

## Lessons Learned in the Norwegian Defence – Who Learns What, and Why?

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PB 25, 2027 Kjeller

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### **ABSTRACT**

*The current Norwegian Defence White paper emphasises that the Defence is a knowledge organisation and needs to collect and analyse all relevant experiences in a systematic and methodical way. Lessons learned should be realised through amendments to current best practice, and consequences for Defence planning need to be investigated.*

*In the Norwegian Defence there is not a Lessons Learned (LL) unit with capacity to actively collect lessons in a broad manner. This implies that the overall system is based on reports at pre-defined reporting points. These reports are staffed at the appropriate level and are stored in the FERDABALL-database as a central repository.*

*Experiences from support to current operations, shows that the overall Lessons Learned system does not capture all relevant experiences. At the same time tactical units do have their own Lessons learned-process, but these are largely unit-internal – and to some extent unit-specific. As a consequence, different units could have different best practices for the same task. When different units rotate into operations, filling the same position, this will on many occasions have a negative impact on performance.*

*At the same time analysis of reports currently stored in the LL-database shows that reported lessons are recurring, thus indicating weak linkages from the Lessons Learned process to the overall Defence planning process.*

### **1.0 INTRODUCTION**

This paper is written in the context of a research project at the Norwegian Defence Research Establishment (FFI) covering operational analysis (OA) support to military operations. Since 2008 our research project has had a small study of the lessons learned (LL) process in the Norwegian Defence. In late 2008 a report was published on this subject [1]. This report was primarily focusing on the systems perspective of LL. We do also have a more practical approach to lessons learned, and have since December 2008 had an operational analyst deployed to the Norwegian led Provincial Reconstruction Team (PRT) in Afghanistan. Among other tasks this operational analyst has been looking at lessons identified (LI) and lessons learned in PRT Maimana (PRT MMN). The LL process in the PRT is a three folded process. The units have their own internal LL process, there is a PRT internal LL process for some of the “bigger” missions and in addition you have the formal LL process that is centred on two standardized reports.

### **2.0 BACKGROUND**

Defence white papers from 2003-2004 defines transformation as “a qualitative change in the military context, which means to change the force composition and the ways of operating” [2]. The goal is to

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*Form Approved  
OMB No. 0704-0188*

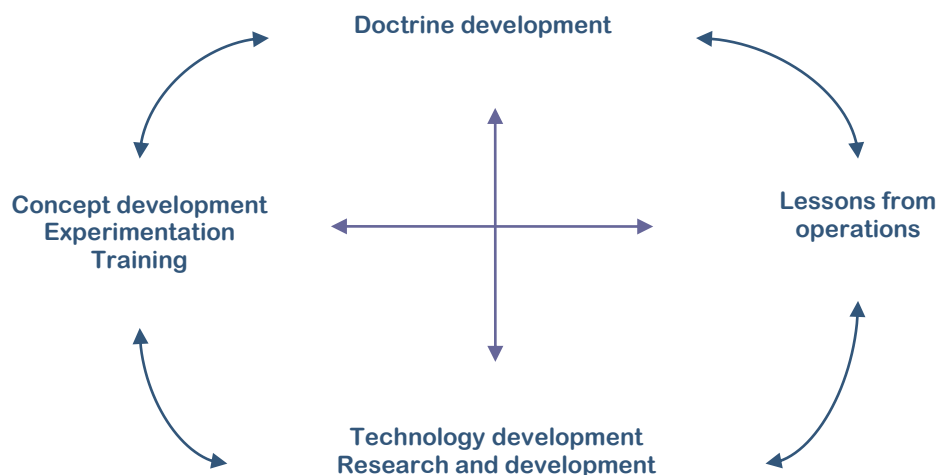
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1. REPORT DATE <b>APR 2010</b>	2. REPORT TYPE <b>N/A</b>	3. DATES COVERED <b>-</b>			
4. TITLE AND SUBTITLE <b>Lessons Learned in the Norwegian Defence Who Learns What, and Why?</b>		5a. CONTRACT NUMBER			
		5b. GRANT NUMBER			
		5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)		5d. PROJECT NUMBER			
		5e. TASK NUMBER			
		5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Norwegian Defence Research Establishment (FFI) PB 25, 2027 Kjeller NORWAY</b>		8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)			
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>See also ADA564688. Analytical Support to Defence Transformation (Le soutien analytique a la transformation de la Defense). RTO-MP-SAS-081</b>					
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15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>SAR</b>	18. NUMBER OF PAGES <b>10</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



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become better at solving the challenges the military faces, i.e. increase the operational capability. The Defence's transformation is further described by the "transformation wheel", where "Lessons from operations" is one of four interacting main processes/activities for the development of the Defence, see Figure 1.



**Figure 1: Transformation wheel.**

To draw lessons from operations is a process of collecting, analysing and addressing experiences. This is referred to as experiential learning.

Two central documents have discussed lessons learned in the Armed Forces:

- The 2008 Defence Policy Committee study, "A strengthened defence", points out that "there is room for improvement compared to today's situation" [3].
- The 2007 Auditor General Report, "Auditor General's investigation of Defence requirements for participation in operations abroad", concludes that "the lessons learned process in the military is not good enough compared to the ambition given in the Defence white paper" [4]. The reason for this is partly inadequate reporting and partly that the reports have different format so that comparative analysis is difficult.

The conclusions from these documents are supported in the Norwegian Defence white paper from 2007, "A Defence for the protection of Norway's security, interests and values" [5]. It states that the military is a knowledge organisation and needs a knowledge strategy in order to:

- Implement a systematic and methodical collection of experiences on the tactical and operational level.
- Perform analysis of these experiences and draw lessons from them.
- Implement lessons learned into doctrine, tactics, techniques and procedures, and identify consequences for Defence Planning.
- Communicate this knowledge in education, training and practice, and implement new practices in operational units.

A simple comparison with the previous Defence white paper shows that this knowledge strategy for all practical purposes is consistent with what has previously been described as a lessons learned process. The conclusions from these documents sets the requirements for a further investigation of the lessons learned process in the Norwegian Defence.

### **3.0 THE LESSONS LEARNED PROCESS**

All organisations have to adapt to changes in the environment they operate in. This requires a flexible organisation where people learn. By learning it is in this context meant to improve the ability to perform effective actions, while a lesson is an observation from an event or activity in which an individual or group can gather knowledge. An organisation that encourages members or employees to learn, and facilitates this, will in a greater degree than other organisations adapt to new ideas and new ways of working. This will in the long run make the organisation better equipped to meet challenges [1].

To describe organisational learning we have chosen a model presented by Kim [6]. This general model discusses the relation between individual and organisational learning. The model is well suited to illustrate some of the challenges related to the lessons learned process in the Norwegian armed forces.

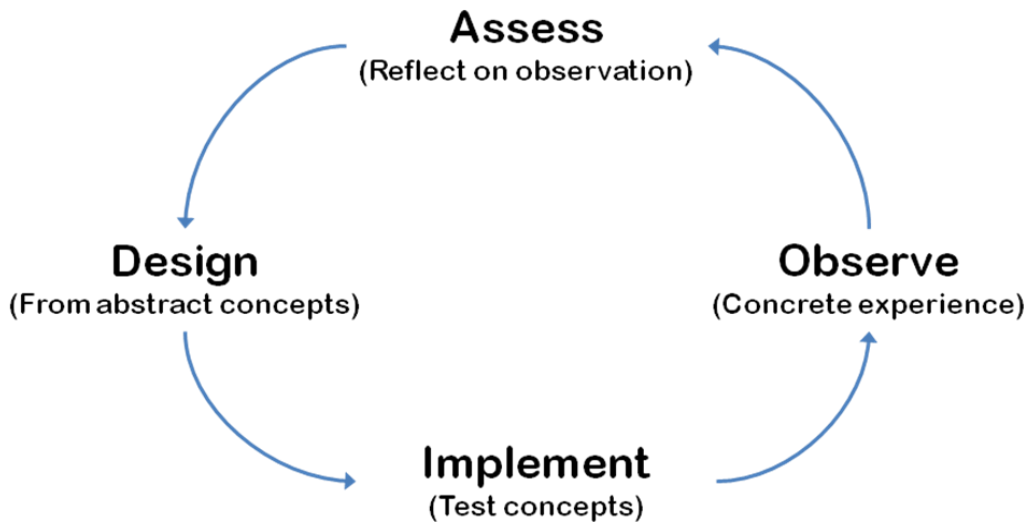
It is important to note that in an organisation it is the people who learn. It is persons who, on behalf of the organisation, is acting and observing. The organisations as such do not learn. It is therefore important to have an understanding of individual learning as a basis.

For our study a simple model for individual learning is sufficient. Kim uses what he calls an OADI loop consisting of the following elements, see also Figure 2:

- Observe – The loop begins with a person who observes the world around and make a concrete lesson.
- Assess – The person who observes reflects on the observation.
- Design – The person generalizes and develops abstract concepts to understand and respond to the observation.
- Implement – The abstract concepts are tested by implementing the preferred response in the real world.

This is an iterative cycle. The implementation in the concrete world leads to a new concrete experience, commencing another cycle.

Kim's OADI loop has several parallels to Boyd's OODA loop which is often used to describe the decision process in military operations. This means that Kim's model is intuitively transmitted to the military domain.



**Figure 2: The Observe-Assess-Design-Implement (OADI) cycle of individual learning.**

A main problem with the outlined model of learning is that it does not describe the role of memory in the process. This can be addressed by including what is called an individual mental model [6]. This model is twofold:

- A part that includes the operational knowledge or *know how*. This is knowledge of how things should be carried out, and affects the operational part of the OADI loop.
- A second part that includes the framework or *know why*, which explains why we act like we do. This does not necessarily need to be proven knowledge, but also includes attitudes, ideas and so on. This part affects first and foremost the conceptual part of OADI loop (Assess and Design).

The next step will be to include the model of individual learning in a model of organisational learning. This is called a shared mental model and has, as the individual's mental model, two parts:

- The first consists of the written material that the organisation acts upon and what it is managed by. This includes the typical doctrines, procedural descriptions (Standing Operating Procedures – SOP's), regulations and textbooks.
- The second part consists of “what is in the walls”. In social sciences this is often called for the world view or “weltanschauung”. It can also be seen as a cognitive structure and it do not need to be conscious, but helps to form the basis for how the individuals in a structure interprets the world around them.

In Figure 3 a shared mental model and an individual mental model has been added to the OADI loop to create a model for organisational learning [6]. In addition it is added two actions; one individual action that a single person is performing, and an aggregated quantity that is called organisational action. This last action is of course influenced by the persons in the organisation and their shared mental model.

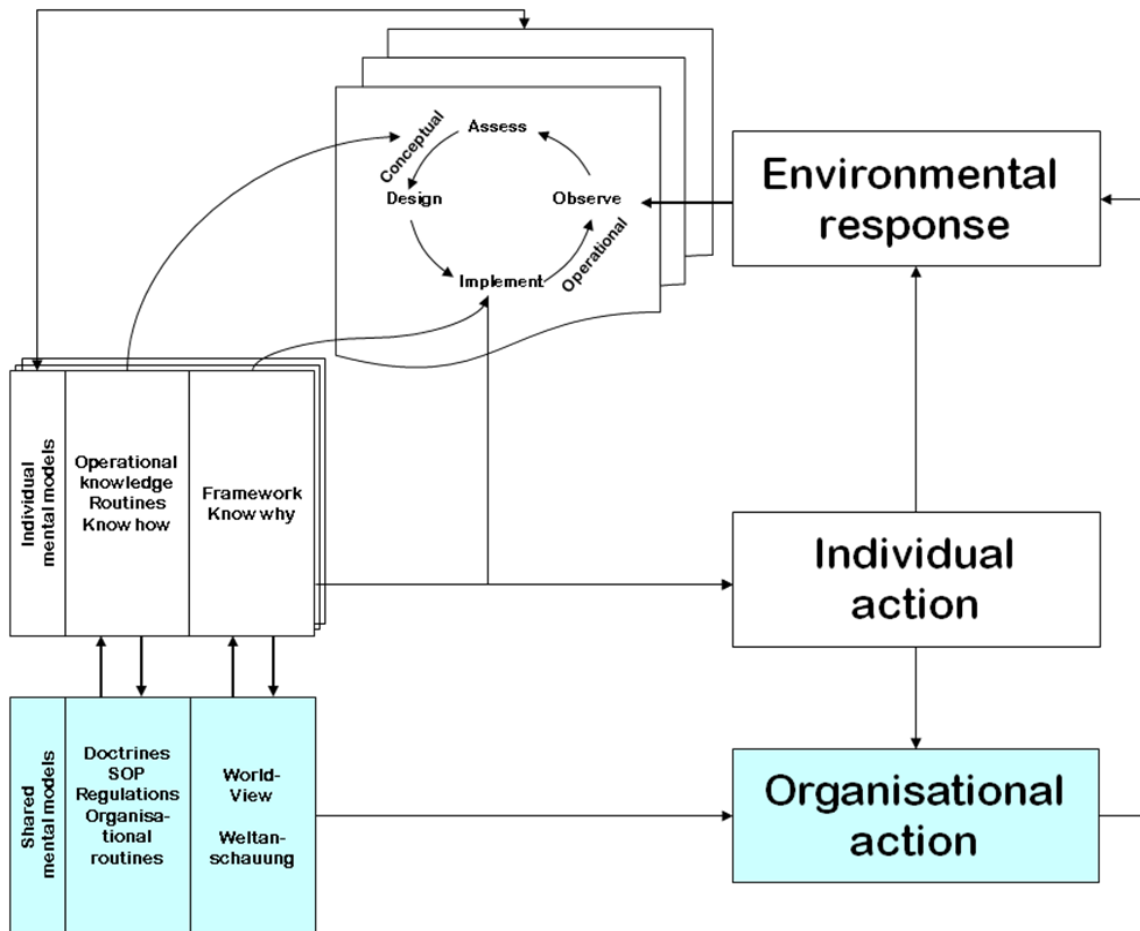


Figure 3: Lessons learned model – Relationship between individual and organisational learning.

A basic lesson learned loop is presented in Figure 4. This loop presents the four important stages in a well functioning military lessons learned system.



Figure 4: Lessons learned loop.

The foundation represents the knowledge the organisation has and acts from, i.e. the basis for own actions. This is the same as the mental models in Kim’s model above. The next step is to make lessons. To do this you have to act and observe. Most humans do this automatically. The first difficult step that the organisation has to address is the reporting stage. Very often we see that the organisation builds a database to collect the lessons, but it is not easy to construct a LL database that works in a complex organization with a broad spectrum of lessons from many different people. The more complex an organisation is, the more difficult it is to create a reporting system and database that fulfil all needs. The next step in the process is the analysis. In this step we need to address the question: What do the reported lessons mean for

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the organisations foundation? Or in Kim's terms: Which part of the individual learned lessons should be included in the shared mental model?

Important challenges for a military organisation are the reporting and analysis parts. As discussed above reporting is challenging due to the complexity of the organisation and the many different needs, i.e. the operational HQ has very different needs than an army soldier on the ground, troubling with his/hers personal weapon. Traditionally the analysis part has also been a huge challenge for military organisations. The reason for this is of course partly cultural, but in the last decades the large transformations (read reductions) in the western armed forces, has forced harsh prioritising and more often than not, the analysis departments have been on the bottom of the list.

This means that the foundation/shared mental model has started to disintegrate and new knowledge is not always included.

### 4.0 NORWEGIAN LESSONS LEARNED SYSTEM

The Norwegian lessons learned system is managed by a small section at the Defence University College, called the Centre for Military Experience and Lessons learned (CME-LL) CME-LL is responsible for the overarching LL system in Norway and has the overall responsibility for coordination and management of operational lessons in the Norwegian Defence.

Figure 5 shows a simple comparison of how the CME-LL compares their role to the role of NATO JALLC (Joint Analysis and Lessons Learned Centre) in an OODA-loop context. The figure illustrates that CME-LL mainly operates in the 'Orientate'-phase whereas it to a larger extent could be argued that the JALLC operates both in the 'Observe' and 'Orientate' phase.

CME-LL is responsible for FERDABALL, which is the database the Norwegian Defences lessons learned process is centred around. FERDABALL is based on reports at pre-defined reporting points. These reports are staffed at the appropriate level and are stored in the FERDABALL-database as a central repository.



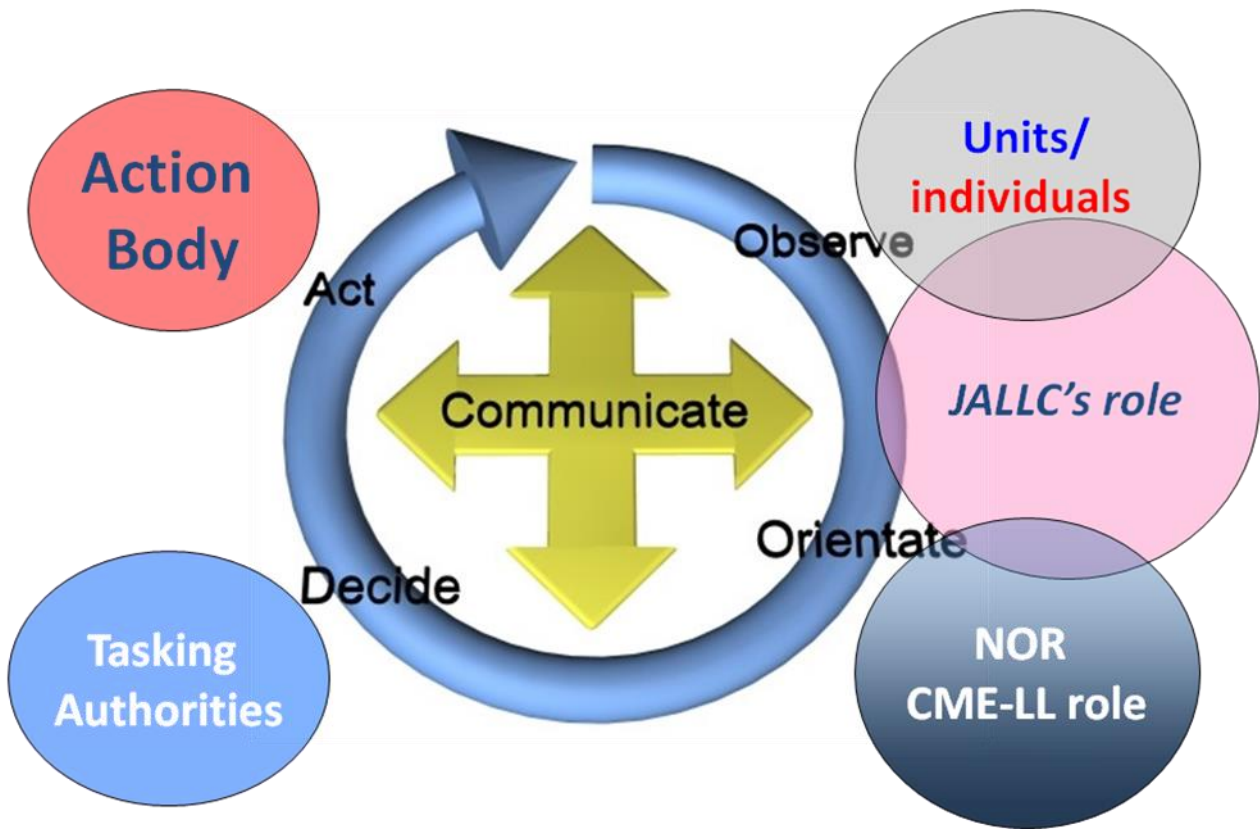
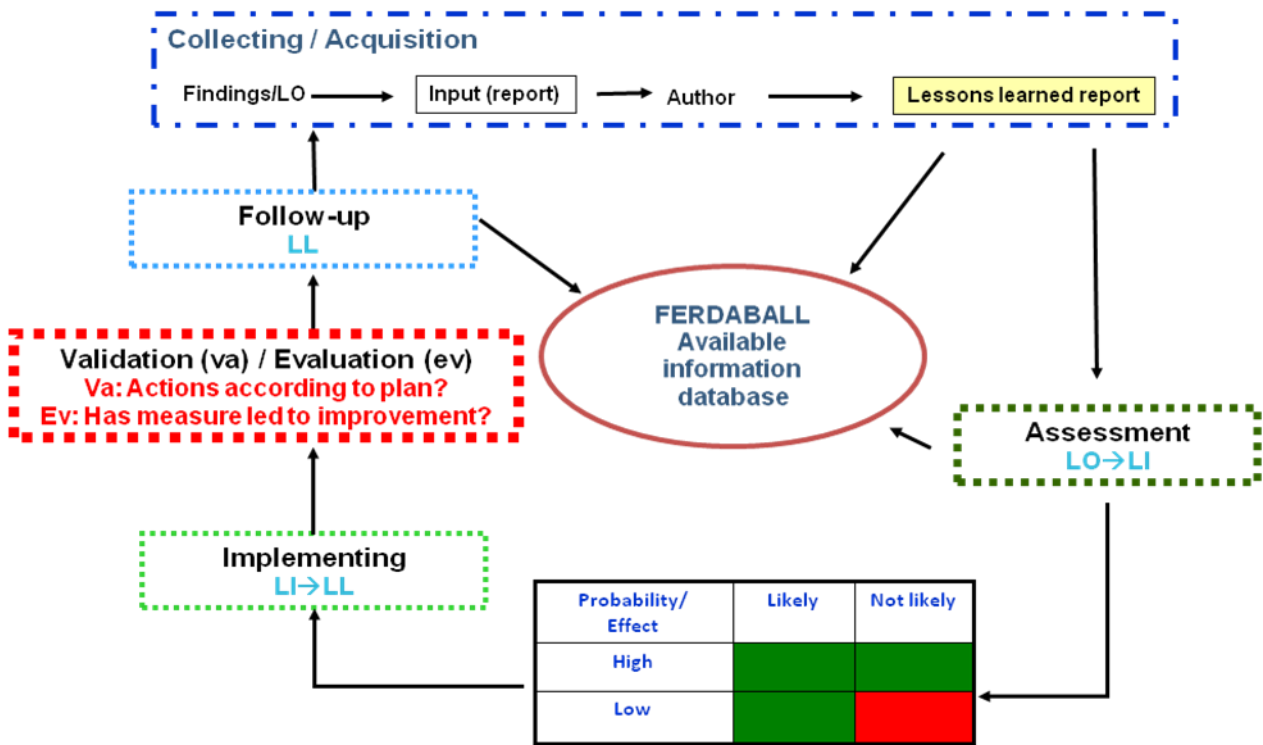


Figure 5: Simple comparison of the roles of NATO JALLC and the Norwegian CME-LL.

Figure 6 illustrates the formal LL loop in the Norwegian defence. This is basically the same loop as discussed in section 3.0 with observation, collection and reporting of lessons on the top and then analysis with assessment and implementation. In practice the Norwegian armed forces have a well-functioning system for collecting and processing single reports, but struggle more when reports are to be compared and analysed in a systematic manner over time.

The consequence is that there are weak connections between the lessons collected in the database and the organisational learning. Compared with Kim's model in Figure 3, this implies that the link between the mental model of the individual and the shared mental model is weak.

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**Figure 6: Lessons learned loop in the Defence.**

However, in addition to the more system related process centred on the FERDABALL database, you also find other learning arenas. This is related to processes within the different units and the fact that the Army, the Navy and the Air Force all are responsible for LL in their own services. This implies that LL is an important part of the soldiers’ education and training in all services (although only the Army has a dedicated function for LL). As such after action reviews (AARs), debriefs, incident reports and the use of personnel with recent experiences from deployment as instructors are important measures for more ‘informal’ organisational learning. In addition social networks (e.g. Facebook) are becoming an important arena. This is particularly obvious when studying ad hoc organisations as the PRT. The discussion of the PRT below expands on some of these issues.

**5.0 CASE PRT**

The Norwegian led PRT can be characterized as an *ad-hoc* organisation built mainly from Norwegian army battalions. In peacetime these units primary role are force generation. Two central units within the PRT are the Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) unit and the Task Unit (TU), which is the PRT manoeuvre element. The ISTAR unit in the PRT is mainly built from the Norwegian ISTAR battalion, whereas the Norwegian manoeuvre battalions rotate the responsibility of filling the TU.

The units in PRT MMN have their own internal evaluation process, and in addition there is a lessons learned process for the PRT as a whole. On every level in the units you have best practises and processes trying to improve the skills, from the soldiers trying to evolve their individual skills and equipment, to the commander trying to improve the PRT as a whole. Exchange of experiences on soldier level are done between soldiers in the field, but are also transferred to the soldiers who are doing pre-deployment training back in Norway through word of mouth, and through written documents.

After each mission and operation in Afghanistan there is an After Action Review (AAR) process. During this process lessons from each unit are collected and presented for other units/commanders and other interested parties. These documents are also passed on to units back home in Norway, and lessons are then incorporated in the pre-mission training to prepare the new units for their mission in a later contingent.

This exchange of information about lessons is quite good for the units in field, and works to satisfaction for home units in training for the next contingent. However, the lessons collected in Afghanistan are not transferred to the battalions in the ordinary force generation system. This means that lessons are only learned by the battalions that participate in the PRT.

This challenge can be illustrated by the difference between the ISTAR battalion and the manoeuvre battalions. The ISTAR battalion participates in every rotation, while the manoeuvre battalion generally contributes every second or third rotation. This means that the ISTAR battalion has a more continuous process where they draw lessons from every contingent, whereas it can be argued that the different manoeuvre battalions lack this continuity. This is amplified through other issues affecting the knowledge foundation, as the fact that the manoeuvre battalions have different peace-time missions, are located differently and individually have strong traditions. Over time this affects the foundation (see section 3.0) or shared mental model and therefore the Task Units built from different battalions will respond differently from contingent to contingent.

Another, different but related, challenge for transmission of lessons is the continuity challenge with respect to rotation of the force. Almost all the PRT are rotated at the same time. That means that transmission of the situational awareness and current lessons must be done in a very short time during a “hand-over-take-over” (HOTO) period, and that all of the experience gained during the spell in Afghanistan must be transferred to the new PRT contingent.

## **6.0 CONCLUSIONS**

Our study of the Norwegian lessons learned system shows that there are still challenges to be solved. Looking at the enterprise level system built on the FERDABALL database, it is quite obvious that analysis resources are scarce. Currently the database is used as an archive and not as an active tool for learning processes. The consequence is that important lessons are not being institutionalized.

Operational experiences are centred on the lessons from Afghanistan. As the PRT is an ad-hoc organisation the force generating battalions mainly learn lessons when their own forces contribute in the PRT. Over time this creates differences in the knowledge foundations/shared mental models in the manoeuvre battalions, thus implying that quality and tasks varies between contingents.

We have identified four key parts in a well functioning military lessons learned system. Firstly, the foundation, i.e. the knowledge the organisation has and acts from must be in place. Secondly, the organisation must act to collect lessons. Thirdly, these lessons must be reported and stored in an appropriate way, and last but not least, the lessons must be analyzed to see which lessons that should be incorporated into the foundation.

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