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The Papers

Doctor Jorit Wintjes (University of Würzburg) - “*Command at Sea – The Roman Perspective*”

Professor Christopher Duffy - “*The Business of Generalship in Old Regime Europe*”

Mr Brian Hall (University of Salford) - “*A Practical, Reliable and Safe Means of Communication? The Telephone and the British Army, 1877-1914*”

Brigadier Philip Pratley “*Lifeline, Pipeline and Occasional Noose? How the British Army’s Communicators Looked Back on World War II*”

The Speakers

Jorit Wintjes studied Latin, Greek and History at the University of Würzburg where he is an assistant professor with the department of ancient history. At the moment he is involved in a major research project on the Roman navy in North Western Europe, focusing mainly on the operation history and on questions of command, control, communications and intelligence.

Christopher Duffy was a Senior Lecturer on the staff of the Royal Military Academy Sandhurst and has written several books on eighteenth century and Napoleonic warfare, fortification, armoured warfare in World War II and modern strategic geography.

Brian Hall is a doctoral student in the European Studies Research Centre, University of Salford, and tutor in history in the School of English, Sociology, Politics and Contemporary History. He is currently completing his Ph.D. thesis on the command, control and communications processes of the British Army during the First World War.

Brigadier Philip Pratley is an associate partner of Defence Strategy and Solutions in Guildford, Surrey, England. He retired from the British Army with the rank of brigadier, having been commissioned in the Royal Corps of Signals.

Command at Sea - The Roman Perspective

Jorit Wintjes, University of Würzburg

I. Introduction

If we look at the amount of scholarly interest it has attracted, then the Roman navy definitely was the junior service. It is regularly seen as little more than an appendix to the Roman army, for which it was to provide such necessary but not exactly glorious tasks as troop transport or logistical support.¹ Of course the Roman navy did have a tradition of fighting fleet actions during the time of the Republic and the civil wars, but these were fundamentally simplistic affairs involving little more than two fleets battling each other head-on under direct control of their admirals until a decision was reached. Due to this, naval command and control, if it indeed existed at all, must have been extremely rudimentary. Michael Palmer sums it up rather neatly in calling ancient naval warfare "land warfare afloat".²

Generally, such a view of Roman naval affairs as being pretty pathetic stems mainly from an analysis of medieval galley warfare in the Mediterranean. That is often said to have been little more than an extension of land warfare with fleets covering the flanks of infantry armies in the same way as cavalry was supposed to do.³ For some reason this view is still quite common particularly among classicists - Roman naval warfare, or so it seems, is on the whole not held in high regard.

This view of ancient naval affairs is fundamentally flawed for a variety of reasons. It is therefore the main aim of the present paper to review the available evidence which all points into just one direction: Roman naval warfare was every bit as complex and evolved as ancient land warfare - or indeed as naval warfare of the 16th or early 17th century. Looking at the operational history of Roman navies it becomes clear that the Romans must have developed systems of command and control at least equal to those employed by the army, systems that were at least equal to that of early modern navies. Having even only a small modicum of control over what happened on the battlefield was at sea even more difficult than on land, if only for the larger distances involved;⁴ it meant being able to get a decent picture of the events as they unfolded, then having the means of communicating orders to subordinates controlling different squadrons and finally having enough confidence in these subordinates to actually act upon the orders as originally intended. Clearly, communications must have been a key issue here, and although they were undoubtedly a major source of headaches for the Romans - as they were to be for navies right up to the present day - they apparently found ways to get them working to some degree.

¹ The recent Blackwell companion to the Roman army (Erdkamp (2007)) can serve as an excellent example, as it devotes a mere 17 pages to the navy (Saddington (2007)). Incidentally, this is by no means a new phenomenon - already Kromayer and Veith in their seminal study on ancient military history devoted more than 350 pages to the history of the Roman army (Kromayer/Veith (1928): 251-609) while leaving less than 20 for Roman naval history (Kromayer/Veith (1928): 609-626).

² Palmer (2005), 19.

³ Palmer (2005), 22: "Navies ... usually operated as flanking forces for the armies to which they were attached".

⁴ The battle of Ecnomus for example took place in an area of several dozens of square miles.

It has to be admitted that the available evidence on Roman ship-to-ship communication is abysmally poor.⁵ It is usually suggested that either flags or acoustic signals were used, but neither is there any hard evidence supporting this, nor are the practical implications sufficiently explained - in the noisy environment of a naval battle, acoustic signals are useless for signalling over anything but the shortest distances, while flags are also of only limited value for long-distance communication unless some artificial support to the eyes is available. The only thing that can be stated with some confidence based on the extant evidence that is the Romans somehow must have mastered communication over a longer distance - unfortunately, it is not known how. This paper will therefore take a small number of examples from Roman naval history, look at these engagements not so much from a technological point of view but from a command and control perspective and try to explore the challenges that presented themselves to the Romans.

II. Rome against Carthage

Although the First Punic War is often seen as the beginning of Roman sea power, the Romans did already have a fleet before that conflict.⁶ In these early days the Romans mainly relied on the knowledge, manpower and shipping assets of their allies. The communities providing these naval services were presumably mainly Greek ones and called *socii navales* - naval allies. Compared to these rather modest beginnings the First Punic War then indeed was a considerable step upwards in the employment of naval power. With Rome and Carthage separated by the sea and Sicily, the main theatre for land operations, only accessible by sea for both opponents, naval power was set to play a crucial role in the conflict. The war not only saw both sides undertaking large-scale operations on a strategic level; enormous amounts of manpower, materiel and not the least money were poured into the construction of large fleets. Indeed, going by the vast numbers of naval personnel involved, the First Punic War probably has to rank among the largest naval conflicts in history at all.⁷

Initially the Romans waged quite a successful campaign in Sicily without employing naval forces on a larger scale.⁸ In 261 however they finally decided that there was the need for a substantial naval force. The reason for this change of strategy lay in a redefinition of the overall objective of the war; after three years of operations resulting in a firm foothold on the island the Romans now set their eyes on capturing the whole of Sicily.⁹ Experience had shown however that the Carthaginians due to their control of the sea could both support their main ports and stage landing operations in order to capture coastal cities behind Roman lines. The Romans realized that they needed to control the sea themselves and, even more importantly, had to deny it to the enemy, otherwise the Carthaginian bases in Western Sicily would

⁵ On Roman signalling in general cf. Wooliscroft (2001); on navy signals cf. Riepl (1913), 147-151.

⁶ In 311 the Romans established a squadron of 20 ships under the command of two *duumviri navales*, cf. Liv. 9, 40. In 282 BC Roman warships operated off the coasts of Southern Italy and entered the harbour of Tarentum, violating a treaty in the process and starting events that would eventually see Pyrrhus come to Italy, cf. Dion. Hal. ant. 15,16; App. Samn. 7.

⁷ Though the literature on the Punic wars in general is voluminous, the only major study directly dedicated to the military history of the first Punic war is Lazenby (1996). For a general overview cf. Scullard (1989).

⁸ When consul Appius Claudius crossed to Sicily in 264 BC he employed ships from allied towns, cf. Pol. 1,20. For the first years of the war cf. Lazenby (1996), 43-60.

⁹ Pol. 1,20.

probably be impossible to capture. In other words, the only way to control all of Sicily was to control all of the waters around it. The large Roman fleet was thus not built merely to support army operations or to act as some kind of flank guard in battles near the coast. It was built to fulfil a strategic function - to make effective operations by Roman armies possible in the first place.

Now, how did this first large Roman fleet look like? According to our main authority for the war, Polybius, the Roman warships were modelled after a Carthaginian warship that had been beached during operations in the Strait of Messina.¹⁰ Although Polybius describes the creation of the fleet as another great example of Roman resourcefulness, in fact the *socii navales* mentioned earlier on must have played an important part both in constructing and in actually manning these ships.¹¹ It is important to note that the Romans in having a Carthaginian design copied - probably - by Greek craftsmen put themselves very firmly into a tradition of building and operating warships that was already several centuries old. And it is absolutely implausible that the Romans acquired the technical skills from their Greek allies or in the case of the warship their enemies, but declined to get the operational skills as well. In joining the Hellenistic naval mainstream, so to speak, one has to assume that the Romans adopted the operational trends of the time as well.

After a number of minor operations the Romans in 260 finally decided to seek a major engagement with the Punic fleet in order to cut off enemy communications with Sicily; such a move would have effectively isolated the Carthaginians on the island. When news reached the Romans that the Carthaginian fleet - which originally had been based at Panormus - was at Mylae plundering the fields and burning the villages there, they immediately set out to confront the enemy.¹² It is actually quite likely that the Carthaginians, aware of the existence and impending arrival of the Roman fleet, deliberately decided to draw the Romans out to battle off Mylae themselves as they were confident of their superiority at sea.

The resulting battle of Mylae is often seen as a prime example for the backwardness of Roman naval warfare. While the Carthaginians may at least have tried to use moderately elaborate ramming tactics, the Romans relied totally on the *corvus* in turning the engagement into a gigantic boarding battle - "land warfare afloat" par excellence. However, there are two important reservations: on the one hand Polybius describes the battle as being won by the Romans due to the employment of the *corvus*, that very piece of equipment he uses to show Roman ingenuity and resourcefulness. One might well ask whether the paramount importance ascribed to this device is actually more of a literary ploy than an actual fact. On the other hand, even if the *corvus* was of such paramount importance, and if it really allowed the Romans to put their expertise in land warfare to good use at sea, then this only means that on a tactical level complicated manoeuvres did not play an important role. But behind the ship-to-ship action stood not only a general strategic decision - to go out and confront the Carthaginian fleet - but also at least some operational planning; the Romans must

¹⁰ Pol. 1,20.

¹¹ On the problem of who manned these ships cf. Lazenby (1996), 65sq., Walbank (1957), 62sq. and 66sq. and Thiel (1954), 60-62. The famous *corvus*, a massive piece of engineering allowing enemy ships to be grappled and boarded and with which all the big Roman ships initially were fitted, most probably was a Greek invention as well, cf. Wallinga (1956), 76sq.; it has been suggested that it was the brainchild either of Archimedes himself or of one of his pupils, cf. Thiel (1954), 183.

¹² Pol. 1,23.

have had some intelligence about the size of the Carthaginian fleet and its whereabouts and reacted after getting news about its foray into the region of Mylae. Taking into account that they had a new and untried fleet equipped with something that probably had never been tested in battle before it is unthinkable that they did not prepare at least some rudimentary plans - based on the capabilities and limitations of the *corvus* - before actually entering the battle.

Turning back to the actual battle the Romans, who enjoyed a small numerical superiority,¹³ formed either a single line or perhaps a crescent-type formation, staying fairly closely together. The Carthaginian fleet on the other hand seems to have been divided into two contingents, the front one of 30 ships charging towards the Roman line. All these ships were captured by the Romans so that when the Carthaginian rear finally joined the battle it was at a distinct numerical disadvantage. After losing around 20 more ships, the Carthaginians broke the engagement and retreated.¹⁴ Not much is known about what the Romans actually did during the battle - apart from staying in place and boarding one Carthaginian ship after another -, but it is interesting to note that the Carthaginians actually managed to break off and retreat. The admiral commanding the Carthaginian fleet must not only have had the means to get a decent impression of what went on - or rather wrong - on the battlefield; he also needed to have access to signalling facilities that - though most probably rudimentary - must have been sufficient to communicate simple orders - like "run".

The Romans on the other hand did not manage to follow up their victory, something that is usually ascribed to the Carthaginian ships being more nimble and considerably faster. Indeed, one would imagine that having a huge drawing-bridge like contraption squarely on the bow could have adverse effects both on speed and on sea-keeping. During the battle however the Roman ships apparently tried with great success to manoeuvre in such a way that they could always turn their *corvus* towards the enemy. Of course, on the face of it this is the obvious thing to do, but it comes with an important consequence: the captains of the Roman warships must have been trained in some way or another not only to make the best use of the *corvus*, but also how to do this within the context of a fleet engagement - it becomes clear from the account of the battle that the Roman line was never totally dissolved. Apart from the existence of some kind of pre-planning - probably in the form of general fighting instructions on the use of the *corvus* - one would also assume that the Roman admiral tried to concentrate on more than only how his own ship fared in the battle.

Taking this all together what can be said about this first big naval engagement in Roman history? It was the result of operational planning on a strategic level that both on the Roman and on the Carthaginian side succeeded insofar as the battle actually took place. On a tactical level it was quite a simple affair, but even so it still was a fleet action, not merely a large number of individual ship-to-ship engagements; both commanders clearly retained some kind of control over their forces even throughout the action.

¹³ Pol. 1,23 gives 130 ships to the Carthaginians. The Romans probably did not have as many heavy ships, but perhaps had more smaller ships, cf. Lazenby (1996), 70sq.

¹⁴ According to Pol. 1,23, the Carthaginians lost 50 ships; it is not totally clear, however, whether that includes the 30 ships lost in the opening phase of the battle; cf. Lazenby (1996), 71sq.

In 260 the Romans had made the strategic decision to seek out the Carthaginian fleet in order to destroy it, thereby gaining control over the seas around Sicily.¹⁵ Even though they managed to win the battle of Mylae, they failed in their overall objective, as the waters around Sicily remained contested. The following years saw a decline in fleet activity on both sides, but four years later the Romans resumed operations on a scale unseen before. For the campaigning season of 256 BC the Romans planned to take the war to Africa in order to strike at one of the main sources of income for Carthage - tributes and trade revenues from North Africa - and to threaten the city itself.¹⁶ A large fleet was drawn together on Sicily that was supposed to guard the ships transporting the troops to Africa. The Carthaginians were well aware of the Roman preparations; both the Carthaginians and the Romans must have had intelligence-gathering networks in place in the Greek cities in Sicily. As a consequence, the Carthaginians prepared a large fleet of their own. Under the command of Hamilcar this fleet set sail for Lilybaeum, the main Carthaginian base on Sicily, and from there proceeded towards the Roman fleet, which was gathered off Phintias, a small town near Cape Ecnomus.

For the battle that was to follow the two sides again had clear strategic objectives. However, where in battle of Mylae these had been very similar - defeat the opponent - at Cape Ecnomus they differed considerably from each other. The transports in which the animals and supplies of the invasion force were embarked constituted the most valuable part of the Roman invasion fleet; the soldiers themselves manned the warships. These transports the warships were to guard and to guarantee their safe passage to North Africa; without them, operations in Africa would have been severely hampered. The Carthaginians on the other hand did not need to deliver a crushing defeat to the Roman fleet itself; they only needed to sink the Roman transports in order to frustrate the Roman attempt at carrying the war to Africa.¹⁷ The need to protect the transports effectively made the Romans handing the tactical initiative over to the Carthaginians, even though they were about to assume the strategic offensive.

When the Romans finally set sail, their fleet took on a strong defensive formation with the transports in the centre. The fleet was divided into four squadrons, forming a large triangle; its base was formed by two squadrons, one towing the transports, the other one forming a rear guard. The size of this formation which may have included more than 300 ships has been estimated as having a front of 4000 or more yards and a depth of 2500 or more yards.¹⁸

On the news that the Romans set sail, the Carthaginian fleet headed eastwards. The Carthaginians apparently had some kind of cruise formation which is unknown to us; it has been plausibly suggested that they formed three or four columns.¹⁹ According to

¹⁵ Scullard (1989), 554 pointedly calls the operations on Sicily a "ding-dong struggle".

¹⁶ Pol. 1,26

¹⁷ According to Pol 1, 27 the Carthaginian commanders addressed their soldiers before the battle explicitly pointing out that winning the battle would ensure that the war would remain confined to Sicily. Usually little importance is ascribed to the horse-transports Livy mentions (cf. eg Lazenby (1996), 95), but apart from the mounts of the tiny cavalry force that was part of the invasion army the horse transports most probably also carried transport animals and any kind of heavy baggage that could not be loaded onto warships; generally the logistical tail, so to speak, of a Roman army of perhaps 25,000 men must have been considerable.

¹⁸ Polybius gives 330 ships for the Romans and 350 for the Carthaginians. On the controversy over the numbers Polybius gives cf. Lazenby (1996), 82-84.

¹⁹ Rodgers (1937), 283.

Polybius it was only after realizing the nature of the Roman formation - which incidentally speaks for the quality of his reconnaissance assets - that Hamilcar developed a battle plan;²⁰ and indeed, unless Hamilcar knew about the Roman dispositions beforehand, this is the only thing that really makes sense. According to this plan, the Carthaginian force was to be divided into three columns; the central one, under Hamilcar's own command, was to draw the Roman squadrons which formed the side of the triangle forward in order to create a gap between them and the transports. The other two Carthaginian squadrons were then to outflank the central Roman squadrons and strike at the warships guarding the transports and at the transports themselves.²¹

The plan itself shows the complexity of ancient naval warfare. Eventually it did not work out the way it was thought it would - something that is known to have happened with plans even after the end of antiquity; nevertheless, it not only shows that the Carthaginians had a clear grasp of naval tactics, it also points towards two other important things: One, the Carthaginian admiral must have been confident that - even with his flagship involved in a battle at close quarters - he could still get at least a general idea of what happened in an area of a dozen or more square miles; after all, he needed to know when the gap was suitably large enough to order his flank squadrons to attack. And two, he must have had communication assets at his disposal enabling him to give the signal for attack to his flank squadrons.

Turning to the Roman side one can clearly see that their mastery of naval tactics was in no way inferior to the Carthaginians'. The two squadrons in front of the transports were indeed drawn towards the Carthaginian centre, creating the gap Hamilcar wanted. However, probably for the fear of being encircled, the Romans apparently began to draw the third and fourth squadron outwards to face the Carthaginian flank squadrons. Again this is a highly interesting development - what happened was nothing less than the Roman consuls rearranging their formation in reaction to the dispositions of the enemy. Obviously, just like Hamilcar, they must have been able to get a decent picture about what went on in front of them in the first place, and they must have had the ability to communicate this picture as well as orders related to it to their rear squadrons, which then acted accordingly.

The battle itself turned out to be a long and bitter engagement. The Carthaginian centre succeeded in drawing the two Roman squadrons away from the transports. The squadron towing these was then attacked by the Carthaginian flank squadrons which caused the Romans to throw their rear guard into battle. The Carthaginians seem to have been on the point of achieving their main objective, as they drove the third squadron close to the shore, but after hours of heavy fighting the Carthaginian centre finally had to give way, just in time to allow the two Roman squadrons it had engaged to turn around and attack the Carthaginian flank squadrons from behind. These, now heavily outnumbered, were almost wiped out completely. The day ended with a clear Roman victory, the Carthaginians losing close to 100 ships against less than 30 Roman ships.

²⁰ Pol. 1,27.

²¹ This is the only reconstruction of the Carthaginian battle plan that is in accordance with Polybius' account. Others have suggested a Carthaginian attempt at encircling the Romans (eg Thiel (1954) 120sq.), assuming that Polybius misunderstood the Carthaginian intentions as he worked with Roman sources, cf. Tipps (1985).

It seems obvious that the cause for the Carthaginian defeat was the failure of the centre to buy enough time for the flank squadrons to destroy the transports, and already preventing the destruction of their transport fleet must be regarded as a victory for the Romans. The Roman consuls then obviously had enough sense not to try to follow up the success of their own squadrons but to go back instead and to assist their rear squadrons. Again they must have had a pretty clear idea about what happened on the battlefield, which speaks for a considerable amount of situational awareness on the side of the Roman commanders and for their ability to communicate fairly quickly - they must have been able to collect their squadrons, bring them into battle formation again and lead them back towards the threatened transports.

In all, the battle of Cape Ecnomus is certainly one of the most fascinating naval engagements in antiquity, as it shows two naval forces apparently operating at the peak of their efficiency. On both sides commanders were able to get a general picture of enemy dispositions and enemy actions, and on both sides they were able to direct large squadrons of ships within a fairly wide area.

III. Rome in the Eastern Mediterranean

Leaving the western Mediterranean and the struggle between Rome and Carthage it is instructive to turn now to the eastern Mediterranean, where Romans were confronted with - and found allies in - communities having a naval tradition as long as that of Carthage.

In the aftermath of the last Macedonian war the Romans were faced with the expansive policy of the Seleucid king Antiochus the Great who from 196 onwards tried to regain former Ptolemaic cities in Asia minor as well as getting a foothold in Europe. The conflict soon escalated into the so-called Syrian war (192 BC-188 BC), and naval warfare in the Eastern Mediterranean had an important part in it.²² Here the Romans had a formidable ally in the Rhodians, who not only were expert seamen, but also had at least some of their ships equipped with fire pots, said to have been a Rhodian invention and at that time by all accounts a brand new weapon in the naval arsenal.²³

The Syrian war saw several large-scale engagements; in this context, the battle of Myonessus of 190 BC is of particular interest. At that time the war had already gone badly for Antiochus, who, having had his attempts at getting a firm foothold in Europe frustrated, now faced a Roman invasion into Asia Minor. In 190 BC his fleet which was based at Ephesus, was the only major asset left to him that was theoretically capable of preventing such a Roman incursion. In a move perhaps comparable to that of the Carthaginians in 260, he attacked a small coastal town to the north of Ephesus which was known to have good relations to Rome, hoping that this would draw out the main Roman fleet which was based at Samos where it had effectively blockaded the Antiochene fleet.

The Romans did indeed react in the way Antiochus had hoped, moving first towards Teos in order to gather supplies. There the Seleukid commander Polyxenidas had

²² On the Syrian war in general cf. Errington (1989), 274-289.

²³ Pol. 21, 7. Cf. Casson (1971), 123.

hoped to trap the Roman fleet inside the harbour of Geraesticum, a bay completely surrounded by rocky promontories that did not allow more than two ships coming out of it at the same time.²⁴ Fortunately for the Romans the commander of their allied Rhodian squadron had pointed out the dangers of Geraesticum and recommended another harbour instead.²⁵ Deprived of the opportunity to destroy the Roman fleet, Polyxenidas then offered battle on the next day off the cape of Myonessus.

Polyxenidas could field a force of around 90 heavy ships, whereas the Romans and Rhodians had only 80 ships between them, around 60 heavy Roman ships, the rest Rhodian ones of lighter construction.²⁶ Many of the latter armed however were armed with fire pots, making them dangerous opponents. Having a shorter line, the Allied force faced the grave danger of being outflanked by Polyxenidas, and apparently it was exactly that which he had in mind - instead of leading his line from a central position with the van of his fleet, he stayed on the left flank as the opposing forces closed on each other. On seeing this development, Eudamas, the commander of the Rhodian squadron, which seems to have been either near the Roman left flank or to the rear, reacted by moving his ships swiftly to the Roman right, thus preventing Polyxenidas from hitting the Roman ships in the flank.²⁷ The Rhodian manoeuvre is a testimony to the tactical skills of Eudamas and shows once again that it must have been possible to get at least a general idea about enemy dispositions during the initial phases of a battle. Of course, communications were of paramount importance here. Eudamas not only must have conveyed his planned reaction to his own captains, but also to the Roman commander - who might have had an uneasy moment or two at the sight of his allies suddenly leaving their original positions in the face of an enemy superior in numbers.

After heavy fighting the royal fleet gave way first in the centre; Polyxenidas, now himself threatened in the flank by the victorious Romans, then fled the scene, and finally the Antiochene right was the last to break off the engagement.²⁸ In all however it was the manoeuvre of Eudamas that really decided over the outcome of the battle as it denied Polyxenidas the advantage of his numerical superiority and threw the Antiochene left into disarray. As a result, the royal fleet of Antiochus lost a considerable number of ships, while the allied forces lost only three.²⁹ With the defeat at Myonessus, the strategic initiative finally went over to the Romans, who invaded Asia Minor and finally brought Antiochus to battle near Magnesia at the end of the year.

IV. Enemies of the State - the civil wars

The last great fleet action in the Mediterranean belongs into the context of the Roman civil wars after the murder of Caesar. The conflict between Octavian and Marc Antony had escalated into outright war in 32, a war in which, since Antony was in the East and had to invade Italy by sea, naval forces had to play an important part. Quite

²⁴ Liv. 37, 27sq. The longest account of the battle is preserved in Livy.

²⁵ Liv. 37,28.

²⁶ App. Syr. 27.

²⁷ Liv. 37,29; cf. App. Syr. 27.

²⁸ Liv. 37,30.

²⁹ According to Liv. 37,30 the Antiochene fleet lost 42 ships; App. Syr. 27 gives 29 ships, adding that 13 were captured with their crew.

fittingly, the battle which already Octavian himself saw as the decisive action in the conflict was a naval one, the famous battle of Actium.³⁰

Antony had already in 32 collected troops and warships in Greece for an invasion of Italy, but had suffered both from naval raids against his lines of communication by Agrippa, Octavian's most important military commander, and from diseases cutting considerably into the manpower of his fleet.³¹ Antony's forces were finally blockaded at a position near the gulf of Ambracia. With his fleet considerably weakened, he decided in September 31 to try to fight his way out of the blockade and to escape with his most important ally Cleopatra and the money he had collected for bankrolling his war effort in Greece and Italy.

The battle of Actium must rank among the most famous naval engagements in antiquity, second perhaps only to Salamis. Interestingly, it is also one that is very often poorly understood, which is due to the quality, or rather lack thereof, of the available sources on the battle. Plutarch paints a vivid picture of Antony bravely attempting to fight his way through the blockade in order to get his fleet and his soldiers to the East, either to Egypt or to Syria. Outnumbered - he fielded probably around 230 ships against close to 400 on Octavian's side, though many of the latter were smaller warships - he took on Octavian's fleet only to be betrayed by Cleopatra's contingent of 60odd ships which did not take part in the battle and instead turned away and retreated to the open sea. Thus left with no other option than to jump off his flagship, head for a smaller vessel and follow Cleopatra at speed, Antony left his men and his fleet at the mercy of Agrippa.³²

Already at the end of the 19th century it was shown that this view of the battle and the desertion of Cleopatra in particular were an invention most probably by Plutarch.³³ Recent research has shown that Antony actually entered the battle with a plan that not only made sense but also worked to some extent.³⁴ He was faced with a grave problem: losing either Cleopatra or his war chest would have severely hampered any attempt at prolonging the war by going to the East, and losing his life in the battle would quite naturally have made any kind of settlement with Octavian impossible. Agrippa on the other hand could gain from a success, but losing the engagement would simply have meant losing one battle in the war against Antony. In other words, Agrippa had a battle to lose, but Antony had everything to lose.

Consequently, getting Cleopatra and the coffers containing the money collected in Greece to safety must have been very high on Antony's agenda. Cleopatra's importance in this context probably had little to do with Antony's romantic attachment to her but rather with the simple fact that losing her meant losing control over Egypt and its resources. Accordingly, getting Cleopatra's fleet out of Actium was the key to success for Antony at Actium. The whole point of the fleet action was therefore not to actually win the battle, something that Antony probably thought to be impossible anyway. It was to create a diversion to allow Cleopatra's ships to slip through the blockade, set sail and make for the open sea. The prevailing winds in this area made it

³⁰ Aug. Anc. 25.

³¹ DC 50,12 and 14.

³² Plut. Ant. 64-68.

³³ Cf. Kromayer (1899).

³⁴ Laspe (2007). On the battle of Actium cf. also Carter (1970).

next to impossible to sail straight out of the bay, so Antony had to engage the blockade fleet, prevent it from interfering with Cleopatra's ships and open a way for these to row to a position from which they could set sail and escape. While it is not clear when Antony decided on this plan he certainly found his decision vindicated when he realized that Agrippa's ships had left their masts and sails ashore, thus making it easy for Cleopatra's ships to escape once they had reached the point from which they could set sail.³⁵

When the battle unfolded on the 2nd of September 31, Antony's plan worked almost exactly as intended. The bulk of his fleet engaged Agrippa's numerically superior force, creating the diversion needed to allow at least some of Cleopatra's and his own ships to escape to safety.³⁶ He effectively traded most of his naval forces - as well as the land forces embarked in his ships - for the escape of those of his assets that strategically were the most important to him. It was a gamble, a bold and admittedly rather ruthless one, but it played out. In the end Antony turned out to be unable to turn the tide of the war from Egypt, but on that September day he succeeded in winning time for his cause even though he lost the battle.

From a tactical point of view the battle does not seem to be interesting; Antony's ships engaged in direct, head-on close combat with that of Agrippa, trying to engage in boarding action, something that particularly Agrippa's lighter ships tried to avoid, harassing Antony's larger ships with missiles and artillery instead. Usually the battle is depicted as some kind of gigantic *melée*. However, while there was certainly some element of chaos to it - Antony might even have aimed at creating a certain amount of it to cover his real intentions - Antony's forces must at least have tried to prevent their own line from breaking. Looking closer at the Egyptian ships reveals that Antony's plan actually put a lot of responsibility on them; they had to estimate when the opportunity to row out and set sail presented itself in the midst of a huge naval battle, and they had to find the right point from which they could safely set sail. This required more than only a fair knowledge of the weather and the waters off Actium; they also had to have the ability to get a decent picture of the event of the battle. Again, communications must have been of paramount importance here; presumably, Antony would have sent updates perhaps by boat back to the Egyptian squadron and given a signal at some point during the battle.

The action off Actium, while not comparable in complexity to fleet actions like that off Cape Ecnomus, shows that not only the overall handling of fleets and squadrons was something the Romans were perfectly capable of, but also that on a lower level individual ship captains sometimes were required to get a decent picture of what happened around them during a fleet action.

V. On distant waters - Roman naval forces in North-Western Europe

Finally it is quite instructive to turn away from the Mediterranean to the more distant waters of the Channel. In Caesar's first expedition to Britain in 55 BC it is possible to observe what is by all accounts the best-documented example for an amphibious assault from antiquity.³⁷

³⁵ Cf. Laspe (2007), 513sq.

³⁶ Carter (1970), 264 estimates that Antony managed to extricate 70 or 80 ships in all.

One indispensable part of the preparations of an amphibious operation is gathering intelligence both about the enemy and about suitable landing grounds. And while already Caesar's campaign against the Veneti in 56 BC, in which naval forces played a prominent role,³⁸ must have seen reconnaissance operations of one kind or another, the first fact-finding mission of which the surviving sources allow a fairly clear picture is indeed set into the context of Caesar's first expedition to Britain during the following year. Having had acquired enough information to get a general idea about the political situation in the southern part of Britain during the preparation for the expedition, Caesar sent one of his military tribunes, a man called Caius Volusenus Quadratus, who had already distinguished himself during the fighting around Octodurus in 57 BC,³⁹ away in a small, fast ship on a scouting mission only days before the invasion fleet set sail. His mission was simple yet important - he had to find suitable landing beaches for Caesar's forces. Volusenus spent four days at sea without making landfall, probably circumnavigating the Isle of Thanet in the process; perhaps he penetrated even further up the coast towards the Isle of Sheppey.

In his account of the first expedition Caesar puts particular stress on Volusenus keeping away from the land;⁴⁰ these remarks have been variously seen as being critical of Volusenus' decision to do so. Yet there is nothing in the text actually justifying such an interpretation. In fact, that Volusenus avoided making landfall during these four days clearly shows that he - and Caesar, one may safely assume - had a good understanding of how to run such a reconnaissance operation. In the run-up to the invasion, and particularly as the campaigning season was already almost over, the information he collected on suitable landing beaches was much more valuable than anything he could gain from spending some time ashore, particularly as that would have brought with it the risk of being rendered incapable of returning the information by some unfriendly Briton. Incidentally, Caesar seems to have been rather satisfied with the way Volusenus had undertaken his mission as the latter continued to serve on special mission for Caesar.⁴¹

Having arrived off the coast of Kent near Walmer Caesar was confronted with the problem that the higher parts of the beach were occupied by enemy forces trying to prevent the Romans from landing.⁴² It is highly likely that such a situation featured nowhere in the Roman military handbooks at the time; it is certainly in Caesar's account that it is possible for the first time in Roman history to observe an actual amphibious assault - usually, when hauling troops across the sea towards an enemy shore, the operational pattern was disembarkation, establishment of a camp and - only then - setting out to confront the enemy if that enemy was indeed bent on being confronted. The Britons however refused to play by the Roman book and tried to fight the invaders on the beach instead. This resulted in the legionaries having to wade

³⁷ For some reasons this has not prevented the invasions of Caesar from attracting quite a lot of criticism. Fuller (1965), 315, to give just one example, called them "amateurish to the extreme". For older examples cf. Wintjes (2007), 277.

³⁸ Caes. Gall. 3,7-14 describes the campaign against the Veneti, which culminated in a sea battle (Caes. Gall. 3,14sq.). Caesar had a fleet built on the Loire for which crews were drawn together from as far as the southern coast of Gaul (Caes. Gall. 3,9); this fleet must have been quite substantial, as the Veneti were able to muster more than 200 ships (Caes. Gall. 3,14).

³⁹ Caes. Gall. 4,21. On Volusenus at Octodurus cf. Caes. Gall. 3,5.

⁴⁰ Caes. Gall. 4,21.

⁴¹ Caes. Gall. 8,23. Caes. Civ. 2, 147 might even hint at Volusenus entering Caesar's senate.

⁴² Caes. Gall. 4,24.

knee-deep in water, trying to battle their way onto firmer ground, a difficult process during which unit cohesion was apparently largely lost.⁴³

According to Caesar's account two things then won the day for the Romans: a display of true Roman virtue and bravery and the capability of the Roman war machine to coordinate land and naval forces. As for the former, it was - according to Caesar - mainly due to the eagle bearer of his crack 10th legion that those soldiers still hesitating to join the fight jumped off the ships and eventually beat the Britons back up the beach.⁴⁴ Much more interesting is how Caesar himself reacted to the unfolding crisis. Among his invasion fleet were shallow-draught warships that he ordered to go closer inshore into a position flanking the enemy troops in order to provide direct fire support, both with archers or soldiers throwing javelins and with on-board artillery hammering the enemy. Particularly the latter then proved to be highly successful in clearing the higher ground atop the beach off enemy warriors.⁴⁵

This is remarkable for a number of reasons. First of all, it is once again proof for the existence of command and communication structures that in this case must have worked exceptionally well. It is clear that Caesar must have been able to get at least a good general idea about what happened on the beach in the first place. Regardless of whether his flagship was positioned near the beach allowing an unobstructed view of the landing or whether it was located further behind among those warships not directly involved in offloading troops, there must have been a constant stream of information reaching him. Then it was apparently possible for him to give specific orders to a particular element of his fleet - the ships equipped with artillery. These orders must have been directly related to what happened on the beach, their execution - which was then somehow relayed back to Caesar - depending on the commanders having more or less the same general picture of the unfolding events as Caesar had. At first this may all seem banal, but as the warships were about to use artillery at ranges probably well in excess of 200 yards, information regarding the whereabouts of friendly and enemy troops was vital to prevent casualties among the Roman troops. As the invasion fleet numbered perhaps more than 200 ships such a working exchange of information is in itself no mean achievement.

In all, one can say that the events around Caesar's first expedition in 55 BC posed a considerable challenge. And even though compared to his second expedition or to the Claudian invasion in AD 43, the first landing was much more of an improvised operation, it was already a highly complex affair, its ultimate success depending both on Caesar's personal ability to coordinate land and ground forces and on the existence of structures allowing him to exert command over them in the first place.

⁴³ Caes. Gall. 4,26.

⁴⁴ Caes. Gall. 4,25. Needless to say, the historicity of this short episode, which so obviously serves as an example of true Roman *virtus*, is debatable

⁴⁵ Caes. Gall. 4,25,2.

VI. Conclusion

The present paper could only scratch the very surface of the overall topic of Roman command at sea. Coming to a conclusion, there are five points worth to be mentioned again.

1) First of all, the Romans were aware of the strategic importance of the sea right from the beginning of their own "naval history"; concepts of what nowadays is called sea control and sea denial were already familiar to them.

2) The Romans were then able to make strategic decisions which resulted in naval forces being employed in the overall framework of grand designs like their expedition to Africa during the First Punic War.

3) These the Romans in turned managed to turn on an operational level into suitable battle plans. They did rely to a great extent on preset plans, something that is neither particularly primitive nor an ancient peculiarity - in fact, the somewhat unhealthy attractiveness of preset plans seems to be universal to military history.

4) The fourth important point is that the Romans on a tactical level managed to get a general picture of the action, coordinate different squadrons, react to the dispositions of the enemy and exploit sudden turns for the better. Of course the picture presented above is slightly distorted as it only gives examples where the Romans actually were successful in reacting; there are at least as many examples where our ancient sources explicitly tell us that things went awry precisely because the Romans failed to exert proper control over their forces.

5) The examples of the battle of Ecnomus and Caesar's landing in Britain show that Roman naval operations were every bit as complex and challenging as those of the 16th and 17th century.

The Romans were up to these challenges, even though - turning back to the beginning of the paper and the remarks about Roman signalling - it is currently not possible to precisely describe how they managed to do it.

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Command and Communication in Old Regime Europe, 1688-1789

Christopher Duffy

When historians get together nowadays they are fond of talking about 'long' and 'short' centuries, a process that can expand or contract a targeted period by forty years. One century that is a proper old-fashioned century, as making sense in its own terms, and being pretty well a genuine century, is the military century that extended between the outbreak of the War of the League of Augsburg in 1688, and the coming of the French Revolution in 1789.

Who, first of all, was in charge over this period? We encounter celebrated soldier-kings of the stature of Peter I of Russia, Charles XII of Sweden, or Frederick of Prussia, who combined military and political authority in a way that greatly simplified the issues of military and political communication at the highest level. Frederick's friend d'Argens happened to encounter Old Fritz at Leipzig in 1760, feeding his dogs, and it dawned on him that the king was planning his next campaign. More frequently, royal authority had to compromise with powerful established interests, and these less-than-absolute monarchs had to work in concert with shifting coalitions of ministers, among whom there might emerge a particular favourite, or an occasional statesman of the stature of William Pitt the Elder or Chancellor Kaunitz of Austria. Party politics might also make its influence felt, and here it is worth mentioning that a number of British military and naval officers themselves had seats at Westminster.

Next, this military century was the age of the great standing armies. In the 1690s an unprecedented number of men came under arms, attaining in France, for instance, no less than 440,000 troops, and figures of that order were not to be exceeded in a regular way for about a century. Most of the men were paid off with the coming of peace, but a permanent cadre remained, and the states now had the material upon which they could think of effecting improvements over the long term. The colonels began to lose the autonomy over their regiments, and it was possible to standardise uniforms, weapons and tactics, and to provide material support in the shape of barracks, depots and arsenals. Military specialists began to claim professional status, beginning with engineers and gunners, and proceeding to staff officers towards the end of our period.

The character of change was coloured strongly by prevailing ways of thinking. The tide of the Enlightenment was gathering strength. It was the notion that the natural world and human affairs were capable of being explored, categorised and perhaps exploited in a rational way. Its influence was felt in fields as diverse as philosophy, industry and the management of state affairs, and in the military world the spirit of the Enlightenment led to the conviction that command was not just a matter of inherent qualities, but was something that had to be studied and developed. State and private military academies began to answer the need, as did a proliferation in military literature. Troops were now marching in 'cadenced' step, unlike modern tourists shuffling along after being disgorged from a bus, and commanders could calculate time and distance more precisely than had been possible in earlier centuries.

From the early 1760s the rigorous and rather self-important Enlightenment had to live alongside an unruly younger brother in the shape of the emerging Romantic movement, as something that answered mankind's craving for something that stirred the innards and gizzards as well as engaging the brain. Nobody understood this better than Napoleon Bonaparte, who was at the same time the supreme rationalist and the supreme military romantic, and whose style of military communication was coloured by his reading of the epic 'Ossian' poems of James MacPherson. Taken together, the emergence of the standing armies, the location of political and military authority and the evolving spirit of the times all helped to determine the character of command and communication in the military century.

The seasonal cycle of campaigning made the winter months available to monarchs and ministers to weigh up the state of war and politics, and for the emerging plans to be tossed to and fro between allies, usually through the medium of the civil envoys at the courts. Concert became much more difficult once the campaigning season had begun, but in their Seven Years War against Prussia the French, Austrian, Russian and Swedish allies made formal provision for their military deputies to be present at the various headquarters, with a seat and a voice at the councils of war. These deputies were astute and high-ranking officers who were well informed of their masters' policies and interests, and they could speak with authority without having to refer constantly back to their distant courts.

When allied armies were operating together, the success or otherwise of communication depended very much on how the two commanders got on together. The brotherhood in arms of Marlborough and Prince Eugene of Savoy has been described in memorable terms by Sir Winston Churchill, and it was being upheld as a model long after their time. Conversely the relations between Russian and Austrian generals were almost invariably poisonous.

In terms of speed, the communications between governments and theatres of war was at the mercy of physical constraints. In the War of the Austrian Succession and the Seven Years War an exchange of considered correspondence between Versailles and Vienna and the principal armies could normally be effected within ten days, which was a comfortable interval. By way of contrast a message might take months to cross the Atlantic in a single direction, and yet it was not impossible to concert operations on a global scale, as witness Colonel Draper's expedition against Manila in 1762, which was mounted from India on instructions from London. To a perhaps surprising degree ministers and commanders derived their knowledge of the latest European and world events from open sources, of which the Dutch newspapers and the Austrian official gazette, the *Wiener Zeitung*, occupied pride of place, and were the equivalents of CNN or BBC World. Great store was set by influencing public opinion, for reasons that are not entirely clear. The *Wiener Zeitung* was recognised as being both accurate and impartial, but it was common practice to plant stories in the other papers.

The relationship between war and politics was well understood amongst the thinking military well before Clausewitz penned his most famous maxim. We find the Russian field marshal Rumyantsev explaining in 1771 that *'you put yourself at a disadvantage if you just see what is in front of your eyes. It would be all too easy for me to go astray if I left the political dimension out of account. After all, that is what lays down*

*the guidelines for the military side*⁴⁶. There are many other expressions in the same vein. The search for political guidance was one of the reasons why the correspondence from generals to ministers usually exceeded that of ministers to generals. So well and good, but when the guidance duly appeared it was likely to be taken as interference.

Then there was the need to safeguard one's political back by forging a personal alliance with a figure of weight at court or in the ministry. Marlborough had his Duchess Anne. In the Seven Years War the Austrian lieutenant general Loudon established his personal line of communication with the Chancellor Kaunitz. The Austrian commander in chief at that time, Field Marshal Daun, went so far as to marry the Empress Maria Theresa's old nanny, the still-influential Countess Fuchs, nicknamed 'Die Fuchsin', 'The Vixen'. The match had occasioned some surprise, as both parties were reckoned to be well beyond the age of romance. For Russian generals, a good political contact might spell the difference between life and death.

Above and beyond the search for guidance and protection, the generals' compulsion to correspond with their distant allies indicates an urge to be rescued from the isolation of command. The letters that Marshal Soubise penned to the war minister Paulmy in 1757 sometimes extended to twelve pages, all in his own hand, and took up a significant part of his working day.

An historic personal style of command in the field survived pretty well intact until later 1750s. Every responsible general carried a great deal in his head or within his immediate reach. He would have invested years of effort into building up his sources of intelligence and his portfolios of maps. Indeed his contacts and his knowledge of theatres of war might well determine his selection for a particular command. What Frederick described as 'the detail of the army', the business of returns, allocation of duties, the preparation of reviews and so on, was the concern of the various grades of adjutants and the brigade majors. Every evening these people, other affected officers and representatives of every regiment of the army attended the ceremony of the Parole, which was the issue of the password for the next twenty-four hours, and the best opportunity for the commanding officer to make known his displeasures and his particular 'good idea' of the time.

Clustered around the commander was a group of aides de camp, an aide de camp being defined as '*an officer who serves a general, to carry his orders wherever is necessary*'⁴⁷. He was also by tradition young, pretty, a fast rider and, crucially, well connected, for the appointment of an ADC was an accepted means of winning friends or paying off favours. High birth was no guarantee of intelligence or even common sense, and ADCs had a way of killing themselves off by throwing themselves into interesting combats they encountered on their rides, or by duelling with idiots of their own kind. Behind the headquarters of de Saxe in the 1740s there was sometimes to be seen a heap of dead young officers, who had been dragged there to be out of the way. A person of growing but still ill-defined importance was the quartermaster general, or chief of staff, who had nothing directly to do with stores, but whose name derived from the lowly officers who went ahead of the headquarters and claimed billets for the

⁴⁶ Rumyantsev to N.I. Panin, 2 February 1771, *P.A. Rumyantsev, Dokumenty*, 3 vols, Moscow 1953-9, II, 226

⁴⁷ d'Authville, *Essai sur la cavallerie tant ancienne que modern*, Paris 1756, 6

generals by chalking their names on the doors. By a kind of mission creep the quartermaster general and his personnel then became responsible for selecting camp sites and determining their layout, and finally for arranging the march of the army from one camp to another, and for keeping it supplied throughout. The Marshal de Puysegur (1656-1743) became *maréchal general des logis* in the 1690s. He strove to enhance both the standards and status of this post, and his practice became known through the important and posthumous *L'art de la guerre par principes et par regles*, 2 vols, Paris 1749. The Marshal de Maillebois was counted as another pioneer, though he was a notorious drunk, and delegated most of his work to his military secretary John William O'Sullivan. Colonel O'Sullivan served as chief of staff to Bonnie Prince Charlie's Jacobite army in 1745 and 1746, and it is probably significant that he organised that body into permanent Highland and Lowland divisions, to take account of the differing capabilities of the troops, which must make his standing divisions among the first, if not the very first, of the kind.

The famous Duke of Marlborough had a gift for getting the best out of people, and the work of his William Cadogan corresponds recognisably with that of a chief of staff. However the relationship between commander and chief of staff remained for decades personal rather than institutional and it is difficult to recognise anyone of comparable stature in the reign of Frederick the Great. His longest-serving chief of staff was the exceedingly primitive 'Wilhelmi' Anhalt, who like Frederick himself, and the king's cronies Winterfeldt and Fouque, had been bred up in the harsh, absolutist school of Prince Leopold of Anhalt-Dessau, the 'Old Dessauer', who had died in 1747. Delegation was alien to men of that kind.

Frederick explored the historic personal style of communication and command to its limit, and a little way beyond. Hitherto there had been nothing for generals, as generals, to do in peacetime, but the king changed all that. In 1748 he set them to studying his *Principes généraux de la guerre*, which were issued to them under conditions of the strictest secrecy. At the same time he put them through their paces in the provincial manoeuvres, which grew in scale and scope. His intention was inculcate a number of basic Standard Operating Procedures (SOPs), which became so familiar that few words would be enough to communicate his intentions on a day of battle. The most important of the manoeuvres was held in Silesia, which happened to be within short striking distance of the Austrian provinces of Bohemia and Moravia, and gave him the opportunity to snatch a perhaps decisive advantage before winter closed down operations. The chosen season was autumn, by when the harvest was safely gathered in and the fields were clear. The Austrians responded by holding comparable manoeuvres in Bohemia from 1752, and in such a way autumn became a time of tension in Europe well into the twentieth century.

How did the Frederician style of command stand up in combat? His basic ploy was to march his army in a unitary mass to a position from where it could strike at the enemy in flank or rear. He took in the scene from some convenient viewpoint, and then called together his senior officers to hear his orders. The briefing was entirely personal, and his thinking was so well understood that the generals were on their way back to their commands after a few minutes.

These methods brought Frederick victory again and again in the Silesian Wars of the 1740s, and again and again in the first two years of the Seven Years War. The one

exception was at Kolin on 18 June 1757, which happened to be the stamping ground of the Austrians in their manoeuvres before the war. Kolin could be written off as an exception, and Frederick proceeded to beat the Austrians in brilliant style at Leuthen in December. From 1758 onwards the old magic lost its potency, and Frederick experienced outright defeats, or won victories that were bought at an intolerably high price. What had been going wrong?

For a start, Frederick's proceedings were wasteful of time. His reconnaissances and briefings were short, as we have seen, but they ate into the morning, and gave the increasingly wary enemy the opportunity to take countermeasures. The lengthy flank march would then have to cover several miles, a guarantee that the action would open when the day was already advanced, and his troops tired and thirsty.

More fundamentally Frederick was coming up against some limitations inherent in the historical personal style of communication and command. A general on horseback certainly had useful facilities of mobility and height, but he like every other individual found it difficult to establish what exactly was going on. Sound carried in a fitful way, and it was easy to be baffled by mist, rainstorms, smoke, broken ground or simply by bad eyesight.

The expression of military genius was also impeded by the manner in which armies were conventionally drawn up for combat. The horizontal arrangement was that of a strong first line, a somewhat weaker second line, and a small third line or reserve. The corresponding vertical structure was represented by a left wing and a right wing of infantry, with a wing of cavalry stationed on either flank of the foot soldiers. We might expect to find a full general commanding an entire line, or one of the wings of cavalry, lieutenant generals commanding wings within a line, and major generals or (where they existed) brigadier generals commanding brigades of two or three regiments. The relative positions of generals and regiments was determined by medieval notions of precedence and seniority, and the comings and goings of senior officers and regiments kept the whole in a state of constant flux. The periodic Orders of Battle (to be distinguished from orders *for* a particular battle) attempted to set down the arrangements as they existed at particular moments, and were the kind of thing for which a computer programme would be designed today.

There were a number of undesirable consequences. The rigid scheme could be adapted only with difficulty to ground and developments. Thus at Campo Santo in 1743 the Spanish Guards refused to have the Irish regiments of Irlanda and Ultonia moved up to cover their vulnerable right flank, for that was the post of honour reserved for the elite of the army. Then again, no single general would have the same units under his command for any length of time, which made it almost impossible to build up any lasting relationship between commanders and commanded. Finally spirits were in the grip of what we might call the 'linear mentality', in which the highest virtue was to hold your place in the line, secure in the knowledge that the commanders on either flank and to your front and rear would be striving to do exactly the same. The power to influence the course of a battle in a dramatic way was normally confined to the commanders to the wings of cavalry, and to the commander in chief, who admittedly had little control over the army as a whole, but might still have the reserve at his disposal. It is not too much to say that the outcome of most battles hung depended on how you committed the reserve or the wings of cavalry.

States could keep great numbers of troops under arms, but the physical and structural weaknesses of the historic personal style of command and communication limited drastically the number of men who could be kept under effective control on a day of battle. De Saxe put it at 46,000, and Frederick and de Guibert only a little more at 50,000.

It is generally accepted that the tactical origins of Revolutionary and Napoleonic warfare take their origins in the later Seven Years War. By a natural extension the available historiography has become bookish and francophone, though in fact the work of the French pioneers was just an expression of an urge that was altogether more general and diverse.

Through prodigies of effort, Frederick had taken his army into battle as a unitary block. When he attacked the king at Hochkirch, on 14 October 1758, Field Marshal Daun did something radically different, namely to break up his army into a number of self-sufficient divisions, which launched a concentric assault from an arc some six miles in length. The plan was based on lengthy reconnaissances which had been carried out over the previous days, the objectives had been assigned to the divisions through a written *Disposition*, the columns had moved into position overnight, and the attack opened before first light. The break with conventional tactics also embraced the tactical level, for the divisions attacked in line or column according to the nature of the objectives. Frederick was taken completely by surprise, he was driven from his position, and he lost one of his best commanders, Field Marshal Keith.

The scheme had been devised by Lieutenant General Lacy, who had been appointed Quartermaster General on 20 February 1758. He established rules for the transmission of orders and for staff work in general, he recruited able young officers, inculcated them with his principles, and detached them as staff officers to the lieutenant generals. He set up units of Staff Jaeger and Staff Dragoons to enable him to carry out close and aggressive reconnaissances, and he created a regiment of Staff Infantry which guarded and policed the transport train, so that it could keep pace with the army.

The effects in the Austrian army were not evident literally overnight, but they made themselves felt within a few weeks, when Daun marched his army across broken country and a swampy plain to relieve the fortress of Olmütz. After the victory at Hochkirch the attack by independent divisions became a staple of Austrian offensive tactics, and enabled them to gobble up an entire Prussian corps at Maxen on 21 November 1759.

It was too good to last. In the enemy army the 'Austrian' grand tactics were taken up enthusiastically by Prince Henry of Prussia, who was the youngest brother of King Frederick, and a man of a very different stamp. Significantly, Prince Henry was the standard bearer of a liberal tradition in the Prussian army, which derived from the late Field Marshal Schwerin. Frederick himself adopted a written *Disposition* for his attack at Torgau in 1760, and an overnight march as well as written orders for divisional attacks helped him to evict Daun from his position at Burkersdorf on 21 July 1762. Prince Henry adopted a full-blown 'Austrian' scheme of attack at Freiberg on 29 October the same year, which proved to be the decisive battle of the war. The Austrians had lost their lead, and not because the Prussians had been catching up. The Austrian transformations had not gone far enough, as Lacy himself was aware, for the

mix of units and commanders was still determined by the old principles, and the prevalence of the 'linear mentality' among the lieutenant generals had denied Field Marshal Daun the victory of annihilation that he had hoped to accomplish at Hochkirch.

In 1758, the year of Hochkirch, Marshal Belle-Isle became the French minister of war, and began to carry through his pet plan of reorganising the army into permanent divisions and brigades. In such a way Marshal Clermont had the authority to rearrange his forces in western Germany in 1760 into standing divisions, two of cavalry and four of infantry. The gains in communication were immediate, for it now required only a single order to get one of these divisions to move off as a formed body.

In 1760 Lieutenant General Lacy was asked for his opinion on the matter. He argued that the regrouping should be extended to the creation of corps of all arms, each standing under the command of a full general. Six corps of this kind would make up an army, and both the corps and their component divisions and brigades would be truly permanent, keeping together both in war and peace. *'Every commander of such a formation would get to know his generals, and these in turn would get to know their officers; thus all the members of the body would become acquainted with one another, and seek to win the others' friendship and trust'*⁴⁸. Lacy did not have the political clout in Vienna to carry his proposals into effect, but it is clear that they were more than forty years ahead of anything into effect on the continent of Europe, or nearly a century if we look the British service considering the way the British army was put together for the campaign in the Crimea.

General peace came to Europe in 1763, and all the ingenious initiatives died away, except for one flame that flickered fitfully in France. The general staffs were disbanded wholesale, and the divisions and the brigades broke apart. The French topographical officer Pierre de Bourcet on his own initiative established a staff school at Grenoble in 1764, and two years later he was able to reconstitute a general staff. One of the issues that preoccupied Bourcet and his fellows at this creative period was how to carry a war into Italy, when France possessed no strategic footholds on the north Italian plain. Geography dictated that the French must organise their forces into divisions, each assigned to one of the available passages of the Alps, and Bourcet bent his efforts towards combining self-sufficiency with coordination, so that all the divisions would arrive simultaneously for concerted action on the theatre of war. Bourcet was striving to effect in the operational sphere what Daun had hoped to accomplish at Hochkirch on the grand tactical level, though it is unlikely that the French were aware of any connection.

Bourcet submitted the fruit of his labours to the war ministry in 1775. The War Minister Saint-Germain was not only unresponsive, but in 1776 proceeded to abolish the general staff outright. However the movement for change was no longer to be denied. The French general staff was reconstituted on a permanent basis in 1783. Years of lively tactical debate culminated in the official *Ordinance* of 1791, and the military legacy of the Old Regime served as an underpinning to the Revolutionary armies' subsequent wars of survival and conquest. The array of bureaucratic and mental furniture could anticipate technical advances in a striking way. Just take the

⁴⁸ Haus-Hof- und Staatsarchiv, Vienna, Kriegsakten 419, *Auszug aus der Beantwortung der dem General Lacy vorgelegten Punkten des gesammten Kriegswesens betreffend*, undated, 1760

French forces in the Netherlands in 1794, who carried out the world's first aerial reconnaissance on 26 June, and on 14 August made the first-ever use of a military telegraph to convey the news of the fall of the fortress of Le Quesnoy to Paris just one hour after the event.

A decade later Napoleon Bonaparte, who was one of the most avid readers of Bourcet, was inspired to develop the miniature armies known as the army corps, which became building blocks of the manoeuvre of Ulm in 1805. In that year it took the Emperor perhaps a dozen key orders to articulate a campaign across half a continent by half a million men, in other words ten times as many troops as had been responsive to command fifty years before. Periodic Bulletins, couched in the style of the Gaelic bard Ossian, reached to every rank of the Grand Army. The structures and the styles of communication in this campaign were recognisably modern, and the American 'Jedi Knights' studied this episode attentively when they conceived the plan for Desert Storm in 1991.

The historical personal style of command had not been abolished, rather that it had been refashioned in such a way as to operate at an altogether more comprehensive level. The experience of our military century suggests that the technical business of military communication does not exist of itself, but is part of a wider process that embraces structures, responsiveness to command, and the modes of thought of the time.

A Practical, Reliable and Safe Means of Communication? The Telephone and the British Army, 1877-1914

Brian Hall

The paper is derived from my ongoing doctoral research at the University of Salford into the processes of command, control and communications (C³) in the BEF during the First World War. At present, we have an abundance of literature on British generalship, strategy and tactics, and numerous detailed accounts of individual battles and campaigns. However, very little research has been done on the mechanisms, structures and techniques that made up the BEF's C³ system between 1914 and 1918. A modern, archival study of this system, which consisted of organisations (in particular, the General Staff and the Signal Service), procedures (the way in which information was processed and distributed) and technical means (how the information was transmitted), will shed significant light on our understanding of command and control on the Western Front.

Throughout the First World War, tenuous communications severely limited the ability of British commanders to exercise efficient command and control once a battle began. In the absence of an efficient, reliable and portable wireless set, it was left to the telephone to provide the primary means of intercommunication. However, although the telephone was to become the chief instrument of generalship on the Western Front, in 1914 it had yet to be considered as a primary method of communication. With this in mind, the paper examines why the telephone had not been fully embraced by the British Army immediately prior to the First World War. In so doing, the paper provides a glimpse into an aspect of the debate concerning the pre-1914 modernisation of the army that historians have largely overlooked and failed to appreciate.

In most respects, the British Army's reaction to the telephone prior to the First World War was not entirely unique. In fact, British society as a whole in the late nineteenth and early twentieth centuries did not warm to Alexander Graham Bell's invention. Doubt, scepticism and suspicion hampered the telephone's development in Britain for a variety of reasons. Firstly, the telephones of the late Victorian and Edwardian period were plagued by the constraints of attenuation. Put simply, until the development and appearance of the vacuum tube amplifier after the war, telephonic communication was severely hindered by the large decline in sound quality over distance. By comparison, the operational range of the telegraph was virtually unlimited. It had been introduced in 1845 and had genuinely revolutionised long distance communication. By 1908 Britain owned 56% of the world's undersea cable. The Post and Telegraph were ubiquitous and relatively cheap. In 1905 89m telegrams were sent as against 15m telephone conversations.

Secondly, a long standing feud between Britain's private telephone companies and the General Post Office, as to who owned the rights to the country's telephonic monopoly, had resulted in Britain's telephone network being left in a dire state of affairs. Although the General Post Office gained complete control in 1911, the telephone system in Britain on the outbreak of the First World War was far from efficient. Finally, issues of class and privacy ensured that the vast majority of late Victorian and Edwardian society preferred to use the postal service or convey

information using the telegraph rather than the telephone. While most of the early telephone subscribers in Britain were of the urban middle and upper classes, even those who could afford a telephone found it too abrupt, rude and impersonal a means of communication to be fully accepted.

Subsequently, British telephone development prior to the First World War lagged far behind that of many countries, including the USA and Germany. Largely as a result of greater financial investment, the value of the telephone as a primary means of communication was much more widely accepted in Germany than in Britain in 1914. This trend was replicated by their respective armies.

Although the British Army made limited use of the telephone during the Second South African War (1899-1902), it was not the preferred method of communication. At the siege of Ladysmith artillery fire had been directed by telephone from a balloon and a network had been installed in the blockhouses built in the later stages of the war. But the experience of the war against the Boers had left the majority of British officers convinced that there was still no quicker and more efficient means of communication than the telegraph, visual signalling and the individual despatch carrier. This belief was still largely predominant when the First World War began over a decade later. Why was this so?

Firstly, in the decade leading up to the outbreak of the First World War, British military planners, like their German, French and Russian counterparts, maintained the overwhelming belief that the next European war would be short, sharp and mobile. Subsequently, with regards to communications, British commanders tended to favour those devices that would enable them to carry out operations under such circumstances. In a war of mobility and manoeuvre, telephones are totally impractical as they severely restricted the freedom and movement of an army. Thus, it was considered much easier and more practical simply to send information via an orderly or despatch carrier than by telephone.

Secondly, British officers in 1914 preferred to exercise a more traditional, personalised style of command and control. This explains, to some extent, why commanders such as Sir John French, Sir Douglas Haig and Sir Horace Smith-Dorrien, were keen to convey orders and other information to their subordinates face-to-face, or at the very least via a trusted staff or liaison officer during the opening months of the war. The telephone removed a commander from a battle both physically and emotionally, and this was something that the majority of British officers in 1914 were not prepared to accept. Furthermore, a telephone did not provide a written record of a commander's orders or instructions. Subsequently, the telephone found little favour with British officers wanting to extol the virtues of personalised leadership and courage on the battlefield.

In comparison, the German Army on the outbreak of the First World War was much more willing to embrace the telephone and integrate it into the army's communications system. Part of the reason for this lay in the fact that German society in the late nineteenth and early twentieth centuries had been more welcoming of the telephone than British society. The telephone monopoly was not held by the German government, as was the case in Britain, and thus the development of the telephone system had not been restricted in the interests of the telegraph service. The German

Army also drew positive lessons from the Japanese use of telephones in the Russo-Japanese War of 1904-5. As a result, in 1914 the German Army went into battle with a heavy reliance upon telephonic and wireless communication.

In terms of the methods of communication employed, the German Army on the outbreak of the First World War was certainly more modern than its British counterpart, although it must be stressed that the British Army was not entirely devoid of telephones and wireless equipment. However, the German reliance upon these more elaborate means of communication did not prove particularly advantageous during the opening weeks of fighting on the Western Front. Telephonic communication was severely hindered by the inability of the German Signal Corps to lay telephone lines fast enough in such a rapidly moving advance. The Belgian Army's systematic destruction of its state's communications infrastructure as it retreated also crippled the German communication network. To compound matters, without an organised motorcycle or motorcar despatch rider service, communications between the advancing German First and Second Armies and OHL in late August and early September became so bad that they were at times non-existent. For example, wireless may have offered advantages but one side-effect was that it took 26 hours for von Kluck to encode and send and for von Bülow to decipher a message on 31 August 1914.

By comparison, although it was not without its fair share of problems and difficulties, the communications system of the British Army was much more ideally suited to the fluid conditions of the fighting during the opening weeks of the war. The Signal Service, and in particular the Motorcycle Despatch Rider Service and the group of specially trained motorcar chauffeur's from the Royal Automobile Club, ensured the rapid and efficient interchange of orders, reports and other vital information that telephone's and wireless were unable to consistently offer during the hectic retreat from Mons in late August and throughout the steady advance to the Aisne in early September. Once on the Aisne, however, the British Army was confronted with its first taste of trench stalemate. With both sides unable to break the deadlock, the British Army's communications system required urgent improvement and refinement, part of which included the recognition by British commanders of the value of the telephone for command and control purposes and the need for its widespread implementation at all levels and all arms. However, since it had not anticipated this need, the army was left chronically short of telephonic equipment in the winter of 1914-15 and as a result, many units at the tactical level had to make do with other, less efficient and vulnerable methods of communication such as visual signalling and runners.

In summary, as with nearly all technological changes that armed forces have faced throughout history, the British Army's acceptance of the telephone prior to the First World War was a very gradual process, influenced by a variety of factors. It would be fair to conclude that when war broke out in 1914, the British Army was caught in a period of transition as it sought to integrate the newer forms of communication, such as telephones and wireless, with the older, more traditional practices of information transfer, such as visual signalling and message carrying. The British Army's gradual and cautious acceptance of the telephone was mirrored by the apprehension, mistrust and anxiety towards Alexander Graham Bell's invention that was widespread throughout late Victorian and Edwardian society. However, given the technical

limitations of telephones at the time and the mobile nature of the opening weeks of fighting on the Western Front, it was perhaps just as well that the British Army was not entirely reliant upon the more elaborate means of communication. The advent of trench warfare in the autumn and winter of 1914, however, provided the British Army with a completely different set of challenges, with which it was very slowly and painfully to get to grips over the following four years.

Editor's Note

When researching illustrations to fill this space in the Newsletter I came across what looks like a very good website on signalling equipment in the Great War.

<http://www.fairmile.fsbusiness.co.uk/sigs.htm>



Lifeline, Pipeline and Occasional Noose? How the British Army's Communicators Looked Back on World War II

Brigadier Philip Pratley

Report by Andy Grainger

On looking back at World War Two the communicators saw a triptych:

- a pipeline – long distance communications worldwide
- a lifeline – communications as an aid to survival – Battle of Britain?
- a noose – lack of communications brought about the failure of operations – Arnhem?

Little has been written of an operational nature on the subject of Army Signals although some signallers did write memoirs, for example *Return Ticket* by Anthony Deane-Drummond and *Echoes from Arnhem* by Lewis Golden.

In 1953 the War Office published a book by Col T B Graveley about the experiences of the Royal Corps of Signals which gives a valuable insight into the coalescing of people and technology since its formation in 1920.

The Royal Corps of Signals was therefore a teenager in 1939. All its senior officers had come from other Corps and so it was still building its own character. The first head of the Royal Signals to have been commissioned into the Corps took up his post in 1956.

The Corps was set up like a scientific college, drawing from a number of intelligent and occasionally eccentric individuals who had been involved in Signals during the Great War. For example, Major R E Priestley MC ⁴⁹ commanded the Divisional Signal Company RE of the 46th Division from 1917 to 1919 but was actually a geologist who had served with both Shackleton and Scott in Antarctica. During the War he served as adjutant at the Wireless Training Centre (1914-17) and whilst with 46th Division was involved in the celebrated taking of the Riqueval Bridge over the St Quentin Canal by 137th Infantry Brigade. He subsequently wrote an account of this action, amongst others, '*Breaking The Hindenberg Line*' (1919). After the armistice he wrote the official record, *The Work of the Royal Engineers 1914-19; The Signal Service France (1919)*⁵⁰, an enormously technical book about all aspects of communication during the Great War.

Although the Gunners and Sappers tried to poach the best graduates, young officers of the fledgling Corps set high standards not only in their technical competence but also in their extramural activities. Ralph Bagnold, founder of the Long Range Desert Group (LRDG) was a Royal Signals officer. Others ascended Everest, competed at the Olympics or explored Africa.

Signals technology expanded massively in WW2.

⁴⁹ <http://www.fairmile.fsbusiness.co.uk/Priestley.htm>

⁵⁰ Neither of these works appear to have been reprinted; publishers please note! Ed



In 1940 an Armoured Division was established for 629 radio sets as against 729 in 1945, a modest increase of 14%. But the true nature of the expansion is to be found in the Infantry Division where 75 radios in 1939 had become over 1,000 by 1944. There were 181 teleprinters in use in the Army in 1939 but more than 11,000 in 1945 – an information explosion.

A staff officer in 1940 faced the equivalent of today's mobile phone technology.

Thus whilst long distance communications were an essential pipeline they were not glamorous – and did not always get shipping space. The war showed that Signals Officers needed not just to be eccentric technicians but 'hands on' leaders with an awareness of the operational characteristics of their equipment so they could make estimates of what was needed and how much space was needed by it, the men and their vehicles. It was slowly discovered that the ratio of signals to other troops differed from that to some other arms. There was a high minimum requirement since there was always a need for communications; however few or many were the operational troops. This lesson was brought out again as the Army's Out of Area commitments expanded during the 1990's. In Iraq, post 2003, there were those who thought that when a Brigade took over from a Division the Signals quotient could be reduced accordingly. This turned out not to be the case since the ability of more dispersed troops to operate effectively was dependent upon their ability to communicate.

Communication technology became a lifeline in WW2 – as it had in WW1 when the telephone proved that it was both essential but highly vulnerable.

In 1940 the Army's radios were inadequate. Their technology was based on civilian radios which were designed to be receivers rather than transmitters. Yet at the personnel level, the competence of the Royal Signals was demonstrated during the Dunkirk evacuation when junior officers of the Corps made use of the Belgian telephone network and then the undersea cable at La Panne to communicate with Admiral Ramsay at Dover. Without this link the co-ordination of the three services would have been extremely difficult.

Apart from coping with the large amount of equipment lost at Dunkirk, the Army was then faced with a mechanized war in the Western Desert which required huge numbers of radios. It was also fought by commanders, officers and soldiers who were entirely unused to the concepts of war by radio. Communications at formation and unit level were frequently interrupted due to low levels of training and the enemy also gained a lot of intelligence by virtue of poor signal security.

So technology could be a lifeline but if it failed it could be a noose. This might be due to failures in equipment design but also to training inadequacies and the abilities of commanders to understand it. Examples are many. As late as August 1942 the 23rd Armoured Brigade, newly arrived in the desert, was obliged to go into battle without the time either to fit or tune its radios. The Brigade was annihilated. At a higher level, when 1st and 8th Armies met in Tunisia there were significant difficulties of interoperability. A survey of one month's traffic of one major HQ found that 68% of signals were graded Immediate (a very high classification) or higher.

The well known (but poorly understood) communications failures at Arnhem were not due to failures to install the correct crystals but because it had not been envisaged that an Airborne



Division would need to operate over such a large area. Consequently the radios lacked range⁵¹.

It is possible that operations in Normandy were affected by the familiarity with communications at the highest level. Montgomery had set up a Signals unit for 21st Army Group as soon as he arrived in the UK at the end of 1943 whereas Dempsey only formed his signals unit at 2nd Army a few days before D-Day⁵². Thus they had almost no time to train.

The lessons brought out of WW2 were:

- Training time is vital if equipment, especially new equipment, is to function properly
- Skilled manpower was vital and was always short
- Communications breakdowns were generally down to poor co-ordination. Most comms problems could be solved but time was essential as it was very difficult to effect a solution once the battle had started.

Questions

Charles Farrell asked the speaker if he could shed any light on the development of the 19 set which had proved particularly effective throughout WW2 and for many years afterwards. Philip said that it had proved to be a particularly effective collaboration of scientists and soldiers and was a much more effective piece of work than some modern projects on satellite communications.

To a question regarding signals in the other services Philip remarked that the RAF was generally effective but benefited from, mostly, relatively static installations. The Royal Navy was particularly effective at making use of a great variety of antennae to produce flexible and versatile communications.

⁵¹ White Paper: Communications at the battle of Arnhem: A modern day technical analysis John Berry BSc MBA CEng FIEE MCMi February 2004 [http://www.atdi.co.uk/paperdocument/White%20Paper%208%20-%20Arnhem%20-%20for%20web\(3\).pdf](http://www.atdi.co.uk/paperdocument/White%20Paper%208%20-%20Arnhem%20-%20for%20web(3).pdf)

⁵² <http://www.bbc.co.uk/ww2peopleswar/stories/19/a2653319.shtml> for an account by a Signaller in Dempsey's Tac HQ.



Panel Discussion

The Panel Discussion was particularly lively after this conference and ranged widely across the theme of Communications.

‘Communications are not problems of kit but of people’

18th Century

Not for nothing was the 18th century known as the Age of Enlightenment. Society tried to organise and rationalise – which meant writing things down on paper. Armies were no exception and raids were often launched to capture enemy papers. Correspondence, newspapers, dispatches were avidly studied. Difficulties sometimes arose when less well-educated raiders, such as Cossacks, presented reams of blank paper as trophies on the basis that they were more useful than paper which already had writing on. 18th century wars were often alliance wars but anyone of education spoke French and Latin so that translation of text from one’s allies or the enemy did not present too much of a problem. Armies also tended to fight in the same linear way so that comparisons of strength and orders of battle could readily be made. Such linguistic and mental simplicities were modified and then swept away by the revolutions of 1776 and 1789 however.

Too much Information

This is not a new phenomenon. Von Moltke recognised ‘overcommand’ as a potential problem as early as the 1850’s when the telegraph appeared. By WW1 extracting the essentials from the mass of paper was a significant problem and, more recently, e-mail, mobile phones and computers have added to it.

The Practicalities of Command

There was a view that historians tended to look at the technical impacts of weapons rather than the military structures and organisations which they equipped. [The same might be said of logistics]. Two books by Mark Adkin ‘The Charge’ (Balaclava) and ‘The Waterloo Companion’ were cited as examples of works where the author looked at the whole battle from the perspective of a commander.

Examples of attempts to standardise language had already been cited by Christopher Duffy in his paper. Others cited Haig and I Corps where a common language or glossary had been produced so that brief proforma type messages could be communicated quickly and accurately. In WW2 much use was made of bigrams both to standardise messages and to provide a level of security. In the Ancient World everyone spoke Greek so that communication between allies was relatively straightforward – as it was to be again in 18th century Europe.

It was pointed out that the Bundeswehr had produced standardised packages of vehicles, communications and so on which appeared to be well ahead of other NATO countries. Another speaker suggested, however, that in the two World Wars this approach had been found to be inflexible and might be so again if the Bundeswehr found itself in combat again.



Modern Communications

It was suggested that there was underinvestment in communications. As weapons become more powerful and can be aimed much more precisely so fewer soldiers on the ground are needed. But their effectiveness is dependent on communications. The recently introduced BOWMAN system is dependent on very heavy radio batteries that actually produce a capability that is not fully needed. On the other hand, modern soldiers do need to speak to a lot of agencies outside the military command chain which means that a sophisticated communication system is needed at battalion / battlegroup level. It was suggested that modern communications have actually regressed although it might equally be said that they are trying to catch up with modern conditions.

Training

One theme produced by the Conference appeared to be that training for commanders, staffs and signallers was essential. From Roman times to the present day the actions of poorly trained staff officers or signallers could affect the entire army. Roman fleets and 18th century armies must have spent a lot of time training to move about and to understand the signals sent by commanders.

1914 saw the Army's communications in a time of transition. Telephone and other communications developed rapidly during the war and many men were trained in their use. It was found, however, that the different training received by the Infantry, Royal Artillery and Royal Engineers and the different policies set by the various Army Corps made co-ordination increasingly difficult. This was the reason for the establishment of the Royal Corps of Signals in 1920.

Units that were well-trained and had worked with each other were far more effective than those which had not. Despite this the panellists did not see any greater understanding of the importance of this factor in the British Army, at least. As recently as the 1982 Falklands Campaign the formation that had been prepared for such an operation was reorganised for army political reasons at the outset.

Andy Grainger