

## SCAR-C OVER LIBYA – TO WAR IN AN AURORA

by Alan Lockerby



DND photo GD2011-0887-09 by Corporal Laura Brophy

The return to CFB Greenwood from Op *Mobile*, 5 November 2011.

**T**his past fall, I flew as a Strike and Armed Reconnaissance Coordinator (SCAR-C) aboard Long Range Patrol (LRP) aircraft in support of Operation *Mobile* and UN Security Council Resolution 1973. Our role was to employ CP140 *Aurora* sensors to acquire and verbally indicate targets for multi-role fighter aircraft, and to serve as spotters for offshore naval gunfire support (NGS) missions.

Operation *Mobile* was the first time the RCAF employed the *Aurora* as a SCAR-C support platform, resulting in many lessons learned. Among these, two stand out. First, the RCAF should equip the CP140 with the means to designate weapons and cue other platforms' sensors onto targets, allowing the *Aurora* to perform a wider range of air-to-ground tasks. Second, *and most importantly*, the RCAF must integrate the platform tactically and operationally with other air, land, and maritime elements in order to dovetail it into the all-arms battle, maximizing its full tactical capability. In essence, the LRP community must continue to think 'joint' when considering all future tasks.

The LRP community was new to the strike coordination and naval gunfire spotting role, and the task force leadership thought it prudent to place additional specialists onboard the *Aurora* to conduct SCAR-C and NGS missions. Eventually, I worked as part of a SCAR-C team that operated aboard the 405 and 407 (LRP) Squadron CP140s flying out of Naval Air Station Sigonella, located on the east coast of Sicily. We formed a modular part of the standard *Aurora* crew, and worked at available stations onboard each aircraft.

As mission specialists, we, our kit, and our procedures fit well with the organic crew and equipment already aboard the aircraft. Even before flying began, I was of the impression that doing the job asked of me from the CP140 would be a natural fit.

A wise Marine once told me, in a laconic display of intellectual prowess, that "words mean things." As members of the profession of arms, this rings most true when discussing doctrine and defining operational capabilities; particularly in the context of a joint and combined task force. For that reason, I

## VIEWS AND OPINIONS

state definitively that as a SCAR-C asset, we and the other strike aircraft over Libya did not, at any point, conduct close air support (CAS) missions.

relocated due to surface fighting. The SCAR-C's goal is to affect such targets before the enemy can bring his full potential to bear upon friendly forces. Although seemingly an

issue of semantics, it is necessary to clearly outline what a CP-140 supporting overland operations can accomplish, (and, more importantly, *canis not* accomplish,) before investing time and resources into a capability that would prove unrecognizable to our allies.

I flew my first mission only hours after arriving in Sicily. A normal day began with a 3:45 A.M. wake-up for a 4:30 A.M. mission briefing, taking off shortly thereafter, and landing in the late afternoon. After transit, we would arrive over Libya, and, as the SCAR-C, would check in with air battle managers aboard the command and control (C2) aircraft in the



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The crew

While airborne, the CP140 lacked the ability to directly interact in real time with the forces that we supported as part of UN Security Council Resolution 1973. Furthermore, we could not assist in the supported force's operational planning, nor liaise for face-to-face coordination prior to our missions. Consequently, in doctrinal terms, our role aboard the *Aurora* was never that of a forward air controller (airborne), or FAC(A).

The primary difference between SCAR-C and FAC(A) lies in the proximity of their respective attacks to friendly ground elements and the necessity for detailed integration of each attack into that ground element's fire, manoeuvre, and, perhaps most importantly, its operational planning. In terms of safety and effectiveness, such integration is absolutely necessary to put air-to-ground ordnance near friendly ground forces. This is not just to ensure the safety of the soldiers on the ground, but also that of the supporting aircrews. The airspace over any battlefield is filled with both friendly and enemy artillery shells, ricocheting bullets, and fragmentation and blast effects, typically travelling in opposite directions! Should the means to coordinate between air and ground forces be lacking, cooperative air attacks must take place at a distance from friendly forces on the ground where detailed integration is not required.

With this in mind, whereas a FAC(A)'s primary job is ensuring safety of friendly troops and that air-to-ground attacks support the ground commander's intent, a SCAR-C's job is to maximize the effectiveness of air interdiction and armed reconnaissance assets. Although both coordinate air assets against enemy resources, the SCAR-C does so in areas where potential targets of opportunity are known, are suspected to exist, or where mobile enemy ground units have

area. These assets provided routing and safety of flight information to all aircraft in area of operations (fighters, suppression of enemy air defence (SEAD) platforms, tankers, UAVs, and SCAR-C), and served as the communication link to the combined air operations centre on the Italian mainland. Controllers aboard the C2 assets then directed us to the area in which we were to search for targets. We would then talk with the fighters assigned to work with us in the same area, tracking targets and passing spot reports to each other and the operations centre for battle tracking.

In any operation in the air, on land, or at sea, the process by which tactical leaders at all levels ensure attacks achieve their commander's aim is very specific. The same is true for the SCAR-C. The methodology can best be summed up in the form of five questions the SCAR-Cs must ask themselves sequentially throughout a developing ground scenario. First, is the target positively identified? Second, based upon the weapon system available, could the attack cause collateral damage? If so, the third question is, can these effects be mitigated by any available means – such as weapon fuzing, or by assigning the employing aircraft specific attack headings? Fourth, based upon the pattern of life in the target area, could even the mitigated weapon effects cause civilian casualties? If so, and thus finally, is the potential military advantage gained from the attack worth the risk of civilian casualties it may incur? In accordance with the laws of armed conflict, each of these questions, or a variation thereof, is addressed every time the CF employs weapons operationally. Operations over Libya were no different.

During one particular mission, we observed a truck-mounted anti-aircraft gun firing from cover in an area con-

## VIEWS AND OPINIONS

trolled by Ghadaffi loyalists towards approaching opposition forces. Exercising tactical patience, we observed the gun crew ‘leapfrog’ the vehicle between different firing positions, converse with observers located on a nearby rooftop, and replenish their ammunition in a concealed assembly area. Based upon the collective experience within the SCAR-C team aboard the aircraft, where each member had previously served in Afghanistan as ground-based forward air controllers (FACs) or artillery observers, we were able to assess the gun crew’s activities and advise the air operations centre. We also coordinated with the C2 aircraft in the area to dispatch fighter aircraft armed to engage the target in a manner that minimally affected the surrounding buildings. In this case, a pair of RAF GR4 *Tornados* arrived, carrying guided anti-tank missiles.

Ghadaffi loyalists fleeing the area. The collateral damage assessment on this strike was zero percent. For this reason, among others, all involved with the engagement felt it had been a successful attack.

Since returning, I have had time to reflect upon and compare my time as a FAC in Afghanistan, attached to an infantry battle group, with the SCAR-C mission over Libya. Although ostensibly similar (both roles involved calling in air-to-ground attacks), I found each presented very different challenges. A FAC’s job is to plan, request, and control air effects in support of his commander’s intent, planning guidance, and manoeuvre. The decision to employ ordnance, and the responsibility for the results, rested with the supported commander. In the case

of operations over Libya, the responsibility for target identification and nomination rested with the SCAR-C during each engagement. Looking back on my role in Afghanistan, I would say, in hindsight, that finding a target and mounting an airstrike against it at the commander’s behest is, comparatively speaking, the easy part of the job. Making the decision to lay down some of the most powerful effects on the battlefield and assuming a greater portion of the responsibility for the outcome was not as easy as it appeared to me, immersed as I was in my duties as a FAC, when someone else had to make that call.



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View of Libya from forward of the engines

Based upon our reporting, the recommended weapon-target match, the SCAR-C fuel state (we had extended our on station time to the maximum available), and deteriorating weather, the air operations centre authorized engagement on the truck-mounted gun itself. The *Tornados* arrived, and we guided the crews’ sensors to the target verbally, the ‘old-fashioned way;’ establishing a reference point and a unit of measure on the ground, and moving the pilots’ eyes forward, stating the direction, the distance, and a description of what to look for at each step, feature-by-feature, to the target. At that point, our target was nestled in defilade behind a building. Taking the target’s location into account, we assigned the *Tornado* crew attack headings to minimize the blast effects upon the building behind which the gun crew had concealed their vehicle between firing bursts. We observed the missile impact, and conducted a pattern-of-life scan for any persons interacting with the wreckage, later seeing the ammunition ‘cook off’ spectacularly as the vehicle burned, the remaining

As well, perhaps counter-intuitively, having now served in both capacities, I feel that, in many respects, it is easier, safer, and more effective to put air effects on the ground with friendly troops in close proximity to a given target. This means that, as a FAC in Kandahar, I knew exactly what my target was, who wanted it attacked, why it was to be engaged, and where friendly troops were positioned. Furthermore, with troops nearby, I could leverage friendly reporting, ground-based weapons (of particular value had there been localized air defence threats), and, most importantly, real time, on-scene visual assessment of the effects. Such was not always the case in Libya, for myself or any other individual involved in this line of work. A person staring at an object or event on a screen from thousands of feet for hours on end will never have the same awareness as someone who spent just minutes looking at the same thing from ground level through binoculars or other optics. Having now served in similar capacities in two operational theatres, this realization is what guides my impressions

## VIEWS AND OPINIONS

of further tactical development of the CP140 in support of overland operations: that the platform's usefulness as a low air threat SCAR-C asset would be most effective when integrated into the joint fight.

As one can readily surmise, a CP140 equipped as described and linked with existing air liaison elements organic to a land force's staff organization offers the supported commander an unparalleled ability to sense and affect his area of

operations. Not just a view to 'the other side of the hill,' but also the means to do something about what is there. Additionally, the same supported commander can account for the *Aurora's* protection from localized ground-based air defence threats with his own assets; namely, indirect fires and observers, as well as the fire and manoeuvre of his forces. While potent threats to aircraft, even modern self propelled anti-aircraft systems generally remain thinly armoured and highly dependent upon their echelon, and they present a force protection dilemma: the best ground from which to operate an anti-aircraft firing position may not be ideal for



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Captain Alan Lockerby at his work station

To do so fully, the CP140 will require certain upgrades, to include the organic means to designate and mark targets. The current sensor on the CP140 could be upgraded to allow for the enhanced targeting capabilities. This inclusion would allow the *Aurora* to support the full range of offensive tasks in support of ground manoeuvre. A laser target designator would allow the aircraft to provide the means to guide the flight path of other strike platforms' precision weapons. The same designator could also be used to cue sensors of strike assets, permitting the visual hand off of targets for engagement. In practice during other operations, both capabilities have demonstrably increased the rate at which these air engagements take place. The designator would further provide the ability to generate high confidence target coordinates, sufficient, in certain instances, for employment of air-dropped inertially-aided weapons. Perhaps more importantly, particularly in support of ground forces and when air assets may not be readily available, the ability to generate highly accurate and precise coordinates with the CP140's sensor would eliminate much of the guesswork associated with indirect fires observation for assets such as artillery, mortars, or naval guns. While each of these assets has varying ranges, they are constrained by the location and availability of observers and the CP140, with the proper specialists aboard and under the direction of the appropriate ground agencies, could extend these assets' coverage to the fullest possible extent. An additional component would allow the sensor to visually indicate targets to any person or platform with night vision optics – this includes both aircrew members and the soldier on the ground.

the escorting infantry and armour to defend. When operating against air targets, most anti-aircraft systems are mobility-limited, and their crews are task saturated: comparatively 'easy pickings' for friendly armour, anti-tank weapons, and indirect fires. Beneficially, this ground-based protection would also serve as an additional layer of security for the CP140, complementing and increasing redundancy to the protection that friendly air combat air patrols, SEAD, and electronic warfare platforms provide.

Further adding to these capabilities is the *Aurora's* long loiter time and the fact that, unlike an unmanned aerial vehicle, the crew is physically located overhead the target area, allowing for a high level of situational awareness. On more than one occasion over Libya, I found myself, as a SCAR-C aboard a multi-million dollar aircraft with electro optical sensors, at a window looking through binoculars to better define a target area. As always, operations highlight problems that even the most modern technology cannot address.

With all this in mind, it is no stretch of the imagination to picture a CP140, in an area of localized air superiority and in communication with a manoeuvring ground unit's indirect fires and air control agencies, building situational awareness of the surface fight and maintaining a 'picture' of reported targets. Under such an arrangement, assigned strike aircraft would arrive in the area of operations, check in with FACs co-located with the ground unit for an operational update and targeting data before contacting the CP140 to be shown their

## VIEWS AND OPINIONS

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An operational view from aft of the wing

targets, dropping their ordnance in minimum time and on the first pass. During the entire period, the ground force's manoeuvre and reporting would, at the very least, expose many enemy ground-based air defences and allow for their engagement by the most appropriate means; either indirect fires or air ordnance. An enemy faced with such capabilities would be presented, not with a *problem*, but with a *dilemma*: a 'no win scenario.' Most importantly, the ground unit would visually verify the results of all air-to-ground attacks, allowing the joint force's planners to more accurately assess the need for follow-on sorties, and the ability to shape follow-on operations, based upon solid information. Achieving this end state should be simple. Organizationally and doctrinally, all

the CF services are able to plan, request, and employ the capabilities that a CP140 with a 'full' sensor could provide. More importantly, our coalition partners plan and operate *similar platforms* along *similar lines*, and could also make use of such a capability.

By avoiding 'stove piping' with respect to training and tasks, the RCAF and LRP community can build credibility and interoperability within the CF, and with our allies. Otherwise, when a joint and combined task force deploys to the world's next hot spot, planners will not be able to *integrate* the CP140's capabilities into operations. Rather, they will have to *accommodate* its inclusion. It would undoubtedly take the CF time to gain experience operating at the level of air-land integration to which I have alluded.

There is nothing 'advanced' about what I have put forward, or the conduct of the CP140's SCAR-C mission over Libya. It was about the fundamentals of air-land integration, and, if I may paraphrase three-time Tour de France winner Greg LeMond's comments about racing, "... when you have the fundamentals, acquiring the experience is just a matter of time."

**CMJ**

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CP-140 Auroras on the flight line, Sigonella, Italy, 29 September 2011.

DND photo RE2011-M127-001 by Corporal Mathieu St-Amour