



*Fortress Study Group*  
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# CASEMATE 126 January 2023



## The CHAIRMAN

I thought I would start with a quotation: *The main fascination of military architecture lies in its honesty..... military architecture is essentially functional architecture; it has always had to be. For its efficient function it required an integrity of plan and section, the use of appropriate first-rate materials and craftsmanship, and the strongest and most resistant forms of construction. Its fascination also lies in its sculptural quality. Equally, .... its fascination lies in its very changing nature.... Not subject to caprice or fashion, it has changed of necessity, and it has been forced to change in order to survive.* This is from Quentin Hughes's preface to his *Military Architecture*, 1974.

Since the last Casemate came out, we have lost two more significant members: Christopher Duffy, one of the most important figures in fortress studies and an Honorary Fellow of the FSG, and Alan Bailey a long-standing member of the Group, known to everyone who met him as a book collector, indeed a collector of many things. They will both be missed; there are obituaries in this issue.

I have been reading early copies of Casemate – they can be found on the website – there is a great deal of interesting stuff to be found in them. We can see how far we have come in half a century and how much we have learnt. At the same time, it is slightly chastening to see how many of the old arguments are still current.

As you will see I have taken up an idea set out in a letter to **Casemate** no. 16 and developed it into a short article. That edition of Casemate (from 1985) alone contains many other items that are still of interest.

Of course, if you download Casemates from the website, you really should donate to the FSG – it is very easily done and it's only fair - you are in effect getting hold of something of value and it has cost money to make it available to you.

The Committee has been busy rewriting the Members' Handbook in the light of the changed world we find ourselves in. You will receive a copy by e-mail, together with notes on the organisation (and enjoyment!) of tours and Members' Days. Even if you are a member of long standing, please read them. And we haven't forgotten the survey many of you took part in last autumn. We are digesting the findings and especially the comments some of you made, to see what we can do to answer your concerns. A note on our thoughts will be circulated with an upcoming newsletter.

The symposium we co-sponsored with The Battlefields Trust in Newark in November was a great success, despite miserable weather and engineering work on the LNER main line. Useful contacts were made and our David Flintham presented archaeological work of real importance.

It was the first live-action function since the pandemic and it was good to meet people again, even if the almost universal reaction was that everyone else seems to have grown old!

Lastly, you will find elsewhere in this issue a notice about Bill Clements's generous legacy to the FSG, leaving us the proceeds of the sale of his library. His books are for sale through an excellent bookseller in Stamford and a catalogue will be available.

*John Harris*

## The EDITOR

Let me first wish you all the best for the New Year! (*It surely will be better?*)

For the FSG we can look forward to an increase in face to face meetings and events, which many of us have missed and if you haven't been to something, be brave.

From the point of view of an Editor, more meetings mean more articles for Casemate and hopefully articles on subjects or locations you have not visited before. Remember too, the back numbers, where you can find information on places you may be looking to visit in 2023.

*Norman H Clark*

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## A Pair of Lunettes

By John Harris

As a prologue, we need some eighteenth-century definitions of "lunette":

*".....another sort of Lunette, which are [sic] larger, and raised to cover the Faces of a Half Moon. They are likewise composed of two faces, a longer and a shorter – from The Theatre of the Present War in the Netherlands and upon the Rhine...."1745.*

(This author uses "half moon" to mean "ravelin." There isn't space here to discuss that controversy – some other time perhaps.)

*"Lunettes are works made on both sides of a ravelin; one of the faces is perpendicular to half or two thirds of the faces of the ravelin, and the other nearly so to those of the bastions" – Muller 1741.*

Confusingly (but I'm used to confusion in these glossaries in books on fortification), both these authors define other constructions called lunette, but let us stick with the ones above, which boil down to roughly the same thing.

If I thought about it all, I suppose I assumed that lunette, literally "little moon," simply suggested a smaller version of a demi-lune. Below is an illustration from Muller- two lunettes (marked D) flanking a ravelin.

Menno van Coehoorn used lunettes extensively at Bergen-op-Zoom, with recessed batteries, all part of a formidably worked out design. Opposite page shows two ravelins with a pair of lunettes each, in the plan relief in the Markiezenhof in Bergen (a copy of one at Les Invalides). The two bastions, the ravelin and lunettes in the top left part of the photograph are the ones that were attacked by the French in the siege of 1747. The bastions are called Coehorn [sic] (the upper one) and Pucelle; the ravelin is called Derden or Didern and the two lunettes are Utrecht and Zeeland.

The siege was famous at the time and many plans were published showing the approach of the French trenches and the mine and counter-mine craters which figured largely in the siege.

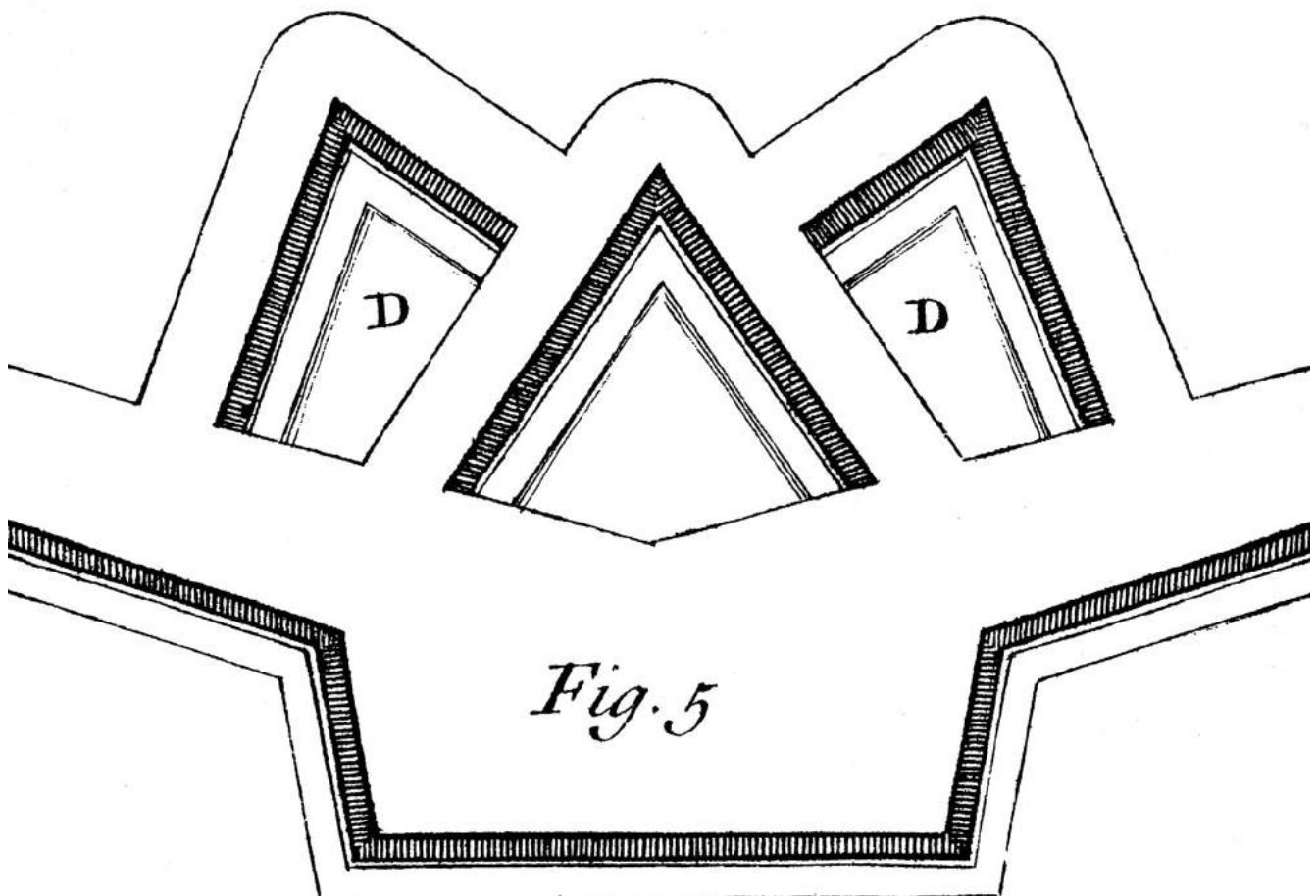


Fig 1: Fig 5 from "A Treatise of Fortifications", John Muller 1740

# The Bay of Kotor and surroundings: a fortification hotspot

## *Impressions and insights from a study tour*

*By Hans-Rudolf Neumann*

*After being postponed twice due to the pandemic, a fortress study tour was carried out as a pilot tour of the European cultural route FORTE CULTURA to Montenegro from August 27th to September 4th, 2022.*

*Fifteen participants came from seven countries, in addition to the German and Swiss INTERFEST members, FSG members came from France, Great Britain, the USA and Australia. The group was accommodated in a 4-star hotel in Herceg Novi at the entrance to the Bay of Kotor; packed lunches were available on three days, lunch could be eaten in the hotel itself, otherwise there was the option of self-catering at the locations visited. The following report gives a summarised overview of the fortifications visited in the individual locations and shows possibilities to carry out a varied and exciting travel programme within one week*



*Tour participants in front of the entrance to the Šipčanić aircraft bunker*

### **Saturday, 27/08/2022**

A number of us flew from Vienna to Podgorica: the capital of Montenegro being reached in just one hour. The first location visited was the aircraft bunker at the former Šipčanić Air Force Base. During the Kosovo War of 1998/99, the aircraft cavern was penetrated by laser-guided bombs, destroying 30 Yugoslav jet fighters. The severely damaged tunnel was converted into a wine cellar in 2006.

We left the facility, after a wine tasting, reaching our hotel in Herceg Novi around 8:00 p.m.

### **Sunday, 28/08/2022**

Sunday was reserved for a full day of sightseeing in Kotor, particularly the Venetian fortress on either side of the old town and Fort San Giovanni.

We were welcomed by the Montenegrin professor of architecture and fortress specialist Professor Ilija Lalosević, who at the time had been instrumental in processing the application for the fortifications to be included in the UNESCO World Heritage List. In the shadow of the rocks, the ascent to Fort San Giovanni was over approx. 1800 steps.





*Armoured cupola on Gorazda Tower Fort*



*Gorge Barracks Fort Vrmac*

**Wednesday, 31/08/2022**

The fact that our hotel was in Herceg Novi made today's planning quite easy: all the objects we wanted to visit were on the northern side of the bay, albeit in two states. The morning programme provided for a tour of the three Turkish-Venetian complexes located in the city, which were led by the local city and fortress guide Alen Filipović and the manager of the tourist office Biljana Belusević.

The starting point was the Forte Mare fortress, which was opened to us and where an interview with Radio Televizija Herceg Novi took place, which was broadcast the same evening in the evening program Vijesti u 6 (News at 6) and in which the cultural route FORTE CULTURA was advertised (<https://www.youtube.com/watch?v=E5b5tkWNSDI>) at 8:40.



*Upper access to Forte Mare*



*Interior view of one of the four caponiers in the Gorazda Tower Fort*

From here we climbed several flights of stairs in narrow streets until we reached the old town tower, next to which the bookshop 'SO' was located. They were informed about our visit in advance, but not all requests regarding the English-language standard work by Radojica-Rašo Pavičević "WERK II" could be satisfied because the required number of copies had not been delivered in time.

However, the problem was solved in the next few days before the group finally left, so that no one had to fly back without the book they had ordered. Once again, we climbed a number of stairs to the second fortress Kanli Kula, which we were also able to visit inside under a competent guide. It is used as an event location in the form of a theatre and an open stage with a wonderful view of the bay's exit.



*Fort Kanli Kula. View of the exit of the Bay of Kotor. In the background Fort Punta d'Ostro on the top of the Prevlaka Peninsula*





*Aerial view of Eastern Fort Kom, Crkvice* I.V.



*Aerial view of the Strač armoured work* I.V.



*Aerial view of the fortified castle of The Holy Cross* I.V



*Aerial view of Western Fort Stražnik, Crkvice* I.V



# SPECIAL TOUR to DENMARK and SWEDEN

**Part 2: 31 May to 7 June 2022**

By **Norman H Clark and Lars Hansson**

The **Coast Defense Study Group** (CDSG) and **Fortress Study Group** (FSG) successfully ran another joint tour (similar to our joint tour to the defences of Switzerland in 2018) to fortifications in Denmark and Sweden from May 22 to June 7, 2022.

The tour was divided into four parts – a pre-tour of two days in Denmark, the main tour for FSG starting in Copenhagen and ending at Arlanda, the CDSG tour starting in Nyköping and ending in Luleå and an extra end of two days in Gothenburg. The tour reports are in two parts – part one written by Norman Clark (*FSG tour segment*) has appeared in Casemate 125 and part two by Lars Hansson (CDSG tour segment) now follows.

Most of the FSG members returned home on May 31st and the CDSG portion of the tour to the Northern Swedish defences begun from our hotel near to the Arlanda Airport (Stockholm). The following is a daily summary of sites visited.

## 31 May 2022 Tuesday

Four rental cars full of CDSG tour members left our hotel at the Arlanda Airport at 8am to head north. After two hours, we rolled through the zoo and amusement park gates at Furuvik and were guided all the way out to Furuskär where we parked on top of **the Cold War coastal artillery battery GE3** (Gävle 3) with its three 7.5cm guns. Here the short tunnel system has been restored and was shown to us by a hired guide. We got our own time to explore in the fog and drizzle. The day was going to be a long drive, so it was just as well we continued north as soon as everyone was done.

Break for lunch (*the first of many Circle-K gas stations we would visit*) and a quick check-in at a hotel in Sundsvall before we headed out to Spikarna where the owner of Storholmen Island provided water transport for us out to **Battery Sundsvall 1** (SL 1) with three 15.2cm/98-50E guns.

The sea was very active, so our tour members were damp when we reached the private island. Here we had the whole big underground facility to ourselves throughout the evening. Those who started outdoors by visiting the northern ex-navy guns were treated to in a thunderstorm, so they were totally soaked, while others took shelter in the 1km long tunnel system. When the battery was taken out of service only the ammunition, rangefinders, and radar was removed before sealing the tunnels. When the private owners opened the tunnel system, they found items ranging from secret documents to mouldy bedding. Only in 2019 did the fortifications authorities learn of this oversight and returned to clean out the battery complex.

During the evening burgers were served and we were all ashore again a bit after 8pm and half an hour later at the hotel after a long and good day of traveling and exploring.



*Part of Battery GE3.*



*GE3 radar antenna.*





*Internal blast door in Storåberget .*



*Main generator in Storåberget .*



*Twin 15.2cm Turret from inside.*



*One of the Twin 15.2cm Turret.*





*Bomyrberget, fake house over the 15.2cm turret.*



*Häggmansberget 15.2cm gun.*



*Häggmansberget 15.2cm.*



*A Stridsvagen M41 turret used as strongpoint*

At around 17:30 we exited the cars up on Häggmansberget for the two preserved 15.2cm guns. The staff from the **Kalix Riverside Inn** met us with coffee and buns before we started exploring this battery that is in the middle of nowhere (even for northern Sweden).

Once we arrived at the Kalix Riverside Inn for the night, we began to inspect the large military vehicle park and **Kalixlinjens Museum** before dinner in the Inn's restaurant down by the river.



*Bomyrberget, 15.2cm from inside turret.*



*Häggmansberget 15.2cm inside turret.*



*Kalixlinjens Museum, fixed tank turret display.*

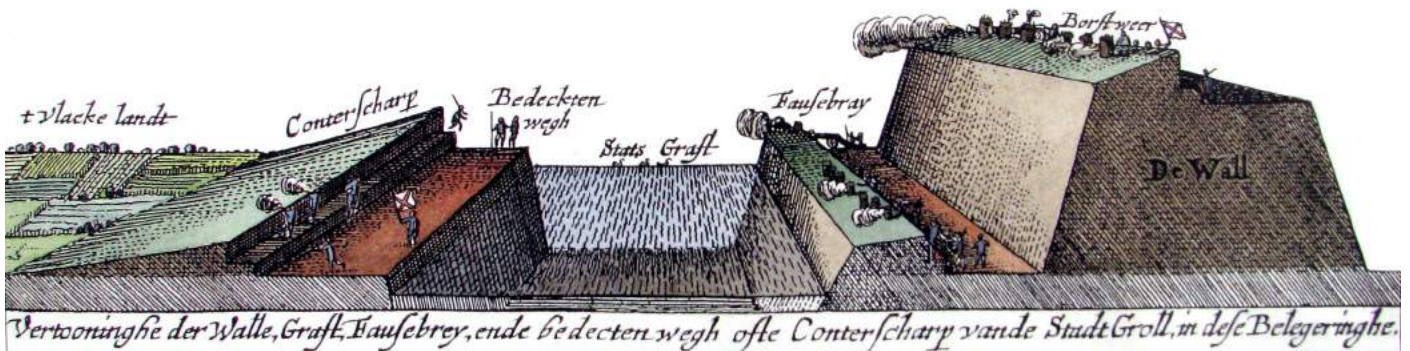
This night, a few miles south of the Arctic Circle, was too bright for some participants who did not sleep very well as it never gets dark this time of year.



## FAUSSE BRAYE

### THOUGHTS ON A THIRTY-SEVEN YEAR OLD QUESTION

By John Harris



Section through the fortifications of Grol (Groenlo) (internet).

We of the pointy-bits tendency of the FSG have from time to time discussed what the words *fausse-braye* actually mean and which structures can properly be called *fausses brayes* or *false braghe*, which is much the same thing in Italian. This piece is about the words rather than the structure.

Probably most people's idea of a *fausse-bray* is the above well-known illustration of Grol (aka Groenlo).

The phrase is puzzling, and it seems to give no clue to the function of the thing itself. I was looking through old Casemates and in no. 16 (May 1985) I found a letter to the editor from John Bury, author of several splendid FORT articles who had been wondering about the words. I will quote from it:

.... I consulted the bilingual dictionaries available to me, in particular Cotgrave's *French and English Tongues* (1611), the *Cambridge Italian-English Dictionary* (1962) and *Pineda's Spanish and English* (1740). From these it appears clear that the English translation of the mysterious *braye* and its Italian and Spanish equivalents must be our obsolete word *breech* meaning a garment which covers (and therefore protects) the loins and thighs (OED) a word which today no longer survives in the singular but only in the plural, *breeches*.

Used figuratively this word can simply mean a covering of any kind. Shakespeare for instance refers to "daggers..... breech'd (= covered) with gore". Could the word *braye* ... have been used to signify a (protective) covering or curtain?

This is a fascinating piece of research and not in my view as far-fetched as John Bury goes on to suggest. My Concise OED does not give any suggestion of a connection between "breech" and any word in any Romance language (only Old English and Old Norse connections are listed).

Otherwise, the OED confirms the Shakespearean usage of "breech'd" as "covered".

I am told that the word *braghe* does indeed mean "trousers" in the Triestino dialect, and possibly in other Italian dialects too. (Incidentally, *braghe* is also the word used in the area for the cranes used for lifting small boats out of the water – they do look a little like a pair of trousers with their two arms or "legs".)



A bragha in Croatia (photo: John Harris)

By coincidence, I had just been looking up *fausse-braye* in Cotgrave's 1611 *French-English Dictionary* when I came across John Bury's letter. (My copy is digital – in 1985 John Bury would have had a real copy.) What I found is:

*Fausse braye. A false-bray or out-wall, in a fortresse. No surprise there, but this is followed by:*

*Faulses brayes. The straps that hang downe on either side of a horses furniture.*

If my 1611 Cotgrave is the same edition that John Bury used in 1985, I am surprised he did not mention this entry.



# Pignerolle

## *A museum of the Infrastructure at the FdU West of Pignerolle*

*By Jean-Baptiste Blain*



*The majestic entrance to the Pignerolle estate shot from the rooftop of the manor. On the left, under a hilltop there is a 504-type bunker.*

*Please note that this article is full of unpublished information discovered after hours of research in the departmental and municipal archive centres of Angers, combined with field studies made between 2018 to 2021.*

With its manor, its “jardins à la française” and its park, which extends over 75 hectares (around 185 acres), the estate of Pignerolle shelters a Kriegsmarine communication centre. Some consider it as the German Bletchey Park. However, “Le domaine de Pignerolle” does remain an actual subject, which continues to write down new pages of its history.

### **Scientific introduction**

On the 15th of July 2022, a newspaper in Angers revealed a project to create a huge museum, which would be dedicated to the military infrastructure as-well as the Corps of Engineers, on the Pignerolle park<sup>1</sup>. This site has a history linked with the U-Boote. as, between 1943 and 1944 it served as a Kriegsmarine transmission centre. The German navy communicated with the submarine force from that estate, which was far away from the Atlantic Ocean. The aim was to keep the site hidden and safe from attack. Nowadays, there isn't any Enigma device at Pignerolle<sup>2</sup>.



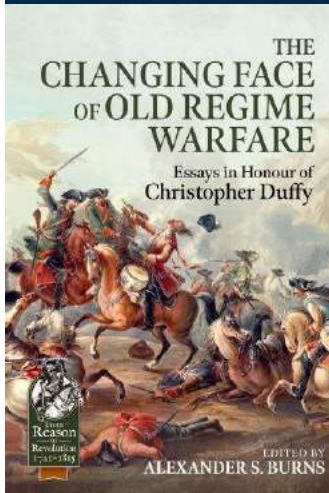
*Admiral Dönitz and Kriegsmarine officers posing on the steps of the manor house, probably on the 23rd of August 1943.*

*Double-composition with a picture made in January 2021.*

Since the 1970's, the estate, located at Saint-Barthélemy-d'Anjou (postal code: 49124), has been a free entrance public park that belongs to Angers Loire metropole. Before, the city of Angers was in charge of the park. Then after the Second World War, the city of Angers owned it throughout the District urbain d'Angers. In addition, Angers already has in its town-centre, a museum dedicated to the Corps of Engineers, logically called: Le Musée du Génie. Its entrance is also free of charge<sup>3</sup>.



## REVIEWS



**The Changing Face of Old Regime Warfare – Essays in Honour of Christopher Duffy:**

**Edited by Alexander S. Burns.**

**HB, 339pp. B/W illustrations.**

**ISBN 978.1.915070.38.8.**

**£35 (but about £23 via online booksellers).**

**Published by Helion and Company**

**2022**

This book is particularly of interest as we remember the late Christopher Duffy. All Festschrift collections are uneven, but there are articles here of interest to FSG members. Fortress enthusiasts will know and love Duffy's books about fortification, perhaps especially *Fire and Stone*, but he was primarily a military historian. His work on Frederick the Great's army gained him a large following in eastern Europe and a couple of these essays are by his colleagues in Poland and the Czech Republic. Other authors are German, French and American. There are sixteen essays in all.

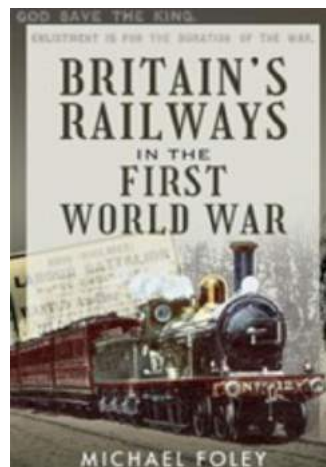
One, by the editor of the collection, Alexander S Burns, discusses Duffy's historiographical legacy; his appreciation of Duffy's life and work reads sadly like an obituary. Duffy's ability to connect not only with fellow scholars but with the public was clear to most of us who have read his work, but the importance of this talent is emphasised by Burns, as is his essential humility. Another piece is by Grzegorz Podruczny who published an essay on Frederick the Great's defence architecture in FORT 42; he writes here about a long-term battlefield archaeology project on the site of the Battle of Kunersdorf (now Konowice), fought in 1759.

Probably of most interest and importance to FSG members is an essay by Piotr Wohlmuth of Charles University Prague, about a little-known British surgeon and military engineer named Charles Bisset (1717-1791), who was at the defence of Bergen-op-Zoom in 1747 and developed and later published theoretical systems of fortification intended to improve on Vauban and Coehoorn. He found himself ignored by the Board of Ordnance, denied promotion by the British military establishment, and became a doctor. Wohlmuth looks at Bisset's quixotic determination to find radically new approaches to the design of fortifications, based on his experience of the fall of Bergen, once considered to be Coehoorn's most expert work. Alas, with no illustrations, it is not easy to see exactly what Bisset is suggesting or why it might be better than Coehoorn and Vauban. Bisset's ideas and writings are clearly worth further research, though – and soon!

Another essay consists of the edited memoirs of a certain Pastor Christian Täge, apparently a Prussian serving as a chaplain in the Russian army in 1759. He tells of the devastation of the town of Cüstrin (now Kostrzyn) after its burning by the besieging Russian army. He is captured at the Battle of Kunersdorf and imprisoned in the casemates of the ruined Cüstrin. This all makes for a curious read, but an important record of the horrors of the War of the Austrian Succession made by a sensitive observer.

Overall, apart from the above-mentioned essays, which are fascinating, this is a book for the dedicated and expert military historian rather than the fortress enthusiast.

**JH**



**Britain's Railways in the First World War**

**by Michael Foley**

**H/B, 201 pp, illustrated with BW photographs**

**ISBN: 978-1-52678-679-1**

**£20**

**Published by Pen and Sword**

**2021**

Railways and war are subjects dear to my heart; I am a closet railway enthusiast and even served in the British Transport Police for a great many years before I grew up and ran away to become an archaeologist.

Foley's book shines a light on Britain's rail system during WW1 and how it grew and was eventually transformed into a cohesive national government operated rail system. Foley brings to our attention the pre-war preparations for war and how they dovetailed into wartime planning. On the other hand, underlined is the chaotic transformation to total war when the railway industry, like most other sectors, was planning for a short sharp war in Europe. Also mentioned are the trench railway systems constructed to serve the frontline trenches with supplies.

Railways during WW1 is an enormous subject to expect just one book to cover in any detail. However, much of the information contained therein is probably well known to the diehard rail enthusiast. Where it does score is as an introduction to the subject to the novice and general reader. The style of the book is not overly technical, and the illustrations are attractive and complement the text. If narrow-gauge trench rail is your thing, then perhaps titles by Martin and Joan Farebrother would suit better.

**CM**





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