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THE PLACE AND ROLE OF MULTINATIONAL LOGISTICS SOLUTIONS IN THE DEPLOYMENT PROCESS

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ABSTRACT

Addressing the new strategic threats generated by globalization of both economic and geo-political environments, force projection and multinational approaches of conflicts are the way that nations are protecting their values. Corroborating deployment, as a required process for force projection, and multinationality, as a basic feature of modern social activities, the aim of this paper is to highlight the instruments that nations may use nowadays considering both of these two elements. Focused on the capabilities that can be generated by employing different multinational solutions, the subject was approached using literature review as a main research method; furthermore, analyzing cases from the past and projects for the future, we exemplified the aimed concepts and the way they are linked in the deployment process.

KEYWORDS: logistic solution, deployment, multinational, expeditionary operation, RSOM

1. Introduction

In the actual geopolitical context, the threats to national and regional security are dispersed all over the globe. This is the reason the need for developing force projection capabilities is a stringent reality to maintain a discouraging posture and to keep the menace as far as possible. Being one of the most important stages of force projection, deployment process needs a wide range of capabilities for supporting the first part of an expeditionary operation. In this kind of operation, the first essential condition to achieve the planned objectives is to get to the planned location.

Considering the global nature of almost all the social activities, a multinational approach of the defense policy and, subsequently, of the deployment process, is a must. Applying alliance or coalition-related rules and procedures, the deployment process is conducted within multinational auspices. That is why nations have created a sum of independent or integrated, with wide or limited contribution, more or less representative, proactive instruments, capable of generating one or more specific capabilities that can be employed in the actual operational contingencies.

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In terms of *research methodology*, the aim of this paper is to identify the existent multinational solutions, to highlight their place in the deployment process, to analyze the role they are playing across the deployment haul and to compare or link in a synergistic way the capabilities requested in different operations or exercises. To achieve the stated objectives, a *qualitative approach* is applied based on relevant *literature review* and comparative analysis of the identified concepts, landmarks and references. Therefore, this work counts on comparing NATO and US regulations, studies published in different scientific publications, NATO and UE institutions official websites, after action reports, situational analyses and historical case studies developed and published by recognized research institutions. From the reviewed literature, both *quantitative and qualitative data* were collected to achieve a comprehensive picture adapted to the stated scientific objectives.

2. The Concept of Multinational Logistics Support

"Multinational logistics is a tool, which, depending on the operational requirements and the specific situation, can enhance efficiency and effectiveness" (North Atlantic Threaty Organization, 2012, p. 81). This is how NATO specialists are identifying the multinational logistics benefits in multinational operations, and they are supporting this theory with arguments that are related to costs reduction, resource optimization, force flexibility, fair and equitable amount of support from each nation, use of national expertise and, last but not least, a better calibrated operational logistic footprint.

Moreover, Edition B of *AJP-4 – Allied Joint Doctrine for Logistics* notes more benefits of multinational logistics. Resource management, deployment package adjustment, interoperability increasement, competition mitigation (NATO Standardization Office, 2018, pp. 1-4 – 1-5) are some of the main advantages and strong points added by the multinational character of logistics.

Nevertheless, multinational operations and multinational logistics that supports them, need some carefully chosen decisions and actions in order to address the particularities and the challenges they pose. *The US Joint Publication 4-08* gives some hints in this direction (Joint Chiefs of Staff, 2017, pp. III-1 – III-2), without being comprehensive or too specific. Thus, even if the multinational approach and its strong points are well understood among nations, commitment of forces and logistic resources to the multinational entity is sometimes avoided by the participants. The uncertainty of the early phases of any operation is generating an initial precaution. That is why the multinational commanders are to include nations' representatives in the planning process as early as possible and share the intelligence about the operation with all participants, to boost the trustworthy relationships within the multinational force. Consequently, the planning of the logistic effort for an operation has to start at the beginning of the overall planning process. To combine logistic capabilities belonging to multiple cultures, attitudes, aims and perspectives involves a lot of cooperation and coordination. It is also a fact that nations are entitled to adjust their contribution to the multinational force or even to withdraw from the operation when national interests are achieved or are not in accordance with the coalition or alliance's stated or unstated objectives; *"a nation's decision to employ military capabilities is always a political decision"* (Joint Chiefs of Staff, 2019, pp. I-1). That is why multinational logistic support must be planned carefully, taking into account a range of uncertainties and unilateral decisions that might affect the entire operational context.

According to the same publication, multinational logistic must also address the

interoperability issue (Joint Chiefs of Staff, 2019, pp. I-10). Bringing forces from different contributing nations under the same command and control umbrella needs an initial homogenization of capabilities each country offers. In a collective operation, this interoperability aspects can be addressed long before the beginning of the crisis. The Alliance's rules and directions can guide nations towards a specific approach regarding logistic capabilities that must be able to function and operate together. This involves procuring specific assets and technology, applying similar doctrines and the same techniques, tactics and procedures, using compatible or similar software products, communication systems and even the same language. On the contrary, coalition operations have a pronounced ad-hoc feature and the interoperability inadvertences are more obvious; even the implementation of a common single language in coalition relationships is a difficult and sensitive process. In both multinational situations, the interoperability and the commanders' ability to address it has a critical role.

3. Multinational Logistics in Support of Deployment Process

The reviewed relevant literature emphasizes some of the most usual and useful multinational solutions adopted at allied and coalition level. As directed by NATO Standardization Office, *NATO Allied Joint Publication AJP 4.9 – Allied Joint Doctrine for Modes of Multinational Logistic Support* was withdrawn without direct replacement in February 2019. It was the allied doctrine that regulated the main instruments that the multinational force commanders and staffs were able to use in order to plan and deliver the logistic support in multinational operations. Without including the guidance that this doctrine was providing, the Edition B, Version 1 of *AJP-4 Allied Joint Doctrine for Logistics* presents some logistic organizations as solutions for setting up an integrated multinational logistic network. Organizing and managing this kind of multinational organizations may provide a source for logistic support in operations. Although not all the modes of multinational logistic support presented in *AJP-4.9* were outlined in the new logistics doctrine, the idea highlighted is that the multinational logistics may and must operationalize all the means that can be useful in an operation, like: logistic lead nation (LLN) and logistic role specialist nation (LRSN) (NATO Standardization Office, 2018, pp. 2-2 - 2-5), multinational logistic unit (MLU) and multinational integrated logistic unit (MILU), the new concept of modular combined petroleum unit (MCPU) or multinational medical unit (MMU) (NATO Standardization Office, 2018, pp. B-1 - B-2).

Besides NATO regulations, the US Army Doctrine Reference Publication *ADRP 4-0 – Sustainment* presents a wide variety of logistic options used for sustaining multinational operations. Precepting sustainment both as national and collective responsibility, US Army states in the mentioned doctrine the following support options: national support element (NSE), host nation support (HNS), multinational integrated logistic units (MILU), logistic lead nation (LLN), logistic role specialization nation (LRSN), contracting support to multinational operations (CSO), third party logistics support services (TPLSS), mutual support agreements (MSA), acquisition cross-servicing agreement (ACSA) and other sustainment options directly authorized outside the provisions of cross-servicing agreements (Headquarters, Department of the Army, 2012, pp. 2-14 – 2-16).

Even if the US forces do not have a distinct doctrine or manual for regulating the multinational logistic support modes, *ADRP 4-0* identifies and defines more solutions in comparison with the allied publications *AJP 4.9* or *AJP 4*. Another distinction that the US doctrine is bringing

into attention is that every logistic-related solution that is not exclusively in the national responsibility can be employed as a multinational support option. Thus, the regulation presents instruments like mutual support agreements, third party support or different other agreements signed at governmental level or decentralized at lower operational levels for common items and services, like: *"food, billeting, petroleum, oils, transportation, communication services, medical services, ammunition, storage, spare parts, maintenance services, and training"* (Headquarters, Department of the Army, 2012, pp. 2-16). Figure no. 1 makes a graphic description of the way each NATO and US regulation approaches the main multinational logistic solutions that can be used in operations.

Giving the fact that hard operational expeditionary conditions associated with the strategic deployment process determine superior requirements, additional high endurance logistic support needs to be planned, particularized and applied. Consequently, every single solution that may generate or enhance deployment capabilities is to be taken into account and managed in a synergistic way according to the stated operational objectives. In the following part of the paper, the multinational logistic solutions presented above will be positioned on the deployment route, from the point of embarkation through strategic movement transit points to the final destination. Additionally, the logistic role that every multinational solution could accomplish and what capability may generate in its position in the multinational force will be brought into attention.

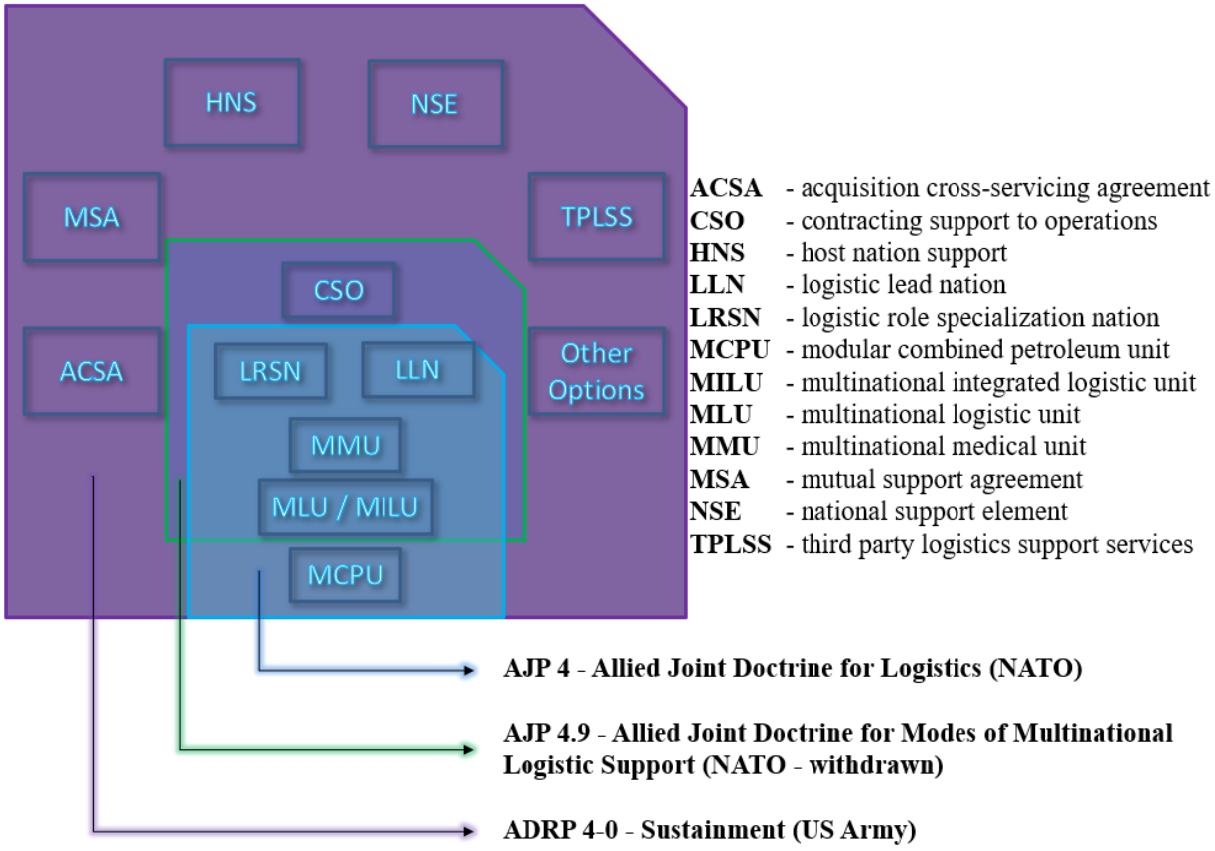


Figure no. 1: *Multinational logistic solutions stated by NATO and US Army publications*

4. Multinational Logistics Solutions in Support of Strategic Deployment

According to the provision of NATO doctrine for deployment and redeployment of forces, in the overall deployment process, the strategic deployment stage is the relocation of capabilities to a joint operation area (JOA) and consists of two categories of movement: national movement and strategic movement (NATO Standardization Office, 2021, pp. 4-3).

National movement usually refers to transportation of capabilities from home stations to the planned points of embarkation (POE), which can be aerial or maritime. It commonly uses road or rail transportation means but, all the available modes of transport (MOT) can be employed for getting at the right place when needed. ***Strategic movement*** is usually an air or sea movement. However, in some specific situation, it can be realized using rail, inland waterways or even road or it can start with a rail, inland waterway or road transportation and continue with a maritime or aerial one (multimodal approach) (NATO Standardization Agency, 2013, pp. C-5).

NATO standard *AJP 4.4 - Allied Joint Movement and Transportation Doctrine* gives some important directions regarding aspects that should be considered when planning a movement, regardless of the modes of transport used (NATO Standardization Agency, 2013a, pp. 3-1 - 3-2). Details like customs, immigration, food and agriculture regulations, border crossing procedures and Host Nation Support, dangerous goods regulation, relations with civilians across the strategic path for sharing the transport infrastructure, terminal operations, require multinational cooperation and coordination. Additionally, timely and detailed planned agreements with other nations (including host nation/nations), operationally trained multinational units, dormant contracts signed with different suppliers or service providers, are instruments that create or enhance different kinds of capabilities.

National movement is usually a process that implies national responsibility, resources and capabilities. Even so, in this stage of the strategic deployment, some multinational instruments might be used. Transporting equipment and heavy assets from home bases to points of embarkation is a consumptive activity in terms of transportation means availability and terminal operations related resources (terminal infrastructure, material handling equipment, qualified personnel, etc.). In this respect, some multinational logistic instruments may be operationalized to fill some capability gaps. Thus, establishing some arrangements with contractors under CSO or TPLSS auspices for transportation and handling services is one of the deployment process enhancing solutions. Moreover, cooperation with other neighbor nations that use the same seaport infrastructure, in order to create and employ an embarkation/debarkation MLU, which can be integrated or not in the multinational force structure, eases the terminal operations and releases the pressure on the national commercial network. The same approach is to be used for supporting convoys on their way to the POEs. Operationalizing convoy support center MLU (CSC MLU), MCPUs for providing the necessary fuel and movement control MLUs (Mov Con MLU) in order to track and coordinate convoys are instruments that planners may use for generating a smooth, controlled and coordinated transportation network in support of national movement.

Strategic movement is also a national responsibility coordinated and deconflicted by multinational institutions. Strategic lift necessary for deployment can be procured using national means or different multinational solutions like: shared-use agreements, strategic lift assets provided under cooperative use arrangements, or commercially chartered assets (NATO Standardization Office, 2021, pp. 4-5). NATO has created dedicated capabilities for enhancing the movement activities

during deployment process and mitigate the risks and vulnerabilities that multinational nature of an alliance is generating. Permanent manned allied multinational institutions like Standing Joint Logistic Support (SJLSG) HQ and Allied Movement Coordination Centre (AMCC) are entitled to support the strategic movement stage of the deployment process, *"to coordinate and deconflict strategic deployment and avoid competition among nations for scarce transport resources"* (Scaparrotti & Bell, 2020, p. 12).

Beyond Alliance's command and control instruments, another EU-NATO initiative comes to fill the strategic transportation capability gaps and *"create strategic lift synergies"* as stated by Group Captain Stuart Gregory (RAF), from the Movement Coordination Centre Europe (MCCE) director (Movement Coordination Centre Europe, 2020). According to his sayings, the MCCE works in line with the smart defense ideology committed to provide three core pillars for strategic movement: *"operate capabilities jointly, streamline structures and maximize efficiency"* (Gregory, n.d.). Moreover, in order to generate efficient strategic lift capabilities, the MCCE cooperates with nations through national movement coordination centers and with a wide range of multinational agencies and institutions, more or less focused on movement and transportation management, that can finally contribute to the Center's goals, namely air transport, air-to-air refueling, sea transport and inland surface transport. Thus, structures like NATO Supply and Procurement Agency (NSPA) – that operates Strategic Airlift Capability (SAC) multinational programme through Heavy Airlift Wing (HAW), Strategic Air Lift Coordination Cell (SALCC) – that manages the Strategic Air Lift International Solution (SALIS), European Air Transport Command (EATC), Multinational Sealift Steering Committee (MSSC) are smartly linked in order to provide synergic strategic movement. Figure no. 2 shows the way Movement Coordination Centre Europe operates in a multinational context and the other institutes it cooperates with. In fact, as the reviewed literature indicates, MCCE *"serves as a coordinating hub without command and control authority for all national movement and transportation centers and multinational strategic lift programs in Europe"* (Scaparrotti & Bell, 2020, p. 12).

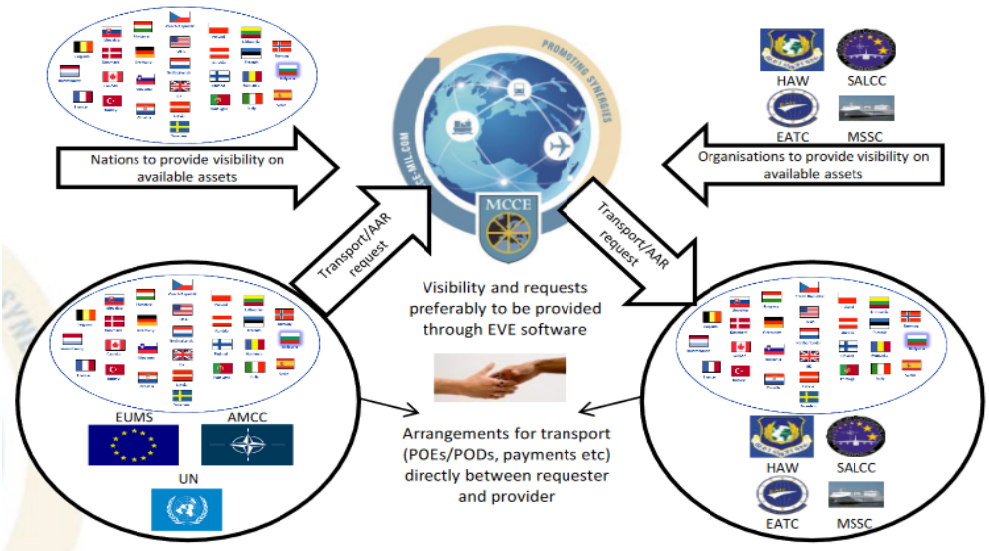


Figure no. 2: *Movement Coordination Centre Europe Functionality System*
(Source: Movement Coordination Centre Europe, 2022)

All the multinational solutions presented above have been created as multinational logistic units (MLU) that are operationalized before the crisis begins, being functional in peacetime and preparing for other worse operational situations. Some of them are integrated in NATO command structure or NATO force structure (MILUs), others are operating outside NATO or UE structure but are coordinating NATO and UE nations' transportation capabilities for the benefit of all members.

Additionally, strategic deployment includes other important activities that create the required context and support movement. Thus, protecting and establishing the lines of communication (LOCs), *"including diplomatic clearances, transit agreements, customs, identify border crossing points (BXPs), holding area, waivers"* (NATO Standardization Office, 2021, pp. 4-5), need multinational cooperation. Instruments like host nation support (HNS) and mutual support agreement (MSA) can be employed in order to obtain the desired planned effects. The same solutions are also useful for supporting the strategic movement in transit points; instruments like HNS, CSO, MSA, ACSA or TPLSS may be employed to provide port services for transportation means and field services for personnel; the same tools, including MCPU are to be negotiated and agreed for refueling the airplanes and ships on their way to the theater of operations (TO), in ports/airports or even through air-by-air/sea-by-sea refueling systems. To offer a significant example regarding the importance of using multinational solutions in deployment operations, the in-kind contributions of airlift and sealift, offered by several nations in support of US forces during Desert Shield/Desert Storm Operations, have to be pointed out. According to the final reports, 250 airlift missions and 3,130 sealift missions were donated by Saudi Arabia, Kuwait, UAE, Japan, Germany and Korea, with a total value of over 218 million USD (Department of Defense, 1992, p. 637).

5. Multinational Logistics Solutions in Support of RSOM Process

RSOM represents the process of receiving units in theatre of operations and transitioning them into a force that is ready to meet the commander's requirements in accordance with the operational plan (NATO Standardization Office, 2018, pp. 4-2). It consists of three main logistic activities: ***reception*** of deploying forces, equipment and sustainment in POD, ***staging*** in order to assemble, temporary hold and organize arriving personnel and materiel into formed units, and ***onward movement*** of units towards the final destination – assembly area (AA) where the integration process begins. Thus, the RSOM process *"facilitates the transition between the execution functions of deployment and employment"* (Joint Chiefs of Staff, 2018, pp. VI-1) of forces.

Considering the fact that units that are deploying in the theatre of operation arrive in PODs *"with little or no operational capability"* (Joint Chiefs of Staff, 2018, pp. VI-6), support is required to achieve the operational goals. In this respect, the logistic support that needs to be planned and conducted should be understood in terms of supply – temporary storage of significant amounts of equipment and provision of the materiel (food, water, medicine, fuel, etc.) needed to continue movement; maintenance of military equipment; transportation towards the AA for personnel and especially for heavy equipment; engineering support for building the needed infrastructure (warehouses, roads, railroads, etc.); health services and field services during staging and on the onward movement route.

The US *Joint Publication 3-35, Deployment and Redeployment Operations* states three enabling elements of RSOM process that can be seen as force multipliers: host nation support (HNS), multinational support and contract support (Joint Chiefs of Staff, 2018, pp. VI-4).

All three are instruments that provide capabilities and means to speed up the process of building of forces in the theatre of operations.

HNS is probably the most valuable solution that one can have during an expeditionary operation. It can provide important assistance in seaport and airport operations during the reception stage of deployment, starting with POD infrastructure, civil labor, materiel handling equipment (MHE), communication and power generation. A good example of the way HNS can enable the RSOM process can be offered by the US Desert Shield Operation. In this case, the support offered by Saudi Arabia during the operation was enormous, taking into consideration the huge amount of equipment and personnel deployed. The two most important seaports supporting the deployment (Ad Damman and Al Jubayl) operated the reception of more than 96 % of entire quantity of materiel deployed by sea; the seaports were modern, with up-to-date fully equipped facilities, with 60, respectively 20 operational piers (Matthews & Holt, 1992, pp. 19-20) that contributed to the final result – *"the number of cargo ships arriving in the Persian Gulf in the first five months of Desert Shield matched that of the 18-month-long allied convoy operations to Northern Russia during World War II"* (Matthews & Holt, 1992, p. 12). Without efficient HNS, the reception and staging related activities had to be managed in a very different way and the deployment of a large force in a short period of time could not have been possible.

Moreover, the onward movement stage of deployment needs previously planned significant support. The multinational solutions that are able to enhance the movement towards final destination can be employed in almost every element of the process. Road, rail, airport and inland waterways infrastructure is probably one of the most required elements during onward movement. Furthermore, a well-developed transportation network cannot be developed on short notice. That is why, timely multinational agreements should be implemented during peacetime, in order to obtain a desired degree of mobility. There are plenty of multinational infrastructure projects focused on strengthening the mobility capabilities. For instance, multinational mutual support agreements and contractors are employed for dual-use infrastructure development. From this point of view, the European continent retains some important benefits, as a series of multinational projects have been initiated to enable the Trans-European Transport Network (TEN-T). For example, the Three Seas Initiative project aims to *"promote connectivity among nations in Central and Eastern Europe"* (Wemer, 2019), between the Baltic, Black, and Adriatic Seas. Development of highways, railways and inland waterways through this kind of multinational solutions, using EU or NATO funding mechanisms, represents an effective mean for streamlining the RSOM process during exercises and operations, before the crisis begins.

Beyond infrastructure related requirements, moving forces through a relative hostile environment over long distances involves additional transportation capabilities. In order to build the initial force package during Persian Gulf War, *"the Coalition moved the equivalent of 17 divisions laterally hundreds of miles over a very limited road network"* (Department of Defense, 1992, p. 227). The main issues were linked to providing the necessary transportation means for moving the stockpiles and the heavy equipment over the Saudi territory towards the Iraqi border. The coalition used the unit's trucks, but also had to purchase and lease transportation equipment from US firms, use donated or procured equipment from foreign countries and supplied by Saudi Arabia as host nation support (HNS) (Department of Defense, 1992, p. 227). As far as concerns the necessary heavy equipment transporter (HET), the US forces

used 1,310 HETs, but only 497 were owned by their own logistic support units; the rest of the required equipment were the result of employing multinational instruments, being provided by Saudi Arabia – through HNS – 333 HETs, by commercial local actors – 48 HETs, US industry (leased) – 51 HETs, Egypt – 100 HETs, Italy – 60 HETs, Germany – 181 HETs and Czechoslovakia – 40 HETs (Department of Defense, 1992, p. 425). Thus, instruments like CSO, MSA, TPLSS and, most importantly, HNS contributed to the RSOM process in a significant amount, taking into consideration the reported data, which stated that without multinational contribution, the US forces had to deploy additionally 67 Army truck companies (Department of Defense, 1992, p. 425). A transportation MILU and a Mov Con MILU could have been also an enhancer for the movement related activities during RSOM process in Operation Desert Shield. This could be a solution even today, especially in the case of small states. For example, the Baltic States, developing the Estonia, Latvia and Lithuania single RSOM plan for VJTF, estimated to be able to provide 50 HETs; nevertheless, the multinational solution adopted is not sufficient for supporting the rapidly movement of large units (Hodges, Lawrence, & Wojcik, 2020, p. 17), a higher capability being required by adding more nations in the current arrangement.

Having the infrastructure and the transportation means operationalized, another significant element needs attention on the onward movement path. An efficient and affective movement process should have some transit support points for refueling, rest, maintenance and other replenishment activities. A Convoy Support Centre MILU (CSC MILU) is a structure that can provide support for all the convoys on their move to final operational destination, accessing other additional multinational solutions like CSO, ACSA, TPLSS, MSA and integrating or cooperating with a MCPU. Fuel – the *"lifeblood of war"* (Finlayson, 2018, p. 181) represents an essential element during every movement process. Excepting the MCPU, another multinational instrument can be a force multiplier for the fuel providing system and for MCPU itself. Cooperation between nations for timely development of fuel delivery and international distribution networks, as part of infrastructure projects, is a multinational logistic solution implemented in Europe through NATO Support and Procurement Agency (NSPA) and other national procurement institutions. For instance, the Central Europe Pipeline System (CEPS) which is part of NATO Pipeline System (NPS), consisting of ten distinct storage and distribution systems, with 10,000 kilometers of pipeline linking fuel depots (with a storage capacity of 4.1 million cubic meters), military and civil airports, truck/rail loading stations and refineries located on 12 states (North Atlantic Treaty Organization, 2017). Designed and build during the Cold War, new NATO members like Poland, Baltic States, Czech Republic, Slovakia, Slovenia, Hungary, Bulgaria and Romania are not part of the NPS initiative. Considering the new operational context in the Eastern flank of NATO as much as the economic arguments, the extension of the system towards the Alliance's borders can be an ambitious project that has to be implemented (Jankowski, 2020); NATO Security Investment Programme (NSIP), another multinational logistic enhancer and force multiplier for NATO forces (a strategic infrastructure procurement MILU), can provide the necessary expertise in this respect.

Moreover, other examples of multinational innovative initiatives are highlighted during the logistic exercises conducted in the past few years. Besides classic multinational solutions deployed to Exercise Capable Logistician 2019 in Poland, like ammunition storage, water

production and distribution, maintenance and recovery, ground transportation, RSOM, Mov Con or infrastructure engineering for logistics (IEL) MILUs, a new capability took shape – Smart Energy MILU (Pettigrove, 2019). This kind of structures could be able to support a force or part of it with the necessary energy in its deploying process and during employment. For this reason, a Smart Energy MILU can be an essential capability for supporting the staging area or convoy support center related activities.

6. Conclusions

Depending on the length and complexity of the strategic movement route, multinational approach of logistic support and the employment of multinational logistic solutions are requested elements even from the first stages of planning process. The global character of the nowadays threats imposes a similar response in order to mitigate the associated risks. Logistic support is not an exception and the planners, theoreticians and practitioners created instruments for enhancing the logistic support using multinational solutions. Focusing on gaining synergy, efficiency and effectiveness, the multinational logistic instruments are gaining more importance in the way logistic support is approached today. Promoting the pooling and sharing concept and its values, the multinational logistic solutions are generating effectiveness by avoiding the multiplication of similar capabilities belonging to different nations in the same theatre of operations. Moreover, having one single unit responsible for a logistic function leads to a better command and control relationship over logistic capabilities and resources, providing a comprehensive operational picture to the commanders at multinational level.

Deployment process has as a primary feature a multinational character; planning and conducting deployment for a force, whether it is national or multinational, requires cooperation with other nations for accessing their infrastructure, resources or services on the strategic movement route. Multinational logistic solutions are a useful tool for enhancing the deployment of forces by creating the official context for sharing operational support among nations. A reduced logistic footprint is the main outcome for the deployment process, having a better distribution of tasks per units and slimmer support organizations to be moved towards TO. Secondly, combining the support efforts of several nations and creating synergies between them may create the necessary conditions to enable enhanced freedom of actions and generate boosted mobility during the deployment process.

Nevertheless, gaining this kind of support advantages comes with a substantial effort long before the crisis begins. Multinational support solutions are hard to be employed during deployment of forces or after it, if previous arrangements are not already in place. Lack of intelligence on the accessible, ready for use capabilities of other partner or host nations will impede a smooth efficient process. This is the reason why negotiating and establishing prior agreements for different projected contingencies have to be a priority in order to achieve the multinational support objectives from the beginning of the operations.

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