Building a Scenario-Based Analysis Method for New and Emerging Societal Conflicts Drawing on International Relations, Military Planning, and Operations Analysis

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INTRODUCTION

This paper is about working together to build a scenario-based analysis method for new and emerging societal conflicts – drawing on the expertise of International Relations, Military Planning and Operations Analysis.

The paper starts with two contrasting mission types (familiar to the authors through analysis) – Crisis Containment – an example of intra-state conflict and Collective Defence – an example of inter -state conflict. The paper describes a logical route from state history, including a 'future history' to provide the circumstances to stimulate a future conflict scenario, through an analysis of the causes and effects and invocation of a UN mandate, legitimising intervention.

The paper next describes an 'estimate process', which defines an 'end state' and a number of supporting phases of conflict resolution, together with a breakout of the objectives and tasks that must be accomplished. This is a systematically derived requirement (complete and coherent), against which fulfilment by military and civilian agencies can then be considered.

The paper then discusses how it is possible to undertake this fulfilment by matching the capabilities required with capabilities (and forces) offered and rationalising the final structures to exact economies of scale.

Individual nations forces/agencies may only provide part of the solution, e.g. if a nation's force contributions are part of a larger combined force. The paper discusses how it is possible to focus on those task requirements where a nation may wish to or be required to contribute and examine how it is possible to analyse the efficacy of national contributions and identify gaps or deficiencies in capability.

The ideas for this paper arose from work the authors undertook for NATO Consultation, Command and Control Agency, NC3A, where they assisted in developing the analytical methods and tools, currently being used in NATO's biennial Defence Requirements Review. The paper also draws on earlier work undertaken for the New Zealand MoD and Army, in examining how a small nation's force structures (and capabilities) can be made to be effective within a multinational coalition force engaged in Peace Enforcement and Peacekeeping.

DEFENCE PLANNING

NC3A Operations Research Division undertakes the scientific analysis on behalf of Allied Command Transformation (ACT), which supports the biennial Defence Requirements Review (DRR). The DRR examines a broadly assessed security situation affecting NATO in the medium term (8 to 10 years ahead) and establishes the number and type of forces required to meet agreed levels of threat or risk. This is initially expressed as force requirements satisfying approximately 20 different Planning Situations or scenarios, representing a smaller number of typical Mission Types. However, not all Planning Situations/scenarios would happen simultaneously, so a large number of small combinations of Planning Situations are considered in turn, in order to generate a minimum sized Force Pool – minimally sufficient to satisfy all of the combinations.

The majority of this paper explains a 'top down' analytical approach to Defence Planning, based on the NC3A methodology. The paper describes how a textual thesis can be reduced to an initial qualitative form of analysis, focused upon 'word phrases' and their contexts and how this is engineered into a form of quantitative analysis, where force/agency requirements and their fulfilment are expressed in quantitative terms, encoded within software code and scripts.

CAPABILITY PLANNING

Crisis Response Operations (CRO), which represent an important new class of Mission Type, have important implications for countries' defence forces – both in terms of numbers of units

and capabilities. Crisis Containment, Counter Terrorism, Peace Enforcement and Peacekeeping are some of the contemporary Mission Types a country needs to plan for, usually in the context of contributing to an internationally mandated coalition operation.

It is therefore important for a country, especially a small country, to analyse thoroughly the circumstances in which its forces may be utilized and to plan for capabilities that are appropriate. A complementary form of 'bottom-up' analysis will enable deficiencies to be 'quantified' and cases for capability acquisition justified, in operational terms.

Thus Capability Planning is the natural complement to Defence Planning. Part of this paper explains a methodology capable of systematically quantifying the impact of capability deficiencies and their alleviation through acquisition and other means. (Note that capability is often referred to as 'equipment capability' and 'military capability,' the latter covering organisations, military doctrine, personnel, training, infrastructure, etc.)

COUNTRY AND MISSION ANALYSIS

In creating a representative scenario for a Mission Type, it is useful to start at 'the end of the story' and work back. This is instrumental in identifying the various components and stages which occur in the escalation of a crisis situation and in mapping and evaluating the road to force deployment.

THE IMPORTANCE OF REALISM AND THE SIGNIFICANCE OF THE MISSION TYPE

Two factors form the keystone of the scenario-generation process. The first is realism. The scenario must reflect reality – it must provide the same context as would exist in a real operation. There must be a background, complete with a history, a political system, a societal dimension, a foreign policy and a wide range of other factors and influences. It must replicate the kinds of 'real-life' stimuli that have bearing on how circumstances evolve and how potential crises can escalate into actual crises. After all, in this case the objective in creating the scenario is to construct a realistic projection of a possible future situation – one that can withstand scrutiny - that can be deconstructed and assessed to provide requirements indicators for force planning.

The task is complicated by the fact that that in addition to creating overall context, the scenario must provide linkages into the different types of missions. These mission types are the second crucial factor which underpin the scenario. The multifarious nature of the international strategic environment calls for a broad spectrum of mission types. These have differing objectives and methods and cover a broad range of military tasks. It is not a case of 'one force fits all'. Due to their diversity, these mission types require bespoke scenarios which include specific triggers and links. These emerge in the deconstruction and affect firstly the assessment or estimate process and consequently the final requirements that are articulated. For example:

- ▪ A Collective Defence mission is likely to be concerned with inter-state conflict, prompted perhaps by a clear violation of international rules or norms. The conflict phase, often fought conventionally and at high-tempo, is likely to be short in duration and opponents will employ a broad-range of high-tech weapons and expensive platforms to keep each other at arms length.

- ▪ A Crisis Containment mission, on the other hand, is likely to be concerned with intra-state conflict. This may revolve around a conflict between a complex multitude of sub-state actors on territorial, political, ethnic or religious grounds. Compromise between belligerents is unlikely, it will be difficult to eliminate the symptoms and the problem could easily spread to neighbouring countries. Any intervening actor becoming involved with an inter-state conflict is likely to find itself locked into a messy war of long duration with limited prospects for manoeuvre and with the possibility of having to assume the reins of government for an indeterminate period.

Clearly the force and equipment requirements in these two situations will vary. Therefore, the differences between the force requirements for these two mission types have to be reflected in the construction and emphasis of the scenario. The mission type is therefore a pivotal element in the process.

CONSTRUCTING THE SCENARIO

The construction of the scenario takes place in 3 stages: the history, the 'future history' – i.e. a set of invented future events which culminate in a crisis situation, and the response: a security assessment/mandate issued to deal with the situation.

The history of a country or region is fairly easily acquired, providing there are enough reliable primary and secondary sources available. As the history provides the basis for constructing an adequate and plausible Future History, it needs at least to be accurate and comprehensive in respect of relevant factual history.

Insofar as the future history is concerned, whilst it is not possible to foretell the future, it is feasible, using history as a pointer, to make a set of informed predictions and then apply artistic licence to ensure all the relevant (mission-type specific) factors are included. To some extent, the generation of the future history allows the author to steer it in the desired direction and contrive circumstances and situations. However, the requirement for a credible scenario demands more than purely creative writing.

When considering the history, present and possible future of any given country, the situation in which that entity may find itself will have evolved as a result of 3 sets of influences: internal 'domestic' influences; external 'foreign' influences; and contextual international influences – the canvas on which domestic and foreign interactions are drawn. The seamless evolution of these 3 elements cannot be overlooked if the scenario is to retain a realistic and representative tone. This is illustrated in Figure 1.

The history, present and possible future course of any given country will to some extent depend upon the Internal, or inward-looking influences to which it is subject. These may

include some all of the following factors: it's history; society; cultural influences; ethnic composition; political system; demographics; economy; resources; military assets; religions; industry; geographical location; national identity/self-perception and many more.

The second set of influences, those which can be considered External, or outward-looking, although they overlap with the first, are more complicated and less easy to categorise. They revolve around the country's relations and status with her neighbours and with other players on the global stage. No country can operate in a vacuum and the internal influences of each of these global players and the external influences to which *they* are subject will determine the nature of their interaction and relationships. These are rarely static and will constantly shift to reflect actual and perceived developments and setbacks to their own particular positions on the international 'canvas.'
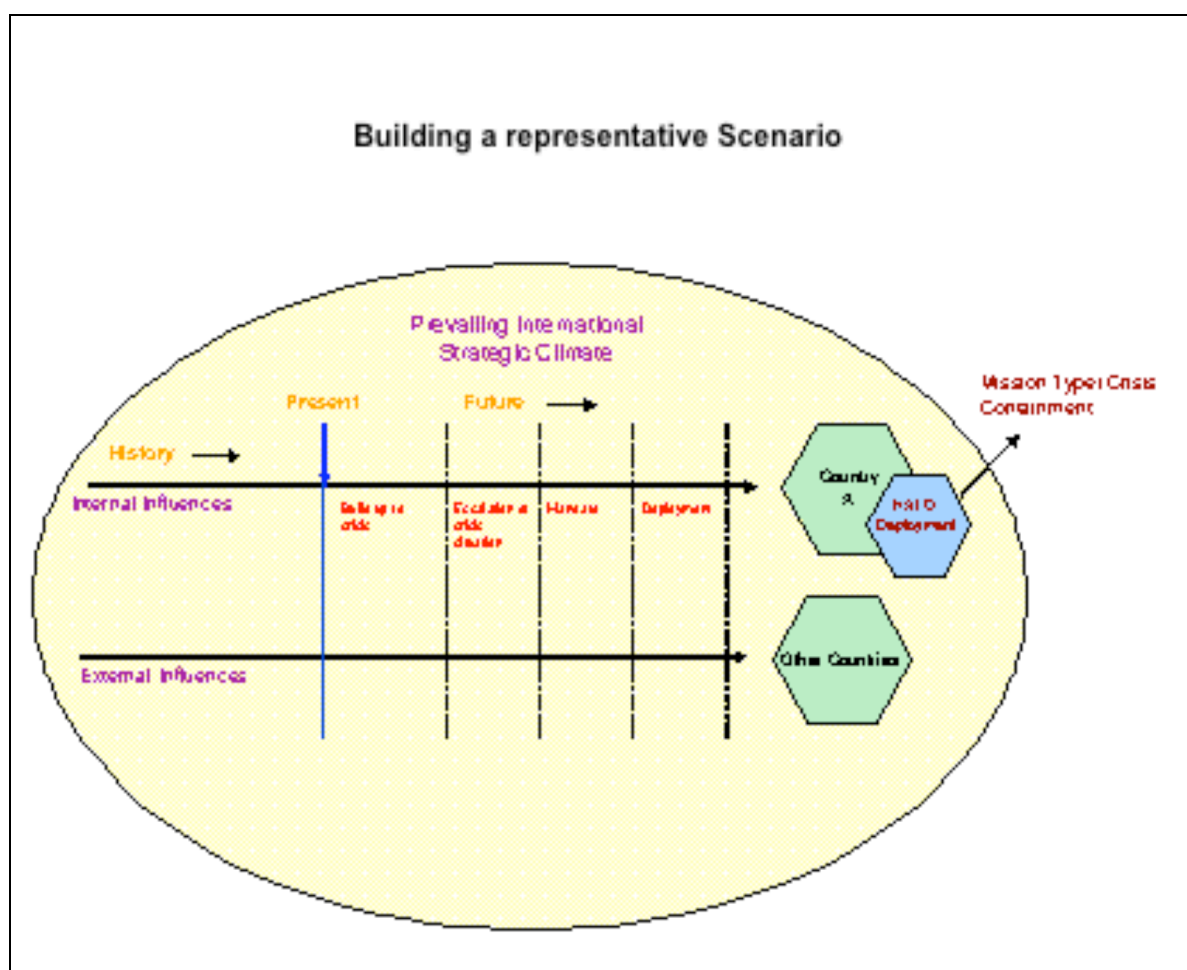

Figure 1: Building a Representative Scenario.

The overall 'canvas' is determined by the prevailing International climate. There are a number of schools of thought as to the dominant factors, which shape the international strategic climate. Many of these emphasise the formative importance of evolutionary cycles of global trends, which blend to create a 'conflict environment', which is constantly shifting and reinventing itself. Again, the current, and past global climate provides a link to the development of emerging trends. Existing trends, the impact of which may continue to shape and inform the global strategic climate may include globalisation, population growth, the development of new threats, including in the nuclear and WMD sphere, multi-polarity and

the erosion of the state, the rise of non-state actors and the increasing influence of identity politics. This new strategic conflict environment will have knock-on effects, both on the kinds of conflicts that will be prevalent, and on the way in which those looking to operate in them will approach their operations. The implications of this, providing they emerge from the scenario, can be swept up in the military estimate.

Taking into account the three sets of influences, it is possible to construct a plausible series of events, which ultimately escalate into a crisis situation. The climax of the future history will depend according to the mission type. In Collective Defence, for example, there might be escalation to a potentially explosive border incident. In Crisis Containment, for example, it might be to do with internally displaced persons or humanitarian concerns. The most important thing is to ensure that the culmination of events is plausible and would draw in the international community, and prompt a security assessment by NATO or the UN, which would result in a UNSC resolution being issued.

THE SECURITY ASSESSMENT

The keywords, plausibility and realism, apply equally to the security assessment at the end of the scenario. If it is to be representative, it must take into account the question of legality and legitimacy of action: there must be appropriate charter basis for UN or UN-sponsored action, there must be precedents for international involvement, and a credible rationale for intervention within the parameters of the mission type specified. Some calculation of the strategic end state is also required. In addition to these questions, there must also be some consideration of the geopolitical or strategic context in which any intervention would be set: Regional contexts have to be recognised and taken into account and wider regional sensitivities – where there are regional considerations which could reduce the likelihood of approval for UN action in general, and NATO actions in particular, these must not be overlooked.

At this point it is also timely to ensure that sufficient detail has been incorporated to create a full assessment under what is called the estimate process – this might extend to the status of ceasefires between belligerent parties, residual tension or hostility in the region, the level of consent to international intervention, and the extent to which humanitarian concerns may feature. On completion of this phase, only the resolution authorising action remains to be created. This might read something like the following.

> *"The UN, under UNSCR 9997, has authorised NATO to conduct a crisis containment operation astride the border of ……… and ……… in order to contain the existing crisis, deter any escalation, and assist the humanitarian relief agencies in order to create the conditions for the development of mutual trust within the region."*

THE ESTIMATE PROCESS

The estimate process is an assessment of the various elements required to accomplish any given mission. In this case we are referring to the domain of military operations, and the

estimate process is a well-developed NATO approach. However this need not be an exclusively military preserve, only of relevance to those concerned with military planning and force generation and is applicable to a wider audience in other sectors and organisations. The estimate process is central to the formulation of the campaign plan and the subsequent updating of that plan. It comprises 4 main elements, which are illustrated in Figure 2.
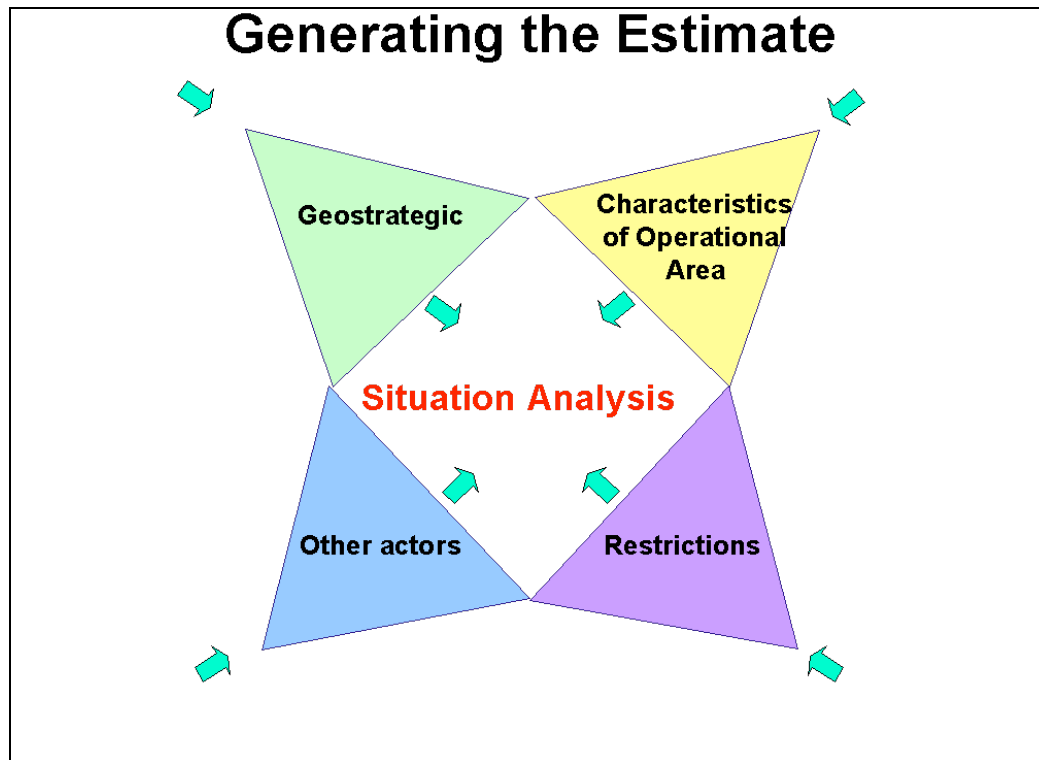

Figure 2: Generating the Estimate.

The first of these is a mission analysis. This articulates the mission's purpose, its short- and long-term objectives and the method, in terms of individual tasks, by which it is to be fulfilled. It establishes an understanding of the strategic intent, direction (i.e. under whose authority it falls) and end-state, outlines the constraints on the mission, articulates specific and implied tasks, and determines priorities. As such it links the strategic with the operational. It concludes with the mission statement, a reiteration of the mission's purpose and parameters. This might read as follows.

> *"A NATO-led coalition force will conduct a crisis containment mission on the …..…./…..…. border in order to contain the dispute, protect the ethnic minorities, facilitate relief and prevent the crisis from escalating into full armed conflict."*

The Situation Analysis follows. This takes into account the geo-strategic dimension, practical and operational facets, the influence of other actors and any restrictions on the way the mission is to be conducted.

The geo-strategic dimension is informed by the political influences, the politico- diplomatic causes of the conflict, both short- and long-term, the level of political will,

strategic interest, and any situational constraints, be they political, economic, legal or moral. For example, this might read as follows.

> *"The dispute is symptomatic of the many ethnic quarrels within this region that owe their origin to historical events of past centuries rather than the immediate past. It would be inappropriate to draw forces from nations that have a vested interest in the region or who are perceived to be 'tainted' by one or other parties to the dispute."*

The operational facets will incorporate the practicalities of the operational area, its terrain, geography, climate, transport and communications system. The unsophisticated nature of the infrastructure, harshness of terrain and lack of airfields might feature, for example.

The influence of other actors, both conflicting and supporting is assessed according to their capabilities and vulnerabilities, their aims, external support, and 'combat' effectiveness or actual ability to carry out the activities with which they have been tasked. A projection of their possible current and future courses of action is also taken into consideration. For example:

> *"There are a number of small but potent armed groups of both ethnic extractions that operate on both sides of the border. Their courses of action include taking independent action against vulnerable minorities in the border area, embarking on terrorist action within the region or attacking NATO using guerrilla tactics to tempt NATO to use disproportionate force."*

Finally, there is an evaluation of any restrictions or limitations on the use of force, for example the constraints of international law and questions of discrimination and proportionality.

> *"Legitimacy of the operation stems from international law and the UN. NAC endorsement alone is insufficient in terms of legitimacy."*

On the basis of the Situation Analysis, and in the light of the possible options the other involved parties might pursue, a decision can be taken as to the preferred course of action.

> *"This Course of Action is selected as it provides the best chance of immediate tactical success. It offers the ability to dominate from the outset, to achieve tactical surprise and to overwhelm and outwit any opposition. It also acknowledges an element of risk-taking in order to achieve rapid effect."*

Leading on from this is the Decision and CONOPS. The CONOPS articulates the different phases of the mission and the Commander's intent, objectives and tasks arising from each. For example, phase 1 might be to conduct preparatory operations, the intent of which will include the comprehensive evaluation of the crisis, the identification of military options, force packaging and the initiation of both Psychological and Special Operations.

The Estimate Process, applied to a number of Planning Situations/scenarios of the same Mission Type, e.g. 'Crisis Containment,' should lead to a set of Operational Objectives, Specifications and Key Tasks – the Mission Task Decomposition – see below. The Estimate Process, leading to a Mission Task Decomposition, is described and illustrated in greater

detail in the Cornwallis Group VIII Proceedings under "Bridging the Lacuna: Development and Systematisation of a Mission Task Analysis Using the NATO Estimate Process" by Richard Cousens.

SCENARIOS AND MISSION TASK ANALYSIS

Following completion of the Estimate Process, a full Mission Task Decomposition into Operational Objectives, Specifications and Key Tasks, by Phases of the operation is created. (The Mission Task Decomposition terminology belongs to NC3A.) For a new Mission Type, a case study scenario is used to generate the Mission Task Decomposition from scratch or, more likely, as a derivative from an affiliated Mission Type.

At this point, scenario specific detail is separated out to leave an abstracted Mission Task Decomposition. With progressive applications of scenarios of the same Mission Type, this decomposition becomes a superset, able to encompass almost any scenario of that Mission Type.

This logic is represented, simply, in Figure 3, where, from an analytical point of view, a Mission Type may be represented by more than one country/scenario and a country may feature in more than one mission type. From an analytical point of view, reuse of countries has advantages – the same country's geo-features and statistics apply – population centres, densities, terrain-type, infrastructure and, to an extent, the political and societal circumstances leading to conflict, though different scenarios may involve different mandates.
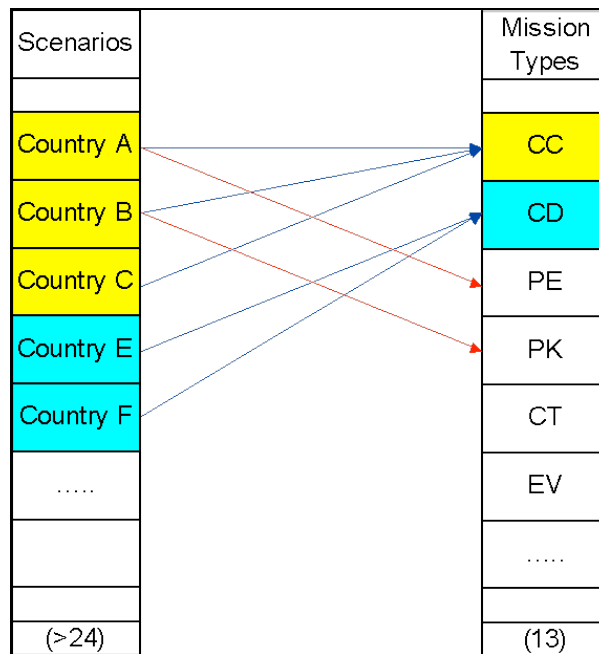

Figure 3: Mapping between Scenarios/Countries and Mission Types.

In the NC3A methodology, three levels of decomposition are sought – Operational Objectives, Specifications and Key Tasks. The logic is that if the Key Tasks are fully satisfied for each Phase, then the desirable end state is reached. For NATO medium term

planning there are now about 13 Mission Types, each with 2-3 scenarios. Of key importance to the methodology are completeness, coherence and consistency of the Mission Task Decompositions. This is a classic qualitative analysis issue.

Work was undertaken to examine the 'word phrases' associated with NC3A's Mission Task Decompositions for six different Mission Types. First to be examined were 'Common (to most Mission Types) Operational Objectives and their Specifications' – this is illustrated in Figure 4 with a break out of 'Own Force Enabling Operations'. Note that there is a further level of break out to Key Tasks, not illustrated.

Common Objectives	
Plan Operation	
Exercise C2	
Conduct Own Force Enabling Ops	
Coordinate with Others	
Conduct Info Ops	
Support the Force	
	Specification
	Facilitate arrival
	Ensure freedom of movement
	Provide for security and protection
	Establish bases
	Build-up the force & arrange for rotation
	Defend against asymetric threat
	Deter incidents that interfere with the mission

Figure 4: Decomposition of Common Objectives.

Next to be examined were 'Specific (to a Mission Type – in this case 'Crisis Containment') Operational Objectives and Specifications' – illustrated in Figure 5, with a break out of 'Support Efforts to Maintain Internal Peace'. Similarly, there is a further Key Tasks level, not illustrated.

Specific Objectives	
Contain the (External) Conflict	
Support Efforts to Maintain (Internal) Peace	
Support (Internal) Stabilisation Measures	
	Specification
	Assist in implementation of ceasefire
	Deter conflict amongst former warring factions
	Support conflict building measures
	Support efforts to establish a permanent paece
	Provide an incidence response mechanism
	Support provision of internal security
	Support efforts to resolve internal tensions

Figure 5: Decomposition of Specific Objectives – 'Crisis Containment.'

In a typical Mission Task Decomposition, there are approximately 9 Operational Objectives, two to three times this number of Specifications and approximately three times this number of Key Tasks, making for upwards of 54 Key Tasks in all. There are currently 154 different Key Tasks, across all of the six Mission Types examined, some Key Tasks being common to more than one Mission Type. The 'word phrases', as illustrated above, are quite abstract, stripped of 'country detail.'

COMPLETENESS, COHERENCE AND CONSISTENCY

Completeness is achieved if all scenarios for that Mission Type can be accommodated by the Decomposition. This is achieved slowly, over a number of cycles of Defence Planning. Coherence concerns the big picture, broad comparison, between Mission Task Decompositions and is illustrated by the analysis of Common Objectives and Specific Objectives (and their Specifications) above. Validation is by repeated inspection and peer review.

Consistency goes a stage further, exploring two dimensions – structure and syntax – and whether these apply 'consistently' across the Mission Task Decompositions. It covers, respectively, the inclusion/exclusion of terms and the clear use of terms.

If something is stated differently – is it intentionally structurally different or simply a difference in expression, with the same intended meaning? To clarify this there can be two approaches – 1. Ask the original author what was in his mind or 2. Examine the further analytical stages and establish whether the difference in expression in fact makes any difference in, say, force allocation.

For syntax, it is possible to examine the use of nouns, verbs, adjectives and adverbs and their consistent application to subject, object, etc.

For example, for the Operational Objective 'Coordinate with Others …' – there are four classes of coordination distinguished at the Specification level – 'civil/military coordination', 'military liaison', 'local liaison' and 'operational liaison'. The question is are these distinctions intended and if so are they clearly defined?

For the Operational Objective 'Coordinate with Others…', examination of the subsequent force allocation revealed that the key distinction appeared to be the object of the liaison, i.e. international agencies, local population or factions, rather than the particular type of liaison. Whether this was an intended distinction, it cannot be said, simply that the distinction existed.

Turning to the use of verbs, for example it was not clear whether 'Provide/ Establish/Maintain' are intended to be synonymous, similarly 'Conduct/Manage/Execute.'

Gaining insights on the completeness, coherence and consistency of the Mission Task Decomposition methodology of NC3A is important to future use of the methodology, both by NC3A and possibly other agencies and nations. The methodology is evolving to become a canonical representation of a Decomposition of most Mission Types applicable to medium term Defence Planning.

FORCE/AGENCY SOLUTIONS

Earlier it was stated that 'if the Key Tasks are fully satisfied for each Phase, then the desirable end state is reached'. The general scope of a 'force/agency solution' will depend on the Mission Type (as it is required to satisfy a canonical set of Key Tasks), however the specific numbers and capabilities required will depend on the particular country and scenario – some scenarios being more difficult or onerous than others (even if the Key Tasks are essentially the same).

The problem faced at this point is one of 'force/agency induction' – how to provide an efficient and consistent approach to satisfying the Key Tasks with force/agency solutions. Originally, NC3A's approach was to satisfy each Key Task in turn using 'Force Allocation Rules'. This was tedious and quickly led to over specification of forces. Later the concept of 'solution groups' was used – each representing a package of capability that can be applied variously to Key Tasks and not limited to any one Mission Type. (Note NC3A uses the term 'Joint Activity Trees' for solution groups.)

By applying a number of solution groups across the timeline of the scenario, it is possible to create a sufficient force/capability package for the scenario. Some attention to over and under specification is still required, e.g. a solution group of 'Engineering' may only be invoked once – when not involved in Engineering the troops may undertake other (e.g. patrolling) tasks. A solution group of 'Presence/Control' may be invoked many times, in which case it will be important to ensure sufficient troops to cover simultaneous instances.

There are about 50 solution groups in the current NC3A methodology (compared to upwards of 154 Key Tasks). To satisfy a Key Task more than one solution group may be required and clearly one solution group may satisfy several Key Tasks. Thus there is a many-to-many mapping between Key Tasks and solution groups. The decision as to which solution groups contribute to which Key Tasks is almost an art form. For the Mission Type 'Crisis Containment', there are 14 solution groups. This increases to 46 solution groups for the more complex 'Collective Defence' Mission. The solution groups for Crisis Containment are summarised in Figure 6. This part of NC3A's methodology is still evolving.

❖ **Ops & Liaison**
  • **Intel/Ops, Information Ops, Presence/Control**
  • **Engineering, Humanitarian Assistance, Liaison**
❖ **Legal**
  • **Provost**
❖ **Protection**
  • **Force, Air Defence, NBC Protection**
❖ **Logistics**
  • **Supplies, Maintenance, Medical, Basing**
  • **Strategic Lift**

Figure 6: Solution Groups for 'Crisis Containment.'

GENERATING A REQUIREMENT

The rules that govern how much of a certain kind of force/agency is required to satisfy the key task under the conditions of the scenario can be built up from a large number 'code segments', which can be independently verified and are held in a repository/database. In essence, a solution group is made up of a collection of code segments – some simple, some complex. The code segments are represented in a programming language.

A 'Master Script' is then run for each scenario, that iterates across all Phases of a Mission Type and within each Phase, all solution groups, and then within each solution group all associated code segments. The outcome is a requirement of forces/agencies, expressed in generic terms (e.g. force units, other agency capability packages, etc.).

At NATO level, a further and final stage involves 'fulfilling' the generic force/agency requirements with actual nations forces/agency contributions. This is a complex process, involving examining combinations of 'benchmarks' – e.g. 'one Collective Defence and two Crisis Containment Missions' simultaneously.

At a national level, fulfilment is often a simpler exercise, as the majority of the forces are one's own. However, some form of benchmarking exercise still needs to be undertaken. The more operations become coalition-based, the more relevant is the NC3A fulfilment methodology, i.e. generating generic forces/agencies first, then fulfilling with real forces/agencies.

NC3A has a comprehensive and flexible software toolset covering all stages of the methodology, from scenario archiving, through Mission Task Decomposition to repositories and test environments for solution groups and code segments, the running of Master Scripts, generating a (generic) requirement, and the data intensive finale of the fulfilment of the requirement within benchmarks. (The toolset is referred to as J-DARTS – Joint DRR Analysis & Requirements Toolset. The Toolset consists of five separate software tools linked to a Common Data Repository.)

TEKAPO MANOEUVRES ANALYTICAL FRAMEWORK

Examining the topic from a different perspective, that of a contributing nation, the logic is inverted. A small country that wishes to participate effectively in defence alliances and contribute to collective security must ensure that its force structure and its capabilities are up to the task. An element of selectivity may arise, e.g. policy may be that the force structures and capabilities may be appropriate to a significant contributory role in Crisis Containment and a less demanding role in a regional conflict (e.g. Collective Defence).

A methodology has been developed and used by New Zealand and is described in outline terms below. The original name for the initiative of 'Tekapo Manoeuvres' has been retained in this paper. Tekapo is a training area in the South Island and Tekapo Manoeuvres is a hark back to the US 'Louisiana Manoeuvres', undertaken as force transformation experiments during WW2 (1940/42).

The idea of Tekapo Manoeuvres Analytical Framework (TMAF) was to provide a methodology in two parts. Part 1 would identify the vignettes in which NZ forces may be expected to be involved and identify at a broad level the capability deficiencies of the current forces and in which vignettes these deficiencies would be most apparent. Part 2 would amplify the most important vignettes, quantify the impact of any deficiencies and estimate the operational effectiveness improvements that could be obtained through alleviating these deficiencies. Part 1 involved mainly qualitative gaming and analysis, Part 2 mainly quantitative modelling and analysis.

Part 1 is summarised conceptually and very simply in Figure 7, where the three major scenarios of a 'Coalition Operation in South East Asia (SEA)', 'Defence of Australia (DOA)' and 'Peace Support Operations (PSO),' e.g. in Bosnia, are decomposed into a number of vignettes. Seminar Gaming establishes the severity of each identified capability gap in each vignette. Those vignettes with most deficiencies, combined with the highest frequency of occurrence, are key candidates for Part 2 of the methodology. Examples of vignettes for PSO (circa 1997) are shown in Figure 8.

		SEA	DOA	PSO		
	Vignettes	A	B	C	D	.....
Capability Gaps	Protected Mobility	***	***			
	ISTAR		***	**	*	
	C4I	**	***		**	
	Logistics	***	**	*	**	
	.....					

Figure 7: Illustration of Part 1 of TMAF Methodology.

❖ **Forcible separation of belligerents**
❖ **Establishment & supervision of protected zones**
❖ **Enforcement of sanctions**
❖ **Movement denial & guarantee**
❖ **Restoration & maintenance of order**
❖ **Protection of Humanitarian Assistance**
❖ **Route opening**
❖ **Redeployment of UN force from outpost**
❖ **Monitoring of ceasefire between factions**
❖ **Reinforcement of garrison**

Figure 8: Examples of Vignettes for New Zealand Defence Force Planning.

There is a close similarity between the vignettes of TMAF and the solution groups of NC3A's methodology. This comes back to the early premise of the paper that Defence Planning is essentially 'top-down' and needs to be complemented with 'bottom-up' analysis, enabling capability deficiencies to be quantified and cases for capability acquisition justified in operational terms.

TMAF enables a nation's capability deficiencies and their alleviation to be closely analysed. Priority capability improvements must be those that have the greatest impact across the vignettes. In terms of acquisition, there is likely to be an optimal sequence of capability improvement.

CONCLUSIONS

The paper has striven to demonstrate the successful application of International Relations principles to construction of future scenarios, the wider relevance of the (military) estimate process, the merit of NC3A's methodology of Mission Task Decompositions into Objectives, Specifications and Key Tasks, and the applicability of the mapping between the Key Tasks (mini tactical problems to be solved) and the solution groups (capability packages, applicable to more than one Key Task), ultimately leading to complete and appropriate force/agency requirements.

In examining a small country's capabilities and in projecting these into typical vignettes in which a country's forces (or agencies) will be required to undertake operations, the TMAF methodology developed for the New Zealand government is the natural flip side to NC3A's force/agency requirements methodology. The vignettes of TMAF are very similar to the solution groups of the NC3A methodology.

If the NC3A canonical mission analysis and the emerging TMAF capability/deficiencies analysis provide stable and repeatable methodologies, the possibility arises of 'trades' in the various components. A country new to defence and capability planning need not reinvent the methodology, it could reuse the methodology (and possibly the tools) taking whatever components it needed and offer back to the pool, for example, further vignettes. The above trades and the maintenance of configuration control across the methodology and its components is an ideal task for an interested industry (consultancy company) partner. Such an initiative would need to be encouraged by NATO, e.g. through NATO's Research Technology Organisation (RTO) or directly by NC3A.

FOOTNOTE

[1.] SCS has worked closely with NC3A over the past four years, helping to extend and to refine their DRR methodology. SCS has also specified the J-DARTS toolset and has developed the majority of the individual software tools. Robert Bailey led the team that undertook the TMAF consultancy for the NZ government.