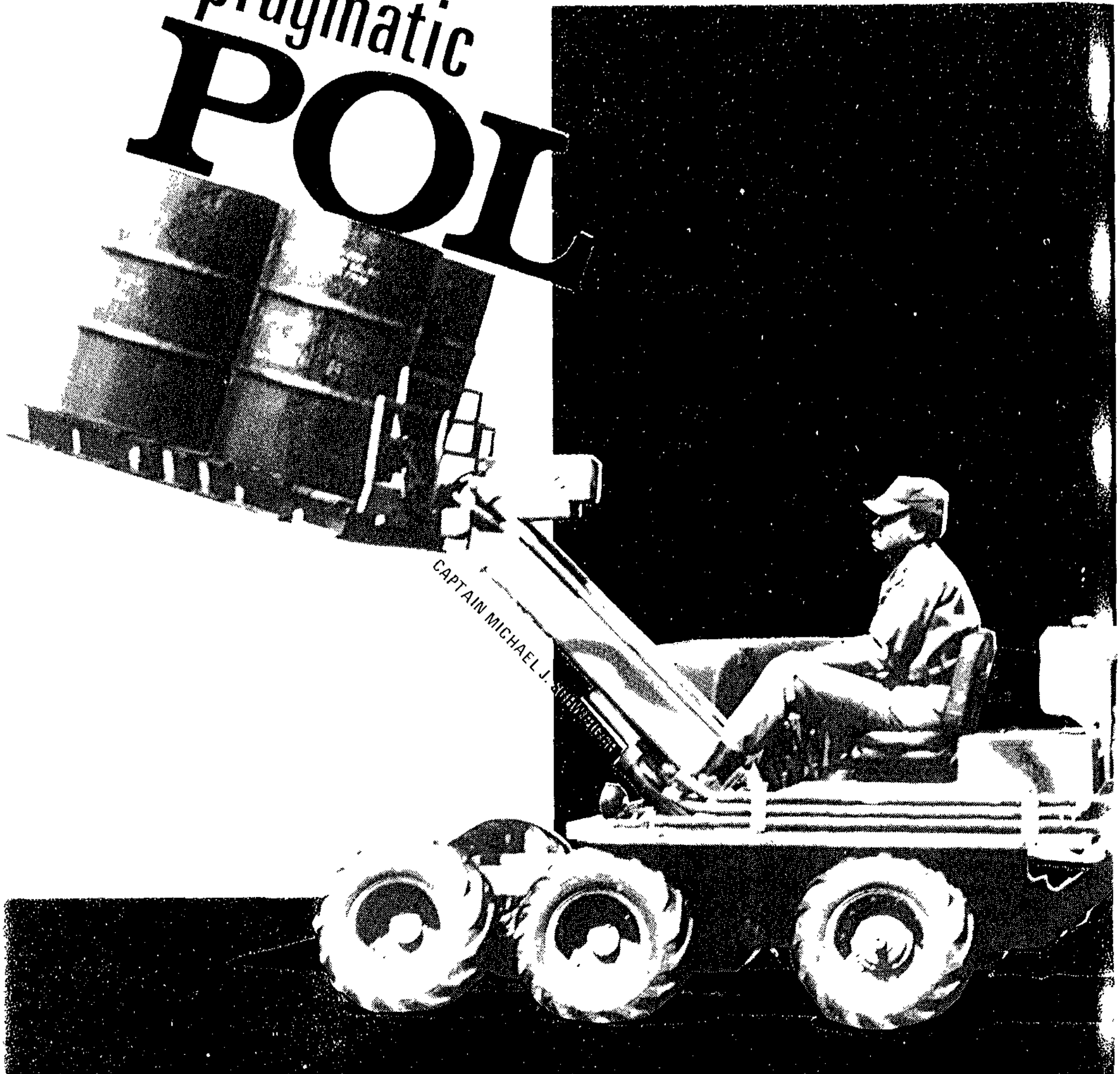
pragmatic POL



CAPTAIN MICHAEL J. [illegible]

Any mechanized infantry battalion that has to maneuver over a large area for any length of time is going to have problems with its Class III resupply. Getting the right items in the right quantities to the right places at the right times is a challenge.

A mechanized infantry battalion task force in Europe, for instance, usually consists of a headquarters company, a combat support company, two mechanized infantry companies, and an attached tank company organized into company teams. The battalion's third infantry company is usually cross-attached to the tank company's parent unit.

When the attachments become effective, the infantry company that moves away with the tank unit [illegible] one of the support platoon's fuel [illegible]. The attached unit [illegible] brings along its own [illegible] and a GOER vehicle. This gives the task force [illegible] POL vehicles with trailers and/or [illegible] each trailer to support [illegible] companies. (Figure [illegible] shows the battalion's usual MTOE configuration.)

Fortunately, in Europe the cross-attached infantry company is seldom in the field at the same time as its parent battalion, which means that the battalion still has the use of the POL tanker that normally supports that company. With this vehicle, every company in the task force can be refueled at the same time, and the task force

can move as a cohesive unit after a single refueling operation.

Although this is a fairly good system, there are two major problems with it. First, when the entire battalion does have to go to the field, such as for a REFORGER exercise or for a brigade FTX, the task force loses one POL tanker. In these exercises, then, the task force is always one POL vehicle short when it stops to refuel. One of the POL vehicles, therefore, must pull double duty, which means that it takes longer to refuel all of the vehicles.

The second problem is that the means of distributing oil and other packaged products, which are just as important as bulk fuel, are limited. Unlike the GOER vehicle, for example, the POL trucks have no built-in place where 55-gallon drums of oil can be secured. At best, only five-gallon cans of oil can be placed around the pods. Drums of oil, in addition to the mogas pods, cannot be placed on the trailers because of cross-country weight limitations.

Facing these problems, a mechanized infantry battalion I served with in Germany looked for a way to solve them. This is the solution it arrived at, one that assured that each of its companies would have an adequate stock of POL supplies to withstand the strain of battle.

The first step in the battalion's search involved analyzing its specific fuel requirements. Although fuel consumption could have been estimated in various ways, the battalion based its requirements on the actual amount of fuel its vehicles consumed on a road march between Grafenwoehr and Hohenfels, and during a subsequent task force ARTEP at the latter place. The final figure included data for all attached units, for support vehicles, for generators, and for messing operations. The battalion also determined the daily rate of consumption for each type of fuel and how much each subordinate unit used.

The battalion's package products presented a somewhat different problem, one that did not concern itself directly with how much or how little was used. It was the difficulty the battalion had in handling the products that caused the problem.

The high usage items, for example — OE-10, OE-30, and antifreeze — were stored in 55-gallon drums. Since each drum weighed 470 pounds, a unit's basic load was not easy to lift onto a five-ton truck. Another problem was that there was not enough space on a five-ton POL truck to haul even one 55-gallon drum, much less three, in such a manner that they could be accessible and easily replaced when empty. And because of the cross-country weight limitation on the one-and-one-half-ton trailers, the battalion was forced to commit a five-ton cargo truck to haul the basic load of packaged products.

The problem was obvious. With the battalion's entire stock of package products on one truck, the system was not totally responsive to more than one package product request at a time. Giving the basic load of package products to the units to haul themselves was an alternative, but their ability to carry drums was extremely limited. Converting the 55-gallon drums to depot pack five-gallon cans did not totally solve the problem.

We knew that the ideal solution for distributing the bulk fuel would be to have a pump unit for each POL vehicle, but this was not always possible. And the ones that were available sometimes failed. But since all POL vehicles could be converted to gravity flow, even a disabled pump did not completely deadline a tanker, because it could still carry fuel. An executive officer or first sergeant can usually find a location for refueling that places the POL tanker much higher than the vehicle to be refueled. Besides, a considerable number of vehicles could be refueled from a gravity flow tanker even if the latter were sitting on level ground. We decided that it was not mandatory, then, to have pumps on all refueling vehicles — only convenient.

Something else we had to consider was just who needed which type of support. We found that diesel consumption was usually spread through the task force rather evenly while mogas consumption was not. In fact, it was the headquarters elements that generated the highest demand for mogas.

IDEA

In examining the entire problem of POL resupply, we observed the company level POL operations of some of our Allies in USAREUR. We particularly liked the method used by the 4th Canadian Mechanized Brigade Group (4th CMBG) during one exercise.

The Group's tactical refueling vehicle, which is our M548 (the vehicle that is now used to haul ammunition for the 155mm howitzer), was filled with about 300 five-gallon cans. Some of the cans contained mogas and oil, but most of them contained diesel fuel. Because the vehicle was tracked, it could go wherever the maneuver element could go. When it pulled into a refueling area, one man issued cans of gas to each vehicle. The crews then refueled their vehicles and returned the empty cans. (Spouts were part of the basic issue items for each vehicle.) Many of the maneuver vehicles also carried extra five-gallon cans of fuel, and when these were empty they were just traded for full ones.

Because there was no pump and hose unit, there was no need to position the refueling vehicles within reach of a

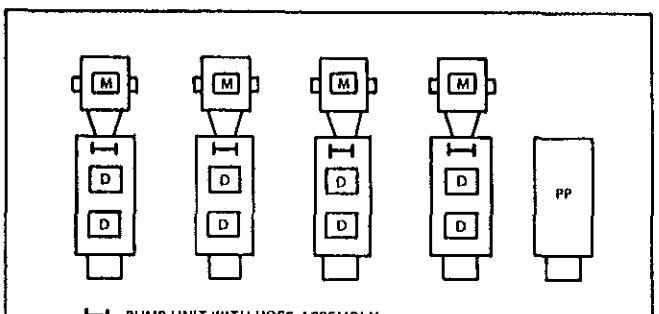


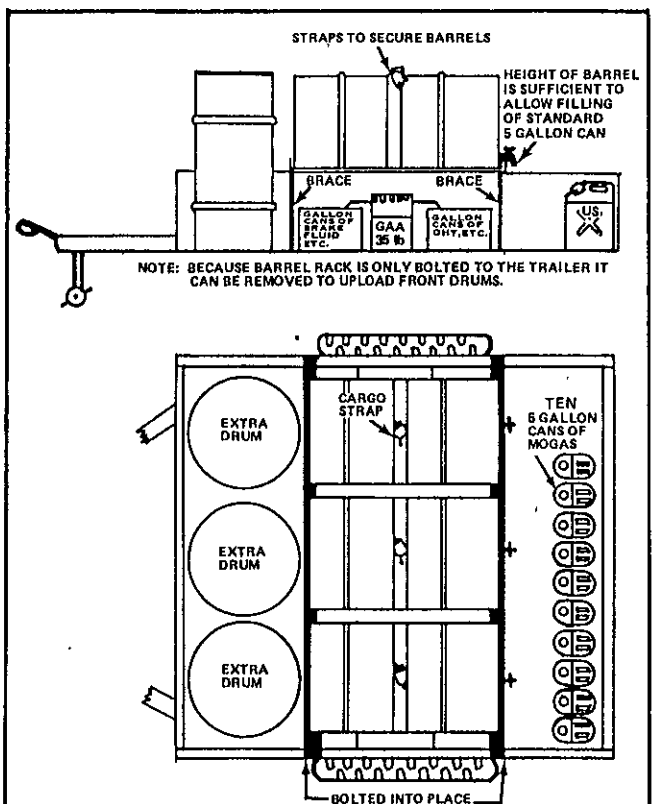
FIGURE 1. PRESENT MTO&E POL CONFIGURATION

fuel hose. The distance between the two vehicles could be as far as the crewmen could carry the cans. The Canadians simply substituted manpower for machine power. In addition, this seemingly crude system was quieter, it could be used to refuel several vehicles at the same time, and it imposed fewer restrictions on the positioning of the vehicles.

After we watched this operation, it became obvious to us that if we placed some five-gallon cans on each of our POL tankers we could conduct this same type of operation when no pump unit was available or when a pump unit was down. We also believed this method would give us flexibility for the times when the terrain would not allow a POL tanker's hoses to reach a vehicle, such as when the M577s were set up in the TOC.

RECONFIGURATION

With these considerations in mind, we decided to reconfigure our equipment. We based our decision on several assumptions: That the task force required less mogas than it organically carried; that the companies with three or four jeeps could refuel them each time they were resupplied with diesel; that a gravity flow tanker with five-gallon cans would be practical to use with the



NOTE 1: SIDE RAILS AND CANVAS ARE NOT SHOWN MOUNTED IN THESE SKETCHES. MOUNTING THE CANVAS WILL PROTECT THE TRAILER CONTENTS FROM THE ELEMENTS, PARTICULARLY MUD THROWN BY THE TOWING VEHICLE

NOTE 2: THE WEIGHT OF THIS SYSTEM IS LESS THAN THAT OF A MOGAS POD AND 600 GALLONS OF MOGAS.

NOTE 3: THE WHEELS OF THE TRAILER HAVE BEEN TURNED OUT TO PROVIDE FOR A WIDER WHEEL BASE.

FIGURE 2. COMPOSITION AND POSITIONING OF THE PACKAGE PRODUCTS ON THE TRAILER.

headquarters elements; and that five-gallon cans and flexible spouts would be readily available from the supply system. In addition, we made a thorough examination of our Class V assets compared with our controlled supply rate and found that we could take from those assets three one-and-one-half-ton trailers to use as POL carriers.

Accordingly, we took the mogas pods off two of the one-and-one-half-ton trailers, converted them to diesel, and placed them on the five-ton cargo truck that was normally assigned to haul the package products. Although no pump unit was available, this one move increased the battalion's ability to haul diesel by 25 percent and provided the headquarters company with a gravity flow tanker.

We then built oil barrel racks on the five trailers. Figure 2 shows how we configured those trailers to take both package products and five-gallon cans of mogas. We found we could easily fit 20 five-gallon cans on a trailer, although initially we put on only 10.

There were several notable features to this system:

- No modification of the trailers was necessary other than to drill four holes to bolt the rack in place.
- The 55-gallon drum and its tap were high enough so that a standard five-gallon can could be positioned and filled.
- The rack was low enough in the trailer for the full drum to be placed into position by tipping and sliding it. Once the drum was in the trailer, it could be used without its full weight having to be lifted.
- There was enough space in the front of the trailer to store extra drums of oil, and enough space under the rack to store all of the remaining package products, including 35-pound pails of grease. The back was wide enough to accommodate 20 five-gallon cans of mogas.
- The combined weight of all of the items was less than that of a pod and 600 gallons of mogas.

We also found that the package products trailer that belonged to the headquarters did not need to carry mogas cans, because the headquarters elements had two other trailers, each with a 600-gallon mogas pod. Its gravity flow truck also carried small amounts of package products.

Under this revised system, one trailer with a POL tanker holding 1,200 gallons of diesel fuel went to each company (see Figure 3). The headquarters company's package products trailer, which was towed by a five-ton cargo vehicle, was kept in the field trains. From this trailer the headquarters tanker could replenish its supply of package products. This trailer also supported all of the vehicles in the field trains.

The two one-and-one-half-ton trailers with mogas pods supported the headquarters elements, where there was the highest demand for mogas. One mogas pod was placed in the field trains and was towed by one of the support platoon's cargo vehicles. Here the mogas pod supported the demands of the field trains vehicles, the mess trailers, and all the headquarters company mogas cans except those belonging to the headquarters element.

The other mogas pod, which was towed by the head-

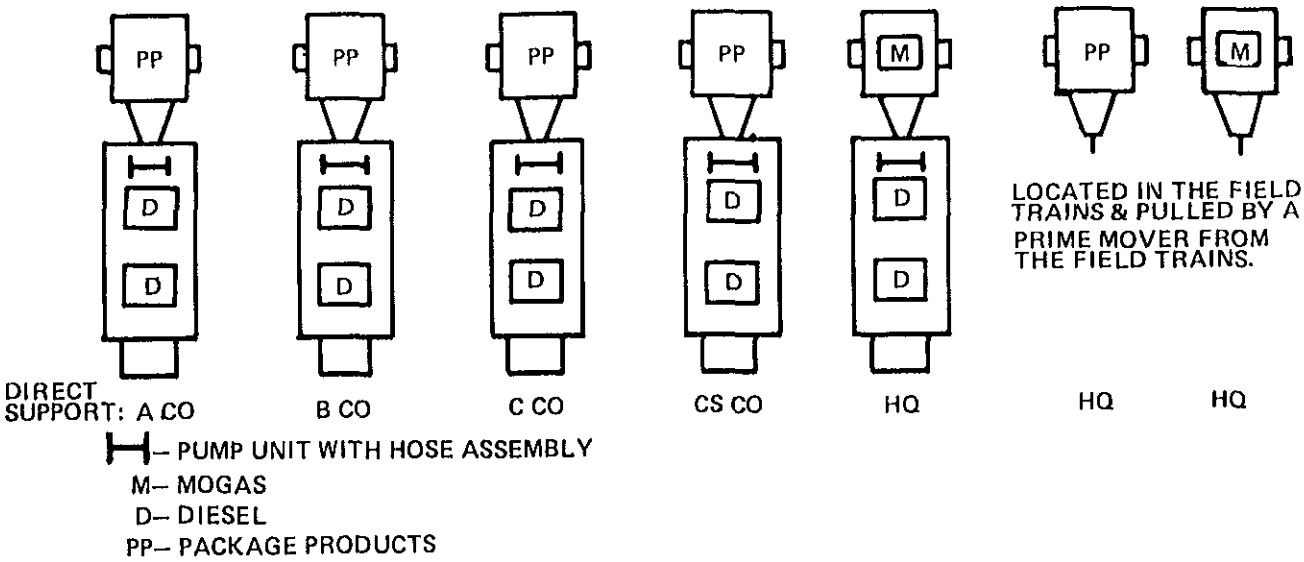


FIGURE 3. THE NEW CONCEPT OF POL SUPPORT

quarters' gravity flow tanker, provided diesel fuel for the field trains and both mogas and diesel fuel for the combat trains and the TOC.

FEW PROBLEMS

The battalion found few problems with this new system. Even when a gravity flow tanker could not be positioned to facilitate direct hose-to-vehicle transfer for such vehicles as the M577s, refueling presented no major problems or delays once everyone understood the system of using the five-gallon cans. Since the headquarters company now had its own tanker, time was not always as critical to its refueling operations as it had been in the past.

Refueling the two-and-one-half-ton and five-ton trucks and the tanks directly from the gravity flow tanker was slower without pump units, but a slow tanker was always better than none at all.

The package products trailers also worked well. Most companies had enough mogas with 10 five-gallon cans. The only real improvement needed was to raise the canvas on the package products trailer to keep mud and slush off the contents.

Placing the package products trailer and one of the mogas pod trailers in the field trains presented no problems. We tested this concept during an ARTEP. At the same time, we also tested our Class V resupply procedures. When we had to move either the mogas or the package products trailer, or had to move both of them, Class V vehicles were usually available in the field or combat trains to pull them.

The one question that has been neglected so far is how does the mess trailer get enough fuel when it is no longer consolidated at the field trains? There are three possible answers aside from sending a 600-gallon pod with the mess.

The first is to mount fuel cans on the fenders of the water buffalos, usually three on a side; the second is to increase the number of fuel cans that the package products trailer carries. A third solution is to have the mess sergeant refuel the mess trailer's organic fuel cans at the field trains when he stops there on his way to the forward area support team's location. Any of these methods will work.

We found the biggest obstacle to timely Class III resupply was the company that failed to return its empty POL tanker promptly to be refilled. But when everyone thoroughly understood and conscientiously implemented the concept, distribution was easier. In addition, the system was more flexible, not only because there was a 25 percent increase in the capacity to carry diesel fuel but also because the distance between the refueling vehicles was no longer restricted by the length of the hoses on the POL vehicles or by the lack of pump units.

Given these improvements, each company commander could plan his POL resupply to support his scheme of maneuver, and the entire mechanized infantry task force was better prepared to stand the strain of battle.

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