

**A METHOD OF PLANNING NEEDS BY THE USE OF LOGREP  
METODA PLANOWANIA POTRZEB PRZY UŻYCIU LOGREPa**

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*Abstracty: The article describes a process of planning needs in the ammunition and explosives procurement sections in a traditional way or by the use of Logrep. The article describes a new diagram of a needs identification sub-process based on needs planning by the use of Logrep.*

*Streszczenia: Artykuł opisuje proces planowania potrzeb amunicji i materiałów wybuchowych w tradycyjny sposób lub przy użyciu Logrep. W artykule opisano nowy schemat podprocesu identyfikacji potrzeb w oparciu o planowanie potrzeb dzięki użyciu Logrep.*

*Key words: needs, planning, identification, procurement sections*

*Słowa kluczowe: potrzeby, planowanie, identyfikacja, sekcje zamówień*

## **INTRODUCTION**

Management is a field of knowledge which follows practice by developing general methodological concepts and useful solutions in response to needs reported by managers. (Barczak, 2012)

Optimum organisation management would not be possible without adequately prepared planning. Planning is the first stage of an organised activity. Planning is a repeatable organisational processes. It defines a goal of the organisation and a manner how this goal will be achieved. Planning enables the organisation to: obtain relevant resources, act in compliance with procedures, monitor and measure progress in goal achievement. (Werpachowski, 2011) Planning is part of the budgeting processes of the National Defence Department.

In 2012, in the National Defence Department, a new planning system based on the following areas was implemented:

- ✓ Activity planning;

- ✓ Asset planning;
- ✓ Budget planning.

The article describes how needs are calculated by the use of a traditional method based on sector-specific documents and by the use of Logrep. The purpose of this document is to present a new method designed to plan needs in a dynamic way in the National Defence Department by the use of Logrep. The problem to be studied is as follows: will the new method of planning needs improve the whole process of planning needs?

## **1. PLANNING NEEDS**

The process of planning needs is composed of nine sub-processes:

- ✓ Process initiation,
- ✓ Identification of needs,
- ✓ Generation of needs,
- ✓ Verification of needs,
- ✓ Aggregation of needs,
- ✓ Balancing needs with capacities,
- ✓ Preparation of data to draw up plans,
- ✓ Preparation of central plans
- ✓ Preparation of plans of 3rd degree planning authorities that make expenditures.

One of key sub-processes in the whole process of planning needs is identification. Identification is the second sub-process where the size of needs necessary to achieve future goals and carry out tasks defined in the plans and orders is planned. At present, the size of needs is calculated outside the planning system. There is no universal method which would improve an activity connected with the definition of an optimum size of needs.

Diagram 1 shows an innovative application of Logrep to calculate the size of needs in the process of planning needs of the National Defence Department. The starting point is an intention that is developed during the initiation sub-process. The intention is recorded in the needs planning system. In addition, other input information that is not recorded in the system comprises of: a size of human resources and a quantity and efficiency of the system. System deliverables are statements of identified needs.

If Logrep is used to plan needs, the duration of the process will be shortened and the number of errors will be reduced. Databases developed in Logrep will be supplemented with all standards stemming from sector-specific documentation. Planners will only have to give data recorded in Diagram 1 as input information outside the system.

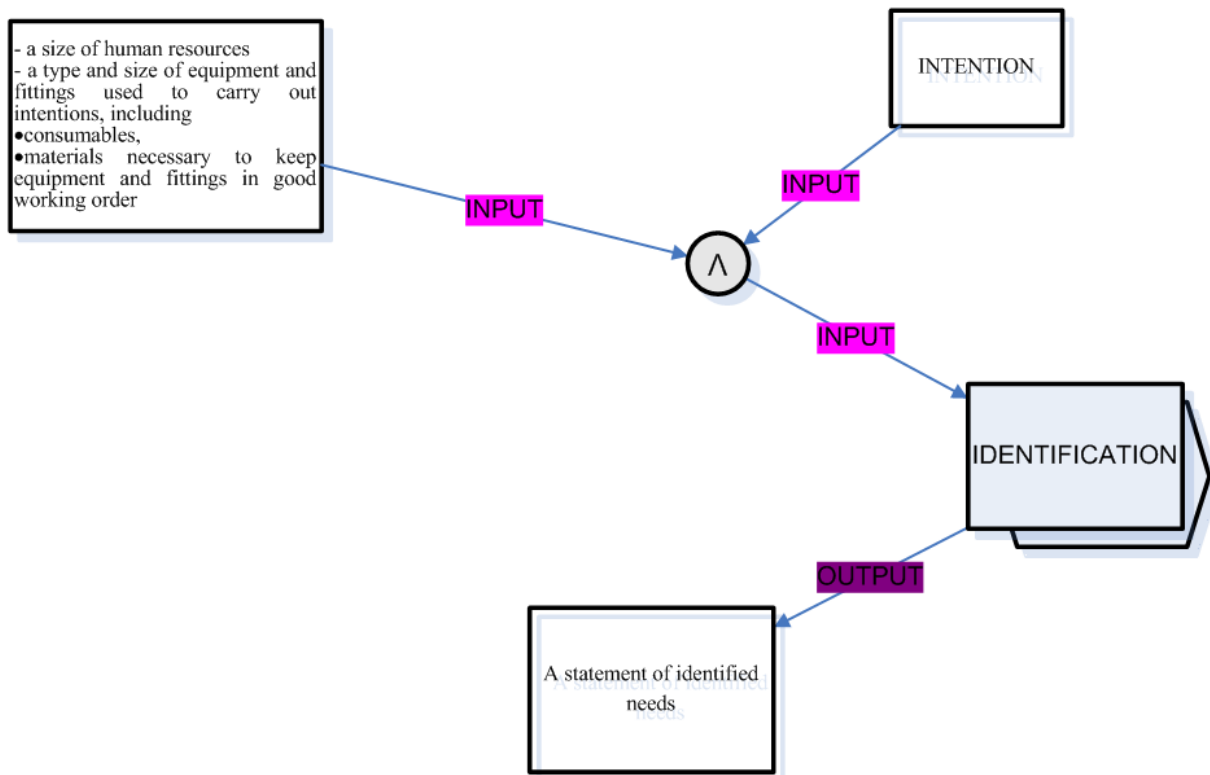


Diagram 1- Identification of Needs Sub-process

Source: own study.

The needs planning process is very extensive as it covers a large hierarchical structure of the National Defence Department. An ultimate effect of the process of planning needs at various organisational levels in the National Defence Department will be a draft budget act. The budget act must be approved by the Parliament and President within a strictly defined period.

## 2. NEEDS

Needs are a status of shortage which is connected with a difference between an actual status and an expected status. (Bentkowska-Senator, 2011)

A need is determined by logistic resources and services necessary to carry out tasks which are expressed in units of measure and are listed by procurement sections. (Decision No. 342/MON, 31 October 2012)

Needs of the National Defence Department are allocated to relevant procurement sections.

A procurement section is a separate group of military equipment, common use equipment, tangible assets, printouts, forms, technical documentation and services within the meaning of regulations on terms and conditions of procurement allocations. (Guidelines of the Head of the Armed Forces Support Inspectorate of the Republic of Poland, 2015)

In the National Defence Department, procurement sections are broken down into (Appendix No. 1 to Decision 412/MON, 20 October 2014) :

1. Defence of Facilities,
2. Weaponry and Electronics,
3. Ammunition and explosives,
4. Engineering,
5. Finance,
6. IT,
7. Tanks and Cars,
8. Metrology,
9. Protection again Weapon of Mass Destruction,
10. Protection of Classified Facilities and Information,
11. Transport and Movement of Armies,
12. Education,
13. Training,
14. Military Uniforms,
15. Food,
16. Medical Services,
17. Propellants and Lubricants,
18. Infrastructure.

Needs are planned for relevant procurement sections. Needs are planned in various units of measure. Quantitative statements of needs for institutions reporting to the 3rd degree administrator of the state budget resources are converted at this level into qualitative statements of needs.

### **3. LOGREP**

Logrep is a programme used to plan needs. It is composed of several modules. From the point of view of planning procurement, the most important modules are as follows:

- ✓ LCM;
- ✓ LDM;
- ✓ SPM.

LCM is a module responsible for the development of databases. Active databases are bases which one can work on in other modules.

LDM is responsible for the development of organisational structures. In LDM, equipment, human resources and other fixed assets, as necessary, are added. In addition, this module is used to prepare operational plans where factors increasing or decreasing individual consumption of tangible assets defined in the SPM module are defined.

SPM is responsible for planning the consumption of particular classes of assets. The consumption can be planned in several different ways. A planner must define a type of calculation so that each operation is optimum from the point of view of its duration and outcome.

### **4. PLANNING AMMUNITION AND EXPLOSIVES - TRADITIONAL METHOD**

To plan needs related to ammunition and explosives, one has to be fluent in the operation of training programmes for sub-units and in sector-specific instructions concerning the quantity of ammunition necessary for a given type of shooting.

Table 1 shows an example of a fighting training plan for a procurement squad in a calendar year. The training plan specifies names of examples of shooting. It specifies a quantity of ammunition dependant on particular types of shooting and a number of soldiers taking part in shooting. In addition, it specifies unit prices of particular types of ammunition and the total cost of ammunition and explosives for the project.

Table 1. An example of a yearly plan of shooting with kbkAKMS for a procurement squad

	February	April	May	June	September	November	December			
Type of projects	preparatory exercise No. 6 - training shooting No. 1 with KbkAK,	training shooting No. 1 with kbkAK	Preparatory exercise No. 3 - training shooting No. 2 with kbkAK	Training shooting No. 2 with kbkAK	Set of preparatory exercises to training shooting No. 3	Training shooting No. 3 with kbkAK	Training shooting No. 3N with kbkAK	TOTAL	Unit price	Value of ammunition used
Ammunition per soldier										
<b>PS</b>	4	3	5	9	6	12	12		1.54	
<b>T45</b>	1	1	1	3	1	3	3		3.16	
Number of shooting soldiers using kbkAK	15	15	15	15	15	15	15			
Planned consumption of ammunition										
PS	60	45	75	135	90	180	180	<b>765</b>		1178.1
T45	15	15	15	45	15	45	45	<b>195</b>		616.2
Total										1794.3

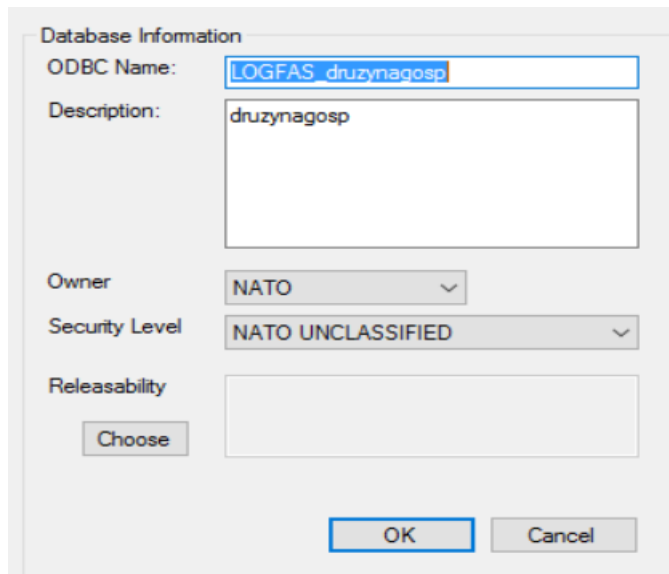
Source: own study.

Table 1 shows that the total cost of the consumption of ammunition and explosives consumption will be PLN 1794.3, including PS ammunition of PLN 1178.1 and T-45 of PLN 616.2.

Then, the consumption of ammunition and explosives based on Table 1 was calculated in Logrep.

## 5. PLANNING AMMUNITION AND EXPLOSIVES BY THE USE OF LOGREP

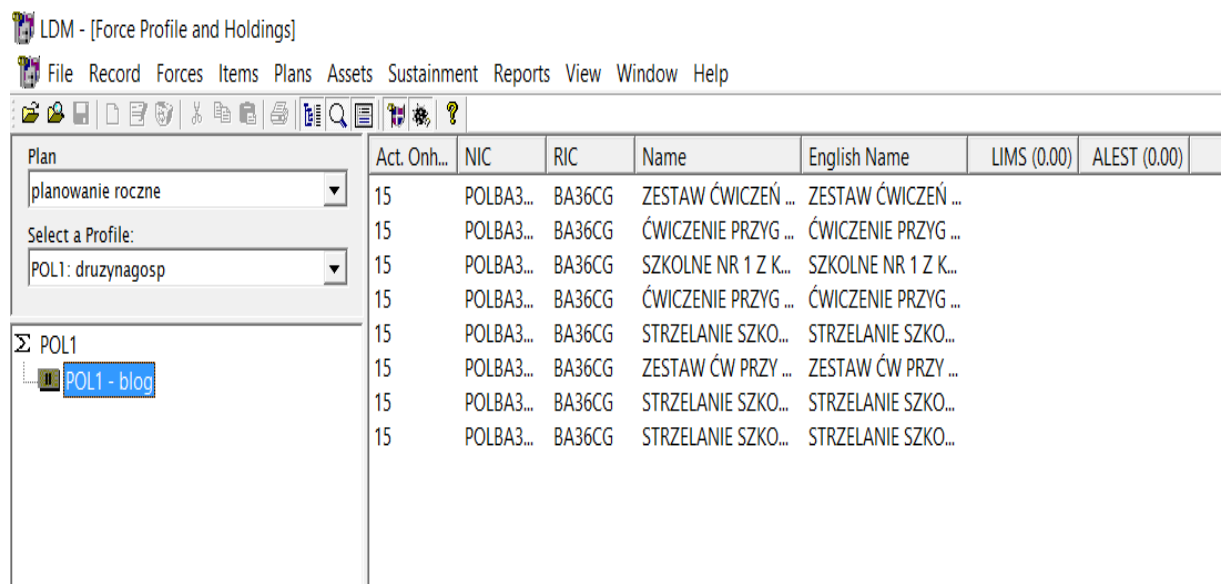
Firstly, to calculate needs in accordance with Table 1 in Logrep, a database is created. For the purpose of this article, we created a database called LOGFAS\_druzynagosp.



Drawing No. 1 – LCM database

Source: own study.

Secondly, a profile and an organisational structure are created in the LDM module under Force Profile and Holdings. Then, relevant types of shootings in accordance with Table 1 are added to the database and moved to the organisational structure. This is presented in Drawing No. 2.



Drawing No. 2 – Force Profile and Holdings

Source: own study.

Then, National Parameter Sets are added and a plan is created under Plans.

This is presented in Drawing No. 3.

The image shows a screenshot of a software dialog box titled "Edit Plan". The dialog contains the following fields and controls:

- Plan Name:** A text input field containing "planowanie roczne".
- Scenario:** A dropdown menu with "Real World" selected.
- Ref. Day:** An empty text input field.
- Ref. Date:** A date picker showing "2017-03-30".
- Plan Type:** A dropdown menu with "Exercise" selected.
- Classification:** A text input field containing "NATO UNCLASSIFIED" and a button with three dots.
- Direction:** Two radio buttons: "Deployment" (selected) and "Redeployment".
- Remarks:** A large empty text area.
- Buttons:** "OK" and "Cancel" buttons at the bottom.

Drawing No. 3 – Plan.

Source: own study.

Then, an operational plan is created under the case study tab. Planning methods are defined. Coefficients to be used in planning are specified. A project duration and a basis for the calculation of needs related to ammunition and explosives must be defined. When a case study is done, the consumption of ammunition and explosives in the SPM module must be planned. For the purpose of this article, ammunition and explosives are calculated by the use of Manage Data by NIC. The planning method is reflected in Drawing No. 4.



## Systemy Logistyczne Wojsk 46/2017

SPM - [Manage Data by NIC]

File Record Common Data Operational Sustainment Data Calculation and Reports View Window Help

NIC	National Parameter Set	Service	Type	Consumer	Consumer ...	Commodity	Commodity...	Rate	Basic Load	Unit of Mea...	Remarks
	Poland: 1	(All Services)	(All Item Types)	POLBA36CG 5	INFANTRY ...	MA29EA	AMMUNITL...	9.0000	30.0000	Round	
				POLBA36CG 5	INFANTRY ...	MA29EB	AMMUNITL...	3.0000	30.0000	Round	

NIC	RIC	NATO Stocknu...	Name	Service	Type
POLBA36...	BA36CG		STRZELANIE SZKOLNE NR 2 Z KBKAK	Army	Equip
POLBA36...	BA36CG		STRZELANIE SZKOLNE NR 3 Z KBKAK	Army	Equip
POLBA36...	BA36CG		STRZELANIE SZKOLNE NR 3N Z KBKAK	Army	Equip
POLBA36...	BA36CG		SZKOLNE NR 1 Z KBKAK	Army	Equip
POLBA36...	BA36CG		ZESTAW CW PRZY DO STRZ SZK NR 3	Army	Equip
POLBA36...	BA36CG		ZESTAW ĆWICZEŃ PRZYGOTOWAWCZYCH ...	Army	Equip
POLBA36...	BA36CG		ĆWICZENIE PRZYG NR 3 DO SZKOL NR 2 Z ...	Army	Equip
POLBA36...	BA36CG		ĆWICZENIE PRZYG NR 6 DO STRZELANIA S...	Army	Equip

Drawing No. 4 - Manage Data by NIC.

Source: own study.

Then, unit prices of individual types of ammunition based on Table 1 are calculated. When the unit prices are calculated, a Scenario Manager is used in order to generate a report on the consumption of ammunition and explosives based on data presented in Table 1. The report of quantities and values related to the consumption of ammunition and explosives is presented in Drawing No. 5.

NATO UNCLASSIFIED

**Sustainment Basic Load And Cost**

1 [drgosp]

Supply Class	V	Munition	Stockpile	Cost (€)	BasicLoad	Cost (€)	UnitOfMeasure
Commodity		Commodity Name					
MA29EA		AMMUNITION & EXPLOSIVES (NSG 13) CARTRIDGE (SMALL ARMS) 7.62 MM (308) X 39 MM BALL	765,00	1 178,10	3 150,00	4 851,00	Round
MA29EB		AMMUNITION & EXPLOSIVES (NSG 13) CARTRIDGE (SMALL ARMS) 7.62 MM (308) X 39 MM SUBSONIC	195,00	616,20	3 150,00	9 954,00	Round
				1 794,30		14 805,00	
			Grand Total Cost (€) =	1 794,30		14 805,00	

Drawing No. 5 – Report on the consumption of ammunition and explosives by quantity and value

Source: own study.

Total costs of the consumption of ammunition and explosives specified in Table 1 calculated by the use of the traditional method and Logrep are the same and amount to PLN 1794.3.

It is important that the database created in Logrep can be used to calculate needs in other projects. A planner must only change quantities of human resources and the system will calculate a relevant quantity of materials by quantity and value. For example, in the analysed database the number of shooters was increased to 100 soldiers. Drawing 6 presents a change in the number of shooters and Drawing 7 presents a project report by quantity and value

Plan	Act. Onh...	NIC	RIC	Name	English Name	LIMS (0.00)	ALEST (0.00)
planowanie roczne	100	POLBA3...	BA36CG	ZESTAW ĆWICZEŃ ...	ZESTAW ĆWICZEŃ ...		
Select a Profile:	100	POLBA3...	BA36CG	ĆWICZENIE PRZYG ...	ĆWICZENIE PRZYG ...		
POL1: druzynagosp	100	POLBA3...	BA36CG	SZKOLNE NR 1 Z K...	SZKOLNE NR 1 Z K...		
	100	POLBA3...	BA36CG	ĆWICZENIE PRZYG ...	ĆWICZENIE PRZYG ...		
	100	POLBA3...	BA36CG	STRZELANIE SZKO...	STRZELANIE SZKO...		
	100	POLBA3...	BA36CG	ZESTAW ĆW PRZY ...	ZESTAW ĆW PRZY ...		
	100	POLBA3...	BA36CG	STRZELANIE SZKO...	STRZELANIE SZKO...		
	100	POLBA3...	BA36CG	STRZELANIE SZKO...	STRZELANIE SZKO...		

Drawing No. 6 – Force Profile and Holdings.

Source: own study.

NATO UNCLASSIFIED

**Sustainment Basic Load And Cost**

1 [drgosp]

Supply Class	V	Munition	Stockpile	Cost (€)	BasicLoad	Cost (€)	UnitOfMeasure
Commodity	MA29EA	AMMUNITION & EXPLOSIVES (NSG 13) CARTRIDGE SMALL ARMS 7.62 MM (308) X 39 MM BALL	5 100,00	7 854,00	21 000,00	32 340,00	Round
Commodity	MA29EB	AMMUNITION & EXPLOSIVES (NSG 13) CARTRIDGE SMALL ARMS 7.62 MM (308) X 39 MM SUBSONIC	1 300,00	4 108,00	21 000,00	66 360,00	Round
				<b>11 962,00</b>		<b>98 700,00</b>	
<b>Grand Total Cost (€) =</b>				<b>11 962,00</b>		<b>98 700,00</b>	

Drawing No. 7 - Report on the consumption of ammunition and explosives for 100 soldiers by quantity and value

Source: own study.

## **SUMMARY**

Logrep used in the identification sub-process will enhance the planning of needs in the National Defence Department. Needs calculated by the use of the programme should indicate correct results because Logrep databases are based on correct data stemming from standards for the consumption of materials in accordance with available sector-specific documents, regulations and guidelines. Logrep databases will be prepared by experts and will be distributed to all users. At present, sector-specific documents are not accessible to all planners. Planners have also different knowledge of and experience in planning, which directly translates into consumption forecasts.

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