



Lessons Learned Handbook

First Edition, October 2010

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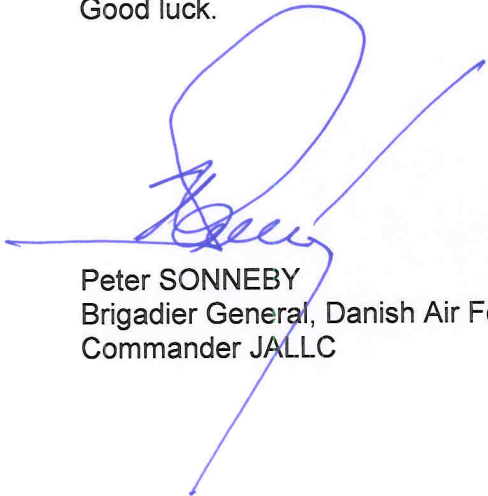
Foreword

I am proud to present the first edition of The NATO Lessons Learned Handbook, an important resource for everyone involved in helping NATO and its partners to learn effectively from experience.

The NATO Lessons Learned Handbook is an easy to use, practical guide to NATO's approach to Lessons Learned. Although it is based on NATO's approach, I believe it is also a valuable resource for anyone implementing Lessons Learned in any organization.

Each edition of The NATO Lessons Learned Handbook will incorporate the latest experience and expertise of the NATO Lessons Learned community. This edition is no exception. I hope you will keep this handbook with you, so that you can benefit from the experience of others in your every day work and, in doing so, demonstrate a commitment to Lessons Learned in your personal activity as well as your organizational responsibilities.

Good luck.



Peter SONNEBY
Brigadier General, Danish Air Force
Commander JALLC

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Introduction

Welcome to the NATO Lessons Learned (LL) Handbook. The purpose of this handbook is to guide and assist you to fulfill your role in supporting your organization and NATO to effectively learn from experience. This handbook uses NATO's approach to LL as the underlying model but has been written to be relevant to any organization.

This opening chapter sets the stage for the rest of this handbook by giving an overview of:

- What Is LL?
- What Is The Role Of A LL Staff Officer (LLSO)?
- How To Get Started In LL?

WHAT IS LESSONS LEARNED?

LL is broadly used to describe people, things and activities related to the act of learning from experience to achieve improvements. The idea of LL in an organization is that through a formal approach to learning, individuals and the organization can reduce the risk of repeating mistakes and improve the chance that successes are repeated. In the military context, this means reduced operational risk, lower cost and improved operational effectiveness.

LL as a deliberate approach to improve an organization's learning is sometimes criticized as being an administrative burden without recognizing the value it delivers. However, if LL is set up and run properly, it can provide enormous value.

Definition: Lessons Learned or Lesson Learned

- *Lessons Learned*, an adjective, describes anything related to a Lessons Learned procedure. E.g. Lessons Learned process, Lessons Learned staff officer, Lessons Learned working group, etc.
- *Lesson Learned*, a noun, a written record of the final lesson, the result of the Lessons Learned procedure.

In this handbook, LL is only used as an abbreviation for Lessons Learned when used as an adjective. Other publications may use LL to abbreviate Lesson Learned the noun. Careful!

Lessons can be derived from any activity. They are a product of operations, exercises, training and experiments. During the course of our activities most of us will recognize ways of doing things more easily or efficiently that can be passed on to our colleagues and successors to help them avoid problems and do even better than we did.

LL describes more than just learning from experience. Learning must be used to justify changes that will lead to improved performance. This is made clear in NATO's Allied Joint Doctrine for Joint Operations, which states:

"The purpose of a Lessons Learned procedure is to learn efficiently from experience and to provide validated justifications for amending the existing way of doing things, in order to improve performance, both during the course of an operation and for subsequent operations. This requires lessons to be meaningful and for them to be brought to the attention of the appropriate authority able and responsible for dealing with them. It also requires the chain of command to have a clear understanding of how to prioritise lessons and how to staff them." AJP-3(A) Allied Doctrine for Joint Operations¹

¹ Allied Doctrine for Joint Operations, AJP-3(A), July 2007, NATO/PfP Unclassified. Paragraph 0451.

Depending on your nation, HQ or organization, you will encounter the term *Lesson Learned* applied both to the end product of an LL process or to one of the intermediate products, i.e. a lesson to be learned.

- A NATO **Lesson Learned** “Results from the implementation of a remedial action that produced an improved performance or increased capability.” NATO LL Policy (Reference A)

To create a Lesson Learned you will capture and exploit both explicit and tacit knowledge:

- Explicit Knowledge is knowledge that has been documented. This type of knowledge can lead to a Lesson Learned by the use of an LL process and LL information sharing tools such as databases and wikis.
- Tacit Knowledge is knowledge that has not been documented but is still extremely valuable. This type of knowledge is stored in our heads and can lead to a Lesson Learned when we interact with others by discussion and sharing experience within a community, perhaps facilitated by formal working groups, training courses, conferences or other events.

Regardless of whether you are learning from explicit or tacit knowledge, in any learning organization, you will follow the same three basic stages of learning. These are as described in The Lessons Learned Handbook (Reference B)²:

1. Identification: Collect learning from experiences.
2. Action: Take action to change existing ways of doing things based on the learning.
3. Institutionalization: Communicate the change so that relevant parts of the organization can benefit from the learning.

For example, consider how the Counter Improvised Explosive Device (IED) community learns:

1. Identification: After every IED incident a report is generated that identifies what can be learned from the incident.
2. Action: The reports are reviewed by national and multinational groups who take the necessary action to learn from the experience. Usually this is an update to doctrine, Standing/Standard Operating Procedures (SOP) or tactics, techniques and procedures.
3. Institutionalization: The new procedures are incorporated into training for new staff and communicated to current staff through newsletters and bulletins.

The activities NATO uses to promote learning from experience vary across organizations and usually include:

- LL process: To gather, staff, action and communicate lessons to ensure learning from experience is converted into actual improvement via a formal process.
- LL information sharing: To make use of databases, spreadsheets, websites, reports or other media to store and communicate lessons.

² These three stages are generic and apply to any learning organization: NATO, military, civilian (government or private enterprise). They are not yet explicitly embedded in NATO doctrine. ‘Institutionalization’, in NATO would be Lesson sharing and, as applicable, incorporation into NATO doctrine and procedures.

- LL community: To bring together Subject Matter Experts (SME) at working groups, training courses, conferences and other events to share experience and learning.

WHAT IS THE ROLE OF A LESSONS LEARNED STAFF OFFICER?

Everyone in an organization has a responsibility for LL, but the LLSO is central to the organization's efforts to engage everybody in seeing the value of lessons learned. If people are not engaged, they see no value and do not actively participate. It then becomes impossible for learning to take place and a 'vicious circle' is created nullifying the LL process.

The simplest way to get everyone involved in LL is to ensure that LL in your organization is constantly demonstrating value. The LLSO has an important role to play in conducting staff work to support the organization's LL process, LL information sharing and participation in the LL community. The LLSO may also need to set up or improve the organization's LL capability.

All organizations will have LL procedures and tools that are tailored to their needs. The LLSO role will be defined within this context. Typically an LLSO will be expected to do the following:

Support the Lessons Learned Process (See Chapters 2-5)

- Gather the organization's observations on a regular basis and immediately after every activity the organization undertakes such as missions, training events or exercises.
- Analyse observations collected to establish whether action needs to be taken to learn and if so, what action is needed.
- Present Lessons Identified (LI) to the command group so they can make a decision about what action to take.
- Keep track of the progress of action relating to LIs and keep the command group up-to-date on which LI have become lessons learned.
- Organize meetings for the staffing of LIs.

Support Lessons Learned Information Sharing (See Chapter 6)

- Maintain a store of the organization's LL information.
- Prepare and release the organization's LL information to other organizations as appropriate.
- Enter the organization's observations, LIs and lessons learned into the NATO LL Database (LLDb) as appropriate.
- Provide LL information in response to requests from inside the organization (e.g. from the planning cell or trainers) or from outside the organization.
- Compile regular newsletters/summaries of LL information to keep people up-to-date.

Support the Lessons Learned Community (See Chapter 6)

- Attend the NATO (or other relevant) LL Conference.
- Organize working groups/training events for knowledge sharing.
- Represent the organization in relevant LL sharing events.
- Maintain a Point of Contact (POC) list of SMEs in the organization.

- Keep LLSO contact details up-to-date in the NATO LL POC Database.

Support the LL Capability

The LL capability within the organization may still need to be established or improved upon and this job will fall to the LLSO. Everything in this handbook will help an LLSO to set up an LL capability that is relevant and effective for the organization and is compliant with NATO's overall LL approach. A checklist of suggested LL capability features (Annex E) may help you assess your current LL capability.

HOW TO GET STARTED IN LESSONS LEARNED?

You are already on the right track having read this far through The NATO LL Handbook. However, this handbook is not the only resource available to help you get started. The following NATO resources are available:

Fundamental NATO Lessons Learned References

You should read and familiarize yourself with the fundamental NATO LL references:

- NATO Lessons Learned Policy (Reference A).
- Bi-Strategic Command (Bi-SC) Directive 80-6 Lessons Learned (Reference C).
- Allied Command Operations (ACO) Directive 80-1 Lessons Learned (Reference D).

NATO LL Policy is applicable to all NATO bodies, agencies and staffs, and acts as a guide to Allies and other international organizations. It establishes the basic principles of an Alliance-wide approach to LL in order to ensure transparency and a common understanding of its intent.

Bi-SC Directive 80-6 Lessons Learned is applicable to all levels of the NATO Command Structure, and HQs in the NATO Force Structure participating in NATO operations and exercises. It establishes a standardized and coordinated approach to the NATO LL process and details tasks and responsibilities at the strategic level.

ACO Directive 80-1 Lessons Learned is applicable to all levels of ACO HQs and to SHAPE divisions. It provides additional guidance and direction for the implementation of the LL process within ACO and is a supplement to the Bi-SC Directive 80-6.

Lessons Learned Staff Officer Training

You should attend the week-long NATO LLSO Course. Courses are offered four times a year. More information can be found via the [SWEDINT website](http://www.forsvarsmakten.se/en/Organisation/Centres/Swedish-Armed-Forces-International-Centre/Courses-at-SWEDINT/NATO-LL-SOC/)³. Individual nations may also offer LL training as part of their national training programmes.

Using This NATO Lessons Learned Handbook

This handbook is divided into seven chapters advising you on various aspects of LL and contains annexes with helpful examples and templates.

- Chapter 1 is this introduction which provides an overview of LL.
- Chapters 2-5 describe the LL process:
- Chapter 2 provides an overview of an LL process based on the NATO LL Policy, gives definitions, and outlines some of the actors involved in the NATO LL process.
- Chapter 3 gives guidance on gathering observations and introduces a template for gathering and documenting lessons.

³ <http://www.forsvarsmakten.se/en/Organisation/Centres/Swedish-Armed-Forces-International-Centre/Courses-at-SWEDINT/NATO-LL-SOC/>

- Chapter 4 guides you on the process of analysis that facilitates development of observations into useful lessons.
- Chapter 5 offers practical advice on management of the remedial action process to ensure lessons are truly learned.
- Chapter 6 describes LL Information Sharing and the LL Community.
- Chapter 7 gives a summary of this handbook and where to go for more information.
- References
- Annex A: Lessons Learned Glossary
- Annex B: Observation, Discussion, Conclusion, Recommendation Template
- Annex C: Example lessons learned in the observation, discussion, conclusion and recommendation lesson template that is advocated by this handbook
- Annex D: Interview Process
- Annex E: LL Capability Checklist

We advise you to read all chapters quickly and then go back through and make notes regarding how the concepts presented relate to your role and your organization specifically. The annexes can be used to increase your understanding and support your daily work as appropriate. Each chapter has some introductory remarks and concludes with a summary of the chapter contents in bullet form. Boxes are used to highlight additional information about particular subjects and make tips stand out.

JALLC Advisory and Training Team

The JALLC Advisory and Training Team (JATT) is tasked with LL outreach. The JATT can provide advice, assistance and training to NATO commands, HQs, and Alliance and partner nations upon request to aid development of LL capabilities. JATT can be reached via e-mail at jattpoc@jallc.nato.int.

SUMMARY

Lessons Learned

- Lessons Learned describes activities relating to learning from experience to achieve improvements. In a military context, this means reduced operational risk, money saved, and improved operational effectiveness.
- Lessons can be derived from any activity – daily events, exercises, training, etc.
- Learning, in any organization, involves three generic stages: identification, action, and institutionalization.
- A NATO Lesson Learned results from the implementation of a remedial action that produced an improved performance or increased capability.

Role of a Lessons Learned Staff Officer

- Support the LL Process – gather, staff, action and communicate lessons to ensure learning from the experience is converted into actual improvement.
- Support LL Information Sharing – share lessons both within and outside of the organization via databases, websites, reports, newsletters, etc.
- Support the LL Community – attend and organize relevant LL sharing events (LL conference, forums, working groups, etc.).
- Support LL Capability – Set up or improve the organization's LL capability.

Getting Started

- Review NATO LL references and study this handbook
- Request JATT outreach support and attend an LLSO Course..

NATO LL Process and Actors

The most formal approach to LL is the use of an LL process. A LL process is a procedure for deliberately staffing observations arising from an activity until a lesson learned is reached.

This chapter provides an overview of:

- NATO Lessons Learned Process
- NATO Actors In The Lesson Learned Process

NATO LESSONS LEARNED PROCESS

Figure 1 illustrates the LL process used by NATO (Reference A). The text that follows describes the process. Terms with specific NATO definitions are defined as they are used and their definitions are included in an LL Glossary at Annex A.

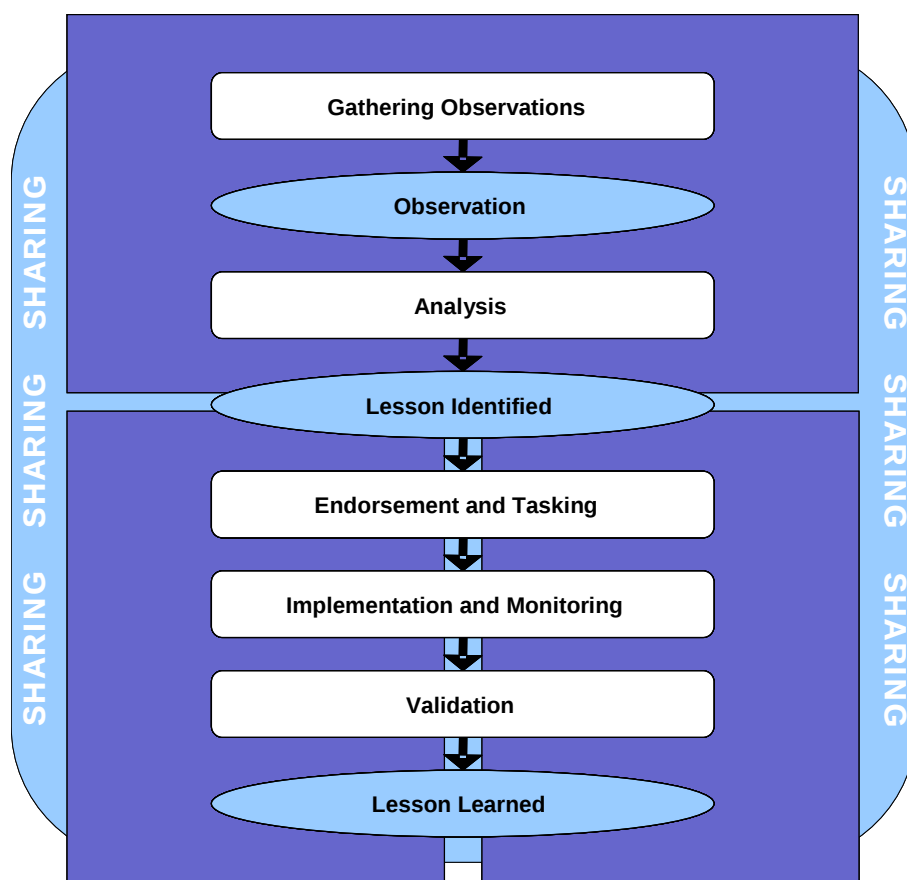


Figure 1: The NATO LL process

Note that this process follows the three basic generic stages of learning described in Chapter 1. 'Identification' occurs during the Observation to LI part of the process and 'Action' and 'Institutionalization' occur during the LI to Lesson Learned part of the process. In NATO, 'Institutionalization' is seen as an integral part of the action necessary to reach a Lesson Learned. Information generated during the LL process can be shared at any time. More information on LL Information Sharing is provided in Chapter 6 of this handbook.

The LL process starts with **Gathering Observations**.

- An **Observation** is “an issue identified for improvement” (Reference C).

For a given activity, an expected outcome exists. If everything goes as expected, there is little to learn from the activity. However, if expectations are either not met or exceeded, there is something to learn. Any difference from expected outcome should be documented as an observation that describes: the sequence of events, conditions under which the events occurred, and other quantifying details. Observations are further discussed in Chapter 3.

The observer may conduct some initial analysis to elaborate on the reason(s) why the activity differed from expectation and identify a proposed solution. For more complex observations, further analysis may be required.

- **Analysis** is “the study of a whole by thoroughly examining its parts and their interactions”⁴.

Analysis will be used to find the root cause(s) of the observed issue and identify a Remedial Action (RA).

- An RA is “a possible action that serves to rectify a fault or improve conditions” (Reference C).

Additionally, the person or organization which should execute the RA will be identified during the Analysis step. The aim of the analysis is to generate a LI.

- A **Lesson Identified** (LI) is “an observation for which an RA has been developed and an Action Body (AB) to carry out the RA has been proposed” (Reference C).

Analysis is further described in Chapter 4.

Tip: Analysis

Do not get too worried about the use of the term “analysis”. Analysis may convey the impression that some mysterious, formal intellectual activity must take place to be able to develop a LI. In many cases, a healthy dose of common sense and SME input is sufficient to determine root causes and identify appropriate actions.

A special type of LI is a Best Practice (BP).

- A BP is “an activity or a series of activities proven effective through analysis that can be replicated by others in a similar situation” (Reference D).

When an LI is a BP, the RA will be to document the conditions under which the positive experience occurred and introduce measures to ensure these conditions are repeated. BPs may be specific to an environment, theatre, or situation, and may become obsolete. A BP may require validation, and should be regularly reviewed to ensure that the practice is still “best”.

The next step in the LL process is **Endorsement and Tasking**. During this step, developed LIs will be presented to the organization’s leadership for them to determine how to progress the LI through the LL process. First the LI will be endorsed whereby it is approved for further action and the proposed RA is accepted or modified to be acceptable, then an AB will be tasked to plan and implement the RA.

- An AB is “an organization tasked to implement or facilitate the implementation of an approved action” (Reference C).

During the **Implementation and Monitoring** step, the AB will implement their RA plan and the LLSO will support leadership in monitoring its implementation.

⁴ AAP6 NATO Glossary of Terms and Definitions, NATO Standardization Agency, 2010.

After the RA has been implemented, validation will be completed.

- **Validation** *“determines if the issue that was originally observed has been successfully rectified by the RA carried out in accordance with the action plan”*⁵ (Reference C).

Validation may involve exercises or experiments. Following the completion of the RA and successful validation, the LI will be deemed a Lesson Learned and the LL process concludes. The last three steps of the LL process are described in Chapter 5.

Sharing is an activity that needs to occur through the LL process. More about LL information sharing is in Chapter 6.

NATO ACTORS IN THE LESSON LEARNED PROCESS

NATO HQ / NATO Agencies Lesson Learned Points of Contact Network

The NATO HQ / NATO Agencies LL POC network is the focus for LL in NATO HQ and the Agencies as described in the information memo subject NATO HQ / NATO Agencies Lessons Learned Process – Implementation⁶. It meets bi-monthly and is chaired jointly by the International Staff (IS) and the International Military Staff (IMS) representatives. It comprises representatives from all NATO agencies, NATO HQ (IS/IMS) Divisions and NATO Military Authorities. The LL POC network will ensure a coordinated and consistent approach within NATO HQ/Agencies and will also monitor progress of the LL process implementation. The LL POC network is responsible for identifying trends in internal lessons.

Military Committee (MC) Standardization Boards

The MC delegates tasking authorities for operational standardization, including NATO doctrine, to Standardization Boards. MC Joint, Maritime, Land, Air and Medical Standardization Boards with their respective Working Groups are responsible for the development of operational and procedural standardization. They produce NATO Standardization Agreements and Allied Publications with the member countries and NATO Military Commands and agencies. The Standardization Boards are supported by the NATO Standardization Agency. Additionally, the Standardization Boards and their respective Working Groups can provide subject matter expertise to review lessons related to NATO doctrine and procedures as promulgated in the Allied Publications.

Conference of National Armaments Directors Groups

The Conference of National Armaments Directors (CNAD) and its subordinate structures are focused on the cost-effective acquisition by Alliance nations of military capabilities, by enhancing and encouraging interoperability and promoting technological cooperation. The CNAD groups include:

- NATO Naval Armaments Group
- NATO Air Force Armaments Group
- NATO Army Armaments Group

⁵ Note that within the NATO LL process, the term validation is applied to the confirmation that a remedial action is successful at fixing the observed problem. Other LL processes may use the term differently; it is also used by some to describe the process to determine whether an observation is suitable for inclusion in the LL process.

⁶ NATO International Staff, Information Memo Subject: NATO HQ/ NATO Agencies Lessons Learned Process – Implementation, 3 July 2009, NATO Unclassified.

The NATO Division of Defence Investment Armaments Directorate supports the work of the CNAD and its groups. The groups are good POCs within NATO for lessons regarding capabilities and interoperability of equipment.

Supreme Allied Commander Transformation (SACT) and Supreme Allied Commander Europe (SACEUR)

The Bi-SC Directive 80-6 LL (Reference C) establishes the SACT as lead for the overall NATO LL process for lessons at the strategic command level and above. SACT is supported by SACEUR in the planning and execution of this task. Reciprocally, SACT supports SACEUR with ensuring the overall output of the NATO LL process is made available for the planning and execution of operations, exercises and training.

HQ SACT

The focal point at HQ SACT for all matters relating to LL is the LL Implementation Branch under Assistant Chief of Staff Programme and Planning Management. The LL Implementation Branch represents ACT at the Bi-SC LL Steering Group. HQ SACT tasks JALLC to conduct LL analysis projects on an annual basis and with emergent analysis requirements for immediate execution as necessary.

SHAPE

The focal point at SHAPE for all matters relating to LL is the Force Standards and LL Branch in the Readiness and Requirements Directorate. This branch coordinates the internal staffing of LL reports and proposes AB tasking to SHAPE Chief of Staff. RAs that exceed SHAPE's capacity or scope will be forwarded to NATO HQ or HQ SACT. SHAPE Force Standards and LL Branch represents ACO in the Bi-SC LL Steering Group. SHAPE also receives and reviews lessons forwarded by the Joint Force Commands (JFCs).

Joint Force Commands and Component Commands

The JFCs and Component Commands (CCs) create and maintain their own LL directives and SOPs. When a LI RA falls under their remit, the JFC/CC endorses the LI and develops an internal action plan to remedy deficiencies. The JFC/CC implements RAs as tasked by SHAPE. Biannually, JFCs/CCs report LI to SHAPE in the lesson template format described in Chapter 3 and Annex B. Lessons reported to SHAPE include those with potential applicability to other commands or organizations, and those where the RA is beyond the capacity or scope of the JFC/CC. If a LI is determined to need urgent attention, the JFC/CC immediately reports the LI to SHAPE for action. (Reference D)

JALLC

The JALLC is NATO's centre for performing joint analysis of operations, training, exercises and concept development and experimentation collective experiments. It has established and maintains the NATO LL Database (LLDb) and is the focal point for analysis of LL⁷. JALLC facilitates the sharing of LL among Allies as well as with non-NATO nations and international organizations as appropriate. On request, JALLC can engage with nations and NATO commands and agencies to support the development of their LL capability (Reference A).

⁷ MC 510(FINAL), Terms of Reference for Directors JWC, JFTC and JALLC, 26 April 2004, NATO Restricted.

Centres of Excellence

Centres of Excellence provide subject matter expertise to assist in the analysis of issues. They also represent potential communities of interest (see Chapter 6) to share lessons on particular subjects.

Commanders

Commanders at all levels are responsible for their LL processes in accordance with the NATO LL Policy (Reference A) and the Bi-SC Directive 80-6 LL (Reference C). LL is a command responsibility and each command under the strategic command structures will operate its own internal LL processes.

SUMMARY

NATO Lessons Learned Process

- Initially, differences between expectations and actual performance are identified. These observations are the starting block for the process.
- Analysis of observations identifies root causes, remedial actions, and the appropriate action body to execute the action. These items together form a LI.
- Leadership will review LIs to determine how to proceed with the LL process. Endorsement and tasking as well as implementation and monitoring are a leadership responsibility.
- Upon successful validation, a LI becomes a Lesson Learned.

NATO Actors in the LL Process

- LL is a command responsibility and each command under the strategic command structures will operate its own internal LL processes.
- The many different actors within the process will take on different roles depending on the scope of the lesson. The chain of command must be set up to ensure lessons are worked through the LL process.
- At times, the different actors may provide subject matter expertise to a process or simply be a member of the community of interest.

Gathering Observations

An observation is the basis of an LL process. The observation must convey the basic details of the observed issue, with detail sufficient for further analysis. At a minimum, the observation must address the questions “what happened?” and “how did that differ from what was expected?” One of the LLSOs most important tasks is gathering observations from the organization as they occur, especially following planned events or activities. Once gathered, observations should be reviewed to filter out unsuitable observations (such as certain obvious complaints), either by an officer higher in the immediate chain of command or by a dedicated LL manager (such as the LLSO). Observations that survive this initial review process are deemed suitable for inclusion in the LL process and will need to be managed. This chapter provides general guidance on the different aspects of gathering observations including:

- Capturing Observations
- Managing Observations
- Tools to Capture and Manage Observations

CAPTURING OBSERVATIONS

All personnel, regardless of rank, must understand they have a responsibility to document observed problems, shortfalls and successes. There must be provisions for all to make observations. Ideally, observation reporting will complement routine reports and returns, not replace them. These observations from within the organization are likely to be the main focus for observation capture. However, observations from outside the organization should also be captured and reviewed.

Observation Attribution

To encourage the reporting of negative experience, some organizations allow observers to remain anonymous. Although this does encourage reporting, it is not a good practice in the context of an LL process. Where observations are drafted with insufficient detail by anonymous originators you may not be able to obtain further information. A compromise should be reached whereby observations can be submitted with a degree of anonymity for the observer while allowing you to find out further information if necessary. This could be achieved by attributing the observation to the branch or unit.

Observation Template

There are long-term benefits to conforming to the NATO-wide lesson template described below for capturing observations. Use of a common template allows information to be shared more easily. Where the template for observations differs, the automatic transfer of data can be difficult.

The template for a lesson suggested in ACO Directive 80-1 Lessons Learned (Reference D) contains five fields: *Title*, *Observation*, *Discussion*, *Conclusion*, and *Recommendation* (ODCR). This is the format that entries into the NATO LLDb must take in accordance with Bi-SC Lessons Learned Directive 80-6 (Reference C) and therefore it is recommended that you collect observations in this template from the start.

Annex B explains the template in full and Annex C provides Joint, Maritime and Land examples using the template.

Post Event Reporting

Post event reports are an ideal means to capture observations. The Bi-SC Exercise Directive 75-3 (Reference E), supplemented by individual sub-command directives and SOPs, gives specific direction on the format and timeline for production of post-event reports, including interim reports. This reporting should already contain much of the information you need to capture observations. In general, some important factors in post-event information capture include:

- Capturing adequate data in a timely manner.
- Capturing the data in a common format.
- Applying quality analysis to the data.
- Prioritizing issues.
- Producing information that can be shared with the appropriate community of interest.
- Ensuring the final product is focused on guidance for the next event's planners, information for the previous event's players to review.

Tip: Focus of Post Event Reporting

The key consideration in post-event reporting is ensuring the final product is focused on giving guidance to the next event's planners, not the previous event's players for review. This should be the focus to ensure that mistakes are not repeated and best practice is institutionalized. Without this focus, post-event products tend to be shelved and do not become part of the knowledge base of the next rotation of actors in the exercise or operation.

Post-Operational and Post-Exercise Interviews

One way to convert tacit knowledge gained during operations and exercises into explicit knowledge for inclusion in the observation is by interviewing SMEs. Post-operation or post-exercise interviews are a valuable way of capturing lessons before troops and key leaders disperse, and while the memories of the events are still clear. Interviews have the added advantage of allowing the interviewer to focus on interest areas that the interviewee may otherwise not consider as important.

The US Center for Army Lessons Learned (CALL) coordinates what is known as an "Umbrella Week" with forces returning to home units, prior to post-deployment leave. During this week, CALL interviews many of the troops to capture observations. This is the only opportunity that CALL has to extract potential lessons from returning troops before they disperse.

Annex D outlines a basic interview process which allows the interviewer to methodically obtain a broad outline of events, while focusing on key events and their causal factors.

MANAGING OBSERVATIONS

Observations will arrive in many different formats, levels of maturity and from many different sources. You will need to review observations for maturity and suitability, and ensure observations are stored with appropriate metadata to comply with information management best practices.

Reviewing Observations

Observations should be reviewed on the basis of suitability for inclusion in an LL process as soon as possible after capture. This initial review process can be carried out either by a member of the originator's chain of command or by a dedicated LL manager (such as the LLSO). This initial review process acts as a filter to remove unsuitable observations. When carried out immediately after the observation has been

captured, the reviewing officer will be able to get back to the originator to clarify any points or issues while it is still fresh in the originator's mind.

For this initial review, ask the following questions⁸:

1. Is this an objective observation and not just an obvious complaint about something or somebody?
2. Is this a problem with the system and not just a simple mistake by somebody?
3. Does this adequately and correctly describe the observed situation?
4. Would you spend your own money to fix this issue?
5. Would you spend your own time fixing this issue?

The answer to **all** of these questions should be **yes** for an observation to be suitable for inclusion in the LL process. Inclusion means somebody will spend some sort of resources to address the issue contained in the observation. Observations for inclusion pass into the next stage of the LL process where the first task is to review its maturity and judge whether it is already a LI or whether it needs further analysis to become an LI (see Chapter 4).

If you decide an observation is unsuitable for inclusion in the LL process, it can either be deleted or placed into an archive. You should inform the originator of the decision that has been made regarding their observation so that they know their observation has been considered and not just forgotten.

Observation Metadata

You should attach metadata to observations captured as soon as possible in accordance with NATO Primary Directive on Information Management (Reference F). This will aid future management of information and facilitate information retrieval and sharing.

Definition: Metadata

Noun, a set of data that describes and gives information about other data.

Consider carefully what metadata you want to attach to your observations; it will save a lot of time in the long term if you get it right the first time. The metadata you attach should be NATO UNCLASSIFIED or non-classified, even if the observation it is describing is of a higher classification. Keeping the metadata unclassified will help later on with LL information sharing. As a minimum, the following set of metadata is required in accordance with NATO Primary Directive on Information Management (Reference F):

- Originator: The person or organization that initially identified the observation. Ideally this will be a person but at least the originating branch or unit is needed.
- POC: The person or branch that will manage the information after it has been submitted. This will usually be the LLSO.
- Classification: An appropriate classification for the observation. Give some thought to the classification of the observation. Ensure compliance with security guidelines^{9,10} but resist the temptation to over-classify: it may prevent you from

⁸ By posing and answering these questions, you are already performing an initial analysis of the observation. Trust your instincts; if it smells, there is probably a reason for that.

⁹ NATO Security Committee, Guidelines on the Security of Information, May 2005, AC/35-D/1032, NATO Unclassified.

¹⁰ North Atlantic Council, The Management of Non-Classified NATO Information, 23 July 2002, C-M(2002)60, NATO Unclassified.

sharing. If the originator has already added a classification, review it. If it seems that the classification is inappropriate, go back to the originator to get it changed.

- Releasability: An appropriate releasability to allow for the widest reasonable distribution. Again, think carefully, in particular about future opportunities to share the information contained in the observation. As with classification, the originator will need to approve any changes to the releasability that are necessary.
- Date: The date the observation was identified. This will allow people to know how old the information is and to judge whether it is still current.
- Title: A statement that encapsulates the essence of the subject of the observation or lesson in such a way to give a reasonable indication as to the content. If the lesson template (Annex B) is used, this will be the same as the title for the observation.

Here are some ideas that you may consider for other useful metadata:

- Time
- Place, position or location
- Name of operation, exercise or experiment
- Priority
- Impact: Mission critical, mission desirable, mission useful
- (Expected) Frequency of occurrence: Frequent, Occasional, Rare
- Relevant NATO Task List item
- Essential Operational Capabilities
- Levels: Political, Strategic, Operational, Tactical
- NATO lines of capability development: Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities – Interoperability (DOTMLPF-I)
- Source: Direct observation, interview, instrumentation data, survey.

TOOLS TO CAPTURE AND MANAGE OBSERVATIONS

A tool should be used to support the collection of observations to ensure that observations can be collated, processed, prioritized, and shared. The tool used should be as simple as possible and should complement your organization's procedures for processing and sharing information. Some units favour a notebook for recording observations. This approach is simple and inexpensive, but software solutions offer alternatives that can make tracking, processing and sharing observations easier.

Web-based Systems

Microsoft SharePoint Server and similar systems are web-based content manager systems. The use of *SharePoint*, when and where available, is probably the best way to collect observations because it has *webparts* which make it easy to create a simple form for collecting observations that can be used over an internal network or the internet. Observers can simply click on a link, enter the data, and submit the form. Observation records will be automatically time stamped and tagged with the originator's log-in name. *SharePoint* can automatically export the submitted observation to *Microsoft Excel* or *Microsoft Access* for further processing. The NATO LL Portal, accessible via the JALLC website, is based on *SharePoint* technology.

Observation Collection Programme

NATO's Observation Collection Program (OCP) is a *Microsoft Windows* application that allows observations to be entered in a systematic and easily-recoverable manner by individuals or teams. The software is freely available on the internet via <http://www.jallc.nato.int/Documents/> or on the NATO Secret network. OCP allows observers to register free text observations and associated discussions, conclusions and recommendations, categorize these observations with respect to lists, and exchange information with other observers.

Additional guidance may be found in the *OCP Quick Start Guide*, the *OCP Administration Manual* and the *OCP User's Manual*, and directly from IT support at the JALLC at tlcgcx0010@jallc.nato.int.

Tip: OCP

On installing OCP, there is a default ADMIN account (no password required).

Microsoft Office Software

Microsoft Word, *Excel* and *Access* are simple and widely available tools that can be used to store and manage observations. Many users will be familiar with these tools and will have the software installed on their computer, encouraging easy sharing. Ease of use and familiarity are important considerations in encouraging people to submit observations. A short overview of the advantages and disadvantages Word, Excel and Access have for supporting observation capture follows:

Microsoft Word

Advantages: Familiarity; ease of use; ease of setting up; ability to store metadata in file properties; ease of sharing.

Disadvantages: Difficult to manage many observations; no filtering of observations; limited sorting of observations; limited search capabilities; poor data integrity protection.

Microsoft Excel

The JALLC has produced a Microsoft Excel workbook that uses a number of macros to facilitate the entering, editing and management of observations that is available for use by the NATO LL community via the [JALLC website](#)¹¹.

Advantages: Familiarity; ease of use; ease of setting up; easy metadata tagging; powerful filtering, sorting tools; good search capabilities; easy to share.

Disadvantages: Merging independent data files is difficult; only 1024 characters display in a cell (in older versions); relatively poor data integrity protection (easy to delete and edit entries by accident).

Tip: Using Excel to Gather Observations

- Use columns for ODCR fields, rows for individual observations.
- Check out AutoFilter for filtering and searching (select the "contains" keyword in the custom AutoFilter).

Microsoft Access

Advantages: A relational database can store lots of data very efficiently; excellent browsing, filtering, sorting and custom reporting capabilities; good data integrity protection.

Disadvantages: A relational database can be very complex to set up and maintain; majority of users will be less familiar with *Microsoft Access* than with other *Microsoft Office* applications; *Microsoft Access* is not a component of the some *Microsoft Office* installations.

¹¹ <http://www.jallc.nato.int>

The NATO Lessons Learned Database

Many headquarters use tailor-made LLDbs to collect and store observations. The NATO LLDb is a tailor-made database that can be used to collect observations and facilitate their browsing, searching, filtering, sorting, reporting and archiving. However, it was primarily designed as a tool to support the staffing of lessons through an LL process, and in particular the NATO Bi-SC LL process. Therefore, it may not be the most appropriate tool simply for storing and managing observations. The use of the NATO LLDb to support the staffing of lessons is discussed in Chapter 5.

Tip: Software Tools for Observation Collection

When considering software tools to support observation collection, the following questions should be addressed, in addition to the usual cost and maintenance considerations:

- ☐ *Is the software easy to use and familiar to users?*
- ☐ *How will the observation collection capability be deployed: stand-alone PCs; over a local area network; over a wide-area network; over the internet?*
- ☐ *Will files need to be centrally accessed or circulated?*
- ☐ *What are the bandwidth requirements and file sizes?*
- ☐ *Will the information remain current? How will versions be controlled?*
- ☐ *What contributing and editing rights and limitations are required?*
- ☐ *What browsing, filtering and sorting capabilities are needed?*
- ☐ *Can searches be performed adequately?*
- ☐ *Can the information be updated easily?*
- ☐ *Can supporting information such as images be attached?*
- ☐ *What report generation capability is needed?*
- ☐ *What staffing processes will need to be supported by the software?*

SUMMARY

Capturing Observations

- Provisions should be in place for all personnel regardless of rank to document observed problems, shortfalls and successes.
- Ideally, the person reporting an observation will attach their name to the observation. However, if a degree of anonymity is desired, provisions must be in place to identify the observation with the appropriate branch or unit to allow a clear basis for further staffing if required.
- Using the ODCR template to record observations enhances interoperability by allowing information to be shared.
- Post-event reports are an ideal source for observations and should become a part of the knowledge base for the next event's planners to use.
- Post-event interviews are a valuable way to capture lessons.

Managing Observations

- Observations should be reviewed as soon as possible after capture to filter out unsuitable observations and allow for the capture of additional information.
- From the start of the process, attach metadata to the observations. Metadata will make finding and subsequently sharing information easier. Careful consideration should be given to the metadata used and should be NATO UNCLASSIFIED or non-classified.

Tools to Capture and Manage Observations

- Methods for collecting observations should be as simple as possible and should complement procedures for processing and sharing lessons.
- Software solutions can make tracking, processing and sharing observations easier. Whichever tool is used should be one that all users can and will use.

Analysis – Observations to Lessons Identified

Once it is decided that an observation is suitable for inclusion in the LL process, the next stage is its transition from an observation to a LI. Analysis is generally completed in two stages: first to find root cause(s) and second to determine Remedial Action(s) (RA). This chapter will explore methods of analysis and walk you through the transition of an observation to a LI by discussing:

- How to Prepare for Analysis – Is further analysis required? Which approach will you use? Do you need assistance? What additional information might you need?
- Visualization – What techniques can you use that will help you to see the patterns in your data?
- Analysis Techniques – What methods of categorization will help you to make sense of your data? What do the statistics tell you? How can you compare different potential solutions?
- How to Write Up the Lesson Identified – How will you document the results of your analysis such that you have a LI ready to take the next step in the LL process?

PREPARE FOR ANALYSIS

How mature are the observations?

The first step in the analysis step is to examine the observation to answer the following questions:

- Does the observation contain any causes of the observed issue (i.e. explanations of why the issue occurred)?
- Do the explanations of the causes (i.e. why it happened) seem to be correct?
- Does the observation contain a recommendation (solution) about how to address the cause of the observed issue?
- Does the proposed recommendation seem to address the causes of the observation? Will following it ensure the learning becomes 'institutionalized'?

If the answer to **all** these questions is **yes**, then the observation is considered to be mature and no further analysis of the issue may be needed. Once the recommendation is written into an RA and a suitable Action Body (AB) is identified, the observation can be considered an LI. The RA and AB should be clearly documented in the Recommendation field of the ODCR template.

However, if the answer to **any** of these questions is **no**, then the observation is considered to be raw and further analysis of the observed issue is required.

Do you need analysis help?

The analysis does not necessarily need to be carried out by professional analysts, but does require staff to look dispassionately at the issue to identify the root cause(s) of the problem. In some cases, observations may relate to issues which are outside the operational control of the originating organization. In others, the originating organization may not have the necessary resources or subject matter expertise to

address the issue. It is important to recognize when such observations occur, and request analysis through the chain of command.

Within NATO, the JALLC performs joint analysis of operations, exercises, training events and experimentation. To obtain assistance from the JALLC with the analysis of a specific issue, propose an analysis requirement to either SHAPE or HQ SACT. JALLC can help you to develop an analysis requirement relevant to your specific issue. If the work is determined to be a priority, JALLC will be tasked with the analysis, through either the annual JALLC programme of work or an emergent analysis requirement. Additionally, JALLC analysts are available to provide advice and assistance regarding analysis tools and techniques. This assistance can be coordinated through the JALLC Production Branch, by email at tlcgp0010@jallc.nato.int.

JALLC holds a week-long analyst training course twice a year, usually in April and September. These courses are designed to train military analysts assigned to the JALLC on the LL analysis process. However, the course content is relevant to LLSOs and there are a limited number of seats available to external participants. The point of contact is JALLC Lessons Learned Analysis Branch, by email at tlcgkx0010@jallc.nato.int.

General approach to analysis: deductive or inductive reasoning?

There are two broad methods of reasoning that can guide your analysis approach; deductive and inductive reasoning. For each approach, the ultimate goal is to determine the root cause(s) for the issues described in observations.

Deductive reasoning or the “top-down” approach (Figure 22) begins with a theory based only on facts shown in observations. From this theory one or more hypotheses are deduced that can be tested by further observation. If the hypotheses are proven correct, it suggests the original theory is also correct. In this way, the deductive approach leads from a general theory to more specific conclusions.

Conversely, inductive reasoning (Figure 3) is a “bottom-up” approach where many specific observations are analysed to find patterns or trends. Patterns are then analysed to form a hypothesis, and the hypothesis eventually facilitates development of a theory. Through this approach, more encompassing theories may be formed from a number of observations that would otherwise appear unrelated.

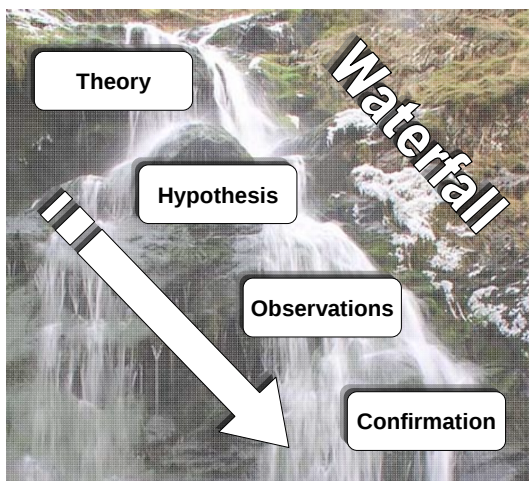


Figure 2: Deductive reasoning

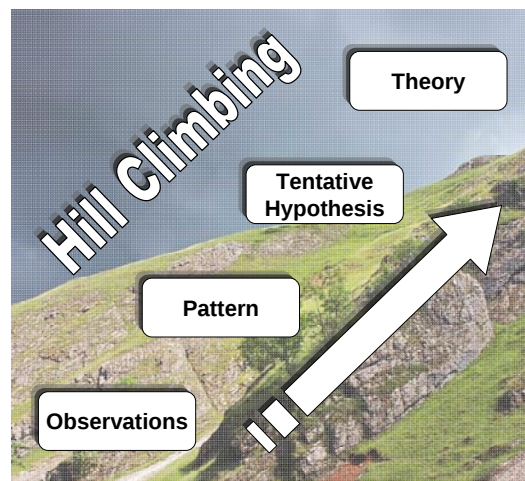


Figure 3: Inductive reasoning

Analysis in the LL process often follows an inductive approach, where patterns that suggest a hypothesis emerge from observations. The hypothesis is then tested to arrive at a theory regarding root causes for issues described in the original observation.

Do you need more information?

The inductive approach may require more observations or more information about the observations before patterns can be found. For this reason, you may be required to collect additional data to facilitate your analysis.

One way of collecting additional information is the use of interviews. The Joint Analysis Handbook (Reference G) provides guidance on interview techniques. There are three general types of interviews described:

structured, semi-structured and unstructured. The use of structured interviews is recommended when gathering information for LL analysis. Structured interviews use standardized questions that are identical for each interview. In this way they are similar to questionnaires or surveys, except the interviewer guides the interviewee through each of the questions and records the responses.

Tip: Interviews

When conducting an interview, start by trying to establish a good relationship with the interviewee. Explain how the interview contributes to the bigger picture. Close the interview by asking "is there anything else you had hoped I would ask?" or similar.

Questionnaires are another way of collecting additional data that are usually used when you wish to collect the same information from a large number of respondents. When additional data is needed about an observation provided by an individual, questionnaire-style data collection is usually not as effective as a structured interview – use a structured interview instead.

Preparation is critical for success: A data collection plan should be prepared prior to the interview or questionnaire and questions must be carefully designed to obtain the desired data. An interview process is further described in Annex D. The Joint Analysis Handbook (Reference G) and Research Methods for Business Students (Reference H) are good resources for developing interviews and questionnaires.

VISUALIZATION

Diagrams provide an easy way to visualize information and explore relationships that would otherwise not be apparent. The Joint Analysis Handbook describes various data visualization models that can be used to facilitate further analysis. Most commonly used in LL analysis are:

Cause and effect

The cause and effect diagram (*Fishbone* chart or *Ishikawa* chart) is used to:

- Focus attention on one specific issue.
- Organize and display graphically the various theories about what the root causes of an issue may be.
- Show the relationship of various factors influencing an issue.
- Reveal important relationships between possible causes.
- Provide additional insight into process behaviours.
- Focus the analysis on the causes, not the effects or symptoms.

Flowcharts

Flowcharts are used to represent a process broken down into less complicated sub-processes. By describing only a limited number of steps or activities at any one stage, the overall process becomes more manageable and understandable. Cross-functional flowcharts ("swimlanes") are used to illustrate which part of an organization performs

particular activities or functions, and are useful in understanding organizational relationships.

Influence diagrams

Influence diagrams, or systems diagrams, are particularly useful in identification of logical relationships that may exist within the observation data and for mapping the logical thought process.

ANALYSIS TECHNIQUES

The Joint Analysis Handbook provides information on various analysis techniques. The following section highlights some techniques that are easily applied to analysis in support of an LL process. Some techniques are better-suited for finding root causes, some are better for recommending RA's, and some can be used for both purposes. The techniques used can be adapted to meet your specific needs.

Five Ws

Simply answer What, Where, When, Why, Who, How? This technique is easily understood and facilitates information gathering and investigation.

Five reasons why / five times why

This technique is a form of deductive reasoning that is often used to support root cause analysis. The technique can be used on an individual or group basis. It consists of the following steps:

Step 1: Clearly state the issue identified in the observation.

Step 2: Brainstorm five reasons why the issue occurred.

Step 3: For each of the five reasons, answer the question "Why has this happened?"

Step 4: Write down the answer to these question.

Step 5: For the answers given you should again ask why, repeating this process five times.

Organization, Process, Technology Categorization

Organization, Process, Technology (OPT) is a technique in which issues are categorized as a process issue, organizational issue, technology issue; or some combination of these. The act of categorizing the issue along these lines will often clarify ideas and help identify root causes.

Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities-Interoperability (DOTMLPF-I) Capability Categorization

DOTMLPF-I categories are used by NATO to guide capability development. Categorizing issues using DOTMLPF-I is another approach to the analysis of an observed issue. Using DOTMLPF-I categorization is particularly useful when developing the RA, as it comprehensively covers considerations for developing or refining capabilities.

Statistical Analysis

Statistical analysis is a field of mathematics related to drawing conclusions about a large population based on limited sample data. You should have some familiarity with statistical methods and be able to summarize

Tip: Statistical Analysis

The Joint Analysis Handbook (Reference E) gives information about statistical analysis. Additionally, Excel provides information in its Help file (press F1 or select the help menu and search for "statistical analysis"). Also, do not hesitate to ask for help –OA staff love to show off their prowess at statistics.

data with descriptive statistics. Specifically, you should have some understanding of:

- The distinction between qualitative variables (either categorical, e.g. military services, or ordinal, e.g. military rank) and quantitative variables (numbers).
- Descriptive statistics including: range, mean, mode, median, standard deviation, etc., and how to find them using a calculator or a spreadsheet application.
- Proportions, ratios, and percentages.
- Data representation using pie charts, bar charts, histograms and x-y scatter plots and which are appropriate for your data.

Six thinking hats

The six thinking hats method is used to explore an issue using the six main modes of thinking, ultimately giving you different points of view. A technique for a group, it supposes the existence of six hats in different colours, each one representing a different way of thinking. When you figuratively put on one of the hats, it is mandatory to think only in that particular way. Each person selects a hat and ideas are discussed. Hats are then changed until everyone in the group has worn all six hats. At the end of the session, the participants record their ideas and apply them to solving the problem.

Plus/Minus/Interesting

Plus/Minus/Interesting (PMI) is a variation on the more common advantages and disadvantages technique, by introducing a third category: interesting. The interesting category is used to record all possible outcomes and implications of adopting a strategy, whether positive (advantage), negative (disadvantage), or uncertain.

Paired comparison analysis

Paired comparison is used to support course-of-action analysis and compares each possible pair of possible solutions (courses of action) against a number of factors. It is a good way of weighing the relative importance of the different courses of action against one or more factors and is useful when priorities are not clear.

Tip: Analysis Resources

Formal analysis is a huge subject area and the methods described above represent just a small selection of techniques that are useful to support an LL process. There are many, many others that you may want to think about. Helpful resources include: the Joint Analysis Handbook (Reference G) which you can download from the JALLC website at www.jallc.nato.int; Research Methods for Business Students (Reference H); the Mind Tools website at www.mindtools.com; or Wikipedia at www.wikipedia.com. Always remember that a bit of thinking and common sense will always go a long way to solving issues.

WRITE UP LESSONS IDENTIFIED

The aim of the analysis step is to provide an explanation of why the issue described by the observation occurred—i.e. the root cause—and provide a solution to fix the issue. After the analysis, the ODCR template can be completed to record the resultant LIs. Additional guidance on using the ODCR template can be found in Annex B.

Observation: Supplementary information should be added to the Observation field if necessary to facilitate analysis.

Discussion: The analysis process should be described in the Discussion field. Be as concise as possible, but provide detail such that the issue and subsequent analysis can be understood by future users.

Conclusion: In the Conclusion field, explain the root cause(s) of the observed issue.

Recommendation: Finally, in the Recommendation field, describe the RA and specify the AB.

SUMMARY

- In order to transition an observation into an LI, analysis must be conducted to determine the root cause(s) and to seek a solution (an RA that an AB will carry out).
- Preparing for analysis involves identifying which observations need analysis, whether you need help with the analysis, what analysis method you will use and what additional information you might need.
- Diagrams provide an easy way to visualize information and explore relationships that would otherwise not be apparent.
- The techniques used for analysis will vary and depend on each individual LL process. Several resources are provided for further information and/or assistance.
- The results of your analysis are documented LIs that are ready to be taken into the next step in the LL process.

Staffing Lessons Identified to Lessons Learned

Once an LI has been generated with a suitable proposed RA and associated AB, effort will focus on making it into a Lesson Learned rather than a lesson admired. Staffing LIs to Lessons Learned relies on everyone involved following the principles of the LL process as described in Bi-SC Directive on LL (Reference C):

- *“Cooperation is critical in ensuring that those bodies involved in learning a lesson play a full part and assist in achieving progress;*
- *Coordination demands from each body to plan and deconflict their efforts effectively to ensure a timely and effective management of their work;*
- *Communication will facilitate this and ensure that all bodies are informed on progress. It will allow others visibility of nascent lessons to begin to appraise them before formal change takes place.”*

The task of turning an LI into a Lesson Learned can be thought of as a project and, as with any project, successful completion will require good project management. This chapter introduces project management considerations for staffing an LI to a Lesson Learned and looks at the steps involved. Specific consideration is given to the following:

- Project Management Considerations
- Endorsement and Tasking
- Implementation and Monitoring
- Tools to Support Staffing an LI to a Lesson Learned

PROJECT MANAGEMENT CONSIDERATIONS

Project management best practices can be applied to improve the effectiveness of staffing an LI to a Lesson Learned. NATO has adopted the PRINCE2 approach as its project management standard. You can tailor the PRINCE2 approach to meet the project management needs of your organization when it comes to staffing LIs to LLs.

Tip: PRINCE2

Although the formal application of PRINCE2 is probably not warranted in an LL process, knowledge of the basic principles is valuable. www.prince2.com

The following PRINCE2 principles must be considered in the context of an LL process:

- Organization: Who will oversee the RA? How will the RA be managed? What resources are required to carry out the work that is needed to complete the RA? Where will the resources come from?
- Plans: What level of detail is realistically needed? What are the significant milestones that can be monitored?
- Controls: What controls need to be in place to be able to tell whether the RA is going to need more time, more resources, or if the final completed RA will be of a lower quality than originally anticipated?
- Management of risk: What risks may prevent the RA from being achieved successfully? What is the probability and severity of those risks?
- Quality Assurance: How will you ensure the project achieves the necessary level of quality? How many checks and balances are needed? What requirements should the AB meet to prove the quality of the solution?

Other considerations that have proved important in the military environment are:

- Leadership support: Leadership support is critical in the endorsement of the RA and tasking of the AB. Without command direction on the RA and AB, the lesson will likely stall in the LL process as the organization will fail to complete the action necessary to 'institutionalize' the learning.
- Clarity of roles and responsibilities: Participants must understand their roles and appreciate how they fit into the LL process. Care should be taken to ensure the process is easily understood and adequately explained.
- Prioritization of resources: A process of prioritization of LIs will help to ensure leaders are able to make informed decisions regarding how many resources to allocate to turning an LI into a Lesson Learned.
- Method of communication: Communication of information must be simple, accessible, and timely. Part of the communication process may involve setup of an archive for LL information that will be accessible to all who need it.

ENDORSEMENT AND TASKING

The endorsement and tasking of an AB to complete the RA is the first step in turning an LI into a Lesson Learned. Specifically:

- Endorsement of a lesson means it has been approved by the authorized decision-making body. This implies a process of review that includes checks for completeness and accuracy with respect to root cause(s) and consideration of recommended RA(s).
- Tasking of an AB means an AB is selected and will be responsible for implementing the RA. It is important to consider at this point who has the authority to task an AB. The level of authority required will vary depending on the authority needed to execute the RA. It is important that the LI is elevated to the appropriate level to ensure that the AB will have adequate authority, jurisdiction, etc.

The LLSO's role in supporting endorsement and tasking will usually be to prepare LIs for presentation to the decision makers and to coordinate and administer meetings where endorsement and tasking takes place.

IMPLEMENTATION AND MONITORING

Once endorsement and tasking is complete, it is time for implementation and monitoring of the RA. The AB tasked with the RA should develop a RA plan for implementation. To assist in the monitoring of the RA plan, a small number of significant milestones should be defined. The leadership should monitor these key milestones to measure success of the RA plan implementation.

The LLSO's role in supporting the implementation and monitoring will usually focus on monitoring. You will usually be responsible for knowing the status of all RAs being implemented and keeping leadership informed of any cost, schedule, or management risks to implementation.

VALIDATION

Validation in the context of the NATO Bi-SC LL process is the act of ensuring the completed RA has correctly addressed the original issue observed. The process and level of effort required to validate will be determined on a case-by-case basis. Factors to consider include:

- Impact of the RA: RAs affecting mission-critical items may require more in depth validation before being deployed.

- Extent of RA: RAs with potential wide-ranging effects may require more in depth validation.

In most cases, a third party SME (i.e. independent of the AB) should be consulted to evaluate whether the RA has had the desired effect. Expert validation is often sufficient to accept the RA and in this case an in-depth validation by analysis or experiment is not required. If in-depth validation is needed, a request should be made to external agencies to support analysis or experimentation to assess whether the lesson has been learned.

Tip: Remedial Action Pitfalls

The RA process is susceptible to many risks that can delay or halt completion of the RA. Common pitfalls include inappropriate or circuitous business processes, lack of quality staffing, lack of adequate resources, and lack of adequate training for staff involved in the process. Leadership engagement greatly mitigates these risks. Where leadership engagement is good, LLSOs will have a direct line of communication into the command group and ideally work directly for their organization's Chief-of-Staff.

TOOLS TO SUPPORT STAFFING LI TO LL

Throughout the LL process, a structured means to track and document progress of lessons is needed. When a Lesson Learned is achieved, it should be recorded as such in all supporting information and documentation, otherwise it can seem as if the organization is not learning anything.

Organizations create or adapt various tools for this purpose, including locally-developed spreadsheets and databases, formal command correspondence, and other task tracking systems. The NATO LLDb is designed specifically to support this function, and is easily adapted to meet local command needs. By installing a copy on your local network, you can keep track of internal lessons without sharing them with the rest of NATO before you are ready.

Locally developed spreadsheets and databases

The advantage of using a spreadsheet is that you can see all of the data in one go, this means that even if people are not very computer literate, they will be able to use the spreadsheet properly without too much difficulty. Spreadsheets can also filter data very simply using drop down menus so you can view only LIs with a certain status at any time. One of the big disadvantages of using a spreadsheet with lessons entered as individual rows is that as the information to support the RA process is added to the basic ODCR template—e.g. ABs, milestones, etc—more and more columns get used and the sheet becomes increasingly unmanageable.

The advantage of using databases is that they generally have excellent form generation and reporting capabilities, and are relatively easy to customize and program. A common pitfall to using a database is that as soon as the person that developed it leaves the organization, it falls into disuse because there is inadequate supporting documentation and the overall design (e.g. the way the tables are set up) is not intuitive to a third person.

Letters, Memos and Tasker-Tracker systems

The advantage of using letters, memos or tasker-tracker systems is that they are pre-existing means of communication within an organization. This means the LL process is leveraging existing infrastructure rather than requiring development of additional tools. Using these tools helps to integrate LL into part of everyday business rather than as a special tasking. The disadvantage of using these tools is that they may not provide needed functionalities – such as ability to attach lesson metadata. You should ensure

that if you use these tools, it is mandatory for the letter, memo or tasker-tracker entry to specifically reference the LI to which it is related.

The NATO Lessons Learned Database

The NATO LLDdb is a powerful tool available to all NATO organizations, NATO nations and partner nations. It runs on a server allowing reliable access for multiple users, but requires Microsoft SQL Server to run and thus requires significant technical support and resources for its initial set up.

The NATO LLDdb supports monitoring of all the steps of an entire LL process. The database acts as a staffing tool: facilitating the cooperation of all participants, coordination of their actions, and communication of lessons and RA. More information about the NATO LLDdb can be found at www.jallc.nato.int.

Tip: NATO LLDdb

The NATO LLDdb Quick Start Guide and other resources, such as the Microsoft PowerPoint briefs on Using the LLDdb and Staffing in the LLDdb, are available via the LLDdb, which can be found on the NS WAN at www.jallc.nato.int and on the internet at www.jallc.nato.int.

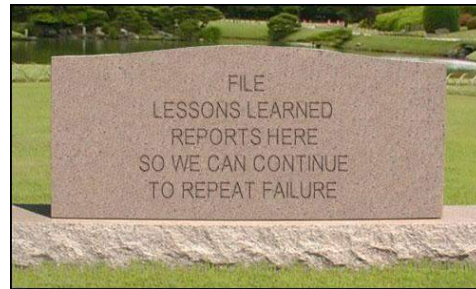
SUMMARY

- Leadership engagement is key to the process of staffing an LI to a Lesson Learned. The appropriate level of leadership needs to be involved to endorse the lesson, task the AB and finally validate the lesson. Additionally, leadership's prioritization will initially determine whether the lesson will be staffed. Only adequate resourcing of the LL process will ensure success.
- Implementation and monitoring of the RA is a project which needs to be planned, managed, and resourced in order to be successful.
- It is important to have a tool that is easily understood and familiar to all users to staff lessons within the LL process. Spreadsheets, databases and existing tasker-tracker tools provide a means to manage the LL process.
- The NATO LLDdb is a managed LLDdb which supports all the steps of an LL process. It is a good tool to support staffing of an LL process.

Lesson Learned Information Sharing

The value of an LL process is only realized when the information generated by the process is available to the people who need it, when they need it. LL information sharing generates organizational knowledge and leads to an enduring improvement in organizational performance. But not everyone is motivated to share. Commonly-expressed reasons for not sharing include:

- Sharing negative experiences creates embarrassment and/or blame
- It is not worth sharing until we have a solution
- Sharing information is a risk: information obtained by the enemy could be used to exploit our weaknesses.
- Lessons can only be learned by doing: documenting experiences is a waste of time.
- The lessons are classified and we cannot change that to share them.



**Figure 4: LL Tombstone
(Reference B)**

Tip: The Power of Sharing Knowledge

If you want to be convinced about the power of sharing knowledge, visit www.knoco.com and read about the Bird Island exercise!

However, there are great benefits to overcoming these concerns and sharing. Sharing knowledge yields better results in both business and military environments. In military terms, this means both saving lives and succeeding in the mission. With proper information management, all of the above concerns are mitigated and become far outweighed by the benefits of sharing the information.

The LLSO is responsible for the organization's LL information sharing and will need to understand:

- Who to share LL information with?
- When to share information and at what stage in the process do you share?
What LL information to share?
- How to share LL information? Communities of interest, forums (working groups, conferences, etc.), training, tools (databases, wikis, etc.), publications (newsletters, reports, etc.)

This chapter answers these questions and can guide you in making your organization's LL information sharing as effective as possible.

WHO TO SHARE LL INFORMATION WITH?

Sharing is a verb that means to "tell someone about"¹². In sharing a lesson learned, it is not enough to simply publicize it. Some consideration must be given to who will benefit from the lesson, and this group is referred to as your target audience. Care should be taken when sharing lessons to ensure relevance to the target audience and therefore promote effective learning. The way you present LL information to a General

¹² Definition 2 from Concise Oxford English Dictionary 11th Edition.

who needs the information to make a decision that will affect the entire organization will need to be different to the way you present LL information to a Private who needs the information to improve his own daily working practices.

In a military organization, lessons will be a valuable input to operations and exercise planning processes and training. The use of lessons in these areas should be routine. These audiences will have specific requirements:

- **Exercise Planners:** Exercise planners should review previous lessons during the exercise planning process. They form the groundwork for the exercise planning process described in the Bi-SC Exercise Directive (Reference E). Lessons most relevant to this audience are likely to come from previous exercises and final exercise reports. Operational lessons should be incorporated if possible.
- **Operational Planners:** Operational planners should review and apply lessons in the preparation, planning and conduct of combat operations. Lessons most relevant to the audience are likely to come from previous operations.
- **Training:** Trainers will need access to lessons from both exercises and operations to incorporate immediately into pre-deployment training. It is particularly important that lessons are communicated in a timely fashion to follow-on forces during pre-deployment training.

Tip: Audience is everything

The target audience will be your primary consideration for information sharing. For example, a lesson learned about an internal administrative practice unique to a small command may be of little consequence to an audience of ISAF combatant troops. By the same token, a tactical observation likely to recur across NATO that could prevent combat deaths would be of limited use to an audience of administrators.

Quote: General Mattis, SACT

"...There is no reason to send troops into the fight and get them killed when a lesson learned the month before could be sent to a commander who could have used it for training..." 16 January 2009, All Hands Call

WHEN TO SHARE?

LL information sharing can occur at any time during the LL process, not just as the last step or as part of RA implementation. Additionally, it may involve sharing information that is not formally part of an LL process such as after action reviews, periodic mission reports, first impression reports, final exercise reports, trip reports, hot wash up output, meeting minutes, etc. In accordance with Bi-SC Directive 80-6 (Reference C), the decision to share an observation outside an organization lies with the commander.

Security: Need to Know versus Responsibility to Share

According to NATO Information Management Policy¹³, information should be managed with emphasis on sharing, but with due consideration of security:

"Information shall be managed with an emphasis on 'responsibility-to-share' balanced by the security principle of 'need-to-know', and managed to facilitate access, optimise information sharing and re-use, and reduce duplication, all in accordance with security, legal and privacy obligations."

LL information is no different. Sharing lessons relating to capabilities (or supposed vulnerabilities) of combat forces may result in inadvertent disclosure of classified information to someone who does not have a "need-to-know" if this is not managed properly. The risk of unauthorized disclosure must be balanced against the benefit that could be achieved through well-managed sharing. In multinational units or where nations work together with adjacent areas of responsibility (e.g. ISAF operations), "responsibility-to-share" is very important. Knowledge represented by lessons must be

¹³ North Atlantic Council, NATO Information Management Policy, 11 December 2007, C-M(2007)0118, NATO Unclassified.

shared as effectively as possible among nations to improve the effectiveness and safety of all units involved.

Good and Bad Practice

When a good practice is noted, there is a natural desire to tell everybody about it immediately. This is understandable, but should be done with caution until the practice has been analyzed properly to determine the conditions and circumstances where it is valid, and how it can be 'institutionalized' smoothly. The danger with sharing good practices too early is that people may assume this is enough to reach a Lesson Learned and then take no further action to 'institutionalize' them. Simply sharing a good practice will not ensure the lesson is learned.

Conversely, there may be a natural desire to hide or minimize ineffective or detrimental practices, or to blame negative outcomes on human error rather than ineffective tactics, techniques, or procedures. A significant part of your role as LLSO will be to encourage sharing of mistakes and to make the distinction between simple human error and more systemic problems. When an ineffective or detrimental practice is concealed or minimized, it denies others the opportunity to learn from it, and it restricts the opportunity to use knowledge or insights gained through experience to improve.

Quality of LL Information

Different types of LL Information have different levels of quality. Quality is dependant on maturity of the information with respect to the LL process, in other words the amount of analysis and scrutiny it has undergone. The level of quality will affect your inclination to share the information as well as its utility to your target audience. Examples of information at differing levels of quality include:

- Low quality LL information: Raw observations, good practices, hot wash up output.
- Medium quality LL information: Newsletters, mature observations, LIs, first impression reports.
- High quality LL information: Lessons Learned, LL analysis reports, handbooks, final exercise report.

You will probably be less inclined to share low quality LL information, because you may not be as confident in the veracity of the information. Low quality LL information may be incomplete or factually incorrect, but that does not necessarily mean it has no value. The important thing to remember is to disclose the reliability and maturity of the information to others to ensure they can use it appropriately. Low quality LL information may be useful to others as a starting point for further planning, experimentation, testing, etc. However, it should not be acted on without appropriate scrutiny or due diligence, as doing so might be wasteful or dangerous. Provided the people you are sharing with are aware of the quality of your information, they will be able to make informed decisions about how to best use that information.

HOW TO SHARE LL INFORMATION?

Consideration needs to be given to the *pushing* and *pulling* of information. Pushing information means that new information is actively sent out to consumers or subscribers as it becomes available, while pulling information implies that consumers have to regularly check to see if new information has become available. An example of pushing information is the distribution of newsletters and the sending of e-mails to subscribers when something happens like the posting of new information on a portal. An example of pulling information is publishing it to a database where people are expected to go to find the information without being alerted that new or updated information has been published.

Most organizations will choose to use a combined push and pull approach whereby there are procedures to ensure that high-impact, high-priority and urgent information is pushed to the appropriate people quickly and lower-priority issues are automatically stored somewhere until the user chooses to check for updates. An example of the use of combined push/pull would be a change to force protection alert level that is sent via radio to all force protection personnel in the area (push) but at the same time updated on a website that people visit to check for updates (pull).

Communities of Interest

Communities of interest engage in socialized learning and consist of people who have common goals interacting with each other. In the military context, opportunities to interact include conferences, working level meetings, working groups and, of course direct communication.

There are a number of benefits to participating in a community of interest, including:

- Solving problems
- Developing new capabilities
- Leveraging best practices
- Standardizing practices
- 'Institutionalizing' best practices
- Time saving
- Increasing skill sets
- Avoiding mistakes
- Creating new knowledge

There are, however, a number of obstacles to participating in a community of interest, including the releasability and classification of information, technological problems such as connectivity, and 'institutional mindset against information sharing. Making personal connections (i.e. networking) significantly enhances your ability to share information. Personally knowing and trusting the individual from whom you are asking for information, or to whom you are sending information, helps information sharing. Much of sharing lessons, particularly across national boundaries, is via informal social networks (the community of interest) rather than through chain of command and established liaison channels.

Many communities of interest are supported by forums that allow them to share their experiences. Examples of forums include training events, conferences, working groups etc, or virtual forums online, including discussion groups and blogs. Conferences not only provide information but also offer the opportunity to network. Working groups are generally focussed on specific areas, subjects or stakeholder groups, for instance the NATO International Security Assistance Force (ISAF) Lessons Learned Support Working Group, or the NATO Bi-SC Medical LL Working Group. Participating in forums allows for reinforcing personal contacts to encourage the sharing of information.

Request for Information Service

Some organizations offer a request for information service, where individuals requiring information on a particular topic can make a request and the LL branch will search the LL information they have in order to respond to the request. The ability to respond to the request will often depend on finding the right POC within the organization. For this reason you should maintain a database of SME POCs within your organization. The JALLC maintains a central database of LL POCs across the NATO Command and

Force Structures who may also be able to assist you in responding to a request for LL information. JALLC also holds LL POC details in some NATO, Partner and Troop Contributing Nations.

Training

Training events at the beginning of rotations into theatre, at the beginning of exercises, or as part of in-processing into a new billet are good opportunities to engage staff on the benefits, opportunities and requirements of an LL process as well as to inform staff about the latest lessons from the field. In Kosovo Force (KFOR), incoming personnel attend several days of briefings and orientation activities which introduce them to their tour of duty. This is an ideal opportunity to introduce new staff to lessons from previous rotations.

Information Technology

There are several information technology tools that support the sharing of lessons and information, including:

- Portals
- Databases, for example the NATO LLDdb
- Knowledge repositories such as wikis
- Blogs

A technology solution can provide access to many different types of LL information easily. However, it will only be as good as the information it contains. It is critical that procedures exist to ensure that it is populated with up-to-date, relevant information that is useful to staff in their work.

Publications

In addition to routine reports (e.g. after action reviews, periodic mission reports, final exercise reports, etc), there are several ways to ensure LL information reaches those within and external to your organization. You may compile information into regular:

- Newsletters
- Reports
- Booklets/Handbooks/Leaflets/Posters
- Email Blasts
- Blogs/Bulletin boards

SUMMARY

Who to Share With

- Carefully select the target audience to ensure relevance and so promote effective learning.
- Lessons are a valuable input to operations and exercise planning processes and therefore operational and exercise planners are one target audience for an organization's lessons.
- Lessons are a valuable input to training and so trainers are another target audience for an organization's lessons.

When and What to Share

- Sharing knowledge promotes better results and proper information management should help to overcome concerns regarding sharing.
- The decision to share an observation outside an organization lies with the commander.
- All LL Information can be shared at any time, as long as it is clear what level of quality it has.
- An emphasis on "responsibility-to-share" should be balanced with the security principle of "need-to-know".

How to Share

- Consideration needs to be given to the *pushing* and *pulling* of information. Pushing actively sends out new information to individuals as it becomes available. Pulling requires the individual to regularly check to see if new information is available.
- Communities of interest engage in socialized learning and consist of people who have common goals interacting with each other. Information may be shared within the community via forums, working groups and direct communications.
- A key factor in sharing information is making the effort to contribute and reinforcing personal contacts. Informal sharing via social networks can complement sharing through formal military channels.
- Training events are good opportunities to share recent lessons from the field.
- Tools that support the sharing of lessons and information include databases, for example the NATO LLDb, and knowledge repositories such as wikis and blogs.

7

Summary

Congratulations for taking the time to read this handbook which has walked you through the essential elements of a successful LL process and highlighted the importance of sharing LL information. We hope that you have found this handbook to be a useful and practical introduction to LL that has improved your ability to effectively and efficiently support LL in your organisation.

We wish to keep this handbook up-to-date with the latest policy, procedures, best practice and innovation in the area of LL, so that it remains a genuinely useful resource for everyone working in LL. If you notice any problems with the handbook, or have any best practices or suggestions about how to improve it, please email them to llh@jallc.nato.int.

USEFUL LESSONS LEARNED POINTS OF CONTACT

- To contact JALLC for LL support, email jattpoc@jallc.nato.int

FURTHER LESSONS LEARNED INFORMATION

For further information on NATO LL and to find the NATO LLDdb, visit the NATO LL Portal at:

- Via www.jallc.nato.int on the internet
- Via the NATO NS WAN

To learn more about LL and learning organizations in general refer to:

- The LL Handbook (Reference B)
- The Fifth Discipline¹⁴

To brush up on your analysis techniques in support of LL see:

- Joint Analysis Handbook (Reference G)

For more information on project management best practice for staffing LI to Lessons Learned:

- <http://www.prince2.com>

To learn more about information management and document classification and releasability in NATO:

- NATO Security Policy documents¹⁵

¹⁴ Senge, P., The Fifth Discipline: The Art and Practice of the Learning Organization, 1st Edition, Doubleday Business, 1994, ISBN:9780385260954.

¹⁵ www.hq.nato.int/NOS/en/library/index.asp on NS WAN.

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Annex A

LL Glossary

The following definitions are derived from the fundamental NATO LL documents (References A, C and D) or as used for the purpose of this handbook:

Action Body (AB)	An organization tasked to implement or facilitate the implementation of an RA.
Analysis	The study of a whole by thoroughly examining its parts and their interactions.
Best Practice (BP)	An activity or a series of activities proven effective through analysis that can be replicated by others in a similar situation.
Endorsement and Tasking	The step in a LL process of endorsing the LI at an appropriate level and identifying and tasking an AB to develop an action plan for the RA and take responsibility for implementation.
Gathering Observations	The step in a LL process of gathering issues identified for improvement that will be managed through the LL process. (proposed definition)
Implementation and Monitoring	The step in a LL process of the AB implementing the RA and the tasking authority monitoring the implementation
Lesson Identified (LI)	An observation for which an RA has been developed and an AB to carry out the remedial action has been proposed.
Lesson Learned	(n.) Results from the implementation of a RA that produced an improved performance or increased capability.
Lessons Learned (LL)	(adj.) Of or relating to the processes, products and people that ultimately produce a lesson learned. (proposed definition)
LL Information	Any information that is generated as part of an LL process as well as information generated after activities that is not formally part of an LL process such as after action reviews, periodic mission reports, first impression reports, final exercise reports, trip reports, hot wash up output, meeting minutes, etc. (proposed definition)
Mature Observation	An observation for which there is already sufficient data and/or understanding to identify the root causes and thus requires no further analysis.
Metadata	A set of data that describes and gives information about other data. (Concise Oxford English Dictionary, 11 th Edition)
Observation	An issue identified for improvement.
Raw Observation	An observation which requires further study or analysis to fully understand the root causes.
Remedial Action (RA)	A possible action that serves to rectify a fault or improve conditions.
Validation	Determines if the issue that was originally observed has been successfully rectified by the RA carried out by the AB.
Wiki	A website that allows the easy creation and editing of any number of interlinked web pages via a web browser. Wikis are typically powered by wiki software and are often used to create collaborative wiki websites, to power community websites, for personal note taking, in corporate intranets, and in knowledge management systems. (Wikipedia)

The following abbreviations are used in this handbook:

AB	Action Body
ACO	Allied Command Operations
ACT	Allied Command Transformation
Bi-SC	of the two Strategic Commands (ACO and ACT)
BP	Best Practice
CALL	Center for Army Lessons Learned (US)
CNAD	Conference of National Armaments Directors
COE	Centre of Excellence
DOTMLPF-I	Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities – Interoperability
IED	Improvised Explosive Device
IMS	International Military Staff
IS	International Staff
ISAF	International Assistance Force
JALLC	Joint Analysis and Lessons Learned Centre
JATT	JALLC Advisory Training Team
JFC	Joint Force Command
KFOR	Kosovo Force
LI	Lesson Identified
LL	Lessons Learned (adj.)
LLDb	Lessons Learned Database
LLSO	Lessons Learned Staff Officer
LLWG	Lessons Learned Working Group
MC	Military Committee
MCM	Mine Countermeasures
OCP	Observation Collection Program
ODCR	Observation, Discussion, Conclusion, Recommendation
OPT	Organization, Process, Technology
POC	Point of Contact
PPE	Personal Protective Equipment
PRINCE2	Projects In Controlled Environments 2
RA	Remedial Action
RSM	Regimental Sergeant Major
SACEUR	Supreme Allied Commander Europe
SACT	Supreme Allied Commander Transformation
SME	Subject Matter Expert
SOP	Standing/Standard Operating Procedure
SWEDINT	Swedish Armed Forces International Centre

Annex B

Lesson Template

Title

The title should be brief but specific. It should give a reasonable indication as to content of the observation.

Observation

A short factual statement to describe what happened and how that differed from expectations. This statement can be positive (i.e. something that was observed to work better than expected or a work around) or negative (i.e. something happened that should not have or something did not happen that should have). Details should be presented in the discussion paragraph. Observations should be restricted to single issues. Multiple issues should be divided into separate observations and cross-referenced to each other in the discussion section.

Tip

When capturing observations, only the observation field of the template is mandatory

WATCH OUT! Common errors include listing details better suited for the discussion, conclusion, or recommendation sections of the template, e.g. “Staff officers should work harder”, or including too little information, e.g. “Lesson 345 was not learned at all”.

Discussion

The discussion explains how and why the observed issue differed from expectations. Reasons for success or failure and the circumstances surrounding the issue are discussed. The discussion amplifies the observation statement and answers the, “who, what, where, when, why and how,” questions about the observation. It should explore all the apparent contributory factors, i.e. the analysis of the observed issue. It can include the history of the event, the context and the environment, and any actions taken to work around a problem should be explained in detail. If a problem could not be solved explain why.

WATCH OUT! Resist the temptation to repeat the observation. Be as concise as possible, but be sure to include all data/information you expect to be necessary for further analysis.

Conclusion

The conclusion is a summary statement of the lesson that has been learned from the experience and the investigation into the root cause(s) of the issues described in the observation and discussion. It is derived in a logical manner from the information contained in the observation and discussion.

WATCH OUT! Avoid too much detail, and make sure that the conclusion contains no new information. A common error is to make recommendations instead of sticking purely to conclusions about root cause(s). Ensure that the conclusion follows logically from the observation and the discussion: a good idea is to get someone else to read it and make sure they agree with your logic. Try starting off the conclusion with the phrase, “Therefore, we have learned that...”

Recommendation

The recommendation should outline the suggested RA by providing explicit advice on what must be done to repeat the success or to avoid and/or solve the problem. Identify exactly what needs to be changed—new or modified publications, procedures, procurement of new equipment, change of the force structure, revision of command relationships, improved training, etc.—and how this should be done. The

recommendation should also propose a suitable AB. The recommendation should follow logically from the conclusion so that if someone were to follow the recommendation, they would reap the benefit of the learning for themselves and their organization.

WATCH OUT! Common mistakes include rephrasing or repeating the observation or conclusion or any other paragraph. Also ensure that the recommendation follows directly from the conclusion.

USING THE LESSON TEMPLATE

You may have noticed that the template described above, when completely filled in, contains all information required for a LI. and therefore question the use of this template for gathering observations.

When capturing observations, all the five fields of the ODCR template need not be used. Only the observation field is mandatory. However, observation originators should be actively encouraged to enter additional information and supporting evidence in the discussion field. This may increase the efficiency of an LL process as the LLSO may not have to go back to the originator for more detail to generate the LI.

As an observation moves through an LL process, additional information is added to the ODCR template fields so that, when complete, a LI is the result. Some examples of LIs in the ODCR template format are provided and discussed in Annex C of this handbook.

Tip

If writing down a LI, i.e. you already have a RA, try 'reverse engineering' the use of the ODCR template by writing down first the observation; second the recommendation; third the conclusion to support the recommendation; and fourth the discussion needed to go logically from the observation to the conclusion and recommendation.

Annex C

Some LI Examples

This chapter gives some examples of LIs in the recommended ODCR template. Text boxes are used to discuss the way that they have been written.

JOINT EXAMPLE

Title

Lack of training for staff in Info Ops.

Title

Title is kept short and concise.

Observation

Info Ops cells at the operational and tactical levels lacked adequately trained staff.

Observation

Note that the observation describes exactly what happened.

Discussion

Info Ops within NATO is a military function to provide advice and coordination of military Information activities. The importance of appropriately trained Info Ops personnel has been raised to SHAPE by JFC Naples. This issue was raised by JFC Naples because current Military Committee policy is that NATO Info Ops training is needed prior to taking post and that on-the-job training is considered to be an unsatisfactory solution.

When Info Ops Course records were examined, it showed that most attendees only undertook NATO Info Ops training after arriving in post. The training sometimes took place many months after arrival in post. Further investigation into why this situation occurred revealed that there was no stated requirement for Info Ops staff to have completed NATO Info Ops training in the relevant job descriptions.

Discussion

The discussion starts with a bit of background and puts the observation into context—who raised the issue—and then mentions the appropriate covering policy. It then describes the analysis that lead to the identification of a possible cause of the issue.

Conclusion

One reason for a lack of adequately trained Info Ops staff is that training requirements for JFC Naples Info Ops staff are inadequately specified in relevant job descriptions.

Conclusion

Does not simply repeat the observation. It describes the overall finding, the cause of the issue.

Recommendation

Job descriptions of Info Ops staff on the JFC Naples peace establishment should be reviewed to include in the essential requirements for the post completion of the NATO Info Ops training course. Action Body: JFC Naples Human Resources.

Recommendation

From the observation, the obvious recommendation is that Alliance nations should send adequately trained staff. However, in this instance, the job descriptions did not specify the training requirements properly.

MARITIME EXAMPLE

Title

Minehunting planning and evaluation, fraction of mines buried.

Title

Title is short and concise.

Observation

During minehunting clearance operation trials with different ships from different nations, the reported percentage clearances varied significantly.

Observation

Note that the observation again describes exactly what happened.

Discussion

Several minehunters from the NATO Standing Group took part in a trial to investigate how well the parameter percentage clearance could be evaluated. Accurate percentage clearance values are essential to be able to determine the risk remaining from naval mines to follow-on shipping.

The trials were held over a period of days in the same area. A number of exercise mines were laid to provide targets for the minehunters. All the participating units used NATO doctrine and procedures to plan and evaluate their minehunting operations, supported by the standard NATO mine countermeasures (MCM) tactical decision aid MCM EXPERT.

The participating units used MCM EXPERT to plan the ordered clearance operation requiring a percentage clearance of 96% of the maximum achievable. The units were told to carry out their own assessment of the minehunting environment in the trials' area. On completion of the minehunting operation, the units used MCM EXPERT to evaluate the percentage clearance achieved and report the value.

One of the factors contributing significantly to the widely varying reported percentage clearance (from 48.0% to 96%) was the different estimates of the parameter "fraction of undetectable mines due to mine burial". For example, one unit estimated this parameter as 50% while another unit estimated it was 0%. De-briefs of the operations officers from the units after the trials demonstrated that this parameter was frequently being misinterpreted as the fraction of mine case that was buried, rather than the fraction of mines that were totally buried. The relevant paragraphs of the supporting NATO doctrine were open to different interpretations as the wording was not sufficiently clear.

Discussion

The discussion provides a bit of a story and indicates how the conclusion was obtained. It is logical to follow.

Conclusion

For the particular minehunting trials that were examined, the wide differences in the evaluated percentage clearance achieved was mainly caused by different interpretations of the parameter "fraction of undetectable mines due to mine burial"; because of the different ways that it is possible to interpret the explanation of this parameter in the supporting doctrine.

Conclusion

The conclusion describes the overall finding, the cause of the issue.

Recommendation

Re-write paragraph xx through to xx of ATP-XX to ensure that it is clear that the parameter "fraction of undetectable mines due to mine burial" refers to the proportion of mines totally buried and not to the proportion of the mine case that is buried. Action Body: Naval Minewarfare Working Group.

Recommendation

Indicates what should be done to solve the problem.

Further information

This was an actual lesson learned by the NATO MCM community. The relevant paragraphs of the supporting doctrine were re-written and another trial carried out in order to validate the re-wording. This second trial showed that even the new wording was open to misinterpretation. As a consequence, another rewrite of the offending paragraphs was done and a third trial used to confirm that this third draft had indeed solved the issue. This third draft appears in the Allied Tactical Publication today. The inclusion of this lesson in this Handbook is to demonstrate with a real example how the process of Validation works in an LL process.

LAND EXAMPLE

Title

Personal protective equipment (PPE) effectiveness.

Title

Title is kept short and concise.

Observation

Soldiers lost belief in their personal protective equipment (PPE) and some stopped wearing it.

Observation

Observation succinctly describes exactly what the issue is.

Discussion

When interviewed, many soldiers told anecdotes about having conducted their own informal testing of their PPE by firing at such items as chest plates and helmets. The resulting damage to the chest plates seemed to show that the equipment would not be effective. The rumours of PPE ineffectiveness quickly spread and some soldiers were not wearing their PPE as a consequence.

Discussion

Explains the context, why the observed issue arose, and logically explains the root cause as a shortage of information rather than an equipment capability shortfall, which at first sight may be a more plausible explanation of the observation.

However, it was found that some soldiers did not understand that chest plates must operate as a system with the frag vest in order to function as designed: a chest plate by itself is not designed to stop any specific threat. In general, there appeared to be a significant shortage of information available to soldiers about the protective levels of the equipment and how it is designed to operate together as a system.

The responsible authority for dress standards and deportment is the regimental sergeant major (RSM). Therefore, task force and unit RSMs are perceived as a highly appropriate chain for delivery, and subsequent enforcement, of PPE protection policy.

Conclusion

Shortage of information about the way that PPE works as a system led to soldiers conducting their own misguided experiments on chest plates and drawing incorrect conclusions about the effectiveness of the kit.

Conclusion

Does not repeat the observation. It describes the overall finding, the cause of the issue.

Recommendation

Develop briefings to better educate soldiers about their PPE protection and how it should be used. Action Body: PPE Procurement Project Manager.

Recommendation

There are four separate recommendations for two action bodies. After the development of the necessary training material, different actions are needed to cover the immediate and long-term requirements.

Deploy briefings to soldiers in-theatre immediately through RSMs. Action Body: Army Doctrine & Training.

Incorporate briefings into basic training. Action Body: Army Doctrine & Training.

Ensure that RSMs are aware of their responsibilities to reinforce PPE protection policy.
Action Body: Army Doctrine & Training.

Annex D

Interview Process

Shamelessly taken from Nick Milton's The Lessons Learned Handbook (Reference B), pp 41-43.

A common task for the LLSO is likely to be gathering further information about observations in order to be able to develop them into LI. If there is time, this is best achieved through interviews with the person or people who submitted the original observation. Using the following process will give you the best chance of leaving the interview with all of the information you need.

Process Overview

Think of the parts of the interview as parts of a tree that you are trying to explore during the interview. The trunk is the basic purpose of the interview, based on the original observation. The branches are all of the issues surrounding the observation that you would like to explore more. Each branch then needs to be explored to find its root causes. Finally, you can pick the fruit at the end of the branch—that is, get the interviewee's expert opinion about how the organization can learn from the experience.

Step 1: Introduce the trunk

You will first need to introduce yourself to the interviewee and explain what it is you are trying to achieve from the interview. Remind them of the observation that the interview will be based on and give them an opportunity to say a little about their background with respect to the observation.

Step 2: Identify the branches

Then ask a number of questions to identify what learning came out of the observation. These should be “what” questions in the past tense such as:

- What were some of the key issues?
- What were the success factors?
- What worked well/didn't work well?
- What were the challenges and pitfalls?
- What would you approach differently next time?

Step 3: Explore root causes

Then for each of the branches from step 2 that seem interesting, explore the root causes using “how” and “why” questions or using the “5 Times Why” technique described in Chapter 4. Use open questions such as:

- Why do you think you were so successful?
- What did you put in place to ensure success?
- What was missing that caused that to happen?
- What makes you say that?
- Can you explain how you achieved that?
- Can you tell me about that?

Step 4: Pick the fruit

When you think you understand what the learning is, get the interviewee to help you to identify some useful ways ahead. Ask questions like:

- What would be your advice for someone else doing this in the future?
- If you were doing this again, what would you do differently next time?
- If you could go back in time and give yourself a message, what would it be?

Step 5: Review your notes

When you finish the interview, ask the interviewee if they mind checking your notes in a day or two. Put aside some time immediately after the interview to rewrite your notes in a summary form that picks out the most important information the interviewee gave you. If you use the ODCR format for this and then you will have a draft LI ready for review by decision makers in your organization. Send your tidied notes to the interviewee so that they can check you have captured their LI correctly.

Annex E

LL Capability Checklist

The following items, presented as a checklist, are important for an LL process to deliver sustainable improvement to the efficiency and effectiveness of an organization. This checklist can be used to assess the current status of an LL capability or to plan for building an LL capability.

ORGANIZATION

- ☐ LL SOP in place, including roles and responsibilities, reporting requirements and staffing process.
- ☐ LLSOs are able to access key leaders required to prioritise lessons, endorse RA and task ABs.
- ☐ LLSOs are trained in information sharing tools and techniques, LL and change management processes, and security classification procedures.
- ☐ LLSOs are protected from double-hatting and other diversions from core tasks.
- ☐ LLSOs from unit branches are internally trained and aware of their responsibilities and reporting requirements.

PROCESS

- ☐ A process exists to facilitate the gathering of observations.
- ☐ The internal LL process encourages self-appraisal and frank exchange of ideas.
- ☐ A process exists for sourcing, reviewing and learning lessons derived from external sources.
- ☐ A process exists for submitting requests for assistance, including analysis support, to higher headquarters.
- ☐ Staffing LI to Lessons Learned is carried out according to project management best practice, ensuring leadership engagement at appropriate stages, particularly at the endorsement, tasking and monitoring stages.
- ☐ Lessons are routinely and actively included in planning operations and exercises and in induction training.
- ☐ Lesson observers and originators are provided with feedback and updates on their contributions.

TECHNOLOGY

- ☐ The LL process, and LL sharing, is supported by a staffing tool and an archive tool with search functionality.
- ☐ Tools enable and encourage management of LL information in accordance with the organization's information management and security policies.

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