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Abstract

On March 24, 1999, four Canadian CF-18's launched into the night sky over Aviano, Italy, in the first wave of North Atlantic Treaty Organization bombing attacks against Serbian military targets in Serbian and Kosovo. Over the next 78 days and nights, Canadian fighter pilots from Bagotville, Quebec, and Cold Lake, Alberta, would dodge Yugoslavian MiG-29 fighters, Surface to Air Missiles and Anti-Aircraft Artillery; would log some 2,600 flying hours and would rain nearly 500,000 pounds of bombs against military targets. Without night vision goggles, the Canadian CF-18 pilots were flying nearly blind. Many flew into combat at great risk without ever dropping their bombs as the result of low resolution Forward Looking Infra Red pods. Without anti-jam radios, the 18 CF-18s were the weakest link in the NATO chain of strike packages. And, initially, their 500-pound laser guided weapons could barely take the paint off the rails of the bridges they were bombing. Still, the pilots' achievements over the skies of Serbia and Kosovo were remarkable. Canadians flew nearly 10 per cent of all NATO Battlefield Air Interdiction missions and not one plane or pilot was lost. The story of the skills the pilots and ground crew brought to bear to overcome serious shortcomings in equipment, personnel and battle experience has never been fully told. Research interviews

conducted with CF-18 pilots from Cold Lake and Bagotville and documents obtained under the Access to Information Act enable the telling of that story for the first time. The research indicates that many lessons learned have not been acted upon since and that an erosion of Canada's air combat capability may mean the air force's stunning success during the Kosovo campaign cannot be repeated today.

Balkan Rats and Balkan Bats

The longest 15 minutes of Canadian Forces fighter pilot Maj. Alain Pelletier's life occurred just before midnight on March 24, 1999, as he sat in the cockpit of his CF-18 Hornet, engines idling on a runway in Aviano, Italy. Pelletier was waiting for clearance to lead a package of four Canadian jets on a bombing run into Serbia marking the first time Canadians had fought in a European war in more than half a century. Like dozens of other Canadian pilots who follow him over the next 78 days and nights, inner doubts, thoughts of his family and a dread of the unknown washed over him as a he sat alone in his cockpit with nothing but dead air coming to him over his radio. Pelletier had spent nearly 15 years in the Canadian forces waiting for those solitary moments, but nothing could have prepared him for them.

"You're: 'Okay; I'm ready. Here I am sitting in that aircraft and we'll be launching in a few minutes, but holy shit, you know, we're really going at it.'" [1] Pelletier's thoughts raced back to when he signed up with the Forces as an unmarried 17-year-old with not a care in the world. "Now, here you are married, you've got kids and a family to care for and you're asked to go into a hostile environment." [2] In his mind, Pelletier ran over all of the briefings about possible threats from Serbian forces that could be waiting for the jets as they penetrated Serbian air space, but that still didn't help. Would the Serbs have anti-aircraft artillery weapons the briefers hadn't anticipated that would reach this flying altitude? Would a surface-to-air missile site be place on a mountain top to give it that extra reach that could cripple his airplane? After what seemed like an eternity, the four Canadian jets were cleared for takeoff.

Captain Mike Barker, a maintenance officer with 441 squadron working out of an aircraft shelter at the Aviano Air Base that night of March 24, had gone for a walk that night with a buddy to an American mess near the end of the runway. They watched the Canadian CF-18s lift off, their glowing blue-white afterburner flames emitting a crackling thunder as they launched into the inky night sky. Reading from a diary he kept while in Aviano, Barker described the fearsome array of NATO coalition war planes taking off: "From the Victor Loop mess, which was a mess out on the end of the runway, we saw jets lining up – bombed up – and then they started rolling. It kept up for something like one to one and a half hours, jet after jet screaming down the runway. There were American jets; there were Spanish jets; and

us; and there were tankers; there was all kinds of stuff there – the British at one point had an AWACs (NATO's E-3 Airborne Warning and Control System) there. I'm not sure if that was there at this point or not, so a couple of F16s, the EF18s, F15s, C130s, tankers, everything including us." [3] Then, all went quiet in the dark after the last warplane screamed into the night sky. The only thing left to do was to wait, listening for news of their return.

It wasn't until the four Canadian Hornets eased into formation in the moonless sky that the self-doubts swirling through Maj. Pelletier's mind were crowded out by years of training and the familiar routine of being airborne. With 1,600.9 flying hours already logged on the CF-18, Pelletier was at home in the cocoon of his fighter's cockpit, thousands of feet above the Adriatic Sea. [4] He was more than familiar with the lay of the land in Europe. He was among a mixed cadre of Bagotville, Quebec, pilots with 433 and 435 Tactical Fighter Squadrons flying six CF-18s out of Italy in the fall of 1998. They represented Canada's contribution to a United Nations-mandated force of North Atlantic Treaty Organization militaries monitoring UN defined exclusion zones – or no-fly zones – over Bosnia in the former Yugoslavia. Code named Operation Echo, it was what the pilots describe as a low-threat environment with individuals on the ground that might fire at an airplane with small arms or a rifle, but which posed no definite organized threat. The pilots generally flew about three sorties per week in two-ship, four-ship or coalition package formations. [5] As a result, Pelletier and his Bagotville comrades were skilled at flying in formations with the French, Dutch, British, Spanish and American allies and on procedures for refueling on the allies various air-to-air refueling tankers.

After less than an hour of flight, the need to refuel in the air put the Canadians into a habitual refueling track toward an American refueling tanker over the Adriatic Sea in an area roughly east of Albania. Once refueled, Pelletier positioned himself and his fellow Canadians in a holding pattern while they checked their radio frequencies. Given the signal from air control, the four Canadians established an attack formation with 12 other NATO aircraft on their way to Serbia. They were to be the second wave of attacks that took place in that night. The first was an attack by British bombers, American stealth aircraft, cruise missiles launched from the British submarine HMS Splendid and American cruise missiles launched from the USS Gonzales and USS Philippine Sea in the Adriatic. [6] The second NATO package Pelletier was in was divided into western and eastern elements. Pelletier positioned himself in the lead of the four Canadian CF-18s flying single file and leading the eastern element. Within a heartbeat they were in hostile territory preparing to launch 500-pound laser guided bombs onto a predetermined military target, a Serbian military base. In a CF-18 engaged in a running procedure on a target some 20 miles – or just three minutes –away, combat activities take place in a matter of seconds. As they closed in on their target, Pelletier could see anti-aircraft artillery fire, or triple A, arching in the night sky towards his formation. "You're seeing Triple A coming up and then you're wondering still, hopefully, is everything we were told about this, the maximum height of the triple A is that accurate? So you take a quick look, where is it directed? It was pretty much a barrage fire nothing really directed at something specific. They knew that we were coming and they were trying to put up stuff in the air. So, we saw it, kicked away from

the position." [7]

Within seconds, the next thing Pelletier was aware of was the fiery exhaust of a surface-to-air missile streaking through the night sky in their direction. "We had no indication, initially of the missile coming up, except for the visual pick up which is easy at night because you see bloom of the missile exhaust coming toward you. And, since we were the leading edge of the eastern element, the eastern arm, we could see that it was actually targeted towards us, so we did a quick inventory of the spike, we call it, of what the radar warning receiver tells us at the time. Nobody was calling anything threatening, so I made the decision to actually kick the formation away – not away as to turn around – but to put a vector that would actually increase the distance between us and the site launch. So, looking at the missile, we finally decided that it never made it to the formation. It was one of those lucky shots that didn't turn out lucky for them, but it was like, the first thing you think about was: 'What is the best course of action?' After that the training starts kicking in, you do a quick inventory, attempt to put the formation into a defensive position and assess again. It turned out to work in our favor." [8]

Some sixty seconds after the triple A fire and after the surface-to-air-missile threat, the CF-18 pilots received a call from the E-3 AWACS that two Yugoslavian MiG-29 Fulcrum fighters were closing in on them 60 miles off their nose. "Initially, you see it on radar. Obviously, nobody's got lights on over there because it's a war and so you don't see it visually until somebody fires a missile or until an aircraft gets shot down." [9] As formation commander, Pelletier had to make split-second decisions. The package he was in was over Kosovo moving south to north toward Serbia. [10] He knew that Royal Netherlands Air Force jets were flying combat air patrol missions in support of the eastern arm, which had also picked up the AWACs surveillance signal. The CF-18s were also quickly closing in on their original target 30 to 35 miles away. "We were close to our decision range. Okay, do I press to the target, do I engage the airborne target, or do we turn around? Do we start selecting on radar and engaging with weapons or do we turn around and let the Dutch handle it completely? Just before I had to make the decision to abort the attack and make a formal commitment on that group of aircraft, the Dutch were successful in shooting one down and getting the other one to turn around. [11] It was just one thing after the other. You react to the triple A, you react to the SAM and then you start thinking about the target things. At around 30 to 35 miles from the target, suddenly this thing pops up and two aircraft are in the air aiming toward both groups and you're trying to make your decision, which worked out in our favor because were able to carry on with the attack which was our primary mission." [12]

The mission was far from over when Pelletier and his fellow pilots touched down on the runway in Aviano. Every mission was followed by debriefing sessions first within his own group of four pilots and then with the squadron's intelligence officers. They had to report on the success of the attack; they had to review cockpit film of the attack on their target; they had to report on the threats they encountered and in which locations and they had to report whether there had been any attempts to jam their communications. It was only afterwards

that he and his flying mates had time to think about what they had just done. "You really think about this. Hey, first of all we went through it, survived the threat that was out there. You think about it. You think about the positive outcome, but mainly you think about your decisions with regard to those actions or inputs you received in the air and whether they were the right ones." [13]

In Canada, it was a somber Art Eggleton who rose in the House of Commons at National Defence Minister on March 24, 1999, to inform Parliamentarians that the military operation Canada had embarked on with its NATO allies was not without risk. The Yugoslav military had a sophisticated defence system, but he assured Parliamentarians the six CF-18s Canada had in place in Aviano were equipped with air-to-air missile and precision guided munitions. "Our task force is well-equipped and well prepared. Our people have been trained for the role that they are taking on right now and in the days ahead." [14] The credibility of those assurances would be challenged on time and again in the House of Commons, particularly in the context of Liberal government cuts to the Canadian Forces over the years. In the words of Opposition leader Preston Manning during debate on the human tragedy in Kosovo: "The Minister of National Defence has repeatedly assured us that the Canadian armed force are adequately equipped to do the dangerous jobs they are called upon to do. But the government's foreign policy repeatedly expands our commitment to peacekeeping and peace making while its management of defence budgets has shrunk our defence resources from $12 billion a year to $9.3 billion. [15]

The CF-18s from CFB Bagotville, Quebec, first arrived in Aviano, Italy in June 1998 as part of a commitment by the Canadian government to provide an air task force in support of the NATO's Stabilization Force to resolve an identified humanitarian crisis in Kosovo. [16] Canada's initial deployment to Operation Echo in Aviano consisted of six CF-18 Hornets and 130 personnel mostly from Bagotville. The command element was Task Force Aviano under Canadian Colonel Jim Donihee, the former commander of CFB Cold Lake in Alberta. By the time hostilities broke out in March 1999, Operation Echo had been rolled into Operation Allied Force, NATO's military response to the failure of Yugoslavian President Slobodan Milosevic's military forces to comply with United Nations Security Council Resolution 1199. Passed on September 23, 1998, the resolution called for a cessation of hostilities in Kosovo and set out a timetable for a political solution to the crisis. [17] The military objective of Operation Allied Force was to degrade and the Yugoslavian military and security structure that was being used to depopulate and destroy the Albanian majority in Kosovo. [18]

The Canadian Forces after action report on the Canadians' performance in the Kosovo air campaign said the Air Force not only acquitted itself superbly, it showed that "vital strategic, political and foreign policy objectives could be achieved through the effective and measured use of air power within a coalition." [19] Many of the after action report's major findings have been severed in the interest of international and defence affairs. But there is one finding that is worthy of note for its congratulatory tone: that the "CF pilots and combat support personnel

responded admirably to this complex operation..." [20] More suspect is a second observation that the doctrine, training and readiness posture that the Canadian Forces maintain was validated by the combat air operation. [21] It is the major contentions of that second observation which are explored in this paper.

Preparation for the eventual hostilities regarding Kosovo began in earnest in June 1998 when Lieutenant-Colonel Jim Donihee gave up command of Canadian Forces Base Cold Lake's 410 Tactical Fighter (Operational Training) Squadron, a CF-18 fighter training squadron. Donihee was promoted to Colonel and assumed command of the newly-formed Task Force Aviano in Aviano, Italy, August 5, 1998. He held that position for four months. During that time international pressure, in the form of military options, was mounting on Serbian president Slobodan Milosevic to end the ethnic strife in Kosovo. Donihee recalls assuming command of the task force as being a particularly frustrating experience. "I mean the first part of my duties really were to get the unit stood up, to get them bedded down, to get the local operating procedures established, to get the rules and regulations and administrative procedures all in place. One of my disappointments I guess which was one of the greatest indicators of where Ottawa was at with a lot of these things was that it took me longer to get permission for the alcohol policy than it did to get permission for the rules of engagement surrounding the employment of deadly force. I think that was really just all the aftermath of the Somalia affair and so much sensitivity and so much concern about having an occurrence of that nature. It actually consumed more of my time and effort than did, you know, getting the unit established on an operational footing." [22]

It was then-Colonel Dwight Davies, who took over command of Task Force Aviano in January, 1999, who was about to feel the real pressure of experiencing the transition to peacetime preparations for a potential war to an actual war footing in March. It has been said that the commencement of hostilities could not have come at a worse time for the Canadian Forces in Aviano. They were just in the process of a wholesale change over of personnel from 3 Wing, Bagotville, to 4 Wing personnel from Cold Lake, Alberta. [23] That was just part of it. There were also plans afoot to move all the air operations out of Aviano for a period of time for planned runway maintenance. The aforementioned rotation of 120 personnel from 4 Wing to replace the 120 personnel from 3 Wing personnel was to take place the week of the bombing campaign. As with just about everything in the military, a mountain of paperwork was also building commensurately. As a rotation such as 3 Wing's ends, the Forces normally conduct a board of inquiry in which all aspects of its operations are measured and investigated, including documentation of the fielded force' status, book keeping, supplies and money accounts. The annual reporting season for personnel evaluations was also just coming to a close. Davies described the pace: "You can understand the frantic place of activity you are involved in the last weeks before engaging in combat. No matter how much you prepare, there are always things that you want to be more prepared in. All these things were happening at once, plus it really looked like we might actually start a bombing campaign. I mean up until the day the secretary general to NATO announced that we were going to do it; most of us believed that it

was another brinksmanship and we wouldn't actually go to war. So this frantic pace of activity was ongoing. When the announcement was made on the 23rd that, in fact, we were going to start bombing, we were ready, but mentally, we didn't believe we were actually going to get there. So, at that point, I issued an order to the entire task force to cease all of the things not related to success in combat. So we stopped the rotation that. We ceased all of this effort that was unrelated to successfully flying combat missions and we started into the combat air campaign." [24]

Canadian CF-18 pilots and ground crew all over the world were also being ordered to make their way to Aviano, Italy, as soon as possible and anyway possible. Lieutenant Colonel William Allen Flynn – call sign "Billie" – was commander of Cold Lake's 441 Tactical Fighter Squadron who led an advance party to Aviano on March 20 to replace 425 Tactical Fighter Squadron from Bagotville. Although it was four pilots from Bagotville on the first mission March 24, pilots from Cold Lake were being integrated into the operational team within three days. Flynn recalls there were 12 Bagotville pilots and eight Cold Lake pilots in the beginning. "Once we realized we were in for a longer haul, the Bagotville pilots in place were rotated out by Cold Lake 441." [25] Flynn assumed command of the fighter operations from the commanding officer of 425 fighter squadron, Lt.-Col. Sylvain Faucher 16 days into the war.

Very early on in the bombing campaign the years and years of cutbacks in Canadian Forces budgets began to manifest themselves in terms of well-known critical strategic capability deficiencies. For example, the Auditor General of Canada reported in 1998 that the navy was seriously deficient in terms of its own projected need for four support ships on the east and west coast to provide strategic sealift capability. At that time, the navy was operating with only three support ships. [26] The Auditor General also noted that Canadian Forces Hercules C130 strategic and tactical transport aircraft were able to provide airlift for passengers and cargo and some air-to-air refueling. As for the aging CF-18 fighter aircraft procured by the Canadian Forces in 1982, the Auditor General noted without being specific that it lagged in advanced technology available in other aircraft and represented a potential threat. On a more positive note, the report observed that the CF-18 squadrons had acquired precision guided munitions and associated delivery systems. [27] In a certain sense, the Canadian air operations after action report on Kosovo two years later can be said to show that, for all its criticisms of the Forces, the Auditor General's report was overly optimistic in its assessments of those strategic capabilities. The Canadian Forces after action report on Kosovo air campaign also belies Defence Minister Eggleton's assurances that the Canadians were well equipped for to do the job the Canadian government had given it in Kosovo. For example, it found a lack of strategic airlift and sealift capability both before and during the Kosovo air campaign. Those deficiencies rendered the Canadian Forces virtually totally dependent on commercial sources. That dependency resulting in not only significant expense but also in a formidable limitation on the Forces to commence rapid operations. For example, the commander of task force Aviano was forced to rely on contracted AN-124 Antonov civilian aircraft to move equipment into Aviano. The problem with contracting out the job was the Italian government was reluctant to

allow commercial aircraft onto a military airfield. It took a Canadian government diplomatic intervention to permit those necessary supply flights into Aviano. Had that intervention failed, the Canadian Forces operational readiness could have been severely delayed. [28]

With regard to the Auditor General's observation that the Hercules C130 could provide "some" air-to-air refueling capabilities, the reality both before and during the Kosovo air campaign was that the lack of a national strategic air-to-air refueling capability resulted in critical deficiencies. Canada had a core capability of strategic air-to-air refueling only until 1997, when its refueling-equipped Boeing 707s were retired. [29] That lack of air-to-air refueling restricted the both deployment schedules of the CF-18s and the force package increase from six to 18 aircraft. In addition, without Canadian strategic air-to-air refueling capabilities, the Task Force Aviano commander was compelled to approach NATO allies to develop "tenuous operational planning and scheduling to achieve the mission." [30] Details beyond that maddeningly limited observation were exempted from Access to Information release citing international affairs and defence considerations.

The one optimistic note sounded by the Auditor General in 1998, that the Canadian Forces had obtained precision-guided munitions capabilities, is an issue dealt with the Canadian Forces after action report on the Kosovo air campaign in only the most opaque fashion. It states that the Canadian airmen and their support crews had to "adapt to difficult and unfamiliar operating environments with equipment that was new, unproven and incompletely documented." [31] Beyond the pilots, the pace and change of the operation meant those challenges extended to maintenance personnel had to cope with "new software versions that were introduced without documentation that made troubleshooting and fault code analysis difficult." [32] To arrive at an understanding of what those cryptic observations mean and what they have to do with precision-guided munitions, it bears turning to those who were most familiar with the steps taken by the Canadian Forces to develop precision guided munitions capabilities. Retired Lieutenant-Colonel William Flynn, who was commander of 441 Tactical Fighter Squadron in Aviano, explains that air forces world wide began to view precision-guided munitions as the way of the future after the 1991 Persian Gulf War. During that war, United States military commanders appeared on television sets around the globe in post operation briefings showing cockpit footage of so called "smart-bombs: dropping onto their targets with pin-point accuracy. Canada acquired the beginnings of its modern precision-guided munitions capability when it acquired NITE Hawk B laser targeting and Forward Looking Infrared (FLIR) pods in 1997. [33] The pods enable target identification at night using four-power magnification heat sensing equipment, while the smart bombs home their way on to targets by seeking out laser energy directed at it by pilots. [34] When Canada acquired the technology it only bought 13 of the FLIR pods. Immediately upon their acquisition, two were taken out of useable service for parts, while the remainder was allocated to Canada's two fighter wings for training. [35] Looking back on what the Canadian Forces were trying to achieve in obtaining smart bomb capabilities, 4 Wing Commander Donihee did not have a lot positive to say. "You basically had two wings attempting to shuttle six or eight pods back and

forth on a recurring basis in order to try and maintain readiness levels. It was almost whimsical that it could be achieved." [36] When the Canadian CF-18s were committed to the Kosovo air campaign, it is believed six or eight of the FLIR pods were committed to the jets in Aviano, while three remained in Canada to train pilots who would eventually be called upon to replace the CF-18 pilots in theatre. In the end, Canada was only able to escalate its sortie commitment by borrowing four earlier generation FLIR pods from the Australian air force which were not as capable as the pods the Canadians were using. [37] At no point after Canada had escalated the number of CF-18s to 18, did Task Force Aviano have enough FLIR pods to equip the last six jets that arrived, rendering them useful only for air defence or for missions that did not require the use of smart bombs. [38] The dearth of FLIR pods created two different sets of problems. In Canada, both CFB Cold Lake and CFB Bagotville were charged with the responsibility of training CF-18 pilots for rotation into Aviano as the campaign wore on. The problem was they only had three pods with which to conduct that training. There was also a shortage of pilots who could conduct the training, because the very best pilots were already in Aviano. Retired Colonel Donihee explained the nature of the problem: "Every pod became absolutely critical to your ability to train the pilots to go over and meet the rotations that were necessary because we used to rotate the pilots in and out of theater about every two months. A lot of these folks had virtually no experience on the pods whatsoever and so it was quite critical that we give them some exposure, some refresher using the pods then before they went overseas. We were very short of spares, very short of people. We were funneling the very best people over there." [39] The other problem was CFB Bagotville. "Bagotville was nipping at our heels because they needed equipment to start to regenerate their pilots in case this went on for a longer period of time so that they could be ready to go in behind us and so you've got three mouths to feed basically with barely enough equipment to nourish one." [40]

The second problem the dearth of FLIR pods created was for the aircrews in Aviano. When the Canadian government committed its third set of CF-18s to Operation Allied Force, the ground crew didn't know what to do with them. Then Captain Mike Barker was 441 Tactical Fighter Squadron's maintenance officer who managed a midnight to noon shift of 80 aircraft technicians. He has first-hand knowledge of the problems the additional six jets created. "When they sent the last six, everybody in Aviano is going: 'Huh? What are we doing?' We never ended up truly using those six jets. We weren't sure where we were going to park them. We were looking at all kinds of things like rolling out runway mat and stuff and it seemed like the commander was then trying to find a role for them because we had them, so let's send them into the fight. But they weren't fully equipped. They didn't have the targeting pods so they couldn't do smart bombing. All they could do was combat air patrol missions, which, if we wanted to truly integrate them into the operation, we couldn't. The way they were configured for air-to-air missions was very different than the way they're configured for air-to-ground. Air-to-ground, generally all we had to do was put the bombs on, take the bombs off, put the bombs on. But with the air-to-air role, there's all different kinds of pylons and monitors and stuff that all needed to be tested with an associated workload associated, so we had two sets of jets. We had one set for the bombers and one set for the air-to-air. The air-to-

air were parked on the other side of the airfield with all the related problems of commuting and back and forth." [41] But, Barker was able to identify one bright spot in having six extra warplanes on the tarmac at Aviano. The $35-million jets could be cannibalized for parts. "They turned into a ready parts bin because we had far more airplanes than we needed for the operation. I think we almost always did have one airplane on the ground as a parts bin. We'd pull whatever we needed off that." [42] When the needed replacement parts needed eventually arrived in Aviano on a Hercules transport plane, Barker said the aircrews would then rebuild the cannibalized aircraft only to cannibalize it again when something else went wrong. "So having all those extra jets did help us, which was good, because of course our supply line back to Canada was pretty long." [43]

The other half of the FLIR pods' untold story involves the ordnance or bombs Canadians were using on their bombing missions. Much ado about them was made by the Canadian Deputy Chief of Defence Staff Lieutenant General Ray Henault at an Ottawa press briefing attended by members of the Parliamentary Press Gallery. He said acquiring the precision-guided munitions got Canada "back into the club again." [44] His remarks were published the next day in *The Globe and Mail*, the *Toronto Sun*, the *Vancouver Sun* and the *Windsor Star.* [45]

As was noted above, the laser-guided technology Canada acquired coupled a Forward Looking Infrared (FLIR) pod with bombs equipped with sensors to follow laser light beamed at a target. Canada obtained two different bomb technologies to be used with the FLIR pods. The first was a Paveway II technology to be used with a 500-pound class laser-guided bomb, known as the GBU-12. Canada also had in its inventory Mark II 500-pound free fall (or so-called "dumb" bombs) and a later generation Paveway III laser-guidance technology for the GBU-24, a 2000-pound class bomb. [46] The difference between Paveway II and Paveway III determined the technology of choice for the Canadian CF-18s during the Kosovo air campaign. The Paveway II bomb technology Canada obtained for its 500-pound GBU-12 bomb simply allowed the bomb to follow a pilot-aimed laser line off the airplane. That seems straightforward, but problems occur if the laser beam encounters a cloud because there is no laser energy for the bomb to follow. When that happens, the bomb falls off the laser beam. The result is that the bomb falls short of its target. That is not necessarily a bad outcome, explained retired Colonel Flynn. "At least you know that if you drop in on a certain line, and you've figured out where your tack is and if there is something in the way of this bomb when you drop it, if it loses laser energy, it's going to drop short by some distance and blow up a couple of trees. You're not going to have the same risk of collateral damage as you might have with a bomb that you don't know where it goes once it comes off your airplane." [47]

Not knowing where the bomb might land was the problem associated with the Paveway III technology Canada obtained for its GBU-24 2000-pound bomb, which is much more sophisticated than the Paveway II technology. The Paveway III has a four program mode capability that allows pilots to determine how it will fly. When released, the GBU-24 falls of the

airplane and establishes itself on a pilot-determined mid-altitude cruise profile, for example, at10,000 feet. The bomb cruises along to a point where it opens its "eyes" and looks for the laser energy to dive into the target. Flynn said the technology was thought ideal during Desert Storm 1991 Gulf War where there were no clouds over the desert. The problem is that if the laser beam aimed at the target runs into clouds, the GBU-24 doesn't simply fall off the beam like a GB-12, it keeps on flying until it runs out of energy. In that situation, the pilot who launched it has no idea where it is going to go. [48]

The weather for much of the Kosovo air campaign wasn't comparable to the Persian Gulf where pilots could launch the bombs from seven miles away and they would hit every time because there was nothing in the way. "This was April and May in the Balkans. It was pouring rain – horrible weather – and we had to be very careful about throwing these bombs away arbitrarily. We also had to deal with the collateral damage issue which is: 'You better make sure you know where this bomb is going to go and if it doesn't hit the target, you better have some idea of where it might fall.' We didn't want to accept the risk of collateral damage by launching these bombs and having no idea where they were going to go." [49] The result was that the tactical conditions dictated the only suitable bombs the Canadians had in their inventory were the lighter 500-pound GBU-12 bombs. Flynn said there was nothing wrong with the 500-pound bombs, given appropriate targets. Flynn said he flew in the most successful bombing mission in the early part of the war in which four Canadian pilots dropped six 500-bombs each on 50 or 60 Serb army vehicles assembled in an exposed area on a hilltop one Saturday morning. "We dropped 24 bombs exactly on target. We destroyed the entire assembly area and vehicles and, obviously, the Serb army soldiers with our attack." [50]

In that case, Flynn said 500-pound bombs were appropriate for the target. "A big bomb isn't always exactly what you want when you drop two bombs at a time. Dropping 4,000 pounds of ordinance every time can be serious overkill. That could be morally irresponsible to be dropping that much weapon. When you talk about the lethality of a bomb, it is not linear in the level of destruction from a 500 pound bomb to a 2,000 pound bomb. It is almost exponential. A 500 pound bomb is basically a poof, a little flash. A 2,000 pound bomb is incredible destruction. You don't always need to be dropping 2,000 pound bombs every where you go." [51]

However, there were three sets of problems emerging as the result of Canadians only having 500-pound smart bombs in their usable inventory. The first problem was they were running out of them. Canadian military personnel are reluctant to give specifics about the seriousness of their supply problems, but at least twice they were down to a single day's supply. [52] The only ally they could turn to in order to obtain more bombs was the United States, which had ammunition storage facilities across the road. The Canadian Armed Forces weapons technician responsible for acquiring the GBU-12 bombs at a cost of $25,000 each from the Americans had no problem at all. Giving added meaning to the expression "Don't leave home without it" he just produced his Canadian government-issued credit card. "I can buy military equipment with

it. Where ever I need it, I can buy it. As soon as Aviano was on, it was weapons, equipment, tools, whatever. If you asked for it you got it, like the money purse was open, the credit cards were everywhere." [53] The technician said it was often easier buying bombs from the Americans than it was getting them back to the Canadian storage area at the southwest end of the Aviano air base. It could be dangerous, a Canadian weapons technician recalled. The American ammunition control building where all the ordnance was tracked and monitored was miles away from the airfield to the east across the main north-south public highway. When the Canadians needed materiel from the Americans, the east gates of the airfield would be opened and Italian civilian police – which the Canadians called carbonari – would stop vehicular traffic so military vehicles could cross the road. "It was actually quite comical. We had a car come right through us, right through the convoy. Like, there was a truck and then two trailers and a truck and two trailers and the car came right between the two trucks and barely missed one of the explosives trailers by about two inches. The carbonari was quite shocked. All he could do, he sort of looked at us and shook his head and waved us through. It's pretty funny. It wasn't at the time, but when you look back: 'Oh that was close.'" [54]

The second set of problems was that, as the campaign wore on, the quality of the American ordinance stocks that was being supplied to the Canadians dropped. "When we first went over there, the first ones were basically pristine looking, you know, like they'd never been out of the box. But, we ran out of what we bought so we had to buy more from them and the stuff that they were basically pawning off was dregs. The oldest one I saw was made in like 1974. It was really old stuff. Some of them, for me to get them to work I had to hit them with a hammer. What happens is the little wing hubs that steer the weapon to the target, over time sitting in storage, they sort of tighten up and the "O" rings would dry up a little bit. To get it to work you would have to whack it with a hammer, that's actually in the American technical orders to do that. It's pretty funny actually." [55] Another problem with the older bombs was that the Americans didn't have documentation for their laser guidance kit codes. It fell to then-Sergeant Don Neil to come up with a solution to that problem. Neil was a weapons load standards and training officer with 1 Air Maintenance Squadron assigned to 441 Tactical Fighter Squadron and a Persian Gulf War veteran. He discovered a way to burn out specific lines in the older laser guidance binary codes to make them compatible with newer guidance systems. "In fact, none of the Americans knew how to do that."[56] Neal was able to show the American military how to reconfigure their own old weapons enabling them to salvage more than 90 per cent of bombs they thought were unserviceable, saving them tens of millions of dollars. [57] Even so, Neal said he often felt uncomfortable as a Canadian going to the Americans with his cap in hand. "We'd always have to go to the Americans to get stuff. It was: 'Yep, we're running out of bombs.' So I felt like an arms dealer going to the guys and going: 'hey what do you got, do you have anything left over that we can use?' you know, making deals with them, having to use their forklifts because we didn't have any, and then using the diesel forklift inside a magazine where all the bombs are stored and then you get fumed out because there were fumes were we should have had an electric forklift in there, or something with better air quality. So, just the lack of equipment that we went in with was embarrassing and we ended

up putting a strain on the Americas by having to use their stuff." [58] Neal says that making do with few resources is the Canadian way. "You work with what you can, and instead of saying 'no we can't do it.' You make it happen. There's normally always a way to get work done." [59] The Canadians working the day shift in Aviano took to calling themselves the "Balkan Rats." The name rhymed with the Deserts Cats nickname for the CF-18 pilots who flew in the 1991 Gulf War. It also carries the connotation "scrounger" which was "apparently both well-deserved and necessary." [60]

The third set of problems to emerge was with the 500-pound GB-12 bomb itself. It was fine for taking out soft-skinned tactical targets, such as lightly armoured military vehicles, but the Canadians were increasingly being called upon to take out bigger tougher strategic targets. 441 Tactical Fighter Squadron Captain Todd Sinclair – who went by the call sign "Piper" – recalled that his mission targets ran the gamut from barracks buildings, radio relay stations and bridges. [61] Major Harry Mueller of 416 Tactical Fighter Squadron – who went by the call sign "Chimp" – also recalled the approved target list running a gamut of military objectives. "The other guy's military infrastructure and equipment was number one; then you started going after things like fuel that keeps the tanks running and the jets in the air. 'Let's blow that up and then they're unable to operate; and ammo dumps.' We wanted to pin them down so they couldn't move about freely, so you now have the bridges and stuff; communications, take out antennas and what not, stop them from speaking and communicating. So that was the nature of it." [62] Major Jason Regenwetter – call sign "Tubs" of 433 Tactical Fighter Squadron from Bagotville, Quebec – also recalled that early in the war the Canadians spent a lot of time bombing Serbian radio relay sites, barracks and other military infrastructure. "Later on, towards the third week we started looking at some of the airports, some of the airfields, some of the infrastructure around the airfields, and then really, you know, supply type, supply type areas, storage areas, storage facilities, POL (Petroleum, Oil and Lubricant) storage areas, that sort of thing." [63]

The pilots discovered, however, that problem with taking out the bigger targets was that the GBU-12 didn't have sufficient punch to do the job. In the words of retired Colonel Flynn: "We have a 500-pound bomb that doesn't knock the paint off the buildings you're trying to bomb." [64] The result was that on a number of occasions, pilots were being asked to bomb the same target over and over again. The problem with that scenario is that the pilots were risking their lives to take out targets with weapons that weren't sufficient for the job. [65] The other problem was that, as was shown above, the Canadians had a 2,000-pound bomb with more advanced technology, but the GBU-24 with its Paveway III guidance didn't suit the tactical conditions over Serbia and Kosovo.

Heavily-vetted and declassified secret Canadian Forces documents obtained under the Access to Information Act reveal that, as early as September 1998 – long before the bombing had begun – Task Force Aviano under the command of Colonel Donihee had requested investigation and clearance of a third bomb for possible use in the Kosovo theatre. That

weapon was a 2,000 pound GBU-10 bomb that used the Paveway II guidance system already in use with the GBU-12. [66] By October, 1998, it was noted that "a wartime clearance to carry GBU-10 weapons within a restricted flight envelop is obtainable with minimal analysis and stores certification testing at this time." [67] That clearance was never approved. Then-commander of 441 Tactical Fighter Squadron, Col. Flynn said that the bombs weren't approved is no surprise. "Remember, in peacetime, you don't get anything you want. There's nothing new about that and when war happens, people jump and they jump pretty quickly." [68] Department of National defence documents show that on April 20, 1999, deputy minister of National Defence's office recommended that the Minister approve spending $8 million to obtain 200 of the GBU-10 bombs from the United States at a cost of $40,000 per bomb. [69] Defence Minister Art Eggleton signed the procurement approval through Foreign Military Sales the same day. It was noted at the time that the 200 GBU-10s were an additional procurement only and that the operational tempo and length of the conflict might necessitate further procurements. [70] Shortly afterward, the weapons technicians in Aviano were back across the road at the American weapons dump giving their government credit cards a Herculean work out buying the 200 GBU-10 bombs. "I was actually there when we went to buy it. We went in there literally and said, 'We want 200 of this and 200 of that and 200 of this. [71] The Americans said, 'here you go.' The contract between the Canadian department of Supply and Services signed months after the fact shows that the actual cost of the bombs came in at $8,615,753.00 (in American dollars) or $12,751,31.00 (in Canadian dollars). [72]

Colonel Flynn said that once approval for the GBU-10 was received, the pilots had them on their CF-18s within days. "My compatriots from AET (the Aeronautical Engineering and Test Establishment in Cold Lake) did all our checks and gave us clearance to go with the bomb in about a week, which is unheard of. They flew over, checked how the bomb would fit on the airplane, confirmed the engineering that it would be okay, and gave us a clearance." [73] Back at the Canadian base, the workload ramped up again for loads standards and trainings officers. Now that the Canadians had the American GBU-10s, it had to be determined how they were going to have to be configured for the Canadian CF-18s and the crews trained. That was all to take place at the same time as the other weapons in the Canadian inventory had to be assembled and built. One crew would work a 12 shift from noon to midnight, while another relieved them for the midnight to noon shift. That carried on seven days a week, often without a day off in more than 40 days. A warrant officer who goes by the call sign "Cookie" said: "In the first 43 days, we had one day off, but that didn't do you a helluva lot of good when you couldn't go anywhere in one day." [74] It has been said that this is nothing less than a story of a superhuman effort by staffs that were already over-stressed and over-staffed. [75] On the pilot side, then Captain Kirk Siroka explained that none of the Canadian pilots in Aviano had ever flown with or dropped a GBU-10, but now that they had them in their inventory, they had to learn how to use them. "No one had ever flown with those except for the test pilots and they basically walked us through a kick how to in the hanger. You know, how to walk around them and they said: 'Just treat them like a GBU-12 and go drop 'em.' So that's what we did.

[76]

In the earlier description of Major Pelletier's bombing mission on the first night of Canadian participation in Operation Allied Force, two sentences merit particular examination for the issues they raise. The first is: "Pelletier positioned himself in the lead of the four Canadian CF-18s flying single file and leading the eastern element." The second is: "Obviously, nobody's got their lights on over there because it's a war..." The reason the pilots turned off their jets' red and green navigation lights, the white lights on tip of the right vertical stabilizer, the stabilizers' red strobe lights and their fluorescent formation lights was because they wanted to avoid detection. The reason they positioned themselves in a single file formation is less obvious and is all but exempted from mention in the military's report lessons learned report on night operations. It is simple: the pilots were not equipped with night vision goggles. In other words, they were flying as blind as Balkan bats. Retired Colonel Flynn describes the lack of night vision goggles this way: "It was a huge fuck up. Let me use the words properly – huge fuck up." [77] Documents obtained under the Access to Information Act dated October 1997 show that Flynn and 441 squadron had developed an elaborate case for acquiring night vision goggles long before Operation Allied Force. It was argued in the documents that since the Second World War, about one third or all air combat missions had flown at night to reduce threat of detection. The case for acquiring the goggles identified ground school and simulator training needs, aircraft lighting modifications, the different types of goggles available, training rules, transition procedures and the types of mission training that would improve as the result of acquiring night vision capability. [78] The timeline envisioned included obtaining six contractor models at a cost of about $9,000 in U.S. dollars each by February 1, 1998; a test plan and review process by November/December 1998; flying trials with them from February to May, 1999 and reporting on the trials by June, 1999. However, that time line was shown in the documents to be on hold. [79] The squadron had also received approval from a supplier to provide two to three sets and assurances two to three other sets could be purchased for $60,000 to $70,000 from the CF-18 risk management program. Further, Wing Operations Officer Lt.-Col. J.M Ouellet had strongly supported Flynn's night vision goggle initiative to his Wing Commander. Acknowledging there were engineering and funding hurdles to overcome, Colonel Quellet wrote: "I believe that NVG is a force multiplier at night and offer significant safety benefits." [80] In turn, that Wing Commander, Colonel R.W. Guidinger, fully supported 441 Squadron's night vision initiative to the Director of Air Requirements at National Defence Headquarters. [81] By April 28, 1998, a night vision goggle committee had been struck and met for the first time at National Defence Headquarters in Ottawa. The costs of a trial program had grown to about $207,000. Six sets of goggles had been purchased at a cost of $97,000 leaving $110,000 for aircraft modifications, trials and incidentals. [82] Details of cockpit light issues to be addressed in order to accommodate the use of night vision goggles are exempted from disclosure. At that time it was envisioned ground trials could be completed by August 1998 and flight trials could commence by October 1998. [83] Two months after that April meeting was adjourned, then-commander of CFB Cold Lake Colonel Jim Donihee was promoted and sent to

Italy to set up Operation Echo as the humanitarian crisis in Kosovo deepened.

During all of that period when the arguments for obtaining night vision goggles were being made, 441 Fighter Squadron Colonel Flynn had his pilots flying night training sessions, readying them for the time when the goggles would be acquired. From the first night of flying on March 24, 1999, night vision goggles were not available to the Canadian pilots. Flynn was livid. "The air force shuffled its feet on it and made no progress. It was an incredible fiasco. That we never killed anybody is a miracle and we had a handful at least of near misses, nearly having guys kill themselves on sorties because you couldn't see anybody. And there was no ability once the war started to ramp up and use night vision goggles. That takes significant training to get that capability and a real formal program. You just can't throw night vision goggles on and drive around in your car and catch up. I'm sure the commander of the air war never knew that we were really flying around totally blind at night as we were. It was incredibly stupid. We could have admitted we couldn't see anything and then we would have been pulled out of the night war." [84]

The second issue was that, in order to compensate for their inability to see each other, the Canadians adopted strict flying procedures that, in theory, enabled them to fly without running into each other. The first thing they did was abandon the mutually supporting formations they flew in the daytime when they could see or that they would have flown at night had they been able to fly with their lights on, or had they been able to see each other with night vision goggles. In a mutually supporting formation, four CF-18s fly in a box or a rectangle, depending on their tactical objectives. Sometimes they fly in what is called battle formation in which the two lead aircraft fly line abreast and the two wingmen each trail about 45 degrees off their wings. [85]

Those formations went out the window and the mutual support they provided went out the window with them. Instead the Canadians flew in a basic straight line with each plane several miles back from the one in front and separated by altitude splits. They used their radar, air-to-air attack and navigation instrumentation to tell how far apart they were from each other. [86] Says Flynn: "Every night mission was lights out and more than half of what we flew was at night. Of the 678 missions, half were at night. Me. I flew five night missions before I became a day guy and it was terrifying. It was really an incredible workload trying not to hit the guy in front of you, trying not to have the guy in back behind hit you and, oh, by the way, you're going to go bomb somebody which was no small feat in itself. It was incredibly stupid and typically Canadian and we still haven't learned the lesson: the F-18 guys don't have night-vision goggles now." [87]

Then Colonel Dwight Davies who was the Task Force Aviano commander had ultimate responsibility for sending troops on admittedly dangerous missions. He said it was simply not possible to have acquired night vision goggles for the Kosovo air campaign for political reasons in the first instance and for logistical reasons in the second. "The facts are that even if the

government had decided to throw an infinite amount of money at it in the fall of 1998, we wouldn't have had them in the spring of 1999. It's not possible. I think that Canadian leadership at the highest political level had to balance of some damn tough decisions in the 90s. We were going broke. We were destitute. We were mortgaged to the hilt as a nation and they had to make tough decisions and that included significantly reducing the amount of resources that we're going to give to the military. As a result of that, we have all sorts of capabilities that we either don't have or they're pretty minimal." [88] Nonetheless, Davies said he was absolutely certain that the CF-18 pilots were capable of carrying out their missions even with the adaptations they had to make to compensate for the lack of night vision capability. "As the commander, that's an area I cared about intensely. As the commander of a fielded force in a combat environment, you are absolutely accountable for the well-being of your people. If I had had any doubts about the operational capability, about the risks to our folks and the risks to the civilians and so on in the areas that we were bombing, if I had any doubts about our abilities, I wouldn't have sent them on the missions. Dot. So despite all of the shortages and cut backs, the folks that were there had good equipment. They didn't have the very best, latest, but they have good equipment and they were extremely well-trained." [89]

Still, the CF-18 pilots who actually flew the missions have strong feelings about flying into combat at night without the benefit of night vision goggles. Capt. Kirk Siroka – call sign "Rambo" was one of them. "That was nuts. My squadron, 441, had been training to fly at night for two years because our tactical expertise determined that when went to war it would probably be at night. So we started conducting night training and so much so that, you know, we were really comfortable flying at night. However, the training we were doing was with our lights on because we didn't have any NVGs. We were flying all the NVG formations, but with our lights on because it was unsafe otherwise. We had no training rules at the time to fly with our lights off. Training rules are set so that we can conduct our operations in peace time safely and as close to war time conditions as we can get. And we were ready to fly at night, at least we thought until our first night into Kosovo. My first night into Kosovo, we turned our lights off and all that training was useless because I couldn't see anything and I was relying heavily on the radar to maintain formation. To stay in some sort of formation is important to survival in combat for a fighter pilot." [90]

There were three sets of problems associated with flying in single file formation that exposed the pilots to greater risk than flying in mutually supporting formations. The first was the manner in which the three trailing pilots had to use their radar. "Rambo" explained that, ordinarily, their on board radar is used to look for threats. "The three formation members relied heavily on the radar to stay in position and because we had to use our radar to ground map the target area, and hand that off to our forward looking infrared targeting pod. There was a period of time when there was no radars looking into the air-to-air threat out there did exist and they could have taken out, particularly the target we were going into that night was heavily defended and a known position for MiG-21s and MiG-29s." [91] "Rambo" also explained the nature of the second problem. "I almost got killed during a night strike on April

30 because of that formation and the way we were ingressing on the target. Whenever people start shooting at you, the first thing you do is you go faster. You just want to get into the target area, get out of there, dodge the bullets and then leave the target area safely. The problem is you have to fly the same speed and we weren't flying the same speed in the formation. There was a turn in the routing to the target and the element behind us over flew me and delivered their bombs right through my element. I'll never know how close they were, I just know that, by virtue of the attack access and the formation we were in, that it was pretty tight. [92]

The third problem flying in single file formations, quite apart from the effort that it took to stay in formation in a threat situation, was explained by Captain Neil "Hoss" McRury. "If we were all going in one after the other at night and the second guy in a train of four had a threat to react to, then the entire formation had to threat react because you can't see each other." [93] Over and above that, "Hoss" explained that four CF-18s flying over the same target and from the same direction and from the relatively same altitude provided valuable information to enemy combatants on the ground. "If you get some information on the first one and wait for the last guy you make him more vulnerable. It was disconcerting." Major Rob "Hooker" Parker was 441 Tactical Fighter Squadron's weapons and tactics officer. He agreed that flying single file formations provide less mutual support for the trailing members, but rather for a different reason. "I would have to agree that flying entrail formations – not the result that you are leaving number four hanging out there to some degree – but the fact that I think you're flying at night makes you perhaps in a sense more vulnerable because you're not able to actually to check the other guy, you know, visually. You're reliant upon the radar to do that." [94] Having said that, Parker also said an argument could be made that the night pilots were somewhat more protected "simply because it's dark and it's more difficult for the bad guy to find you and to shoot you than would be the case in the daytime." [95] Night vision goggles would have given the Canadians greater capabilities and more support, Parker thinks, but that wasn't reality. The Canadians virtually no choice but to play the cards they were dealt. "Under the circumstances our feeling in theater was, you know, we had a job to do and we had really only one way of going about doing that and we did what we had to do." [96]

On June 9, 1999, on Day 78 of the NATO bombing campaign, it was announced that NATO had signed an agreement with the Yugoslavian military authorities to end hostilities, for the withdrawal of Serbian forces and for the return of Kosovar refuges to their homes. At 3 p.m. on June 10, 1999, Prime Minister Jean Chretien rose in the House of Commons to announce the ceasefire and the fact that the United Nations Security Council had adopted a resolution setting out the terms for the end of the conflict. The majority of his address talked about Canada's diplomatic initiatives to bring about the conflict's end. He uttered just one sentence recognizing the role the Canadian Forces played: "During 78 days, our fine Canadian pilots risked their lives to accomplish their duty in the name of Canadian values." [97]

There are many stories yet to tell about what the brave and dedicated Canadian Forces men and women based in Aviano, Italy, accomplished in the Kosovo air campaign in the name

of all Canadians. What they had accomplished was remarkable. On day six of the NATO bombing campaign Canada had escalated its commitment of CF-18s by committing six more of the warplanes to the air war. [98] Four weeks into the campaign, Defence Minister Eggleton committed six more Cf-18s from 4 Wing in Cold Lake, Alberta, to the bombing campaign. That brought the number of CF-18s Canada had committed to the bombing campaign to 18. [99] In addition to the CF-18s the number of personnel had grown to 300 with 32 pilots. By the time a ceasefire was agreed to on June 10, 1999, the Canadian Forces had rotated the task force's personnel three times. Over the course of the campaign the pilots flew 684 combat sorties in 224 missions and flew 2,577 hours. They dropped 532 bombs representing nearly 500,000 pounds of high explosive munitions. [100] The Canadian commitment of 18 CF-18s represented just two percent of the allied aircraft involved Operation Allied Force. However, the Canadian CF-18s flew in nearly 10 per cent of the battle field air interdiction or bombing missions, considered the most dangerous of all the missions flown. The bombing missions, combat air patrols that rode shotgun on other NATO allies bombing missions and other close air support missions amounted to more than 82 per cent of the Canadian air effort. [101]

There is much more to this story, but it is appropriate to conclude here with two glimpses of how the Canadians from Aviano were welcomed home. About three weeks after the Prime Minister recognized the efforts of those Canadians in just one sentence in the House of Commons, a dozen CF-18s led by Lt.-Col. Flynn were allowed to fly over the Peace Tower in Ottawa on July 1 on Canada. to celebrate Canada Day. "What a great way to come home," said Col. Flynn. [102] The downside to the experience, he said, was the cold shoulder he received from Canada's top military men. "This was American showboating, that is was total American bravado, as opposed to saying: "Wow, these guys just went into combat.'" [103]

Far more typical of the Canadian experience returning to Canada after the Kosovo campaign was the experience of Captain Travis "Brass" Brassington of 441 Squadron from Cold Lake. "From Day One, Canada was in there dropping bombs. There is all the stats of how much we did over there with the aircraft and the crews and the missions we led and what we did on a daily basis, and you know, hail the conquering hero kind of thing – that didn't happen. I came home at 11:00 o'clock at night, to the airport. My driver who was supposed to pick up me and about four or five other guys was about an hour late. We loaded our stuff in to the back of the van, we drove home and he dropped me off at my house. And that was my coming home." [104]

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[1] Bergen telephone interview with Major Alain Pelletier, July 16, 2003.

[2] Ibid. Bergen telephone interview with Pelletier. July 16, 2002.

[3] Bergen personal interview with Major Mike Barker. Cold Lake, Alberta. April 16, 2003.

[4] Major Alain Pelletier. E-mail to Bergen. October 15, 2003. [Accessed October 16, 2003]

[5] A sortie is one flight by one plane. One mission involving four air ships would count as four sorties.

[6] Hewson, Robert, et. al. "Operation Allied Force: the first 30 days." World Air Power Journal. Vol. 38. Autumn/Fall 1999. pp. 16-29.

[7] Bergen telephone interview with Major Alain Pelletier. August 13, 2003.

[8] Ibid. Bergen telephone interview with Major Alain Pelletier. August 13, 2003.

[9] Ibid. Bergen telephone interview with Major Alain Pelletier. August 13, 2003

[10] "Dutch/Belgian Allied Force." *World Airpower Journal*. Volume 38. Autumn/Fall 1999. p. 23.

[11] The AWACS had told four Dutch flying F-16s in two pairs that three MiG-29s had taken off from Batajnica air base near Belgrade. The pilot who engaged the MiG fired one AMRAAM missile at it from a distance of 11 miles. He watched the missile detonate 30 seconds after launch. Ibid. "Dutch/Belgian Allied Force." *World Airpower Journal*. Volume 38 Autumn/Fall. 1999. United States Air Force F-15s downed two others. p. 16, p. 23.

[12] Ibid. Bergen telephone interview with Major Alain Pelletier. August 13, 2003.

[13] Ibid. Bergen telephone interview with Major Alain Pelletier. August 13, 2003.

[14] House of Commons, *Debates*, Volume 135, Number 203 (March 24, 1999) p. 13444.

[15] House of Commons, *Debates*, Volume 135, Number 205A (April 12, 1999) p. 13579.

[16] Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00. Obtained informally under the Access to Information Act. Request Number (A) 2001-00308.

[17] United Nations. S/RES/1199 (September 13, 1998) From the Internet: www.un.org/peace/kosovo/98sc1199.htm [Accessed October 16, 2003]

[18] From the Internet: http: www.defenselink.mil/specials/kosovo/ [Accessed October 16, 2003].

[19] Op. Cit. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00. The 33-page after action report is only a fraction of the after action documentation held by the Department of National Defence in four offices. To meet a formal request for all the after action report records available under the Access to Information Act would require some 500 hours of searching at a cost of $10 per hour. That would amount to fees of some $5,000. Bergen telephone conversation with Department of National Defence Access to Information staff. March 29, 2003.

[20] Op. Cit. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00.

[21] Ibid. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00.

[22] Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003.

[23] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 56.

[24] Bergen telephone interview with Brigadier-General Dwight A. Davies. July 30, 2003.

[25] Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[26] Canada. *Report of the Auditor General of Canada to the House of Commons*. April, 1998 Chapter 3. p. 3-10.

[27] Ibid. Canada. *Report of the Auditor General of Canada to the House of Commons*. April, 1998 Chapter 3. pp. 3-11 to 3-12.

[28] Op. Cit. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00.

[29] Canada. National Defence. Directorate of Air Public Affairs. CF-18 backgrounder. 31 Oct 02.

[30] Ibid. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00.

[31] Ibid. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff Action Directive. Annex A. 12 Jan. 00.

[32] Ibid. Canada. Department of National Defence. Operation Echo – Lessons Learned Staff

Action Directive. Annex A. 12 Jan. 00.

[33] "Canadian contribution." *World Airpower Journal*. Volume 38 Autumn/Fall. 1999. p. 26.

[34] From the Internet: http://www.raytheon.com/products/paveway [Accessed October 14, 2003]; http://www.fas.org/man/dod-101/sys/smart/aas-38.htm

[35] Ibid. Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003; Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 60.

[36] Op. Cit. Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003

[37] Ibid. Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003; Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[38] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 60.

[39] Op. Cit. Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003.

[40] Ibid. Bergen personal interview with Colonel (ret'd) J.M. Donihee. Calgary, Alberta. April 22, 2003.

[41] Bergen personal interview with Major Mike Barker. Canadian Force Base Cold Lake, Alberta. April 16, 2003.

[42] Ibid. Bergen personal interview with Major Mike Barker. Canadian Force Base Cold Lake, Alberta. April 16, 2003.

[43] Ibid. Bergen personal interview with Major Mike Barker. Canadian Force Base Cold Lake, Alberta. April 16, 2003.

[44] Canada. Department of National Defence Daily Technical Briefing. March 25, 1999. From the Internet: http://dgpa-dgap.mil.ca/Transcr/1999Mar/99033007.htm [Accessed January 16, 2003] p.81 of 11. Provided by the National Defence Public Affairs Office – Calgary (Prairie Region & Northern Area).

[45] Laghi, Brian. "Canada now waging high-tech warfare." *The Globe and Mail*. March 26, 1999. p. A19; Dawson, Anne and Rubec, Stephanie. "Brass on Cloud 9 over Hi-Tech Bomb;

Laser-guided GBU-12 Deadly." *Toronto Sun*. March 26, 1999; Blanchfield, Mike. "Top weaponry puts Canada at front line: The state-of-the-art GBU-12 missiles – each with a $25,000 price tag – keeps country 'in the club.'" *Vancouver Sun*. March 26, 1999, p. A 13; Blanchfield, Mike. Canada's 'Top Guns': CF-18s launch missiles, rejoining NATO 'club.'" *Windsor Star*. March 26, 1999. p. A1.

[46] Martin, Patrick. "Balkan Rats." Air Forces Monthly. November 1999. No. 140. pp. 56-61.

[47] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[48] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[49] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[50] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[51] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[52] Op. Cit. Martin. "Balkan Rats." Air Forces Monthly. November 1999. No. 140. pp. 56-61.

[53] Bergen confidential interview. Canadian Forces Base Cold Lake. April 16, 2003. Documents obtained under the Access to Information Act review a flurry of diplomatic activity was taking place behind the scenes in Washington in correspondence between the Canadian Embassy and the Pentagon. Public Works Canada had an "extremely urgent" requirement emergency supply of 100 GBU-12 laser guided bombs. Later c

[54] Ibid. Bergen confidential interview. Canadian Forces Base Cold Lake. April 16, 2003.

[55] Ibid. Bergen confidential interview. Canadian Forces Base Cold Lake. April 16, 2003.

[56] Bergen personal interview with Warrant Officer Don Neal. Canadian Forces Base Cold Lake. April 14, 2003.

[57] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 58.

[58] Op. Cit. Bergen personal interview with Warrant Officer Don Neal. Canadian Forces Base

Cold Lake. April 14, 2003.

[59] For his efforts, Neal received a Chief of Defence Staff commendation and the Romeo Vashon Award from the Canadian Aeronautics and Space Institute.

[60] Op. Cit. Martin. “Balkan Rats.” Air Forces Monthly. November 1999. No. 140. p. 60.

[61] Bergen personal interview with Capt. Todd Sinclair. Canadian Forces Base Cold Lake. April 14, 2003.

[62] Bergen personal interview with Major Harry Mueller. Canadian Forces Base Cold Lake. April 14, 2003.

[63] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret’d) William Allen Flynn. April 9, 2003.

[64] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret’d) William Allen Flynn. April 9, 2003.

[65] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. “Mission Ready: Canada’s role in the Kosovo air campaign.” P. 60.

[66] Canada. National Defence Headquarters. Memo. Message ID. 199827000147. 27 Sept. 1998. Obtained under Access to Information request A-202-01182/Team 3-2.

[67] Canada. National Defence Headquarters. Secret Memo DAEPMFT028. 20 Oct. 98. Obtained under Access to Information request A-202-01182/Team 3-2.

[68] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret’d) William Allen Flynn. April 9, 2003.

[69] Canada. National Defence Headquarters. Letter from Jim Judd to the Defence Minister. 20 April 99. Obtained under Access to Information request A-202-01182/Team 3-2.

[70] Canada. National Defence Headquarters. Synopsis Sheet: Ammo Requirement OP Echo – Guided Bomb Unit (GBU) bombs. April 20, 1999. Obtained under Access to Information request A-202-01182/Team 3-2.

[71] Bombs don’t come fully assembled. The tail fins, for example, come in a can.

[72] Canada. Supply and Services Canada. DSS file No. W8484-9-WA01 PT.2 June 3, 1999. Obtained under Access to Information request A-202-01182/Team 3-2.

[73] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[74] Bergen personal interview with "Cookie." Canadian Force Base Cold Lake. April 14, 2003.

[75] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 60.

[76] Bergen personal interview with Major Kirk Siroka. Canadian Forces Base Cold Lake. April 14, 2003.

[77] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[78] Canada. Department of National Defence. Concept of Operations for the Use of Night Vision Goggles in the CF-18. 441 TFS. Oct. 97. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[79] Canada. Department of National Defence. Night Vision Goggles. 441 OT&E Proposal. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[80] Canada. National Defence. Minute to W. Commander from W Ops O. 6 Oct 97. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[81] Canada. Department of National Defence. Letter from Colonel R.W. Guidinger, Wing Commander, 4 Wing Cold Lake, to National Defence Headquarters. 27 October 1997. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[82] Canada. Department of National Defence. Minutes of the CF-18 NVG Project Committee Meeting. 28 Apr 98. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[83] Ibid. Canada. Department of National Defence. Minutes of the CF-18 NVG Project Committee Meeting. 28 Apr 98. Obtained under Access to Information Act request A-2003-00139/Team 2-3.

[84] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[85] Bergen. Confidential telephone interview.

[86] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn.

April 9, 2003.

[87] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[88] Op. Cit. Bergen telephone interview with Brigadier-General Dwight A. Davies. July 30, 2003.

[89] Ibid. Bergen telephone interview with Brigadier-General Dwight A. Davies. July 30, 2003.

[90] Bergen personal interview with Major Kirk Siroka. Canadian Forces Base Cold Lake. April 14, 2003.

[91] Ibid. Bergen personal interview with Major Kirk Siroka. Canadian Forces Base Cold Lake. April 14, 2003.

[92] Ibid. Bergen personal interview with Major Kirk Siroka. Canadian Forces Base Cold Lake. April 14, 2003.

[93] Bergen personal interview with Captain Neil McRury. Canadian Forces Base Cold Lake. April 16, 2003.

[94] Bergen telephone interview with Major Rob Parker. April 24, 2004.

[95] Ibid. Bergen telephone interview with Major Rob Parker. April 24, 2004.

[96] Bergen telephone interview with Major Rob Parker. April 24, 2004.

[97] House of Commons, *Debates*, Volume 135, Number 239 (June 10, 1999) p. 16195.

[98] Canada. Department of National Defence Daily Technical Briefing. March 30, 1999. From the Internet: http://dgpa-dgap.mil.ca/Transcr/1999Mar/99033007.htm [Accessed January 16, 2003] p. 1 of 15. Provided by the National Defence Public Affairs Office – Calgary (Prairie Region & Northern Area).

[99] Canada. Department of National Defence Daily Technical Briefing. April 17, 1999. From the Internet: http://dgpa-dgap.mil.ca/Transcr/1999April/99033007.htm [Accessed January 16, 2003]. P. 1 of 12. Provided by the National Defence Public Affairs Office – Calgary (Prairie Region & Northern Area).

[100] Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." *Canadian Military Journal*. Vol. 1, No. 1. Spring 2000. p. 55; Martin, Patrick.

"Balkan Rats." Air Forces Monthly. November, 1999. No. 140. pp. 56-59.

[101] Op. Cit. Bashow, Lieutenant-Colonel David L., et al. "Mission Ready: Canada's role in the Kosovo air campaign." P. 59. From the Internet: http://www.afsouth.nato.int/operations/detforce/force.htm

[102] Op. Cit. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[103] Ibid. Bergen telephone interview with Lieutenant-Colonel (ret'd) William Allen Flynn. April 9, 2003.

[104] Bergen personal interview with Captain Travis Brassington. Canadian Force Base Cold Lake, Alberta. April 14, 2003.