

# **Logistic Support in Crisis Management Operations - Experiences of Royal Netherlands Army Units**

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The dissolution of the Warsaw Pact saw the disappearance of the acute threat from the East. As a consequence the world of international politics started to focus on establishing an international rule of law. Potential hotbeds had to be nipped in the bud. A great deal was expected from the United Nations, which was given an important role in suppressing crisis situations. Its member countries were invited to participate in crisis management operations. The Royal Netherlands Army (RNLA) accepted that invitation and participated (and still does) in such missions.

Participation in crisis management operations was no new matter for the army. In the past the RNLA had made a limited contribution to operations in Korea and the Lebanon. The army had also contributed monitors and humanitarian aid in crisis areas. However, all of these contributions were regarded as being of secondary importance; in operations under the UN flag these contributions did not require an insurmountably great logistic effort.

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The operation in the former Yugoslavia resulted in many changes. First of all there was a cultural change. Participation in crisis management operations was no longer seen as being of secondary importance, nor did it remain limited to a small group of military personnel. It became a primary task, and all military personnel could expect to be deployed in crisis areas. In a short period participation took place in crisis areas in Asia, Africa, the Middle East, the Caribbean and Eastern Europe. The operations in the former Yugoslavia were the largest and longest in terms of both time and scale, and are thus interesting to look at in further detail from a logistic point of view. In this article I shall confine myself mainly to discussing the logistic support of the RNLA's operations in the former Yugoslavia.

## **RNLA Operations in the Former Yugoslavia**

The RNLA's operations in the former Yugoslavia started in March 1992 with the deployment of a signals battalion. The battalion provided the communications between the various headquarters (battalion level and higher) of the UN force. Because of its tasks, the unit was split up into small detachments and spread throughout Croatia and Bosnia. The UN took care of the logistic support.



**Figure 1: The former Yugoslavia**

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In that same year the Dutch contribution was increased with the addition of a transport battalion responsible for the transportation of UNHCR aid. This battalion carried out its tasks in the areas where, for reasons of safety, civilian UNHCR drivers could not be used for transporting the goods. A Belgian transport company was attached to the battalion. The battalion was deployed at various locations in Bosnia, and consisted of conscript and regular personnel. The logistic support of the battalion was initially a national responsibility. However, this task was soon partially taken over by the UN.

A third battalion was assigned to the Dutch contingent in the former Yugoslavia at the end of 1993. This was an infantry battalion, deployed in Srebrenica and around Tuzla (later in Simin Han). An extensive logistic unit, in which facilities such as a third role mobile field hospital were incorporated, was assigned to the battalion. Most of the logistic unit was to be found in Lukavac. The battalion carried out its task within the UNPROFOR organisation, with the UN being responsible for logistic support. Support was given to the infantry battalion by its own logistic unit.

In the logistic chain between the deployed units and the logistic installations in the Netherlands, small, autonomous logistic units were deployed in both Zagreb and Split, and performed tasks which belong in a Point of Debarkation/Embarkation. In principle, the UN was responsible for the logistic support of the units incorporated in the

organisations of UNPROFOR and UNHCR. As for the maintenance of contingent-owned equipment, arrangements were made to the effect that the equipment would be repaired by national logistic units, with spare parts being supplied from the Netherlands and their cost reimbursed by the UN (Reimbursement on the basis of what are known as Letters of Assistance).

In the second half of 1994, the Dutch participation in UNPROFOR and UNHCR changed. The signal battalion retired and at a later stage the infantry battalion's logistic support unit was combined with the transport battalion. This battalion was thus given a double task: on the one hand, transporting goods for UNHCR, and on the other providing logistic support to Dutchbat in Srebrenica and Simin Han.

The success of UNPROFOR did not live up to expectations, and ultimately led to the dramatic developments in what had been labelled Safe Havens. The Dayton Agreement resulted in a different situation, and troops were again stationed in Bosnia; however, this time they were no longer under UN command. UNPROFOR was replaced by IFOR and steered from within the NATO structure. Dutch units once again formed part of the multinational peacekeeping organisation. The switch was preceded by Operation Deliberate Force, to which the Netherlands contributed a mortar company and a mortar-locating battery. The ultimate composition of the Dutch land-based contingent in IFOR consisted of a mechanised infantry battalion, a logistic transport battalion, a mortar company, a mortar-locating battery and several smaller support units. The transition from the UN operation to the IFOR operation had major consequences for logistic support. Unlike during the UN period, logistic support became a fully national responsibility. The IFOR operation was later continued in the form of the SFOR operation, in which the size of the Dutch participation remained virtually unchanged.

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### **Influential Factors**

A number of influential factors clearly left their mark on the logistic support of the operations. The influence began even in the early stages of the planning of and preparing for participation in the operations.

### **Reorganisation of the Royal Netherlands Army**

At almost the same time as operations in the former Yugoslavia began, the RNLA embarked on one of its most radical reorganisation processes since the Second World War. Not only was the army to be considerably reduced in size in a short time, but the organisation, management and culture were also to undergo drastic changes. At a slightly later stage came the phasing out of conscription, which was still a surprise, and the army had to quickly transform into an all-volunteer

force. The logistic organisation within the RNLA was faced with the additional demand of implementing cutbacks by reorganising the logistic system. Far-reaching centralisation took place, which enabled reductions in personnel, equipment and supplies.

In the Royal Netherlands Army doctrine, great value is attached to the concept of mobility. Transport units were thus spared when it came to the reductions. After all, the deployment of transport units in the former Yugoslavia had soon shown that the rotation capacity would be endangered if the RNLA had insufficient transport potential. The logistic support of other deployed units also required sufficient transport capacity. Unlike the transport units, the engineer units suffered considerable reductions. This meant that logistic engineering capacity was scarce. The need for this capacity in crisis management operations was, in my opinion, underestimated when these measures were implemented. We are therefore experiencing a shortage, and the size and organisation of this arm are being reviewed, so as to bring about an improvement in the situation.

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Damage repair units and supply units were regrouped, with the aim of making savings by means of the centralisation of assets. The structures thus created are strongly geared towards efficiency in the peacetime management at army camps. However, the adapted organisations still result in a great deal of discussion in operational circumstances, for instance in crisis management operations. Centralisation at the level of the damage repair units is sometimes avoided under operational conditions, by illegally keeping on tools and supplies decentrally, whereas this was common practice in the old structure. In operational conditions supply units are once again given tasks which, in peacetime, have been centralised for reasons of efficiency and assigned to the static national units.

Undergoing a large-scale reorganisation while simultaneously participating fully in crisis management operations may cause a certain amount of tension, but it also has advantages. Experience gained in practice can be put to direct use in the sizeable reorganisation process, which of course takes several years. In some cases studies and long-term plans are even accelerated in this way. The logistic studies on container transport, bar-coding, and supply and chain management are becoming increasingly relevant thanks to the practical situation of crisis management operations. Making funds available for the introduction of new equipment is more readily accepted if the prototypes have proven their value in pilot projects in crisis management operations. The practicability of academic studies on setting up logistic organisations, chains, responsibilities and procedures can be immediately tested in practice.

A final comment I would like to make regarding the reorganisation as



an influential factor concerns the transition to an all-volunteer force. Advances in technology ensure that the logistic organisations set high demands on highly-trained personnel. Operational conditions have taught us that the deployability of equipment is strongly dependent on the technical know-how of the user and the logistic personnel taking care of the maintenance. First of all, the logistic functions have to be sufficiently manned. However, the quality of personnel must also be safeguarded; particularly the manning of logistic functions with high-calibre technical personnel can sometimes be a problem. In the recent past this problem was less prominent, as sufficient conscripts with high-quality civilian education were available for manning technical and specialised functions.

I have thus far discussed influential factors for logistic support that relate to the time of transition in which we now find ourselves. I could not fail to do so, as we did not opt to put up a sign saying 'Closed for Reconstruction' during the current huge reorganisation process, which is taking several years. On the contrary, despite the radical process of reorganisation we are participating on a large scale in various crisis management operations in many countries.

However, when we speak of 'influential factors' in military circles when using operational jargon, the first things that spring to mind are the factors 'Weather', 'Terrain' and 'Enemy Operations'. These factors greatly influence the logistic support of crisis management operations.

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### **Climatological Conditions**

Until the dissolution of the Warsaw Pact, the RNLA's operations were strongly geared towards the North German plain. The entire organisation was tailored to the possibility of such an operation. Personal and other equipment was geared to operations in a moderate climate. In the past, extreme temperatures and their effects were barely taken into account.

Operations in tropical areas, or in mountains with extreme differences in temperature soon changed this approach. They led to investments in and adaptation of personal and other equipment. The addition of clothing for operations in extremely high and low temperatures was welcomed by personnel; limits had to be set on the numerous suggestions for adding more and more items of personal equipment to the standard kit. A new problem arose: there was now barely enough room in the combat vehicles for the increasingly larger kit.

Adaptation of the equipment itself was also necessary; it was not possible to fit snow chains onto all of the wheeled vehicles. Modifications were implemented so as to make this possible. Some adaptations had to be identified by trial and error. There was a great deal of discussion with regard to the number of snow grips in the tracks of tracked vehi-

cles. Ultimately, the number of snow grips in the armoured infantry fighting vehicles (YPR) doubled compared to the initial situation. These are just a few examples.

It was not only extremely low temperatures that led to the adaptation of equipment - extremely high temperatures also resulted in extra provisions. For instance, the computer of the mortar-locating radar had to be fitted with air-conditioning. The advanced testing equipment in the field hospital also proved to be sensitive to excessively high ambient temperatures. Additional measures were also taken to keep the temperature in shelters such as tents and containers manageable. The use of heating and air-conditioning equipment automatically led to increased energy consumption, as electrical facilities required increasingly high-powered generators and extensive electricity supply in the compounds, where there was a total lack of local utilities.

### **Terrain Influences**

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If we look at the factor of terrain, we have to establish once again that operations in the various areas of deployment deviate strongly from the all too familiar North German plain. Instead of a closely-knit network of extremely high-quality roads, such as those that we come across all over Western Europe, in the areas of deployment we are faced with few roads, goat trails and rough, mountainous terrain. We sometimes operate in inaccessible areas with unsurfaced roads, on which driving may or may not be possible, depending on the time of year. This situation has two significant consequences for logistic operations.

First of all, time-consuming movements will have to be taken into account in the planning. Crossing distances in areas such as those mentioned above, across which logistic support is to take place, is of an entirely different dimension than we were used to during our training exercises on the roads of Western Europe.

A second influential factor is the extra wear on the equipment caused by the rough terrain. Not only does this require an extra logistic effort with regard to maintenance, but in cases of long-term deployment it also results in periodical exchanges with equipment from depots in the Netherlands. The exchanged equipment will be ready for major maintenance once it arrives back in the Netherlands. In the long term we will even have to take into account writing the equipment off prematurely. This process is at present relatively simple, as we have surplus equipment left over from the reorganisation processes, which we can use to compensate for losses owing to wear. In the future, when establishing the quantities of new equipment to be procured, we will have to bear in mind increased losses as a result of deployment in crisis management operations. Operations in a mountainous area such as those in the former Yugoslavia have also led to adaptations in the signals equipment fitted standard into the vehicles. The existing FM-

equipment was added to on a large scale with HF-equipment and SATCOM. The addition of extra signals equipment was coupled with extensive testing. For instance, we had to determine whether use of the HF equipment in the Leopard II Main Battle Tank did not have an adverse effect on the tank's electronic systems. In some vehicles, radiation danger for personnel had to be taken into account when fitting the SATCOM antennae.

### **Enemy Operations**

Various scenarios are recognised in crisis management operations, covering the entire spectrum of levels of force. We usually deal with several parties to a conflict, with the peacekeeper assuming a neutral position among them. The transition from a peacekeeping situation to a peace-enforcement operation might jeopardise this neutral position. Assuming a neutral position in particular can result in a delicate situation. Experience in the UNPROFOR operation has shown that this can ultimately lead to an impossible situation, in which especially the logistic operations can be disrupted. One of the most important lessons we have learned from that particular operation is the absolute necessity of freedom of action. Translated into the logistician's terms: 'Freedom of Movement'. If necessary this can be enforced using all available assets.

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Because in crisis management operations there are no clear front lines for the logistic peacekeeper and he does his job at the focal point of the warring factions, this makes special demands on both personnel and equipment. Usually only the combat service support elements of a combat unit have the assets to continue to carry out their logistic duties under direct fire. In orthodox operations the logistic units, which provide general support, were expected to stay out of range of enemy artillery, whatever they did. During the UNPROFOR operations this was most definitely not the case. For this reason, extra measures needed to be taken to compensate for the insufficient ballistic protection. Thus all soft-skin vehicles of the Dutch units were fitted with Kevlar floor mats and sheets. Some vehicles were given extra sheet steel or specially-manufactured armour modules which could be fitted over the cabins. The UNPROFOR units conducted static operations from compounds. Defence walls and shelters were constructed to protect the units; these constructions proved their worth more than once during the regular mortar fire from the warring factions. The construction of these facilities also required a considerable logistic effort in moving up the required materials, as well as the deployment of equipment and personnel for logistic engineering.

Finally, this situation was a culture shock for the logistic personnel, who like thinking and working efficiently, and do not have a great fee-

ling for tactical operations. The situation soon taught us in no uncertain terms that logistic units should also pay attention to tactical aspects such as monitoring, security and operating under the direct influence of hostile actions.

### **Planning**

The planning of crisis management operations is hampered at the outset by a great many uncertainties. The political decision-making process requires a certain amount of time, which does not coincide with the preparations for equipment and logistics. Close cooperation between the various staff disciplines in this phase is vitally important. This applies in particular to operational and logistic personnel. The time-consuming logistic preparations have to take place in a period in which the political and military decision-making is not yet complete. The logistic planning and preparation at the executive levels have to be initiated while the size and quality of the contingent to be deployed is still under discussion, and there is no certainty as to the grouping in higher (often multinational) organisations, the location of deployment or the tasks to be carried out.

102 The worst-case scenario, I believe, is always a proper point of departure in logistic planning. Particularly in the initial deployment situation it is better to work with an overkill of logistics than to have an operation fail at the outset because of a shortage of logistic support. This applies in particular to transport and storage capacity that is initially needed from the Point of Debarkation to the area of operations. In principle we assume that we will get little or no support from others. Once the units have been deployed we draw up the balance and any surplus logistic capacity is taken away.

Logistic planning information was developed for the large-scale conflict and was largely based on historic situations from the distant past. There is little planning information available for crisis management operations, as this type of operation is often unique and difficult to incorporate in standard operations.

For want of better statistics, the basis is usually formed by the logistic planning information for the large-scale conflict. We use it with common sense when establishing the levels of supply to be kept at the various locations in the area of deployment. We are unable to give any standard statistics at this point. This means that we pay close attention to the structure of a well-functioning supply system. Speed and reliability are the indicators used not only for setting up the system, but also for regular checking and readjustment.

In the logistic planning and preparation it is of vital importance to inform the executive level as early as possible, so as to give the 'shop floor' sufficient time to conduct the necessary activities for forming the



contingent to be prepared and assigning stand-by status. Informing the lower levels prematurely sometimes - in retrospect - carries the danger of unnecessary activation. However, we must accept this disadvantage, which is a result of the method used for flexible adaptation of the readiness level of units to the conditions; from a logistic point of view, this aspect is starting to gain in importance. Because of the many cutbacks in logistics, the processes in the peacetime organisation at army camps are strongly geared to efficiency, and are organised accordingly. This peacetime organisation and modus operandi deviate from logistic operations in operational conditions. It is of course regrettable that financial resources prohibit the application in full of the principle 'train as you fight' in logistics. However, this has not proved to be an insurmountable problem thus far.

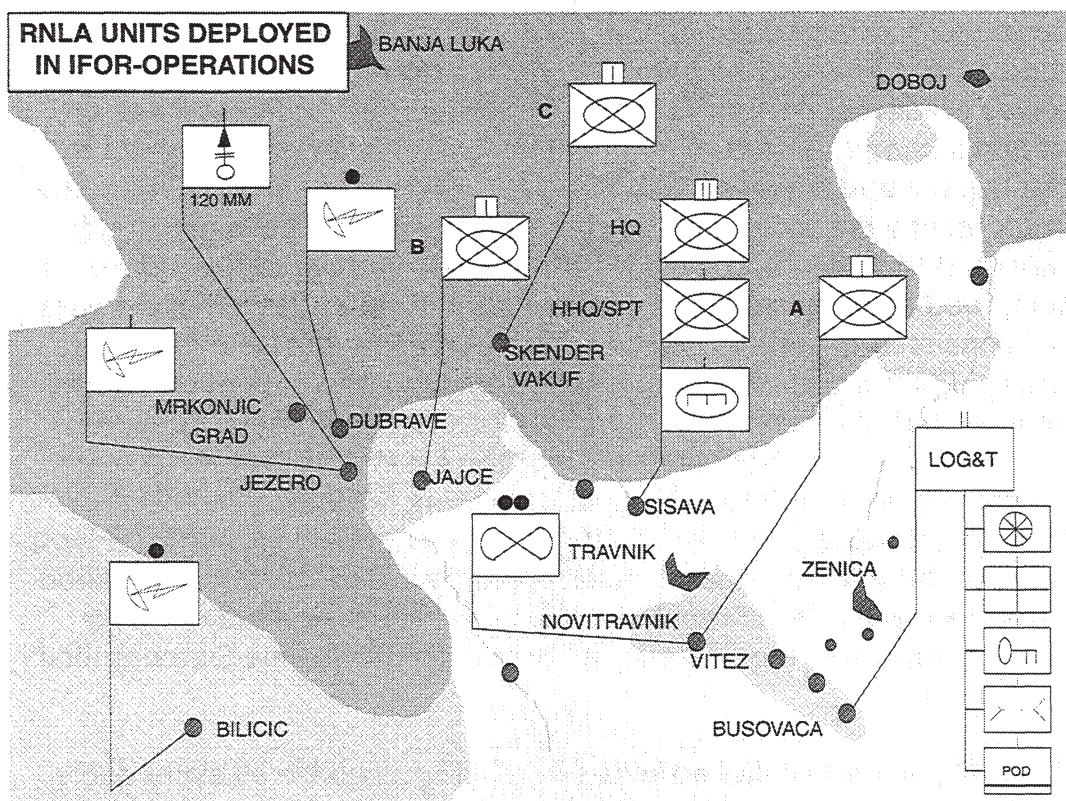
### **Logistic Support in the UNPROFOR/IFOR/SFOR Operations**

As I have already pointed out, I am concentrating largely on logistic support in the former Yugoslavia. In the UNPROFOR operation, this support was initially the responsibility of the UN. Now, in the IFOR and SFOR operations, it is a national responsibility. In the UN period, logistic support was carried out largely using the units' own logistic installations. For instance, the Dutch contingent had a logistic and transport battalion. For medical support and evacuation the Dutch contingent incorporated national medical installations up to and including a third role field hospital. UN assets only had to be called upon for air medevac. The entire maintenance and repair process was in national hands. A third role maintenance company was assigned to the logistic and transport battalion, and spare parts and maintenance equipment were moved up from the Netherlands. The logistic and transport battalion had facilities for the field storage of fuel, ammunition, food supplies and other goods. Furthermore, the transport potential consisted of various types of vehicle, ranging between lowbed trucks, POL<sup>1</sup> trucks, vehicles for general cargo and containers. Some vehicles had their own loading and unloading equipment. At various locations the units had water purification assets, refrigerator-freezer containers, and mobile bathing and washing facilities. The logistic and transport battalion was assigned a logistic engineering unit for adaptations to the infrastructure. Finally, the logistic and transport battalion had a field post detachment at its disposal which, spread out over various locations, took care of the postal service for the Dutch military personnel.

The UN's responsibility extended to making available all expendable items and maintaining the UN-owned and contingent-owned equipment. The actual implementation was partly placed in national hands. I have already mentioned the maintenance and repair of contingent-owned equipment, but the supply and moving up of ammunition was

also a national affair. The goods to be provided by the UN were usually picked up by the logistic and transport battalion from the UN depots or from firms commissioned by the UN. The battalion then distributed the goods among the Dutch units in the contingent. Long distances were then covered in the triangle between Split, Zagreb and Srebrenica. The supply trips did not always run smoothly, as front lines had to be crossed and there were many miles of narrow, unsurfaced mountain paths (better known among the drivers as the infamous 'goat trails'). Convoys were obstructed by fire from the warring factions, or held up at the many checkpoints. In winter conditions the movements along the narrow paths in the mountains were delayed even more by snow and ice. In this period it sometimes took the supply vehicles days to reach their destination. The absence of Freedom of Movement made the supply process extremely unreliable. The supplying of Dutchbat in the Srebrenica enclave depended on the whim of the warring factions, and eventually became almost impossible. In the IFOR and SFOR operations, many of the above-mentioned difficulties were eradicated. The road network was made accessible once again and largely repaired, there is full Freedom of Movement and convoys no longer face hostile fire. The strong stand taken by the IFOR/SFOR units, particularly as regards the aspect of Freedom of Movement, has been a great relief to the logistic operations.

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**Figure 2: Dutch troops deployed in Bosnia**

The Dutch logistic organisation deployed during UNPROFOR switched

effortlessly over to IFOR and subsequently to the SFOR operation. The size of the Dutch contingent did not change radically during the transition, although the assets with which the contingent was equipped were changed. Unlike the organisation in UNPROFOR, 1(NL) Mechanised Brigade is equipped with armoured infantry fighting vehicles with a 25 mm gun. The battalion also has the Leopard II main battle tank and 120 mm mortars. Naturally, the logistic support has been adapted accordingly.

### **Some Special Logistic Aspects**

For the transition from UN logistic support to national logistic support the supply of various goods had to be rearranged. For the supply of food and fuel contractual facilities were used, provided by the Role Specialist Nation and NAMSA.<sup>2</sup> Food, drinking water and fuel are purchased locally from civilian suppliers. The supply method is no different from that used during the UNPROFOR period.

A buffer supply of field rations was moved up, so as to reach the levels of supply prescribed by NATO. Quantities of items from this buffer supply are used regularly; replacements come from the Netherlands. Expiry dates are checked on a regular basis.

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In addition to the supply of packaged drinking water, local water is purified using water purification installations, and is distributed by the logistic and transport battalion.

A single fuel concept was adapted in the first half of 1997, using extremely pure fuel i.e. F34.<sup>3</sup> The original diesel fuel used did not satisfy the requirements in terms of quality. The high water content resulted in the growth of bacteria in the fuel storage equipment, which meant that fuel filters became blocked and engines did not run well. Some of the problem was caused by inadequate logistic discipline. The water collecting in the fuel tanks was not removed regularly using the water separation filters. In some cases the sealing valves of the storage tanks were not closed properly. Periodic quality inspections of the fuel now take place regularly.

Because of the required quality, oil and lubricants are not procured locally, but are moved up from the Netherlands. Account must therefore be taken in all crisis management operations of moving up oil and lubricants from national stocks. The local supplies are often scarce, and usually of a lower quality.

The supply of ammunition takes place through a central control system in the Netherlands. On the basis of consumption reports, the ammunition is replenished from the depots in the Netherlands. In the area of operations, buffer supplies are set up by echelon. The quality of the ammunition is inspected periodically, and if it becomes outdated



in the area of operations it is used up in firing exercises or exchanged for new supplies from the Netherlands.

Medical supplies are also replenished from Dutch depots. Inspections are held regularly to check the expiry dates of the supplies stored in the area of operations. Special measures have been taken for the conditioned transportation of blood and medication from the Netherlands to the area of operations. Medical refrigerator and freezer boxes can be connected to the electrical system of the supply vehicles. Measuring instruments safeguard the right conditions within the set limits.

The application and distribution method is the same as for all other goods that are moved up from the Netherlands, and takes place using an electronic central stock control system.

The supply of spare parts and equipment also takes place using the central stock control system, to which all logistic installations and depots in the Netherlands are connected by means of computers. On the basis of job orders the applications for spare parts are relayed daily to the central database in the Netherlands, from where the order is given directly and automatically to the depots to start with the supply. The system checks and monitors the levels of supply at all logistic installations, and plots the route for the supply orders.

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With the help of the same system, part of the logistic process can be analysed and assessed with regard to quality. This takes place in my section; on the basis of its results, the logistic process is adjusted, if necessary.

The tendency towards the increased automation of logistics and management of logistics with the help of computers has the advantage of fast and efficient work. If the application is submitted today, the spare part will be on its way to the former Yugoslavia tomorrow. The time factor is only determined by the physical covering of distances. All goods intended for the units in the former Yugoslavia are delivered from the Dutch depots within 24 hours by means of a national military scheduled service system to a central point in the Netherlands (Point of Embarkation). From this central point a scheduled service connection has been established with Split (Point of Debarkation), where a small logistic detachment is tasked with the reception and transshipment of the goods. The scheduled service is carried out using military road transport assets with the TIR4 carnet, which enables them to quickly cross the various national borders. There is a convoy three times a week. In Split the goods are immediately transferred to the logistic vehicles of the Dutch contingent and then brought to the final destination. The norm applies that goods that are supplied directly from Dutch depots must arrive at their destination within 14 days of the electronic request in the area of operations. In many cases this will be considerably faster. In cases of high priority military air transport



between the Netherlands and Split can be used (a shuttle flight twice a week).

Although the management of the logistic process - in particular the supply of goods using computers and the central stock control systems - has many advantages, it is also vulnerable - particularly in operational conditions in crisis areas where the infrastructure often cannot accommodate high-quality technology, such as data communications systems. Such a situation will often compel the use of satellite communications. Operational conditions can also stand in the way of undisturbed use of high quality technology. This means that, in addition to using computerised support, it must always be possible to fall back on manual back-up systems. We must also realise that the periodical breakdown of data communication at the very moment batches are being transmitted is not only frustrating, but can ultimately lead to incorrect information in the computer systems concerning the levels and composition of supplies. Periodical inspection and stock-taking are therefore not an unnecessary luxury, but should be a logistic discipline.

### **Lessons Learned**

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When viewed over a long period, most logistic problems were only of a temporary nature, and were quickly solved, apart from those in the UNPROFOR situation. Only in the UNPROFOR situation did logistic problems arise that limited the operation.

Firstly, there were the problems during the deployment of the first Dutch infantry battalion destined for the Srebrenica enclave. For technical reasons the strategic movement from the Netherlands to the Point of Debarkation (Split) in Croatia did not go according to plan. The deployed ships reached Split harbour late, and, owing to an engine fault, not in the planned order. The speed at which the battalion subsequently had to move from the Point of Debarkation to its destination only served to aggravate the situation. The available transport capacity was not sufficient to enable rapid and well-ordered deployment from Split. The lesson we have learned from this situation is to draw up flexible plans, and to take disruption into account even more than we do already. It is also vitally important to deploy sufficient logistic assets in an initial deployment. It is better to start with a logistic overkill which is reduced at a later stage, than to be confronted at the outset by logistic shortages. Logistic assets should preferably be a national responsibility. Despite support from allies, dependence on third parties results in less flexibility and speed, which are necessary facets in operational conditions.

Secondly, there was the in-survey<sup>5</sup> of the contingent-owned equipment which has to be carried out in UN operations. Because of com-

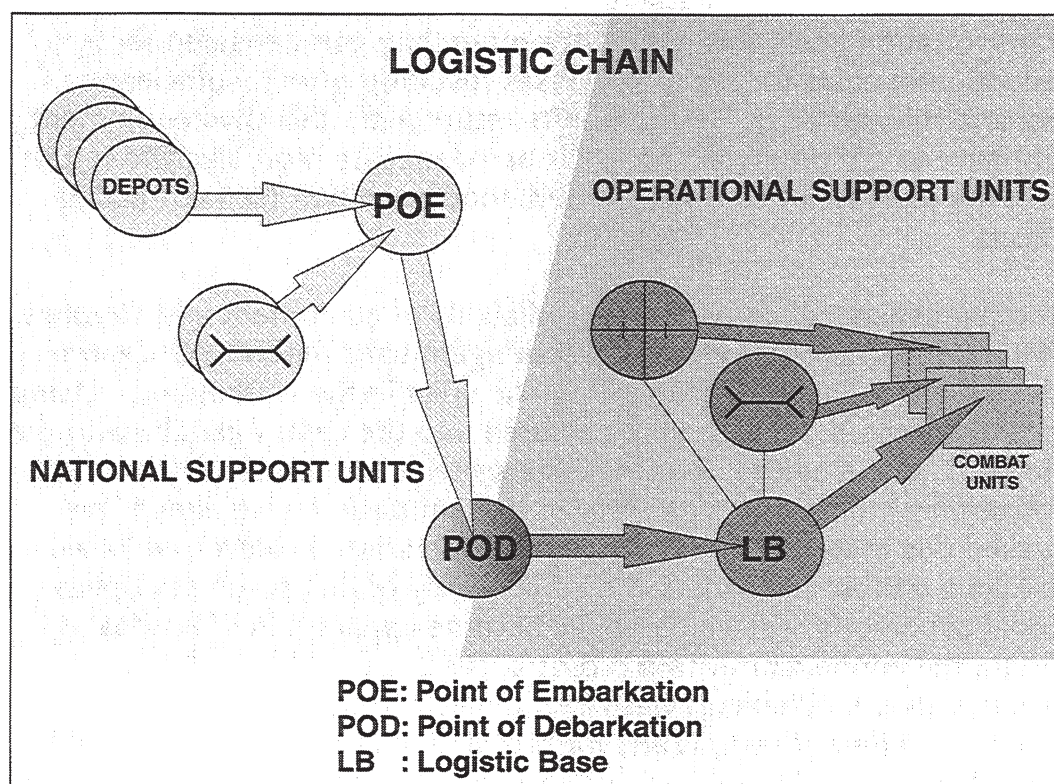
pliance with the wishes of the UNPROFOR Commander to deploy as quickly as possible, there was neither the time nor the space to follow administrative in-survey procedures. Not until deployment had already taken place did we realise how difficult it is to carry out an in-survey of the equipment being used at the UN. The lesson to be learned from this situation is that in UN operations the administrative procedures must be completed before actual deployment takes place.

108 A final important experience drawn from the UNPROFOR situation concerns the supply problems. I have already pointed out that the logistic support of the operation hinges on a reliable supply system. One of the most important conditions for such a system is Freedom of Movement. The absence of Freedom of Movement in the UNPROFOR situation led to countless logistic problems. The supplies available to the battalion in Srebrenica were extremely limited as a result of inadequate and unpredictable replenishment. The lack of fuel in particular impeded the operation. This limitation affected not only mobility, but also the possibilities for energy supply required for command, control and communications, water purification, heating and lighting. It was necessary to ration supplies and use alternative assets. The stagnation of the supply of spare parts influenced the maintenance and repair of items of equipment. The supply of medical goods was, comparatively speaking, disrupted the least; however, unlimited operation was not possible in this area either.

In the IFOR/SFOR situation no logistic problems have arisen thus far that have influenced operations. This does not mean to say that everything is running smoothly as far as logistics are concerned; at the beginning of this article I mentioned a number of specific aspects. However, the problems that are arising are of a more minor nature and some of them are even concerned with the luxury available to the units.

However, I would still like to discuss some of these problems in greater detail. They may not be operational problems at the moment (or may not have been in the past) but they have the potential to become so if they are not recognised, monitored or solved in time.

I have already indicated the nature of the supply line from the Netherlands to the deployed units. A national scheduled service connects to a scheduled service to Split and subsequently to the transport assets of the logistic unit of the deployed contingent. In this regular system the equipment that cannot be repaired in the area of deployment is sent back to a repair unit in the Netherlands. All too often equipment still gets lost in this logistic chain. The total logistic chain consists of sub-chains, in which separate units carry out their activities, such as transportation, transshipment, stock formation, maintenance and repair. The equipment is transferred from one responsible



**Figure 3: Logistic chain**

unit to the other at the junction between the separate chains. The impression is created that, particularly at these junctions, some goods are not handled correctly and do not end up at the right destination. As a result, equipment is lost, in administrative terms. The solution to this problem has been sought in the in-house development of a tracking and tracing system, which can also be used in the area of deployment. The system has only recently been developed; it is therefore too early to mention any results.

Another problem is the control of the equipment in operational conditions. The composition of the Dutch units is largely tailor-made; the units have equipment that has been made available specifically for the operation in which they are deployed. During the reorganisation of the RNLA cutbacks were implemented in the logistic-administrative support of the operational units. The units no longer have their own administrative organisation enabling control of the equipment. Such an organisation is assigned to the contingent when units are deployed. To date this system has not been satisfactory, and is currently the subject of new studies. Until recently the only rotation in the units was of personnel. The equipment remained in the area of deployment, and was taken over each time by relief units. This method resulted in less care being taken of the equipment. This was illustrated by losses as a result of insufficient control and insufficient maintenance. Policy has since changed and units rotate both equipment and personnel. The extra



transportation costs this entails are more than compensated for by a reduction in costs for replacing losses resulting from insufficient control and maintenance. Because units return with their own equipment and have to continue using it, their personnel are more likely to return with the equipment complete and in good condition (self-correcting effect).

Another aspect concerns the controllability of equipment and supplies. The logistic unit of the deployed contingent uses the RNLA's Central Stock Control System, as do all logistic units in the Netherlands. Using local computers, details can be entered into the central database in the Netherlands using the units' satellite system. Conversely, information concerning stocks and supplies can be sent back. I have already discussed this in detail. At the start of the operation, however, we failed to take sufficient account of the vulnerability of this system in operational conditions. The vulnerability became apparent in two areas. Firstly, the connection with the central database in the Netherlands was not always reliable. It was often difficult to trace the cause of the problem. Different technicians from civil companies were responsible for software, satellite system and ground stations. They passed on the problems to each other, without arriving at a structural solution. Apart from the technical problems, there were, secondly, operating problems at the very beginning. The operators of the local computers in the area of deployment were not always experienced or well-trained logisticians.

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Despite these disruptions, this situation has not led to insurmountable problems in the various logistic processes, because a surplus of local supplies acted as a buffer. Moreover, an alternative system was provided for situations in which the supply process could not be computer-driven. The disruptions merely resulted in inefficiency with regard to supplies, illustrated by local supplies that were larger than actually required. This had an adverse effect on the controllability and manageability of these supplies, which were not always in line with the administrative information in the central database. We are now attuned to these problems and respond quickly. Despite its vulnerability the Central Stock Control System yields many advantages and is regarded as an important logistic management instrument.

A final aspect I should like to discuss on the subject of lessons learned is an invisible problem that may arise in the longer term. The protracted use of equipment in deployment operations results in breakdowns and losses due to wear. In a Defence organisation that is becoming smaller, and with shrinking budgets, there could conceivably be a problem in the future with regard to financing the procurement of new equipment. More than ever before, the planned life of equipment must be monitored and evaluated, enabling us to reserve sufficient funds in time in the long-term plans for the procurement of the required equip-



ment. The increased wear not only puts pressure on the financial budgets, but also on the logistic system, in which capacity has to be reserved for extra maintenance, including mid-life upgrading of equipment with a higher rate of wear.

## Close

As I pointed out in my introduction, the RNLA has been active in many parts of the world since 1990 - sometimes with smaller detachments, at other times with larger units. The tasks are also varied, and range from humanitarian aid, through instruction in de-mining to peacekeeping in extremely difficult and sometimes threatening circumstances. In this article the emphasis lay on the Dutch share in the operations in the former Yugoslavia. This could give the impression that this situation is used as the model for logistic support of Dutch units in other areas. This is not the case. Each crisis management operation requires its own evaluation of the situation, both in operational and logistic terms. What is possible in the former Yugoslavia is perhaps impossible elsewhere. I am aware that I have only focused on a number of facets of logistic support, and combined them with the practical experiences in the former Yugoslavia. Several aspects have barely, if at all, been discussed, because of the selection made. Perhaps I could have shed more light on the multinational cooperation in the UNPROFOR and IFOR/SFOR operations, and emphasised the good cooperation we have with our allies. This applies in particular to Belgium (UNPROFOR) and the United Kingdom (IFOR/SFOR), with whom we were - and still are - closely involved in these operations. Perhaps I could have discussed some logistic sub-areas in greater detail. However, the objective was to give a general impression of the logistic support of Dutch units in the operations in the former Yugoslavia, without actually discussing the technical details of logistics.

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## Notes

1. POL: Petrol, Oil, Lubricant
2. NAMSA: NATO Maintenance and Supply Agency
3. F34: NATO code for kerosene
4. TIR: Transit International Routier
5. in-survey: Physical verification of all contingent-owned stores, equipment and vehicles and UN-owned accountable items when a new member nation's contingent enters the UNPROFOR theatre (must be completed within one month of the contingent's arrival).