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NATO LETTER OF PROMULGATION

20 March 2019

1. The enclosed Allied Maintenance Publication AMaintP-01, Edition A, Version 1, MAINTENANCE SUPPORT OF LAND OPERATIONS, which has been approved by the nations in the MILITARY COMMITTEE LAND STANDARDIZATION BOARD, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 2633.

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
HRV	Croatian Armed Forces conducts maintenance support of land operations thru 3 levels of maintenace which equals 4 levels of maintenace as described in chapter 2.5.1 Maintenance Levels. Level 3 & 4 are merged in national level no. 3.
SVN	Recovery activities executed by SAF wheeled 8x8 recovery vehicle is planed after year 2023.
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TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION 1
1.1 Purpose 1
1.2 Applicability 1
1.3 Scope 1

CHAPTER 2 MAINTENANCE SUPPORT 2-1
2.1 Purpose 2-1
2.2 Scope 2-1
2.3 Maintenance Definitions 2-2
2.3.1 Preventive Maintenance 2-2
2.3.2 Corrective Maintenance 2-2
2.3.3 Repair 2-2
2.3.4 Expedient Repair 2-2
2.3.5 Battle Damage Repair 2-2
2.3.6 Recovery 2-2
2.3.7 Recovery Task Force. 2-2
2.3.8 Equipment casualty 2-3
2.3.9 Equipment casualty evacuation 2-3
2.3.10 Maintenance Point 2-3
2.3.11 Collection Point 2-3
2.3.12 Cannibalization 2-3
2.3.13 Reclamation 2-3
2.3.14 Tools 2-3
2.3.14.1 Common/Basic tools 2-3
2.3.14.2 Special tools 2-3
2.3.14.3 Workshop equipment 2-3
2.3.14.4 Calibration equipment 2-3
2.3.15 Spare 2-4
2.4 Maintenance responsibilities 2-4
2.5 Principles of Maintenance 2-4
2.5.1 Maintenance Levels 2-4
2.5.1.1 Level 1 2-4
2.5.1.2 Level 2 2-4
2.5.1.3 Level 3 2-5
2.5.1.4 Level 4 2-5
2.5.2 Spares Management 2-5
2.5.2.1 Spares 2-5
2.5.2.2 Critical spares 2-5
2.5.2.3 Repairable spares 2-5
2.5.2.4 Consumable spares 2-6
2.5.3 Reclamation process 2-6
2.5.4 Maintenance Personnel 2-6
2.5.4.1 Military maintenance personnel 2-6
2.5.4.2 Civilian maintenance personnel 2-6
2.5.4.3 Civilian contractor 2-6

2.6 Maintenance planning 2-7
2.6.1 Planning guidance 2-7
2.6.2 Planning considerations 2-7
2.6.3 Recovery and Evacuation planning 2-8

CHAPTER 3 EXPEDIENT REPAIR/BATTLE DAMAGE REPAIR 3-1
3.1 Purpose 3-1
3.2 Scope 3-1
3. 3 Classification of expedient repair/BDR 3-1
3.4 Expedient repair/BDR requirements 3-2
3.5 Responsibilities 3-2
3.6 Documentation 3-2
3.7 Capabilities 3-2
3.8 Functionality of Kits 3-3
3.9 Expedient repair/BDR Training 3-3
3.9.1 Training elements 3-3

CHAPTER 4 RECOVERY AND EVACUATION 4-1
4.1 Purpose 4-1
4.2 Scope 4-1
4.3 Equipment Recovery 4-1
4.4 Equipment Casualty Evacuation 4-1
4.6 Recovery Requesting Messages and Procedures 4-2
4.6.1 Messages 4-2
4.6.2 Procedures 4-2
4.7 Conducting Recovery 4-3
4.8 Additional considerations 4-4

CHAPTER 5 EQUIPMENT RECOVERY DATABASE 5-1
5.1 Purpose 5-1
5.2 Scope 5-1
5.3 Location 5-1
5.4 Database contents 5-1
5.5 Database user rights 5-2
5.5.2 Administration and national responsibility 5-2
5.5.2 ERD Access and reports 5-2
5.5.3 Database User personal 5-3

ANNEX A Glossary 1
ANNEX B References and Related Publications Related documents 1
ANNEX C Expedient Repair/BDR Record Form 1
ANNEX D Recovery Task Force (RTF/Example) 1
ANNEX E EQUIPMENT RECOVERY REPORT 1

CHAPTER 1 INTRODUCTION

1.1 Purpose

1. This publication provides a reference for staff and personnel involved in the planning and execution of maintenance support to land operations.

2. It is acknowledged that the level of interoperability between nations across the maintenance functions varies significantly. This publication sets a common understanding of maintenance within a multinational area of operation by defining a shared maintenance terminology and principles and by suggesting planning guidelines. Detailed chapters are provided for Expedient Repair as well as Recovery and Evacuation. These are the two areas where it is expected nations will provide each other with the most mutual support.

1.2 Applicability

1. This publication applies to all forces that are engaged in all NATO land operations and exercises. It derives its authority from other NATO doctrinal publications and policy. The following maintenance procedures apply to:

   a. NATO land forces.

   b. The elements of naval forces and air forces of NATO engaged in land operations, as appropriate.

2. This publication states how the maintenance of military equipment is conducted within a multinational area of operations, and provides a common understanding of maintenance activities.

3. The Troop Contributing Nation (TCN) is responsible for maintenance and logistic support to their own equipment. However, mutual support between TCNs and efficient use of their maintenance resources can enhance the provision of maintenance capabilities and logistics efforts in an operational theatre.

1.3 Scope

Maintenance is an essential combat multiplier for success of all NATO operations. This publication is to be used as a reference document for planning and execution of maintenance operations within a multinational environment. There are four levels of maintenance within NATO terminology, which are intended to enable TCNs to understand how their own maintenance system aligns to other nation’s maintenance systems.

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CHAPTER 2 MAINTENANCE SUPPORT

2.1 Purpose

This chapter provides considerations for planning and execution of maintenance support to land operations.

2.2 Scope

The effective execution of maintenance processes in a multinational environment depends on comprehensive planning for the systematic and flexible relationships between all the elements described in this chapter.

This relationship is illustrated in Figure 2.1

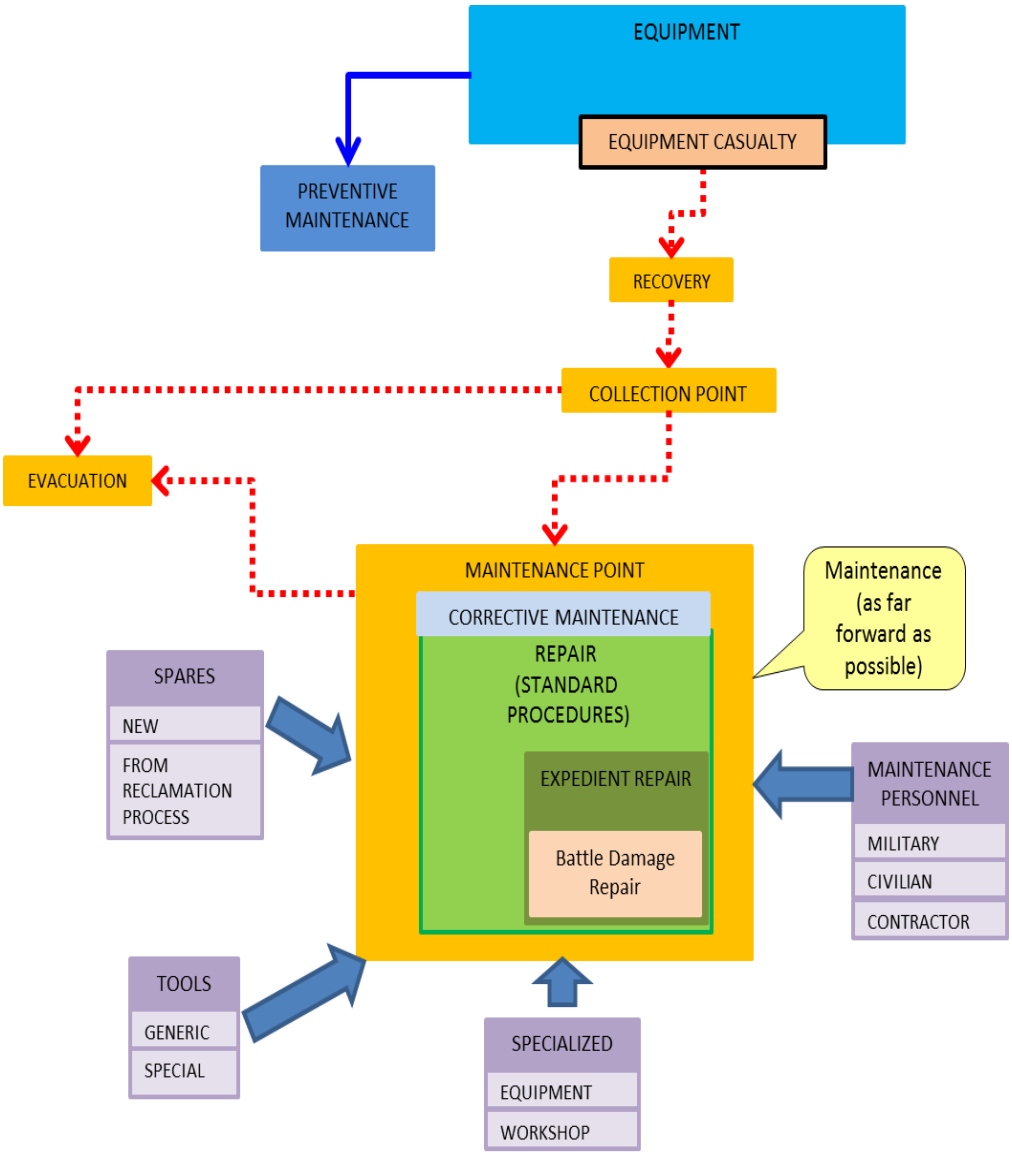

Figure 2-1: Maintenance processes

2.3 Maintenance Definitions

2.3.1 Preventive Maintenance

Systematic and/or prescribed maintenance intended to reduce the probability of failure.

a. Preventive maintenance operations performed preserve the operational condition and inherent reliability of equipment.
b. Although vital to mission success preventive maintenance is a national responsibility and will not be addressed in this manual.

2.3.2 Corrective Maintenance

Maintenance carried out after fault recognition and intended to restore equipment to a state in which it can perform a required function.

2.3.3 Repair

A technical action to restore operational functions to an item of equipment or reparable sub-assembly by adjustment, manufacture, or replacement of defective components.

2.3.4 Expedient Repair

To restore an equipment to a specified condition by improvised means.

a. This type of repair may be bound by legal constraints, and must be recorded.
b. Expedient repair may be carried out both in a deployed situation and on base, and may be of a permanent or temporary nature.

2.3.5 Battle Damage Repair

Essential repair, which may be improvised, carried out rapidly in a battle environment in order to return damaged or disabled equipment to temporary service.

a. Battle Damage Repair (BDR) is a form of expedient repair.

b. BDR may not meet standard safety and/or legal requirements.

2.3.6 Recovery

The extrication of an abandoned, disabled or immobilized equipment and, if necessary, its removal to a place where it can be repaired or evacuated.

2.3.7 Recovery Task Force.

An element established for the purpose of conducting recovery operations.

2.3.8 Equipment casualty

Equipment requiring maintenance.

2.3.9 Equipment casualty evacuation

The collection and removal of equipment casualties within the logistic system.

2.3.10 Maintenance Point

A location where a maintenance unit or part of it conducts maintenance.

2.3.11 Collection Point

A designated location established to collect equipment casualties.

2.3.12 Cannibalization

Operation consisting of taking one or more sub-assemblies or spares from repairable or fit equipment to respond to an urgent supply need.

2.3.13 Reclamation

The action of removing and possibly repairing and reconditioning, assemblies, sub-assemblies or components from an equipment in order to place them into the spares supply system.

2.3.14 Tools

2.3.14.1 Common/Basic tools

Tools commonly used during maintenance activities. These tools are available at all maintenance levels and can be used for multiple tasks.

2.3.14.2 Special tools

Tools that are utilized to complete a maintenance task associated with a specific piece of equipment.

2.3.14.3 Workshop equipment

May consist of but not limited to; test, measurement and diagnostic equipment, power and handling equipment; e.g. cranes, vehicle lifts, brake tests, weapon workshop, hydraulic test, tire workshop, electric workshop, etc. Workshop equipment can be used for multiple tasks and requires trained maintenance personnel and appropriate infrastructure.

2.3.14.4 Calibration equipment

Is the equipment required to maintain instrument accuracy, and is referred to as test, measurement, and diagnostic equipment.
Although vital to mission success calibration is a national responsibility and will not be addressed in this manual.

2.3.15 Spare

An individual part, sub-assembly or assembly supplied for the maintenance of systems or equipment.

2.4 Maintenance responsibilities

Nations are responsible for the provision of maintenance of their forces allocated to NATO. Nations should strive to make full use of bilateral or multilateral agreements to provide mutual maintenance support. The overall objective of standardization, including maintenance standardization is interoperability. This can be achieved through compatibility of equipment and tools, interchangeability of spares, and commonality of procedures. Where two or more nations possess the same equipment, a coordinated maintenance effort should be encouraged.

2.5 Principles of Maintenance

The guiding principle of maintenance is that unserviceable equipment should be repaired as far forward as operationally possible and technically feasible.

Maintenance is comprised of preventive and corrective activities. Corrective maintenance is categorized as by the following types of repairs:

a. Standard repair.

b. Expedient repair.

c. Battle damage Repair (BDR).

2.5.1 Maintenance Levels

The NATO maintenance levels are determined by the extent of the engineering content in the repair task. Maintenance tasks are determined by the depth of repair, the time, the resources and stability required. The level of maintenance that can be undertaken will have a direct relationship to the tactical situation which must be taken into account when making repair decisions. The application of these levels is flexible. If the tactical situation, type of military activity and technical resources permit, the Commander can direct that higher Maintenance Levels be carried out closer to the point of failure.

2.5.1.1 Level 1

The system can be restored by the user, with the tools, consumables and procedures prescribed at sub unit level. These will tend to be simple tasks, including the replacement of knobs, bulbs, road wheels and batteries or rebooting computers.

2.5.1.2 Level 2

The system can be restored by maintenance personnel, using the tools, spares, consumables and procedures prescribed at unit level. These will

be more involved but straightforward tasks, which require a degree of diagnosis and technical competence. Repairs might include the replacement of spares or sub-assemblies, tuning, alignment and welding.

2.5.1.3 Level 3

The system can be restored by maintenance personnel using tools, spares, assemblies and procedures prescribed for use in mobile workshops. These will be more involved and time-consuming activities, which may require special tools, facilities and highly trained maintainers. Examples might include the replacement of major assemblies, the repair of sub-assemblies, optical alignment and limited manufacture of mechanical components.

2.5.1.4 Level 4

The system can be restored by maintenance personnel using special tools and test equipment in static workshops operated by the maintainer or supplier. Such repairs would tend to be complex and may take a considerable period of time. They might encompass complete rebuilds, the replacement of component parts, calibration and manufacture under controlled conditions.

2.5.2 Spares Management

2.5.2.1 Spares

1. When nations share the same equipment they may be able to exchange spares based on the NATO Stock Number (NSN).

2. Where spares are to be exchanged a bilateral or multilateral agreement between nations is required.

3. If local manufacture or fabrication of spares is conducted it must be completed to national specifications. Records will be created by the manufacturing unit and maintained by the equipment owner.

2.5.2.2 Critical spares

Critical spares are items which the lack of or failure would cause the loss of a mission-essential operational capability. These items must be subjected to special supervision and management control at all levels. They will often be transported using higher priorities, using all available means. When the critical spares are not available cannibalization may be required if authorized.

2.5.2.3 Repairable spares

Repairable spares are assemblies and subassemblies which can be repaired and returned to stock. For some nations the management of

repairable spare is a supply function, or other nations is a maintenance function.

2.5.2.4 Consumable spares

Consumable spares are items which are not repairable; for example Bench Stock (i.e., screws, bolts, filters, etc.). Upon failure or end of life the items are disposed of or scrapped.

2.5.3 Reclamation process

Reclamation is an important process for the recycling of spares. The process should be coordinated in advance and incorporated in multinational Standard Operating Procedures. Equipment that cannot be evacuated or is unsuitable for reclamation activity may be destroyed to deny its use to the enemy.

2.5.4 Maintenance Personnel

The objective for maintenance personnel, assigned to NATO activities, is to ensure that supported units can accomplish their mission. They should conform to the tasks and procedures applicable to maintenance activities conducted during training, exercises and operations.[1] Their tasks may consist of inspecting, servicing, repairing, and recovery of equipment. Maintenance personnel can be classified into following groups.

2.5.4.1 Military maintenance personnel

Military maintenance personnel are trained to perform their mission in any tactical environment supporting all types of units. Military maintenance personnel will have undergone military as well as technical training.

2.5.4.2 Civilian maintenance personnel

Civilian maintenance personnel are trained to perform their mission only in a secure environment. During operations this means that they are generally located in secure military compounds. They are employed by the individual nations, and comply with national policies.

2.5.4.3 Civilian contractor

Contracted civilian personnel are engaged to perform their duties according to the terms of their contract. This contract is between the nation and the contractor. During operations, their working location and physical protection will be determined by the contract and the national policies established in the area of operations.

[1] As Expedient Repair/BDR techniques may fall outside the descriptions in the technical documentation

2.6 Maintenance planning

Coordination and planning of maintenance operations is paramount. The following guidance will assist with the planning of NATO maintenance operations.

2.6.1 Planning guidance

1. Nations should consider establishing bilateral or multilateral agreements for maintenance activities, to include spares and services, to maximize maintenance capabilities.
2. National forces are responsible for the provision of their equipment fleets. This includes the spares and maintenance assets that support their forces. Unless bilateral or multilateral agreements have been established by TCNs.
3. In an effort to support higher level decision making and operational planning, national forces must be prepared to report equipment readiness and availability to coalition headquarters using NATO approved procedures.
4. During maintenance activities, special care should be taken to be in accordance with STANAG 2582 Best Environmental Protection Practices for Military Compounds in NATO operations.
5. Access to the Equipment Recovery Database (ERD) should be established by the TCN prior to initial NATO activities. The ERD provides information on towing, preferred hookup locations, winching, salvage, overturned or disabled vehicles. The ERD also includes safety information that mitigates risk to personnel and equipment.
6. Expedient repair policies should be established in standard operating procedures (SOP), and shared with TCNs.
7. Procedures for handling sensitive components, such as radios, weapons, maps and signal operating instructions should be incorporated in SOPs.
8. Equipment that cannot be recovered or evacuated may be destroyed or denied. Procedures for destruction or denial between nations should be incorporated into SOPs specific to the operation.

2.6.2 Planning considerations

The following considerations are intended for use in planning maintenance activities:

1. What is the anticipated duration of the operation?
2. What are the characteristics of the objective area, including available resources, climate, weather, and terrain?
3. What maintenance services are available from TCN?
4. What host nation support will be available?
5. What maintenance facilities and assets are available from TCN?
6. What are the specific maintenance facility requirements?
7. Are collection and maintenance points identified for each TCN?

8. What common equipment is being utilized by TCN?
9. Are spare packages being aligned with national equipment density list?
10. Are guidelines and authorities established for obtaining spares by cannibalization and/or reclamation?
11. What recovery assets are available in theatre (to include wheeled, tracked, trailer and heavy equipment transporter)?

2.6.3 Recovery and Evacuation planning

Given the limited recovery assets in an operational environment there is a requirement for cooperation between nations regarding recovery and evacuation of vehicles. These operations should be coordinated with maintenance efforts and commander's priorities. The following are some considerations for recovery and evacuation planning;

1. It is imperative for nations to ensure access to the following recovery message forms prior to deployment:

   a. Recovery Evacuation Form (RECEVACFORM) is available at APP-11 ANNEX B.

   b. Equipment Recovery Request (EQUIPRECREQ) is available at ATP-97
2. Identify areas of responsibility and establish clear command and control structure for recovery and evacuation activities.
3. Identify the tasks and responsibilities with regard to recovery and evacuation which may include: Force protection, medical support, and evacuation of recovered troops and cargo.
4. Establish monitoring procedures for the availability of all recovery and evacuation assets in area of operations.
5. Establish recovery and evacuation priorities based on previous assessments of mission essential equipment.
6. Identify and establish collection points where recovered equipment can be evacuated or moved to a maintenance point for expedient repair or corrective maintenance.
7. Establish procedures for evacuation of the equipment casualty crew and their cargo.
8. Establish multinational procedures for recovering and evacuating abandoned and immobilized equipment.
9. Establish an SOP for recovery and evacuation of non-combatant equipment.
10. Identify equipment recovery assets to determine interoperability between TCNs. This could be established with a working matrix.
11. Arrange for mutual preparatory training and orientation sessions with all TCNs. If possible continued training of recovery personnel will be encouraged to enhance recovery and evacuation skills.

CHAPTER 3 EXPEDIENT REPAIR/BATTLE DAMAGE REPAIR

3.1 Purpose

This chapter standardizes the policy for expedient repair, also referred to as Battle Damage Repair (BDR), as an essential element of maintenance.

3.2 Scope

Expedient repair/BDR is a key enabler in maintaining military capability using technical skills and improvised techniques to conduct limited repairs.

The following aspects of expedient repair/BDR are covered in this chapter:

1. Classification.
2. Requirements.
3. Responsibilities.
4. Documentation.
5. Capabilities.
6. Functionality of Kits.
7. Training.

3. 3 Classification of expedient repair/BDR

1. Type 1
   An improvised, non-conventional expedient repair that is of sufficient quality and robustness to be considered as permanent, so allowing the continued use of the equipment, and does not require subsequent replacement. This repair must meet any legal and safety requirements.

2. Type 2
   An improvised, non-conventional expedient repair that is considered only temporary in nature, allowing the equipment to complete the immediate mission or task, before being replaced by a conventional repair. This repair should meet agreed legal and safety requirements.

3. Type 3
   An improvised non-conventional BDR that rapidly returns the equipment to a mission capable status. This repair is unlikely to be permanent or may not meet legal and safety requirements, but is essential to maintain military capability in periods of conflict or war.

These three classifications of repairs can be applied across the maintenance levels.

3.4 Expedient repair/BDR requirements

1. Each TCN should appoint expedient repair/BDR Officers prior to any NATO activity.
2. The Senior Maintenance Officer should request the expedient repair/BDR capabilities from each TCN.
3. The Senior Maintenance Officer should publish information about each TCNs expedient repair/BDR capabilities.
4. The appointed expedient repair/BDR Officers will be the technical authorities.

3.5 Responsibilities

All TCNs have the responsibility to properly equip personnel, establish expedient repair/BDR techniques, and perform expedient repair/BDR. TCNs should at a minimum institute the following:

1. Develop individual publications or manuals that support expedient repair/BDR techniques.
2. Develop procedures based upon capabilities required to support mission essential equipment.
3. Develop and procure expedient repair/BDR kits.
4. Develop training to support expedient repair/BDR on mission essential equipment.
5. Encourage the exchange of information between nations to facilitate the development of best practices, ideas, and enhance skills.

3.6 Documentation

1. Expedient repairs/ BDR is an important maintenance process that is useful during garrison and deployment. Any expedient repair/BDR that is performed will be recorded using the Expedient repair/BDR Record form found in Annex C.
2. Expedient repairs/BDR must be authorized by an appropriate technical authority, as defined in the operational SOP, and be accepted for use by the commander.
3. The technical authority must determine how long a repair may last and the risks associated with such repairs prior to completing the Expedient Repair/BDR Record form.
4. The appointed expedient repair/BDR Officers will be the technical authority signing the Expedient Repair/BDR Record form.

3.7 Capabilities

Examples of expedient repairs/BDR capabilities may include, but are not limited to the following:

1. Suspension systems (i.e. short tracking, chaining up axles).
2. Electrical systems (bypassing components, wire repair).
3. Cooling systems (radiator bypass and repair).
4. Fuel systems (patching holes, replacing or making pipes or hoses).
5. Hydraulic/oil systems (repair high pressure and oil pipes or hoses).
6. Tire and track repair.

7. Plastic and rubber repair.

3.8 Functionality of Kits

1. An expedient repair/BDR kit should contain the tools and materials to apply expedient repair/BDR techniques to systems such as mechanical systems, hydraulics, electrical and optical equipment. These repairs are to restore minimum functionality, regardless of the type and origin of the equipment.

2. The functionality of the expedient repair/BDR kits will vary by nation, maintenance level, and mission essential equipment supported. Examples of functions these kits may be able to perform:

   a. Welding/brazing (metal).
   b. Welding (chemical/glue).
   c. Cutting (metal, wood, plastic).
   d. Fabrication/manufacture (machining and 3D printing).
   e. Diagnostic (multi-meter).

3.9 Expedient repair/BDR Training

In order to ensure all TCNs have the ability to perform expedient repair/BDR it is recommended that a standardized approach to training is adopted. The skill level associated with maintainers and crews' conducting expedient repairs depends largely on their level of training. TCNs training model could consist of the following:

1. Specialist training at technical schools.

2. On the job training.

3. Period specific training given during deployments and exercises.

4. Advanced courses for senior expedient/BDR personnel.

3.9.1 Training elements

In order to establish an effective expedient repair/BDR training program, unconventional and improvised repair elements should be identified for:

1. Training of expedient repair/BDR should be based upon the supported mission essential equipment.

2. The specific skills and knowledge necessary for performing specific expedient repair/BDR.

3. The materials and kits should be designed to perform expedient repair/BDR on mission essential equipment.

4. Specify the location and allocate the proper amount of time to teach and practice expedient repair/BDR techniques.

5. Teach best practices and identify emerging non-conventional repair techniques.

6. Training should be carefully planned utilizing realistic resources, such as damaged vehicles, appropriate visual aids, up-to-date publications, and a full range of expedient repair/BDR kits.

7. Operators/crew should receive basic expedient repair/BDR training, if possible, to return immobilized equipment to operation in the absence of maintenance personnel.

8. Training on specialized repairs should be practiced under controlled conditions, as part of periodic training organized by the unit expedient repair/BDR instructor.

9. Specific training for appointed technical authorities on the fundamentals of expedient repair.

10. Every opportunity should be taken to practice expedient repair techniques under realistic exercise conditions.

CHAPTER 4 RECOVERY AND EVACUATION

4.1 Purpose

This chapter describes equipment recovery and evacuation procedures. Supporting recovery and evacuation efforts during NATO activities will result in increased efficiency and readiness throughout NATO operations.

4.2 Scope

Recovery and evacuation operations remove inoperable equipment casualties from the place where it has become disabled or defective. These procedures prevent equipment from falling into enemy hands, and enable the repair of damaged equipment. Nations are in principle responsible for recovery and evacuation of their own equipment during operations. This is an area in which nations must move towards interoperability, so that any nation's recovery assets can be used in recovery and evacuation operations. The procedures described within this chapter enable mutual support between nations.

4.3 Equipment Recovery

The objective of recovery is either the immediate return of the equipment to the user or to a collection point. At the collection point the non-serviceable equipment can be transported to a maintenance point for repair or processed for evacuation. This functionality is in line with the principle of forward repair. Equipment recovery should consider the following tasks:

1. Evacuate crews and personnel to a safe location.

2. Return immobilized but serviceable equipment an operational status.

3. Recover non-serviceable equipment to a collection or maintenance point.

4. Follow denial procedures established in SOP to prevent enemy capture of equipment.

5. Collect enemy equipment for exploitation by NATO forces once secured for recovery.

4.4 Equipment Casualty Evacuation

If an equipment casualty cannot be repaired at a maintenance point, the decision can be made to evacuate the equipment casualty to a higher level repair facility or out of the operational theater. Equipment casualty evacuation is normally conducted by transportation force elements, with the intent to conserve operational recovery assets.

4.6 Recovery Requesting Messages and Procedures

3.6.1 Messages

1. Recovery Evacuation Form (RECEVACFORM) [2] (APP-11 Annex B). This form will be used at the operation center level in order to provide more detailed tasking to the Recovery Task Force (RTF).
2. Equipment Recovery Request (EQUIPRECREQ)[3](ATP-97). This report is used to request equipment recovery via radio communication under field conditions.

4.6.2 Procedures

After all efforts to perform expedient repair/BDR and/or self-recovery have been exhausted the following steps must be taken to initiate the vehicle recovery:

1. Recovery will be completed by the owning unit if it has the capacity.
2. If the owning unit does not have the ability to perform recovery, then the vehicle commander must complete an EQUIPRECREQ.
3. The vehicle commander will communicate by secure means with his chain of command to initiate the EQUIPRECREQ, and the command will forward the request to the appropriate operations center for action.
4. The operations center establishes the priority and identifies the role specialist nation (RSN) / lead nation (LN) supporting unit that will perform the recovery.
5. The operations center generates the RECEVACFORM request from information received from the requesting unit and sends to RSN/LN for tasking.
6. The RECEVACFORM is forwarded to the RTF for action.
7. The recovery mission will then be conducted by the tasked element.
8. On completion of the recovery task the RTF must inform the requesting operations center that the task is complete.
9. If a RSN/LN supporting unit is not able to perform the recovery operation the operations centre recovery supervisor will coordinate the recovery with the NSE and if necessary the Joint Logistic Support Group (JLSG) in order to identify a recovery solution.
10. The recovery request process is detailed in figure 4-1.

[2] STANAG 7149 (APP-11) NATO MESSAGE CATALOGUE
[3] STANAG 2627 (ATP-97) NATO LAND URGENT VOICE MESSAGES

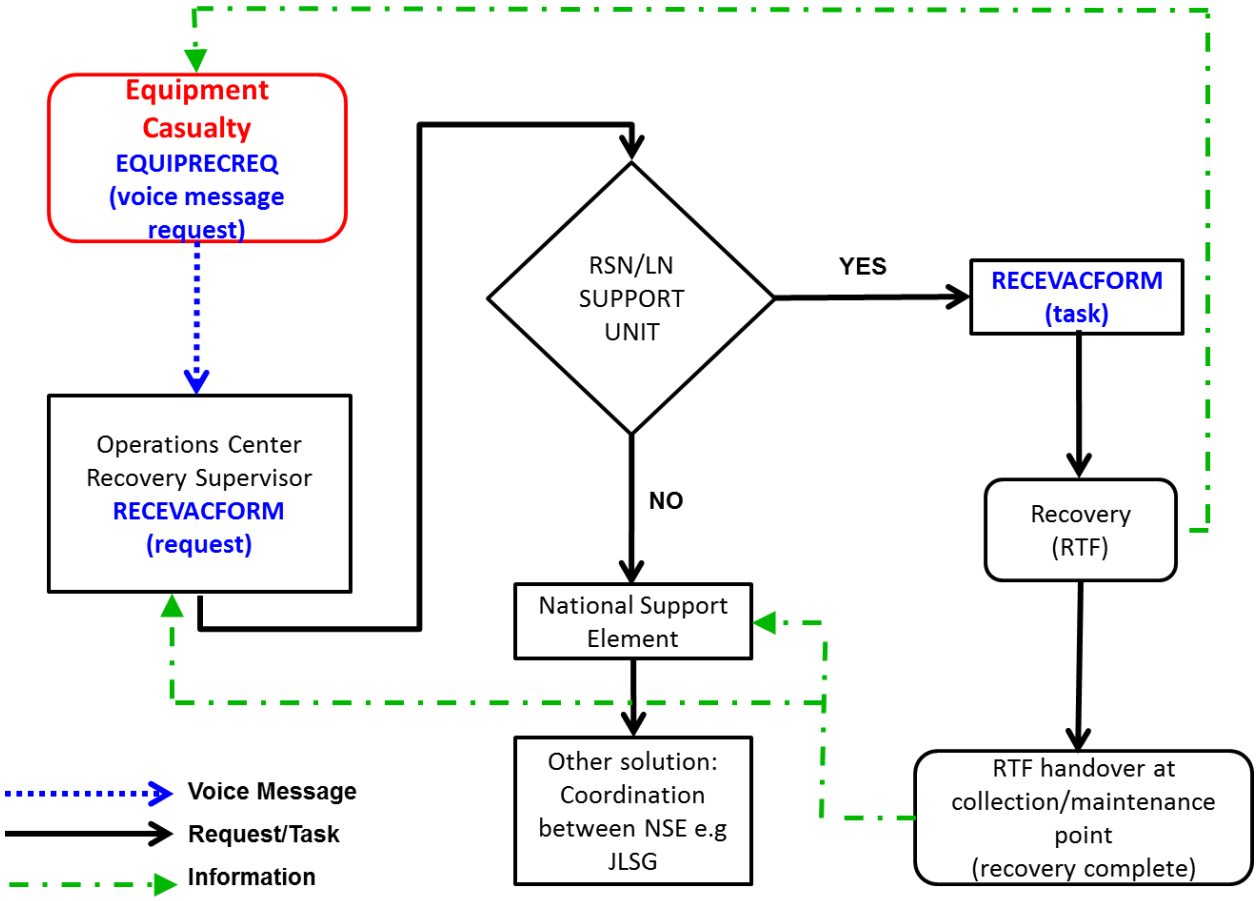

Figure 4-1: Request-/Task-flow chart

4.7 Conducting Recovery

The conduct of recovery operations is dependent on the tactical situation and every effort should be made to account for the following:

1. If possible recovery should be conducted without causing further damage to the equipment.
2. All actions to ensure the safety of the crew should be carried out prior to undertaking the recovery operation.
3. If the tactical situation, mission and/or time available limit the team's ability to comply with environmental standards then the environmental exceptions must be documented and reported accordingly.
4. If the tactical situation prevents recovery, SOPs on the destruction of immobilized equipment should be followed.
5. The RTF should be equipped with a similar force protection level as the supported forces.
6. An example of an RTF structure is provided in Annex D.

4.8 Additional considerations

It is generally necessary to match the recovery vehicle to the equipment to be recovered. In addition to the RECEVACFORM received the RTF commander should consider the following:

1. The condition, total weight, ground pressure and dimensions of the equipment should be determined prior to recovery.

2. Equipment should have standard connections/hook-up points[4] for emergency towing. Where these standard connections are not available alternatives should be identified and agreed in SOPs.

3. Equipment should be designed to withstand straight pulls and suspended/ supported towing, without incurring further damage.

4. Prior to conducting recovery any preparatory work on the equipment to be recovered must be conducted. Information on this preparatory work is available at the equipment handbook or the equipment recovery database.

5. Location of the disabled equipment (i.e., roadside, in a major ditch or ravine, underwater, etc.).

6. Identify hazardous materials to RTF prior to recovery.

[4]STANAG 4478 Emergency Towing and Recovery Facilities for Tactical Land Vehicles

CHAPTER 5 EQUIPMENT RECOVERY DATABASE

5.1 Purpose

This chapter describes the Equipment Recovery Database (ERD), and how it provides a single source of equipment data in order to enable equipment recovery and evacuation in multinational operations.

5.2 Scope

The ERD is a non-proprietary standards related document (SRD), which is intended for use by all recovery crews, maintenance and recovery personnel. Additionally, it is meant for use as a tool by staff and maintenance personnel to assist in the planning and execution of recovery and evacuation operations. Each nation is responsible for updating the data as required.

5.3 Location

The Equipment Recovery Database is located on the NATO Standardization Office (NSO) website.

5.4 Database contents

The database contents and overall structure includes layers, which after filtering and sorting will provide detailed information such as technical data, recovery information and reports (Figure 5-1). This database is specific to recovery of vehicles, and does not establish the overall evacuation process. The information in this database is only to be communicated to authorized personnel.

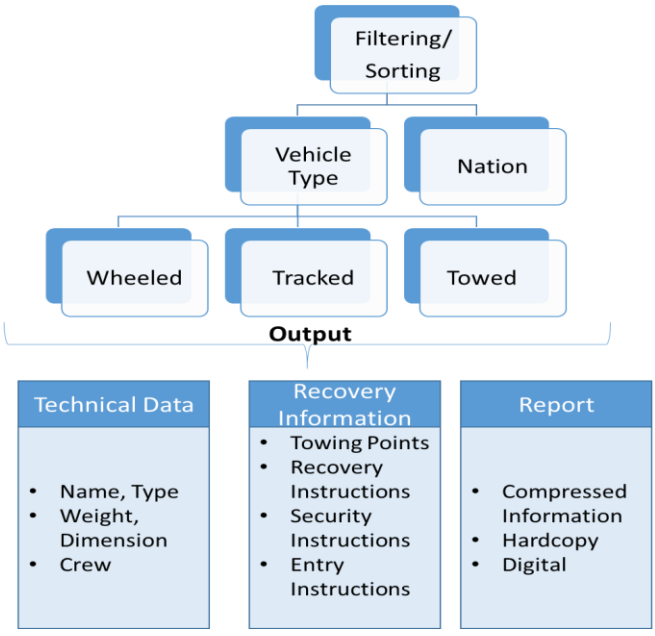

Figure 5-1: Database contents and structure

5.5 Database user rights

A brief overview of the functions for the database administration and usage is shown in Figure5-2.

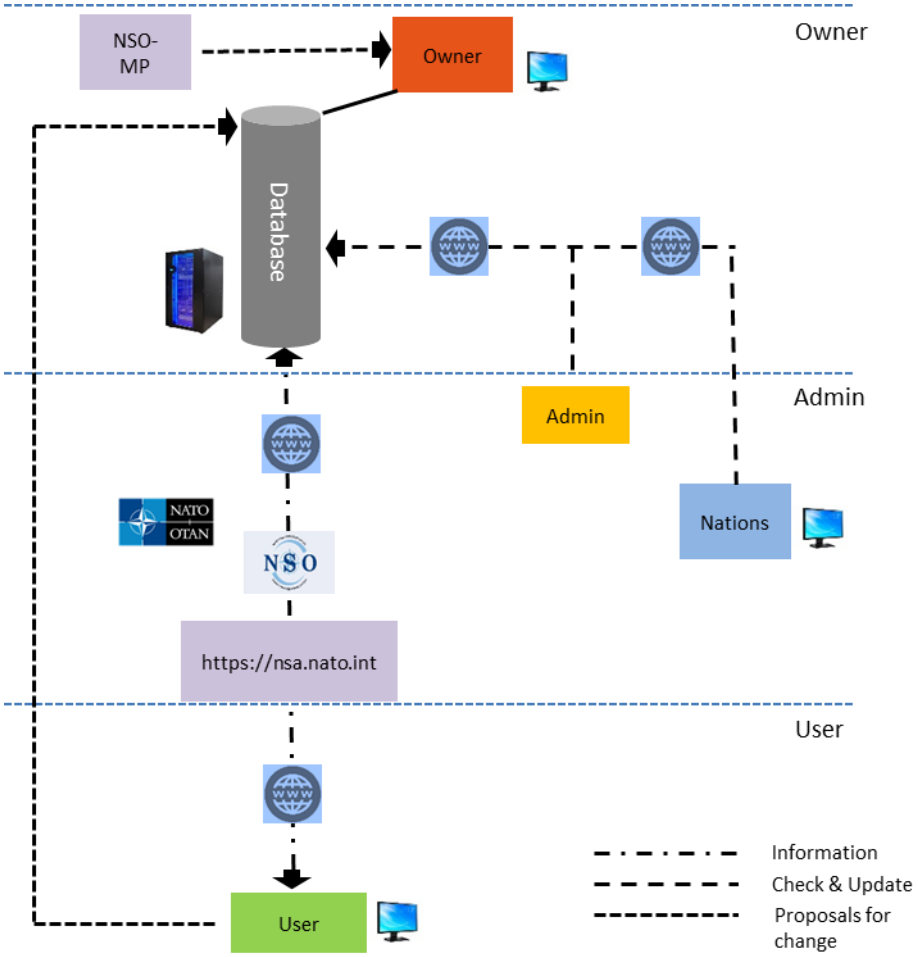

Figure 5-2: Database

5.5.1 Administration and national responsibility

The contributing delegates to the Military Committee Land Standardization Board, Combat Service Support Group, Maintenance Panel are responsible for the overall governance of the ERD. It is a national responsibility to provide accurate, current and complete information within the equipment recovery database. Individual nations are obliged to check and update their information in the database at a minimum annually.

5.5.2 ERD Access and reports

Microsoft Access software is necessary to utilize the ERD. It is an unclassified database, which provides the user with information necessary to complete the mission. The Equipment Recovery Database user manual will enable Staffs and

maintenance personnel to utilize the ERD. The output of the ERD can be used by recovery officers in the operations center and by the RTF to execute the mission. This exportable report can be printed or sent electronically. An example of this report is in Annex E.

5.5.3 Database User personal

The user requires access to and the ability to download the ERD via the NSO website as noted in paragraph 5.3. Maintenance personnel are required to confirm the details of the equipment casualty prior to executing the recovery task and report any errors detected within the ERD.

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ANNEX A Glossary

	B
BDR	Battle damage repair (AAP-06)
	E
EQUIPRECREQ	Equipment Recovery Request
ERD	Equipment recovery database
	J
JLSG	Joint Logistic Support Group
	L
LN	lead nation (AAP-15)
	N
NSE	National support element
NSO	NATO Standardization Office
NSN	NATO Stock Number
	R
RECEVACFORM	Recovery Evacuation Form
RSN	Role specialist nation (AAP-15)
RTF	Recovery task force
	S
SOP	Standard operating procedure (AAP-06)
SRD	Standards related document (AAP-06)
	T
TCN	Troop-contributing nation (AAP-15)

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ANNEX B References and Related Publications Related documents

1. STANAG 2019
   NATO Joint Military Symbology – APP-6
2. STANAG 2034
   NATO Standard Procedures for Mutual Logistic Assistance
3. STANAG 2284
   Land Compendium of Hand Signals – APP-14
   Battlefield Vehicle Recovery – User Handbook – AEP-17
4. STANAG 2406
   Land Forces Logistic Doctrine – ALP-4.2
5. STANAG 2512
   Modes of Multinational Logistic Support – AJP-4.9
6. STANAG 2605
   Allied Land Tactics – ATP-3.2.1
7. STANAG 2614
   Convoy Operations – ATP-76
8. STANAG 2627
   NATO Land Urgent Voice Messages Pocketbook- ATP-97
9. STANAG 3680
   NATO Glossary of Terms and Definitions – AAP-6
10. STANAG 4478
    Emergency Towing and Recovery Facilities for Tactical Land Vehicles
11. STANAG 7149
    NATO Message Catalogue – APP-11
12. NATO Glossary of Abbreviations used in NATO
    Documents and publications – APP-15
13. STANAG 4062
    Slinging and Tie-down Facilities for Lifting and Tying down Military Equipment for Movement by Land and Sea
14. STANAG 4174
    Allied Reliability and Maintainability Publications

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ANNEX C Expedient Repair/BDR Record Form

Equipment Type:	Designating Mark/ **Number Plate:**	**Crew:**	**Equipment Location:**
Owning Unit:	**Nationality of Owner:**		**DTG of Repair:**
Maintenance Unit:	**Maint Unit Nationality:**	**Maint Unit Contact Details:**	**Maint Unit Location:**

Description of Fault/Damage (including systems affected)

	Weapon/Armament (main or primary)		Weapon/Armament (secondary)		Communications		Chassis/Hull		Steering
	Weapon control system (main)		Weapon control system (secondary)		External Lights		Suspension		Power Train
	Electrical		Electronic		Hydraulic		Braking		Other

Sketch of Expedient Repair

Parts Fitted/Materials Used:

Description: NSN: Quantity:	Description: NSN: Quantity:	Description: NSN: Quantity:
Description: NSN: Quantity:	Description: NSN: Quantity:	Description: NSN: Quantity:

LIMITATIONS/CONSTRAINTS ON USE

Repair completed by: (Maintainer)	**Repair authorized by: (Technical Authority)**	**Equipment User/Owner or Vehicle Commander; acceptance of repair and agreement to the limitations or constraints on use:**
Number: Rank: Name: Unit: Signature:	Number: Rank: Name: Unit: Signature: Qualifications & Appointment:	Number: Rank: Name: Unit: Signature: Appointment:

ANNEX C TO
AMaintP-01

FORMULAIRE OTAN DE RÉPARATION DE FORTUNE

Type d'engin :	**Numéro de série/ d'immatriculation :**	**Équipage :**	**Position :**
Unité :	**Nationalité :**		**GDH :**
Unité de maintenance :	**Nationalité de l'unité de maintenance :**	**Point de contact à l'unité de maintenance:**	**Position :**

Description de la panne / défectuosité (mentionnant les systèmes concernés) :

	Arme/ Armement (principal ou primaire)		Arme/ Armement (secondaire)		Communications		Châssis / caisse		Direction
	Conduite de tir (arme principale)		Conduite de tir (arme secondaire)		Dispositif d'éclairage		Suspension		Groupe motopropulseur / chaîne cinétique
	Électricité		Électronique		Hydraulique		Freinage		Autres

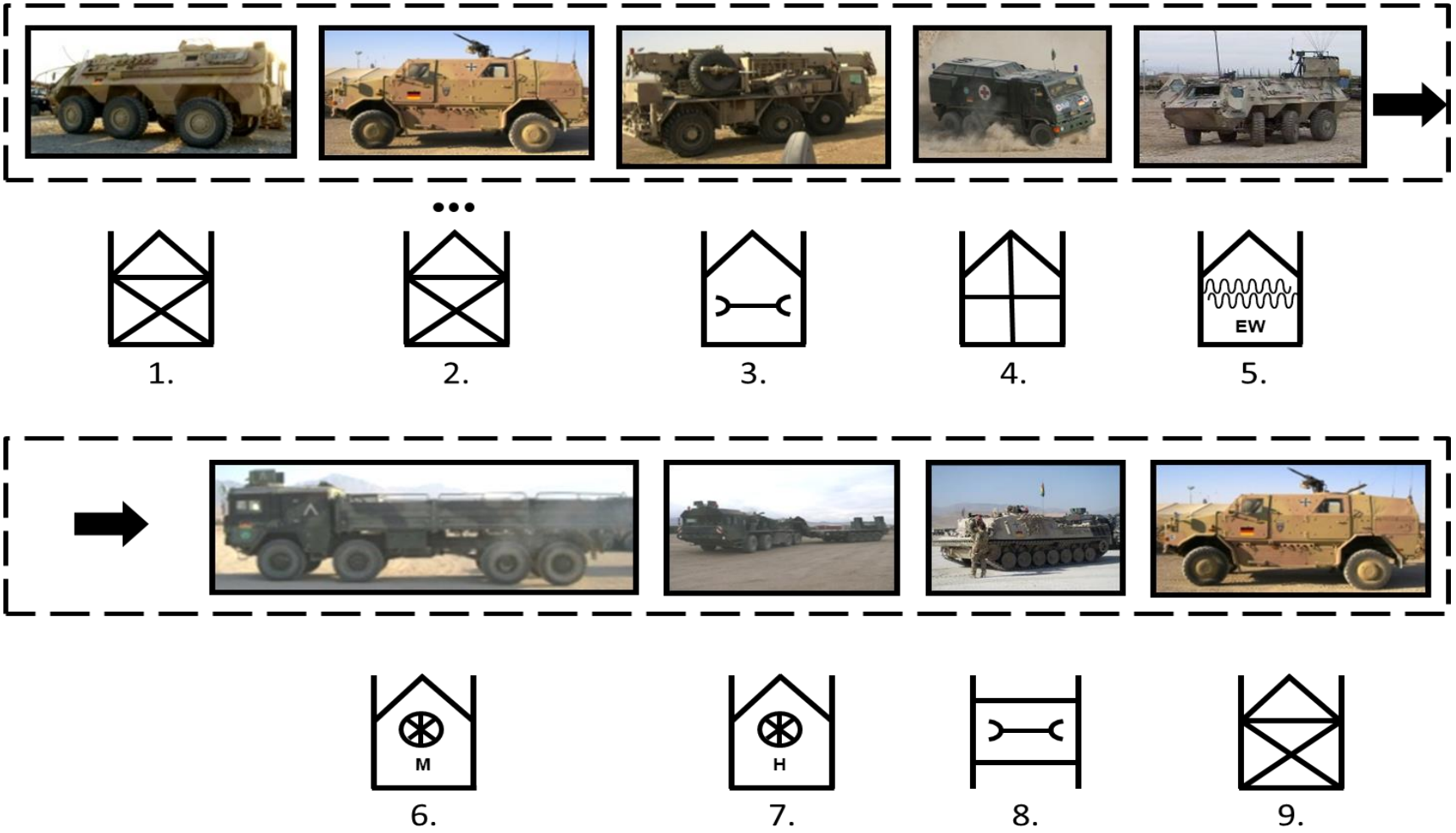
Schéma de la réparation de fortune

Pièce de rechanges montées / matériaux utilisés :		
Description : NNO : Quantité :	Description : NNO : Quantité :	Description : NNO :
Description : NNO : Quantité :	Description : NNO : Quantité :	Description : NNO :

LIMITATIONS / RESTRICTIONS D'EMPLOI

Opération effectuée par : (technicien)	**Autorisée par : (responsable technique)**	**Autorisation de l'utilisateur/du détenteur du véhicule ou du chef de bord de procéder à l'intervention et acceptation des restrictions ou contraintes d'utilisation :**
Matricule : Grade : Nom : Unité : Signature :	Matricule : Grade : Nom : Unité : Signature : Qualifications et affectation :	Matric ule : Grade : Nom : Unité : Signa ture :

ANNEX D Recovery Task Force (RTF/Example)



ANNEX E EQUIPMENT RECOVERY REPORT

DEU

RECOVERY TASK DETAIL

Eagle IV, GDELS-Mowag, 4x4

CHARACTERISTICS

Axel Weight				Dimension	
F1:	4150 Kg	R1:	5000 Kg	Length:	5,394 m
F2:	---	R2:	---	Width:	2,299 m
F3:	---	R3:	---	Height:	2,688 m
F4:	---	R4:	---		

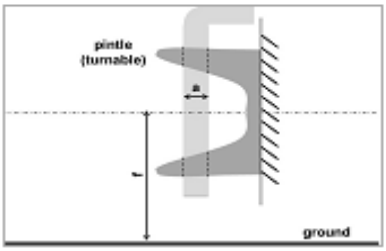
Fuel:	F-54 Diesel	Empty:	8210 Kg
Capacity:	180 l	Loaded:	8860 Kg
#Crew:	5	Tow:	3500 Kg
MLC:	10	Crane:	---
		Winch 1:	3200 Kg
		Winch 2:	---

NSN: 2355-12-387-4329 RIC:

TOWING DATA / EYE DAT

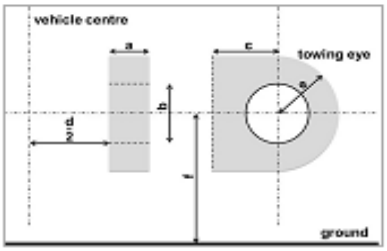
Max Speed: 40 Km/h Distance: 30 Km

front-center



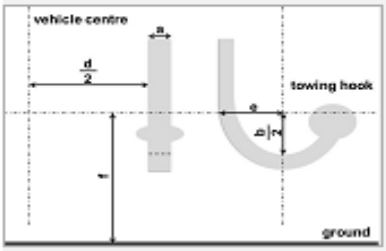
Cap:	< 5001 Kg
a:	22,2 mm
b:	20,5 mm
c:	25,4 mm
d/2:	0 mm
e:	20 mm
f:	680 mm

front-left & right



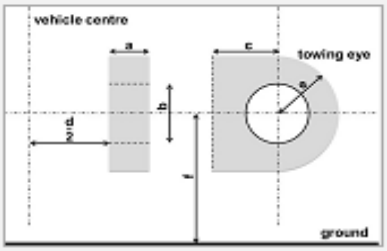
Cap:	< 10000 Kg
a:	34,9 mm
b:	25,5 mm
c:	31,8 mm
d/2:	380 mm
e:	32,2 mm
f:	680 mm

rear-center



Cap:	< 5001 Kg
a:	22,2 mm
b:	20,5 mm
c:	25,4 mm
d/2:	0 mm
e:	20 mm
f:	690 mm

rear-left & right



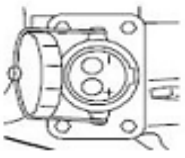
Cap:	< 10000 Kg
a:	34,9 mm
b:	25,5 mm
c:	31,8 mm
d/2:	400 mm
e:	32,2 mm
f:	730 mm

AIR BRAKE CONNECTORS

Front: STANAG 2604 Rear: STANAG 2604

ELECTRICAL JUMP START CONNECTOR

NATO Type II



Page 1 of 2

Eagle IV, GDELS-Mowag, 4x4

RECOVERY INSTRUCTION

1	Disconnect differential locks
1	Emergency power take off (PTO) and gear selector
1	Gearbox neutral in high group

VEHICLE ENTRY INSTRUCTION

1	Cut the doorhinges with powersaw and open the door with a hydraulic spreader and a winch or crane
2	Drilling holes in the windshield and pull out the windshield with a chain
3	Only tow vehicle with comparable or larger wheeled vehicle

SAFETY/SECURITY INSTRUCTION

1	A towing cable may only be used if steering and breaking systems are operational
1	Do not exceed maxium tow distance
1	Do not exceed maxium tow speed
1	Steering unlocked

Additional Information

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