

Keynote—Actionable Statistics

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MGen Natynczyk is currently in Ottawa as the Chief of Transformation for the Canadian Forces. He joined the Canadian Forces in August 1975. He attended the Royal Roads Military College and College Militaire Royal graduating with a Business Administration degree in 1979. His formative years were spent on NATO duty in Germany with The Royal Canadian Dragoons (RCD) in troop command and staff appointments. Returning to Canada in 1983, MGen Natynczyk assumed duties as a Squadron Commander at the Royal Military College in Kingston, Ontario. In 1986, he commenced a five-year regimental tour in Petawawa, serving in several staff and squadron command appointments. The tour also included six months of UN peacekeeping duties in Cyprus. Following attendance at Canadian Forces Command and Staff College, he served on the Army Staff in St Hubert Quebec focused on Reserve Enhancement and the Land Force Restructure staffs. In May 1994, MGen Natynczyk embarked upon a yearlong tour with the United Nations in the Former Yugoslavia. For the first half he was assigned as the Sector South-West Chief of Operations in Bosnia and Herzegovina working within 7 (UK) Armoured Brigade. For the latter half of his tour, he was assigned as the Chief of Land Operations, UNPROFOR HQ in Zagreb, Croatia.

In June 1995 MGen Natynczyk was assigned to the Vice Chief of Defence staff within National Defence HQ in Ottawa followed by command of his regiment, The RCD. The highlight of his tour was the Regiment's deployment on domestic operations in the Ottawa region during the 1997 Ice Storm. MGen Natynczyk returned to Bosnia in 1998 as the Canadian Contingent Commander. On his return to Ottawa in March 1999 he was appointed J3 Operations where he was involved in planning Canada's contributions to the Kosovo campaign, and UN operations in East Timor and Eritrea. MGen Natynczyk was a member of the Centennial Class of the U.S. Army War College graduating in June 2002 before assuming the appointment as Deputy Commanding General, III Corps and Fort Hood. In January 2004, he deployed with III Corps in support of Operation Iraqi Freedom to Baghdad, Iraq, serving first as the Deputy Director of Strategy, Policy and Plans and subsequently as the Deputy Commanding General of the Multi-National Corps Iraq. Upon his return to Canada, Major-General Natynczyk assumed command of the Land Force Doctrine and Training System in Kingston, Ontario, February to July 2005.

Thank you for inviting me to address you and many thanks to those who came so far to be in Kingston this week for the conference. The topic of my presentation is “Actionable Statistics” and I will focus on how we on the staff of Combined Joint Task Force 7 (CJTF 7) in Baghdad last year used statistics as indicators of what was happening in our area of responsibility. I will give you a short presentation, and reserve most of my time for questions.

Before I get to the presentation though, let me develop for you some of the history behind how a Canadian general officer ended up in such a situation. Upon graduation from the U.S.

Army War College in the summer of 2002 I assumed the duties of Deputy Commanding General, U.S. III Corps and Fort Hood. For a number of years now Canadian brigadier generals have filled this position on the III Corps staff as a means of developing stronger bonds between the two armies.

The position affords one of those all-too-rare opportunities for a Canadian officer to see American military personnel going about their normal duties and to appreciate their level of commitment to their nation. Before going further, I should clarify that, under Title 10 of the US Code, American troops are always commanded by American officers. Nevertheless, Canadian generals in this position with III Corps have considerable authority and responsibility.

Without exception I was afforded, as were my predecessors in the position, tremendous respect by all of the personnel in III Corps. Title 10 rarely got in the way, and my “requests” and “suggestions” were given the same weight as if they had been “orders” from an American brigadier general. I expect that Title 10 would have come up only in life or death situations. In January 2004, III Corps commanded by Lieutenant-General Thomas F. Metz deployed to Baghdad, Iraq, to support of Operation Iraqi Freedom.

During my time in Iraq I served first as the Deputy for Strategy, Policy and Plans on the staff of CJTF 7 under Lieutenant-General Ricardo S. Sanchez and subsequently as the Deputy Commanding General of the Multi-National Corps Iraq once again under LTG Metz. It was particularly in the first assignment that I came to rely on the analytical expertise of operational research personnel with the headquarters. At this point in my story, perhaps I should go back further in my career before I was assigned to the US Army War College in 2001. I admit, “I am a cold warrior.”

My formative years were spent on NATO duty in Germany with my regiment, The Royal Canadian Dragoons, in troop command and staff appointments. Like the others there at the time, I stood ready to defend against the threat to the Central Front. By the early nineties, things were changing and in the mid-nineties I had a year-long tour with the United Nations in the Former Yugoslavia. For the first half of this I was assigned as the Sector South-West Chief of Operations in Bosnia and Herzegovina working within 7 (UK) Armoured Brigade. For the latter half of the tour, I was assigned as the Chief of Land Operations, UNPROFOR HQ in Zagreb, Croatia. A few years later, after assignments back in Canada, I returned to Bosnia in 1998 as the Canadian Contingent Commander.

On my return to Ottawa in March 1999 I was appointed J3 Operations where I was involved in planning Canada’s contributions to the Kosovo campaign, and to UN operations in East Timor and Eritrea. So I started my career as a “cold warrior”. Then came about a decade of dealing with new and emerging societal conflicts focused mostly, though not exclusively, on the Balkans. And about a year ago, as a consequence of my assignment in III Corps, I found myself dealing with the strategy, policy, and plans of Operation Iraqi Freedom in Baghdad. It was at this stage that I was introduced to the use of a number of the products of analysis and saw many examples of applying analytical techniques to our mission in OIF.

Most of the ORSAs [Operations Research and Systems Analysts] we had came from Fort Belvoir. They gave us indicators of where and when things were about to happen. Sometimes these may have amounted to “hunches,” but they could give us “hunches” when there was nothing better for our decision-making. In UNPROFOR [1994-1995] and in my time with J3 Ops in Ottawa [1999-2001] we really did not use statistics to determine how we were doing

or where we might expect new activity. But in the early days on OIF II, LTG Sanchez and LTG Metz gave us a number of examples of what sort of analysis products to ask for and how to use them. The analysts were measuring indicators that gave the commander insight as to what the insurgents were doing. They gave a weekly briefing on statistics and the commander asked them for more background as and when it was appropriate. To accomplish this effectively in such a situation is not easy. The context can change rapidly with combat operations, stability operations and PSOs [Peace Support Operations] often occurring simultaneously at different places and at different times.

Role of the Analyst

- Staff horsepower to assist the Commander
 - See the belligerent's plan
- Concurrent Operations
 - High intensity
 - Stabilisation operations
 - Peace support
- “Commander-think”
 - Emerging data points
 - “Slidetology”
- In-theatre advantages
 - Access to Commander
 - Mother of all data bases



Figure 1: The Role of the Analyst.

I would say that ORSA analysts must be aware of how their commander thinks – an asset that often depends on the length of time that analysts spend in the field (Figure 1). This can be crucial to developing a good working relationship with the commander. Failing that, it is difficult to develop the synergies required to get ahead of the adversary in terms of his decision-making loop. ORSA analysts who have been with the same commander in the past will know how he thinks. They must also know how the commander likes to have information presented. I have been impressed that the people in this field have a deep knowledge of decision-making and the analysis and presentation of quantitative material. This really pays off in terms of the flexibility required to take on new and complex problems.

The analysis community must also be aware that “good work begets more work.” So once they have produced something that a commander and staff can use, they are likely to be sought out over and over again. Our analysts in theatre [US analysts] were a mixture of military ORSAs, government civilians with corresponding specialities, and contractors (Figure 2). When appropriate, these analysts could send problems back to colleagues outside the theatre, usually back in the US (Figure 3). The analysts back there don’t have the “baggage” of the analysts in theatre, which can bring new vision to a problem. So this means they can bring some innovative ideas to the problem. Of course, there can be a downside in that the analysts outside the theatre lack “local knowledge,” and this may make some of their proposals impractical once we see them back in theatre. But, as long as everyone knows that not all proposals will be implemented, this is still a very effective means draw in innovative ideas.

Practical Issues: In-Theatre

- Mix of both military and civilian analysts
- Issues for in-theatre deployment
 - Training on firearms, mines, and IED
 - Need for “security details” to escort analysts
 - Visiting analysts
 - Legal liability




Figure 2: Practical Issues In Theatre.

Reach-back

- Timely, instantaneous analysis
- Innovative solutions
- TTPs changing daily
- CompanyCommand.com
- Training of follow-on troops



Figure 3: Reach-back.

To be sure, one problem involves deciding what can be sent back home and what needs to be addressed in theatre. Generally speaking, however, anything that needed solving on a timely basis remained in theatre. The conflict in Iraq ensured that there were a lot of things to measure – and a huge database was developed. What was considered important would change on a day-to-day and week-to-week basis. And a lot depended on the intent of the commander in terms of what he wished to achieve and what he saw as important at any particular time.

One key indicator that had to be monitored when I was in Iraq was the hourly rate of electricity available to cities (most notably Baghdad) (Figures 4 and 5). This was particularly important in light of the fact that it was a central area of operations and it was winter (during the December–January period, the power rate averaged approximately nine hours of electricity per day). A stable supply of power was thus crucial to progress. Yet ensuring this was at times, problematic – as locals in other cities would often tap into Baghdad’s electricity supply – leaving it short of what was needed. Certainly, when we are trying to measure success in such operations we must have clear criteria and requirements for judging it. And this can be difficult. In Iraq, different authorities have different requirements and needs. Luckily though, we were often able to get different organizations to converge on their objectives.

One also needs the right tools for the job (Figures 6, 7, and 8). Here the key is ensuring that information is relevant and timely. If one doesn't have the products available for the commander when required and in a form that he can easily understand, this wastes valuable resources. A commander's time is precious. If you approach him, it must be with the right material as life and death decisions can ultimately result from what is provided. Thus, the provision of statistics must be timely and credible. In my view, analysis was a key enabler to command. When you provide analysis products of high quality, you will find that commanders and their staffs will go back to you time and time again. Now I would like to take some questions to see if I can further characterize for you the use of statistical and other analysis methods as I saw them employed.

Measuring Progress

- Military/Iraqi Security Forces/Civilian casualties
- Attacks on Infrastructure
- Transition to Local and Regional Control
- Assistance (TIPS) from locals
- Return to normality for the local population
 - Water, shelter, electricity, goods and services
 - Schools operating
 - Banking
 - Law and Order
 - Gas lines
- Elections



Figure 4: Measuring Progress.

Measuring Success

- Success where and for who?
- Differing perspectives:
 - Coalition Provisional Authority
 - CJTF-7 Multi-National Force
 - Multi-National Corps Iraq
 - Respective Governments
- Overlapping objectives
- Thorough analysis
 - Consistent objectives



Figure 5: Measuring Success.

QUESTIONS AND ANSWERS

- *Mr Tom Schmidt:* As I understand it, some of the statistical analysis was conducted to determine when you could turn a province back over to local control. Is that right? *MGen Natynczyk:* The statistics from the analysis teams

could assist in this. They might, for example, give some idea of which provinces had seen a return of basic services to near normal levels. But, of course, may other factors had to be considered as well.

Measuring Success: Tools

- Right tool, for the right job, at the right time:
 - Sampling
 - Surveying
 - Questionnaires
 - Opinion polls
- Desired result:

ACTIONABLE STATISTICS



Figure 6: Measuring Success: Tools.

Actionable Statistics

- Commander's Critical Information Requirements
- Factor in decision-making
- Time sensitive







Figure 7: Actionable Statistics.

- *Mr Ian Mitchell*: Could you give us an idea of the balance between long-term and short-term analytical studies? *MGen Natynczyk*: In general, I would say that short-term studies were those that needed turn around in under 72 hours. The staff in theatre typically took these on. The longer-term studies (taking more than 72 hours) were often dealt with through reach-back, generally by staffs back in the US. So it would be misleading to give a proportion to the balance between these within CJTF 7.
- *Dr George Rose*. I have been leading a NATO study that has developed a Code of Best Practice on providing analysis to military decision-makers in positions like the one you were in last year. You may be happy to know that study report endorses your findings. And coming from the analysis perspective, rather than your military perspective, this is a rather gratifying correlation. My question is over how the trust, or perhaps the term would be

“mutual credibility,” developed between military leaders like yourself and the analysis staff? *MGen Natynczyk*: I was lucky. When I arrived in CJTF 7 commanders were already using analysis products. In particular LTG Sanchez had a very good idea of what he could expect from the analysis staff. So during my tenure there was no need to establish “mutual credibility.”

Analytic Requirement

- There is a role!
- Military and civilian
 - Brains/knowledge/experience
- Expertise in nation building
 - Economics
 - Infrastructure
 - Civil Affairs
- Enable command
 - Receptive
 - Guidance
 - Credibility

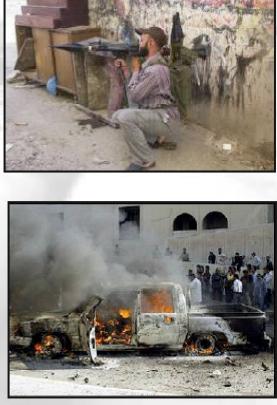


Figure 8: Analytic Requirement.

- *Mr Robert Eberth*: Did you use high-level metrics of success? For example, was there a “target profile” of what the country would look like if we were successful? *MGen Natynczyk*: When I was there it was basically an insurrection. So the sort metrics we were generally most interested in were “how many attacks have there been and where were they?”
- *Dr Richard Hayes*: When you were in CJTF 7, how did you handle co-ordination with non-military organizations? *MGen Natynczyk*: At the time I was in CJTF 7, we would go to the CPA [Coalition Provisional Authority]. There were really no NGOs [non-governmental organizations] in Iraq in any real number. So we could focus the co-ordination on the CPA. Now, if I go back to my earlier experiences in the Balkans, there certainly was the need and there were many means for co-ordination with many NGOs, but I suppose those are now well known.
- *Dr Mike Baranick*: It seems to have been critical that the Commander should have a background that includes experience with operations research and systems analysis? *MGen Natynczyk*: There is undoubtedly an aspect of culture here. General Sanchez had certainly worked with ORSA personnel in previous assignments and this contributed his effective use of them in CJTF 7. But I would say that the “cultural awareness” of many of us in the headquarters has now been raised. Everyone who was there saw the widespread and effective use of statistics.
- *Dr Pauline Baker*: How exactly did you use statistics to determine the belligerents’ plan? *MGen Natynczyk*: Things are happening all over. So there is lots of data. The task for the ORSA teams was to develop this into usable format. It was often useful to see what was happening over time, for example,

were attacks on infrastructure increasing? From this we often could see emerging patterns.

- *Lt Col Syvert:* Since much of the analysis seems to have been devoted to a return of basic services to the locals, do you think it was a good decision to get rid of the pre-existing civilian and military apparatus? *MGen Natynczyk:* Well, the decision to get rid of the civilian and military apparatus was taken before I arrived in theatre.
- *Dr Margaret Daly Hayes:* Who kept track of new questions for the analysts as they emerged? *MGen Natynczyk:* General Sanchez, who had a strong OR background, knew about this and seemed to be tracking for himself the problems assigned to the analysis teams. He was brilliant.
- *Dr Margaret Daly Hayes:* Was there a dialogue between commanders and the ORSAs? *MGen Natynczyk:* There was certainly some interaction between commanders and the ORSAs. And both Lieutenant Generals Sanchez and Metz clearly knew the value of operations research. LTG Sanchez holds a bachelor's degree in mathematics and history from Texas A&I University and a master's degree in operations research and systems analysis engineering from the Naval Postgraduate School. He has had previous assignments where analysis products were widely used.
- *Professor Ted Woodcock:* I am afraid we have run out of time. On behalf of the Cornwallis Group, and our chairman emeritus, Dave Davis, I would like to thank Major-General Natynczyk for his contributions to our discussions this week.