

RIGHT The Roman army was not merely a mighty fighting force: its soldiers were also skilled engineers, able to build their own defences, as well as civilian structures. This construction scene is depicted on Trajan's Column in Rome.



PHOTO: Benjamin Núñez González

Empire state

The Roman military machine is renowned as an elite fighting force, but beyond its role during conflict the military was an imperial instrument integral to the smooth running of the empire. In Britain, research is shedding new light on the military's involvement in managing major mining and quarrying works. [Simon Elliott](#) explains more.

Exploring how the Roman military shaped Britannia's industries

The principal political force within the Roman Empire was the state, which was intricately involved in all economic activities geared towards supporting its continuance and infrastructure. As a patrician institution, though, it also had other responsibilities: an interrelated web of political, social, and economic roles. In an age before the advent of bodies like

nationalised industries, a free market able to fund major capital expenditure projects, and a civil service, it was often the military (as the largest institution within the empire) that was turned to in order to ensure the smooth running of the imperial system.

This was particularly important in remote provinces, especially during the Principate (the period stretching from the accession of Augustus in

27 BC to the accession of Diocletian in AD 284), where the governor's and procurator's combined staff would represent perhaps 80 or fewer officials

BELOW Among the impressive structures erected by the Roman military in Britain are the Saxon Shore fort at Richborough, and York's Multangular Tower – once part of the west corner of Eboracum's legionary fortress. The small stones in the tower's lower half are Roman, while its upper portion was reconstructed during the medieval period.



PHOTOS: John Lambshead/Simon Elliott



PHOTO: Francis Tusa

running an area's legal and financial affairs – contrast this with Britain's modern civil service, where over 25% of the population (almost 50% in some areas) works in a public-sector job.

Military administrators would have been at their most visible in a newly conquered territory, which would quickly be assessed by skilled military land-surveyors to work out the region's likely contribution to the imperial purse. Once established within the empire, the province would then see the military fulfilling a variety of non-combat roles, including enforcing tax collections, escorting officials, and controlling traffic. Epigraphy contains a number of examples of such individuals operating in Britain: for example, the cavalry prefect Titus Haterius Nepos is recorded as carrying out a census in Annandale, Dumfries and Galloway, in c.AD 117. The centurions T Floridius Natalis (Legio VI Victrix) and C Severius Emeritus (Legio II Augusta) are also seen performing the role of regional administrator at Ribchester and Bath respectively.

ENGINEERING EXPERTS

The best-known non-combat role of the Roman military, though, was in engineering and construction. Even the lowliest trooper was able to participate in the erection of

their own defences (inscriptions at Hadrian's Wall, for example, record that Legio II Augusta, Legio VI Victrix, Legio XX Valeria Victrix, and the Classis Britannica all participated in its construction and maintenance), as well as civilian structures of all kinds. Accordingly, every legionary carried a wide selection of tools in addition to his fighting kit, and each major fighting formation also contained specialist engineers of all kinds, from land-surveyors and levellers to quantity measurers and aqueduct inspectors.

BELOW As well as construction, the Roman military was heavily involved with managing *metalla* – extractive industries – throughout the empire. This Roman quarry site is at Paphos, Cyprus.



PHOTO: Simon Elliott

ABOVE Ermine Street, one of the principal trunk routes in Roman Britain, looking north. Its *agger* – the ridge supporting the road's surface – and roadside ditches can be clearly seen.

For evidence of the skill of these men, we only have to look at the vast network of Roman roads, a central feature of the Roman experience both politically and economically. The construction of a substantial metalled road across a newly conquered landscape was the ultimate stamp of authority, and state-built roads, often principal trunk routes, were particularly associated with the military. In Britain, these include Watling Street (running from Richborough to Wroxeter), Ermine Street (from London to York), and ➔

RIGHT Tiles stamped with 'CLBR', the fleet mark of the *Classis Britannica*, have been found in large numbers at the Weald's eastern and coastal ironworking sites, as well as at Pevensey, in Sussex, and Richborough, Dover, Lympne, Folkestone, and Cranbrook in Kent. This well-preserved example is from Dover Museum.



the Fosse Way (from Lincoln to Exeter). These roads are inseparably associated with Roman rule, but for carrying heavy loads it was water transport that was the preferred means of travel. Here too the military was heavily involved, canalising rivers and building and maintaining new channels – as an excellent example of their achievements in this field, see the 37km-long Fossa Carbulonis in the Netherlands, begun after AD 47 to help supply the newly created *limes* (frontier) in Germany and the Netherlands.

Bridges were another engineering feat in which the Romans were well versed, and the vast majority were constructed by, or under the supervision of, the military. Those associated with campaigning were usually made of wood, while others, built to facilitate commerce and trade, were often made at least in part from stone. In Britain, examples of the latter, probably featuring stone-built piers and a wooden roadway, are known to have been raised across the Thames in London, the Medway in Rochester, and the Ouse in York.

One of the Roman military's key roles, though, was the running of large-scale industrial enterprises. The Roman Empire's industries operated on a truly massive scale – so much so that high concentrations of pollutants from this period (mostly in the form of lead and copper emissions) have been found in Greenlandic ice cores, something

extremely rare for a culture pre-dating the Industrial Revolution. These ranged from huge state-controlled mining and quarrying works via manufacturers producing large quantities of wares from garum and Samian ware to local milling and food production. Roman-occupied Britain was quickly drawn into this system, gaining large-scale iron production and quarrying (of which more anon). Brewing was another important industry – major operations are particularly evident in Kent's archaeological record – as was salt extraction, with significant salterns located around the Wash, the East Anglian coast and Thames Estuary, and around Bridgewater in Somerset. Pottery and textile production also thrived under Roman occupation, with British-made *birrus* (hooded cloaks) and *tapetia* (woollen rugs) particularly prized – the latter is listed in the AD 301 Edict of Diocletian as the best available across the empire.

MINING FOR EVIDENCE

A responsibility particularly associated with the military was managing *metalla* – places where stone, metal, and other resources could be extracted – and it is this aspect that formed the focus of my own PhD research. These epic undertakings were frequently state-run, often as imperial estates, in order to ensure continuity of the supply of mined and quarried material that was so vital to the empire's operations (and the flow of wealth to the emperor's treasury). The Weald, on which my research centred, was one of three key iron-producing areas of Roman Britain, together with the Forest of Dean and the East Midlands.

This activity had its origins in the late Iron Age and its success was a key factor in attracting Roman interest – from these comparatively modest beginnings the industry expanded rapidly under occupation, such that by the early 2nd century it predominated in the region, peaking in AD 150-250 at an estimated 750 tonnes of iron produced every year. This bounty had declined to around 50 tonnes by c. AD 350-400, due in part to silting of the region's rivers which severed the works' connection to the coast.

Romano-British iron-producing sites appear in the archaeological record as shallow quarries and bowl-shaped open-cast pits, and in the Weald a number of significant sites have been identified at Beaufort Park (the largest, covering 10ha), Bardown, Chitcombe,



LEFT This iron stamp is marked on its striking surface with the letters 'MPBR', which have been interpreted as an abbreviation of *metalla provinciae Britanniae*, 'the mines of the province of Britannia'.

IMAGE: Dover Museum and Bronze Age Boat Gallery

IMAGE: Museum of London

RIGHT Tapslag from a Roman military ironworking site associated with the ragstone quarrying industry in the Upper Medway Valley – an industry that provided much of the building stone for Roman London through to the mid-3rd century AD.



Footlands Farm, and Oaklands Park. These centres have been traditionally linked to the Roman military, and specifically the navy – the regional fleet known as the *Classis Britannica*. The main body of evidence for their involvement in Wealden iron comes from quantities of tile and brick stamped with the fleet's mark. These appear in large numbers across many of the eastern and coastal ironworking sites, and particularly at Beauport Park. There, of the 41 complete roof tiles, or *tegulae*, found during the excavation of a bathhouse, all but one feature this stamp. Fleet marks are also seen on almost all of the 3.35 tonnes of tile recovered there during archaeological work in the 1960s and '70s, representing around 1,600 marks in total, or 11 stamps per square metre.

Three further clues also hint at a state presence in the region: Beauport Park has also yielded a wooden tile comb bearing the (to-date) unique imprint of 'CLBR', identifying it as a tool belonging to the *Classis Britannica*, while stonework from above the entrance of the site's bathhouse preserves an inscription referring to a *vicilus*, perhaps indicating the presence of the *vicilus officinae*, who managed the site on behalf of the provincial procurator. Finally, an iron die found in London features a stamp declaring its provenance as *m(etalla) p(rovinciae) B(ritanniae)*, which has been interpreted as referring to its origins in a provincial iron-manufacturing facility. No direct link can be made between this and the Wealden iron industry, unfortunately, but as the nearest such sites both geographically

and chronologically lie in the Weald, it is tempting to make such a connection.

In terms of other material culture from the major ironworking sites in the eastern and coastal Weald, an intaglio featuring a representation of the goddess Victory, found in the bathhouse excavations at Beauport Park, has also been interpreted as suggesting a military presence, as has a fine medallion of Antoninus Pius found in 2006 at Bardown – it seems plausible that such a token of prestige should have belonged to a high-ranking official. Meanwhile, the High Weald coin hoard of 2,891 radiates spanning AD 215-268, which was found in 2008 at a satellite ironworking site near Bardown, has also been interpreted as evidence of the presence of a high-ranking state official, given the wide geographic range of its contents (including mints at Rome, Milan, Antioch, and Lyon), as well as the fact that it included a relatively high number of rare coins, including a radiate of Gordian III's wife Sabinia Tranquillina, and issues

RIGHT A surviving section of the Severan land walls of Roman London, located near Tower Hill tube station. It was built by military master craftsmen from finely worked blocks of Kentish ragstone quarried in the Upper Medway Valley.

documenting the Secular Games of Phillip I.

If there was state involvement in the Wealden mines, it seems entirely possible that the imperial instrument there should be the *Classis Britannica*. After all, another regional fleet, the *Classis Germanica*, is known to have controlled quarrying along the Rhine and its tributaries. It is also interesting to note that the Wealden iron industry entered a rapid decline in the late 3rd century, at around the same time that the *Classis Britannica* disappears from the record after AD 249.

Looking further afield, those who have argued in favour of the Wealden iron industry being an imperial estate run by the *Classis Britannica* also point to the regional transport infrastructure, where the north-south alignments of key regional Roman roads (particularly the Wealden road from Rochester to Beauport Park) speak of their being built specifically to facilitate →





LEFT The fine amphitheatre at Caerleon's legionary fortress, built by the military.

“The Roman military played a role in agriculture, policing and firefighting, building and maintaining aqueducts, and helping to run the Games.”

official communications with the Upper Medway Valley and the north Kent coast. The unusual settlement pattern of the Weald, with little elite occupation in the centre and with most villas located on the periphery – as well as a seeming lack of local reinvestment of wealth – might also point to the area being an imperial estate.

QUARRIES AND CLUES

While the case is not yet proven, there does appear to be a compelling body of evidence to suggest that the *Classis Britannica* was responsible for the management of the eastern and coastal regions of the Wealden iron industry during the Roman occupation. Less clear-cut, but very persuasive, are suggestions that this fleet may also have been involved in the ragstone quarries of the Upper Medway – an area known for its prolific output from the early days of Roman occupation until it too declined in the mid-3rd century.

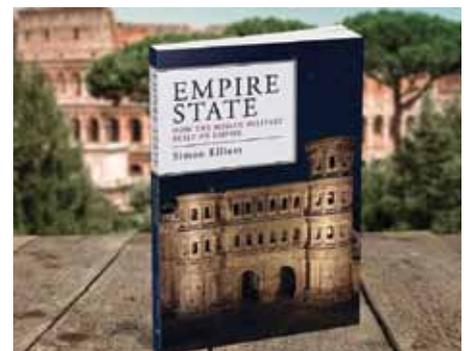
To-date, five quarry sites have been identified in this area, at Allington,

Boughton Monchelsea, Dean Street, Teston, and Quarry Wood at West Farleigh, and together they represent extraction on an impressive scale. Collectively they total a quarried area of 723,430m², and at 356,400m² the biggest site, Dean Street, is comparable to its largest equivalents anywhere in the empire. This region provided much of the raw building material used in the urbanisation and early fortification of south-east Britain, and ragstone is seen both in grand projects, like the Severan land walls of London (comprising an estimated 1 million dressed blocks), and the foundations of townhouses and bathhouses, like those excavated at Bloomberg and Billingsgate, also in London. The stone is also found in Roman walls at Canterbury and Rochester, the early Saxon Shore forts at Reculver and Bradwell, and in the villas of the Medway Valley.

Maritime transport was vital to moving this material from Kent

to where it was needed, and this was done in vessels like *Blackfriars I*, a 2nd-century Roman wreck excavated from the bed of the Thames in 1962, which still contained a load of 26 tonnes of Upper Medway Valley ragstone in its hold. Evidence for these quarries being a military-run imperial estate is less strong than for the Weald's iron production, but the scale of operations, the organisation involved in moving the material, and the enormous maritime commitment required to ensure the success of this industry does suggest that the *Classis Britannica* could have been involved in some way, if only to facilitate the required transport network for this vital resource.

Outside combat responsibilities, the Roman military also played a role in agriculture, policing and firefighting, building and maintaining aqueducts, and helping to run the Games. Ongoing research into their involvement in industrial production reflects just one more facet of how Roman soldiers were far more than just an elite fighting force, but were also integral to binding together the state in Britain and right across the empire. ■



Further reading

Simon Elliott, *Empire State: how the Roman military built an empire*, Oxbow Books, £36, ISBN 978-1785706585.