2nd August 2025

Introduction

It's 1630 hrs on 6 June 1944, Captain Foreman just arrived at his company harbour near Colleville. An hour earlier, he and the 11 lorries of C Platoon 90 Company RASC (90 Coy) disembarked the LSTs they had been stuck on for the past six days waiting to cross the English Channel to support Operation Overlord, the Anglo-American invasion of Normandy France.[1] Loaded in these 11 lorries are supplies for 6 Airborne Division currently operating to secure the British left flank over the Orne. These loads consist of 'pet[rol], [ammunition], R[oyal] E[ngineer] stores, and water', stores vital for the paras of 6 Airborne Division to resist a German counter attack.[2] Alas, despite the urgency of these stores, Major Cuthbertson, 90 Company's Officer Commanding has yet to make contact with 6 Airborne so C Platoon has little to do but wait for contact to be established.[3] Thus, doubtless, the men of C Platoon, 90 Coy would have dismounted their lorries and pause. Likely, they would have appreciated being once more on dry land having spent the last few days being bounced up and down in the English Channel. A few kilometres away, the men of the 6th Airborne Division, the 3rd British Infantry Division, and 90 Coy's home brigade, 27th Armoured Brigade were, in the case of 6th Airborne, guarding the British flank, or in the case of 3 Div and 27 Armoured Bde, pushing inland to try to reach Caen.

Of course, the vital efforts of the 6th Airborne Division and the other fighting troops of the British Army in Normandy have been fairly well studied. Extensive critiques and

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1. 90 Company RASC War Diary, WO 171/2377, The National Archives UK (TNA), Kew, 1–6 June 1944 (hereafter cited as TNA WO 171/2377).

2. TNA WO 171/2377, S & T Report (June History Report) p 4.

3. TNA WO 171/2377, 6 June 1944.

justifications have been made on British infantry-armour co-operation, the aggression — or lack thereof — displayed by British troops, Allied inadequacies in armour, Montgomery's personality, tactics, vs firepower, etc. In short, we often discuss what went wrong or how we fought; however, what we often ignore is the critical question of what enabled us to fight. The work done by troops a few kilometres behind the front line is generally ignored as a side-show; yet, the work of ensuring the combat arms are well supplied with all the minutiae of war from ammunition, to food, to water, and other general supplies is what will make or break an army. Thus, in light of this gap, I hope to argue for the centrality of logistics in the British preference to expend firepower rather than lives. The British Army seems quite helpless compared to the might of the Wehrmacht until one looks at this Army from a systems approach. It is however, this systems approach that reveals the British Army's strengths.

To examine the centrality of logistics in British Army operations, we will follow Major and 90 Company RASC as they work their way across the English channel, landing in Normandy and following them as the units they support attempt to capture the city of Caen, and we will examine their role in the closure of the Falaise Pocket in August. Along the way, we will first examine how the British Army structured logistics administratively, before joining 90 Coy as they support the 27 Armoured Brigade as they partake in the Battle for Caen. After 27 Armoured Brigade is broken up at the end of July, we will see how 90 Coy integrated into a larger and longer supply column as they support infantry units through Normandy. Following this, we will have a brief discussion on historical methods and how they apply to military logistics.

Historiographical Review

The Battle of Normandy is of course, a well studied topic. Much has been written on this battle from books on the Second World War at large to publications that focus squarely on operations and tactics in Normandy. Curiously, there is also a second historiography which discusses logistics at large; however, the precise area of military logistics in Normandy is less well covered.

On WW2

Britain's Other Army: The Story of the ATS
Why the Allies Won

On Normandy

Clash of Arms
Overlord
Fields of Fire: Canadians in Normandy
Montgomery and 'Colossal Cracks': The 21st Army Group in Northwest Europe, 1944-45
The Normandy Campaign 1944
Gators of Neptune: Naval Amphibious Planning for the Normandy Invasions
Neptune: the Allied Invasion of Europe and the D-Day Landings
From the Normandy Beaches to the Baltic Sea: The North West Europe Campaign 1944-1945
Feeding Mars: The Role of Logistics in the German Defeat in Normandy, 1944

On Logistics

Supplying War: Logistics from Wallenstein to Patton
The Lifeblood of War: Logistics in Armed Conflict
A Great Feat of Improvisation
War of Supply: World War II Allied Logistics in the Mediterranean
Supplying the Troops: General Somervell and American Logistics in WWII
Military Logistics and Strategic Performance
The Story of the Royal Army Service Corps
Logistics and Modern War
Logistics Diplomacy at Casablanca: The Anglo-American Failure to Integrate Shipping and Military Strategy
Strategy and Logistics: Allied Allocation of Assault Shipping in the Second World War
The Science of the Soldier's Food
D Day to VE Day with the RASC

Tools of the Trade

A Note on My Sources

Overlord as Planned

Op Overlord was made up of a number of smaller operations. The seaborne landings were part of Op Neptune. This was the operation that established a 50 km wide logistical beachhead in Normandy. Neptune divided this section of Normandy coastline into five discontinuous beaches. The Allied right was anchored by Utah beach on the Cotentin Peninsula and the Allied left was anchored by the River Orne and the Caen Canal at Sword

beach. Between these flank beaches was Omaha, Gold, and Juno beach. The Americans were responsible for Utah and Omaha, whilst Anglo-Canadian forces were responsible for Gold, Juno, and Sword beaches. Each beach was subdivided into a 2 – 4 sub-beaches and assigned a letter from A to R. This study will primarily concern itself with the affairs of the troops of the 3rd British Infantry Division and 27 Armoured Bde that landed at Sword beach, specifically, Queen beach.

This study will also concern itself with the work done by 6th Airborne Division as part of Op Tonga. Their objective was to execute a series of airborne landings East of the River Orne, Caen Canal, and Sword Beach to secure the British left flank. They were also to capture the only bridge crossing these water features North of Caen along a road running between Benouville and Ranville. All this was to be done during the night before the forces of Op Neptune landed. For approximately six hours, the paras of 6th Airborne would be cut off. Once the British landed at Sword beach, they would push inland, to Benouville, cross the bridges if they were still intact, and reinforce and resupply 6th Airborne. That is how the 11 lorries of C Platoon 90 Coy finds itself waiting in Colleville, around 4km away from Benouville waiting for their CO to link up with the Paras so that C Platoon could resupply 6th Airborne who would likely be running low on stores by this point. C Pl would then keep the paras supplied via Queen Beach until 6th Airborne's RASC unit could take over on D + 1 after landing at Juno.[4]

4. S & T History 90 Coy RASC Armd Bde-Assault an account of the work carried out during the first four days of the Invasion, June 1944, WO 171/2377, The National Archives UK (TNA), Kew, 1 (hereafter cited as TNA WO 171/2377 June History Report).

By 1800, C pl made contact with the Paras and, as the Paras had successfully captured the Orne and Caen Canal bridges, C pl was able to replenish the depleting ammunition of 6th Airborne by 2300 hrs on D - Day — a five hour job. As 6th Airborne's area of operations had yet to be fully secured, the drivers of C pl faced sniper fire throughout the day.[5]

Not all of 90 Coy landed on D - Day however, whilst A and D Pls stayed in the UK to be brought across the channel on B Pl landed on D - Day. Their tasking to simply support 27 Armd Bde primarily in terms of their fuel requirements and to otherwise keep the Bde supplied. Their 13 lorries were mainly loaded with fuel for the Bde's Sherman tanks. Alas, Due to the heavy shelling of Queen Beach however, only 9 lorries actually landed by 1200 hrs. The lorries that landed proceeded to the 27 Armd Bde's A Echelon Area in Hermanville-Sur-Mer and would quickly be put to work keeping the Bde supplied with fuel and ammunition.[6] Hermanville, situated along the main road departing Queen Beach — location of the Beach Sector Stores — rapidly became 90 Coy's control point where vehicles would check in before proceeding to the beaches or to the units.

As a point of curiosity, you may have noticed how B Pl was not preloaded with ammunition. This was because the Bde brought their own ammunition ashore firstly with the ammunition they carried in their tanks, but also with the ammunition they towed behind their tanks in *Porpoise* sledges.[7] These sledges would be released shortly after the tanks made

5. TNA WO 171/2377, 6 June 1944.

6. TNA WO 171/2377, 6 June 1944.

7. TNA WO 171/2377 June History Report, 2–3.

it ashore. Collecting the ammunition in these sledges also became one of B Pl's tasks in the first hours of the invasion.

Perhaps as a happy co-incidence, Neptune had failed to meet it's D Day objective of pushing all the way to Caen — an optimistic goal anyway.This meant that supply lines were shorter than planned which doubtless decreased the stress on the 9 lorries of B Pl. It is difficult to understate how heavy the fighting was. Indeed, there were many instances where tanks were replenished with tanks still 'in their forward positions'.[8] This single under strength platoon was trying to keep a whole brigade supplied. Tasks which would ordinarily been reasonably simple tasks were now incredibly onerous. Take for example the task of refuelling and reammunitioning the tanks. What should have been a simple task done at the end of each day to ensure the Brigade was ready for the next day's operations became a night long ordeal requiring the initiative of the 9 lorry drivers of B Pl who had to understand the requirements of their client unit before returning to the beaches to try to obtain the critical stores required by their units. It was paramount that these drivers not only knew what was needed, but the priority of what was needed in the event that there were insufficient stores available to meet an urgent order. This way, lorries were always moving and stores were always flowing. Fortunately, by nightfall on D - Day, a small Brigade supply dump was beginning to form in Hermanville — an act that would logistics chains. Even still, this put a great strain on the men who were worked day and night until D + 4.[9]

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8. TNA WO 171/2377 June History Report, 2.

9. TNA WO 171/2377 June History Report, 2.

Thus was the dispositions 90 Coy on D-Day, two Pls would make their way ashore: one to support their parent unit, 27th Armd Bde and one help the Division to their left — 6th Airborne — until their own RASC unit could make it. Here, one can begin to see the role of 2nd line transport companies such as 90 Coy. They form the final interface between the wider supply system and the fighting units — it is these units that *deliver the goods* — however, how did these 90 Coy interface with the rest of Army?

The Supply Chain in the Field

Whilst admittedly, the supply system on D - Day did appear somewhat improvised and ramshackle, there was good reason for this. Because the British failed to advance as far forward as planned, the supply dumps that were to be set up all along Sword Beach failed to materialize in the same way as planned. Still, the logisticians of the British Army tried to beat a formal planned system into an effective supply chain however much improvised. It is worth recalling that, even without additional planning, the British Army's baseline doctrine included a supply chain. This was after all, an army that could expect to be deployed to not just fight a large, European Army, but also fight small wars across vast stretches of the British Empire. To do so, the British Army already had an organic logistical capacity that Overlord adapted to its use. At it's core

> The principle of supply [in the British Army was] that field units should always have with them, or within reach, two days' rations and forage, and one iron ration, and that these stocks should be replenished by delivery, at a point within reach of the troops, of one day's ration and forage each day.

Moreover, as the British Army was fully mechanized by the Second World War, it was the aim that all vehicles would have full petrol tanks at the end of each day. To enable

operational mobility, 2nd line transport was also to have immediately available, an additional 50 miles of fuel; and 3rd line transport, a further 25 miles instantly available for use.[10] Of course, it is unlikely that this exact fuel holding was available on D - Day; however, this was the standard the British Army would have expected. These principles meant that, at any one point, the British Army was expected to be able to advance independent of it's bases for slightly over 75 mi over the course of three days. Thus, this formed it's maximum operating range.

Of course, it is suboptimal for an Army to operate for long without access to its supply chain so, to support the Army, the supply chain was broken up into four main areas, ordered from furthest to nearest the front line, the Base Sub-Area(BSA), the Line of Communication Area (LoC), the Corps or GHQ Area, and finally, the Divisional Area. Those depots that 90 Coy went to along the beach? Those were Beach Sub-Areas (BSA).

The Base/Beach Sub-Area and Line of Communication

In the first days at Normandy, it appears that Beach and Base Sub-Areas were treated as one and the same. Whatever the 'B' stands for, BSAs functioned as the British Army's initial interface between sea and land. The BSA had the docks, the base railway marshalling yard, a main supply depot, a petrol sub-depot, field bakery, and detailed issue depot. Cold storage was also available for rations such as sides of meat, etc — of course, it is unlikely that such niceties were available in the first days of the invasion, fresh rations weren't even available for quite some time.

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10. Precis of Lecture No. 12: Petrol No. 27 (Winter) War Course, 2017/7 Box 3 File 7, Directorate of History and Heritage Archives (DHH), Ottawa, s 3.

The BSA would then theoretically interface with the Line of Communication Area (LofC). These were railway networks or truck convoys that transported stores from the BSA to the field army. Now, the supply lines in Normandy were quite short, measuring in the ones or tens of kilometres. It was simply unnecessary to have a strict LofC area per se. The field army could simply draw stores directly from the BSA — the LofC area really is not necessary until the field army is some distance away from the BSA. The LofC would become necessary as the British Army advanced through France and into Germany. As they went deeper, scheduled and intentional convoys to convey the stores would become more useful in relieving the field army of such transport network.

Supplies in the GQH, Corps, and Divisional Areas

In any case, regardless of whether the Army was drawing stores directly from the BSAs or from the LofC, eventually, Army would have to start drawing stores. To such ends, the Army was divided into two sections the Corps / GHQ Area and the Divisional Area. Typically, the distance — and thus, also depth of the Army — from the LofC area to the delivery points was 30 – 40 mi (50 – 65 km) At the GHQ level, one begins to see how the British Army sorted supplies. POL and other stores were handled in two theoretically separate systems. In either case, it is at the GHQ level that stores were bulk broken.

Let's handle the general stores first. Stores are delivered to the Supply Column (Sup Coln) where stores are bulk broken. Think of this bulk breaking with the analogy of a grocery store. A grocery store may receive it's goods in wholesale, bulk form, but then repackage it into smaller, more usable units to be easier to sell — a retail customer may want 1 lb of almonds, not 1 ton for example. In the case of prepackaged stores, bulk breaking is more

similar to the procedure that occurs when a grocery store receives a palette of cereal which is subsequently unpacked and loaded as single units on a shelf. Thus, the Sup Coln HQ can function as an interface where the Army's bulk handling meets it's piece handing functions.[11]

Petrol, Oil, and Lubercants (POL)

Likewise, fuel could, at times be shipped in bulk initially however fuel for the British Army was never delivered to field units as such. It was always containerized first into tins. There are few modern equivalents to this in our modern world. When we buy fuel at the petrol station, we pump it from a massive underground tank into our cars where it's sold by volume. Rarely do we buy a pre-packed can of fuel. This was however how the British Army preferred to receive it's fuel — in 4 Gal (18L) of petrol per tin.[12]These tins were nicknamed flimsies, and it was not an ironic term of affection. They were meant to be disposable so they were built cheap; however, the design teams were perhaps overzealous. The flimsies had an unfortunate habit of breaking or leaking such that it was quite common for them to arrive damaged leading to fairly severe losses in fuel as well as a notable fire risk. Indeed, the flimsies were so bad that the British Army began to simply use captured German (Jerry) petrol cans — hence our modern term jerrycan (a German petrol can).

Nevertheless, despite the questionable durability of flimsies, the British Army had some sound reasons for using containerized, as opposed to than bulk distribution. Firstly, tanker lorries weren't nearly so common in 1940 as the are today. Secondly, containers are

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11. Precis on Lecture "Supplies in War", (Part II) No. 27 (Winter) War Course, 3.

12. Precis of Lecture No. 12: Petrol No. 27 (Winter) War Course, 3. For reference, the 2025 Toyota Corolla sedan has an approximately 50 l fuel tank whilst the 2025 Ford F150 Raptor pickup truck has a 136l tank.

compartmentalized. If a bullet pierces a tanker lorry, one may loose thousands of litres of fuel before one notices; however, if a bullet travels through a containerized fuel transport (i.e. lorry full of flimsies), one may loose only a few tins worth of fuel. Moreover, containerized fuel has far fewer mechanical requirements. For bulk fuelling to work, one must have a working petrol pump. This could be quite inconvenient. Imagine having a tanker load of fuel but no simple way to get the fuel out of the tanker. Moreover, using this system, you can only fuel a few vehicles at a time. With containerized fuel, one merely pulls up to the vehicles, unload a few tins at each vehicle, and each crew then subsequently fuels their vehicle with a cheap tin funnel. Of course, this system was quite laborious to use but even so, it was judged by the British Army that the additional labour was worth the cost.

All told, the British POL supply chain was designed, to provide containerized fuel for the Army. As designed, it was intended for the Army to be able to advance the whole army 75 mi (120 km) using only such reserves held by the field army (the GHQ/Corps areas, and the Divisional Areas). 50 mi (80 km) of fuel would be held by the the Divisions, whilst the Corps areas would hold the remaining 25 mi for the divisions, plus an additional 75 mi for the corps' organic transport.[13]

Having been bulk broken at the Corps or GHQ levels, it was now up to the 2nd line transport units like 90 Coy to then bring those stores forward into the Divisional areas and deliver them to the end-user units. Depending on operational requirements, this may mean delivering it directly to the individual end-users, or it could mean delivering such stores to the units who could then further distribute stores internally. This formed the

13. Precis on Lecture "Supplies in War", (Part II) No. 27 (Winter) War Course, 3.

basic, theoretical structure of the British Army's supply chain; however, just as how no plan survives first contact with the enemy, the supply chain had to adapt to tactical and operational necessities.

Already, you may have noticed that the 27th Armoured Brigade is a *brigade*. Why does it have it's own 2nd line transport? The answer is fairly simple, 27th Armd Bde's full name was 27th Armoured Brigade (Armoured Assault). The Bde was raised as an independent armoured brigade for Overlord. As such, it needed a way to ensure it could run its own logistics. You may also recall how 90 Coy was, on D-Day, delivering both POL as well as ammunition to 27 Armd Bde. This shows how the supply chain had to remain flexible. Whilst in theory, there was a separate chain for POL and ammunition, in practice, this was impossible. This was the advantage of containerized fuel as fuel could simply be loaded into any available lorry.

Storage and Dumping

Finally, before we carry on with the affairs of 90 Coy, it may be prudent to clarify what is meant by a 'dump' and other forms of storage. In a perfect world, supply chains would be perfectly efficient. Ever single item required by an army would be produced when it's needed, sent to where that item was required without delay, and used immediately on receipt. Alas, hiccups invariably appear. Shipping gets stalled, major operations consume unusually large quantities of supplies, supplies are lost to enemy action, etc. Thus, to ensure first-line units receive a continuous flow of supplies, it was — and remains — necessary to store a reasonable reserve of stores at various points along the supply chain.

Ideally, this would be a large, dry, flat, climate controlled warehouse with good transport networks, but alas, conditions in the field often are not always ideally suited to the logistician. Thus, supplies were often stored by stacking supplies in a field or some woodland and covering them with tarpaulins if they required protection from the weather. The precise requirements of this may seem quite trivial and not terribly important to the profession of fighting wars; however, seemingly trivial tasks such as labelling and organizing are critical. Consider what would happen if there was a German counter attack and the supply officer could not find the 76mm anti-tank shells because their boxes were not properly labelled or because the dump was not given enough land so that the aisles were too narrow. Moreover, what would happen to those same shells if they were dropped and the packaging was inadequate to protect their contents — and honestly, who hasn't dropped a heavy box before. Damage to the shell casing could prevent the casing from ejecting properly after firing leading to a stoppage and possibly leading to the tank being out of action.

Consider also what would happen if one of these these dumps was attacked and caught fire. Aisles do not merely provide access but function as fire breaks. These fire breaks are critical for hazardous material dumps such as POL dumps or ammunition dumps. When these dumps catch fire, it is often too dangerous to attempt to extinguish the fire — POL burns and High Explosives explode. Instead, standard operating procedures tend to relate to containing the fire and letting it burn out on its own.

This may seem small but how do acts like this win wars? Unlike the combat arms, logistics does not win wars by plunging a bayonet into the hearts of the enemy. Instead, logistics wins wars by ensuring the combat arms can act without restrictions. If there is insufficient ammunition or fuel to support an advance, a General cannot order that advance.

If reserves are not ready when the enemy attacks, then the combat arms will have few options but to withdraw or fix bayonets. Logistics enables and constrains but achieves nothing on its own but by doing so, is a significant factor in determining if an operation is achievable or foolhardy. Let us return to Normandy in June of 1944 to see this in play.

Return to the moment

By the morning of D+1, the situation for 90 Coy was slowly improving. 90 Coy was still quite overwhelmed, but C pl's 22, and B Pl's 4 lories that were used with the rest of the platoon, ferrying stores from the Beach Sector Stores dump to the nacent Bde dump at Hermanville.

C pl's greater number of lorries takes longer to land with elements being ferried ashore thorughout the day. As they landed, they delievered their original preloads to their intended recipients before moving to supply 6 Airborne however, by the afternoon, fears were beginning to materialize of a German counter attack targeted at the Eastern bridgehead presently held by 6 Para. As such, all available transport in the 3rd Britisih Infantry Area were ordered to assist in preparing for this German counterattack on the British left flank.

C pl simply continued running supplies to 6 Airborne as usual as the stores they were building up would be extremely useful if the Germans attacked. B Pl was however was busy establishing a reserve of critical stores for 27th Armd Bde, running up and down the congested road running between the Beach Sector Stores Dump and the Bde dumps at Hermanville. When the order came throuhg for B Pl transport a Battalion of British infantry 4–5 km East to St Aubin d'Arquenas to meet the feared German counter attack, the Pl was around half way through the process of unloading flimsies at the dump. The situation was

so urgent however, that the infantry battalion was ordered to mount up ontop of the flimsies and they were rushed East. After this, B pl switch between continuing to build up the Hermanville dump and delivering stores to the forward eleemnts of 27 Armd Bde. This is perhaps representative of the role of logistics in warfare. Logistics contributes to military success by removing constraints, but it often does so not by reacting to a threat per se, but by ensuring that the Army is ready to recieve the enemy by prepositioning assets where they may *foreseeably* be required whether that be by transporting troops or by establishing dumps. This establishment of dumps may seem fairly hum-drum; however, consider this: by D+2, B Pl had been engaged had no more than 1-2 hours of rest over the course of 60 hours. By D+2, B Pl was falling asleep at the wheel!

This is how critical the British ARmy considered the dumps at Hermanville. The object of these dumps was to have a contingency in case the Beach Sector Stores dumps were attacked — and frankly, Hermanville has better road access than Queen Beach. This work may seem unimportant compared to combat operaations however, so much of logistics is preparing for the next step. Yes, the German counter attack does not materialize nor is the Beach Sector Stores dump lost; however, imagine what would happen if either of these eventualities occurred and the work was not done. What would happen if critical troops or supplies could not be accessed when they were needed? This goes beyond anxiety. As this was happening, along Sword Beach, the Luftwaffe was attacking various Beach Sector Stores and, at 1345, they attacked a POL dump adjacent to the main beach exit. The attack ignited the POL in the dump and the fire spread to near by supply and ammunition dumps. Over the next 3 hours, 60000 gallons of POL and 400 tones of ammunition were consumed

in the flames.[14] Efforts to extinguish the flames This was indeed, not the only fire, over the next few days, POL fires dot various Army war diaries and RAF Operations Record Books. We can assume that these fires, from their frequency, rapildy become non-events as these events are increasingly reported as 'P.O.L. Dump hit...' followed by, 'P.O.L. Dump fire extinguished'.[15] Increasingly, a quantified estimate is not recorded in the war diaries or operations record books. Nevertheless, it is highly likely that preparitory actions such as prepositioning firefighting apparatus, stacking flimseys with a mind to fire breaks, and dispersing the storage locations for these dumps helped to minimize losses. Whilst this may appear mundane, prepairations such as this are essential to keep an army mobile. Consider that 90 Coy was, as these fires were raging, running loads of petrol forward for the tanks. Once again, it is rare that logistics can win a war, but it can certaily loose it. Without these standard prepairations taking place, it is probable that the British Army of 1944 would have simply been unable to fight in Normandy as it would have been much easeir for the Germans to simply destroy the buildups the British were making. Whilst these stacking and loading standards are quite mundane, they are important to actually winning wars.

Consider also unforeseen events. The paras 6 Airborne fighting East of the Orne would, due to the general difficulties in provideing sustainment from the air, often found itself short of rations or ammunition. Why, you might as was it difficult to ensure the paras were well supplied with rations, is it not a fairly simple affair? You know the strength of a

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14. No 1 RAF Beach Unit (Later Squadron) Sept 1943-July 1944 IIn/FJ3/1 and 14 Including No 70 and 71 Beach Units Operations Record Book, AIR 29/438/9, The National Archives UK (TNA), Kew, 8 June 1944 (hereafter cited as TNA AIR 29/438/9).

15. TNA AIR 29/438/9, 10 June 1944.

division, you know how many days of rations to proivide them and some simple multiplication revieals the number of meals. Take the number of meals, divide by the number of rations in a case, divide that by the number of cases that will fit in a lorry, all all that's left to do is to find the raitons, load up the lorries and go. Job done! Nice and easy!

Alas, if only life was so simple! See, dumps had to supply these rations and this math is only accurate if the supply officers knew how many men they had to feed. Typically, this is solved by storing an excess of rations at these dumps to make up for any shortfall; however, in the first days of the invasion, rations were in short supply so these reserves that would have been prudent to build up simply had not had time to amass ashore. Thus, on in the evening of D + 1 when Commander RASC (CRASC) 6 Airborne Division — the officer in charge of supplies for 6 Airborne — found out that they had been reinforced and that these reinforcements were to be fed by him, he would have had his staff check their supplies. His team would have informed him that they simply did not have the rations available.[16] What would have then likely happened was that he would calculate the rations required, put a message through to Beach Sector Stores and request those rations. This would set into motion several chains of events from clerks and officers nervously eyeing ledgers, making sure that this requisition could actually be met off hand. If it could not, they would be figuring out where they could squeeze from the supply system for a little extra. Maybe transfer stores from a different dump, maybe reduce the size of a shipment for the next morning in hopes that they could fill their evening request, etc.

16. TNA WO 171/2377 June History Report, 6.

Whilst all this was happening, transport officers would be liasing with transport units like 90 Company and pushing through orders to arrange for the transport (in this case, three viehicles) to then get those rations from BSS to the end user. CRASC 6 Airborne whilst all this was happening would be ensuring he actually had room to put the rations once they were delivered, figuring out how to ensure his new troops knew where and when draw stores, etc.

This is complicated further when the required stores just don't exist in the quantities available ashore. By the afternoon of D + 2, 6 Airborne was growing of 75 mm Pack Howitzer shells. Thus far, the supply of this 75 mm ammunition had been air dropped; however, it was insufficient to keep the division supplied and it was mainly the paras that used this exact ammunition. As such reserves of these shells simply did not exist ashore. Thus, CRASC 6 Airborne made some inquires with the Navy and an officer of 90 Coy was sent to the Navy's Command Post to liase with them as they attempted to locate the stores.[17]

Locating stores in 1944 was difficult. Its not like today where one can search a database for the stores required, find which ship the shells are on, and just ask that ship to expedite that delivery. It required hours going through reams of paperwork trying to locate a single line in a ledger but, until someone worked out which ship these shells had been loaded onto, the paras would not be able to use their artillery.

By the morning of D + 3, these shells were still nowhere to be found and 6 Airborne was beginning to grow desperate. We will discuss the importance of artillery later, but sufficed to say, the British were reliant on their guns. They were so desperate indeed that,

17. TNA WO 171/2377 June History Report, 7.

that morning, 6 lorries of 90 Coy were held so that instant the shells made it ashore, they could be sped to 6 Airborne's gunlines. To permit this, CRASC 6 Airborne made special arrangements with Beach Control to allow the DUKWs — amphibious lorries — to make an inland delivery (typically the DUKWs are just used as ferries to Beach Sector Stores). Thus, when the ammunition was finally located on the afternoon of D + 3 by 6 Airborne RASC HQ's Ammunition Officer, Navy contacted the relivant ship, the ship unloaded her stores into the DUKWs, and the DUKWs drove directly to 90 Coy's Colleville harbour, the ammunition was crossloaded onto 90 Coy's 3 tonners, and that ammunition was rushed to 6 Airborne's gunlines which were, at the time, stood to and actively engaged with repelling a German attack.[18] The German attack was successfully repulsed by element's of 27 Armd Bde — also supported by 90 Coy. It was not until the next day, D + 4, that 6 Airborne's own RASC transport made contact with their parent unit. Until that time, the 46 lorries of 90 Coy (reduced to 20 by D + 4) had been supporting two divisions and one Brigade, a force which would have been undermanned to support even a single Brigade.

Think about what it thus meant that 6 lorries (around 1/4 of 90 Coy's remaining strength) was held, standing by to ferry that 75 mm ammunition instead of delivering other critically needed stores — granted, by this time, some of the 3rd British Infantry Division's own transport had landed as well. What would have happened if those shells were not located? 6 Airborne would have lost much of its artillery support. Moreover, think about how complex it was to locate and deliver even a single load of artillery. Teams involved included at least 6 Airborne's CRASC (at least one officer and a few NCOs), the Navy

18. TNA WO 171/2377 June History Report, 7–8.

Command Post (at least one officer, a clerk, and a signaller), at least one officer and six drivers from 90 Company, likely around six DUWK drivers, the teams at sea loading and unloading cargo, the Beach Control point, dozens of MPs controlling traffic, and doubtless more I have yet to think of. Whilst the combat arms rightly gets much of the credit for fighting wars, and the Generals credited for figuring out where to put men, spare a thought to the staff work done by the men keeping ledgers, speaking on the radio, co-ordinating actions and pushing forward supplies. When times are desperate, one not only needs brave men, but highly organized logisticians to ensure that which was needed was obtained. Why else would you have drivers driving almost non-stop for some 60 hours if their work could be ignored?

Operations to Hold Ranville

Based on our impression of the first few days of the invasion, you would be foregiven for thinking that supply in general was quite a ramshackle affiar. Thus far, the picture is probably exausted lorry drivers ferrying materiel and troops this way and that, creating hasty dumps of essential stores, with busy supply officers running this way and that trying to scrape together what resources resources were available to support operations; however, as the situation stabalized in Normandy, supply slowly starts to become more regular and these quick and hasty names I keep brigning up like Hermanville, the 6 Airborne's Dumps, etc. start to become more important. It is thus worth pausing to assess the situation and to put some order to the chaos and really consolodate the supply chaing that both we and 90 Coy were working to navigate.

The Supply Chain to Ranville

With the exception of the Paras who were being partly supplied by air, the supply chain supported by 90 Coy — at least, as far as the Coy was concerned — originates at sea on the various transport ships loaded down with any number of stores. These could be landing craft, landing ships, or any other vessel capible of carrying a large volume and tonnage of cargo. If these ships such as the LST could be beached directly ashore, then they were typically beached and their stores discharged via their bow ramps. These supplies were then taken to the Beach Sector Stores where they would be stacked in an organized manner taking into account the need for creating asles for both access, and fire protection.

If the ships however could not beach themselves, then the stores could be brought ashore either by rhino ferry, or DUKW (pronounced 'duck'). As mentioned before, the DUKW was an amphibious lorry with a 5000 lbs payload — 2.25 tons — or a tad smaller than the 3 tonners used by 90 Coy. Whilst DUKWs could be driven quite far inland, after lessons at DUKWs were mainly used to transport stores from ship to the supply dumps nearest the beach — any old lorry can drive miles inland but driving into the sea with a common 3 tonner is unwise. Of course, in emergency situations as we have already seen with the shipment of 75 mm pack howitzer shells, occasional exceptions would be made; however, it was generally best to use the DUKWs to fulfil the mission that only a DUKW could achieve.

DUKWs were useful for moving things that would fit in a lorry; however, for transporting vehiciles or if there was simply a shortage of DUKWs, then rhino ferries were used. The rhinos were essentially shallow draft barges assembled from pontoon structures that could have a ramp fitted. They were typically moved with rhino tugs going back and forth

between from ship to shore and back again. Rhinos had the advantage over DUKWs that they could take several vehicles on board at a time and, once beached, the vehicles could just be driven off and any stores in those vehicles, offloaded at the sector stores dumps as they drove past.

In any case, however the stores were brought from ship to shore, their first port of call in these first days of the invasion would have been the Beach Sector Stores. This would rapildy evolve into the fully fledged Base/Beach Maintainence Area (BMA) Moon controlled by 101 Beach Sub Area.[19] The BMA Moon started along Sword Beach's Peter, Queen, and Roger sectors and extended around 2km inland. The full BMA with it's organized supply dumps do not appear to have been fully developed by D + 2; however, those dumps 90 Coy created as a Brigade amunition dump in the vicinity of Hermanville was likely on the land that became BMA Moon's ammunition dump.[20] From these first dumps, logistics units like 90 Coy would then transfer the nessessary stores to dumps further inland essentially forming a chain of operational reserves. For example, take 6 Airborne's Ranville maintainance area mainly drew stores from Hermanville and units working in 6 Airborne's Area of Operations (AO) would then draw stores from the Ranville dump forming smaller, often less formal dumps along the way.

19. See traces in Neptune No. 1 RAF Beach Squadron Operation Order found in TNA AIR 29/438/9.

20. Trace of BMA Moon annexed to Neptune RAF Beach Squadron Operation Order found in TNA AIR 29/438/9, Legend entry 67.

Ranville

How these dumps grow and evolve becomes of interest to the to the historian of logistics; thus, let us return to Ranville. Recall that the Germans are currently probing the area to see if they can dislodge the British and 6 Airborn of their lodgement North-East of Caen and East of the River Orne and the Caen Canal.

The Arrivals of A & B Plns
Operation Mitten 27–28 June 1944
British Artillery
Support to Operations
Figure out a name
Operation Aberlour

The Lead up to Charnwood
Pre Goodwood
Goodwood (18-20 Jul 44)
Post Goodwood

Criticality of Supply
Conclusion

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