its citizens.

Initially, Canada deployed two destroyers and a supply ship to conduct interdiction operations. By the end of the war, they would be joined by 24 of Canada's newest CF-18 fighter aircraft, a Boeing 707 tanker, a Field Ambulance Hospital and a modest contingent of army personnel to provide force protection. The traditional left-right political schism guided the debates on Canada's involvement while the public's view of Canada as a peacekeeping nation was fundamentally challenged. This chapter will argue that the deployment of CF-18s in a progressively 'offensive' defensive counter-air role with a surge of kinetic, purely offensive, strikes at the end was a

[9] BBC, "1991: 'Mother of all Battles' begins," http://news.bbc.co.uk/onthisday/hi/dates/stories/january/17/newsid_2530000/2530375.stm; Internet; accessed 18 May 2011.

conscious decision by a 'cautious' government. As frustrating as it was for the fighter pilots capable of doing so much more to be limited by public opinion, it was in fact the best way Canadians could be reintroduced to the warrior spirit of their air force.

Background

> …In the early morning hours of August 2nd, Iraqi armed forces, without provocation or warning, invaded a peaceful Kuwait. Facing negligible resistance from its much smaller neighbor, Iraq's tanks stormed in blitzkrieg fashion through Kuwait in a few short hours. With more than 100,000 troops, along with tanks, artillery and surface-to-surface missiles, Iraq now occupies Kuwait.[10]
>
> – US President George H.W. Bush, 8 August 1990.

In President George H.W. Bush's first official speech following Iraq's invasion of Kuwait, he correctly stated that aggression was not provoked; however, his assertion that it came without warning is not entirely true. Iraq had never recognized the independence of Kuwait, granted by Britain in 1961, and openly claimed parts of Kuwait's territory as its own.[11] Near the end of July 1990, Iraq possessed a formidable military force and tensions escalated when it claimed that Kuwait was driving down oil prices by not respecting the quotas established by the Organization of the Petroleum Exporting Countries (OPEC) and slant drilling into Iraqi territory.[12] At the time, the Canadian government and military were distracted by the controversial events unfolding at Oka. While soldiers mobilized to dismantle a blockade of armed Mohawks in Québec, Saddam Hussein was massing troops, tanks and artillery along the Kuwait border. Many nations incorrectly assessed Iraq's posturing as a chest pounding bluff to force Kuwait to concede

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[10] George Bush, "Iraq Invasion of Kuwait," *Vital Speeches of the Day* 56, no. 22 (September 1990): 674; http://web.ebscohost.com; Internet; accessed 11 March 2011

[11] Stan Morse, *Gulf Air War: Debrief* (London, England: Aerospace Publishing Ltd., 1991), 6.

[12] *Ibid.*, 6. Encroachment on Iraqi oil supplies and excessive oil production by Kuwait and the UAE drove down market prices.

on disputed territorial and economic issues. They were proven wrong, when in the morning hours of 2 August 1990, Saddam's forces invaded the sovereign territory of another nation.

Without delay, the United Nations (UN) held an emergency session and issued Resolution 660, calling for the immediate withdrawal of Iraqi forces and for Iraq and Kuwait to begin "…negotiations for the resolution of their differences."[13] Emerging from the decline of the Soviet Union, as the world's only superpower, the United States (US) naturally assumed the lead to ensure Saddam complied. Canadian Prime Minister Brian Mulroney enjoyed a close relationship with President Bush and was one of the first world leaders asked to join the coalition. During their telephone conversation on 4 August 1990, Mulroney made it clear to the US President that Canada would only engage in military action with the backing of a legitimate UN Security Council Resolution.[14] They agreed in principle to a plan which involved Canada helping enforce the economic embargos being tabled at the time.[15]

SEQUENCE OF EVENTS

Initial Military Recommendations

When Iraq invaded Kuwait, the Minister of National Defence, Bill McKnight, and Chief of Defence Staff (CDS), General John de Chastelain, were out of country on

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[13] U.N. Security Council, 2932nd Meeting, "Resolution 660 (1990) [on Iraq-Kuwait]," (S/RES/660), 2 August 1990 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; accessed 11 March 2011.

[14] Jean H. Morin and Richard H. Gimblett, *Operation Friction: The Canadian Forces in the Persian Gulf* (Toronto: Dundurn Press, 1997), 18.

[15] *Ibid.,* 18.

unrelated business. The responsibility of providing a military recommendation to Mulroney devolved to Vice-Admiral Charles Thomas as Acting CDS. Not surprisingly, the navy officer offered the services of Maritime Command to shoulder the initial military response. In fairness to Thomas, with the army implicated in Oka and the air force carefully watching the deteriorating situation in Eastern Europe, few options were available. Though the ships identified for the task group were physically ready for a short notice deployment, they were not adequately equipped for the Persian Gulf threats. They were designed and fitted for Cold War anti-submarine operations and lacked critical systems to counter Iraq's Exocet-equipped fast patrol boats, helicopters and air force jets.[16] In spite of these deficiencies, Mulroney announced, on Friday 10 August 1990, that Canada would send Her Majesty's Canadian Ships (HMCSs) *Terra Nova*, *Athabascan* and *Protecteur* on Operation Friction "to deter further Iraqi aggression."[17] Defence analysts immediately questioned the operational suitability of the ships, which included the oldest destroyer in Canada's fleet.[18]

Ships 'Rusted Out' but Refitted Quickly

The *1987 Defence White Paper* cited decades of neglect as the cause of a significant "commitment-capability gap" in the Canadian Forces (CF), with the navy being one of the most "rusted out" services.[19] As a result, the government committed to a

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[16] *Ibid.,* 19, 27. The Exocet is a long range sea or air launched anti-ship missile.

[17] *Ibid.,* 30.

[18] HMCS *Terra Nova* was 31 years old at the time.

[19] Department of National Defence, *1987 Defence White Paper*, 43; http://www.forces.gc.ca/admpol/downloads/Challenge%20and%20Commitment%201987.pdf; Internet; accessed 13 March 2011.

"vigorous naval modernization program"; however, the collapse of the Soviet Union changed defence priorities and at the time Operation Friction was announced modernization was far from complete.[20] Many critics felt the Canadian ships in their current configuration would be vulnerable in the Persian Gulf, putting their sailors at a significant risk. Among the critics was defence analyst and retired Rear-Admiral Fred Crickard who questioned the ships' self-protection capabilities against air threats in particular.[21] The government and military were well aware of the deficiencies and embarked upon an aggressive refit to bring them to an acceptable level of operational capability. Two weeks after Mulroney's announcement, Crickard toured the refitted ships and was impressed by the upgrades which had been made in such a short time. However, he still feared this small Canadian Task Group would be vulnerable to air attacks – unless adequate air cover was provided.[22]

CF-18 Option Quickly Presented

CF-18s were not an immediate consideration because they could do little to enforce the initial embargos and Canada's commitment to the North Atlantic Treaty Organization (NATO) in Europe had not been officially reduced.[23] However, the Soviets' tacit support of UN Resolutions against Iraq and the Cold War abeyance permitted NATO to release Hornets from their German bases without leaving the

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[20] *Ibid*., 51.

[21] Kevin Cox, "Hero's Sendoff Expected As Ships Depart Halifax," *Globe and Mail*, 24 August 1990, A13.

[22] *Ibid*., A13.

[23] Force reductions in Europe occurred one to one and a half years after the Persian Gulf War.

European theatre vulnerable.[24] It did not take long for the air force to conduct staff checks and determine that they were in fact a viable option.[25] For the government, deploying fighter aircraft in a defensive role would be 'meat on the bone' of Canada's contribution the general public would be willing to digest. On 14 September 1990, before the Canadian Naval Task Group had even arrived in theatre, Mulroney announced that Canada would "…deploy a squadron of CF-18 fighter aircraft from Lahr, West Germany to the Gulf … and provide air cover for our own ships and the ships of friendly nations."[26] Less than a month later, 18 Canadian Hornets were in Doha, Qatar poised to commence Operation Scimitar.[27] The Task Force was unofficially known as the Desert Cats since the majority of the personnel were from the 416 "Lynx" Squadron and the 439 "Tiger" Squadron. For the first time in over four decades, Canadian fighter aircraft would fly in combat.

Defensive Role and the UN Deadline

Initially, CF-18s were assigned defensive combat air patrols to protect coalition naval assets conducting intercept operations and embargo enforcement.[28] The first few months were relatively uneventful; the Iraqi Air Force was never bold enough to really test coalition fighters over the Gulf. However, Saddam was bold enough to remain in steadfast defiance of all resolutions and international pressure. As a result, the UN

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[24] Morin and Gimblett, *Operation Friction…,* 27.

[25] Lieutenant-General Fred R. Sutherland, CMM, CD (Ret'd), telephone interview with author, 13 April 2011.

[26] Morin and Gimblett, *Operation Friction…,* 65.

[27] Operation Scimitar was the name given to Canada's deployment of CF-18s to the Middle East.

[28] Morin and Gimblett, *Operation Friction…,* 84.

passed Resolution 678 which established 15 January 1991 as the deadline for Iraq's withdrawal from Kuwait. If Iraq did not comply with the deadline and all previous resolutions, it authorized under Chapter VII of the UN Charter the use of "all necessary means to … restore international peace and security in the area."[29] As the deadline approached, Mulroney was in close contact with Bush regarding the invasion plan and Canada's role.

Mulroney Cautiously Steps into Sweep/Escort Role

On 16 January 1991 Mulroney made his first 'cautious' step towards offensive action by authorizing CF-18s to conduct sweep and escort missions across the border of Kuwait.[30] The new mission involved escorting coalition aircraft without an air-to-air capability into enemy territory. It was a much riskier endeavour than air patrols over the Gulf since it required CF-18s to enter Iraq's air defence umbrella. The air force sent an additional six aircraft and maintenance crews to Doha in early January 1991 to accommodate increased sortie rates and potentially combat attrition.[31]

The first sweep and escort mission was launched on 20 January 1991, and to the frustration of Canadian pilots, CF-18s were still not challenged by the Iraqi Air Force.[32] Laden with offensive air-to-air weapons, they became the de facto bait for the Iraqi air

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[29] U.N. Security Council, 2963rd Meeting, "Resolution 678 (1990) [on Iraq-Kuwait]," (S/RES/678), 29 November 1990 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; accessed 11 March 2011.

[30] Morin and Gimblett, *Operation Friction…,* 160.

[31] *Ibid.,* 154. Sending additional CF-18s and ground crew was given the code name Operation Enoble.

[32] *Ibid.,* 167. The first mission was launched on this date, but was aborted before CF-18s pushed into Kuwait due to unsuitable weather.

defence system so that trailing F-4E Wild Weasels could engage or electronically jam radar sites that showed any interest in the Canadian fighters. According to the Desert Cats' commanding officer, Lieutenant-Colonel Don 'Fang' Matthews, being "locked up" by surface to air missile (SAM) radars initially created some very tense moments of "jinking and chaffing," but over time the pilots grew accustomed to it. As long as pilots stayed above 15,000 feet, they would remain above the effective altitude of anti-aircraft artillery (AAA) and could evade the SAM radars using manoeuvres and countermeasures.[33] According to the Deputy Commander of the Canadian Air Task Group – Middle East (CATGME), Lieutenant Colonel Denny Roberts, the missions were "like sneaking into your bedroom at 3 a.m. and trying not to wake your wife."[34] For several weeks, Canadian pilots provided comfort to the unarmed bombers they escorted, but grew frustrated by a seemingly futile mission.[35]

No Battle of Britain for Canada

The Iraqi Air Force was targeted heavily during first few days of the war, compelling many of Saddam's pilots to make the low level 'defection dash' to Iran. The coalition recognized this trend and set up combat air patrols between Baghdad and the Iranian border, successfully intercepting and destroying several MiG-23s.[36] The Iraqis

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[33] Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011.

[34] "News of the eastern front," *Globe and Mail*, 8 February 1991, A12.

[35] Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011.

[36] Stan Morse, *Gulf Air War: Debrief*, 106.; General Accounting Office, NSIAD-97-134, *Operation Desert Storm: Evaluation of the Air Campaign* (Washington: 1997); Also available online at: http://www.gao.gov/archive/1997/ns97134.pdf, Internet; accessed 20 April 2011; Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress* (Washington, U.S. DoD: 1991): 113-247; available online at: http://www.fas.org/irp/imint/docs/cpgw6/, Internet; accessed 20 April 2011.

brave enough to look for action were outmatched technologically and their pilots were at a severe proficiency deficit. On one occasion a 'kill' was claimed by a coalition aircraft without firing a single shot.

The very first aerial victory of the war was claimed by an *unarmed* EF-111A Raven on 17 January 1991 while conducting a stand-off jamming mission. During the mission, the Raven was surprised to find an Iraqi Mirage F1 directly behind it. Surprise turned into shock when the F1 launched an air-to-air missile. The Raven's pilot conducted a diving break turn and dispensed countermeasures which successfully decoyed the mach 2 projectile. When the Raven pulled out of its diving turn at only a few hundred feet above the Iraqi desert, its crew observed the Mirage F1 impact the ground exploding in a fireball.[37] The Iraqi pilot had followed the Raven through the vertical manoeuvre without enough altitude to recover. He learned the hard way that the earth has a 'kill probability' of 100 percent and that one can only tie the world low flying record. The overwhelming superiority of coalition pilots and aircraft, exemplified by this first air-to-air engagement, was a sign the air war of Desert Storm would be no Battle of Britain.

The vast majority of the 34 confirmed allied victories against fighter aircraft were achieved by the US Air Force's F-15C Eagle, a pure air superiority fighter dedicated to defensive counter-air, sweep and escort missions for the entire conflict.[38] Only three victories were claimed by multi-role aircraft: two by US Navy F-18C Hornets and one by

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[37] Stan Morse, *Gulf Air War: Debrief*, 50.

[38] *Ibid.*, 226. There were a total for 41 aerial victories. Eight were against helicopters and out of the 34 jet aircraft, two were Su-25 Frogfoot ground attack aircraft with very limited air-to-air capability.

a US Navy F-14A Tomcat.[39] Canada's multirole Hornet manned the combat air patrols to the south where Iraqi aircraft never ventured while the sweep and escort missions occurred with air superiority already achieved. It was becoming clear that Canadian Hornets would have to take the fight to the enemy. This occurred in an unconventional way on the night of 30 January 1991, when a formation of CF-18s attacked an Iraqi patrol boat.

After two weeks of uneventful combat air patrols, Capt Steve 'Hillbilly' Hill and Major Dave 'DW' Kendall did not hesitate to accept their ship borne controller's unexpected request: "would you like to strafe a boat?"[40] The boat in question had escaped an A-6 attack when the American 'Intruder' ran out of ordnance. After receiving final clearance to engage from their controller, the two Canadian pilots emptied their 20mm cannons over multiple strafing runs. With only air-to-air missiles remaining they attempted to acquire an infrared lock to fire an AIM-9 Sidewinder missile. The boat's heat signature was too low and after some trouble 'Hillbilly' acquired a radar lock and fired an AIM-7 semi-active radar missile at the boat. The missile impacted the water short of the target at which time both pilots returned to base. The boat was eventually finished off by US bombers; but, the Canadians were officially awarded an 'assist' to its seaworthiness kill.[41] Hill and Kendall were extolled by senior military officials at home

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[39] *Ibid.*, 226.

[40] David N. Deere, *Desert Cats: The Canadian Fighter Squadron in the Gulf War* (Stoney Creek, Ontario: Fortress Publications, 1991), 32.

[41] *Ibid.*, 32.

for their "…example of Canadian can-do."[42] However, the CATGME Commander Colonel Roméo Lalonde conveyed to the press in theatre a different opinion, asserting they should have made less passes to minimize their exposure – he was not entirely happy about the attack.[43] They had, after all wasted a $250,000 air-to-air missile on a boat in the first offensive action by the Canadian military since the Korean War. The engagement was admittedly unorthodox but Lalonde's criticisms were viewed to be a little harsh by most officers in the fighter community.[44]

Sweep/Escort Missions Progress and Bombing Finally Authorized

Meanwhile, acting as 'bait' during the sweep and escort missions marginalized the CF-18's capabilities and frustrated Canadian pilots who were capable of much more. In early February, Lalonde questioned the rationale of the role when the Iraqi Air Force had been rendered impotent. In spite of his reservations, General de Chastelain insisted that Canada continue the missions based on the air order of battle which still existed in Iraq.[45] In Ottawa, speaking on behalf of the headquarters staff, Commodore Murray pointed out that there was "…still a gap there between … [the number of pre-war Iraqi combat aircraft] and what we can confirm are out of action."[46] According to Murray,

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[42] Commodore Larry Murray quoted in Alan Ferguson, "CF-18 launches missile at Iraqi boat," *Toronto Star*, 31 January 1991, A15.

[43] Alan Ferguson, "Canadian urges end to 'sweep' missions," *Toronto Star*, 4 February 1991, A13.

[44] Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011; Lieutenant-General Fred R. Sutherland, CMM, CD (Ret'd), telephone interview with author, 13 April 2011.

[45] Morin and Gimblett, *Operation Friction…,* 171.

[46] Commodore Larry Murray quoted in Alan Ferguson, "Canadian urges end to 'sweep' missions," *Toronto Star*, 4 February 1991, A13.

Canada was "…not in the business of gambling" on Iraq staying grounded.[47] After months of combat air patrols and weeks of evading air defences, CF-18s were finally authorized to conduct bombing missions.

On 20 February 1991, Minister of National Defence Bill McKnight announced that Canada would commence an offensive bombing campaign, describing the decision as "a logical evolution of our role in this conflict."[48] However, the commander of Air Command at the time, Lieutenant-General Fred R. Sutherland, recalled that it may not have been an 'evolution,' but rather the result of an appeal by the United States for Canada to "metaphorically dip its hands in the bucket of blood."[49] The Desert Cats anticipated changing to an air-to-ground role and had already completed ground school and reviewed their bombing theory by the time the announcement was made.[50] After a few days of training flights to consolidate the theory, the pilots and aircraft were ready to go; but one critical resource was missing – bombs. While war stocks were enroute from Germany, the United States generously provided ordnance for the first few days of the Canadian offensive. On 24 February 1991 a flight of four CF-18s (call sign Talon 01) dropped the first bombs from Canadian aircraft in combat since the Second World War.

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[47] Commodore Larry Murray quoted in Alan Ferguson, "Canadian urges end to 'sweep' missions," *Toronto Star*, 4 February 1991, A13.

[48] Bill McKnight quoted in Geoffry York, "Canada swithches CF-18s to offensive role in gulf," *Globe and Mail*, 21 February 1991, A1.

[49] Lieutenant-General Fred R. Sutherland, CMM, CD (Ret'd), telephone interview with author, 13 April 2011.

[50] Morin and Gimblett, *Operation Friction…,* 172. The ground school covered planning air-to-ground attacks to ensure safe weapons separation and dive recovery, fuse settings, pre-flight inspections, attack techniques and parameters and contingencies.

Before the fighting stopped on 28 February 1991, Canada conducted 56 bombing sorties and dropped more than 100 tonnes of ordnance on military targets.[51]

POLITICAL AND PUBLIC OPINION

War is merely the continuation of policy by other means.[52]

– Carl Von Clausewitz

The political decision to become militarily involved in the US-led coalition in the Gulf, and to what degree, was guided by many internal and external factors, with 'policy' forming only part of the equation. Saddam's invasion of Kuwait was a clear violation of international treaties and customary law which demanded a stern international response. A clear mandate from the United Nations Security Council and the support of the Arab League were essential to legitimize the response. Canada was in a position to contribute since Cold War posturing had ceased, and felt a responsibility to both the United Nations and the United States (its main ally) to do so in a substantive way. However, Canada's contribution was politically controversial and significantly constrained by the 'peacekeeping nation' perception stemming from decades of 'blue beret' operations. Clausewitz' simplistic theory above applies well to conventional state on state conflicts, but breaks down in the context of modern multinational coalitions, especially for self proclaimed 'middle power' nations like Canada.

Fighting the 'Peacekeeping Nation' Perception

A 16 August 1990 *Globe and Mail* editorial titled: "Risking a Peacekeeping Reputation" reflected the belief by many Canadians the 'blue beret' had become the only

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[51] *Ibid.,* 174, 175; Stan Morse, *Gulf Air War: Debrief*, 115.

[52] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Oxford: Oxford University Press, 2007), 28.

authorized headdress for CF members.[53] In the article, Nicola Vulpe argued that Mulroney's decision to deploy a naval task group had "compromised Canada's traditional and admirable role as an international peacekeeper."[54] Mulroney, on the other hand, argued that Canada's involvement in the Iraq War did not compromise its reputation and emphasized multilateralism and international order as the foundation for the intervention:

> Our military response to Iraqi aggression is fully compatible with our tradition as international peacekeepers. Canada has been amongst [the most] active of all countries in multilateral peacekeeping efforts over the last forty-five years. Canadians have served in more than twenty peacekeeping operations, from the Congo to the Sinai, from Indochina to Namibia. And we are all proud of that tradition. But our peacekeeping role neither excludes us nor excuses us from the call to resist aggression. The roles are complementary, as both serve the larger political purpose of preserving international order and are very much in Canada's interest.[55]

McKnight highlighted that a peacekeeping reputation only existed by virtue of generations of stability. He also reminded Canadians about their rich military heritage:

> Some Canadians see our involvement in the Gulf War is somehow inconsistent with our role as peacekeeper and mediator. They would have our forces stay out of the fighting, and restrict themselves to providing peacekeeping forces after hostilities have ended. This view, however, shows a fundamental misunderstanding of Canadian tradition. Two generations of Canadians have been blessed, having never experienced their nation at war, and having seen their armed forces only as peacekeepers. But in two world wars and the Korean War, more than 1,500,000 Canadians served their country overseas, and more than 100,000 gave their lives.[56]

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[53] Nicola Vulpe, "Risking a peacekeeping reputation," *Globe and Mail*, 16 August 1990, A17.

[54] *Ibid.,* A17.

[55] Robert Davis, "Canada and the Persian Gulf War" (Master's Thesis, University of Windsor, 1997), 67.

[56] Bill McKnight, "The Gulf War and Canada's Defence Policy." *Speaking Notes for The Honourable Bill McKnight, P.C., M.P., Minister of National Defence, to the Conference of Defence Associations Annual General Meeting*, chateau Laurier Hotel, Ottawa, Ontario January 25, 1991, 4.

Mulroney and McKnight reiterated these sentiments during many public addresses and, although it took time, the public did begin to understand this line of thinking.

Early polls revealed that most Canadians actually favoured sending forces to the Persian Gulf, but were loathe to the idea of Canada engaging in an offensive war. In September 1990, 58% of Gallup poll respondents supported Canada's military's presence in the region – but only to help enforce the UN embargos.[57] When a subsequent poll modified the question and specified "going to *war* against Iraq [emphasis added]," only 36% were in favour and 55% were opposed.[58] The slogan, "no blood for oil," regularly appeared during marches and two days prior to Bush's 15 January 1990 deadline, 25,000 Canadians across the country demonstrated against Canada's involvement.[59] Then by late February 1991, a surprising 58% of Canadians favoured war while only 38% opposed it, marking a significant change in public opinion.[60] This shift coincided very closely with the beginning of the CF-18 bombing campaign. With a government inextricably tied to public opinion, the military's hands were tied until the final days of the war.

LESSONS LEARNED

During the Gulf War, the operational capability and interoperability of the CF-18 was not a limiting factor. However, the chain of command's sensitivity to 'leaning

[57] Gallup Poll 009, 2 September 1990; http://search2.odesi.ca/; Internet; Accessed 17 March 2011.

[58] Gallup Poll 012, 1 December 1990; http://search2.odesi.ca/; Internet; accessed 17 March 2011. Poll question: Do you favour or oppose the Canadian Armed Forces going to war against Iraq?

[59] Morin and Gimblett, *Operation Friction…,* 157-158.

[60] Samuel J. Walker, "Interoperability at the Speed of Sound: Canada-United States Aerospace Cooperation…Modernizing the CF-18 Hornet" (Maxwell AFB: Air Force Fellows Program Paper, 2001), 13.

forward' inhibited training in theatre and delayed the eventual conduct of air-to-ground missions. The war was the first display of American 'shock and awe' precision weapon systems and because Canada only conducted three days of bombing, few took note how ineffective the CF-18's imprecise systems and unguided weapons were.

Link 4 Data Link

To fully integrate with naval assets, CF-18s required the Link 4 system which was not part of the initial Hornet acquisition. Once Mulroney announced the deployment of Canadian fighter aircraft to the Gulf theatre, the United States agreed to loan Canada enough Link 4 components to ensure interoperability. It provided pilots with situational awareness regarding air contacts and indicated if they were hostile, friendly or unknown. The information was sent via data link from the controlling ships. The pilot needed only to interpret the data and manipulate his/her cockpit display. Although not ideal to introduce new systems on the eve of war, the benign nature of the combat air patrols and the relative simplicity of Link 4 allowed the Desert Cats to gain proficiency during the course of their operational missions.[61]

Defensive Counter Air Weapons

Another minor deficiency, highlighted by the patrol boat engagement, was that CF-18s lacked appropriate weapons for their combat air patrols. The biggest threat to naval assets in the Gulf was the Exocet anti-ship missile. They were in Iraq's inventory and could be employed from helicopters, fighter jets and fast patrol boats. The AIM-9 Sidewinder and AIM-7 Sparrow were not the weapons of choice against the low and slow

[61] Major Dave Stone, CD, telephone conversation with author, 18 March 2011; Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011 stated: "we assimilated Link 4 faster than I can say Jiminy Cricket."

moving helicopters and 'Hillbilly' proved they were not anti-ship missiles. The tactical experts identified that configuring aircraft with one rocket pod, would provide an effective weapon against both helicopters and ships; however, with the politicians avoiding any perception of offensive action, rockets and bombs were never delivered until after the war was over.[62] In Matthew's opinion, the chain of command would have allowed rocket pods in a defensive counter air role, but they were just not available in theatre.[63]

Precision Guided Munitions

Precision weapons were relatively new to combat aircraft and gained a great deal of media attention throughout the war. The constant images on major news networks of precision guided bombs and missiles 'knocking on bunker doors' were impressive to watch. At the time Canada lacked a targeting pod capable of supporting Precision Guided Munitions (PGMs), but were authorized to carry them as 'bomb trucks' for American aircraft (equipped with the 'Lantirn' targeting pod) to guide them to their targets. However, the decision came late and PGMs had not arrived in Doha before the war ended.[64] Canadian pilots conducted their air-to-ground missions with great skill, but the effectiveness of their unguided bombs delivered from high altitude and sometimes through clouds is debatable. It was clear that PGMs would be a critical component of

[62] Major Dave Stone, CD, telephone conversation with author, 18 March 2011; Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011.

[63] Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011.

[64] Morin and Gimblett, *Operation Friction…,* 174.

any future air campaign and for the first time, the CF-18 was falling behind the technology curve.

Air to Ground Training

During a four month period at the beginning of 1990, the Fighter Force experienced a handful of fatal mishaps. Lieutenant-General Sutherland emotionally recalled: "I was commander of the air force when we lost five F-18s and four pilots in four months, which nearly drove me to resign…."[65] He implemented an operational pause to determine, beyond the investigative cause factors, why so many accidents had occurred. A working group of senior Fighter Force officers determined the capabilities of the aircraft were exceeding pilot capacity and training. A step was taken back and 1 Canadian Air Division in Europe was restricted to the air-to-air role to reduce pilot workload.[66] The air-to-ground proficiency of the Desert Cats had atrophied which necessitated a work-up in theatre. However, every attempt to conduct air-to-ground training before 20 February 1991 was prohibited by the commander of Canadian Forces Middle East Commodore Kenneth J. Summers.

Matthews anticipated the possibility of a bombing role as early as the fall of 1990. He even staffed papers which outlined a detailed training plan to prepare the Canadian pilots to safely conduct air-to-ground missions. Ground school on bombing techniques and theory were provided well in advance and weeks before the first bombs dropped from CF-18s Matthews requested authorization to conduct dedicated training missions over

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[65] Lieutenant-General Fred R. Sutherland, CMM, CD (Ret'd), telephone interview with author, 13 April 2011.

[66] *Ibid.*.

Qatar. He was flatly denied by Summers who was concerned that if the media reported air-to-ground bombing missions were being rehearsed it would embarrass the government. Matthews defiantly scheduled practice missions anyway only to get caught by a "spy…who called [Summers] to spill the beans."[67] When Summers learned that an air-to-ground practice mission was airborne, he called Matthews and ordered him to recall the aircraft in flight within 30 minutes or face a Court Martial. The four days between the government's announcement and the first Canadian bombs falling on Iraqi targets was a result of Matthews' refusal to commence operations until his pilots conducted a couple of training flights – the ones he was ordered not to do weeks earlier.[68]

Conclusion

The Persian Gulf War was an important event in Canadian military history. It was the first offensive combat action in four decades by Canadian forces. However, the Mulroney government's reluctance to 'dip its hands in the bucket of blood' was guided by a public which had grown generationally apart from Canada's Second World War and Korean War experiences. The evolution of the CF-18 mission from defensive combat air patrols, to sweep and escort, and then finally to air-to-ground bombing missions reflected a government inextricably linked to public opinion. The notion of Canada as a 'peacekeeping nation' was challenged and CF-18 operations helped gradually reintroduced Canada to the warrior spirit of its air force. According to the authors of *Operation Friction: the Canadian Forces in the Persian Gulf* the government:

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[67] Colonel Don "Fang" Matthews, MSM, CD (Ret'd), telephone conversation with author, 22 March 2011.

[68] *Ibid.*. Major Dave "Stoner" Stone also recalled it was extremely frustrating that headquarters "was not listening to common dog logic from the man [Matthews] on the ground."

> … Got exactly what it wanted: an active but limited participation in the Coalition that was conducted at arm's length from direct American control, and to a degree to which a middle power with a limited defence budget can realistically aspire in the expensive high-technology business of modern war.[69]

The Gulf War example of deploying ships and then fighter aircraft has become the 'set piece' Canadian sequencing for conventional conflicts or anytime the government does not favour boots on the ground. They are commitments which achieve substantial credit geopolitically and they avert the backlash which accompanies soldiers dying in a controversial war. Ships and fighters result in low operational risk and high strategic reward. However, they are also the most expensive platforms in the Canadian Forces and require constant upgrades to remain relevant.

The integration of the Link 4 system was done 'just in time' in the Gulf and improved Canadian interoperability. However, avionics and sensors have become more complex and not all systems would be as easily integrated as the Link 4 was in 1991. Canada's lack of a targeting pod and laser guided munitions did not detract from its overall performance in the Gulf because the Task Group only conducted 56 bombing sorties. But, the successful demonstration of precision weapons during the war, in effect, prescribed the same capability for all future air campaigns. The cuts to Canada's defence budget which followed the Gulf War would preclude the Fighter Force from being fully prepared for its next operation in spite of the clear trend towards precision capabilities.

The role of the military is to prepare for missions which fit within accepted doctrine, but not appear to be ahead of the government on matters of operational tasks. CF-18 pilots were restricted from conducting air-to-ground training flights because of

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[69] Morin and Gimblett, *Operation Friction…,* 262.

concerns that media reports would embarrass the government. This resulted in a delay of four days before the first Canadian bombs were dropped. The government's position was anything but consistent, so implicit political restraints became explicit military constraints which frustrated the pilots who could see the writing on the wall. In Canada's next fighter operation, the government's gloves would come off right from the start.

CHAPTER 3 – BOSNIA AND KOSOVO

Shortly after the Persian Gulf War another regional conflict became the focus of international attention. In the Balkans, the perfect storm of complex ethnic divisions and independence movements created conditions which degenerated into widespread violence and human suffering. During the 1990s, there were no less than seven named UN missions in the region ranging in scope from police force training to enforcing ceasefire agreements between belligerent parties.[70] However, peace was transitory and when diplomatic efforts failed air power was relied on to avert a humanitarian crisis.

The Canadian Air Force was slow to mobilize as the Balkan conflict evolved, but eventually a contingent of CF-18s arrived in Aviano, Italy to conduct offensive combat operations over the Federal Republic of Yugoslavia. From 24 March to 9 June 1999, Canadian Hornets joined aircraft from 14 other countries in a 78 day NATO-led air campaign called Operation Allied Force (OAF). This chapter will show that from the Canadian political perspective the operation was a resounding success but from the air force's perspective it could have quite easily been a failure. In contrast to the Iraq experience eight years earlier, the government approved CF-18 offensive operations from the outset of the Kosovo Air Campaign. The political restraints which relegated CF-18s to almost purely defensive operations during Desert Storm had been removed but the government's failure to modernize and recapitalize the Canadian Forces throughout the 1990s was beginning to take its toll. CF-18s had recently been modified to employ

[70] United Nations, "Past peacekeeping operations," http://www.un.org/en/peacekeeping/operations/past.shtml; Internet; accessed 7 April 2011.

precision guided munitions, but they lacked several capabilities which detracted from the overall favourable assessment of their performance in theatre. The growing capability gap between the CF-18 and other allied platforms was bringing Canada's front line fighter to the verge of obsolescence. In spite of the many challenges and deficiencies, CF-18s flew nearly ten percent of all strike missions during the campaign with just two percent of the total number of coalition aircraft – a tribute to the dedication and professionalism of all personnel involved.[71]

SEQUENCE OF EVENTS

Deny Flight

The roots of the ethnic and religious disputes in the Balkans go back centuries, but the first trigger of the modern regional conflict occurred during the summer of 1991. When Croatia declared independence from the Socialist Federal Republic of Yugoslavia, Croatian Serbs backed by the Yugoslav People's Army, violently opposed it. After a series of diplomatic efforts failed to curtail the fighting, a United Nations Protection Force (UNPROFOR) was authorized to re-establish peace and security on the ground.[72] Subsequently, ethnic divisions in Bosnia-Herzegovina resulted in an expansion of the original UNPROFOR mission. On 13 March 1993, an aerial attack by an unidentified combat aircraft on villages east of Srebrenica compelled NATO to commence Operation

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[71] Kim Richard Nossal and Stéphane Roussel, "Canada and the Kosovo War: The Happy Follower.," in *Allied Force or Forced Allies,* edited by Pierre Martin and Mark R. Brawley, 181-199. (New York: Palgrave, 2000), 185.

[72] U.N. Security Council, 3055th Meeting, "Resolution 743 (1992) [on Socialist Federal Republic of Yugoslavia]," (S/RES/743), 21 February 1992 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; Accessed 7 April 2011.

Deny Flight, a no-fly zone with an "all measures" UN mandate.[73] It commenced on 12 April 1993, drawing fighter aircraft from several nations into the region.[74] Even though the operation was focussed on airborne threats, aircraft conducted isolated precision strikes in response to requests from the UNPROFOR commander. CF-18s deployed to Europe for a NATO exercise four months after Deny Flight began – ironically as a demonstration of Canada's ability to respond to a European crisis.[75] The reality was that CF-18s were not suited for the Balkan theatre at this stage because they lacked a PGM capability and the Fighter Force was busy repatriating their German squadrons.

Deliberate Force

Although more than 30,000 soldiers were on the ground and superior air forces were overhead, warring factions continued to violate the conditions of peace.[76] In late August 1995, ground forces could not secure designated safe areas, compelling NATO to launch Operation Deliberate Force. This pre-planned bombing campaign lasted 16 days with a total of 3515 sorties flown by aircraft supporting Operation Deny Flight. A total of 1026 bombs were dropped against fielded forces, heavy weapons, command and control facilities, and lines of communication, of which 69% were precision guided. Eight nations participated in this short and decisive action with the United States

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[73] U.N. Security Council, 3191st Meeting, "Resolution 816 (1993) [on Bosnia and Herzegovina]" (S/RES/816), 31 March 1993 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; Accessed 7 April 2011.

[74] *Ibid.*.

[75] Milberry, *Fighter Squadron*…, 260.

[76] United Nations, "Former Yugoslavia – UNPROFOR," http://www.un.org/en/peacekeeping/missions/past/unprof_b.htm; Internet; Accessed 7 April 2011.

conducting the overwhelming majority of combat missions.[77] It successfully ended the violence, thereby reinforcing the lessons drawn from Iraq regarding the effectiveness of precision air power. The US Ambassador to NATO, Robert Hunter, called it the "most successful use of strategic bombing as a deterrent to aggression in modern history."[78] Because the CF-18 did not have a precision capability, there was still neither push nor pull to get them into theatre.

Deliberate Guard

In early 1997, the Fighter Force finally acquired the Nitehawk Forward Looking Infrared (FLIR) pod and a limited number of laser guided bombs. On 14 August that same year, six CF-18s deployed to Aviano, Italy in support of Operation Deliberate Guard, the NATO Stabilization Force no-fly zone over Bosnia. The 'air policing' deployment was an opportunity for the Canadian government and the air force to show its recently acquired targeting pods and precision capability were deployable in support of a coalition operation.[79] It was an uneventful three month mission which received very little media attention and was all but forgotten by most prominent air force historians.[80]

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[77] North Atlantic Treaty Organization Regional Headquarters Allied Forces Southern Europe: Factsheets, "Operation Deliberate Force," http://www.afsouth.nato.int/factsheets/DeliberateForceFactSheet.htm; Internet; Accessed 7 April 2011.

[78] Philip Smucker, "NATO sure it can make peace," *Globe and Mail*, 28 November 1995, A14. Hunter incorrectly applies the term 'strategic bombing' which generally refers to targeting major industries and even civilian populations. The short bombing campaign was in actuality quite tactical. For a comprehensive paper on effects based operations, see Colonel J.F. Cottingham's, "Effects Based Operations: An Evolving Revolution," in *Effects Based Approaches to Operations: Canadian Perspectives*, ed. Allan English and Howard Coombs, 7-63, (Ottawa: Department of National Defence, 2008).

[79] LCol Jim Grecco, CD (Ret'd), Deliberate Guard CF-18 Detachment Commanding Officer, email to author, 2 May 2011; Milberry, *Fighter Squadron*…, 274.

[80] Note: the Toronto Star and the Globe and Mail archives were searched to find no mention of the August – November 1997 deployment, Greenhous and Halliday mentions it in just one sentence of *Canada's Air Force* on page 154, and Milberry devotes only one sentence in *Fighter Squadron: 441 Squadron from Hurricanes to Hornets* on page 274.

However, the deployment was significant because it signalled that Canada had finally caught the 'PGM train' and demonstrated the government's willingness to push fighter aircraft into theatre with a potential for offensive action.[81] When they left, the situation on the ground appeared to be stable, but that did not last for long.

Determined Falcon

On 11 June 1998, after months of increased violence on the ground, NATO defence ministers agreed that a 'show of force' might help defuse the situation. Operation Determined Falcon was planned as an air power demonstration to be conducted over Albania and Macedonia. NATO hoped it would encourage Slobodan Milosevic, President of the Federal Republic of Yugoslavia, to cease his aggression towards ethnic Albanians in Kosovo.[82] Canadian Defence Minister Art Eggleton expressed an immediate desire to participate in what his British counterpart George Robertson categorized as "…diplomacy backed by the threat of force."[83] However, the deployment of Canadian fighters was delayed because Canada lacked strategic airlift and air-to-air refuelling platforms. According to journalist Paul Koring, the government's decision to retire the Boeing 707 tanker in 1997 without tendering a replacement "…left the CF-18s all but marooned at their bases."[84] Canada also lacked strategic airlift platforms, making delays inevitable when a contracted Antonov was initially denied

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[81] LCol Jim Grecco, CD (Ret'd), Deliberate Guard CF-18 Detachment Commanding Officer, email to author, 2 May 201. The standard CF-18 load consisted of air-to-air missiles, laser guided bombs, and infrared guided air-to-surface missiles called the Maverick. Not one weapon was dropped.

[82] Paul Koring, "Warplanes await NATO's call," *Globe and Mail*, 12 June 1998, A1.

[83] Paul Koring, "Canada prepared to join NATO show," *Globe and Mail*, 12 June 1998, A14.

[84] Paul Koring, "Warplanes await NATO's call," *Globe and Mail*, 12 June 1998, A1.

access to the airbase in Aviano. On 15 June 1998 the show of force went ahead without CF-18s – Koring did not miss the opportunity to point out their "conspicuous" absence.[85] Canada's inability to enter the theatre quickly was veiled under Prime Minister Chrétien's insistence on cabinet approving the deployment, but even after Cabinet convened it took eight more days and several delays before the first CF-18s departed for Italy.[86]

Allied Force

In 1997 the Balkan conflict migrated from Croatia and Bosnia to Kosovo where violence between Serbian forces and ethnic Albanians rapidly escalated. Milosevic believed that Kosovo was historically the 'heart of Serbia.' For years he promoted Serbian nationalism and advocated autocratic rule in the area while actively suppressing Albanian desires for self-determination. The Kosovo Liberation Army (KLA) emerged to counter what they viewed as oppressive Serbian aggression. A series of increasingly violent KLA guerrilla attacks and Serbian reprisals led Milosevic to begin targeting key Kosovar leadership and to commence a 'scorched earth' campaign against Albanians in the region. By September 1998, it was estimated that 250,000 Kosovo Albanians had either fled or been driven from their homes with tens of thousands homeless as the cold winter approached.[87] Recognizing the grave nature of the situation, the UN Security Council passed Resolution 1199 on 23 September 1998 calling for all parties to cease

[85] Paul Koring, "NATO flights to proceed without Canadian aircraft," *Globe and Mail*, 15 June 1998, A10.

[86] Iceland and Luxembourg also did not participate but they did not have combat air forces.

[87] Anthony H. Cordesman, *The Lessons and Non-Lessons of the Air and Missile Campaign in Kosovo*, Praeger Publishers (Westport, Conneticut: 2001), 6, 9, 11.

fire.[88] Months of diplomatic negotiations and sanctions failed to arrest hostilities between the KLA and Serbian forces. When Milosevic mobilized nearly one third of his army around Kosovo in preparation for an obvious offensive, NATO was forced to take action. After months of uneventful no-fly zone missions, Canadian fighter aircraft launched on 24 March 1999 as part of the first wave of strike missions in support of Operation Allied Force. For 78 days they conducted offensive counter air, defensive counter air, and interdiction missions to compel Milosevic to end his ethnic cleansing crusade.[89] In the end Determined Falcon, the show of force in June 1998, did not achieve its desired effect making Canada's "conspicuous" absence a moot point.

POLITICAL AND PUBLIC OPINION

In the months leading up to the air campaign, policymakers were operating in a permissive and generally supportive domestic political environment. The need to intervene and arrest the brutal humanitarian suffering of Albanians outweighed national security interests, alliance commitments, and subservience to a coercive United States foreign policy. Canada was not being forced into a NATO campaign it did not fully support. However, the government did require time to rationalize a gradual withdrawal from its traditional dependence on UN mandates, giving explicit legitimacy for military action. Once it was understood that the UN was paralyzed, Canada became what Kim Richard Nossal and Stéphane Roussel called a "happy follower" of the US and of

[88] U.N. Security Council, 3930th Meeting, "Resolution 1199 (1998) [on the Situation in Kosovo (FRY)]," (S/RES/1199), 23 September 1998 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; accessed 30 March 2011.

[89] Cordesman, *The Lessons and Non-Lessons…,* 16.

NATO.[90] The air campaign took much longer than expected, but again reinforced the strategic weight a token task force of fighter aircraft can carry with it.

When CF-18s deployed on 24 June 1998, the Canadian government still held tightly to the notion that a UN mandate was required for any type of military action.[91] The fact that an 'all measures' resolution had not been approved caused some to question what role fighter aircraft would play in the region. According to government officials, the deployment was to enforce the no-fly zone over Bosnia and to conduct any future 'shows of force' similar to the one Canada was 'conspicuously' absent from nine days earlier. In reality, the deployment would show support for alliance partners and buy time for the international community (and the general public) to accept that NATO must take action without it being explicitly sanctioned by the UN Security Council.

In a special parliamentary debate on 7 October 1998, Minister of Foreign Affairs Lloyd Axworthy outlined the exhaustive steps which had already been taken to engage the UN. With Russia expected to exercise its veto on any resolution authorizing force, he implored the House to carefully consider if enough legitimacy existed within the current framework for NATO to act. Milosevic continued to violate existing Security Council 'cease fire' resolutions, a breach of international law in of itself, and no one could deny that egregious human rights violations continued unabated. The other political parties almost unanimously endorsed the government's position to support a possible NATO offensive. Reform MP and foreign affairs critic Bob Mills expressed his frustration with

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[90] Nossal and Roussel, "Canada and the Kosovo War…," 195.

[91] Paul Koring, "Alliance rift weakens threat of air strikes in Kosovo," *Globe and Mail*, 24 June 1998, A13.

the diminishing utility of the UN at the hands of Russia's powerful veto. He acknowledged that Canada "…may end up fulfilling NATO action as opposed to UN action."[92] New Democrat MP Svend Robinson and Bloc Québécois MP Daniel Turp both indicated support for military action, the latter even providing the House with possible legal solutions to the intricacies of acting without a UN mandate. Progressive Conservative MP David Price criticized the Liberal government's apparent kowtowing to the United States and the United Kingdom, but did nonetheless express his party's support for military action. Axworthy closed his statement that day with a powerful comment which reflected the altruistic nature of the war Canada would soon fight: "…all it takes for evil to triumph is for the good to do nothing."[93]

When the air strikes began, Parliament remained united with one exception. Price was the lone dissenter during the debates on 24 March 1999, but his comments appeared to reflect partisan campaigning rather than a true party position. On 7 October 1998 he argued that NATO was the only credible force which "…must act now" and that Canadian CF-18s "…must be used."[94] Five months later he was admonishing the government for launching an air attack against a sovereign state and even suggested that Canada "…may have broken the codes of international law."[95] The day after Price made

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[92] *House of Commons Debates*, 7 October 1998 (Bob Mills, Reform Party); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=36&Ses=1&DocId=2332840; Internet; accessed 15 April 2011.

[93] *Ibid.* (Lloyd Axworthy, Liberal Party of Canada).

[94] *Ibid.* (David Price, PC).

[95] *House of Commons Debates*, 24 March 1999 (David Price, PC); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=36&Ses=1&DocId=2332840; Internet; accessed 15 April 2011. The next day PC leader Joe Clark issued a statement of unequivocal support for Canada's role in the military intervention; Marcus Gee and Graham Fraser, "Combat role new," *Globe and Mail*, 27 March 1999, A17.

this controversial statement, Conservative leader Joe Clark expressed the true party position which fully supported military action in support of the NATO mission.

Russia, a traditional ally of Serbia, openly opposed the western alliance's military action. After the first strikes occurred, President Boris Yeltsin stated he was "profoundly outraged" by NATO's "outright aggression" and its "violation of all norms of international law."[96] This was the first military operation in which Canada had been involved without a UN mandate; it was the first time NATO had used its military power against a sovereign nation and the first time the international community had intervened in such a forceful way to stop a civil war. It was no surprise that Canadians of Serbian descent opposed the operation and at times their public demonstrations did turn violent.[97] However, they represented a very small demographic, as the majority of Canadians supported the government's decision to intervene and more specifically they supported its small but effective Fighter Force.[98] A Gallup Poll taken in April 1999 showed that 70% of Canadians believed that CF-18 participation in Kosovo should either remain the same or even increase.[99] Apparently, the use of fighter aircraft was becoming an acceptable foreign policy tool in the eyes of Canadians.

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[96] Geoffry York, "Furious Russia halts co-operation with NATO," *Globe and Mail*, 25 March 1999, A16.

[97] Nossal and Roussel, "Canada and the Kosovo War…," 190; Estanislao Oziewicz and Murray Campbell, "Demonstrators start fire at U.S. consulate," *Globe and Mail*, 26 March 1999, A1.

[98] Gallup poll in April 1999 showed that 65% of Canadians were in favour of a military offensive while 26% were opposed. Another Gallup poll in May 1999 showed support had faded a bit but still 58% were in favour while 31% were opposed.

[99] Gallup Canada Inc., *Canadian Gallup Poll, April 1999*, http://search2.odesi.ca/details/view.html?q=kosovo&field=&coll=CGP&date-gt=1999&date-lt=2011&uri=/odesi/cipo_E_1999-04.xml; Internet; accessed 11 April 2011.

LESSONS LEARNED

Canada's contribution to the Kosovo Air Campaign was initially six CF-18s which increased later to 18. They deployed to Aviano on 24 June 1998 under the Canadian name Operation Echo. The CF-18 detachment in Aviano called themselves the Balkan Rats – a politically incorrect name coined for the abundance of the destructive rodents in and around the Canadian quarters on the airfield.[100] Over 78 days the Balkan Rats conducted 678 combat sorties and logged approximately 2600 flying hours. They delivered 532 bombs of which 361 (68%) were precision guided. Approximately 18% of these missions were strictly defensive combat air patrols. Over the course of the campaign, Canadians achieved an air-to-ground success rate of approximately 70%, which was on par with many allies with more capable platforms and avionics. CF-18 pilots were also chosen to lead many strike packages – an implicit recognition of their abilities and professionalism. Combined exercises like Maple Flag and frequent cross border training with US fighter units had developed a level of interoperability few other nations enjoyed. In contrast to Canada's experience during Desert Storm, the CF-18s conducted a consistent ratio of counter-air and strike missions from the beginning to the end of the Kosovo Air Campaign. Multi-role fighters like the Hornet, capable of employing precision guided munitions, were exactly what the Air Component

[100] Milberry, *Fighter Squadron*…, 278.

Commander wanted.[101] Canada's fleet of CF-18s had been given the minimum tools necessary to be effective but they certainly were not the technological leaders of the pack.

The capability and effectiveness of the CF-18 had improved significantly since Desert Storm, but the aircraft and pilots still lacked several very important systems. The most notable deficiencies were: a lack of interoperable jam resistant radios, night vision goggles, a GPS navigation system, sufficient numbers of FLIR pods, and adequate precision weapon war stocks.[102] Many lessons learned from Kosovo stemmed from these observations and provided justification for a 1.2 billion dollar CF-18 modernization program. Task Force Aviano was successful due to outstanding pilot performance which compensated for not having the best equipment available.

Jam Resistant Radios

During Allied Force, Canada was the only nation which lacked jam resistant communications, relegating the entire strike force to use a single ultra-high frequency (UHF) radio plan.[103] Anyone on the ground with a simple UHF receiver could find strike package frequencies and listen to everything pilots and controllers were saying. This made coalition aircraft vulnerable to Serbian communications jamming which could have severed a critical command and control link. The United States Department of Defence (DoD) asserted that the deficiency severely compromised operations security and further

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[101] Lieutenant-Colonel David L. Bashow, Colonel Dwight Davies, Colonel André Viens, Lieutenant-Colonel John Rotteau, Major Norman Balfe, Major Ray Stouffer, Captain James Pickett, and Dr. Steve Harris, "Mission Ready: Canada's Role in the Kosovo Air Campaign," *Canadian Military Journal* vol. 1, no. 1 (Spring 2000) [journal on-line]; available from http://www.journal.forces.gc.ca/vo1/no1/index-eng.asp; Internet; accessed 30 March 2011, 55-58.

[102] *Ibid.,* 60.

[103] *Ibid.,* 60.

claimed it "...reduced the effectiveness of NATO air strikes and increased the risk to NATO forces."[104] The DoD emphasized that NATO allies (i.e., Canada) must gain access to interoperable technologies to minimize risk in future coalition operations.[105]

Night Vision Goggles

If flying with degraded and jammed communications was risky, then flying at night without Night Vision Goggles (NVGs) was treacherous. The United States had fielded NVGs in fixed wing aircraft decades before and several coalition fighters were using the latest generation goggles during the Kosovo Air Campaign.[106] In spite of attempts to field a night vision capability prior to Operation Echo, CF-18s did not have NVG modified lighting. Canadian pilots flew lights out and 'blind' for almost half of their 678 combat sorties, leading the night crews to fittingly refer to themselves as the Balkan Bats instead of the Balkan Rats.[107]

Opinions differed greatly between the rear echelon senior leadership and the pilots on the front line regarding the impact of this deficiency. The Commander of Task Force Aviano, Colonel Dwight Davies, expressed a high degree of confidence that CF-18 pilots could conduct their missions without NVGs and the Deputy Chief of the Defence Staff, Lieutenant-General Raymond Henault, agreed. Henault explained after the war

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[104] United States. Department of Defense. *Report to Congress: Kosovo/Operation Allied Force After-Action Report*. n.p., 31 January 2000, 74 [Report on-line]; available from http://www.au.af.mil/au/awc/awcgate/kosovoaa/kaar02072000.pdf; Internet; accessed 30 March 2011.

[105] *Ibid.*, 74.

[106] ITT: Night Vision & Imaging, "F4949 / Aviation Successes," http://nightvision.com/products/military/case_study-F4949.htm; Internet: accessed 15 April 2011.

[107] Robert W. Bergen, "Balkan Rats and Balkan Bats: The art of managing Canada's news media during the Kosovo air war" (doctoral thesis, University of Calgary, 2005), 208.

that fielding a night vision capability was "…not nearly as simple as strapping the goggles on the helmet."[108] However, the Commander of the Aviano CF-18 Detachment, Lieutenant-Colonel Billie Flynn, with five night combat missions himself, called his superior's indifference to the NVG issue "…incredibly stupid and typically Canadian."[109] Cumbersome bureaucratic processes and slow test and evaluation were blamed for Canada's lack of night vision capability.[110] After the war had ended, test and evaluation resumed to modify the CF-18's interior and exterior lighting. The Canadian Fighter Force did not achieve NVG initial operational capability until eight years later, demonstrating how slow the procurement and upgrade process can be.[111]

Navigation System

Canadian pilots flying at night without NVGs or jam resistant radios also had to overcome the CF-18's insidious navigational drift. The inertial navigation system drifted on average 0.5 nautical miles per hour which made it very difficult to find tactical sized targets using the targeting pod. At a range of 10 miles the pilot's FLIR display would show approximately a quarter of a mile on either side of the cockpit screen's crosshairs, making it entirely possible for the actual target to be well outside the field of view of the display. The risk associated with this phenomenon was mitigated using navigation system updates and disciplined target search techniques. However, finding targets with this kind of navigational drift is like trying to find a star with a high powered telescope

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[108] *Ibid.,* 210.

[109] *Ibid.,* 211, 214.

[110] *Ibid.,* 213.

[111] Maj Darcy E. Molstad, *CF188 NVG POAC Recommended Changes* (FSET: file 1027-1 (OC FSET)), 3 October 2008.

and no viewfinder. The lack of a Global Positioning System (GPS) to centre aircraft sensors precisely at the target coordinates added complexity to an already complex mission. As a result, pilots returned to base on occasion with their full compliment of bombs – a frustrating outcome after fighting through enemy defences.[112]

FLIR Pods

The lessons of Desert Storm very clearly pointed to laser guided bombs as the future weapon of choice for combat aircraft. A critical component of a laser guided weapon system is the forward looking infrared sensor with an integrated laser designator for guidance and ranging. At the start of Allied Force Canada possessed only 13 Nitehawk FLIR pods for its fleet of more than 120 CF-18s. Just six aircraft in the Balkan theatre were initially equipped with this critical piece of equipment, leaving limited pods for spare parts and for training back in Canada.[113] The fact that Canada possessed only a handful of pods for training new aircrew at home and not enough to equip all 18 aircraft in theatre limited the number of strike missions that could be conducted and to a degree the pilots' proficiency with the new system. A total of 12 out of 18 CF-18s were eventually equipped with FLIR pods as a result of a special request sent directly to the Deputy Under-Secretary of the United States Air Force citing a "national emergency operational" requirement.[114] If Canada had not received extra pods from the United

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[112] Bashow *et al*, "Mission Ready…," 59.

[113] *Ibid.,* 60.

[114] James Murray, "Understocked forces begged U.S. for bombs: 'Not prudent for us to go ahead and buy up all kinds of stuff ... on a what-if basis': Kosovo campaign,".*National Post* [National Edition], 21 October 2002; http://www.proquest.com; Internet; accessed 22 April 2011.

States, the majority of their, on average, 16 sorties per day would have been uneventful combat air patrols – a scenario similar to the one played out in Iraq.

War Stocks

Another critical component of a precision guided weapon system is the weapon itself – of which Canada possessed very limited numbers. Canada's war stocks of the 500 pound guided bomb units were exhausted within weeks of the first strikes, requiring bombs and guidance kits to also be requested in the "national emergency operational" requirement letter sent to the United States Air Force.[115] The 2000 pound laser guided bomb was also desperately needed to prevent multiple passes over certain targets, but at the outset of the air campaign it had not yet been cleared for carriage and employment on the CF-18. It took a great deal of effort by engineers and staff officers to develop the needed stores clearance and authorize CF-18s to carry the heavier bomb.[116] Ironically, after so much effort was made to create a PGM operational capability, the effectiveness of Canadian aircraft over Kosovo was limited by something out of anyone's control – the weather.

The Weather

Laser Guided Bomb (LGB) employment requires a clear line of sight between the aircraft and target for a significant amount of time. Pilots must acquire the desired point of impact and maintain an unobstructed line of sight to that point for the entire designation and guidance of the weapon. In Kosovo, more than 70% of the time there was at least 50% cloud cover which made LGB employment on many occasions a futile

[115] *Ibid.*.

[116] Bashow *et al*, "Mission Ready…," 60.

endeavour. The DoD's Kosovo after action report identified GPS guided weapons like the Joint Direct Attack Munition (JDAM) as the preferred weapon because of its all-weather capability.[117] Canada did not possess a GPS weapon then and still does not today.[118] One can only assume Canada's 70% success rate would have been better with this capability.

Fighter Capabilities Atrophy Quickly

Almost a decade after Desert Storm, budget cuts and cumbersome procurement processes were beginning to push the CF-18s precariously close to irrelevance. In 1991 the Hornet was a credible and capable platform; but, eight years later, Canada still lacked jam resistant radios, night vision goggles, and GPS navigation systems. Hasty integration of FLIR pods and staffing of stores clearances generated a critical PGM capability in the final hour, but after the war had ended, Colonel Dwight Davies warned that "…in most [similar] scenarios we would not be permitted to participate to the same extent, due to our increasingly outdated equipment."[119] The air force managed to work around the "laughable" technologies in the aging CF-18 fleet and the success of Task Force Aviano was purely a result of the professionalism and dedication of the pilots, ground crew, and

[117] United States. Department of Defense. *Report to Congress*…, 87.

[118] According to the CF18 Advanced Precision Guided Munitions Project Officer all of Canada's GBU-49 kits (Enhanced Paveway II dual mode laser and GPS bombs) currently in production will be available for shipment to the Canadian Forces Ammunitions Depot Dundurn by the end of September 2011. A limited GBU-49 stores clearance will be in place by October 2011.

[119] Colonel Dwight Davies quoted in Bashow *et al*, "Mission Ready…," 59.

the support echelon.[120] According to Colonel Donihee, Canada made an important contribution because of:

> ...the vestiges of a time when we were capable of retaining greater readiness levels and overall expertise. We need to articulate the requirement for a credible fighter force and point clearly to the manner in which it is atrophying as a result of a dwindling resource base.[121]

Senior officers were understandably frustrated by the Kosovo experience of scrambling to overcome operational deficiencies. While the government in the 1990s was giving them the political support and consensus they needed, they were not giving them the money and equipment they required.

Conclusion

When the operational plan was released for Allied Force it was no surprise that air power was envisioned to deliver the knock out blow to Milosevic. It had proved to be an extremely effective way to shape the battlefield in Desert Storm and had also proven to be very efficient during Deliberate Force in 1995. Canadian military planners performed their due diligence to provide the government with all of Canada's service options, but Paul Koring noted with a degree of humour in a June 1998 *Globe and Mail* article, the proposals reflected simple inter-service rivalries more than any realistic alternatives:

> ... [The options] include sending a small infantry unit, although NATO hasn't asked for ground forces, sending a warship, although Kosovo is landlocked, and sending a handful of utility helicopters. The latter are unarmed but planners have proposed mounting a light machine gun in the door opening.[122]

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[120] Dean Beeby, "$1.2-billion plan to extend CF-18 life: Cockpit technology has become 'laughable' in aging Canadian air force fighter jets," *Globe and Mail*, 14 December 1998, A9.

[121] Colonel André Viens quoted in Bashow *et al*, "Mission Ready…," 59.

[122] Paul Koring, "NATO issues aerial warning to Serbia," *Globe and Mail*, 16 June 1998, A15.

The most logical option was to send the multi-role CF-18 newly configured to employ the 'panacea' of modern bombing – precision guided munitions. Even though the campaign took much longer than expected its ultimate success reinforced the primacy of modern fighter aircraft in the government and public's minds.

From the political perspective Canada's participation in the air campaign was a great success and achieved significant strategic benefits. The political and public support for Operation Echo permitted Task Force Aviano (TFA) to execute its task without being unduly constrained as was the case during Desert Storm. According to Nossal and Roussel, "the Chrétien government was happy because Canada could participate in what was widely perceived to be a just cause without having to devote any serious Canadian blood or treasure to the enterprise."[123] The authors of "Mission Ready: Canada's Role in the Kosovo Air Campaign" concluded that "while expensive to maintain fighter forces in peacetime, it is politically much cheaper to use them in war" – a concept that politicians were beginning to learn.[124] Thus, the government achieved significant strategic benefits without suffering even a single casualty.

Canada achieved a high success rate throughout the campaign because of the dedication and professionalism of TFA personnel; however, failure was never more than a stone's throw away. Canada's mission might have been jeopardized if they were not given access to the United States Air Force's operational 'grocery store' or if one of the CF-18's deficiencies resulted in the loss of the 'blood or treasure' referred to by Nossal.

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[123] Nossal and Roussel, "Canada and the Kosovo War…," 195.

[124] Bashow *et al*, "Mission Ready…," 59.

If Serbia had embarked upon a communication jamming surge, Hornets might have been politely asked to stay on the ground. Had CF-18s collided with one another or another coalition aircraft because they did not have NVGs, Canadians would have demanded to know why their pilots were not equipped to safely execute their missions and NATO would have restricted Canada to daytime only operations. If navigational drift caused a pilot to misidentify a target resulting in unacceptable levels of collateral damage, alliance cohesion and resolve might have faltered, undermining the entire operation. Fortunately, these hypothetical scenarios did not occur, but the CF-18 deficiencies emphasized the planned Hornet modernization was not only urgently needed, it was already too late.

NATO's historical record states that by the end of May 1999, 1.5 million people (90% of the population of Kosovo) had been expelled from their homes, almost a quarter of a million Kosovar men were believed to be missing, and at least 5000 Kosovars had been executed.[125] While Canadian peacekeepers remained to deal with the fallout of Milosevic's brutal campaign, the Fighter Force returned home and began the process of regeneration and institutionalizing the lessons learned. Their recovery period was short lived when the world was shocked by the September 11, 2001 attacks on the World Trade Center and the Pentagon which triggered Canada's next major combat operation.

[125] North Atlantic Treaty Organization, "NATO & Kosovo: Historical Overview," http://www.nato.int/kosovo/history.htm; Internet; accessed 31 March 2011.

CHAPTER 4 – AFGHANISTAN

The images of United Airlines Flight 175 and American Airlines Flight 11 impacting the Twin Towers will forever be engrained in the minds of those who witnessed these horrific terrorist attacks, whether in person or on television. The image of President George W. Bush patiently listening to storybook readings after his Chief of Staff Andrew Card whispered to him, "America is under attack" was also difficult to endure and drew much criticism.[126] Bush was attempting to project calm amidst chaos and remained sitting for five minutes in a Florida elementary classroom while the North American Aerospace Defence Command (NORAD) and its alert fighter aircraft were literally scrambling to counter a threat they had never anticipated. The 9/11 attacks on the World Trade Center and the Pentagon fundamentally changed the way alert fighters protect North America and marked the starting point of what the United States has called the Global War on Terror (GWOT). As an integral part of the NORAD bi-national command, Canadian CF-18s rose to the challenge domestically in the immediate aftermath of the attacks. However, in the international military campaign which followed, where close air support has been a critical enabler, CF-18s sat on the sidelines and

[126] United States, National Commission on Terrorist Attacks Upon the United States, *9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States* (Washington, DC: U.S. Government Printing Office, n.d.), 38 [Report on-line]; available from http://www.gpoaccess.gov/911/pdf/fullreport.pdf; Internet; accessed 29 April 2011.

watched while the army, navy, and every other combat deployable aircraft in the CF inventory fought, sailed, and flew.[127]

There were several windows of opportunity for CF-18s to deploy in support of the GWOT; but with Prime Minister Jean Chrétien at first wanting to commit the minimum force necessary and with no shortage of fighter aircraft in theatre, a convincing argument could not be made for such a deployment to occur. The Chief of Defence Staff from 2005 to 2008, General Rick Hillier, espoused the doctrine of 'boots on the ground but not on the roads' which led to a larger role for the army while the air force concentrated all its efforts on fielding a medium lift helicopter capability, Unmanned Aerial Vehicles (UAV) and arming the CH-146 Griffon. Most frontline fighter pilots have been confused by the exclusion of their community from this decade long war considering the strategic benefits the "pointy end" of air power achieved in the Persian Gulf War and in Kosovo. This chapter will disprove the conspiracy theories and show that a CF-18 deployment might have appeased American desires for a broad coalition and demonstrated joint solidarity with Canadian soldiers on the ground, but it would not have achieved any strategic benefits for Canada.

9/11 TERRORIST ATTACKS

Pre-9/11 Alert Duty

After the fall of the Berlin Wall, NORAD alert duty became, in a way, a distraction from the day to day training activities of most Canadian fighter pilots.

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[127] The CF-18 joins the following aircraft which have not deployed or supported operations in Afghanistan: CC-115 Buffalo, CT-156 Harvard II, CH-139 Jet Ranger, CC-138 Twin Otter, CH-149 Cormorant, CT-142 Dash 8, CT-155 Hawk, and CT-114 Tutor. The CF-18 is clearly out of place in this list which includes training, search and rescue, and Arctic patrol aircraft. Furthermore, none of these aircraft have a kinetic combat capability – except the CF-18.

Occasionally, Russian Tu-95H 'Bear' bombers approached Canada's northern border compelling NORAD to scramble CF-18s. The intercepts ensured that Canada's airspace was respected and the presence of military aircraft in the Arctic demonstrated the country's resolve to exercise sovereignty in the far north. The missions fit neatly into traditional NORAD doctrine which dictated aerospace threats would always come from the northern approaches.[128] However, on 24 August 1998 Canada's first 'home grown' threat to domestic airspace challenged this single axis mentality.

When a rogue weather balloon became a hazard to civilian air traffic it quickly found itself in the gun sights of two fully armed alert fighter aircraft. Balloons and airships had been successfully attacked by First World War fighter pilots in their wood and wire bi-planes, so surely shooting one down would be an easy task for the venerable CF-18. However, after over 1000 rounds were fired, with several hitting their mark, the pilots could not believe the balloon remained aloft.[129] To the embarrassment of the air force, Canada's frontline fighter had failed against a technologically inferior and underpowered adversary. In fairness, the fighter community did not have established tactics, techniques and procedures or the right weapons for the mission. In the same way defence experts had never imagined the 'balloon scenario' they had also never imagined that commercial airliners would be use as guided missiles like they were on 11 September 2001.[130]

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[128] Joseph T. Jockel, *Canada in NORAD, 1957-2007: a history* (Kingston: McGill-Queen's University Press, 2007), 165.

[129] Bruce Poulin, "Balloons Away!" *Airforce* Vol. 28 no. 4 (Winter 2005), 60.

[130] United States, National Commission on Terrorist Attacks Upon the United States, *9/11 Commission Report…*, 14, 17. The most recent hijacking which drew a response from NORAD occurred in 1993.

Post-9/11 Alert Duty

In the days following the 9/11 attacks, Canada's fleet of CF-18s went on an unprecedented level of alert. They were dispersed throughout Canada and readied to react within a classified, but very short amount of time. A total of 239 civilian aircraft were denied entry into US airspace and diverted to Canadian airports, taxing the logistic capacity of many small communities.[131] Within hours of the attacks, CF-18s had already conducted intercepts on passenger jets with reports of cabin disturbances or other credible threats.[132] Since then, CF-18s have dutifully secured Canada's airspace and, at times, have even helped secure America's too.

When the entire American F-15 fleet was grounded in 2007, the United States asked for Canadian Hornets to fill their void. For several weeks, CF-18s successfully operated out of Elmendorf Air Force Base under the control of the Alaska NORAD Region.[133] Allowing Canada to assume even a small portion of America's domestic defence was a significant demonstration of trust between nations and re-emphasised the importance of the NORAD bi-lateral arrangement. After 9/11, the requirement for CF-18s to protect domestic airspace, infrastructure, and human life regained its rightful spot at the top of the air force's priority list – a fact the government emphasized at every opportunity as the United States was sounding the 'war horn.'

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[131] Nav Canada, "Nav Canada and the 9/11 Crisis," http://www.navcanada.ca/NavCanada.asp?Language=en&Content=ContentDefinitionFiles\Newsroom\Backgrounders\911crisis.xml; Internet; accessed 29 April 2011.

[132] *Ibid.*.

[133] MSNBC, "Grounded F-15s have U.S. searching for cover: Defense patrols are thinner after breakup of jet forced down 450 others," http://www.msnbc.msn.com/id/22400351/; Internet; accessed 29 April 2011.

THE GLOBAL WAR ON TERROR 'AWAY GAME'

Initial Debates and Bush's Coalition

The House of Commons debates for weeks after 9/11 revolved around Canada's ability (or lack thereof) to fulfill the commitments made in the *1994 Defence White Paper*. Specifically, the white paper committed Canada to participate in "multilateral operations anywhere in the world under UN auspices, or in the defence of a NATO member state… with a full wing of fighter aircraft and all required support."[134] A full fighter wing consisted of 24-36 aircraft and many opposition MPs justifiably voiced doubts whether Canada could deploy such a large contingent. They also expressed concerns regarding the interoperability of the aging CF-18 with United States platforms. When directly questioned if Canada would support the war against terrorism by deploying CF-18s, Minister of National Defence Art Eggleton avoided answering and instead reminded the House that Canada had put more "…CF-18s into the NORAD system to help in the protection of North America."[135] Amidst pressure to reveal some type of military plan, the government kept its cards very close to its chest while discreet staff checks were feverishly underway at various headquarters. Still emotionally invested, the United States was much less guarded about its intended military response.

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[134] Department of National Defence, "1994 White Paper on Defence," http://www.forces.gc.ca/admpol/1994%20White%20Paper%20on%20Defence.htm#opaf; Internet; accessed 30 April 2011.

[135] *House of Commons Debates*, 19 September 2001 (Art Eggleton, Lib.); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=844891; Internet; accessed 20 April 2011; Criticisms were voiced in the House of Commons by the following MPs regarding the interoperability and capacity for deploying CF-18s: Leon Benoit – Canadian Alliance (19, 25 September 2001), Joe Clarke – Progressive Conservative (19 September 2001), Ellsie Wayne – Progressive Conservative (19 September 2001), Jason Kenney – Canadian Alliance (19 September 2001), Keith Martin – Canadian Alliance (24, 27 September 2001), and Stockwell Day – Canadian Alliance and opposition leader (26 September 2001).

The Bush administration solicited support for the Global War on Terror from several nations immediately after the 9/11 attacks. However, Operation Enduring Freedom (OEF), the initial campaign "...to disrupt the use of Afghanistan as a terrorist base of operations, and to attack the military capability of the Taliban regime," was conducted by a 'coalition of the willing' comprised primarily of US and UK forces.[136] Specific requests made by President Bush to other world leaders were not publicly disclosed and US Secretary of Defence Donald Rumsfeld declined to openly discuss what was actually committed by coalition partners.[137] Both appreciated that each nation would need to reconcile their response within their own government and assert a degree of self-determination on its public disclosure. In his 7 October 2001 address to the nation, Bush simply acknowledged the pledges of future support from "other close friends" to include Canada, Australia, Germany, and France.[138]

Early Canadian Commitments

As the first American strikes were occurring in Afghanistan on 7 October 2001, Prime Minister Chrétien publicly stated that his government would commit air, land, and sea assets in support of the unfolding mission. In his words, Canada would stand "shoulder to shoulder" with the United States.[139] The Minister of National Defence, Art Eggleton, clarified that Canada's contribution would consist of approximately 2000

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[136] George W. Bush, "We Are At War Against Terrorism," *Vital Speeches of the Day* 68, no. 1 (October 15, 2001): 2. http://web.ebscohost.com/; Internet; accessed 26 April 2011.

[137] David J. Gerleman, Jennifer E. Stevens, and Steven A. Hildreth, *CRS Report for Congress: Operation Enduring Freedom: Foreign Pledges of Military & Intelligence Support* (Washington D.C.: Library of Congress Congressional Research Service, 17 October 2001), 1 [Report on-line]; http://fpc.state.gov/documents/organization/6207.pdf; Internet; accessed 28 April 2011.

[138] Bush, "We Are At War Against Terrorism," 2.

[139] John Stackhouse, "U.S. strikes back, Canada gears up," *Globe and Mail*, 8 October 2001, A1.

personnel. It would include a Special Forces (JTF2) contingent, six warships with associated Sea King helicopter detachments, three Hercules, one Airbus, and two Aurora aircraft.[140] At this early stage, many believed that Canadian troops would not see front-line experience and would likely provide only backup and relief support.[141] In November 2001 Chrétien himself stated that Canada would not participate "…if there is hard fighting; if hard fighting breaks out we will leave."[142] It would take time before the Prime Minister realized that Canada needed to both draw and shed blood in this campaign.

Although the first few months of OEF required persistent offensive air strikes, Canada's approach was again typically defensive and cautious. Fighter aircraft in particular were not offered, reflecting the country's characteristic 'soft power' approach to military operations even with the media and several military analysts suggesting CF-18s would be the appropriate and logical contribution. Eggleton 'shot down' the fighter option, pointing out that airstrikes were being conducted primarily by carrier-borne US aircraft and that land based CF-18s were not needed.[143] Even though the Canadian Fighter Force had just returned battle hardened from operations over Kosovo and could have integrated into the initial air campaign, they were also fully engaged with elevated

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[140] Gerleman, Stevens, and Hildreth, *CRS Report for Congress: Operation Enduring Freedom: Foreign Pledges…*, 3; Jeff Sallot, "'Operation Apollo' mobilizes ships, aircraft and commandos," *Globe and Mail*, 9 October 2001, A1, A7.

[141] Steven Chase, "Pro-strike stand puts Canada at risk: PM," *Globe and Mail*, 8 October 2001, A5.

[142] Lewis MacKenzie, "Mr. Chretien, don't shame our soldiers," *Globe and Mail*, 27 November 2001, A17; Sharon Hobson, "Canada joins US Army combat force," *Janes Defence Weekly*, 16 January 2002; http://search.janes.com/Search/index.jsp; Internet; accessed 27 April 2011.

[143] Jeff Sallot, "'Operation Apollo' mobilizes ships, aircraft and commandos," *Globe and Mail*, 9 October 2001, A7; Dr. Milan Vego, "What Can We Learn from Enduring Freedom?," *U.S. Naval Institute Proceedings* vol. 128 no. 7 (2002): 28; http://www.ebscohost.com/; Internet; accessed 27 April 2011.

NORAD commitments without a great deal of spare capacity.[144] During a meeting between the Chief of the Air Staff, Lieutenant-General Lloyd Campbell, and the Chief of Staff of the United States Air Force shortly after 9/11, the two agreed that CF-18 involvement at this early stage would be extremely difficult from a logistic and basing point of view. Campbell recalled that, "from the United States perspective, they were very much interested in boots on the ground," which largely influenced Canada's early commitments.[145]

By December of 2001, the Canadian government remained guarded on the role that ground forces would play. It was still holding on to the idea that Operation Apollo, Canada's name for its initial support to OEF, would be given some type of Pearsonian peacekeeping mandate.[146] When UNSC Resolution 1386 authorized NATO to provide security in Kabul and its surrounding areas using "all necessary measures," Chrétien realized that 'shoulder to shoulder' would actually involve standing beside and not behind Canada's allies.[147] On 8 January 2002, the *Globe and Mail* revealed that Canada had rejected a "passive mission" and opted for a "combat role" within NATO's International Security Assistance Force (ISAF). The 3rd Battalion, Princess Patricia's Canadian Light Infantry (3 PPCLI) Battle Group would be the 'boots on the ground' the

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[144] The author was a front line CF-18 pilot at the time and can only provide a unclassified qualitative description of the force disposition at the time. A quantitative description is unavailable from open sources.

[145] LGen Lloyd C. Campbell, CMM, CD (Ret'd), telephone conversation with author, 7 May 2011.

[146] Paul Koring, "Mandate for peace force likely to be very limited," *Globe and Mail*, 20 December 2001, A1, A17.

[147] U.N. Security Council, 4443rd Meeting, "Resolution 1386 (2001) [on The Situation in Afghanistan]" (S/RES/1386), 20 December 2001 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; Accessed 7 April 2011.

United States was pushing for. Their six month deployment to Afghanistan was the army's first combat mission in nearly 50 years; when the PPCLI's rotation was over, the Canadian government did not replace them, leaving a void in the country's contribution.[148]

At the beginning of 2003 Chrétien was still waiting for the UN response to the US plan for Iraq. Military leaders were forced to keep all options on the table until Chrétien officially announced that Canada would not send troops to oust Saddam Hussein.[149] In retrospect, Bush's 'you are either with us or against us' rhetoric made it impossible for Canada to support a coalition operation outside of its normal dependence on international alliances. Chrétien's position was not well received by the United States and geopolitically, Canada needed to make amends by further committing to the Afghanistan theatre. The first rotation of Operation Athena, the Canadian name for its support to NATO's International Security Assistance Force (ISAF), began in August 2003 consisting of over 2000 personnel with associated command and support elements. With Canadian soldiers entering a dangerous war zone, the government still did not deploy CF-18s to provide air cover even though the US had requested it and basing had been secured.[150]

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[148] Daniel Leblanc and Jill Mahoney, "Ottawa rejects passive mission in Kabul, sends 750 more troops into Kandahar," *Globe and Mail*, 8 January 2002, A1.

[149] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011; *House of Commons Debates*, 17 March 2003; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=2&DocId=755432; Internet; accessed 20 April 2011.

[150] Chris Wattie, "Iraq 'politics' kept jets from Afghanistan," *National Post*, 10 September 2004, A4; http://proquest.umi.com/pqdweb?did=694327671&Fmt=3&clientId=1711&RQT=309&VName=PQD; Internet; accessed 21 April 2011.

First Request for Hornets

The Manas airbase in Kyrgyzstan, about 600km north of Afghanistan, was activated on 21 December 2001 and was the host to several coalition aircraft.[151] Though it still took two hours for fighter/bombers to reach the heart of Afghanistan from Manas, it provided a foot in the door for countries without aircraft carriers to provide close air support to their troops on the ground. A contingent of French Mirage aircraft were based in Manas from February to October 2002 until they were replaced by 18 F-16s from Norway, Denmark and the Netherlands.[152] The three nation air component, called the European Participating Air Forces (EPAF), agreed to just six months in theatre. A United States request to Canada in April 2003 coincided with the EPAF withdrawal asking for 18 CF-18s to replace them.[153] The United States did not get an immediate response from Canada and therefore engaged Denmark and the Netherlands to extend their commitment

[151] Joris Janssen Lok and John Berg, "Pull-out of Norwegian and Netherlands air assets from 'Enduring Freedom' will strain coalition airpower," *Janes Defence Weekly*, 9 April 2003; http://search.janes.com/Search/index.jsp; Internet; accessed 25 April 2011; John D. Gresham "Forces Fighting for Enduring Freedom," *U.S. Naval Institute Proceedings* vol. 127, no. 11 (November 2001): 45. http://www.ebscohost.com/; Internet; accessed 26 April 2011; Global Security, "Operation Enduring Freedom: Order of Battle," http://www.globalsecurity.org/military/ops/enduring-freedom_orbat-02.htm; Internet Accessed 26 April 2011; FDHC, "Group Launches Airstrip in Kyrgyzstan," *FDCH Regulatory Intelligence Database*, 26 December 2001; http://www.ebscohost.com/; Internet; accessed 26 April 26; Air Force Central Command, "376th Air Expeditionary Wing: Cycle 6 AEF 9/10 Summary September-December 2007 Manas Airbase, Kyrgyzstan," http://www.manas.afcent.af.mil/shared/media/document/AFD-080405-002.pdf; Internet; Accessed 26 April 2011.

[152] Center for Defense Information, "Operation Enduring Freedom: Forces in Play around Afghanistan, the Arabian Sea and the Horn of Africa," http://www.cdi.org/terrorism/forces-1119-pr.cfm; Internet; Accessed 26 April 2011; L.A.C. Lewis and Joris Janssen Lok, "French Mirages hand over Afghanistan duties," *Janes Defence Weekly*, 9 October 2002; http://search.janes.com/Search/index.jsp; Internet; accessed 27 April 2011.

[153] Chris Wattie, "Iraq 'politics' kept jets from Afghanistan."

for six more months. Norway withdrew as planned due to "personnel shortages," leaving just 12 EPAF fighters which reduced the level of close air support available.[154]

The United States' request to Canada was refused on the basis of sustainability and surprisingly, political conjecture by the strategic military leadership. In correspondence between the Deputy Chief of Defence Staff, Vice-Admiral Greg Maddison, and the Chief of Defence Staff, General Raymond Henault, it was suggested that a CF-18 deployment should not be approved based on the 41.6 million dollar price tag, the shortage of precision guided war-stocks, and the strain on logistic and support elements. Although a deployment was technically feasible, Maddison suggested that the political ramifications would not be acceptable. He asserted it "would in essence be backfilling U.S. forces to allow them to force generate for other contingencies." The 'other contingency' he referred to of course was the war in Iraq which Chrétien staunchly opposed. Conservative defence critic, Gordon O'Connor categorized the decision as an example of the government being "more concerned about appearances than fighting the war on terrorism."[155]

Second Request for Hornets

In late 2005 another proposal to deploy six CF-18s to Afghanistan was rejected by the new CDS, General Rick Hillier.[156] The six aircraft identified were newly upgraded and their integration in the operation would have been a perfect example of the joint

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[154] Lok and Berg, "Pull-out of Norwegian and Netherlands air assets…."

[155] Chris Wattie, "Iraq 'politics' kept jets from Afghanistan."

[156] Chris Wattie, "U.S. to provide Canadian air cover: Afghanistan 'too far' for our fighter jets," *National Post* [All But Toronto Edition], 11 January 2006, A1.

synergies that Hillier sought to achieve in his transformation initiatives.[157] Nonetheless, the inability to airlift all the personnel and support equipment and the high cost were cited as reasons for the rejection of another CF-18 deployment. The lack of national strategic air-to-air refuelling and transport aircraft left Canada at the mercy of other countries and civilian contractors yet again.[158] Kicking and screaming to 'get in the game,' the fighter community was beginning to grow frustrated, resulting in one senior officer using the press to get his message to the highest levels.

Fighter General Stirs the Pot

In April 2009 the ISAF Air Component Commander Major-General Duff Sullivan spoke with reporter Matthew Fisher on the subject of CF-18s and Afghanistan. He was a Canadian fighter pilot with combat experience in both Iraq and Bosnia and he could not understand why, when Canadian soldiers were being killed, Canada did not have national fighter assets in theatre. He pointed out that Canada was the only nation with ground troops in theatre that had never provided close air support aircraft. He told Fisher that senior officers from two major United States combatant command headquarters had asked how they could "get Canadian F-18s into the game." The United States' informal

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[157] The engineering change proposal (ECP-583) R1 upgrade included the following: AN/APG-73 radar; AN/APX-111 combined interrogator and transponder; AN/ARC-210 radios with Havequick capability; AN/AYK-14 XN-8 mission computers; AN/AYQ-9 stores management system; and integrated GPS/INS; General Hillier's vision for better integration of CF capabilities are outlined in the Department of National Defence's, A-JS-005-000/AG-001 *Canada's International Policy Statement: A Role of Pride and Influence in the World: Defence* (Ottawa: DND Canada, 2005), 12; see also, Brigadier-General Daniel Gosselin and Doctor Craig Stone's "From Minister Hellyer to General Hillier: Understanding the Fundamental Differences Between the Unification of the Canadian Forces and its Present Transformation," *Canadian Military Journal*, vol. 6 no. 4 (Winter 2005-2006) [journal on-line]; available from http://www.journal.dnd.ca/vo6/no4/trans-eng.asp; Internet; accessed 14 May 2011.

[158] Canadian American Strategic Review, "CF Aircraft – Strategic Air-to-Air Refuelling – CC-150T Polaris," http://casr.ca/101-af-cc150t-polaris-mrtt.htm; Internet; accessed 14 May 2011; Department of National Defence: Equipment Procurement, "CC-177 Globemaster III - Strategic Airlift," http://www.forces.gc.ca/site/pri/2/pro-pro/globemaster-eng.asp; Internet; accessed 14 May 2011.

queries claimed that CF-18s would "relieve the pressure" on American squadrons. Sullivan contended that Hornets had not been deployed as a result of "a political decision back in Canada." However, Defence Minister Peter McKay's office was quick to refute the claim, stating that Sullivan was "…somehow mistaken on this issue." McKay's office went on to say, "if the chain of command believes this is worthwhile, they would make a recommendation to the minister." What was now becoming very clear was that a CF-18 deployment had never made it past the CDS. In the words of McKay's staffer, it could therefore "…hardly be a political decision."[159]

WHY HORNETS DID NOT DEPLOY

Initial Staff Check

Immediately after the 9/11 attacks, staff checks were conducted by 1 Canadian Air Division to determine if CF-18s could deploy in support of the Global War on Terror. With an elevated NORAD posture, the determination was made that a 'six pack' could deploy without compromising Canada's commitment to homeland defence.[160] This air force 'menu item' was made available to the CDS for conveyance to the Minister of National Defence very early on. However, the United States was initially engaged in a carrier based and strategic bombing campaign to which Canada could not make any measurable contributions. General Raymond Henault tabled the fighter option throughout his tenure as Chief of Defence Staff but according to Lieutenant-General Ken Pennie, the Chief of the Air Staff from 2003 to 2005, the Liberal government was trying

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[159] Matthew Fisher, "Canadians urged to send fighter jets to Afghanistan," Canwest News Service, 20 April 2009; http://www.ceasefire.ca/?p=1619; Internet; accessed 22 April 2011.

[160] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011.

to do the absolute minimum required to appease the United States.[161] A deployment of ships with Sea Kings, Hercules, Aurora aircraft, and 750 soldiers from 3 PPCLI satisfied Chrétien's early pledge to stand 'shoulder to shoulder' with the United States without breaking the bank or inciting public dissent.

More Than Enough Air Power

During the first few years of ISAF, there was an incredible amount of American and British air power available, making requests for fighter aircraft seem, at the strategic level, as efforts to broaden the international flavour of the coalition. According to Lieutenant-General Angus Watt, Chief of the Air Staff from 2007 to 2009, the air effort had become "too American" and the United States' need for support was actually more a desire for international legitimacy.[162] Six CF-18s could offer little, if any, military utility and such a deployment would not have gained any more strategic recognition from the United States or NATO than had already been achieved. The standard reasons of cost, logistics, and sustainability were provided as convenient excuses when in fact the Chiefs of Defence Staff, Henault and Hillier, were simply reading the pulse of the politicians and not pushing the fighter option. In the early cost benefit analysis, CF-18s were not a good 'deal.'

Collateral Damage Concerns

In every theatre of operation, collateral damage and friendly fire are of great concern to commanders and politicians alike. With near real time global news reporting,

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[161] LGen Lloyd C. Campbell, CMM, CD (Ret'd), email to author, 9 May 2011; LGen Ken Pennie CMM, CD (Ret'd), telephone conversation with author, 10 May 2011.

[162] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011.

collateral damage and fratricide incidents can have far reaching effects. One friendly fire incident which caught the attention of Canadians occurred at Tarnak Farms on 17 April 2002. That night, four Canadian soldiers were killed when a United States Air National Guard F-16 pilot disregarded orders to break off an attack and dropped a laser guided bomb in 'self defence' on a scheduled small-arms range training exercise. The deaths were Canada's first in a combat theatre since Korea – made all the more tragic they were a result of "wilful misconduct" by an American pilot.[163] According to the Chief of the Air Staff at the time, Lieutenant-General Lloyd Campbell, the Chrétien government did not have a high level of ambition to begin with and the Tarnak Farms incident "tended to colour" Afghanistan fighter operations in a negative light.[164] Watt also recalled that Hillier was deeply concerned that collateral damage at the hands of Canadians would undermine the Afghan government – a sentiment reiterated by the current Commander of 1 Canadian Air Division in Winnipeg.[165] If collateral damage discouraged Canada it certainly did not discourage the United States from emphasizing the importance fighter operations.

Joint Solidarity Rejected

The resurgence of the Taliban in 2006 made it necessary for incredible amounts of close air support. The United States alone would increase its annual CAS sortie count

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[163] CBC News Online, "In Depth: Friendly Fire: U.S. Air Force Verdict." http://www.cbc.ca/news/background/friendlyfire/verdict.html; Internet; accessed 10 May 2011.

[164] LGen Lloyd C. Campbell, CMM, CD (Ret'd), telephone conversation with author, 7 May 2011.

[165] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011; MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

from 14,202 in 2007 to 33,679 in 2010.[166] As the Commander of 1 Canadian Air Division from 2007-2009, Lieutenant-General Marcel Duval visited Afghanistan on three separate occasions and was regularly briefed on fighter operations. He recalled a British officer stating there "was more CAS than you can shake a stick at," which led him to question the rationale for UK fighters being in there at all. The British officer argued that even with ample CAS available, "there is something to be said about having your own."[167] Lieutenant-General Watt also strongly believed if Canadian soldiers were on the ground, Canada should provide a portion of the air cover as a matter of principle. He later recalled his argument was "completely ignored" in Canada, but was deeply entrenched in the doctrine of other nations.[168]

In 1995, hundreds of Dutch peacekeepers were unable to prevent the massacre of thousands of Bosnian Muslims during the infamous 'Srebrenica Genocide.' Their failure was controversial and led to the resignations of the Dutch Prime Minister and the Chief of the Army Staff.[169] Many Dutch officers attribute the failure, in part due to NATO's inability to provide air support when it was requested. As a nation, the Netherlands vowed if their soldiers were ever to be in harm's way, their own combat aircraft would

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[166] United States Air Force Central Command, "Combined Forces Air Component Commander: 2007-2010 Airpower Statistics," http://www.afcent.af.mil/shared/media/document/AFD-101214-006.pdf; Internet; accessed 24 May 2011; United States Air Force Central Command, "Combined Forces Air Component Commander: 2008-2011 Airpower Statistics," http://www.afcent.af.mil/shared/media/document/AFD-110505-001.pdf; Internet; accessed 24 May 2011.

[167] LGen J.M. Duval, CMM, CD, telephone conversation with author, 3 May 2011.

[168] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011.

[169] Anthony Deutsch, "Dutch general resigns over 1995 massacre," *Toronto Star,* n.d.; http://www.ebscohost.com/; Internet; accessed 1 May 2011.

deploy to provide support and protection.[170] They maintained a contingent of F-16s in the Afghanistan theatre in parallel with the Royal Netherlands Army from 2002 until all Dutch forces returned home in 2010.[171] Over the last several decades, Canada has never experienced such a defining event which linked air power to an army tactical failure. One can only speculate if Canadians had died as a result of NATO air priorities or a lack of fighter aircraft, the public would have demanded to know why CF-18s were not there to protect them. The reasons of cost, logistics and sustainability would have offered little consolation and closure to the families of the fallen.

The Manley Report

In 2007, the government commissioned the Independent Panel on Canada's Future Role in Afghanistan to assess the situation and make recommendations which informed the 2009 decision to extend the mission.[172] It provided legitimate justification for Canada's rapid procurement of the CH-47 Chinook medium lift helicopter and the hasty modifications to its 'would be' body guard – the CH-146 Griffon helicopter. Soldiers were dying from Improvised Explosive Devices (IED) in growing numbers, making roads a virtual minefield. The Chinook could transport troops and supplies within the area of operations much more safely. Six were acquired under a foreign

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[170] LGen W.A. Watt, CMM, CD (Ret'd), telephone conversation with author, 1 May 2011. During LGen Watt's multiple tours to Afghanistan in senior command positions, he spoke with senior Dutch officers who explained how their nation reacted to the Srebrenica Genocide.

[171] Joris Janssen Lok and John Berg, "Pull-out of Norwegian and Netherlands air assets…."

[172] John Manley *et al*., *Independent Panel on Canada's Future Role in Afghanistan: Final Report* (Ottawa: PWGSC, 2008), 8; available online at http://dsp-psd.pwgsc.gc.ca/collection_2008/dfait-maeci/FR5-20-1-2008E.pdf; Internet; accessed 18 April 2011.

military sales contract and by February 2009 they were operating in Afghanistan.[173] The Griffon, known to be underpowered, was heavily modified to enter the ISAF pool of aircraft from which, according to Watt, Canada had drawn from "…for the last few years without contributing anything." The Chief of the Air Staff pointed out that with Griffons in theatre, Canada would be able to "influence the pool in a different way than when you're just a customer."[174] Although the parallel argument was made for a fighter deployment, the Manley Report emphasized helicopters and UAVs putting the last nail in the coffin of a CF-18 deployment in support of ISAF. After the Canadian Air Wing was activated in Kandahar in 2009, Lieutenant-General Watt remarked:

> The Afghan mission is a balance of capabilities…. The balance depends on the objectives of the mission. Helicopters are the most recent addition; tanks were added in 2007 as well. Fighters are a valuable capability and have been used in the past during other missions. But, so far, they have not been called for as part of that balance of capabilities.[175]

In the words of the current Commander of 1 Canadian Air Division, Major-General Blondin: "the requirement for helicopters far outweighed the requirement for fighters in Afghanistan."[176]

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[173] Department of National Defence, "CH-47 Chinook - Canadian F-model - Medium-to-Heavy Lift Helicopters," http://www.forces.gc.ca/site/pri/2/pro-pro/chinook-eng.asp; Internet; accessed 10 May 2011.

[174] Canada's Engagement in Afghanistan, "New capability in Afghanistan will help save lives: Air Force commander," http://www.afghanistan.gc.ca/canada-afghanistan/focus/airwing-escadreaerienne.aspx?lang=eng; Internet; accessed 29 April 2011.

[175] *Ibid.*.

[176] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

Conclusion

Canada like the rest of the world was shocked by the tragic, yet seminal events which occurred on 11 September 2001. Since then, the CF-18 community has shouldered the lion's share of domestic defence while almost every other combat element in the Canadian Forces has taken part in the 'away game' of the GWOT. Canada did not deploy fighter aircraft to the Afghanistan theatre because there was never a compelling need for them and the government maximized its strategic benefits very early in the campaign. The Canadian fighter contribution was framed as a 'beefed' up NORAD commitment and although a 'six pack' could have feasibly deployed at any time, the Chrétien government was not interested for reasons of political ideology and expediency. It is evident that during General Hillier's tenure as CDS, the Paul Martin and the Stephen Harper governments were never even offered the Hornet 'menu item.' The introduction of Canadian Chinooks, Griffons, and Herons into the pool of ISAF assets cost Canada a great deal of money and required an enormous level of effort from the Department of National Defence, but did not appreciably increase Canada's strategic standing amongst its major allies. They were justified based on the shortage of their respective capabilities in theatre and more importantly they have kept 'boots on the ground but not on the roads.' It was an accepted fact they would save Canadian lives and although they did represent the concept of joint solidarity, this concept was not used to legitimize their deployment into theatre.

During the early part of the war in Afghanistan, the government did not fully recognize the dangers Canadian soldiers would face in the 'post Apollo' counter-insurgency campaign. Many senior air force officers were proponents of a CF-18

deployment to foster a joint mentality and force solidarity. The Dutch were strong believers in this doctrine based on the lasting scars of the Srebrenica Massacre, but without such scars, the strategic military leadership and Canadian politicians were unable justify a principle based deployment of fighter aircraft. If the First Gulf War and Kosovo were examples of low operational risk resulting in high strategic gain, Afghanistan was the exact opposite for the fighter community. It is unlikely that CF-18s will ever deploy based on the principle of 'joint solidarity' unless Canada experiences its own Srebrenica. There must be a quantifiable military need or assurances of strategic benefits.[177]

There are many who believe that the exclusion of the CF-18 from OEF and then ISAF was a 'conspiracy' so that Afghanistan would be the army's war. However, once the real issues are uncovered and the layers of strong personalities removed, CF-18s were not needed in Afghanistan the very same way the army was not needed in the First Gulf War. The Fighter Force has used this operational pause to improve its relationship with the army through air-land integration initiatives and has completed a major avionics and sensors upgrade pushing it to the top of the fourth generation class of fighters. The exclusion of CF-18s and Canada's loss of significant 'blood and treasure' in Afghanistan will do much to reinforce the primacy of fighters to efficiently achieve strategic benefits. Canada's current fighter operations over Libya suggest this concept continues to dominate contemporary thinking.

[177] Some would argue a military need and strategic benefits must both exist, however, this breaks down when one looks at the percentage of bombs Canadian Hornets dropped in Kosovo as a single example. Coalitions are likely to do just fine without a six pack of CF-18s.

CHAPTER 5 – LIBYA

> One either believes in freedom, or one just says one believes in freedom. The Libyan people have shown by their sacrifice that they believe in it. Assisting them is a moral obligation upon those of us who profess this great ideal.[178]
>
> – Prime Minister Stephen Harper, 18 March 2011.

In February 2011, largely influenced by the successful uprisings in Tunisia and Egypt, the Libyan people began publicly demonstrating against Colonel Muammar Gaddafi's 42 year dictatorship and oppressive governance.[179] Their demonstrations were met with violent opposition by Gaddafi's military forces, resulting in a civilian death toll which by some accounts has now surpassed 30,000 people.[180] In Canada, politicians from all political parties voiced their abhorrence with the situation and called for the international community to take action. On 17 March 2011, the United Nations passed Resolution 1973 authorizing Member States "all necessary measures" to protect the civilian population from increasingly aggressive Gaddafi loyalists.[181] With legal authority and a "moral obligation," Canadian Prime Minister Stephen Harper committed a frigate, a Sea King detachment, two CC-150 Polaris tankers, two CP-140 Auroras, and

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[178] Stephen Harper, "Statement by the Prime Minister of Canada on the situation in Libya: 18 March 2011," http://pm.gc.ca/eng/media.asp?category=3&featureId=6&pageId=49&id=4048; Internet; accessed 18 March 2011.

[179] Tunisian President Zine El Abidine Ben Ali fled to Saudi Arabia on 14 January following the Jasmine Revolution protests, and in Egypt, President Hosni Mubarak resigned on 11 February 2011, ending his 30-year presidency; Although Muammar al-Qaddafi's name is always written the same way in Arabic, there are a wide range of spellings used in the Western media. "Muammar Gaddafi," "Mu'ammar Qadhafi," and "Moammar Kadafy" are a few of the most common, although it is possible to find many others. This paper will use "Muammar Gaddafi" throughout for consistency.

[180] Bradley Klapper, "U.S.: Libya death toll could be as high as 30,000," http://www.msnbc.msn.com/id/42784880; Internet; accessed 14 May 2011.

[181] U.N. Security Council, 6498th Meeting, "Resolution 1973 (2011) [on The Situation in Libya]" (S/RES/1973), 17 March 2011 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; Accessed 14 May 2011.

seven CF-18 Hornets to help enforce embargos, a no-fly zone, and protect the Libyan people.[182]

On very short notice, fighter aircraft from 425 Squadron deployed to Trapani, Italy and have taken part in the air campaign to prevent Gaddafi from acting on his promise to "burn all of Libya."[183] This chapter will show that Canada's most recent use of CF-18s in an operational theatre is another example of a consistent non-partisan policy when the United Nations or the North Atlantic alliance calls for offensive action – without an appetite for boots on the ground. It will show that while defending Canadian airspace, the fighter community completed an extremely important modernization process, providing a ready and relevant kinetic capability well suited to operations with a low tolerance for collateral damage. The rapid deployment of CF-18s highlights the relevance of fighter aircraft to Canada's international alliance commitments and demonstrates again that low operational risk fighter deployments result in high strategic benefits. It has been a textbook example of what a fighter force can do with the right people, equipment, and political mandate.

SEQUENCE OF EVENTS

Evacuating Canadians

The most pressing concern for the government at the outset of the North African crisis was the safety of hundreds of registered Canadian nationals living in Libya who

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[182] Harper, "Statement by the Prime Minister of Canada on the situation in Libya…."

[183] "Gaddafi's last stand: Embattled leader threatens to 'burn all of Libya' if protesters do not cease in their bid to overthrow him," *Daily Mail Online*, http://www.dailymail.co.uk/news/article-1360595/Gaddafi-threatens-burn-Libya-protesters-cease.html?ito=feeds-newsxml; Internet; accessed 14 May 2011.

sought to flee the ensuing violence.[184] In the last week of February 2011, one CC-177 Globemaster and two CC-130J Hercules were put on standby in different European locations to transport Canadian citizens and those from other like-minded nations away from the increasingly dangerous environment.[185] On 1 March 2011, Prime Minister Harper also announced that the Halifax class frigate HMCS *Charlottetown* would depart to assist with the evacuation operations already underway.[186] The government's number one priority was the safety of its citizens, but Harper also realized that a Non-combatant Evacuation Operation (NEO) could easily turn into a humanitarian intervention. Besides the immediate need for transport aircraft, the navy's high readiness and ability to operate in international waters made it again one of the first responders to provide a persistent military presence for a strategic benefit. The deployment of transport aircraft and a frigate marked the beginning of Operation Mobile, a name well suited to the NEO theme and ironically foreshadowed the rapidity with which Canada's Fighter Force responded to Harper's official announcement that CF-18s would deploy.

Fighters Deploy Rapidly

> Last night, the United Nations Security Council passed a resolution endorsing immediate action to protect Libyan citizens from the threat of further slaughter.

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[184] Tobi Cohen, "Airlift planned for Canadians in Libya as violence flares," *Postmedia News*, http://www.canada.com/Canada+planning+evacuation+from+Libya/4326899/story.html; Internet; accessed 15 May 2011.

[185] Bradley Bouzane, "NATO offers to help Libyan evacuation, Canadian efforts falter," http://www.canada.com/news/decision-canada/Canadian+evacuation+plane+leaves+Libya+empty/4346562/story.html; Internet; accessed 15 May 2011; *House of Commons Debates*, 4 March 2011 (Laurie Hawn, CPC); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=5009877; Internet; accessed 10 May 2011.

[186] *House of Commons Debates*, 1 March 2011 (Prime Minister Stephen Harper, CPC); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=4996288; Internet; accessed 10 May 2011.

> Canada, in cooperation with our allies and other members of the international community, worked to gain support for this resolution. We will now take the urgent action necessary to support it. As a consequence, the Government has authorized the deployment of CF-18 fighter jets to join the HMCS *Charlottetown* in the region.[187]
>
> - Prime Minister Stephen Harper, 18 March 2011.

According to the Commander of 1 Canadian Air Division, Major-General Yvan Blondin, a contingent of CF-18s and pilots were already in the breach for an Iceland Air Policing operation, making it possible to immediately redirect them to the Mediterranean.[188] The Air Policing mission was to be conducted in the month of April, but as the Libyan situation escalated the 425 Squadron Commanding Officer, Lieutenant-Colonel Sylvain Ménard, started to see the writing on the wall. He took it upon himself to discreetly ready eight of his aircraft and put together a list of pilots and ground crew who would be the first out the door if ordered to deploy. In the early morning hours of 17 March 2011, military commanders predicted that Resolution 1973 would not be vetoed in the UN Security Council and put Lieutenant-Colonel Ménard and his squadron on 48 hours 'notice to move.' Because of 425 Squadron's high level of readiness, the 'notice to move' was reduced to 24 hours by 11:45EST that day.[189] Just a few hours after Harper made his announcement, six CF-18s departed Bagotville, Québec and just three days later, Canadian Hornets conducted their first mission in support of the US-led air campaign

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[187] Harper, "Statement by the Prime Minister of Canada on the situation in Libya…."

[188] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

[189] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011; Canadian Press, "Canada poised to help enforce Libyan no fly zone," n.d.; *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

called Operation Odyssey Dawn.[190] Four days from deployment notice to flying operational missions was an impressive accomplishment for an air force which had previously depended on contracted airlift and the United States Air Force air-to-air refuelling aircraft to get them anywhere. The use of the CC-177 Globemaster and the CC-150 Polaris air-to-air refuelling aircraft validated the importance of possessing these national capabilities and their support to the deployment was described by Lieutenant-Colonel Ménard as "a thing of beauty."[191] However, the first mission could have been conducted up to two days earlier if not for delays encountered securing a suitable base and establishing communications with the Combined Air Operations Centre (CAOC).[192]

At the outset, the air force expressed interest in operating out of Trapani, Italy, but had not yet received approval to do so on the day of their departure. According to Major-General Blondin the CF-18s "…deployed without knowing where the target was," making a 24 hour stopover necessary in Prestwick, Scotland while diplomatic channels were being exercised between Canada and Italy. Final authorization to operate out of Trapani was received just two hours before the CF-18s landed at the Italian air base on 19 March 2011. The arrival surprised the Italian Wing Commander who learned of his new guests when their powerful engines roared in the 'overhead break' at his airfield.[193] Once

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[190] *House of Commons Debates*, 21 March 2011 (Peter Mackay, CPC); http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=5039495; Internet; accessed 10 May 2011; Canadian Expeditionary Force Command, "Operation Mobile," http://www.cefcom.forces.gc.ca/pa-ap/ops/mobile/index-eng.asp; Internet; accessed 15 May 2011.

[191] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

[192] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

[193] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011. An "overhead break" is the name given to an arrival where the aircraft flies over the runway and conducts a 180 degree turn to a downwind leg and then another 180 degree turn to slow down and line up on final approach.

they arrived at Trapani another day was required to set up the communication networks and establish a link with the CAOC before they could accept any air tasking orders.[194]

From Apprehension to Confidence

For the first few days of air operations, Major-General Blondin recalled he was "the most nervous he had been" during his time as the commander of 1 Canadian Air Division. He was confident in the abilities of his pilots, but demographics and recent modifications to CF-18 training had reduced the overall level of experience of Canadian fighter squadrons considerably. The air force's new force generation policies had not been validated and the initial group of aircrew was made up of a number of first tour 'pipeline' pilots. Public reports of CF-18s not dropping weapons due to collateral damage concerns confirmed that, in spite of low experience levels, Canadian aircrew were exercising a high degree of discretion and professionalism in a very sensitive operation.[195] The fighter detachment's commanding officer acknowledged the decisions being delegated to the cockpit were "significant" and that ultimately each pilot held the responsibility to positively identify every target.[196] After the first few days had passed, Major-General Blondin's apprehension turned to confidence when he realized that soon he "…would have the most combat experienced 'pipeline air force' in the world."[197] While Canada's pipeline fighter pilots were gaining experience on the front line, the

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[194] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

[195] CTV News, "Canadian pilots abort bombing over risk to civilians," http://www.ctv.ca/CTVNews/TopStories/20110322/canadian-cf-18s-operation-odyssey-dawn-libya-110322/; Internet; accessed 15 May 2011; Richard J.Brennan, "Canadian jets halt bombing run, fearing for civilians." *Toronto Star*, n.d., *Newspaper Source Plus*, http://web.ebscohost.com/; Internet; accessed 16 May 2011. A pipeline pilot is one who is chosen to fly fighters immediately after receiving their pilot wings.

[196] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

[197] MGen Y.J. Blondin, OMM, CD, telephone conversation with author 6 May 2011.

transfer of command of the air operation to NATO provided Canada the opportunity to gain experience at the other end of the spectrum – the operational command level.

Canadian Commander

Operational commands for international campaigns of this size and complexity do not come often. In the decade long war in Afghanistan for example, General Rick Hillier was the only Canadian who took a turn commanding the NATO-led International Security Assistance Force. When the US handed over responsibility for the entire operation in Libya to NATO, under the name Unified Protector, Canadian Air Force officer Lieutenant-General Charlie Bouchard was appointed the Combined Joint Task Force Commander.[198] Already in a NATO command position in Naples, Italy he was at the right place at the right time with all the qualifications to accept the challenge of leading a multinational force. Canada's contribution to Unified Protector is made that much more significant by the fact it is being commanded by one of its own.

POLITICAL AND PUBLIC OPINION

Unlike all of Canada's major combat operations in the last 20 years, there was overwhelming political consensus regarding the country's involvement in Libya. During the 21 March 2011 "Take Note Debate" in the House of Commons, the Liberals, New Democrats, and the Bloc all expressed support for Canada's military contribution.[199] Their positions announced before Resolution 1973 was passed made it difficult to

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[198] North Atlantic Treaty Organization, Unified Protector, "Commander," http://www.jfcnaples.nato.int/Unified_Protector/commander.aspx; Internet; accessed 17 May 2011.

[199] *House of Commons Debates*, 21 March 2011; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=5039495; Internet; accessed 10 May 2011.

subsequently oppose Canadian military involvement without appearing disingenuous. On 22 February 2011 Liberal Leader Michael Ignatieff set the tone by condemning "the Libyan government's use of violence to punish protesters for exerting their right to free speech and right to assembly." Foreign Affairs Critic Bob Rae added that "…international sanctions should be mobilized right away against Mr. Qaddafi [sic]" and that "Canada should urge for the application of these sanctions immediately."[200] On the same day, New Democrat Party Leader Jack Layton went further and specified that the Canadian government should work "…with its international partners to bring the issue to the UN Security Council and work to establish a no-fly zone in Libya's airspace."[201] The Bloc Québécois was the only major political party which did not release an official statement in February, but according to news reports supported Harper's position.[202]

Even former Liberal Prime Minister Paul Martin, one of several western leaders who extended an olive branch to Gaddafi in 2004, joined the chorus of calls for the UN to act, calling the Libyan leader's actions "despicable."[203] It is hard to say if party leaders anticipated that the UN, normally paralyzed by bureaucratic inertia and vetoes, would be

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[200] Michael Ignatieff, "Statement by the Liberal Party of Canada on the situation of civil unrest in Libya," *Liberal Party of Canada Website*, http://www.liberal.ca/newsroom/news-release/statement-liberal-party-canada-situation-civil-unrest-libya/; Internet; accessed 18 March 2011.

[201] Jack Layton, "New Democrat statement on the ongoing protests in Libya and throughout the Middle East and North Africa," *New Democrat Party Website*, http://www.ndp.ca/press/new-democrat-statement-on-ongoing-protests-in-libya-throughout-middle-east-north-africa; Internet; accessed 18 March 2011.

[202] Meagan Fitzpatrick, "Harper heads to Paris meeting on Libya: Canada commits 6 CF-18 fighter jets to help enforce UN no-fly zone over Libya," *CBC News Online*, http://www.cbc.ca/news/canada/montreal/story/2011/03/18/pol-harper-libya.html; Internet; accessed 14 May 2011.

[203] Stephanie Levitz, "Send in the troops: UN must intervene in Libya, says ex-PM Paul Martin," *Canadian Press* (n.d.): *Newspaper Source Plus*, http://web.ebscohost.com/; Internet; accessed 16 May 2011.

so quick to provide the legal authority for an armed intervention or whether their outspoken opposition was merely lip service to endear the voting public on the eve of an election campaign. Regardless of their initial motives, their positions did reflect the public sentiment which was also weighted heavily towards a military intervention.[204]

LESSONS LEARNED

Modernized Hornet Critical

The performance of the CF-18 Task Force is not just a validation of recent training and the professionalism of Canadian pilots; it is also a validation of recent and long overdue upgrades to the CF-18 itself. Although the CF-18 community was discouraged from having never deployed to support the mission in Afghanistan, they took advantage of their decade long hiatus to put into service upgrades and systems which have assured success in their current operations. At the time the deployment was announced, the air force had taken delivery of its last fully modernized aircraft and integrated a new FLIR pod which greatly enhances situational awareness, target identification, and laser guided weapons accuracy.[205] The Sniper FLIR pod and the Joint Helmet Mounted Cueing System have been critical components in the fluid air campaign where pilots typically receive their target brief while airborne. NVGs have given CF-18

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[204] An IPSOS poll conducted in April 2011 reported that 70% of Canadian respondents were in favour of the military no-fly zone. See http://www.ipsos-na.com/news-polls/pressrelease.aspx?id=5234; Internet; accessed 15 May 2011.

[205] Boeing Canada, "Boeing Completes CF-18 Hornet Modernization Project for Canada," http://www.boeing.ca/ViewContent.do?id=54002&Year=2010; Internet; accessed 15 May 2011; Lockheed Martin, "Lockheed Martin Awarded Canadian Forces Contract for Sniper Advanced Targeting Pod," http://www.lockheedmartin.com/news/press_releases/2007/LockheedMartinAwardedCanadianForces.html; Internet; accessed 15 May 2011.

pilots a distinctive edge under the cover of dark while secure communications and data links have been exercised regularly.[206]

Combat Experience in a Sterile Environment

Although it is clear that Canadian pilots are performing well with their new sensors and under considerable pressure, it must be noted they are doing so in a low to medium threat environment. In early April 2011, Stanford University fellow and military historian Victor Davis Hanson categorized the Libyan air campaign as a "probable cakewalk rather than a quagmire."[207] However, the Canadian commander actually flying missions over Libya challenged this position, and without going into classified detail, indicated it is not as permissive as one would think.[208] This so-called 'cakewalk' has nonetheless afforded a very young pilot cadre the opportunity to gain valuable combat experience without facing the threats which were present in Iraq in 1991 and Kosovo in 1999. The experienced gained by Canada's 'pipeline air force' in this relatively sterile environment will go a long way to ensure that it retains enough practical warrior spirit to be effective in the next war, which may feature a much more competent and well equipped adversary.

CF-18s Punch Well Above Their Weight

As with most coalition operations, Canada's aircraft in theatre make up only a small percentage of the forces at play; however, they typically execute a disproportionate

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[206] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

[207] Victor Davis Hanson, "War Without Strategy," *National Review* vol. 63, no. 7 (April 18, 2011), 26; *The National Review Archive*; http://web.ebscohost.com/; Internet; accessed 14 May 2011.

[208] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

number of missions. In just 52 days CF-18s have conducted 254 sorties which has accounted for almost ten percent of the strike missions conducted by coalition aircraft.[209] They have conducted strikes against ammunition storage facilities, artillery pieces, tanks, command and control headquarters, intelligence headquarters, radar sites, and surface to air missile sites. They have even conducted strikes on Libyan forces engaged in offensive action against the rebels. They have dropped a significant number of laser guided bombs on approved targets with an impressive success rate and unlike previous air campaigns, not one of them was borrowed from the United States; however, at the time of writing stocks were starting to get critically low.[210]

Collateral Damage

The current operation in Libya is as sensitive to collateral damage as any other theatre including Afghanistan. As Gaddafi entrenches in his stronghold of Tripoli, it will become necessary to strike military targets in the heart of its built up areas. Lieutenant-Colonel Ménard suggested it would be highly useful for Canada to have a GPS guided weapon so that terminal parameters could be programmed to minimize collateral damage. It would also be useful to have a weapon with a lower explosive yield to achieve the same results. Work is being done to expedite the acquisition of these capabilities for CF-

[209] North Atlantic Treaty Organization, "NATO and Libya: Operational Media Update for 12 May 2011," http://www.nato.int/nato_static/assets/pdf/pdf_2011_05/20110513_110513-oup-update.pdf; Internet; accessed 15 May 2011. Figures calculated as of 12 May 2011 using CEFCOM statistics. Note that Unified Protector began tracking statistics on 31 March 2011 and CF-18s had conducted several sorties in support of the US-led Operation Odyssey Dawn prior to this date. These must be subtracted from its total of 254 sorties as of 12 May 2011. Based on an average sortie rate of five per day, Canada has conducted approximately 214 sorties since 31 March 2011 out of 2512 reported by NATO.

[210] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

18 employment in Libya, but it is not known whether they will arrive in theatre before the operation is over.[211]

F-35 Debate

There is no doubt the Harper government appreciated the timing of the Libyan intervention. The rapid deployment of fighter aircraft and their involvement in the bombing campaign has been used to justify the government's intent to purchase the F-35 Lightning to replace the aging CF-18 fleet.[212] Some military critics have argued the contrary by saying that such low threat environments do not call for the high tech systems and stealth featured in the F-35. Regardless of which side one takes, the world is trending towards western democratic ideals. There will be popular uprisings in the future that will be repressed by the oppressors requiring Canada to fulfill its 'responsibility to protect' along with its international allies.

Conclusion

Canada's contribution to Odyssey Dawn and then Unified Protector demonstrates the government's continued predilection for deploying fighter aircraft to achieve strategic benefits. Unlike the debates which raged during Desert Storm in Iraq, Allied Force in Kosovo, and even Enduring Freedom in Afghanistan, military action was strongly supported by the public and politicians alike. The fighter community had spent years

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[211] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

[212] Matthew Fisher, "Libya mission carries limited risks for Canada," http://www.canada.com/news/canada-at-war/Libya+mission+carries+limited+risks+Canada/4473876/story.html; Internet; accessed 15 May 2011; David Pugliese, "Harper shifts focus on F-35 jets: War in Libya used to defend need for better fighters," http://www.ottawacitizen.com/news/decision-canada/Harper+shifts+focus+jets/4552354/story.html; Internet; accessed 15 May 2011; Murray Brewster, "Canadian army recon team and medics join Malta military build up," *Canadian Press* (n.d.): *Newspaper Source Plus*, http://web.ebscohost.com/; Internet; accessed 16 May 2011.

shining their ‘fire trucks’ so when the alarm was sounded they surged to the scene faster than anyone ever expected. Their rapid departure was made possible by a high readiness squadron already prepared for an operational deployment and the availability of national strategic airlift and refuelling platforms. As with most success stories, timing and luck did play a role, but was overshadowed by readiness and relevance.

CHAPTER 6 – CONCLUSION

Since the mid 1980s, every combat operation endorsed by the government of Canada, except for Afghanistan, has been supported by fighter aircraft. CF-18 deployments are characterized by low operational risk with high strategic benefits and the use of fighters has been consistent even though Hornet pilots at all rank levels have kicked and screamed to get 'in the game' in Afghanistan. Two decades ago, Canada's contribution to Operation Desert Storm was a turning point for the country which had come to identify itself as a peacekeeping nation. The cautious approach of the Mulroney government was guided by public opinion, and although the lack of a consistent political mandate frustrated the fighter pilots flying fruitless missions over enemy territory, it provided time for the public to digest that international security sometimes requires using the pointy end of its military. The Chrétien government later showed that the use of fighters was a non-partisan practice when the Prime Minister committed them to the Kosovo air campaign. The fact they attacked Serbian targets from the first day of the operation proves the government's previous aversions to bombing had disappeared. In Afghanistan, there was never a political appetite for CF-18s because Canada had cashed in all of its strategic chips with its ground force commitment. The cost, collateral damage risk, lack of a true need with 'more than enough' aircraft, and the helicopter impetus derived from the philosophy of 'boots on the ground and not on the roads' erased any chance for a CF-18 deployment. Disappointed but not discouraged, the fighter community completed long overdue upgrades and exploded out of the gates for operations over Libya as soon as the government gave the green light. Each CF-18 operation has been unique and they have all provided valuable lessons that inform how

Canada can keep its fighter force relevant into the next decades regardless of what platform is being flown.

After examining the previous combat operations holistically, it becomes clear that fighter capabilities atrophy very quickly and Canadian defence procurement is poorly structured to keep pace with technology. Understandably the 'decade of darkness' of the 1990s did much to accelerate the atrophy of the Fighter Force; however, very clear lessons were drawn from each CF-18 operation that were rarely remedied efficiently. Desert Storm proved that PGMs would be the weapons of the future but it took Canada almost seven years to acquire just 13 FLIR pods for over 120 aircraft. Canada was one of the only nations flying fighters in Kosovo without NVGs and it took eight years after the air campaign to get them. Kosovo showed that all-weather GPS weapons were vital to a precision bombing campaign and 12 years later Canada has yet to field this capability. The recent upgrades completed on the CF-18 have rectified several other notable deficiencies and the Hornet is performing and integrating very well over Libya.[213] However, if the Fighter Force does not conduct continuous and comprehensive analyses regarding future weapons and capabilities, it will always be reacting to the lessons derived from the last operation rather than being fully prepared to fight in the next one.

During the counter-insurgency campaign in Afghanistan, senior officers feared that collateral damage would undermine their efforts and therefore CF-18s ought not to deploy. Even though this might have been a convenient excuse in the strategic 'big picture' of the CF-18 deployment decision, the Fighter Force could do or say nothing to

[213] Lieutenant-Colonel Sylvain Ménard, CD, telephone conversation with author 16 May 2011.

assuage it. How can the Fighter Force reconcile a strategic and political aversion to collateral damage in a COIN environment where, in the case of Afghanistan, over 30,000 close air support missions are being flown by the USAF alone in a year? Why does it seem like Canada is the only country who viewed this as a prohibitive outcome? How can the fighter community alleviate concerns to get a 'piece of the action' without their participation undermining the campaign or inciting public dissent? The answer to these questions is beyond the scope of this paper, but there is no doubt that weapons systems must be procured to ensure suitability in an urban environment. They must be precise and the CF should pursue the acquisition of lower explosive yield munitions to ensure that collateral damage can be minimized. For the fighter community to remain relevant, it must attempt to forecast and mitigate the concerns of one of its main customers – the army. If COIN is the war of the future, then it behoves the Fighter Force to be proactive to ensure that it remains relevant.

In the past CF-18s had been at the mercy of contracted airlift and other nations' air-to-air refuelling aircraft which delayed the deployments to both Doha and Aviano. After witnessing the speed and mobility of the CF-18 deployment to Trapani, Italy, the Commander of Canadian Expeditionary Forces Command and army officer Lieutenant-General Marc Lessard admitted: "now I really love the fast air guys."[214] The recent acquisition of the CC-177 Globemaster and the CC-150 Polaris tanker has given Canada the capability to force project almost as quickly as a carrier battle group. CF-18s were unable to deploy in four days to support the 1998 Determined Falcon show of force in

[214] LGen Marc Lessard, CMM, MSC, CD, "CEFCOM" (lecture, Canadian Forces College, Toronto, ON, 19 May 2011), with permission. He also mentions the Op Order is just being completed (more than two months after CF-18s departed).

spite of the Minister of National Defence's clear desire for them to do so. Today, they would have made it into theatre with time to spare, proving that national strategic airlift and air-to-air refuelling capabilities are essential. The speed with which CF-18s travelled to Trapani, Italy was so fast it outpaced the diplomacy to secure ramp space.

Governments of all political stripes have understood that deploying fighter aircraft achieves significant strategic benefits. The recent public support for the intervention in Libya is an indication that the public is also beginning to understand this concept. Canadians, it seems, are realizing what their government has known for decades; the CF is an effective instrument of 'Clausewitzian' diplomacy and Canada has a responsibility to its alliances and a responsibility to protect. It has always been less costly in political terms to deploy ships and fighters over tanks and soldiers; however, Afghanistan has shown that not every war fits this Canadian 'set piece' campaign plan. The Canadian Fighter Force has come a long way since the CF-18 conducted Canada's first combat mission post-Korea and it has been responsible for much of this country's military-political international recognition since then. For Canada to retain its 'seat at the international table' it must ensure that a relevant and ready Fighter Force is maintained well into the future. The Canadian government and the public must continue to recognize the strategic dividend of fighters.

BIBLIOGRAPHY

Barnes, Bruce P. "'Fighters First': The Transition of the Royal Canadian Air Force, 1945-1952." Master's thesis, Royal Military College of Canada, 2006.

Bashow, Lieutenant-Colonel David L., Colonel Dwight Davies, Colonel André Viens, Lieutenant-Colonel John Rotteau, Major Norman Balfe, Major Ray Stouffer, Captain James Pickett, and Dr. Steve Harris. "Mission Ready: Canada's Role in the Kosovo Air Campaign." *Canadian Military Journal* vol. 1, no. 1 (Spring 2000): 55-61. Journal on-line; available from http://www.journal.forces.gc.ca/vo1/no1/index-eng.asp; Internet; accessed 30 March 2011.

BBC. "1991: 'Mother of all Battles' begins." http://news.bbc.co.uk/onthisday/hi/dates/stories/january/17/newsid_2530000/2530375.stm; Internet; accessed 18 May 2011.

Beeby, Dean. "$1.2-billion plan to extend CF-18 life: Cockpit technology has become 'laughable' in aging Canadian air force fighter jets." *Globe and Mail*, 14 December 1998.

Bergen, Robert W. "Balkan Rats and Balkan Bats: The art of managing Canada's news media during the Kosovo air war." Doctoral thesis, University of Calgary, 2005.

Boeing Canada. "Boeing Completes CF-18 Hornet Modernization Project for Canada." http://www.boeing.ca/ViewContent.do?id=54002&Year=2010; Internet; accessed 15 May 2011.

Boeing. "Boeing Receives Contract to Upgrade Canadian CF-18 Hornets." http://www.boeing.com/defense-space/military/fa18/news/2001/q2/news_release_010423o.htm; Internet; accessed 26 April 2011.

Bouzane, Bradley. "NATO offers to help Libyan evacuation, Canadian efforts falter." http://www.canada.com/news/decision-canada/Canadian+evacuation+plane+leaves+Libya+empty/4346562/story.html; Internet; accessed 15 May 2011.

Boyd, Lieutenant Colonel Frank L. Jr. "The Politics of Canadian Defense Procurement: The New Fighter Aircraft Decision." Paper presented to the Conference on The Canadian Defence Industrial Base: Domestic and International Issues and Interests, Queen's University, 1987.

Brennan, Richard J. "Canadian jets halt bombing run, fearing for civilians." *Toronto Star*, n.d., *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

Brewster, Murray. "Canadian army recon team and medics join Malta military build up." *Canadian Press* (n.d.): *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

Brown, Christopher B. "The Military and the Media: A Case Study of Canadian Experiences in the Gulf War." Masters Thesis, Dalhousie University, 1992.

Bush, George W. "We Are At War Against Terrorism." *Vital Speeches of the Day* 68, no. 1 (October 15, 2001): 2-3; http://web.ebscohost.com/; Internet; accessed 26 April 2011.

Bush, George. "Iraq Invasion of Kuwait." *Vital Speeches of the Day* 56, no. 22 (September 1990): 674-675; http://web.ebscohost.com; Internet; accessed 11 March 2011.

Campion-Smith, Bruce. "Canadian jets begin Libyan mission." *Toronto Star*, n.d., *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

Canada. Canada's Engagement in Afghanistan. "New capability in Afghanistan will help save lives: Air Force commander." http://www.afghanistan.gc.ca/canada-afghanistan/focus/airwing-escadreaerienne.aspx?lang=eng; Internet; accessed 29 April 2011.

Canada. Department of National Defence. *1987 Defence White Paper*. http://www.forces.gc.ca/admpol/downloads/Challenge%20and%20Commitment%201987.pdf; Internet; accessed 13 March 2011.

Canada. Department of National Defence. "1994 White Paper on Defence." http://www.forces.gc.ca/admpol/1994%20White%20Paper%20on%20Defence.htm#opaf; Internet; accessed 30 April 2011.

Canada. Department of National Defence. A-JS-005-000/AG-001 *Canada's International Policy Statement: A Role of Pride and Influence in the World: Defence.* Ottawa: Assistant Deputy Minister for Public Affairs, 2005.

Canada. Department of National Defence. Canadian Expeditionary Force Command, "Operation Harmony." http://www.cefcom.forces.gc.ca/pa-ap/ops/harmony-eng.asp; Internet; accessed 8 April 2011.

Canada. Department of National Defence. Canadian Expeditionary Force Command. "Operation Mobile." http://www.cefcom.forces.gc.ca/pa-ap/ops/mobile/index-eng.asp; Internet; accessed 15 May 2011.

Canada. Department of National Defence. "CH-47 Chinook - Canadian F-model - Medium-to-Heavy Lift Helicopters." http://www.forces.gc.ca/site/pri/2/pro-pro/chinook-eng.asp; Internet; accessed 10 May 2011.

Canada. Department of National Defence. "Equipment Procurement: Afghanistan Air Capabilities." http://www.forces.gc.ca/site/pri/2/pro-pro/Afghanistan-eng.asp; Internet; accessed 29 April 2011.

Canada. Department of National Defence: Equipment Procurement. "CC-177 Globemaster III - Strategic Airlift." http://www.forces.gc.ca/site/pri/2/pro-pro/globemaster-eng.asp; Internet; accessed 14 May 2011.

Canada. Department of National Defence: News Room. "Canadian Forces completes participation in NATO-Iceland Air Policing Program." CEFCOM NR 11.002 - May 11, 2011; http://www.forces.gc.ca/site/news-nouvelles/news-nouvelles-eng.asp?cat=00&id=3777; Internet; accessed 12 May 2011.

Canada. Department of National Defence. *Tactical Aviation Aerial Firepower: The Armed Griffon Concept*. 1 Wing Headquarters, 25 September 2002.

Canada. Department of National Defence. *The Gulf War and Canada's Defence Policy: Speaking Notes for The Honourable Bill McKnight, P.C., M.P., Minister of National Defence, to the Conference of Defence Associations Annual General Meeting, chateau Laurier Hotel, Ottawa, Ontario January 25, 1991*. Ottawa: Department of National Defence, 1991.

Canada. *House of Commons Debates*, 7 October 1998; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=36&Ses=1&DocId=2332840; Internet; accessed 15 April 2011.

Canada. *House of Commons Debates*, 24 March 1999; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=36&Ses=1&DocId=2332840; Internet; accessed 15 April 2011.

Canada. *House of Commons Debates*, 19 September 2001; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=844891; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 24 September 2001; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=1246970; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 25 September 2001; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=845036; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 26 September 2001; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=845038; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 27 September 2001; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=1&DocId=845498; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 17 March 2003; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=2&DocId=755432; Internet; accessed 20 April 2011.

Canada. *House of Commons Debates*, 1 March 2011; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=4996288; Internet; accessed 10 May 2011.

Canada. *House of Commons Debates*, 4 March 2011; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=5009877; Internet; accessed 10 May 2011.

Canada. *House of Commons Debates*, 21 March 2011; http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=40&Ses=3&DocId=5039495; Internet; accessed 10 May 2011.

Canadian American Strategic Review. "CF Aircraft – Strategic Air-to-Air Refuelling – CC-150T Polaris." http://casr.ca/101-af-cc150t-polaris-mrtt.htm; Internet; accessed 14 May 2011.

Canadian Press. "Canada poised to help enforce Libyan no fly zone." n.d., *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

CBC News Online. "In Depth: Friendly Fire: U.S. Air Force Verdict." http://www.cbc.ca/news/background/friendlyfire/verdict.html; Internet; accessed 10 May 2011.

Center for Defense Information. "Operation Enduring Freedom: Forces in Play around Afghanistan, the Arabian Sea and the Horn of Africa." http://www.cdi.org/terrorism/forces-1119-pr.cfm; Internet; accessed 26 April 2011

Chase, Steven. "Pro-strike stand puts Canada at risk: PM." *Globe and Mail*, 8 October 2001.

Cohen, Tobi. "Airlift planned for Canadians in Libya as violence flares." *Postmedia News*; http://www.canada.com/Canada+planning+evacuation+from+Libya/4326899/story.html; Internet; accessed 15 May 2011.

Cordesman, Anthony H. *The Lessons and Non-Lessons of the Air and Missile Campaign in Kosovo*. Westport, Conneticut: Praeger Publishers, 2001.

Cottingham, Colonel J.F. "Effects Based Operations: An Evolving Revolution." In *Effects Based Approaches to Operations: Canadian Perspectives*, ed. Allan English and Howard Coombs, 7-63. Ottawa: Department of National Defence, 2008.

Cox, Kevin. "Hero's Sendoff Expected As Ships Depart Halifax." *Globe and Mail*, 24 August 1990. http://heritage.theglobeandmail.com/PageView.asp; Internet; accessed 11 March 2011.

CTV News. "Canadian pilots abort bombing over risk to civilians." http://www.ctv.ca/CTVNews/TopStories/20110322/canadian-cf-18s-operation-odyssey-dawn-libya-110322/; Internet; accessed 15 May 2011.

Daily Mail Online, "Gaddafi's last stand: Embattled leader threatens to 'burn all of Libya' if protesters do not cease in their bid to overthrow him." http://www.dailymail.co.uk/news/article-1360595/Gaddafi-threatens-burn-Libya-protesters-cease.html?ito=feeds-newsxml; Internet; accessed 14 May 2011.

Davis, Robert. "Canada and the Persian Gulf War." Masters Thesis, University of Windsor, 1997.

Deere, David N. *Desert Cats: The Canadian Fighter Squadron in the Gulf War*. Stoney Creek, Ontario: Fortress Publications, 1991.

Deutsch, Anthony. "Dutch general resigns over 1995 massacre." *Toronto Star,* n.d.; http://www.ebscohost.com/; Internet; accessed 1 May 2011.

FDHC. "Group Launches Airstrip in Kyrgyzstan." *FDCH Regulatory Intelligence Database*, 26 December 2001; http://www.ebscohost.com/; Internet; accessed 26 April 26.

Ferguson, Alan. "Canadian urges end to 'sweep' missions." *Toronto Star*, 4 February 1991.

Ferguson, Alan. "CF-18 launches missile at Iraqi boat." *Toronto Star*, 31 January 1991.

Fisher, Matthew. "Canadians urged to send fighter jets to Afghanistan." Canwest News Service, 20 April 2009; http://www.ceasefire.ca/?p=1619; Internet; accessed 22 April 2011.

Fisher, Matthew. "CF-18's to Libya: modest, symbolic commitment."*Postmedia News* 18 March2011; http://www.proquest.com/; Internet; accessed 14 May 2011.

Fisher, Matthew. "Libya mission carries limited risks for Canada." http://www.canada.com/news/canada-at-war/Libya+mission+carries+limited+risks+Canada/4473876/story.html; Internet; accessed 15 May 2011.

Fitzpatrick, Meagan. "Harper heads to Paris meeting on Libya: Canada commits 6 CF-18 fighter jets to help enforce UN no-fly zone over Libya." *CBC News Online*. http://www.cbc.ca/news/canada/montreal/story/2011/03/18/pol-harper-libya.html; Internet; accessed 14 May 2011.

Gallup Canada Inc. *Canadian Gallup Poll, April 1999*; http://search2.odesi.ca/details/view.html?q=kosovo&field=&coll=CGP&date-gt=1999&date-lt=2011&uri=/odesi/cipo_E_1999-04.xml; Internet; accessed 11 April 2011.

Gallup Canada Inc. *Canadian Gallup Poll, May 1999*; http://search2.odesi.ca/details/view.html?q=kosovo&field=&coll=CGP&date-gt=1999&date-lt=2011&uri=/odesi/cipo_E_1999-05.xml; Internet; accessed 11 April 2011.

Gallup Poll 009, 2 September 1990; http://search2.odesi.ca/; Internet; accessed 17 March 2011.

Gallup Poll 012, 1 December 1990; http://search2.odesi.ca/; Internet; accessed 17 March 2011.

Gee, Marcus and Graham Fraser. "Combat role new." *Globe and Mail*, 27 March 1999.

Gerleman, David J., Jennifer E. Stevens, and Steven A. Hildreth. *CRS Report for Congress: Operation Enduring Freedom: Foreign Pledges of Military & Intelligence Support.* Washington D.C.: Library of Congress Congressional Research Service, 17 October 2001. Report on-line; available from http://fpc.state.gov/documents/organization/6207.pdf; Internet; accessed 28 April 2011.

Global Security. "Operation Enduring Freedom: Order of Battle." http://www.globalsecurity.org/military/ops/enduring-freedom_orbat-02.htm; Internet; accessed 26 April 2011.

Gosselin, Brigadier-General Daniel, and Doctor Craig Stone. "From Minister Hellyer to General Hillier: Understanding the Fundamental Differences Between the Unification of the Canadian Forces and its Present Transformation." *Canadian Military Journal* vol. 6, no. 4 (Winter 2005-2006). Journal on-line; available from http://www.journal.dnd.ca/vo6/no4/trans-eng.asp; Internet; accessed 14 May 2011.

Greenhous, Brereton, and Hugh A. Halliday. *Canada's Air Forces: 1914-1999*. Montreal: Art Global, 1999.

Gresham, John D. "Forces Fighting for Enduring Freedom." *U.S. Naval Institute Proceedings* vol. 127, no. 11 (November 2001): 45; http://www.ebscohost.com/; Internet; accessed 26 April 2011.

Hanson, Victor Davis. "War Without Strategy." *National Review* vol. 63, no. 7 (April 18, 2011): 26-30; *The National Review Archive*; http://web.ebscohost.com/; Internet; accessed 14 May 2011.

Harper, Stephen. Prime Minister of Canada. "Statement by the Prime Minister of Canada on the situation in Libya: 18 March 2011." http://pm.gc.ca/eng/media.asp?category=3&featureId=6&pageId=49&id=4048; Internet; accessed 18 March 2011.

Hobson, Sharon. "Canada joins US Army combat force." *Janes Defence Weekly*, 16 January 2002; http://search.janes.com/Search/index.jsp; Internet; accessed 27 April 2011.

Ignatieff, Michael. Liberal Party of Canada. "Statement by the Liberal Party of Canada on the situation of civil unrest in Libya." http://www.liberal.ca/newsroom/news-release/statement-liberal-party-canada-situation-civil-unrest-libya/; Internet; accessed 18 March 2011.

Ipsos. "Ipsos Global @dvisory: Majority (60%) of Global Citizens Support NATO's Military Intervention in Libya." http://www.ipsos-na.com/news-polls/pressrelease.aspx?id=5234; Internet; accessed 15 May 2011.

ITT: Night Vision & Imaging. "F4949 / Aviation Successes." http://nightvision.com/products/military/case_study-F4949.htm; Internet: accessed 15 April 2011.

Jockel, Joseph T. *Canada in NORAD, 1957-2007: a history.* Kingston: McGill-Queen's University Press, 2007.

Klapper, Bradley. *Associated Press*. "U.S.: Libya death toll could be as high as 30,000." http://www.msnbc.msn.com/id/42784880; Internet; accessed 14 May 2011.

Koring, Paul. "Alliance rift weakens threat of air strikes in Kosovo." *Globe and Mail*, 24 June 1998.

Koring, Paul. "Canada prepared to join NATO show." *Globe and Mail*, 12 June 1998.

Koring, Paul. "Mandate for peace force likely to be very limited." *Globe and Mail*, 20 December 2001.

Koring, Paul. "NATO flights to proceed without Canadian aircraft." *Globe and Mail*, 15 June 1998.

Koring, Paul. "NATO issues aerial warning to Serbia." *Globe and Mail*, 16 June 1998.

Koring, Paul. "Warplanes await NATO's call." *Globe and Mail*, 12 June 1998.

Layton, Jack. New Democrat Party. "New Democrat statement on the ongoing protests in Libya and throughout the Middle East and North Africa." http://www.ndp.ca/press/new-democrat-statement-on-ongoing-protests-in-libya-throughout-middle-east-north-africa; Internet; accessed 18 March 2011.

Leblanc, Daniel, and Jill Mahoney. "Ottawa rejects passive mission in Kabul, sends 750 more troops into Kandahar." *Globe and Mail*, 8 January 2002.

Levitz, Stephanie. "Send in the troops: UN must intervene in Libya, says ex-PM Paul Martin." *Canadian Press,* n.d.; *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

Lewis, L.A.C., and Joris Janssen Lok. "French Mirages hand over Afghanistan duties." *Janes Defence Weekly*, 9 October 2002; http://search.janes.com/Search/index.jsp; Internet; accessed 27 April 2011.

Liebstone, Marvin. "US & NATO Air Assets in Afghanistan: Aviation as An Indispensable Resource for Counter-Insurgency and the 'Long War'"; http://www.ebscohost.com/; Internet; accessed 26 April 2011.

Lockheed Martin. "Lockheed Martin Awarded Canadian Forces Contract for Sniper Advanced Targeting Pod." http://www.lockheedmartin.com/news/press_releases/2007/LockheedMartinAwardedCanadianForces.html; Internet; accessed 15 May 2011.

Lok, Joris Janssen, and John Berg. "Pull-out of Norwegian and Netherlands air assets from 'Enduring Freedom' will strain coalition airpower." *Janes Defence Weekly*, 9 April 2003; http://search.janes.com/Search/index.jsp; Internet; accessed 25 April 2011.

MacKenzie, Lewis. "Mr. Chretien, don't shame our soldiers." *Globe and Mail*, 27 November 2001.

Manley, John, *et al*.. *Independent Panel on Canada's Future Role in Afghanistan: Final Report.* Ottawa: PWGSC, 2008; available online at http://dsp-psd.pwgsc.gc.ca/collection_2008/dfait-maeci/FR5-20-1-2008E.pdf; Internet; accessed 18 April 2011.

Mark Kennedy, "Harper confirms jets for Libya mission." Journal on-line; available at: http://www.canada.com/news/Harper+confirms+jets+Libya+mission/4464300/story.html; Internet; accessed 18 March 2011.

McKnight, Bill. "The Gulf War and Canada's Defence Policy." *Speaking Notes for The Honourable Bill McKnight, P.C., M.P., Minister of National Defence, to the Conference of Defence Associations Annual General Meeting*, chateau Laurier Hotel. Ottawa, Ontario January 25, 1991.

Milberry, Larry. *Fighter Squadron: 441 Squadron from Hurricanes to Hornets*. Toronto: CANAV Books, 2003.

Molstad, Maj Darcy E. *CF188 NVG POAC Recommended Changes.* FSET: file 1027-1 (OC FSET), 3 October 2008.

Morin, Jean H, and Richard H. Gimblett. *Operation Friction: The Canadian Forces in the Persian Gulf*. Toronto: Dundurn Press, 1997.

Morse, Stan. *Gulf Air War: Debrief*. London, England: Aerospace Publishing Ltd., 1991.

MSNBC. "Grounded F-15s have U.S. searching for cover: Defense patrols are thinner after breakup of jet forced down 450 others." http://www.msnbc.msn.com/id/22400351/; Internet; accessed 29 April 2011.

Murray, James. "Understocked forces begged U.S. for bombs: 'Not prudent for us to go ahead and buy up all kinds of stuff ... on a what-if basis': Kosovo campaign." *National Post* [National Edition], 21 October 2002; http://www.proquest.com; Internet; accessed 22 April 2011.

Nav Canada. "Nav Canada and the 9/11 Crisis." http://www.navcanada.ca/NavCanada.asp?Language=en&Content=ContentDefinitionFiles\Newsroom\Backgrounders\911crisis.xml; Internet; accessed 29 April 2011.

"News of the eastern front." *Globe and Mail*, 8 February 1991.

North Atlantic Treaty Organization. "NATO & Kosovo: Historical Overview." http://www.nato.int/kosovo/history.htm; Internet; accessed 31 March 2011.

North Atlantic Treaty Organization. "NATO and Libya: Operational Media Update for 12 May 2011." http://www.nato.int/nato_static/assets/pdf/pdf_2011_05/20110513_110513-oup-update.pdf; Internet; accessed 15 May 2011.

North Atlantic Treaty Organization. "Operation UNIFIED PROTECTOR: Command and Control." http://www.nato.int/nato_static/assets/pdf/pdf_2011_03/20110325_110325-unified-protector-command-control.pdf; Internet; accessed 6 May 2011.

North Atlantic Treaty Organization. "Operation UNIFIED PROTECTOR: NATO No-Fly Zone over Libya: Fact Sheet." http://www.nato.int/nato_static/assets/pdf/pdf_2011_03/unified-protector-no-fly-zone.pdf; Internet; accessed 6 May 2011.

North Atlantic Treaty Organization. "Operation UNIFIED PROTECTOR: Protection of civilians and civilian populated areas: Fact Sheet." http://www.nato.int/nato_static/assets/pdf/pdf_2011_04/20110407_unified-protector-protection-civilians.pdf; Internet; accessed 6 May 2011.

North Atlantic Treaty Organization. Regional Headquarters Allied Forces Southern Europe: Factsheets. "Operation Deliberate Force." http://www.afsouth.nato.int/factsheets/DeliberateForceFactSheet.htm; Internet; accessed 7 April 2011.

North Atlantic Treaty Organization. Regional Headquarters Allied Forces Southern Europe: Factsheets. "Operation Deny Flight." http://www.afsouth.nato.int/archives/operations/DenyFlight/DenyFlightFactSheet.htm; Internet; accessed 7 April 2011.

North Atlantic Treaty Organization. Unified Protector. "Commander." http://www.jfcnaples.nato.int/Unified_Protector/commander.aspx; Internet; accessed 17 May 2011.

Nossal, Kim R. and Stéphane Roussel. "Canada and the Kosovo War: The Happy Follower." In *Allied Force or Forced Allies?* Edited by Pierre Martin and Mark R. Brawley, 181-199. New York: Palgrave, 2000.

Oziewicz, Estanislao and Murray Campbell. "Demonstrators start fire at U.S. consulate." *Globe and Mail*, 26 March 1999.

Pappalardo, Joe. "Afghanistan Taught U.S. "Hard Lessons" In Close Air Support." *National Defense* 90, no. 621 (August 2005): 62-63. *International Security & Counter Terrorism Reference Center*; http://web.ebscohost.com/; Internet; accessed 28 April 2011.

Poulin, Bruce. "Balloons Away!" *Airforce* Vol. 28 no. 4 (Winter 2005): 60.

Pugliese, David. "Harper shifts focus on F-35 jets: War in Libya used to defend need for better fighters." http://www.ottawacitizen.com/news/decision-canada/Harper+shifts+focus+jets/4552354/story.html; Internet; accessed 15 May 2011.

Roberts, Leslie. *There Shall Be Wings: A History of the Royal Canadian Air Force*. Toronto: Clarke, Irwin & Company Limited, 1959.

Sallot, Jeff. "'Operation Apollo' mobilizes ships, aircraft and commandos." *Globe and Mail*, 9 October 2001.

Smucker, Philip. "NATO sure it can make peace." *Globe and Mail*, 28 November 1995.

Sokolsky, Joel. "A Seat at the Table: Canada and its Alliances." *Armed Forces and Society* 16, no. 1 (Fall 1989): 11-35.

Solomon, John. "1,700 planes intercepted, but tests show terrorists could still strike U.S." *The Canadian Press,* 15 January 2004; http://web.ebscohost.com/ehost/detail?sid=b95fba2b-1eaa-4220-ab8d-3df027b2fe9d%40sessionmgr12&vid=5&hid=21&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=n5h&AN=MYO185417080504; Internet; accessed 25 April 2011.

Stackhouse, John. "U.S. strikes back, Canada gears up." *Globe and Mail*, 8 October 2001.

Sympatico.ca News. "Harper heads to Paris meeting on Libya." http://news.sympatico.cbc.ca/world/canada_will_help_enforce_libya_no-fly_zone_pm/603b26ad; Internet; accessed 18 March 2011.

U.N. Security Council, 2932nd Meeting. "Resolution 660 (1990) [on Iraq-Kuwait]" (S/RES/660). 2 August 1990 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; accessed 11 March 2011.

U.N. Security Council, 3055th Meeting. "Resolution 743 (1992) [on Socialist Federal Republic of Yugoslavia]." 21 February 1992. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 7 April 2011.

U.N. Security Council, 3191st Meeting. "Resolution 816 (1993) [on Bosnia and Herzegovina]" (S/RES/816). 31 March 1993. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 7 April 2011.

U.N. Security Council, 3607th Meeting. "Resolution 1031 (1995) [on implementation of the Peace Agreement for Bosnia and Herzegovina and transfer of authority from the UN Protection Force to the multinational Implementation Force (IFOR)]" (S/RES/1031). 15 December 1995. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 7 April 2011.

U.N. Security Council, 3930th Meeting. "Resolution 1199 (1998) [on the situation in Kosovo (FRY)]" (S/RES/1199). 23 September 1998. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 30 March 2011.

U.N. Security Council, 4443rd Meeting. "Resolution 1386 (2001) [on The Situation in Afghanistan]" (S/RES/1386). 20 December 2001 [U.N. documents on-line]; available from http://www.un.org/documents/scres.htm; Internet; accessed 7 April 2011.

U.N. Security Council. 2963rd Meeting. "Resolution 678 (1990) [on Iraq-Kuwait]" (S/RES/678), 29 November 1990. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 11 March 2011.

U.N. Security Council. 6498th Meeting. "Resolution 1973 (2011) [on The Situation in Libya]" (S/RES/1973), 17 March 2011. U.N. documents on-line; available from http://www.un.org/documents/scres.htm; Internet; accessed 14 May 2011.

United Nations. "Former Yugoslavia – UNPROFOR." http://www.un.org/en/peacekeeping/missions/past/unprof_b.htm; Internet; accessed 7 April 2011.

United Nations. "Past peacekeeping operations." http://www.un.org/en/peacekeeping/operations/past.shtml; Internet; accessed 7 April 2011.

United States. Department of Defense. *Conduct of the Persian Gulf War: Final Report to Congress*. Washington, U.S. Dept. of Defense, 1991.

United States. Department of Defense. *Report to Congress: Kosovo/Operation Allied Force After-Action Report*. n.p., 31 January 2000. Report on-line; available from http://www.au.af.mil/au/awc/awcgate/kosovoaa/kaar02072000.pdf; Internet; accessed 9 April 2011.

United States. Air Force Central Command. "376th Air Expeditionary Wing: Cycle 6 AEF 9/10 Summary September-December 2007 Manas Airbase, Kyrgyzstan." http://www.manas.afcent.af.mil/shared/media/document/AFD-080405-002.pdf; Internet; accessed 26 April 2011.

United States. Air Force Central Command. "Combined Forces Air Component Commander: 2007-2010 Airpower Statistics." http://www.afcent.af.mil/shared/media/document/AFD-101214-006.pdf; Internet; accessed 24 May 2011.

United States. Air Force Central Command. "Combined Forces Air Component Commander: 2008-2011 Airpower Statistics." http://www.afcent.af.mil/shared/media/document/AFD-110505-001.pdf; Internet; accessed 24 May 2011.

United States. Congressional Research Service. *CRS Report for Congress: Operation Enduring Freedom: Foreign Pledges of Military & Intelligence Support.* Washington D.C.: Library of Congress, 17 October 2001. Report on-line; available from http://fpc.state.gov/documents/organization/6207.pdf; Internet; accessed 28 April 2011.

United States. General Accounting Office. Operation Desert Storm: Evaluation of the Air Campaign. Washington, 1997. 235 p. (NSIAD-97-134) Also available online at: http://www.gao.gov/archive/1997/ns97134.pdf;

United States. National Commission on Terrorist Attacks Upon the United States. *9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*. Washington, DC: U.S. Government Printing Office, n.d.. Report on-line; available from http://www.gpoaccess.gov/911/pdf/fullreport.pdf; Internet; accessed 29 April 2011.

Vego, Milan. “What Can We Learn from Enduring Freedom?” *U.S. Naval Institute Proceedings* vol. 128 no. 7 (2002): 28-36; http://www.ebscohost.com/; Internet; accessed 27 April 2011.

von Clausewitz, Carl. *On War*. Edited and translated by Michael Howard and Peter Paret. Oxford: Oxford University Press, 2007.

Vulpe, Nicola. “Risking a peacekeeping reputation.” *Globe and Mail*, 16 August 1990.

Walker, Samuel J. “Interoperability at the Speed of Sound: Canada-United States Aerospace Cooperation…Modernizing the CF-18 Hornet.” Maxwell AFB: Air Force Fellows Program Paper, 2001.

Wattie, Chris. “Iraq ‘politics’ kept jets from Afghanistan.” *National Post*, 10 September 2004; http://proquest.umi.com/pqdweb?did=694327671&Fmt=3&clientId=1711&RQT=309&VName=PQD; Internet; accessed 21 April 2011.

Wattie, Chris. “U.S. to provide Canadian air cover: Afghanistan ‘too far’ for our fighter jets.” *National Post* [All But Toronto Edition], 11 January 2006.

Winnipeg Free Press. "The price of being prepared." 14 March 2011, A12; *Newspaper Source Plus*; http://web.ebscohost.com/; Internet; accessed 16 May 2011.

York, Geoffry. “Furious Russia halts co-operation with NATO.” *Globe and Mail*, 25 March 1999.