

A MILITARY ATLAS OF THE FIRST WORLD WAR

ARTHUR BANKS



Arthur Banks

**A Military Atlas of the
First World War**

commentary by ALAN PALMER



LEO COOPER

First published in 1975 by Heinemann Educational Books Ltd
Republished by LEO COOPER (an imprint of Pen & Sword Books)
in 1989, Reprinted in 1997
Reprinted in this format in 2001
by Pen & Sword Books Ltd
47 Church Street
Barnsley
South Yorkshire S70 2AS

A CIP record for this book is available
from the British Library

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ISBN 0 85052 791 0

Printed and bound by CPI UK

PREFACE

It is now nearly a quarter of a century since I entered the specialised field of cartography and during that time I have been able to direct much of my effort into the fascinating, but technically complicated, area of military and historical map-production.

I soon discovered that the research material I needed was very widely scattered through many different libraries and military institutions and that much of my time would be spent in sifting through material and consulting veterans of past campaigns. At one time I longed to find some clear, reasonably-priced atlases of battles accompanied by succinct texts, tables, and diagrams. No such volumes seemed to exist, so far as I could discover. The idea of producing such an atlas myself took shape; from my researches and discussions with those who planned and took part in some of the actions I decided to compile my own cartographical record. This was the genesis of this present book.

In these times economy seems to dictate much that we do; therefore, my original plan to give detailed coverage to most of the important military campaigns has had to be modified. As a result, this book is necessarily briefer than the one I originally designed.

However, I hope that the book will be a convenient reference work which deals with those areas where a more detailed examination in cartographical terms has long been demanded.

Arthur Banks
1975

The original version of this atlas has been out-of-print for some years. Nevertheless, demand for it has been steadily increasing with so much media presentation of events in the First World War. Accordingly it has been decided to reprint the work to cater for all the various interests in the war that changed the future for so many millions of people.

1989

ACKNOWLEDGEMENTS

During the research involved in the preparation of this atlas, I consulted some 1,300 historical reference works, examined and cross-checked 4,000 large- and small-scale maps (many of them of German or French origin), inspected several hundred technical manuals plus individual drawings, and attended numerous discussions with experts and veterans of the First World War.

Consequently, this must of necessity be a blanket appreciation of all those who were interested enough in my project to proffer advice and information in order to advance my work at various stages of the scheme.

In particular, I should like to thank General Sir James Marshall-Cornwall, Mr Michael Willis, and Mr Alan Palmer; all three went to enormous lengths to assist me and I am tremendously indebted to them.

In addition, the following persons deserve special mention and my gratitude: Dr R. Banks, Captain G. Bennett, Rear-Admiral P. Buckley, Captain L. Boswell, Captain E. Bush, Mrs J. Campbell, Miss R. Coombs, Major-General P. Essame, Miss S. Glover, Mr R. Holmes, Dr I. Nish, Mr V. Rigby, and Mr R. Welsh. Mr P. Richardson, Mr A. Hill, and Mr D. Heap of Heinemann Educational Books Limited extended endless encouragement and support to aid me in my task.

The librarians and staffs of the following organisations were generous in the facilities they placed at my disposal:

Imperial War Museum, Ministry of Defence, Royal Science Museum, Royal United Services Institute for Defence Studies, Royal Air Force Museum, H.M.S. *Vernon*, Hydrographic Department of the Admiralty, l'École Royale Militaire (Brussels), Turkish Naval Attaché's Office (London), United States Embassy (London), Belgian Embassy (London), and Surrey County Council Headquarters (Study and Information Department).

Finally, and above all, my wife deserves my deepest thanks: her devotion to my cause succoured me on so many occasions during the years of toil entailed in the research and preparation of this volume.

BIBLIOGRAPHICAL NOTE

Owing to the enormity of the research involved, it has proved impossible to itemise every reference work consulted, and the author feels that it would be unfair to specify particular accounts for recommended reading. However, he states that an essential first step for the serious student is to inspect the various military, naval, and aerial official histories of the belligerent powers. Usually these can be obtained from a central reference library or inspected at museums and institutions which specialise in military history and warfare.

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THE PRE-WAR SITUATION

The coming of the Great War took the European peoples by surprise. In the spring of 1914 the nations of western and central Europe had been at peace with each other for forty-three years, a longer period free from conflict than ever before in their histories. Except in the south-eastern corner of the continent, where the Balkan peoples still sought complete independence from Turkish rule, frontiers had remained inviolate since the Franco-Prussian War. Two traditional battle cockpits, the Polish plains and the low-lying fields of Flanders, had escaped war not merely for forty years, but for a full century. Small wonder if the long European Peace lulled ordinary people into a false sense of security. Economists argued war was commercially so disruptive that no industrialised nation would resort to it; intellectuals maintained that international society was enlightened enough to scorn its folly.

Statesmen and generals remained less sanguine. There had, after all, been colonial campaigns throughout the armed peace. By 1914 the army of every European Great Power, except Germany and Austria-Hungary, had already been engaged in fighting since the turn of the century. If colonial disputes had not led to a general conflict it was because, as yet, they had never affected the vital interests of more than two Great Power rivals at the same time; but potentially they were dangerous, as the Agadir Crisis showed in 1911. Moreover no one could ignore the significance of the arms race. Naval and military expenditure by the Great Powers doubled in the last twenty years of the nineteenth century; it doubled again in the first decade of the twentieth. Where could the arms race finish, if not on the battlefield?



There was, too, uncertainty over the ability of the diplomats to safeguard peace much longer. By 1900 Europe was divided by rival alliances, with the Central Powers (Germany, Austria-Hungary, Italy) on one side and with France and Russia on the other. So long as

potential opponents seemed equally strong, these alliances made for continuance of the peace rather than war. But by 1905 Russia, defeated in the Far East by Japan and weakened by the threat of revolution, had ceased to be militarily formidable. There was no genuine balance of strength between the Powers. Too many imponderables accumulated. What would the British do? The Liberal Government gave diplomatic support to its Entente partners, France and Russia, but evaded formal military obligations: in the last resort, only the 1839 pledge to uphold Belgium's neutrality counted in British reckoning. What, too, of Italy? Rivalry with Austria over territorial interests in the Adriatic made the Italians uncomfortable members of the Triple Alliance. Was Italy still a 'Central Power'? There was no doubt that the diplomatic system of 1900 had changed by 1914.

Yet mutual antagonism was growing in intensity rather than diminishing. The French still sought recovery of Alsace-Lorraine; the British were increasingly suspicious of Germany's naval shipbuilding programmes; Russian Pan-Slavism seemed to threaten the integrity of Austria-Hungary; and the Germans resented the web of encirclement which they believed others were weaving around them. Already these issues had provoked diplomatic crises, for which solutions were improvised by statesmen unready for war. But everyone in authority knew that once orders were given for mobilisation, the alliance system would work against any localisation of the conflict. Peace was fragile: the Sarajevo crime was to show it lay ultimately at the mercies of chance. The heir to the Austrian throne and his consort were assassinated in the Bosnian capital by a Serbian student on 28 June 1914. By the middle of August five European Great Powers and two of lesser standing were locked in battle from the Flanders Plain to the eastern foothills of the Carpathians.

MAIN REASONS WHY THE FIVE MAJOR EUROPEAN POWERS WENT TO WAR IN 1914

KEY

-  The Triple Entente.
-  The Central Powers.

BRITAIN

- 1 To honour treaty obligations to Belgium dating back to 1839.
- 2 To preserve world naval supremacy.
- 3 To support France; under a naval agreement, Britain "protected" the English Channel and North Sea zones, thus releasing the French fleet for possible Mediterranean operations.
- 4 To avoid a continental shift in the balance of power.

? MORAL OBLIGATION. BRITISH CABINET INFLUENCED BY THE MILITARY STAFF TALKS?

FRANCE

- 1 To combat growing military importance of Germany.
- 2 To fulfill treaty obligations to Russia.
- 3 To regain Alsace and Lorraine.

RUSSIA

- 1 To ensure that Serbia was not crushed by Austria-Hungary.
- 2 To dominate the Balkans.
- 3 To strengthen the position of the Tsar at home; the ruling classes feared growing semi-revolutionary murmurs. A foreign victorious war seemed a good insurance against any internal strife.

RUSSIA

GERMANY

- 1 To protect Austria-Hungary from the consequences of her attack on Serbia.
- 2 To preserve German security; the Kaiser feared an "encirclement" by the Triple Entente powers.
- 3 To demonstrate Germany's emergence from a continental rôle to world power status.
- 4 To gain advantage from a surprise attack. Britain appeared pre-occupied in Ireland and India and with the suffragette movement. Furthermore, Germany was sceptical of Britain's full determination to honour her obligations to Belgium.

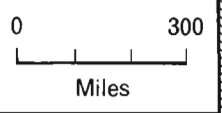
AUSTRIA - HUNGARY

- 1 To crush Pan-Serb movement.
- 2 To dominate the Balkans by crushing Serbia, thus securing Austrian control of the route to Salonika on the Aegean.

2



THE TWO EUROPEAN RIVAL ARMED CAMPS PRE - 1914



KEY

- The Triple Alliance of Germany, Austria-Hungary, and Italy.
- The Triple Entente of Britain, France, and Russia.
- Non-aligned European countries.

BRITAIN AND THE ENTENTES. These were not formal alliances: they were "understandings" (e.g. settlements of old disputes).

FRENCH DESIROUS OF RETRIEVING ALSACE AND LORRAINE FROM GERMANY.

This map illustrates the widely-publicised notion in pre-war Germany that she was being encircled by the "Triple Entente" powers.

BRITISH AND GERMAN NAVAL RIVALRY.

BRITISH AND FRENCH FLEETS DOMINATE THE MEDITERRANEAN

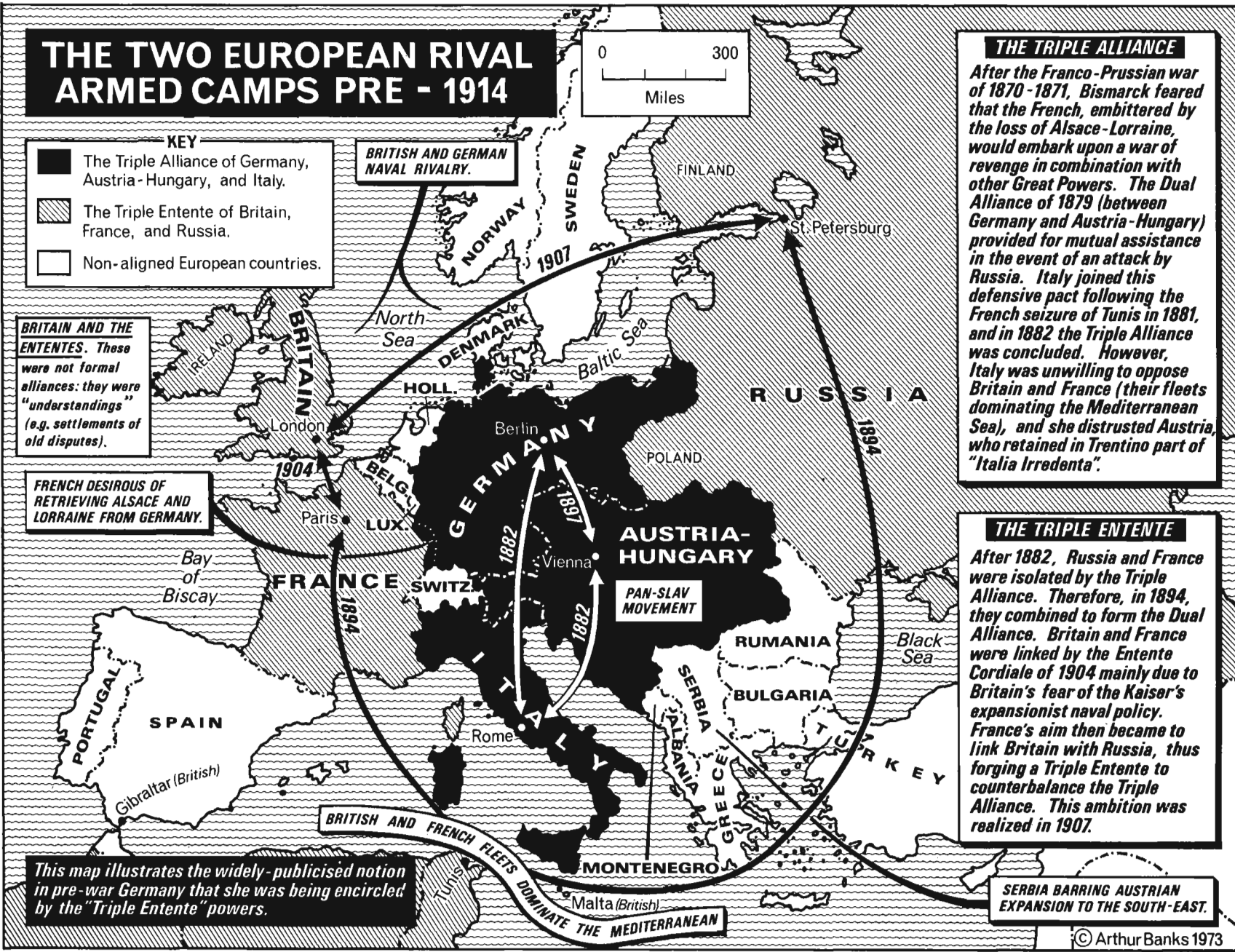
THE TRIPLE ALLIANCE

After the Franco-Prussian war of 1870-1871, Bismarck feared that the French, embittered by the loss of Alsace-Lorraine, would embark upon a war of revenge in combination with other Great Powers. The Dual Alliance of 1879 (between Germany and Austria-Hungary) provided for mutual assistance in the event of an attack by Russia. Italy joined this defensive pact following the French seizure of Tunis in 1881, and in 1882 the Triple Alliance was concluded. However, Italy was unwilling to oppose Britain and France (their fleets dominating the Mediterranean Sea), and she distrusted Austria, who retained in Trentino part of "Italia Irredenta".

THE TRIPLE ENTENTE



After 1882, Russia and France were isolated by the Triple Alliance. Therefore, in 1894, they combined to form the Dual Alliance. Britain and France were linked by the Entente Cordiale of 1904 mainly due to Britain's fear of the Kaiser's expansionist naval policy. France's aim then became to link Britain with Russia, thus forging a Triple Entente to counterbalance the Triple Alliance. This ambition was realized in 1907.


SERBIA BARRING AUSTRIAN EXPANSION TO THE SOUTH-EAST.



A BASIC APPRAISAL OF THE MAIN CONTESTANTS 1914

KEY

-  The Entente Powers.
-  The Central Powers.

BRITAIN 

- 1 Essentially a sea power, rather than a land power (due to Empire considerations).
- 2 Inexperienced in large European-style land operations.
- 3 Reliance placed upon cavalry rather than upon artillery.
- 4 Reliance placed upon rifle techniques rather than upon machine gunnery.
- 5 An 'amateur' army power, rather than a professional army power.
- 6 An 'untapped' Empire at her disposal.

GERMANY 


- 1 The sole European nation to appreciate the importance of mortars, howitzers, and machine guns.
- 2 Appreciation of an efficient railway system to switch troops from west to east in the event of a 'two-front' war.
- 3 Foresight to back-up a front-line corps with a 'reserve' corps.
- 4 Active in scientific research.

RUSSIA 


WEAK AFTER DEFEAT BY JAPAN (RIOTS AND MUTINIES OF 1905).

RUSSIA 

- 1 Overwhelming in terms of potential man-power.
- 2 Weak in communications and in manufacturing munitions.
- 3 Poorly-led compared to her enemies.
- 4 Geographically isolated from her allies.
- 5 Confronted with a 'two-front' war situation (against Germany and Austria-Hungary).

FRANCE 

- 1 Population disadvantage with Germany in terms of a long war (potential 'call-up').
- 2 Possession of the best artillery gun in the world (the 75-mm.).
- 3 Expectation of a short war.
- 4 Reliance upon out-of-date forts.

AUSTRIA-HUNGARY 

- 1 Weakened by her racial structure, yet strengthened by her resolute Germanic and Magyar backgrounds.
- 2 Conscious of the need to defend a long frontier.
- 3 Army obsolescent in equipment.
- 4 Possessed by an offensive spirit.



THE EUROPEAN CAULDRON PRIOR TO HOSTILITIES

British naval circles view the rapidity of Germany's naval construction programme with alarm and suspicion.

1914, civil war seems likely (to Germany).

French anxious to regain Alsace and Lorraine lost to the Germans in Franco-Prussian War of 1870-1871 ('la Revanche').

Italy keen to obtain territory from Austria-Hungary and to control the Adriatic Sea.

Kiel Canal (Kaiser Wilhelm Canal) constructed 1887-1895; deepened and widened by 1914 for passage of German naval vessels from the North Sea to Baltic Sea. At the opening of canal, Kaiser makes speech including the words "our future lies on the water", a most direct challenge to Britain's navy.

KEY

Heterogeneous Austria-Hungary: basic ethnic (linguistic) key:	
G Germans.	R Ruthenes.
C Czechs.	SV Slovenes.
SK Slovaks.	I Italians.
P Poles.	RM Rumanians.
S Serbs.	L Ladins.
CR Croats.	M Magyars.
CS Catholic Serbs of southern Hungary.	MS Moslem southern Slavs.

Minorities anxious for free expression.

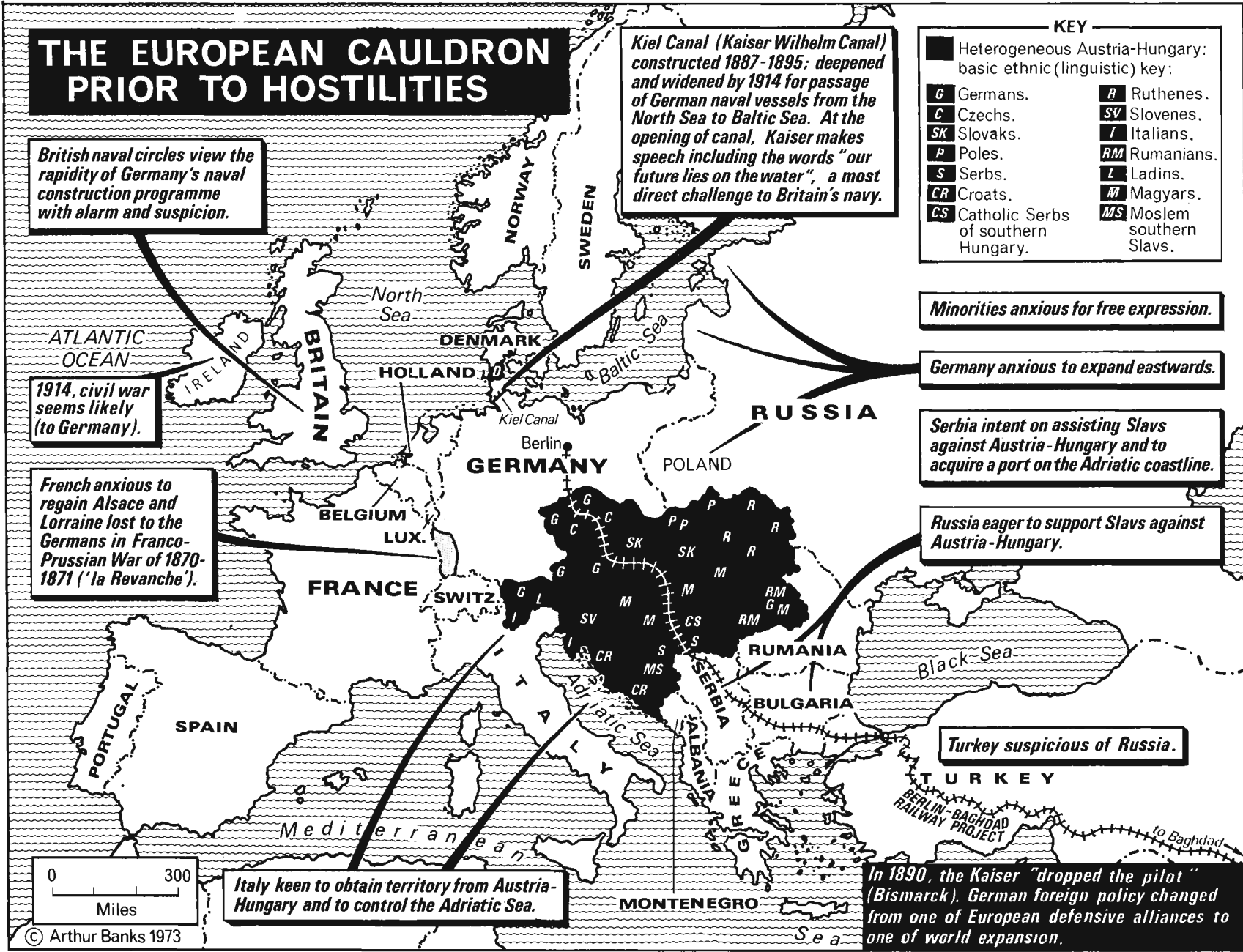
Germany anxious to expand eastwards.

Serbia intent on assisting Slavs against Austria-Hungary and to acquire a port on the Adriatic coastline.

Russia eager to support Slavs against Austria-Hungary.

Turkey suspicious of Russia.

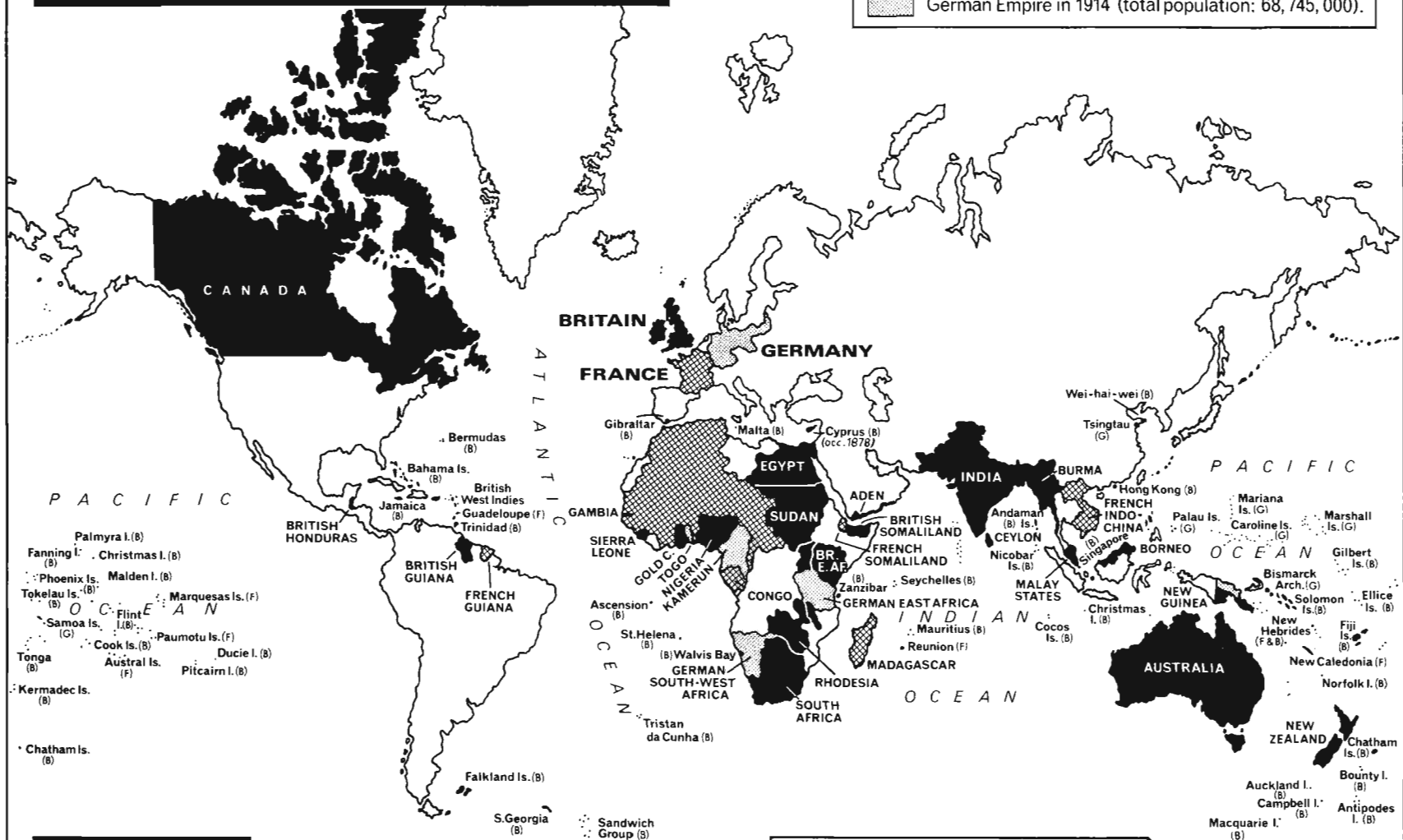
In 1890, the Kaiser "dropped the pilot" (Bismarck). German foreign policy changed from one of European defensive alliances to one of world expansion.



WORLD EMPIRES OF BRITAIN, FRANCE, AND GERMANY 1914

KEY

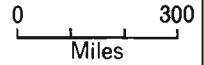
- British Empire in 1914 (total population: 400,000,000).
- French Empire in 1914 (total population: 95,638,000).
- German Empire in 1914 (total population: 68,745,000).



Empire troops played a large part in the war, notably those of Britain.

Note: by the end of 1914, the only German overseas possession remaining uncaptured by the Allies was German East Africa.

CRISES IN NORTH AFRICA AND THE BALKANS 1905-1912



1 1905-1906 CRISIS IN MOROCCO

31 March 1905, Kaiser Wilhelm II visits Tangier and claims equal rights for Germany in Morocco and the maintenance of the Moorish Empire; this is a challenge to the position of France in Morocco. Britain supports France. The Algeiras Conference of 1906 avoids a Franco-German clash.

As a result of the crisis in Bosnia, Italy distrusted Austria, thus weakening the Triple Alliance.

Britain was worried over development of Agadir; future naval base for Germany?

The crises in Morocco caused France to draw closer to Britain.

4 1911 CRISIS IN MOROCCO

French army units occupy Fez to assist Sultan in maintaining control against rebels. Germany views this action as a breach of the 1906 Algeiras Treaty and despatches warship SMS "Panther" to Agadir to safeguard German interests. 5 November 1911, Germany recognizes French protectorate in return for territorial adjustments in her favour in West Africa.

3 1908 CRISIS IN BOSNIA

Austria annexes Bosnia and Herzegovina (mainly Serb-populated). Germany supports Austria. Slavs look to Russia for support, but latter is still weak after Russo-Japanese war (1904-1905). Faced by the Austro-German combination, Russia backs out.

2 1908 YOUNG TURK REVOLT

Young Turkey Party demands constitutional government; this is conceded by Sultan of Turkey. Bulgaria violates Treaty of Berlin 1878 (Article One) by proclaiming herself an independent kingdom. Greece-Crete union.

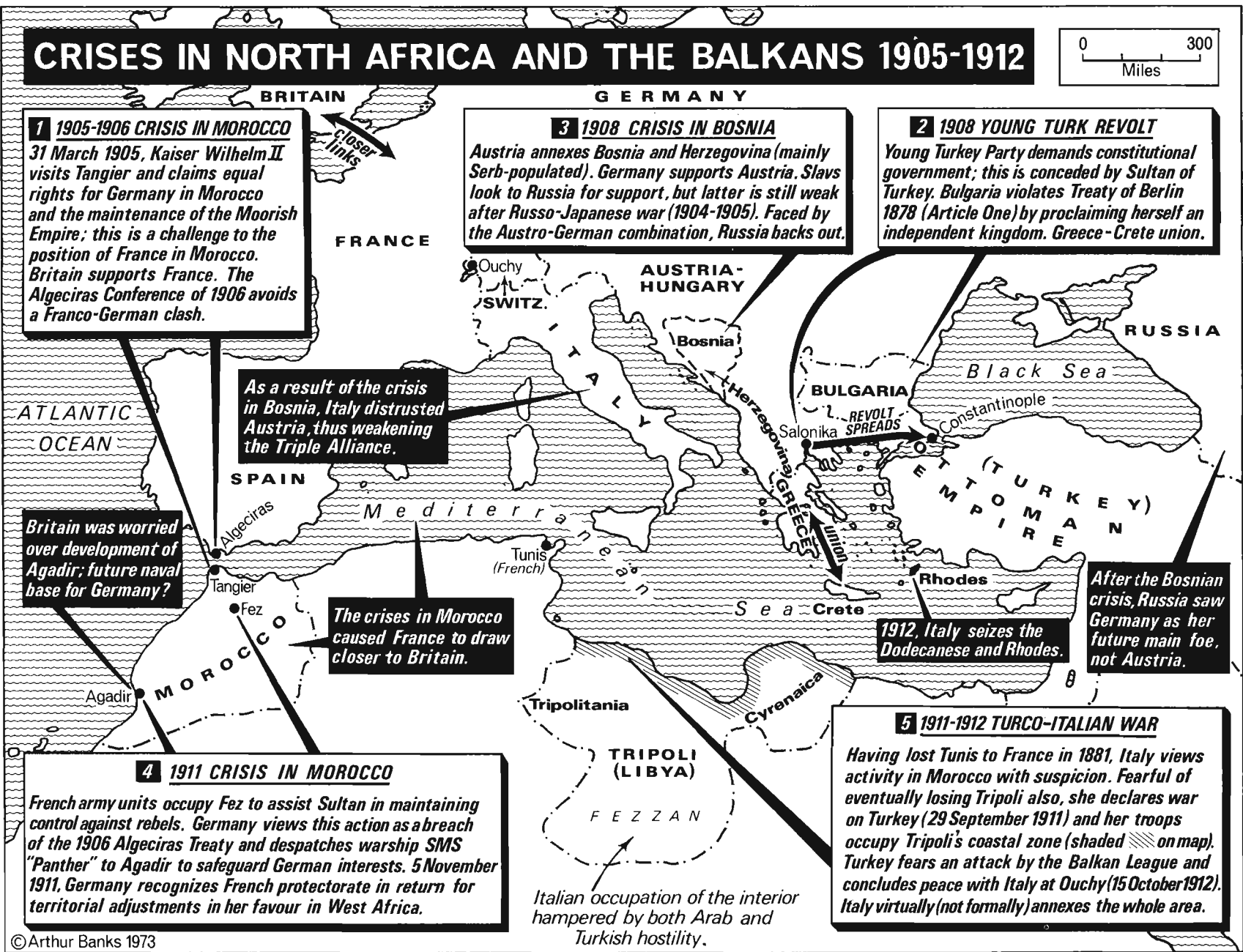
1912, Italy seizes the Dodecanese and Rhodes.

After the Bosnian crisis, Russia saw Germany as her future main foe, not Austria.

5 1911-1912 TURCO-ITALIAN WAR

Having lost Tunis to France in 1881, Italy views activity in Morocco with suspicion. Fearful of eventually losing Tripoli also, she declares war on Turkey (29 September 1911) and her troops occupy Tripoli's coastal zone (shaded on map). Turkey fears an attack by the Balkan League and concludes peace with Italy at Ouchy (15 October 1912). Italy virtually (not formally) annexes the whole area.

Italian occupation of the interior hampered by both Arab and Turkish hostility.



THE FIRST BALKAN WAR 1912-1913*

1 The General Situation

*Note: in two parts, viz.,
1. 18 Oct. - 3 Dec. 1912
2. 3 Feb. - 10 May 1913.

Austria opposes Serbia's demand for a port on Adriatic coast



Russia supports Serbia's demand for a port on the Adriatic coast.

Rumania does not join Balkan allies but is keen to share in their gains.

Bulgaria is anxious to obtain territory to her south, most of which has been promised to her.

Greece occupies and wishes to retain Salonika, which is claimed by Bulgaria.

Montenegro declared war on Turkey on 8 October 1912, and the other three Christian states presented their ultimatums to Turkey on 18 October, whereupon Turkey replied by declaring war upon them. Britain and Germany restrained their allies temporarily to avoid a full-scale conflict enveloping Europe, but Turkey lost territory.

KEY
 Countries of the Balkan League.
 Territory lost by Turkey at Peace of London.

0 200
Miles

MAIN REASON FOR WAR: BALKAN STATES EAGER TO "LIBERATE" THEIR COMPATRIOTS STILL WITHIN TURKEY IN EUROPE.

2 The Military Operations

KEY
 Montenegrin advances.
 Serb advances.
 Greek advances.
 Bulgar advances.
 Turkish counter-attacks.

Armistice concluded.

The Serbs gained victories at Kumanovo (23 October) and Monastir (15 November). The Bulgarians gained victories at Kirk Kilisse (23 October) and Lule Burgas (30 October), but failed in their attack on the fortified lines of Chatalja (17-18 November). The Greeks moved into Macedonia occupying Salonika on 9 November.

0 50
Miles

THE SECOND BALKAN WAR 1913*

1 The General Situation

*Note: dates, viz., 30 June - 30 July.

KEY

- Territory gained by Serbia at Treaty of Bucharest.
- Territory seized by Rumania.
- Territory gained by Greece.
- Territory gained by Montenegro.

Serbia gains much territory but no port on the Adriatic. Austria views the growth of Serbia as further serious impediment to her plans for early south-easterly expansion.

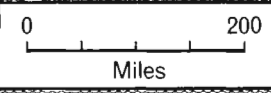
Bulgaria is defeated by the combination of five powers against her and loses most of her newly-gained territory.

Turkey takes advantage of beaten Bulgaria, regaining eastern Thrace including Adrianople.

Greece gains southern Macedonia and Salonika.

New state of Albania is created, thus blocking Serbia's access to Adriatic.

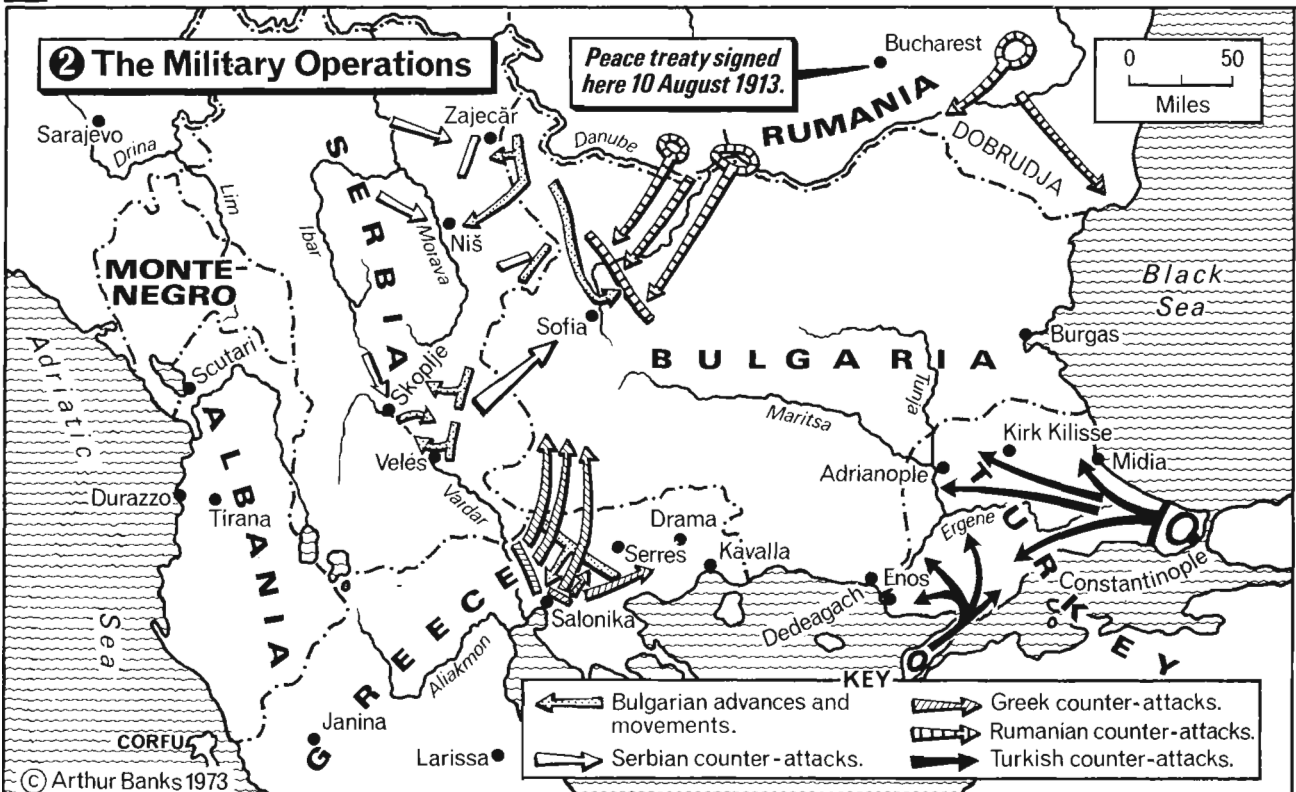
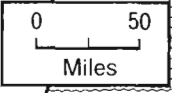
The Chatalja armistice (3 December 1912) was concluded without Greece. The London Peace Conference, which opened on 16 December, broke down over Bulgarian insistence on obtaining Adrianople and war was resumed on 3 February 1913. This time Bulgaria had to fight a combination of Greece, Serbia, Montenegro, and Rumania. The whole campaign ended in the Treaty of Bucharest (10 August 1913).



NOTE: THIS WAR WAS BASICALLY A QUARREL OVER THE PREVIOUS SPOILS AND OVER THE RACIAL CHARACTER OF MACEDONIA.

2 The Military Operations

Peace treaty signed here 10 August 1913.



THE 'SPARK'-ASSASSINATION OF FRANZ FERDINAND 28 JUNE 1914

1 The First Unsuccessful Attempt

2 1012 hours, Čabrinović hurls bomb at Archduke's car, leaps embankment, runs off along riverbed but is held by police. Bomb explodes against third car which renders it unserviceable. Archduke unhurt.

3 Remaining three cars continue in procession to Town Hall as originally planned, but at fast speed.

CLARIFICATION NOTE: 'BLACK HAND' WAS A SECRET SERBIAN SOCIETY, WHEREAS 'YOUNG BOSNIA' WAS A MOVEMENT, PARTLY CULTURAL.

4 Princip sees cars pass, then crosses to café.

7 Four-car procession; Archduke and wife in second car.

THE WAITING CONSPIRATORS

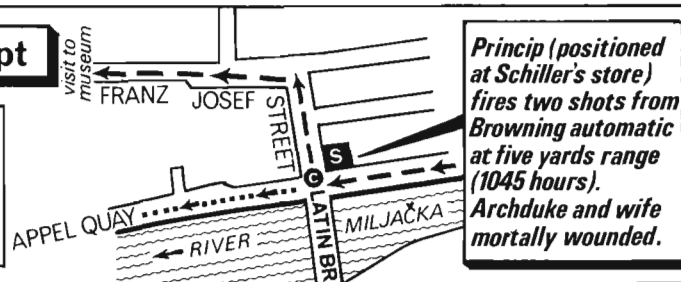
- 1 Danilo Ilić.
- 2 Viješko Popović.
- 3 Mohamed Mehmedbašić.
- 4 Nedeljko Čabrinović.
- 5 Vaso Čubrilović.
- 6 Gavrilo Princip.
- 7 Trifko Grabež.

The assassination of Archduke Franz Ferdinand (heir to the throne of Austria-Hungary) and his wife at Sarajevo, capital of Bosnia, was the spark igniting a chain reaction sequence that led to the outbreak of war in 1914. A group of conspirators associated with two Balkan Slav societies (the 'Black Hand' and the 'Young Bosnia') were put into operation on St. Vitus' Day (a Serbian festival). The first attempt failed, but the Archduke, who was on an official visit to Sarajevo, went on to the Town Hall as arranged. The return route was altered but the driver of the Archduke's car misunderstood the change of plan (due to poor briefing) and followed the leading car into Franz Josef Street. Princip, one of the conspirators, saw the car reversing into Appel Quay, ran into the road and shot the Archduke and Duchess.

2 The Second Successful Attempt

KEY

- ← - - - Return route from Town Hall as originally planned (before Čabrinović's bomb action).
- ← ····· Revised return route (after bomb action).
- S** Moritz Schiller's delicatessen/café shop.
- C** Position of car during Princip's action.





Princip (positioned at Schiller's store) fires two shots from Browning automatic at five yards range (1045 hours). Archduke and wife mortally wounded.

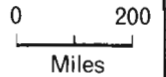
THE TRAGIC FAMILY HISTORY OF FRANZ JOSEF (EMPEROR OF AUSTRIA)

- 1867. His brother, Emperor of Mexico, was executed.
- 1889. His son, Crown Prince Rudolf, died mysteriously.
- 1898. His wife, Empress Elizabeth, was assassinated.

EUROPE'S PLUNGE TO DISASTER IN THE SUMMER OF 1914

KEY

-  The Triple Entente.
-  The Central Powers. (note: Italy maintained neutrality because Germany had embarked upon aggressive war. Thus, no "casus foederis" under the Triple Alliance had arisen).



1 2 August, Germany invades Luxembourg without warning.

2 2 August, Britain assures France that British fleet will deny German fleet access to French ports via English Channel.

3 3 August, Belgium requests Britain to safeguard her integrity.

4 3 August, Germany declares war on France.

5 4 August, Germany invades Belgium, explaining to Britain that this was necessary due to French warlike plans.

6 4 August, Britain declares war on Germany which regards the Anglo-Belgian treaty as a "scrap of paper".

7 6 August, Russia and Austria are at war.

8 7 August, Montenegro declares war on Austria.

9 12 August, Britain declares war on Austria.

10 1 August, France commences mobilization.

1 28 June, Archduke Franz Ferdinand (heir-presumptive to the Austro-Hungarian throne) and his wife, are shot dead by a Slav nationalist in Sarajevo. (Austria declares war on Serbia on 28 July 1914).

2 5 July, Germany 'assures' Austria of support in the event of war with Russia.

3 23 July, Austria delivers ultimatum to Serbia which, in effect, violates Serbia's status as an independent country. Only 48 hours are allowed for Serbia to accept the Austrian demands.

4 24 July, Britain urges Germany in vain to mediate with Austria to extend the 48-hour time period.

5 25 July, Austria mobilizes on Serbian front.

6 27 July, British fleet (ready for manoeuvre leave) is ordered not to disperse.

7 30-31 July, Russia commences mobilization.

8 31 July, Austria commences mobilization.

9 1 August, Germany commences mobilization and declares war on Russia.



WAR ON THE WESTERN FRONT IN 1914

There had never been so great a concentration of military forces as in August 1914. A little over a century before, Napoleon (who, with Voltaire, believed fortune favoured 'the big battalions') staggered his contemporaries by gathering a Grand Army of 500,000 men to invade Russia. Yet, within a fortnight of the outbreak of war in 1914, the Germans had three times that number in France and Belgium alone. At the same time there were over a million Frenchmen on the Western Front, with three million reservists on call; both the Russians and the Austrians had more than a million and a quarter field troops along their frontiers; and by the end of the year a million volunteers in Britain had come forward for Kitchener's 'New Army'. Napoleon's Marshals counted their big battalions in hundreds of thousands; the commanders of 1914 thought in millions.

These huge numbers determined the character of the war. Military theorists in both France and Germany had long believed victory would come to the nation able rapidly to mobilise its mass of manpower and deploy its forces effectively in the field. It was assumed that the key to success lay in an offensive spirit and that the outcome of the war would be decided by a single campaign on each Front. Kitchener warned the British Cabinet the war would last for at least three years, but his colleagues doubted his powers of judgment. In Berlin that August the Kaiser told departing troops, 'You will be home before the leaves have fallen from the trees'; and few public figures in London, Paris or St Petersburg (soon to be renamed Petrograd) believed the fighting would continue for more than six months. The great tragedy for Europe is that when rapid victory eluded the combatants, the armies—still massive in numbers—became deadlocked in trench warfare, the big battalions checked by the unexpected defensive power of machine guns and exposed to the fury of weapons which the authorities had underrated. It was this transformation of the battlefield which wasted so many lives. Casualties were heavy during the 'war of movement': they were heavier still during the long agony of the 'war of attrition'. At a conservative estimate over the world as a whole—with land fighting in three continents and with warships engaged on every

ocean—one sailor, soldier or airman was killed for every ten seconds the war lasted; and it continued in the end for fifty-one months.

Yet, at the outset, it seemed as if the fighting would indeed 'all be over by Christmas'. The Schlieffen Plan, finally adopted by the German General Staff at the end of 1905, proposed a holding operation against the Russians (who, it was assumed, would be slow to mobilise) in the East while the bulk of the German Army struck against France with an enveloping movement through Flanders and Picardy which would invest Paris from the west and south and thus force the French armies eastwards on to their own defences from Nancy to Belfort. British intervention, though regarded as probable once Belgium was invaded, was discounted as negligible. France defeated, the Germans planned to use the network of railways to move their forces eastwards and destroy the Russian menace. This plan, which was modified by Moltke (Chief of the German General Staff since 1906) in the three years immediately preceding the war, came within an ace of success. The French grand design—Plan XVII—to some extent played into German hands, for it committed two armies to an attack on Lorraine, away from the principal threat to the heart of France. Even when amended after the German invasion of Luxembourg, Plan XVII still ignored the strength of the enemy's thrust into western Belgium. So successful were the Germans that on 30 August the readers of *The Times* in England were startled to learn that 'the investment of Paris cannot be banished from the field of possibility'. What the public was not told was that the French, exhausting themselves by courageous counter-attacks in the spirit of Napoleonic battle panoramas, had already suffered nearly a third of a million casualties (dead, missing, wounded). One out of every ten officers in the whole French army (not merely the regiments in the field) was killed or incapacitated before the end of August 1914.

Moltke's variation on the Schlieffen Plan failed for three principal reasons. He lost touch with his army commanders, who showed excessive independence of manoeuvre; he was so worried by reports of the

Russian advance into East Prussia that he weakened his right wing by detaching troops to the East (compare pages 19, 88 and 89); and he failed to see that three weeks of forced marches in intensive heat and blazing sunshine had reduced the efficiency of the invading armies. When General von Kluck began to move his tired troops south-eastwards, exposing the right flank of the German First Army to the Paris garrison (page 54), the fate of the whole war was in the balance. The French commander-in-chief, Joffre, supported by the Military Governor of Paris, General Gallieni, ordered the French Sixth, Fifth and Ninth Armies (Generals Maunoury, Franchet d'Espèrey and Foch) together with the British Expeditionary Force (Field-Marshal Sir John French) to counter-attack across the lower Marne and its tributaries on 5–6 September. There followed the series of inter-related engagements, the legendary 'miracle of the Marne', fought along a front of more than 125 miles. Momentarily the nerve of the German High Command seemed to crack; Paris and France were saved; the German knock-out blow—which had stunned France in 1870 and which was to stun France again in 1940—was thrust aside.

If the Allies had not themselves been so weary and cautious that September, they might well have turned the German retreat from the Marne into a sensational defeat. As it was, the Germans found they could stabilise their line north of Rheims and along the river Aisne. Moltke retired from active service and was replaced as Chief of the German General Staff by General von Falkenhayn, who at once determined to consolidate the German hold on Belgium, through which the invaders had passed like a scythe in the first weeks of war. When Brussels was occupied on 20 August five divisions of the Belgian Army (80,000 men) fell back on Antwerp, the great fortress-port on the Schelde. So long as the Belgians held Antwerp (from which they made a number of sorties to relieve pressure on the French and British on the Marne and the Aisne) there was a possibility of using the city as a point from which to attack the German right flank. This threat the Germans were determined to eradicate. The First Lord of the Admiralty, Churchill, sought to stiffen resistance in Antwerp by a personal visit and by sending from England a naval division, which was hastily trained and inadequately armed. In the event, the Belgians placed excessive reliance on outdated forts and redoubts which could not withstand the pounding of German artillery. Antwerp duly surrendered to General von Beseler on

9 October, but the main Belgian army withdrew by way of Ghent and Bruges to the line of a canalised small river, the Yser. There, inspired by their courageous King Albert, the Belgians resisted a German advance towards Dunkirk, eventually opening the sluices of Nieupoort and bringing the North Sea in flood to the aid of the defenders.

While Beseler was besieging Antwerp, both the Germans and the Allies were engaged in a complicated movement from the Aisne to cover the Channel ports. At times during this 'race for the sea' it seemed as if both sides were risking envelopment by the other during their outflanking operations. Briefly there was hope that the British would capture Lille and open up a route towards Brussels, but they failed to penetrate the town in strength. All six divisions of the B.E.F. were moved northwards from the Aisne to Flanders. By the end of the second week in October they had established a salient around Ypres, Armentières and Neuve Chapelle. It was here that they faced Falkenhayn's principal attempt to break through the Allied positions and take Calais and Boulogne.

The first battle of Ypres (October–November 1914) virtually destroyed the old peacetime British regular army and began to take heavy toll of the new territorial infantry battalions as well. 50,000 British soldiers fell at Ypres that autumn, one division losing two-thirds of its infantry in three weeks of combat. Hardest hit were the original 'old contemptibles', the men who had gone forward to Mons in August (page 47) and retreated for a gruelling fortnight before turning back south of the Marne and forcing the Germans northwards to the Belgian frontier. By the end of November over half of the men who had crossed to France three months previously were casualties, one in ten of them dead. The Germans lost twice as many soldiers as the British at Ypres, yet they never broke through. They penetrated the British line at Gheluvelt on the Menin Road (31 October) but were ejected in a surprise counter attack by the 2nd Battalion of the Worcestershire Regiment, subsequently supported by French units. The city of Ypres was never captured by the Germans, even though fighting raged continuously around the ruined mediaeval cloth town for four years. Ypres and its salient acquired a symbolic significance for the British which was out of all proportion to its strategic value. There were two later battles within the Ypres Salient: in the spring of 1915 (pages 138–143) and from June to November 1917 (pages 172–173); and a final

penetration of the German positions in September 1918 (page 196).

Winter set in before the First Battle of Ypres was over. There was no longer any danger of an outright German victory, but equally there was little prospect of an Allied breakthrough. First Ypres marked the end of open warfare: henceforth the opposing armies on the Western Front were paralysed by barbed wire, by entrenchments, by minefields, and by machine-gun emplacements. In another sense, too, First Ypres marked a change of character in the war. The first month of fighting had shown divisions and suspicion between the Allied commanders, especially between the British and the French. The close proximity of

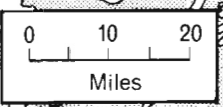
British, French and Belgian lines around Ypres helped to weld together the Allied command, although it was difficult to forget old prejudices. The mud-filled disease-ridden trenches bred a sense of communal adversity. At the same time First Ypres showed the extent of Allied resources, for in the line were not only the first battalions of Kitchener's 'new army', but Zouave regiments from French Algeria and Indians from Lahore. Before the fighting died away at the salient in 1918, they were to be joined by units from Canada, Senegal and finally the United States. The cemeteries around Ypres, and the great monument to those 'with no known grave', bear silent testimony to the world-wide character of this most wasteful of wars.

THE WESTERN FRONT IN AUGUST 1914

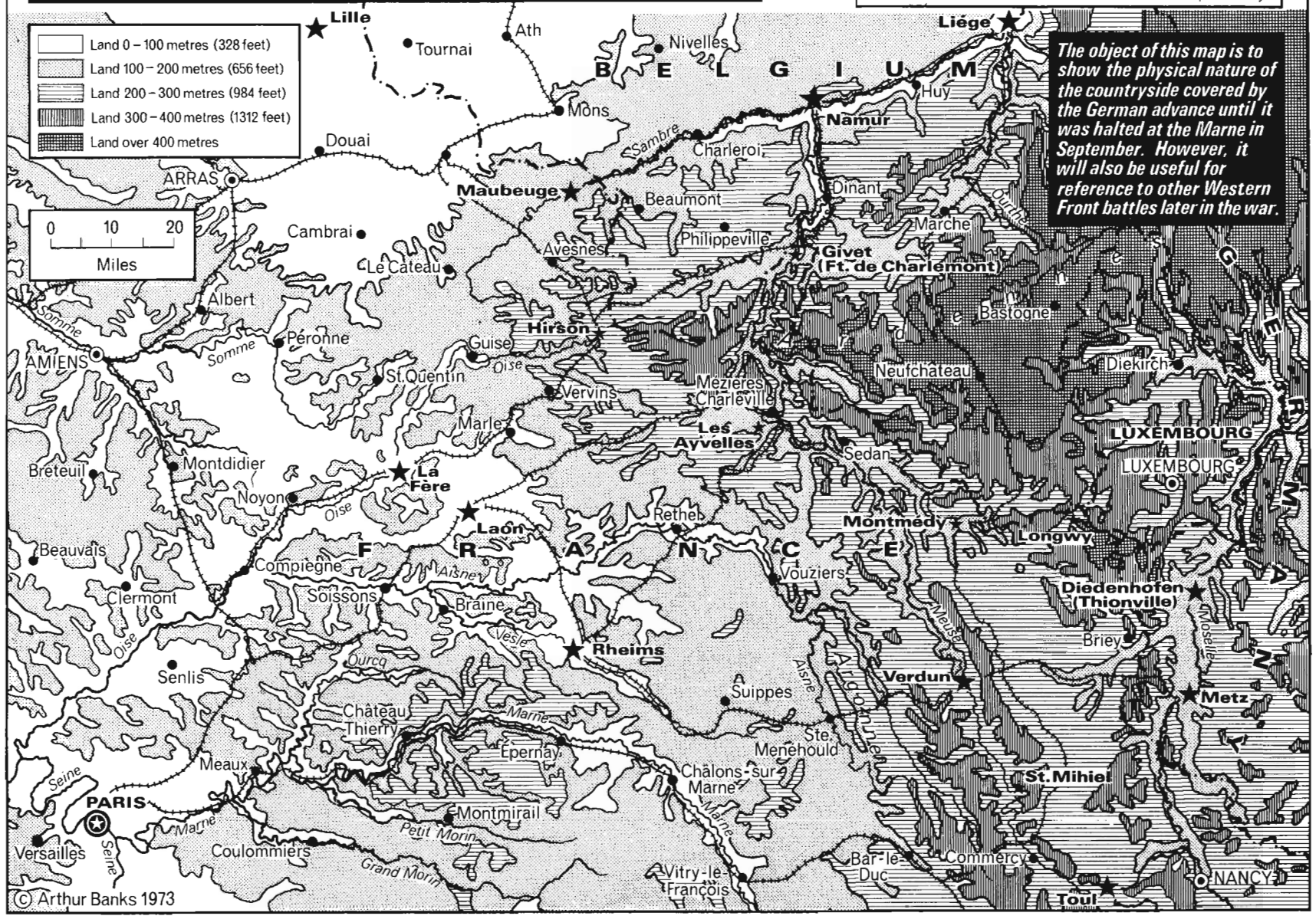
KEY

- ★ ★ Fortresses.
- — International boundaries.
- Rivers.
- ● Cities and towns.
- +++++ Principal railways.

	Land 0 - 100 metres (328 feet)
	Land 100 - 200 metres (656 feet)
	Land 200 - 300 metres (984 feet)
	Land 300 - 400 metres (1312 feet)
	Land over 400 metres



The object of this map is to show the physical nature of the countryside covered by the German advance until it was halted at the Marne in September. However, it will also be useful for reference to other Western Front battles later in the war.



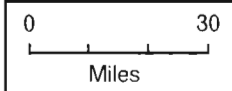
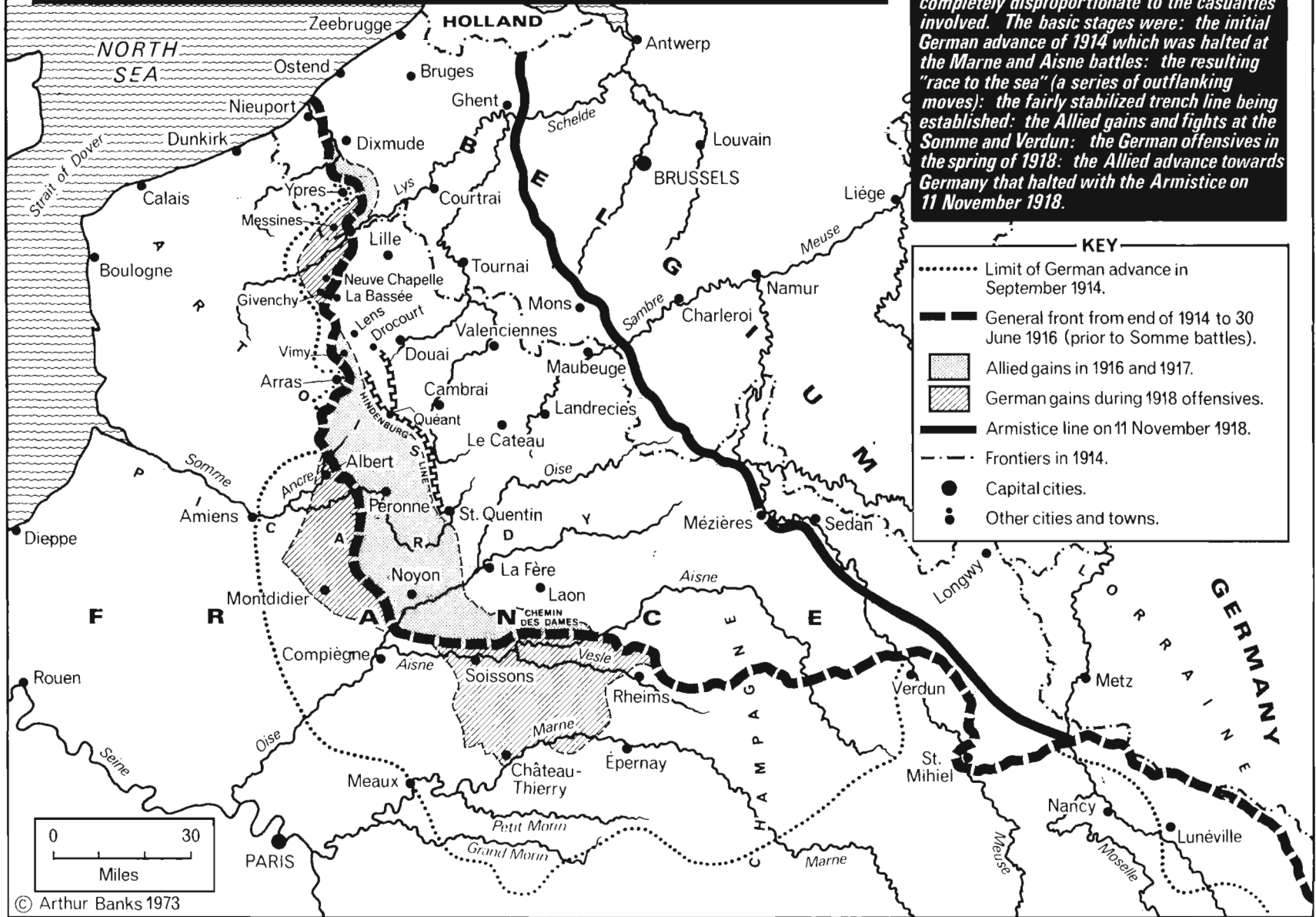
16

THE WESTERN FRONT IN OUTLINE 1914 - 1918

The campaign was really one prolonged battle involving territorial gains and losses completely disproportionate to the casualties involved. The basic stages were: the initial German advance of 1914 which was halted at the Marne and Aisne battles; the resulting "race to the sea" (a series of outflanking moves); the fairly stabilized trench line being established; the Allied gains and fights at the Somme and Verdun; the German offensives in the spring of 1918; the Allied advance towards Germany that halted with the Armistice on 11 November 1918.

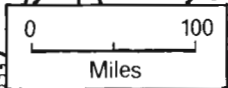
KEY

- Limit of German advance in September 1914.
- General front from end of 1914 to 30 June 1916 (prior to Somme battles).
- ▨ Allied gains in 1916 and 1917.
- ▩ German gains during 1918 offensives.
- Armistice line on 11 November 1918.
- - - Frontiers in 1914.
- Capital cities.
- Other cities and towns.



THE EAST-EUROPEAN WAR FRONTS IN AUGUST 1914

This map gives a general impression of the countryside to be fought over. It should be noted that German and Russian railway lines differed in gauges.



- KEY**
- ★ Forts or fortified towns.
 - ★ Smaller forts.
 - +— Railways.
 - ⌚ German "fortified zone".
 - ▨ Land over 600 feet.
 - ▩ Land over 3000 feet.

THE EASTERN FRONT IN OUTLINE 1914 - 1918

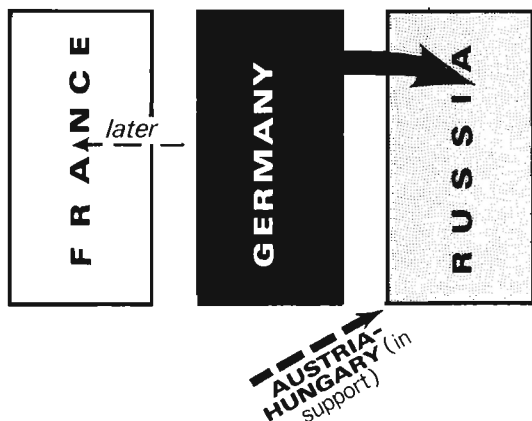
The battle fronts were not continuous and therefore, the lines on map are generalized. The trench system was not so detailed as on the Western Front and the limits of advances or retreats were not contemporaneous. For example, the Russian advance into East Prussia in 1914 was ended at Tannenberg before their large gains in Galicia were achieved.



GERMANY'S PRE-WAR NIGHTMARE OF HAVING TO FIGHT A LAND CAMPAIGN ON TWO FRONTS AT ONCE

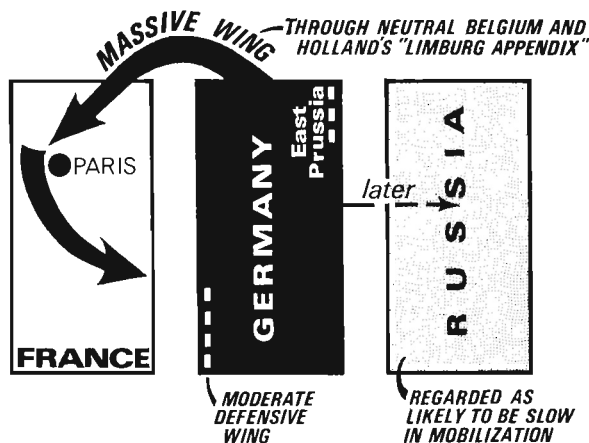
©Arthur Banks 1973

① The Elder Moltke's Appraisal (1879)



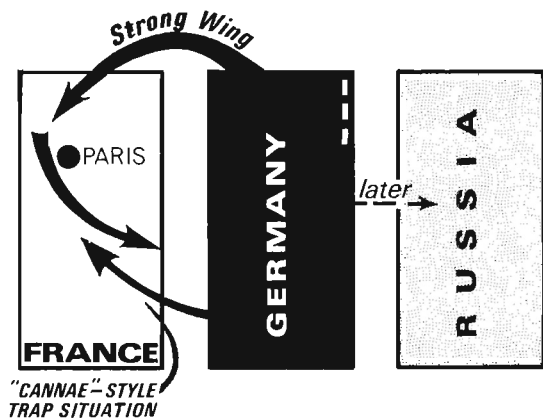
RUSSIA must be dealt with **FIRST**. Count von Waldersee (Moltke's successor) agreed with this provided that the offensive against Russia be conducted in summer weather.

② Schlieffen's Appraisal (1905)



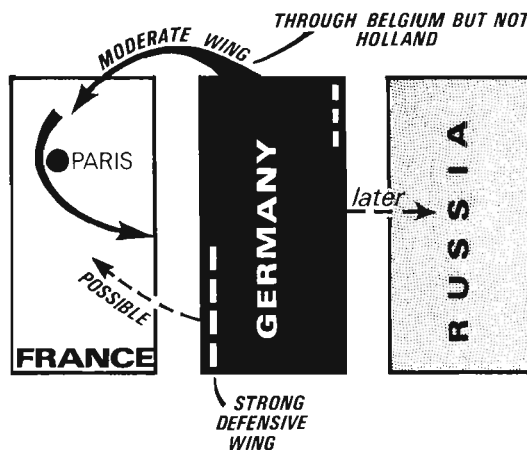
FRANCE must be dealt with **FIRST** in a rapid campaign while Russia is kept at bay by means of a holding or delaying operation in East Prussia. Austria in support.

③ Schlieffen's Revised Appraisal (1912)



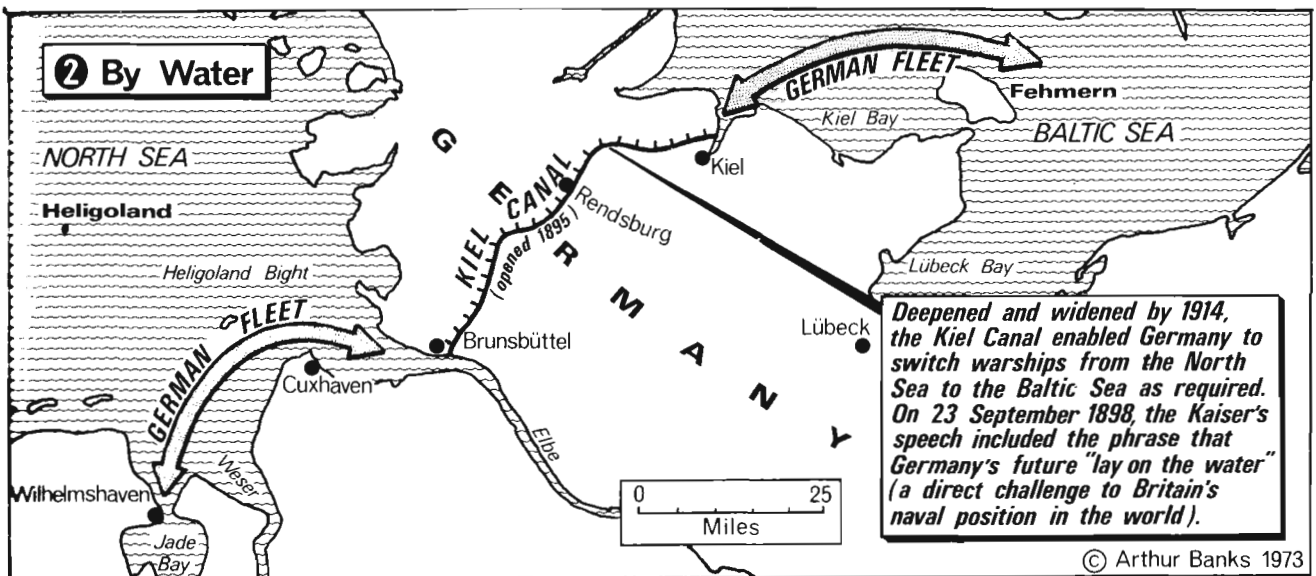
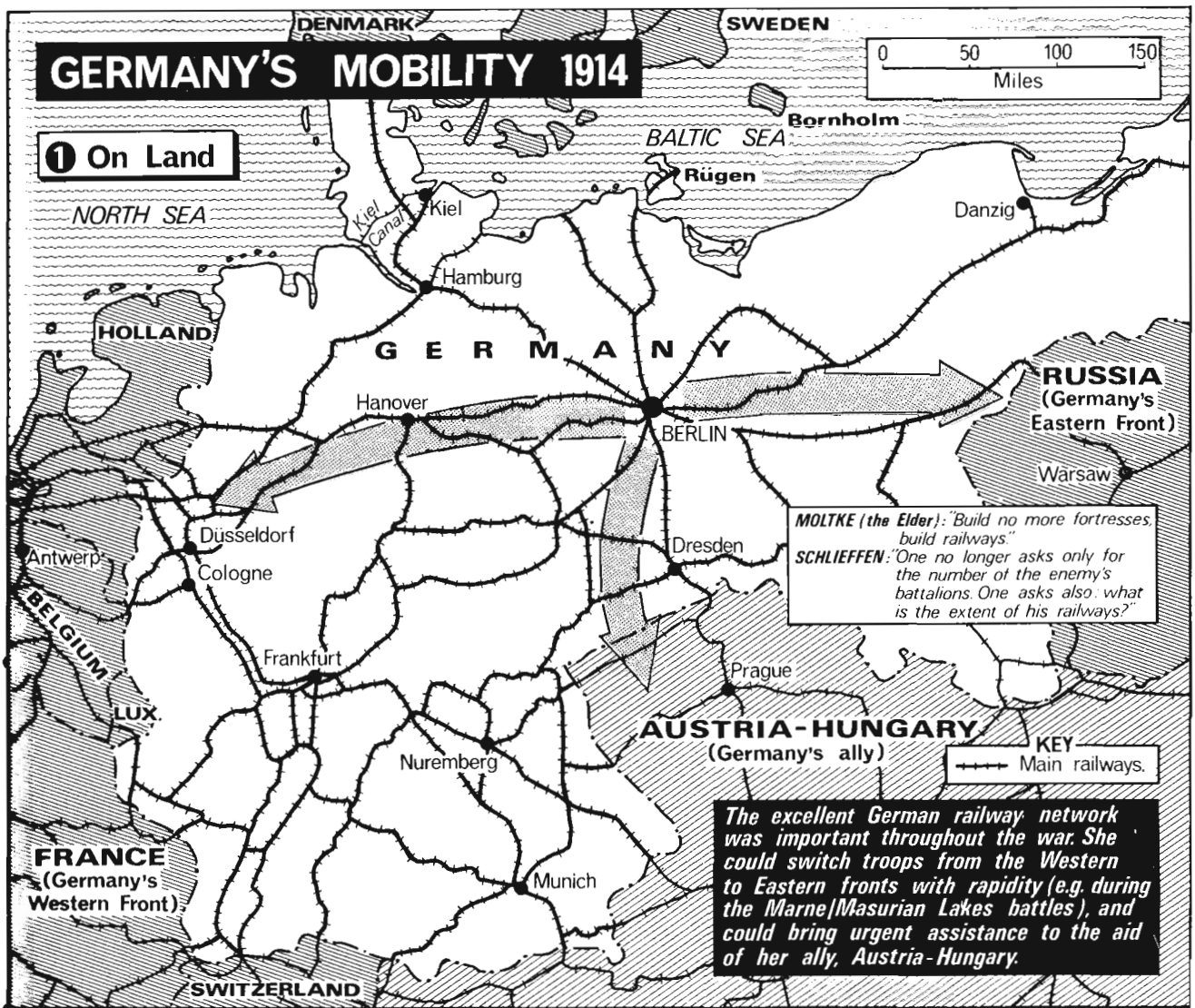
Apparently Schlieffen studied Hannibal's victory at Cannae (216 B.C.) in detail and, as a consequence, revised his own plan. But the German right wing was to be kept strong.

④ The Younger Moltke's Appraisal (1914)



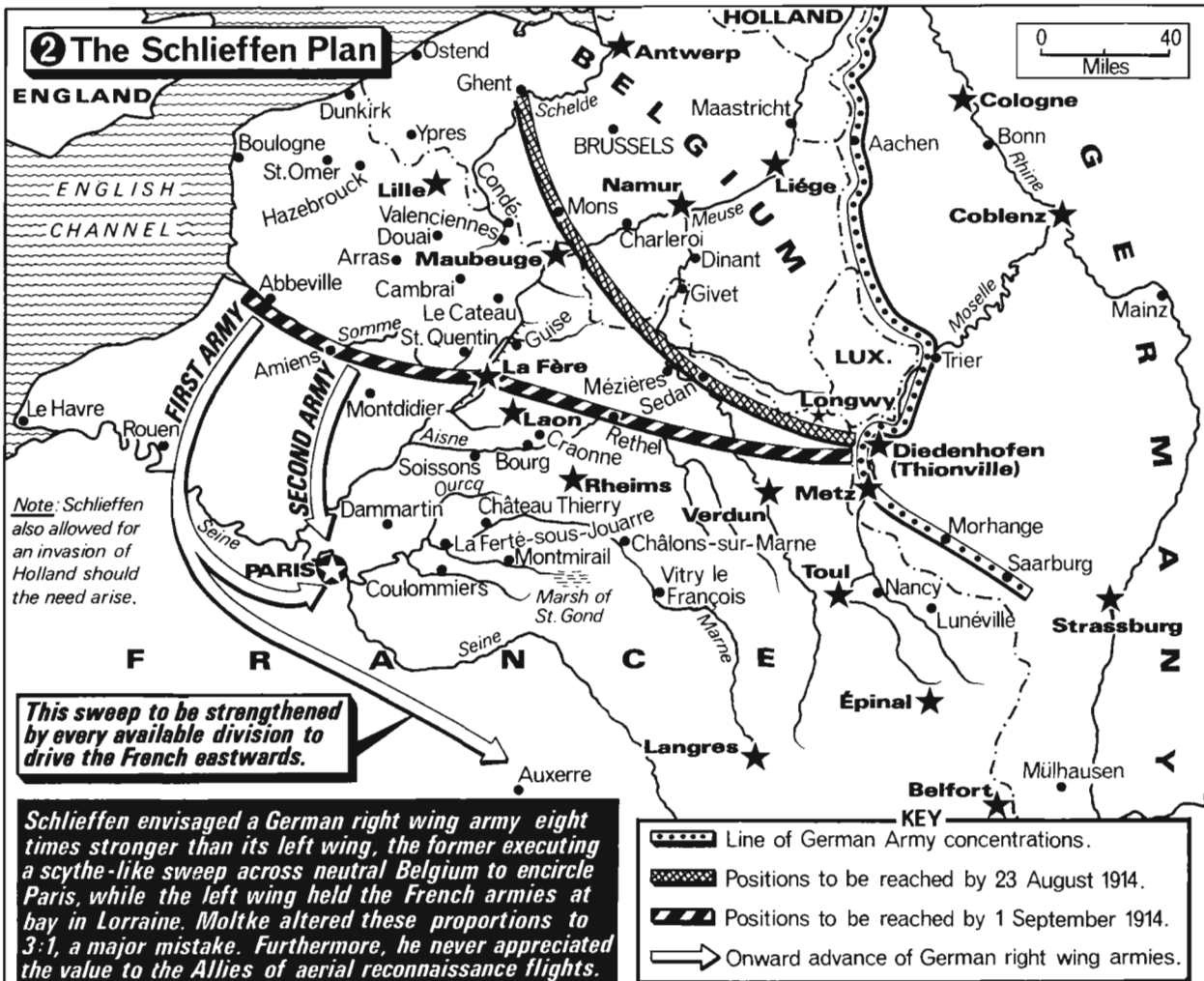
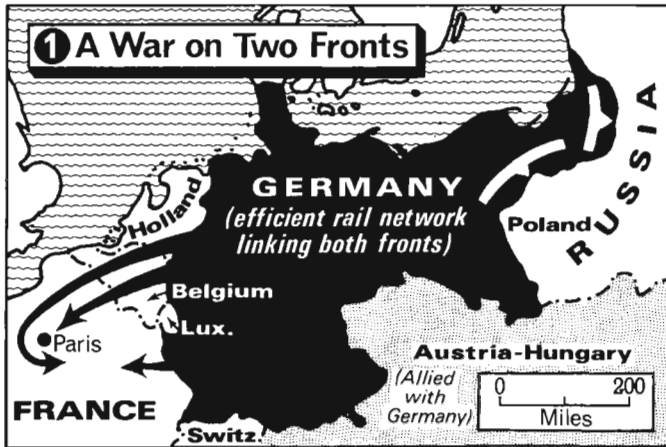
Moltke (nephew of Bismarck's general) strengthened his defensive wing at the expense of his right wing: he omitted ersatz "back up" formations at rear of right wing armies.

In all plans, Germany had to attack first to obviate her fighting an all-out war on two fronts simultaneously: the two potential enemies had to be fought in sequence to avoid splitting Germany's main effort. Everything hinged upon her ability to switch troops from front to front with speed and precision. Even in August 1914, Germany was not powerful enough to launch two major offensives at the same time. Her fear was that SHE might be attacked first!

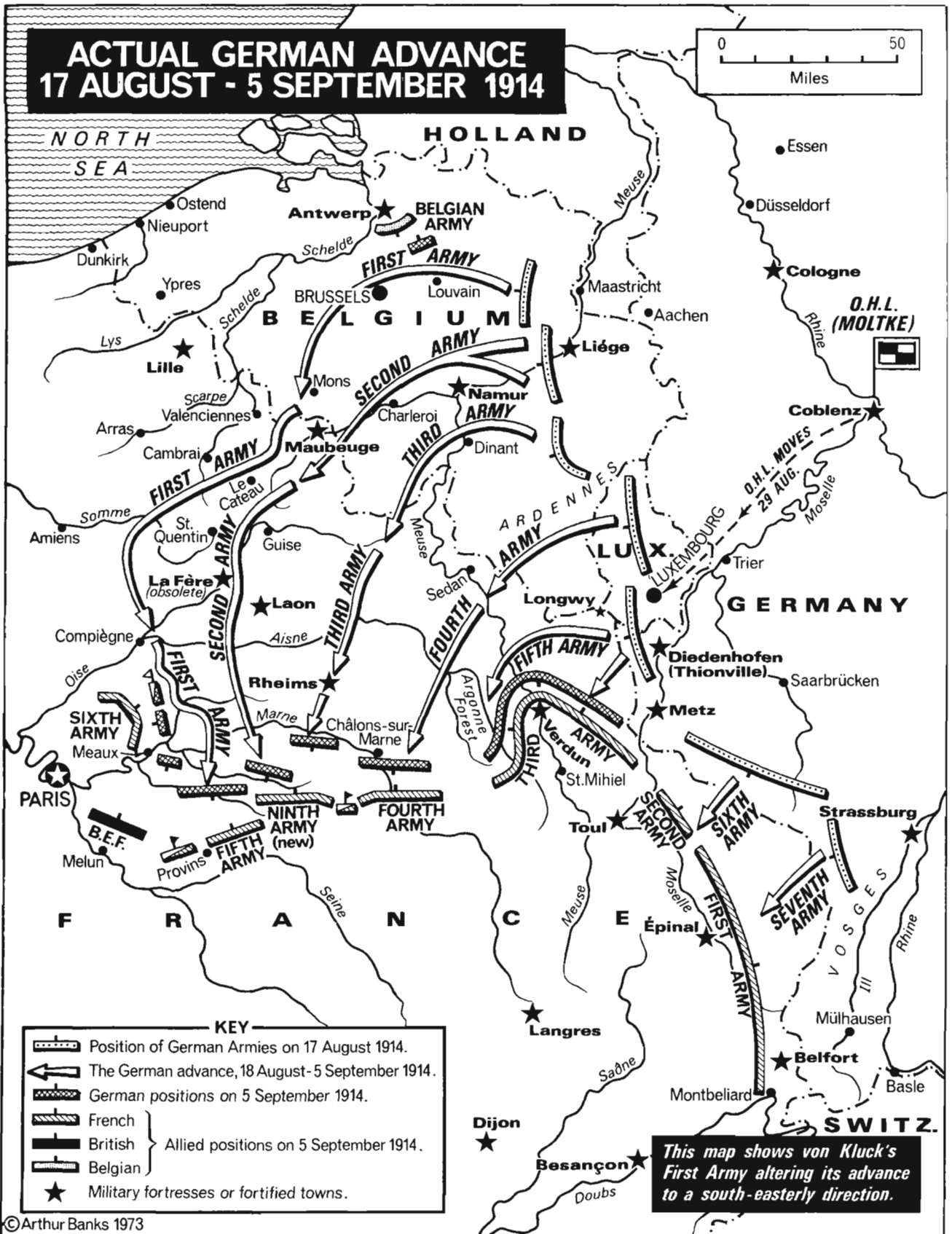
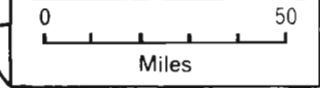


GERMAN MILITARY PLANS 1905 - 1914

In the years before 1914, German military planners were haunted by fear of an all-out war on two fronts simultaneously (that is, against Russia and France). In 1905, Field-Marshal Graf Alfred Schlieffen prepared a plan based on an assumption that Russia (calculated to be slower in mobilization than France) could be held temporarily at bay, while the bulk of German military power be directed at securing a rapid victory over France. Thus, Schlieffen's plan dealt almost exclusively with the Western Front. Moltke, Schlieffen's successor as Chief of the German General Staff, modified the scheme on several occasions before the war, and an amended version was put into operation in August 1914. Despite initial successes, the plan failed to produce the expected quick victory, and the Western Front became a scene of almost rigid trench warfare until 1918.



ACTUAL GERMAN ADVANCE 17 AUGUST - 5 SEPTEMBER 1914



KEY

- Position of German Armies on 17 August 1914.
- The German advance, 18 August-5 September 1914.
- German positions on 5 September 1914.
- French
- British
- Belgian
- Military fortresses or fortified towns.

This map shows von Kluck's First Army altering its advance to a south-easterly direction.

WAR PLANS OF GERMANY AUSTRIA - HUNGARY, RUSSIA, AND SERBIA 1914

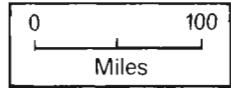
GERMAN PLANS

These comprised the eastern part of the Schlieffen Plan whereby Russia (calculated to be slow in mobilization) would be held at bay until France was defeated in the west (hopefully in six weeks). Utilising the excellent German rail system, troops from the west would then be rushed to the east. However, the Austrians were not keen for the Germans to remain passive at the outset, and Moltke was persuaded that a German thrust to link with an Austrian offensive would nip off the Russians in the Polish "tongue".

RUSSIAN PLANS

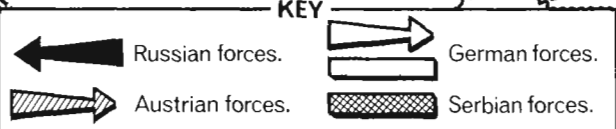
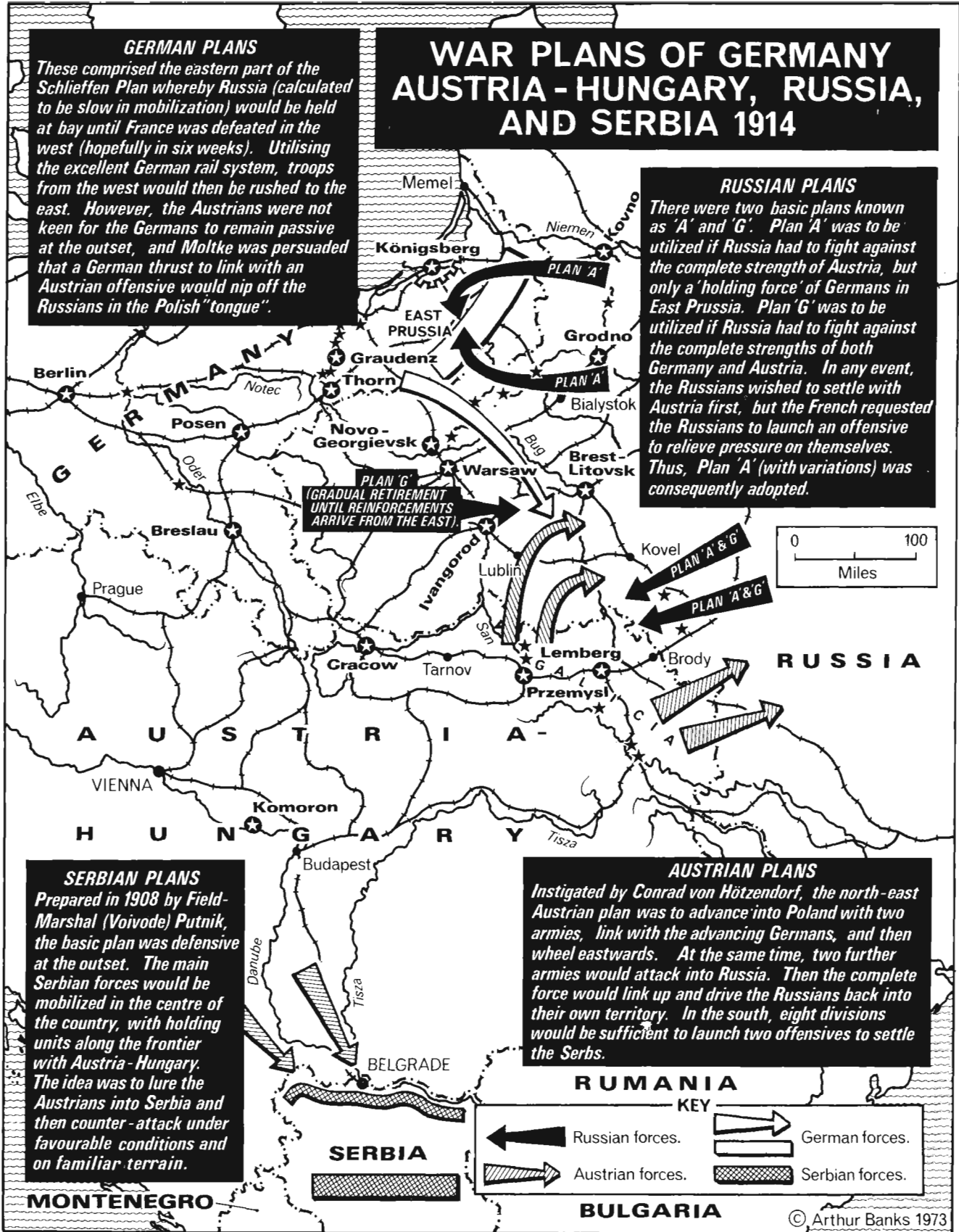
There were two basic plans known as 'A' and 'G'. Plan 'A' was to be utilized if Russia had to fight against the complete strength of Austria, but only a 'holding force' of Germans in East Prussia. Plan 'G' was to be utilized if Russia had to fight against the complete strengths of both Germany and Austria. In any event, the Russians wished to settle with Austria first, but the French requested the Russians to launch an offensive to relieve pressure on themselves. Thus, Plan 'A' (with variations) was consequently adopted.

PLAN 'G'
(GRADUAL RETIREMENTS
UNTIL REINFORCEMENTS
ARRIVE FROM THE EAST)

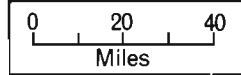


AUSTRIAN PLANS
Instigated by Conrad von Hötzendorf, the north-east Austrian plan was to advance into Poland with two armies, link with the advancing Germans, and then wheel eastwards. At the same time, two further armies would attack into Russia. Then the complete force would link up and drive the Russians back into their own territory. In the south, eight divisions would be sufficient to launch two offensives to settle the Serbs.

SERBIAN PLANS
Prepared in 1908 by Field-Marshal (Voivode) Putnik, the basic plan was defensive at the outset. The main Serbian forces would be mobilized in the centre of the country, with holding units along the frontier with Austria-Hungary. The idea was to lure the Austrians into Serbia and then counter-attack under favourable conditions and on familiar terrain.

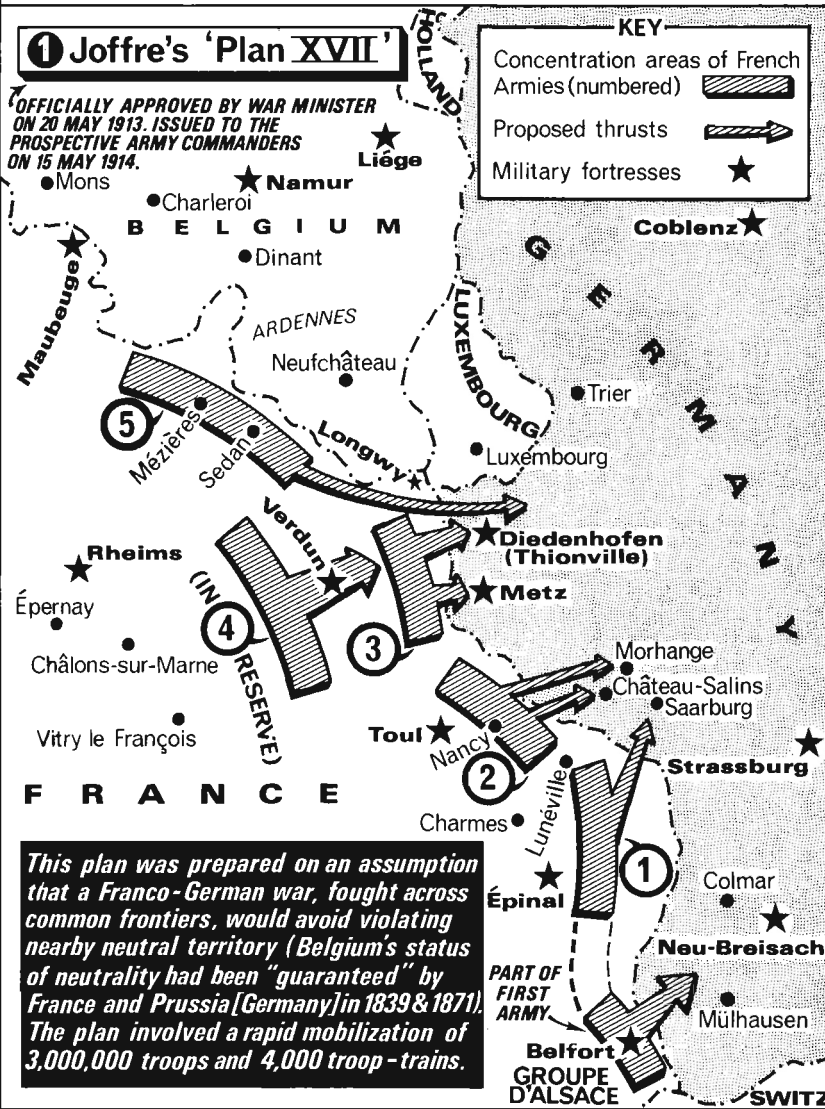


FRENCH PRE-WAR MILITARY PLANS 1914



1 Joffre's 'Plan XVII'

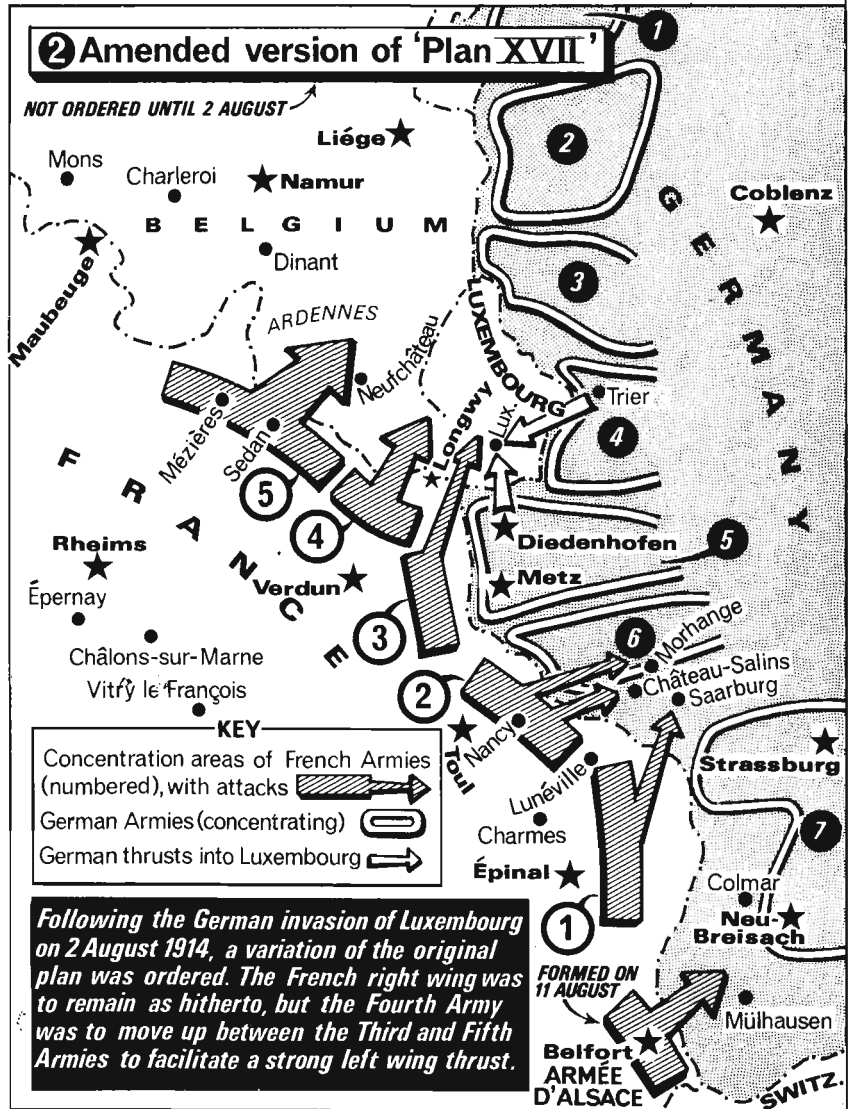
OFFICIALLY APPROVED BY WAR MINISTER ON 20 MAY 1913. ISSUED TO THE PROSPECTIVE ARMY COMMANDERS ON 15 MAY 1914.



This plan was prepared on an assumption that a Franco-German war, fought across common frontiers, would avoid violating nearby neutral territory (Belgium's status of neutrality had been "guaranteed" by France and Prussia [Germany] in 1839 & 1871). The plan involved a rapid mobilization of 3,000,000 troops and 4,000 troop-trains.

2 Amended version of 'Plan XVII'

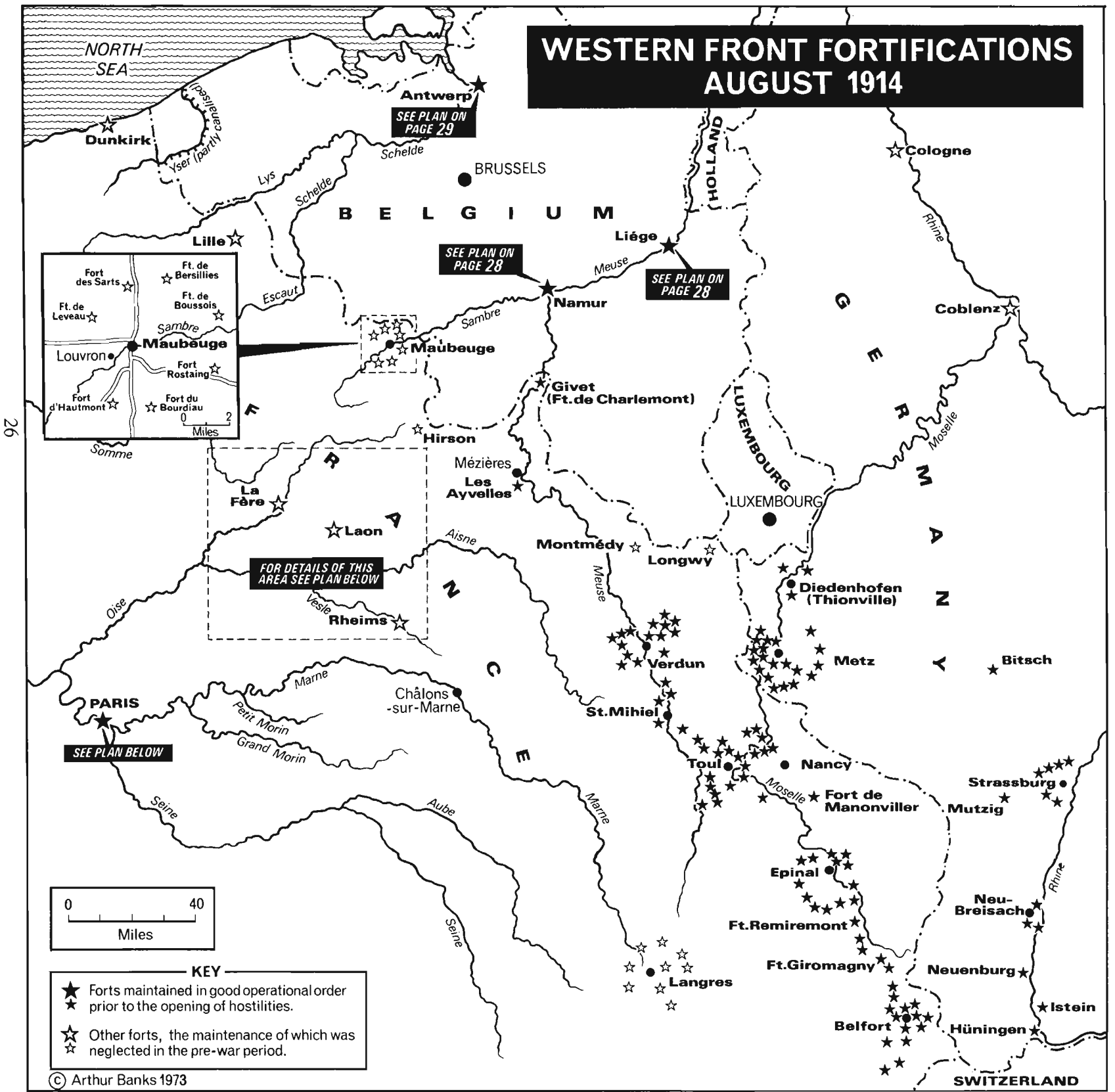
NOT ORDERED UNTIL 2 AUGUST



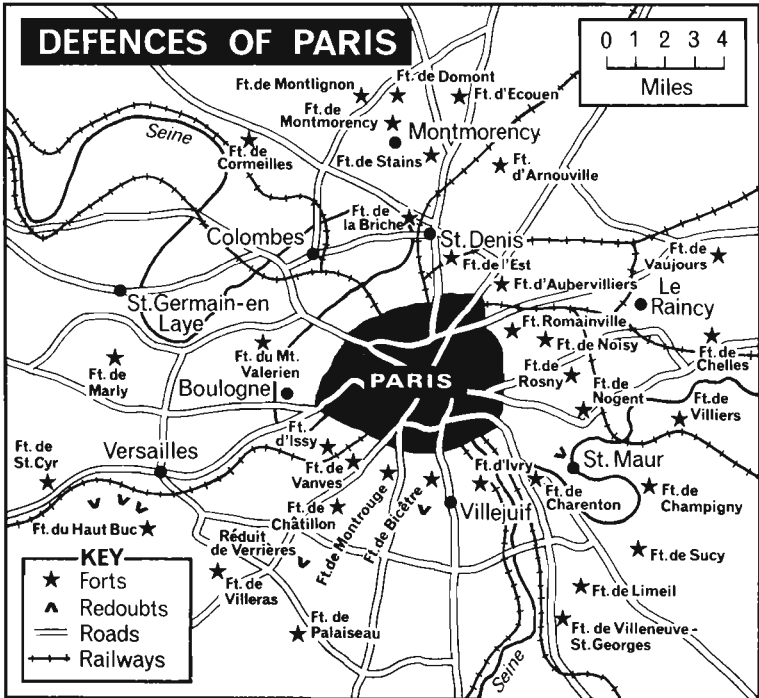
Following the German invasion of Luxembourg on 2 August 1914, a variation of the original plan was ordered. The French right wing was to remain as hitherto, but the Fourth Army was to move up between the Third and Fifth Armies to facilitate a strong left wing thrust.

The basic weakness of both plans lay in the fact that Germany could strike first, a position which the French felt morally unable to assume in 1914.

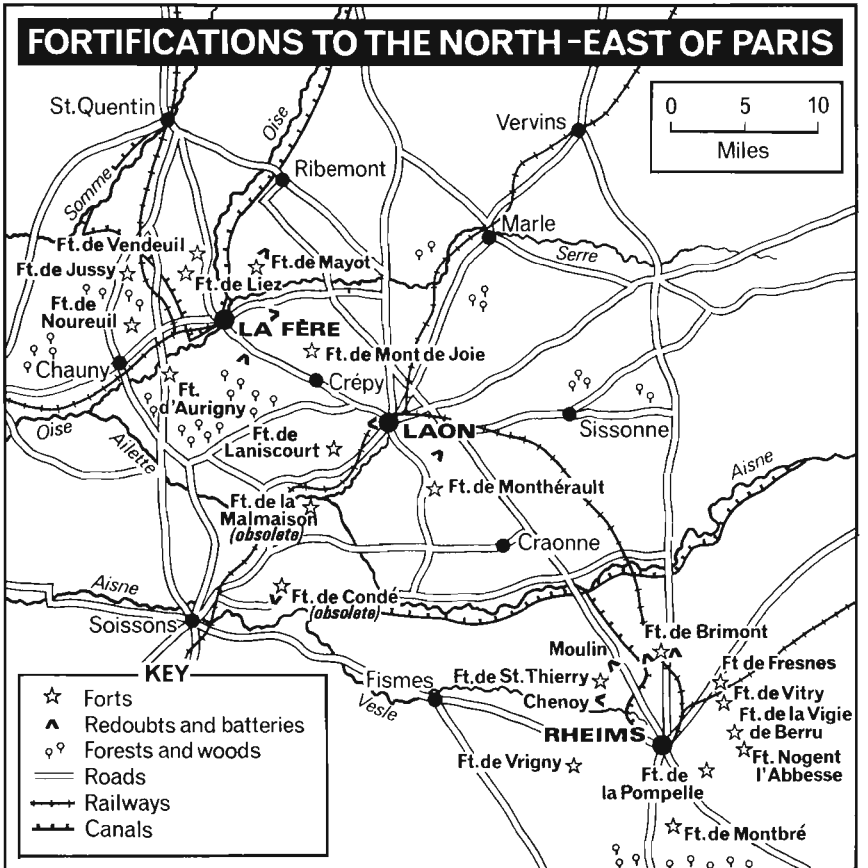
WESTERN FRONT FORTIFICATIONS AUGUST 1914



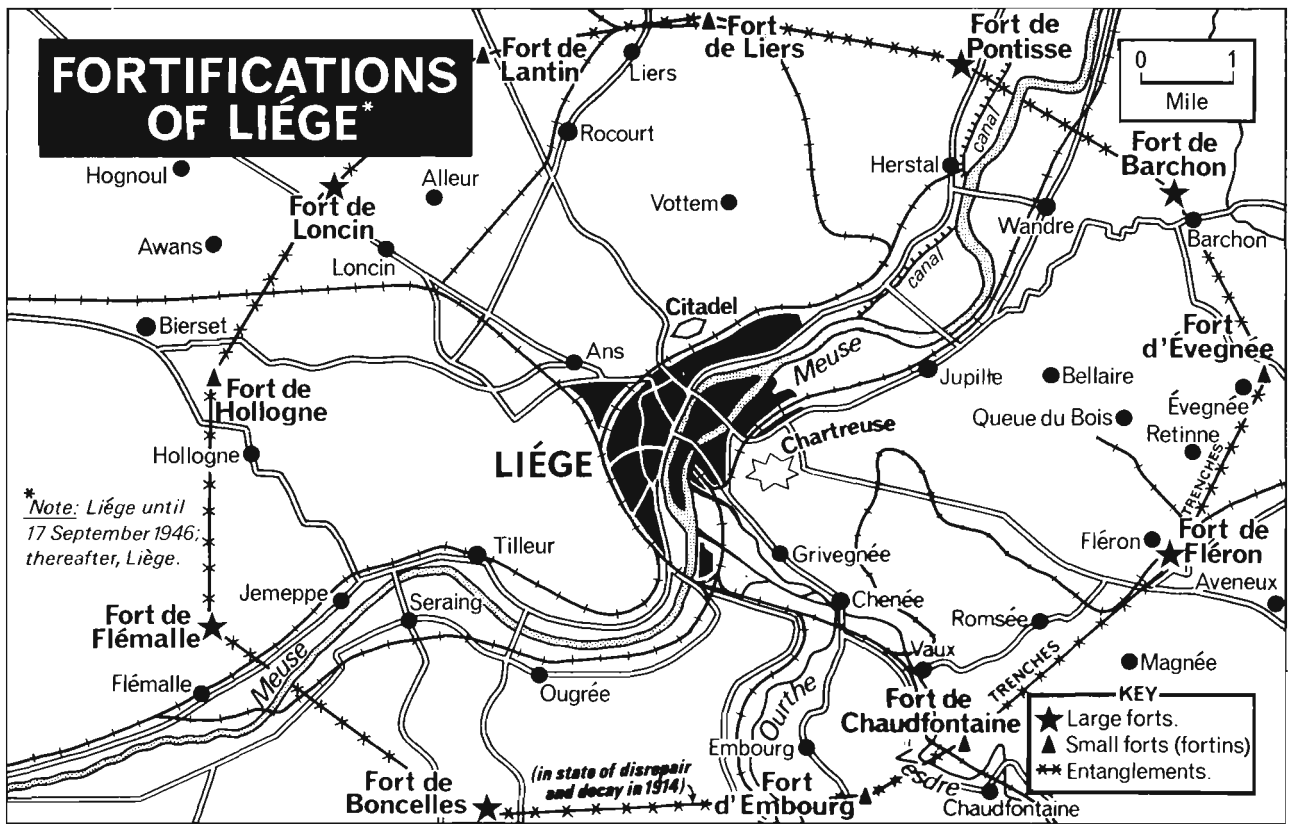
DEFENCES OF PARIS



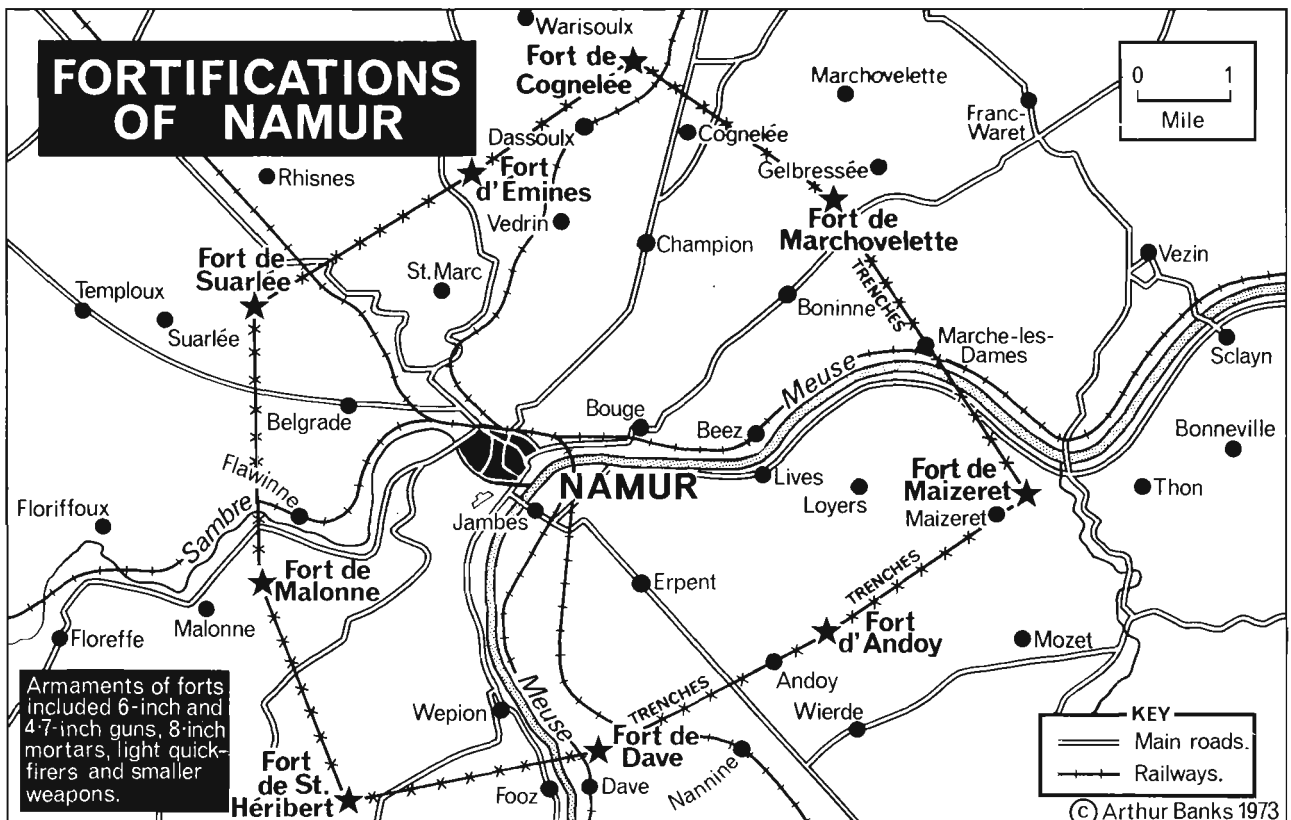
FORTIFICATIONS TO THE NORTH-EAST OF PARIS



This map depicts the system of fortifications that adorned the Western Front area prior to the commencement of hostilities. Many of the northern French fortresses were virtually obsolete or in a state of disrepair and the three Belgian fortresses had been designed in the 1880's and 1890's, long before the advent of "Dicke Bertha" and "Schlanke Emma".

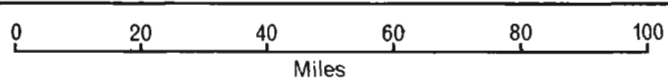


The main forts were pentagonal in shape, whereas the smaller 'fortins' were triangular. All consisted of works beneath ground level, with the guns being housed in steel cupolas which could be raised and lowered again at will. The designer was Henri Brialmont.



Armaments of forts included 6-inch and 4-7-inch guns, 8-inch mortars, light quick-firers and smaller weapons.

ARMY CONCENTRATIONS ON THE WESTERN FRONT AUGUST 1914

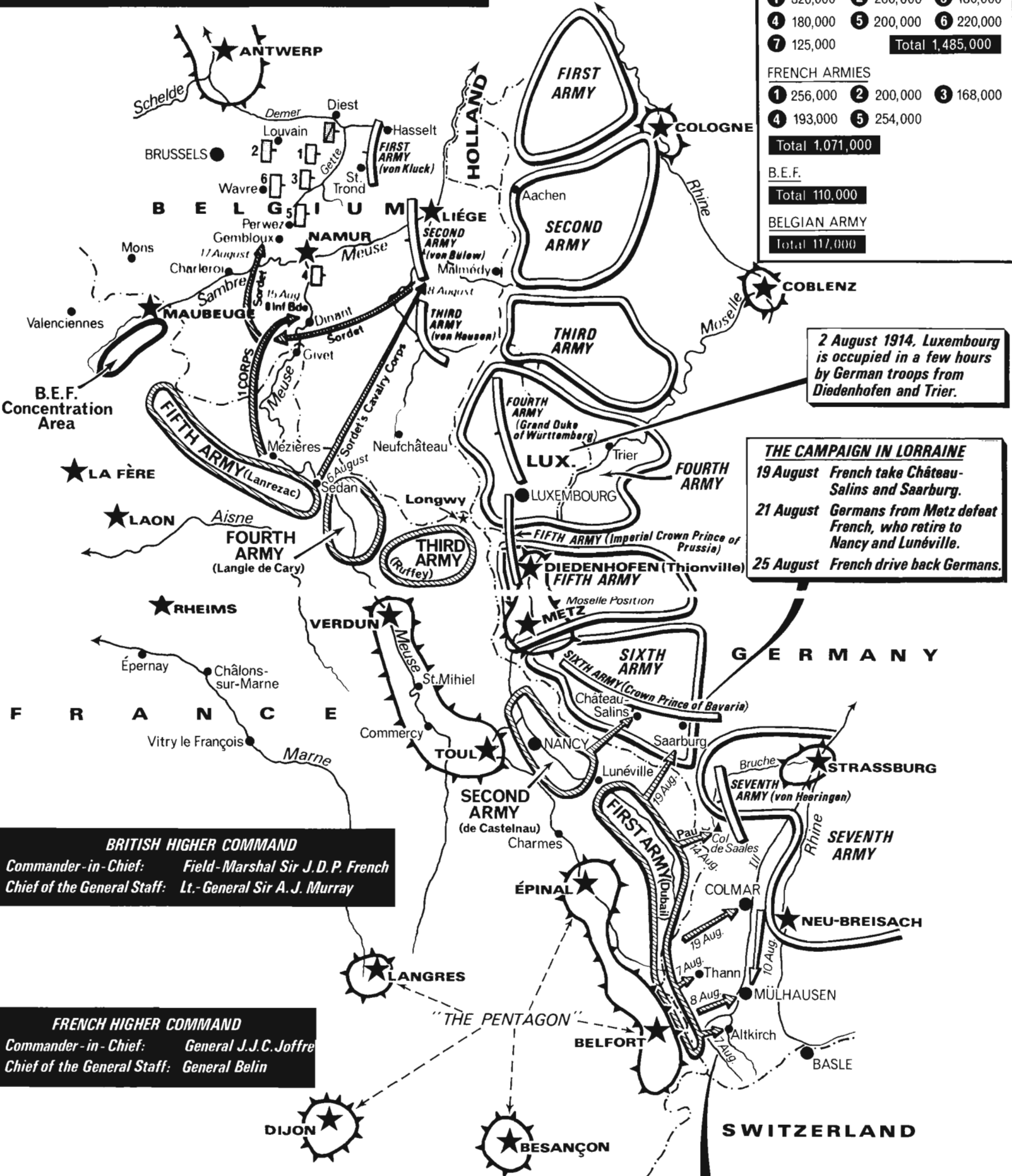


GERMAN HIGHER COMMAND
 Commander-in-Chief: William, German Emperor
 Chief of the General Staff: Generaloberst von Moltke

BELGIAN HIGHER COMMAND
 Commander-in-Chief: King Albert
 Chief of the General Staff: Lt.-General Chevalier de Selliers de Moranville

TROOP STRENGTHS ON 17 AUGUST 1914

GERMAN ARMIES			
1	320,000	3	180,000
2	260,000	4	180,000
5	200,000	6	220,000
7	125,000	Total 1,485,000	
FRENCH ARMIES			
1	256,000	2	200,000
3	168,000	4	193,000
5	254,000	Total 1,071,000	
B.E.F.			
Total 110,000			
BELGIAN ARMY			
Total 117,000			



2 August 1914, Luxembourg is occupied in a few hours by German troops from Diedenhofen and Trier.

THE CAMPAIGN IN LORRAINE
 19 August French take Château-Salins and Saarburg.
 21 August Germans from Metz defeat French, who retire to Nancy and Lunéville.
 25 August French drive back Germans.

BRITISH HIGHER COMMAND
 Commander-in-Chief: Field-Marshal Sir J.D.P. French
 Chief of the General Staff: Lt.-General Sir A. J. Murray

FRENCH HIGHER COMMAND
 Commander-in-Chief: General J.J.C. Joffre
 Chief of the General Staff: General Belin






KEY

- British Expeditionary Force (beginning concentration 14 August).
- French Armies (concentration areas on 14 August).
- Belgian Army (positions on 17 August).
- German Armies (concentration areas on 14 August).
- German Armies (positions on 17 August).
- Military fortresses or fortified towns.
- Defended areas.

THE CAMPAIGN IN ALSACE
 7 August French from Belfort take Altkirch and Thann.
 8 August French capture Mülhausen.
 10 August Germans from Colmar and Neu-Breisach re-take Mülhausen.
 19 August French re-occupy Mülhausen; other forces move towards Colmar.
 28 August French retire, leaving a small force to occupy Thann.

ACTUAL CONCENTRATIONS OF OPPOSING ARMIES IN EASTERN EUROPE AND THE BALKANS 1914

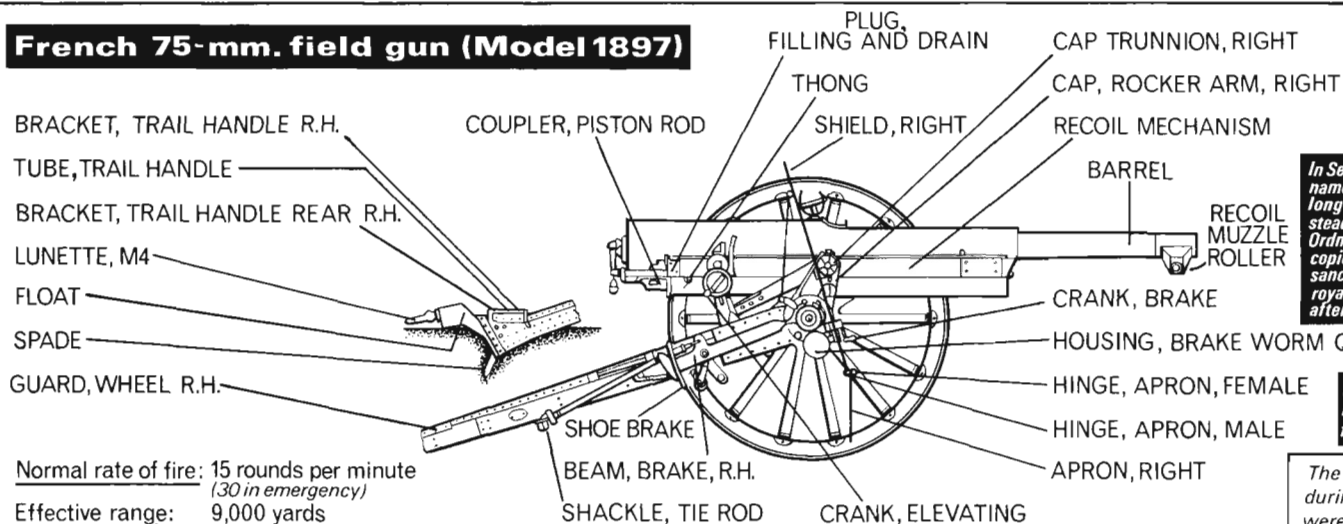
KEY

-  Russian dispositions.
-  German dispositions.
-  Austrian dispositions.
-  Serbian dispositions.
-  Montenegrin dispositions.



THREE IMPORTANT GUNS IN 1914

French 75-mm. field gun (Model 1897)



The buffer recoil action enabled the gun to be fired repeatedly, thus avoiding relaying.

In September 1891, a German engineer named Konrad Haussner patented a long-recoil hydraulic brake to ensure steadiness during rapid fire. The French Ordnance Factory Director at Puteaux copied this, construction finally being sanctioned in February 1893, but no royalties were paid to the inventor after 1894.

By 1896 the German artillery had been rearmed with the 77-mm. field gun, a less-efficient weapon.

The majority of 75-mm.'s used during the campaigns of 1914 were of the 1897 version.

Normal rate of fire: 15 rounds per minute
(30 in emergency)
Effective range: 9,000 yards

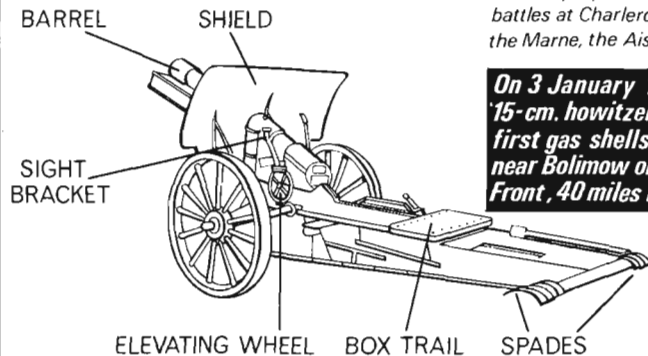
33

German 15-cm. field howitzer (Model 1913)

Normal rate of fire: 5 rounds per minute
Effective range: 9,300 yards

There were four models of this weapon. The 1913 version was employed during the 1914 battles at Charleroi, Dinant, Mons, the Marne, the Aisne, etc.

On 3 January 1915, German 15-cm. howitzers fired the first gas shells of the war near Bolimow on the Eastern Front, 40 miles from Warsaw.

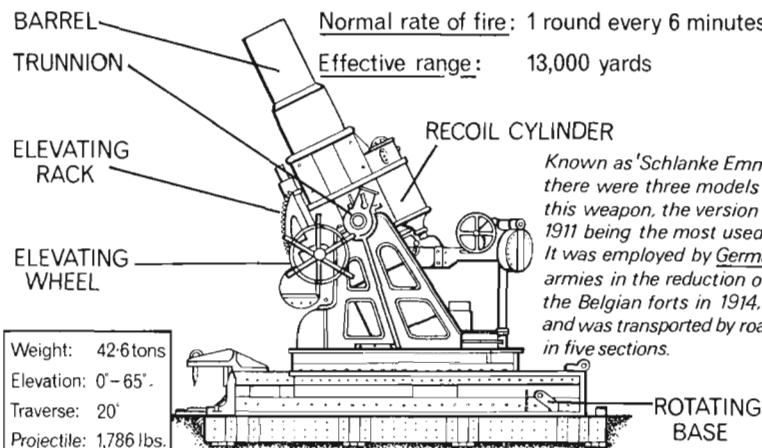


Austrian 30.5-cm. howitzer (Model 1911)

Normal rate of fire: 1 round every 6 minutes
Effective range: 13,000 yards

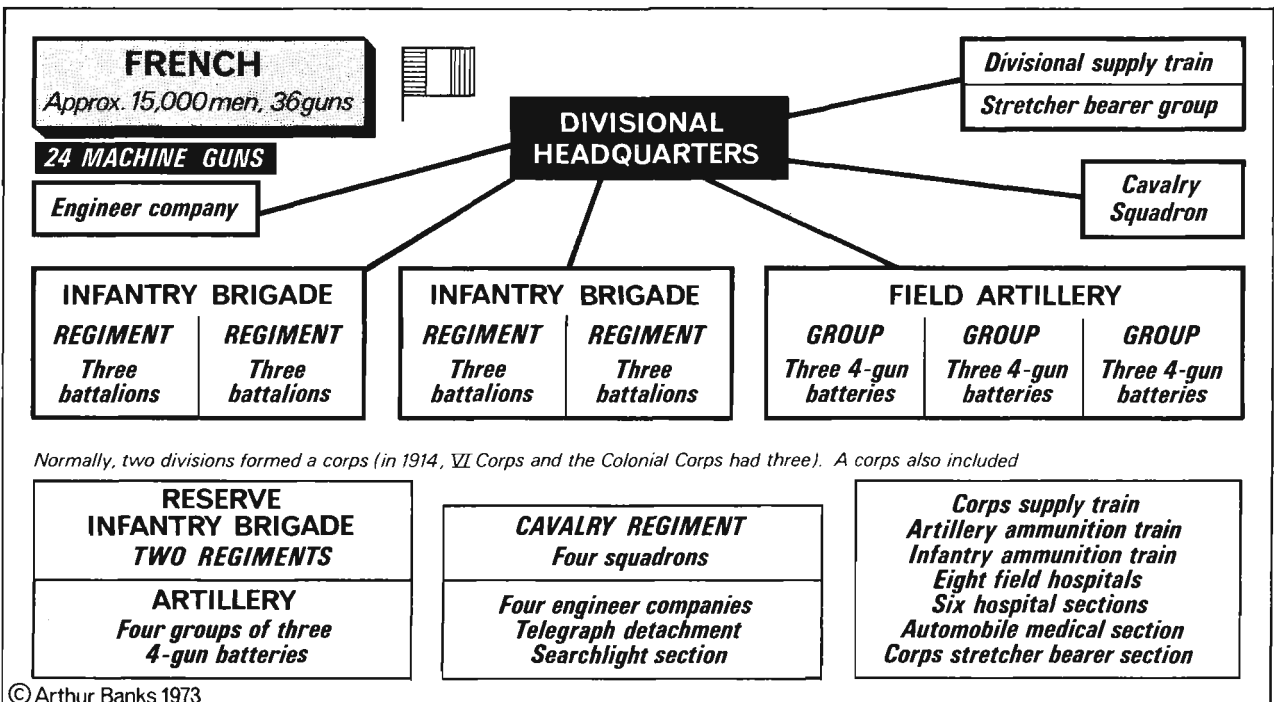
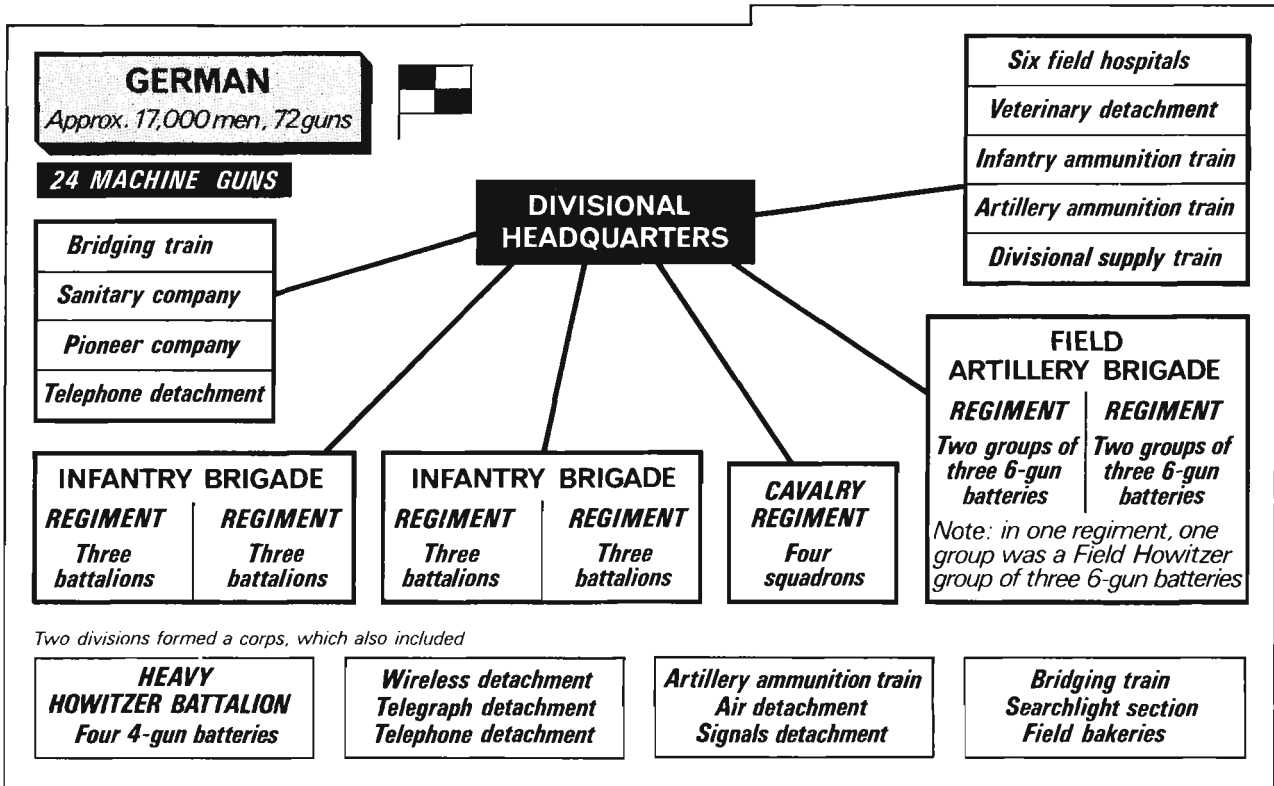
Known as 'Schlanke Emma', there were three models of this weapon, the version of 1911 being the most used. It was employed by German armies in the reduction of the Belgian forts in 1914, and was transported by road in five sections.

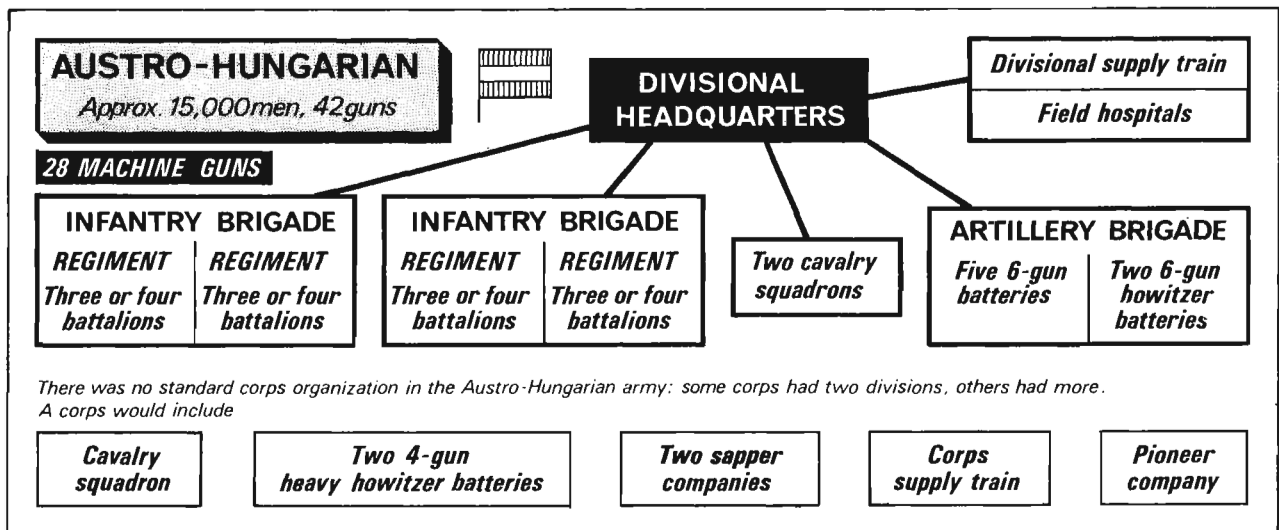
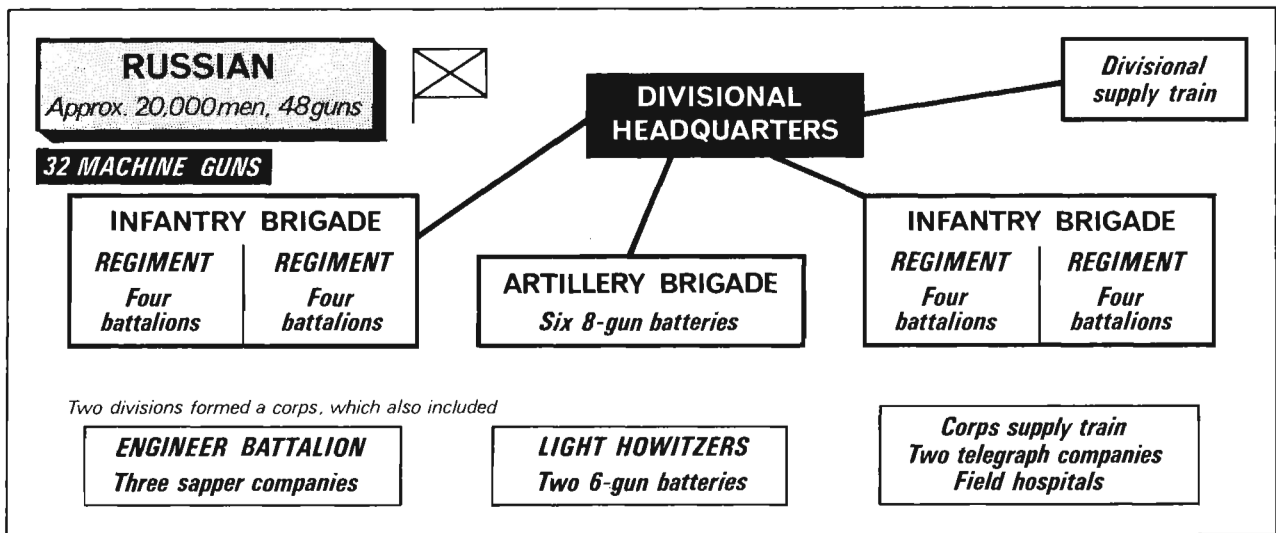
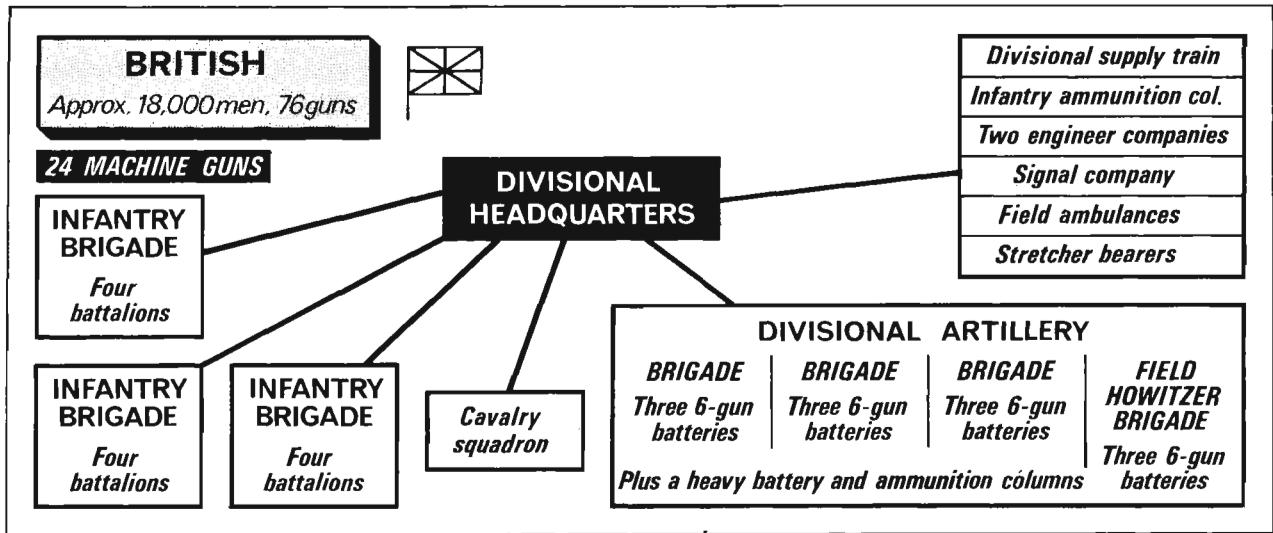
Weight: 42.6 tons
Elevation: 0°-65°
Traverse: 20°
Projectile: 1,786 lbs.



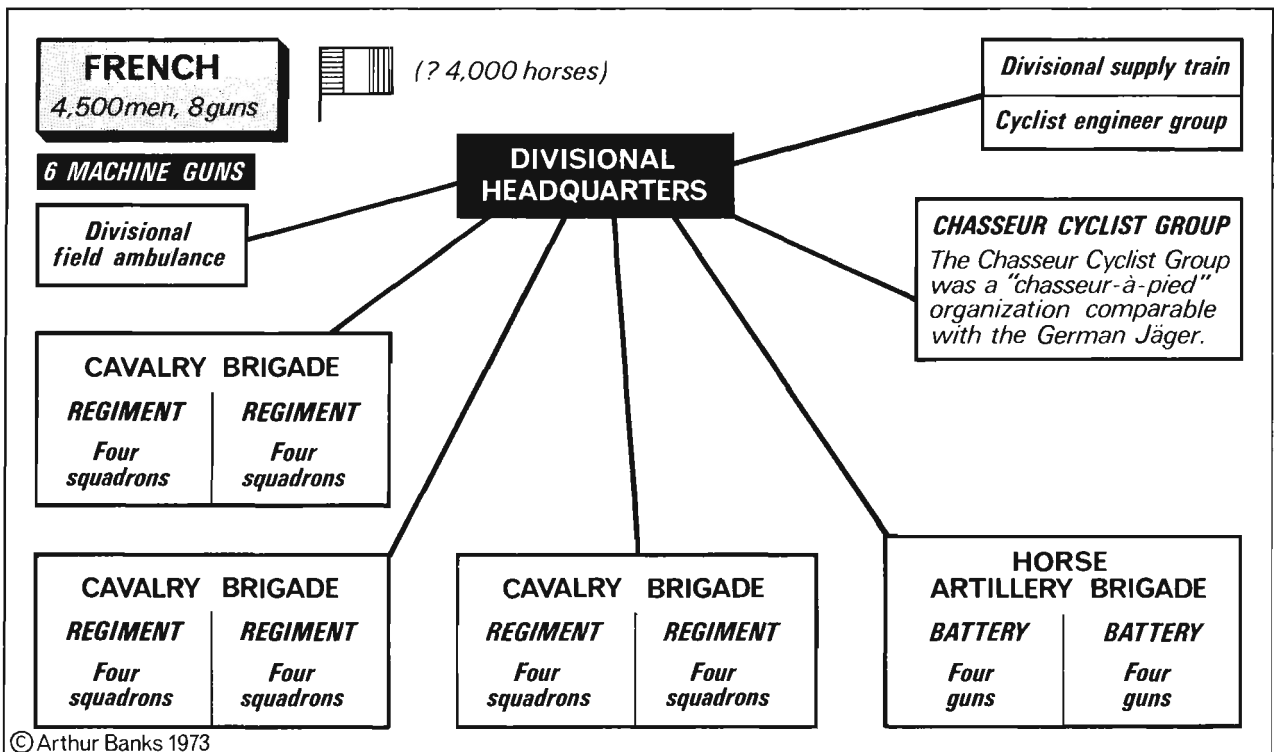
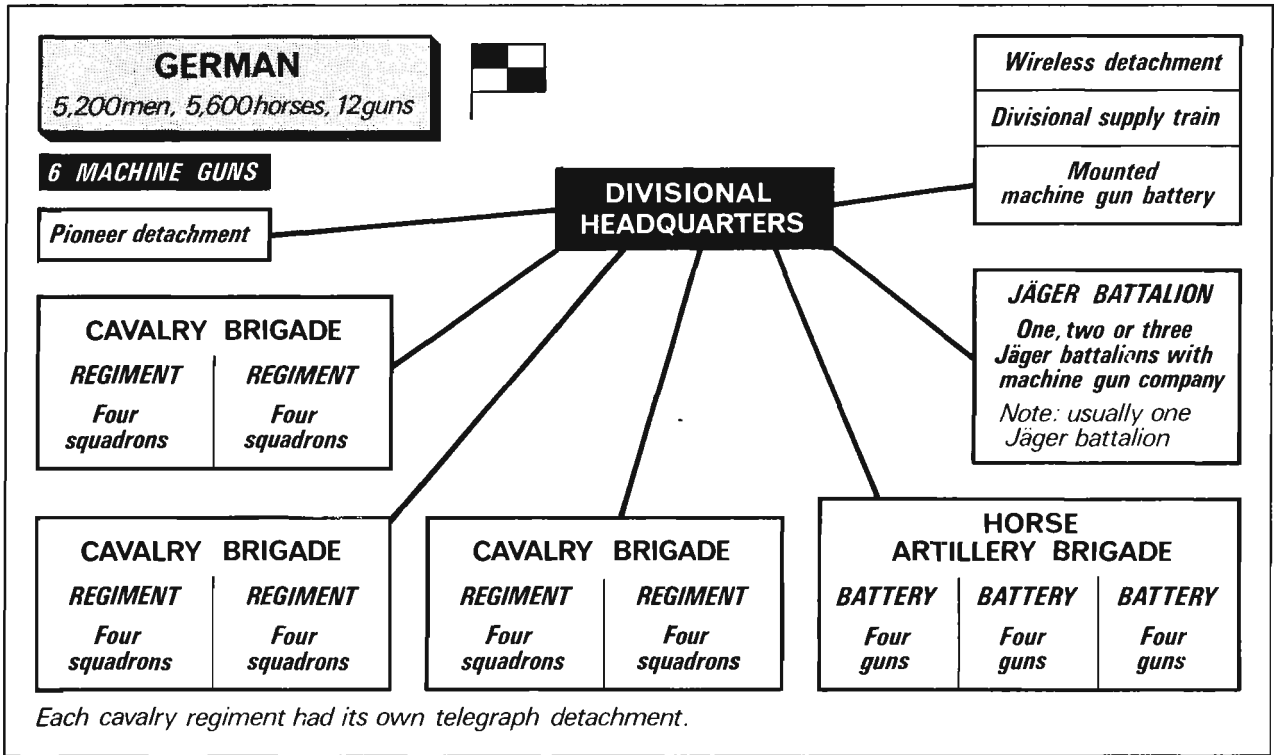
RIVAL INFANTRY DIVISIONAL ORGANIZATIONS IN 1914

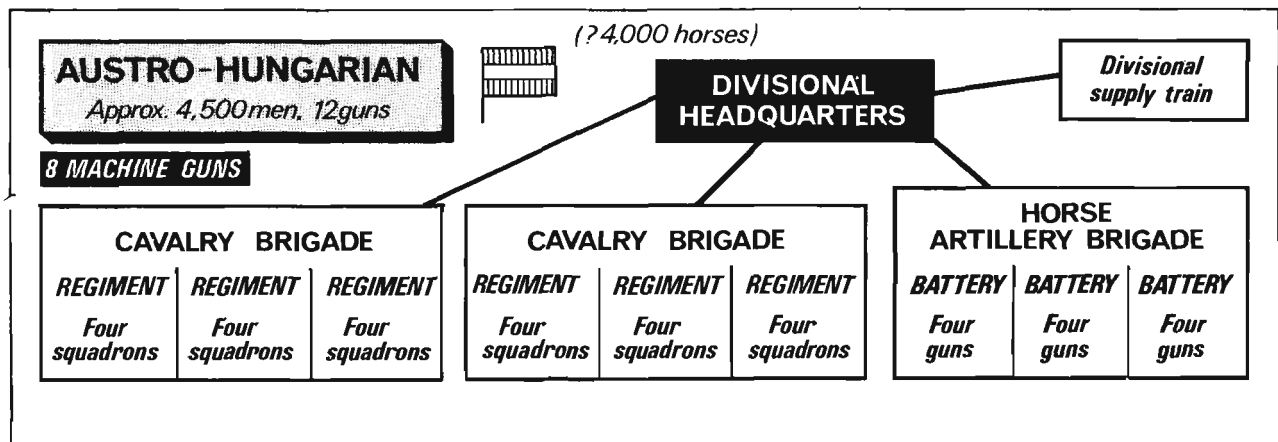
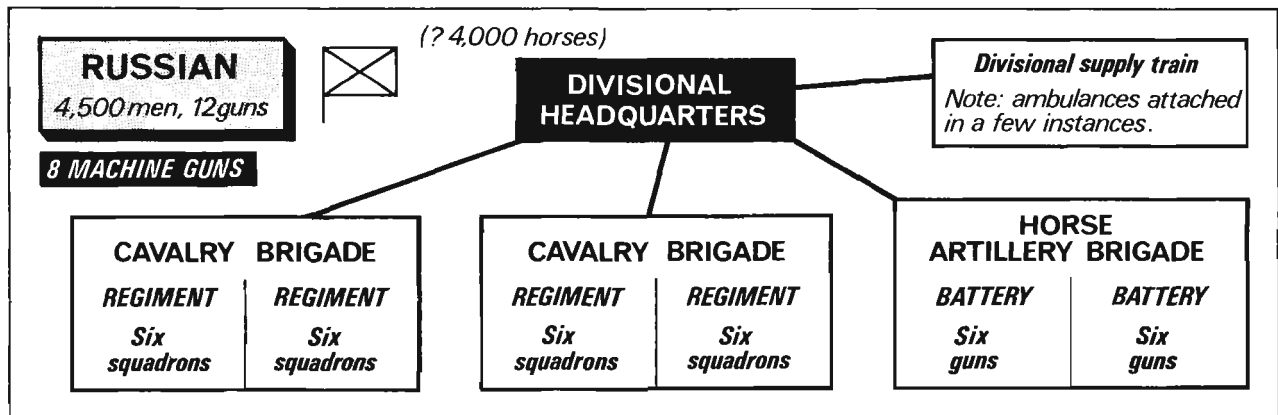
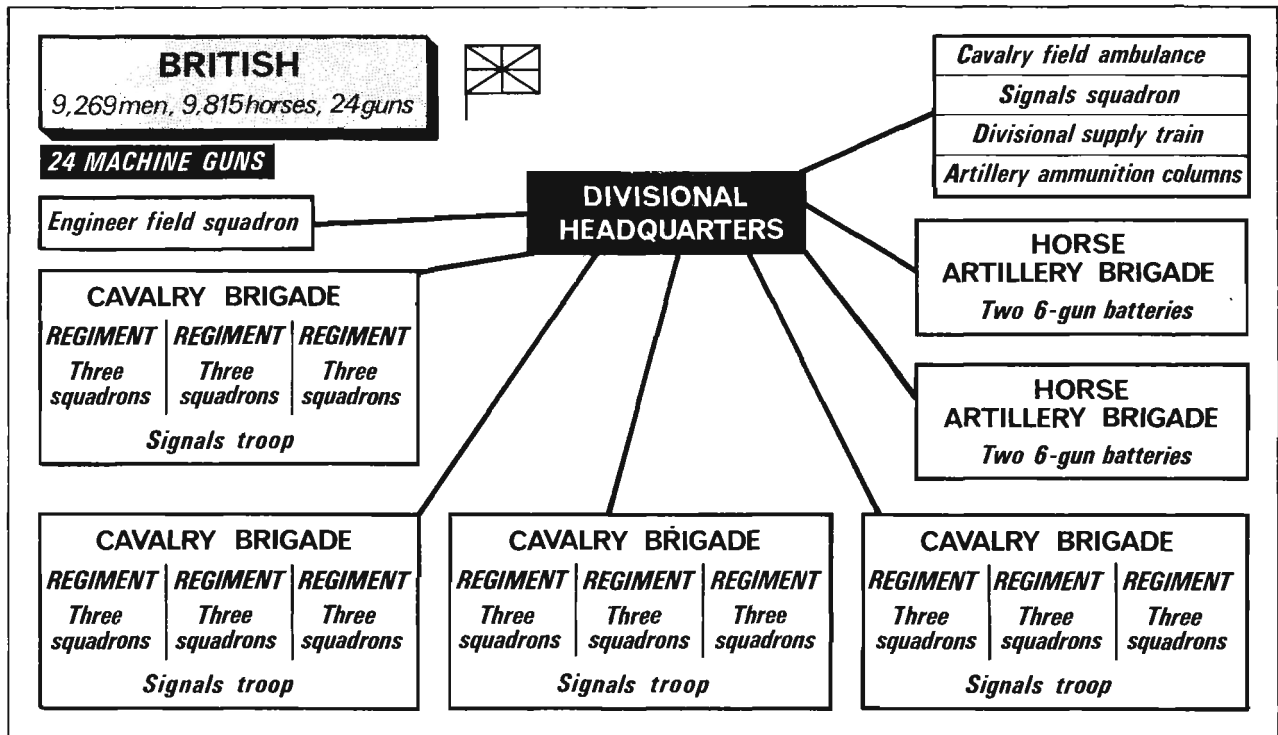
The infantry division was the standard component of corps and armies. These diagrams give approximate comparisons between the main contending forces.





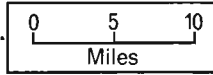
RIVAL CAVALRY DIVISIONAL ORGANIZATIONS IN 1914





THE GERMAN INVASION OF BELGIUM AUGUST 1914

Situation 17-24 August



KEY TO GERMAN DISPOSITIONS

- First positions, 17 August.
- Front lines, 20 August.
- Second positions, 21 August.
- Third positions, 22 August.
- Fourth positions, 23 August.
- March of Cavalry Corps and II Corps, 24 August.

Note: Corps are shown by Roman numerals

The German attack was accompanied by atrocities against the civilian population of Belgium, hostages being executed, towns pillaged, and homes destroyed.

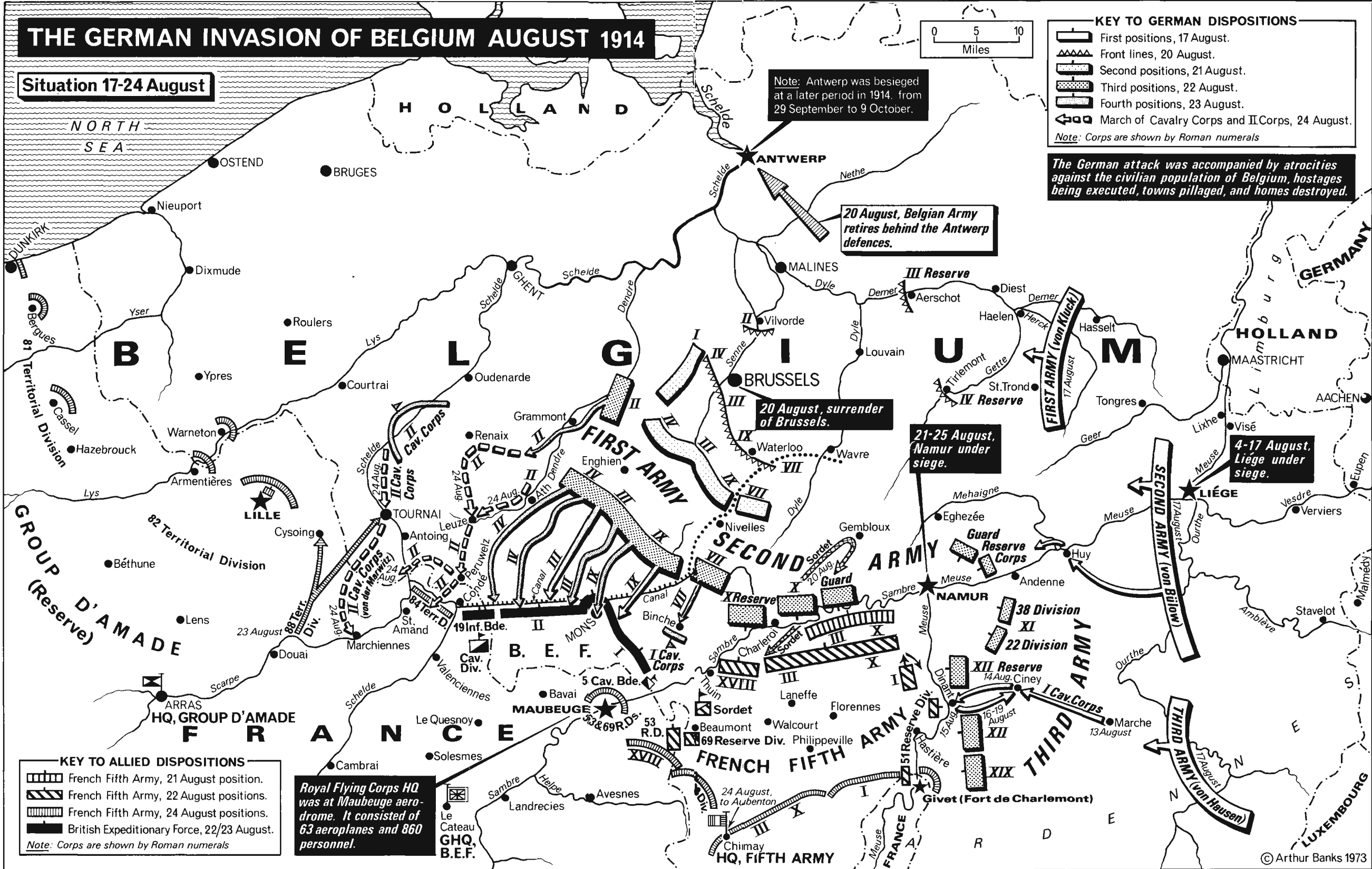
Note: Antwerp was besieged at a later period in 1914, from 29 September to 9 October.

20 August, Belgian Army retires behind the Antwerp defences.

20 August, surrender of Brussels.

21-25 August, Namur under siege.

4-17 August, Liège under siege.



KEY TO ALLIED DISPOSITIONS

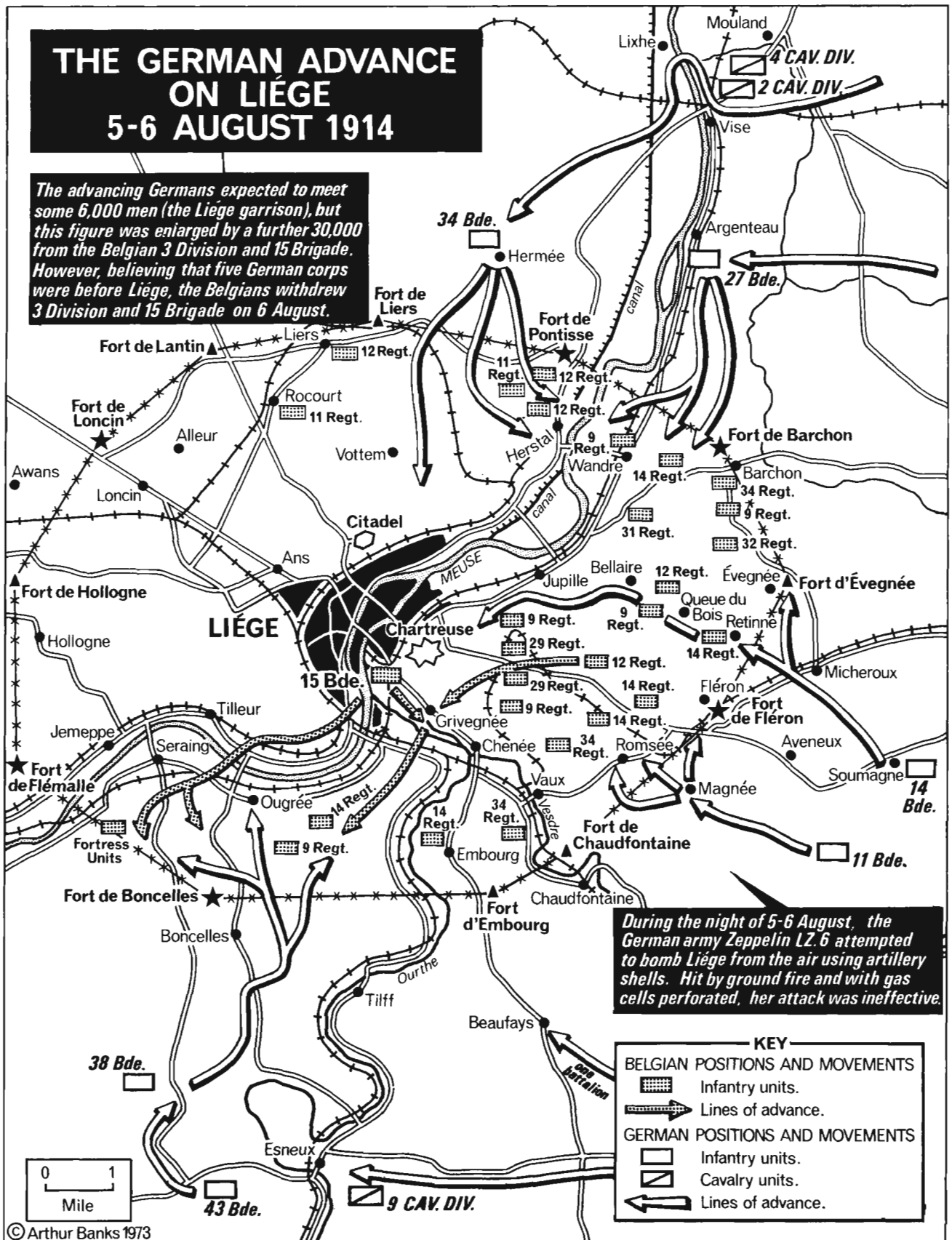
- French Fifth Army, 21 August position.
- French Fifth Army, 22 August positions.
- French Fifth Army, 24 August positions.
- British Expeditionary Force, 22/23 August.

Note: Corps are shown by Roman numerals

Royal Flying Corps HQ was at Maubeuge aerodrome. It consisted of 63 aeroplanes and 860 personnel.

THE GERMAN ADVANCE ON LIÈGE 5-6 AUGUST 1914

The advancing Germans expected to meet some 6,000 men (the Liège garrison), but this figure was enlarged by a further 30,000 from the Belgian 3 Division and 15 Brigade. However, believing that five German corps were before Liège, the Belgians withdrew 3 Division and 15 Brigade on 6 August.



During the night of 5-6 August, the German army Zeppelin LZ.6 attempted to bomb Liège from the air using artillery shells. Hit by ground fire and with gas cells perforated, her attack was ineffective.

REDUCTION OF THE LIÉGE FORTS 8-16 AUGUST 1914

10 15 August. Magazine explodes during huge bombardment by heavy German siege artillery. Germans capture Lieut.-General Leman, Belgian commander of Liège.

11 16 August. Shocked by terrible damage at Fort de Loncin, the garrison surrenders.

12 16 August. Garrison surrenders to avoid annihilation.

8 15 August. Fort is pounded by mortars. Submits at 0730 hours.

The rapid reduction of the Belgian fortress at Liège was due primarily to the overwhelming fire-power of the German siege artillery, which went on to equal success at Antwerp (reputed to be the strongest fortress in Europe in 1914). Liège itself was occupied before the forts were bombarded, and one of the two German 42-cm. mortars employed was sited in one of the town's squares.

5 13 August. Krupp 42-cm. mortars and Skoda 30.5-cm. howitzers pound the fortin, which surrenders at 1730 hours to avoid further bloodshed.

9 15 August. Fortin pounded into submission at 1230.

6 14 August. Fortin is pounded into submission at 0940 hours.

3 12 August marks the appearance of the first of the two Krupp 42-cm. mortars. 13 August, the second 42-cm. opens fire at 0800 hours. Fort surrenders at 1230 hours due to the extensive damage.

The first of the two German 42-cm. mortars was sited at Mortier.

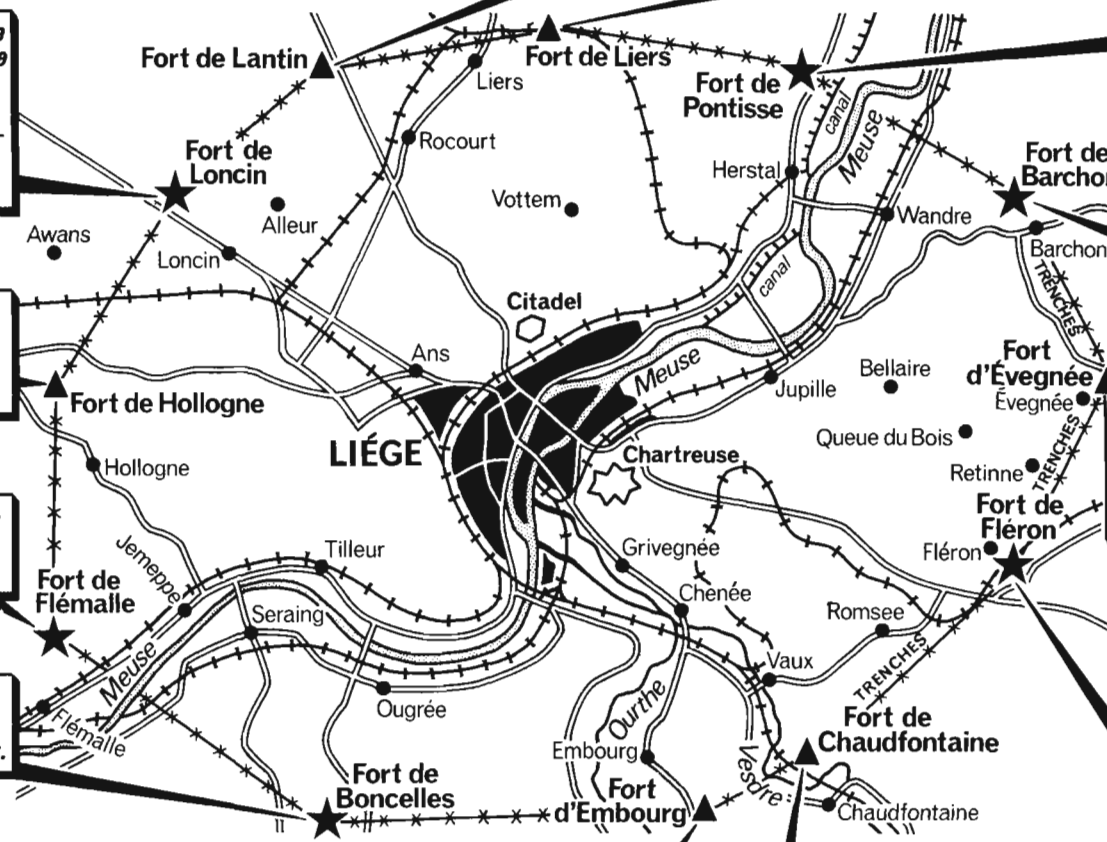
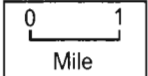
1 8 August. Two German light howitzer batteries of 27 Brigade demolish the parapet, killing over thirty men. The garrison is demoralised and surrenders to the Germans at 1630 hours.

2 11 August. Fortin is pounded into submission by large German howitzers.

7 14 August. Fort is pounded into submission at 0945 hours.

4 13 August. The magazine explodes and fire destroys the casements after hits by German shells. Fortin surrenders at 0900.

Note: all times shown in the panels are Belgian; German time was one hour later.



THE BOMBARDMENT OF NAMUR 21-25 AUGUST 1914

1 23 August, "mörser" shell attack commences, and heavy damage soon results. 3,600 shells are rained on the fort's position, the majority from 42-cm. weapons. Fort falls at 1700 hours on 25 August.

8 23 August, fire shifted from Fort de Cognelee; fort falls at 1630, 24 Aug.

6 Shelling opens at 1000 hours on 21 August. Early-morning infantry attack repulsed on 23 August, but fort falls at 1230 due to damage.

2 Morning 21 Aug., German field guns fire on trenches in intervals of forts.

7 Night 20 August, three preliminary infantry attacks.

Namur was defended by the fortress garrison and 4 Belgian (Mobile) Division, plus two companies of the French 45 Infantry Brigade. The German investing forces included the Guard Reserve Corps and XI Corps, plus the heavy siege artillery moved up from Liège.

Namur itself was shelled for four hours on 21 August, and again on 22 August.

3 1000 hours 21 August, the German "mörser" bombardment commences, rapidly inflicting severe damage to cupolas and magazines. By dusk, telephonic apparatus is unserviceable. Throughout 22 August anti-concrete shells continue falling on sole operational cupola. Fort finally succumbs on 23 August.

10 24 August, howitzer attack commences. Fort succumbs at 1430 hours on the following day.

4 1000 hours 21 August, the German siege artillery opens fire. By dusk, cupolas remain in working order, but telephonic apparatus is unserviceable. Shelling continues throughout night and on following day. By dusk on 22 August fort is in ruins, and garrison decides to evacuate the position.

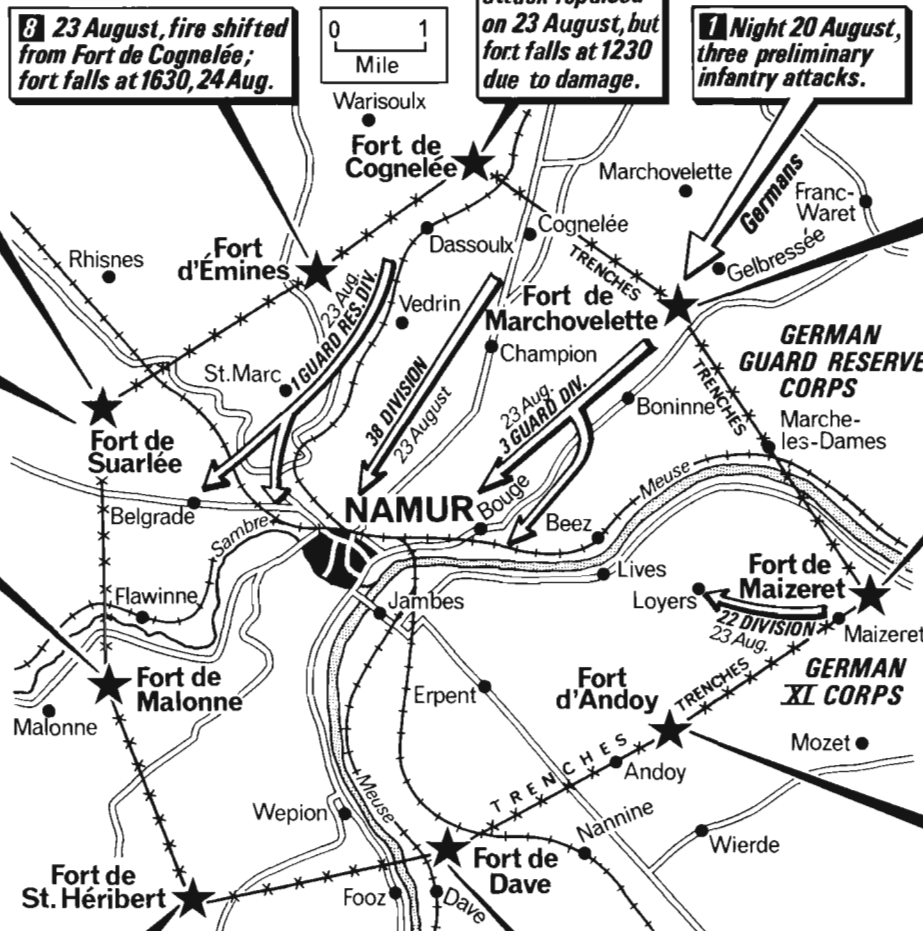
The bombardment of Namur followed the pattern established by the German heavy siege artillery at Liège. As before, the forts facing east were attacked first by the German 42-cm. "mörser" and Austrian-produced 30.5-cm. howitzers; likewise, they were destroyed systematically. Belgian 4 Division was extricated from the holocaust at night on 23 August, and although the rearguard was trapped at Ermeton-sur-Biert, 12,000 men eventually reached Antwerp via Mariembourg on 30 August.

9 24 August, German 15-cm. field howitzers open bombardment. Fort is shelled continuously for 90 minutes, and then succumbs after main part of garrison is evacuated.

7 Morning 22 August, German artillery opens fire, but by dusk is only slightly damaged. On 23 August, German heavy howitzers switch fire from Forts d'Andoy and Maizeret. Destruction follows swiftly.

5 1000 hours 21 August, the German heavy artillery opens fire. By dusk the structure of fort is honeycombed by large cracks in the concrete structure. By dusk all telephonic apparatus is unserviceable. Fort succumbs on 23 August.

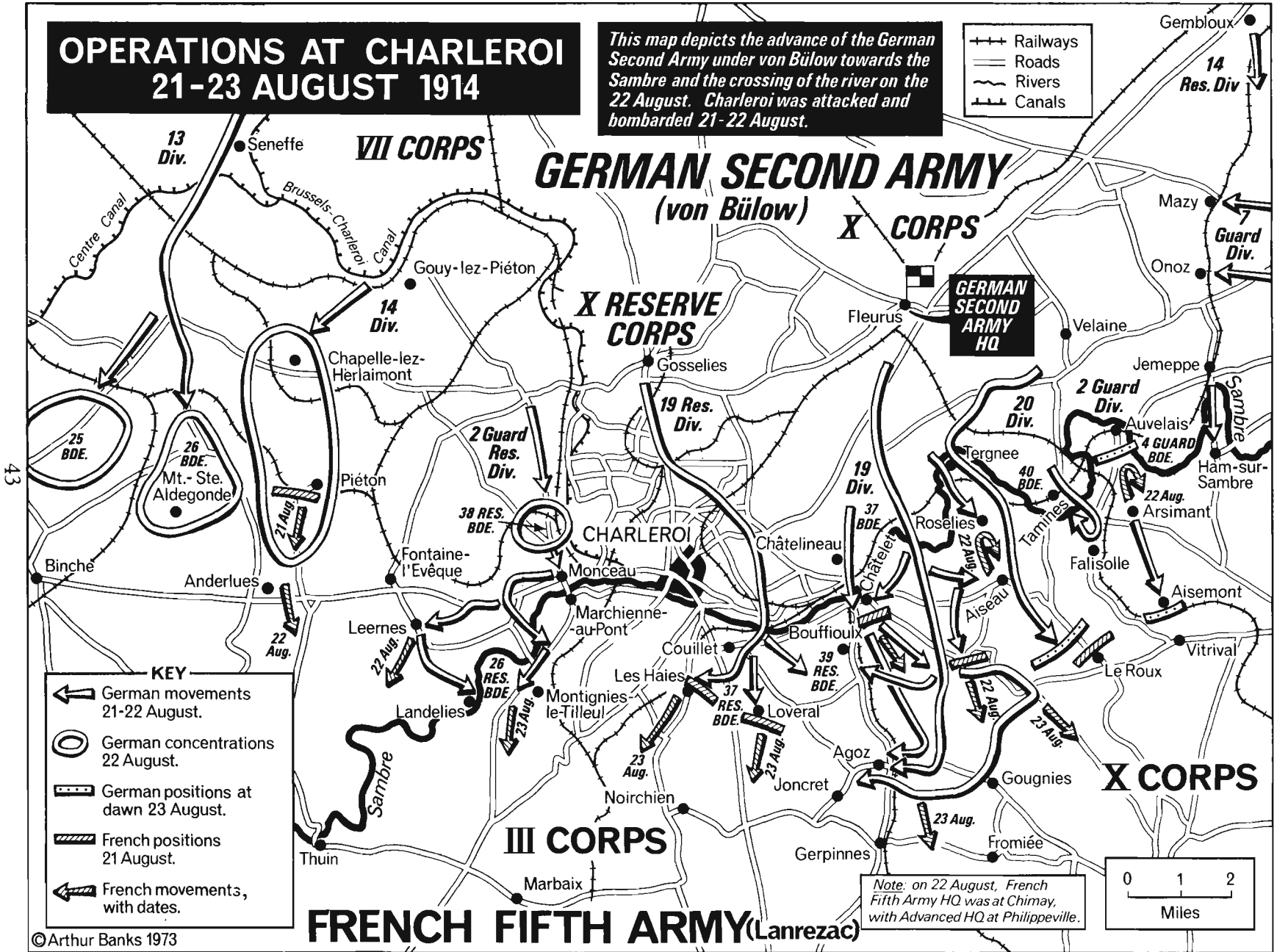
Note: all times shown in the panels are Belgian; German time was one hour later.



OPERATIONS AT CHARLEROI 21-23 AUGUST 1914

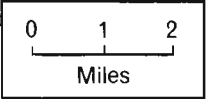
This map depicts the advance of the German Second Army under von Bülow towards the Sambre and the crossing of the river on the 22 August. Charleroi was attacked and bombarded 21-22 August.

- Railways
- Roads
- ~ Rivers
- Canals



- KEY**
- ← German movements 21-22 August.
 - German concentrations 22 August.
 - ▬ German positions at dawn 23 August.
 - ▬ French positions 21 August.
 - ← French movements, with dates.

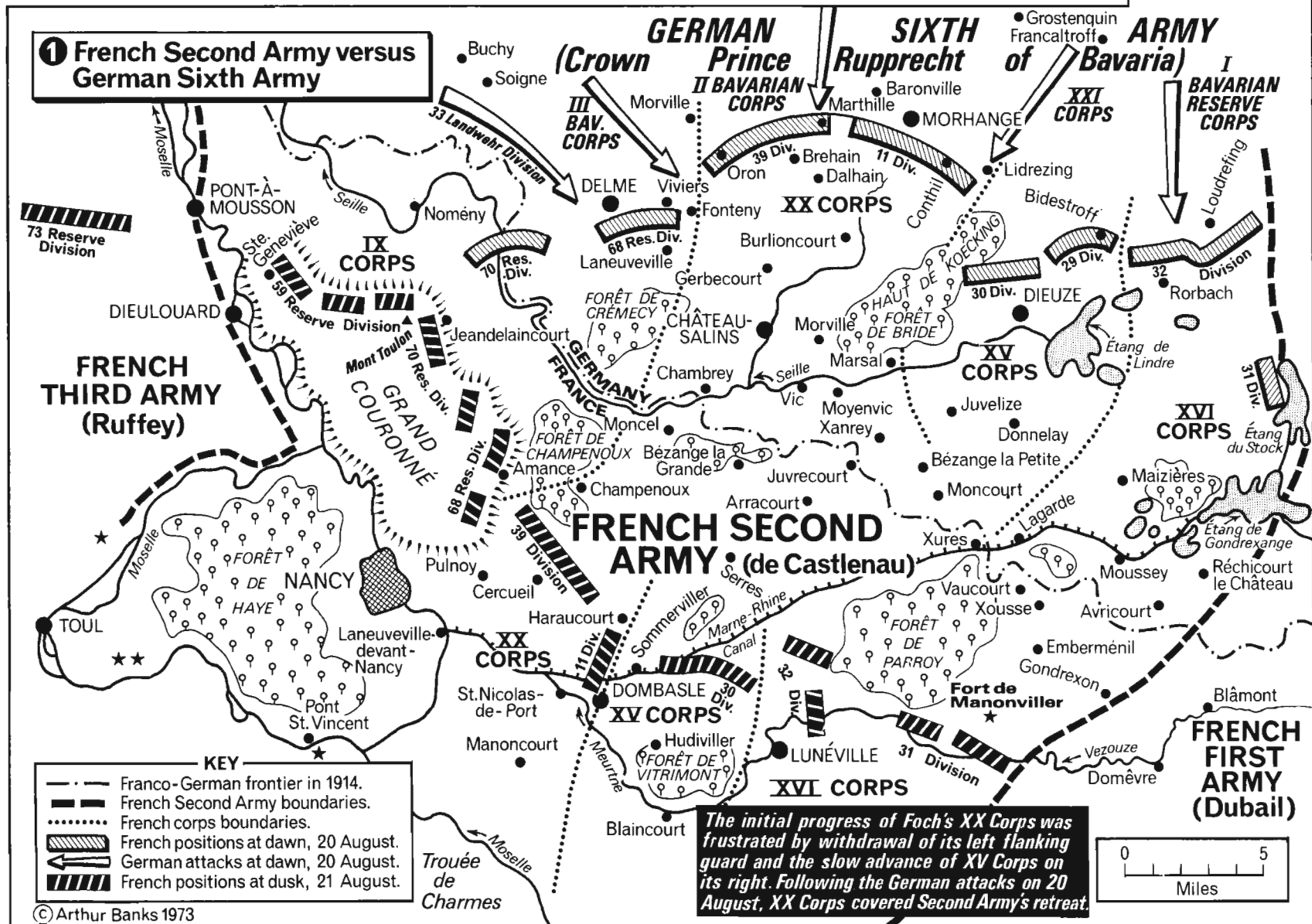
Note: on 22 August, French Fifth Army HQ was at Chimay, with Advanced HQ at Philippeville.



THE FRONTIER BATTLES IN LORRAINE 10-28 AUGUST 1914

 HQ, GERMAN SIXTH ARMY
 Hellimer

① French Second Army versus German Sixth Army

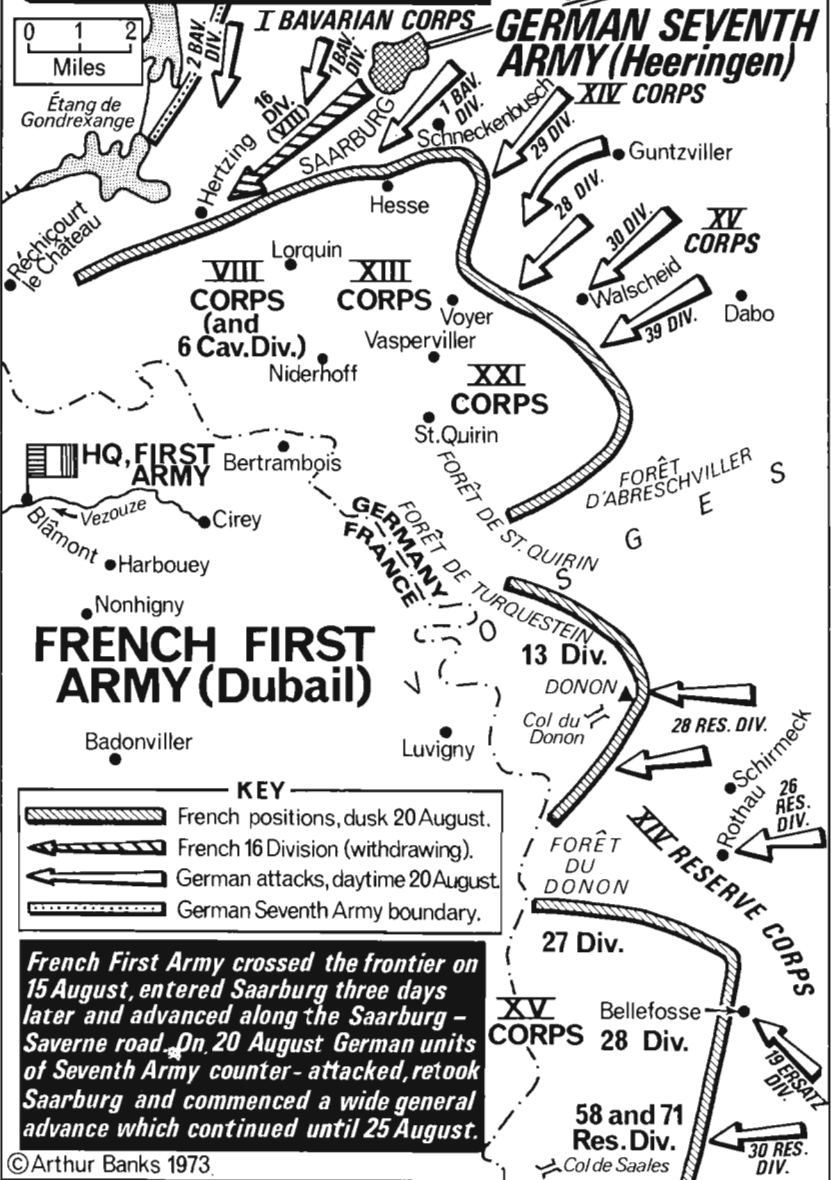
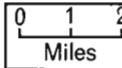


The initial progress of Foch's XX Corps was frustrated by withdrawal of its left flanking guard and the slow advance of XV Corps on its right. Following the German attacks on 20 August, XX Corps covered Second Army's retreat.

② French First Army versus German Seventh Army

HQ, SEVENTH ARMY

road to Phalsburg (Pfalzburg)
Saverne



FRENCH FIRST ARMY (Dubail)

- KEY**
- French positions, dusk 20 August.
 - French 16 Division (withdrawing).
 - German attacks, daytime 20 August.
 - German Seventh Army boundary.

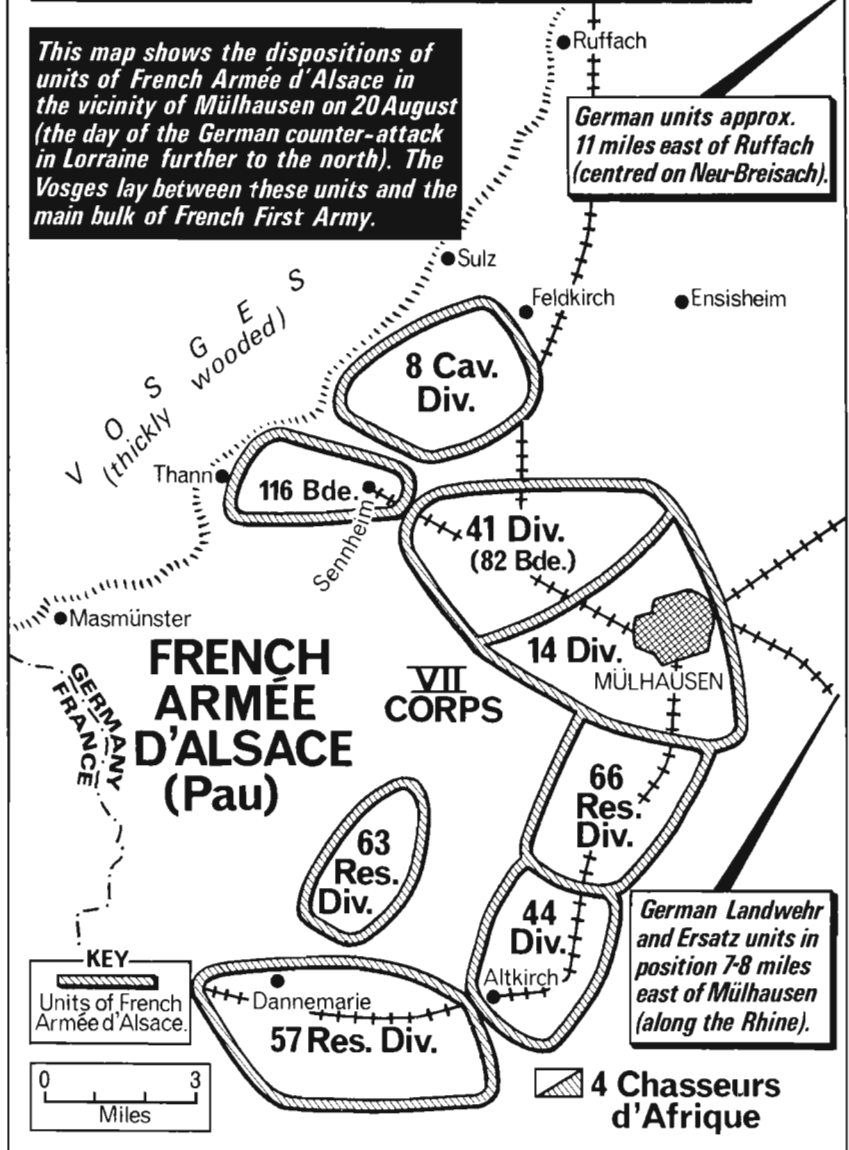
French First Army crossed the frontier on 15 August, entered Saarburg three days later and advanced along the Saarburg - Saverne road. On 20 August German units of Seventh Army counter-attacked, retook Saarburg and commenced a wide general advance which continued until 25 August.

THE SITUATION IN ALSACE 20 AUGUST 1914

to Colmar (15 miles)

This map shows the dispositions of units of French Armée d'Alsace in the vicinity of Mülhausen on 20 August (the day of the German counter-attack in Lorraine further to the north). The Vosges lay between these units and the main bulk of French First Army.

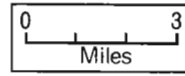
German units approx. 11 miles east of Ruffach (centred on Neu-Breisach).



FRENCH ARMÉE D'ALSACE (Pau)

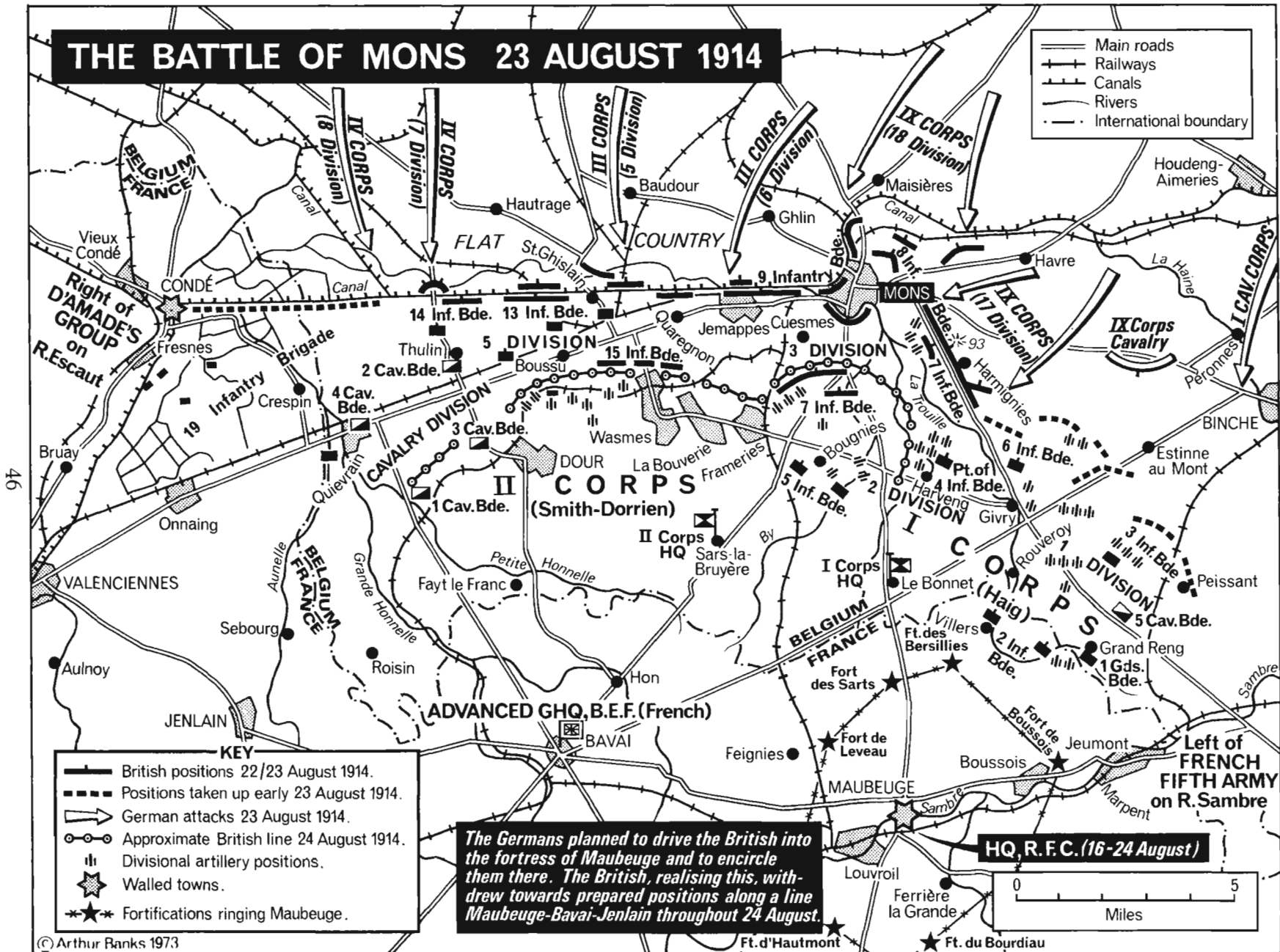
- KEY**
- Units of French Armée d'Alsace.

German Landwehr and Ersatz units in position 7-8 miles east of Mülhausen (along the Rhine).



4 Chasseurs d'Afrique

THE BATTLE OF MONS 23 AUGUST 1914



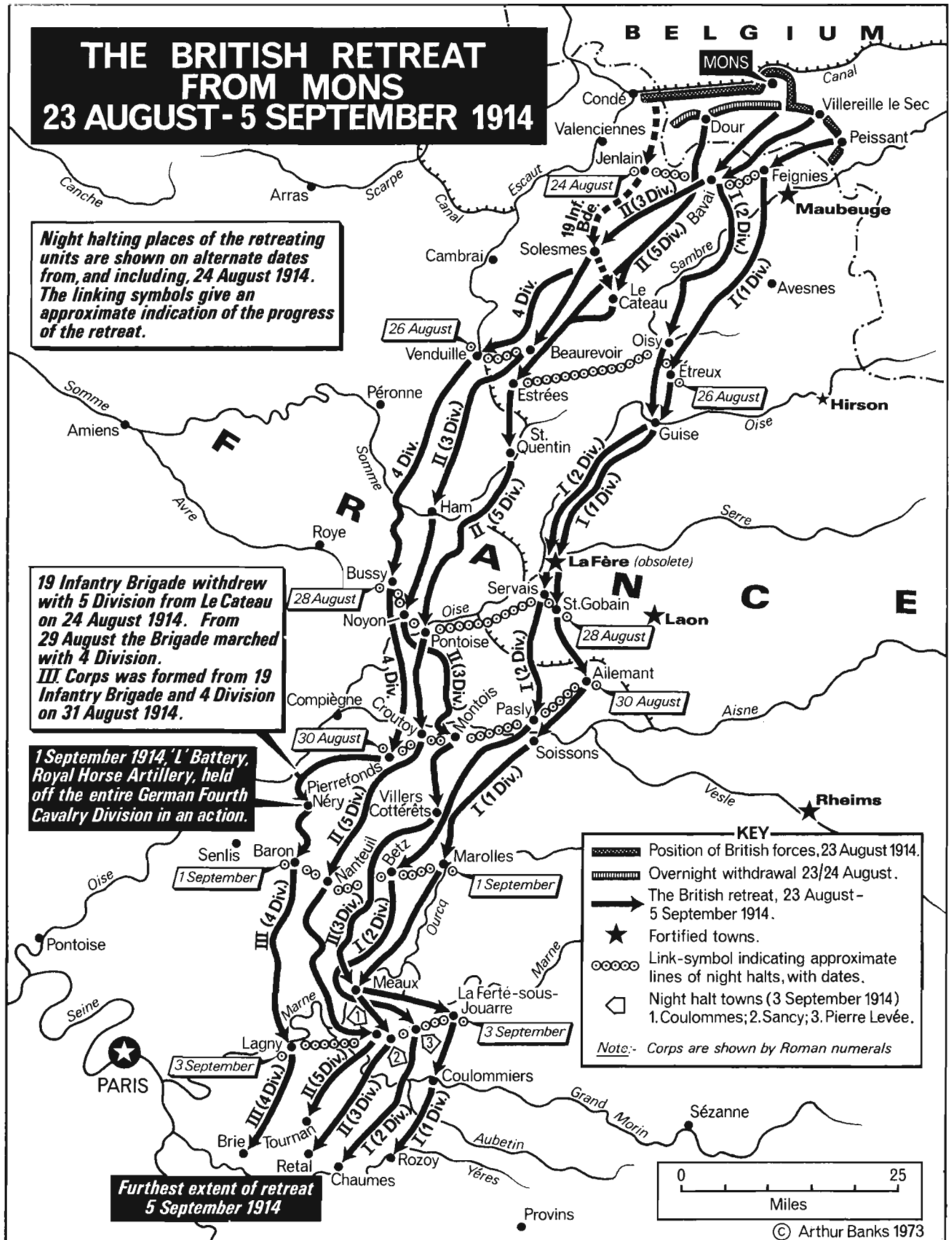
THE BRITISH RETREAT FROM MONS 23 AUGUST - 5 SEPTEMBER 1914

Night halting places of the retreating units are shown on alternate dates from, and including, 24 August 1914. The linking symbols give an approximate indication of the progress of the retreat.

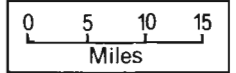
19 Infantry Brigade withdrew with 5 Division from Le Cateau on 24 August 1914. From 29 August the Brigade marched with 4 Division. III Corps was formed from 19 Infantry Brigade and 4 Division on 31 August 1914.

1 September 1914, 'L' Battery, Royal Horse Artillery, held off the entire German Fourth Cavalry Division in an action.

Furthest extent of retreat
5 September 1914



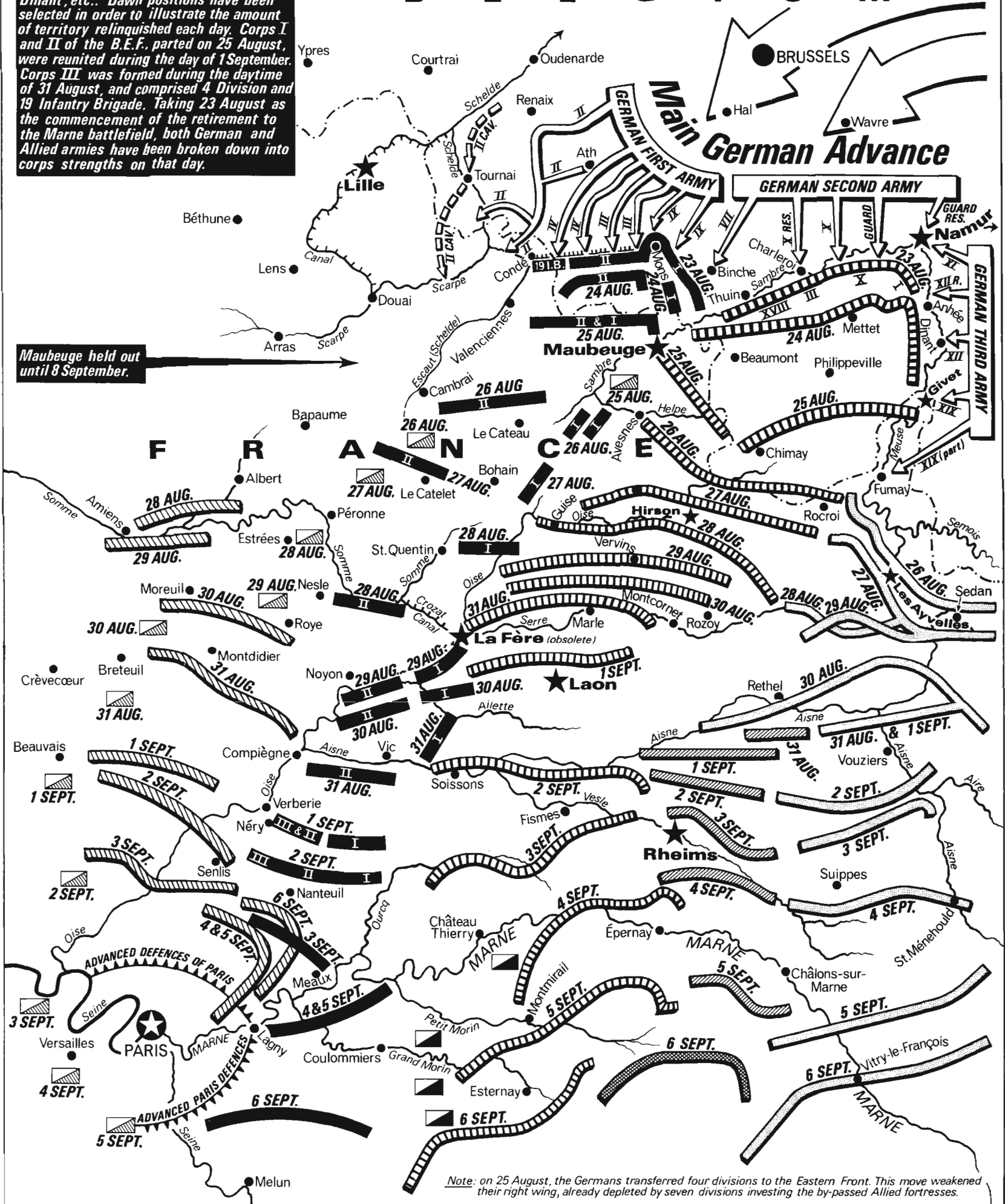
THE ALLIED RETIREMENT 23 AUGUST-6 SEPTEMBER 1914



This map shows the day by day withdrawal of the Allied Armies of the Left, following the German successes at Mons, Charleroi, Dinant, etc.. Dawn positions have been selected in order to illustrate the amount of territory relinquished each day. Corps I and II of the B.E.F. parted on 25 August, were reunited during the day of 1 September. Corps III was formed during the daytime of 31 August, and comprised 4 Division and 19 Infantry Brigade. Taking 23 August as the commencement of the retirement to the Marne battlefield, both German and Allied armies have been broken down into corps strengths on that day.

Note: the rapidity of the German advance caused their lines of communication to become over-extended and supplies began to fail.

BELGIUM



Maubeuge held out until 8 September.

Note: on 25 August, the Germans transferred four divisions to the Eastern Front. This move weakened their right wing, already depleted by seven divisions investing the by-passed Allied fortresses.

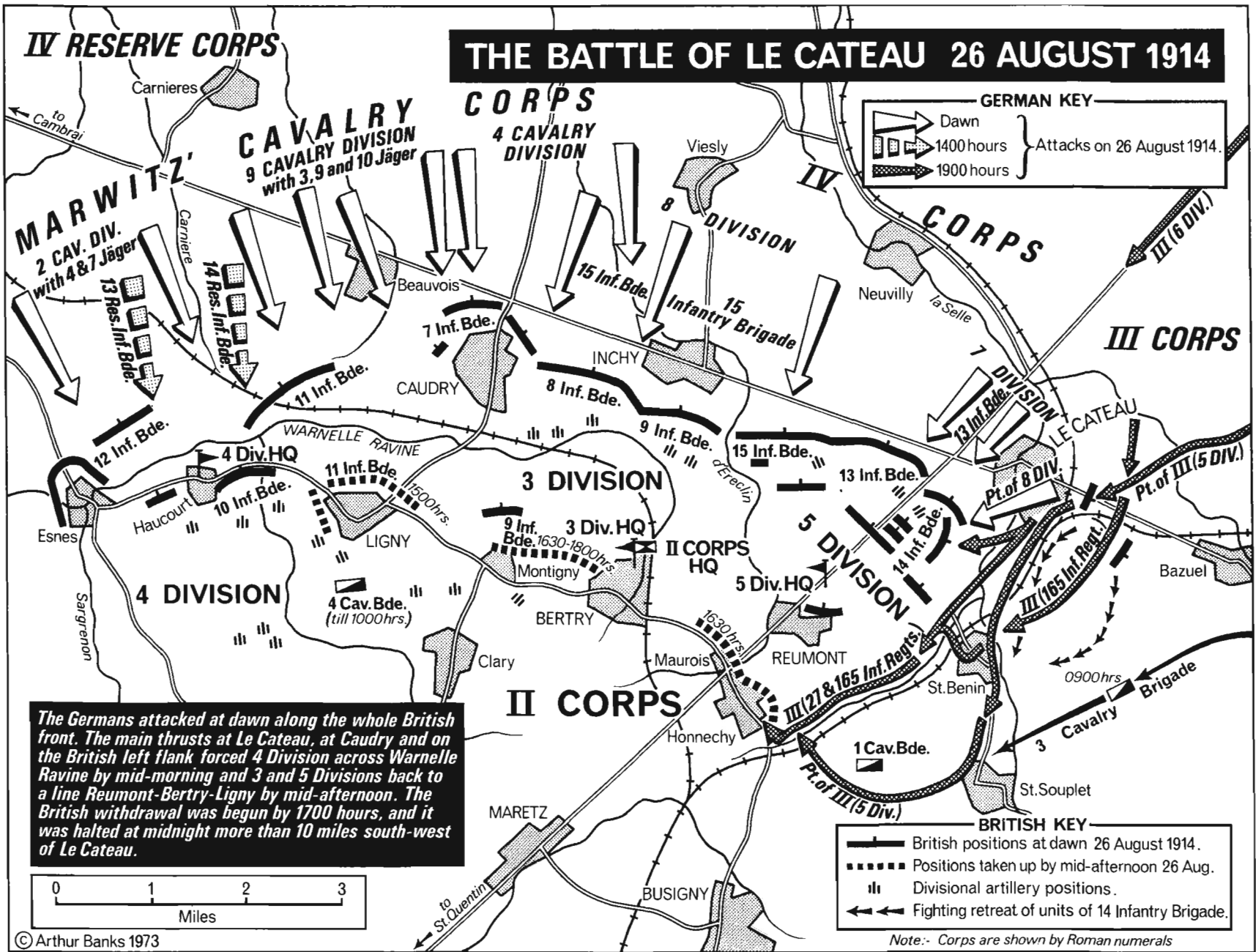
KEY TO ALLIED ARMIES OF THE LEFT (approx. 700,000 troops on 23 August 1914)

- Fourth Army (commanded by General Langle de Cary).
- Fifth Army (commanded by General Lanrezac until replaced by General d'Esperey on 3 September 1914).
- Sixth Army (commanded by General Maunoury until replaced by General Galliéni on 1 September 1914).
- Foch "detachment" (commanded by General Foch, and formed on 29 August 1914).
- Ninth Army (formerly the Foch "detachment").
- Sordet's Cavalry Corps (Sordet was replaced by General Bridoux on 8 September 1914).
- Conneau's Cavalry Corps.
- British Expeditionary Force (commanded by Sir John French).

KEY TO GERMAN ARMIES OF THE RIGHT (approx. 760,000 troops on 23 August 1914)

- FIRST ARMY (commanded by Generaloberst von Kluck).
- SECOND ARMY (commanded by Generaloberst von Bülow).
- THIRD ARMY (commanded by Generaloberst von Hausen).

THE BATTLE OF LE CATEAU 26 AUGUST 1914



GERMAN KEY

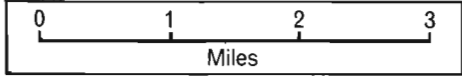
- Dawn
- 1400 hours
- 1900 hours

} Attacks on 26 August 1914.

BRITISH KEY

- British positions at dawn 26 August 1914.
- Positions taken up by mid-afternoon 26 Aug.
- Divisional artillery positions.
- Fighting retreat of units of 14 Infantry Brigade.






The Germans attacked at dawn along the whole British front. The main thrusts at Le Cateau, at Caudry and on the British left flank forced 4 Division across Warnelle Ravine by mid-morning and 3 and 5 Divisions back to a line Reumont-Bertry-Ligny by mid-afternoon. The British withdrawal was begun by 1700 hours, and it was halted at midnight more than 10 miles south-west of Le Cateau.



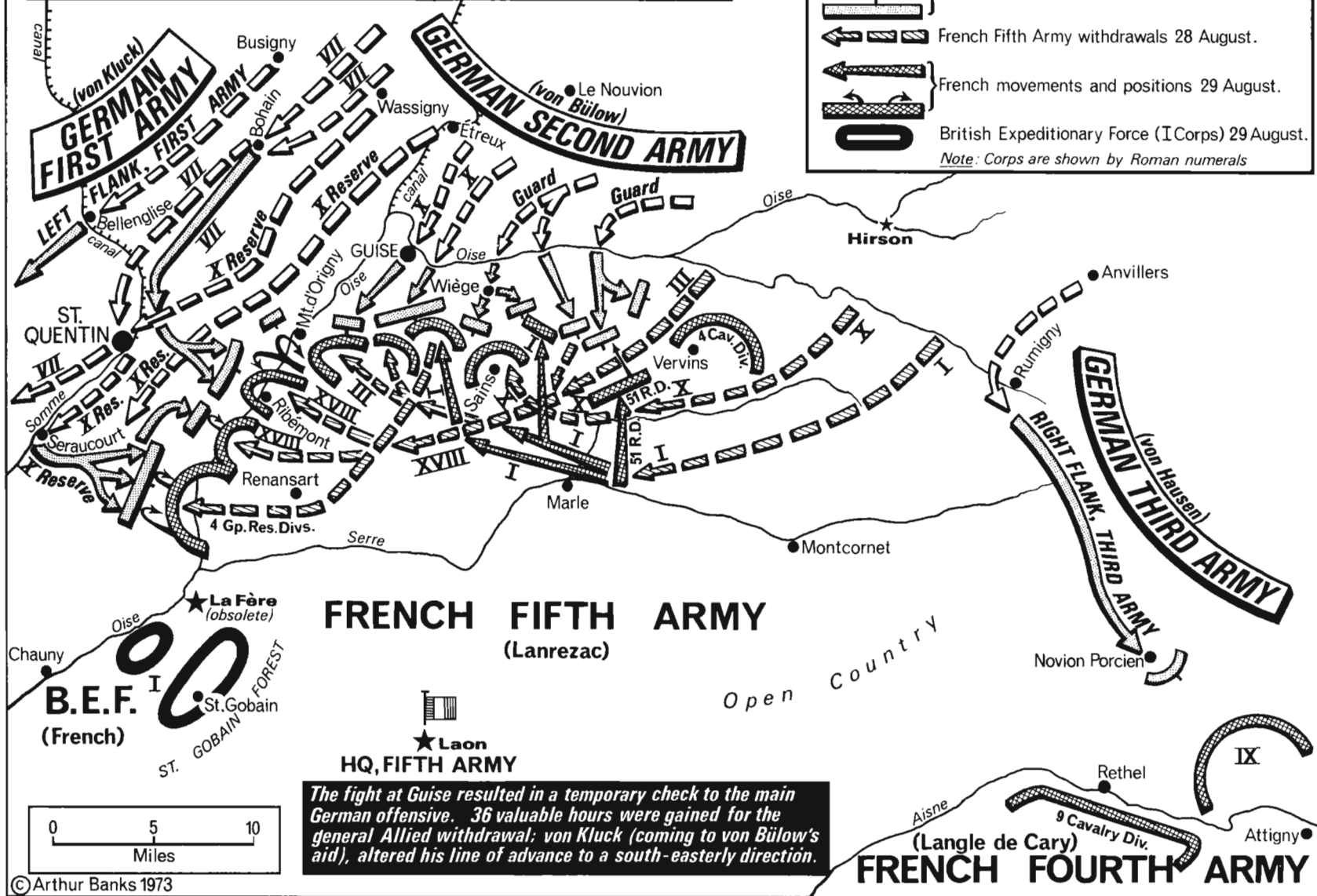
Note:- Corps are shown by Roman numerals

THE BATTLE OF GUISE-ST. QUENTIN 29 AUGUST 1914

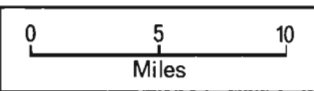
KEY

-  German advances 28 August.
-  German movements and positions 29 August.
-  French Fifth Army withdrawals 28 August.
-  French movements and positions 29 August.
-  British Expeditionary Force (I Corps) 29 August.

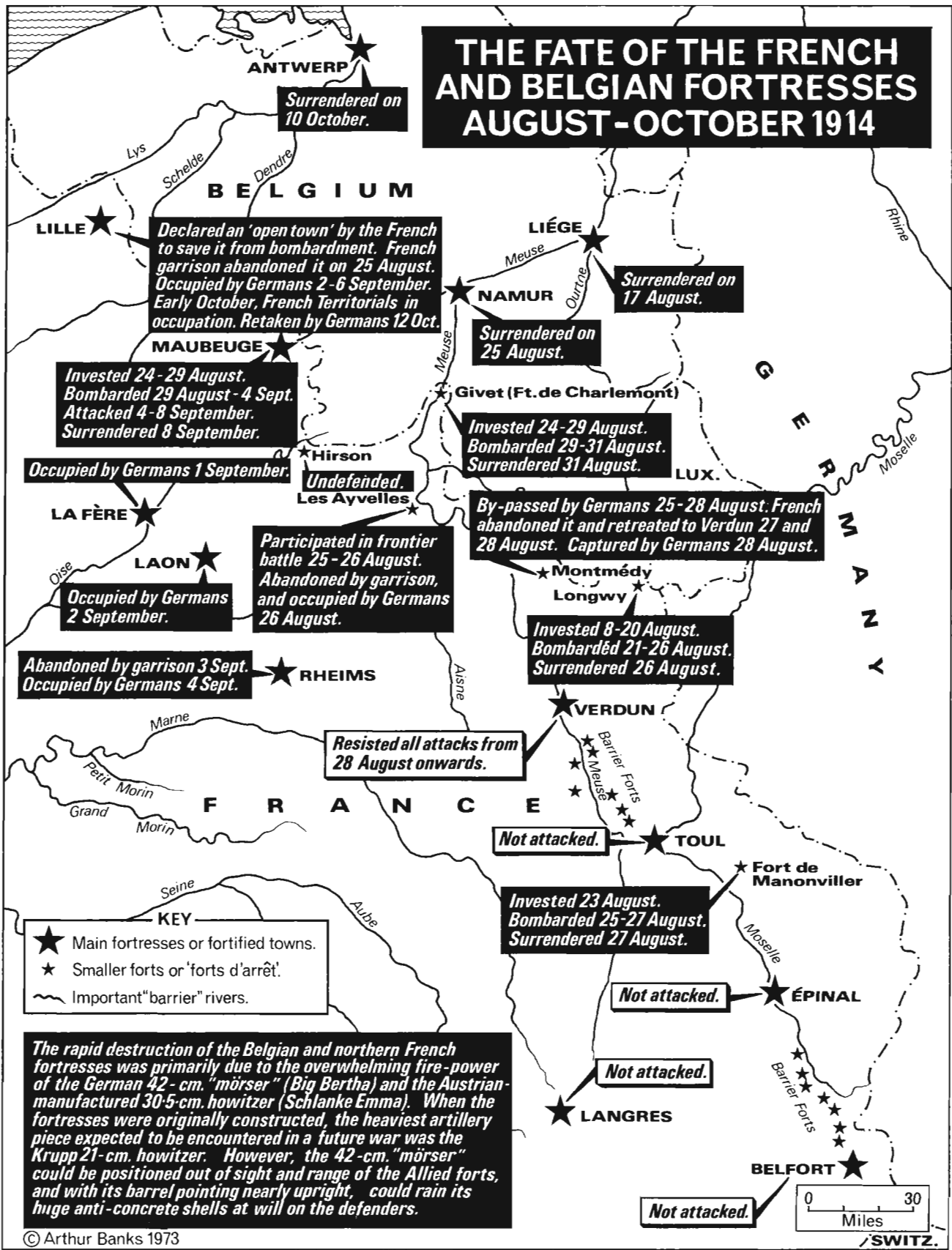
Note: Corps are shown by Roman numerals



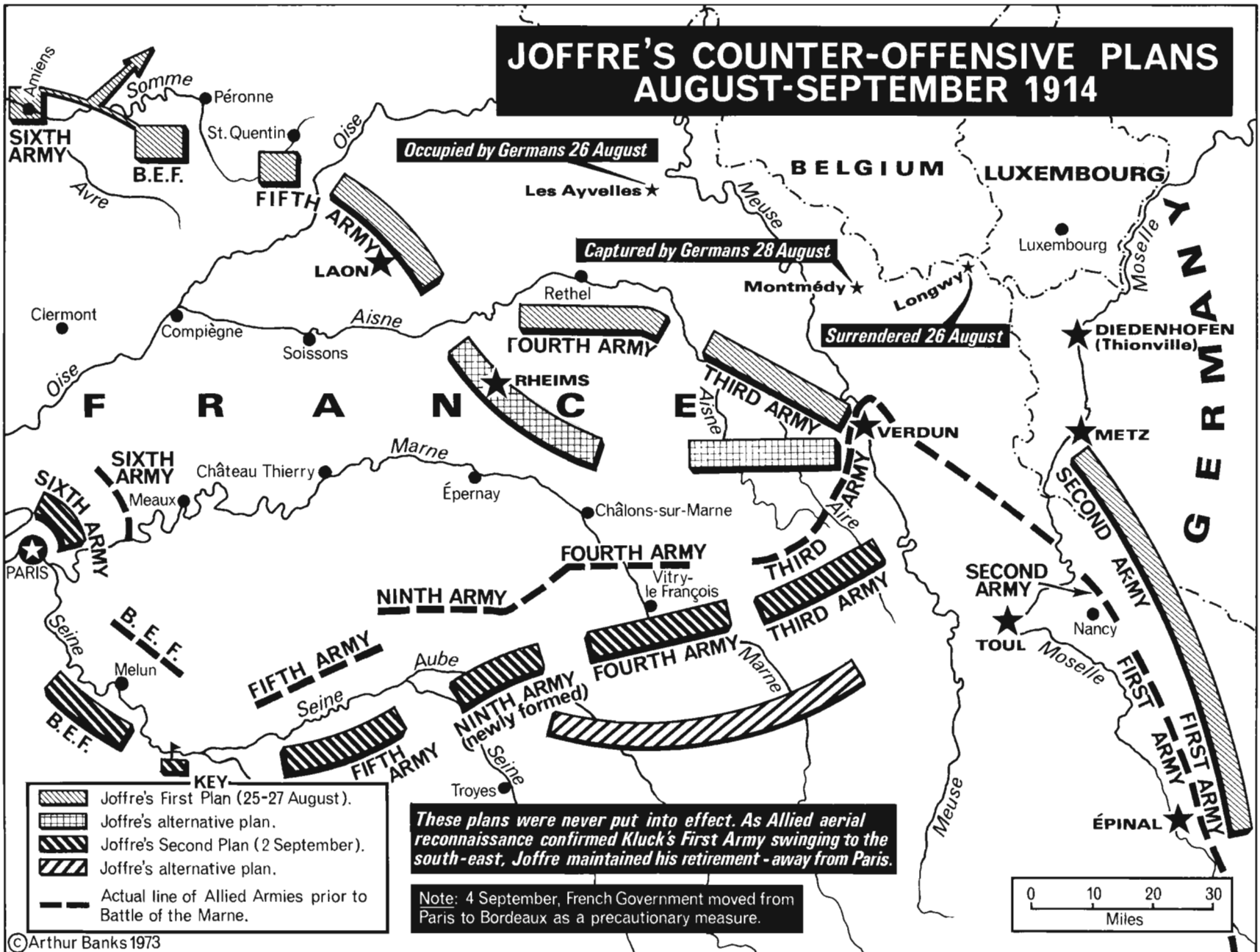
The fight at Guise resulted in a temporary check to the main German offensive. 36 valuable hours were gained for the general Allied withdrawal; von Kluck (coming to von Bülow's aid), altered his line of advance to a south-easterly direction.








THE FATE OF THE FRENCH AND BELGIAN FORTRESSES AUGUST-OCTOBER 1914



JOFFRE'S COUNTER-OFFENSIVE PLANS AUGUST-SEPTEMBER 1914



53

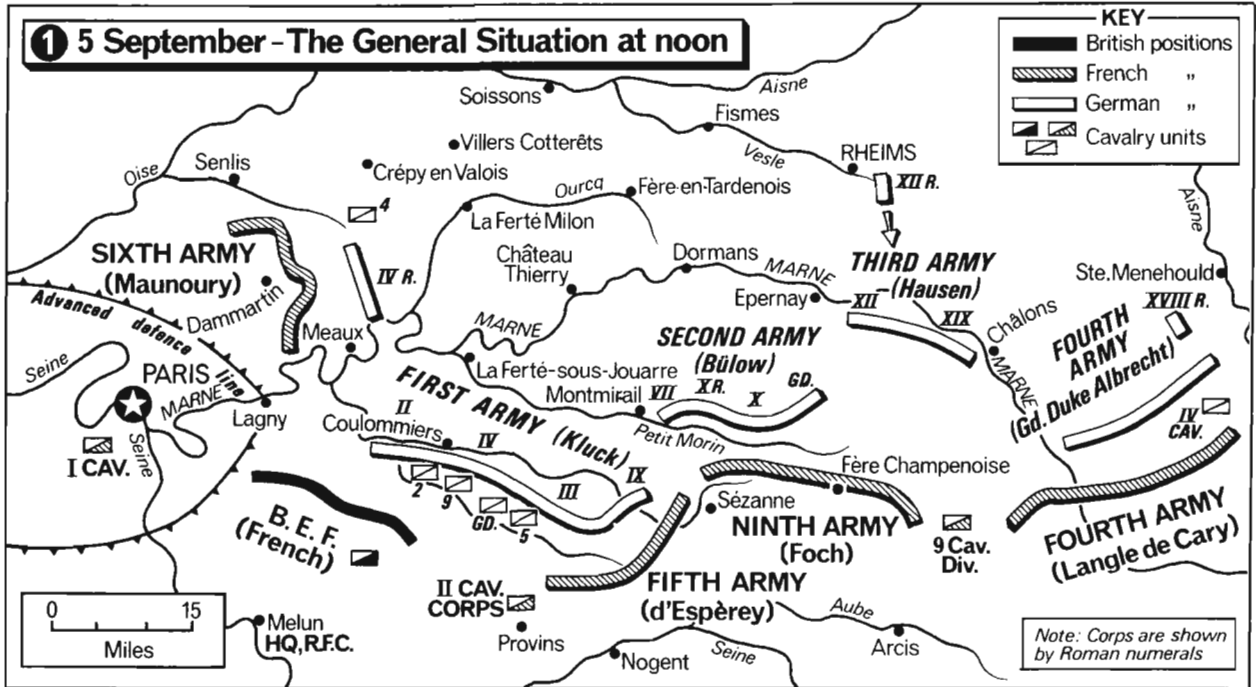
- KEY**
-  Joffre's First Plan (25-27 August).
 -  Joffre's alternative plan.
 -  Joffre's Second Plan (2 September).
 -  Joffre's alternative plan.
 -  Actual line of Allied Armies prior to Battle of the Marne.

These plans were never put into effect. As Allied aerial reconnaissance confirmed Kluck's First Army swinging to the south-east, Joffre maintained his retirement - away from Paris.

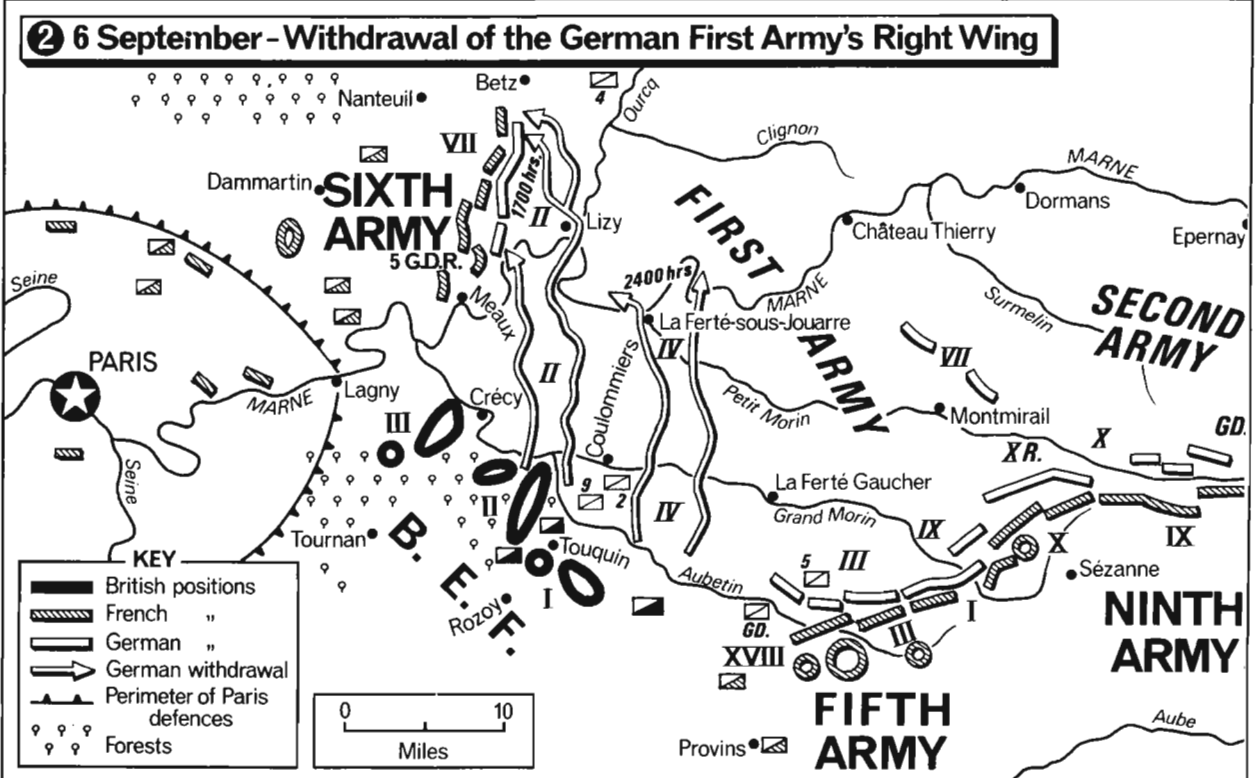
Note: 4 September, French Government moved from Paris to Bordeaux as a precautionary measure.

THE FIRST BATTLE OF THE MARNE 5-10 SEPTEMBER 1914

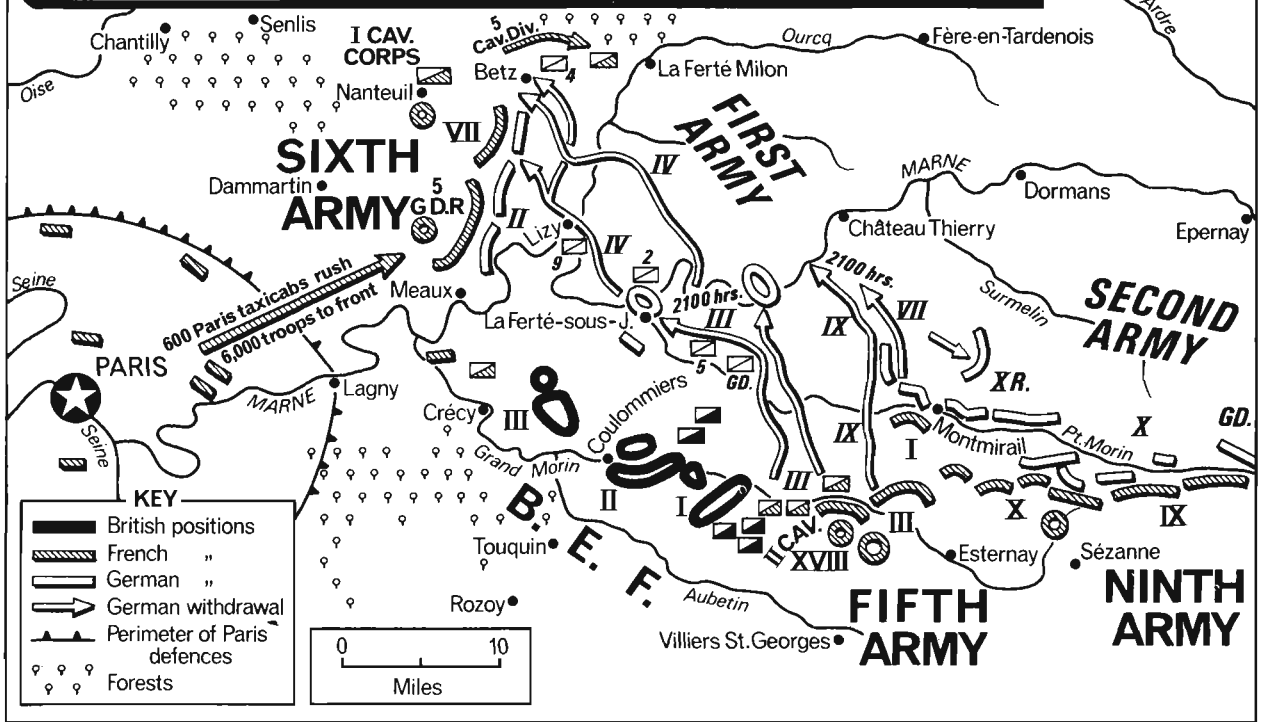
1 5 September - The General Situation at noon



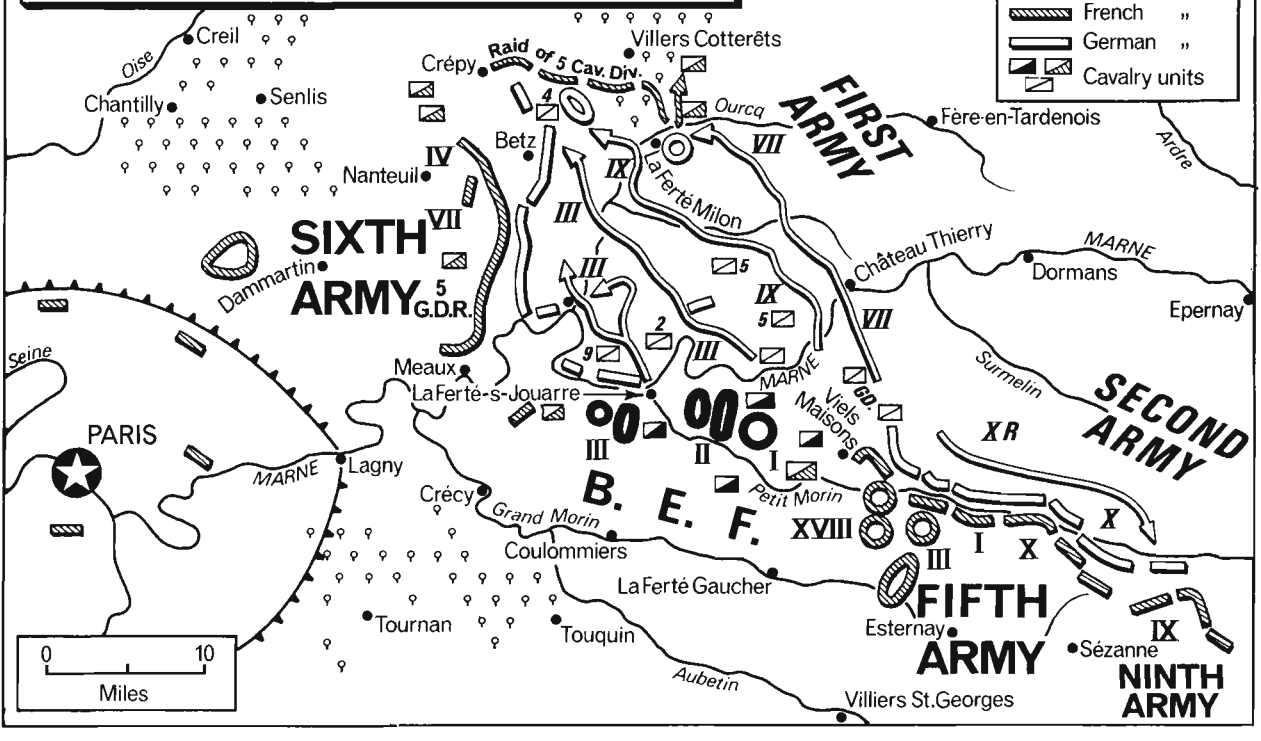
2 6 September - Withdrawal of the German First Army's Right Wing



3 7 September - Withdrawal of the German First Army's Left Wing



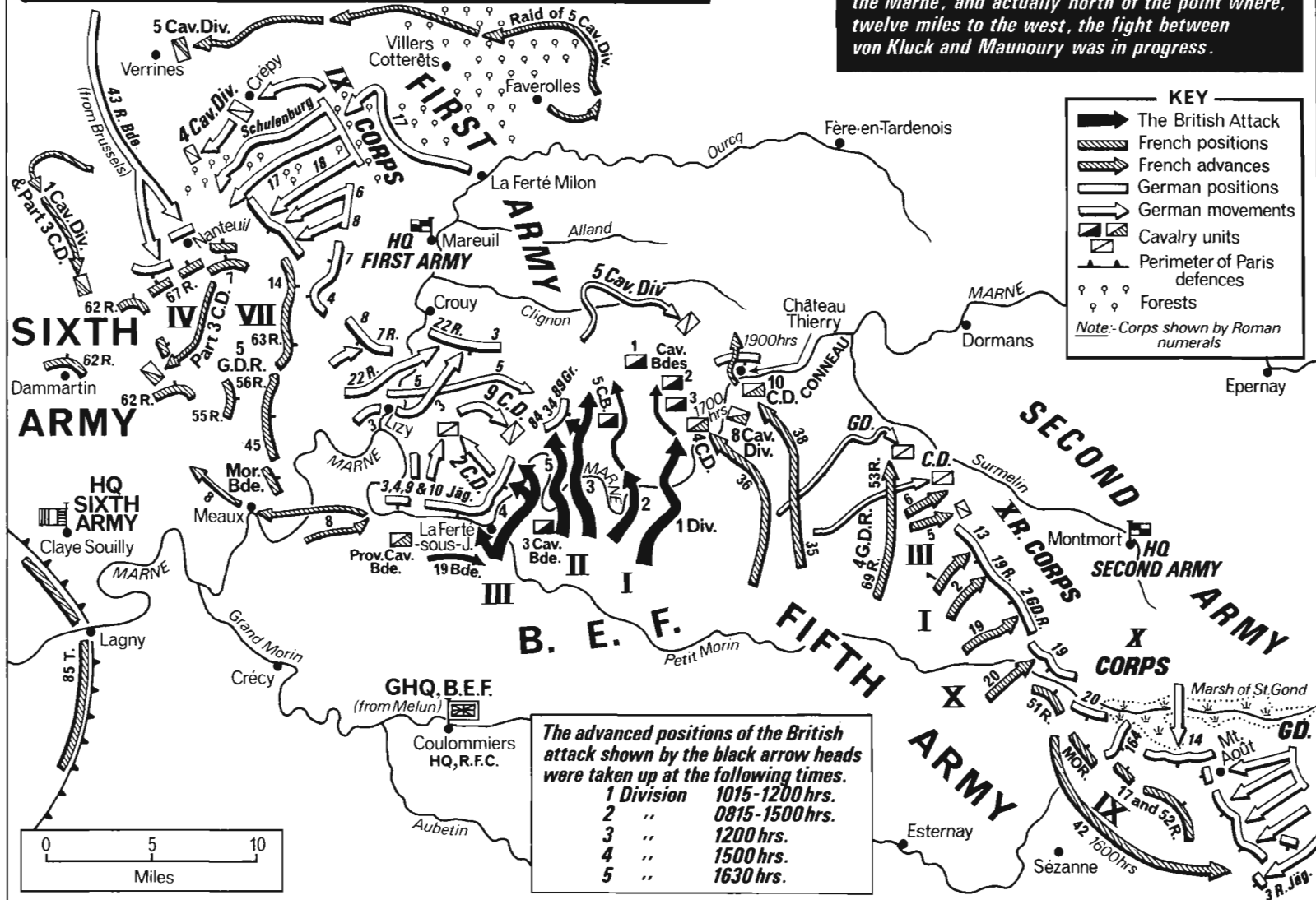
4 8 September - The General Situation at dusk



THE FIRST BATTLE OF THE MARNE - continued

5 9 September - The British Attack across the Marne

The British found the bridges west of Château Thierry unbroken, and no enemy to hold the river. The German guns did not open fire until the British 3 Division (II Corps) was some four miles beyond the Marne, and actually north of the point where, twelve miles to the west, the fight between von Kluck and Maunoury was in progress.

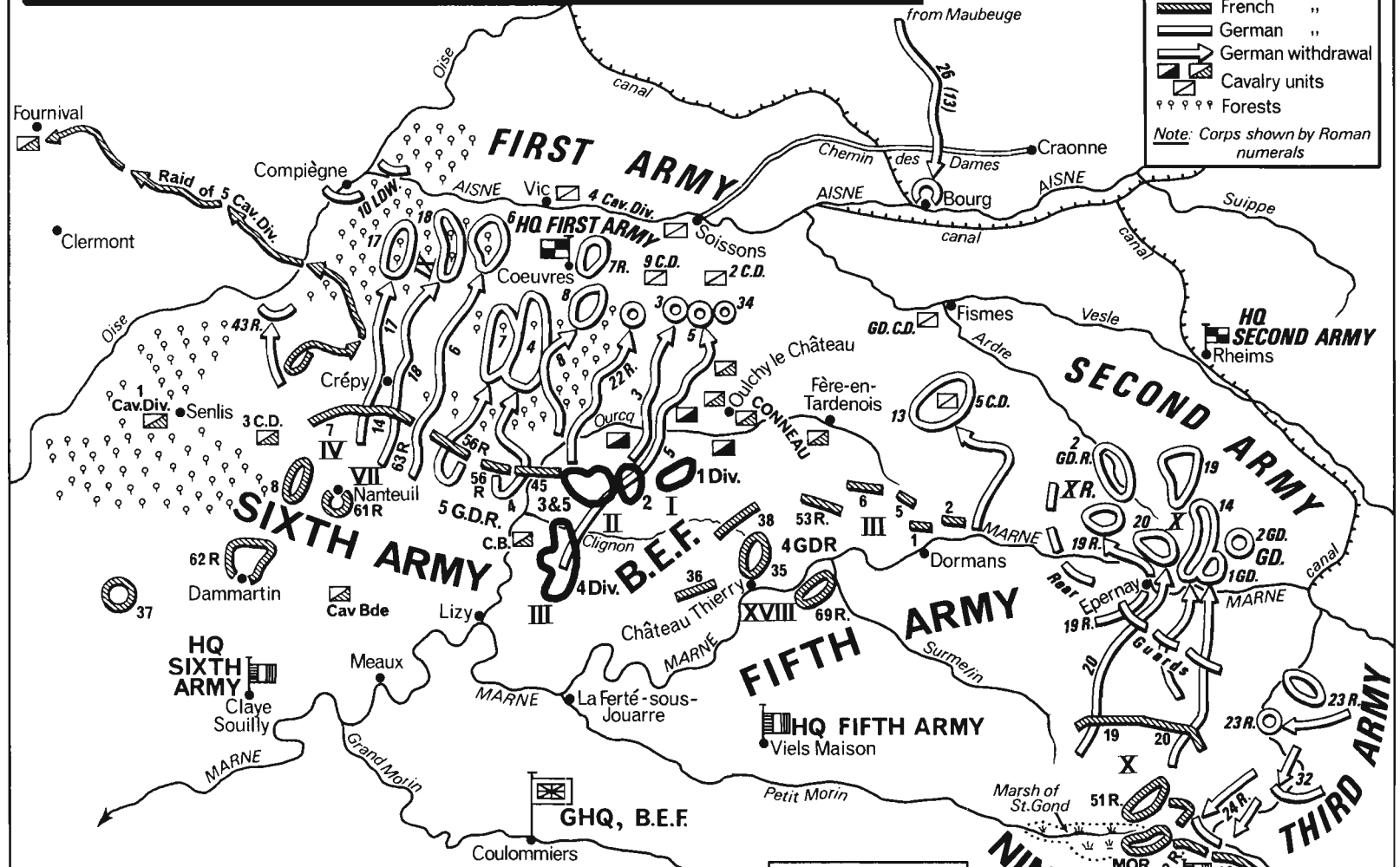


6 10 September - The German Armies in Retreat towards the Aisne

KEY

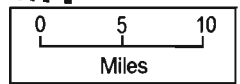
- British positions
- French "
- German "
- German withdrawal
- Cavalry units
- Forests

Note: Corps shown by Roman numerals

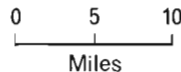


The German Armies commenced a general retirement towards prepared defensive positions behind the Vesle and Aisne rivers. Having been held on their flanks, and with their centre broken, the Germans instituted a series of forced marches over previously conquered territory. Only Allied cautiousness in advance prevented this retirement from turning into a full-scale disorganized retreat.

PSYCHOLOGICAL WARFARE
 The Germans believed false rumours of 40,000 British & 80,000 Russians landing on Belgian coast.

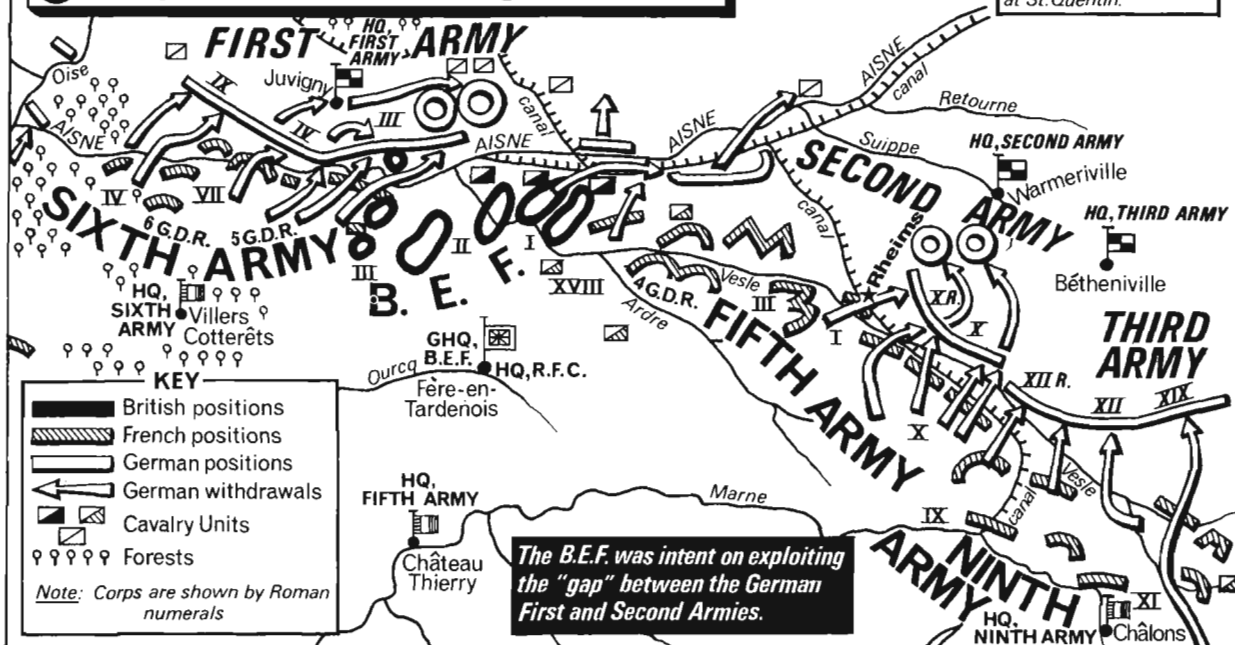


OPERATIONS ALONG THE AISNE LINE SEPTEMBER 1914

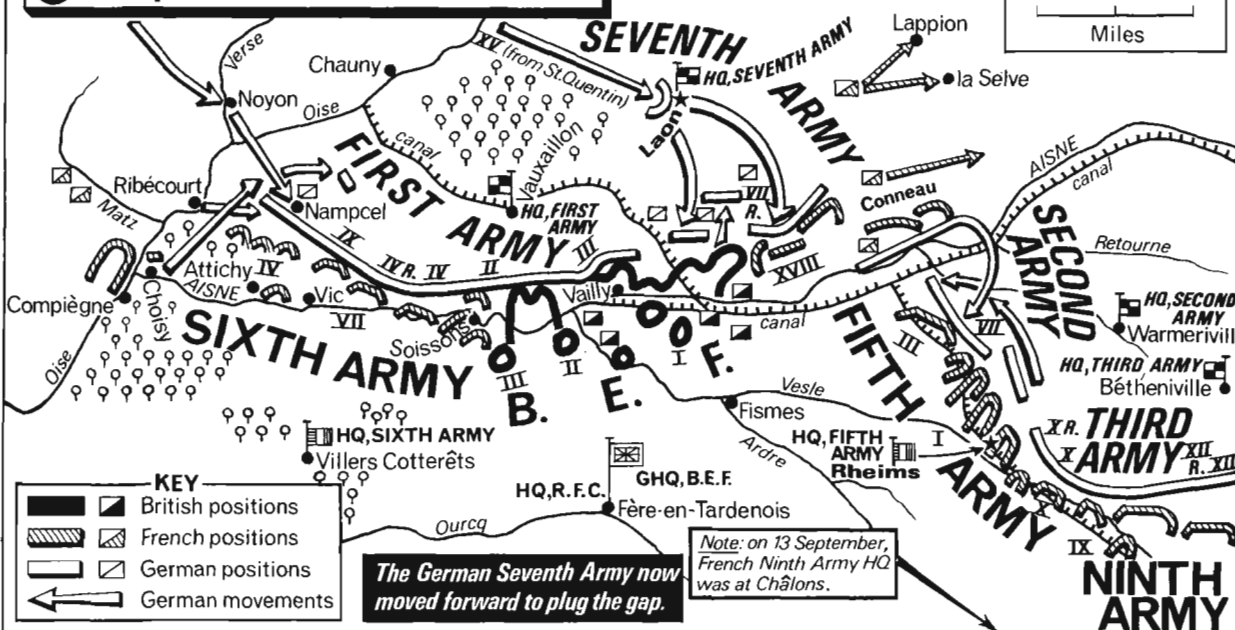
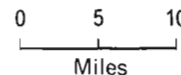


Note: on 12 September, German Seventh Army HQ and XVII Corps were at St. Quentin.

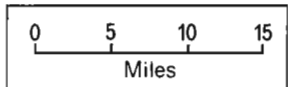
1 12 September - The Crossing of the Aisne



2 13 September - Battle of the Aisne



3 14-18 September - Operations on the North Bank

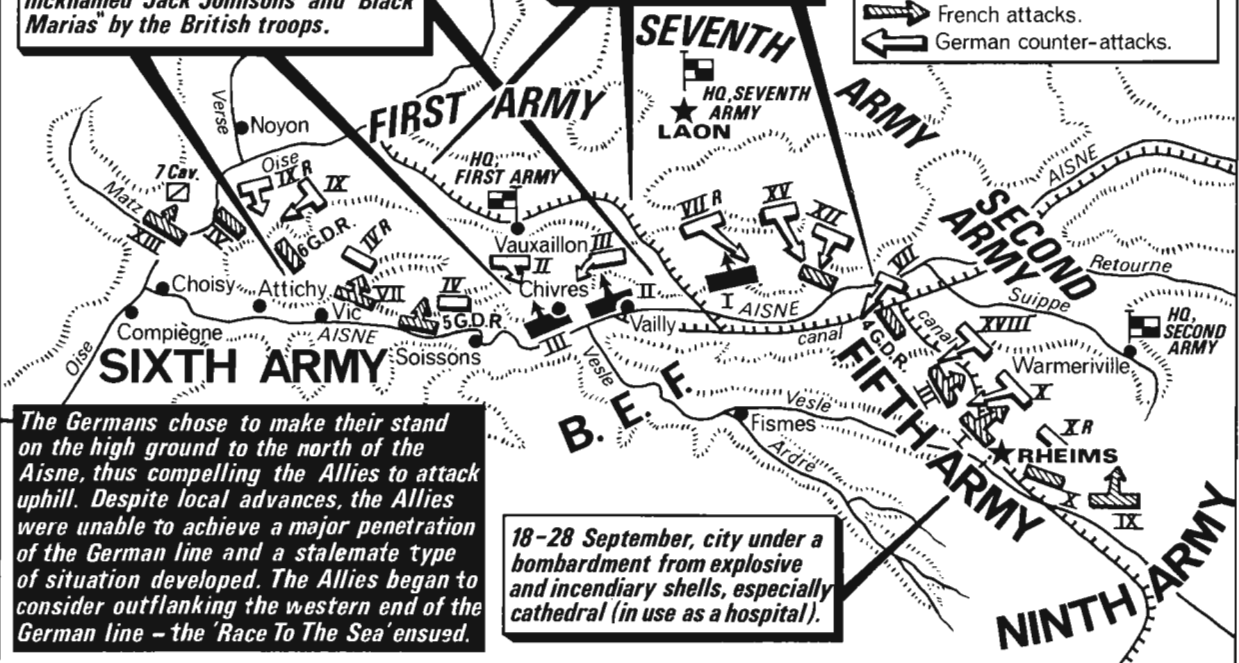


Germans employ 21-cm. mortars and 15-cm. howitzers in the rôle of field artillery. The exploding shells are nicknamed "Jack Johnsons" and "Black Marias" by the British troops.

Germans employ aircraft and observation balloons for target spotting.

KEY

- High ground (300-400 feet).
- British attacks.
- French attacks.
- German counter-attacks.



The Germans chose to make their stand on the high ground to the north of the Aisne, thus compelling the Allies to attack uphill. Despite local advances, the Allies were unable to achieve a major penetration of the German line and a stalemate type of situation developed. The Allies began to consider outflanking the western end of the German line - the 'Race To The Sea' ensued.

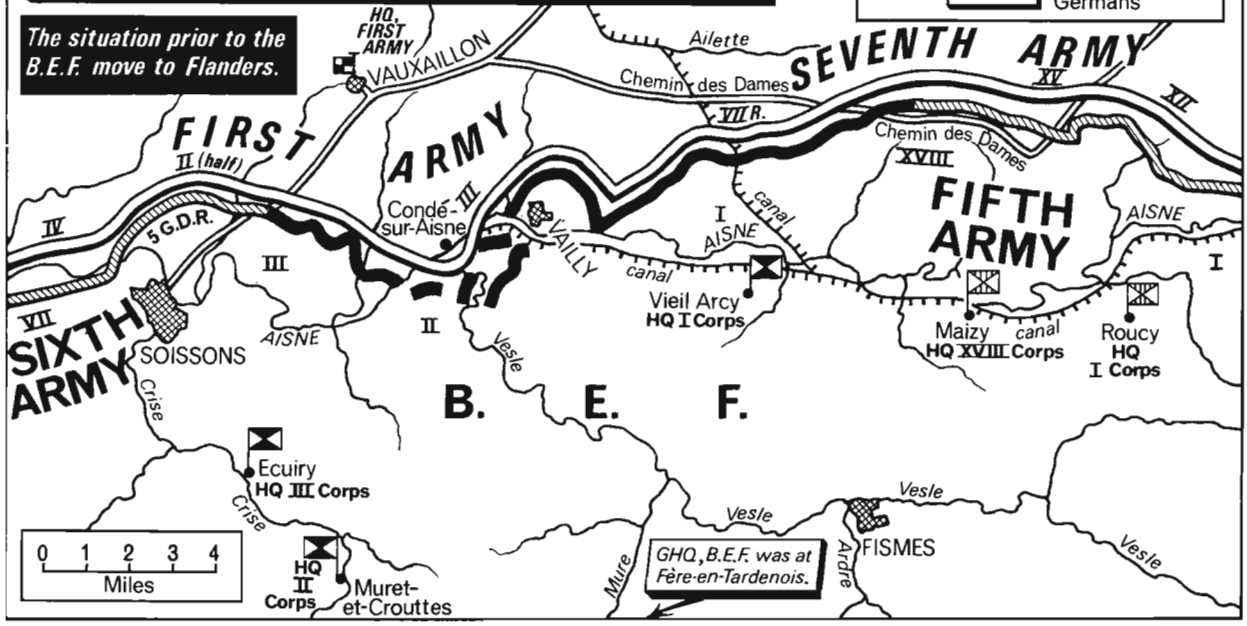
18-28 September, city under a bombardment from explosive and incendiary shells, especially cathedral (in use as a hospital).

4 25 September - Centre of the Stabilized Line

KEY

- British
- French
- Germans

The situation prior to the B.E.F. move to Flanders.



GHQ, B.E.F. was at Fère-en-Tardenois.

BELGIAN SORTIES FROM ANTWERP AUGUST-SEPTEMBER 1914

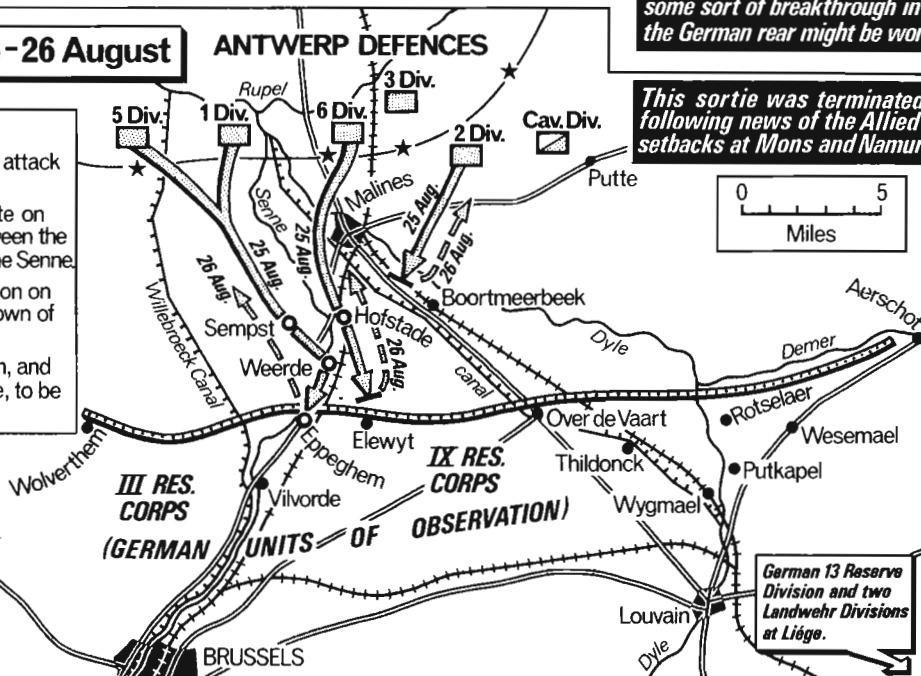
The main object of the sorties was to divert part of German strength from their main lines of advance into France. There was also the minor hope that some sort of breakthrough in the German rear might be won.

1 First Sortie: 25-26 August

BELGIAN PLAN

- 6 Division to make central attack on Hofstade and Elewyt.
- 1 and 5 Divisions to operate on the right of 6 Division between the canal of Willebroeck and the Senne.
- 2 Division to come into action on left of 6 Division towards town of Boortmeerbeek.
- 3 Division behind 6 Division, and Cavalry Division near Putte, to be held in reserve.

- KEY**
- Belgian movements, with dates.
 - Limits of Belgian penetration.
 - Belgian gains.
 - German positions.



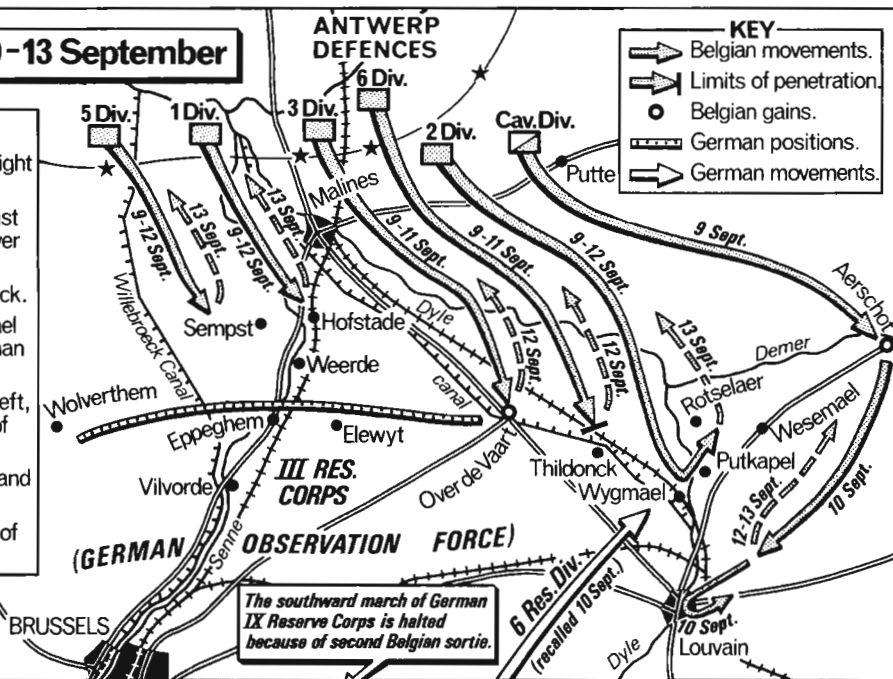
This sortie was terminated following news of the Allied setbacks at Mons and Namur.

2 Second Sortie: 9-13 September

BELGIAN PLAN

- Basic object to turn German right north of Louvain.
- 3 Division to be directed against end of German position at Over de Vaart.
- 6 Division to move on Thildonck.
- 2 Division to move on Wygmael and Louvain to outflank German position.
- Cavalry Division, on extreme left, to debouch on the left bank of the Dyle.
- 1 Division to attack Hofstade and Elewyt.
- 5 Division to operate on right of 1 Division, west of the Senne.

This sortie cost the Belgians 8,000 men in casualties and missing.



The southward march of German IX Reserve Corps is halted because of second Belgian sortie.

- KEY**
- Belgian movements.
 - Limits of penetration.
 - Belgian gains.
 - German positions.
 - German movements.

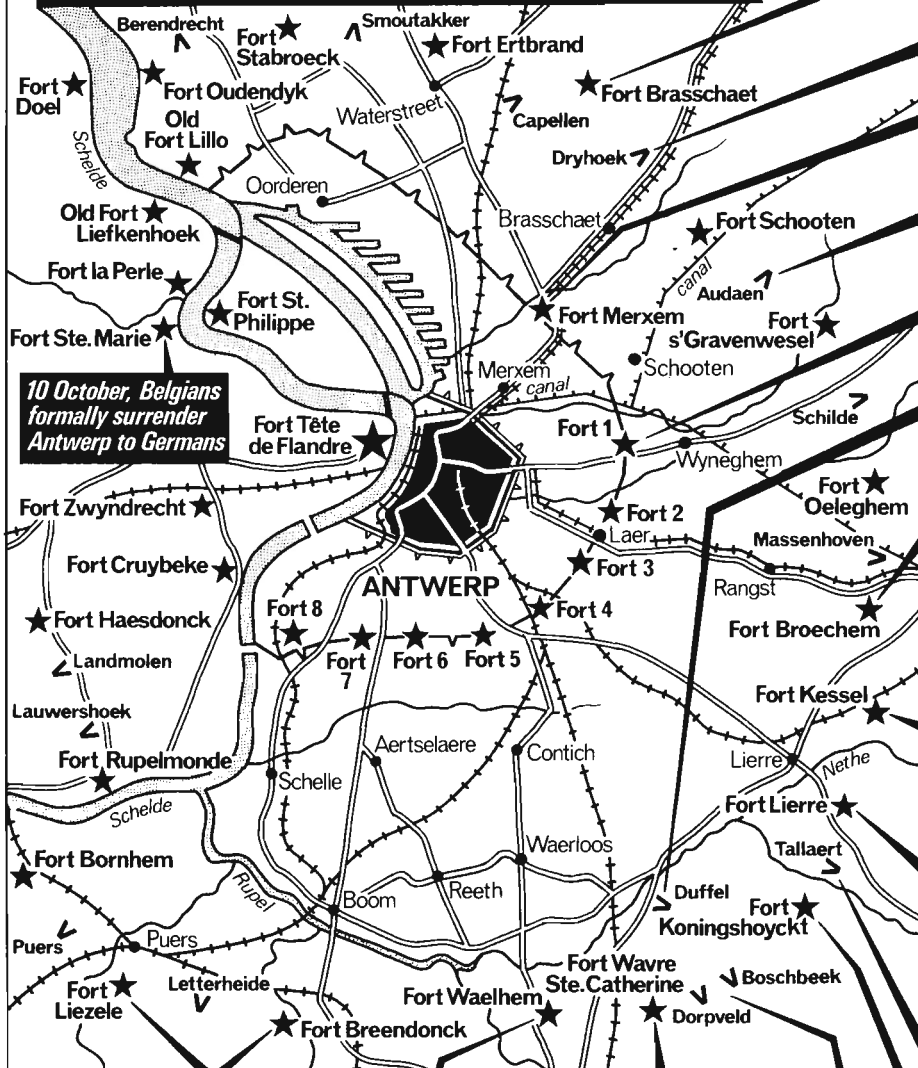
On 27 September, 700 Belgian cyclist volunteers arranged in seven detachments, left Antwerp to destroy railway lines of communication in enemy-occupied region outside the fortress. Main lines were severed in Limbourg, Brabant and Hainaut provinces, disrupting German transport. Most cyclists returned to Antwerp, but some were captured.

A third sortie, requested by Joffre on 24 September, never materialised as the Germans launched their offensive on Antwerp shortly after Joffre's request.

BOMBARDMENT OF THE ANTWERP FORTS 28 SEPTEMBER–9 OCTOBER 1914

Note: all times shown in panels are Belgian; German time was one hour later.

Antwerp itself was shelled continuously from midnight 7 October to noon 9 October. The Military Governor surrendered to General von Beseler's representative at 1500hrs. 10 October at Fort Ste. Marie. The Germans exacted a levy of £20,000,000.



14 9 October, garrison is fully evacuated after electrical plant fails.

13 9 October, redoubt surrenders.

12 9 October, fort capitulates.

15 9 October, guns out of action; garrison withdraws.

11 7 October, bombardment of second defence line commences.

9 3 October, redoubt destroyed by shellfire.

10 7 October, fort is destroyed by concentrated shellfire.

7 0800 hrs. 1 October, bombardment opens. On 3 October, front face and gorge are enfiladed; the caponnière is blocked; casement collapses; at 0700 hrs. the fire-commander's station destroyed. With many guns silenced the garrison evacuates in afternoon.

3 30 September, shell explosion destroys 5-7-cm. gun cupola. By noon 2 October, only entrance postern remains intact; cupolas out of action. Garrison evacuates at 1800hrs.

8 2 October, redoubt destroyed by magazine explosion.

4 By 30 September most guns out of action. On 1 October, machine-gun casements and front face of gorge collapse. At 1430 hrs. 2 October, colossal explosion renders fort untenable.

10 October, Belgians formally surrender Antwerp to Germans

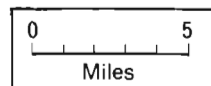
6 1 October, German opening fire has little effect. Forts hold out for nearly one week before being overwhelmed.

2 28 September, bombardment opens. At 1230 hrs. 29 September, magazine explodes; garrison withdraws gradually. By 30 September, fort is in ruins.

1 28 September, bombardment by German 42-cm. "mörser" soon reduces fort's fire-power. 29 September, magazine explodes. 2 October, fort surrenders.

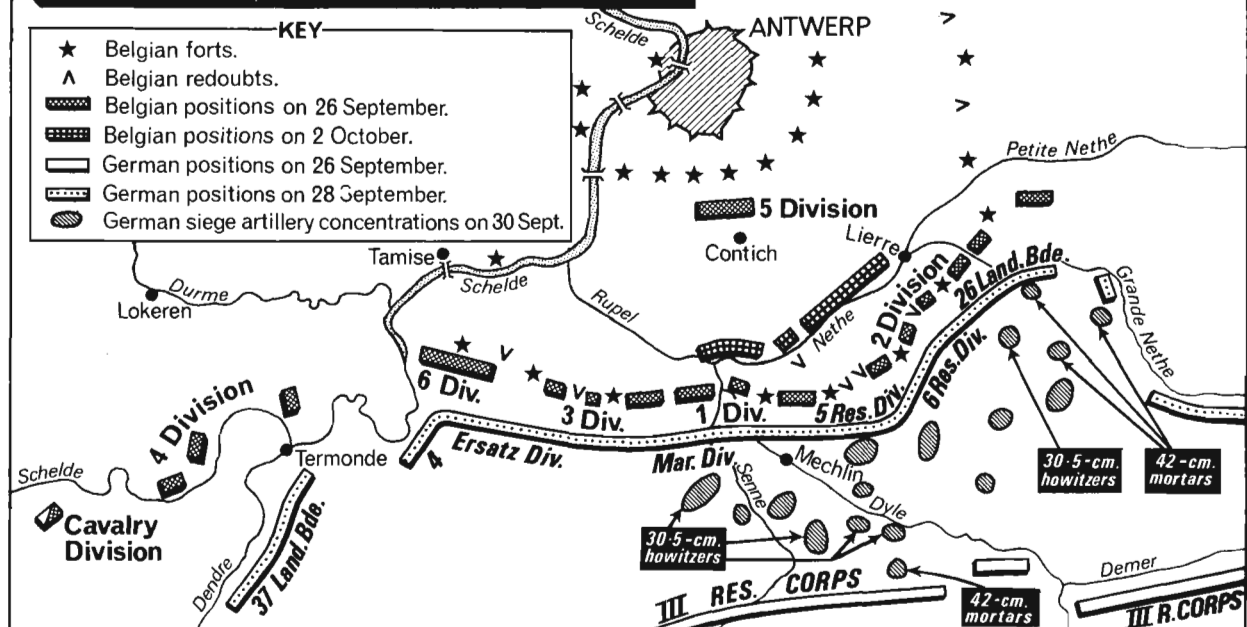
5 1 October, redoubts severely damaged; Boschbeek is evacuated. On 2 October, Dorpveld is mined and destroyed.

THE GERMAN VICTORY AT ANTWERP 26 SEPTEMBER – 9 OCTOBER 1914



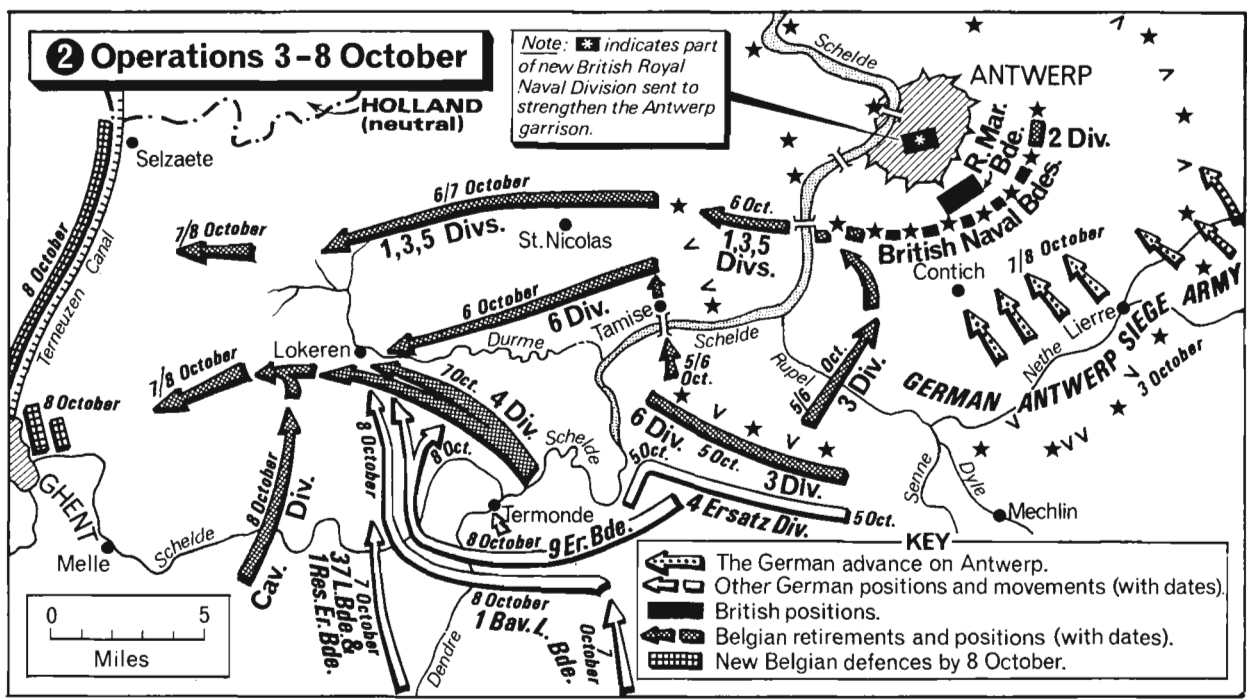
1 Operations 26 September-2 October

- KEY**
- ★ Belgian forts.
 - ▲ Belgian redoubts.
 - ▨ Belgian positions on 26 September.
 - ▩ Belgian positions on 2 October.
 - ▭ German positions on 26 September.
 - ▮ German positions on 28 September.
 - ⊙ German siege artillery concentrations on 30 Sept.

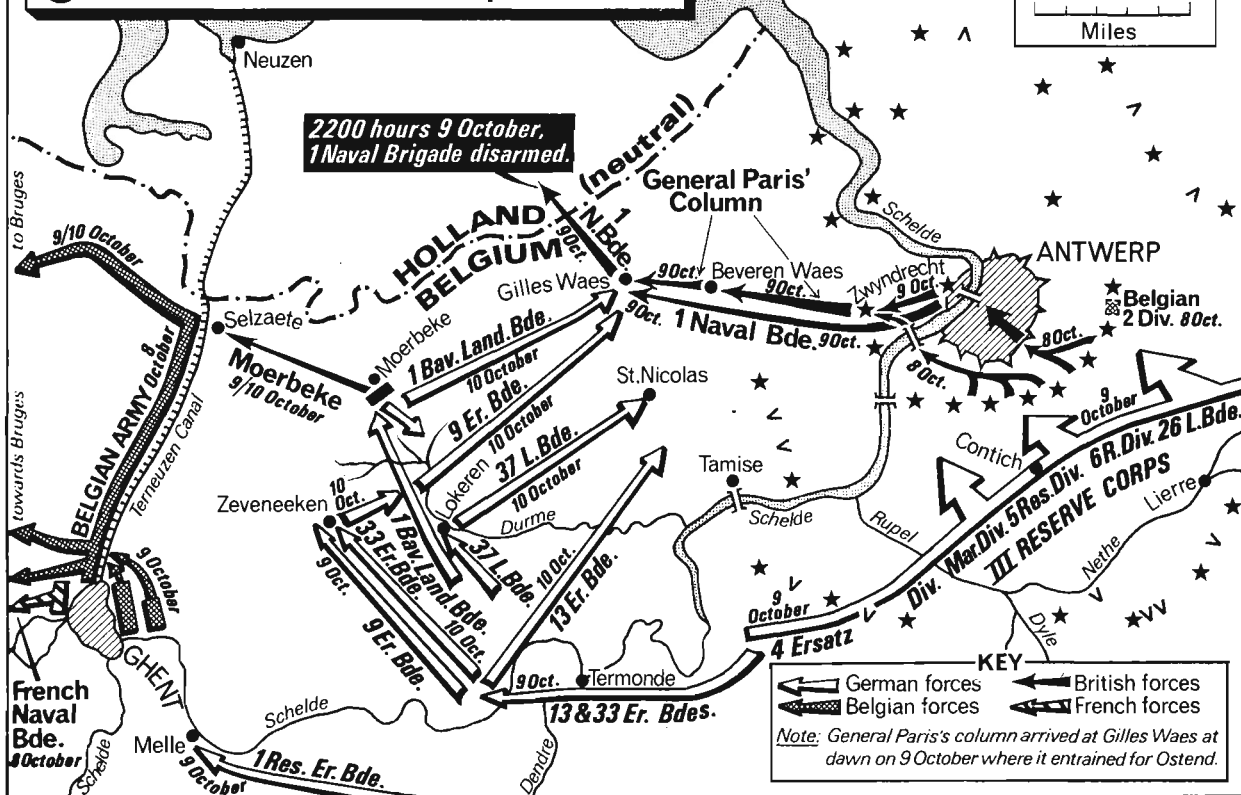


2 Operations 3-8 October

Note: ★ indicates part of new British Royal Naval Division sent to strengthen the Antwerp garrison.



③ The Surrender of Antwerp 9 October

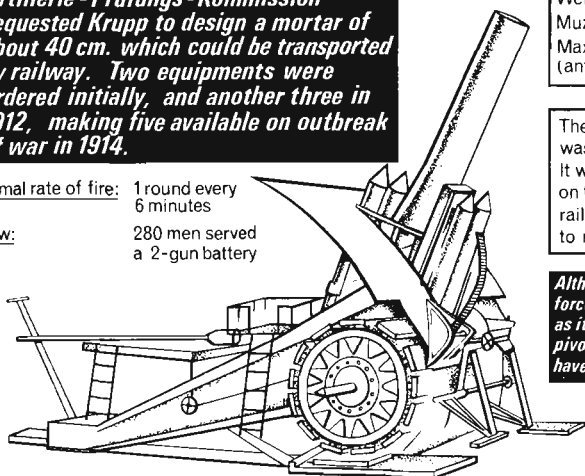


German 42-cm. (16.5-inch) L/16 Mortar "Gamma"

In July 1906, in accordance with the German General Staff directive, the *Artillerie-Prüfungs-Kommission* requested Krupp to design a mortar of about 40 cm. which could be transported by railway. Two equipments were ordered initially, and another three in 1912, making five available on outbreak of war in 1914.

Normal rate of fire: 1 round every 6 minutes

Crew: 280 men served a 2-gun battery



The weapon was known as "Big Bertha" or "Fat Bertha"

Elevation: 43° - 66°
 Traverse: 45°
 Weight with platform: 75 tons
 Muzzle velocity: 1,312 ft.-secs.
 Maximum range: 15,500 yards (anti-concrete shell)

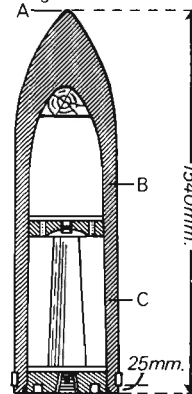
The mortar had a recoiling barrel and was mounted on an iron platform. It was transported in separate loads on ten normal-gauge 25/30-ton railway wagons, and took ten hours to mount.

Although named a "Mörser" by the German forces, the 42 was technically a howitzer as it was capable of being elevated and pivoted on trunnions, whereas mortars have rear trunnions on fixed beds.

The first naval battery to be armed with the original two mortars was formed and trained in the summer of 1912.

German 42-cm. H.E. Shell

Weight (shell complete): 2,052 lb.
 Bursting charge: 234 lb.



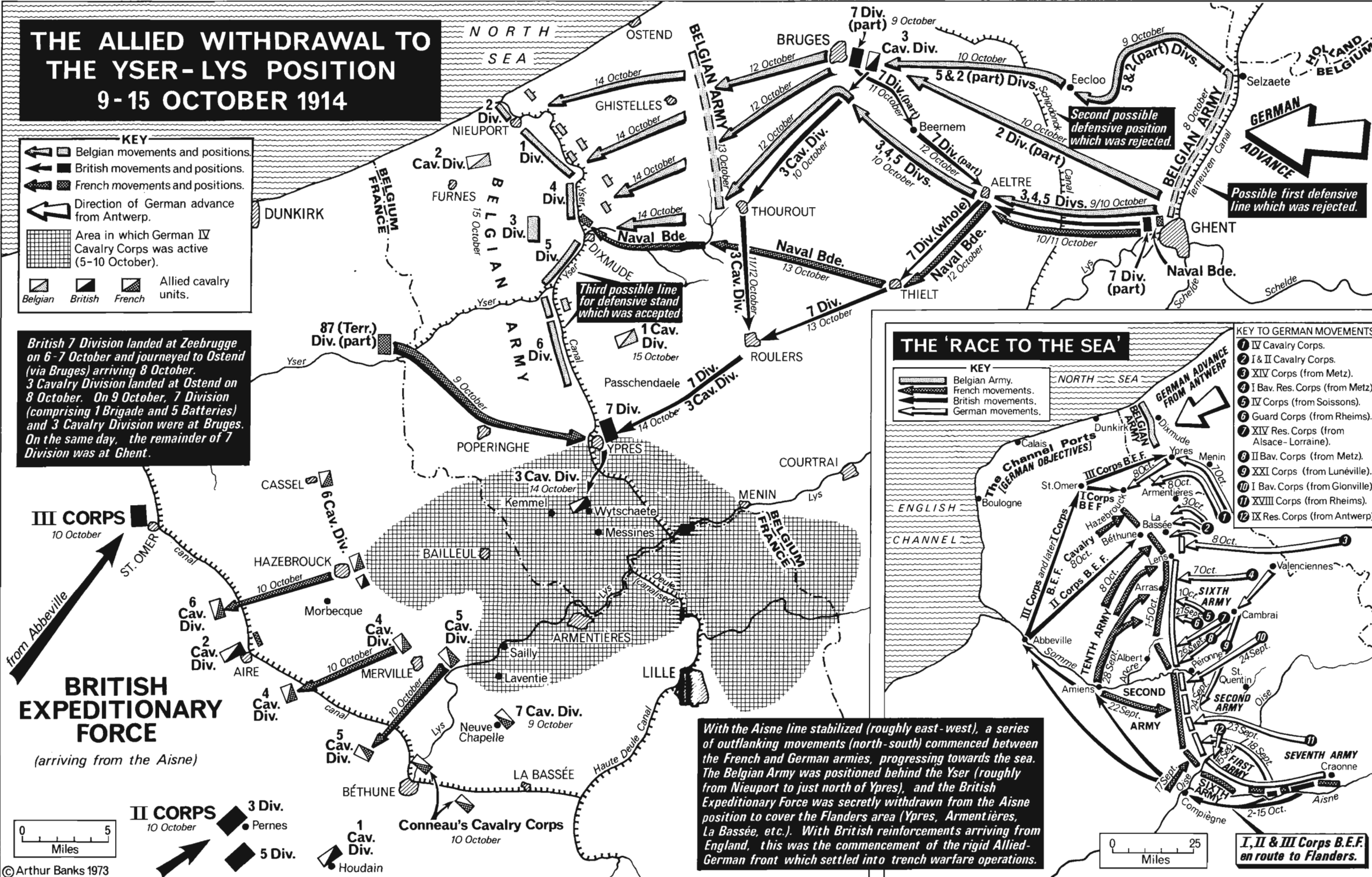
Thickness of walls: at A, 295 mm.
 at B, 52 mm.
 at C, 46 mm.
 Thickness of base: 95 mm.
 Width of driving band: 50 mm.
 Construction material: Steel

THE ALLIED WITHDRAWAL TO THE YSER-LYS POSITION 9-15 OCTOBER 1914

KEY

- Belgian movements and positions.
- British movements and positions.
- French movements and positions.
- Direction of German advance from Antwerp.
- Area in which German IV Cavalry Corps was active (5-10 October).
- Allied cavalry units: Belgian, British, French.

British 7 Division landed at Zeebrugge on 6-7 October and journeyed to Ostend (via Bruges) arriving 8 October. 3 Cavalry Division landed at Ostend on 8 October. On 9 October, 7 Division (comprising 1 Brigade and 5 Batteries) and 3 Cavalry Division were at Bruges. On the same day, the remainder of 7 Division was at Ghent.



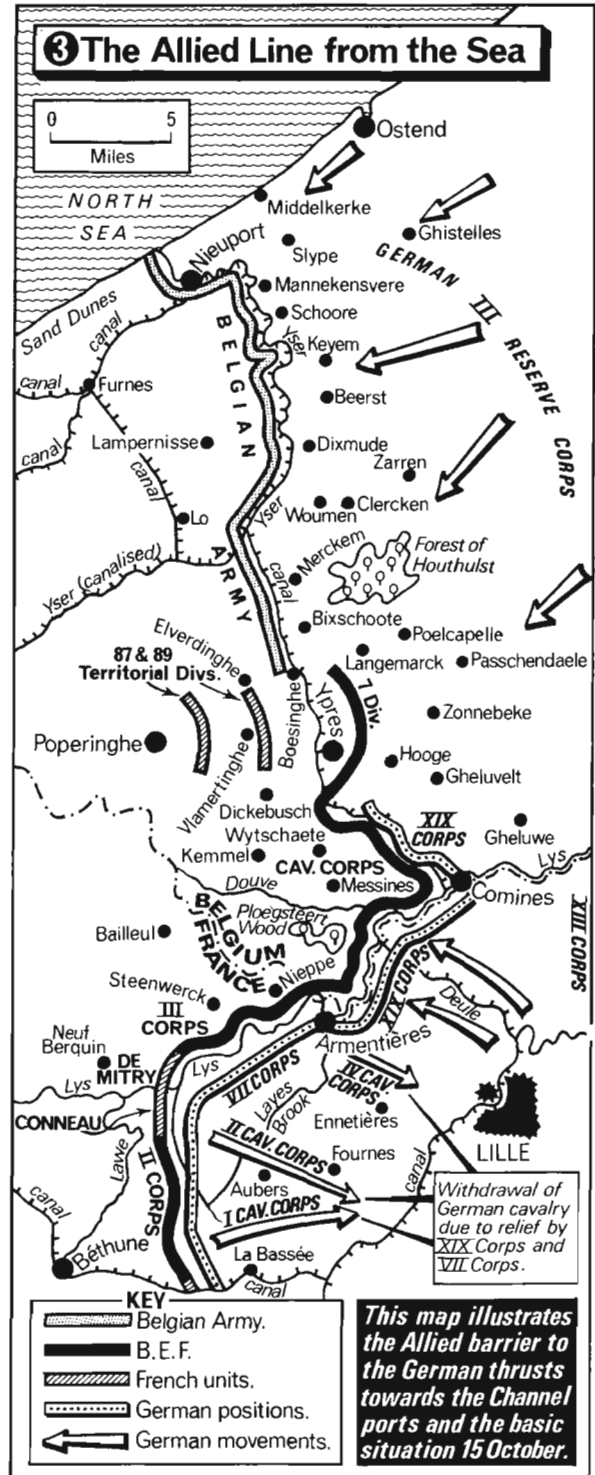
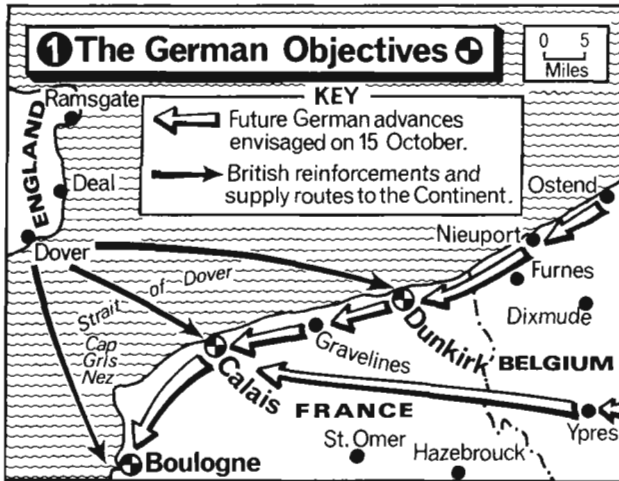
THE 'RACE TO THE SEA'



With the Aisne line stabilized (roughly east-west), a series of outflanking movements (north-south) commenced between the French and German armies, progressing towards the sea. The Belgian Army was positioned behind the Yser (roughly from Nieupoort to just north of Ypres), and the British Expeditionary Force was secretly withdrawn from the Aisne position to cover the Flanders area (Ypres, Armentières, La Bassée, etc.). With British reinforcements arriving from England, this was the commencement of the rigid Allied-German front which settled into trench warfare operations.

DEFENCE OF THE CHANNEL PORTS AUTUMN 1914

With Antwerp and also Ostend behind them, the German aim was to sever the sea link with England.

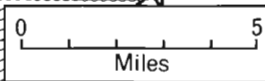


Withdrawal of German cavalry due to relief by XIX Corps and VII Corps.

This map illustrates the Allied barrier to the German thrusts towards the Channel ports and the basic situation 15 October.

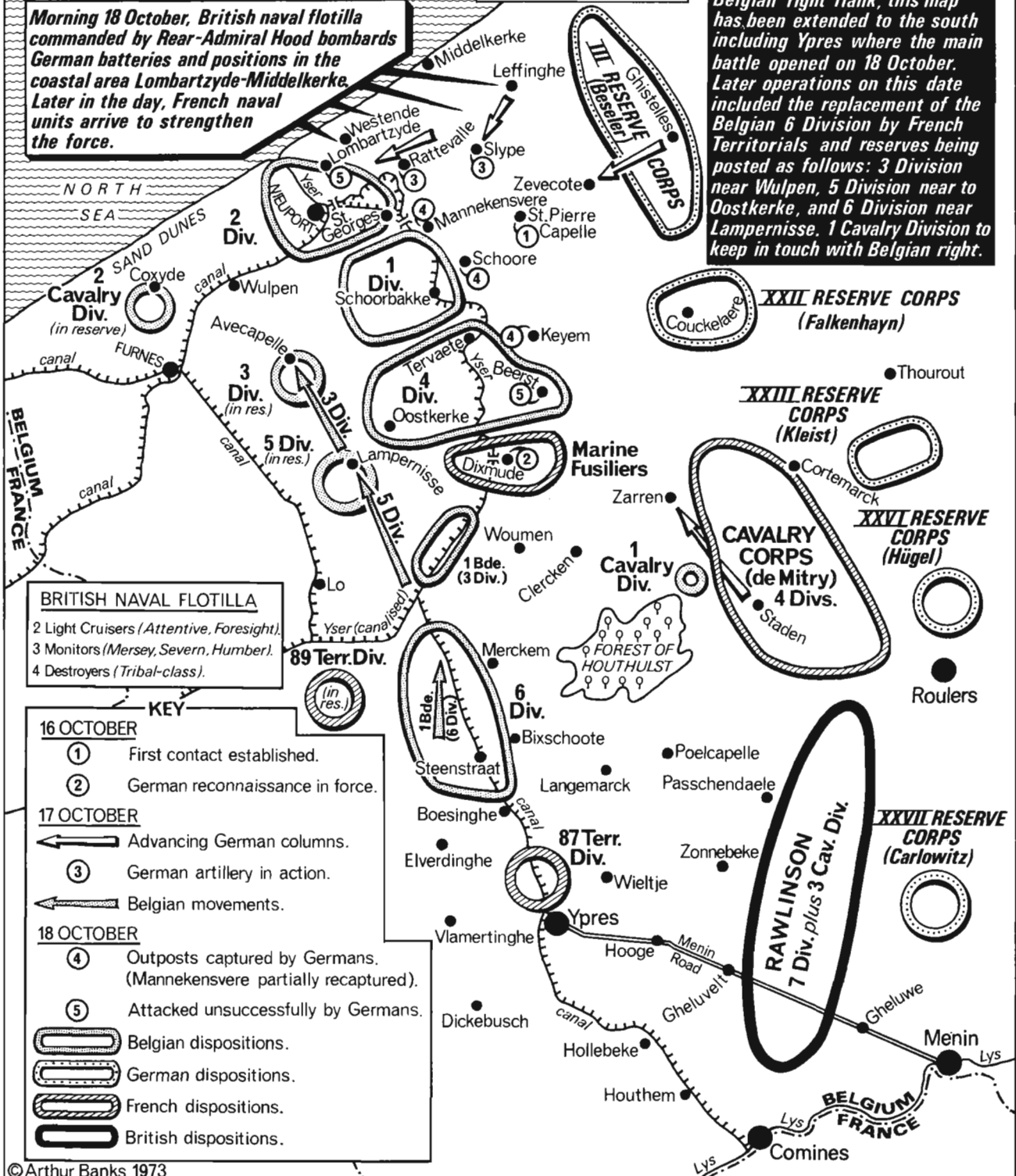
BATTLE OF THE YSER 16-30 OCTOBER 1914

1 16-18 October - The Opening Moves



Morning 18 October, British naval flotilla commanded by Rear-Admiral Hood bombards German batteries and positions in the coastal area Lombartzyde-Middelkerke. Later in the day, French naval units arrive to strengthen the force.

In order to show the Franco-British cavalry covering the Belgian right flank, this map has been extended to the south including Ypres where the main battle opened on 18 October. Later operations on this date included the replacement of the Belgian 6 Division by French Territorials and reserves being posted as follows: 3 Division near Wulpen, 5 Division near Oostkerke, and 6 Division near Lampernisse. 1 Cavalry Division to keep in touch with Belgian right.

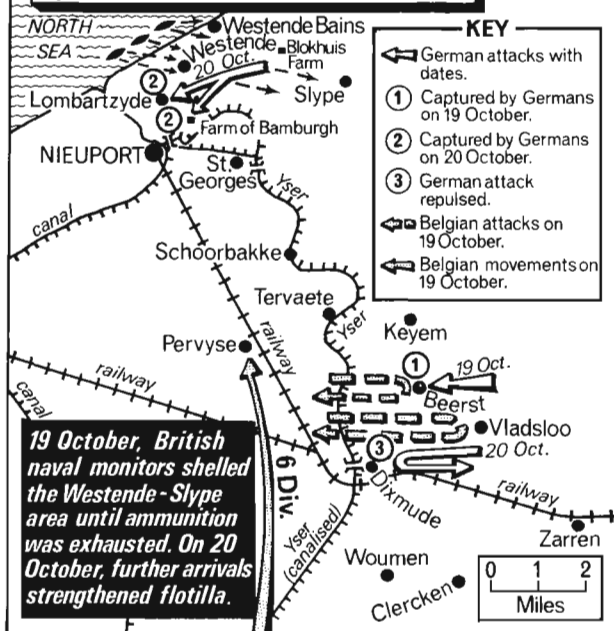


BRITISH NAVAL FLOTILLA
 2 Light Cruisers (*Attentive, Foresight*).
 3 Monitors (*Mersey, Severn, Humber*).
 4 Destroyers (*Tribal-class*).

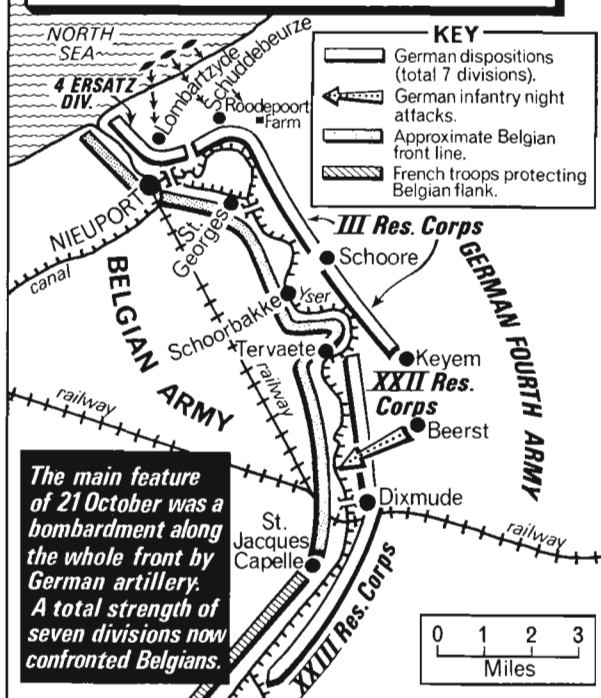
- KEY**
- 16 OCTOBER**
 ① First contact established.
 ② German reconnaissance in force.
- 17 OCTOBER**
 ← Advancing German columns.
 ③ German artillery in action.
 ← Belgian movements.
- 18 OCTOBER**
 ④ Outposts captured by Germans. (Mannekensvere partially recaptured).
 ⑤ Attacked unsuccessfully by Germans.
- Belgian dispositions.
 German dispositions.
 French dispositions.
 British dispositions.

BATTLE OF THE YSER - continued

2 Operations 19-20 October

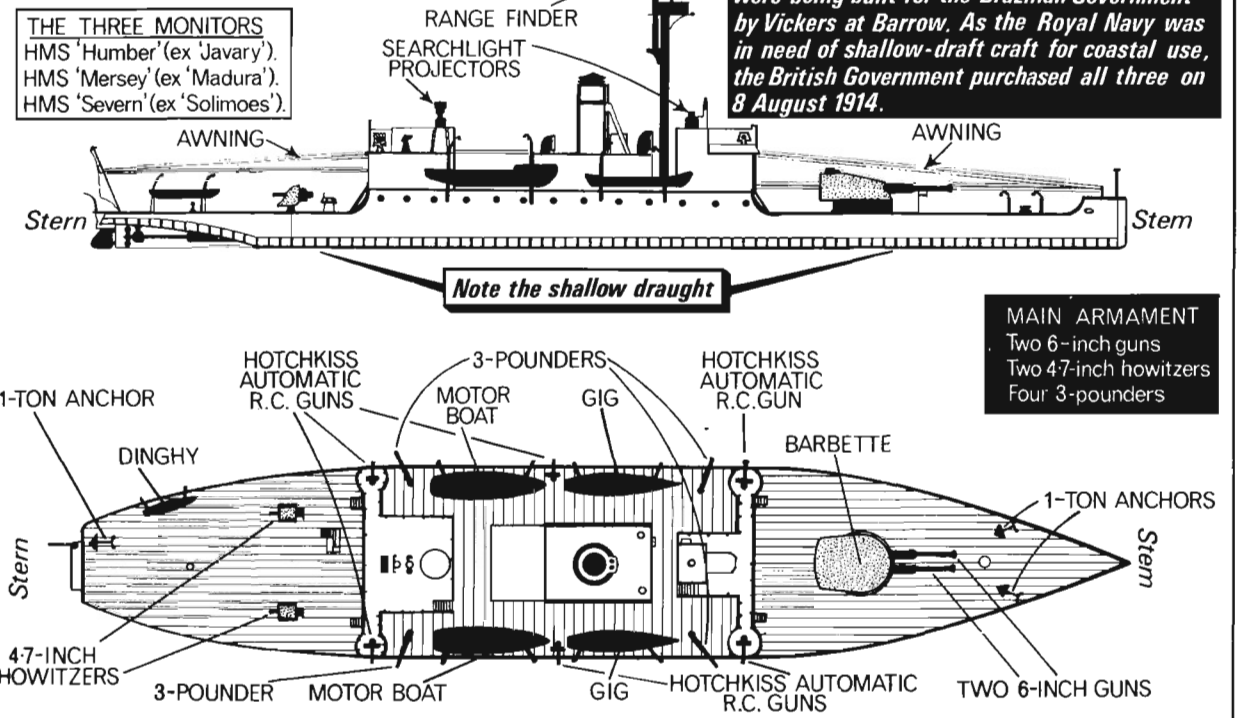


3 21 October - Completion of the German Concentration



An ex-Brazilian River Monitor

THE THREE MONITORS
 HMS 'Humber' (ex 'Javary').
 HMS 'Mersey' (ex 'Madura').
 HMS 'Severn' (ex 'Solimoes').



Length: 267 feet. Beam: 49 feet. Draught: 5 feet 9 inches. Displacement: 1,260 tons. Complement: 100. Max. speed: 12 knots.

4 Naval Operations: Evening 21 October - Morning 31 October

COMPOSITION OF ALLIED FLOTILLA ON 24 OCTOBER

Monitors: 'Mersey' and 'Humber' ('Severn' sent home).
 Gunboat: 'Bustard'.
 Cruisers: 'Brilliant' and 'Sirius'.
 Sloops: 'Rinaldo' and 'Wildfire'.
 Destroyers: 8 British and 5 French.

Note: British pre-dreadnought battleship H.M.S. 'Venerable' joined flotilla on 26 October.

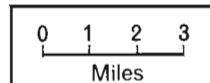
4 0940 hours 31 October, German submarine sinks British seaplane-carrier 'Hermes'.

1 21 October, Allied naval balloon (out of range of enemy guns) directs ship-fire.

2 21 October, French lay protected minefield outside Ostend.

3 23 Oct., harbour bombarded by Allied flotilla following unsuccessful German submarine attack on British sloop 'Wildfire' and the destroyer 'Myrmidon'.

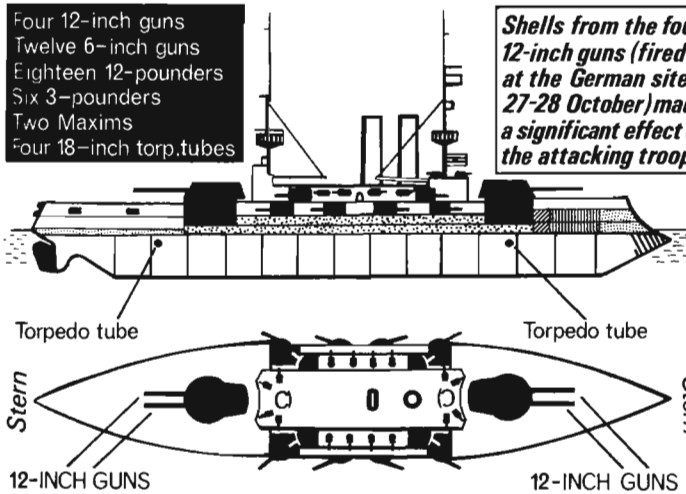
Ostend presented a problem to the Allies, who contemplated an offensive along the coast on 23 October. The port was an obvious German submarine base, yet it would be invaluable as a re-entry port for Allied troops should the projected coastal advance succeed.



HMS "VENERABLE" "London" Class of three ships

Four 12-inch guns
 Twelve 6-inch guns
 Eighteen 12-pounders
 Six 3-pounders
 Two Maxims
 Four 18-inch torp. tubes

Shells from the four 12-inch guns (fired at the German sites 27-28 October) made a significant effect on the attacking troops.



Laid down: 1899 Waterline length: 411 feet Displace.: 15,000 tons
 Completed: 1902 Over all length: 430 feet Draught: 29 feet
 Complement: 750 Maximum speed: 18.5 knots Beam: 75 feet

5 Military Operations 22-23 October

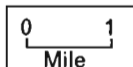
4 22 October, Belgian attacks.

3 22 October, German attack repulsed by 4 Line Regiment.

5 23 October, arrival of French 42 Division.

2 22 October, Belgian counter-attack fails to dislodge German units.

1 Night 21/22 October, Germans establish footing on west bank of Yser. They deploy infantry and guns.

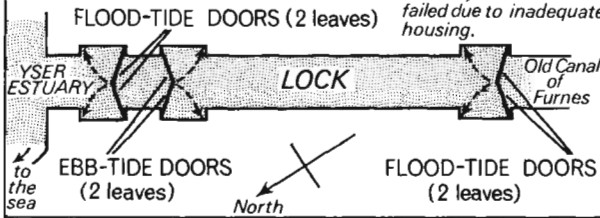


BATTLE OF THE YSER-continued

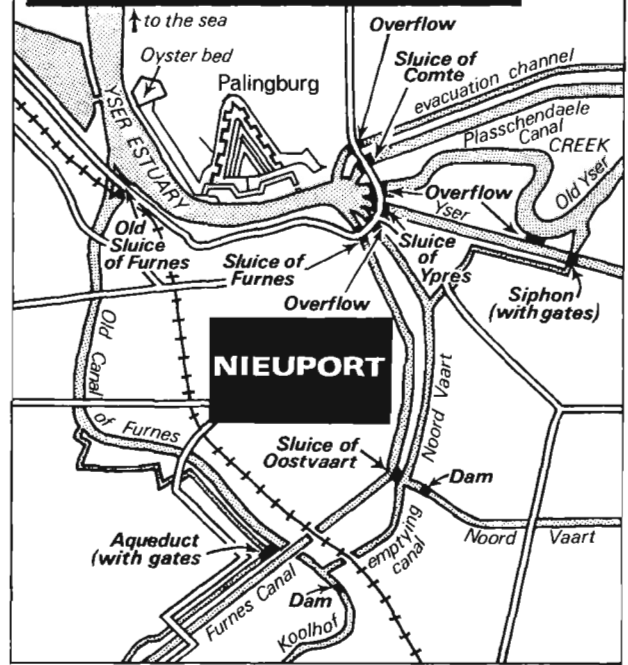
By 24 October, Belgian resistance was deteriorating due to exhaustion of troops, lack of ammunition, and only a few reinforcements arriving (French 42 Division). However, as the whole area was intersected by canals and ditches, a possibility existed of flooding the countryside to a depth sufficient to render the attacking Germans unoperational. Stated briefly, this entailed damming 22 culverts under the Nieuport - Dixmude railway bankment to contain the rising waters in the east, followed by opening the Nieuport sluices to admit the sea. This manoeuvre was accomplished successfully and by 30 October the drive by the Germans along the coast was virtually at an end.

THE OLD SLUICE OF FURNES

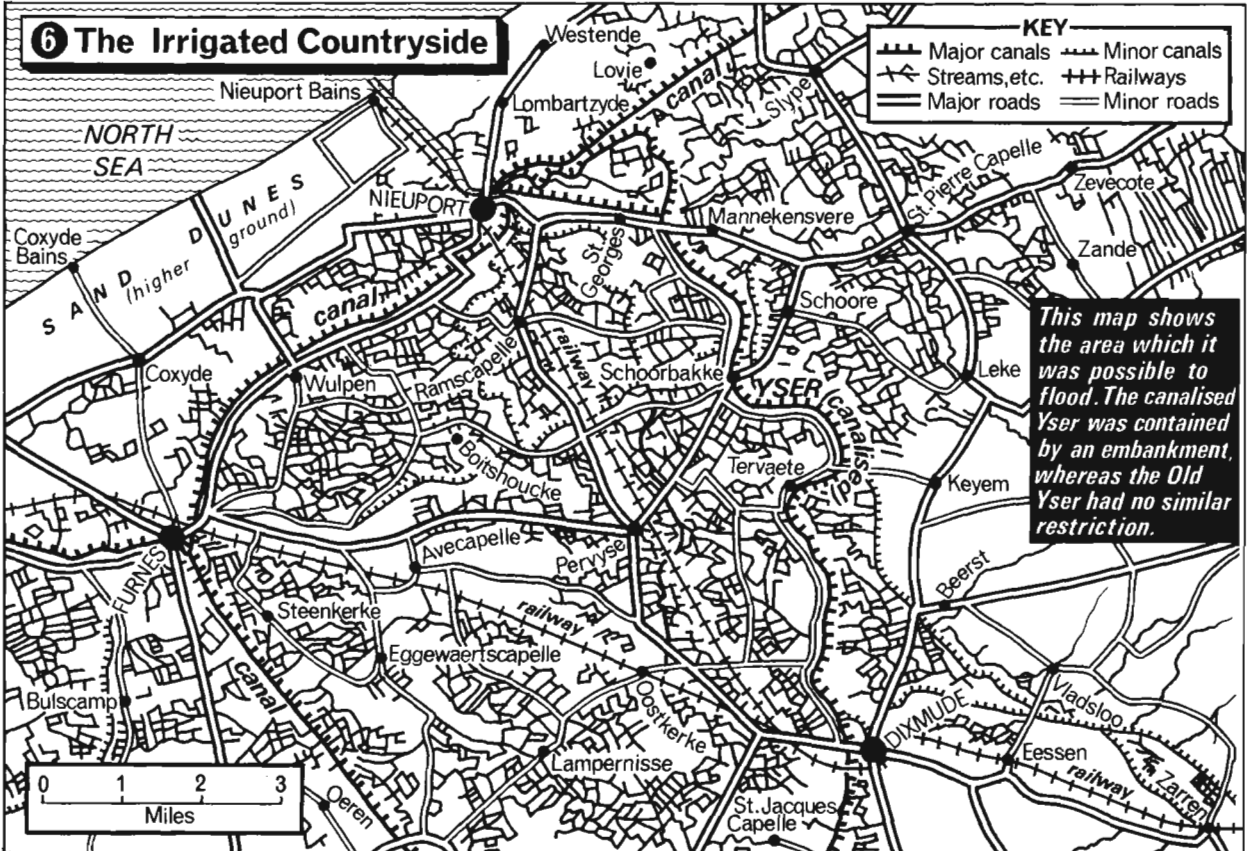
On 26 October, efforts to manipulate doors failed due to inadequate housing.



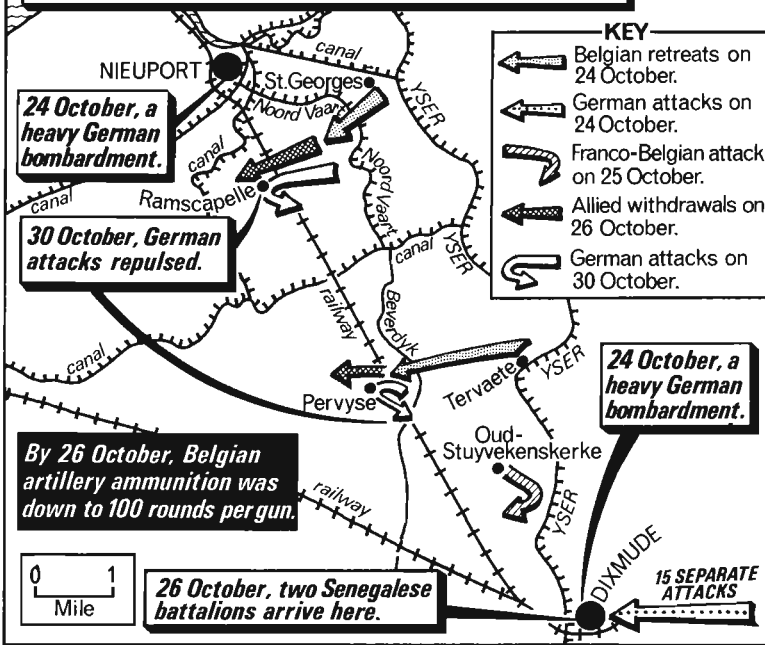
NIEUPOORT'S SLUICES AND CHANNELS



6 The Irrigated Countryside



7 Military Operations 24-30 October



BELGIAN ENGINEERING OPERATIONS AT NIEUPOORT

The operational procedures were extremely complex, depending for success upon tides from the North Sea being propitious, force and direction of winds being correct, plus the actual manipulation of sluice gates being feasible. At the old sluice of Furnes, the two sets of flood-tide doors needed to be held open permanently with the one set of ebb-tide doors freed from their racks so that they opened and closed according to the water pressure from rising and receding tides. At other sluices, doors and gates required to be operated manually for each manoeuvre; that is, opened at high tides and closed before low tides. *(The full moon of 29 October assisted operations by causing a very high tide).*

21 October. 1100 hours. Old Yser's overflow is opened; water rapidly inundates creek; Noord Vaart-Old Yser siphon closed to avoid flooding 2 Division's established position.

25 October. Foch contemplates flooding area east of Dunkirk, but delays plan temporarily.

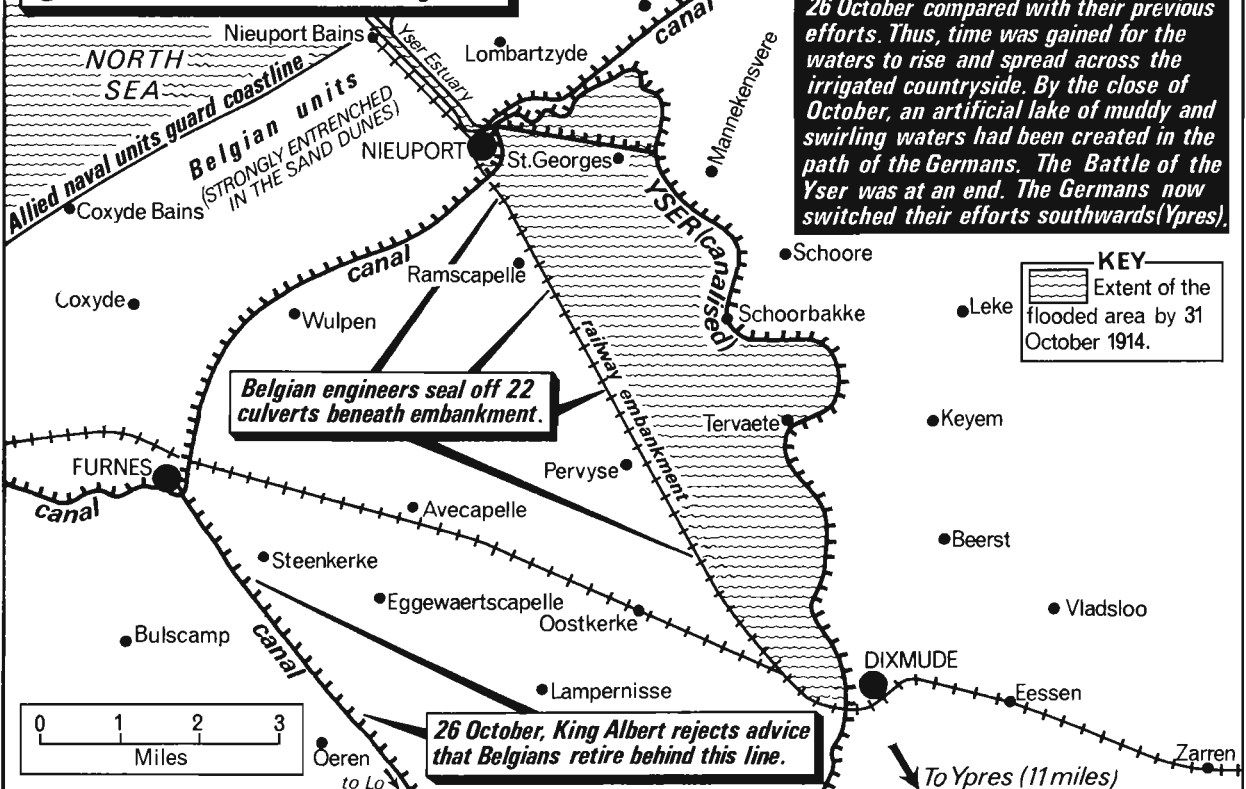
26 October. Attempt fails at old sluice of Furnes.

28 October. Second try succeeds; waters rise.

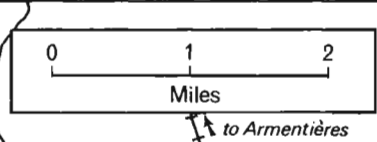
29 October. 1930 hours, gates of N.Vaart opened.

30 October. Manoeuvre repeated; floods spread.

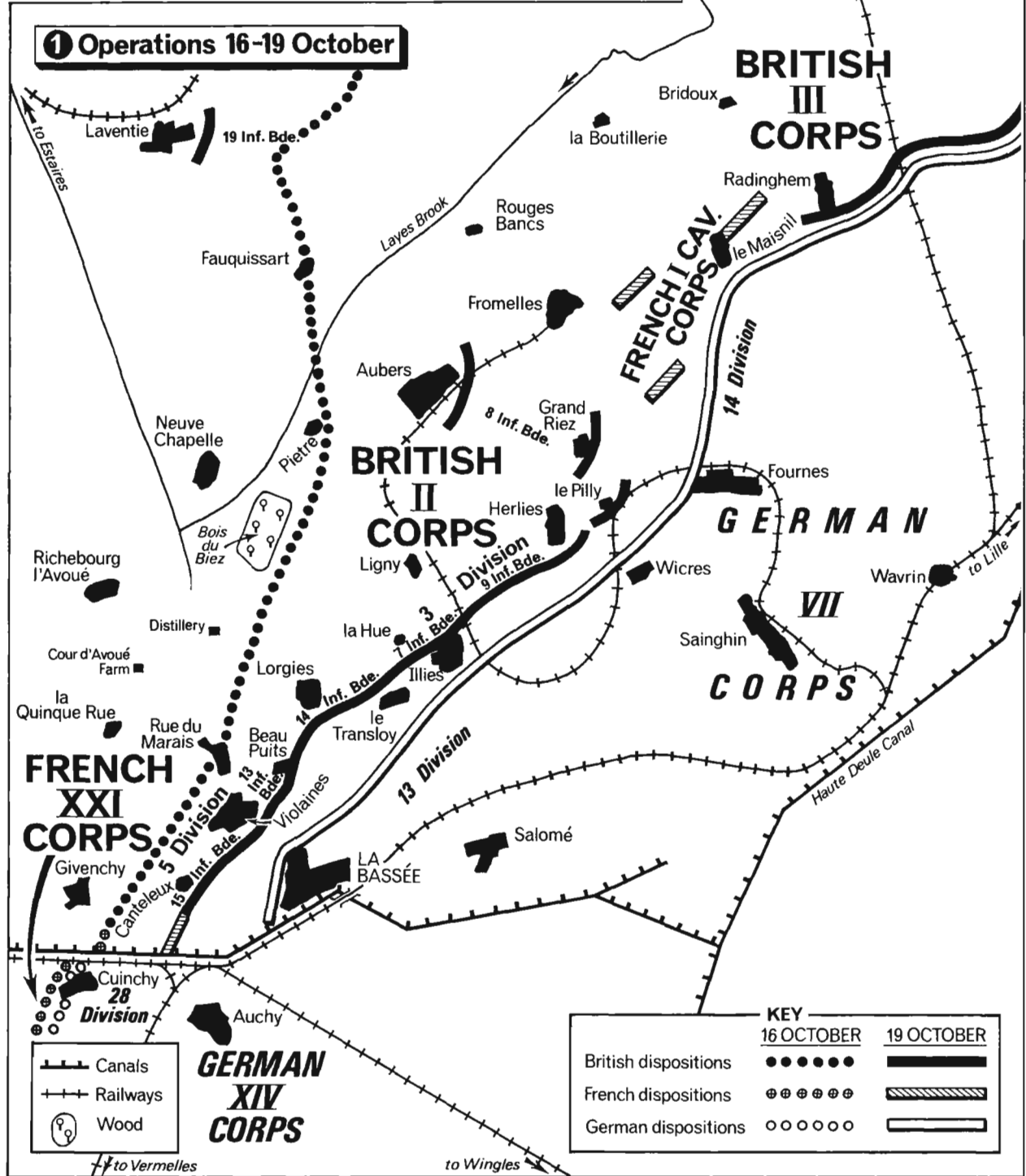
8 The Inundated Countryside



THE BATTLE OF LA BASSÉE 16 OCTOBER – 2 NOVEMBER 1914



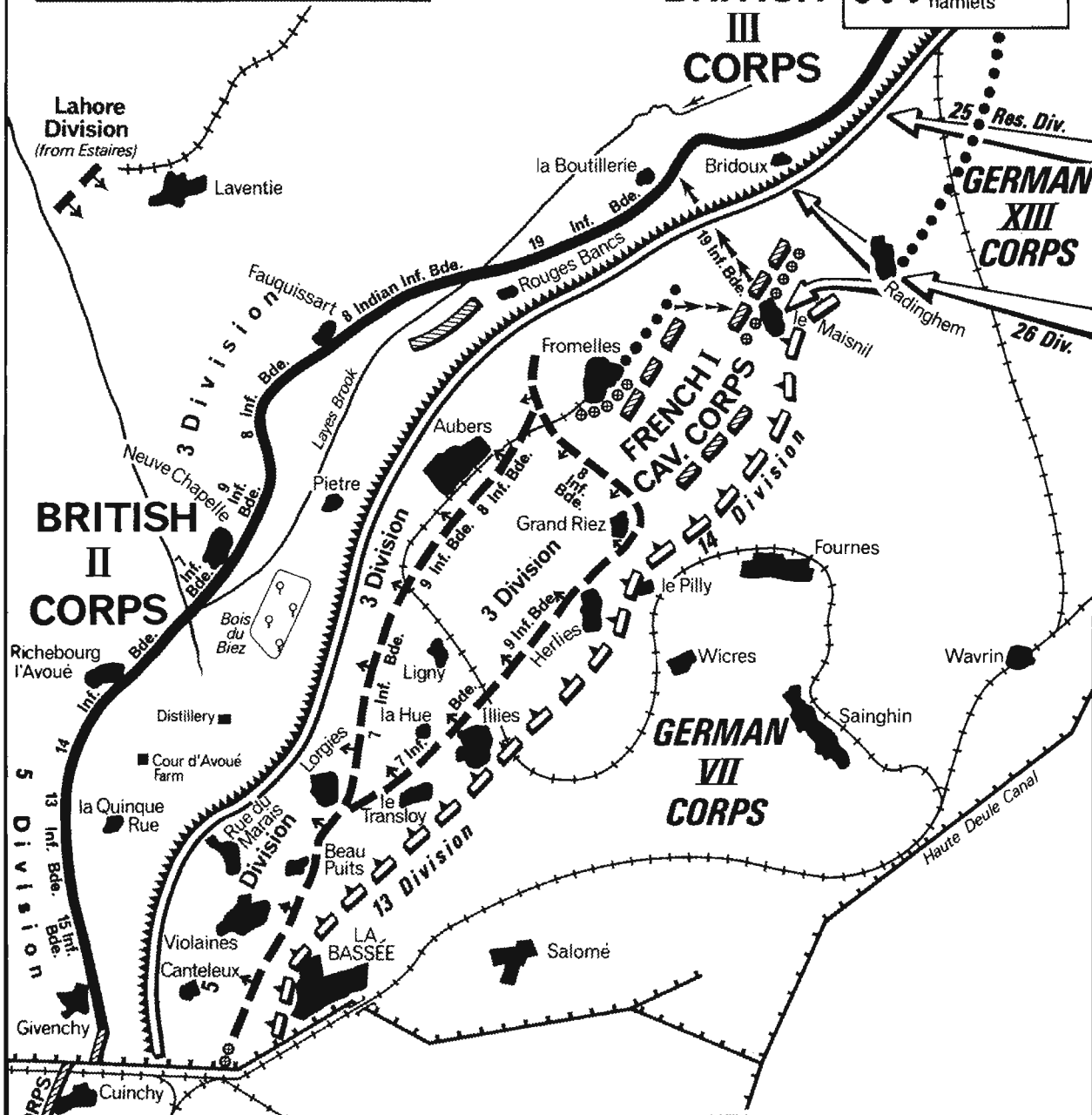
① Operations 16-19 October



	KEY	
	16 OCTOBER	19 OCTOBER
British dispositions	●●●●●	▬
French dispositions	⊕⊕⊕⊕⊕	▨
German dispositions	○○○○○	▭

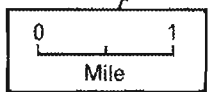
② Operations 20-24 October

Towns, villages, hamlets



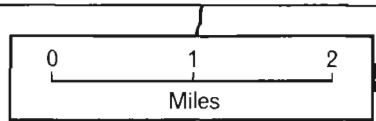
KEY

	20 OCTOBER	21-22 OCTOBER	23-24 OCTOBER
British dispositions	●●●●●●	← →	—————
French dispositions	▨▨▨▨	⊕⊕⊕⊕⊕⊕	▨▨▨▨▨▨
German dispositions	⚡⚡⚡	←	▨▨▨▨▨▨



THE BATTLE OF LA BASSÉE-continued

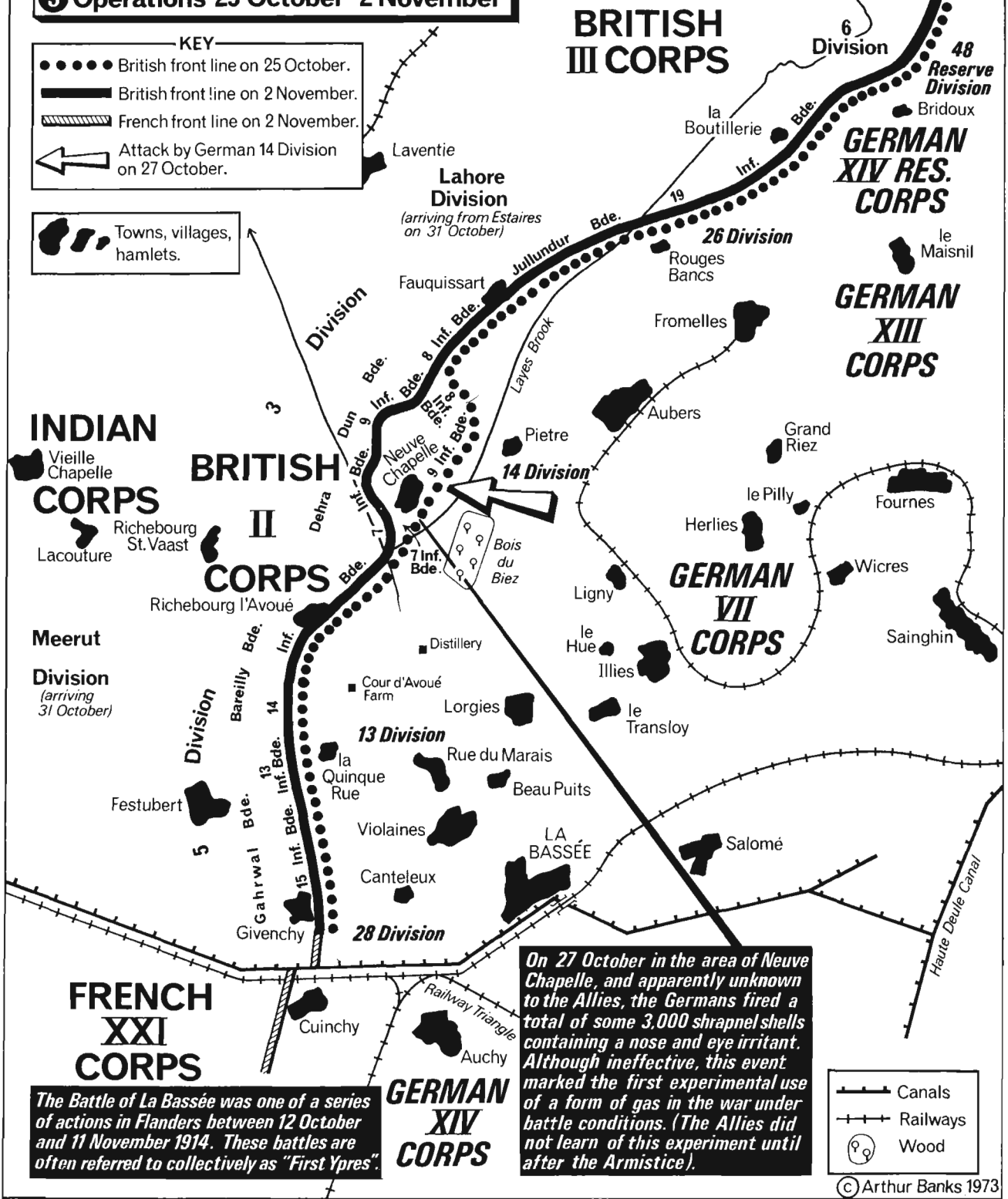
③ Operations 25 October-2 November



KEY

- British front line on 25 October.
- British front line on 2 November.
- ▨ French front line on 2 November.
- ← Attack by German 14 Division on 27 October.

●●●● Towns, villages, hamlets.



The Battle of La Bassée was one of a series of actions in Flanders between 12 October and 11 November 1914. These battles are often referred to collectively as "First Ypres".

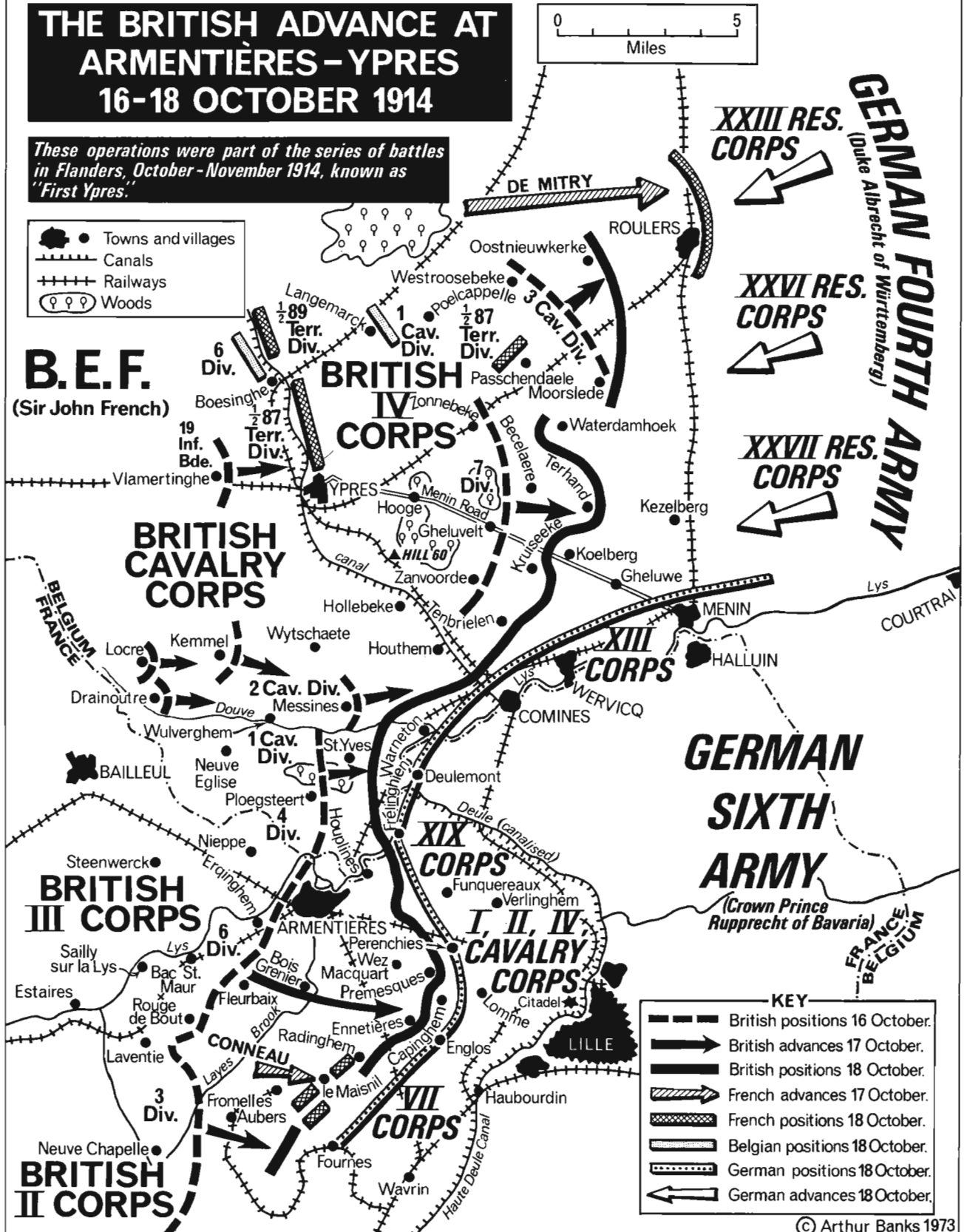
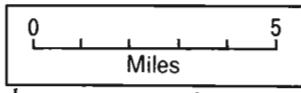
On 27 October in the area of Neuve Chapelle, and apparently unknown to the Allies, the Germans fired a total of some 3,000 shrapnel shells containing a nose and eye irritant. Although ineffective, this event marked the first experimental use of a form of gas in the war under battle conditions. (The Allies did not learn of this experiment until after the Armistice).

- ▬ Canals
- +—+—+ Railways
- ⊙ Wood

THE BRITISH ADVANCE AT ARMENTIÈRES – YPRES 16-18 OCTOBER 1914

These operations were part of the series of battles in Flanders, October-November 1914, known as "First Ypres."

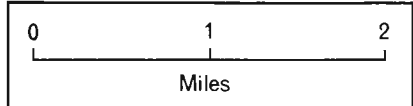
- Towns and villages
- Canals
- Railways
- Woods



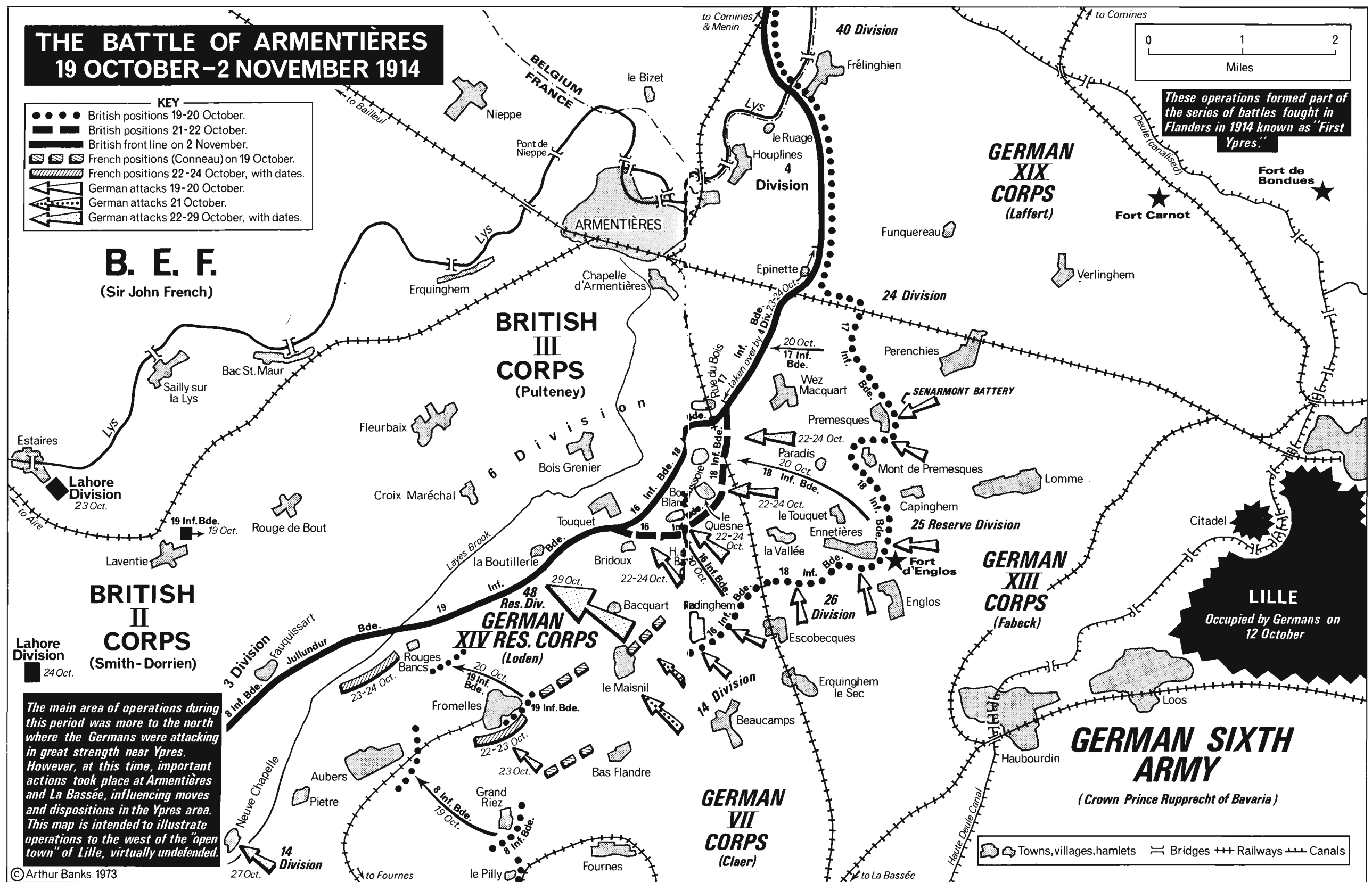
- KEY**
- British positions 16 October.
 - British advances 17 October.
 - British positions 18 October.
 - French advances 17 October.
 - French positions 18 October.
 - Belgian positions 18 October.
 - German positions 18 October.
 - German advances 18 October.

THE BATTLE OF ARMENTIÈRES 19 OCTOBER–2 NOVEMBER 1914

- KEY**
- British positions 19-20 October.
 - British positions 21-22 October.
 - British front line on 2 November.
 - ▨ French positions (Conneau) on 19 October.
 - ▩ French positions 22-24 October, with dates.
 - ➔ German attacks 19-20 October.
 - ➔ German attacks 21 October.
 - ➔ German attacks 22-29 October, with dates.



These operations formed part of the series of battles fought in Flanders in 1914 known as "First Ypres."



B. E. F.
(Sir John French)

BRITISH III CORPS
(Pulteney)

BRITISH II CORPS
(Smith-Dorrien)

GERMAN XIV RES. CORPS
(Loden)

GERMAN XIX CORPS
(Laffert)

GERMAN XIII CORPS
(Fabeck)

GERMAN SIXTH ARMY
(Crown Prince Rupprecht of Bavaria)

The main area of operations during this period was more to the north where the Germans were attacking in great strength near Ypres. However, at this time, important actions took place at Armentières and La Bassée, influencing moves and dispositions in the Ypres area. This map is intended to illustrate operations to the west of the "open town" of Lille, virtually undefended.

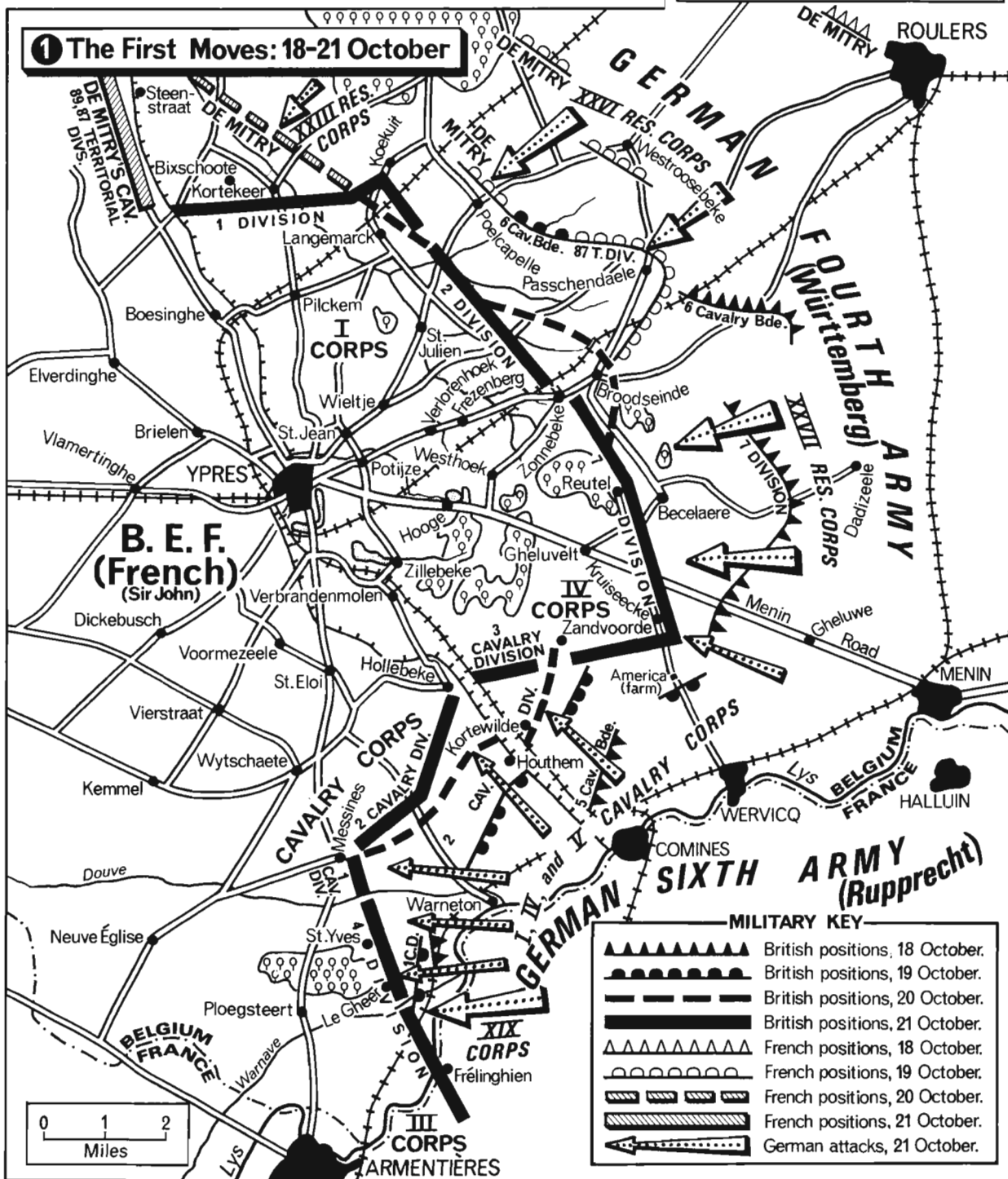
☐ Towns, villages, hamlets ≡ Bridges +++ Railways --- Canals

FIRST BATTLE OF YPRES 18 OCTOBER – 11 NOVEMBER 1914

TOPOGRAPHICAL KEY

- Roads
- Frontiers
- ++++ Railways
- ⊗ Forests
- Canals
- Rivers

1 The First Moves: 18-21 October

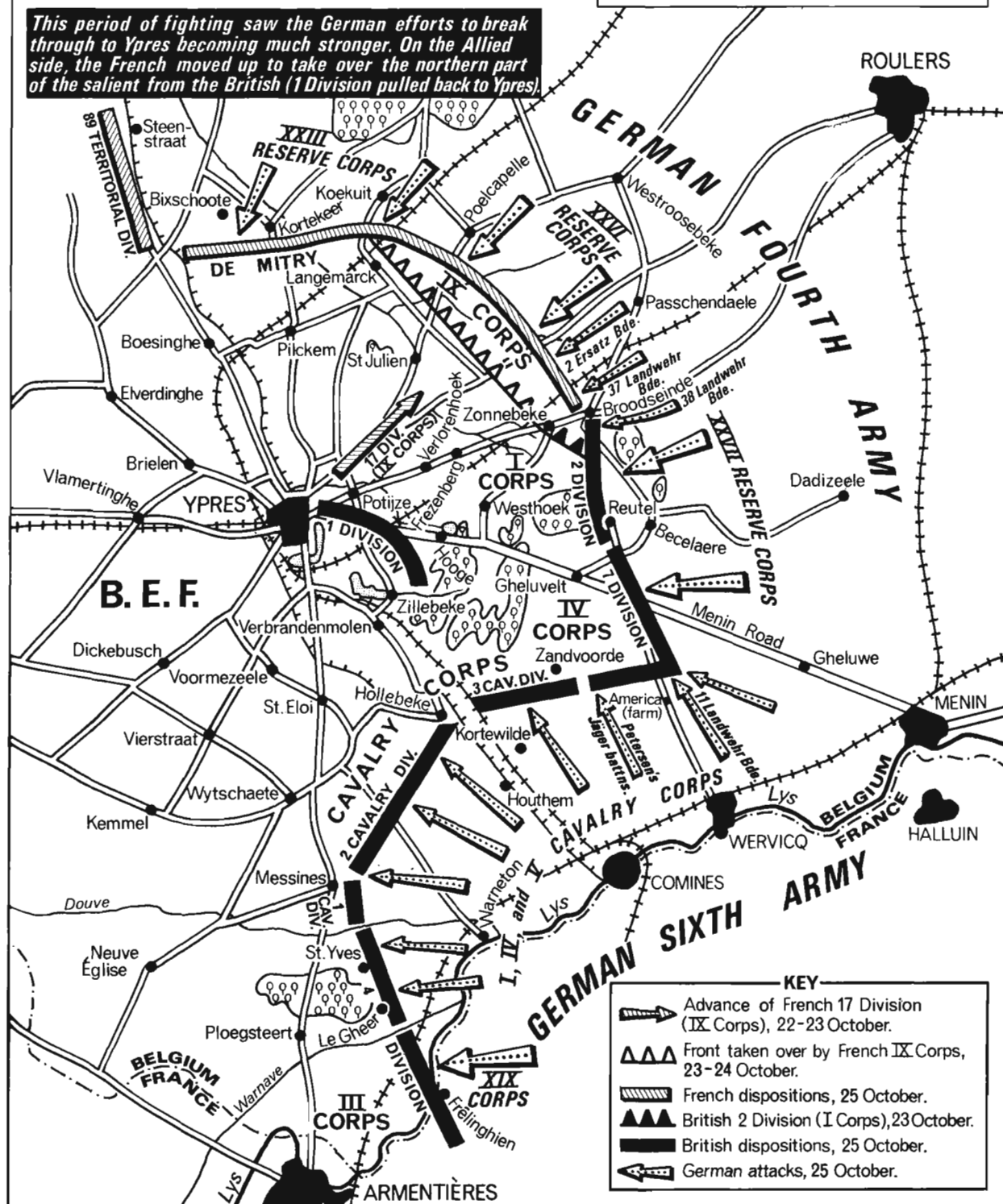
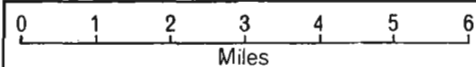


MILITARY KEY

- ▲▲▲▲▲ British positions, 18 October.
- British positions, 19 October.
- British positions, 20 October.
- British positions, 21 October.
- △△△△△ French positions, 18 October.
- French positions, 19 October.
- French positions, 20 October.
- French positions, 21 October.
- German attacks, 21 October.

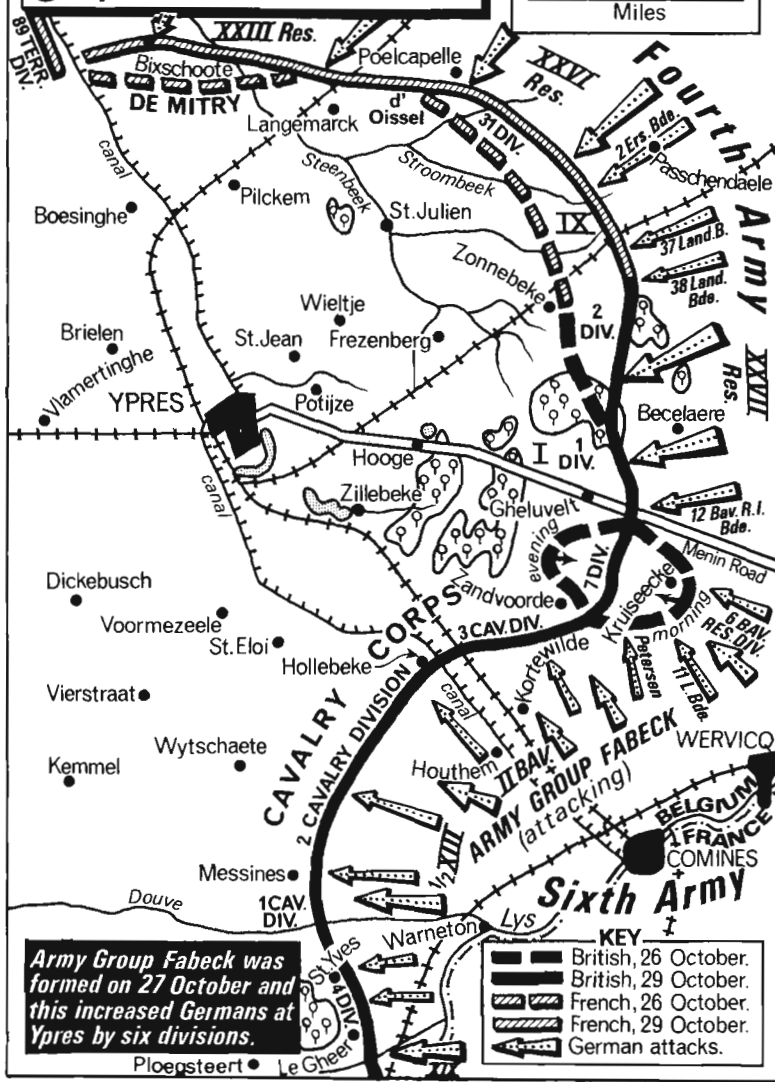
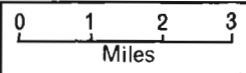
② Further Developments: 22-25 October

This period of fighting saw the German efforts to break through to Ypres becoming much stronger. On the Allied side, the French moved up to take over the northern part of the salient from the British (1 Division pulled back to Ypres).



FIRST BATTLE OF YPRES-continued

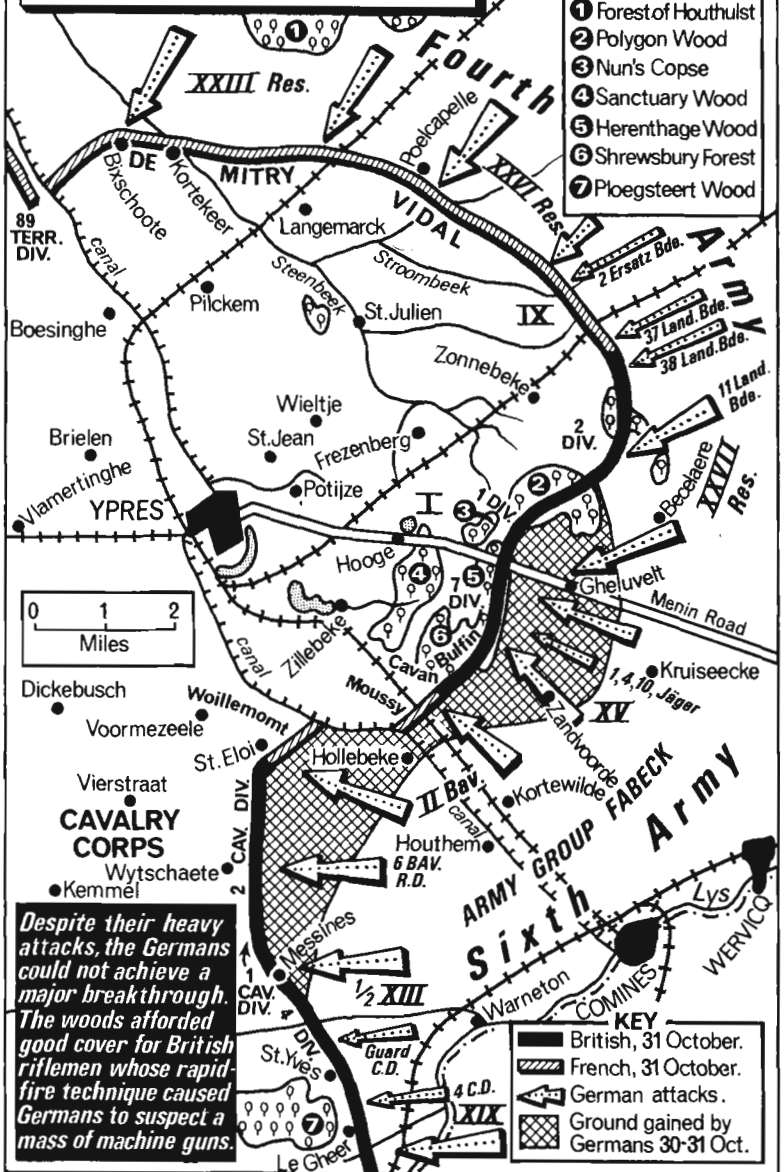
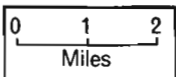
③ Operations 26-29 October



Army Group Fabeck was formed on 27 October and this increased Germans at Ypres by six divisions.

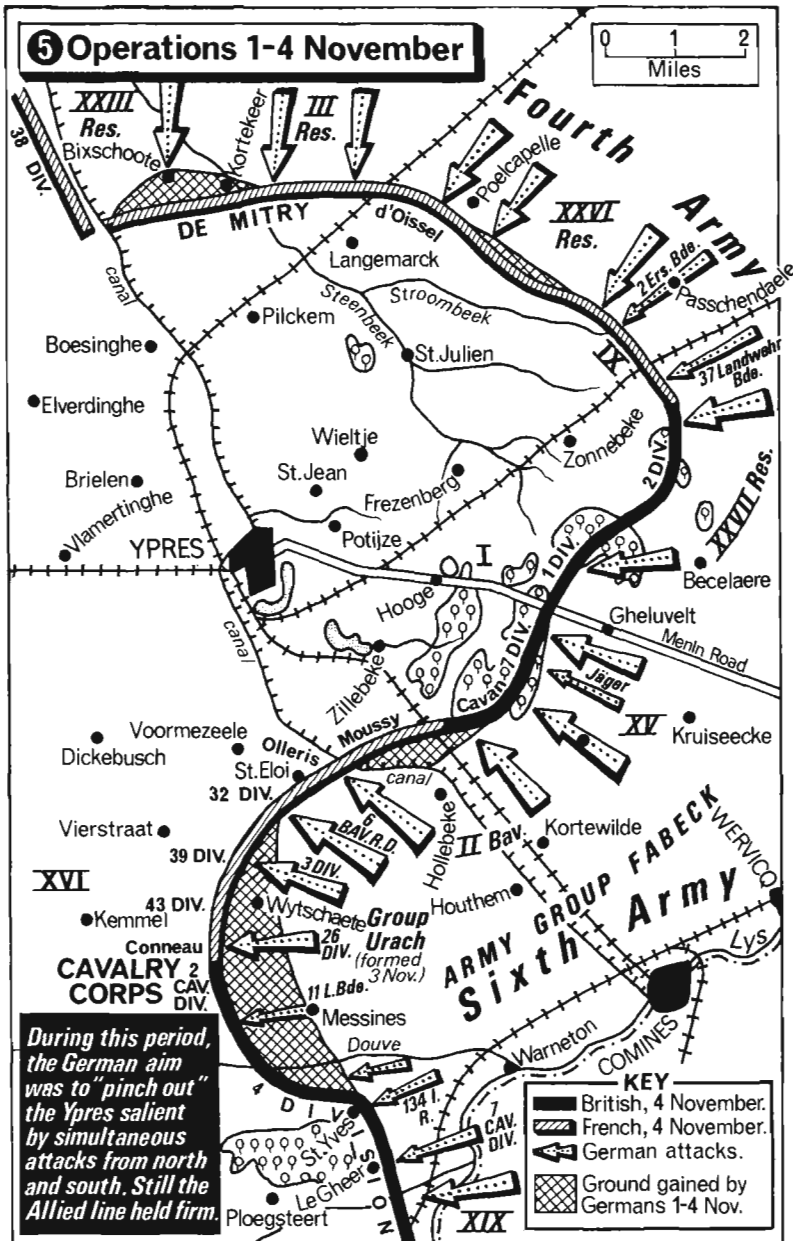
④ Operations 30-31 October

- FORESTS - WOODS**
- Forest of Houthulst
 - Polygon Wood
 - Nun's Copse
 - Sanctuary Wood
 - Herenthage Wood
 - Shrewsbury Forest
 - Pløegsteert Wood

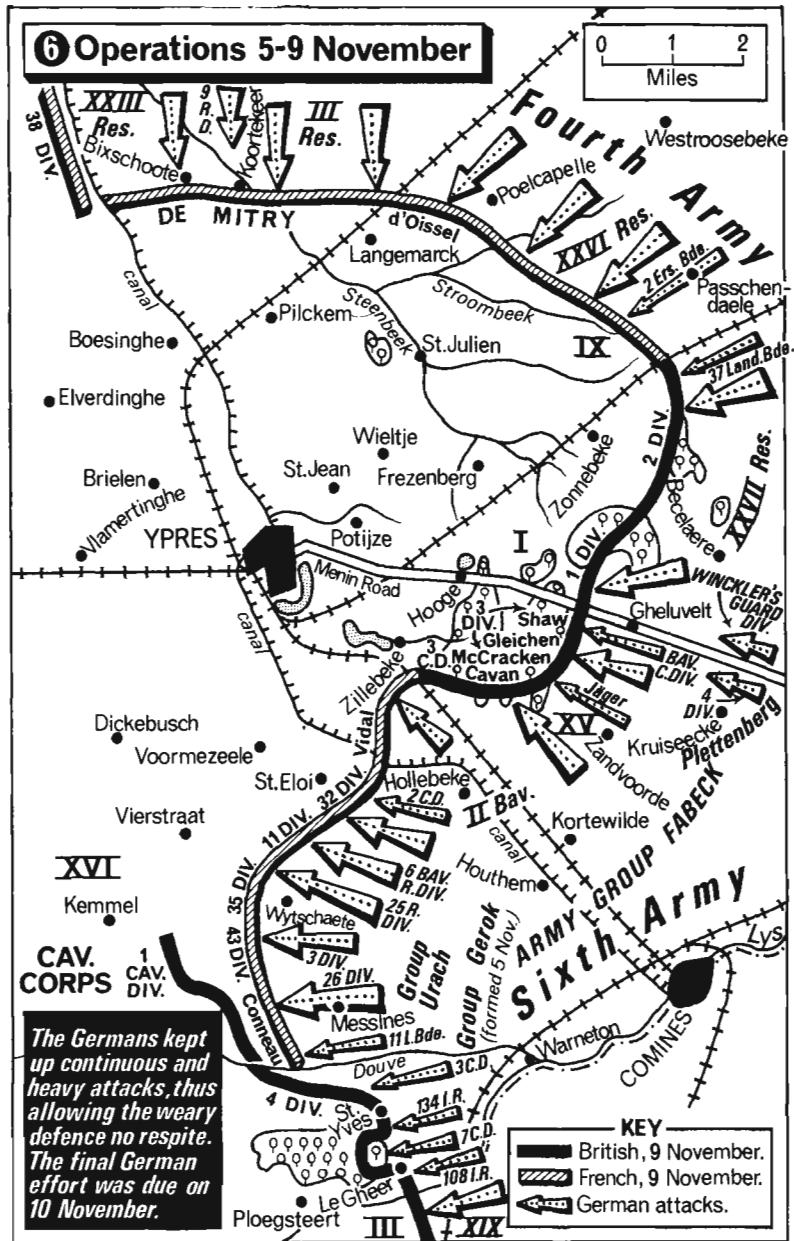


Despite their heavy attacks, the Germans could not achieve a major breakthrough. The woods afforded good cover for British riflemen whose rapid-fire technique caused Germans to suspect a mass of machine guns.

5 Operations 1-4 November






6 Operations 5-9 November

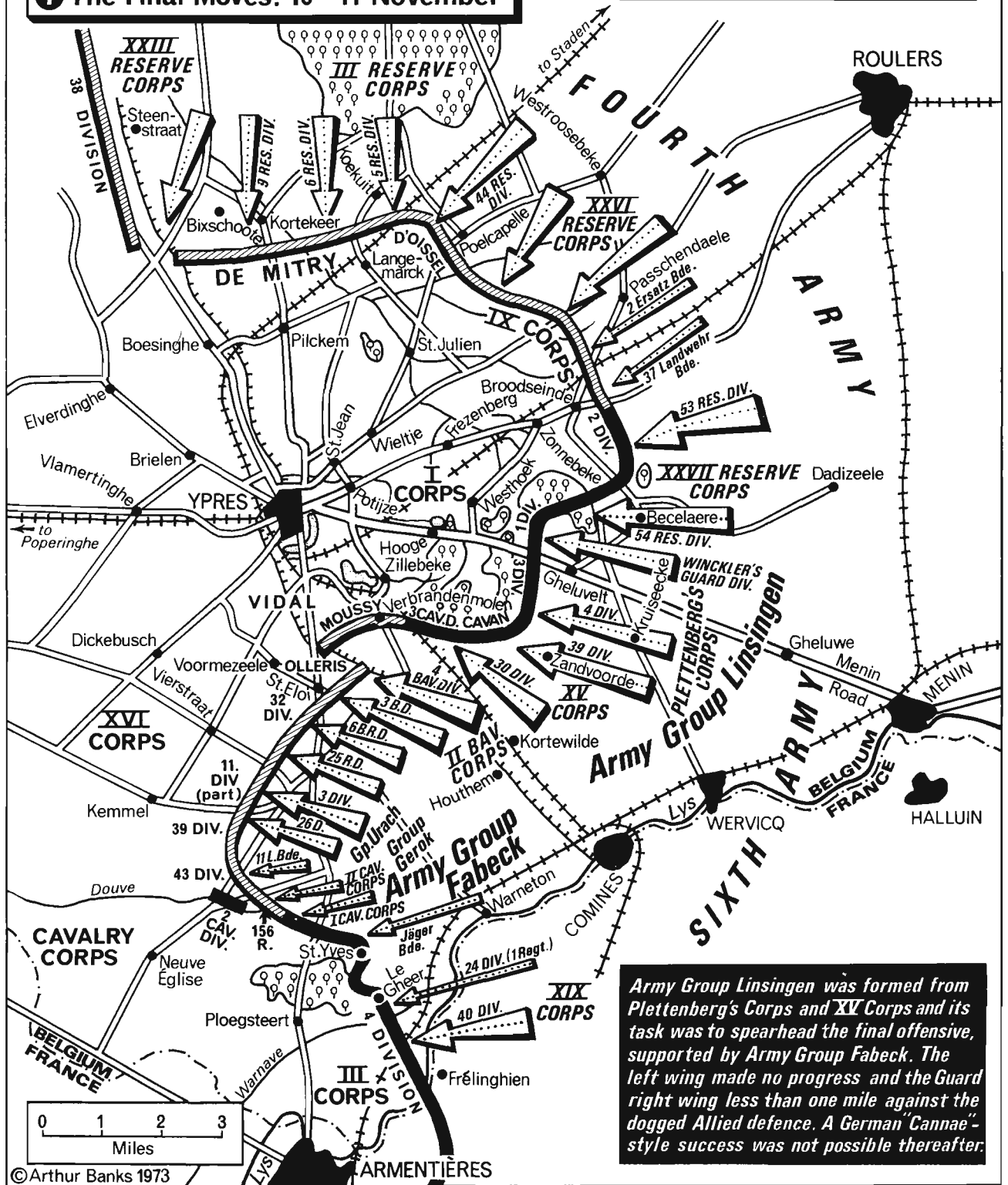


FIRST BATTLE OF YPRES—continued

7 The Final Moves: 10–11 November

KEY

-  British positions, 10-11 November.
-  French positions, 10-11 November.
-  German attacks, 10-11 November.



Army Group Linsingen was formed from Plettenberg's Corps and XV Corps and its task was to spearhead the final offensive, supported by Army Group Fabeck. The left wing made no progress and the Guard right wing less than one mile against the dogged Allied defence. A German "Cannae"-style success was not possible thereafter.

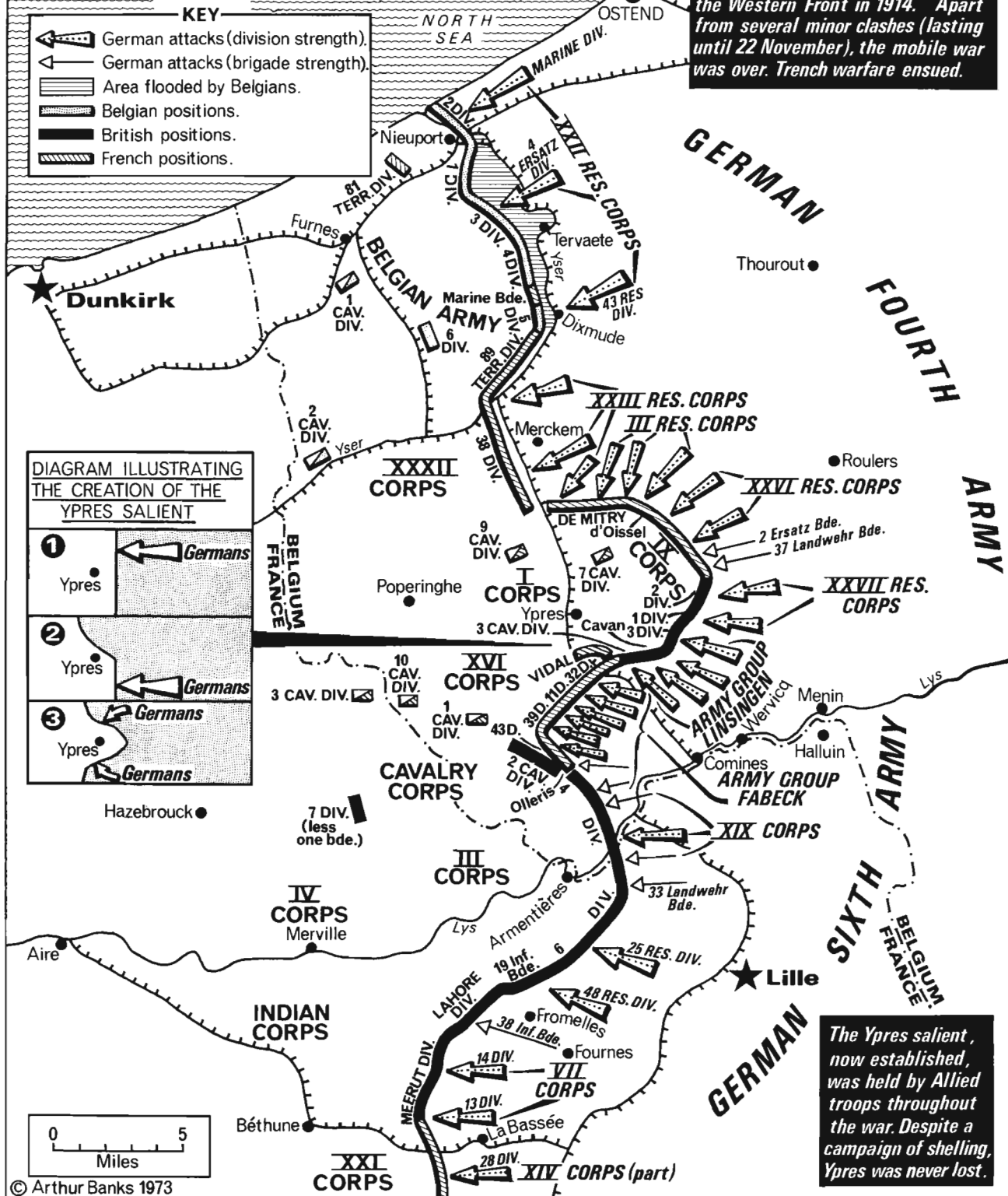
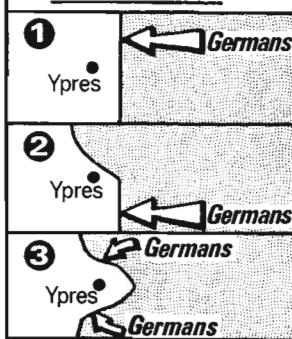
THE MILITARY SITUATION IN FLANDERS 10 NOVEMBER 1914

This map shows the situation from the sea to La Bassée just prior to the cessation of German efforts to achieve a major breakthrough on the Western Front in 1914. Apart from several minor clashes (lasting until 22 November), the mobile war was over. Trench warfare ensued.

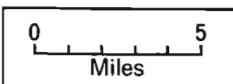
KEY

- German attacks (division strength).
- German attacks (brigade strength).
- Area flooded by Belgians.
- Belgian positions.
- British positions.
- French positions.

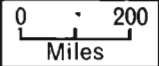
DIAGRAM ILLUSTRATING THE CREATION OF THE YPRES SALIENT



The Ypres salient, now established, was held by Allied troops throughout the war. Despite a campaign of shelling, Ypres was never lost.



SMALL DETONATORS: BIG EXPLOSIONS!



BLOCKADE

2 August 1914, Winston Churchill mobilizes the British Grand Fleet. 0400 hours on 4 August, British Admiralty announces that mobilization is complete. **THUS, THE BLOCKADE OF GERMANY (THE MAJOR DECISIVE FACTOR IN THE WAR) IS IN EXISTENCE FROM THE OUTBREAK OF HOSTILITIES.**

CODES

26 August 1914, German cruiser SMS 'Magdeburg' is beached here. On following day, Russians wreck and burn the ship, but salvage German naval code-books and cyphers. These are passed to British Admiralty in London. **THUS, THE BRITISH POSSESS GERMAN NAVAL SECRETS WITHIN ONE MONTH OF THE OUTBREAK OF WAR.**

ATLANTIC
OCEAN

Scapa Flow

North
Sea

Odenso

Portsmouth

Ypres

Somme

GAS

22 April 1915, Germans launch their first gas attack on the Western Front, gaining some ground. **BUT, MORE IMPORTANT, THEY HAVE PREMATURELY DISCLOSED THE EXISTENCE OF THEIR NEW SECRET WEAPON TO THEIR ENEMIES.**

(Note: on 3 January 1915, the Germans used lachrymatory gas shells against the Russians at Bolimov, but apparently this event was not communicated to their British and French allies.)

TANKS

15 September 1916, British launch their first tank attack of the war without major success. **BUT, MORE IMPORTANT, THEY HAVE PREMATURELY DISCLOSED THE EXISTENCE OF THEIR NEW SECRET WEAPON TO THE GERMANS.**

Constantinople

Mediterranean
Sea

THIRD FRONT

12 August 1914, two German warships (SMS 'Goeben' and SMS 'Breslau') arrive here after eluding Allied hunting units in the Mediterranean. **THEIR PRESENCE IS AN IMPORTANT FACTOR IN TURKEY'S DECISION TO ENTER THE WAR ON THE SIDE OF THE CENTRAL POWERS, THUS CREATING A THIRD ENEMY FOR THE ENTENTE POWERS TO FIGHT.**

The European events shown here were comparatively minor in themselves at the time. Yet they had long-term major implications.

THE WAR ON THE EASTERN FRONT

There were four other theatres of war in Europe during the autumn of 1914. Eight hundred miles to the east of the Belgian cockpit, Russian and German armies clashed in the marchlands of East Prussia while to their south other forces manoeuvred for position in the great plains of the Vistulan Basin. The principal Austrian army was concentrated at the outbreak of war in Galicia, with the well-forested range of the Carpathians in its rear, an admirable position for withstanding any Russian onslaught (compare pages 24 and 32). Farther south still, nearly four hundred miles across the Austro-Hungarian empire, another quarter of a million soldiers from Franz Josef's multinational empire were assigned the duty of 'punishing' Serbia. The commander of this Balkan Army was the former Governor of Bosnia, General Potiorek, who had been sitting in front of Archduke Franz Ferdinand on that fateful day in Sarajevo. But Potiorek, like all other Austro-Hungarian commanders, was subordinate to General Conrad von Hötzendorf, the Austrian Chief of Staff, who established his first headquarters in the reputedly impregnable Galician fortress town of Przemyśl.

Although Conrad had hoped to cut off the Russians in Poland by joint Austro-German operations uniting the commands in East Prussia and Galicia, there was in fact little co-ordination between the various eastern European armies. The first shots in the whole war were fired by two monitors of the Austro-Hungarian Danube flotilla, which bombarded Belgrade on 29 July, five days before the opening of hostilities in western Europe. But thereafter all was peaceful until the middle of the second week in August when Conrad sent his First and Fourth armies northward into Russian Poland, while the first units of the Russian 1st Army invaded East Prussia, and Potiorek's troops crossed the river Sava and seized the Serbian town of Sabac.

The most dramatic of these undertakings was the Russian incursion towards the historic Prussian coronation city, Königsberg, some ninety miles from the frontier. The Schlieffen Plan had anticipated a German holding operation against Russia for some six or seven weeks, before the full weight of German arms was shifted to the West. On paper, there was no reason for

German alarm, even though the invaders had a numerical superiority of more than four to one. But on 20 August three German army corps clashed with Rennenkampf's Russian First Army at Gumbinnen and did not distinguish themselves (pages 88-89). The German commander, Prittwitz, was worried by news that the Russian Second Army, under Samsonov, was threatening his southern flank, and sent alarming messages to Moltke's headquarters in the West. The situation was saved by one of Prittwitz's staff officers, Lieutenant-Colonel Max von Hoffmann, who knew there was a deep personal vendetta between Samsonov and Rennenkampf. Hoffmann proposed that the Germans should concentrate against Samsonov, leaving the route towards Königsberg apparently open for Rennenkampf (who would not resist this bait simply to aid the rival he so detested). Thus began the deployment for the battle of Tannenberg, three days of agony for the Russians, in which the Second Army was destroyed and its commander shot himself in despair.

Tannenberg, like the Marne, became a legendary victory. The discovery of a Russian staff officer's body on the battlefield, with detailed military directives in his pocket, helped the Germans considerably; and so did the incredible folly of the three Russian headquarters in sending unciphered operations orders by wireless, with the Germans able to note down every word (see page 98). The ease of their victory made the Germans despise their Russian opponents and they therefore suffered heavy casualties in rash frontal assaults on Rennenkampf's army, which was caught at the Masurian Lakes in the first week of September. But the Masurian Lakes completed the triumph of Tannenberg: the Russians, after nibbling at the edge of East Prussia for twenty-eight days, were thrown back across the frontier, broken and demoralised. No Russian army penetrated German territory again until 1945.

The twin victories enabled the German people to find a heroic father-figure to idolise for the remainder of the War and beyond. Paul von Hindenburg was six weeks short of his sixty-seventh birthday when, on 22 August, he was summoned from obscure retirement to replace Prittwitz on the Eastern Front. Hindenburg

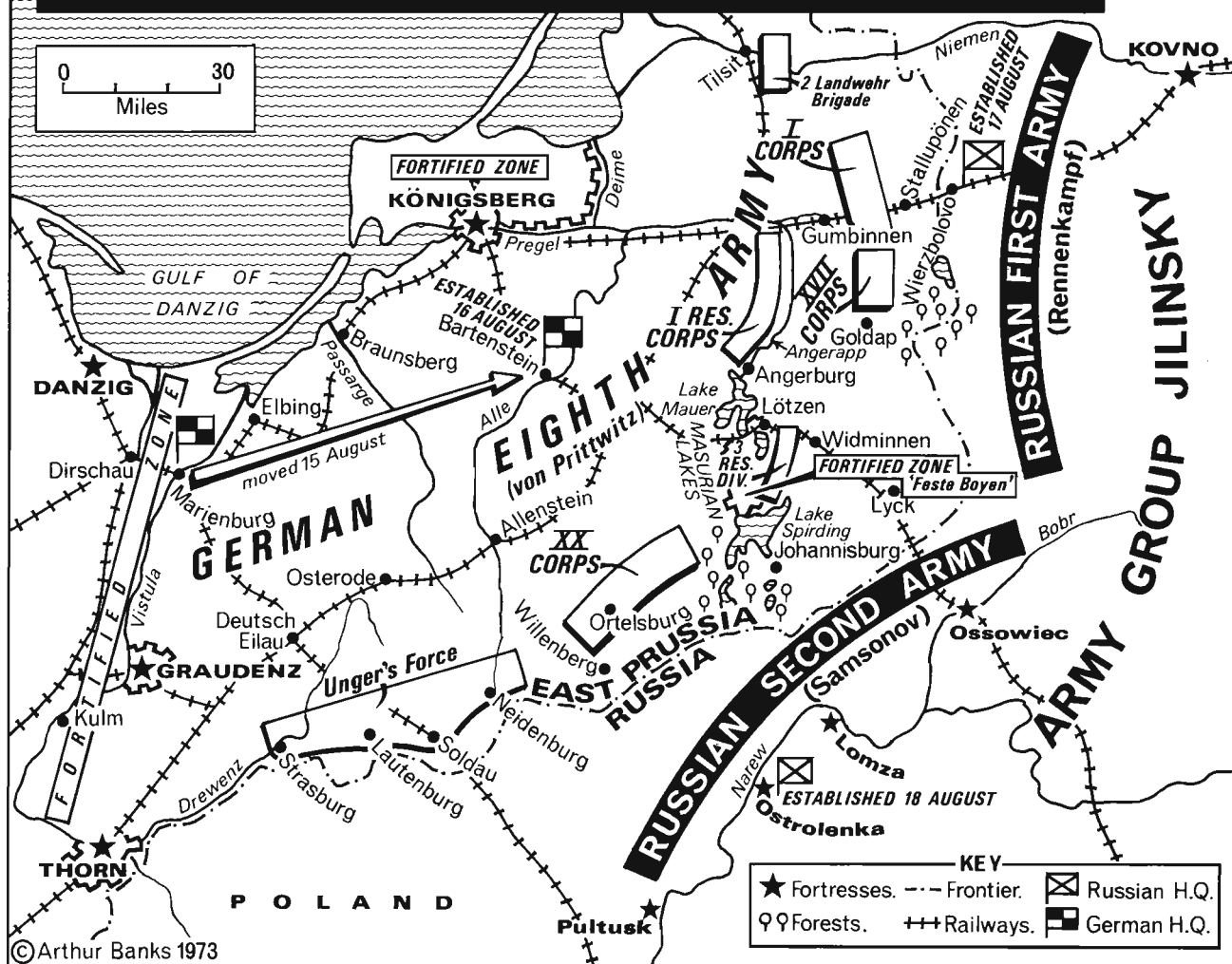
had been decorated for bravery both in the 1866 war with Austria and the 1870 war with France and he had witnessed the proclamation of the German Empire at Versailles in 1871. No one could describe him as a strategic genius. His greatest asset was his rocklike imperturbability. The brain behind his triumphs belonged to his deputy, Ludendorff, who had already distinguished himself in reducing the Liège forts (page 41); and, at least on the Eastern Front, Ludendorff owed much to Hoffmann, who understood the Russian military mind. But, in Germany, sentiment and propaganda combined to turn Hindenburg into a colossus of victory.

Austria-Hungary discovered no such idol. Conrad's decision to send the First and Fourth armies northwards from Galicia was based upon a false assumption. He thought that the Russian commander-in-chief, Grand Duke Nicholas, had ordered the commander of the South-Western Army Group, General Ivanov, to concentrate around Lublin. In reality the Russians were farther south-east, threatening Lemberg (Lvov) where Ivanov had, in his turn, wrongly assumed the main Austrian forces to be. There was, in consequence, a curious week of shadow-boxing before Conrad turned to meet the challenge to his flank from Ivanov (see pages 100–101). Conrad made the mistake of opening up a gap in the north which was filled by the Russian Fifth Army. Fearing he might be encircled, Conrad ordered a general retreat on 11 September, and found it impossible to stabilise the Front until the Russians had penetrated over a hundred miles, reaching the Carpathian passes into Hungary. The Austrians thus sustained a humiliating defeat, with the Russians capturing two provincial capitals, Lemberg (the fourth largest city in Austria-Hungary) and Czernowitz, as

well as besieging Przemyśl. The Slav contingents in the Austro-Hungarian Army (particularly the Czechs) had little heart for a war against 'Mother Russia', but large-scale desertions did not begin until the spring of 1915, and it is clear that the disaster reflects as much on Conrad and his staff as on the quality of the troops they commanded. Eventually the Austrians were saved by an offensive mounted by Hindenburg in central Poland and threatening Warsaw. An abortive Russian counter-offensive in Poland at the end of October threatened Silesia but brought down a massive German response from the north, when Mackensen's Ninth Army fell on the Russians at Lodz and as winter set in, destroyed all prospects of avenging Tannenberg. Though the Russians had triumphed in Galicia, the first four months of fighting against the Germans had proved disastrous and left the Russian artillery desperately short of shells.

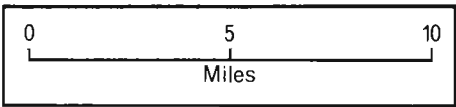
Yet the strangest development of the war was in Serbia. For Putnik, the Serbian commander-in-chief, had successfully repelled Potiorek's first incursion across the river Sava, and nipped another offensive (across the river Drina) in the bud. At the end of November Potiorek tried again and captured Belgrade on 2 December, sweeping the Serbs back into the mountain heart of the Kingdom. Yet, though short of men and munitions, the Serbs made a surprise counter-attack and within eleven days had recovered their capital. 'On the whole territory of the Serbian Government there remains not one free enemy soldier', ran a proud communiqué on 15 December. Austria's humiliation was complete. Small wonder the German High Command began privately to wonder if they were allied to a living Empire or a corpse.

THE PRE-BATTLE SITUATION IN THE NORTH



NOTE: fire-strength of a German infantry division was 50% greater than that of a Russian division.

THE RUSSIAN 'STEAMROLLER' IN ACTION AT GUMBINNEN 20 AUGUST 1914



KEY

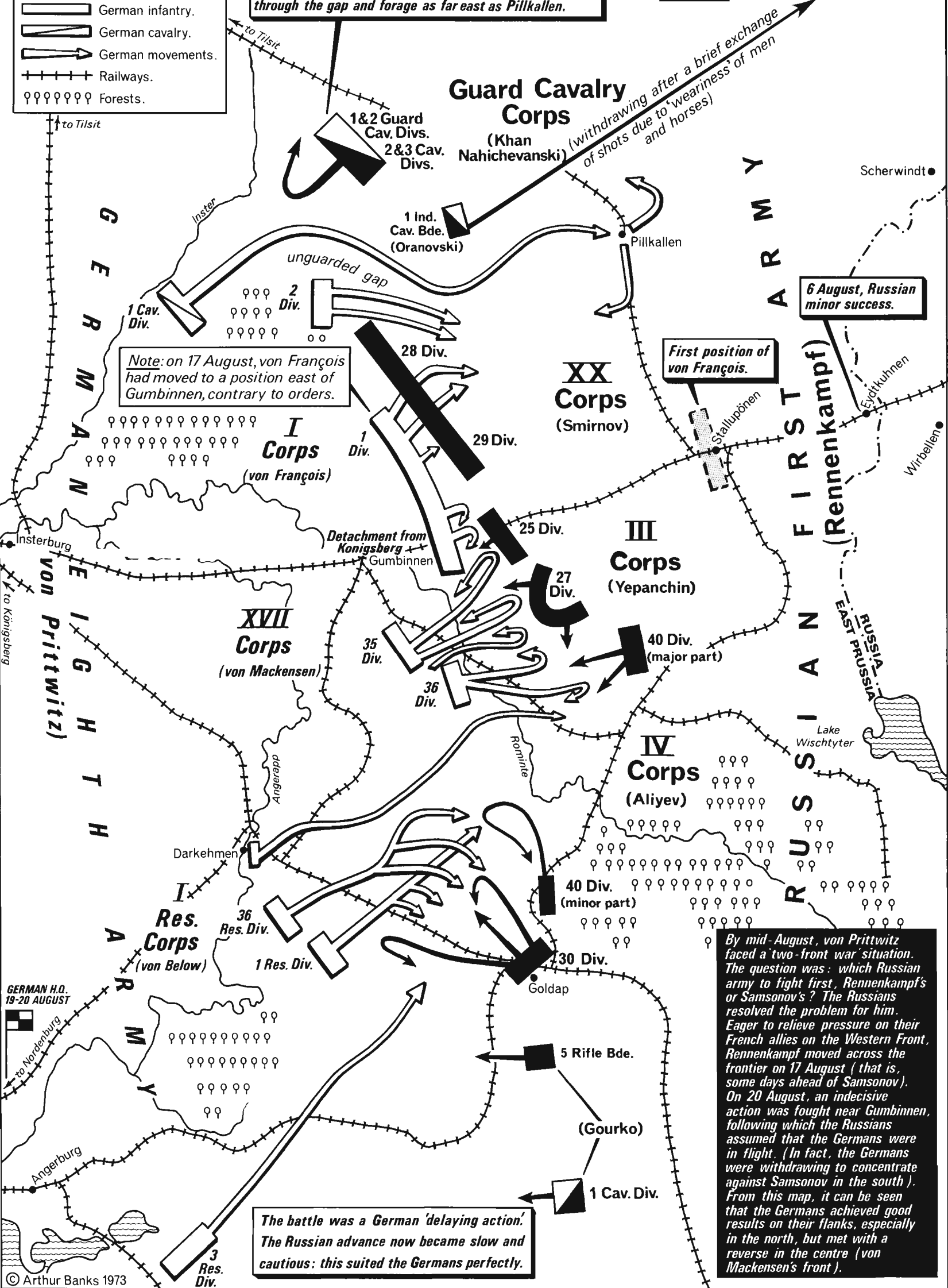
- Russian infantry.
- Russian cavalry.
- Russian movements.
- German infantry.
- German cavalry.
- German movements.
- Railways.
- Forests.

By his failure (or inability: his troops were exhausted) to comply with Rennenkampf's instructions to secure the eastern bank of the Inster, Khan Nahichevanski leaves Russian right flank unguarded. German cavalry penetrate through the gap and forage as far east as Pillkallen.

Note: on 19 August, Oranovski was 50 miles east (i.e. to the rear) of the Russian van. An exhaustive gallop was instituted to close with the main advance.

88

89



Note: on 17 August, von François had moved to a position east of Gumbinnen, contrary to orders.

The battle was a German 'delaying action'. The Russian advance now became slow and cautious: this suited the Germans perfectly.

By mid-August, von Prittwitz faced a 'two-front war' situation. The question was: which Russian army to fight first, Rennenkampf's or Samsonov's? The Russians resolved the problem for him. Eager to relieve pressure on their French allies on the Western Front, Rennenkampf moved across the frontier on 17 August (that is, some days ahead of Samsonov). On 20 August, an indecisive action was fought near Gumbinnen, following which the Russians assumed that the Germans were in flight. (In fact, the Germans were withdrawing to concentrate against Samsonov in the south). From this map, it can be seen that the Germans achieved good results on their flanks, especially in the north, but met with a reverse in the centre (von Mackensen's front).

THE BATTLE OF TANNENBERG 26-30 AUGUST 1914

1 The Pre-Battle Situation

KEY

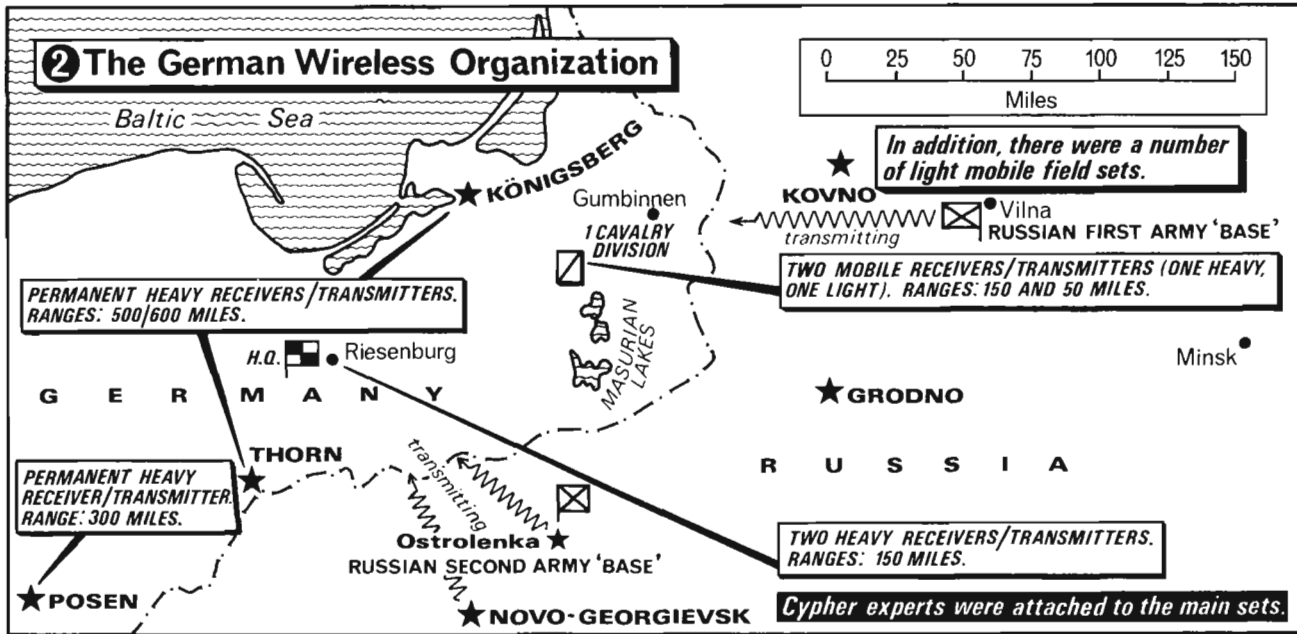
	German infantry.
	German cavalry.
	Russian infantry.
	Russian cavalry.

CHANGE IN GERMAN COMMAND

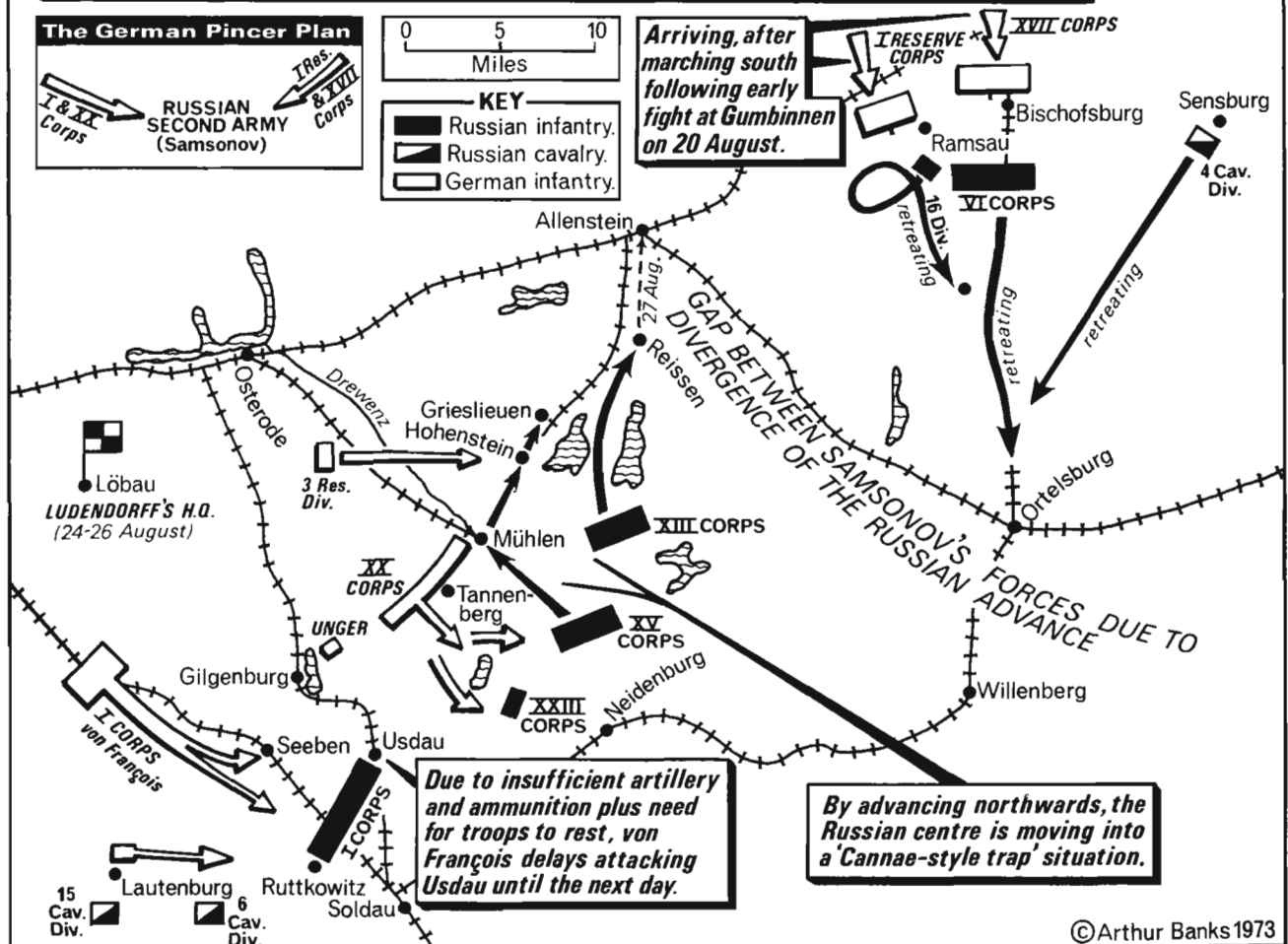
23 August, General Hindenburg and Major-General Ludendorff arrive here to replace von Prittwitz and von Waldersee.



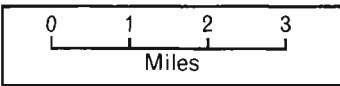
② The German Wireless Organization



③ 26 August: Opening Moves: Rout of Samsonov's Right Wing



THE BATTLE OF TANNENBERG - continued



(Allenstein is occupied without a fight)

4 27 August: Main Operations: The Defeat of Samsonov's Left Wing

Apart from these operations against Samsonov, the Germans kept a watchful eye on the virtually "unguarded" Rennenkampf to the north (the only sizable unit in the path of Russian First Army was German 1 Cavalry Division). A rapid advance by Rennenkampf (who imagined that the Germans had retired on Königsberg following the Gumbinnen action) would have jeopardized the German plans at this stage. As it was, Rennenkampf was increasing his rate of advance to nearly twenty miles a day.

KEY

- Russian infantry.
- Russian cavalry.
- German infantry.

92

The German senior command keeps moving forward so that close contact is always maintained with the assault troops.

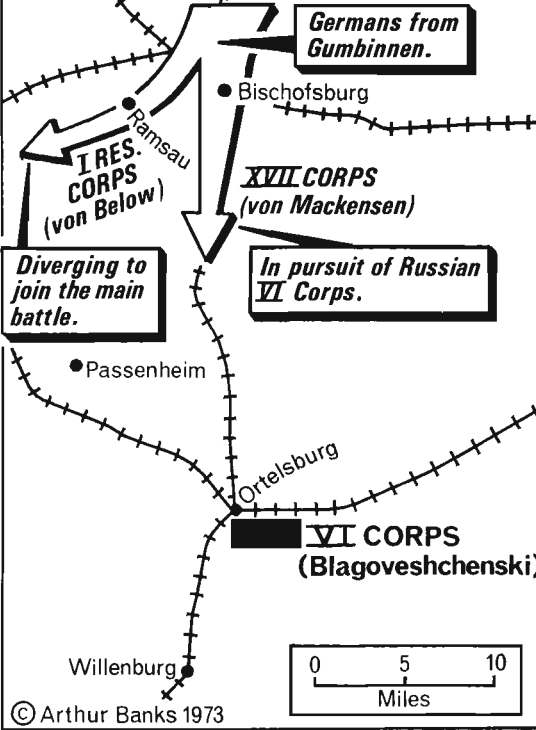
Germans begin advance south of Lake Mühlen (towards Waplitz) but wheel to counter Russian threat north of lake.

Heavy artillery bombardment by Germans.

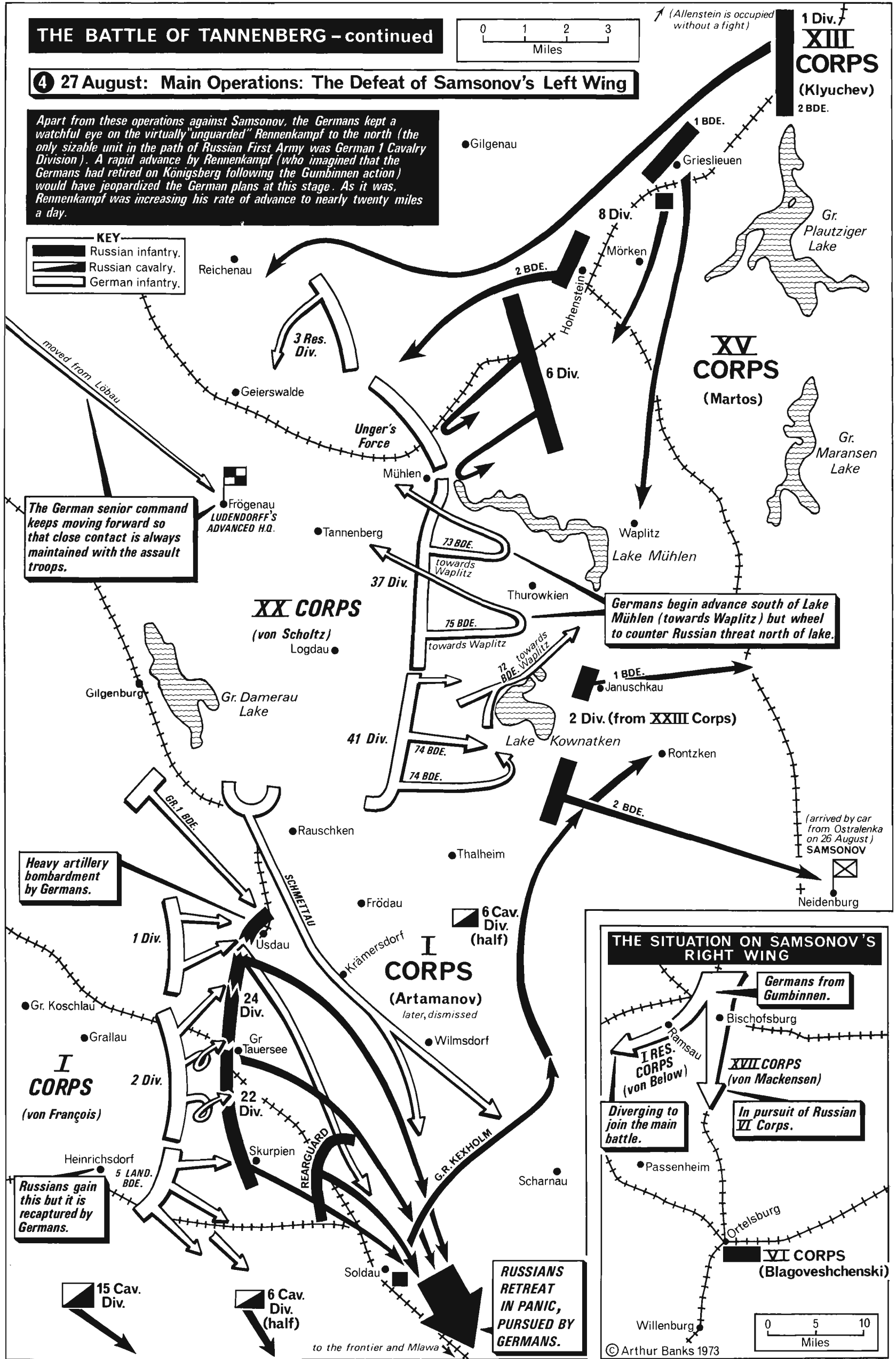
Russians gain this but it is recaptured by Germans.

RUSSIANS RETREAT IN PANIC, PURSUED BY GERMANS.

THE SITUATION ON SAMSONOV'S RIGHT WING

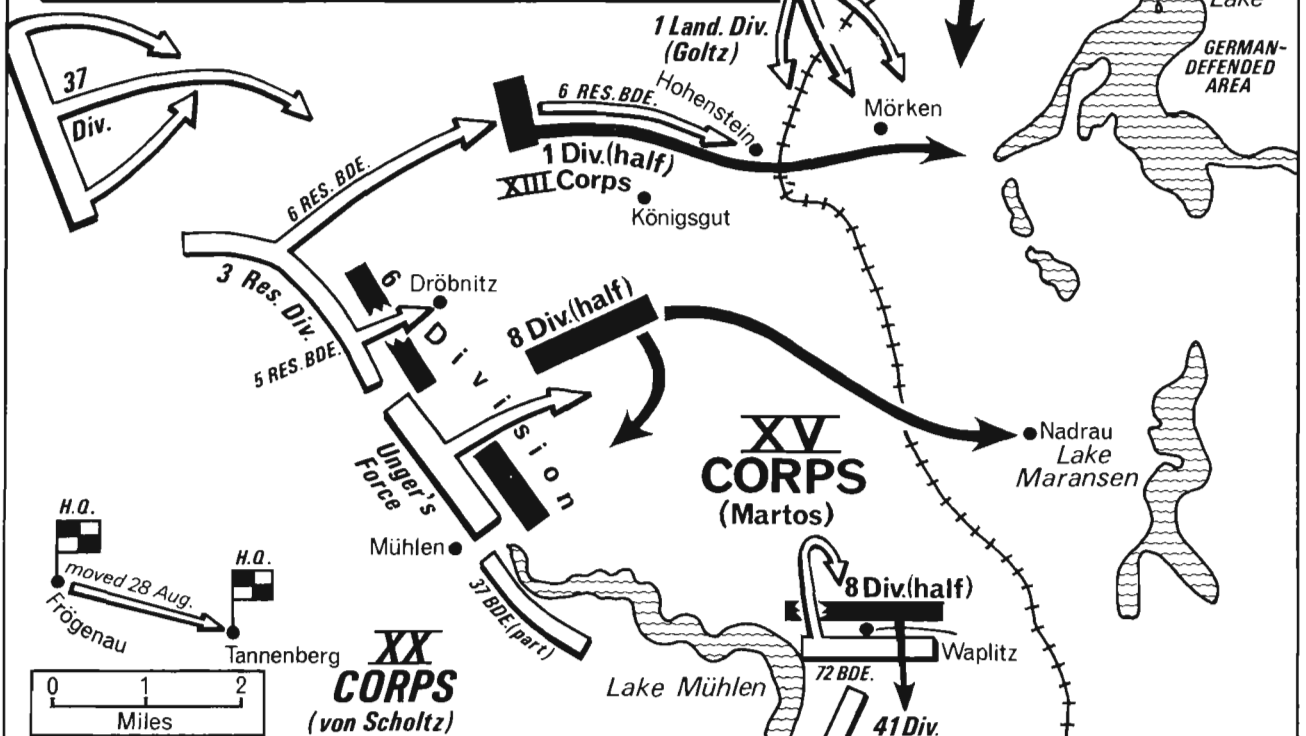


93



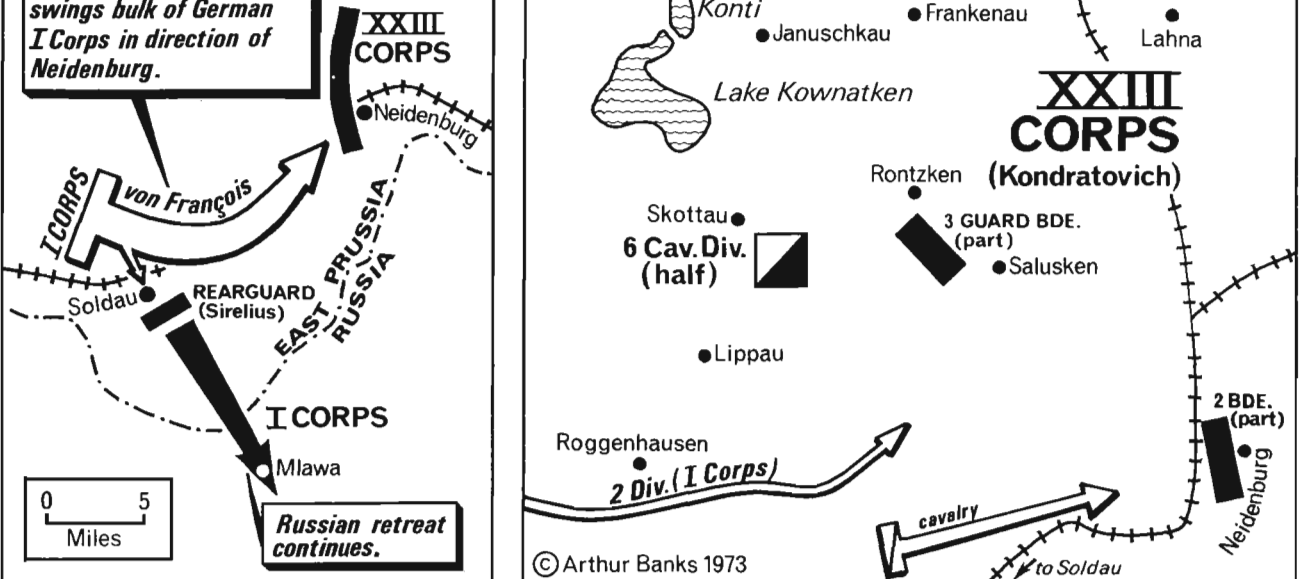
THE BATTLE OF TANNENBERG - continued

5 28 August: The Main Fight in the Centre

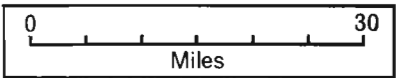


THE SITUATION SOLDAU - NEIDENBERG

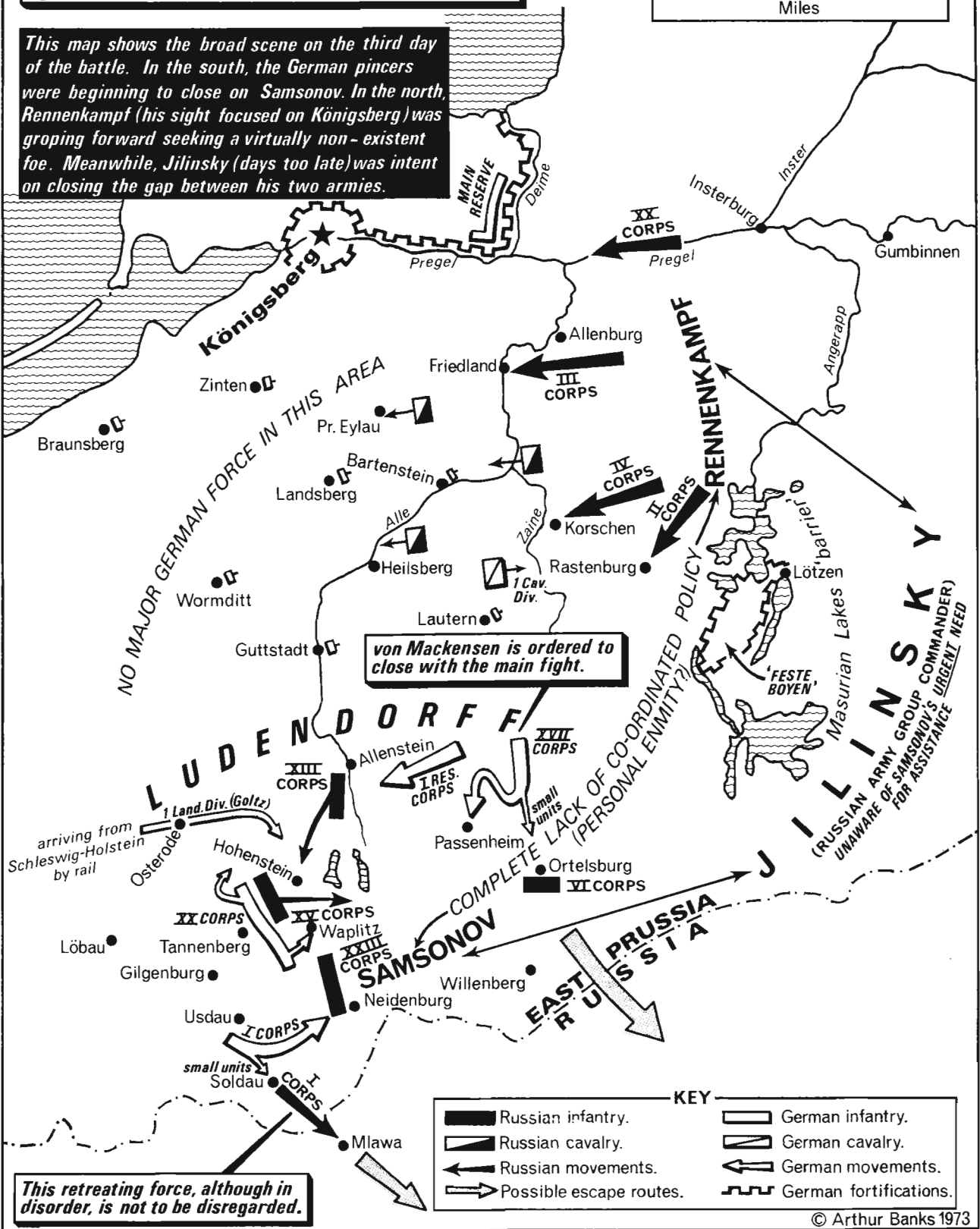
Believing Russian I Corps is beaten, von François swings bulk of German I Corps in direction of Neidenburg.



6 28 August: The Strategic Situation

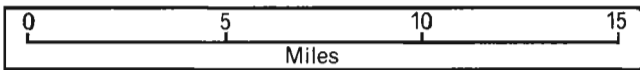


This map shows the broad scene on the third day of the battle. In the south, the German pincers were beginning to close on Samsonov. In the north, Rennenkampf (his sight focused on Königsberg) was groping forward seeking a virtually non-existent foe. Meanwhile, Jilinsky (days too late) was intent on closing the gap between his two armies.

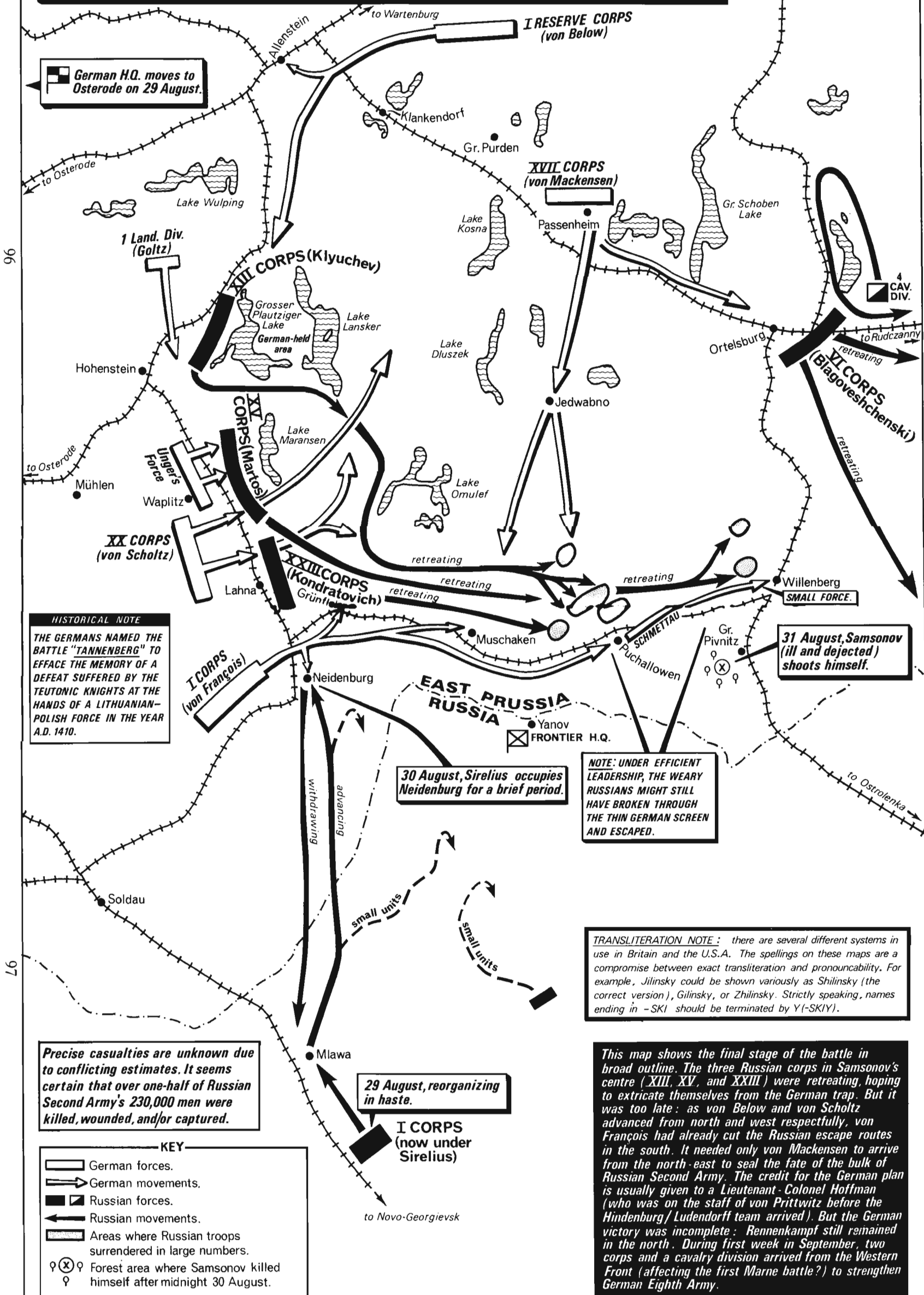


KEY			
	Russian infantry.		German infantry.
	Russian cavalry.		German cavalry.
	Russian movements.		German movements.
	Possible escape routes.		German fortifications.

THE BATTLE OF TANNENBERG—continued

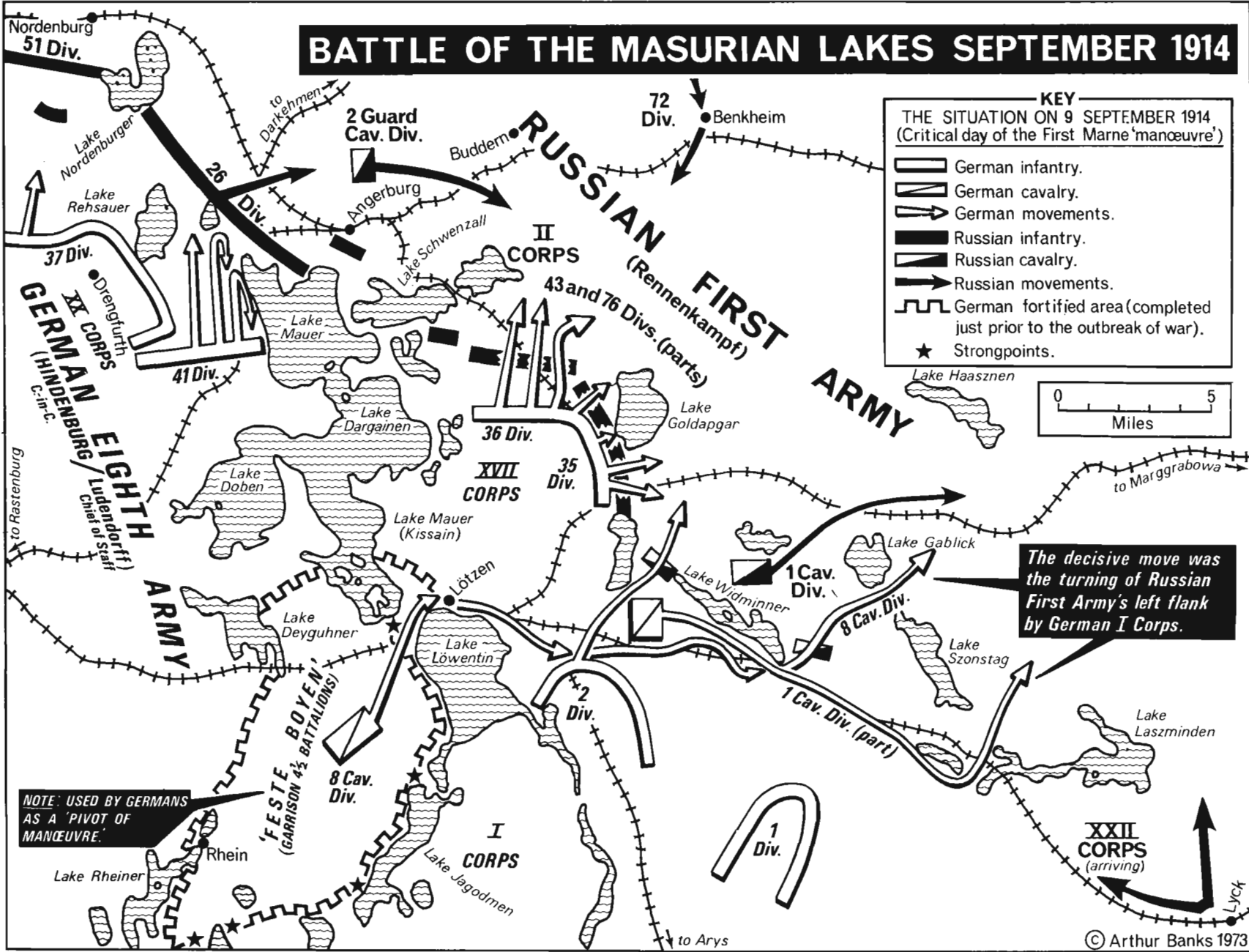


7 Operations 29-30 August: The Final Act and Curtain (Samsonov's Suicide)



This map shows the final stage of the battle in broad outline. The three Russian corps in Samsonov's centre (XIII, XV, and XXIII) were retreating, hoping to extricate themselves from the German trap. But it was too late: as von Below and von Scholtz advanced from north and west respectively, von François had already cut the Russian escape routes in the south. It needed only von Mackensen to arrive from the north-east to seal the fate of the bulk of Russian Second Army. The credit for the German plan is usually given to a Lieutenant-Colonel Hoffman (who was on the staff of von Prittwitz before the Hindenburg/Ludendorff team arrived). But the German victory was incomplete: Rennenkampf still remained in the north. During first week in September, two corps and a cavalry division arrived from the Western Front (affecting the first Marne battle?) to strengthen German Eighth Army.

BATTLE OF THE MASURIAN LAKES SEPTEMBER 1914



SERBIA IN TRAVAIL AND TRIUMPH 1914

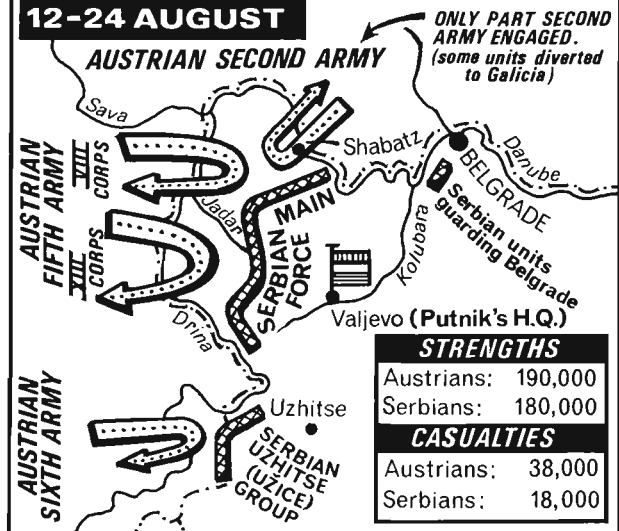
*Punitive expedition: so-called by the Austrians after it had failed.

1 Serbia's Strategic Position



2 Austria's "Strafexpedition" *

12-24 AUGUST



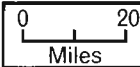
STRENGTHS

Austrians: 190,000
Serbians: 180,000

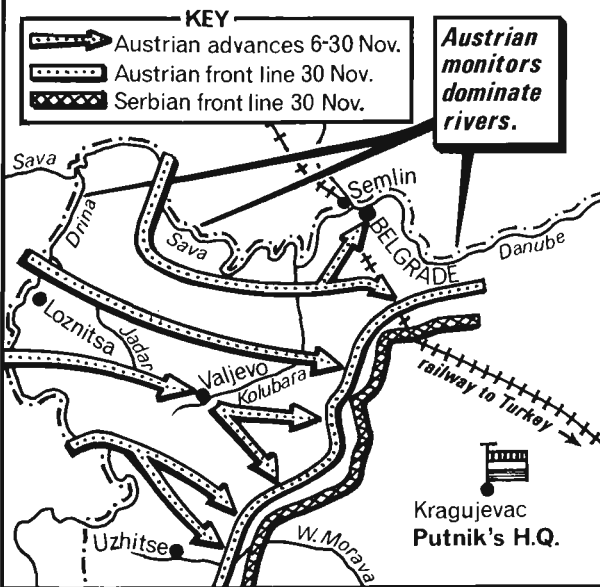
CASUALTIES

Austrians: 38,000
Serbians: 18,000

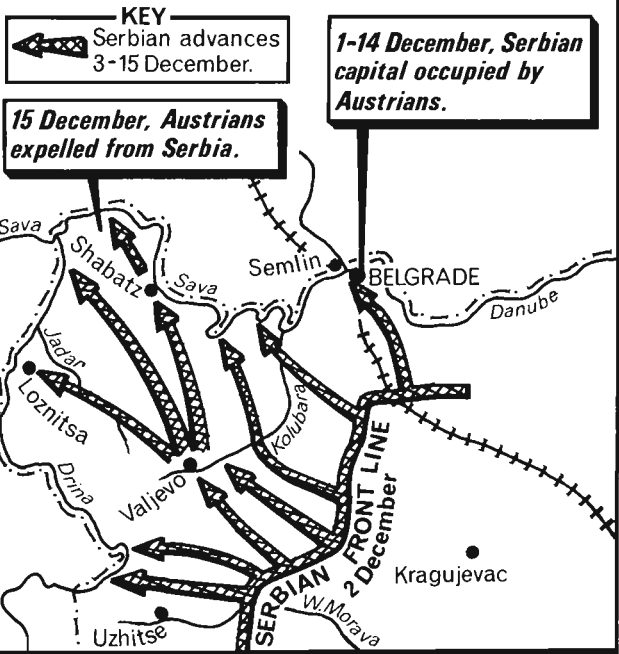
3 Serbia the Bastion



AUSTRIAN ADVANCE (NOVEMBER)

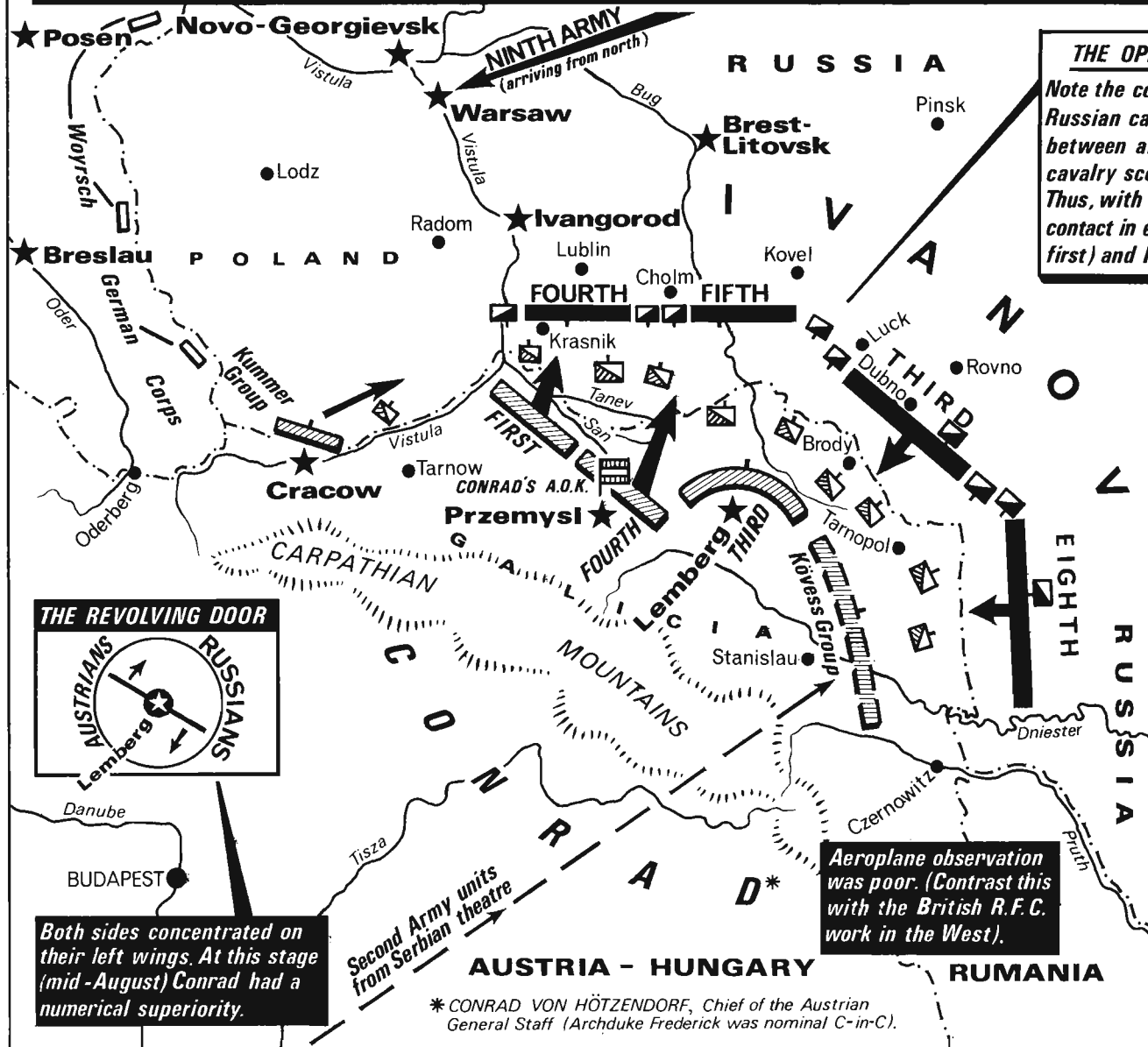
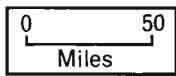


SERBIAN COUNTER-ATTACKS (DECEMBER)



In 1914, "little" Serbia astounded the world by blocking and repelling the invading armies of Austria-Hungary. German reaction was derisive: "Allies? We are shackled to a corpse." It is important to note that part only of Austrian Second Army was engaged in August, and these units were gradually withdrawn to fight on the Galician front. However, a Serbian Army equalled little more than an Austrian corps.

THE PRE-BATTLE SITUATION ON THE GALICIAN FRONT



THE OPPOSING CAVALRY UNITS
 Note the contrasting deployments. The Russian cavalry was used to fill gaps between armies whereas the Austrian cavalry scouted ahead of their armies. Thus, with no cavalry (i.e. reconnaissance) contact in evidence, both Conrad (moving first) and Ivanov pushed ahead.

- KEY**
- ★ Main fortresses.
 - ▨ Austrian armies.
 - ▧ Austrian cavalry divisions.
 - Russian armies.
 - ◀ Russian cavalry divisions.

CONRAD'S ARMY COMMANDERS

DANKL	First Army.
AUFFENBERG	Fourth Army.
BRUDERMANN	Third Army.
KÖVESS	Army 'Group' (from Serbian front).
KUMMER	Army Group north of Cracow.

IVANOV'S ARMY COMMANDERS

SALZA	Fourth Army. (replaced by Evert on 25 August).
PLEHVE	Fifth Army.
RUZSKI	Third Army.
BRUSILOV	Eighth Army.



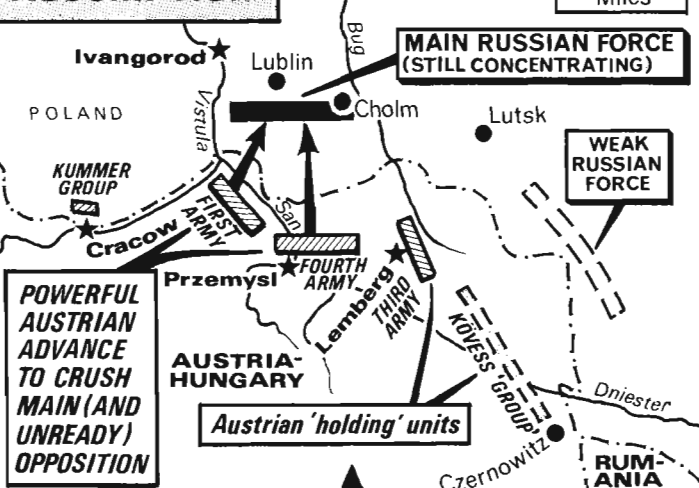
Both sides concentrated on their left wings. At this stage (mid-August) Conrad had a numerical superiority.

Aeroplane observation was poor. (Contrast this with the British R.F.C. work in the West).

* CONRAD VON HÖTZENDORF, Chief of the Austrian General Staff (Archduke Frederick was nominal C-in-C).

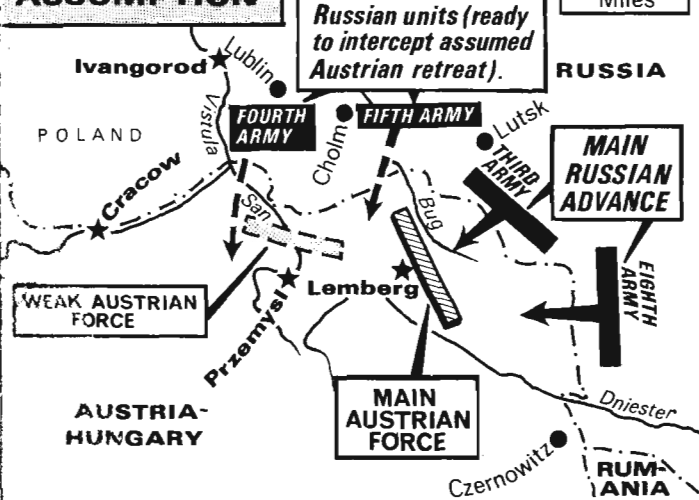
THE CONFLICTING PLANS

CONRAD'S ASSUMPTION



Both assumptions were incorrect and exactly opposite to the facts, possibly due to inadequate Intelligence and poor cavalry reconnaissance. Each side wished to fight the other's main force.

IVANOV'S ASSUMPTION



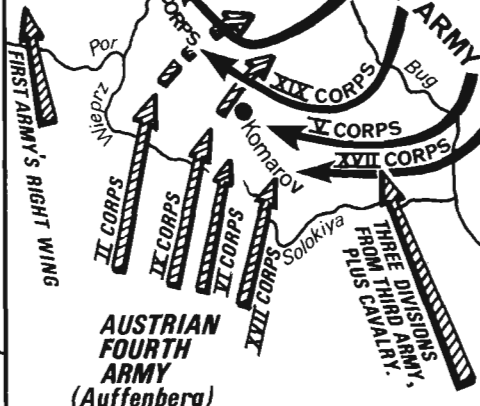
THE NORTHERN CLASH

26-30 AUGUST

1 23-25 AUGUST



2 26-30 AUGUST

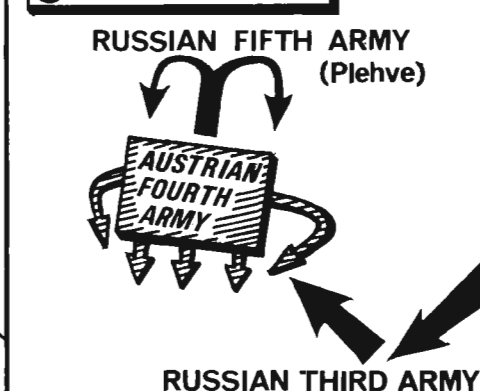


Austrian First Army clashed with Russian Fourth Army which withdrew. Russian Fifth Army on Fourth Army's left, wheeled right thus exposing its left flank to the Austrian Fourth Army. Strengthened on his right by divisions under Archduke Josef Ferdinand, Auffenberg sensed an opportunity to envelop the Russians.

3 31 AUGUST-1 SEPT.



4 2 SEPTEMBER



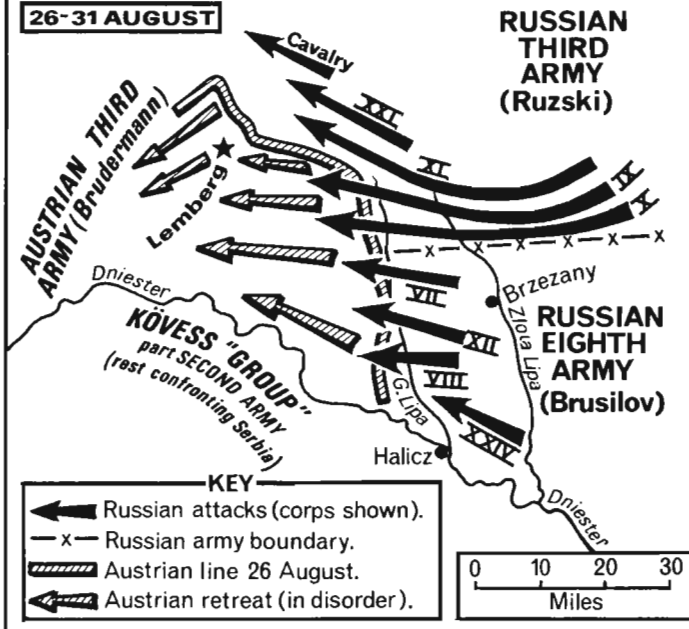
Austrian right and left flanks (believing enemy units to be moving towards their rears) fell back and the Russians escaped being encircled. Auffenberg reversed his main force and marched south to aid the now-threatened Austrian Third Army (see next page). The advancing Russian Third Army swung north-west to aid Plehve.

LEMBERG-PRZEMYSL OPERATIONS

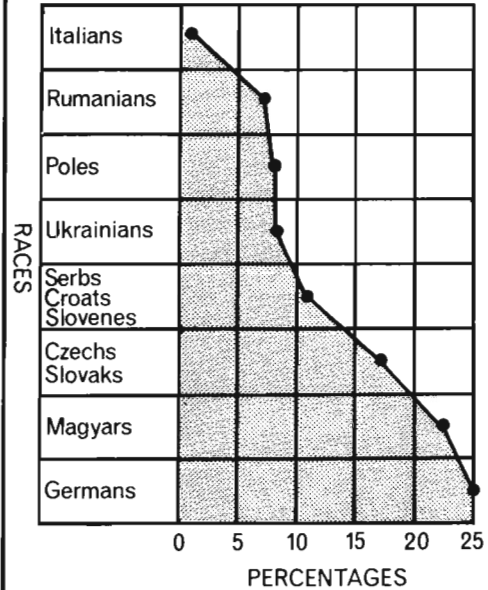
The Austro-Hungarian armies were multi-racial: the graph below gives a broad guide to their heterogenous make-up.

1 The Russian Advance on Lemberg

26-31 AUGUST



(Senior officers largely of German race)



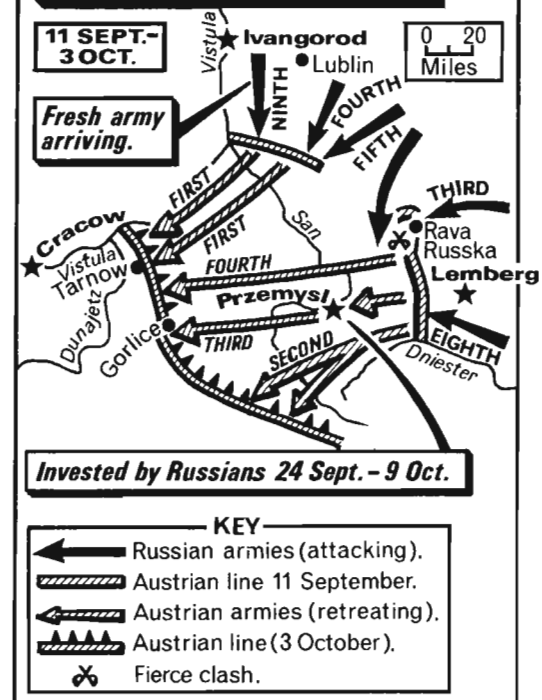
2 The Overall Scene in Outline

3-11 SEPTEMBER

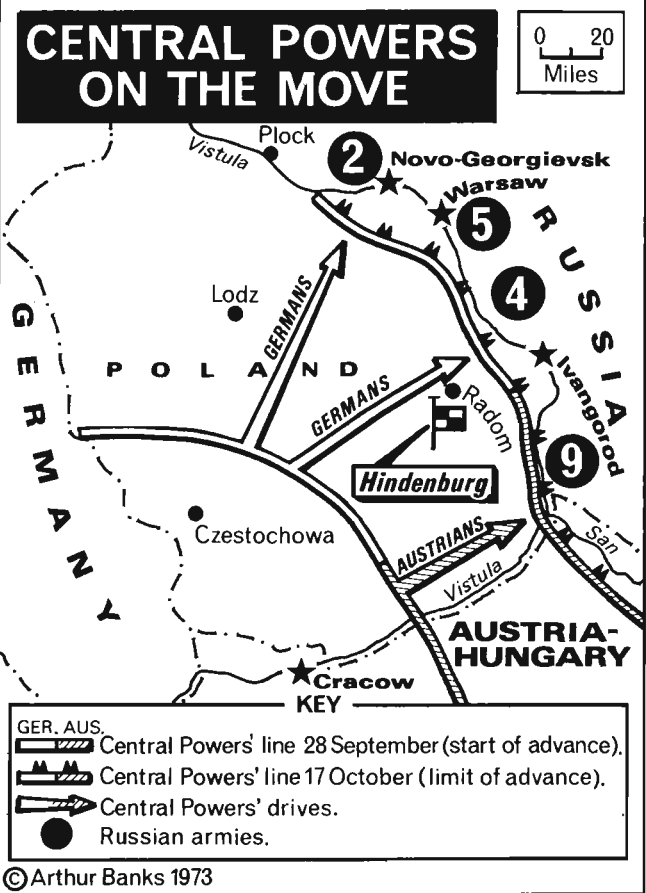
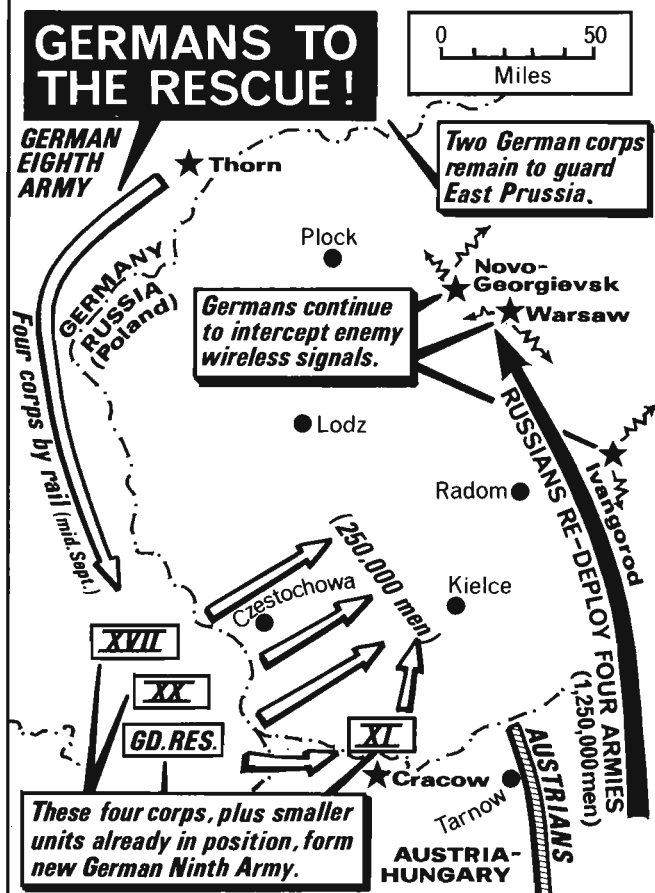
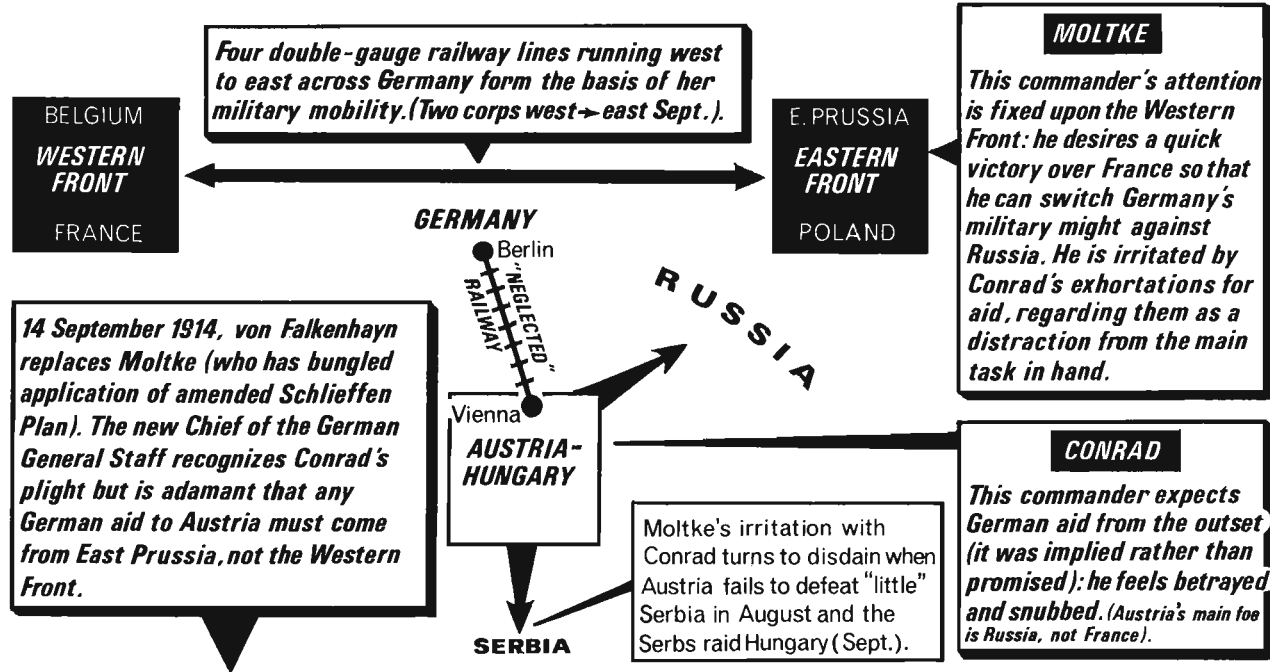


3 The Austrian Retreat

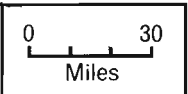
11 SEPT.-3 OCT.



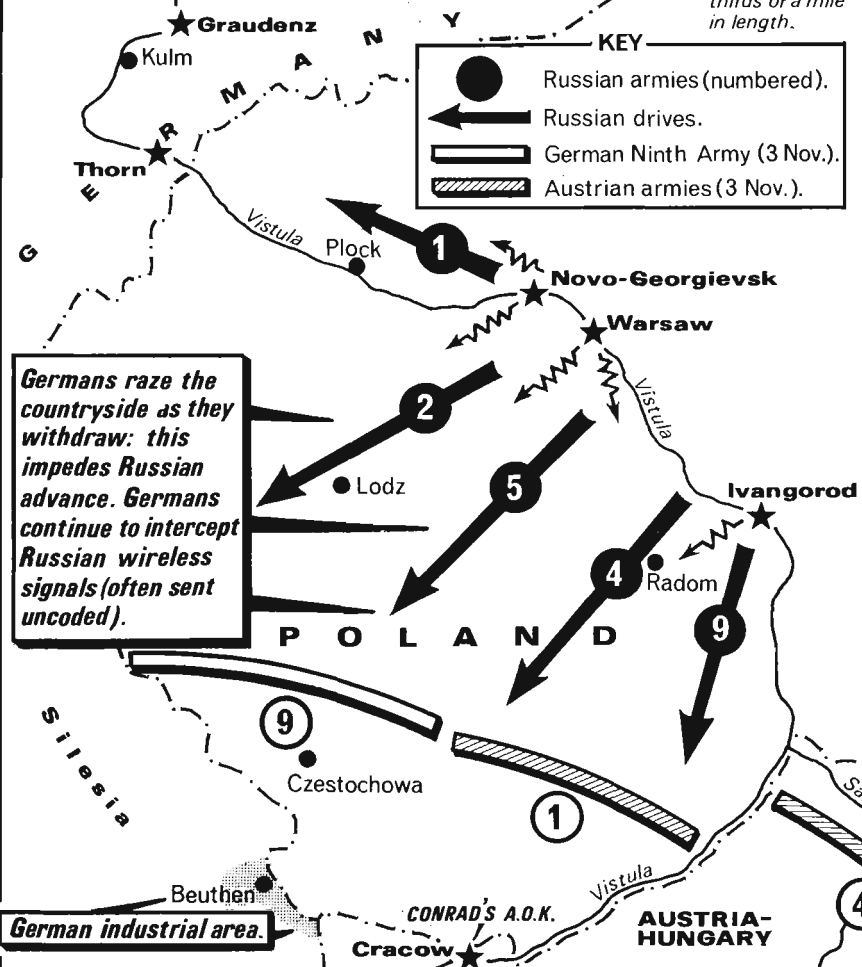
THE DISCORDANT VIEWS OF CONRAD & MOLTKE



THE RUSSIAN ADVANCE 17 OCTOBER - 10 NOVEMBER

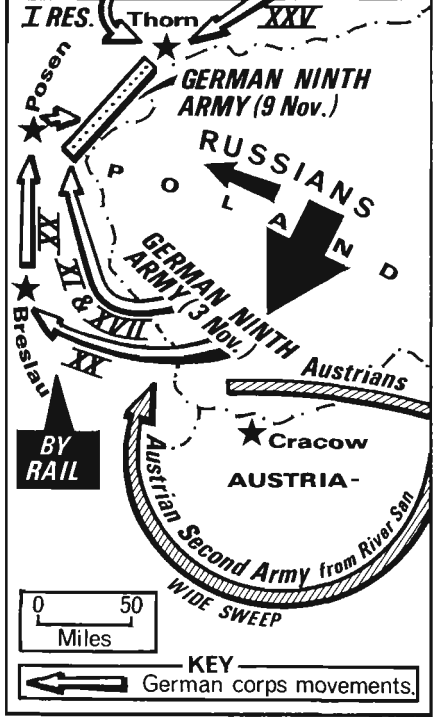


Note: Russians use *versets*. A *verset* is approx. two-thirds of a mile in length.



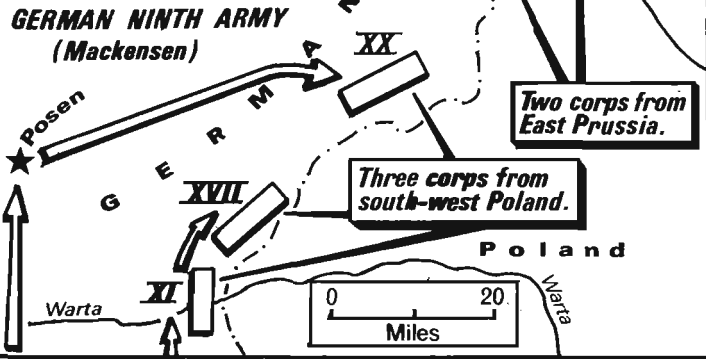
GERMAN "SWITCH" MANŒUVRE 3-9 NOVEMBER 1914

Eighth Army units from Masuria.

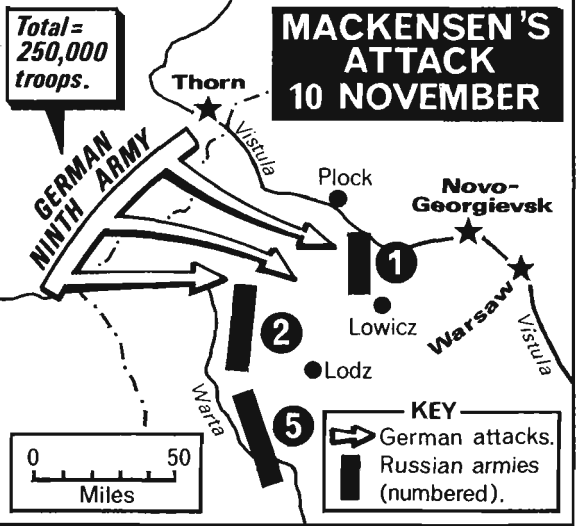


1 November 1914, Mackensen succeeds Hindenburg as Ninth Army commander; Hindenburg becomes Eastern Front C-in-C.

MACKENSEN'S FIVE CORPS "LINE-UP" 10 NOVEMBER



MACKENSEN'S ATTACK 10 NOVEMBER






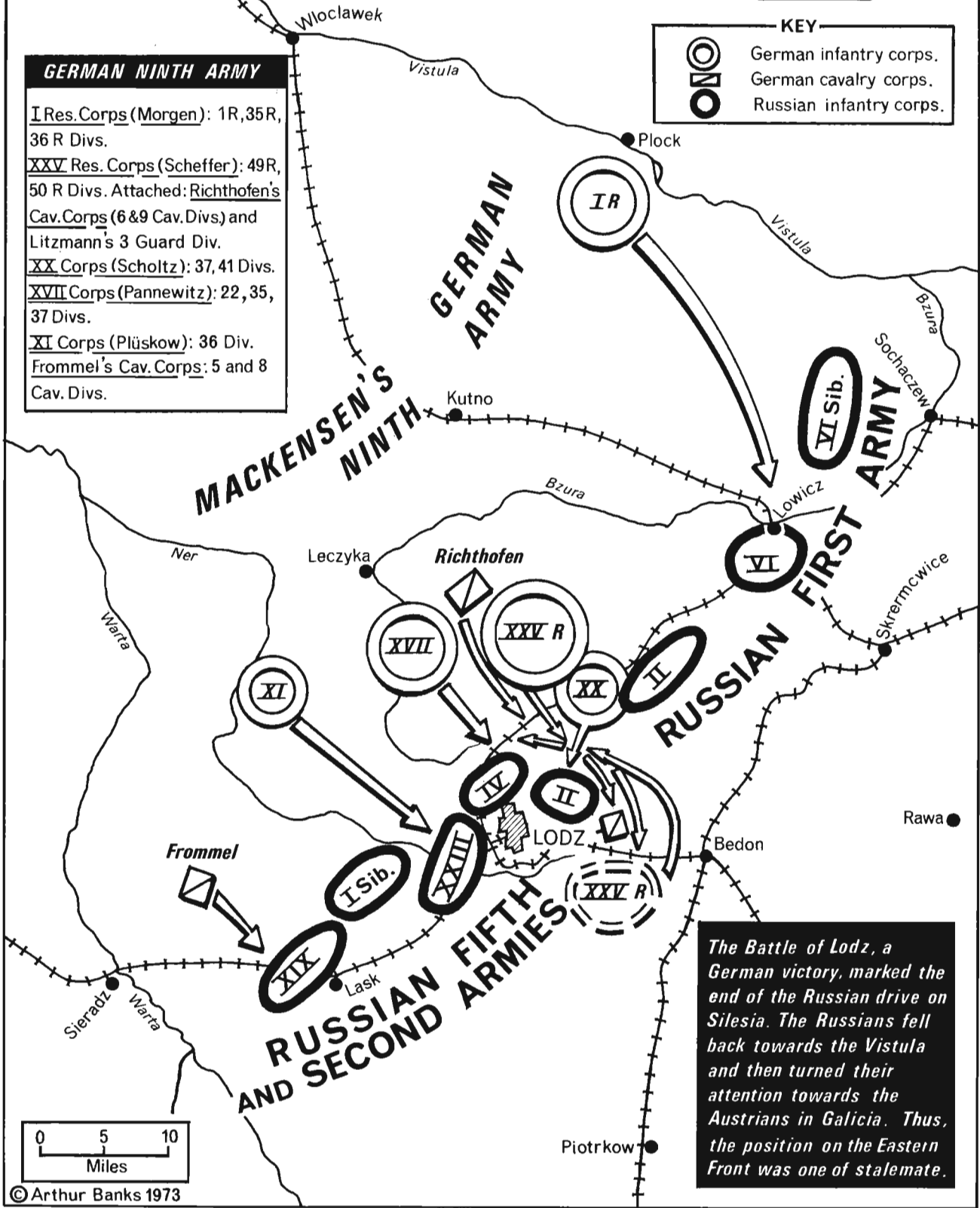
THE BATTLE OF LODZ 18-25 NOVEMBER 1914

GERMAN NINTH ARMY

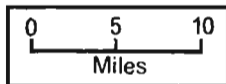
I Res. Corps (Morgen): 1R, 35R, 36 R Divs.
XXV Res. Corps (Scheffer): 49R, 50 R Divs. Attached: Richthofen's Cav. Corps (6 & 9 Cav. Divs.) and Litzmann's 3 Guard Div.
XX Corps (Scholtz): 37, 41 Divs.
XVII Corps (Pannowitz): 22, 35, 37 Divs.
XI Corps (Plüskow): 36 Div.
Frommel's Cav. Corps: 5 and 8 Cav. Divs.

KEY

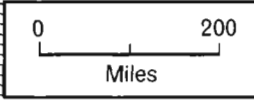
-  German infantry corps.
-  German cavalry corps.
-  Russian infantry corps.



The Battle of Lodz, a German victory, marked the end of the Russian drive on Silesia. The Russians fell back towards the Vistula and then turned their attention towards the Austrians in Galicia. Thus, the position on the Eastern Front was one of stalemate.



THE EUROPEAN MILITARY SITUATION 30 NOVEMBER 1914



KEY

- The Entente Powers and associates on 30 November 1914.
- The Central Powers on 30 November 1914. *Note: Britain declared war on Turkey on 5 November 1914.*
- Neutral states on 30 November 1914.
- The Western and Eastern fronts on 30 November 1914.



THE SITUATION AT THE END OF THE YEAR 1914

By the end of the year 1914 there was deadlock over every battlefield in Europe. From the Swiss frontier northwards fortified lines ran by way of the Vosges, the hills of the Meuse, the Argonne and the Chemin des Dames to the Aisne and up to Armentières and the Ypres Salient, reaching down to the inundated fields around Dixmude and so to the sand dunes of the North Sea. A tenth of metropolitan France, including the main French coalfields, and almost the whole of Belgium were behind the German trenches, and remained so throughout the war. The line of the Western Front did not move as much as ten miles in either direction for the following two and a half years. In the East, stalemate had come only through the onset of winter and there were no continuous systems of entrenchment to rule out a war movement. Yet there seemed little prospect of a decisive victory, and both sides had by now abandoned all hope of a short war.

Both the British and the German public were surprised by what was happening in the war at sea. After more than a decade of naval rivalry it was assumed there would be a naval battle between the great capital ships at an early date. But the Kaiser personally vetoed an engagement which might have destroyed his battle fleet until after the enemy fleet had been weakened by other means. The Germans accordingly made extensive use of their submarines (see page 246) and of minefields, although there was a sharp clash between cruisers and destroyers in Heligoland Bight at the end of August (see pages 242–245) and twice the German battle-cruisers took advantage of the long winter nights to cross the North Sea and bombard the East coast of England (see page 255). It was accepted in Britain that the days of isolation were over, a point emphasised on Christmas Eve when the first aerial bombs were dropped on English soil, at Dover.

The main clashes of sea power were, however, on the oceans. Vice-Admiral von Spee's squadron caused havoc in the Pacific and won a naval victory off Coronel before being defeated at the Falkland Islands early in December (pages 238, 240–241). The German cruiser *Emden* effectively disrupted trade in the East Indies (page 239), but by the end of the year, the British had reasserted their naval supremacy, clearing the seas of surface raiders and virtually destroying Germany's overseas commerce. Japanese, Australian and New Zealand forces mopped up Germany's island possessions in the Pacific, and British and Japanese troops occupied Kiaochow (the small German protectorate on the coast of China) in November. General von Lettow-Vorbeck retained firm control of German East Africa (pages 216–218) and the South Africans were in some difficulty in German South-West Africa but Togoland had surrendered and there was minimal resistance in the interior of the Cameroons.

The attention of the British outside Europe was from now on primarily concentrated on the Ottoman Empire. Turkey, long under the influence of Germany militarily, entered the War early in November, hoping to gain territory from Russia in the Caucasus and to recover, with German backing, her influence in the Balkans. The handing over by Germany to Turkey of the battle-cruiser *Goeben* and the cruiser *Breslau* (page 237) finally decided Turkey's course of action. Militarily Turkey was a distraction both to Britain and Russia, but her entry into the war suggested a possible alternative strategy—of toppling Germany, not on the main battlefronts, but by destroying her supports and entering Central Europe by the back door. It seemed the only way to make the war once more fluid. From such ideas developed the Dardanelles and Gallipoli campaigns, and belatedly the expedition to Salonika.

THE GALLIPOLI CAMPAIGN

The attempt to force the Dardanelles and gain control of Constantinople and the Straits was the first strategically imaginative project of the war. Its origins lie in a proposal made by Churchill to the War Council of 25 November 1914. He argued that 'the ideal method of defending Egypt' and the Suez Canal from an invading Turkish army 'was by an attack on the Gallipoli Peninsula' which, if successful, would enable the Allies to 'dictate terms at Constantinople'. Subsequently the possibilities of using British naval power to open up a new front against the enemy appealed to other members of the War Council, including Lloyd George, Admiral Sir John Fisher and the Secretary of the Council, Colonel Hankey. There was much debate over the best place for a landing, Lloyd George urging the occupation of Salonika and the transportation by rail of an army to aid Serbia against Austria-Hungary, and this plan was favoured by two leading French Generals, Gallieni and Franchet d'Espèrey. The Dardanelles project had, however, three major advantages: it appeared to be primarily a naval operation; it would rally Turkey's traditional enemies among the Balkan nations to the Allied side; and it would open up a short warm-water route for supplies to Russia. It was this third consideration which was decisive: for at the end of December gloomy reports were received from Petrograd, indicating an acute shortage of munitions and appealing for British help in relieving Turkish pressure on the Russian armies in the Caucasus. The War Council agreed on a naval expedition 'with Constantinople as its objective' on 15 January 1915.

The Gallipoli enterprise falls into four distinctive phases (which may be studied in pages 110–129, supplemented for naval and submarine operations by pages 252–254). Naval bombardments on 19 and 26 February were followed by nearly three weeks of abortive mine-sweeping before the principal attempt by capital ships

to force the passage of the Dardanelles on 18 March. Preparations were then made for using British, Australian and New Zealand troops for a series of landings on the Gallipoli peninsula while a French army corps temporarily occupied Kum Kale on the mainland and made a feint assault on Besika Bay. These landings were carried out on 25 April in an atmosphere of almost crusading ardour, but without proper landing craft and with no real training in amphibious operations. The Anzacs established themselves in a cove of steep cliffs and backed by a gorge covered in scrub, where it was difficult to penetrate more than half a mile inland. The British made more headway at Cape Helles, but suffered appalling casualties. Further landings in early August came near to success, but by the end of the summer the troops on the peninsula were as effectively pinned down in a network of trenches as the armies in France and Flanders; four thousand men died in seeking to secure four hundred yards on a mile front. Kitchener went out to investigate in November and accepted the inevitability of evacuation. The final phase, the withdrawal from Anzac and Suvla in December and from Helles a fortnight later, was the most successful aspect of the campaign.

The expedition failed because of confused leadership, insufficient co-ordination, inadequate planning, and sheer lack of troops and firepower; perhaps, too, it failed because the landings were made at the tip of the peninsula rather than at its neck, where there would have been greater freedom of manœuvre. Failure at the Dardanelles cost Churchill his predominant position in the War Council; it deprived the Allies of a grand Balkan alliance against Berlin; above all, it completed the isolation of Russia. Gallipoli, with its high hopes twice nearly realised, was a tragic disappointment which discredited imaginative strategic thought in London for many years ahead.

TURKISH DEFENCES AT THE DARDANELLES 1915

This map depicts the Turkish defences guarding the Dardanelles prior to the Allied naval attacks during February and March 1915. Following a Russian request to the Western Allies at the end of 1914 for a "second front" to be created against Turkey to ease pressure on the Russian forces in the Caucasus, British naval authorities devised a three-point plan to force the Dardanelles passage. First, a naval bombardment of the entrance forts; secondly, a minefield-clearing operation; thirdly, a naval force to sail right through the Dardanelles to the Sea of Marmara, and thence on to the Turkish capital of Constantinople.

Vice-Admiral Carden, commander of the British squadron in the Aegean, considered that he would require the following units to successfully force the Dardanelles passage: 12 battleships, 3 battlecruisers, 3 light cruisers, 16 destroyers, 6 submarines, 4 seaplanes, 12 minesweepers, and a plentiful supply of ammunition.

- KEY TO MINEFIELDS**
- 1 26 February 1915.
 - 3 5 November 1914 - 19 February 1915.
 - 4 5 November 1914 - 15 February 1915.
 - 7 5 November 1914 - 15 February 1915.
 - 8 5 November 1914 - 19 February 1915.
 - 11 8 March 1915 (laid by 'Nousret').

Note: The correct name for Achi Baba was Alchi Tepe; this was due to a spelling error on British maps, but Achi Baba became the accepted name.

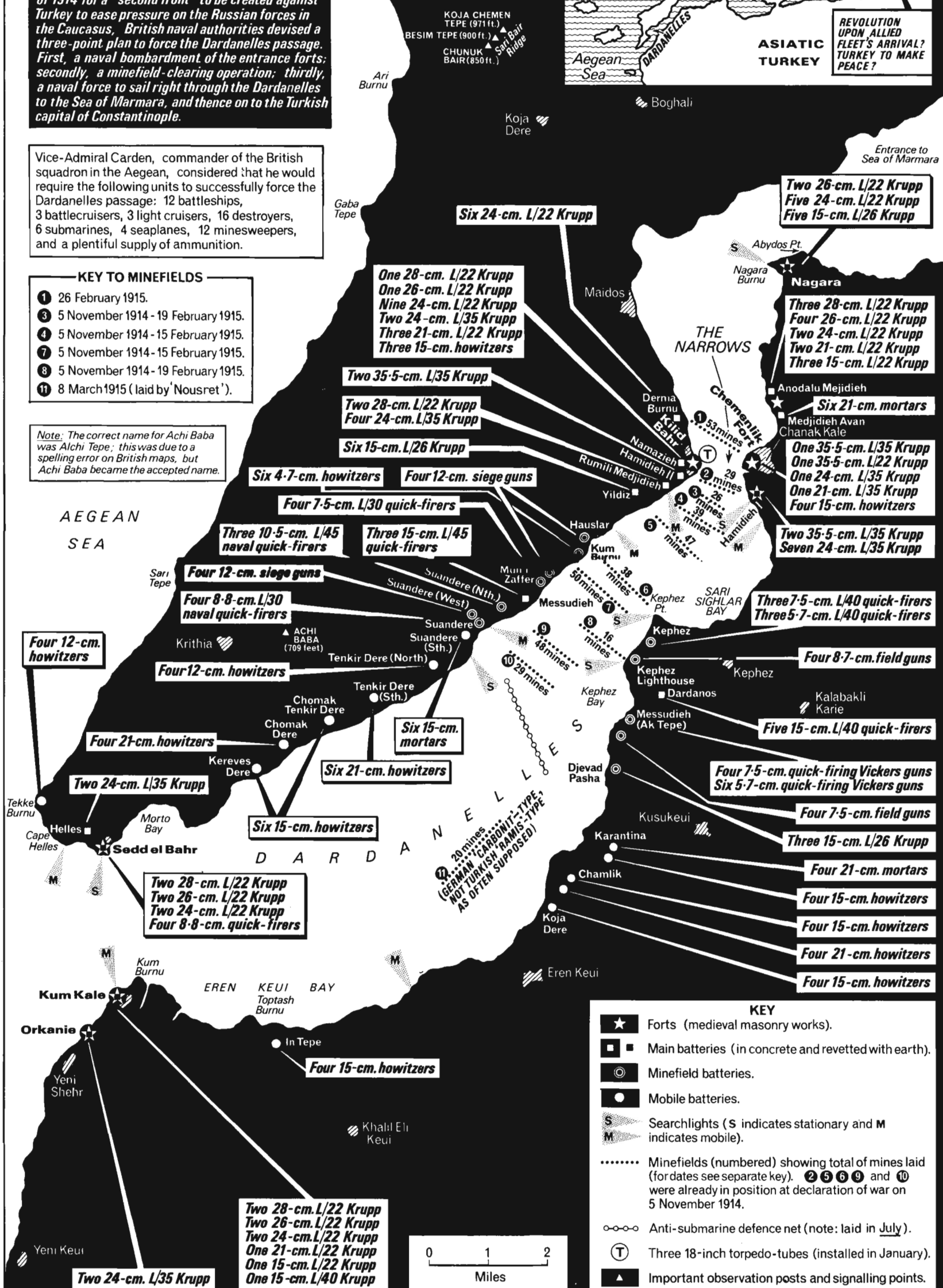
Note: spellings are those used on British maps in 1915. For example, Chanak Kale is used instead of the Turkish name Çanakkale. The modern romanized spelling of Turkish was not introduced until 1925; prior to that, Turkish map names were shown in Arabic characters.



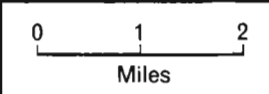
REVOLUTION UPON ALLIED FLEET'S ARRIVAL? TURKEY TO MAKE PEACE?

110

111



- KEY**
- ★ Forts (medieval masonry works).
 - Main batteries (in concrete and revetted with earth).
 - ⊙ Minefield batteries.
 - Mobile batteries.
 - S Searchlights (S indicates stationary and M indicates mobile).
 - Minefields (numbered) showing total of mines laid (for dates see separate key). 2 5 6 9 and 10 were already in position at declaration of war on 5 November 1914.
 - Anti-submarine defence net (note: laid in July).
 - Ⓣ Three 18-inch torpedo-tubes (installed in January).
 - ▲ Important observation posts and signalling points.



FIRST NAVAL BOMBARDMENT OF THE DARDANELLES ENTRANCE WORKS

19 FEBRUARY 1915

GUN RANGES OF TURKISH ENTRANCE WORKS





Allied estimated maximum ranges of the main guns:

L/35.....	12,000 yards
L/22.....	10,000 yards

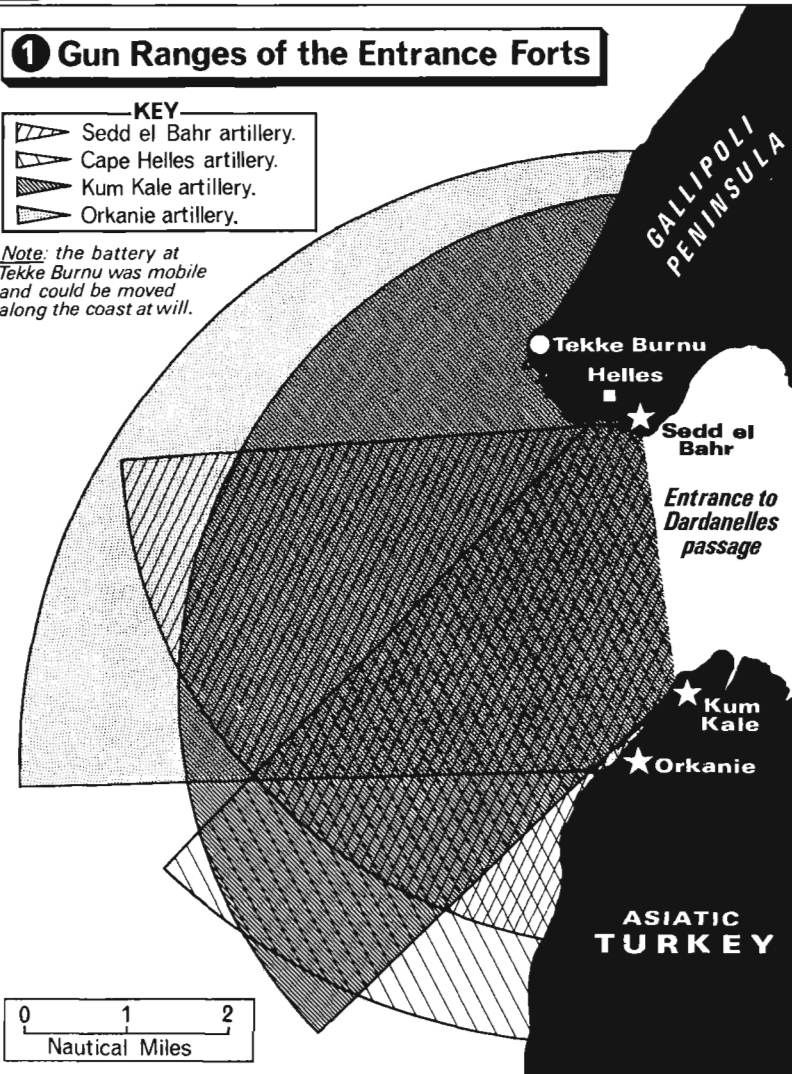
(effective ranges rather less)

*Note: on 3 November 1914, four Allied warships had bombarded Sedd el Bahr and Kum Kale using 12-inch guns.

1 Gun Ranges of the Entrance Forts

- KEY**
-  Sedd el Bahr artillery.
 -  Cape Helles artillery.
 -  Kum Kale artillery.
 -  Orkanie artillery.

Note: the battery at Tekke Burnu was mobile and could be moved along the coast at will.



NOTES ON GUN CALIBRES

L/35	24-cm. Krupp	9-4 - inch
L/22	28-cm. Krupp	11 - inch
L/22	26-cm. Krupp	10-2 - inch
L/22	24-cm. Krupp	9-4 - inch
L/22	21-cm. Krupp	8-2 - inch
L/22	15-cm. Krupp	5-9 - inch
L/40	15-cm.	5-9 - inch
	12-cm. howitzer	4-7 - inch
	8-8-cm. quick-firer	3-4 - inch

MAIN ALLIED NAVAL ORGANISATION

- FIRST DIVISION (British)**
'Inflexible' (flagship); 'Agamemnon', and 'Queen Elizabeth' (both en route from Malta)
- SECOND DIVISION (British)**
'Vengeance' (flagship); 'Albion', 'Cornwallis', 'Irresistible', 'Triumph'.
- THIRD DIVISION (French)**
'Suffren' (flagship); 'Bouvet', 'Charlemagne', 'Gaulois'.

THE ALLIED PLAN

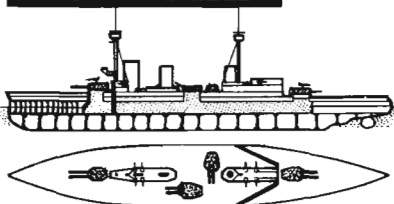
1. Long-range bombardment. (This stage commenced at 0951 hours).
2. Medium-range bombardment. (This stage commenced at 1400 hours).
3. Short-range bombardment. (This stage never materialised).

Note: Main armament of warships to be employed for Stage 1, secondary armament for Stage 2, and main armament again for Stage 3 (to completely obliterate the forts and defence remnants, if any).

TARGETS OF SHIPS (STAGE ONE)

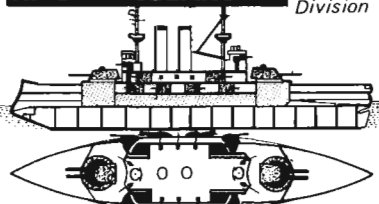
- | | | |
|--------------|---|--------------|
| 'Inflexible' | → | Sedd el Bahr |
| 'Triumph' | → | Helles |
| 'Cornwallis' | → | Orkanie |
| 'Suffren' | → | Kum Kale |
- ('Bouvet' spotting; 'Gaulois' patrolling off Besika Bay)

British battlecruiser *flagship*
HMS "INFLEXIBLE" *First Division*



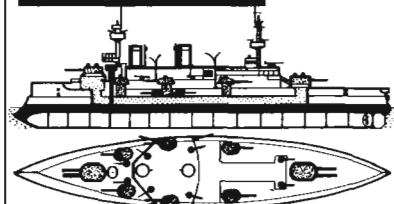
Eight 12-inch guns. Three 18-inch torp. tubes. Sixteen 4-inch guns. Max. speed 29 knots.

British battleship *flagship*
HMS "VENGEANCE" *Second Division*



Four 12-inch guns. Four 18-inch torp. tubes. Twelve 6-inch guns. Max. speed 18 knots.

French battleship *flagship*
"SUFFREN" *Third Division*



Four 12-inch guns. Four 18-inch torp. tubes. Ten 6-4-inch guns. Max. speed 16 knots.

② Combined Tracks of the Bombarding Warships

KEY

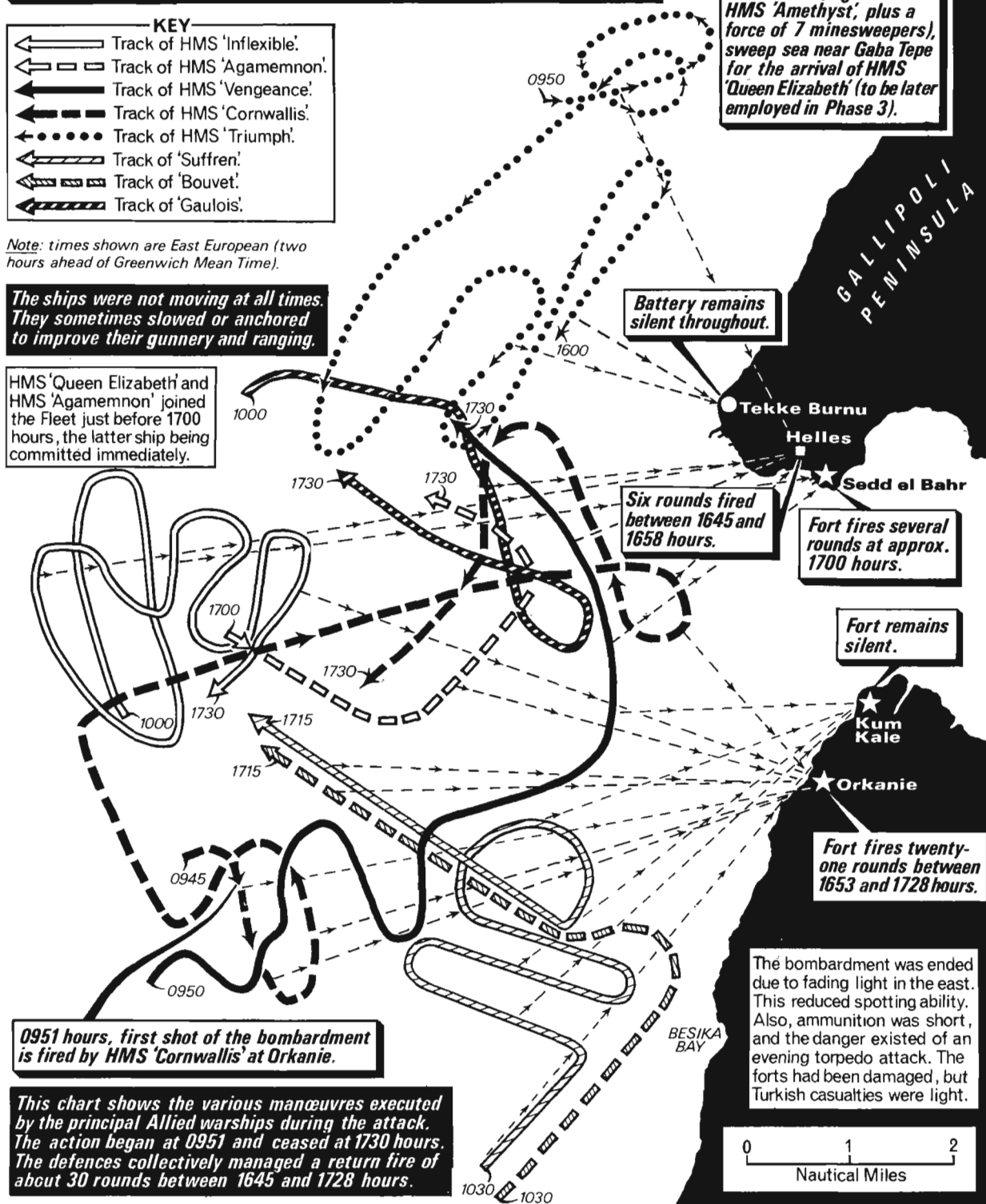
- ← Track of HMS 'Inflexible'.
- ← Track of HMS 'Agamemnon'.
- ← Track of HMS 'Vengeance'.
- ← Track of HMS 'Cornwallis'.
- ← Track of HMS 'Triumph'.
- ← Track of 'Suffren'.
- ← Track of 'Bouvet'.
- ← Track of 'Gaulois'.

Note: times shown are East European (two hours ahead of Greenwich Mean Time).

The ships were not moving at all times. They sometimes slowed or anchored to improve their gunnery and ranging.

HMS 'Queen Elizabeth' and HMS 'Agamemnon' joined the Fleet just before 1700 hours, the latter ship being committed immediately.

British units (battleship HMS 'Albion', light cruiser HMS 'Amethyst', plus a force of 7 minesweepers), sweep sea near Gaba Tepe for the arrival of HMS 'Queen Elizabeth' (to be later employed in Phase 3).



Battery remains silent throughout.

Six rounds fired between 1645 and 1658 hours.

Fort fires several rounds at approx. 1700 hours.

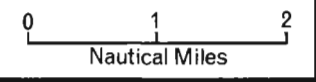
Fort remains silent.

Fort fires twenty-one rounds between 1653 and 1728 hours.

0951 hours, first shot of the bombardment is fired by HMS 'Cornwallis' at Orkanie.

This chart shows the various manoeuvres executed by the principal Allied warships during the attack. The action began at 0951 and ceased at 1730 hours. The defences collectively managed a return fire of about 30 rounds between 1645 and 1728 hours.

The bombardment was ended due to fading light in the east. This reduced spotting ability. Also, ammunition was short, and the danger existed of an evening torpedo attack. The forts had been damaged, but Turkish casualties were light.

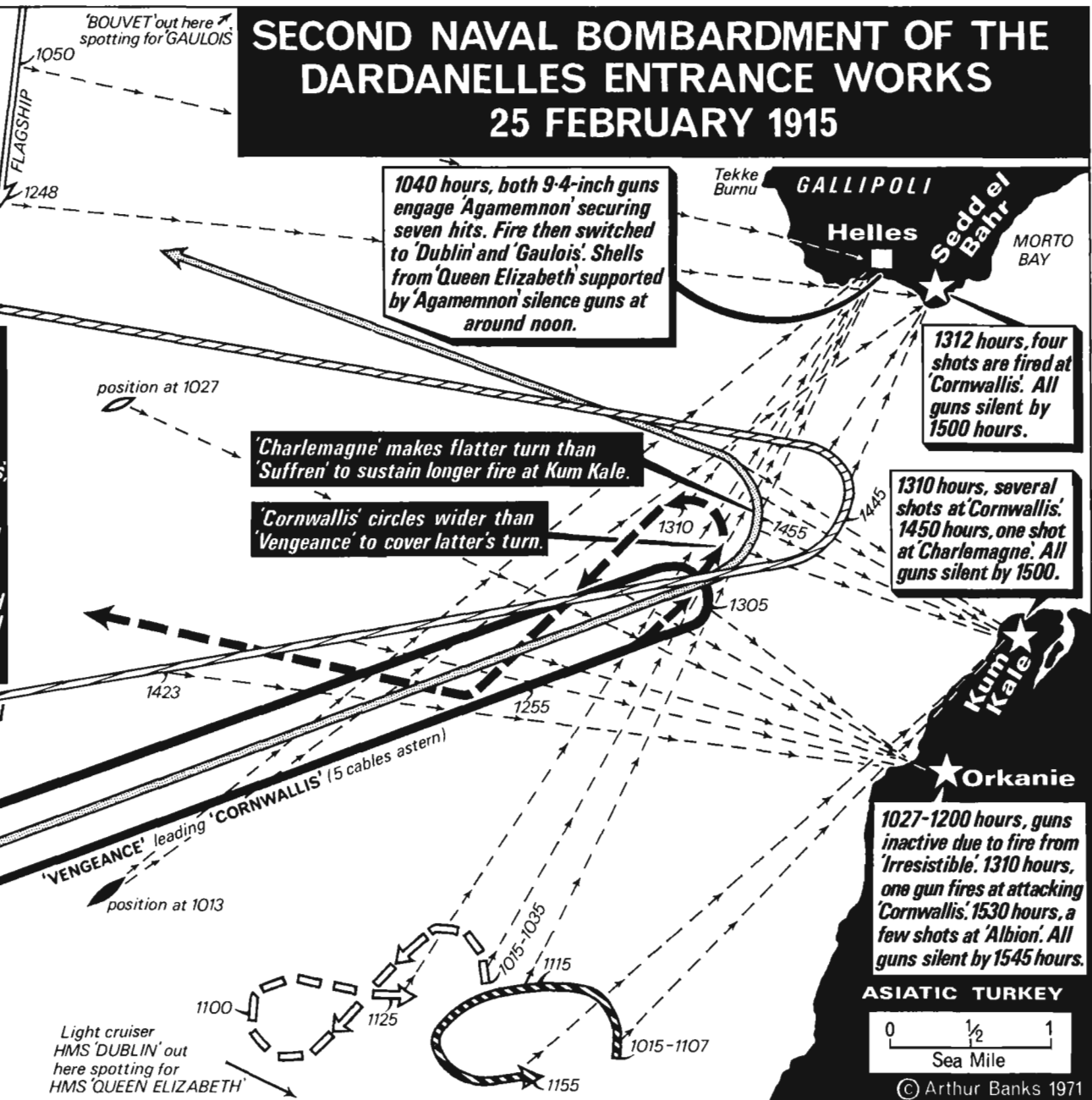


SECOND NAVAL BOMBARDMENT OF THE DARDANELLES ENTRANCE WORKS 25 FEBRUARY 1915

KEY

- ← Track of HMS 'Inflexible'.
- ← Track of HMS 'Vengeance'.
- ← Track of HMS 'Cornwallis'.
- ← Track of HMS 'Agamemnon'.
- ← Track of 'Suffren'.
- ← Track of 'Charlemagne'.
- ← Track of 'Gaulois'.
- HMS 'Queen Elizabeth'.
- HMS 'Irresistible'.

The object was to complete Phase One operations (delayed since 19 February by bad weather). Two runs were proposed: the first to be by 'Vengeance' and 'Cornwallis', and the second by 'Suffren' and 'Charlemagne'. 'Queen Elizabeth', 'Agamemnon', 'Gaulois', and 'Irresistible' would bombard the four defence works at long-range. The first run commenced at 1220 and the second at 1405. By 1600 hours, Turkish resistance was at an end, as a close-range attack by 'Triumph' and 'Albion' completed the destruction. All seemed set for the opening of Phase Two (the minesweeping operation).



1040 hours, both 9-4-inch guns engage 'Agamemnon' securing seven hits. Fire then switched to 'Dublin' and 'Gaulois'. Shells from 'Queen Elizabeth' supported by 'Agamemnon' silence guns at around noon.

1312 hours, four shots are fired at 'Cornwallis'. All guns silent by 1500 hours.

1310 hours, several shots at 'Cornwallis'. 1450 hours, one shot at 'Charlemagne'. All guns silent by 1500.

1027-1200 hours, guns inactive due to fire from 'Irresistible'. 1310 hours, one gun fires at attacking 'Cornwallis'. 1530 hours, a few shots at 'Albion'. All guns silent by 1545 hours.

'Charlemagne' makes flatter turn than 'Suffren' to sustain longer fire at Kum Kale.

'Cornwallis' circles wider than 'Vengeance' to cover latter's turn.

Light cruiser HMS 'DUBLIN' out here spotting for HMS 'QUEEN ELIZABETH'

- Notes:**
1. Times shown are East European (two hours in advance of Greenwich Mean Time).
 2. A cable equals 200 yards.

OPERATIONS INSIDE THE DARDANELLES CHANNEL 26 FEBRUARY – 16 MARCH 1915

These operations (Phase Two) were intended to clear the mines before the Allied Fleet's entry into the channel, but they were unsuccessful. The Turks varied positions of the mobile battery units and employed "dummy" batteries to dissipate Allied fire. Bad weather hampered seaplane spotting operations. The minesweepers (small trawlers) had civilian crews who were irresolute in view of mine hazards and shellfire.

6 4 March, Marines meet unexpected resistance and are evacuated. 'Majestic' shells castle and village.

2 26 February, parties from Plymouth battalion of R.N. Div. destroy 20 guns. 1 killed, 2 wounded.

NOTE: SEAMEN FROM 'IRRESISTIBLE' LAND GUN COTTON CHARGES.

3 27 February-3 March, Marines land here and destroy 30 guns.

4 26 February, 'Albion', 'Triumph', 'Majestic', fire at Intermediate works from inside entrance of Dardanelles channel.

5 4 March, Marines undergo sniping. 17 killed, 24 wounded, and 3 missing.

7 5 March, using summit as a directional marker, 'Queen Elizabeth' bombards the Inner Defences across the Gallipoli peninsula. Turks rush battery across peninsula overnight to force battleship out of range when resuming attack 6 March.

8 7-8 March, 'Queen Elizabeth' inside straits bombarding defences.

4 2-3 March, 'Canopus', 'Swiftsure', 'Cornwallis', bombard Intermediate Defences (Asiatic side).

9 Night 8 March, Turks lay a new minefield unobserved by Allied forces. Three mines are swept by trawlers on 16 March but these are thought to be isolated floating mines. (Allied C-in-C is not told).

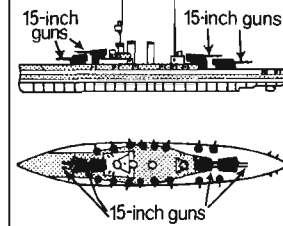
Owing to ill-health, Vice-Admiral Carden was replaced as Commander-in-Chief by Rear-Admiral de Robeck on 16 March 1915.

The British entertained greatest hopes that the fire-power of the eight 15-inch guns of HMS 'Queen Elizabeth' would prove as effective against the Turkish defences as the German heavy siege artillery had been at Liège, Namur, Antwerp, and Maubeuge. In the particular circumstances, naval armour-piercing shells proved inferior to army anti-concrete projectiles.

MINESWEEPING EFFORTS

Night 1 March, minesweepers fail to reach Kephez minefield; 40-minute action with Turkish defences, but no ships lost.
2-9 March, five attempts fail.
10 March, minefield reached but no sweeping results. 1 ship lost.
11 March, no progress.
Night 13 March, determined effort made to reach minefield with six trawlers supported by light cruiser HMS 'Amethyst'; 4 trawlers badly damaged and casualties incurred of 27 killed and 43 wounded (majority in 'Amethyst'). Carden decides to reverse original plan by sending in warships to destroy defences before further sweeping begins.

HMS "QUEEN ELIZABETH"



Eight 15-inch guns.
 Sixteen 6-inch guns.
 Two 12-pdr. AA guns.
 Four 3-pdrs. (saluting).
 Four 21-inch torpedo tubes.
 Completed: October 1914.
 Length: 650 feet.
 Beam: 94 feet.
 Displacement: 27,500 tons.

THE ALLIED FAILURE TO FORCE THE DARDANELLES PASSAGE

18 MARCH 1915

1030 hours, preceded by destroyers, the Allied fleet of 17 battleships and 1 battlecruiser entered the straits and advanced to allotted positions. Line 'A' opened fire at 1130 and Line 'B' was advanced at 1206. By 1345, the defences were inactive; consequently the minesweepers were ordered up supported by Second Division (to relieve Line 'B'). Moving out, 'Bouvet' was mined at 1355, then capsized and sank in two minutes. 1610 'Irresistible' was mined; 1614 'Inflexible' suffered a similar fate. At 1715 'Gaulois' was badly holed and had to beached. 1805 'Ocean' was mined and abandoned. Thus one-third of the capital ships were either sunk or incapacitated and the naval attempt to force the Dardanelles was called off. Prematurely? By 16 April, a British destroyer-minesweeping "fast" force was in existence ("Beagle" class ships). This fact is not generally appreciated.

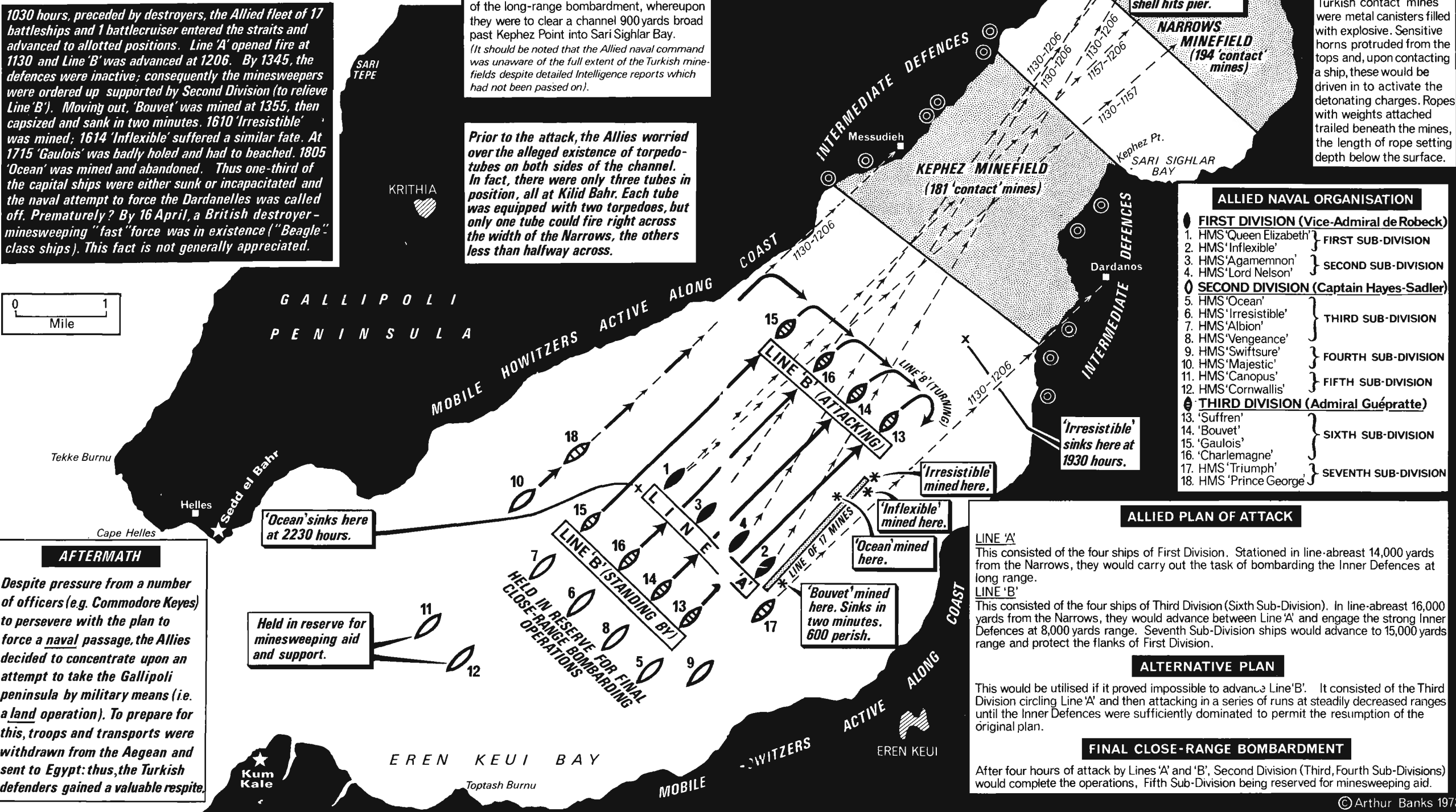
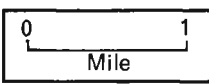
The attack of 18 March was intended to break the stalemate situation of Phase Two in which the minesweeper crews were reluctant to pursue their operations until the capital ships had silenced the Turkish main batteries. The Allied plan allowed for the trawlers to begin sweeping operations two hours after start of the long-range bombardment, whereupon they were to clear a channel 900 yards broad past Kephez Point into Sari Sighlar Bay. (It should be noted that the Allied naval command was unaware of the full extent of the Turkish minefields despite detailed Intelligence reports which had not been passed on).

Shellfire observation was to remain with seaplanes from HMS 'Ark Royal'; to eliminate danger from stray floating mines, each capital ship was attended by an armed picket boat. Royal Naval Division was to make a feint landing attack on western side of Gallipoli peninsula.

Noon, double explosion rocks fort as shell hits magazine.

Turkish 'contact' mines were metal canisters filled with explosive. Sensitive horns protruded from the tops and, upon contacting a ship, these would be driven in to activate the detonating charges. Ropes with weights attached trailed beneath the mines, the length of rope setting depth below the surface.

Prior to the attack, the Allies worried over the alleged existence of torpedo-tubes on both sides of the channel. In fact, there were only three tubes in position, all at Kilid Bahr. Each tube was equipped with two torpedoes, but only one tube could fire right across the width of the Narrows, the others less than halfway across.



ALLIED NAVAL ORGANISATION	
FIRST DIVISION (Vice-Admiral de Robeck)	
1. HMS 'Queen Elizabeth'	FIRST SUB-DIVISION
2. HMS 'Inflexible'	
3. HMS 'Agamemnon'	SECOND SUB-DIVISION
4. HMS 'Lord Nelson'	
SECOND DIVISION (Captain Hayes-Sadler)	
5. HMS 'Ocean'	THIRD SUB-DIVISION
6. HMS 'Irresistible'	
7. HMS 'Albion'	
8. HMS 'Vengeance'	
9. HMS 'Swiftsure'	FOURTH SUB-DIVISION
10. HMS 'Majestic'	
11. HMS 'Canopus'	FIFTH SUB-DIVISION
12. HMS 'Cornwallis'	
THIRD DIVISION (Admiral Guépratte)	
13. 'Suffren'	SIXTH SUB-DIVISION
14. 'Bouvet'	
15. 'Gaulois'	
16. 'Charlemagne'	
17. HMS 'Triumph'	SEVENTH SUB-DIVISION
18. HMS 'Prince George'	

AFTERMATH

Despite pressure from a number of officers (e.g. Commodore Keyes) to persevere with the plan to force a naval passage, the Allies decided to concentrate upon an attempt to take the Gallipoli peninsula by military means (i.e. a land operation). To prepare for this, troops and transports were withdrawn from the Aegean and sent to Egypt: thus, the Turkish defenders gained a valuable respite.

Held in reserve for minesweeping aid and support.

'Bouvet' mined here. Sinks in two minutes. 600 perish.

'Ocean' mined here.

'Inflexible' mined here.

'Irresistible' sinks here at 1930 hours.

ALLIED PLAN OF ATTACK

LINE 'A'
This consisted of the four ships of First Division. Stationed in line-abreast 14,000 yards from the Narrows, they would carry out the task of bombarding the Inner Defences at long range.

LINE 'B'
This consisted of the four ships of Third Division (Sixth Sub-Division). In line-abreast 16,000 yards from the Narrows, they would advance between Line 'A' and engage the strong Inner Defences at 8,000 yards range. Seventh Sub-Division ships would advance to 15,000 yards range and protect the flanks of First Division.

ALTERNATIVE PLAN

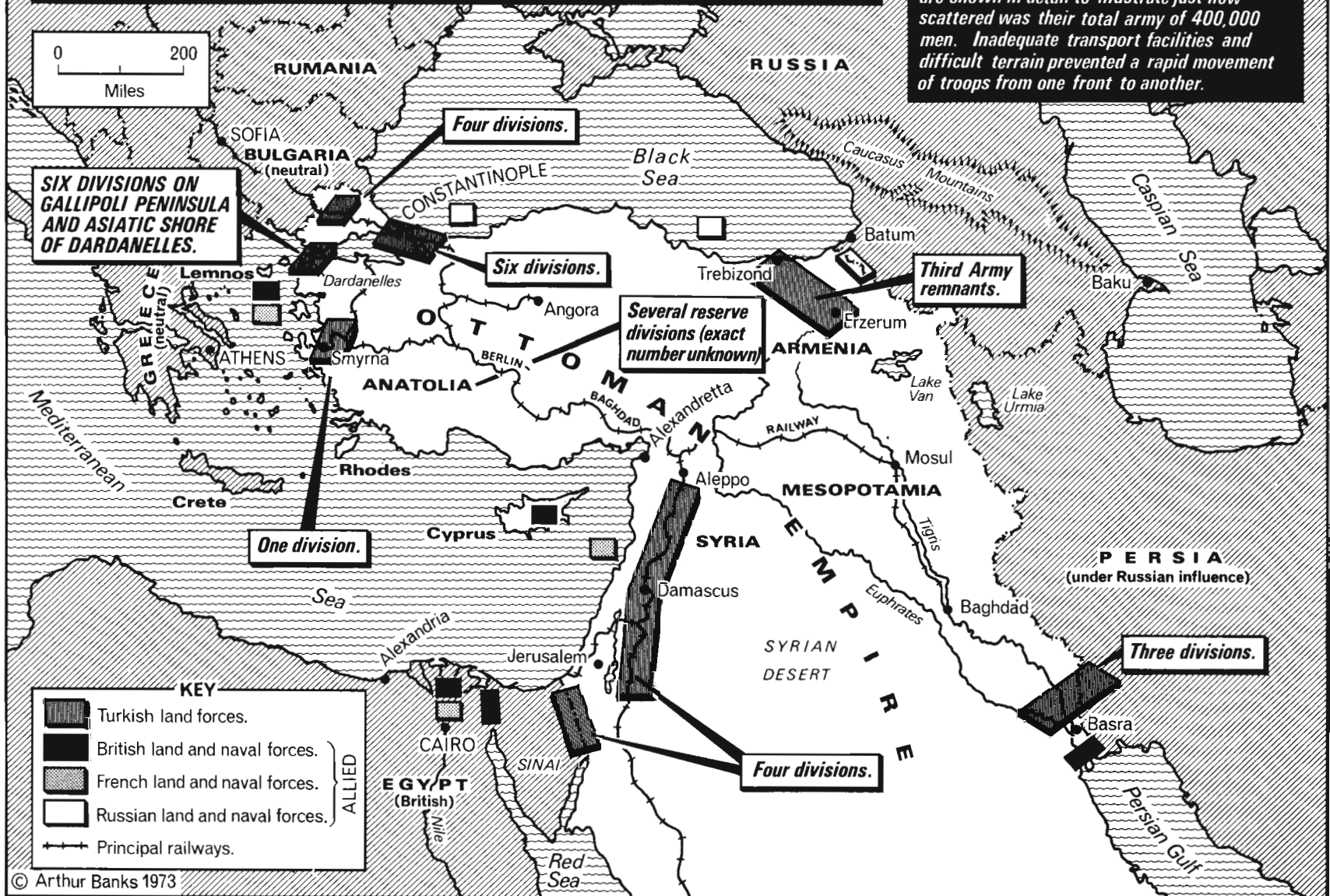
This would be utilised if it proved impossible to advance Line 'B'. It consisted of the Third Division circling Line 'A' and then attacking in a series of runs at steadily decreased ranges until the Inner Defences were sufficiently dominated to permit the resumption of the original plan.

FINAL CLOSE-RANGE BOMBARDMENT

After four hours of attack by Lines 'A' and 'B', Second Division (Third, Fourth Sub-Divisions) would complete the operations, Fifth Sub-Division being reserved for minesweeping aid.

RIVAL DISPOSITIONS IN THE MIDDLE EAST APRIL 1915

This map shows the rival dispositions in the Middle East prior to the Allied attack on Gallipoli (25 April 1915). The Turkish strengths are shown in detail to illustrate just how scattered were their total army of 400,000 men. Inadequate transport facilities and difficult terrain prevented a rapid movement of troops from one front to another.



TURKISH DISPOSITIONS AT THE DARDANELLES 24 APRIL 1915

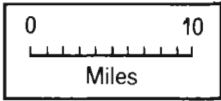
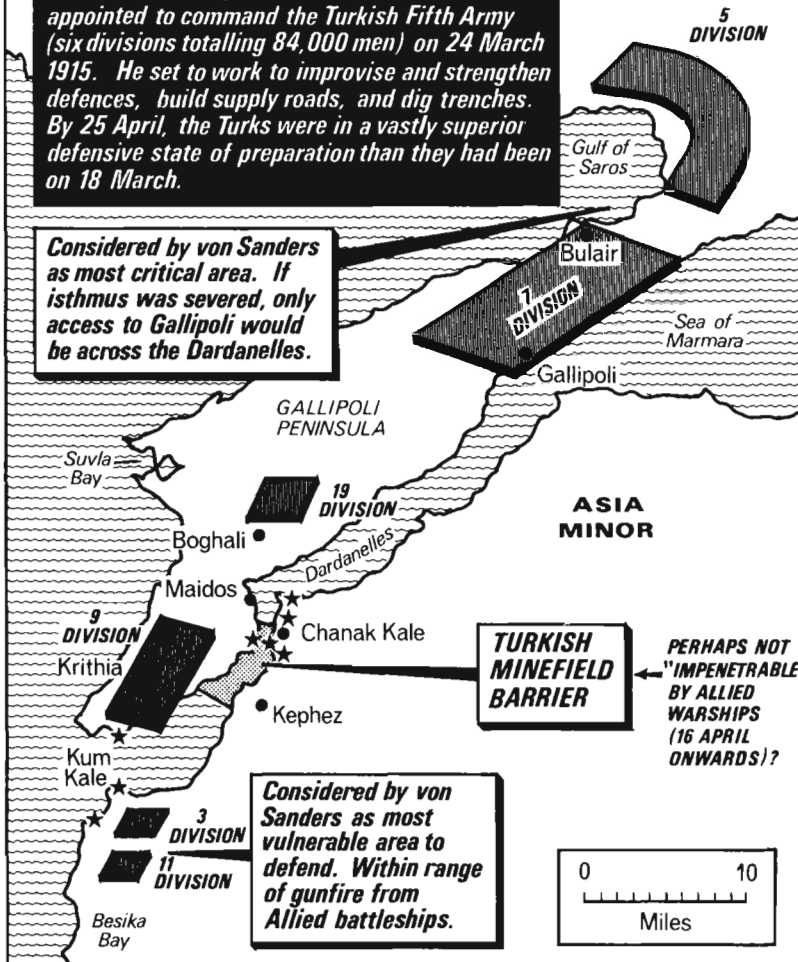
A German officer, *Liman von Sanders*, was appointed to command the Turkish Fifth Army (six divisions totalling 84,000 men) on 24 March 1915. He set to work to improvise and strengthen defences, build supply roads, and dig trenches. By 25 April, the Turks were in a vastly superior defensive state of preparation than they had been on 18 March.

Considered by von Sanders as most critical area. If isthmus was severed, only access to Gallipoli would be across the Dardanelles.

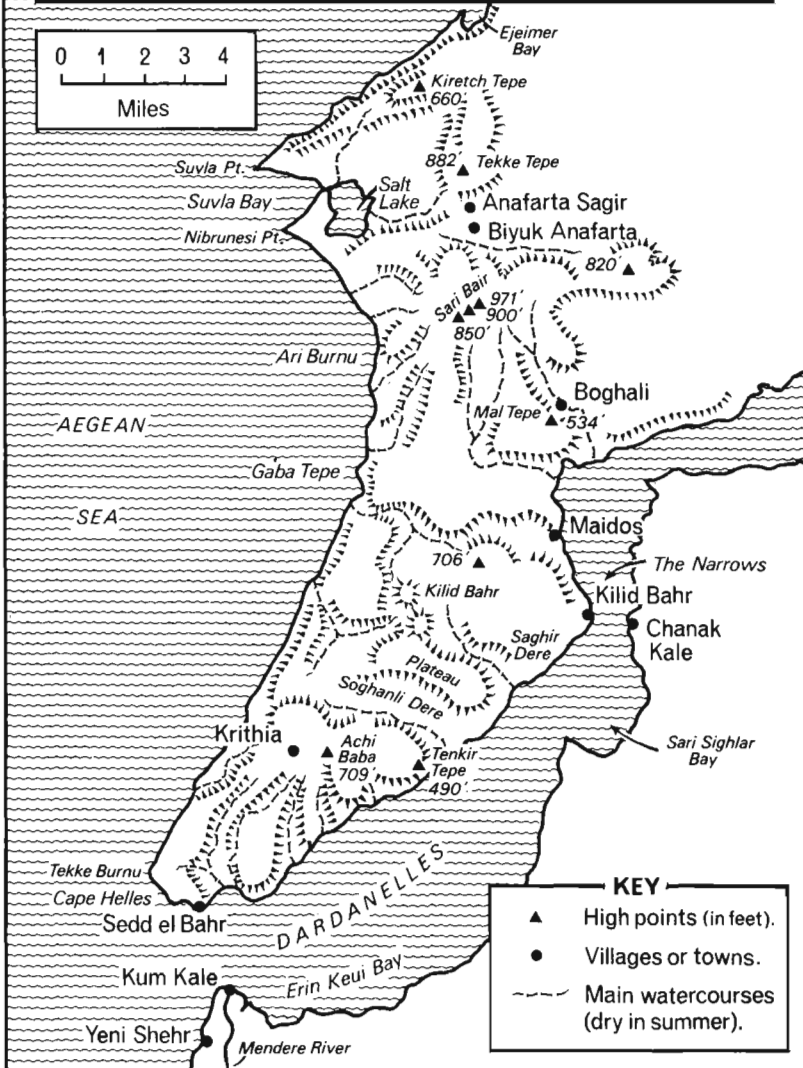
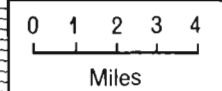
Considered by von Sanders as most vulnerable area to defend. Within range of gunfire from Allied battleships.

TURKISH MINEFIELD BARRIER

PERHAPS NOT "IMPENETRABLE" BY ALLIED WARSHIPS (16 APRIL ONWARDS)?



GALLIPOLI PENINSULA: PHYSICAL FEATURES



KEY

- ▲ High points (in feet).
- Villages or towns.
- - - Main watercourses (dry in summer).

THE ALLIED PLAN FOR ASSAULTING THE GALLIPOLI PENINSULA APRIL 1915

LANDING OPERATIONS

Covering forces to be disembarked from warships (a mile from the beaches they would transfer to cutters and ultimately be rowed ashore); warships to bombard the defences; main forces to be disembarked from transports and rowed ashore in cutters.

The ideal plan should have been firm in outline, flexible at local level, and (most important), understood by all those partaking in the operations.

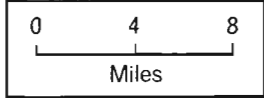
ROYAL NAVAL DIVISION

HQ, Liman von Sanders.

AEGEAN SEA

GALLIPOLI PENINSULA

SEA OF MARMARA

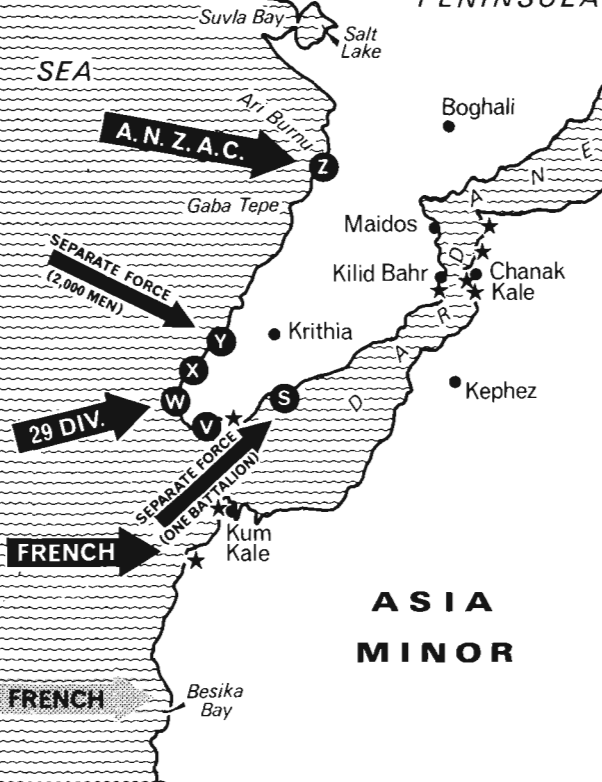


KEY

- Definite attacks.
- Feint attacks.
- Landing beaches.
- Main forts.

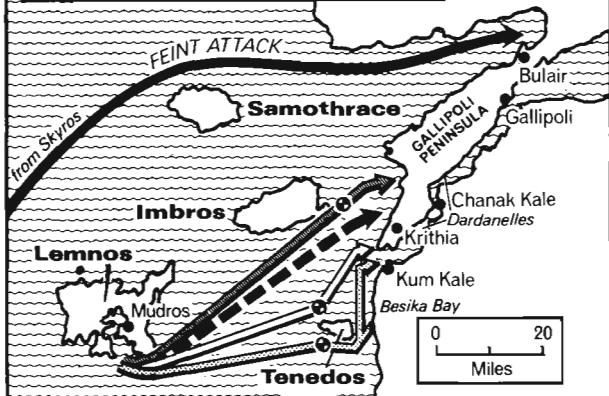
ALLIED STRENGTHS

Troops:	75,000
Ships:	200



General Hamilton, the British Commander-in-Chief, calculated that the defenders would not concentrate their forces until they were certain of where the major attacks were coming in. He allowed two days for this period of Turkish indecision, by which time the Allies would be safely ashore and established. (The British War Office "estimated" total Allied casualties for the entire operations would be about 5,000).

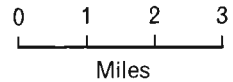
PROGRESS TO THE BEACHES



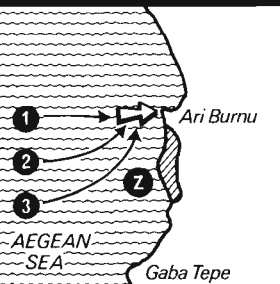
KEY

- Royal Naval Division (Paris).
- Australian and New Zealand Corps (Birdwood).
- British 29 Division (Hunter-Weston).
- French Army Corps (d'Amade).
- 'Y' Beach force (Hunter-Weston).
- Assembly areas.

THE ALLIED LANDINGS ON THE GALLIPOLI PENINSULA 25 APRIL 1915



THE A.N.Z.A.C. LANDINGS

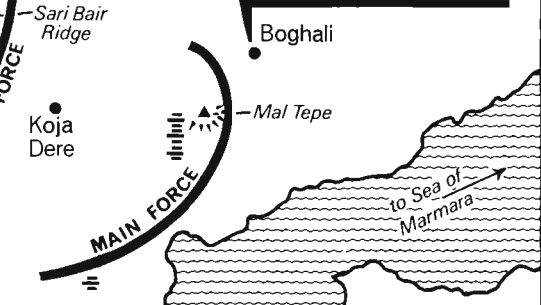


THE LANDINGS WERE MADE AT AN INCORRECT AND DISADVANTAGEOUS POINT. REASONS SUGGESTED FOR THE ERROR INCLUDE AN UNFORESEEN NORTHERLY CURRENT, LAST-MINUTE PLAN VARIATIONS, THE MOVEMENT OF A MARKER BUOY BY TURKS, AND SOME MISINTERPRETED SIGNALS.

- 1 HMS 'London'. ▨ Intended landing area.
- 2 HMS 'Prince of Wales'. ⇨ Actual landing position.
- 3 HMS 'Queen'. → 'Tows' to shore.

TURKEY IN EUROPE

HQ, Turkish 19 Division (in reserve under Mustapha Kemal Pasha).



AEGEAN SEA

GALLIPOLI PENINSULA

TURKISH 9 DIV. (Sami)

Australian submarine AE 2 sinks Turkish gunboat.

0600 hours, 2,000 troops land from 'Athemyst' and 'Sapphire' without opposition.

0630 hours, three battalions land from 'Implacable' without a casualty.

0600 hours, Turks inflict 533 casualties on British, but troops get ashore.

0625 hours, 'River Clyde' attempts to land 1,500 men. Turks open fusillade on boat-causeway to shore. British suffer 1,200 casualties.

0750 hours, three companies get ashore covered by guns of 'Cornwallis'.

To achieve success, the Allies required: a unified command; knowledge of the opposing defences and unit strengths; accurate maps of the terrain; the element of surprise. They possessed none of these essentials.

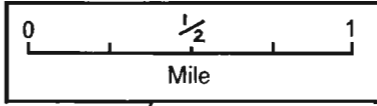
TURKEY IN ASIA

INITIAL REACTIONS BY THE DEFENDERS
Liman von Sanders, the German commander, was at Bulair viewing the feint attack by the Royal Naval Division. (This was the landing area most feared by him). He ordered all available troops at Gallipoli town to race to the "threatened" isthmus. Meanwhile, reports of the extent of the various attacks around the peninsula alarmed him greatly. A report of an enemy submarine within the Dardanelles caused him to dismiss any idea of ferrying troop reinforcements across the Dardanelles from the Asiatic shore.

KEY

- Allied objectives by dusk 25 April.
- ▨ Positions actually gained by dusk 25 April.
- ▬ Turkish infantry units (companies or platoons).
- ≡ Turkish artillery batteries.
- Landing beaches.

THE ALLIED ADVANCE ON THE HELLES FRONT 28 APRIL-4 JUNE



KEY

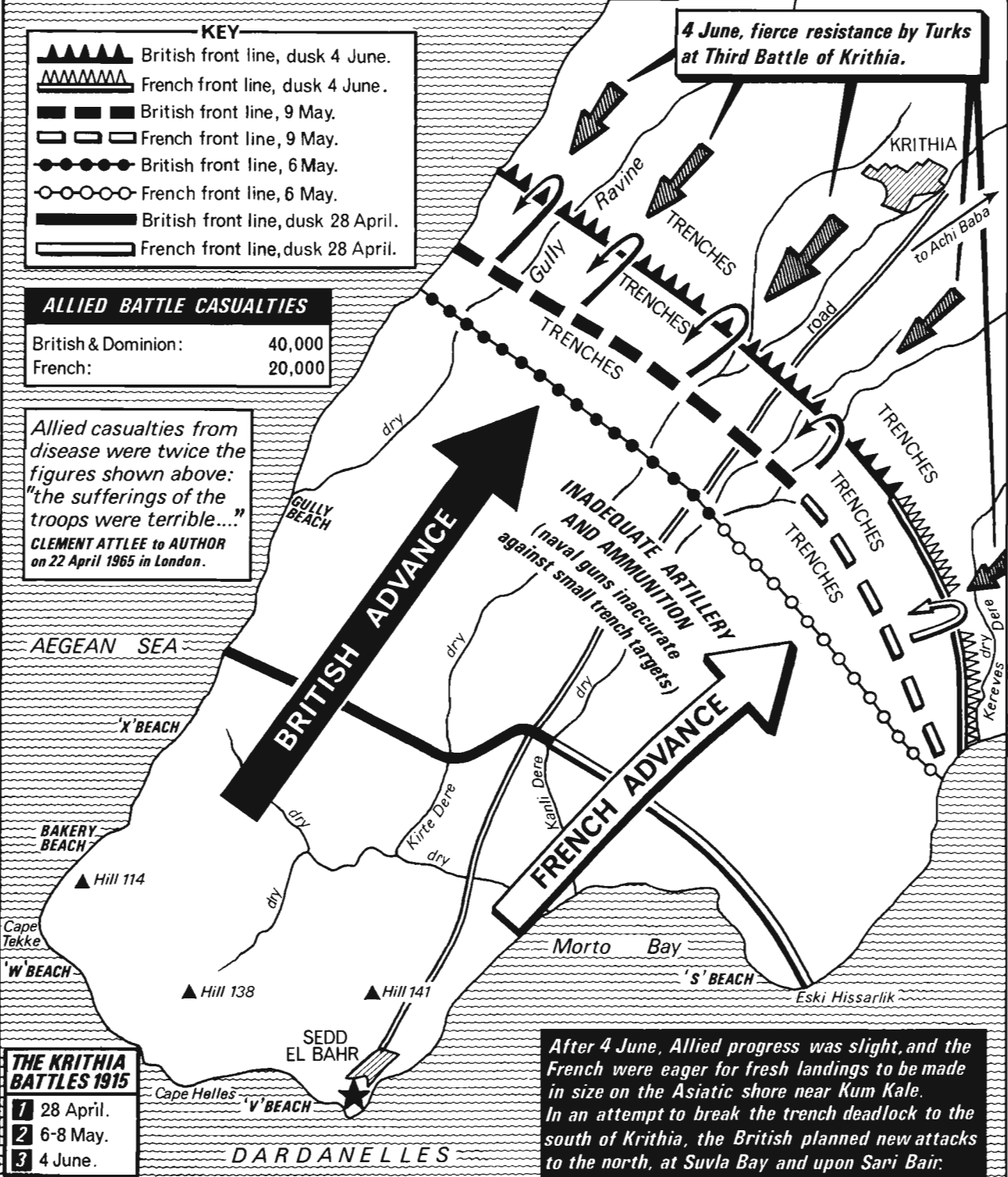
- British front line, dusk 4 June.
- French front line, dusk 4 June.
- British front line, 9 May.
- French front line, 9 May.
- British front line, 6 May.
- French front line, 6 May.
- British front line, dusk 28 April.
- French front line, dusk 28 April.

ALLIED BATTLE CASUALTIES

British & Dominion:	40,000
French:	20,000

Allied casualties from disease were twice the figures shown above: "the sufferings of the troops were terrible...."
CLEMENT ATLEE to **AUTHOR** on 22 April 1965 in London.

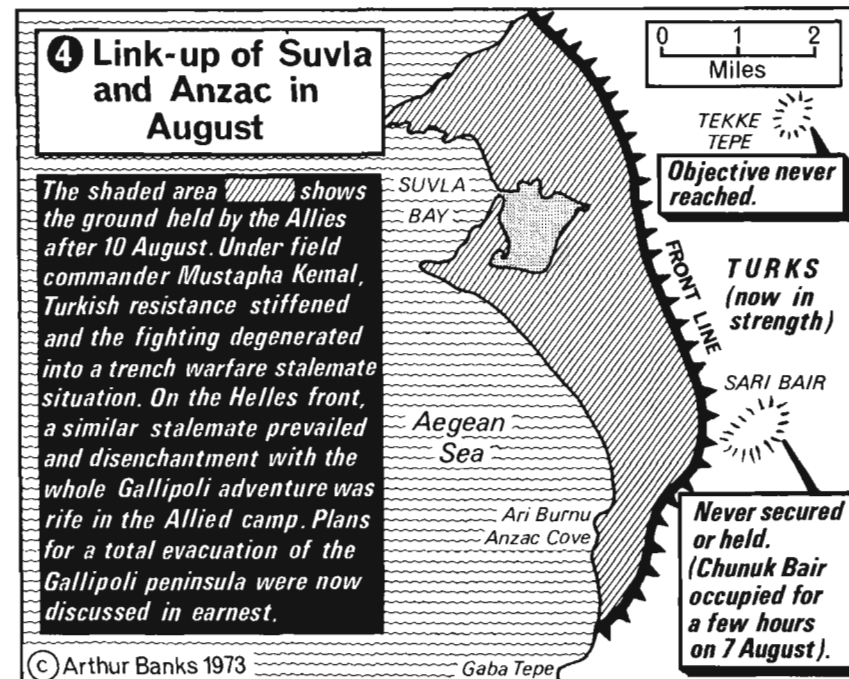
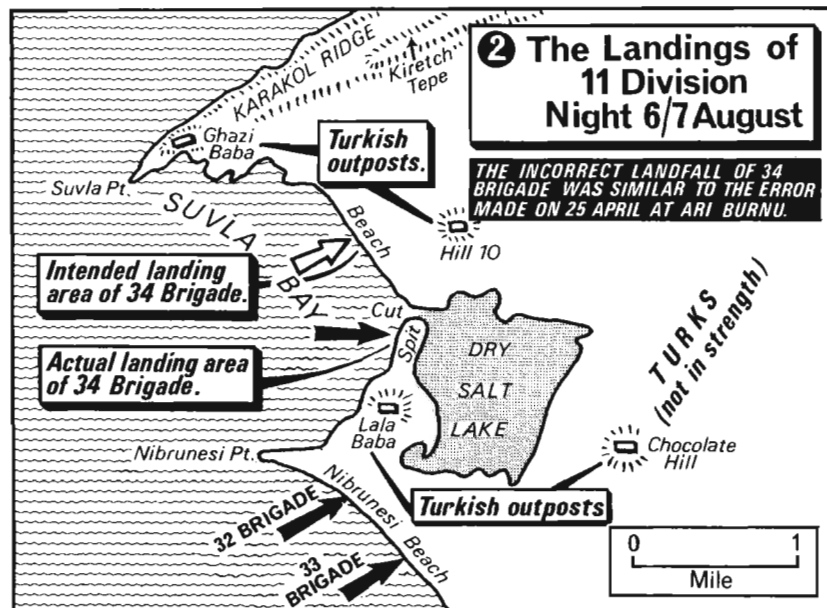
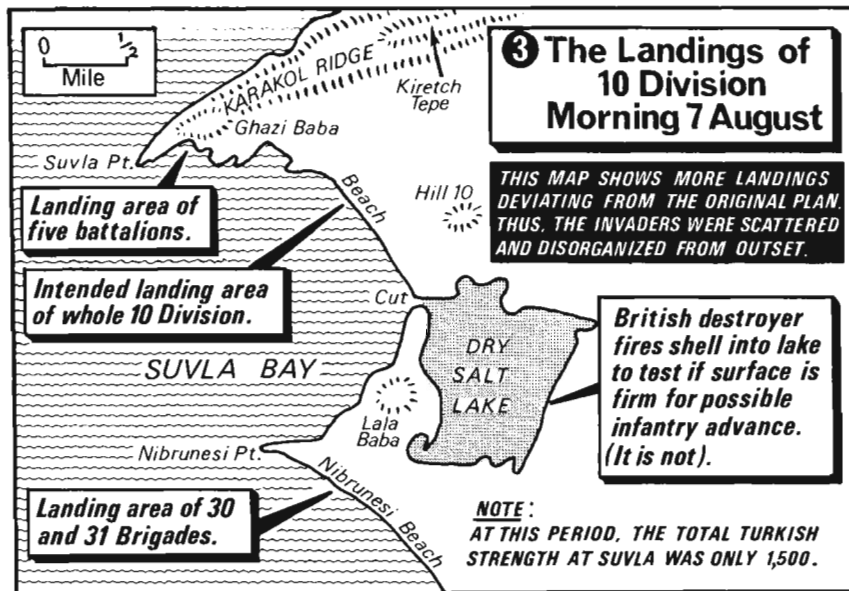
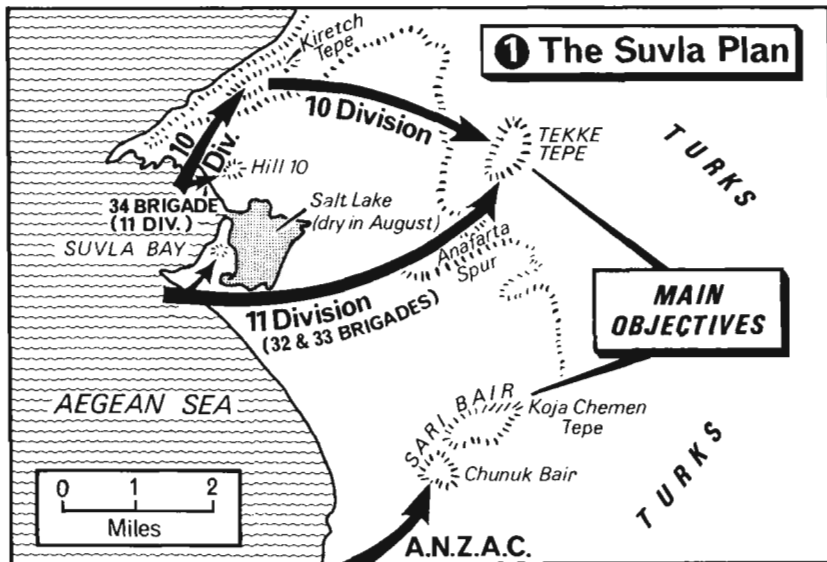
4 June, fierce resistance by Turks at Third Battle of Krithia.

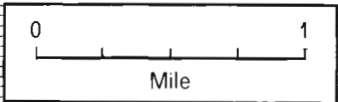


- THE KRITHIA BATTLES 1915**
- 1 28 April.
 - 2 6-8 May.
 - 3 4 June.

After 4 June, Allied progress was slight, and the French were eager for fresh landings to be made in size on the Asiatic shore near Kum Kale. In an attempt to break the trench deadlock to the south of Krithia, the British planned new attacks to the north, at Suvla Bay and upon Sari Bair.

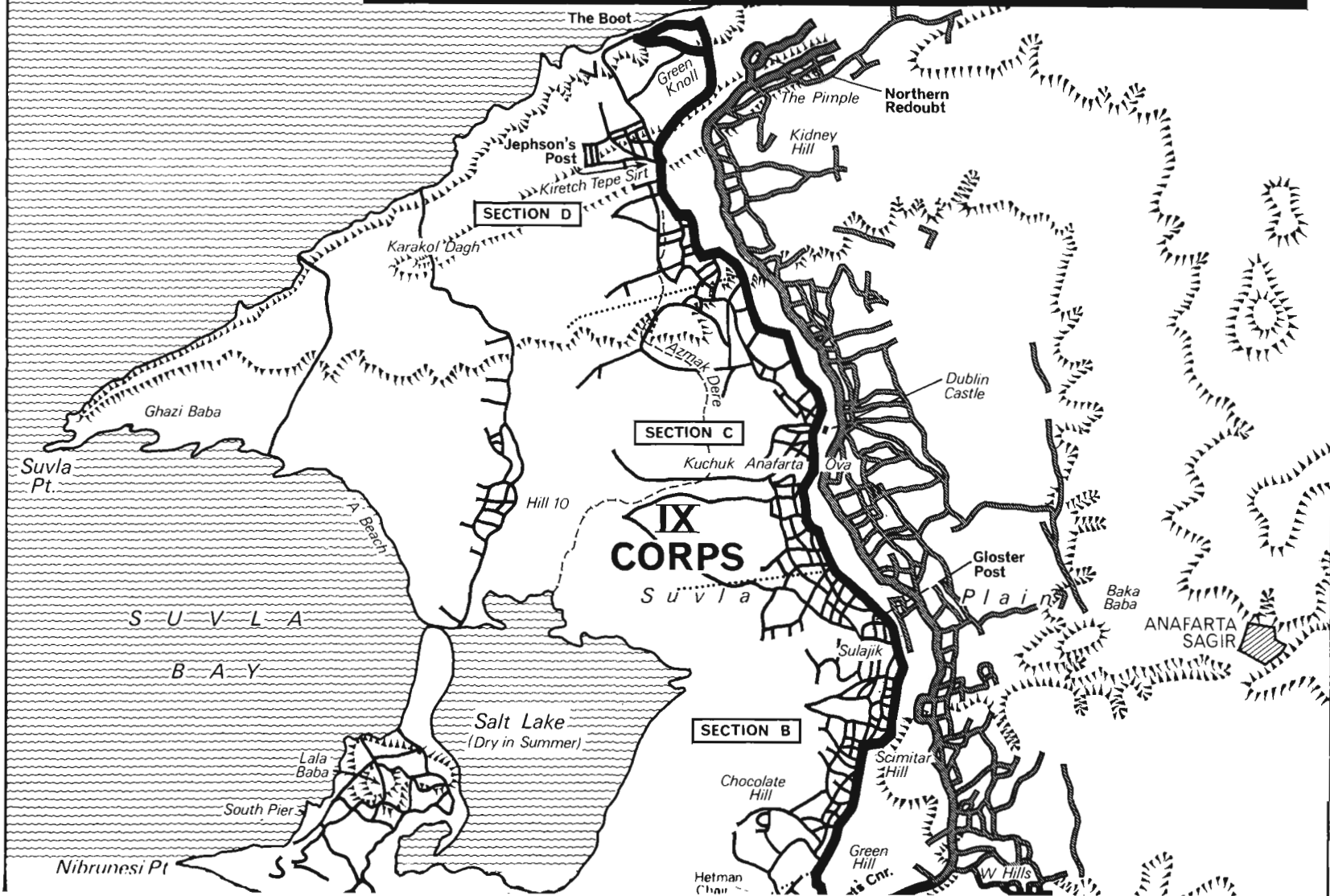
FRESH BRITISH LANDINGS 1915



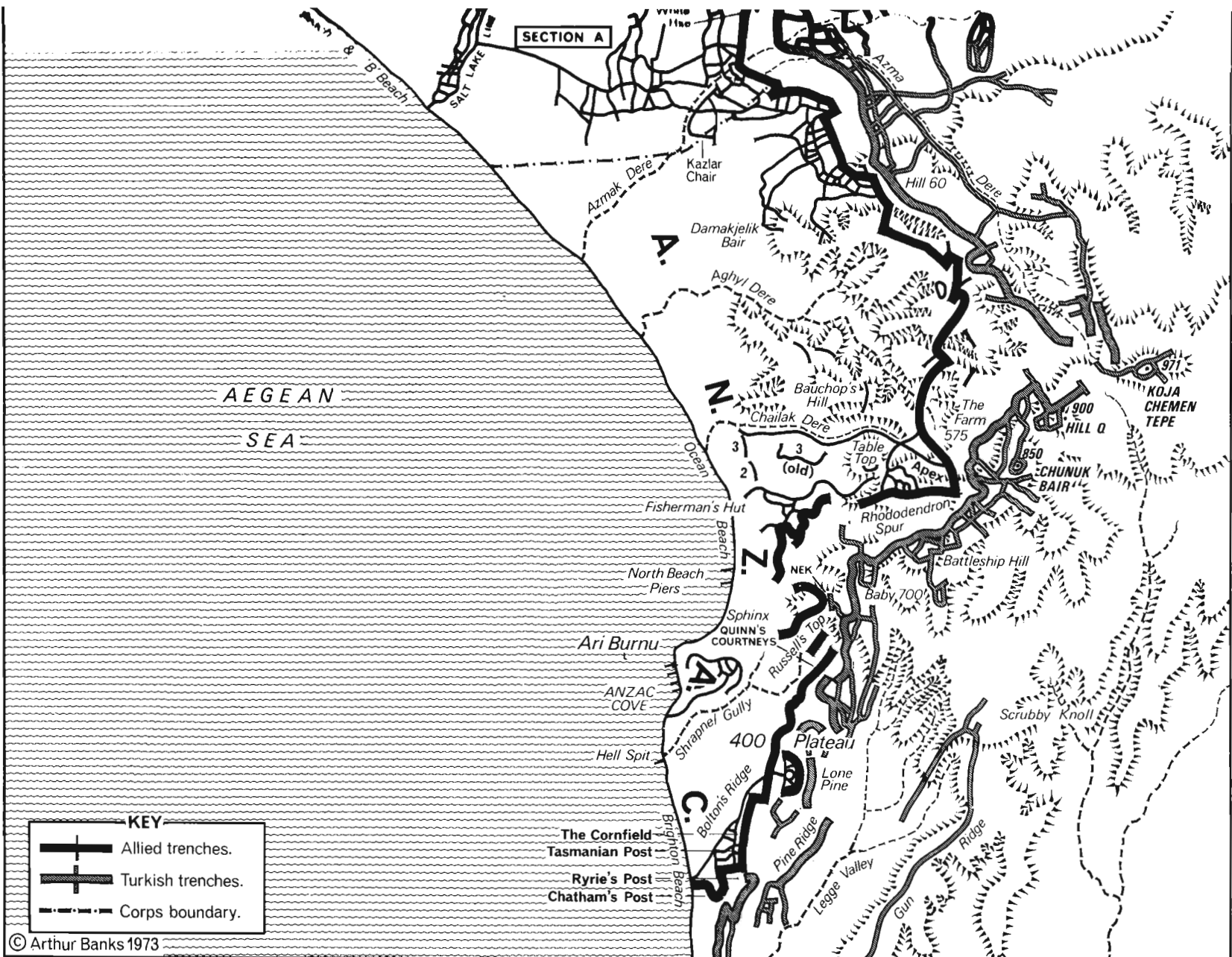


GALLIPOLI: OPPOSING TRENCHES ON SUVLA AND A.N.Z.A.C. FRONTS DECEMBER 1915

124



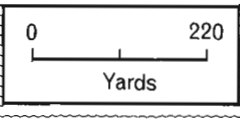
125



KEY

- Allied trenches.
- Turkish trenches.
- Corps boundary.

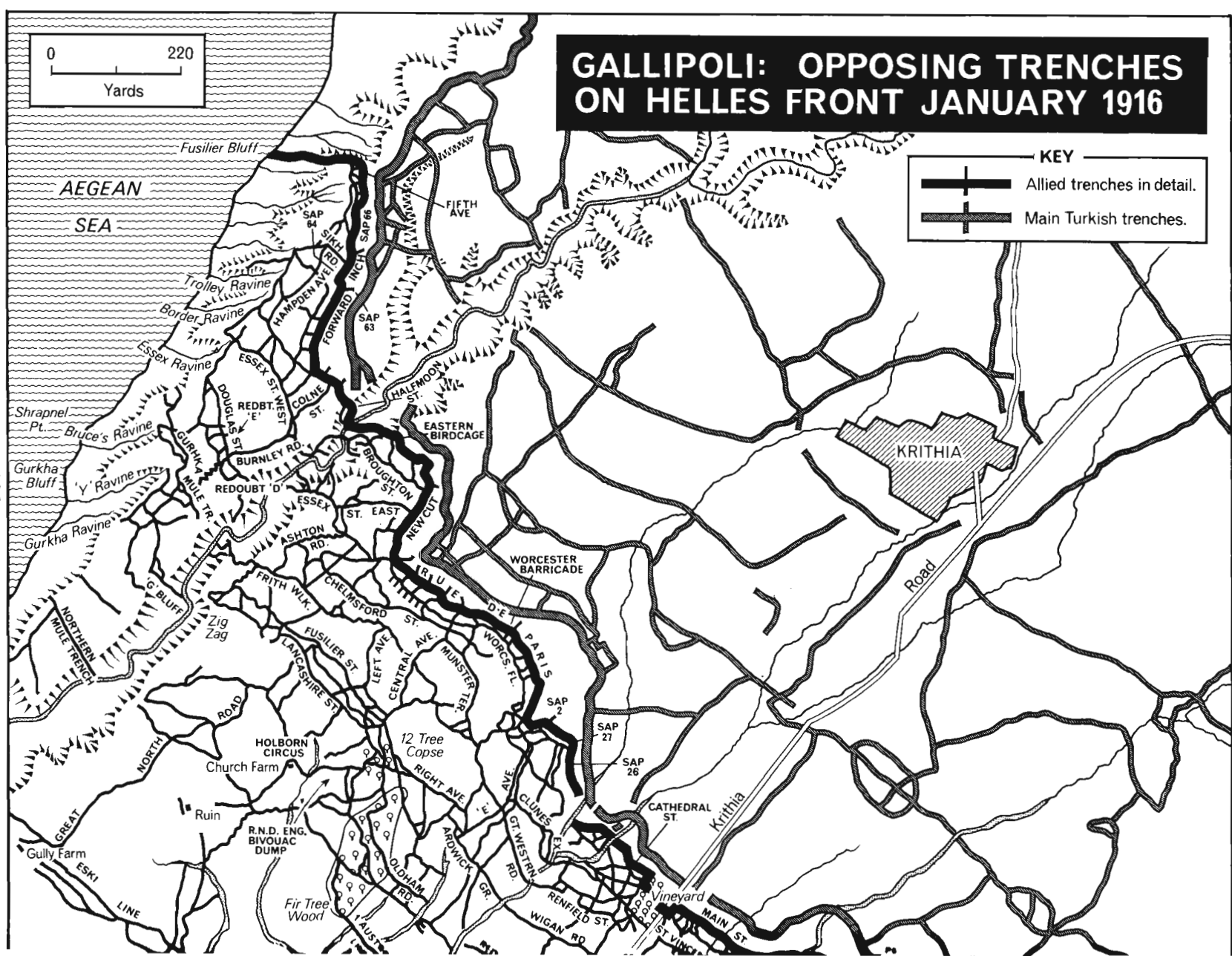
GALLIPOLI: OPPOSING TRENCHES ON HELLES FRONT JANUARY 1916



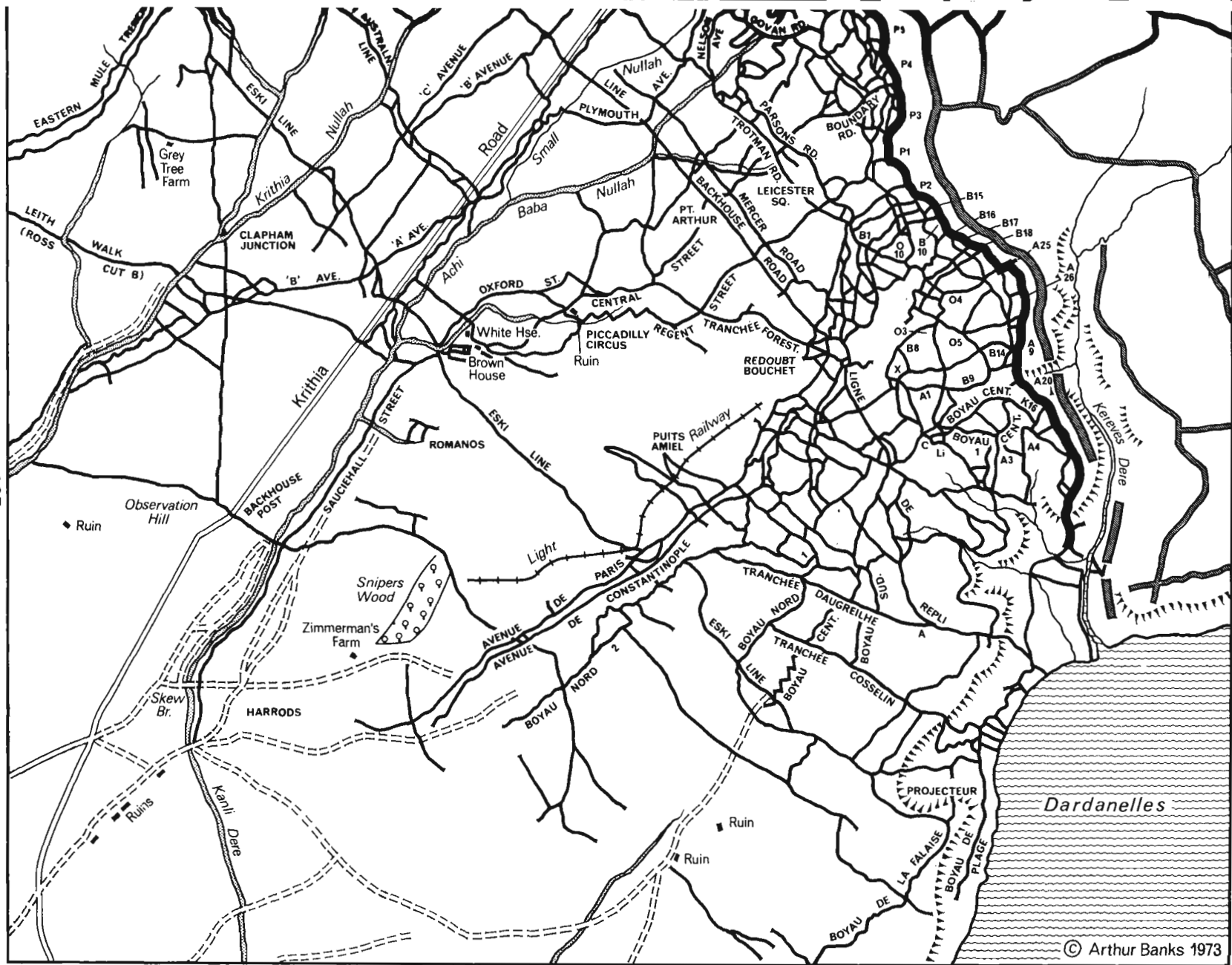
KEY

- Allied trenches in detail.
- Main Turkish trenches.

126



127



THE EVACUATIONS OF THE SUVLA AND A.N.Z.A.C. POSITIONS

1 The Suvla Rearguard (Nights 18/19 December).

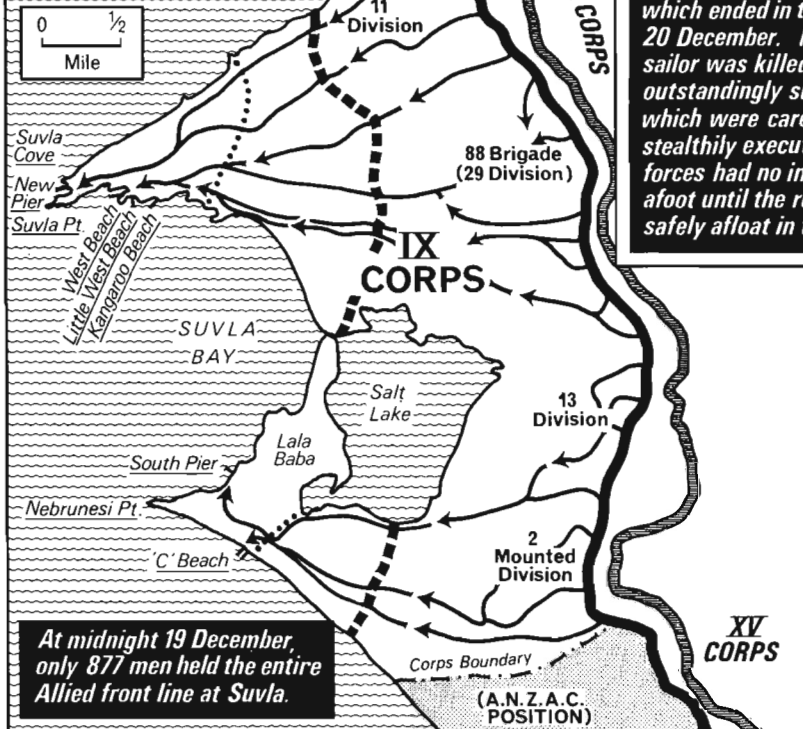
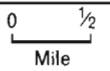
TOTAL ALLIED STRENGTH ON 19 DECEMBER

10,612 men.
21 guns.

KEY

- Allied front line 19 December.
- Intermediate withdrawal positions.
- Final holding lines.
- Routes to the embarkation points.
- Turkish front lines.

Note: embarkation points underlined.



At midnight 19 December, only 877 men held the entire Allied front line at Suvla.

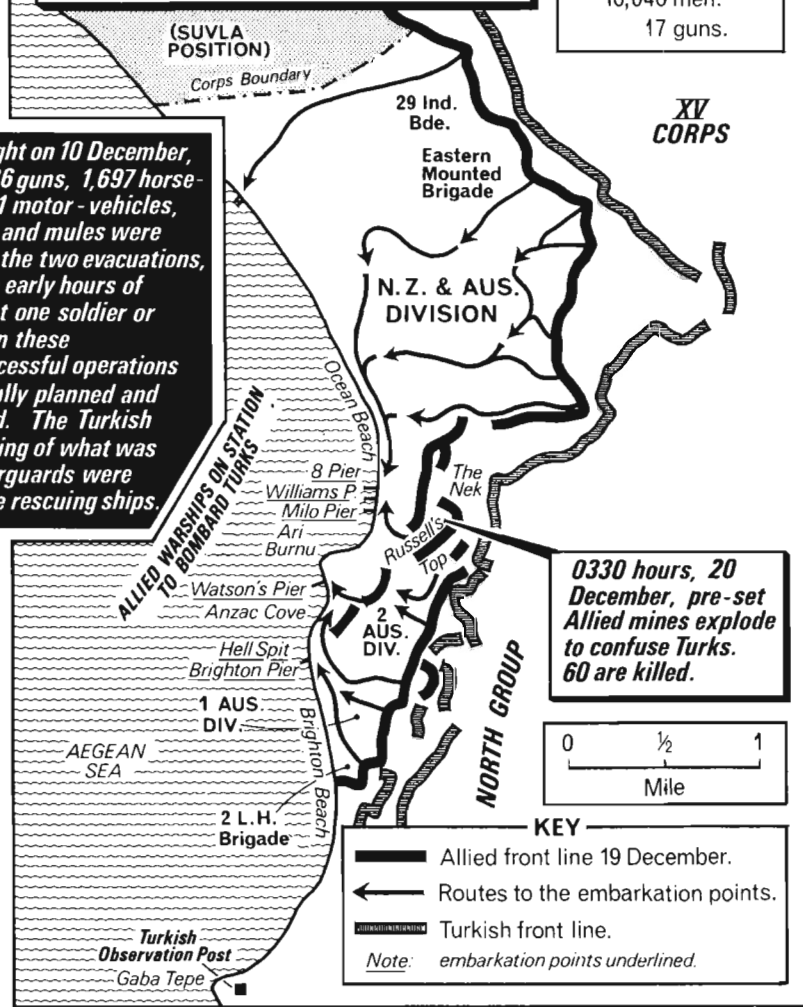
2 The A.N.Z.A.C. Rearguard (Nights 18/19 December).

TOTAL ALLIED STRENGTH ON 19 DECEMBER

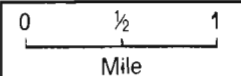
10,040 men.
17 guns.

Commencing at night on 10 December, 83,048 troops, 186 guns, 1,697 horse-drawn vehicles, 21 motor-vehicles, and 4,695 horses and mules were withdrawn during the two evacuations, which ended in the early hours of 20 December. Not one soldier or sailor was killed in these outstandingly successful operations which were carefully planned and stealthily executed. The Turkish forces had no inkling of what was afoot until the rearguards were safely afloat in the rescuing ships.

ALLIED WARSHIPS ON STATION TO BOMBARD TURKS



0330 hours, 20 December, pre-set Allied mines explode to confuse Turks. 60 are killed.

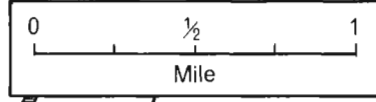


KEY

- Allied front line 19 December.
- Routes to the embarkation points.
- Turkish front line.

Note: embarkation points underlined.

THE EVACUATION OF THE HELLES POSITION



The Final Withdrawals (Night 8/9 January 1916).

7 January, Turks launch offensive which is stubbornly repulsed by British.

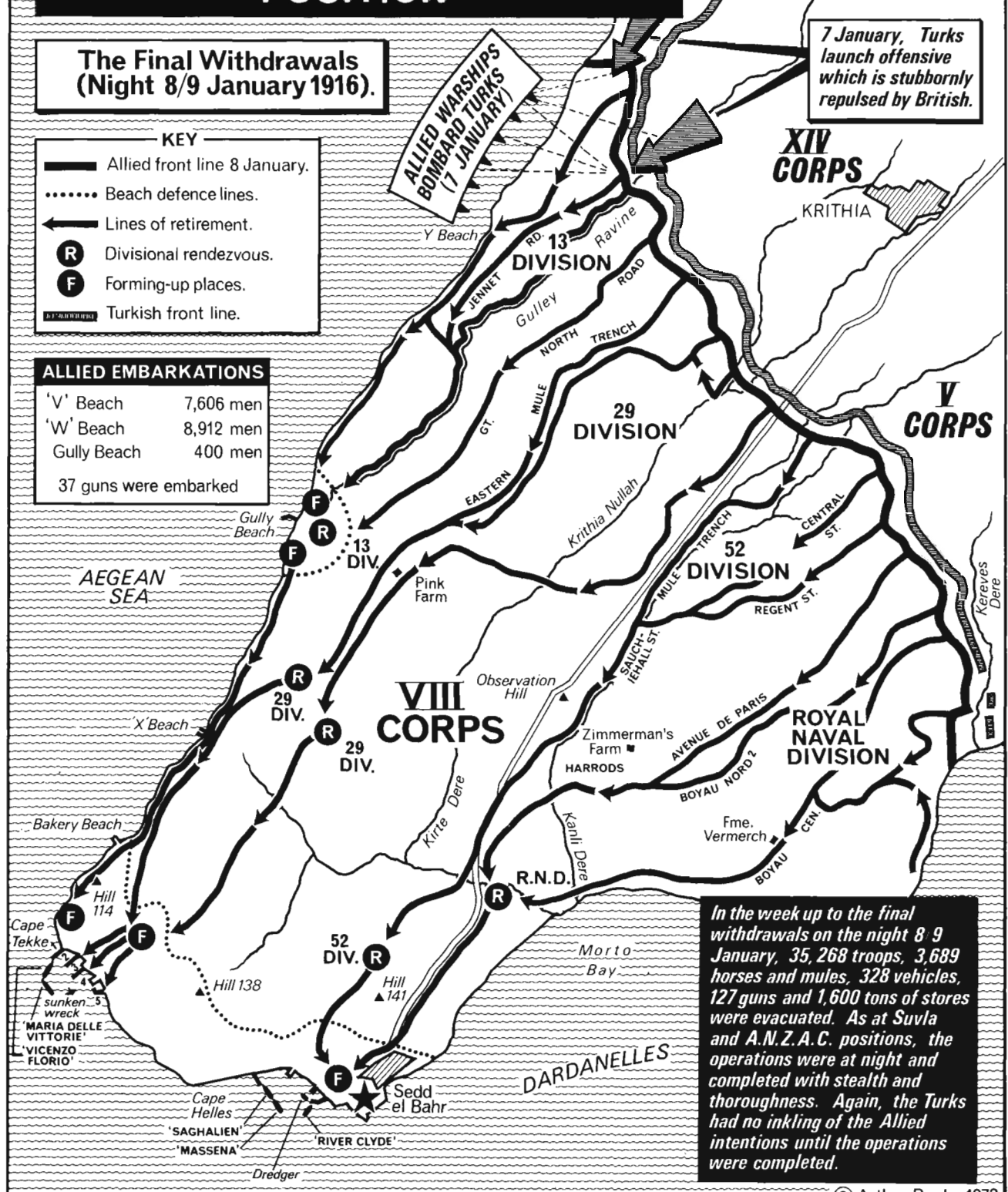
ALLIED WARSHIPS BOMBARD TURKS (17 JANUARY)

KEY

- Allied front line 8 January.
- Beach defence lines.
- ← Lines of retirement.
- (R) Divisional rendezvous.
- (F) Forming-up places.
- Turkish front line.

ALLIED EMBARKATIONS

'V' Beach	7,606 men
'W' Beach	8,912 men
Gully Beach	400 men
37 guns were embarked	



In the week up to the final withdrawals on the night 8-9 January, 35,268 troops, 3,689 horses and mules, 328 vehicles, 127 guns and 1,600 tons of stores were evacuated. As at Suvla and A.N.Z.A.C. positions, the operations were at night and completed with stealth and thoroughness. Again, the Turks had no inkling of the Allied intentions until the operations were completed.

THE WAR IN 1915

The Dardanelles and Gallipoli dominated the minds of the political leaders in Whitehall during the opening months of 1915. But Sir John French and his generals across the Channel bitterly opposed any plans which might divert troops from the Western Front, and Joffre agreed with them. French and his principal subordinate, Haig, wished to attack the Germans in Belgium as soon as the weather was favourable. Joffre had hopes of a two-pronged thrust later in the spring in Artois and Champagne, intended to break through the German lines and sweep across Belgium west of the Ardennes. Reality fell short of expectation that year on every sector of the Western Front: the British gained the town of Neuve Chapelle at the cost of heavy casualties in March (pages 136–137); the German offensive in the West during April sought to eliminate the Ypres Salient, but, despite the use of poison gas, their success was limited to a few villages; and later frontal assaults by the British and the French in Artois, at Loos, and in Champagne, though shaking the vertebrae of the German defensive system, failed to crack the spinal cord. The newspapers continued to carry long casualty lists which, together with the frustrations of Gallipoli, emphasised the terrible burden of the War on families far from the battlefronts. The first Zeppelin raids (pages 286–290) brought a new terror to English homes.

The news from other fronts was no more encouraging. At first it seemed that the Russians would make some progress on the southern sector of the Eastern Front, for they at last captured the fortress of Przemysl on 22 March. But Falkenhayn, unlike Moltke in the previous year, was prepared to co-ordinate strategy with Conrad. In May a massive Austro-German offensive began in Galicia, breaking through four lines of Russian

defences at Gorlice and forcing a general withdrawal from the Carpathians. The Russians were driven out of Przemysl, out of Galicia, and out of Poland as well. When the campaign ended, half a million Russians were in prisoner-of-war cages. Nor was this the limit of Falkenhayn's success. In October Mackensen, the victor of Gorlice, set up his headquarters in southern Hungary and took command of a joint Austro-Germano-Bulgarian army which overran Serbia (page 160) and gave Germany control of a continuous railway route from Berlin to Constantinople and the Middle East. The Allied response to Bulgaria's alliance with Germany was, at last, to establish a base at Salonika, but no effective aid could be given to Serbia.

Bulgaria's entry into the German camp was preceded by Italy's adhesion to the Allied cause in May 1915. But, though it was hoped in London and Paris that Italy would pose a new threat to Austria-Hungary, this Front, too, was soon paralysed by defensive trench warfare (page 200–201). Briefly it seemed possible that the German U-Boat campaign, and especially the sinking of the Cunard liner *Lusitania* with the loss of 128 American lives on 6 May, would bring the United States into the War, but the Germans gave informal assurances that passenger ships would not be sunk without warning, and America maintained her neutrality.

By the end of the year the war seemed as rapacious of lives and material as ever, and there was no prospect of peace. Among the Allies, and especially in Britain, indignation mounted at the lack of munitions. On both sides governments began to take unprecedented measures to organise their economy for a long war. The task was to prove too great for Tsarist Russia.

GERMAN CARTOGRAPHIC PROPAGANDA 1915

1 Europe Following a Central Powers Victory

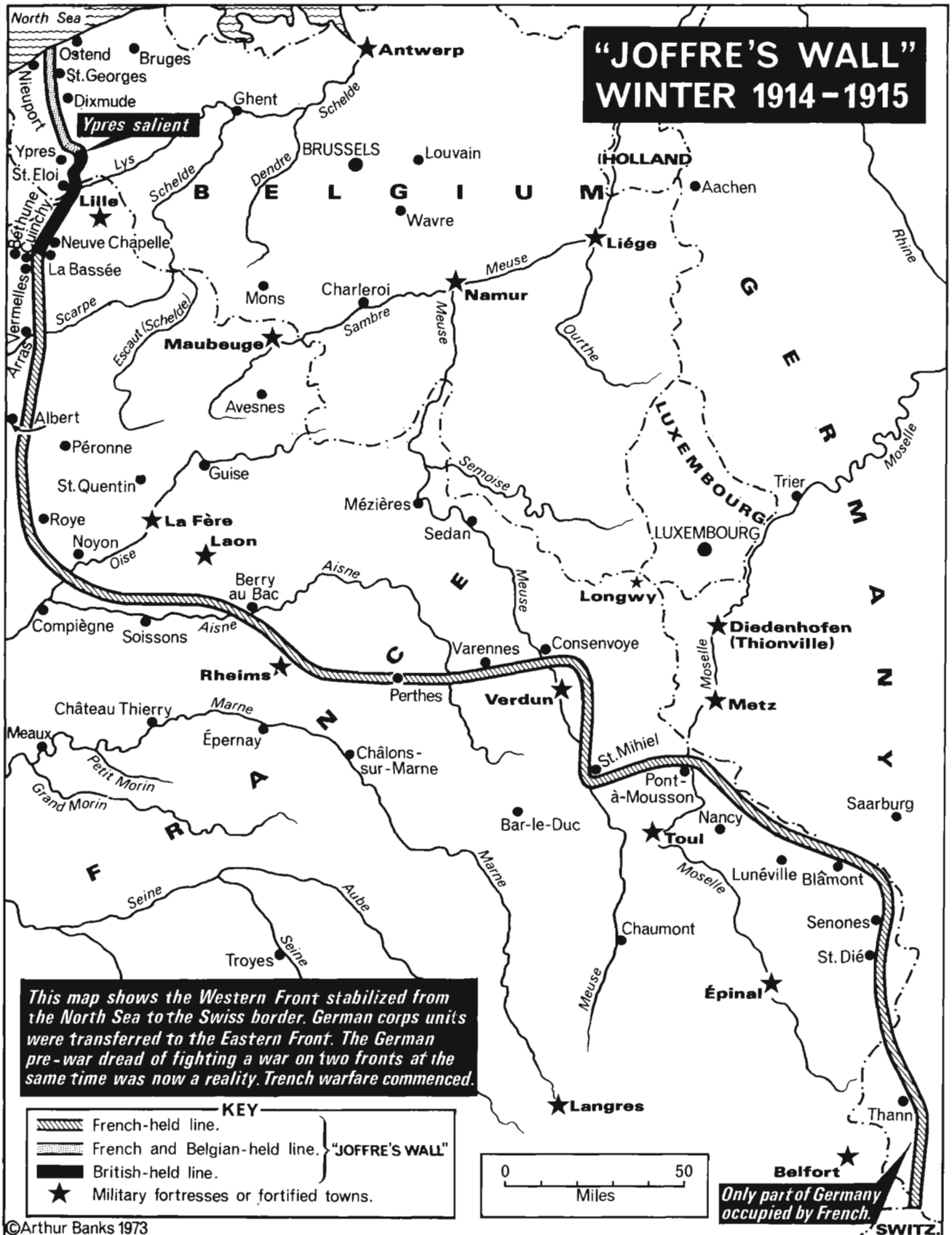


In early 1915, Germany was intent on wooing neutral Holland to side with her against the Entente powers. Sets of maps were sent to Holland to assist German propaganda and the basic details (anglicized) are shown here. The dominant theme would seem to be an automatic assumption that whichever side won the war would crush the losers virtually out of existence.

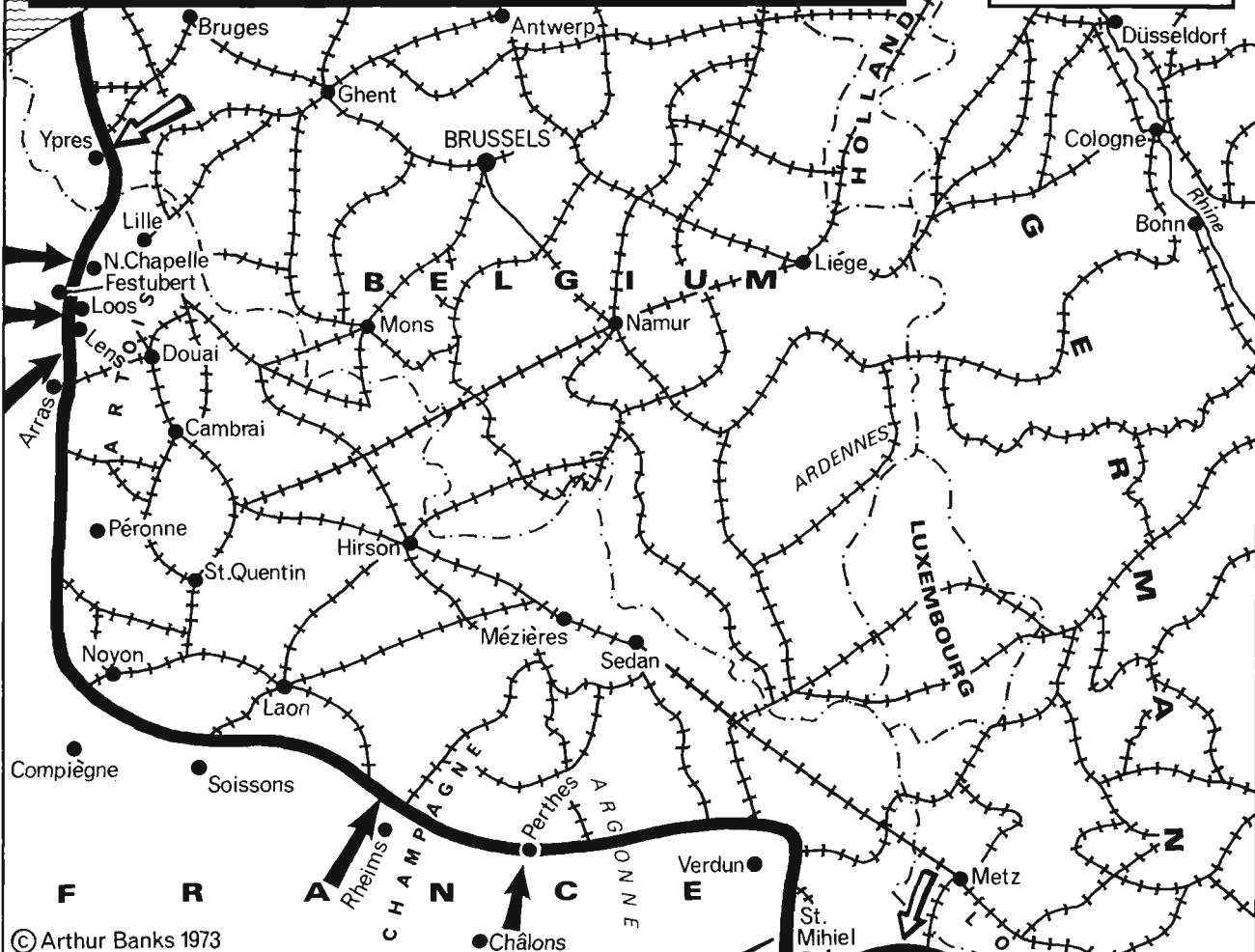
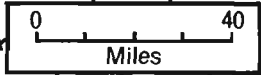
2 Europe Following an Allied Victory



"JOFFRE'S WALL" WINTER 1914-1915

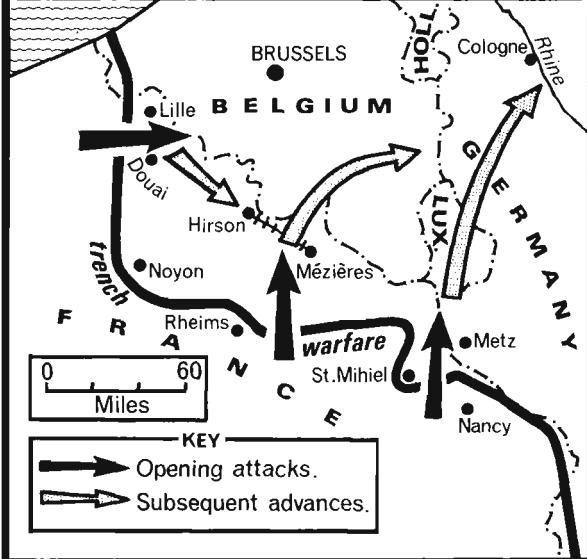


THE STATIC WESTERN FRONT 1915



© Arthur Banks 1973

JOFFRE'S PLANS IN EARLY 1915



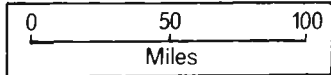
THIS GERMAN SALIENT EXISTED (WITH VARIATIONS) UNTIL SEPTEMBER 1918.

Despite Allied efforts to achieve a breakthrough, the basic shape of the front line remained virtually unaltered on small scale maps. Note the important rail network under German control.

KEY

- Front line in February.
- Allied offensives.
- German offensives.

THE MOBILE EASTERN FRONT 1915



Germany's aim was to make the Eastern Front safe and passive so that she could switch her main assault to the Western Front (she did not hope to completely defeat Russia). Rather than instituting an "enveloping" operation, she decided to attempt a "breakthrough" attack between Gorlice and Tarnow. This commenced on 2 May 1915, in concert with the Austrians. This front contrasts sharply with the Western Front during 1915.

North of this position, the front line remained as shown (with minor variations) until the end of 1917.

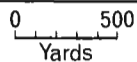
South of this position, the front line remained as shown (with minor variations) until June 1916.

Evacuated by Russians on 22 June.

- KEY**
- Opening assault by German and Austrian armies.
 - Advances by German and Austrian armies.
 - Front line, 2 May.
 - Front line, 1 June.
 - Front line, 16 July.
 - Front line, 15 August.
 - Front line, 1 September.
 - Front line, winter 1915.

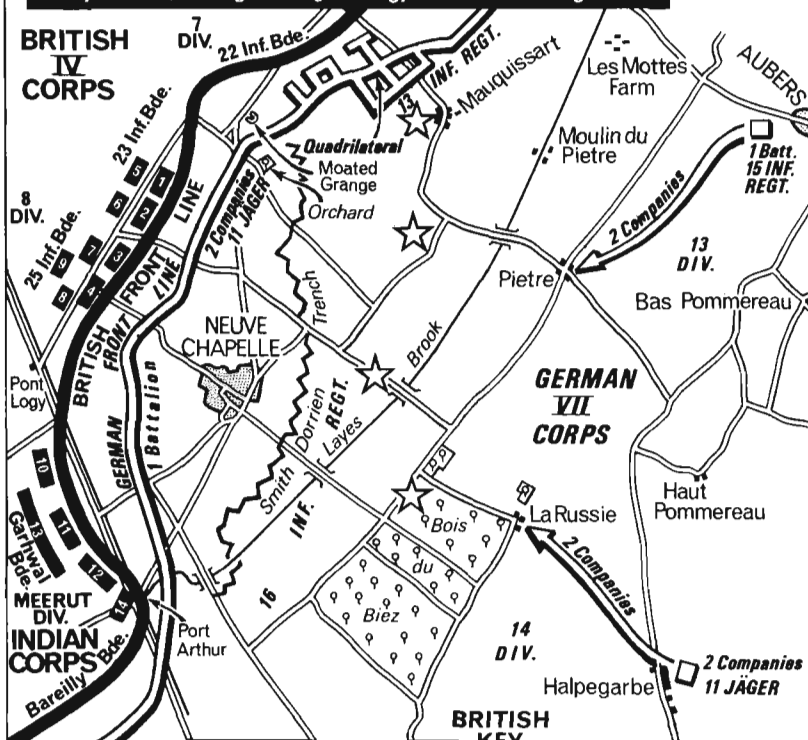
THE BATTLE OF NEUVE CHAPPELLE 10-12 MARCH 1915

① 10 March—The Opening Attack



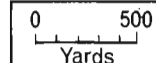
0730 hours 10 March, a British artillery bombardment commenced along the whole front. At 0805 hours the range was lengthened some 300 yards to include Neuve Chapelle, and the infantry commenced their advance which continued until dusk. The Germans began rapid consolidation of their new position, strengthening strongpoints and wiring.

The British employed some 300 guns which was thought to be a huge concentration at the time.



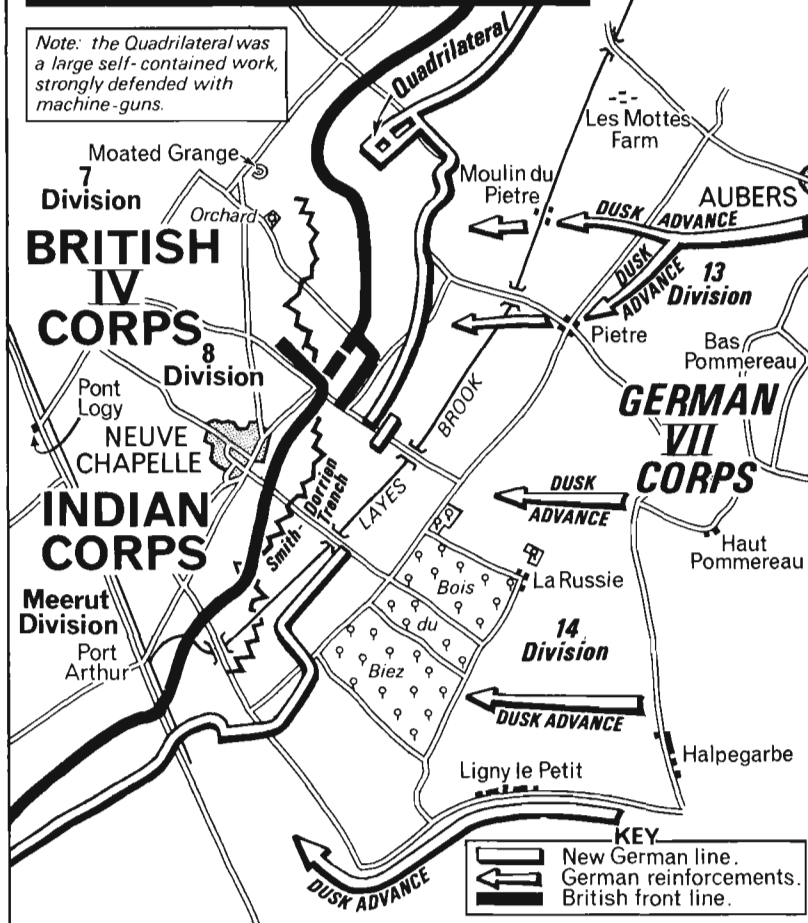
BRITISH KEY					
1	2 Middlesex	6	2/Devon	11	2/3rd Gurkhas
2	2/Scottish Rifles	7	1/Royal Irish Rifles	12	2/Leics.
3	2/Lincs.	8	2/Rifle Brigade	13	3/London
4	2/Royal Berks.	9	13/London	14	1/39th. Garhwal Rifles
5	2/West Yorks.	10	2/39th. Garhwal Rifles		

② 11 March—New German Line Established



0645 hours 11 March, the offensive was resumed, but was largely ineffectual due to difficulties in concentrating a further artillery bombardment on to the new German positions. Mist impaired visibility.

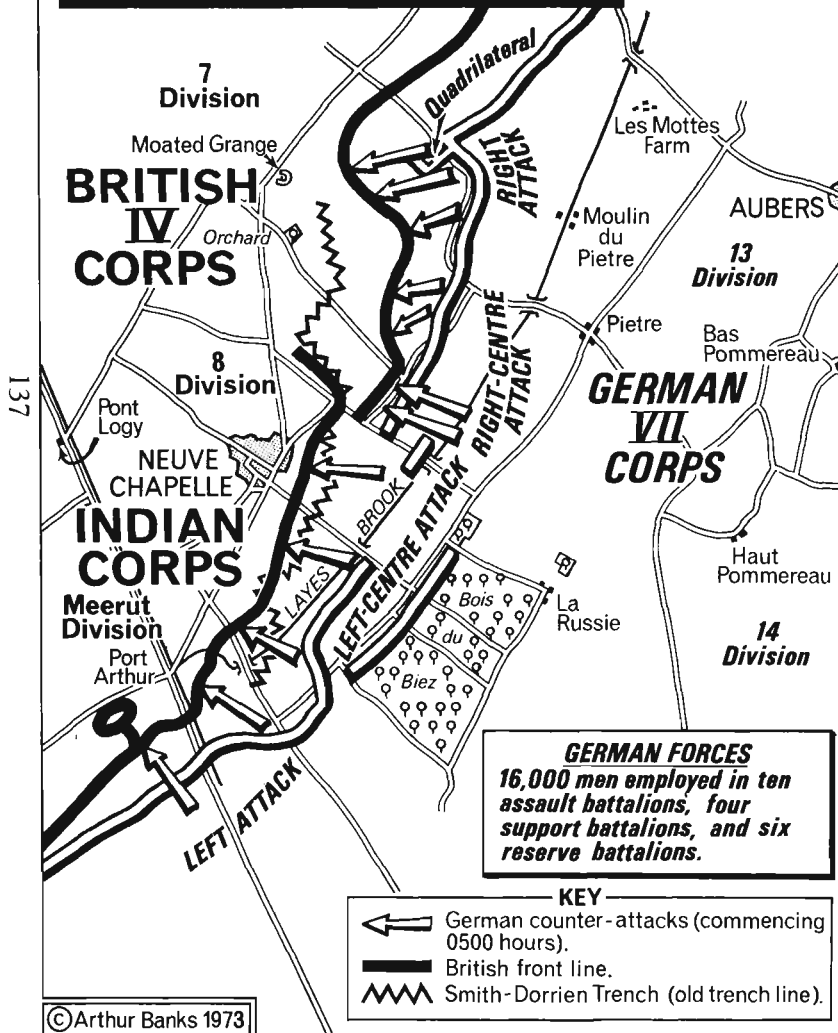
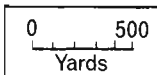
Note: the Quadrilateral was a large self-contained work, strongly defended with machine-guns.



KEY	
	New German line.
	German reinforcements.
	British front line.

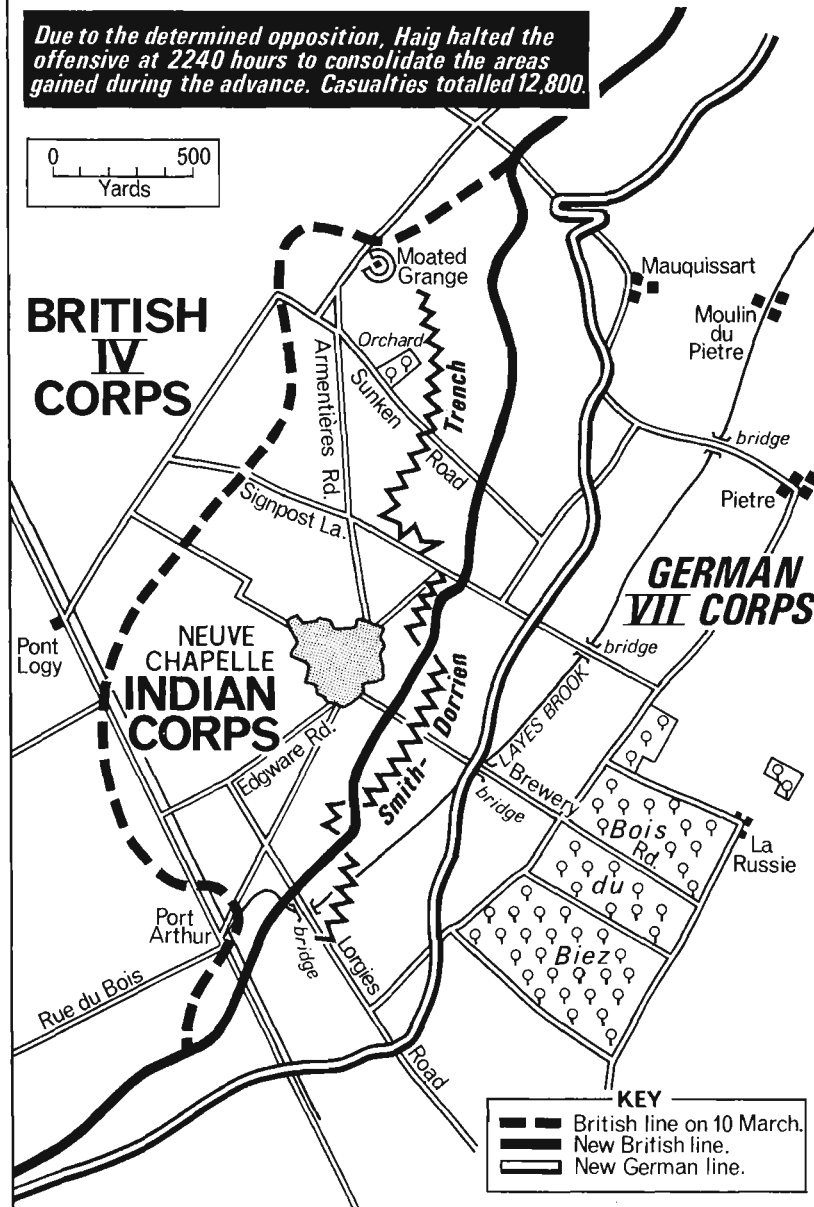
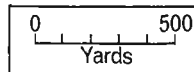
③ 12 March – German Counter-Attacks

The German infantry counter-attacks were preceded by an artillery bombardment (at 0430 hours) along the length of the front held by the British IV and Indian Corps. This mostly affected rear areas, the front-line trenches remaining intact.



④ 12 March – Close of Battle; Situation at 2400

Due to the determined opposition, Haig halted the offensive at 2240 hours to consolidate the areas gained during the advance. Casualties totalled 12,800.

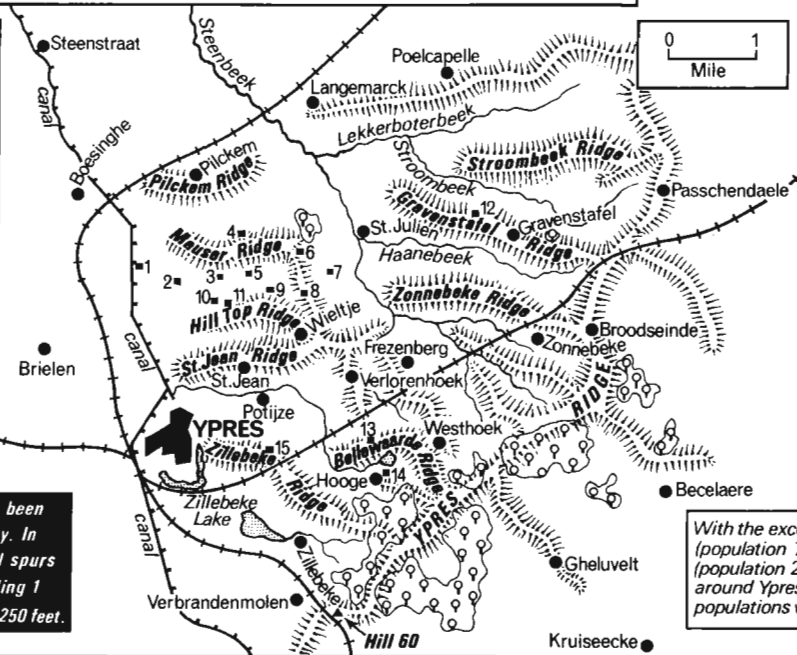


"SECOND YPRES" APRIL-MAY 1915

1 The Battle Area

Note on farm names: most farms were not named on military maps in use at this stage of the war in the vicinity of Ypres, and were simply referred to by the grid square in which they were situated. This caused some confusion, and the fighting powers began to bestow their own versions of names to various farms. On these maps, British-used names have been employed. Using 'Mouse Trap Farm' (British version) as an example, it was known as 'Chateau du Nord' to the French and Belgians, 'Wielctie Chateau' to the Germans, and 'Shell Trap Farm' to the Canadians.

Note on ridges: these have been emphasised solely for clarity. In reality, they are low gradual spurs with gradients rarely exceeding 1 in 20. Highest points about 250 feet.

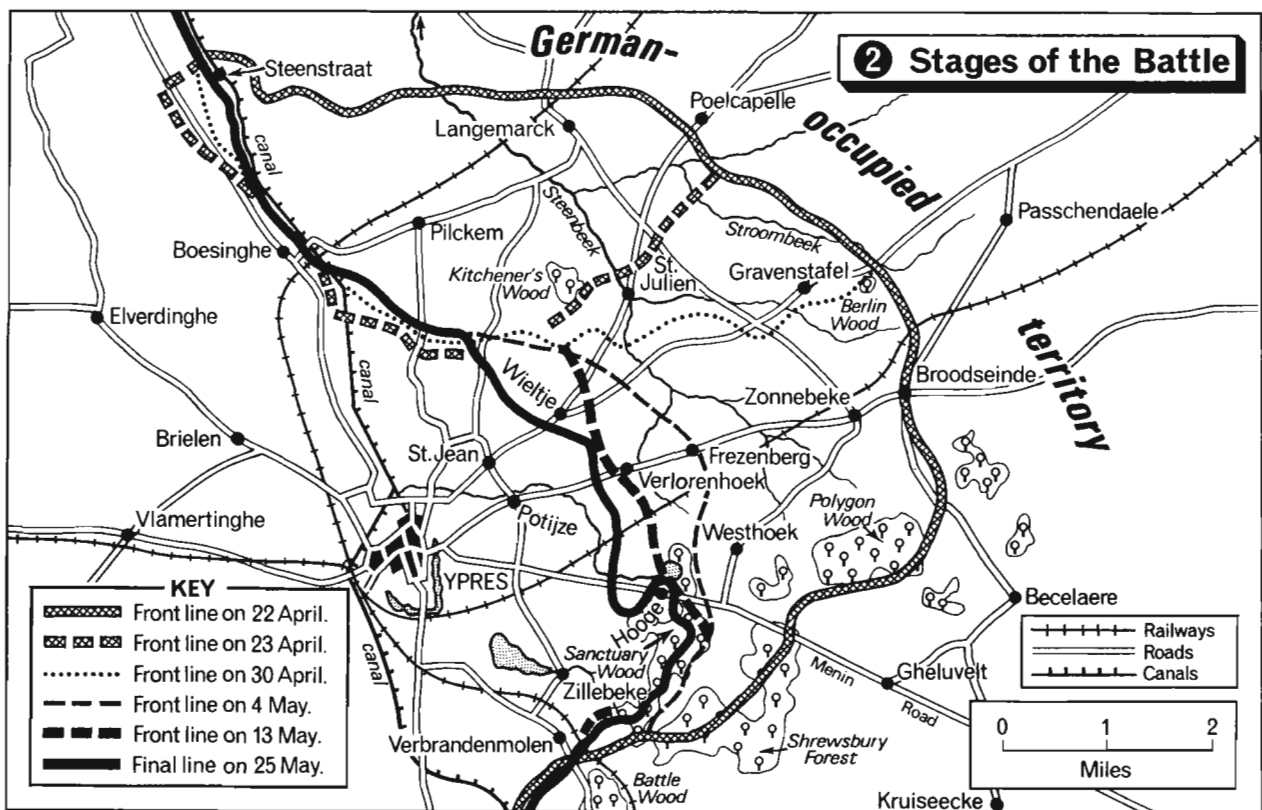


- FARMS**
1. South Zwaanahof
 2. Fusilier
 3. Turco
 4. Welch
 5. Canadian
 6. Oblong
 7. Vanheule
 8. Mouse Trap
 9. Hampshire
 10. Foch
 11. Belle Alliance
 12. Boetleer's
 13. Bellewaarde
 14. Chateau
 15. White Chateau

- Villages
- Farms
- ⊗ Woods

With the exception of Langemarck (population 7,500) and Boesinghe (population 2,500), the villages around Ypres were small, and their populations were less than 1,000.

2 Stages of the Battle



- KEY**
- Front line on 22 April.
 - Front line on 23 April.
 - Front line on 30 April.
 - Front line on 4 May.
 - Front line on 13 May.
 - Final line on 25 May.

- ⊕⊕⊕⊕⊕ Railways
- Roads
- Canals

3 Situation prior to the Battle

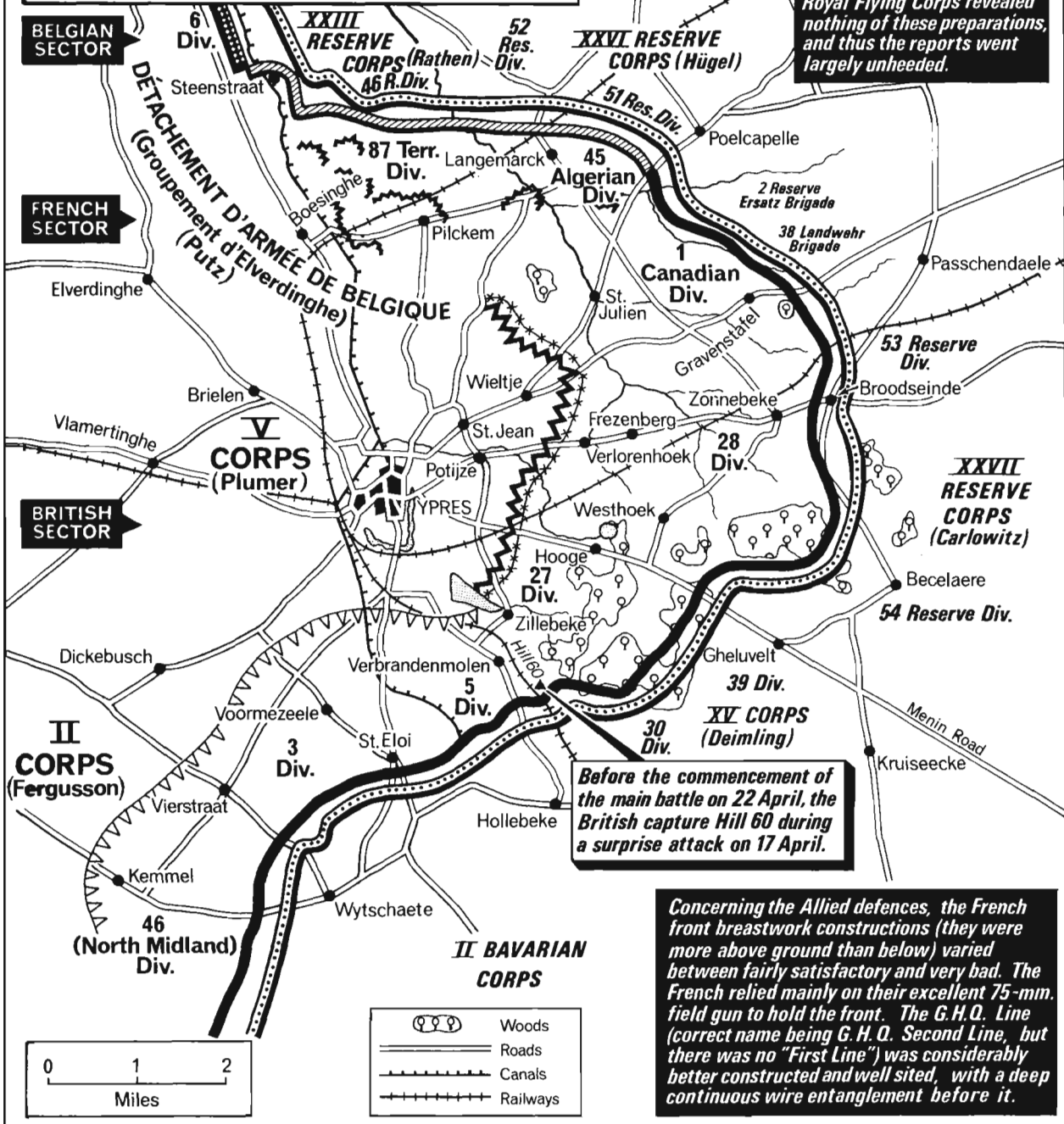
Prior to 22 April, the Allies received reports that the Germans were installing cylinders of gas in this area. Aerial reconnaissance by the Royal Flying Corps revealed nothing of these preparations, and thus the reports went largely unheeded.

Before the commencement of the main battle on 22 April, the British capture Hill 60 during a surprise attack on 17 April.

Concerning the Allied defences, the French front breastwork constructions (they were more above ground than below) varied between fairly satisfactory and very bad. The French relied mainly on their excellent 75-mm. field gun to hold the front. The G.H.Q. Line (correct name being G.H.Q. Second Line, but there was no "First Line") was considerably better constructed and well sited, with a deep continuous wire entanglement before it.

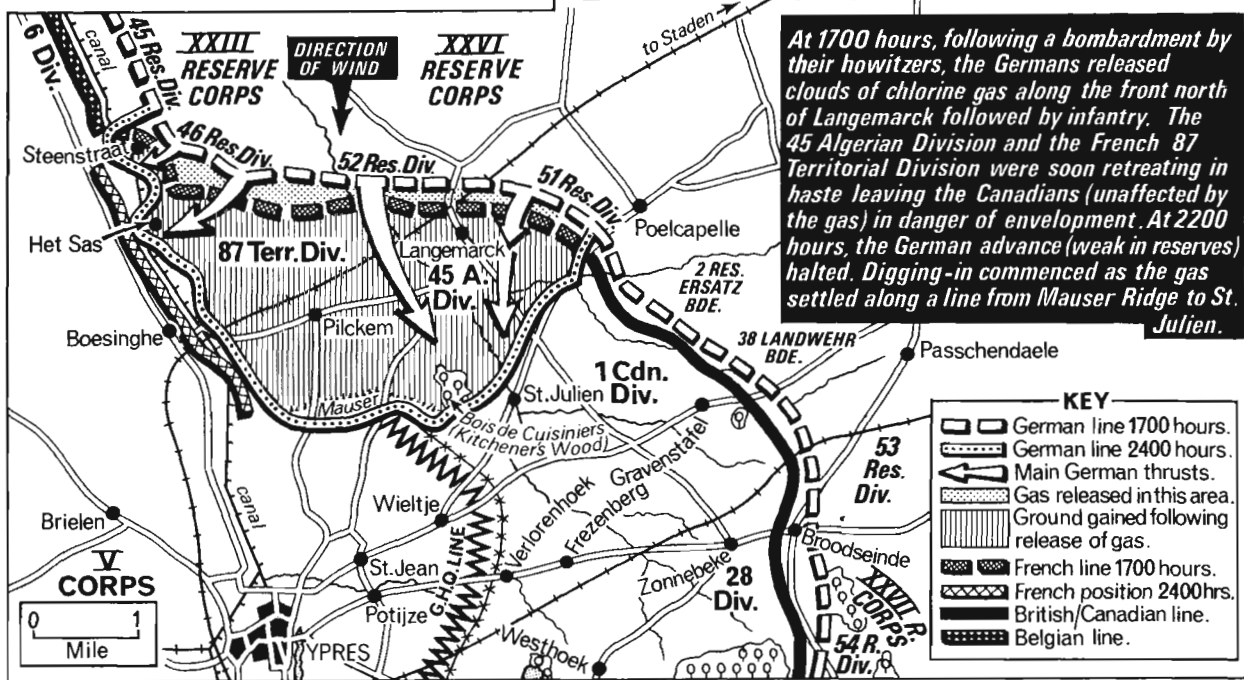
KEY

- German front line on 21 April.
- British front line on 21 April.
- French front line on 21 April.
- Belgian front line on 21 April.
- French trenches or breastworks on 21 April.
- G.H.Q. line (French-constructed) on 21 April.
- G.H.Q. line extension (work commenced on 24 April).

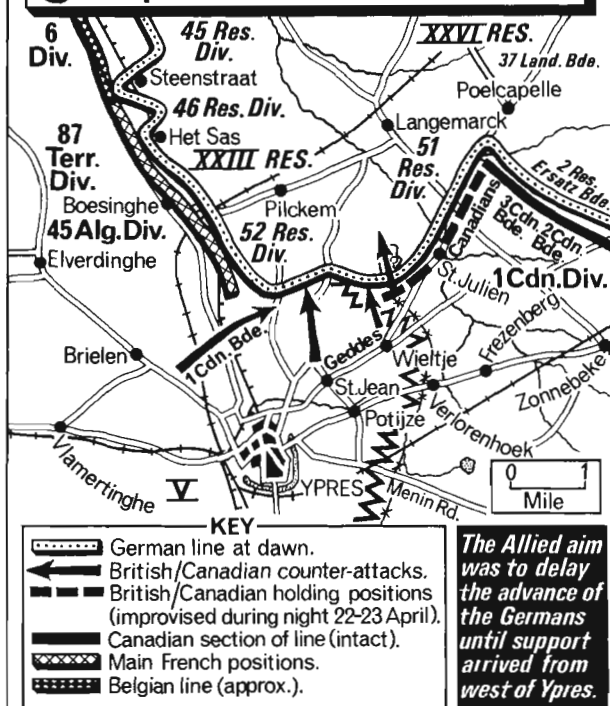


"SECOND YPRES" - continued

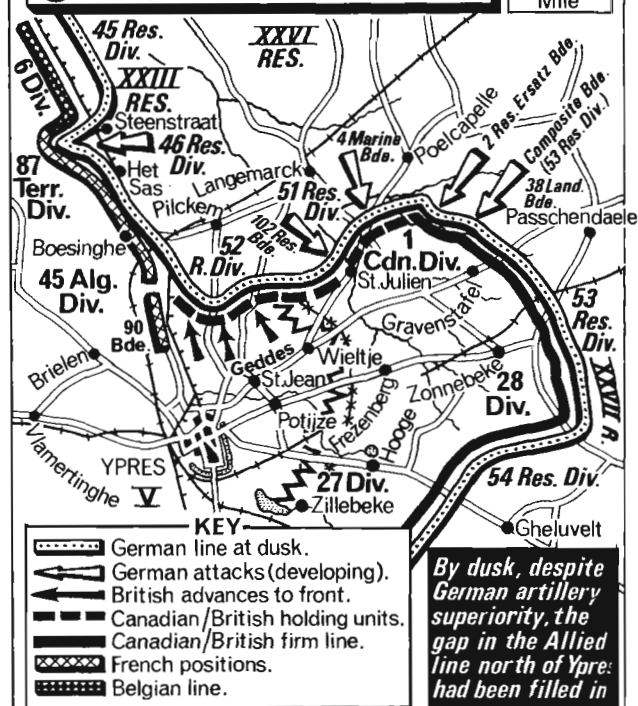
4 22 April-First Chlorine Gas Attack



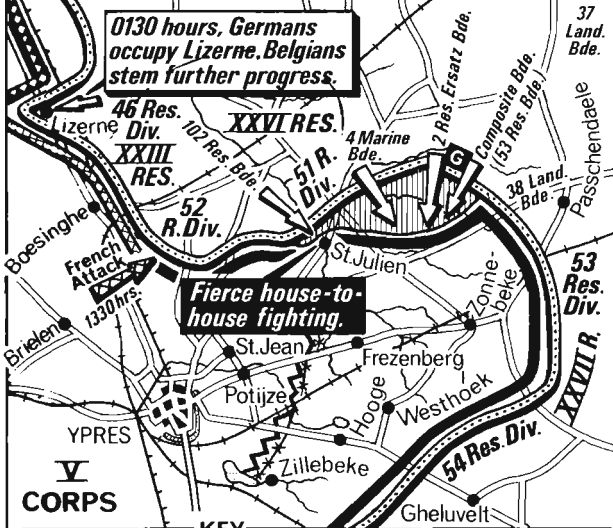
5 23 April-British Counter-Attacks



6 23 April-Situation at Dusk



7 24 April-Battle of St.Julien



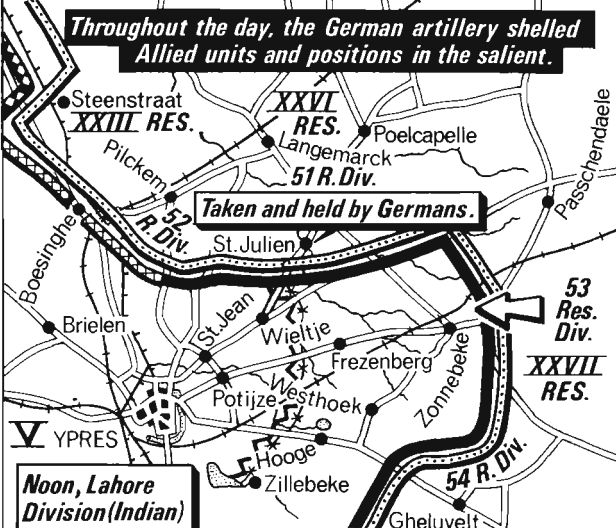
0130 hours, Germans occupy Lizerne. Belgians stem further progress.

Fierce house-to-house fighting.

Allied units have been omitted for clarity. German artillery batteries dominated area.

- KEY**
- German line at dawn.
 - Main German thrusts.
 - Ground gained by Germans.
 - Gas released at G (0400 hours).

8 25 April-Situation at Dusk



Throughout the day, the German artillery shelled Allied units and positions in the salient.

Taken and held by Germans.

Noon, Lahore Division (Indian) concentrates at Ouderdom, five miles south-west of Ypres.

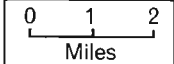
During the evening, the bulk of the Canadian Division was pulled back into reserve. Its casualties since 22 April: 1,700 dead and 2,500 wounded.

9 26 April-British Counter-Attacks

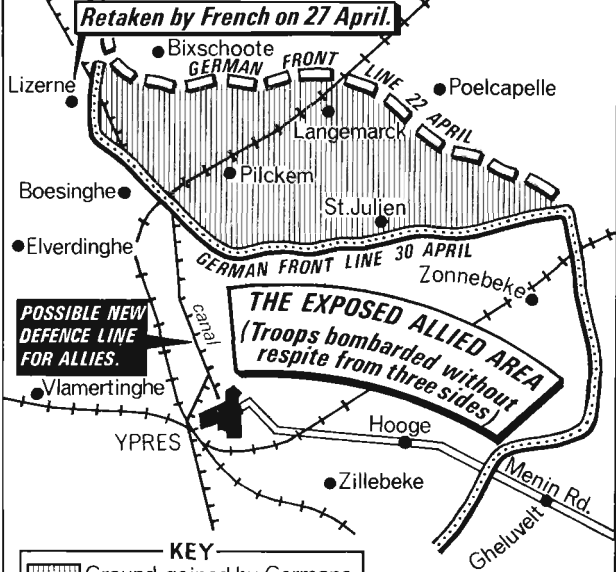
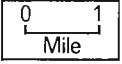
Despite the superiority of German artillery and machine guns, the British launched counter-attacks south-east of Pilckem and towards St. Julien. These efforts to regain lost ground came to naught with the British incurring 4,000 casualties during the day.



- KEY**
- British counter-attacks.
 - 1 Lahore Division.
 - 2 149 (Northumberland) Brigade.
 - German front line.
 - Gas released at 1420 hours.



10 30 April-The Old Salient



Retaken by French on 27 April.

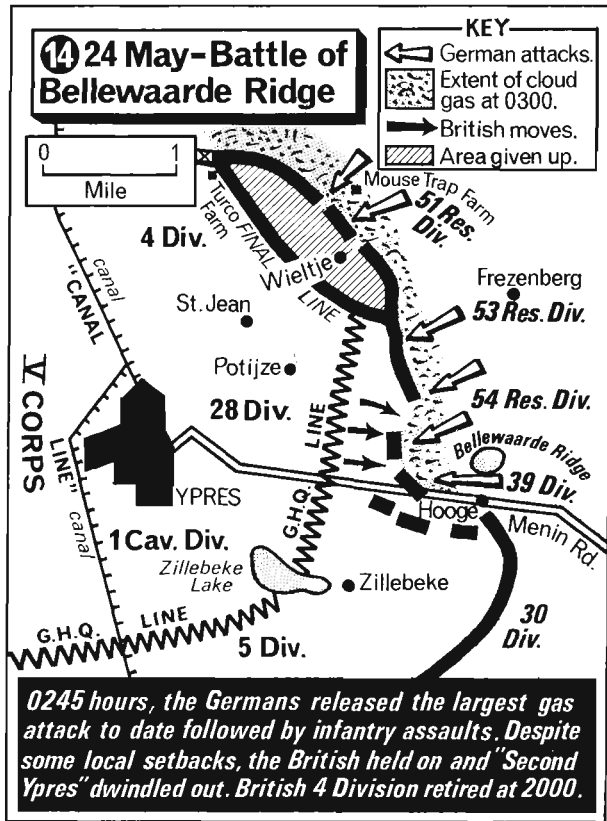
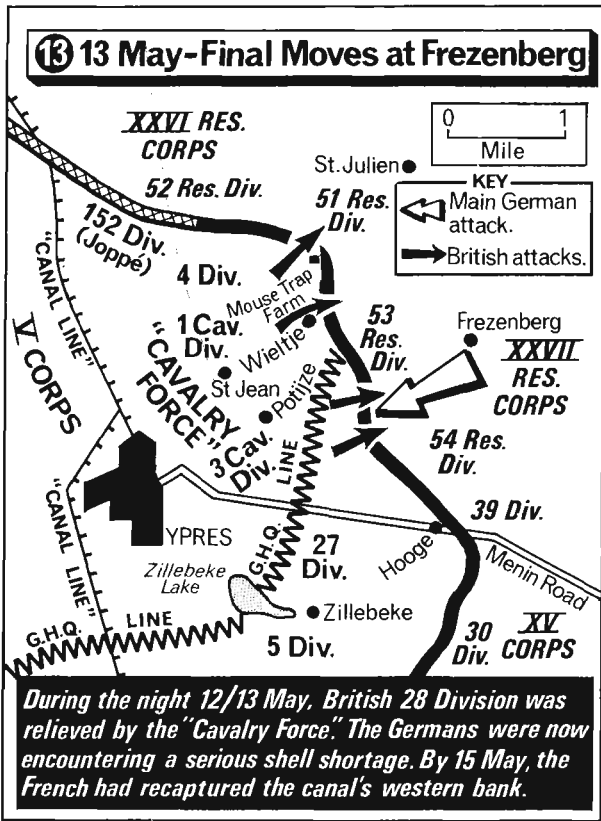
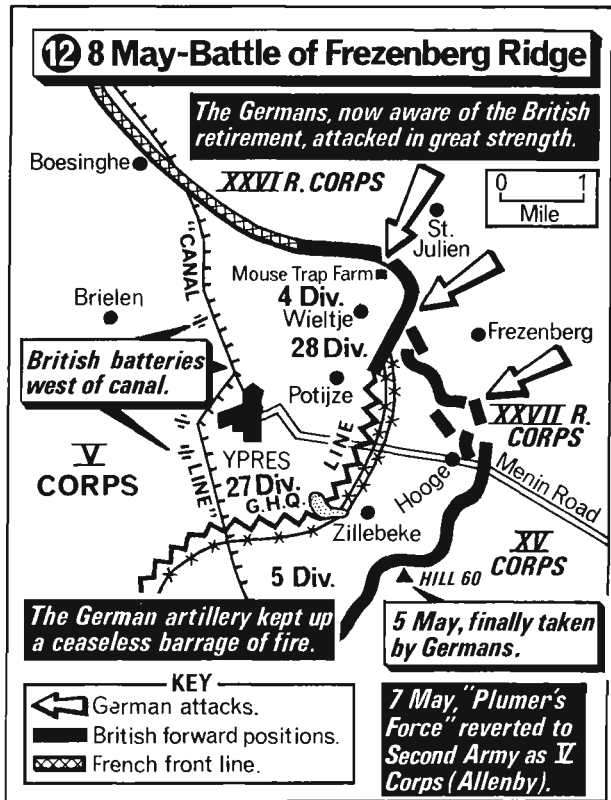
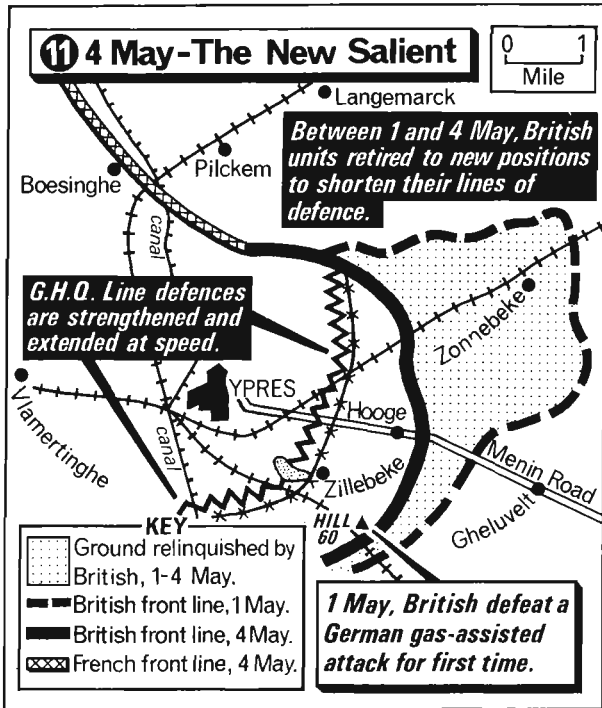
THE EXPOSED ALLIED AREA (Troops bombed without respite from three sides)

POSSIBLE NEW DEFENCE LINE FOR ALLIES.

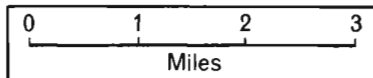
- KEY**
- Ground gained by Germans 22-30 April.
 - Railways.
 - Canal.

British V Corps was known as "Plumer's Force" from 1730 hrs. on 27 April.

"SECOND YPRES" - continued



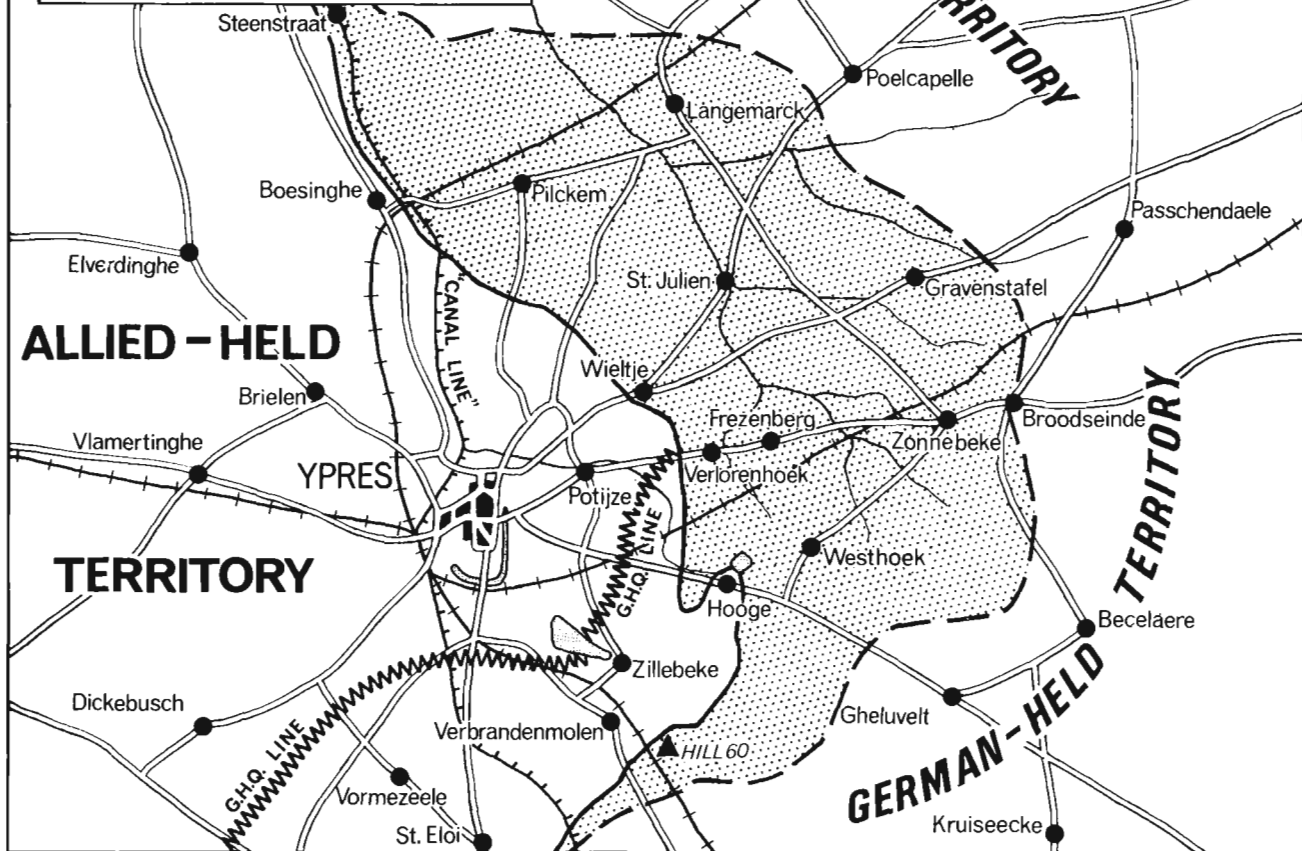
"SECOND YPRES": A SUMMARY



KEY

- Front line 22 April 1915.
- Front line 25 May 1915.
- ▨ Ground gained by Germans during battles.
- Important roads.
- +++ Railways.
- Canals.
- ~ Streams.

Note: on 22 May, the French reorganized the "Detachment d'Armée de Belgique": it became XXXVI Corps (commanded by General Hély d'Oisse!).



BRITISH CASUALTIES (59,275)

1 Cavalry Division :	1,203
2 Cavalry Division :	244
3 Cavalry Division :	1,618
4 Division :	10,859
5 Division :	7,994
27 Division :	7,263
28 Division :	15,533
50 Division :	5,204
1 Canadian Division :	5,469
Lahore Division :	3,888

GERMAN CASUALTIES (34,933)

XXIII Reserve Corps :	10,592
XXVI Reserve Corps :	12,845
XXVII Reserve Corps :	8,652
XV Corps :	2,844

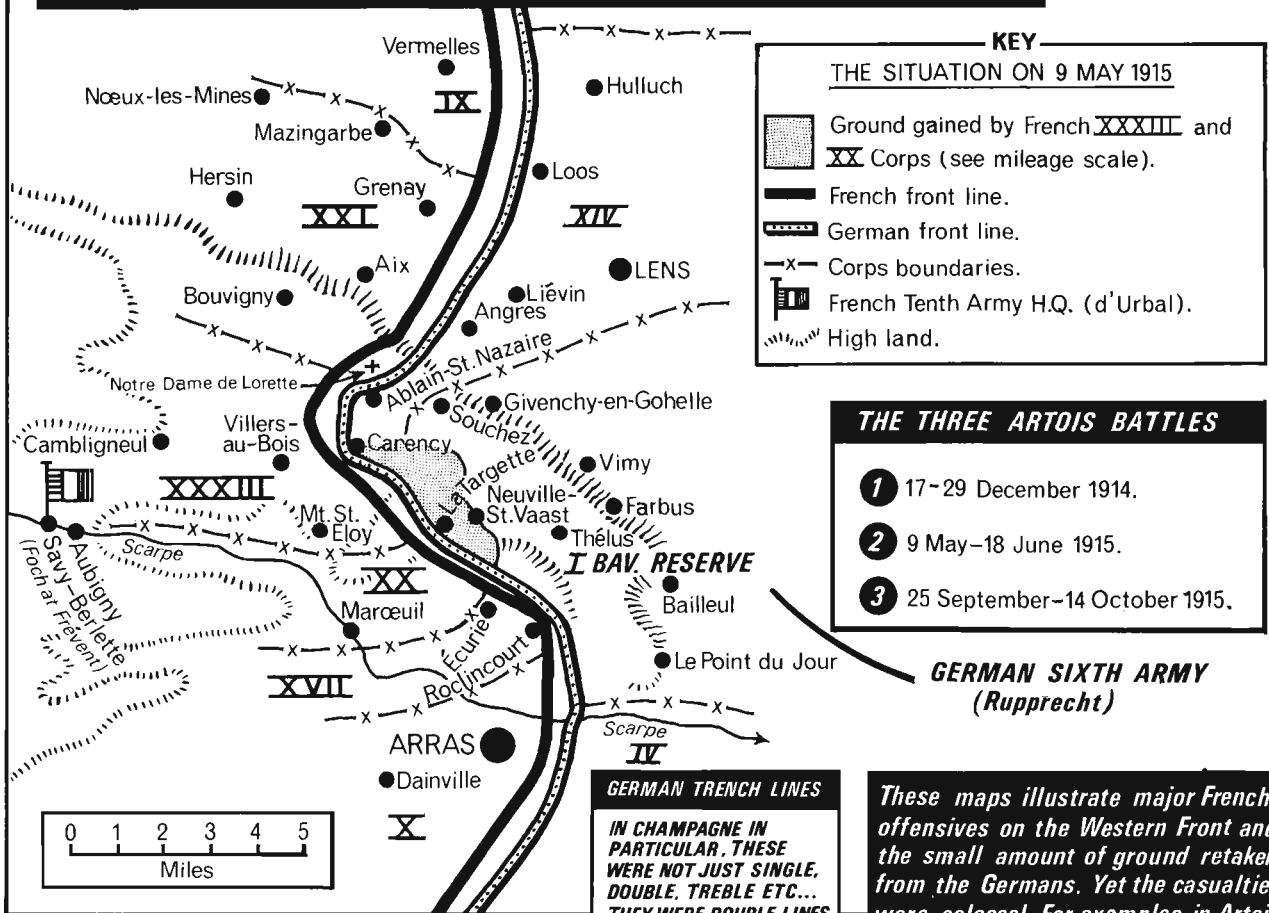
FRENCH CASUALTIES (10,000)

ESTIMATE *Precise figs. unknown*

BELGIAN CASUALTIES (1,530)

BY THE CLOSE OF "SECOND YPRES", THE GERMANS HAD GAINED SOME GROUND BUT THE SALIENT STILL REMAINED, ALBEIT REDUCED IN SIZE. MORE IMPORTANT FOR THE FUTURE, THEY HAD DISCLOSED THEIR SECRET WEAPON (GAS) PREMATURELY, AS THEY WERE NOT SUFFICIENTLY EQUIPPED TO EXPLOIT THEIR INITIAL SUCCESS OF 22 APRIL. ON THE BRITISH SIDE, THE BATTLES WERE MARKED BY INDECISION AMONG THE HIGHER RANKS AS TO THE CORRECT DEFENSIVE ACTION TO EMPLOY, AND GENERAL SMITH-DORRIEN (2 ARMY COMMANDER) WAS DISMISSED ON 6 MAY AS A RESULT OF DISSENSION BETWEEN HIMSELF AND THE COMMANDER-IN-CHIEF, FIELD-MARSHAL SIR JOHN FRENCH.

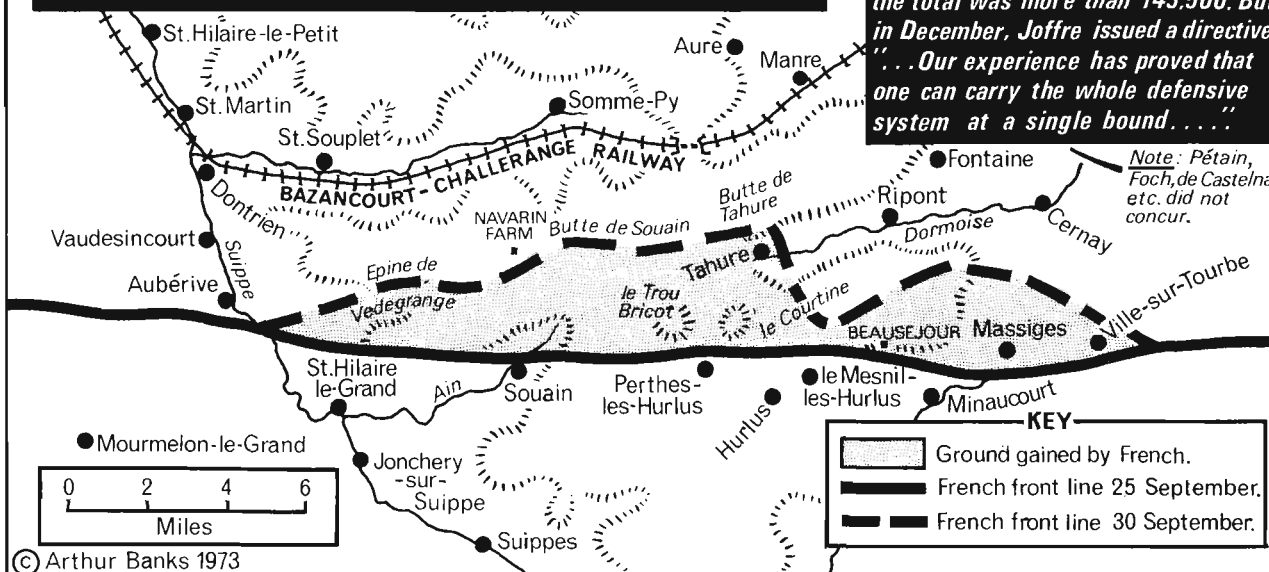
ARTOIS : DECEMBER 1914 - OCTOBER 1915



These maps illustrate major French offensives on the Western Front and the small amount of ground retaken from the Germans. Yet the casualties were colossal. For examples, in Artois (9 May-18 June alone) the French losses exceeded 102,500, and in Champagne (25-30 September alone) the total was more than 143,500. But, in December, Joffre issued a directive: "... Our experience has proved that one can carry the whole defensive system at a single bound."

Note: Pétain, Foch, de Castelnau, etc. did not concur.

CHAMPAGNE : SEPTEMBER 1915

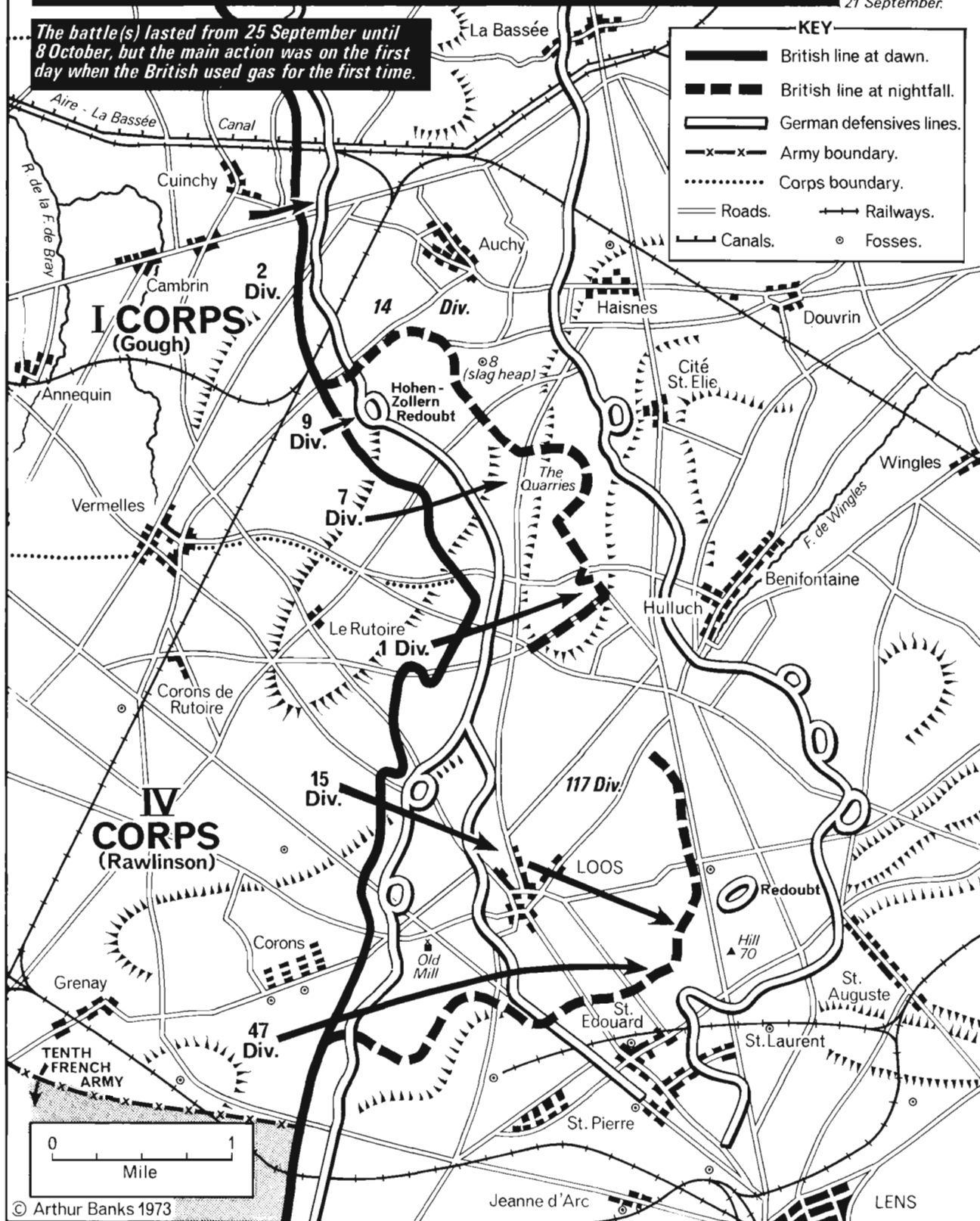


THE BATTLE OF LOOS 25 SEPTEMBER 1915

Note: the British opened an artillery bombardment on 21 September.

The battle(s) lasted from 25 September until 8 October, but the main action was on the first day when the British used gas for the first time.

KEY	
	British line at dawn.
	British line at nightfall.
	German defensives lines.
	Army boundary.
	Corps boundary.
	Roads.
	Railways.
	Canals.
	Fosses.



THE WAR IN 1916

The costly failures of 1915 had led to changes in command before the end of the year. In the autumn, against the advice of his ministers, Tsar Nicholas II assumed command on the Eastern Front, sending Grand Duke Nicholas to hold the Caucasus against the Turks (page 163). The heavy casualties at Loos discredited Sir John French who, in December, was replaced as British commander-in-chief by Sir Douglas Haig. At the same time Kitchener, though remaining War Minister, surrendered responsibility for operations to a new Chief of the Imperial General Staff, Sir William Robertson, an ex-footman who had enlisted as a private thirty-nine years before. Only in France did Joffre's supremacy pass unchallenged.

Haig and Robertson were a formidable partnership. They insisted that, after the frustrations of Gallipoli, the Western Front was to have priority over all other Fronts. This decision was endorsed by the Cabinet on 28 December 1915; it was welcomed by Joffre. His own plans for 1916 looked for wearing-down operations by his allies preparatory to a major offensive by the French later in the spring. But the initiative on the Western Front was seized by the Germans. Falkenhayn won the Kaiser's consent for a different concept of military operations: he proposed massive attack on a narrow sector where reasons of national sentiment would 'compel the French General Staff to throw in every man they have'. The sector he recommended for this attempt 'to bleed France white' (Falkenhayn's own expression) was Verdun, the historic city on the Meuse whose fall in 1792 precipitated the panic September massacres in revolutionary Paris.

The battle of Verdun, which began with a concentrated artillery barrage on 21 February 1916 and continued for 300 days, overshadowed—and to some extent predetermined—all other military events of the year. Verdun, like Ypres, never fell to the Germans; it consumed Joffre's reserves; it left the French Army permanently shell-shocked; but it also brought dis-

illusionment to the Germans, who sustained a third of a million casualties in occupying a crater filled wasteland one-sixth the size of the Isle of Wight. Never again was morale steady, either in France or Germany.

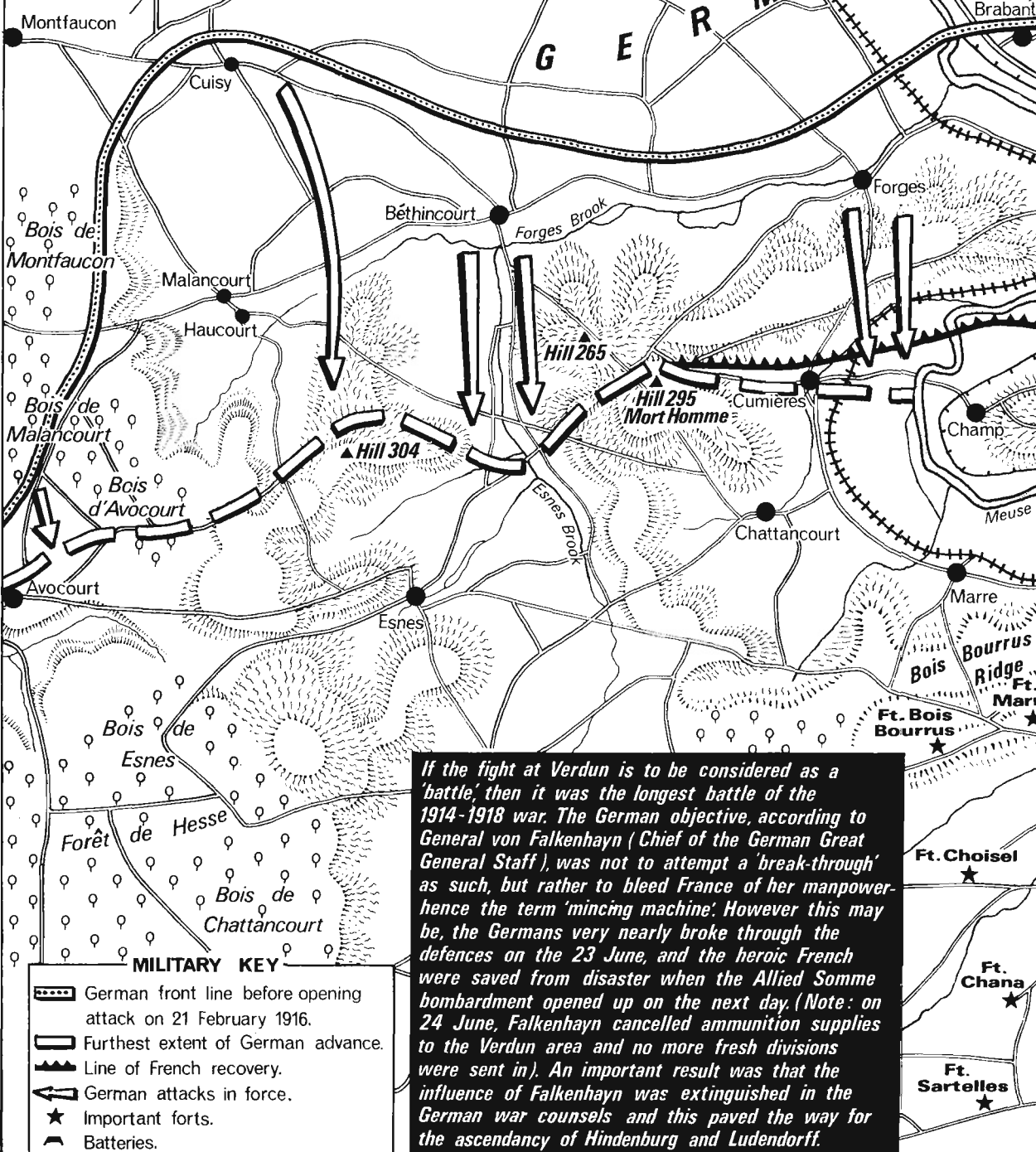
Ultimately the defenders of Verdun were relieved by actions elsewhere. By midsummer Haig, supported by Foch's Sixth Army, was ready to attack on the Somme. 20,000 British soldiers perished on the first day of the battle, more than were killed in action during the five years of Wellington's Peninsular Campaign. Yet, despite the terrible losses, Haig continued to pound the German lines on the Somme, employing in September, for the first time, tanks to cross trenches and destroy machine gun nests. The Somme was a traumatic as Verdun.

Success in 1916 came on the south-west sector of the Eastern Front where General Brusilov convinced the Tsar that it was possible to break through the Austrian defences and, if assisted by an enveloping movement farther north, to knock Austria-Hungary out of the war. Brusilov forced the Austrians to fall back sixty or seventy miles in confusion: the Germans rushed divisions from the Western Front to plug the gap, the Austrians relaxed pressure on Italy, and even a Turkish Corps was hurried to Galicia. The northern attack never materialised, but Brusilov gained a remarkable triumph, sufficient to tempt Rumania into the war as an ally, although the Rumanians were speedily defeated (page 162). The victory over Rumania was won by Mackensen and Falkenhayn, who had been replaced as Chief of the German General Staff by Hindenburg when the Kaiser despaired of his Verdun policy at the end of August.

At sea, 1916 was the year of Jutland (pages 256–261), of intensified measures by the British to blockade Germany, and of a fifty per cent increase over the 1915 figures for the tonnage of Allied shipping sunk by U-boats. The outlook for 1917 was ominous.

THE VERDUN 'MINCING MACHINE' 21 FEBRUARY - 16 DECEMBER 1916

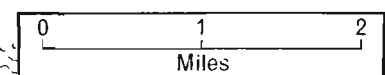
Broad Stages of the Battle



If the fight at Verdun is to be considered as a 'battle,' then it was the longest battle of the 1914-1918 war. The German objective, according to General von Falkenhayn (Chief of the German Great General Staff), was not to attempt a 'break-through' as such, but rather to bleed France of her manpower - hence the term 'mincing machine'. However this may be, the Germans very nearly broke through the defences on the 23 June, and the heroic French were saved from disaster when the Allied Somme bombardment opened up on the next day. (Note: on 24 June, Falkenhayn cancelled ammunition supplies to the Verdun area and no more fresh divisions were sent in). An important result was that the influence of Falkenhayn was extinguished in the German war councils and this paved the way for the ascendancy of Hindenburg and Ludendorff.

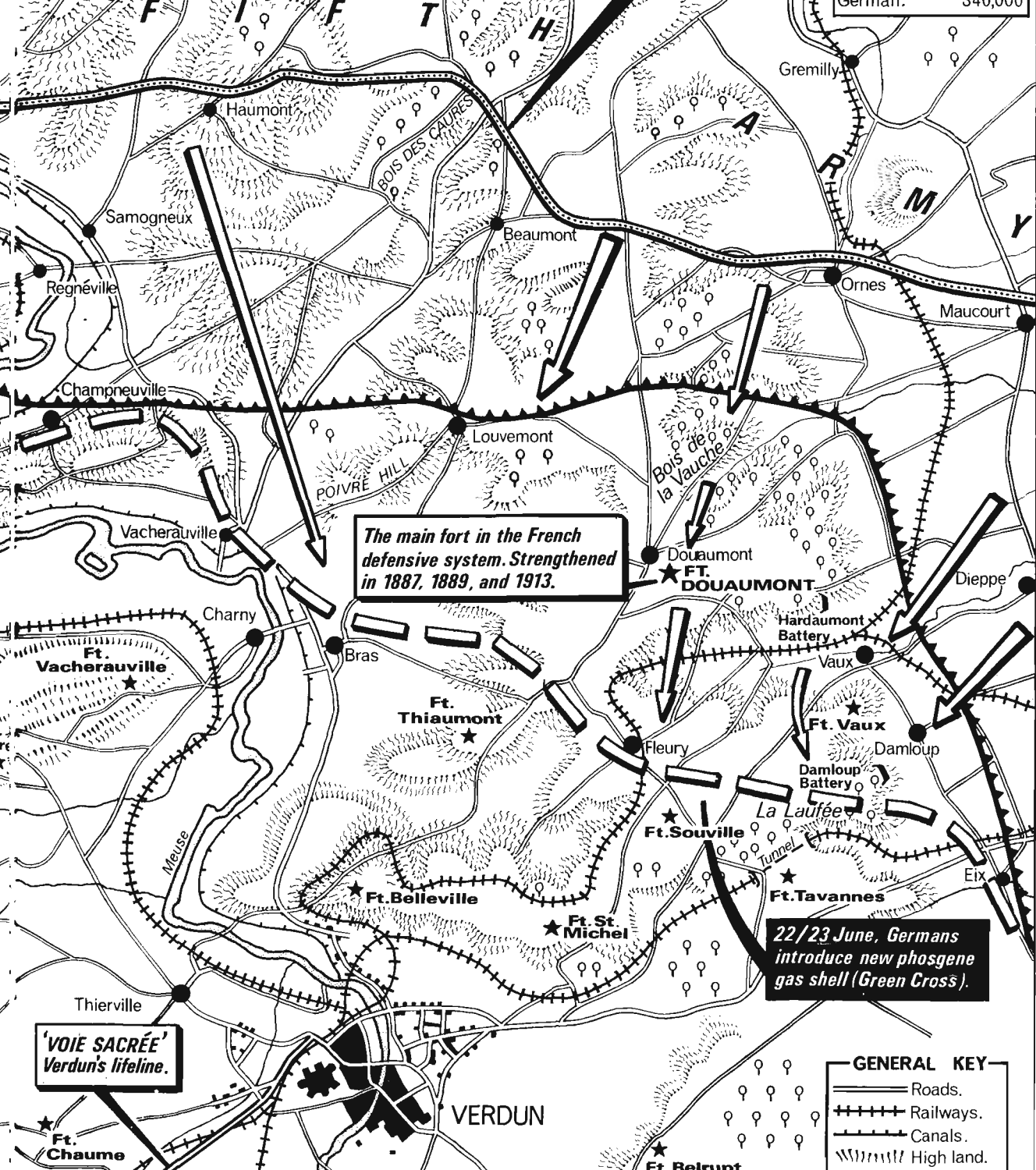
MILITARY KEY

- German front line before opening attack on 21 February 1916.
- Furthest extent of German advance.
- Line of French recovery.
- German attacks in force.
- Important forts.
- Batteries.



21 February, Germans use new flamethrowers for the first time in battle.

CASUALTIES	
French:	400,000
German:	340,000



The main fort in the French defensive system. Strengthened in 1887, 1889, and 1913.

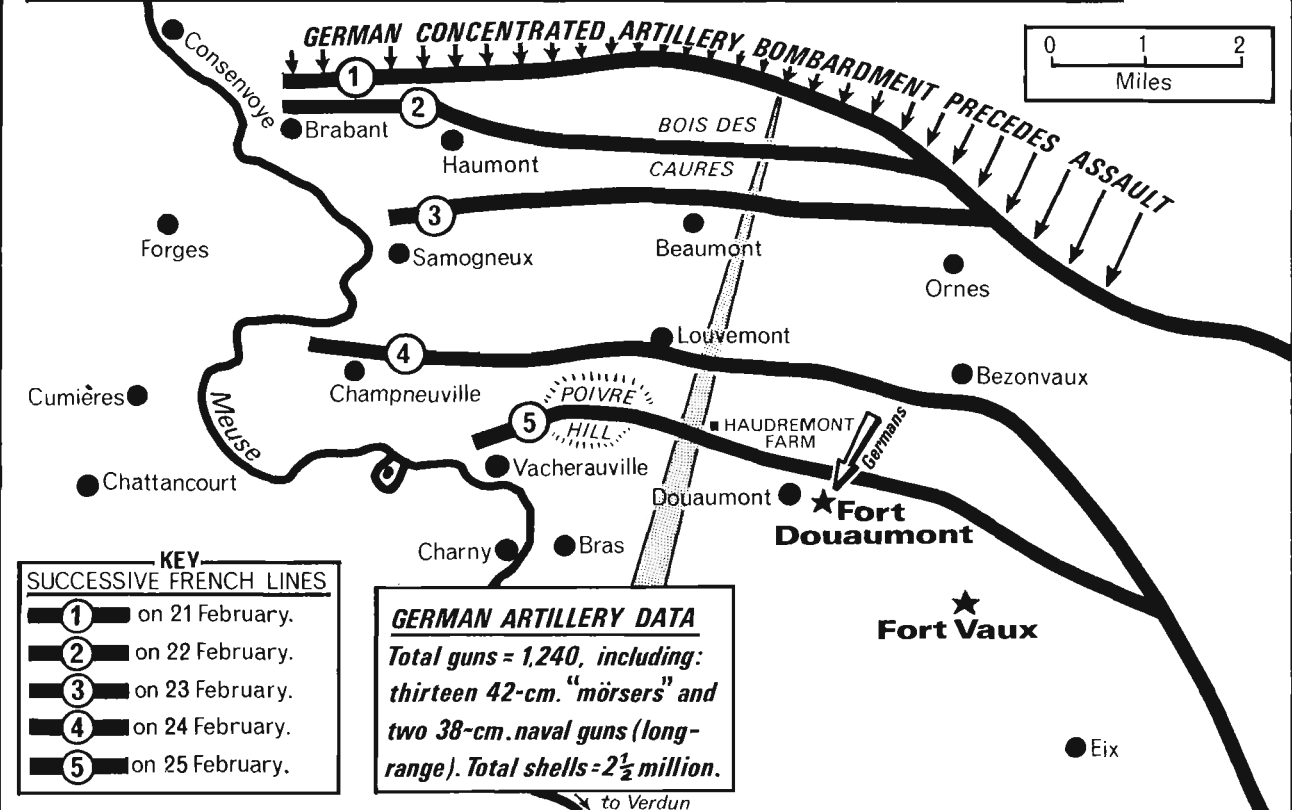
22/23 June, Germans introduce new phosgene gas shell (Green Cross).

'VOIE SACRÉE'
Verdun's lifeline.

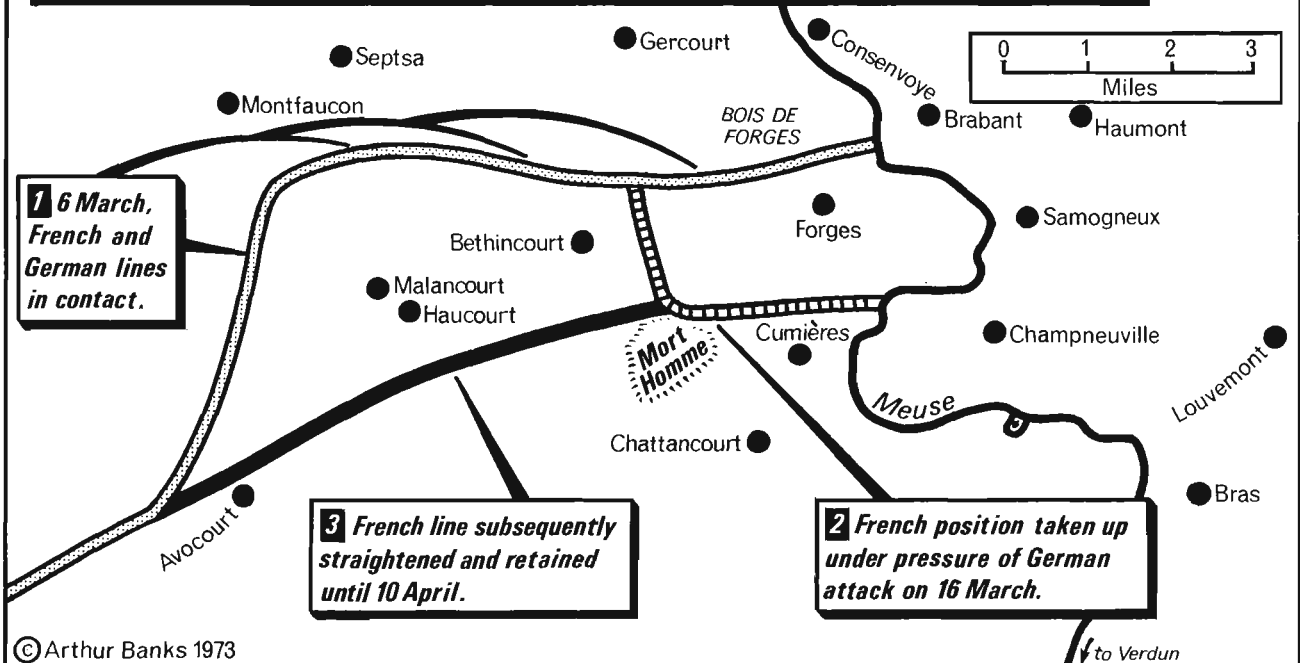
GENERAL KEY

- Roads.
- Railways.
- Canals.
- High land.

THE OPENING PHASE 21-25 FEBRUARY 1916



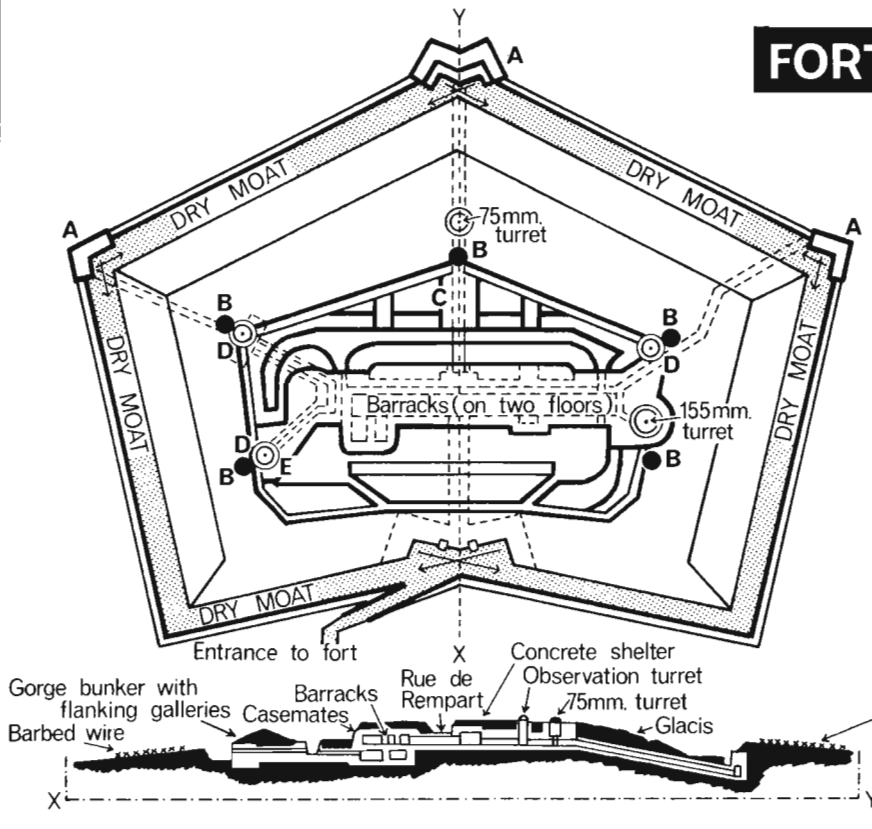
WEST OF THE MEUSE 6 MARCH - 10 APRIL 1916



FORT DOUAUMONT

KEY

- A Counterscarp gallery.
- B Observation turrets.
- C Magazine.
- D Machine gun turrets.
- E 'Casemate de Bourges.'
- ⇒ Field of fire.

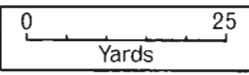


The largest work in the French defensive system, this fort (virtually ungarrisoned) was captured by the Germans on 25 February 1916. Over 120,000 shells fell upon it before its recapture by the French on 24 October 1916.

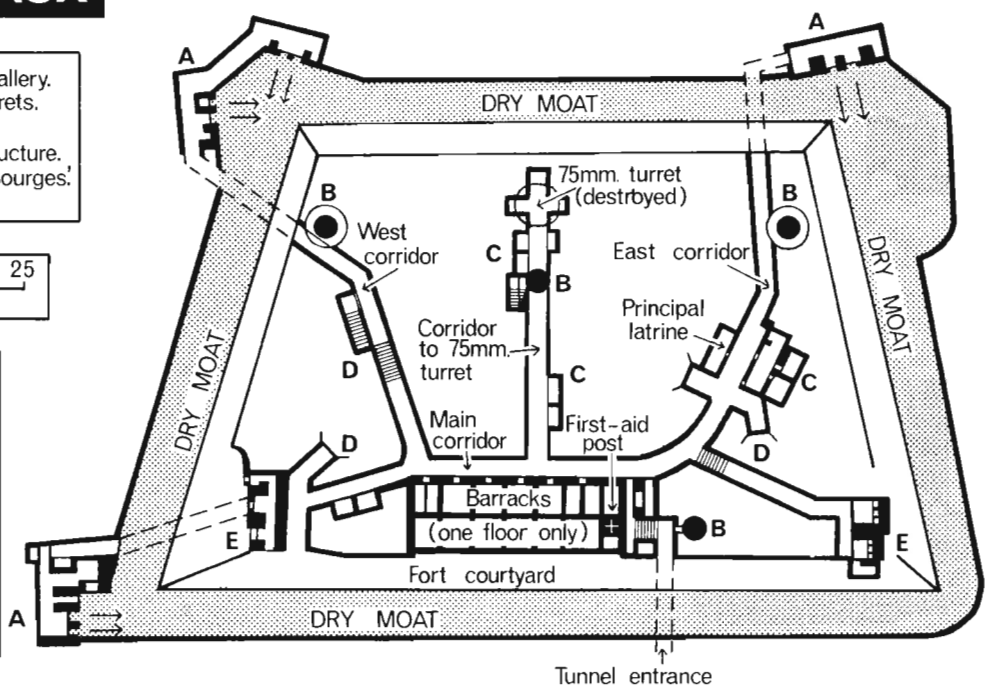
FORT VAUX

KEY

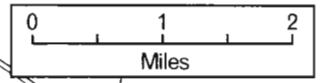
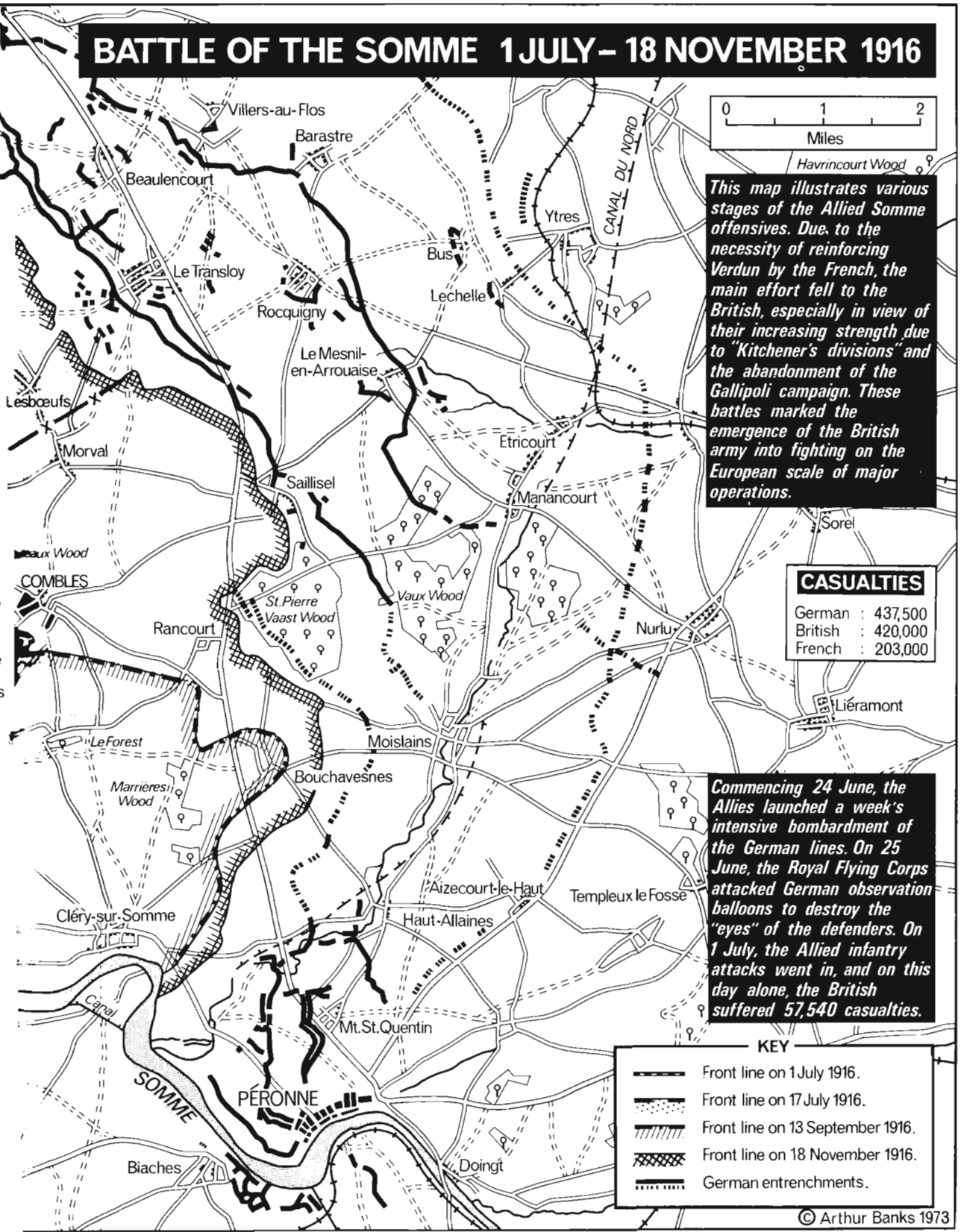
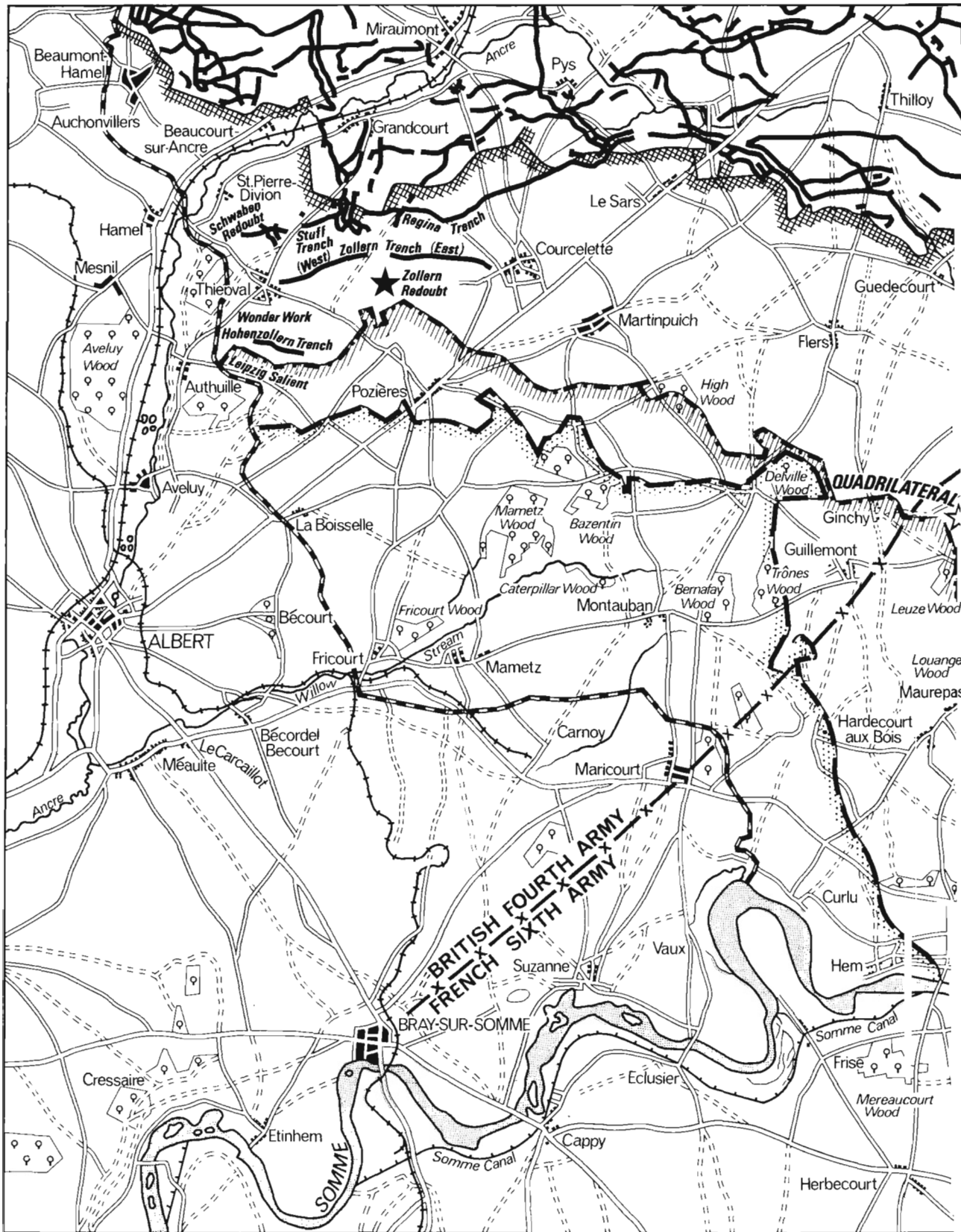
- A Counterscarp gallery.
- B Observation turrets.
- C Magazines.
- D Exit to superstructure.
- E 'Casemate de Bourges.'
- ⇒ Field of fire.



The smallest work in the French defensive system, this fort (after a stubborn and heroic resistance) was captured by the Germans on 7 June 1916. It was retaken by the French on 2 November 1916.



BATTLE OF THE SOMME 1 JULY - 18 NOVEMBER 1916



This map illustrates various stages of the Allied Somme offensives. Due to the necessity of reinforcing Verdun by the French, the main effort fell to the British, especially in view of their increasing strength due to "Kitchener's divisions" and the abandonment of the Gallipoli campaign. These battles marked the emergence of the British army into fighting on the European scale of major operations.

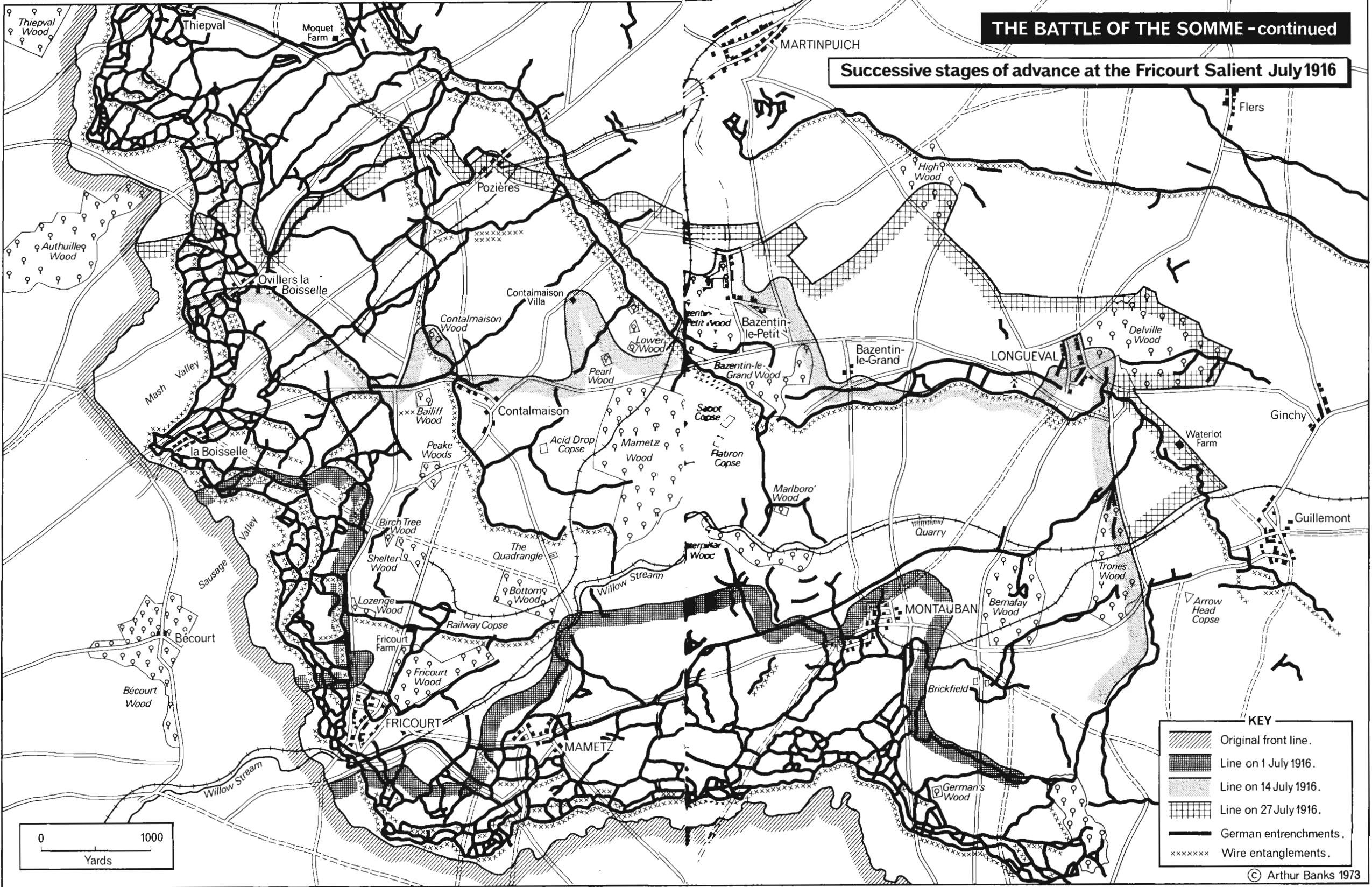
CASUALTIES	
German	: 437,500
British	: 420,000
French	: 203,000

Commencing 24 June, the Allies launched a week's intensive bombardment of the German lines. On 25 June, the Royal Flying Corps attacked German observation balloons to destroy the "eyes" of the defenders. On 1 July, the Allied infantry attacks went in, and on this day alone, the British suffered 57,540 casualties.

- KEY
- Front line on 1 July 1916.
 - - - Front line on 17 July 1916.
 - /// Front line on 13 September 1916.
 - ▣ Front line on 18 November 1916.
 - ▧ German entrenchments.

THE BATTLE OF THE SOMME - continued

Successive stages of advance at the Fricourt Salient July 1916



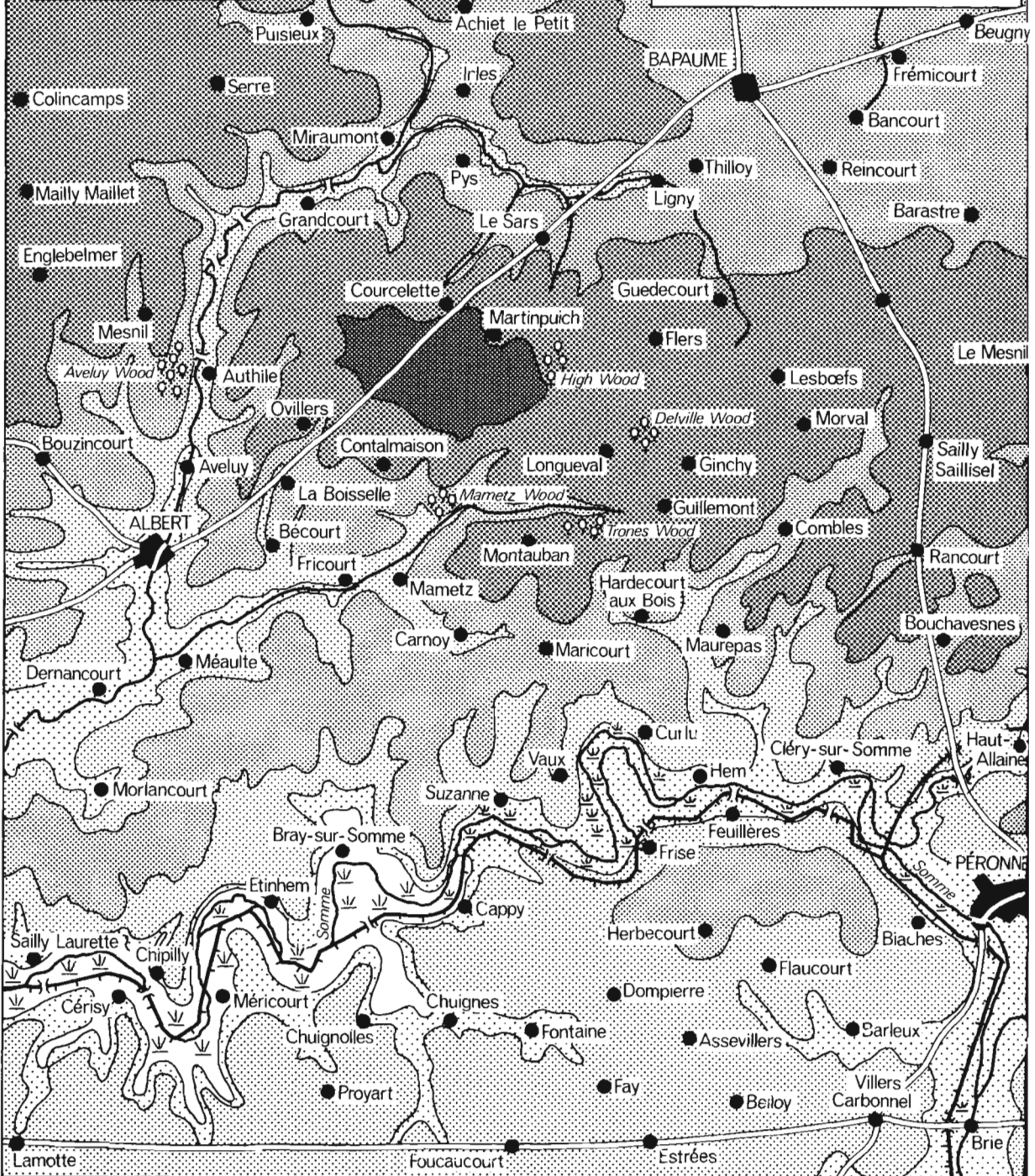
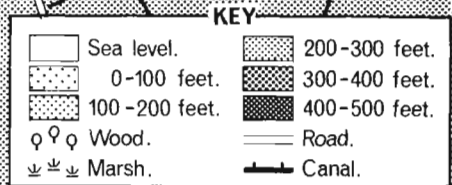
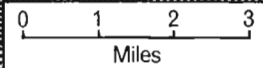
KEY

	Original front line.
	Line on 1 July 1916.
	Line on 14 July 1916.
	Line on 27 July 1916.
	German entrenchments.
	Wire entanglements.

© Arthur Banks 1973

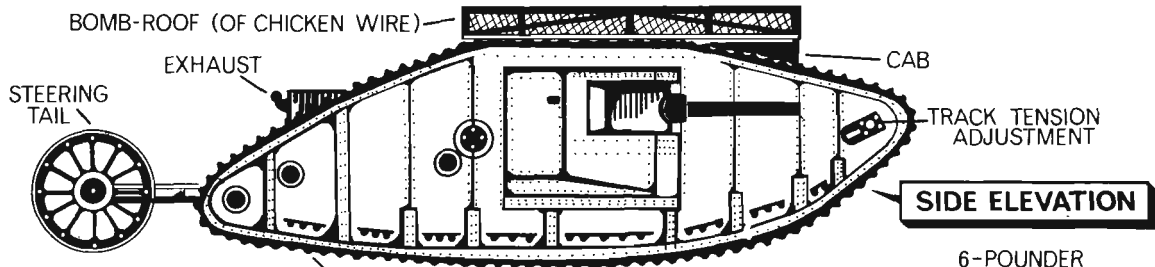
THE BATTLE OF THE SOMME - continued

The Somme Country



The First Tanks in Action-15 September 1916

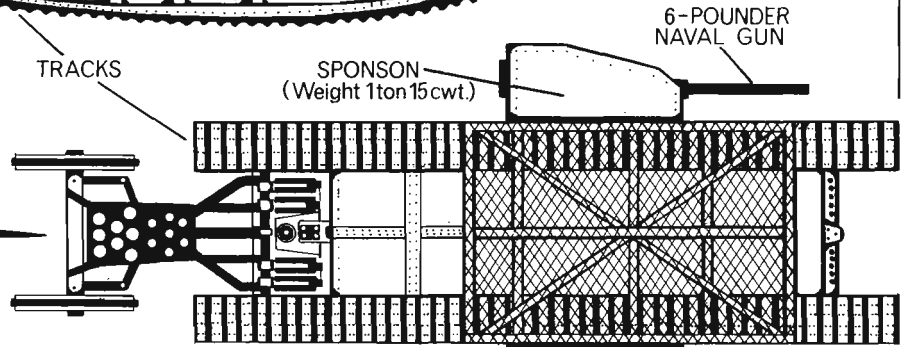
British Mark I Male Tank (of Heavy Section, Machine Gun Corps)



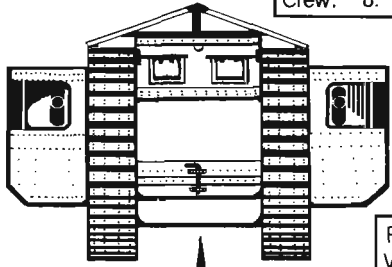
There were two versions of the British Mark I tanks known as males and females.

PLAN VIEW

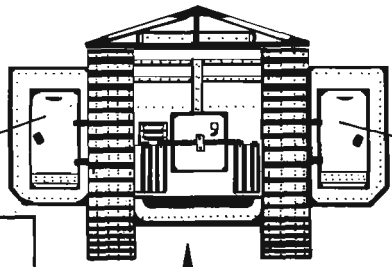
Male tanks were armed with two 6-pounder naval guns. Female tanks carried two Vickers machine guns within modified sponsons.



Length: 32.5 feet (with tail).
Width: 13.75 feet.
Height: 8 feet.
Crew: 8.



FRONT ELEVATION

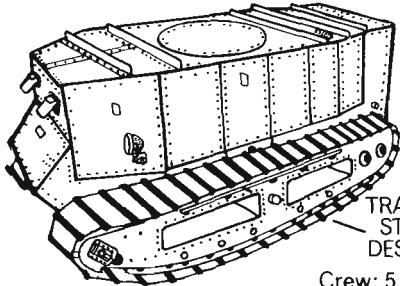


REAR ELEVATION

Range: 23 miles.
Weight: 28 tons.
Max. speed: 3.7 m.p.h.
Engine: Daimler 105 h.p.

EARLY BRITISH TANK DEVELOPMENT

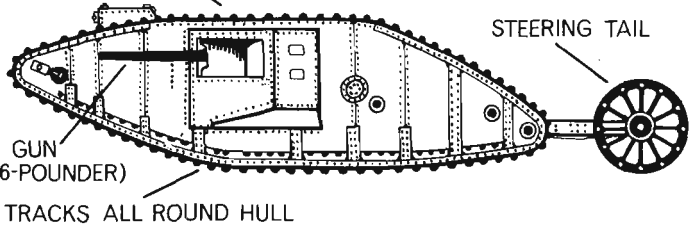
1 'LITTLE WILLIE' (experimental)



Crew: 5.
Length: 26.5 feet. Weight: 28 tons. Speed: 3.5 m.p.h.

2 'MOTHER' (the first real tank)

LOZENGE-SHAPED TO REDUCE HEIGHT



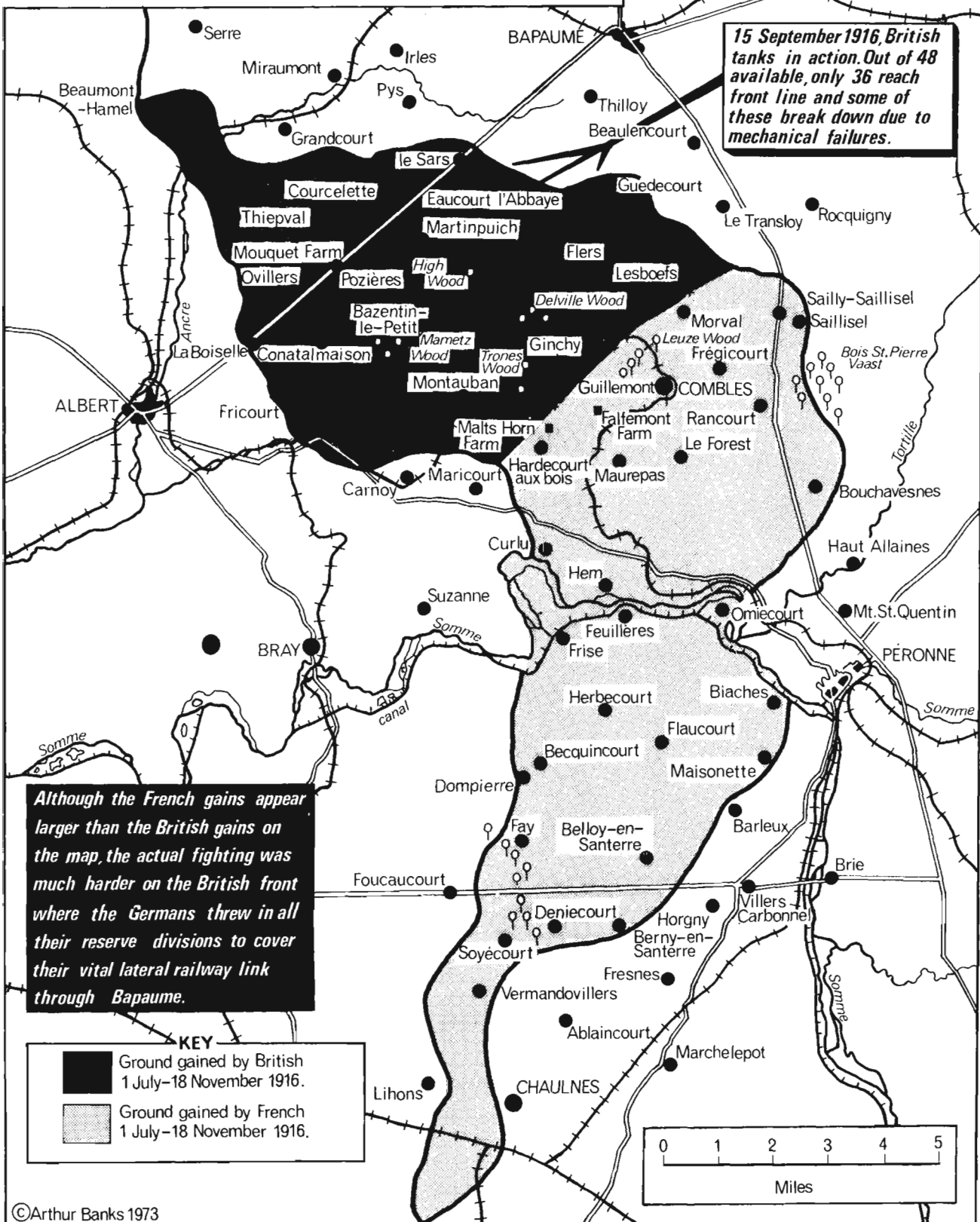
Length: 32.5 feet. Width: 13.75 feet. Height: 8 feet. Armour: mild steel.

Maximum speed: 3.7 m.p.h.
Crew: 8.
Engine: Daimler.
Armament (main): Two 6-pdrs.

THE BATTLE OF THE SOMME - conclusion

A Basic Summary

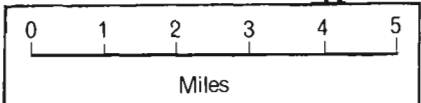
15 September 1916, British tanks in action. Out of 48 available, only 36 reach front line and some of these break down due to mechanical failures.



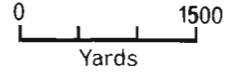
Although the French gains appear larger than the British gains on the map, the actual fighting was much harder on the British front where the Germans threw in all their reserve divisions to cover their vital lateral railway link through Bapaume.

KEY

- Ground gained by British 1 July - 18 November 1916.
- Ground gained by French 1 July - 18 November 1916.



THE FRENCH RECOVERY AT VERDUN OCTOBER - DECEMBER 1916



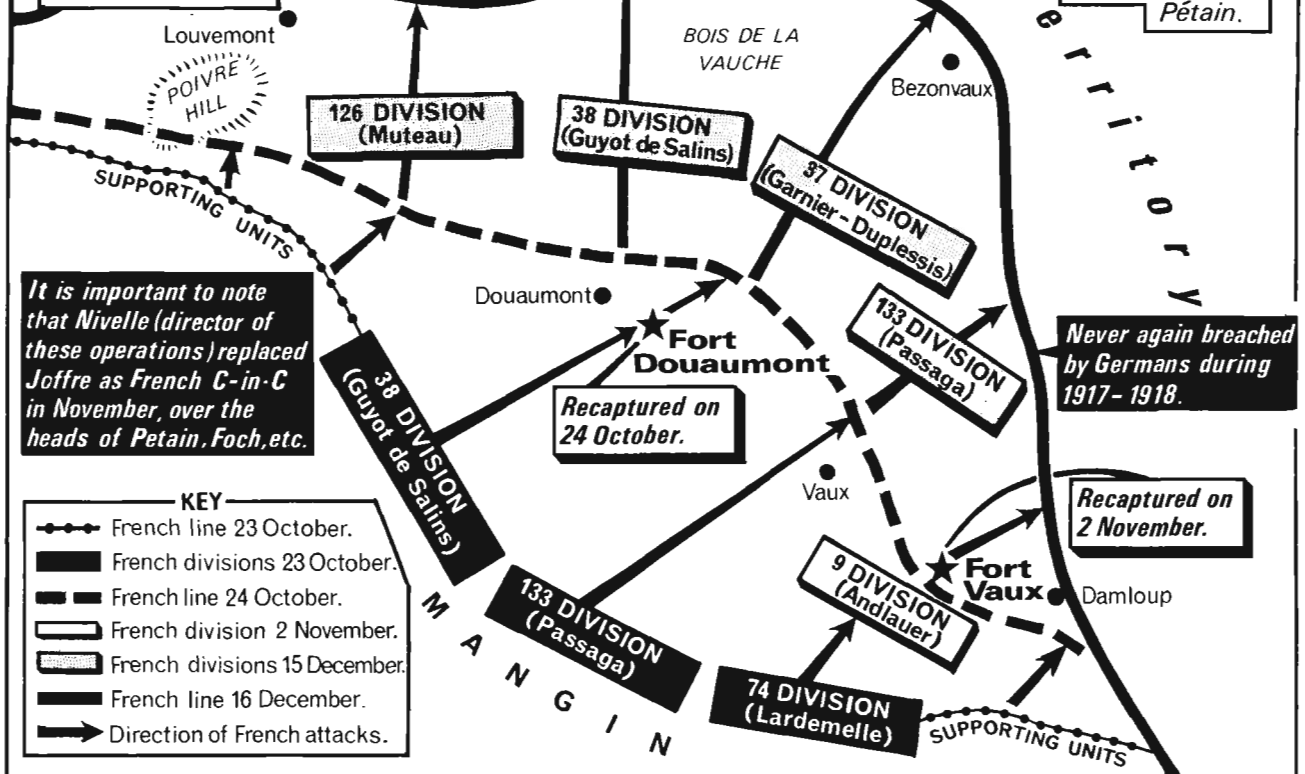
German-occupied

FORTS

An evaluation of their importance in future commenced in France. ? Maginot Line (1939).

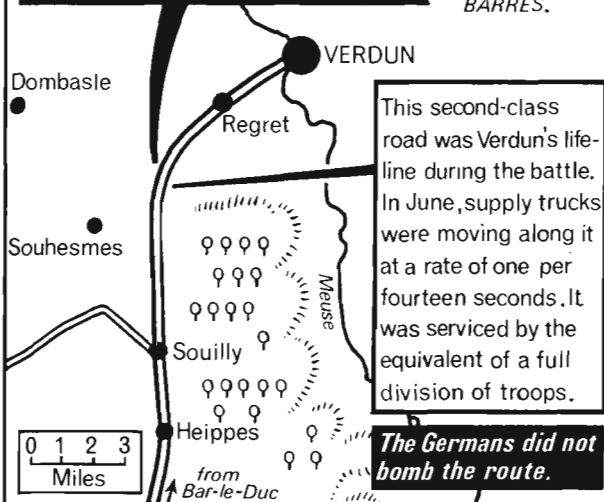
AVIATION

Verdun was "THE CRUCIBLE IN WHICH THE AVIATION OF THE FRENCH WAS FIRED." Pétain.



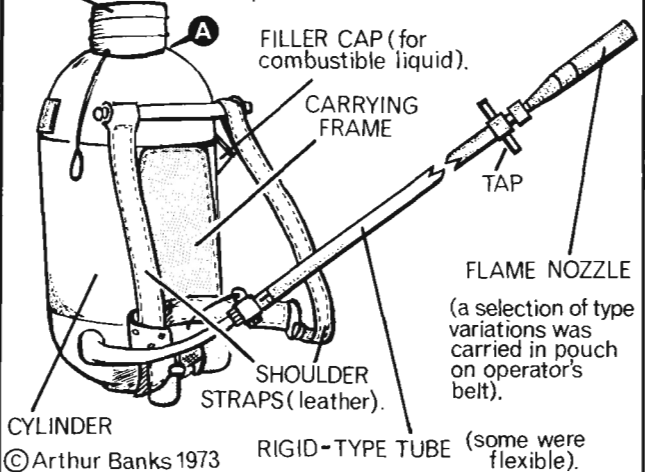
THE 'SACRED WAY' (la Voie Sacrée)

ROAD NAME IMMORTALIZED BY MAURICE BARRÈS.

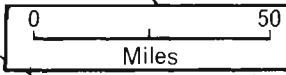


German FLAMMENWERFER

CAP (hinged at A) covering valves through which cylinder was pressurized.



AUSTRIA-HUNGARY



9 October 1915, falls to Germans

The Serbians could not stem the advances of the Central Powers. Withdrawing through Albania, the survivors were evacuated to Corfu by Allied warships (astonishingly, taking 24,000 prisoners with them).



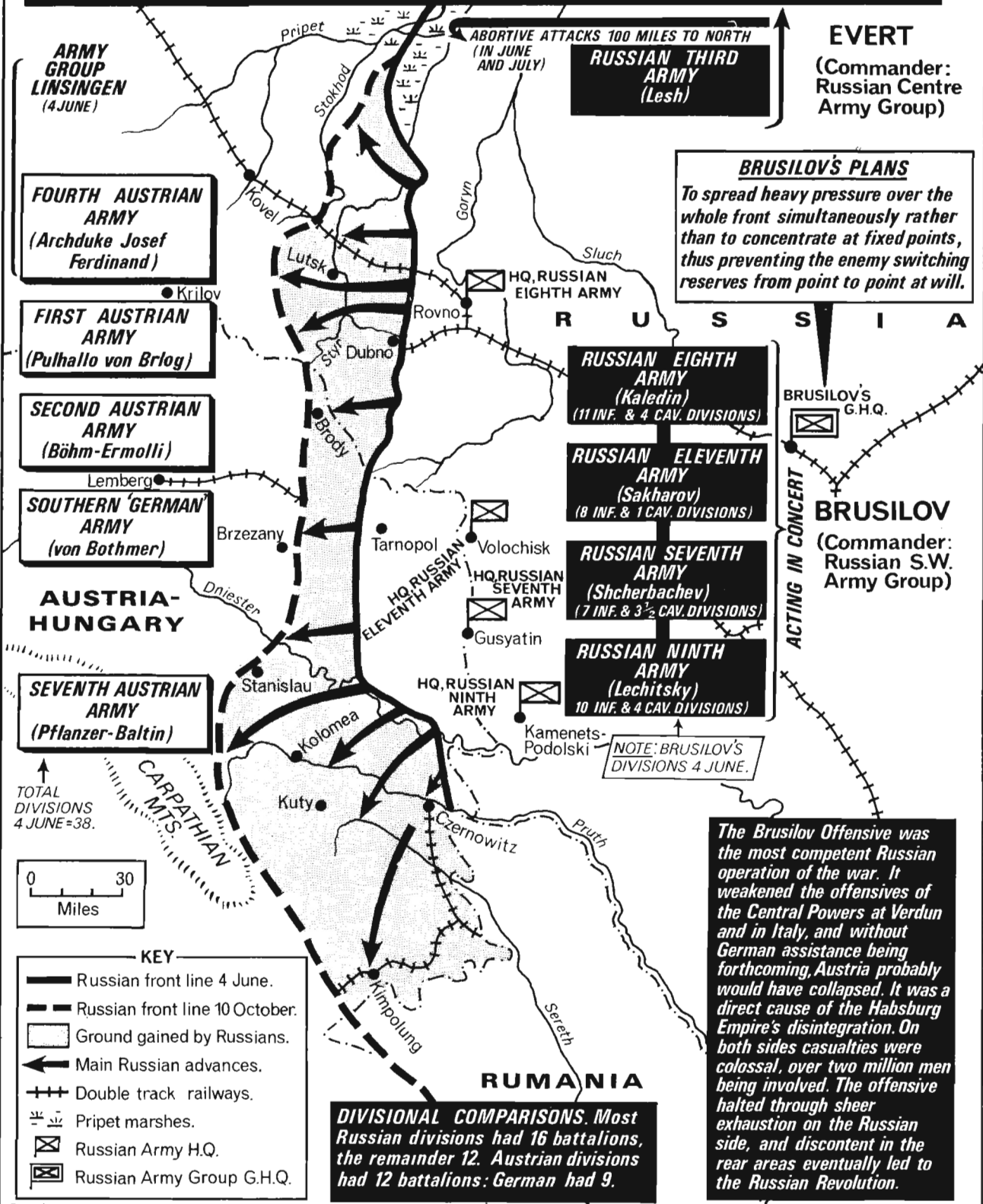
Serbian military centre and arsenal.

- KEY**
- German forces.
 - Austrian forces.
 - Bulgarian forces.
 - Serbian and Montenegrin forces.
 - French and British forces.
 - Serbian line 23 November.
 - ← Advances of Central Powers.
 - ← Lines of Serbian retreat through Albania 1915-1916.

THE AUSTRO-GERMAN-BULGARIAN COMBINED ASSAULT UPON SERBIA OCTOBER 1915

5 October 1915, Allies land here in vain bid to assist Serbians.

THE BRUSILOV OFFENSIVE JUNE - OCTOBER 1916



ARMY GROUP LINSINGEN
(4 JUNE)

FOURTH AUSTRIAN ARMY
(Archduke Josef Ferdinand)

FIRST AUSTRIAN ARMY
(Pulhallo von Brlog)

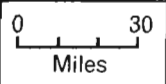
SECOND AUSTRIAN ARMY
(Böhm-Ermolli)

SOUTHERN 'GERMAN' ARMY
(von Bothmer)

AUSTRIA-HUNGARY

SEVENTH AUSTRIAN ARMY
(Pflanzer-Baltin)

TOTAL DIVISIONS 4 JUNE = 38.



KEY

- Russian front line 4 June.
- - - Russian front line 10 October.
- Ground gained by Russians.
- ← Main Russian advances.
- +++ Double track railways.
- ≡ Pripet marshes.
- ⊠ Russian Army H.Q.
- ⊠ Russian Army Group G.H.Q.

ABORTIVE ATTACKS 100 MILES TO NORTH
(IN JUNE AND JULY)

RUSSIAN THIRD ARMY
(Lesh)

EVERT
(Commander: Russian Centre Army Group)

BRUSILOV'S PLANS
To spread heavy pressure over the whole front simultaneously rather than to concentrate at fixed points, thus preventing the enemy switching reserves from point to point at will.

RUSSIAN EIGHTH ARMY
(Kaledin)
(11 INF. & 4 CAV. DIVISIONS)

RUSSIAN ELEVENTH ARMY
(Sakharov)
(8 INF. & 1 CAV. DIVISIONS)

RUSSIAN SEVENTH ARMY
(Shcherbachev)
(7 INF. & 3 1/2 CAV. DIVISIONS)

RUSSIAN NINTH ARMY
(Lechitsky)
(10 INF. & 4 CAV. DIVISIONS)

NOTE: BRUSILOV'S DIVISIONS 4 JUNE.

BRUSILOV'S G.H.Q.

ACTING IN CONCERT

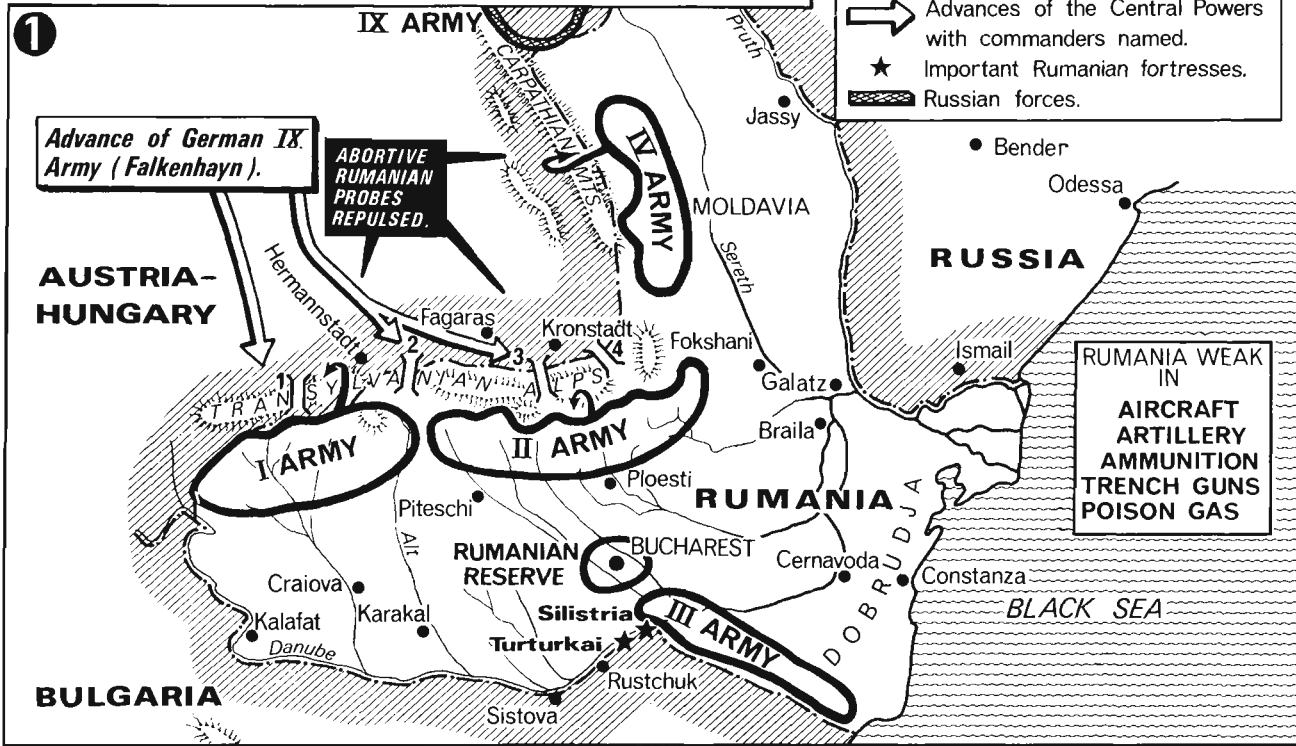
BRUSILOV
(Commander: Russian S.W. Army Group)

DIVISIONAL COMPARISONS. Most Russian divisions had 16 battalions, the remainder 12. Austrian divisions had 12 battalions; German had 9.

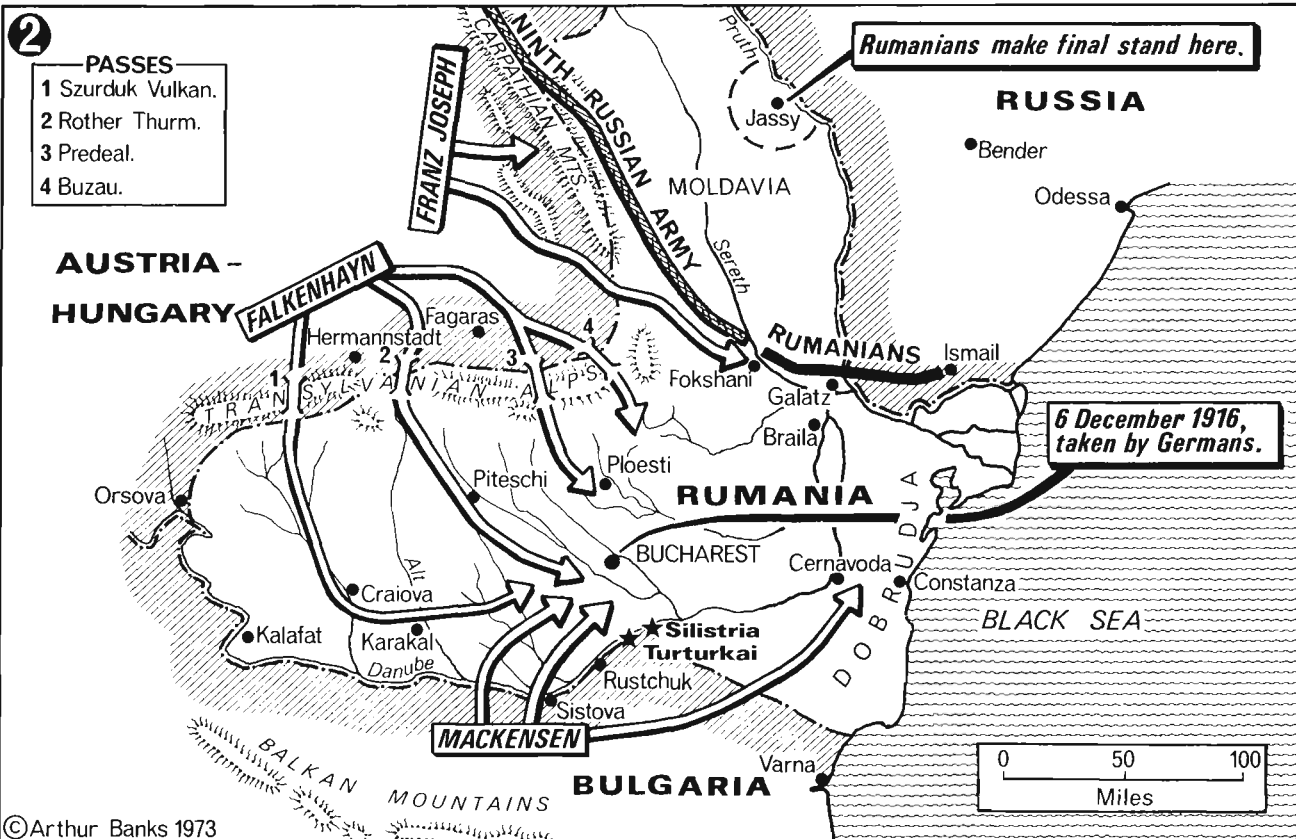
The Brusilov Offensive was the most competent Russian operation of the war. It weakened the offensives of the Central Powers at Verdun and in Italy, and without German assistance being forthcoming, Austria probably would have collapsed. It was a direct cause of the Habsburg Empire's disintegration. On both sides casualties were colossal, over two million men being involved. The offensive halted through sheer exhaustion on the Russian side, and discontent in the rear areas eventually led to the Russian Revolution.

THE RUMANIAN CAMPAIGN 1916

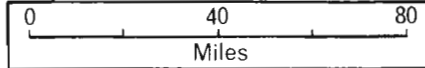
1



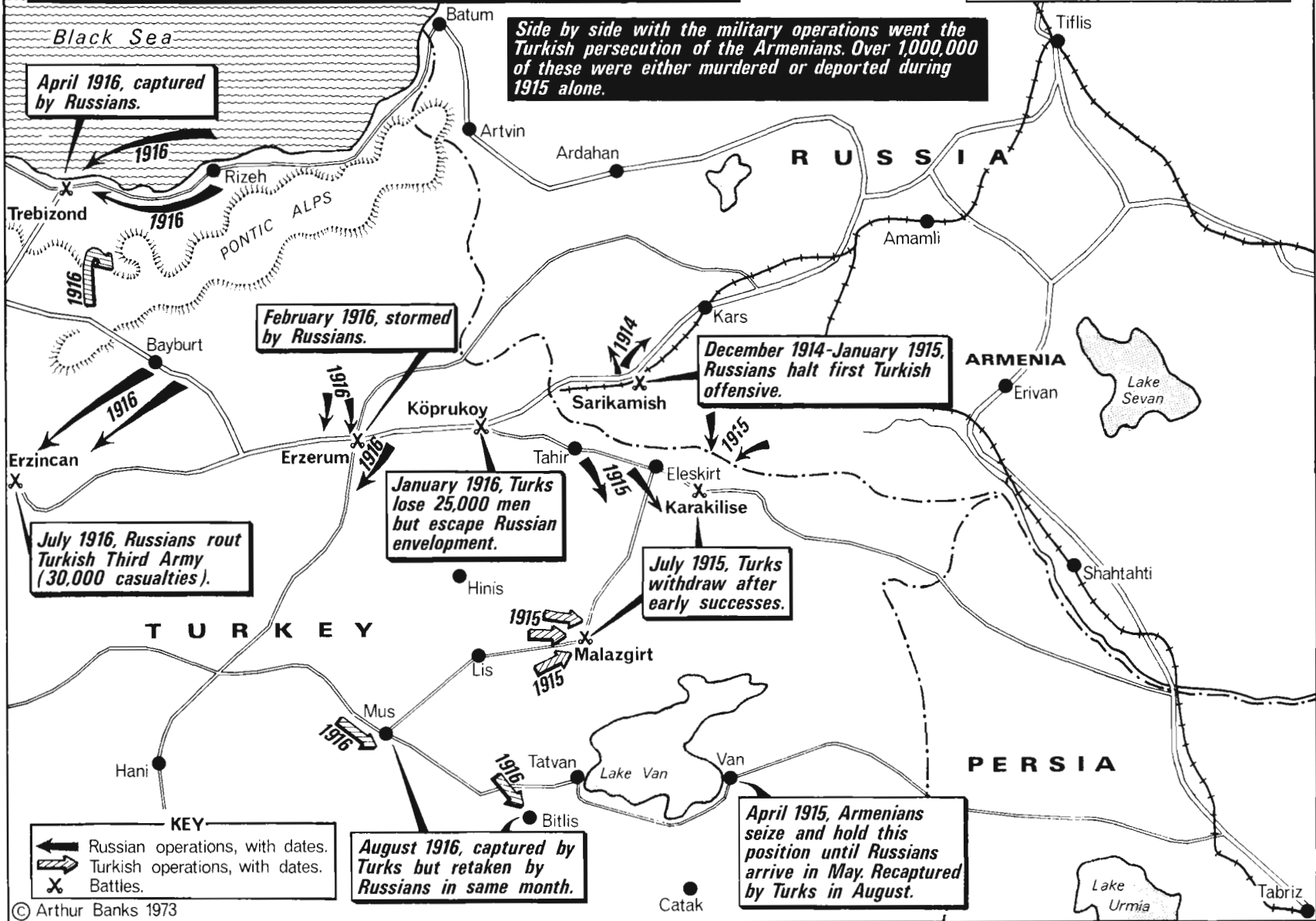
2



OPERATIONS IN CAUCASIA 1914-1916



Side by side with the military operations went the Turkish persecution of the Armenians. Over 1,000,000 of these were either murdered or deported during 1915 alone.



April 1916, captured by Russians.

February 1916, stormed by Russians.

December 1914-January 1915, Russians halt first Turkish offensive.

January 1916, Turks lose 25,000 men but escape Russian envelopment.

July 1915, Turks withdraw after early successes.

July 1916, Russians rout Turkish Third Army (30,000 casualties).

August 1916, captured by Turks but retaken by Russians in same month.

April 1915, Armenians seize and hold this position until Russians arrive in May. Recaptured by Turks in August.

KEY
 ← Russian operations, with dates.
 → Turkish operations, with dates.
 X Battles.

THE WAR IN 1917

The wasteful slaughter of 1916 was followed by a year of astonishing political change and upheaval. When, on 1 February 1917, the Germans announced a resumption of unrestricted U-Boat warfare, they knew that they ran the risk of bringing America into the conflict, but they calculated that they could eliminate Russia and France on land and starve the British into surrender before the effects of American belligerency were felt in Europe. In the event, the United States was finally brought to declare war on Germany in April 1917 as much by evidence of German intrigues in Mexico (the Zimmermann telegram) as by the submarine (see page 214). The fall of the Tsarist autocracy and the establishment of a democratic Provisional Government in Russia (page 177) made it easier for Congress to accept the idea of war; but British and French hopes that the Provisional Government would purge corruption and make Russia again an efficient military partner proved ill-founded. The so-called Kerensky Offensive of July 1917 soon petered out (page 176); the Russian people were apathetic and anxious only for 'peace and bread'. When in the first week of November Lenin's Bolsheviks seized power in Petrograd, Russia virtually withdrew from the war, opened negotiations with Germany and her allies, and concluded a separate peace (the Treaty of Brest-Litovsk, March 1918) by which Russia surrendered Poland, the Ukraine, the Baltic provinces, Finland and much of the Caucasus (see page 178).

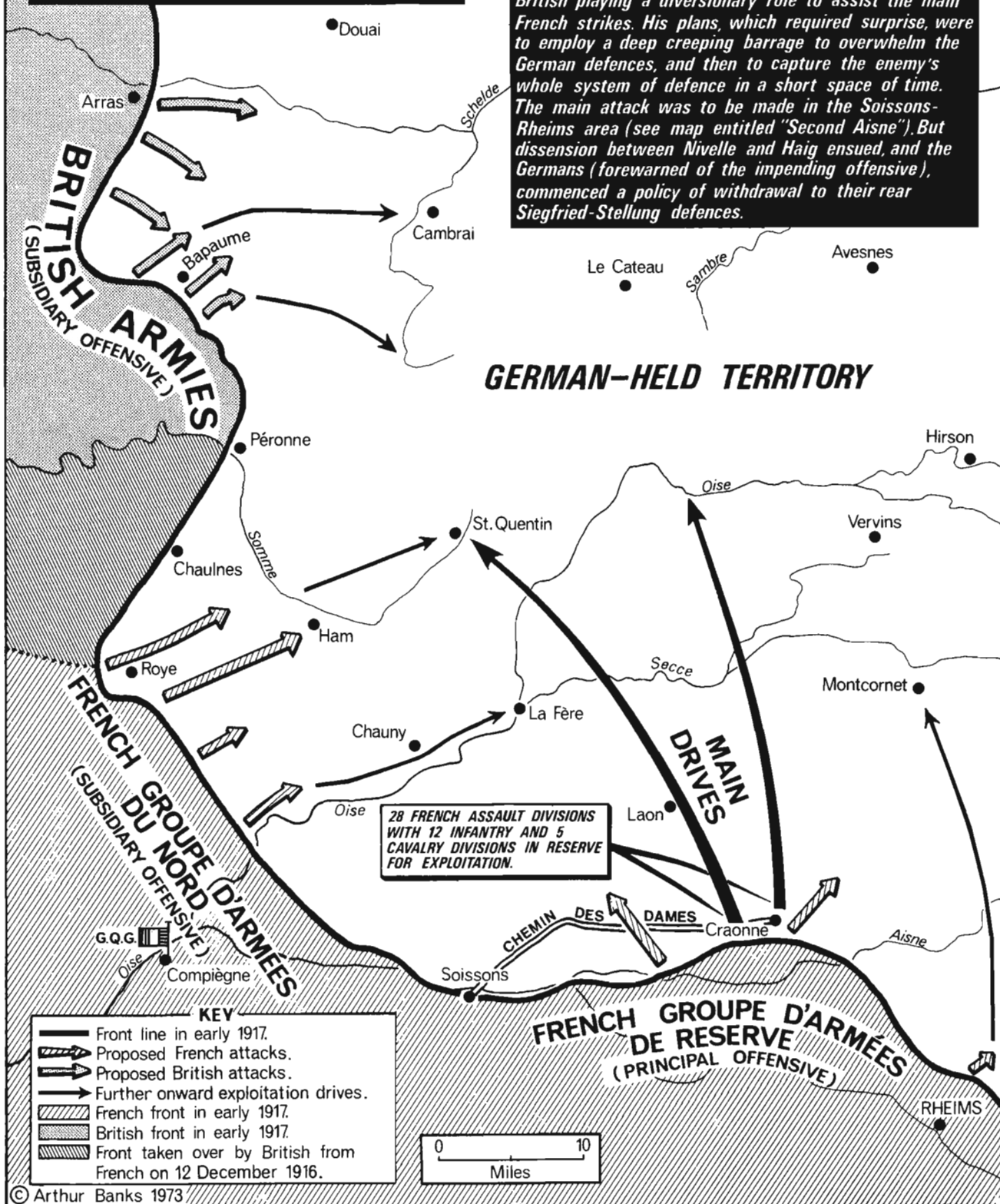
Bolshevik propaganda contributed to unrest elsewhere in the Allied camp, notably among the French and Russians in Macedonia (page 204) and among mutinous French units on the Western Front (page 168). Although there was disaffection among the Austro-Hungarian forces, their morale was strengthened by the combined Austro-German victory over the Italians at Caporetto (page 202), in which the rout was only halted

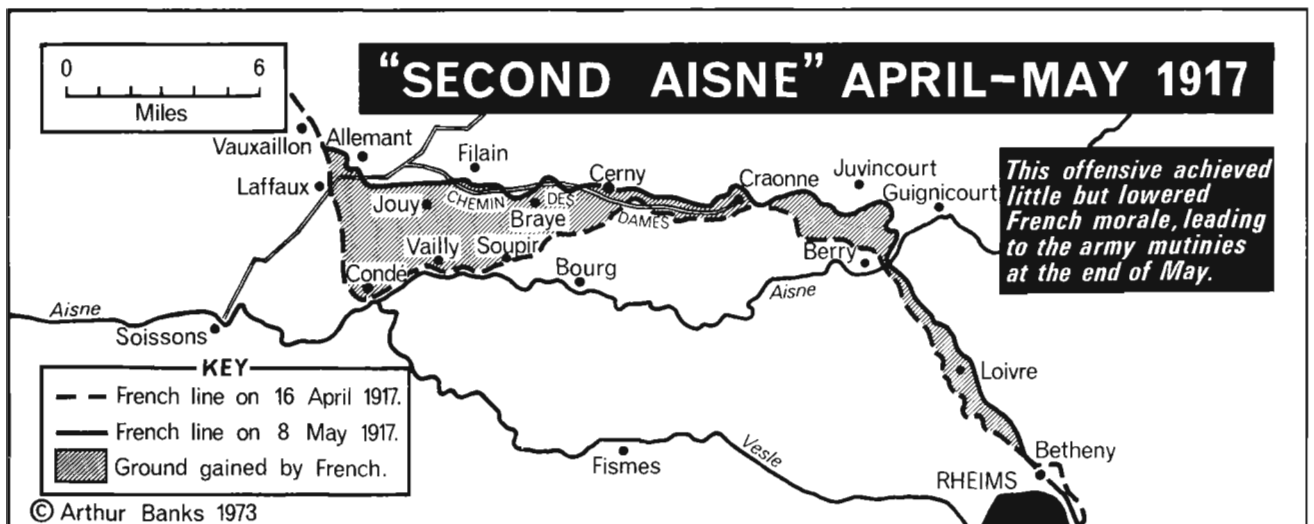
by the arrival of British and French reinforcements. The principal successes of the Allies during 1917 were in Asia. The Tigris port of Kut (where the first British expedition of Mesopotamia had been forced to surrender to the Turks in the spring of 1916) was retaken in February and Baghdad captured a fortnight later. The most dramatic victory was won by Allenby in Palestine, enabling the British to enter Jerusalem at the beginning of December. (For Mesopotamia see pages 206-210 and for Palestine see pages 211-213.)

On the Western Front Nivelle had succeeded Joffre in the second week of December 1916. The new commander-in-chief planned an offensive towards Laon, and persisted in his project even when the Germans withdrew to stronger defensive positions. The offensive was a disaster; Nivelle was replaced by Pétain, who with great skill gradually restored the confidence of the French soldiery. But there was little the French Army could do for the remainder of the year. Haig hoped to defeat the Germans in Flanders, a policy which appealed to the British naval chiefs, since it would have eliminated the U-boat bases on the Belgian coast. Heavy bombardments and rain made the ground impassable, and the 'third battle of Ypres' came to a disastrous halt in the mud of Passchendaele. Earlier in the year the Canadians gained a striking success at Vimy Ridge, north-east of Arras, and the British Second Army (which included an Australian and New Zealand Corps) won a comprehensive local victory at Messines, south of Ypres. Potentially the most significant military development of the year was the breakthrough by massed British tanks at Cambrai in November, but Haig by now did not have sufficient reserves to consolidate the gains made by the tanks, and the Germans recovered much of the land they had lost in a counter-attack ten days later.

NIVELLE'S PLANS FOR VICTORY IN 1917

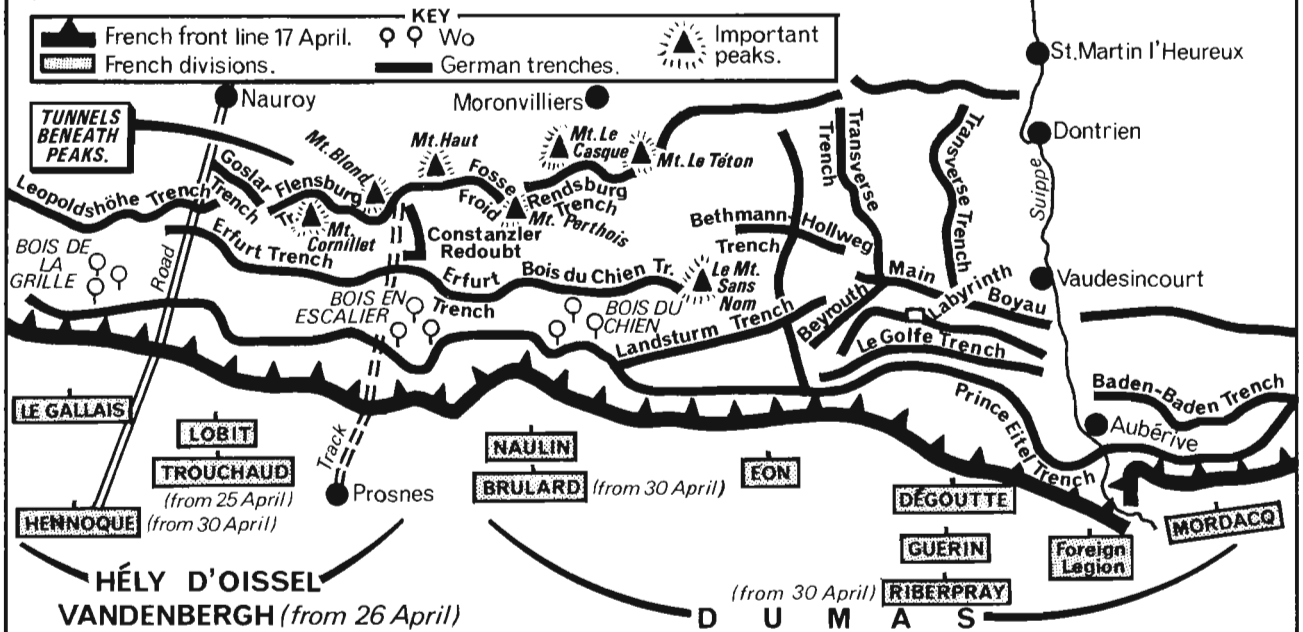
Nivelle effectively "replaced" Joffre in December 1916, and he formulated fresh plans whereby the German armies would be destroyed by French troops with the British playing a diversionary rôle to assist the main French strikes. His plans, which required surprise, were to employ a deep creeping barrage to overwhelm the German defences, and then to capture the enemy's whole system of defence in a short space of time. The main attack was to be made in the Soissons-Rheims area (see map entitled "Second Aisne"). But dissension between Nivelle and Haig ensued, and the Germans (forewarned of the impending offensive), commenced a policy of withdrawal to their rear Siegfried-Stellung defences.



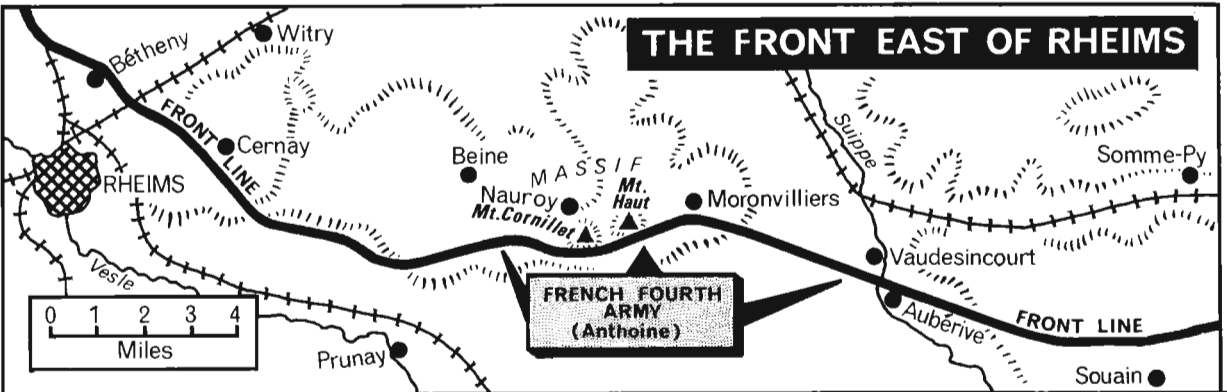


THE BATTLE OF MORONVILLIERS 17 APRIL - 20 MAY 1917

Note: this is a diagrammatic representation.

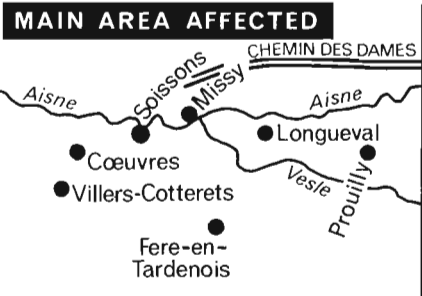


THE FRONT EAST OF RHEIMS



THE FRENCH MUTINIES MAY - JUNE 1917

* Main period. Acts of disobedience lasted into September.



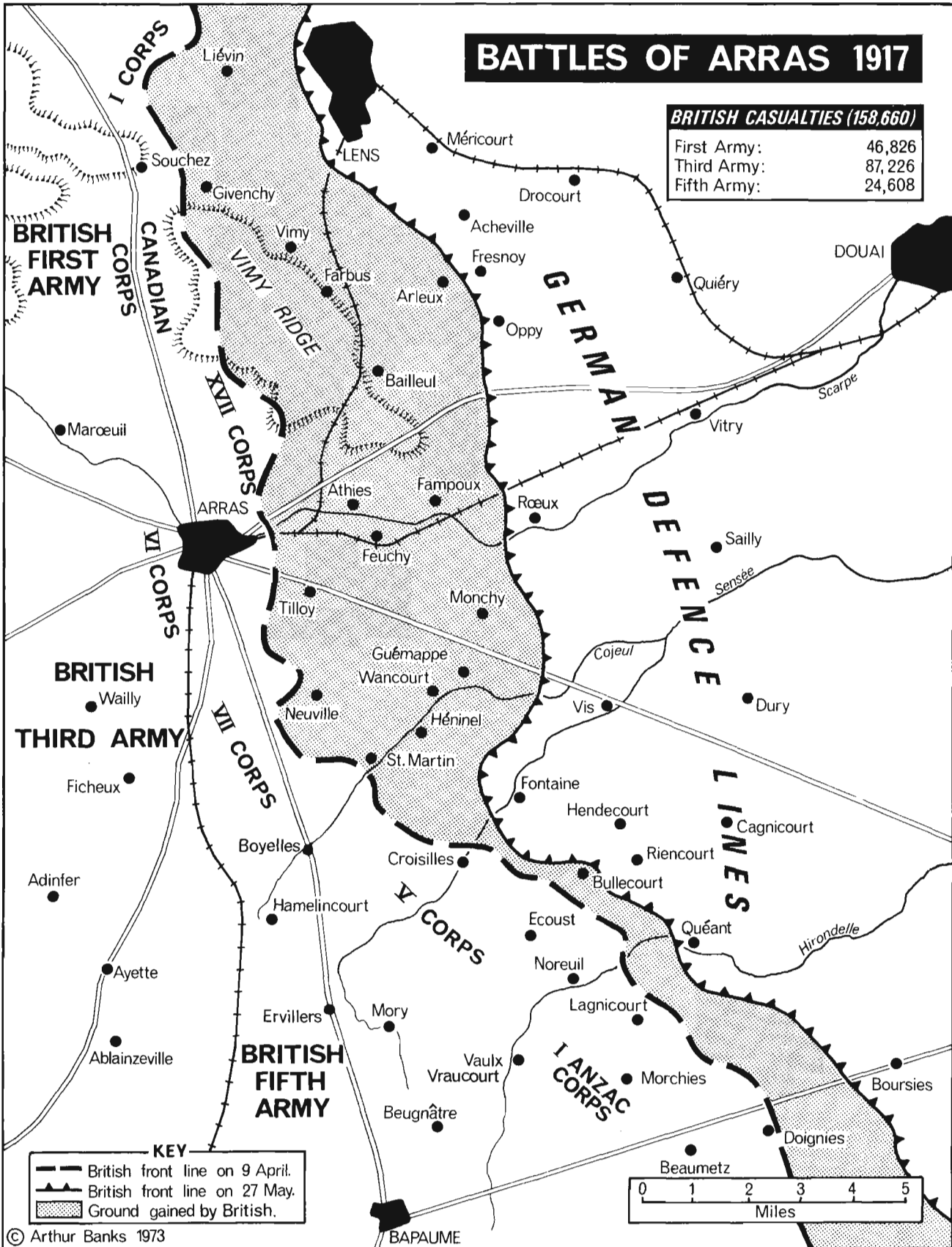
Following the failure of Nivelle's offensive, many French units refused to go up to the front (54 divisions were involved). The situation was alarming and pressure mounted on the British to distract German attention. Many court-martials were held in secret and ringleaders executed by firing-squad.

Note: Russian brigades (inspired by the Revolution) mutinied at La Courtine, 200 miles south of Paris.

BATTLES OF ARRAS 1917

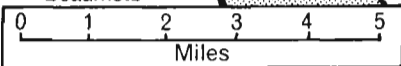
BRITISH CASUALTIES (158,660)

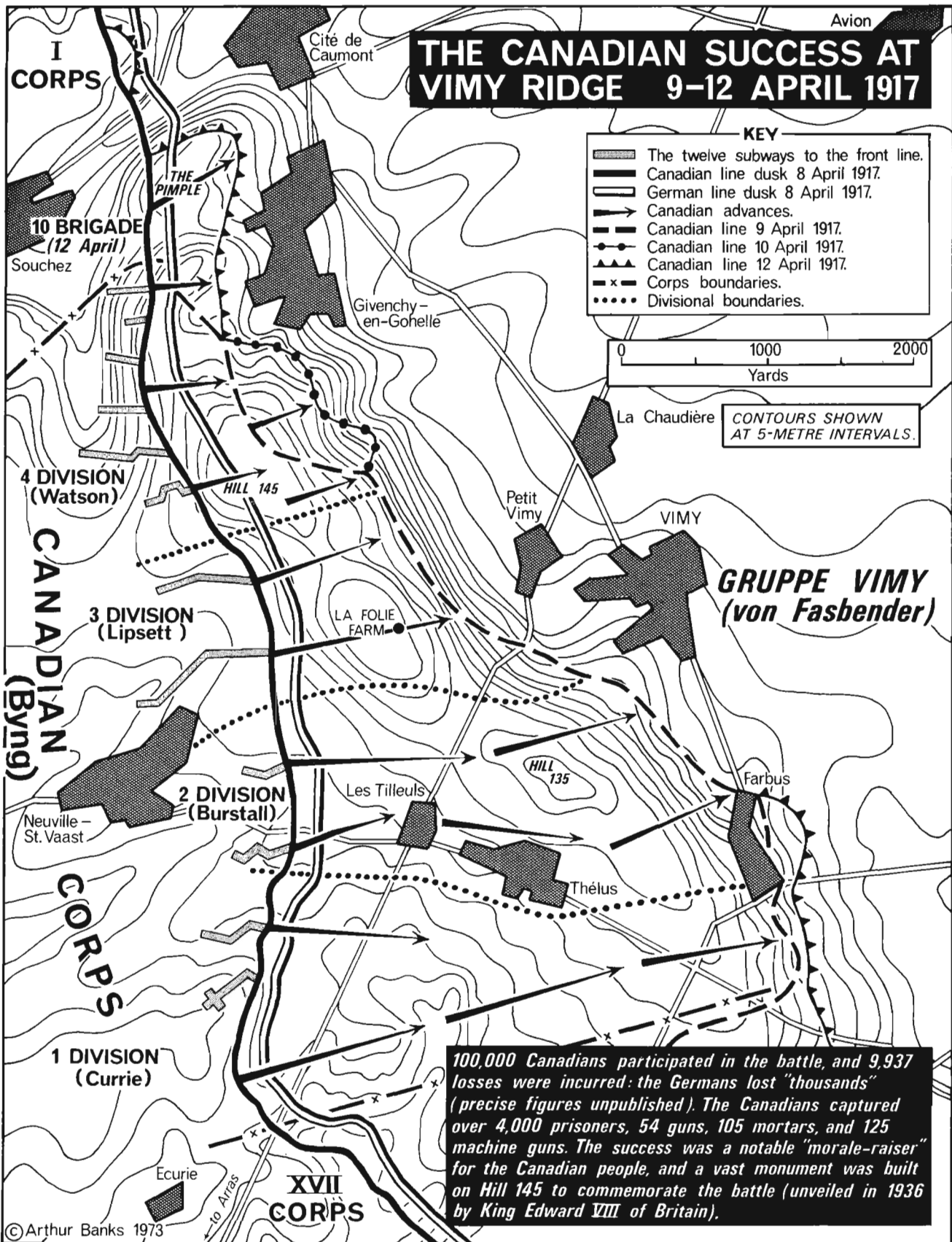
First Army:	46,826
Third Army:	87,226
Fifth Army:	24,608



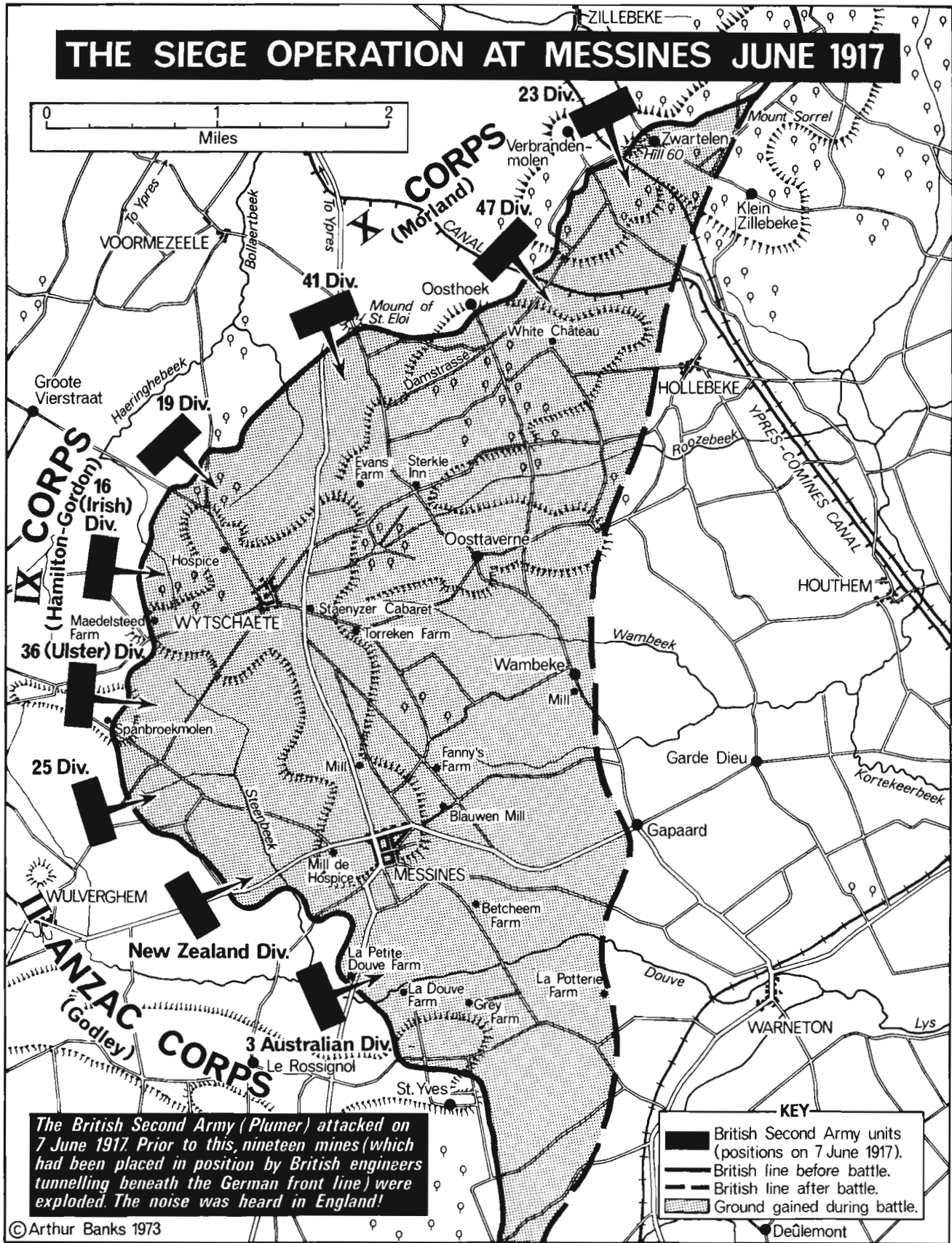
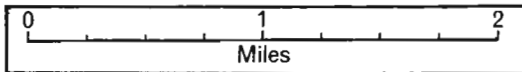
KEY

- British front line on 9 April.
- ▲— British front line on 27 May.
- Ground gained by British.





THE SIEGE OPERATION AT MESSINES JUNE 1917



The British Second Army (Plumer) attacked on 7 June 1917. Prior to this, nineteen mines (which had been placed in position by British engineers tunnelling beneath the German front line) were exploded. The noise was heard in England!

KEY

- British Second Army units (positions on 7 June 1917).
- British line before battle.
- British line after battle.
- Ground gained during battle.

Deûlemont

BRITISH PLANS FOR "WIPERS THREE" 1917

ALLIED DISPOSITIONS

- N** Allied naval forces.
- 4** British Fourth Army.
- B** Belgians.
- F** French.
- 5** British Fifth Army.
- 2** British Second Army.

NOTE: IN FACT, THESE WERE SHORT-RANGE CRAFT.

Haig (secretly under intense French pressure to distract German attention from their mutinous sectors) outlined these plans to a meeting of the Cabinet Committee on War Policy in London on 21 June. Jellicoe stressed the German U-boat threat: Haig stated that Bruges was his main objective.

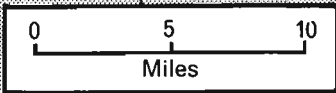
GERMAN FLANDERS SUBMARINE BASE.

To Ghent (possible Fourth Objective).

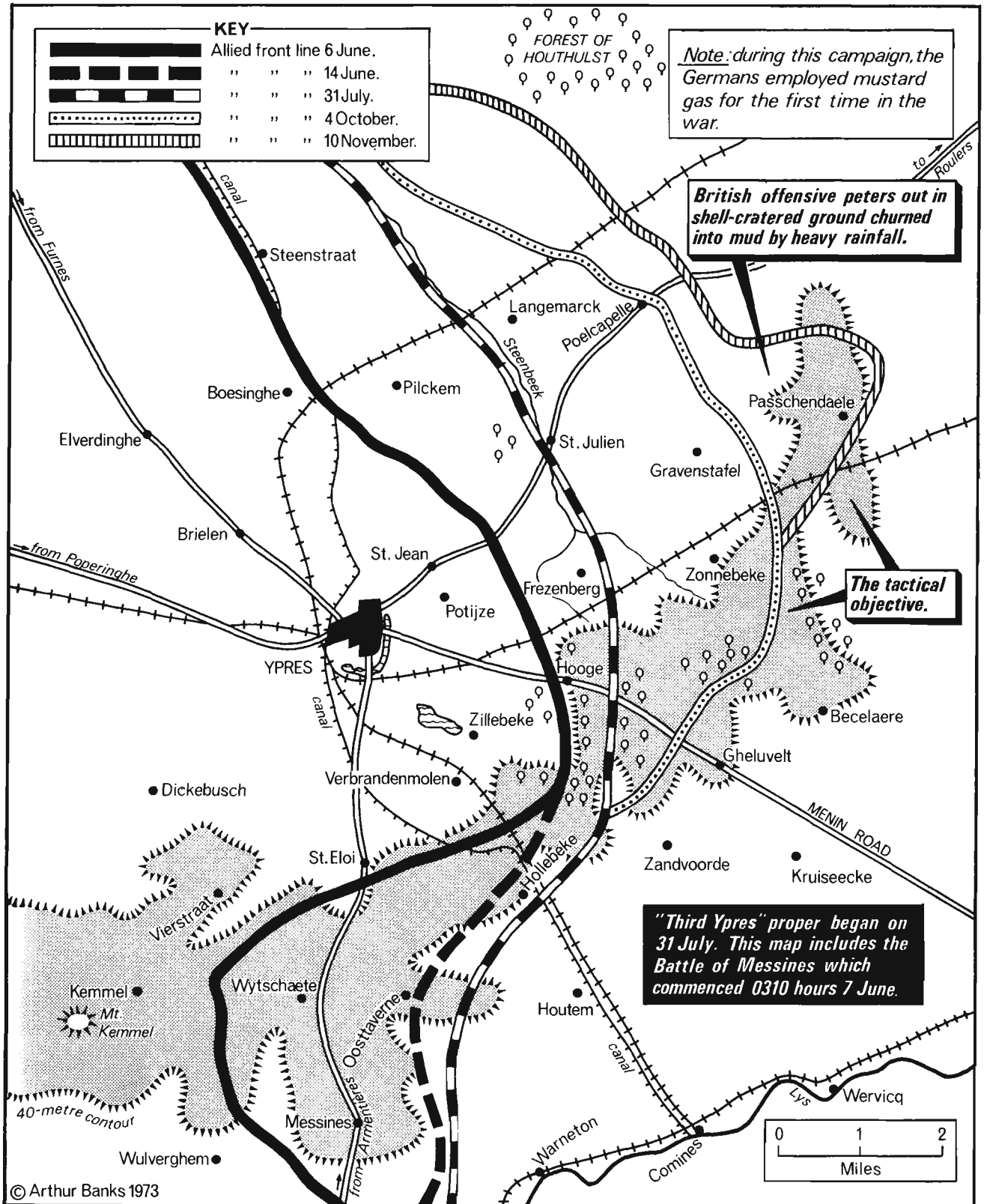
Known to British troops as "Wipers."

KEY

- Allied front line 21 June.
- Allied-held territory.
- Opening assault.
- Haig's First Objective.
- "Follow-up" assault.
- Haig's Second Objective.
- Main concentrated attack.
- Haig's Third (Main) Objective.
- Flankguards along River Lys.
- German U-boat routes to sea.
- Canals (note Bruges area).



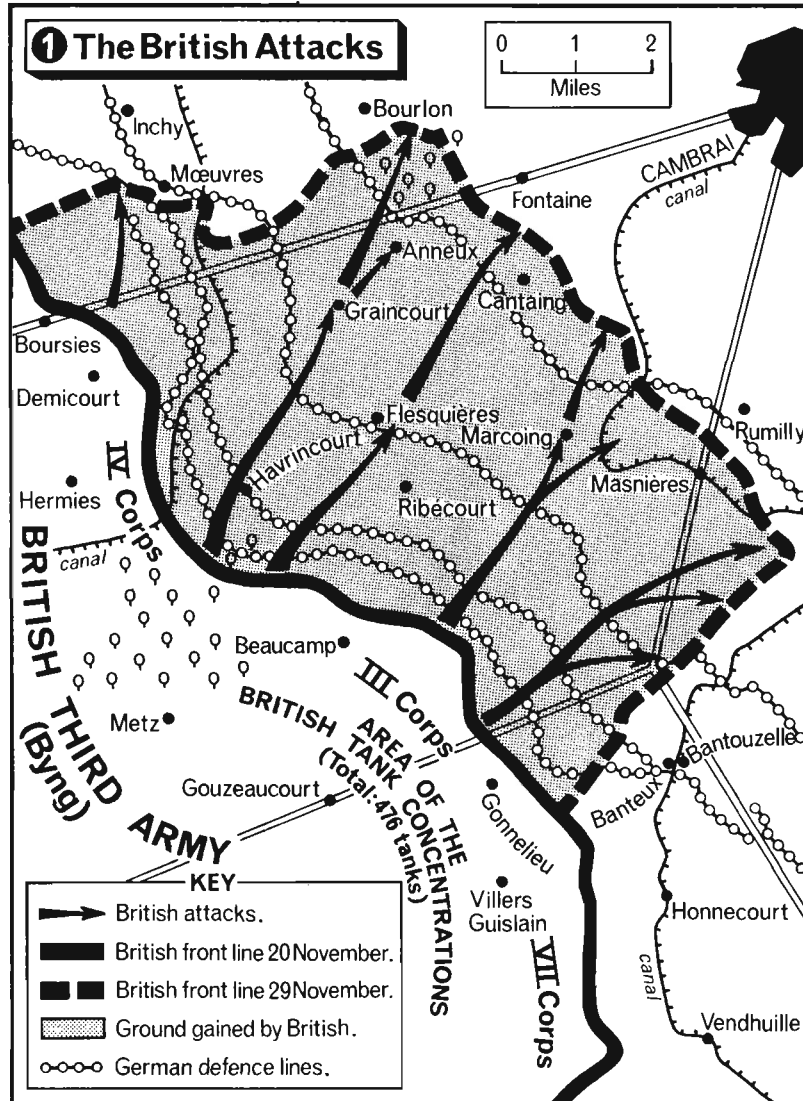
"THIRD YPRES"(PASSCHENDAELE): JULY - NOVEMBER 1917



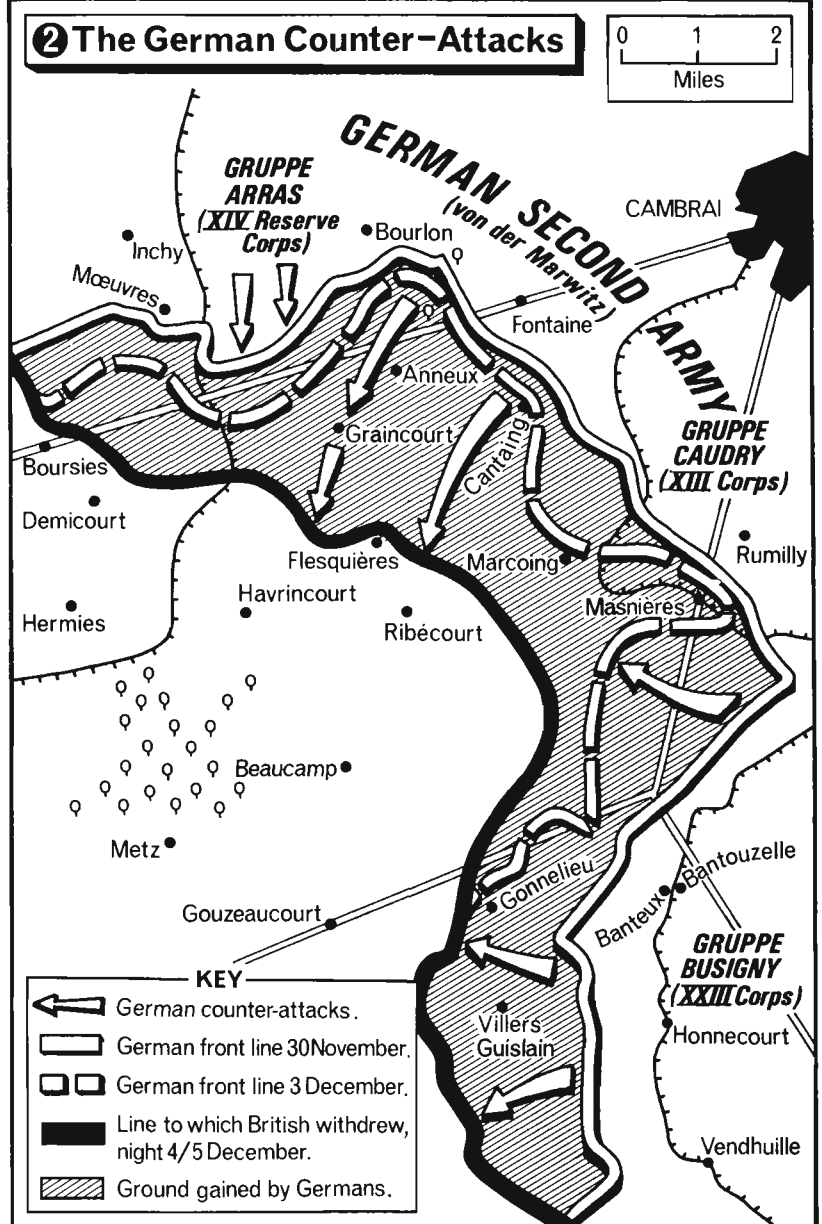
THE BRITISH TANK-SPEARHEADED OFFENSIVE AT CAMBRAI 1917

174

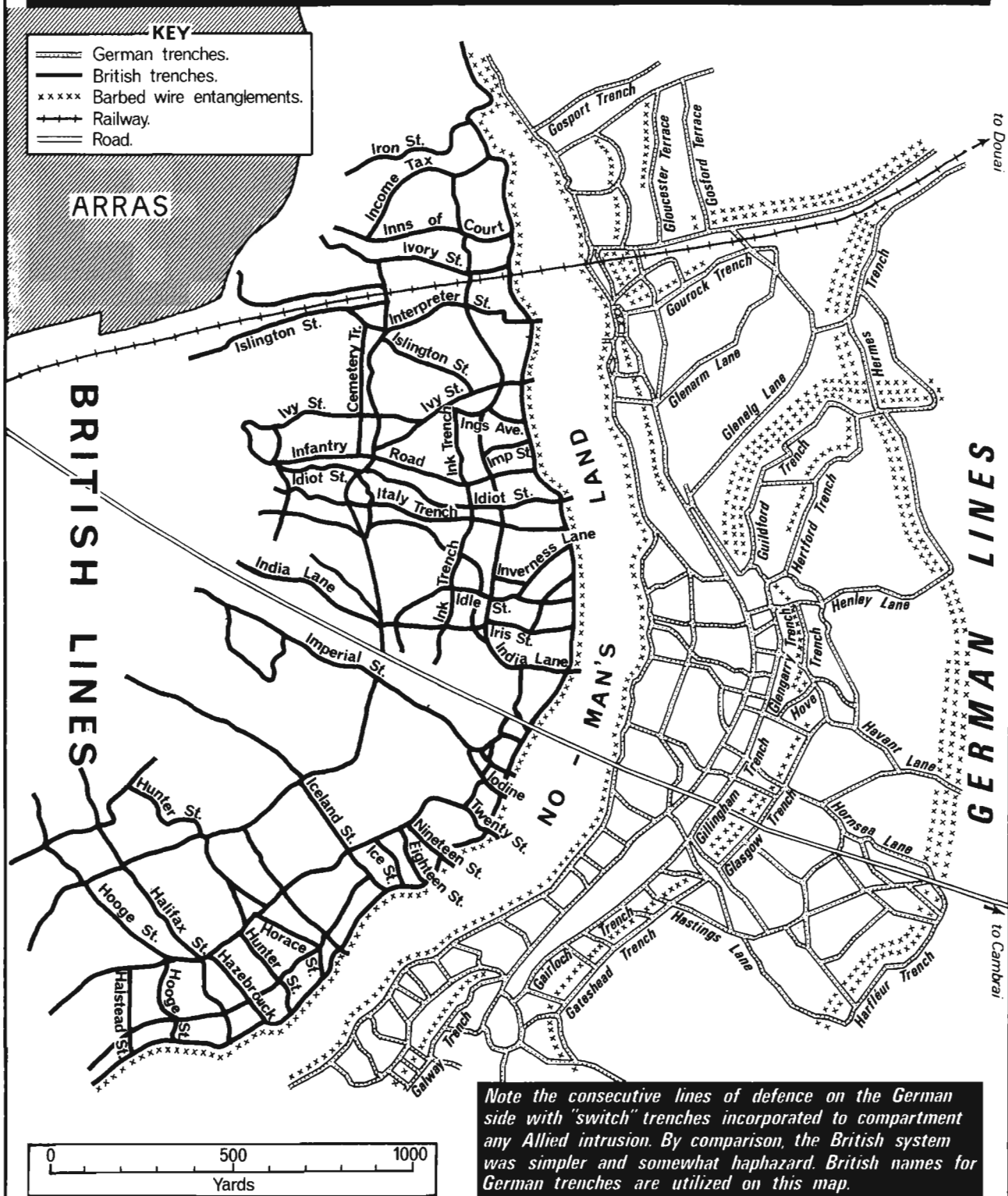
① The British Attacks



② The German Counter-Attacks



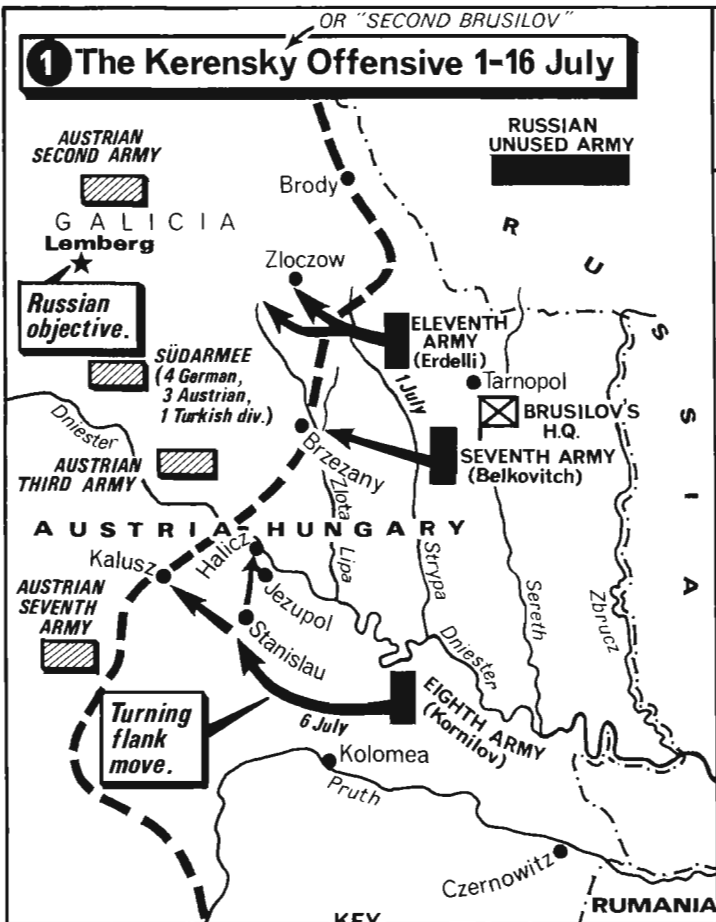
TRENCH WARFARE: A TYPICAL SECTION OF FRONT SOUTH-EAST OF ARRAS FEBRUARY 1917



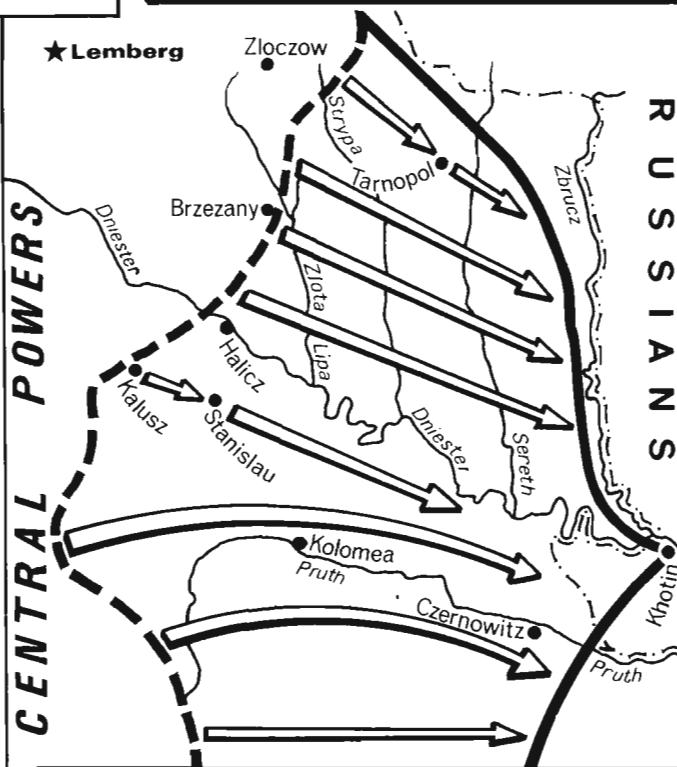
Note the consecutive lines of defence on the German side with "switch" trenches incorporated to compartment any Allied intrusion. By comparison, the British system was simpler and somewhat haphazard. British names for German trenches are utilized on this map.

RUSSIA'S FINAL EFFORT IN 1917

1 The Kerensky Offensive 1-16 July

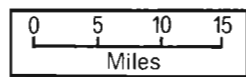
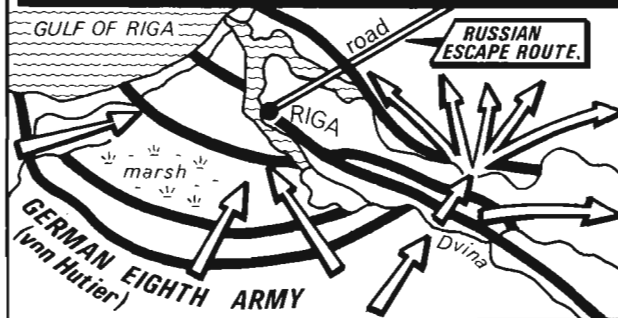


2 Central Powers' Backlash 19 July-4 August



Despite some early success the Russian offensive petered-out by 16 July. The troops were war-weary and supplies failed to arrive. The Germans brought reinforcements (via their railways) from the west and began a counter-offensive on 19 July. The Russians collapsed under the onslaught and fled back to the River Zbrucz. Only insufficient reserves and logistical factors halted the German advance.

GERMAN RIGA OFFENSIVE 1-5 SEPTEMBER 1917



KEY

- German advances.
- - - Russian defences.

German tactics: assault troops by-pass stronghold which is reduced by the "follow-up" units.

TURBULENT RUSSIA 1917-1918



Russia's defection from the war in 1917 allowed Germany to switch her main effort to the Western Front before American troops arrived in numbers sufficient to readjust the balance in favour of the Western Allies (Ludendorff's "now or never" offensive commenced in March 1918). However, the continuing uncertain situation on the Eastern Front compelled Germany to keep many divisions on alert facing Russia: thus she never ever managed to throw her full weight against the Western Allies.

FINLAND
German intervention enables government to establish its independence.

Prisoners-of-war, criminals, and Chinese toil to construct double broad-gauge railway.

Port inaccessible to Western Allies (ice-bound for eight months in year).

Name changes to Leningrad.

Trotsky returns from America: Stalin returns from Siberia.

Note: after Lenin's death (1924)

Tsar abdicates, March 1917.

Tsar and family murdered on approach of counter-revolutionary 'White' Army, July 1918.

Becomes new capital of Russia.

German advance on Petrograd brings Trotsky to heel.

THE EASTERN FRONT
Russian armies short of ammunition and food: low morale: mutinies: mass desertions: mass executions.

Working-class discontent: factory workers and peasants in revolt: students and socialists intent on overthrowing government: food riots in large towns.

Bolsheviks sign Armistice and Treaty with the Central Powers.

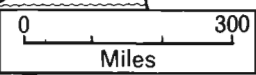
UKRAINE
Russia's granary area, exploited by Germany, declares its independence.

DON COSSACKS
They refuse to acknowledge the Revolution.

DATES
Russia used the Julian Calendar which was thirteen days behind the International Calendar. Therefore, the 'February' Revolution occurred in March 1917, and the 'October' Revolution in November 1917.

CAUCASUS
Independent republics proclaimed.

Turkey reoccupies her frontier and races Germany for the oil of Baku.

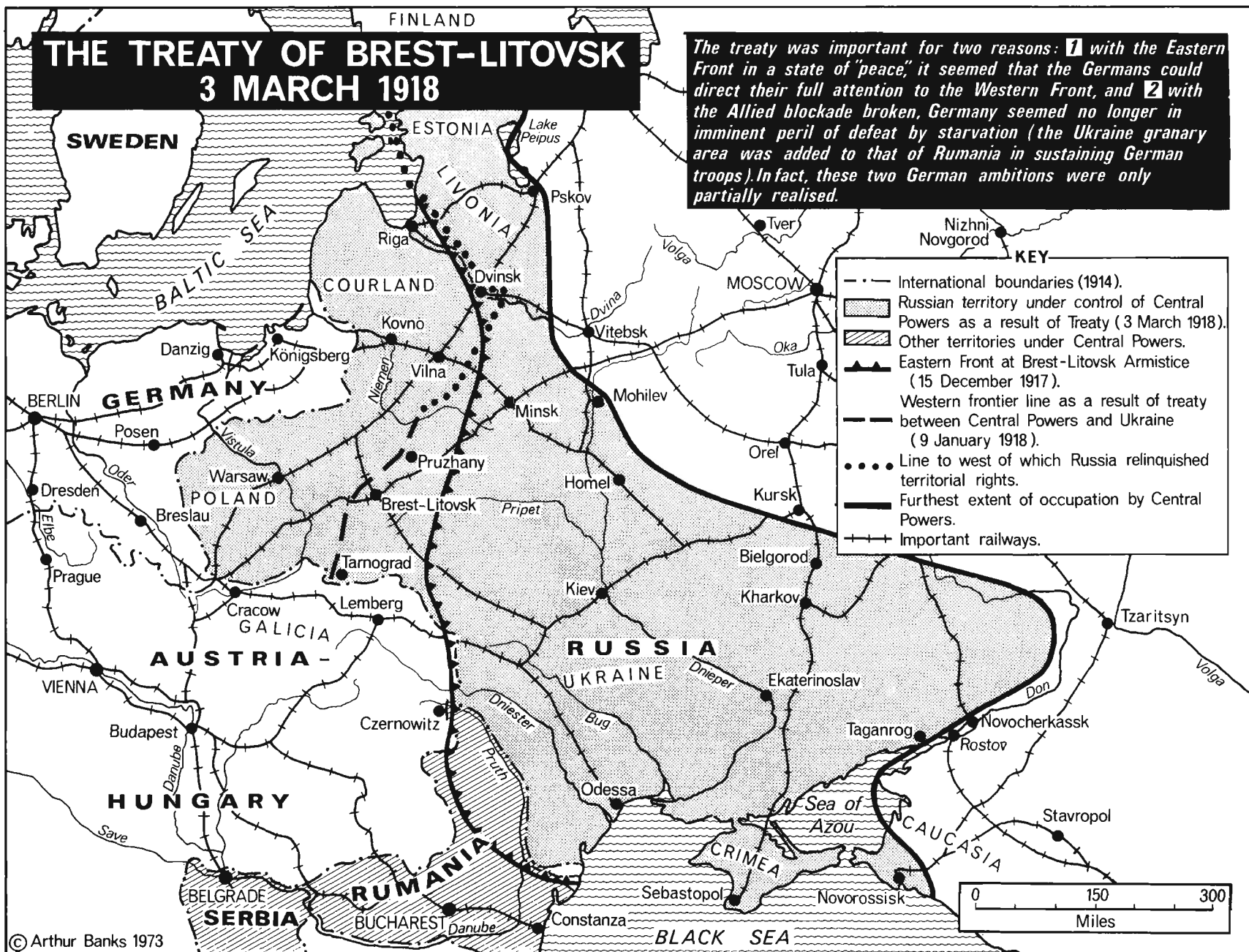


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THE TREATY OF BREST-LITOVSK 3 MARCH 1918

The treaty was important for two reasons: 1 with the Eastern Front in a state of "peace," it seemed that the Germans could direct their full attention to the Western Front, and 2 with the Allied blockade broken, Germany seemed no longer in imminent peril of defeat by starvation (the Ukraine granary area was added to that of Rumania in sustaining German troops). In fact, these two German ambitions were only partially realised.

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THE WAR IN 1918

The war weariness which had assailed the Russian people at the start of winter in 1917–1918 threatened to spread to other countries which had been subjected to many years of heavy casualties and short rations. The German home front was hard-pressed by the British blockade while the British themselves had come close to disaster during the worst month of sinkings by U-boat, April 1917. There was widespread disaffection in Austria-Hungary, accentuated by conflicts between the nationalities within the Empire, and an extensive peace movement in Bulgaria, while desertions from the Turkish army in Palestine began to increase sharply. It was therefore essential for Hindenburg and Ludendorff to achieve a rapid military victory on the Western Front, using reinforcements from the East to defeat the British and French armies in the field before the Americans flooded in. In March 1917 there were three Allied soldiers to every two Germans in France and Belgium: a year later, the troop trains from Russia had changed the balance to four Germans to every three Allies.

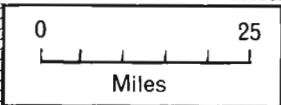
The French and British prime ministers, Clemenceau and Lloyd George, anticipated a hard thrust by Germany; but no one believed it possible for Ludendorff to have achieved such concentration of firepower as the Germans mounted in March 1918. Within a week the Germans penetrated the Allied line to a depth of forty miles, although the Germans caused problems to themselves by outrunning their supplies. In April they struck farther north, penetrating a section of the Flanders Front held by inexperienced Portuguese troops; and in May Ludendorff succeeded in bringing the campaign back to the Marne and threatening Paris. His last great stroke, around Rheims on 15 July, was checked by astute defensive positioning on the part of Pétain. The German drive was brought to a standstill, with an

exhausted army exposing the flanks of a series of salients to counter-attack.

The Allies had at last accepted the principle of unified command, entrusting Foch with the task of throwing back the Germans. American troops, disembarking in France at the rate of a quarter of a million each month, replenished the Allied armies. On 18 July tanks (as at Cambrai) provided the spearhead for Foch's counter-offensive although it was the German break in morale on 8 August which convinced Ludendorff Germany could not win the War. In September the Allied attacks seemed to lose impetus, but the British at last penetrated the Hindenburg Line on 29 September. At the same time news reached Supreme German Headquarters of collapse elsewhere: Bulgaria capitulated, after Franchet d'Espèrey's Salonika armies broke through on the Macedonian Front (page 204); Allenby and Lawrence's Arab Legion entered Damascus (3 October), and the Turks began to seek peace; at the end of October the Italians, with British and French support, launched a furious offensive on the Piave and induced Austria-Hungary to seek terms (page 203). Lloyd George, who had long believed in 'knocking away the props from under Germany', found his policy vindicated.

Hindenburg accepted the need for peace on 3 October, but he became more optimistic once he saw the Allies were themselves tiring. It was, in the end, bread riots, revolution and a mutiny of the fleet which convinced the German High Command the war was over. The tightening grip of the blockade prevented any hopes of further resistance, while a mass influenza epidemic lowered the morale of the civilian population. A German armistice delegation set out from Berlin on 6 November. The Armistice became effective five days later.

THE GERMAN OFFENSIVES 21 MARCH - 17 JULY 1918



KEY
○ GERMAN ARMIES

German troop strengths in the west had increased by 30% between November 1917 and 21 March 1918, primarily due to transfer of troops from the east following the Treaty of Brest-Litovsk. British strengths had decreased by 25% since "Third Ypres" (Passchendaele) 1917 as they were content to wait upon the arrival of the fresh American troops.



FRANCE

BELGIUM

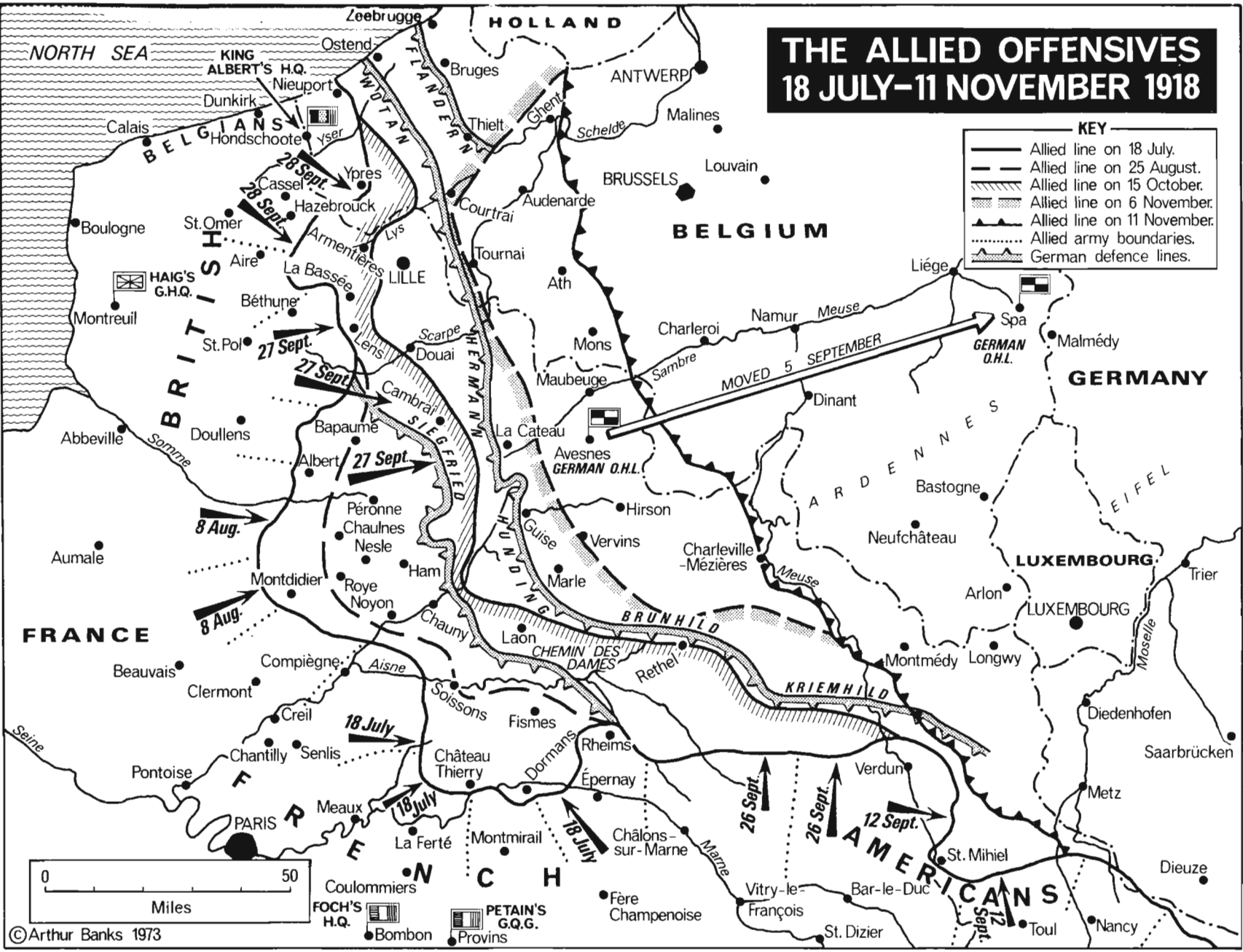
KEY

- 'MICHAEL' 21 March-5 April.
- 'GEORGETTE' 9-11 April.
- 'BLÜCHER-YORCK' 27 May.
- 'GNEISENAU' 9 June.
- 'MARNE-RHEIMS' 15-17 July.
- Army boundaries.
- Army General Headquarters.
- Army Headquarters.

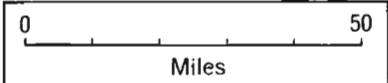
THE ALLIED OFFENSIVES 18 JULY-11 NOVEMBER 1918

KEY

- Allied line on 18 July.
- Allied line on 25 August.
- Allied line on 15 October.
- Allied line on 6 November.
- Allied army boundaries.
- German defence lines.



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FOCH'S H.Q. BOMBON
 PETAIN'S G.Q.G. PROVINS

THE GERMAN ADVANCE AND THE BRITISH RETREAT MARCH - APRIL 1918

Important note: on 3 April, the Allied armies were unified under one supreme "generalissimo" (Foch).

RIVAL STRENGTHS		
ARMIES	DIVISIONS	GUNS
German 17th. Army	25	2,234
German 2nd. Army	21	1,751
German 18th. Army	25	2,623
British 3rd. Army	14	1,120
British 5th. Army	12	1,566

This map depicts the German advance and the British retreat between 21 March and 28 March 1918, together with the line re-established on 4 and 5 April 1918. On 22 March, the first breakthrough south of the River Somme occurred, and by 26 March, the lines of the British Fifth Army (south of the Somme) were near to total disintegration. Between 26 and 27 March, many successive positions were rapidly and temporarily taken up. The German offensive was a tactical success but a strategic failure. Main reasons: lack of logistical, strategic, and tactical fire support mobility. Also, Allied aircraft strafing attacks demoralized the advancing troops.

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BRITISH FIRST ARMY

GERMAN SIXTH ARMY

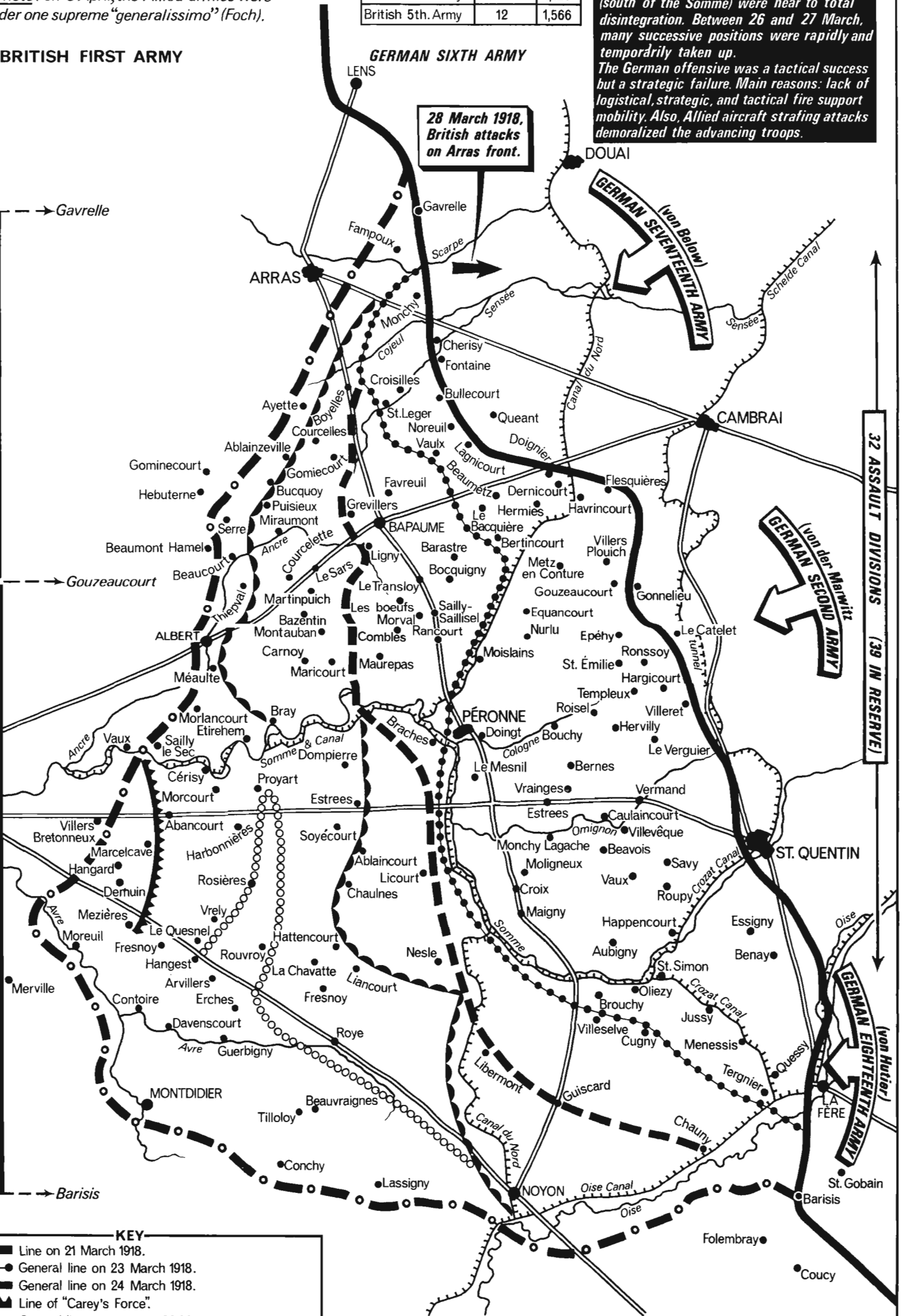
- XVII Corps (Fergusson)
- VI Corps (Haldane)
- IV Corps (Harper)
- V Corps (Fausshawe)

- VII Corps (Congreve)

- XIX Corps (Watts)

- XVIII Corps (Maxse)

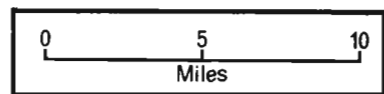
- III Corps (Butler)



KEY

- Line on 21 March 1918.
- General line on 23 March 1918.
- ■ ■ ■ ■ General line on 24 March 1918.
- ▒▒▒▒▒ Line of "Carey's Force".
- ▒▒▒▒▒ General line on morning 26 March 1918.
- Successive defence lines throughout 26 March 1918.
- Line in April 1918.

FRENCH SIXTH ARMY



THE BOMBARDMENT OF PARIS BY GERMAN LONG-RANGE ARTILLERY

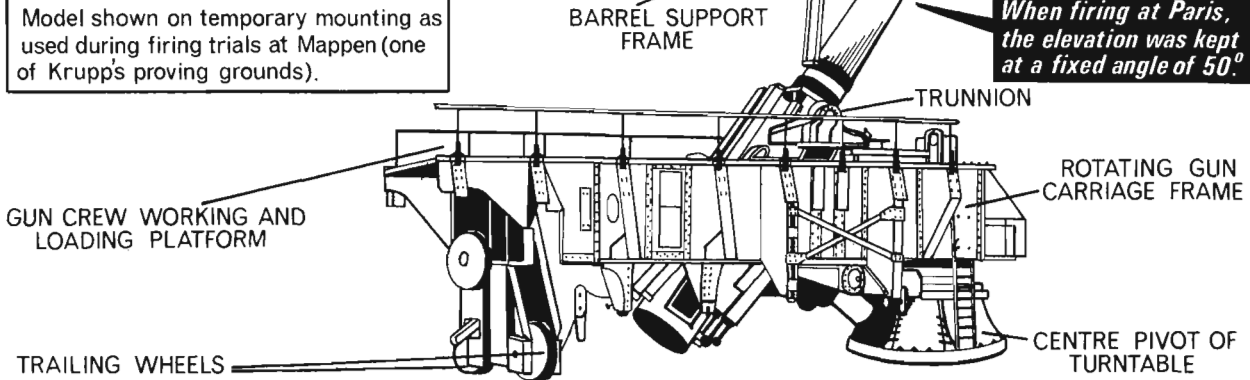
23 MARCH - 9 AUGUST 1918

The German "PARIS GUN" (Lange 21-cm. Kanone)

Note: the weapon was nicknamed "Wilhelm's Gun" as a compliment to the Kaiser. But, contrary to popular belief, it was not known to the Germans as "Big Bertha": this was the Krupp 42-cm. mörser (technically, howitzer) which reduced the Belgian and French fortresses in 1914. Nor was it known as "Long Max": this was a German 15-inch naval gun sited near Luegenboom which shelled Dunkirk.

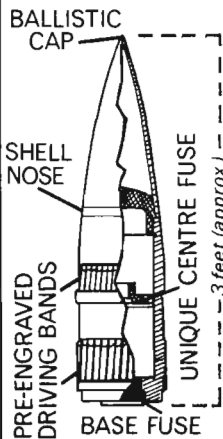
Model shown on temporary mounting as used during firing trials at Mappen (one of Krupp's proving grounds).

When firing at Paris, the elevation was kept at a fixed angle of 50°

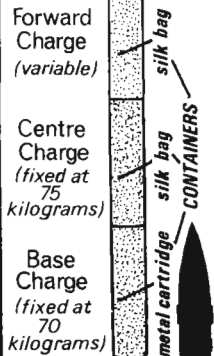


Maximum range of gun: 80 miles.
 Maximum muzzle velocity: 5,399 feet per sec.
 Barrel life: 60 shells.
 Weight of shell: 228 pounds.
 Propellant charge(max.): 430 pounds.
 Time taken by shell to travel 80 miles: 3 mins. 2 secs.

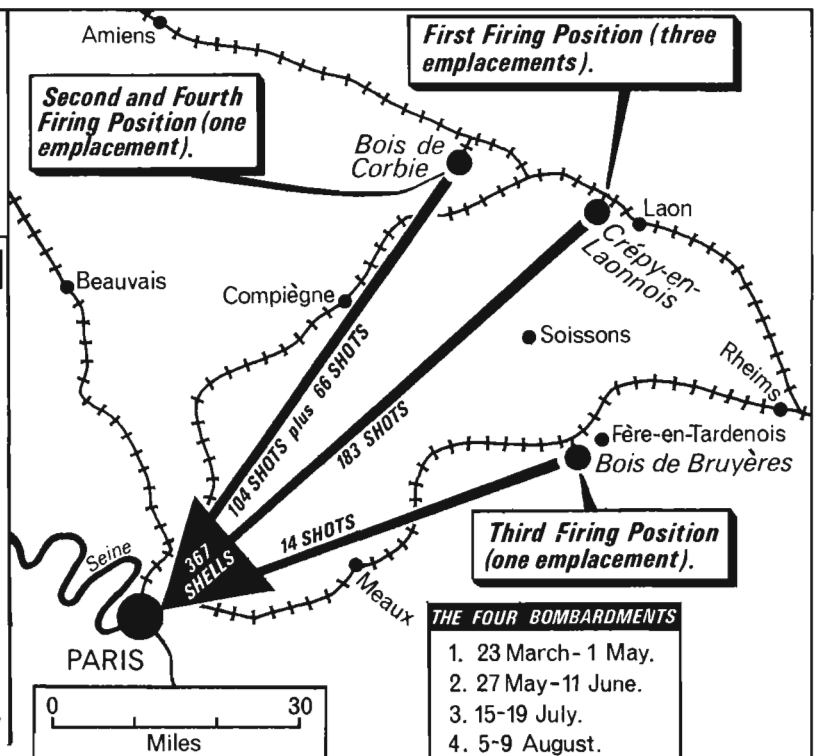
PROJECTILE



POWDER - CHARGE



COMPARISON BETWEEN POWDER-CHARGE AND PROJECTILE



THE FOUR BOMBARDMENTS

1. 23 March - 1 May.
2. 27 May - 11 June.
3. 15-19 July.
4. 5-9 August.

GENERAL DISTRIBUTION OF SHELLS FALLING ON PARIS

DISCREPANCIES BETWEEN GERMAN AND FRENCH SOURCES

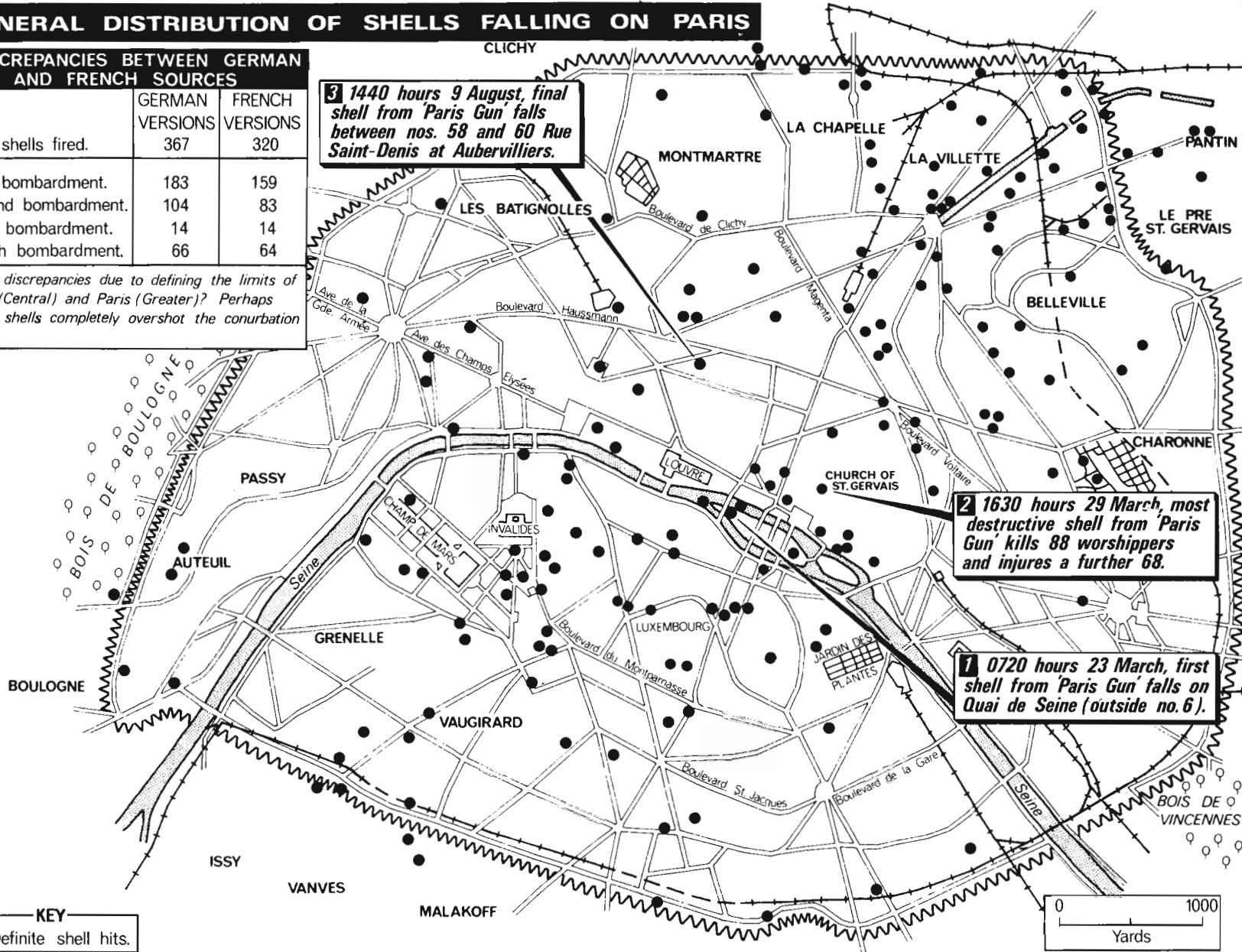
	GERMAN VERSIONS	FRENCH VERSIONS
Total shells fired.	367	320
First bombardment.	183	159
Second bombardment.	104	83
Third bombardment.	14	14
Fourth bombardment.	66	64

Note: discrepancies due to defining the limits of Paris (Central) and Paris (Greater)? Perhaps some shells completely overshot the conurbation area?

3 1440 hours 9 August, final shell from 'Paris Gun' falls between nos. 58 and 60 Rue Saint-Denis at Aubervilliers.

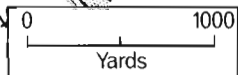
2 1630 hours 29 March, most destructive shell from 'Paris Gun' kills 88 worshippers and injures a further 68.

1 0720 hours 23 March, first shell from 'Paris Gun' falls on Quai de Seine (outside no. 6).



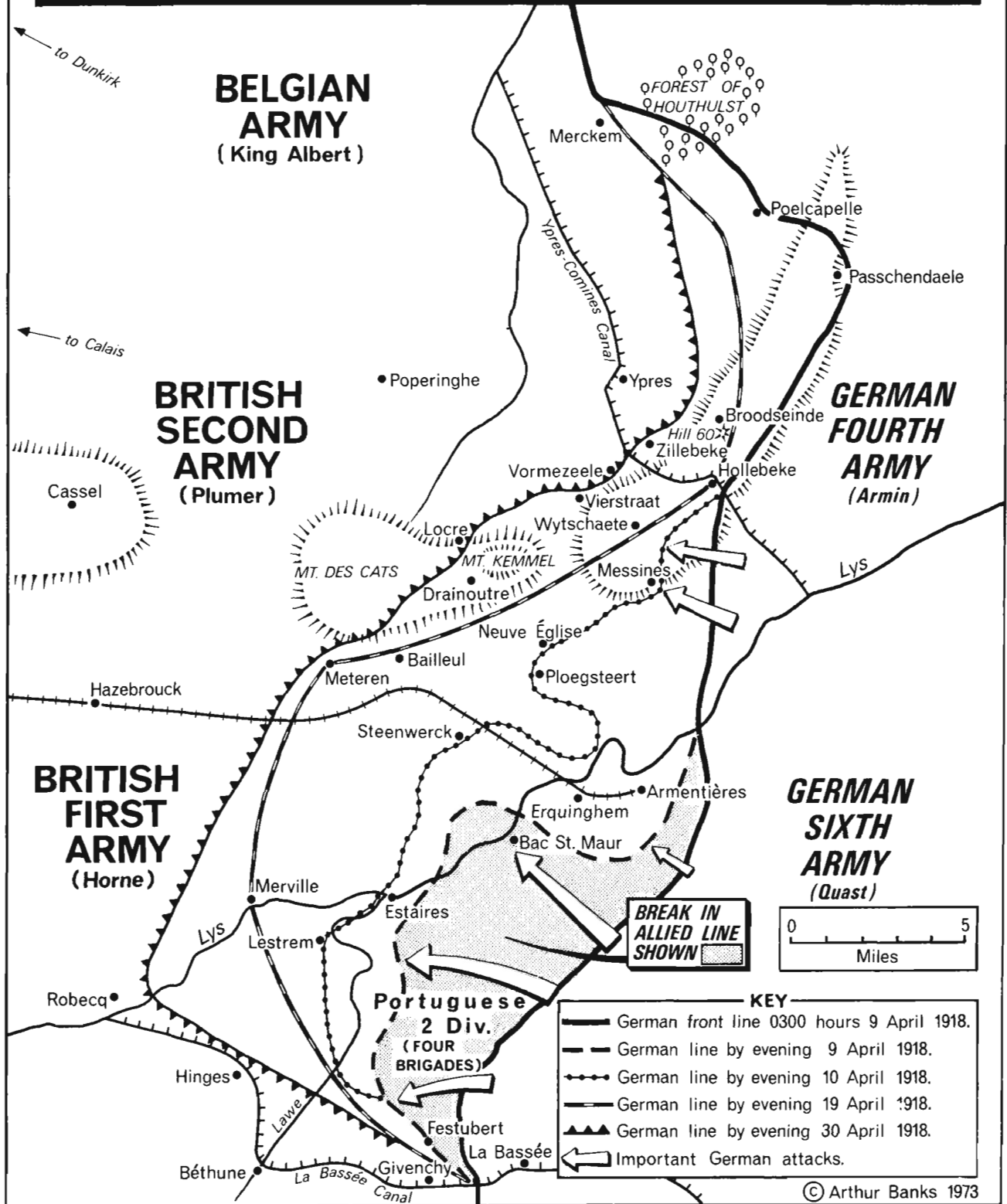
KEY

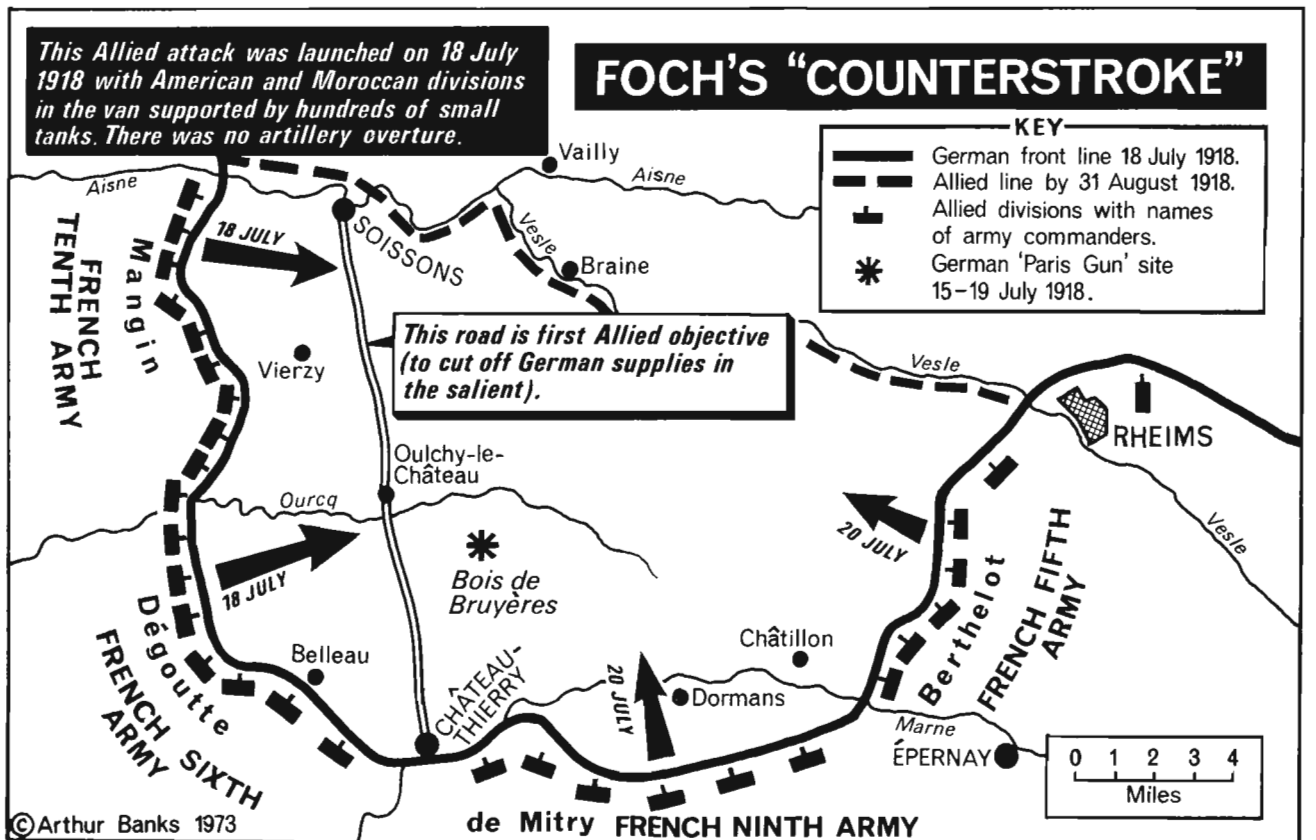
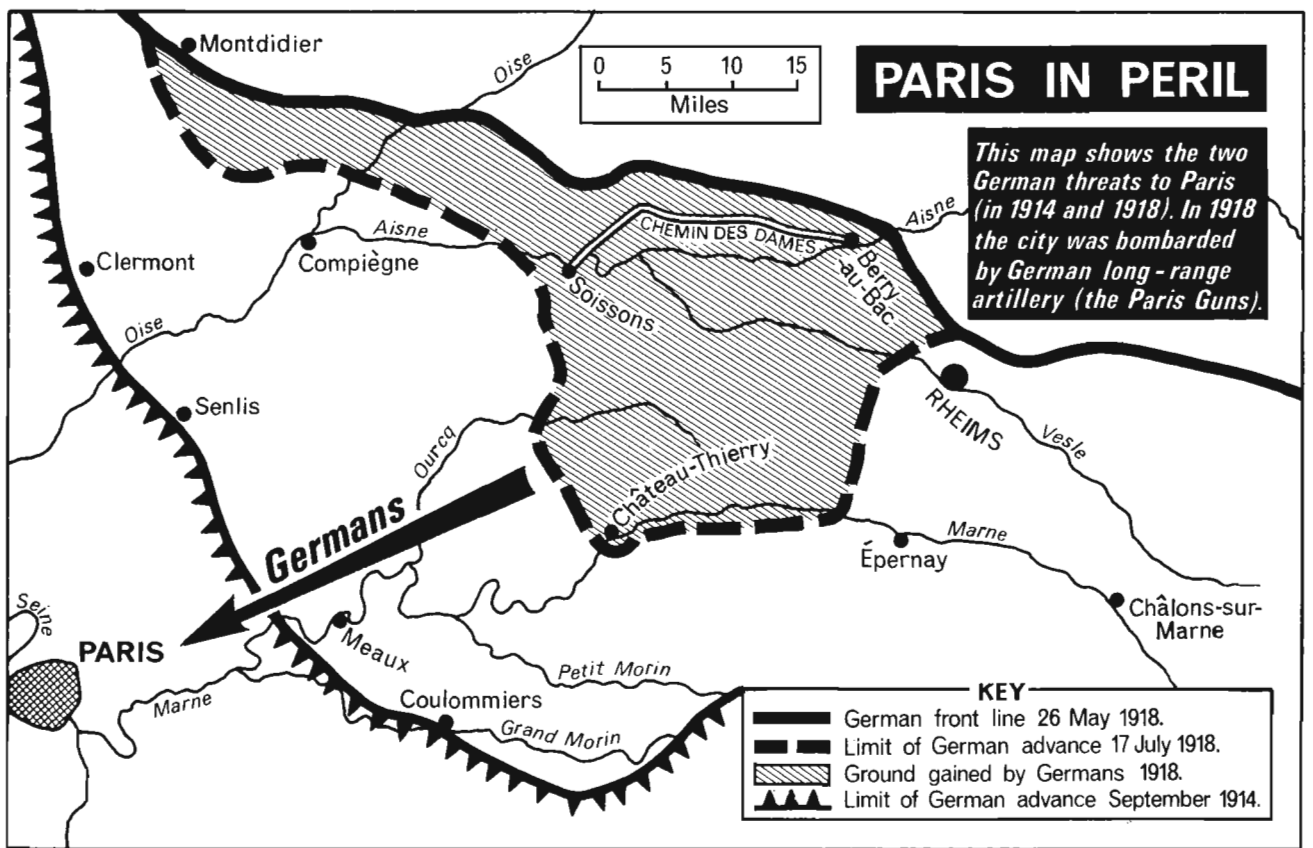
● Definite shell hits.



GERMANY'S LAST BID FOR THE CHANNEL PORTS

9 - 30 APRIL 1918





THE AMERICAN EXPEDITIONARY FORCE IN EUROPE 1918

Note: the United States lost more soldiers from illness than it lost from all battles combined.

NUMBERS OF UNITED STATES TROOPS

EMBARKED FOR EUROPE AT:

New York	1,656,000 men
Newport News	288,000 men
Boston	46,000 men
Philadelphia	35,000 men
Portland	6,000 men
Baltimore	4,000 men

PLUS 45,000 TROOPS EMBARKED AT CANADIAN PORTS

Montreal	32,000 men
Quebec	11,000 men
Halifax	5,000 men
St. John's	1,000 men

2,084,000 men

DISEMBARKED IN EUROPE AT:

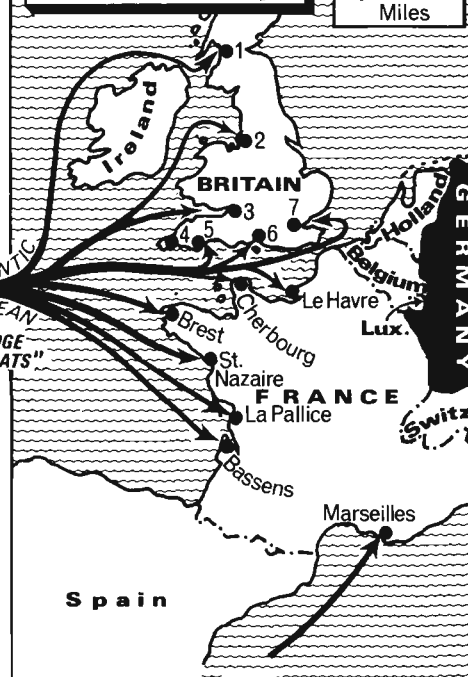
Liverpool (including 4,000 at Manchester)	848,000 men
Brest	791,000 men
St. Nazaire	198,000 men
London	62,000 men
Southampton	57,000 men
Bassens (including Bordeaux)	50,000 men
Glasgow	45,000 men
Le Havre	13,000 men
Bristol	11,000 men
La Pallice (including La Rochelle)	4,000 men
Cherbourg	2,000 men
Marseilles	1,000 men
Plymouth	1,000 men
Falmouth	1,000 men

2,084,000 men

Precise figs. 71 men were lost in Atlantic crossings.

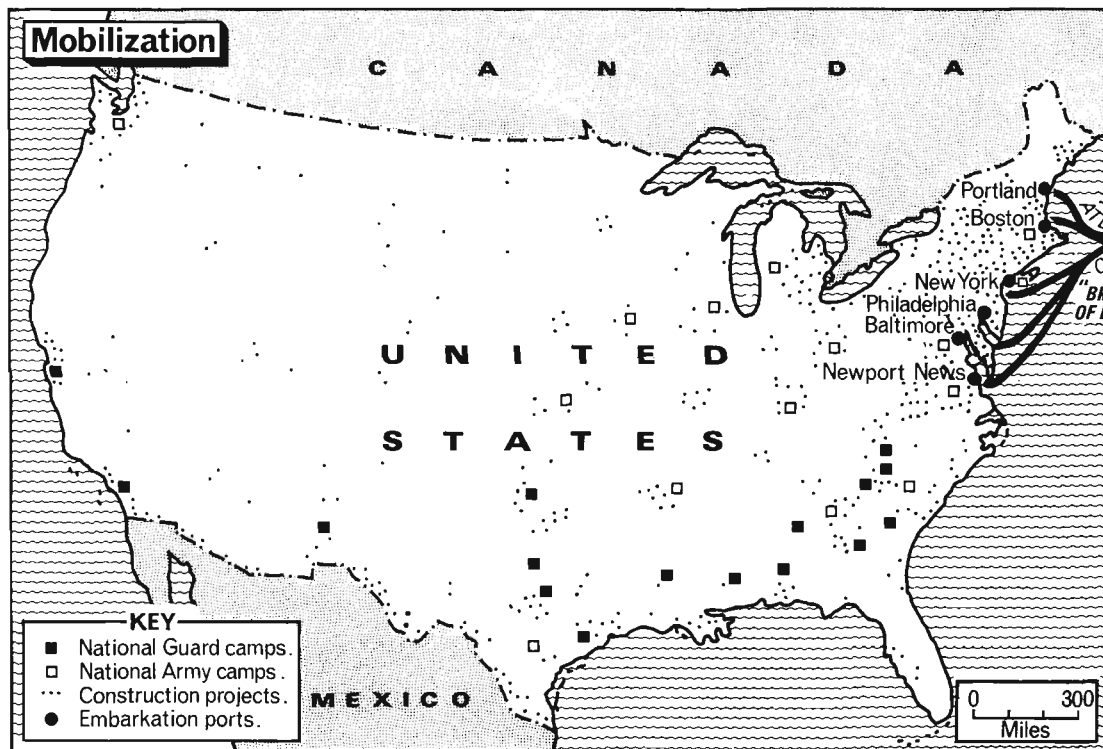
The United States declared war on Germany on 6 April 1917, and against Austria-Hungary on 7 December 1917. General John Joseph Pershing was appointed commander of the American Expeditionary Force to Europe, and a vast training and camp-building programme was commenced. By May 1918, there were over 500,000 U.S. troops in France, and by mid-July, over 1,000,000 men had arrived in Europe.

Arrival in Europe



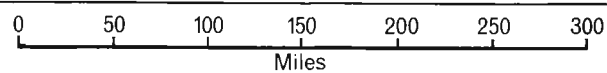
KEY
Disembarkation ports shown ●
KEY TO BRITISH DISEMBARKATION PORTS
1. Glasgow 2. Liverpool 3. Bristol 4. Falmouth
5. Plymouth 6. Southampton 7. London

Mobilization



KEY
■ National Guard camps.
□ National Army camps.
... Construction projects.
● Embarkation ports.

Lines of Communication to the Front



KEY

- First line of communication.
- Second line of communication.
- Third line of communication.
- Fourth line of communication.
- Other main lines.
- Second Marseilles line.
- Section boundaries.
- 1** etc. Base section numbers.
- Advance section.
- Intermediate section.
- Section headquarters.
- Main ports in use.
- Base hospitals.
- Storage depots.
- Regulating stations.
- Locomotive erection stations.
- Battle front on 18 July 1918.
- International frontiers in 1914.

GENERAL INFORMATION

GHQ, A.E.F. was at Chaumont.

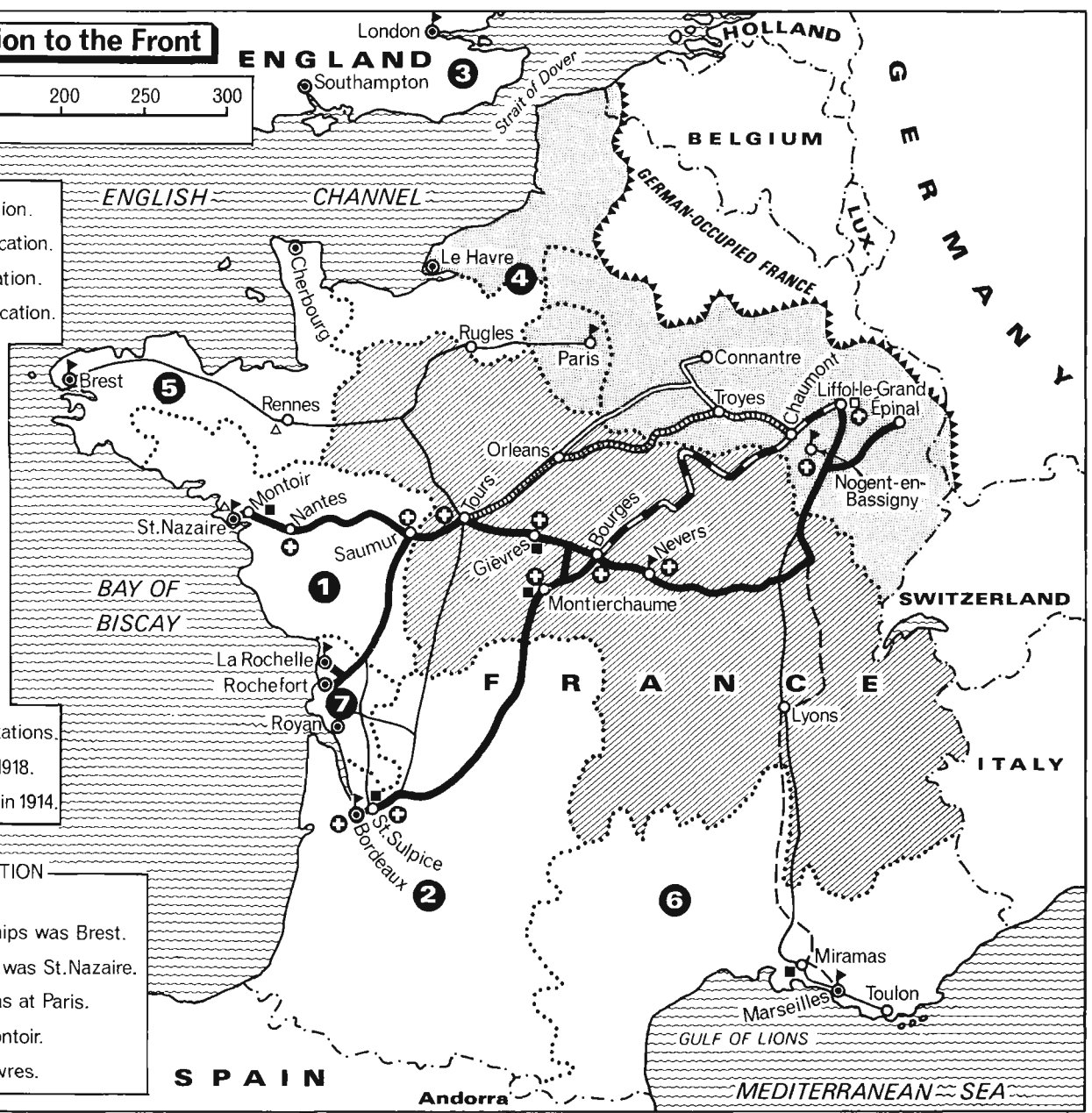
Main French port used by troopships was Brest.

Main French port used for freight was St.Nazaire.

HQ General Purchasing Board was at Paris.

HQ Service of Supply was at Montoir.

Largest storage depot was at Gièvres.



AMERICAN INFANTRY DIVISIONAL ORGANIZATION 1918

Approx. 27,200 men.
Guns and machine
guns variable.



DIVISIONAL HEADQUARTERS

- Engineer regiment
- Ammunition train
- Supply train
- Field signals detachment

Divisional machine gun battalion

FIELD ARTILLERY BRIGADE

REGIMENT	REGIMENT	REGIMENT	TRENCH MORTAR BATTERY
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MEDICAL TRAIN

Four field hospital companies	Four field ambulance companies
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INFANTRY BRIGADE

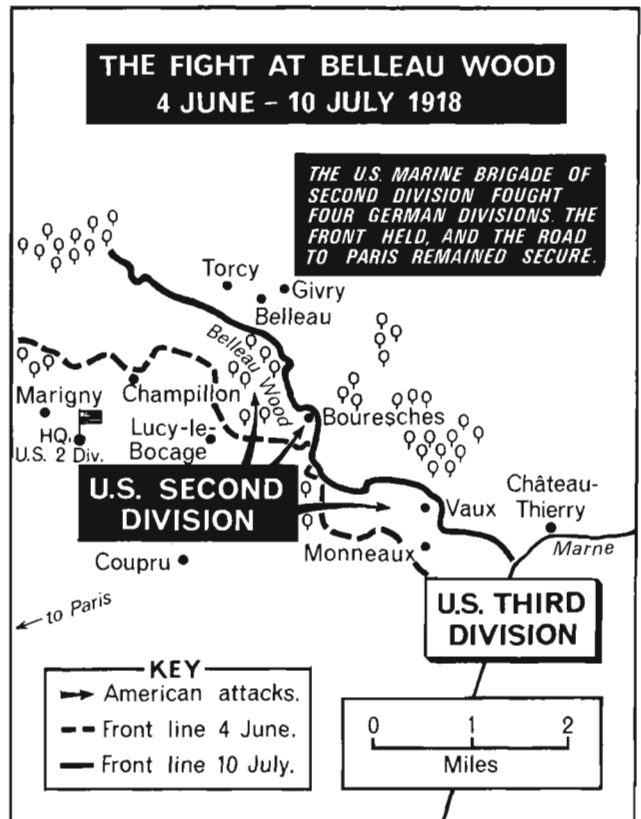
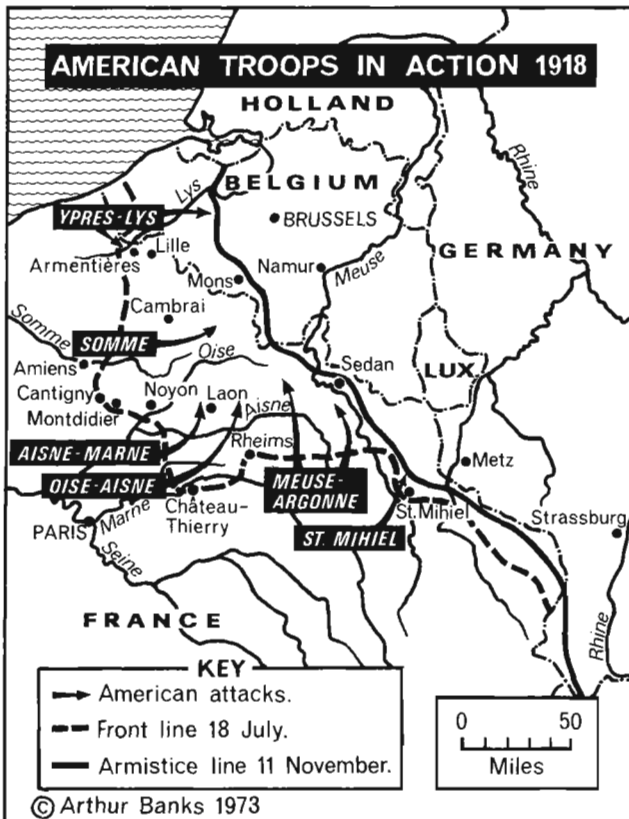
REGIMENT Three battalions Machine gun company	REGIMENT Three battalions Machine gun company
---	---

Brigade machine gun battalion

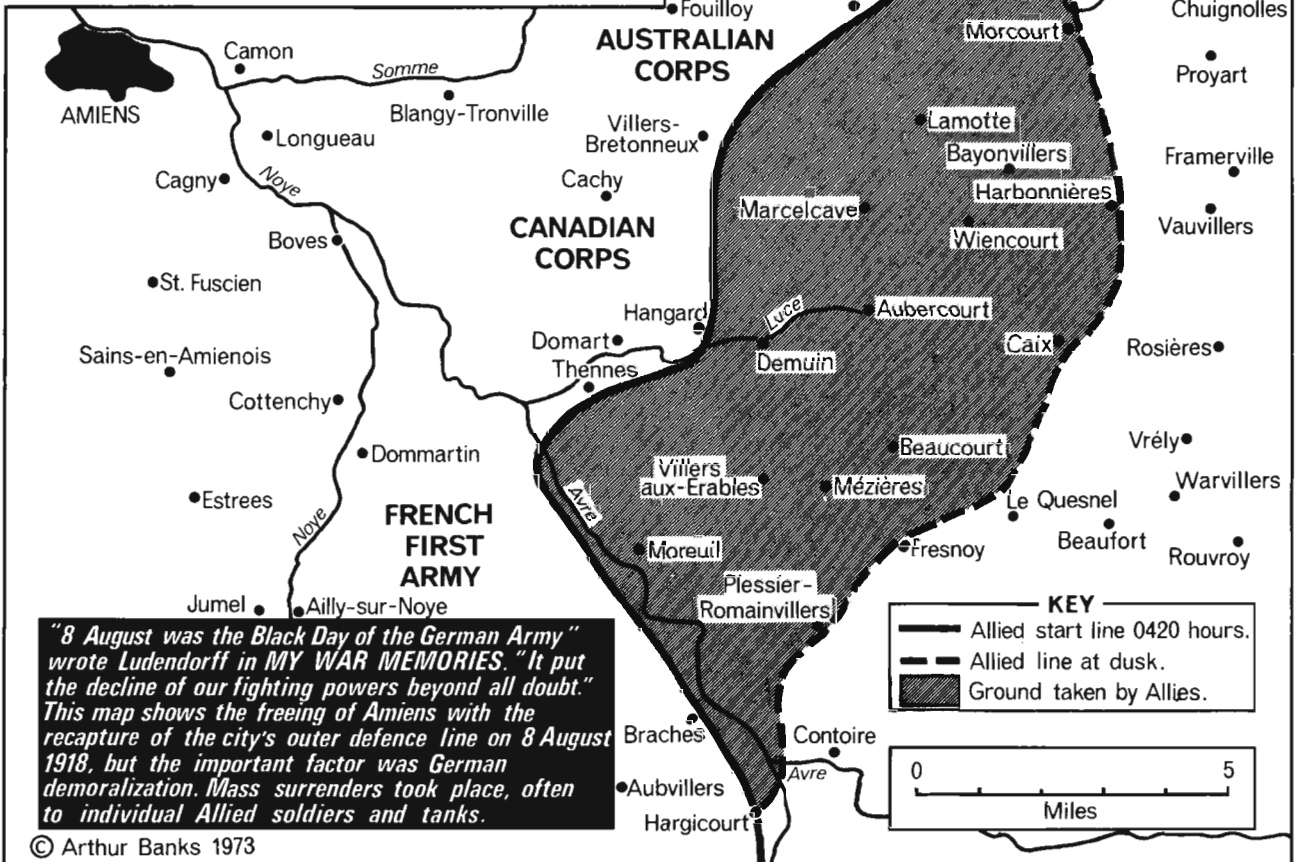
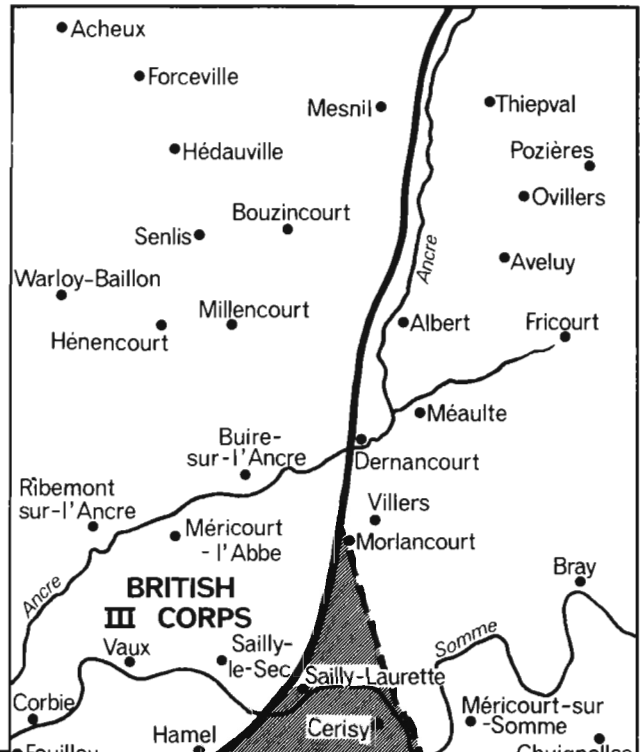
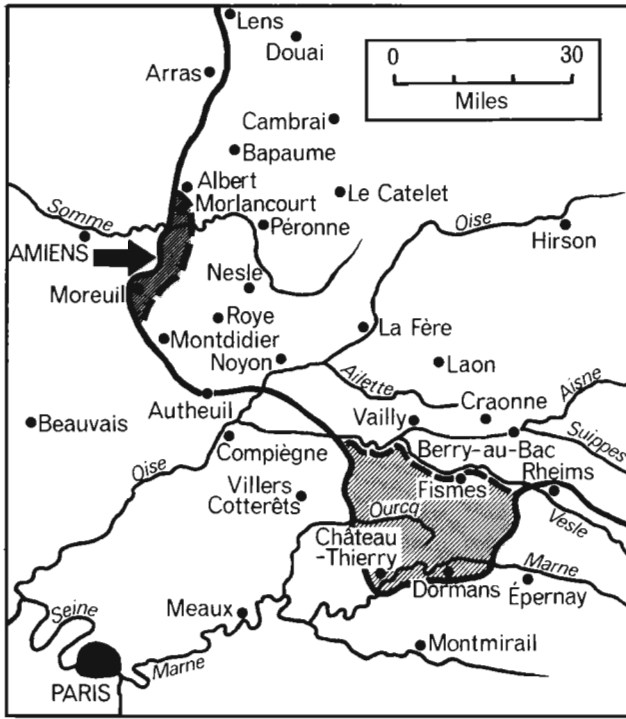
INFANTRY BRIGADE

REGIMENT Three battalions Machine gun company	REGIMENT Three battalions Machine gun company
---	---

Brigade machine gun battalion



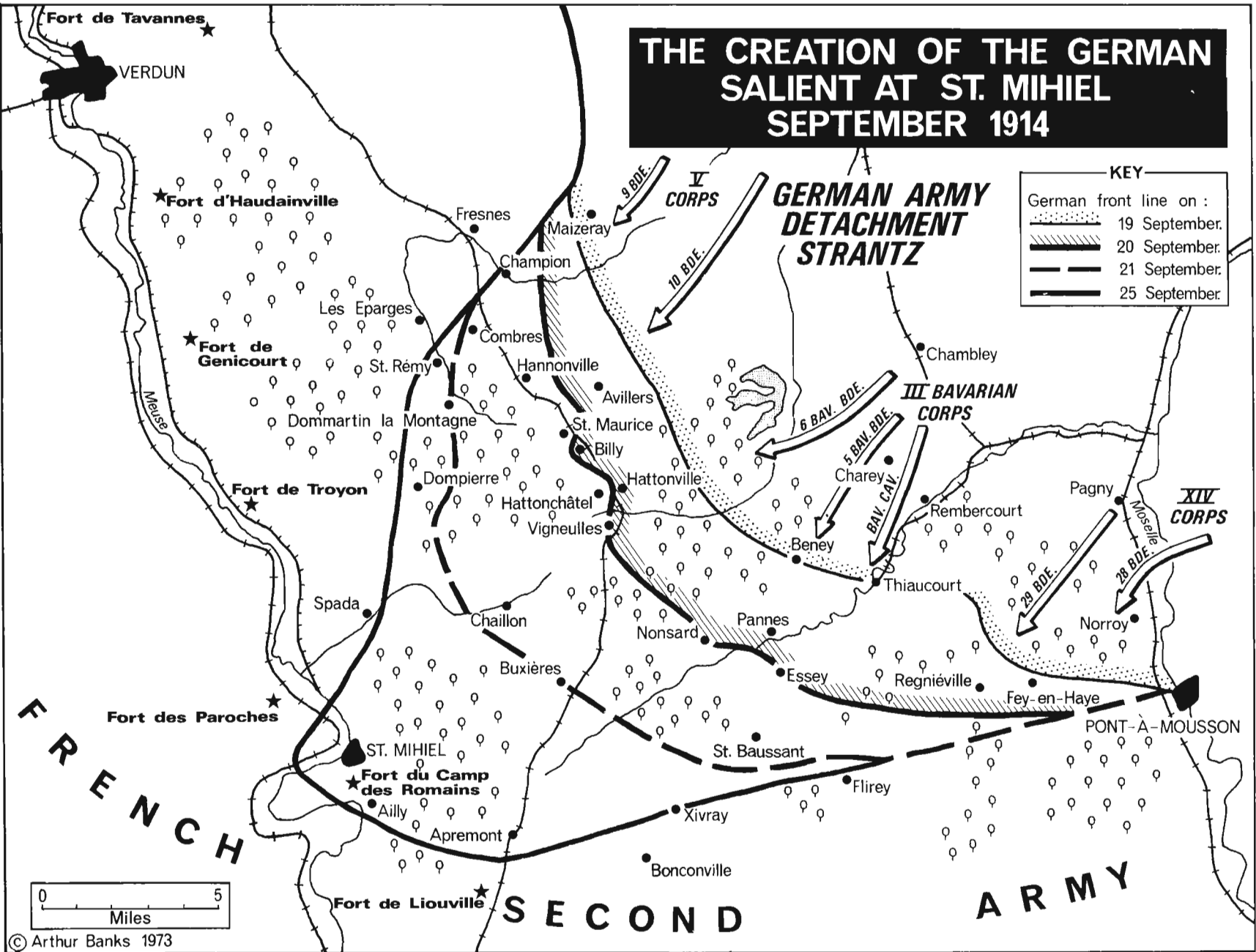
"BLACK DAY OF THE GERMAN ARMY" 8 AUGUST 1918



"8 August was the Black Day of the German Army" wrote Ludendorff in MY WAR MEMORIES. "It put the decline of our fighting powers beyond all doubt." This map shows the freeing of Amiens with the recapture of the city's outer defence line on 8 August 1918, but the important factor was German demoralization. Mass surrenders took place, often to individual Allied soldiers and tanks.





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THE CREATION OF THE GERMAN SALIENT AT ST. MIHIEL SEPTEMBER 1914

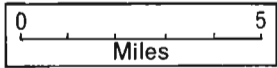


KEY

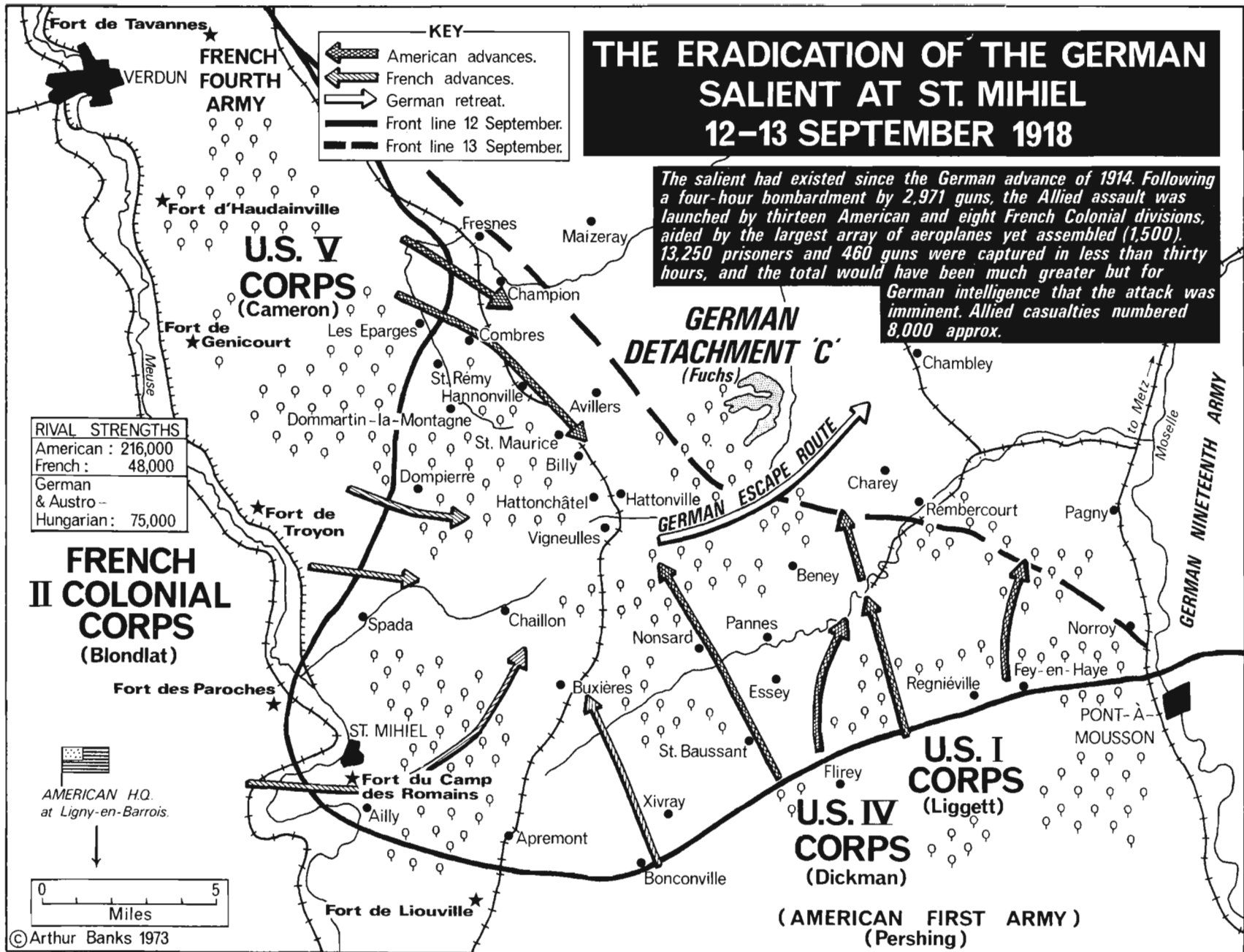
German front line on :

-  19 September.
-  20 September.
-  21 September.
-  25 September.

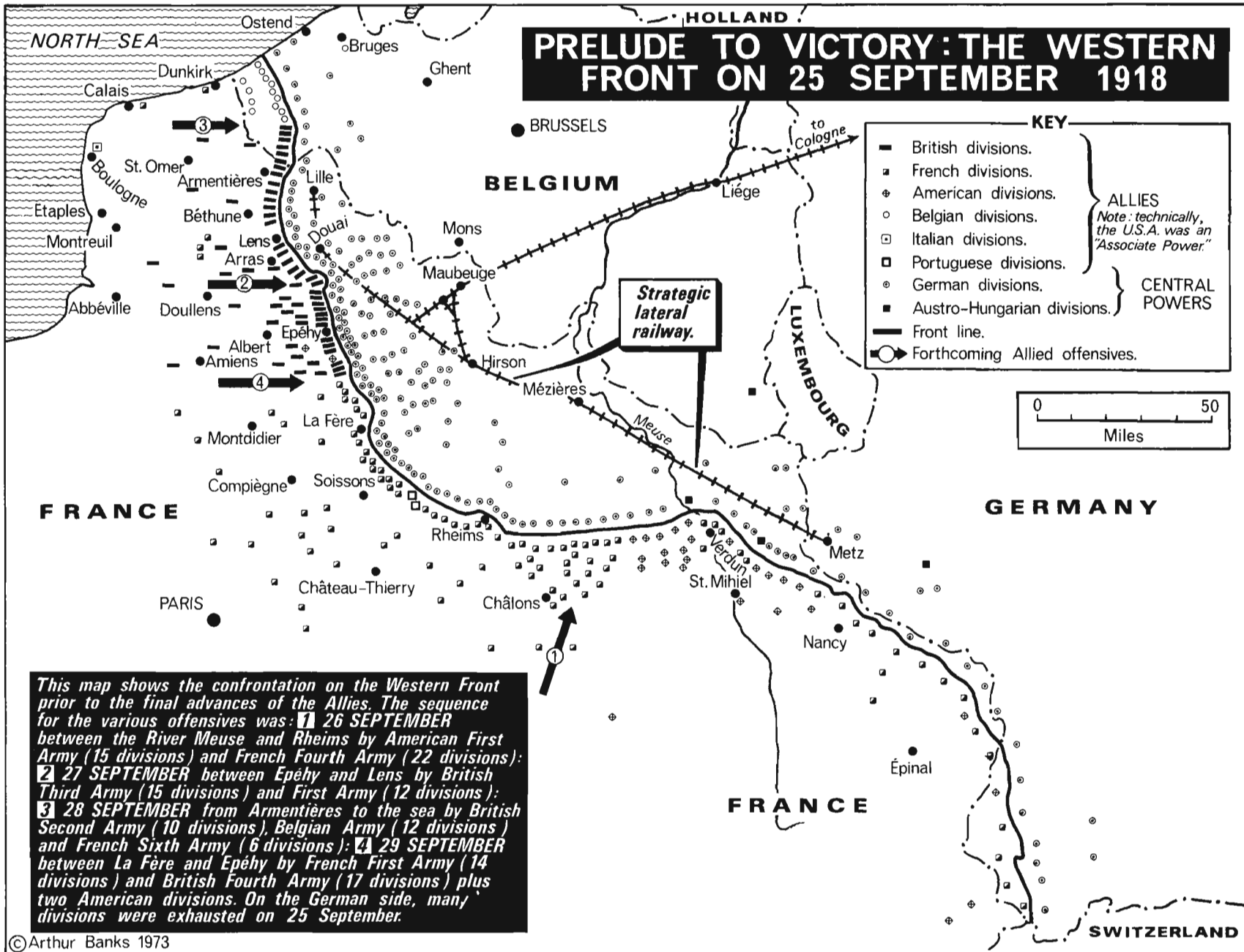
192



THE ERADICATION OF THE GERMAN SALIENT AT ST. MIHIEL 12-13 SEPTEMBER 1918



PRELUDE TO VICTORY: THE WESTERN FRONT ON 25 SEPTEMBER 1918

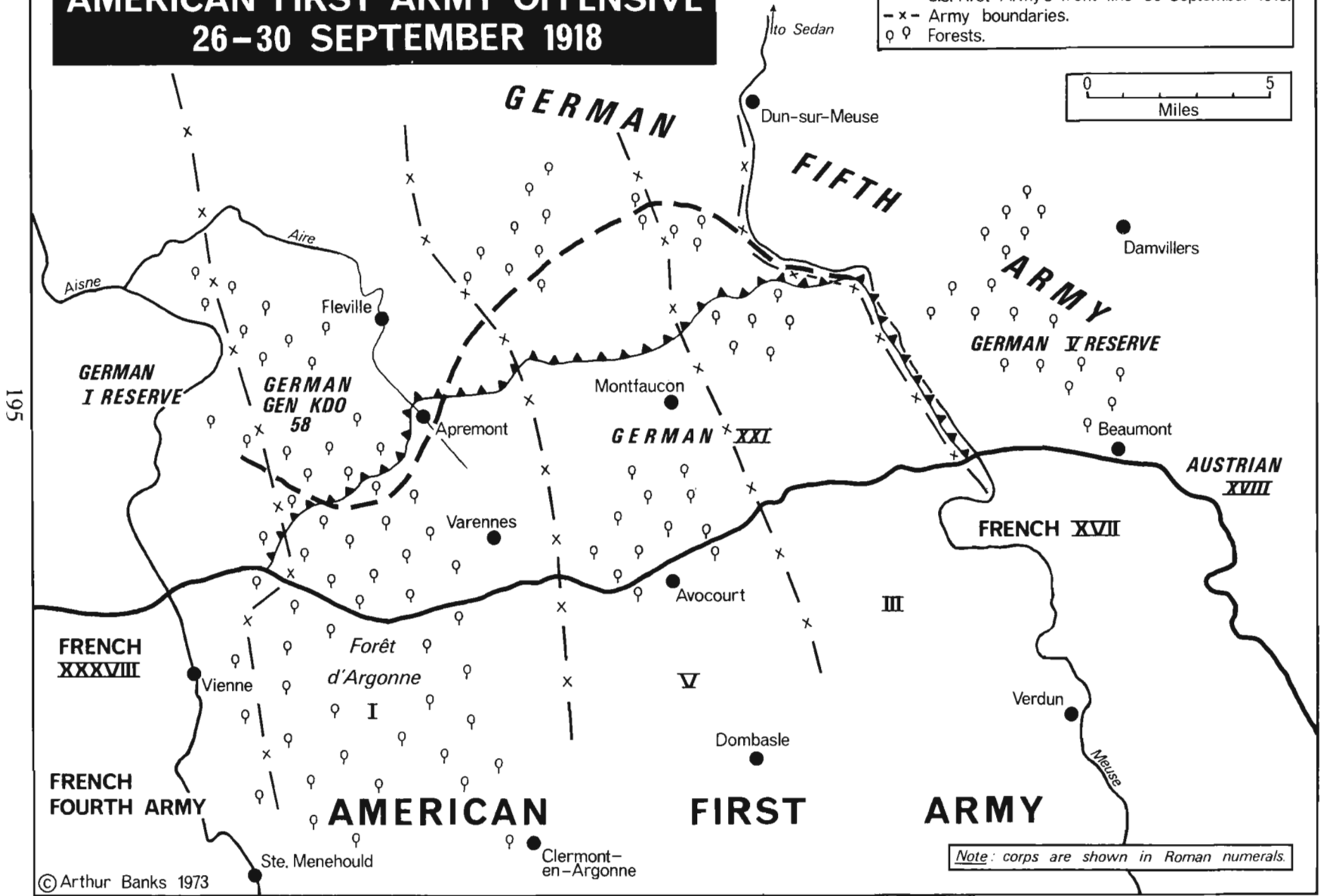
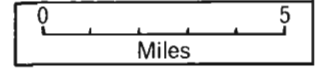


This map shows the confrontation on the Western Front prior to the final advances of the Allies. The sequence for the various offensives was: **1** 26 SEPTEMBER between the River Meuse and Rheims by American First Army (15 divisions) and French Fourth Army (22 divisions); **2** 27 SEPTEMBER between Epéhy and Lens by British Third Army (15 divisions) and First Army (12 divisions); **3** 28 SEPTEMBER from Armentières to the sea by British Second Army (10 divisions), Belgian Army (12 divisions) and French Sixth Army (6 divisions); **4** 29 SEPTEMBER between La Fère and Epéhy by French First Army (14 divisions) and British Fourth Army (17 divisions) plus two American divisions. On the German side, many divisions were exhausted on 25 September.

THE MEUSE-ARGONNE BATTLE : AMERICAN FIRST ARMY OFFENSIVE 26-30 SEPTEMBER 1918

KEY

- Allied front line 26 September 1918.
- - - U.S. First Army's objective.
- ▲▲ U.S. First Army's front line 30 September 1918.
- x - Army boundaries.
- ♀♀ Forests.

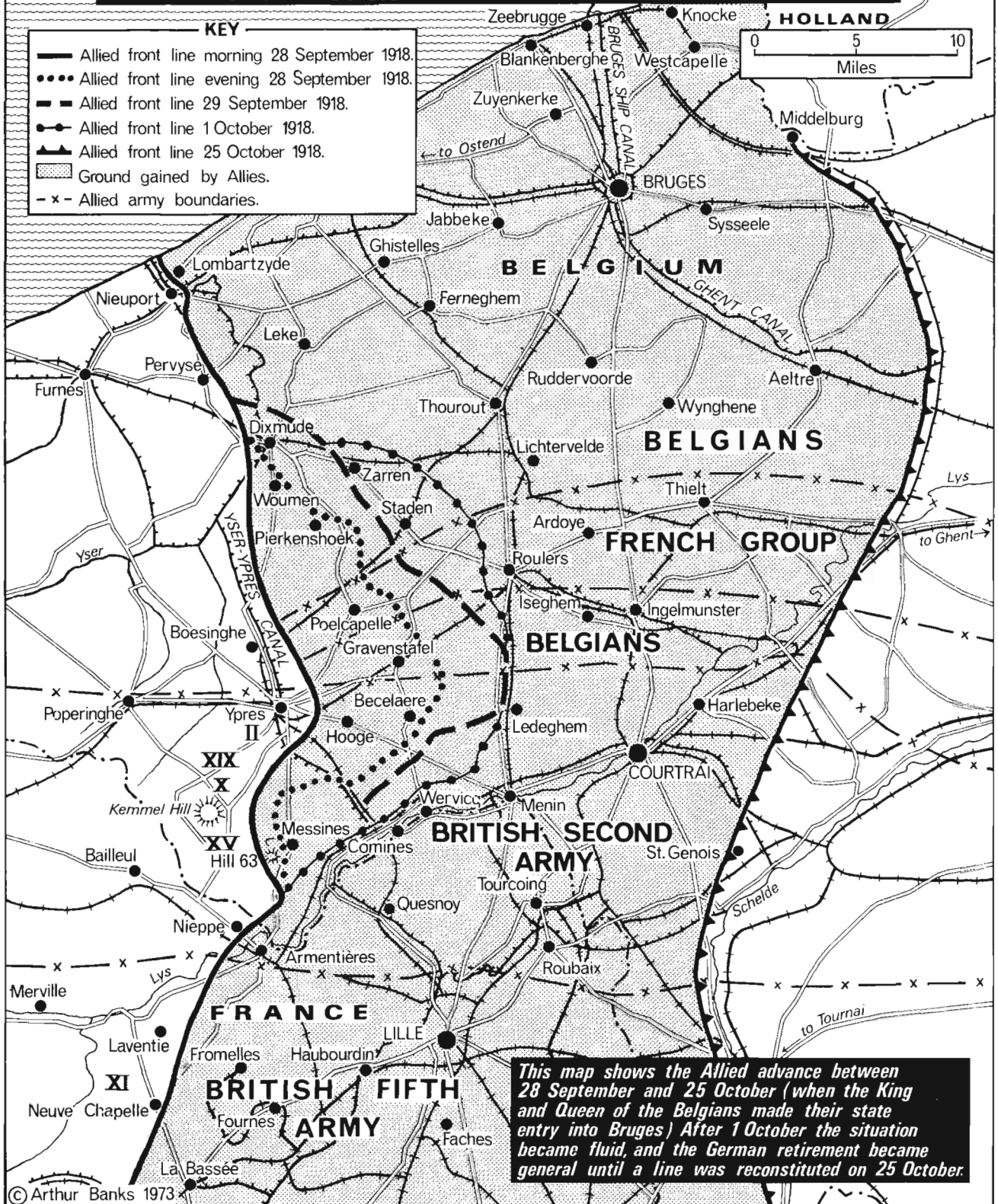


Note: corps are shown in Roman numerals.

THE LIBERATION OF THE BELGIAN COAST 28 SEPTEMBER - 25 OCTOBER 1918

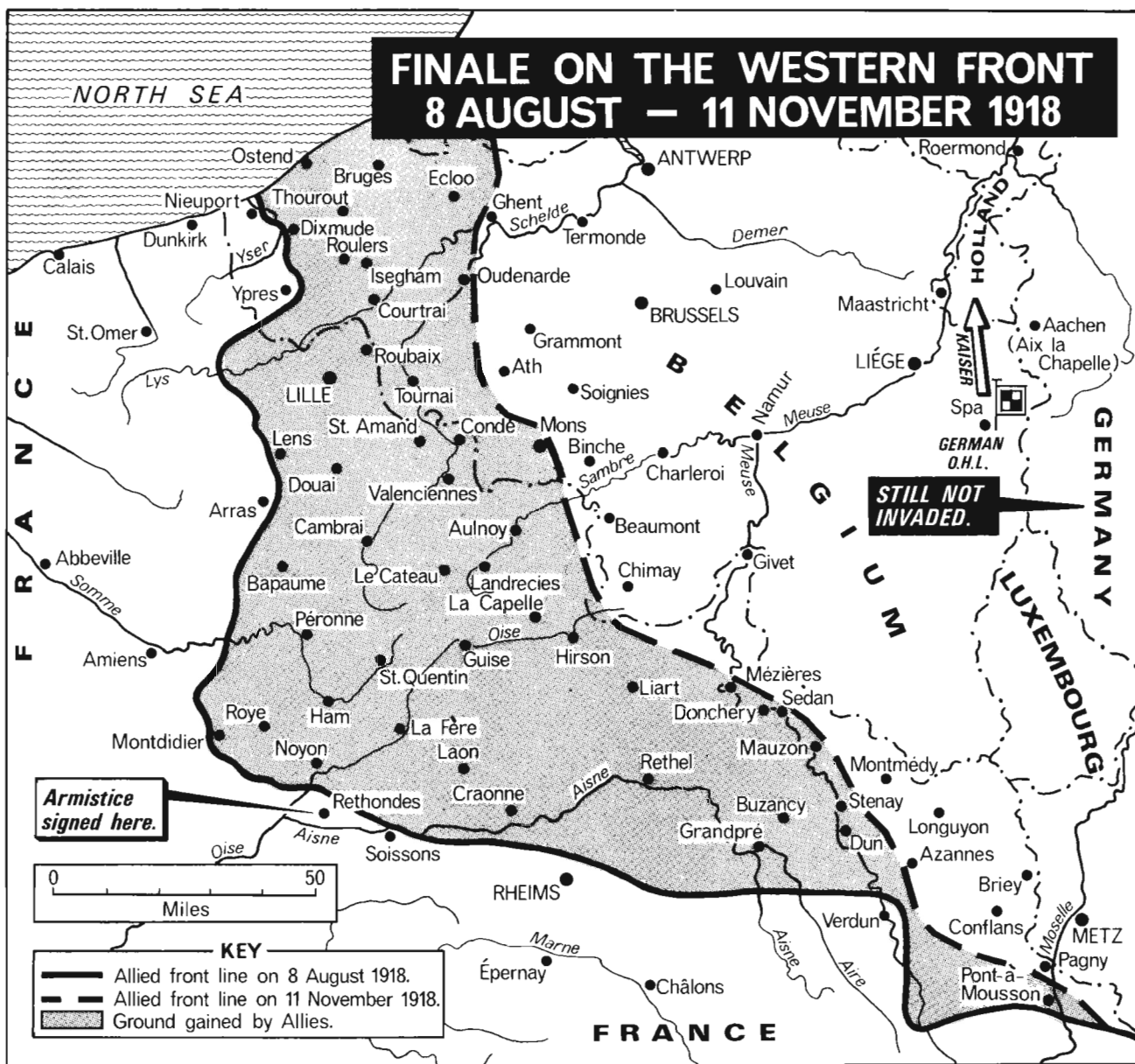
KEY

- Allied front line morning 28 September 1918.
- Allied front line evening 28 September 1918.
- Allied front line 29 September 1918.
- Allied front line 1 October 1918.
- Allied front line 25 October 1918.
- ▨ Ground gained by Allies.
- x - Allied army boundaries.

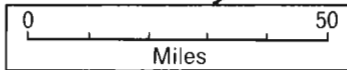


This map shows the Allied advance between 28 September and 25 October (when the King and Queen of the Belgians made their state entry into Bruges) After 1 October the situation became fluid, and the German retirement became general until a line was reconstituted on 25 October.

FINALE ON THE WESTERN FRONT 8 AUGUST – 11 NOVEMBER 1918



Armistice signed here.



KEY

- Allied front line on 8 August 1918.
- Allied front line on 11 November 1918.
- Ground gained by Allies.

Since 18 July, when Foch sent Mangin and Dégoutte to open the Allied attack, the following prisoners had been taken: 188,000 (by the British), 140,000 (by the French), 44,000, (by the Americans), and 14,000 (by the Belgians). Plus some 7,000 guns captured. If German killed and wounded are added, it is plain that the German armies could not continue to fight on effectively.

On 10 November, the Kaiser fled to Holland, followed by the Crown Prince. The basic Armistice terms signed at 1100 hours on 11 November were: immediate cessation of hostilities; German evacuation of invaded territory and of Alsace-Lorraine; repatriation of Allied citizens and prisoners of war; surrender of war materials and weapons; evacuation of the Rhine's left bank and bridgeheads; surrender of U-boats; internment of German surface warships; a declaration that the Treaties of Bucharest and Brest-Litovsk were null and void.

THE PERIPHERAL CAMPAIGNS

Throughout the War most military leaders in Britain and France were 'Westerners'; they believed the principal task of their armies was to defeat the enemy in the theatre of operations which the Germans had themselves selected for their main effort. All other campaigns were dangerous 'sideshows', eating up men and munitions; and it was not until the final months of the war that a resolute effort was made to gain victories against Germany's allies in northern Italy, the Balkans, and the Middle East.

In practice these peripheral campaigns fall strategically into three categories. Some were intended, at least originally, as offensive thrusts against the central bloc from new points of the compass: the Italian and Macedonian Fronts, for example. Others were forced on the allies by Turkey's adhesion to the Germano-Austrian side: the need to defend the Suez lifeline by a campaign in Palestine, and to secure Anglo-Persian oil supplies by an offensive up the Shatt-el-Arab. Finally there was the fighting in Africa, and notably in German East Africa, where General von Lettow-Vorbeck waged colonial warfare throughout the four years of the European conflict, eventually surrendering a fortnight after the Armistice in France.

The character of several of these campaigns changed as the war dragged on: thus operations to safeguard oil refineries and counter intrigues in the Middle East developed into a lengthy campaign in Mesopotamia, with the possibility of a strike against the interior of Turkey. Conversely, the Italian Front, where it was hoped in 1915 that Austria-Hungary would drain away her last resources, became a burden for Italy's allies, although the Italian troops fought at first with fiercely whipped-up patriotic courage. They suffered from inadequate supplies of munitions and artillery, from poor training, and from the assumption that frontal assaults were the sole method of achieving victory. The Italians sustained 600,000 casualties in eleven offensives along the river Isonzo from mid-June 1915 to mid-

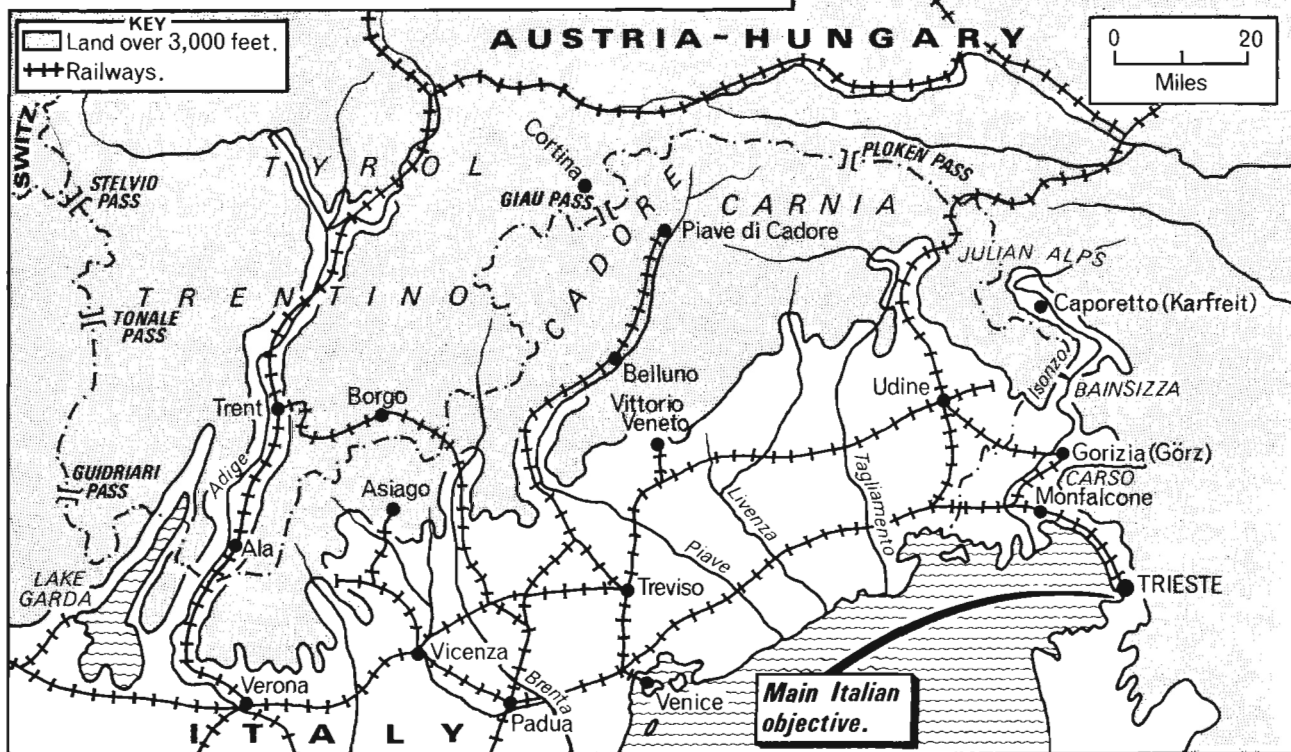
September 1917; and after all this terrible fighting, they succeeded in advancing the front line only seven miles. The twelfth Isonzo battle, the combined German and Austrian offensive at Caporetto in October 1917, pushed the Italians back fifty miles to the river Piave. Eventually, on the first anniversary of Caporetto, the Italians launched an attack on the Austrian positions which cost them 25,000 casualties in sixty hours of grim combat, before the Austrians lost their headquarters at Vittorio Veneto and sued for peace.

The Salonika Front, originating with the Austro-German-Bulgarian offensive against Serbia (page 160) was for long quiescent, although joint operations by Serbs, Italians, Russians and French liberated Serbian Monastir in November 1916 and the British were heavily engaged with the Bulgarians around Lake Doiran and the River Struma in the spring of 1917. Disease, especially malaria, caused the heaviest casualties in Macedonia. The final offensive of 1918 involved an initial assault by the French and the Serbs on a formless ridge known as the Dobropolje, more than 7,000 feet above sea-level. Subsequently Franchet d'Espèrey's army made the swiftest long advance of the war, sweeping up to the Danube and the plains of Hungary, and preparing to march on Berlin by way of Budapest and Dresden.

In Palestine General Allenby, with elaborate deception and imaginative use of cavalry pushed the Turks (and the German 'Asia Corps') rapidly northwards into the Lebanon and Syria in the autumn of 1918. His advanced cavalry reached Aleppo before Turkish delegates concluded an armistice at Mudros on 30 October, with the commander-in-chief of the British Mediterranean Fleet. Both Allenby in Palestine and Franchet d'Espèrey in Salonika had shown the need for unconventional commanders filled with offensive spirit in the fringe theatres of war. So, indeed, did Lettow-Vorbeck in East Africa.

THE ITALIAN FRONT 1915-1918

1 The Battleground



2 The Opposing Forces (Land and Air)

NOTE: GERMANY AND ITALY WERE NOT AT WAR UNTIL 29 AUGUST 1916.

ON 23 MAY 1915

AUSTRIA-HUNGARY

ARMY GROUP COMMANDER: Archduke Eugen

(100,000 troops)

IN RESERVE → 20 divisions (Sava area alone) in the event of an Italian breakthrough.

IN SUPPORT → 35 INFANTRY BATTALIONS, 30 ARTILLERY BATTERIES } plus Cavalry Squadrons

FRONT LINE STRENGTH → 127 INFANTRY BATTALIONS, 57 ARTILLERY BATTERIES }

STELVIO PASS

←----- 420 MILES -----→

TRENTINO (TYROL) FRONT

CARNIA FRONT

ISONZO (JULIAN) FRONT

ADRIATIC SEA

FRONT LINE STRENGTH → 195 INFANTRY BATTALIONS, 151 ARTILLERY BATTERIES }

IN SUPPORT → 45 INFANTRY BATTALIONS, 24 ARTILLERY BATTERIES } plus Cavalry Squadrons

IN RESERVE → 101 INFANTRY BATTALIONS, 87 ARTILLERY BATTERIES }

(875,000 troops) **ITALY** CHIEF OF THE GENERAL STAFF: General Cadorna

BY 15 JUNE 1915

	ITALY	AUSTRIA-HUNGARY
INFANTRY BATTALIONS	415	234
ARTILLERY BATTERIES	326	155
CAVALRY SQUADRONS	116	21

Note: figures are deceptive.

Austria was stronger in heavy artillery and machine guns and many of her troops were already battle-experienced.

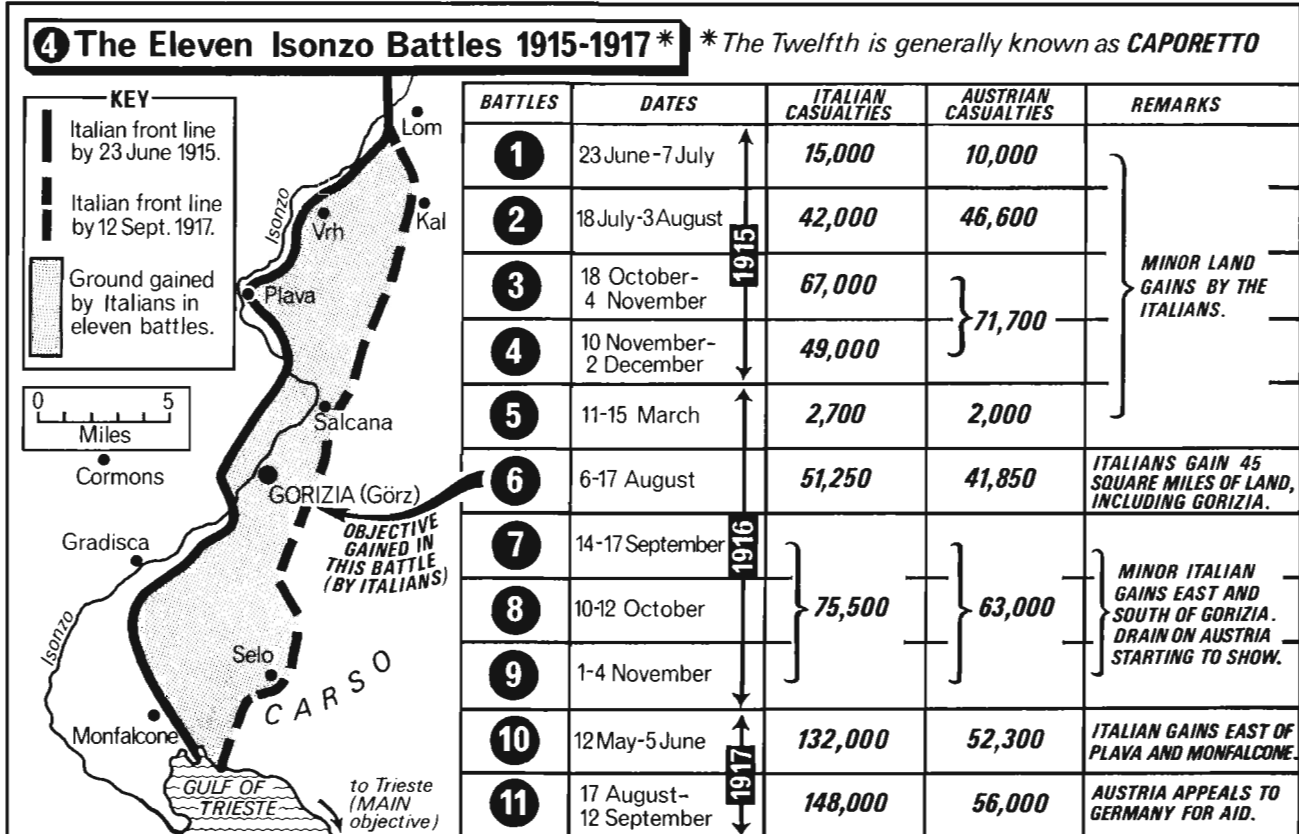
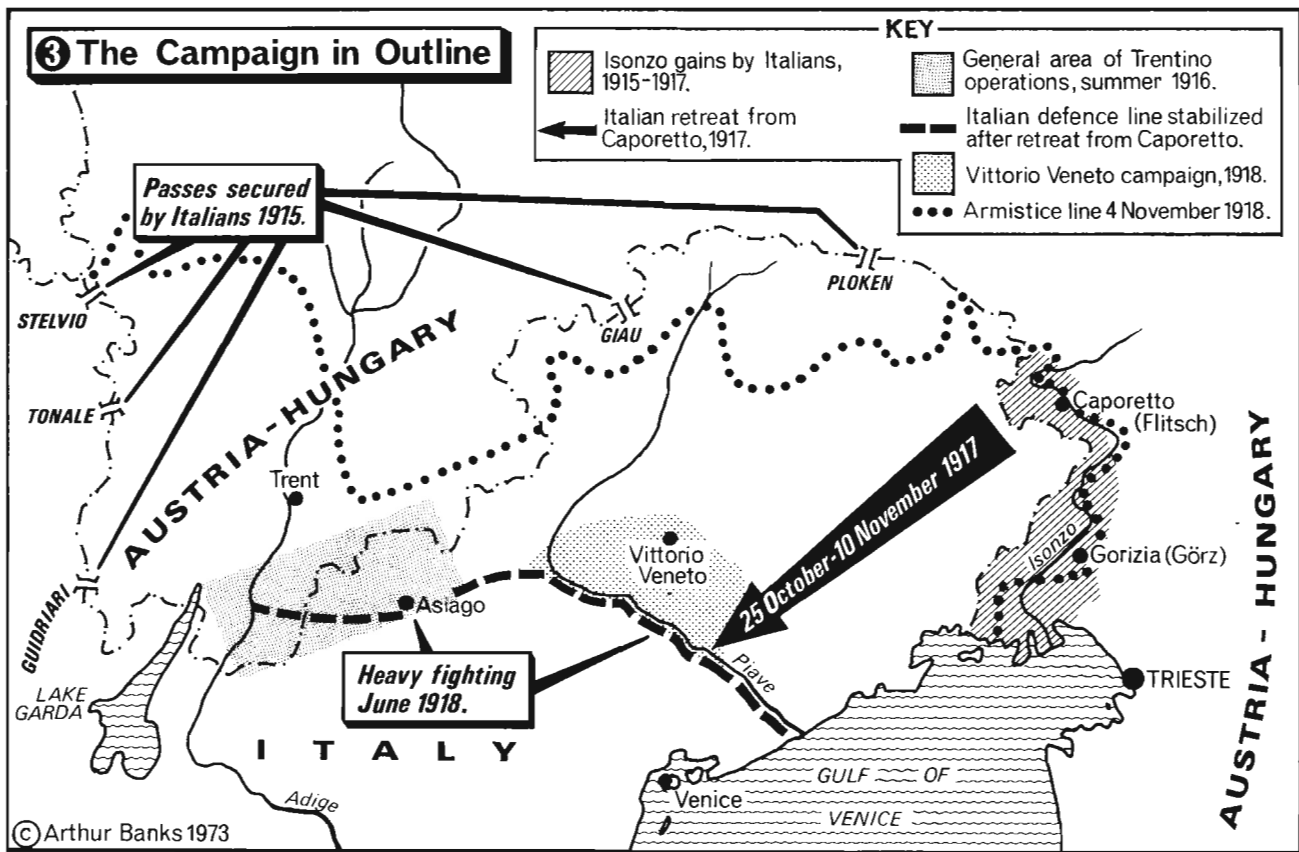
IN THE AIR

ITALY

77 Aircraft including seaplanes
7 Airships

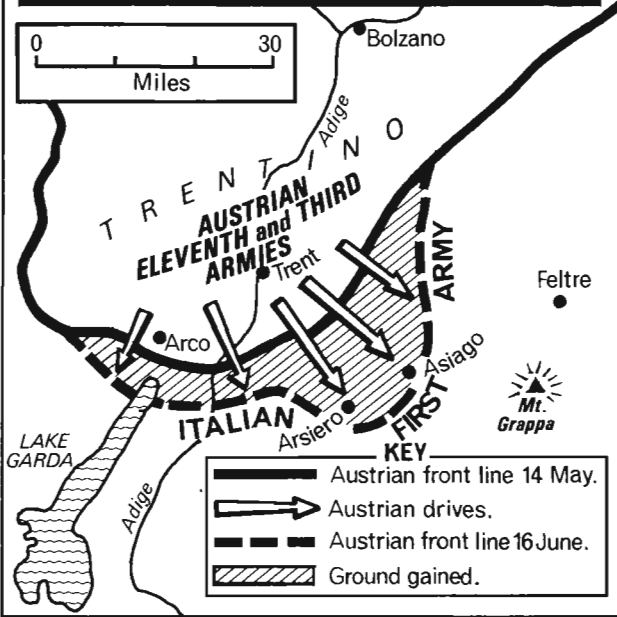
AUSTRIA-HUNGARY

136 Aircraft including seaplanes
1 Airship



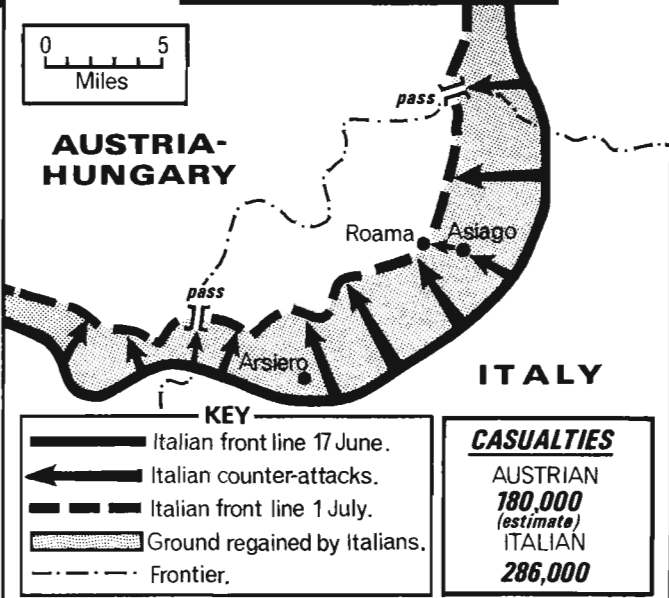
THE ITALIAN FRONT - continued

STAGE 1. AUSTRIAN ADVANCE



5 Austrian Trentino Offensive 1916

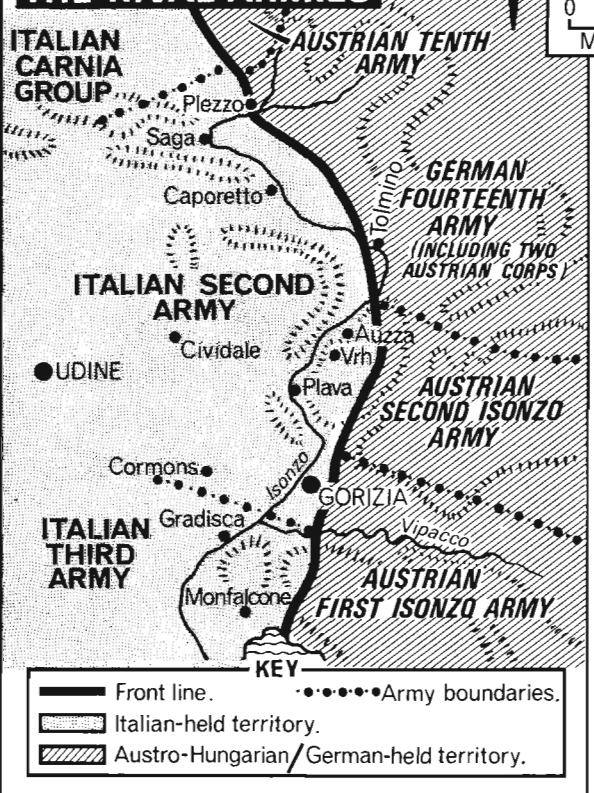
STAGE 2. ITALIAN COUNTER-OFFENSIVE



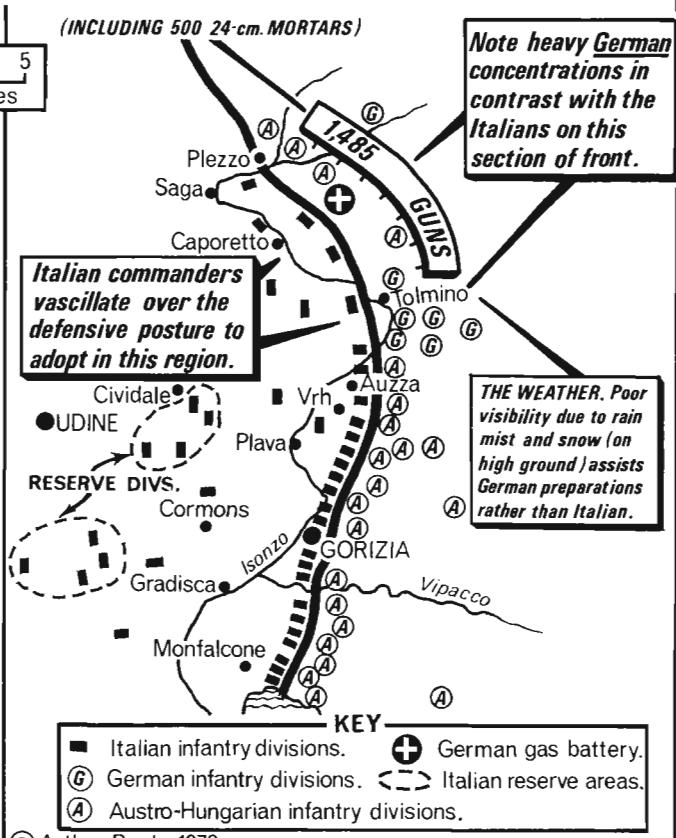
CASUALTIES
 AUSTRIAN
 180,000
(estimate)
 ITALIAN
 286,000

6 Eve of Caporetto: 23 Oct. 1917

THE RIVAL ARMIES



DIVISIONAL DISPOSITIONS



Note heavy German concentrations in contrast with the Italians on this section of front.

Italian commanders vacillate over the defensive posture to adopt in this region.

THE WEATHER. Poor visibility due to rain mist and snow (on high ground) assists German preparations rather than Italian.

© Arthur Banks 1973

7 The Italian Retreat from Caporetto to the River Piave Position 1917

KEY

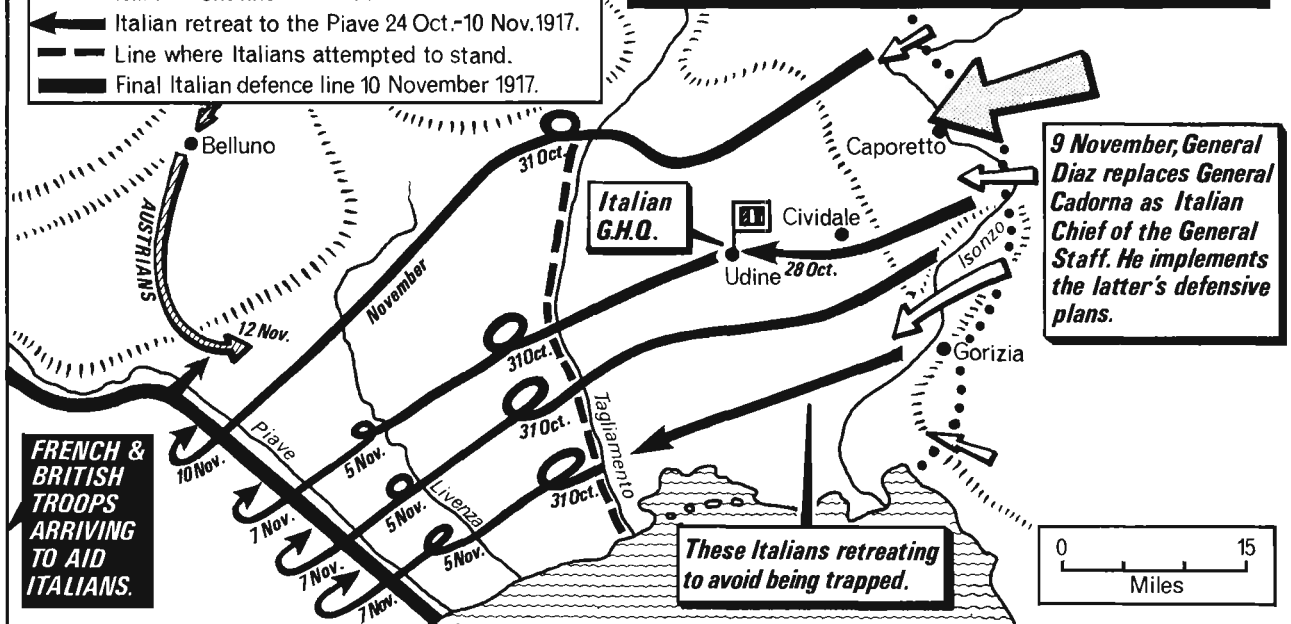
- Main German-led 'punch' attack 24 October 1917.
- Other attacks by Central Powers October 1917.
- Abortive attempt to intercept Italians.
- Italian front line 23 October 1917.
- Italian retreat to the Piave 24 Oct.-10 Nov. 1917.
- Line where Italians attempted to stand.
- Final Italian defence line 10 November 1917.

The Germans and Austrians attacked on 24 October. A huge bombardment (including gas shells) preceded the infantry. The demoralized Italians fell back, tried to halt at the River Tagliamento, but were eventually pushed back to the Piave.

9 November, General Diaz replaces General Cadorna as Italian Chief of the General Staff. He implements the latter's defensive plans.

These Italians retreating to avoid being trapped.

FRENCH & BRITISH TROOPS ARRIVING TO AID ITALIANS.



8 1918: Vittorio Veneto: The Armistice

KEY

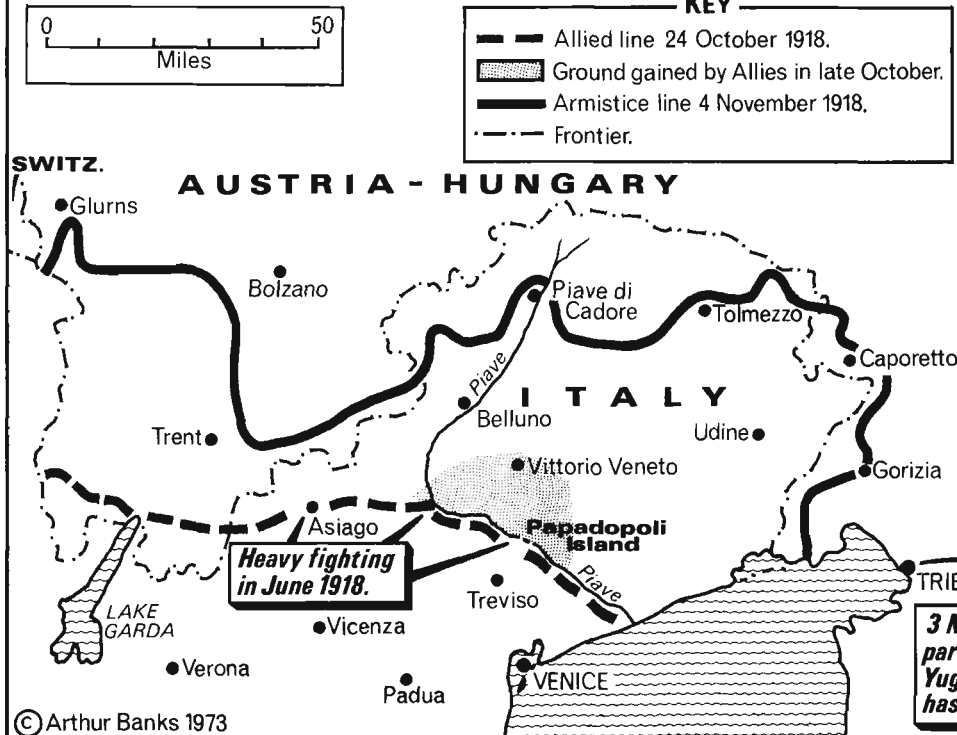
- Allied line 24 October 1918.
- Ground gained by Allies in late October.
- Armistice line 4 November 1918.
- Frontier.

MAIN EVENTS

- 1 15-16 June, Battle of Asiago.
- 2 15-24 June, Battle of the Piave.
- 3 30 June, American infantry arrive in Italy.
- 4 24 October, Battle of Vittorio Veneto opens. British take Papadopoli.
- 5 27 October, Austria asks Italy for armistice.
- 6 2 November, Hungarians ordered to disarm.
- 7 3 November, armistice signed near Padua: takes effect 1500 hours 4 Nov.

3 November 1918, Italian landing party is received by the Yugoslav National Council which has taken over the port.

Heavy fighting in June 1918.



THE SALONIKA FRONT 1915-1918

AUSTRIA-HUNGARY
SERBIA
MONTENEGRO

The Salonika expedition, undertaken by the Allies for both military and political reasons, became a running sore. It did not save Serbia from the Central Powers' attack and occupation in 1915, and the Allies found themselves confined for nearly a whole year within their own concentration camp and unable to break out decisively to the north until September 1918. The force was "guarded" by one-half of the Bulgarian land force plus some German stiffening. Disease (notably malaria) took a heavy toll of the Allied troops: on the political side, Greek intrigues and Allied suspicions served to exacerbate the general situation.

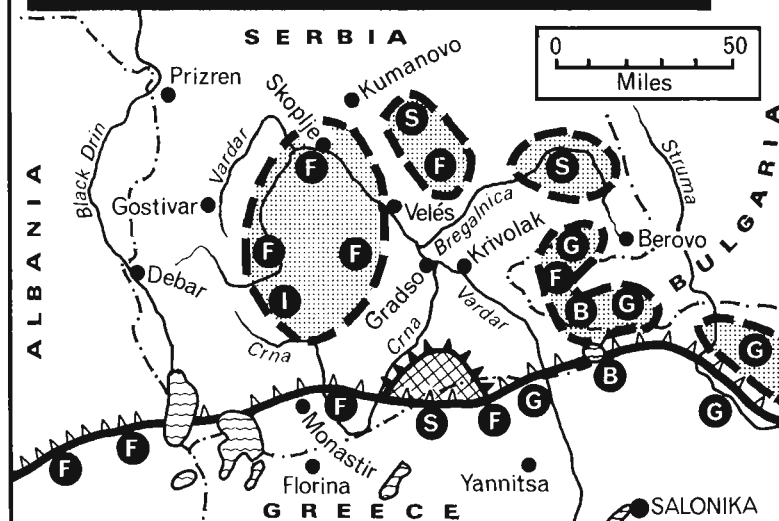
Lake Scutari
ADRIATIC SEA
ALBANIA
CORFU

S E R B I A
Front line basically static Dec. 1916 - Sept. 1918.

Serbian troops from here serve at Salonika (1916 onwards).

Neutral zone 16 November 1916.

FINAL OFFENSIVE IN MACEDONIA SEPTEMBER 1918

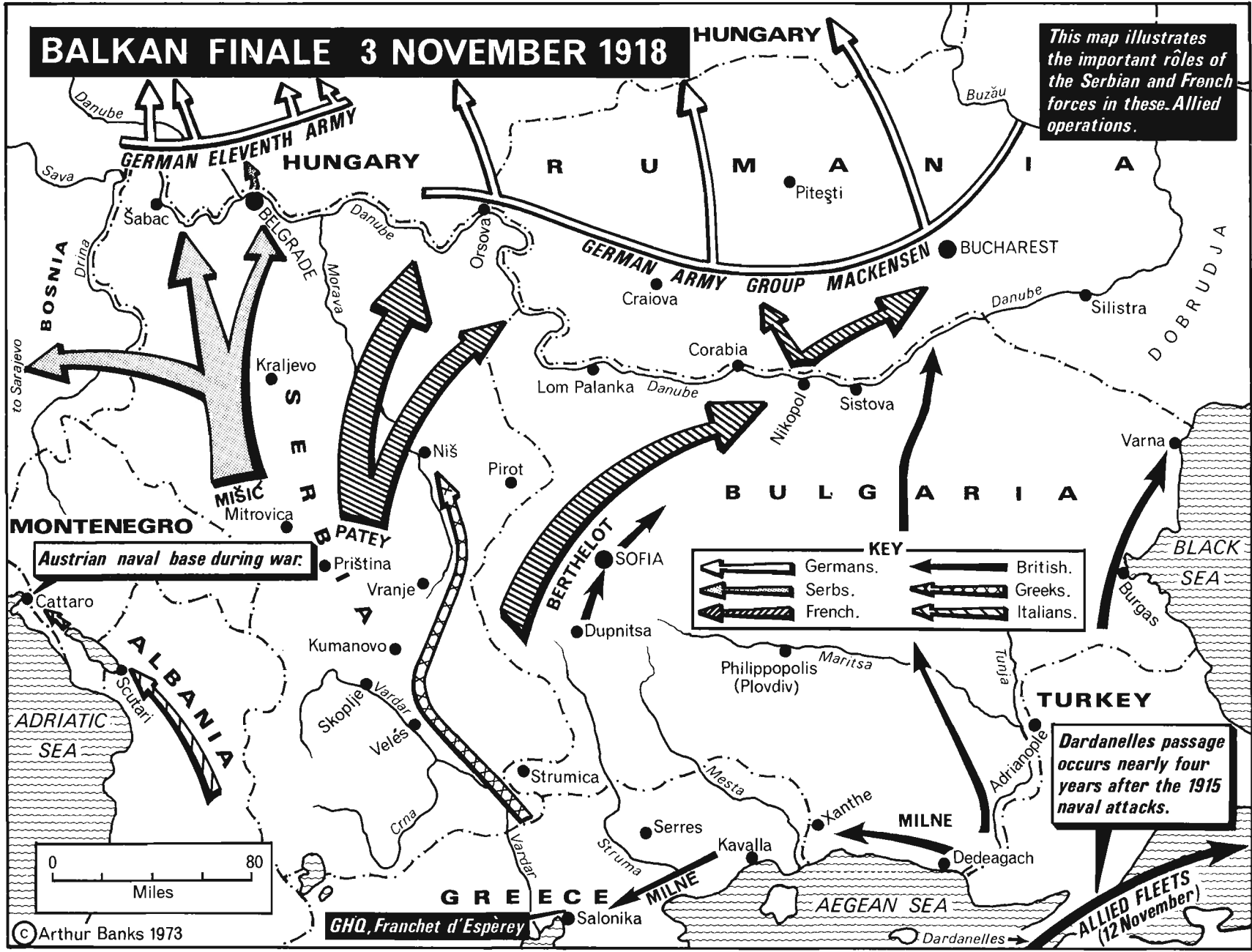


KEY
F French. **B** British. **G** Greeks. **S** Serbs. **I** Italians.
 ▲▲▲ Allied front line, dawn 15 September. **XXXX** Gains by 19 September.
 (F, B, G, S, I) Allied dispositions on 30 September.



BALKAN FINALE 3 NOVEMBER 1918

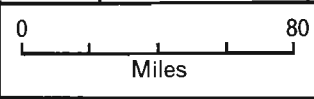
This map illustrates the important rôles of the Serbian and French forces in these Allied operations.



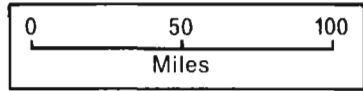
Austrian naval base during war.

Dardanelles passage occurs nearly four years after the 1915 naval attacks.

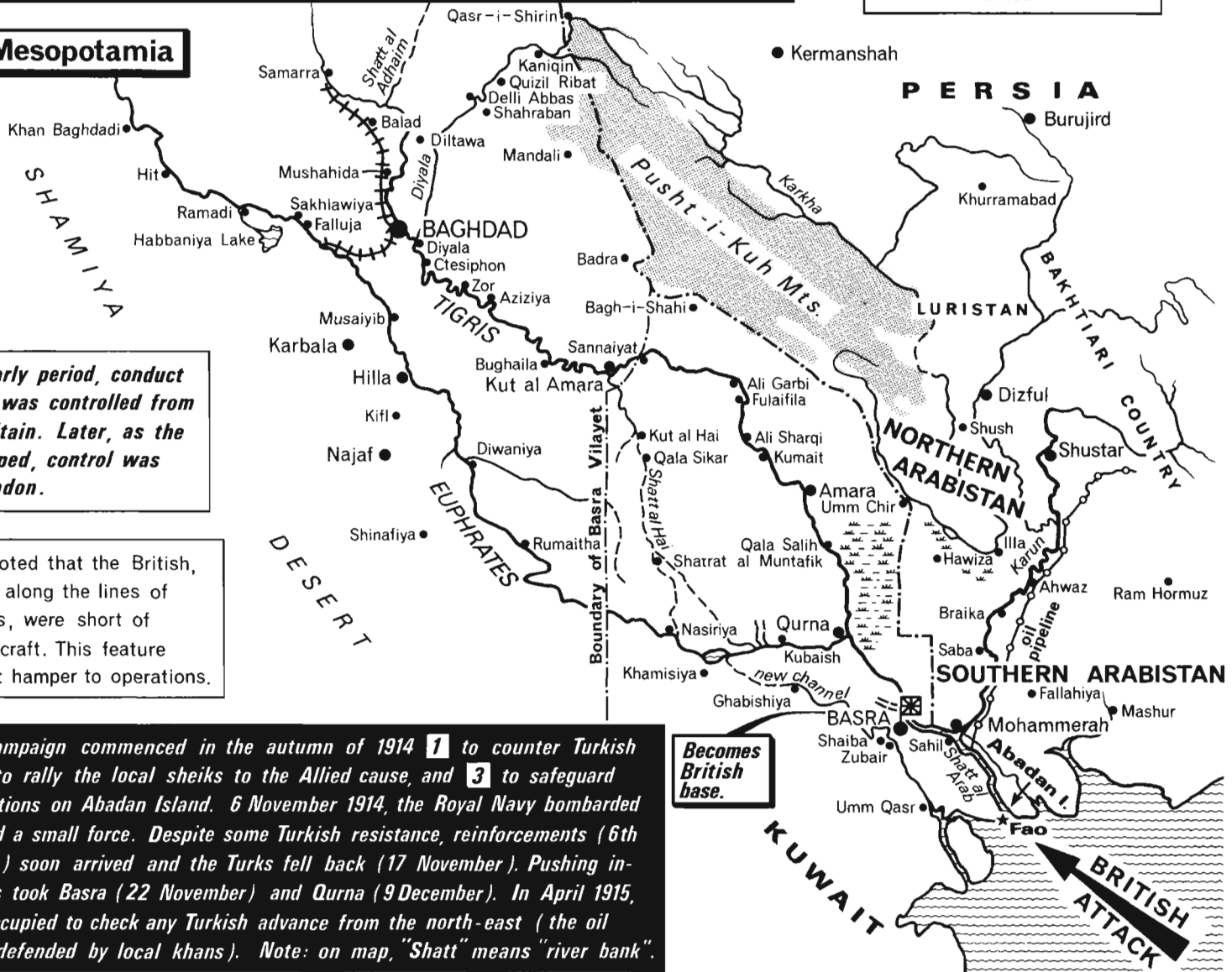
GHQ, Franchet d'Espèrey



THE CAMPAIGN IN MESOPOTAMIA 1914-1918



1 Lower Mesopotamia



During this early period, conduct of operations was controlled from India, not Britain. Later, as the events developed, control was passed to London.

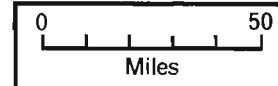
It should be noted that the British, pushing inland along the lines of the main rivers, were short of suitable river-craft. This feature was a constant hamper to operations.

The British campaign commenced in the autumn of 1914 1 to counter Turkish intrigues, 2 to rally the local sheiks to the Allied cause, and 3 to safeguard the oil installations on Abadan Island. 6 November 1914, the Royal Navy bombarded Fao and landed a small force. Despite some Turkish resistance, reinforcements (6th Indian Division) soon arrived and the Turks fell back (17 November). Pushing inland, the Allies took Basra (22 November) and Qurna (9 December). In April 1915, Ahwaz was occupied to check any Turkish advance from the north-east (the oil pipeline was defended by local khans). Note: on map, "Shatt" means "river bank".

Becomes British base.

BRITISH ATTACK

② The 'Step-by-Step' Advance Towards Baghdad (The "Magic City")



Note: when calculating march distances, allow for river's meandering course.

The British possessed few aeroplanes in this theatre at this time.

OMINOUS SIGN: von der Goltz (a German) en route for here in Nov. 1915.

21 November 1915, limit of British advance on Baghdad.

British reach here on 5 October. At this time, only 6,100 Turkish troops are in position between Aziziya and Baghdad, but advance does not resume until 11 November due to political vascillation between London and Delhi. While British delay, Turks reinforce their Ctesiphon position.

Climatic conditions affect health of marching troops. Scarcity of doctors and medical supplies.

Wooden rafts and native craft are utilized to help transport supplies upriver ("Townshend's Regatta").

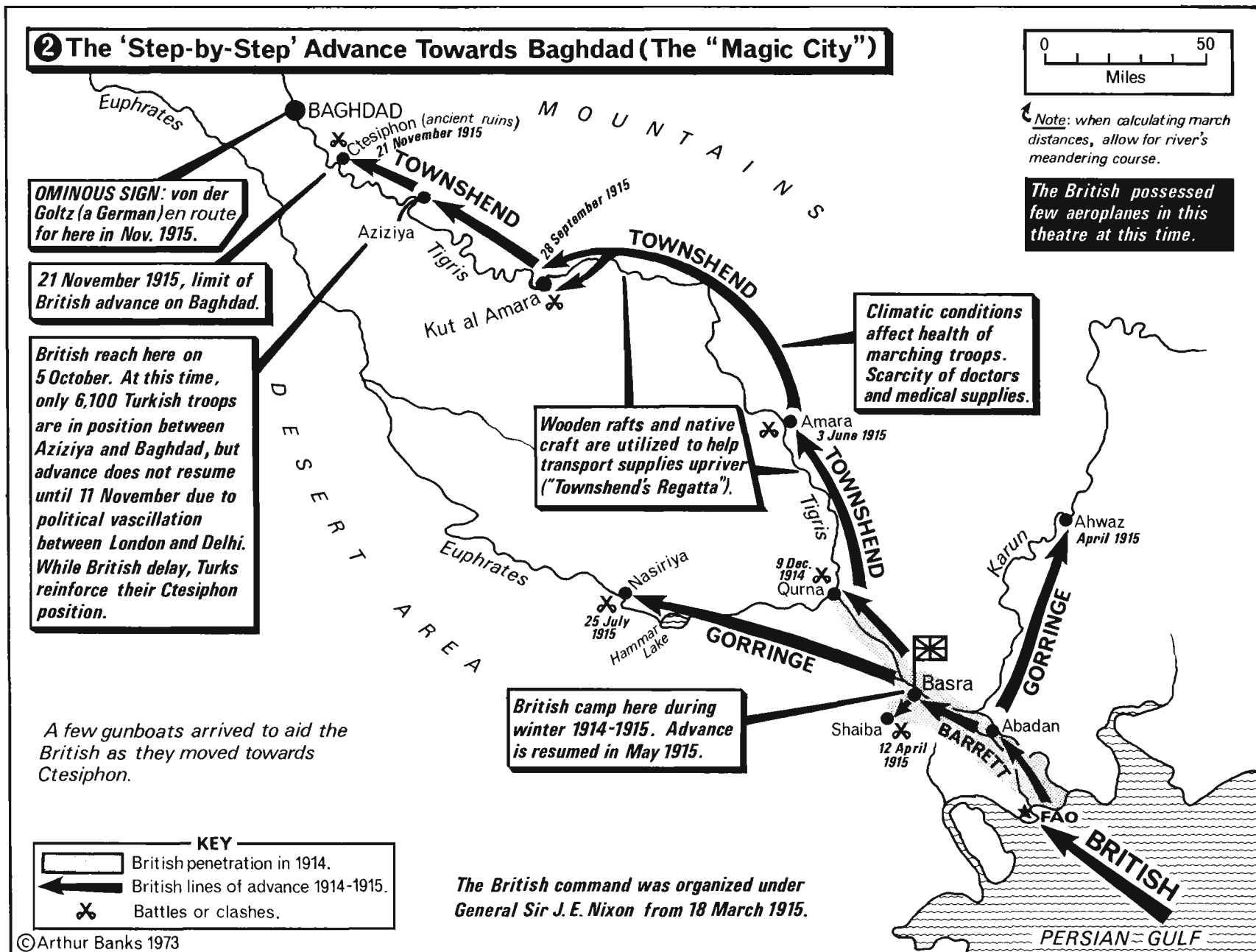
A few gunboats arrived to aid the British as they moved towards Ctesiphon.

British camp here during winter 1914-1915. Advance is resumed in May 1915.

KEY

- British penetration in 1914.
- British lines of advance 1914-1915.
- Battles or clashes.

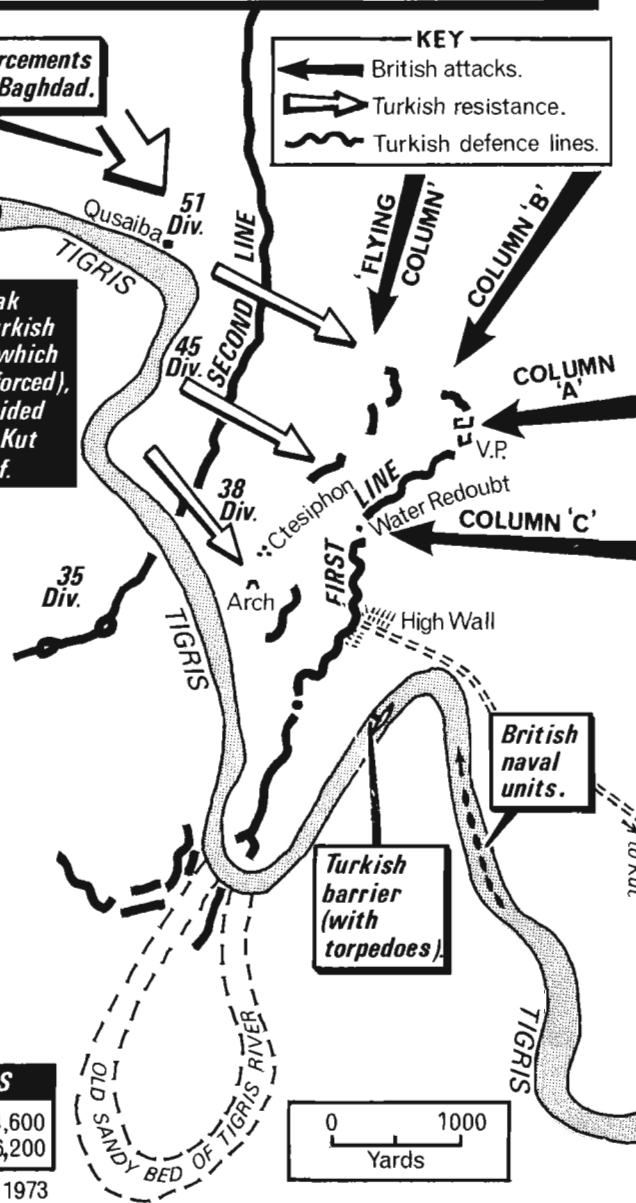
The British command was organized under General Sir J. E. Nixon from 18 March 1915.



3 The Check at Ctesiphon 22-25 November

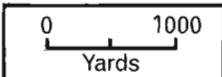
Turkish reinforcements from north of Baghdad.

Unable to break through the Turkish concentration (which was being reinforced), Townshend decided to fall back to Kut and await relief.



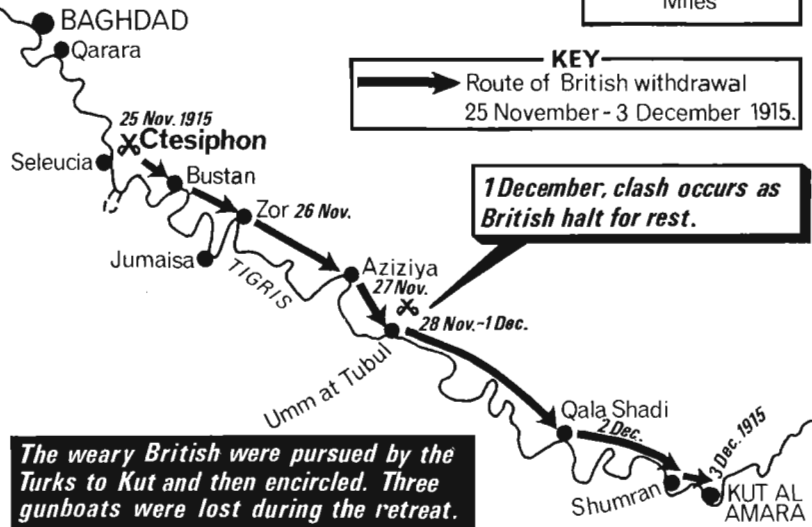
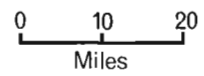
CASUALTIES

British:	4,600
Turkish:	6,200

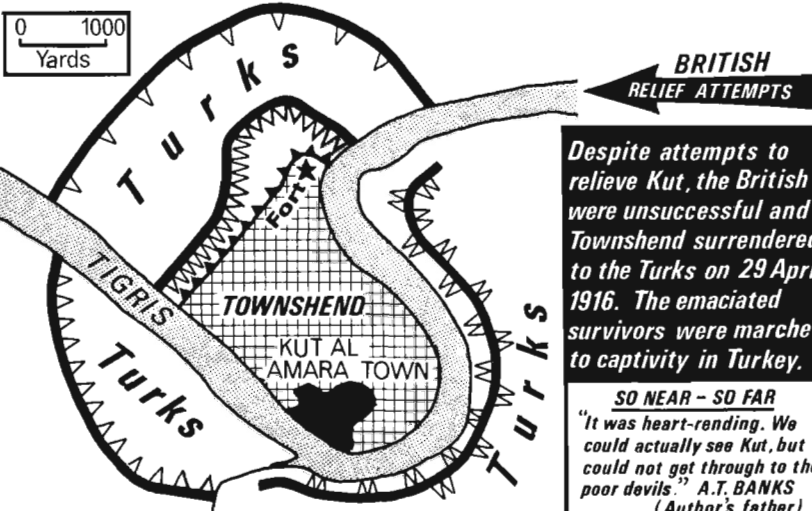


© Arthur Banks 1973

4 The Retreat to Kut



5 Townshend Besieged: Surrender of Kut



Despite attempts to relieve Kut, the British were unsuccessful and Townshend surrendered to the Turks on 29 April 1916. The emaciated survivors were marched to captivity in Turkey.

SO NEAR - SO FAR
"It was heart-rending. We could actually see Kut, but could not get through to the poor devils." A.T. BANKS (Author's father)

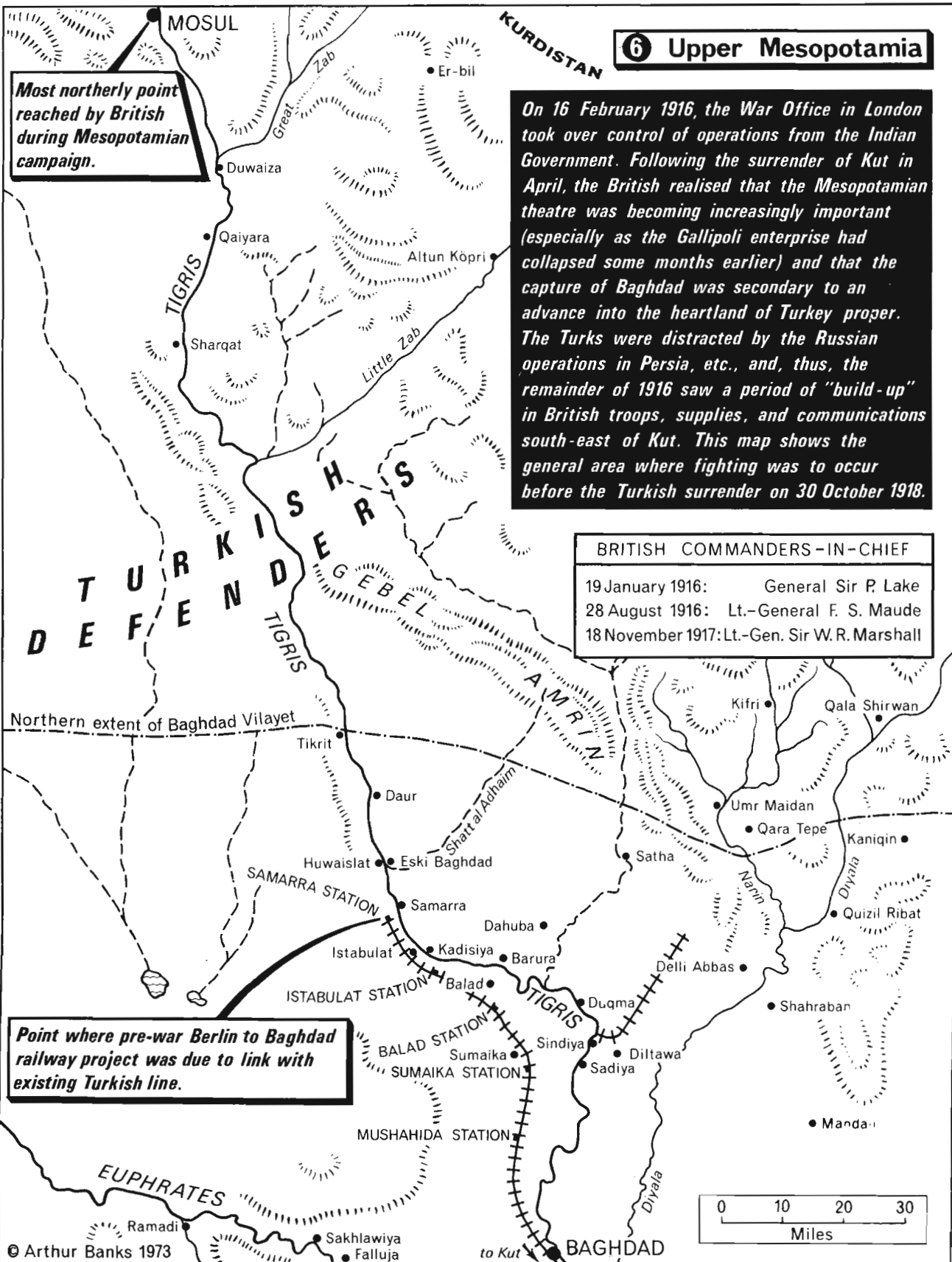
6 Upper Mesopotamia

Most northerly point reached by British during Mesopotamian campaign.

On 16 February 1916, the War Office in London took over control of operations from the Indian Government. Following the surrender of Kut in April, the British realised that the Mesopotamian theatre was becoming increasingly important (especially as the Gallipoli enterprise had collapsed some months earlier) and that the capture of Baghdad was secondary to an advance into the heartland of Turkey proper. The Turks were distracted by the Russian operations in Persia, etc., and, thus, the remainder of 1916 saw a period of "build-up" in British troops, supplies, and communications south-east of Kut. This map shows the general area where fighting was to occur before the Turkish surrender on 30 October 1918.

BRITISH COMMANDERS - IN-CHIEF

19 January 1916: General Sir P. Lake
 28 August 1916: Lt.-General F. S. Maude
 18 November 1917: Lt.-Gen. Sir W. R. Marshall



Point where pre-war Berlin to Baghdad railway project was due to link with existing Turkish line.

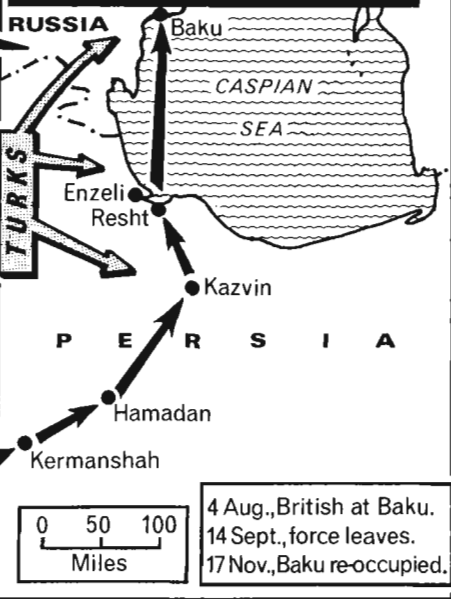
7 Operations 1917-1918

This British force was sent to assist Russians defending Baku against Turco-German attacks.

3 November 1918, British occupy Turkish base and secure oil wells.

1 November 1918, Turks surrender to British.

DUNSTERFORCE 1918



10 November, Turks leave Mosul for disbandment.

1918, British extend railway to here.

British river-craft (now in strength) unable to navigate north of here.

Proposed British cavalry raid to link with Palestine front (not instituted).

British aeroplanes bomb and harass Turks.

25 February 1917, Kut is retaken by British and Turks pursued to Baghdad (captured on 11 March). During 1917/1918, British advance railway construction in Mesopotamia.

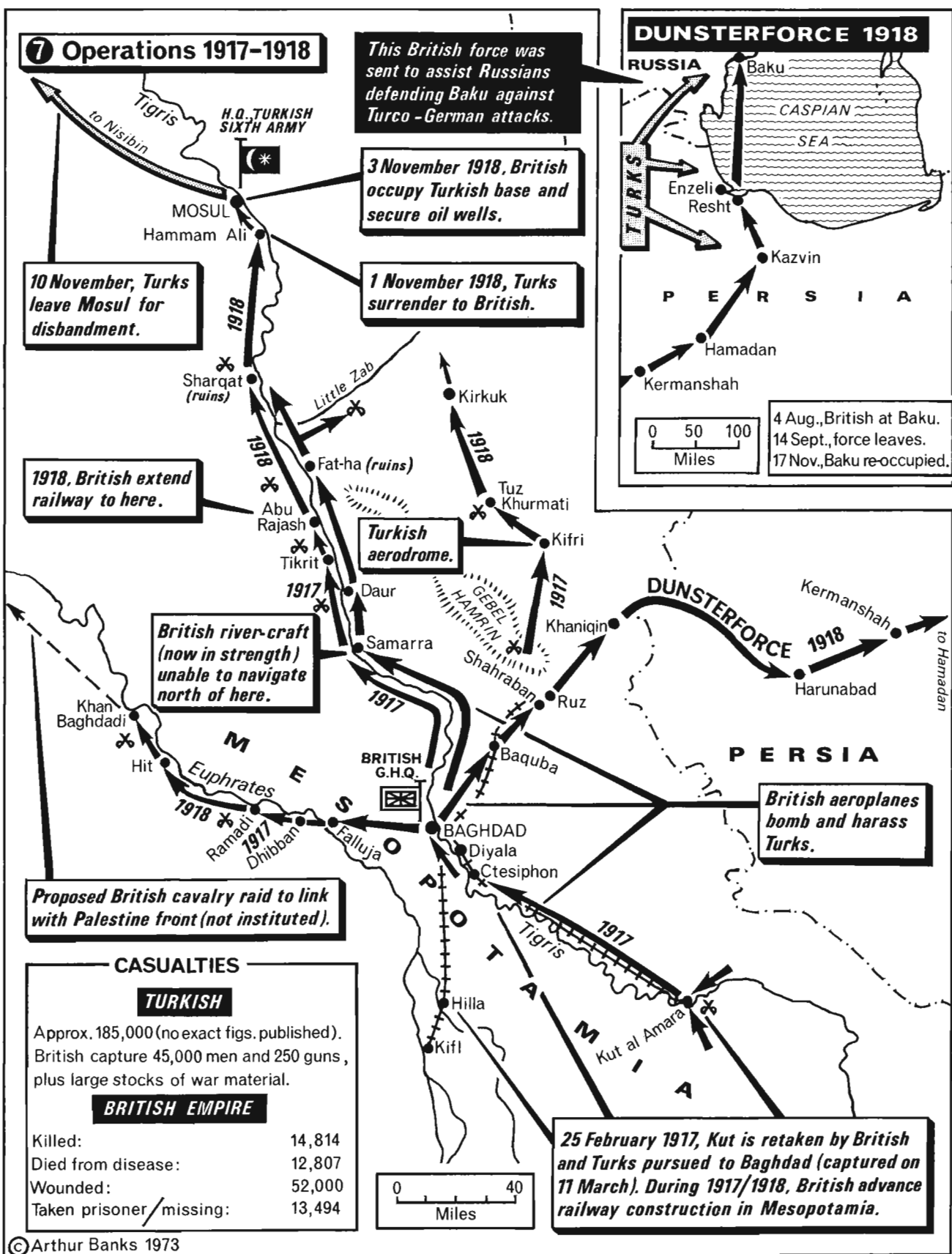
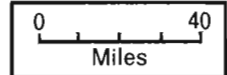
CASUALTIES

TURKISH

Approx. 185,000 (no exact figs. published).
British capture 45,000 men and 250 guns,
plus large stocks of war material.






BRITISH EMPIRE

Killed:	14,814
Died from disease:	12,807
Wounded:	52,000
Taken prisoner/missing:	13,494



THE MIDDLE EAST: A PANORAMIC VIEW

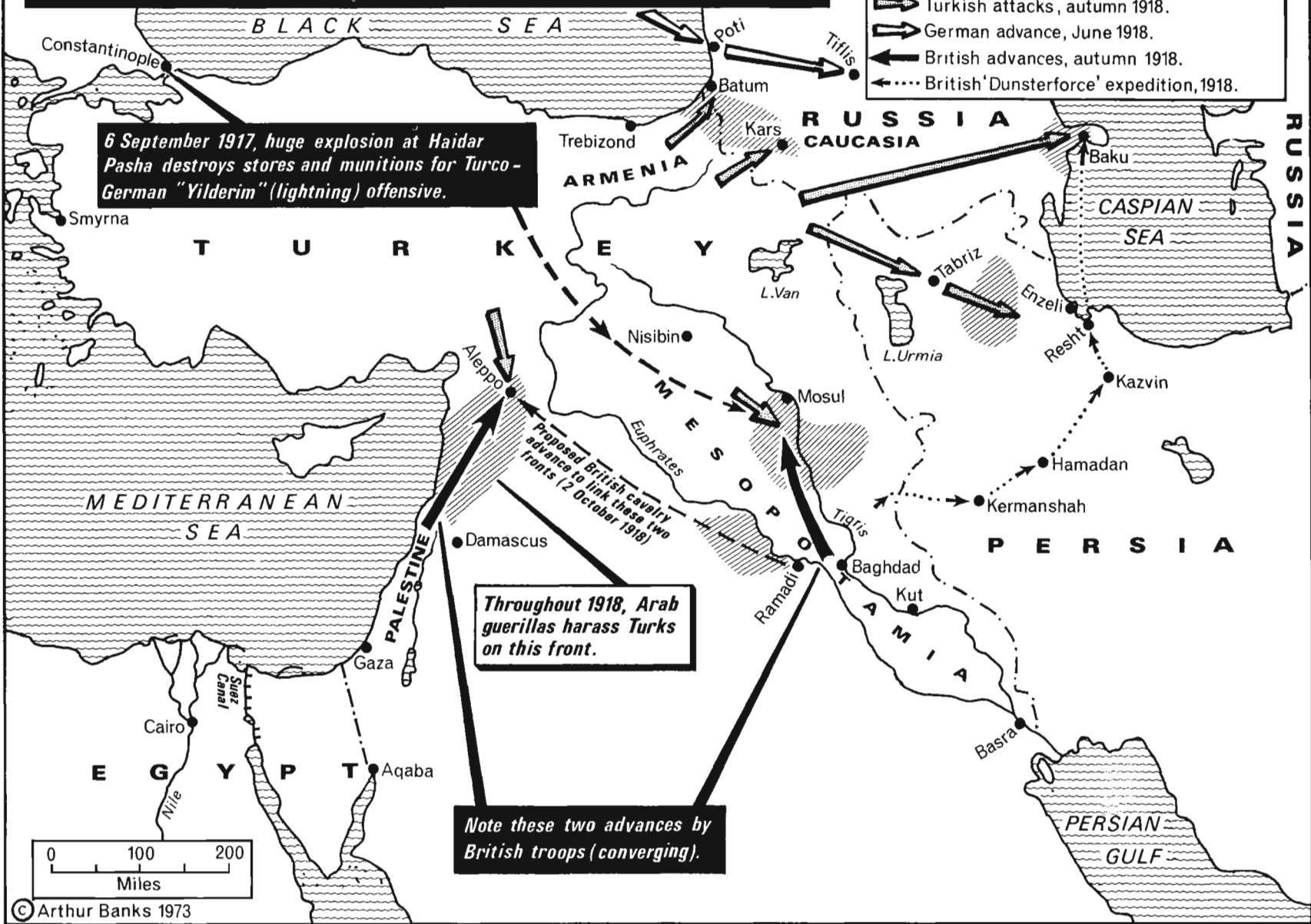
KEY

-  Turkey's war fronts, autumn 1918.
-  Turkish attacks, autumn 1918.
-  German advance, June 1918.
-  British advances, autumn 1918.
-  British 'Dunsterforce' expedition, 1918.

6 September 1917, huge explosion at Haidar Pasha destroys stores and munitions for Turco-German "Yilderim" (lightning) offensive.

Throughout 1918, Arab guerillas harass Turks on this front.

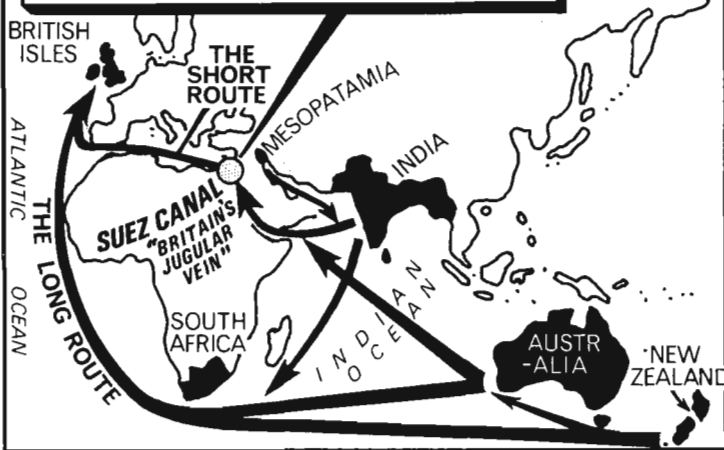
Note these two advances by British troops (converging).



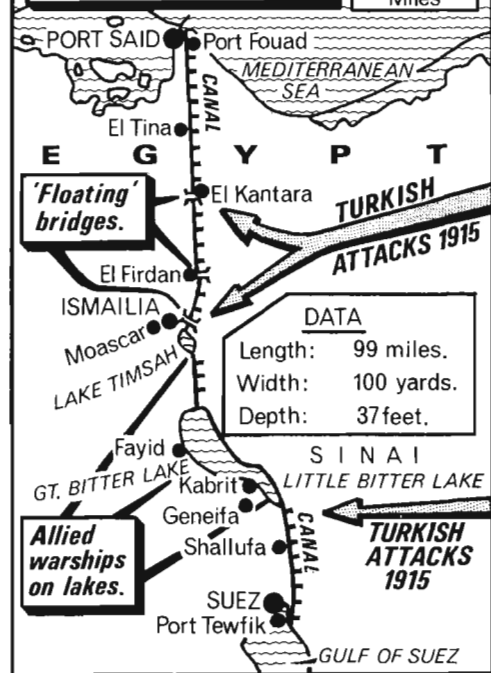
EGYPT, PALESTINE, AND THE ARAB REVOLT

The canal was opened in 1869.

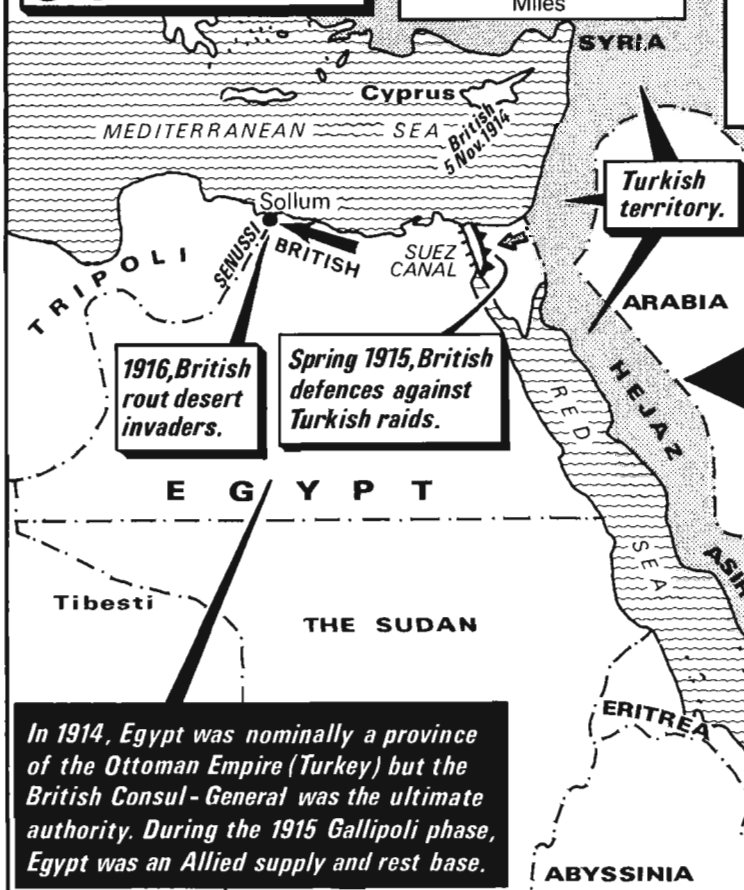
1 The Strategic Importance of the Suez Canal to Britain



2 The Suez Canal



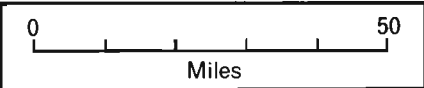
3 Egypt and Arabia



THE ARAB REVOLT



4 Operations in Palestine

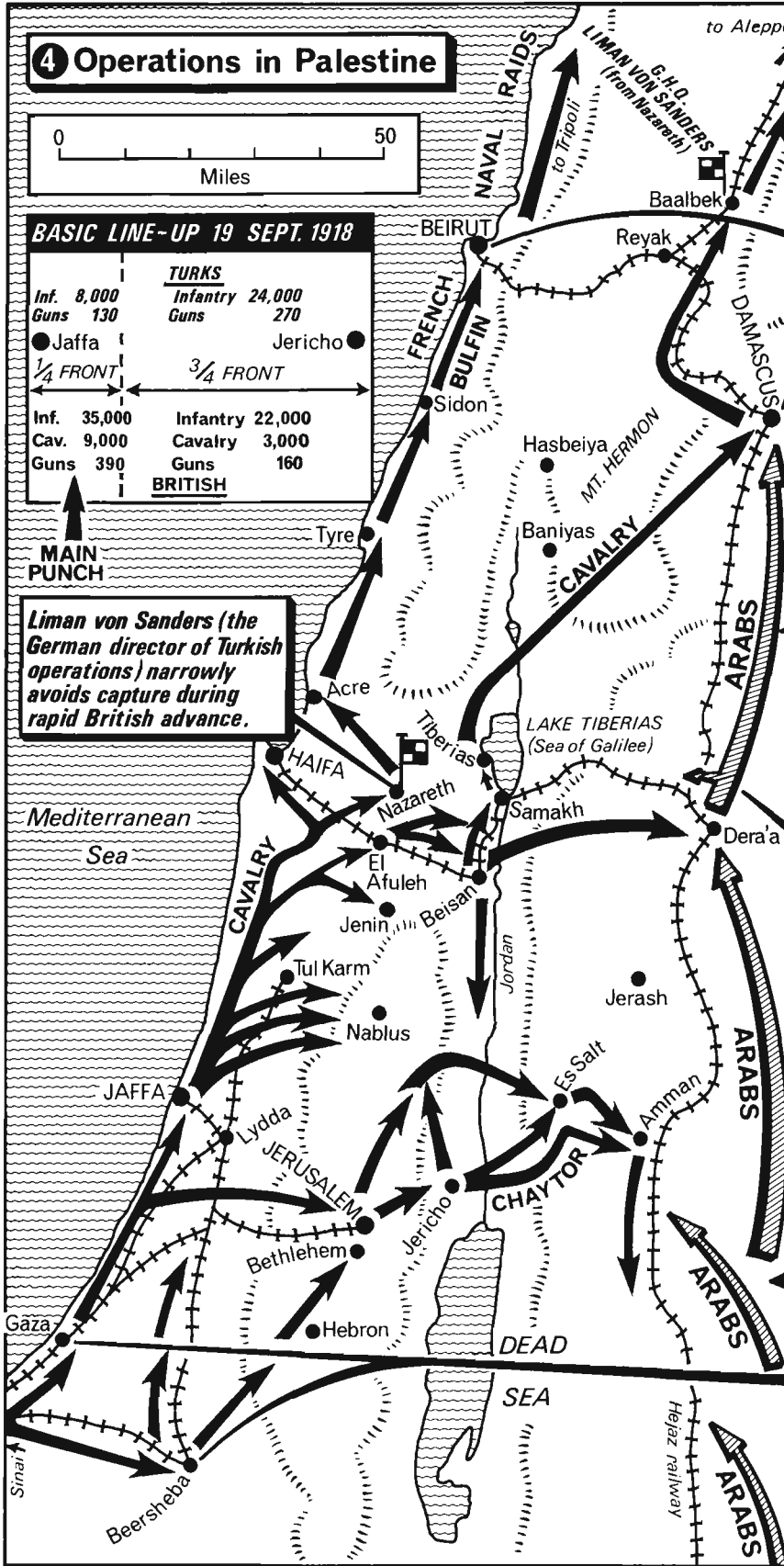


BASIC LINE-UP 19 SEPT. 1918

TURKS	
Inf. 8,000	Infantry 24,000
Guns 130	Guns 270
● Jaffa Jericho ●	
← 1/4 FRONT 3/4 FRONT →	
BRITISH	
Inf. 35,000	Infantry 22,000
Cav. 9,000	Cavalry 3,000
Guns 390	Guns 160

MAIN PUNCH

Liman von Sanders (the German director of Turkish operations) narrowly avoids capture during rapid British advance.



25 October 1918, British 5 Cavalry Division reaches Aleppo. Mudros Armistice (30 October) concludes hostilities.

2 October 1918, taken by 7 Indian Division.

1 October 1918, taken by Australian and Arab forces.

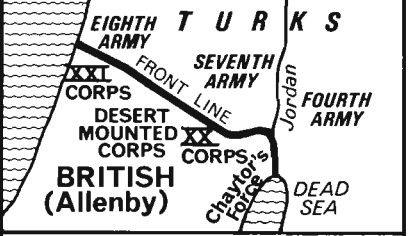
LAWRENCE OF ARABIA

HIS AIMS

- 1 To disrupt Turkish railway communications.
- 2 To entice Turkish troops away from main battle fronts.
- 3 To pin down Turks using Arabs as mobile guerillas.
- 4 To avoid definite battles (as opposed to skirmishes).

17 September 1918, Arabs sever Turkish link with north.

OPPOSING FORCES 19 SEPT. 1918

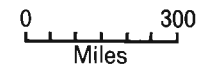


Following an elaborate deception plan, Allenby attacked with his left: his cavalry poured through the gap and, swinging east, enveloped the Turks.

THE THREE GAZA BATTLES 1917

- 1 26 March. British success but troops withdrawn in error.
- 2 17-19 April. Turkish success.
- 3 27 Oct.-7 Nov. British success.

UNITED STATES' INVOLVEMENT IN MEXICO AND THE CARIBBEAN 1914 - 1919



THE ZIMMERMANN NOTE
 19 January 1917, German code message is intercepted by British Naval Intelligence. It proposes a German-Mexican alliance, for which Mexico is promised the return of the lost territory in New Mexico, Texas and Arizona. British pass message to the United States authorities.

9 March 1916, Villa raids town with a force of 500 men. U.S.A. sends Regular and National Guard troops to police the border. Later, this force grows to total of 150,000 men.

15 March 1916, 15,000 U.S. troops under Pershing invade Mexico to pursue Villa, who escapes. Skirmishes with regular Mexican troops occur (notably, one at Carrizal on 21 June). Expedition withdraws on 5 February 1917.

3 July 1915, internal strife is followed by U.S. landings: 16 September, protectorate proclaimed. 12 July 1918, declares war on Germany. 1918-1919, revolt against U.S. occupation is quelled by marines.

2 March 1917, Jones Act makes island U.S. territory. Its inhabitants become U.S. citizens.

February-March 1917, revolt occurs in Cuba. U.S. forces land at Santiago de Cuba to restore order.

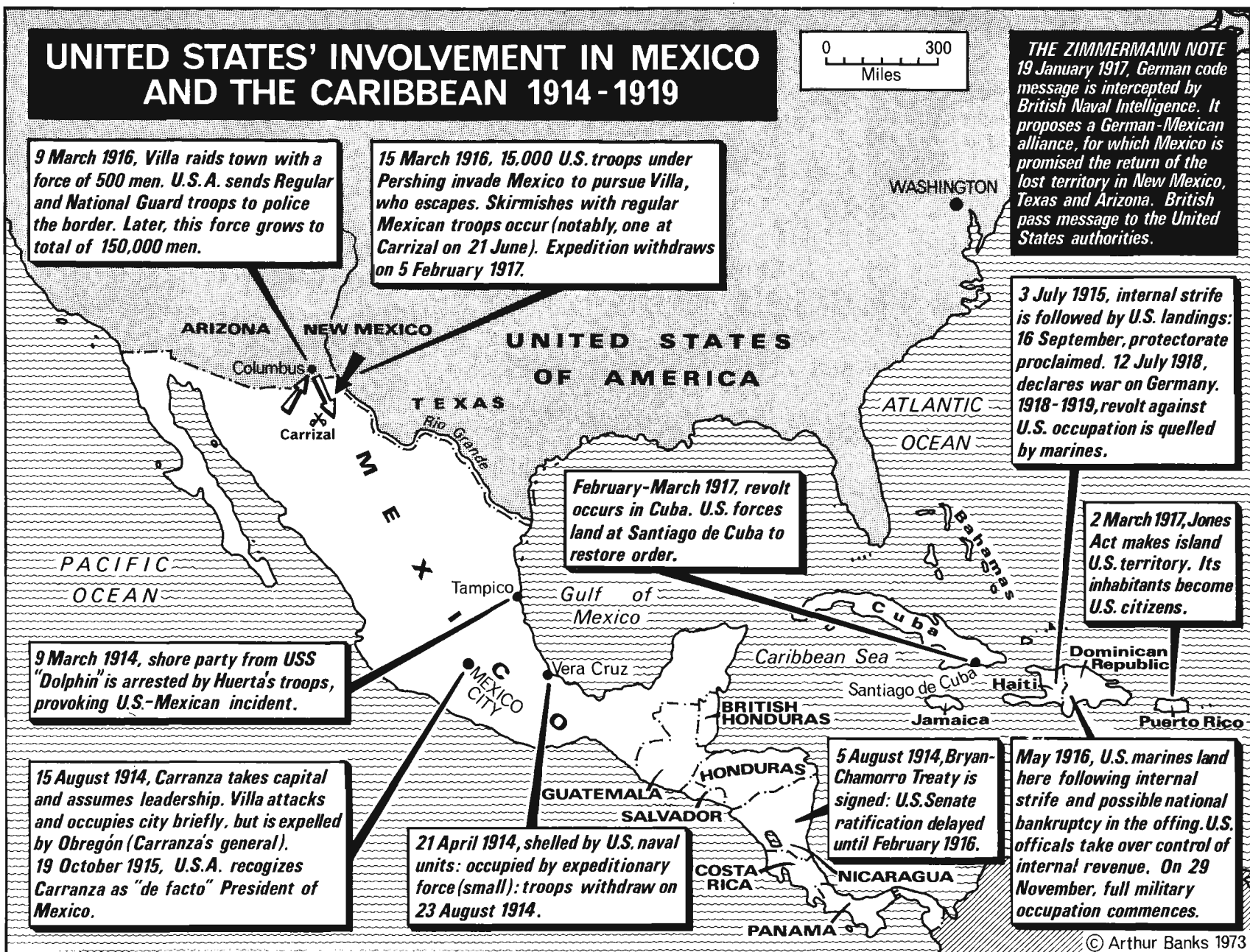
9 March 1914, shore party from USS "Dolphin" is arrested by Huerta's troops, provoking U.S.-Mexican incident.

15 August 1914, Carranza takes capital and assumes leadership. Villa attacks and occupies city briefly, but is expelled by Obregón (Carranza's general). 19 October 1915, U.S.A. recognizes Carranza as "de facto" President of Mexico.

21 April 1914, shelled by U.S. naval units: occupied by expeditionary force (small): troops withdraw on 23 August 1914.

5 August 1914, Bryan-Chamorro Treaty is signed: U.S. Senate ratification delayed until February 1916.

May 1916, U.S. marines land here following internal strife and possible national bankruptcy in the offing. U.S. officials take over control of internal revenue. On 29 November, full military occupation commences.

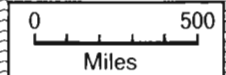


SOUTH AMERICA 1914 - 1918

KEY

- At war against the Central Powers 1917-1918.
- Neutral states.
- ▨ British territory.
- ▤ French territory.

Track of SMS 'Dresden' from 8 December 1914 to 14 March 1915.



1914, revolt led by Benavides ends in the overthrow of President Billinghurst. Pardo is president from 1914 to 1919; breaks off diplomatic relations with Germany in 1917.

April 1917, the 'Paraná' is sunk by a German submarine.
 11 April 1917, Brazil severs her relations with Germany and on 1 June 1917, revokes neutrality in favour of the Allies.
 26 October 1917, Brazil declares war upon the Central Powers.

14 March 1915, SMS 'Dresden' is destroyed following action with HMS 'Glasgow' and 'Kent'.

Juan Fernandez Islands

1 November 1914, naval battle.

HUNTED BY BRITISH WARSHIPS

'Dresden' hides in this area from 11 December 1914 to 8 February 1915.

German cruiser SMS 'Dresden' is the sole survivor from the Falkland Islands naval battle.

Falkland Islands

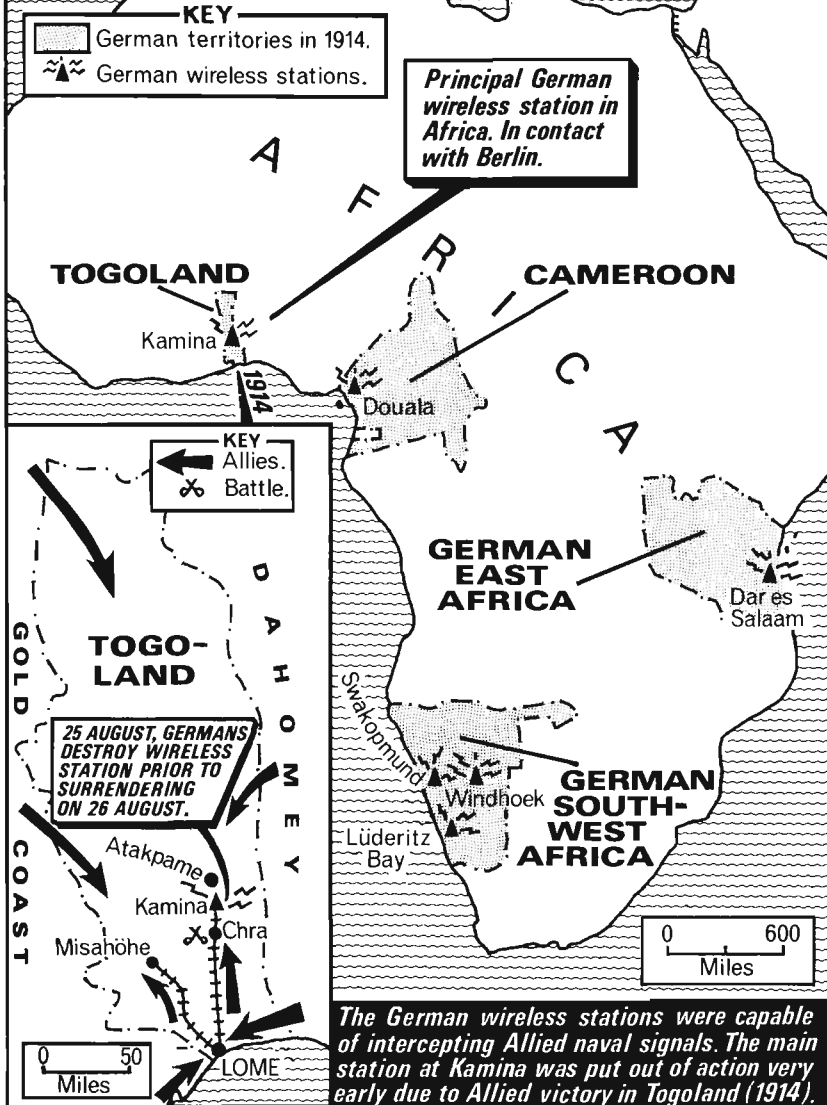
8 December 1914, naval battle.

1917, three Argentinian ships are sunk by German submarines. After secret diplomatic exchanges, the German minister is withdrawn from Buenos Aires.

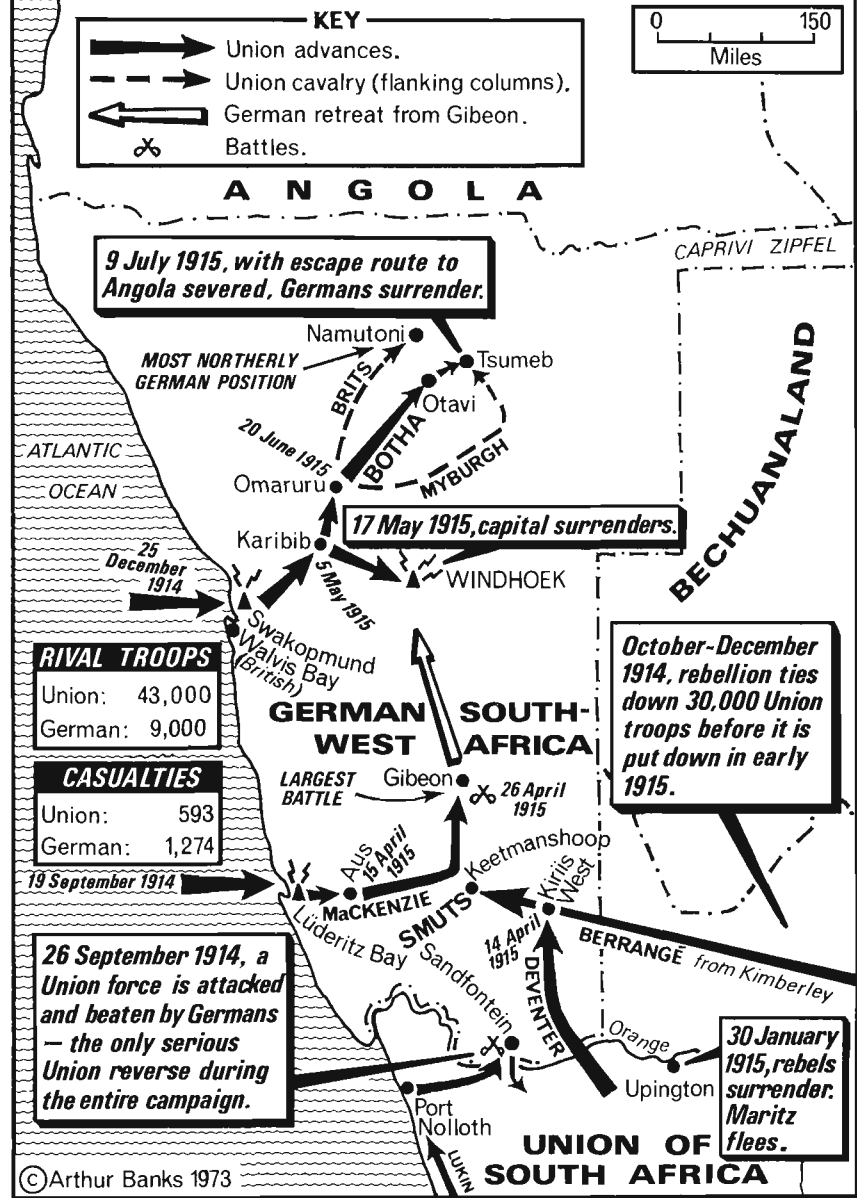
Brazil was the sole Latin American state at war with the Central Powers. In 1918, a Brazilian squadron served for nine months with the Allies off the African coast, and on 10 November 1918, Brazilian warships entered the Mediterranean Sea for further duty with the Allies.

THE WAR IN AFRICA 1914-1918

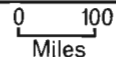
① German Colonies: Operations in Togoland



② Operations in German South-West Africa



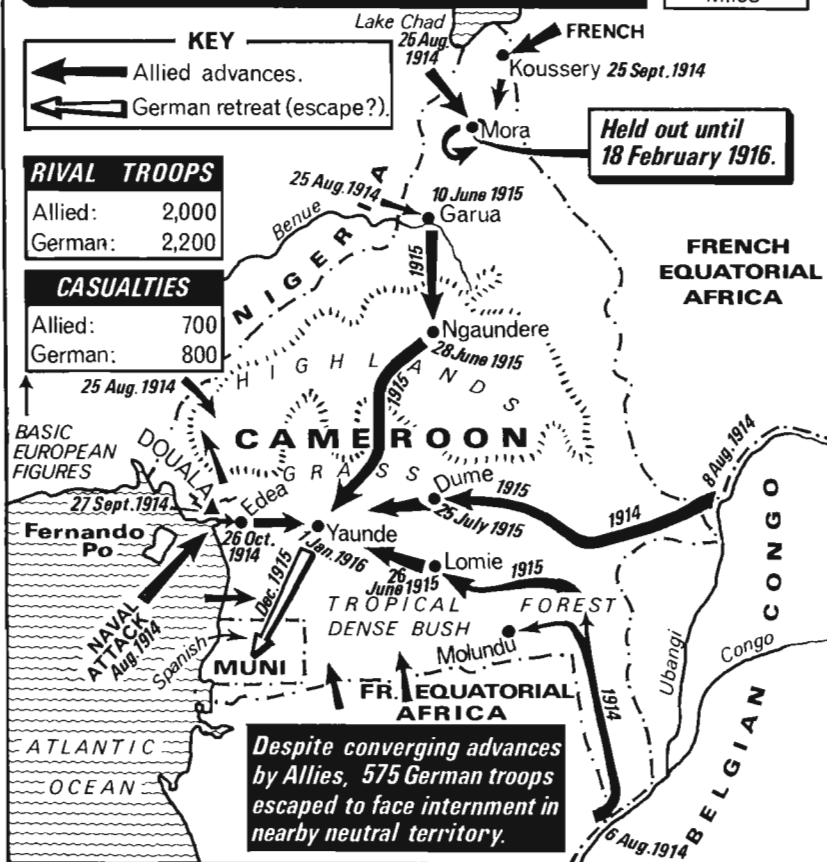
3 Operations in Cameroon 1914-1916



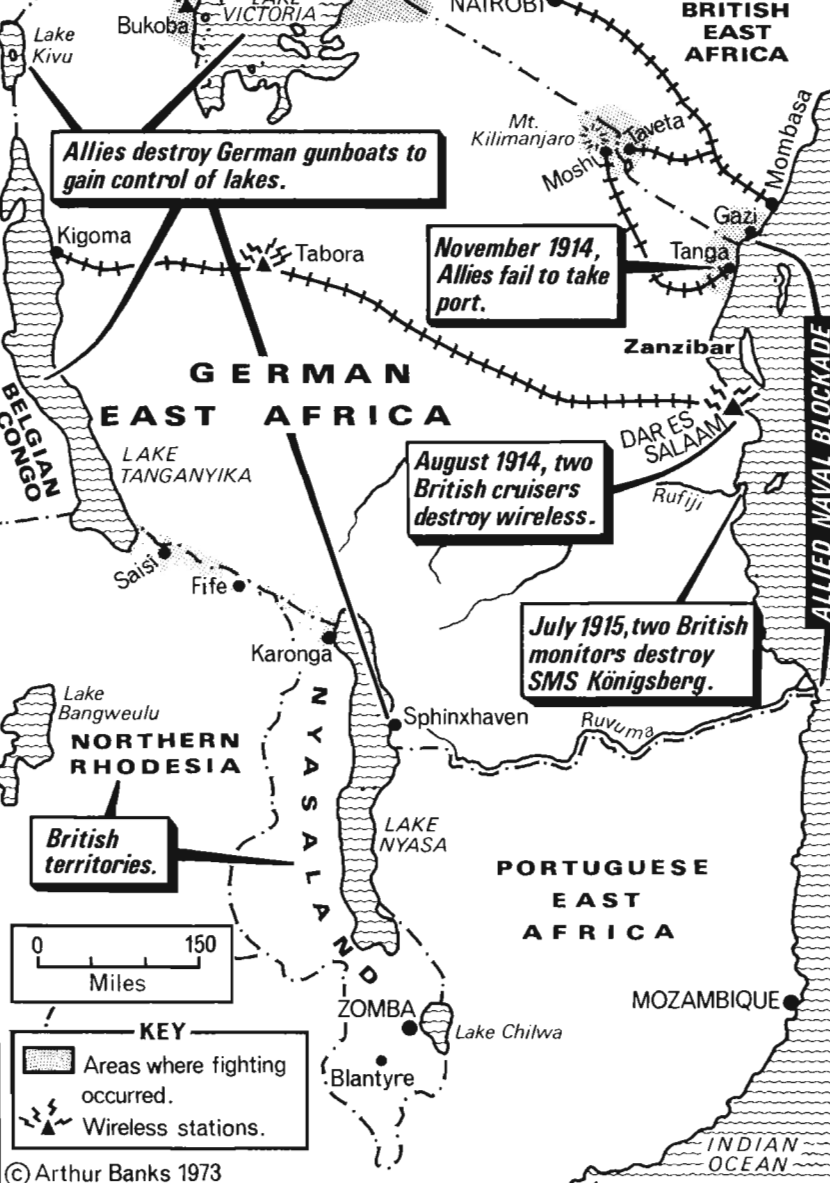
KEY
 ← Allied advances.
 ← German retreat (escape?).

RIVAL TROOPS
 Allied: 2,000
 German: 2,200

CASUALTIES
 Allied: 700
 German: 800



4 The Main Theatre: East Africa 1914-1915



KEY
 [Shaded Area] Areas where fighting occurred.
 [Star Symbol] Wireless stations.

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SMS 'KÖNIGSBERG'

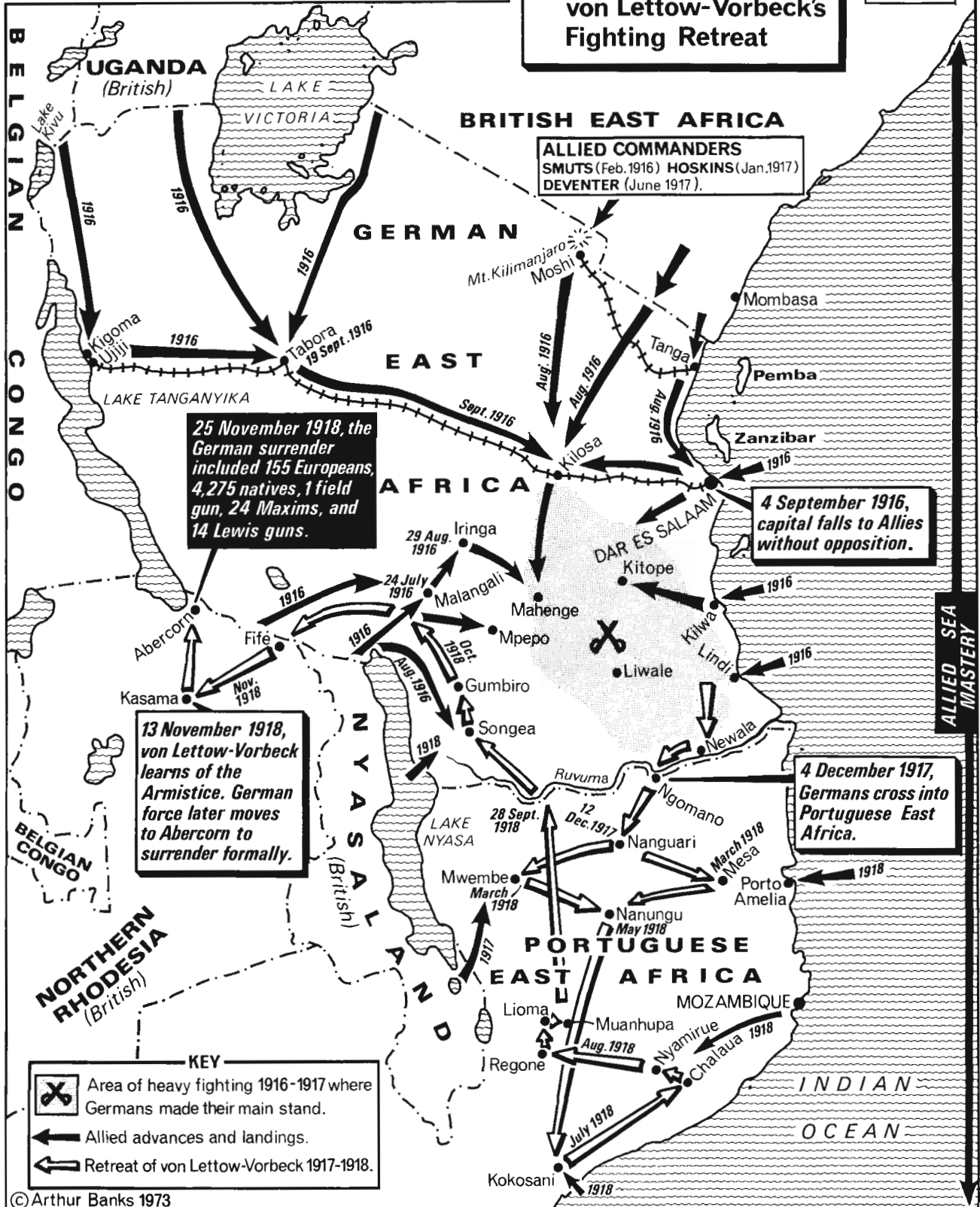
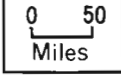
The German light cruiser 'Königsberg' sank HMS 'Pegasus' in Zanzibar harbour in September 1914 but later was blockaded in the Rufiji river. She was destroyed on 11 July 1915 after an action with British monitors and two aircraft, but her guns were salvaged and used by the Germans in east Africa.

STRENGTHS AND CASUALTIES

These cannot be given precisely on maps as a detailed analysis of each total is necessary. For example, the German force which surrendered at Abercorn on 25 November 1918, included 30 German officers, 125 other Europeans, Askari, porters, headmen, natives, and women.

THE WAR IN AFRICA – continued

5 East Africa 1916-1918: von Lettow-Vorbeck's Fighting Retreat



WEAPONS

During the half century preceding the First World War military science had taken note of technological developments but had not appreciated the extent to which they revolutionised traditional concepts of warfare. French infantrymen armed with the *chassepot* breech-loading rifle had wrought havoc with the German attackers in 1870 and convinced military authorities that rifles would henceforth strengthen the defensive position of troops, especially if they were also supported by artillery. But because the original French machine guns—the *mitrailleuses*—of 1870 had proved ineffectual, the potentialities of this weapon were ignored. The trench fighting of the Russo-Japanese War (1905–1905) should have awakened an interest in the machine gun, for Maxim's water-cooled weapon of 1884, firing 2,000 rounds in three minutes, was very different from the prototypes of the Franco-Prussian campaign; and it was eventually the German Maxim which proved so terribly effective on the first day of the Somme (compare pages 152–153 and page 224). Without well-sited machine guns and barbed-wire entanglements, there would have been no war of stalemate on the Western Front.

At first it was assumed that mobility could be restored to warfare by artillery power. This, at least, had been a lesson of the Russo-Japanese War, and in the ten years before Sarajevo much attention was given to the development of howitzers, the heaviest models being used to reduce the Belgian fortifications in 1914 (pages 33 and 62). The most effective field gun was the French 75-mm (page 33), with a buffer recoil system which allowed a fire rate of 20/30 rounds a minute. By contrast, the British 18-pounder had a rate of fire of only 8 rounds a minute, and this was faster than the best German and Austrian guns. During the First World War three-quarters of the wounds caused by guns came from shells, high explosive or shrapnel, rather from bullets.

The experience of the long barrages used as preparation for offensives in 1915 showed that artillery was a less decisive weapon in the field than the experts had anticipated. Concrete pill-boxes stood up against most normal field artillery, while the barrages ruled out all element of surprise and made soft ground impassable to heavily encumbered infantry. It was partly to overcome these problems that petrol driven armoured vehicles with caterpillar tracks were introduced, first as 'tanks' in the British army and then into the armies of other countries. No commander, however, felt sufficiently confident to develop the tank as a revolutionary weapon in its own right. On the Somme in 1916 tanks suffered as much as infantry from shell craters, and at Cambrai in 1917 (page 174) no attempt was made to follow penetration by exploitation with vehicles mounted on caterpillar tracks. Moreover, although use was made of armoured cars, lorries (notably at Verdun), and the famous Paris taxis (page 55), the value of the internal combustion engine was only slowly perceived.

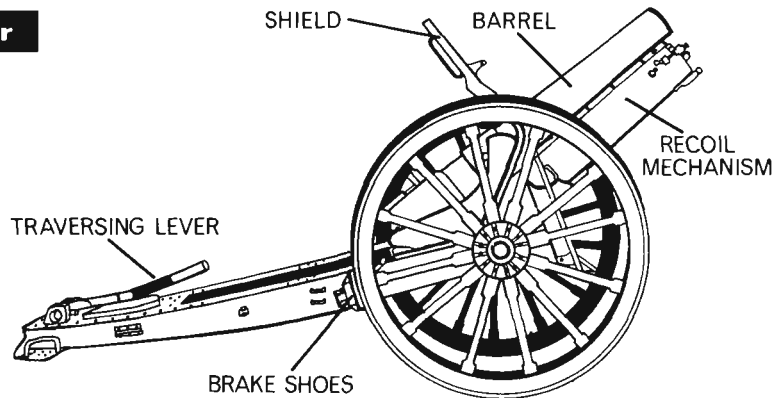
This hardly is surprising: military minds did not rapidly assimilate the changed patterns of daily life. Thus, although the transport of armies by rail from one war zone to another dates from 1862–1863 (both Confederate and Union forces in the American Civil War), it was not until the outbreak of the First World War that the smooth running of a railway transport system was recognised as an essential prerequisite for offensive operations. General Groener, who succeeded Ludendorff as virtual field commander in the last days of the War, was the first military leader to have 'graduated' as a railway specialist.

By contrast, trench warfare brought new forms of old weapons: clubs, knives, canisters of burning oil, pistols and revolvers. The greatest innovations of all, however, were in the skies and under the waves.

TWELVE IMPORTANT ARTILLERY WEAPONS 1914-1918

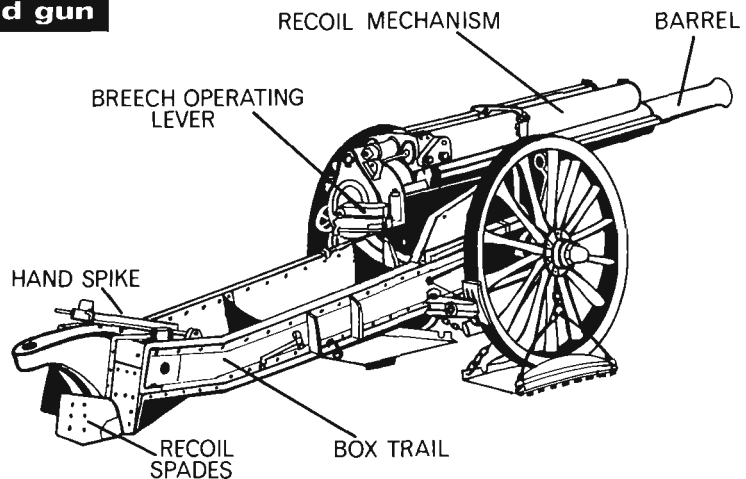
British 4.5-inch howitzer

Length of gun(overall): 13 feet,6 inches.
 Weight of gun in action: 3,004 pounds.
 Range: 7,000 yards.
 Elevation: -5 to +45 degs.
 Barrel length: 13.33 calibres.
 Weight of shell: 35 pounds.
 Muzzle velocity: 1,010 ft./sec.
 Rate of fire: 4 rds. per min.



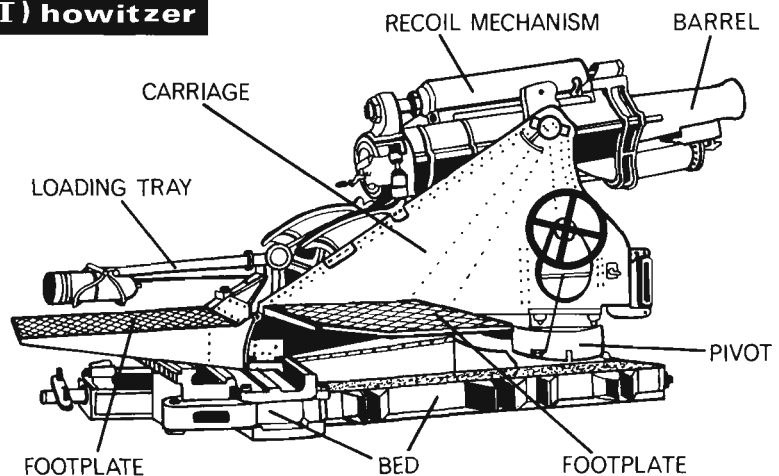
British 60-pounder field gun

Length of gun (overall): 21 feet,7 inches.
 Weight of gun in action: 11,705 pounds.
 Range: 10,300 yards.
 Elevation: 21°30'.
 Barrel length: 33.61 calibres.
 Weight of shell: 60 pounds.
 Muzzle velocity: 2,149 ft./sec.
 Rate of fire: 2 rds. per min.
 Traverse: 4° left / 4° right.
 Calibre: 5 inches.

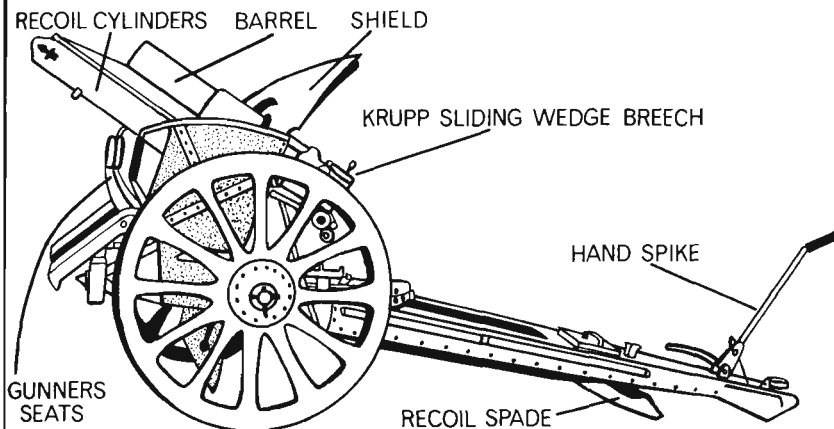


British 9.2-inch (Mark I) howitzer

Length of gun(overall): 11 feet,15 inches.
 Weight of gun in action: 25,906 pounds.
 Range: 10,000 yards.
 Elevation: 55°.
 Barrel length: 14.5 calibres.
 Weight of shell: 290 pounds.
 Muzzle velocity: 1,187 ft./sec.
 Rate of fire: 2 rds. per min.
 Traverse: 30° left / 30° right.
 Height: 8 feet,6 inches.

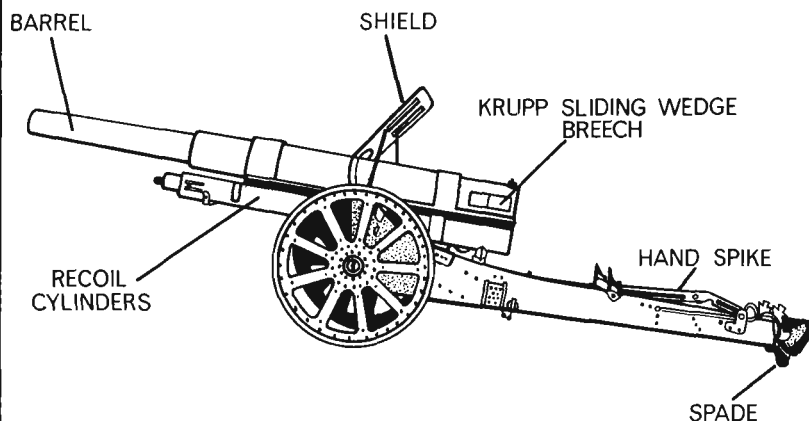


German 10-5-cm. howitzer 1916



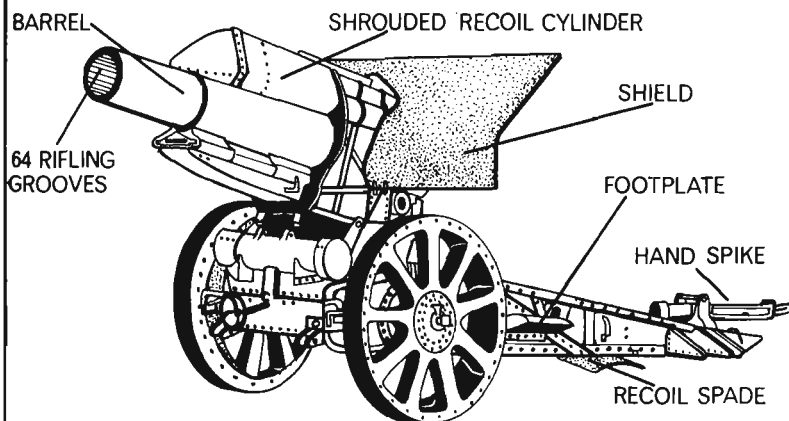
Length of gun(overall): 12 feet.
 Weight of gun in action: 3,036 pounds.
 Range: 6,250 yards.
 Elevation: 40°
 Barrel length: 22 calibres.
 Weight of shell: 34.5 pounds.
 Muzzle velocity: 1,400 ft./sec.
 Rate of fire: 4 rds. per min.
 Traverse: 4° left/4° right.
 (note: unusual nine increment cartridge).

German 13-cm. (Model 1913) field gun



Length of gun(overall): 22 feet.
 Weight of gun in action: 12,768 pounds.
 Range: 15,750 yards.
 Elevation: 26°
 Barrel length: 35 calibres.
 Weight of shell: 89 pounds.
 Muzzle velocity: 2,280 ft./sec.
 Rate of fire: 2 rds. per min.
 Traverse: 2° left/2° right.
 (note: shrapnel shell contains 1,170 lead bullets).

German 21-cm. "mörser"

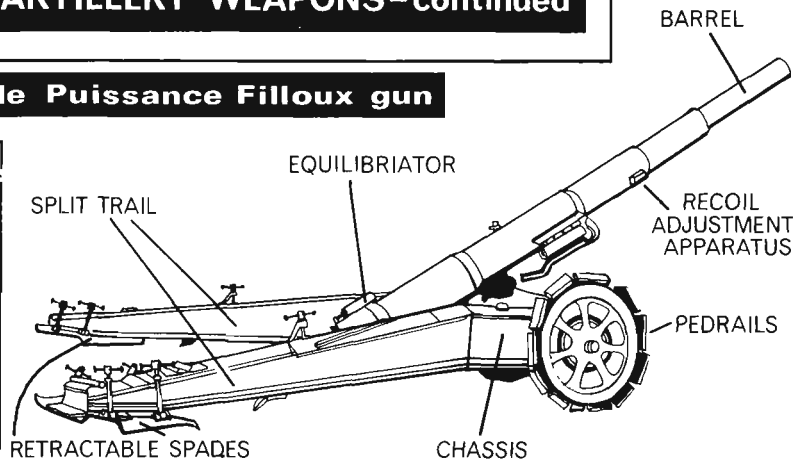


Length of gun(overall): 20 feet.
 Weight of gun in action: 9,828 pounds.
 Range: 10,280 yards.
 Elevation: 70°
 Barrel length: 12 calibres.
 Weight of shell: 184 pounds.
 Muzzle velocity: 1,203 ft./sec.
 Rate of fire: 2 rds. per min.
 Traverse: 2° left/2° right.
 (note: H.E. shell contains 17 pounds of amatol).

TWELVE IMPORTANT ARTILLERY WEAPONS—continued

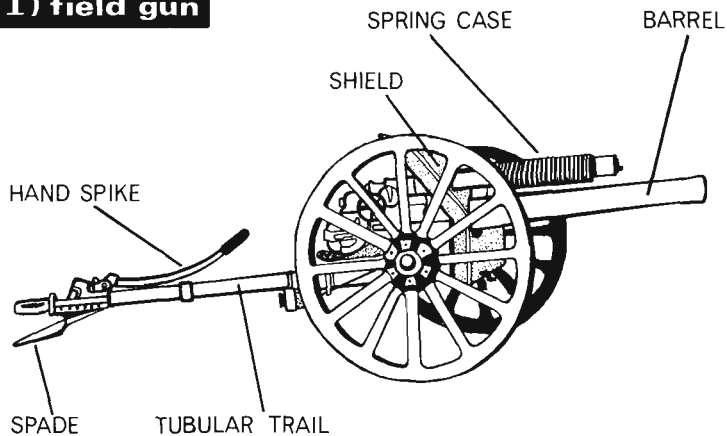
French 155-mm. Grande Puissance Filloux gun

Length of gun (overall): 29feet,7inches.
 Weight of gun in action: 24,640 pounds.
 Range: 19,650 yards.
 Elevation: 35°.
 Barrel length: 38·2calibres.
 Weight of shell: 97 pounds.
 Muzzle velocity: 2,339 ft./sec.
 Rate of fire: 2 rds.per min.



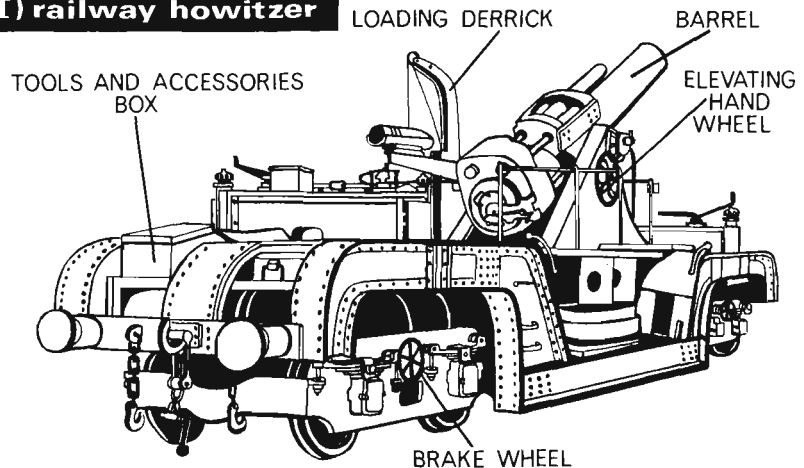
British 18-pounder (Mark I) field gun

Length of gun (overall): 13feet,8inches.
 Weight of gun in action: 2,904 pounds.
 Range: 7,000 yards.
 Calibre: 3·3 inches.
 Elevation: -5 to +6degs.
 Barrel length: 28calibres.
 Weight of shell: 18 pounds.
 Muzzle velocity: 1,614 ft./sec.
 Rate of fire: 8 rds.per min.
 (note: developed from the lessons of the Boer War).

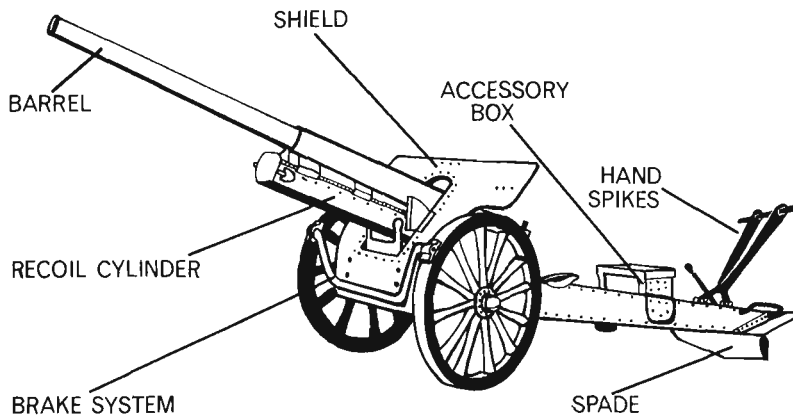


British 12-inch (Mark III) railway howitzer

Length of mounting: 41feet,3inches.
 Weight of gun in action: 76 tons.
 Range: 14,300 yards.
 Elevation: 40°.
 Barrel length: 17·3calibres.
 Weight of shell: 750 pounds.
 Muzzle velocity: 1,474 ft./sec.
 Rate of fire: 1rd.per min.
 Traverse: 5°left/5°right.
 (note: most used British railway howitzer).

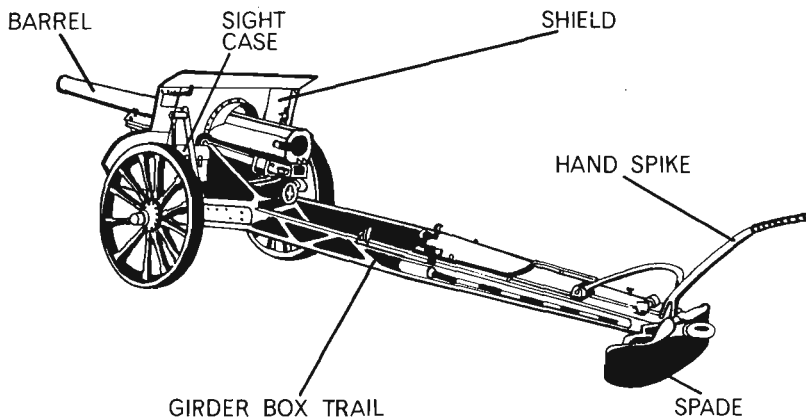


German 10-cm. (Model 1917) field gun



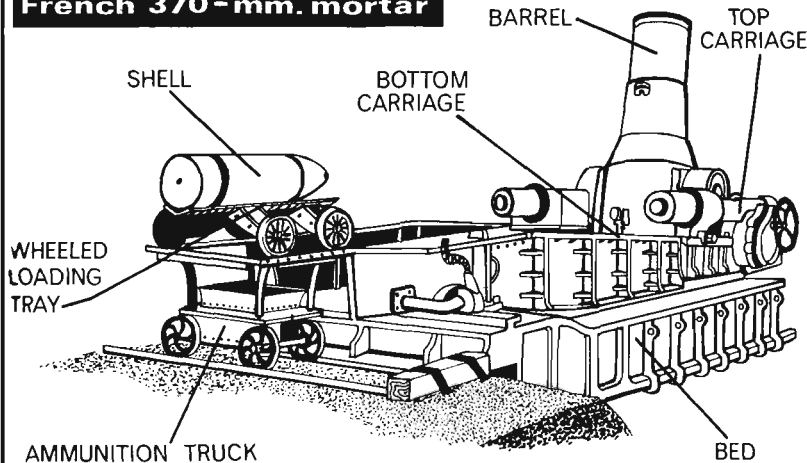
Length of gun(overall): 20 feet.
 Weight of gun in action: 6,104 pounds.
 Range: 12,085 yards.
 Elevation: -5 to +30 degs.
 Barrel length: 35 calibres.
 Weight of shell: 39.5 pounds.
 Muzzle velocity: 1,923 ft./sec.
 Rate of fire: 2 rds. per min.
 Traverse: 2° left / 2° right.
 (note: smallest high-velocity gun in field use during 1914-1918 war).

Austrian 10.4-cm. field gun M.14



Length of gun(overall): 14 feet.
 Weight of gun in action: 5,040 pounds.
 Range: 13,670 yards.
 Elevation: -10 to +30 degs.
 Barrel length: 35 calibres.
 Weight of shell: 38.5 pounds.
 Muzzle velocity: 2,230 ft./sec.
 Rate of fire: 4 rds. per min.
 Traverse: 3° left / 3° right.
 (note: first Austrian steel field gun: previous guns were bronze).

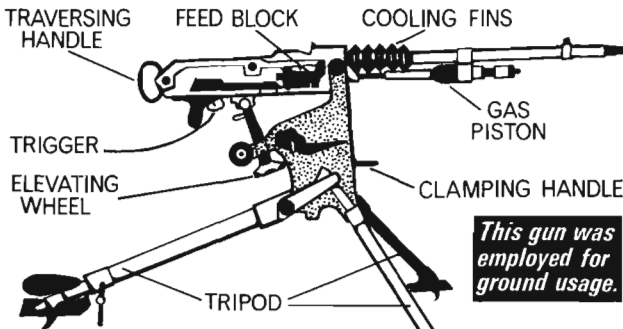
French 370-mm. mortar



Length of gun: 13 feet.
 Weight of gun in action: 30 tons.
 Range: 8,820 yards.
 Elevation: 60°
 Barrel length: 8 calibres.
 Weight of shell: 1,076 pounds.
 Muzzle velocity: 1,230 ft./sec.
 Rate of fire: 1 rd. per 2 mins.
 Traverse: Nil.
 (note: shell contains 262 pounds of high explosive).

SIX IMPORTANT MACHINE GUNS 1914-1918

French HOTCHKISS (1914 Model)



This gun was employed for ground usage.

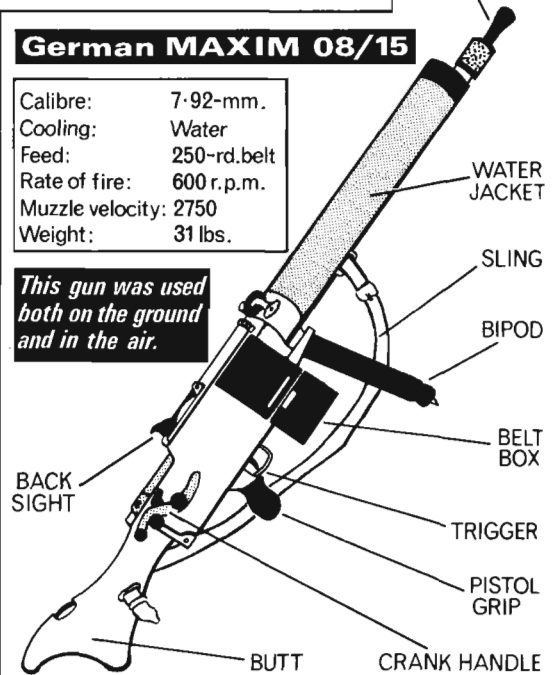
Being air-cooled and light, other Allied nations used the gun, notably Britain.

Calibre: 8-mm.	Weight: 55 lbs. and 60 lb. tripod
Cooling: Air	Rate of fire: 600 r.p.m.
Feed: 30-round strip	Muzzle velocity: 2291

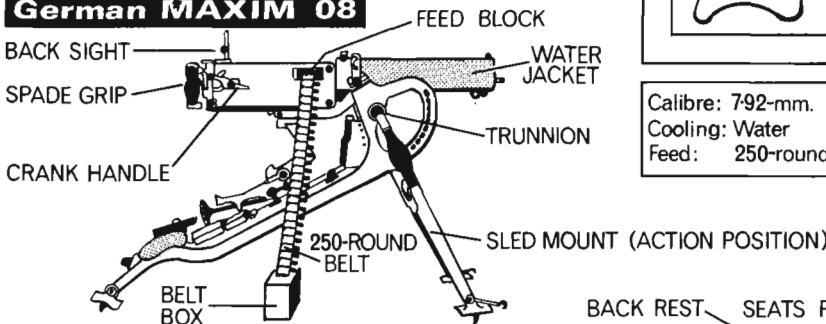
German MAXIM 08/15

Calibre:	7.92-mm.
Cooling:	Water
Feed:	250-rd. belt
Rate of fire:	600 r.p.m.
Muzzle velocity:	2750
Weight:	31 lbs.

This gun was used both on the ground and in the air.

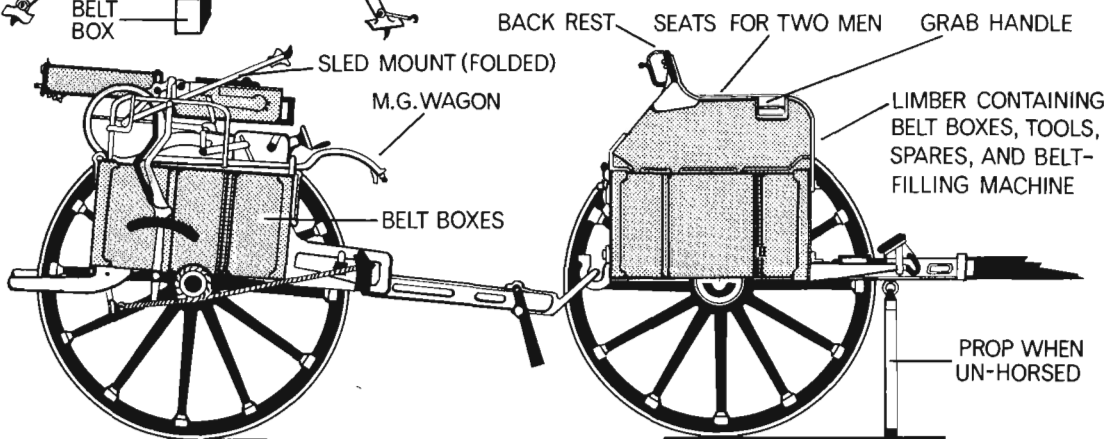


German MAXIM 08



This particular type saw ground service. A modified version was sometimes employed in the air.

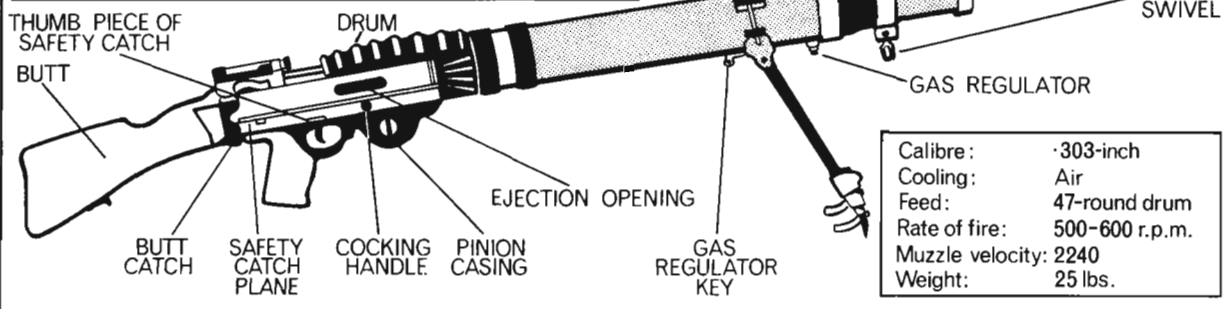
Calibre: 7.92-mm.	Weight: 40.5 lbs. & 83 lbs. sleigh mt.
Cooling: Water	Rate of fire: 600 r.p.m.
Feed: 250-round belt	Muzzle velocity: 2750



This gun was the "slayer" of 1 July 1916, the opening day of the Allied infantry offensive at the Battle of the Somme. Its devastating fire-power accounted for 90% of the 60,000 Allied casualties (mainly British) incurred on that one day.

American-designed LEWIS

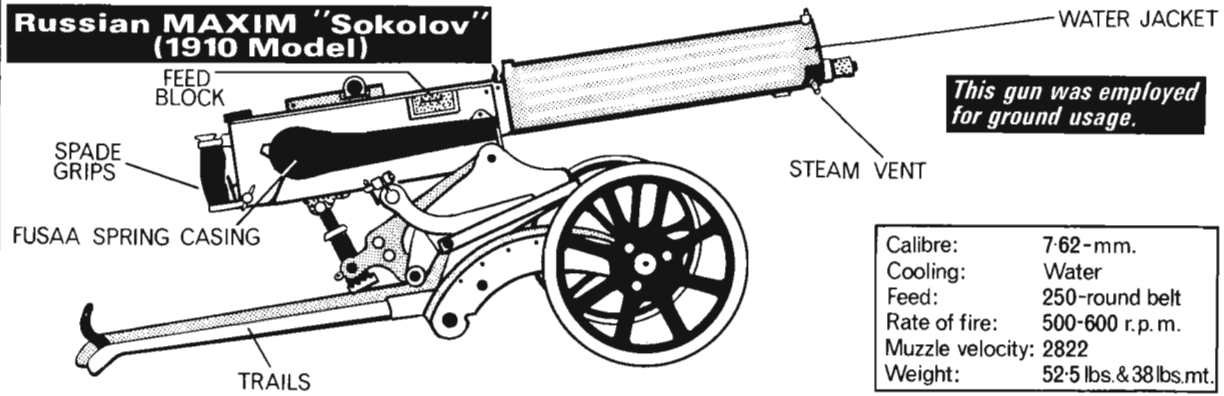
Although somewhat prone to jamming in damp conditions, this gun was used by the Allies both on the ground and in the air.



Calibre:	.303-inch
Cooling:	Air
Feed:	47-round drum
Rate of fire:	500-600 r.p.m.
Muzzle velocity:	2240
Weight:	25 lbs.

Russian MAXIM "Sokolov" (1910 Model)

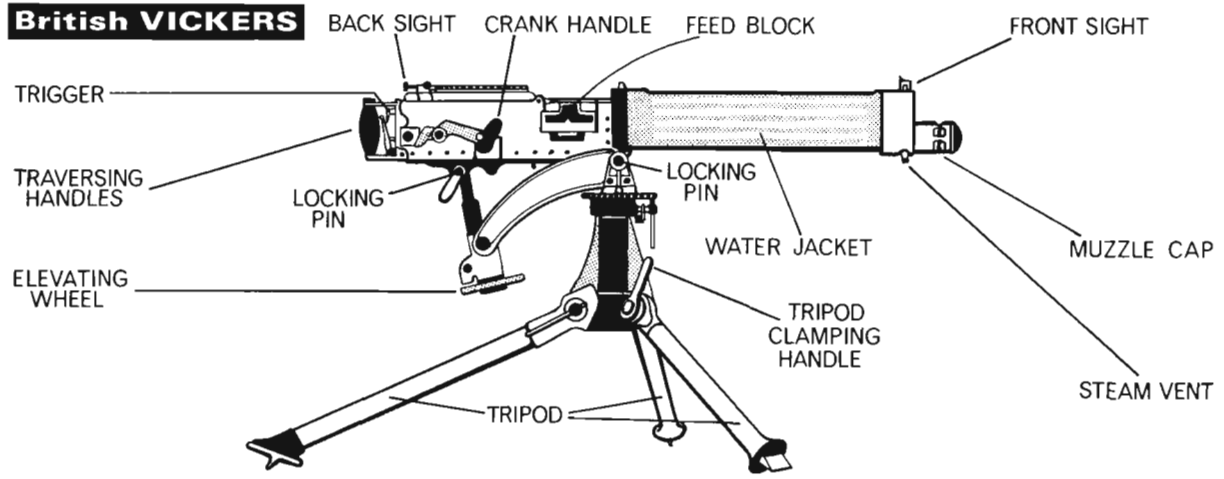
This gun was employed for ground usage.



Calibre:	7.62-mm.
Cooling:	Water
Feed:	250-round belt
Rate of fire:	500-600 r.p.m.
Muzzle velocity:	2822
Weight:	52.5 lbs. & 38 lbs. mt.

British VICKERS

This gun was used by all the Allies, both in the air and on the ground.

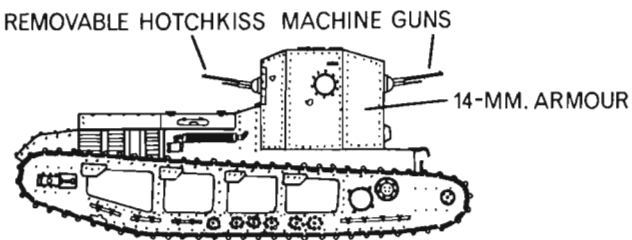


Calibre:	.303-inch	Rate of fire:	500 r.p.m.
Cooling:	Water	Muzzle velocity:	2240
Feed:	250-round belt	Weight:	33 lbs. and 40 lbs. tripod

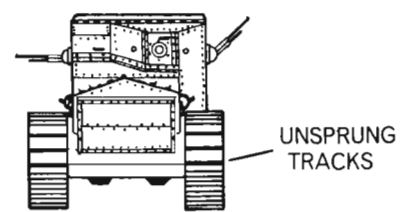
FOUR IMPORTANT TANKS 1916-1918

Weight: 14 tons.
 Speed: 8.3 m.p.h.
 Range: 80 miles.
 Crew: 3.
 Engines: 2 Tylor (total: 90 h.p.).

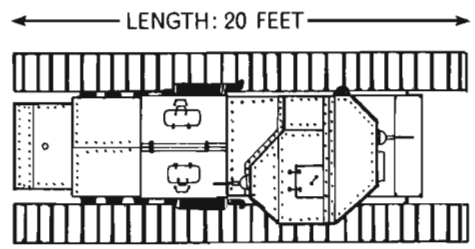
British Medium Mark A "Whippet"



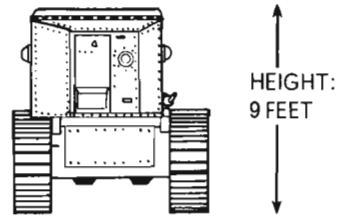
SIDE ELEVATION



FRONT ELEVATION



PLAN VIEW

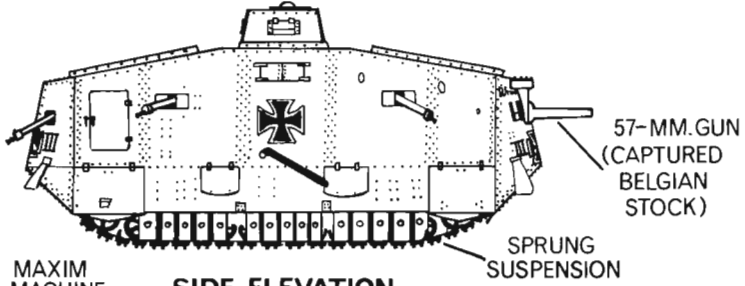


REAR ELEVATION

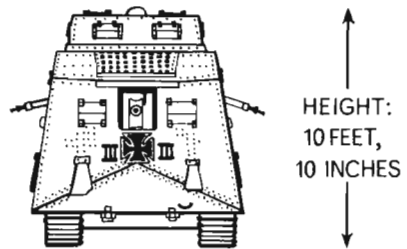
German A7V Sturmpanzerwagen

Weight: 30 tons. Speed: 8 m.p.h. Crew: 18.
 Engines: 2 Daimler four-cylinder (total: 200 h.p.).

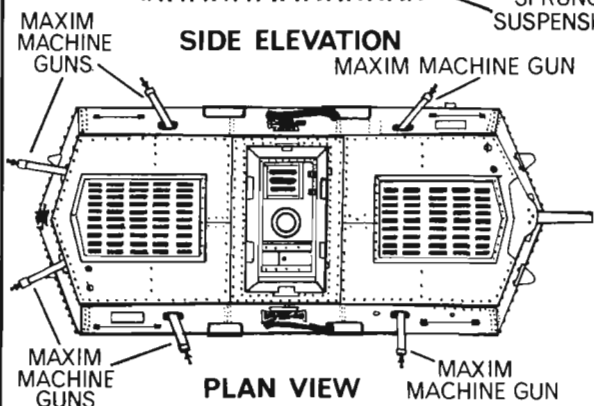
LENGTH: 24 FEET



SIDE ELEVATION

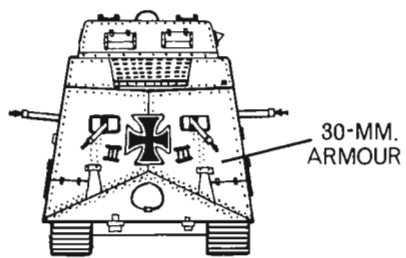


FRONT ELEVATION



PLAN VIEW

WIDTH: 10 FEET, 1 INCH

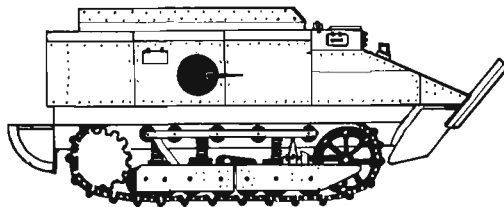


REAR ELEVATION

French Schneider M.16 CA1

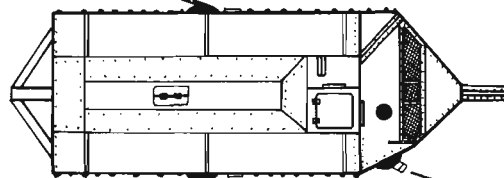
Weight: 13.5 tons.
 Speed: 4.5 m.p.h.
 Range: 25 miles.
 Crew: 6/7.
 Engine: Schneider, four-cylinder, watercooled, 55 h.p.

LENGTH: 19 FEET, 7 INCHES



SIDE ELEVATION

HOTCHKISS MACHINE GUN



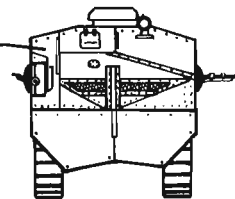
PLAN VIEW

HOTCHKISS MACHINE GUN

75-MM. HOWITZER

WIDTH:
10 FEET,
9 INCHES

11.5-MM. ARMOUR



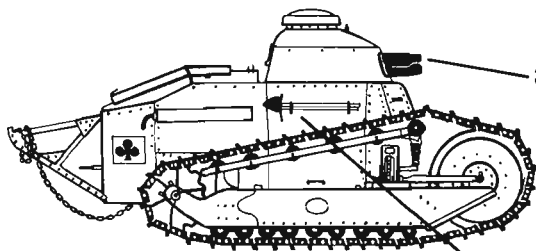
FRONT ELEVATION

HEIGHT:
7 FEET,
8 INCHES

French Light Renault FT 17

Weight: 6.4 tons Speed: 4.8 m.p.h. Crew: 2.
 Engine: Renault, four-cylinder, 35 h.p.

LENGTH: 16 FEET, 5 INCHES



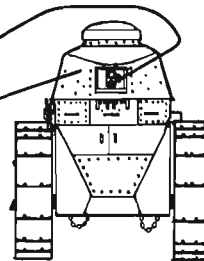
SIDE ELEVATION

8-MM. ARMOUR

37-MM. GUN

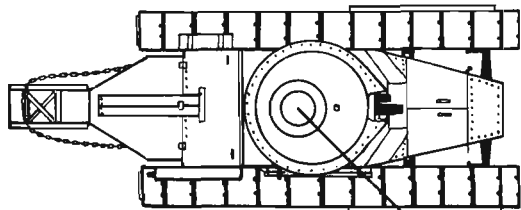
16-MM. ARMOUR

SIGHTING TELESCOPE



FRONT ELEVATION

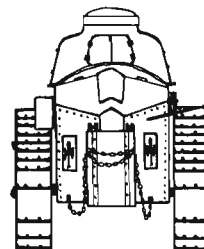
HEIGHT:
7 FEET



PLAN VIEW

ROUND TURRET

WIDTH:
5 FEET,
7 INCHES



REAR ELEVATION

6-MM. ARMOUR

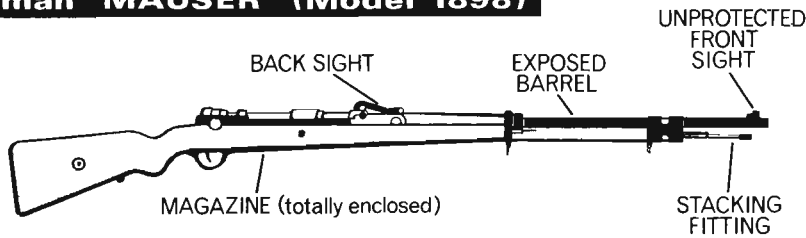
NINE IMPORTANT RIFLES 1914-1918

The rifles of the 1914-1918 war were basically similar in performance. All incorporated hand-operated bolt actions, some straight pull, others turn-bolt. Reliability varied somewhat, but no single rifle had any outstanding advantage over the others. In 1918, efforts were made to produce rifles of a self-loading nature, but only one type saw some limited service. The vast majority of rifles used were of the basic types shown on these pages.

THE BRITISH REGULAR ARMY

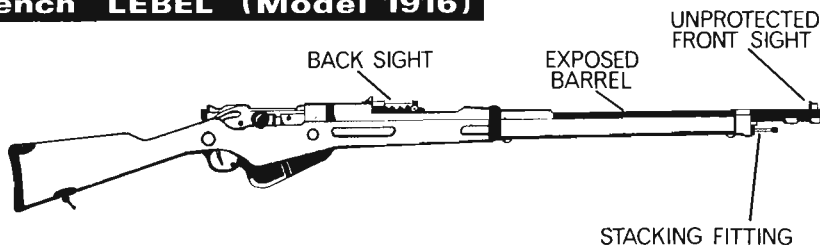
Prior to the war, the British Regular Army paid particular attention to training its infantry in marksmanship and "rapid fire" techniques and by the outbreak in August 1914, regiments contained riflemen with ability to fire at rates of 15-20 rounds per minute with great accuracy.

German "MAUSER" (Model 1898)



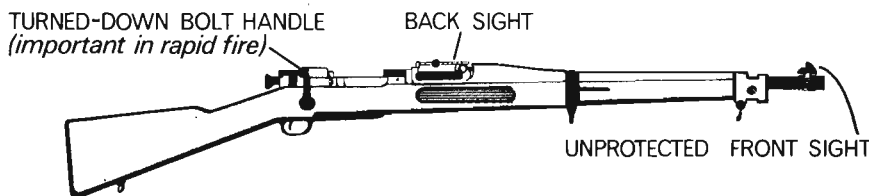
Calibre:	7.92-mm.
Length overall:	49.25 inches
Barrel length:	29.15 inches
Magazine (full):	5 rounds
Weight:	9.5 lbs.
Muzzle velocity:	2,500 ft./sec.

French "LEBEL" (Model 1916)



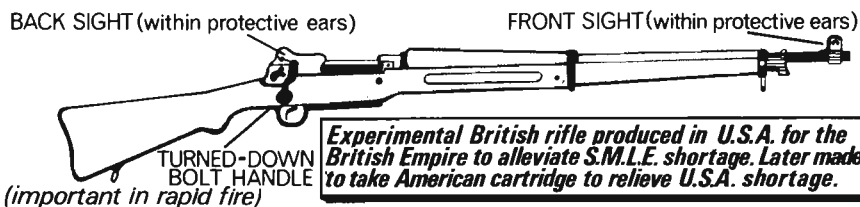
Calibre:	8-mm.
Length overall:	51.3 inches
Barrel length:	31.4 inches
Magazine (full):	8 rounds
Weight:	9.35 lbs.
Muzzle velocity:	2,380 ft./sec.

United States "SPRINGFIELD" (Model 1903)



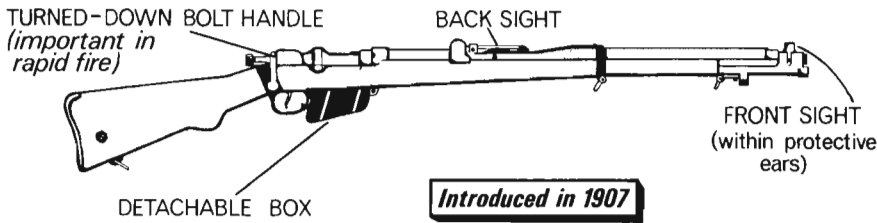
Calibre:	30.06
Length overall:	43.25 inches
Barrel length:	24 inches
Magazine (full):	5 rounds
Weight:	8.69 lbs.
Muzzle velocity:	2,500 ft./sec.

United States (Model 1917)



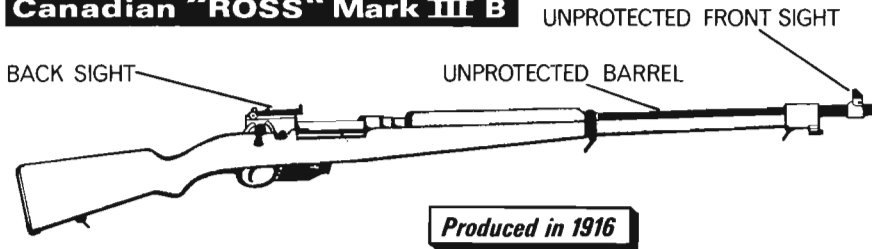
Calibre:	30.06
Length overall:	46.25 inches
Barrel length:	26 inches
Magazine (full):	5 rounds
Weight:	9.62 lbs.
Muzzle velocity:	2,600 ft./sec.

British SHORT MAGAZINE "LEE-ENFIELD" Mark III



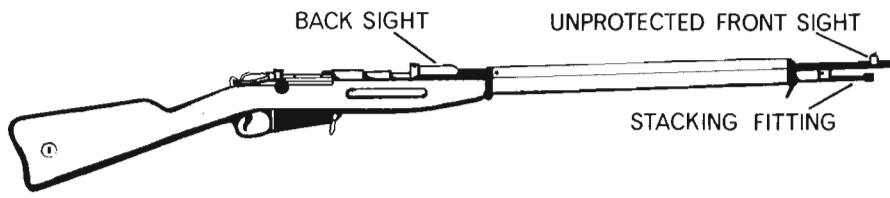
Calibre: .303-inch
 Length overall: 44.5 inches
 Barrel length: 25.19 inches
 Magazine (full): 10 rounds
 Weight: 8.12 lbs.
 Muzzle velocity: 2,060 ft./sec.

Canadian "ROSS" Mark III B



Calibre: .303-inch
 Length overall: 50.5 inches
 Barrel length: 30.5 inches
 Magazine (full): 5 rounds
 Weight: 9.75 lbs.
 Muzzle velocity: 2,060 ft./sec.

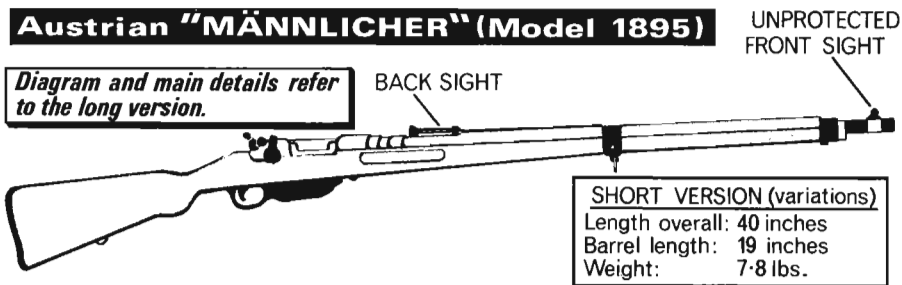
Russian "MOISIN-NAGANT" (Model 1891)



Calibre: 7.62-mm.
 Length overall: 51.37 inches
 Barrel length: 31.6 inches
 Magazine (full): 5 rounds
 Weight: 9.62 lbs.
 Muzzle velocity: 2,660 ft./sec.

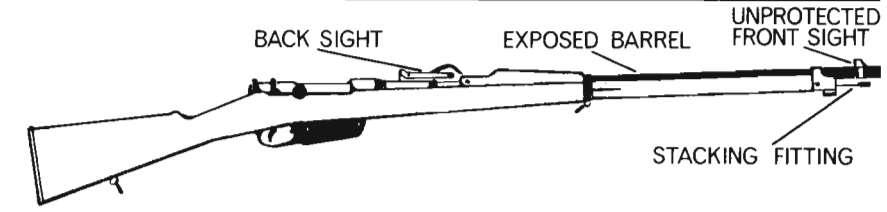
Austrian "MÄNNLICHER" (Model 1895)

Diagram and main details refer to the long version.



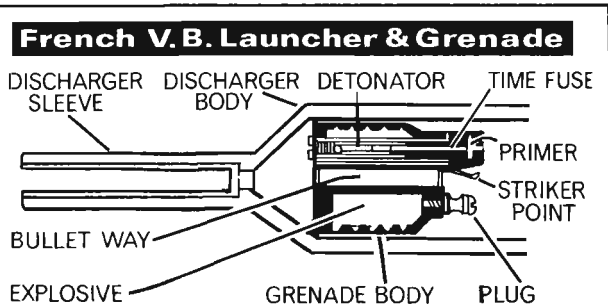
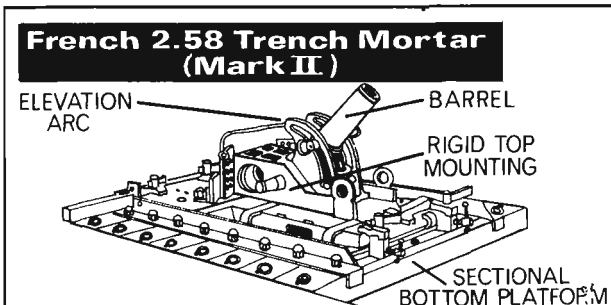
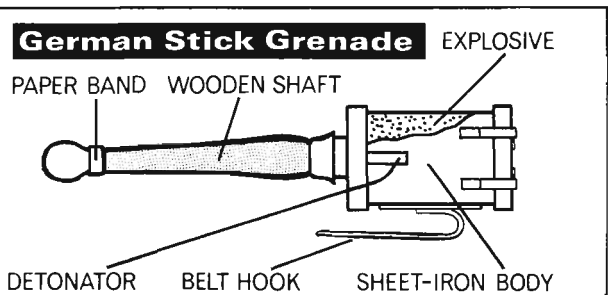
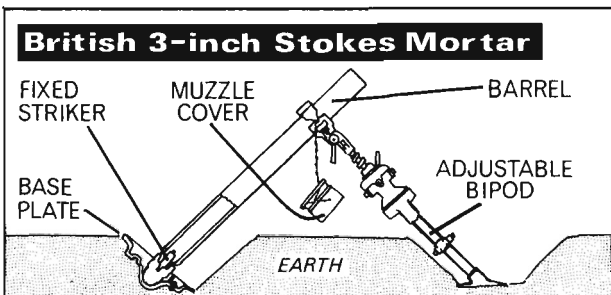
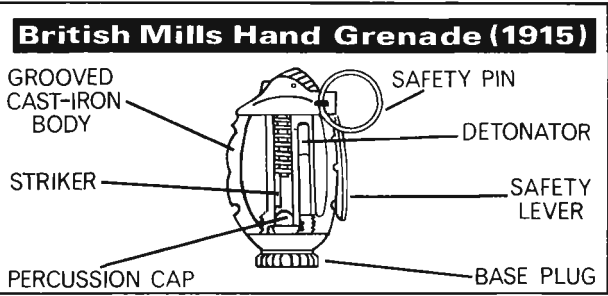
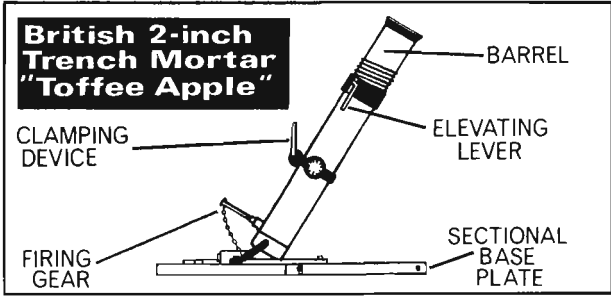
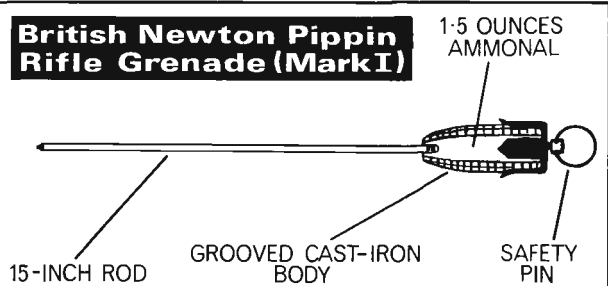
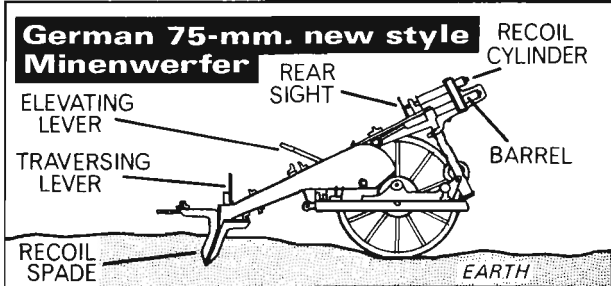
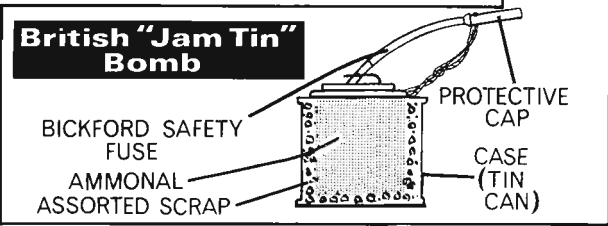
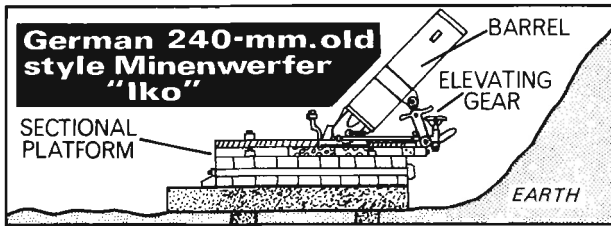
Calibre: 8-mm.
 Length overall: 50 inches
 Barrel length: 30 inches
 Magazine (full): 5 rounds
 Weight: 8.4 lbs.
 Muzzle velocity: 2,030 ft./sec.

Italian "MÄNNLICHER-CARCANO" (Model 1891)

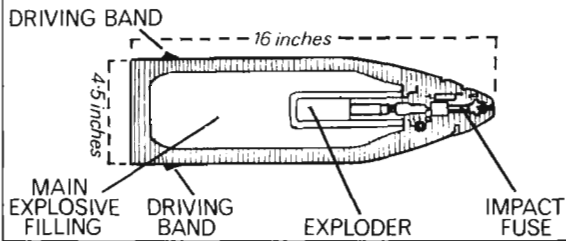


Calibre: 6.5-mm.
 Length overall: 50.75 inches
 Barrel length: 30.7 inches
 Magazine (full): 6 rounds
 Weight: 9 lbs.
 Muzzle velocity: 2,200 ft./sec.

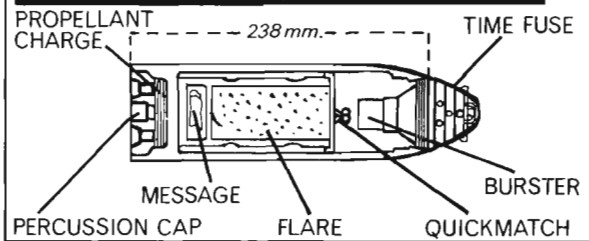
TWENTY TRENCH WEAPONS AND MUNITIONS



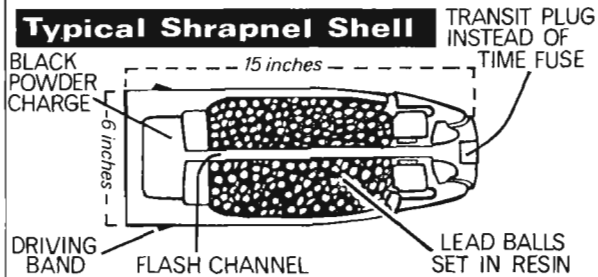
Typical High Explosive Shell



German 76-mm. Minenwerfer Message Shell

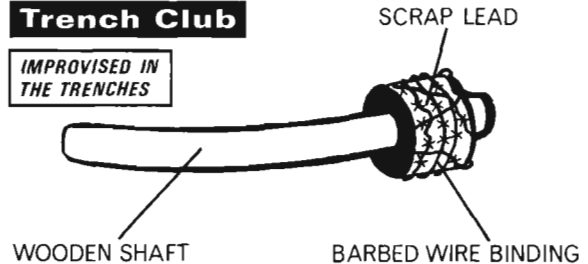


Typical Shrapnel Shell

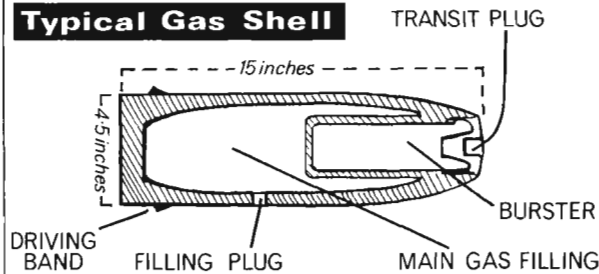


Trench Club

IMPROVED IN THE TRENCHES

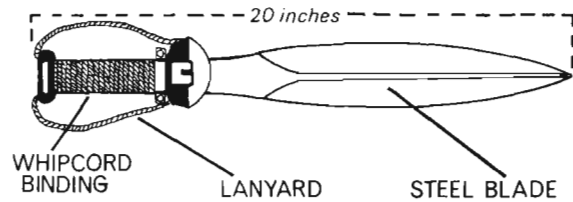


Typical Gas Shell

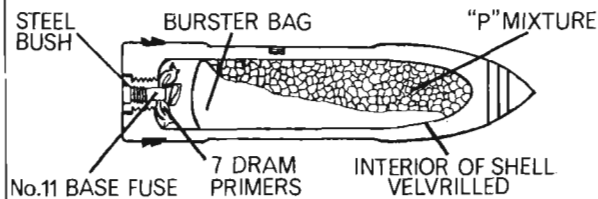


Old Welsh Knife

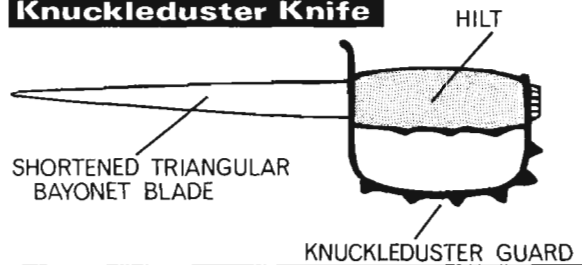
TRADITIONAL FROM DAYS OF THE LONGBOW



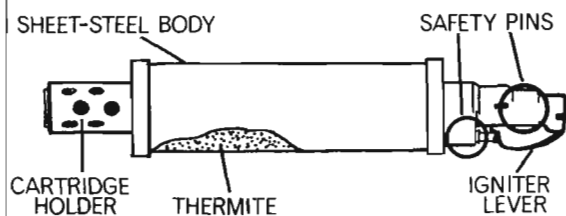
Typical Semi Armour-Piercing Shell



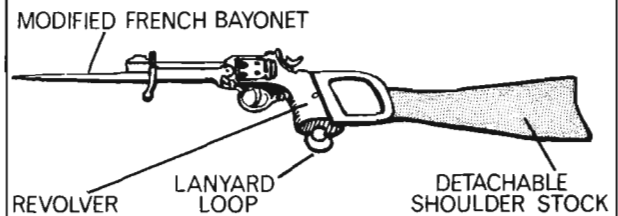
Knuckleduster Knife



Typical Incendiary (Thermite) Shell



British Webley (Mark VI) Stock & Bayonet

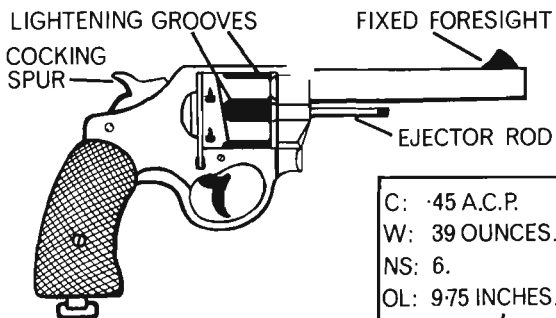


EIGHT IMPORTANT PISTOLS AND REVOLVERS 1914 - 1918

Abbreviations:

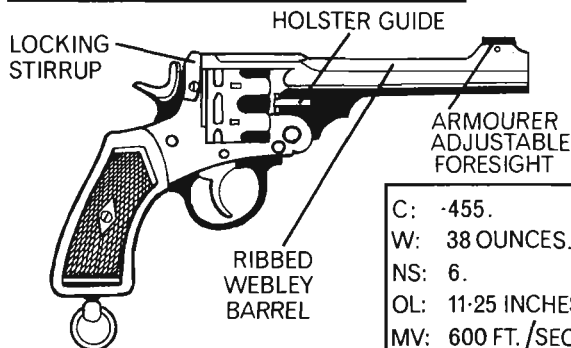
C = Calibre. OL = Overall length.
 W = Weight. MV = Muzzle velocity.
 NS = Number of shots. BW = Bullet weight.

United States COLT M 1917



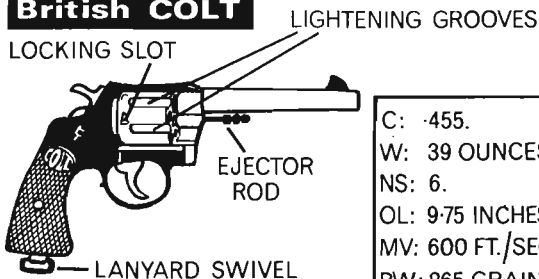
C: .45 A.C.P.
 W: 39 OUNCES.
 NS: 6.
 OL: 9.75 INCHES.
 MV: 810 FT./SEC.
 BW: 230 GRAINS.

British WEBLEY Mark VI



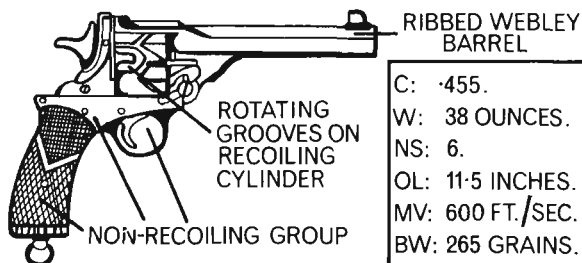
C: .455.
 W: 38 OUNCES.
 NS: 6.
 OL: 11.25 INCHES.
 MV: 600 FT./SEC.
 BW: 265 GRAINS.

British COLT



C: .455.
 W: 39 OUNCES.
 NS: 6.
 OL: 9.75 INCHES.
 MV: 600 FT./SEC.
 BW: 265 GRAINS.

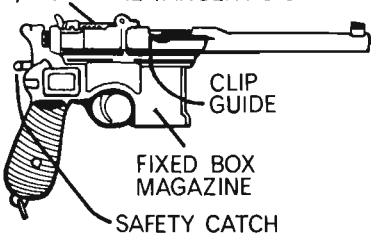
British WEBLEY-FOSBERY



C: .455.
 W: 38 OUNCES.
 NS: 6.
 OL: 11.5 INCHES.
 MV: 600 FT./SEC.
 BW: 265 GRAINS.

German MAUSER

1,000 METRE TANGENT SIGHT



C: 7.63.
 W: 45 OUNCES.
 NS: 10.
 OL: 12 INCHES.
 MV: 1420 FT./SEC.
 BW: 86 GRAINS.

German LUGER (Parabellum)

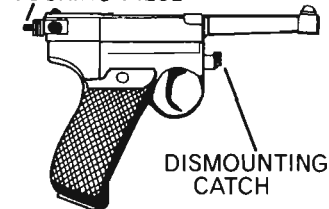
LANYARD LOOP TOGGLE LINK



C: 9 PARABELLUM.
 W: 30 OUNCES.
 NS: 7.
 OL: 8.75 INCHES.
 MV: 1,150 FT./SEC.
 BW: 125 GRAINS.

Italian GLISENTI

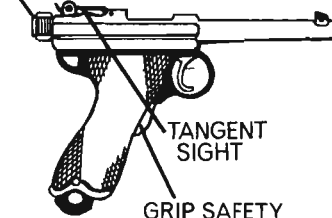
COCKING PIECE



C: 9 GLISENTI.
 W: 30 OUNCES.
 NS: 7.
 OL: 8.5 INCHES.
 MV: 900 FT./SEC.
 BW: 125 GRAINS.

Japanese NAMBU

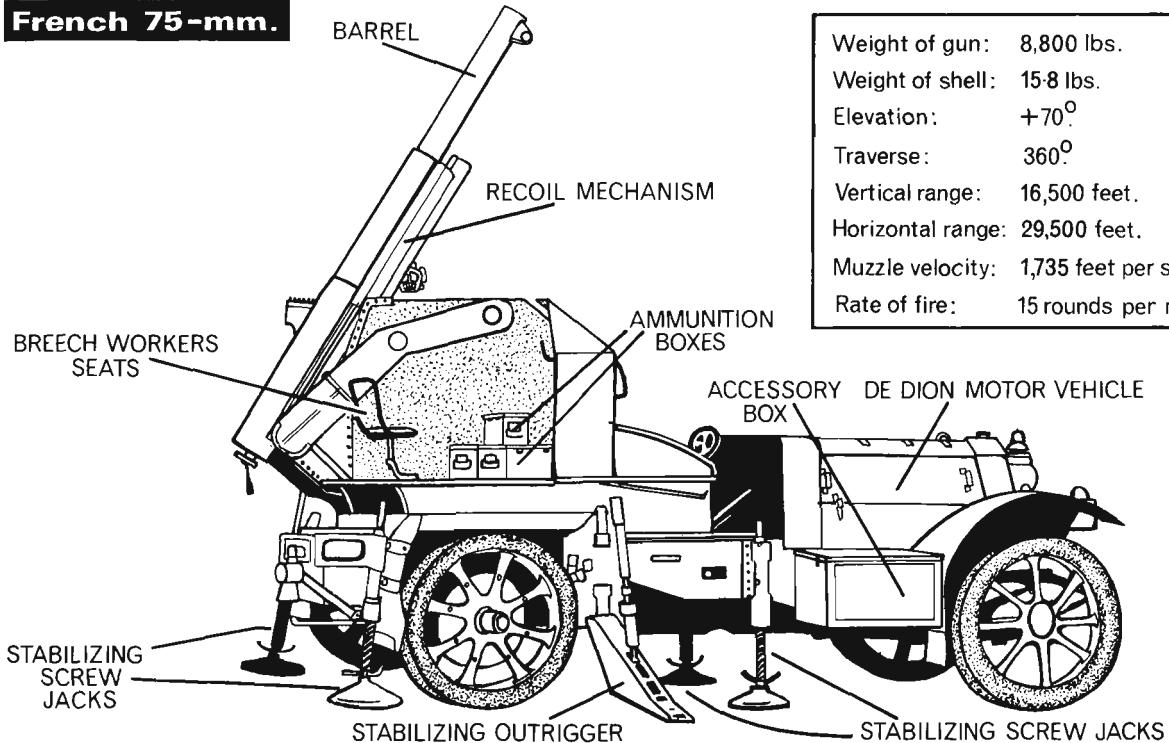
COCKING PIECE



C: 8 NAMBU.
 W: 30 OUNCES.
 NS: 8.
 OL: 10 INCHES.
 MV: 950 FT./SEC.
 BW: 102 GRAINS.

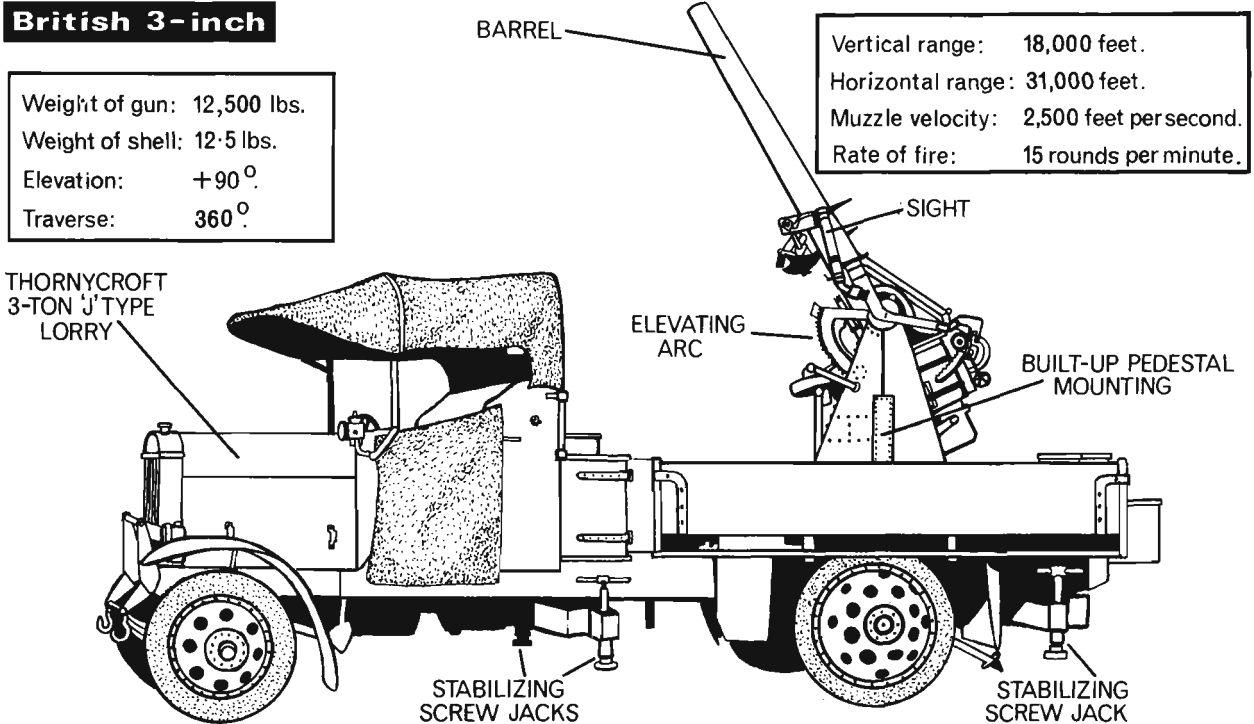
FIVE IMPORTANT ANTI-AIRCRAFT GUNS 1914-1918

French 75-mm.



Weight of gun: 8,800 lbs.
 Weight of shell: 15.8 lbs.
 Elevation: +70°
 Traverse: 360°
 Vertical range: 16,500 feet.
 Horizontal range: 29,500 feet.
 Muzzle velocity: 1,735 feet per second.
 Rate of fire: 15 rounds per minute.

British 3-inch



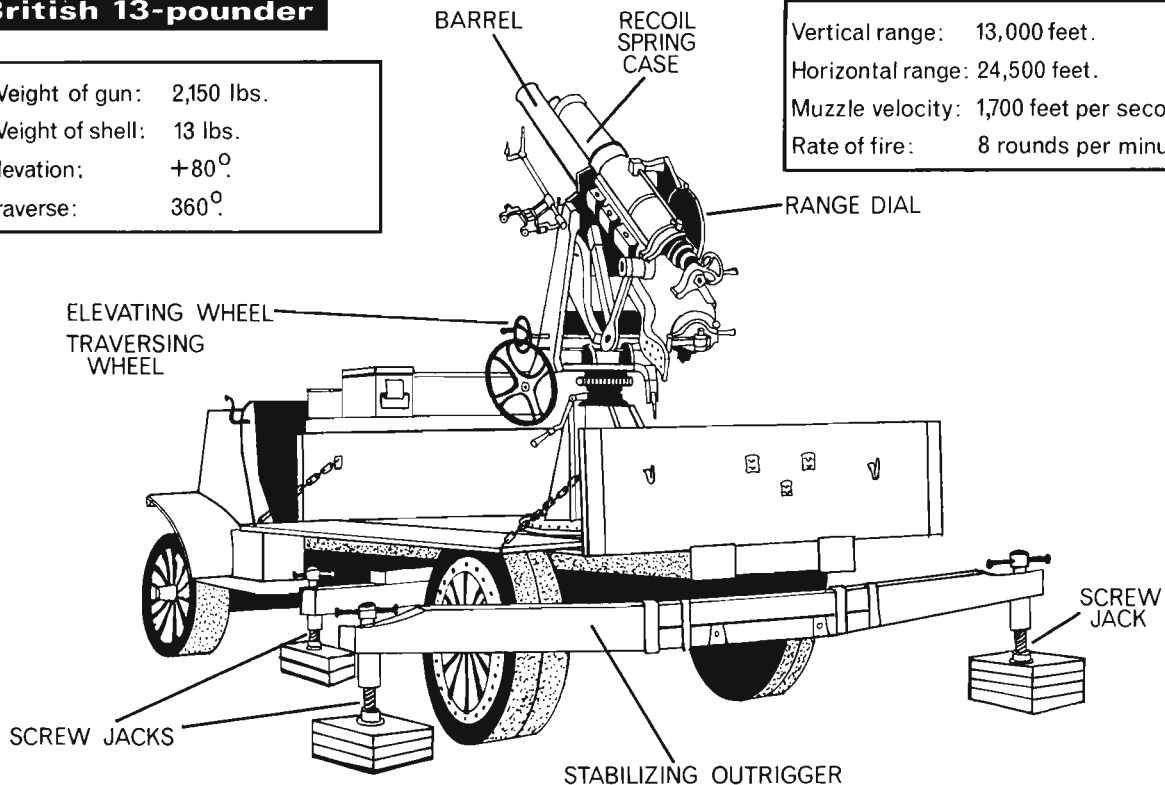
Weight of gun: 12,500 lbs.
 Weight of shell: 12.5 lbs.
 Elevation: +90°
 Traverse: 360°

Vertical range: 18,000 feet.
 Horizontal range: 31,000 feet.
 Muzzle velocity: 2,500 feet per second.
 Rate of fire: 15 rounds per minute.

British 13-pounder

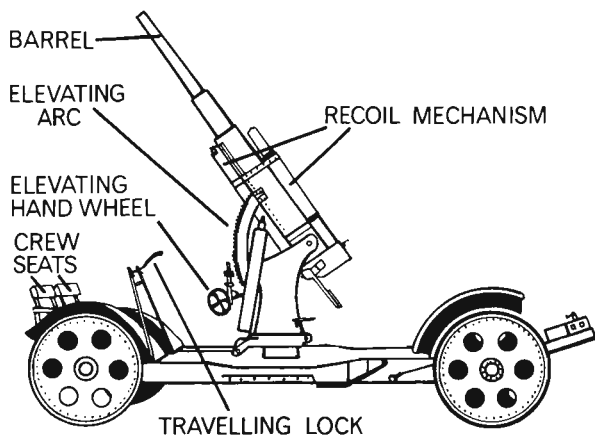
Weight of gun: 2,150 lbs.
 Weight of shell: 13 lbs.
 Elevation: +80°
 Traverse: 360°

Vertical range: 13,000 feet.
 Horizontal range: 24,500 feet.
 Muzzle velocity: 1,700 feet per second.
 Rate of fire: 8 rounds per minute.



German 8-8-cm.

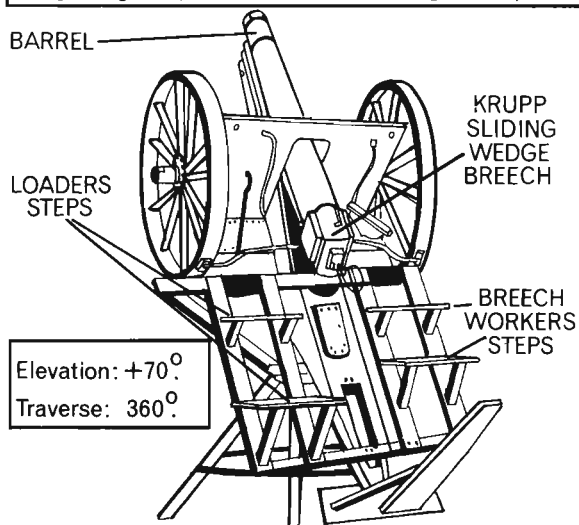
Elevation: +70°
 Traverse: 360°
 Weight of gun: 6,700 lbs.
 Weight of shell: 21 lbs.
 Vert. range: 12,500 feet.
 Horiz. range: 35,500 feet.



Muzzle velocity: 2,575 feet per second.
 Rate of fire: 10 rounds per minute.

German 7-7-cm.

Weight of shell: 15 lbs.
 Vertical range: 14,000 ft.
 Weight of gun: 3,675 lbs.
 Horiz. range: 26,000 ft.



Muzzle velocity: 1,520 ft./sec. Rate of fire: 8 rds. per min.

THE WAR AT SEA

During the first decade of the century a radical change in warship construction led to the development of 'all big gun' battleships. The first British vessel of this type was H.M.S. *Dreadnought* (ten 12-inch guns and a speed of 21 knots), laid down in October 1905, launched February 1906, at sea by October 1906. The Dreadnoughts could outrange and outpace all previous battleships, which were soon made obsolete. Other countries followed Britain's lead: a German dreadnought, the *Nassau*, was launched in 1907. The Royal Navy in 1914 had twenty dreadnoughts or 'super-dreadnoughts' based in home waters: Germany, the second largest naval power in Europe, had fifteen. Everyone awaited a dreadnought Trafalgar. A difference in concepts of naval strategy postponed the clash. The Germans hoped to offset their numerical inferiority by splitting the British Grand Fleet by a feint, enabling their battle squadrons to fall on the enemy a portion at a time; the British, on the other hand, were content to use dreadnoughts as a distant deterrent, exercising naval supremacy in home waters from Scapa Flow, in the Orkneys. The prospect of a great naval battle receded.

Meanwhile, the British, French, Russian and Japanese navies were confronted with the problem of German cruisers in distant seas. The battle-cruiser *Goeben* and the cruiser *Breslau* succeeded in evading pursuit in the Mediterranean and took refuge at Constantinople, where their transference to the Turkish fleet played a considerable part in inducing the Turks to enter the war. The German Pacific Squadron (Spee) inflicted, off Coronel, the first defeat sustained by the Royal Navy since the 1812 War with America, sinking an outdated armoured cruiser and a light cruiser. Coronel was avenged at the Falkland Islands five weeks later, while the lone raider *Emden* was tracked down by the Australian cruiser *Sydney* in the Indian Ocean. The chivalrous seamanship of the commanders of the German surface vessels won high regard; but the development by the Germans of submarine warfare, and especially the increasing number of underwater attacks on merchantmen and passenger liners, aroused anger and resentment in Britain and the

United States. On the other hand, the Americans also resented the British imposition of a naval blockade on Germany and her allies. British submarine activity was especially effective in the Sea of Marmara, off Constantinople, and in the Baltic.

In January 1915 the battle-cruisers of the Grand Fleet, under Beatty, intercepted Admiral Hipper's 'scouting group' off the Dogger Bank and pursued the Germans but lost contact after Beatty's flagship was immobilised. The German armoured cruiser *Blücher* was sunk, and the Germans concentrated for the remainder of the year on U-boat activity. In February 1916 Admiral Scheer took command of the High Seas Fleet at Wilhelmshaven, and planned to tempt Beatty into another battle-cruiser engagement, with a pack of U-boats waiting to intercept the dreadnoughts of the Grand Fleet (Jellicoe) as they moved south. Surface, submarine and Zeppelin activity was, however, not as co-ordinated as Scheer wished. The British were remarkably well-informed of German movements (by wireless interception), and were prepared for a major battle in May 1916.

Jutland, the largest naval action in world history, was essentially a battle of feints and manoeuvres. It involved 151 British warships and 99 German vessels although the dreadnoughts themselves (28 British, 16 German) were in action against each other for only twenty minutes during the evening of 31 May. Beatty, realising the German cruisers were seeking to draw his squadron towards the heavy guns of the High Seas Fleet, himself tried to lure the Germans towards Jellicoe's squadron. The British battle-cruisers suffered heavily from accurate German fire, but tactically trapped Scheer into allowing the Grand Fleet to get between his vessels and his home port. Jellicoe hoped to bring Scheer to battle next morning, but the Germans evaded him at night, partly through sheer speed and partly through better training for a running battle by night. British casualties and losses were far higher than those of the Germans at Jutland; but it was harder for the Germans to fill the gaps in their fleet. Strategically Jutland was a British victory, for it reinforced the Kaiser's inclination to preserve his navy

intact, rather than risk another encounter with the Grand Fleet.

After Jutland there was little surface conflict between rival warships. The Austro-Hungarian fleet made a number of sorties on the barrage which the Allies sought to establish across the Strait of Otranto, so as to seal off the Adriatic from the Mediterranean; and there were occasional alarms in the Black Sea, where the Russian and Turkish fleets had already clashed briefly off the southern tip of the Crimea in November 1914. It is often said that the German High Seas Fleet remained inactive off Heligoland and Kiel for the remainder of the War until a break in morale led to mutiny in 1918. Yet, though the Kaiser was opposed to offensive action, Scheer took the Fleet to sea again in the third week of August 1916 and, for the last time, in April 1918. These sweeps seem, however, to have been intended as diversions rather than as preliminaries to another battle, and no contact was made with British surface vessels. It should, of course, be noted (page 276) that the rival fleets were increasingly hemmed in by minefields.

Both the British and German Admiralties had anticipated that attempts would be made in any war to strangle the economy of a country, and cut off its food supply, by means of a blockade. The British system (for which a separate Government department, the Ministry of Blockade, was eventually established early in 1916) was basically an extension of the controversial rights exercised during the Napoleonic Wars: an Order in Council of March 1915 authorising the seizure by British warships of goods destined for Germany by way of a neutral port provoked similar hostility to the notorious Orders in Council of 1807, although German submarine ruthlessness assuaged the wrath of some neutral countries. Neither the British nor the Germans had worked out the implications of using the submarine as a destroyer of commerce; but by the spring of 1916 the U-boat was recognised in Berlin as the most effective of all naval weapons. Attempts were made later that summer to counter the U-boat menace with new minefields, increased defensive nets and disguised

'mystery ships' (Q-ships). Yet the tonnage of merchant shipping sunk by U-boat averaged 300,000 a month in the last quarter of 1916 and rose dramatically in February when the Germans began unrestricted submarine warfare. Over half a million tons of British merchant shipping was lost in April 1917, one in four vessels leaving British ports never returning there again. Corn supplies in England were down to six weeks.

The U-boat menace was mastered by a return to the eighteenth century concept of convoys, imposed on a reluctant Admiralty by the Prime Minister Lloyd George, in May 1917 (see page 266). The addition of American naval strength to Atlantic patrols helped ensure the effectiveness of convoying. At the same time, new anti-submarine techniques were perfected, notably the depth-charge. The Admiralty remained concerned over the use which the Germans made of the Belgian ports as U-boat bases. In April 1918 a raid was made on Zeebrugge—the prototype of amphibious commando raids in the Second World War—which sought to block the canal to Bruges, where there were docking facilities for destroyers and as many as 30 U-boats. An attempt was also made on the Bruges–Ostend Canal. The Zeebrugge Raid (for which eight Victoria Crosses were awarded) was only partially successful and the accompanying raid on Ostend (which won another three Victoria Crosses) was so disappointing that a second assault had to be made a fortnight later. It, too, proved largely abortive. But the Zeebrugge–Ostend operations sealed off the U-boats and destroyers at Bruges, even if the shallow-draught boats were soon able to move again out to sea. The chief effect of the raids was as a fillip to lagging morale in Britain.

A final plan to challenge the Grand Fleet in the hopes of securing better Armistice terms in 1918 came to nothing when the German naval ratings mutinied, first at the fleet anchorage off Wilhelmshaven on 29 October and later at Kiel. It was the beginning of the revolution which, within a fortnight, turned Germany from an autocracy to a republic.

THE PURSUIT AND ESCAPE OF SMS 'GOEBEN' AND 'BRESLAU', AUGUST 1914



The safe arrival of the two German warships strongly influenced Turkey's decision to join the Central Powers.

BRITISH SHIPS IN THE HUNT

- 3 Battlecruisers
- 4 Armoured cruisers
- 4 Light cruisers
- 16 Destroyers

SMS "GOEBEN"

- 10 11-in. guns
- 12 6-in. guns
- 12 24-pdrs.
- 4 20-in. t.t.s.

Displacement 23,000 tons; Complement 1,107

Laid down 1909; Completed 1912; Maximum speed 28 knots

SMS "BRESLAU"

- 12 4.1-inch guns
- 2 20-inch t.t.b.s.

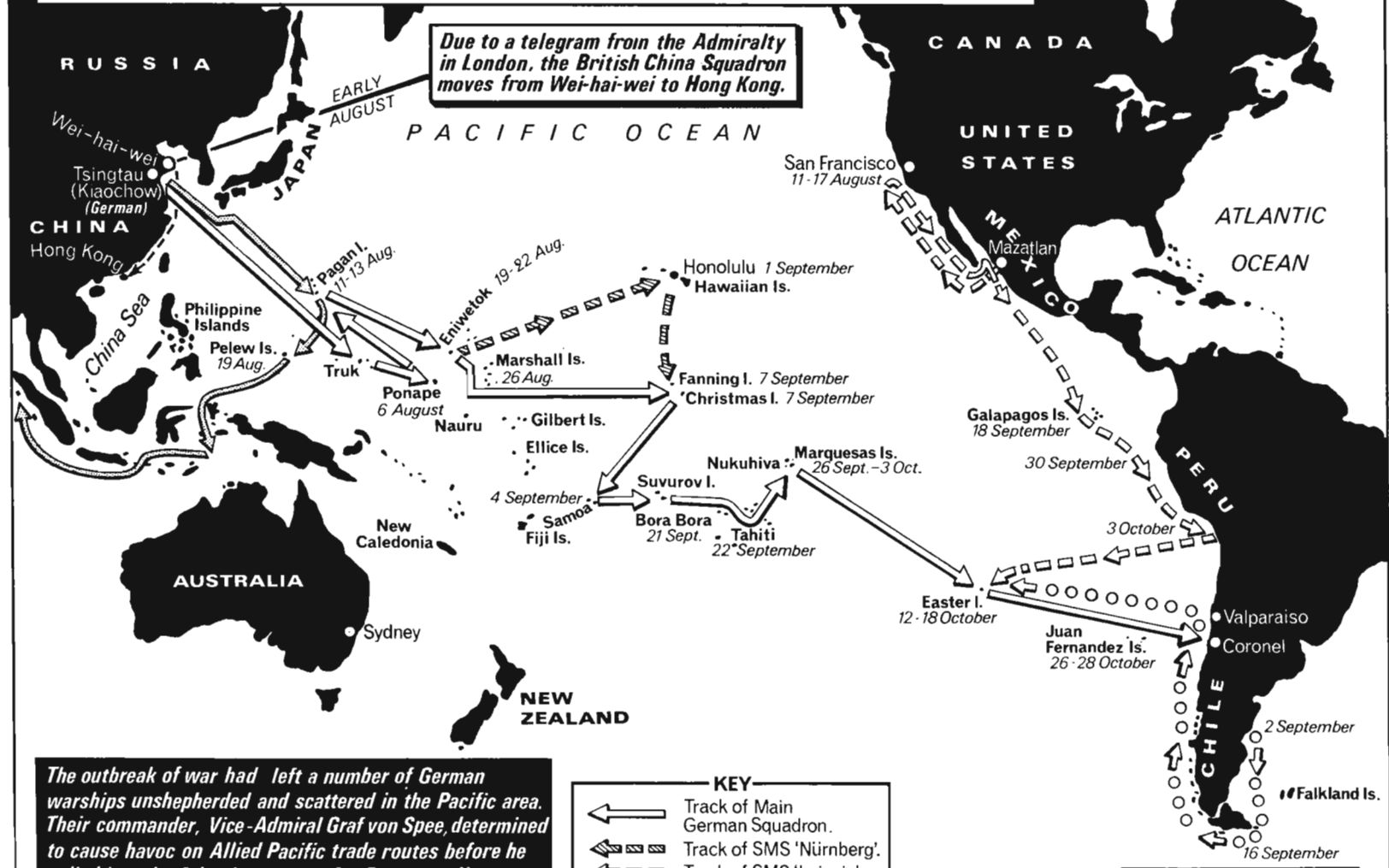
Displacement 4,500 tons; Complement 370

Laid down 1910; Completed 1912; Maximum speed 30 knots

The battlecruiser 'Goeben' and the light cruiser 'Breslau', were German warships situated in the Mediterranean area at the outbreak of the war. After attempting to disrupt French troop convoys between Africa and France by bombarding Algerian ports, they were hunted by British naval units from Messina to the Dardanelles. To escape capture, they were sold to Turkey for a sum of £3,800,000, and then used against Russia.

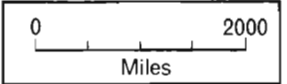
THE VOYAGE OF VON SPEE'S PACIFIC SQUADRON AUGUST – NOVEMBER 1914

Due to a telegram from the Admiralty in London, the British China Squadron moves from Wei-hai-wei to Hong Kong.



The outbreak of war had left a number of German warships unshepherded and scattered in the Pacific area. Their commander, Vice-Admiral Graf von Spee, determined to cause havoc on Allied Pacific trade routes before he sailed into the Atlantic en route for Germany. He collected his fleet (minus SMS 'Emden') together at Easter I. and then made for the coast of South America.

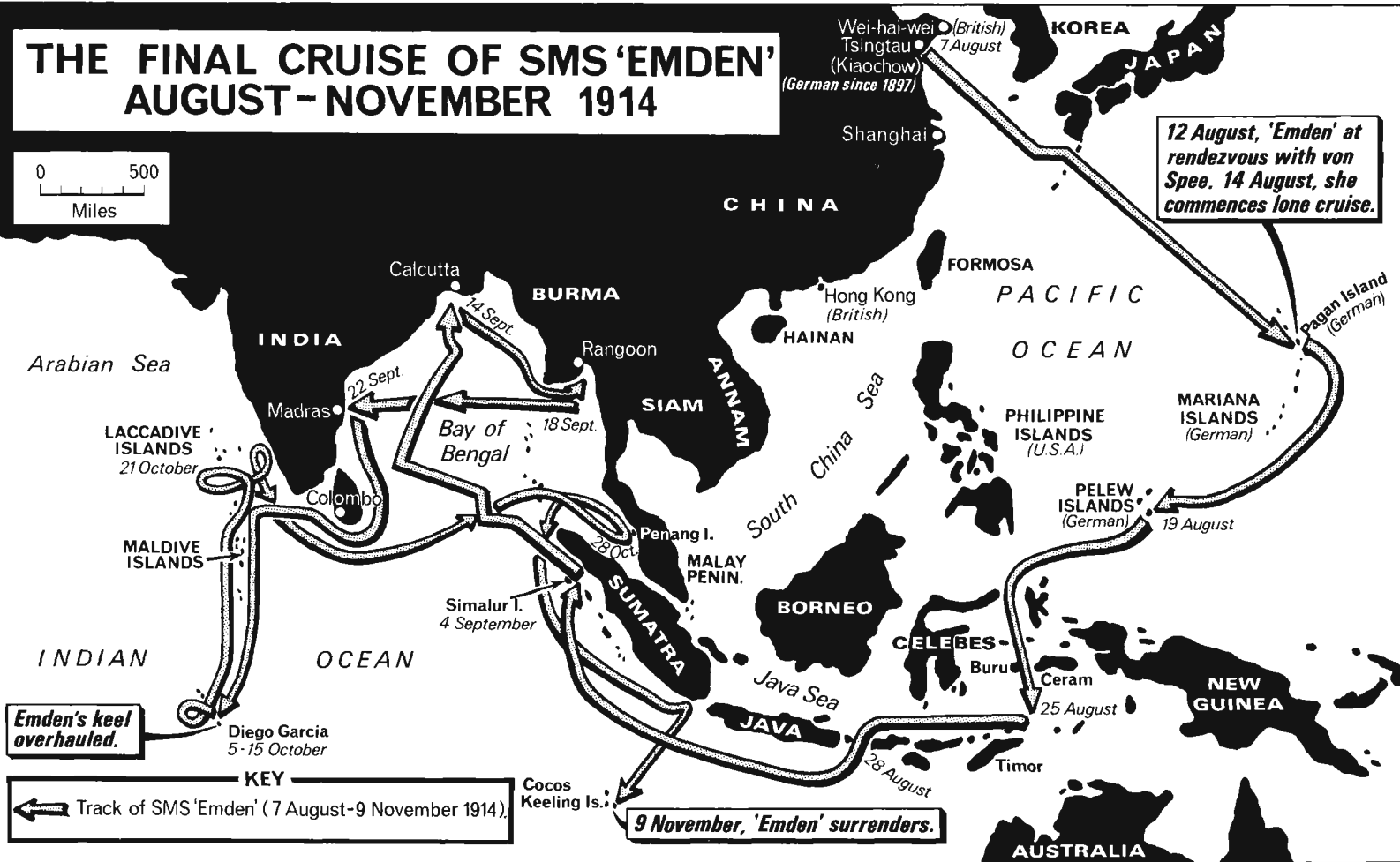
KEY	
	Track of Main German Squadron.
	Track of SMS 'Nürnberg'.
	Track of SMS 'Leipzig'.
	Track of SMS 'Dresden'.
	Track of SMS 'Emden'.



THE FINAL CRUISE OF SMS 'EMDEN' AUGUST-NOVEMBER 1914

0 500
Miles

12 August, 'Emden' at rendezvous with von Spee. 14 August, she commences lone cruise.



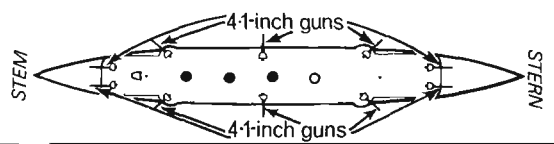
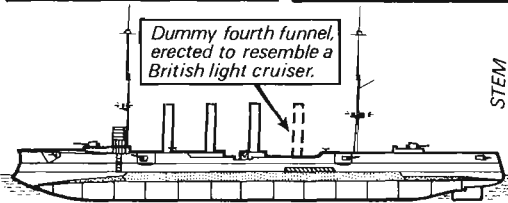
Emden's keel overhauled.

KEY
← Track of SMS 'Emden' (7 August-9 November 1914).

9 November, 'Emden' surrenders.

239

SMS "EMDEN" Laid down 1906; Completed 1908; Displacement 3,600 tons; Top speed 25 knots



'Emden' complement 321, carried an armament of ten 4.1-inch guns, eight 5-pounders & two 17.7-in. t.tbs.

'Emden', a Dresden-class light cruiser, was employed as a lone commerce raider in Eastern waters. During September and October, she captured 19 British merchant ships, bombarded Madras, and sank a Russian cruiser and a French destroyer. On 9 November, attempting to destroy the Cocos Keeling wireless station, she was engaged by HMAS 'Sydney'. Forced ashore half-sunk, 'Emden' surrendered after losing 111 men.

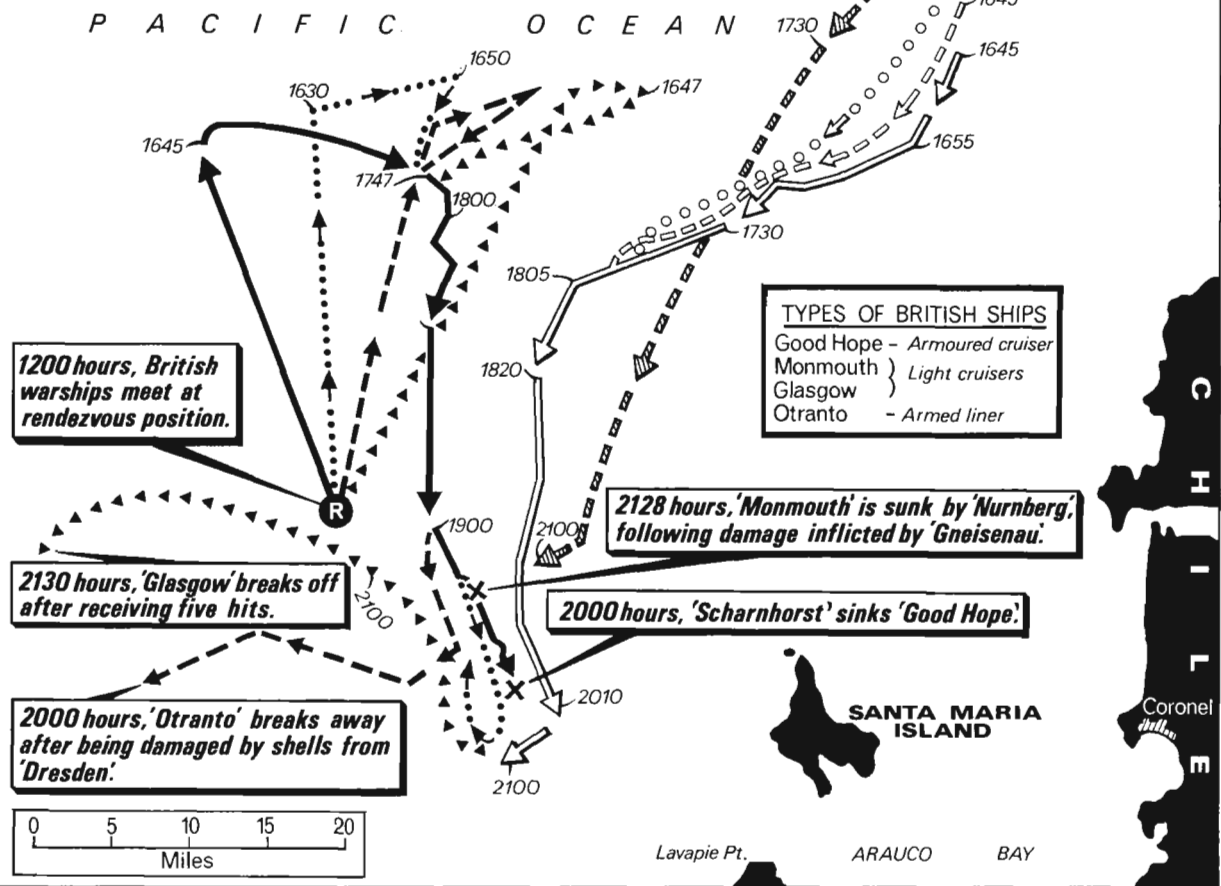
THE BATTLE OF CORONEL 1 NOVEMBER 1914

The Battle of Coronel resulted in a German victory. It was the first major British naval reverse for over a century, and command of the sea from Panama to Cape Horn, passed to Germany.

KEY

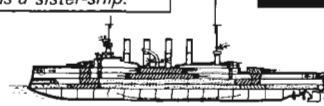
BRITISH SHIPS		GERMAN SHIPS
← Track of HMS 'Good Hope'.	←	Tracks of SMS 'Scharnhorst' (leading) and SMS 'Gneisenau'.
←···· Track of HMS 'Monmouth'.	←	Track of SMS 'Nürnberg'.
←←←← Track of HMS 'Glasgow'.	←	Track of SMS 'Leipzig'.
←--- Track of HMS 'Otranto'.	←	Track of SMS 'Dresden'.

Note: where more than one ship followed a similar course, the leading ship's track is shown



Note: SMS 'Gneisenau' was a sister-ship.

SMS "SCHARNHORST"



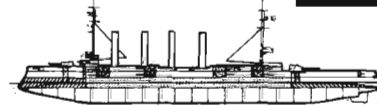
Laid down: 1905
Completed: 1907
Max speed: 21 knots
Displacement: 11,600 tons
Complement: 765

Eight 8.2-inch guns
Six 6-inch guns
Twenty 24-pdr. guns
Four 18-inch torp. tubes



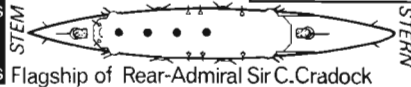
Flagship of Vice-Admiral von Spee

HMS "GOOD HOPE"



L.d.: 1899
Cd.: 1902
M.s.: 24 knots
Dis.: 14,100 tons
Ct.: 900

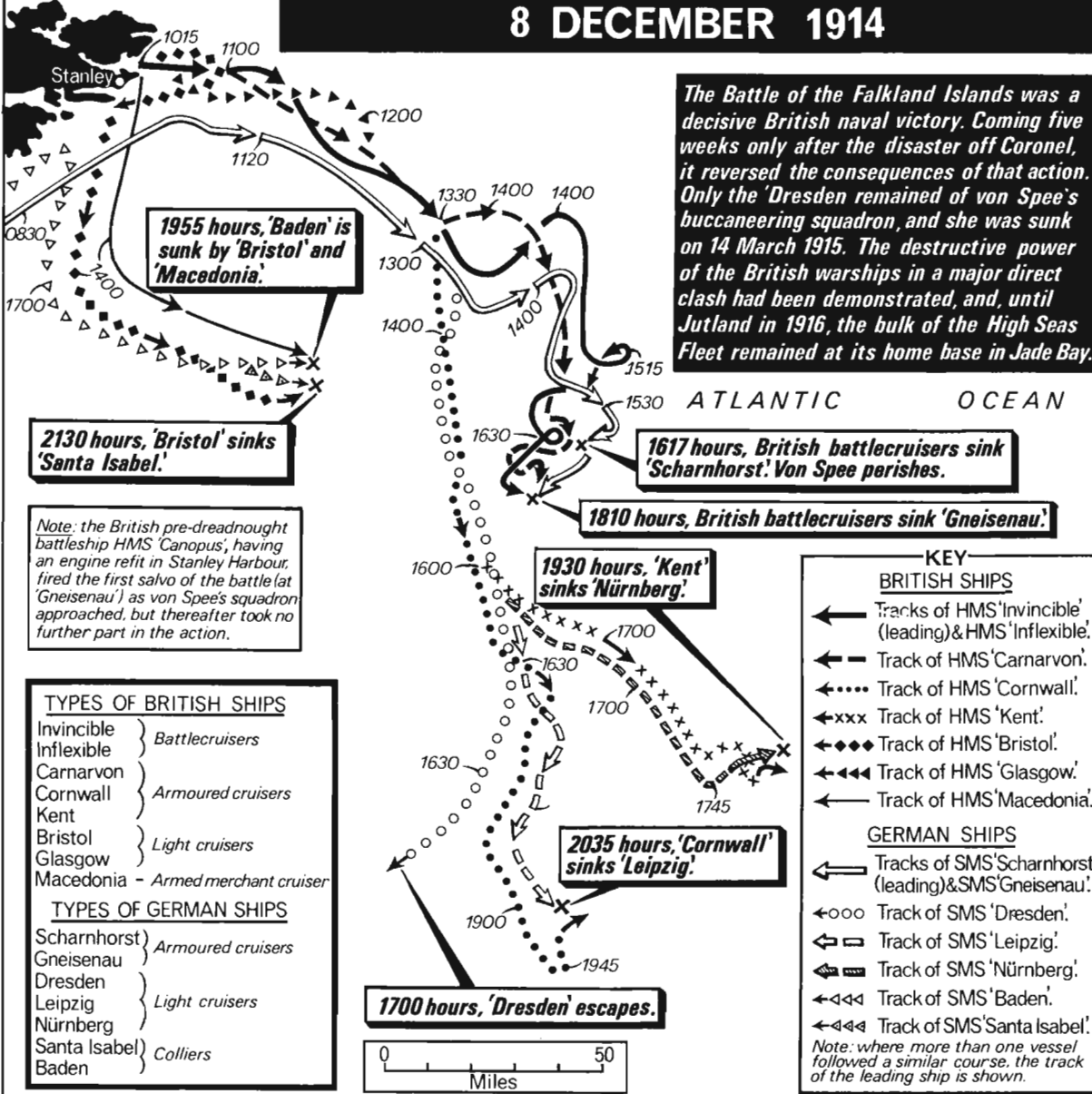
Two 9.2-in. guns
Sixteen 6-in. guns
Twelve 12-pdrs.
Three 3-pdrs.
Two 18-in. t. tubes



Flagship of Rear-Admiral Sir C. Cradock

BATTLE OF THE FALKLAND ISLANDS 8 DECEMBER 1914

EAST FALKLAND



The Battle of the Falkland Islands was a decisive British naval victory. Coming five weeks only after the disaster off Coronel, it reversed the consequences of that action. Only the 'Dresden' remained of von Spee's buccaneering squadron, and she was sunk on 14 March 1915. The destructive power of the British warships in a major direct clash had been demonstrated, and, until Jutland in 1916, the bulk of the High Seas Fleet remained at its home base in Jade Bay.

1955 hours, 'Baden' is sunk by 'Bristol' and 'Macedonia.'

2130 hours, 'Bristol' sinks 'Santa Isabel.'

Note: the British pre-dreadnought battleship HMS 'Canopus', having an engine refit in Stanley Harbour, fired the first salvo of the battle (at 'Gneisenau') as von Spee's squadron approached, but thereafter took no further part in the action.

- TYPES OF BRITISH SHIPS**
- Invincible } Battlecruisers
 - Inflexible } Battlecruisers
 - Carnarvon } Armoured cruisers
 - Cornwall } Armoured cruisers
 - Kent } Armoured cruisers
 - Bristol } Light cruisers
 - Glasgow } Light cruisers
 - Macedonia - Armed merchant cruiser
- TYPES OF GERMAN SHIPS**
- Scharnhorst } Armoured cruisers
 - Gneisenau } Armoured cruisers
 - Dresden } Light cruisers
 - Leipzig } Light cruisers
 - Nürnberg } Light cruisers
 - Santa Isabel } Colliers
 - Baden } Colliers

- KEY**
- BRITISH SHIPS**
- ← Tracks of HMS 'Invincible' (leading) & HMS 'Inflexible'.
 - ←- - Track of HMS 'Carnarvon'.
 - ←... Track of HMS 'Cornwall'.
 - ←xxx Track of HMS 'Kent'.
 - ←◆◆ Track of HMS 'Bristol'.
 - ←◀◀◀ Track of HMS 'Glasgow'.
 - ← Track of HMS 'Macedonia'.
- GERMAN SHIPS**
- ←◁ Track of SMS 'Scharnhorst' (leading) & SMS 'Gneisenau'.
 - ←○○○ Track of SMS 'Dresden'.
 - ←◻ Track of SMS 'Leipzig'.
 - ←◻ Track of SMS 'Nürnberg'.
 - ←◁◁◁ Track of SMS 'Baden'.
 - ←◁◁◁ Track of SMS 'Santa Isabel'.
- Note: where more than one vessel followed a similar course, the track of the leading ship is shown.

Note: HMS 'Inflexible' was a sister-ship.

HMS "INVINCIBLE"

L.d.: 1906
Cd.: 1908
M.s.: 26 knots
Dis.: 17,250 tons
Ct.: 750

Eight 12-in. guns
Sixteen 4-in. gs.
Three 18 in. t.t.s.

Flagship of Vice-Admiral Sir D. Sturdee

Note: SMS 'Dresden' and SMS 'Leipzig' were sister-ships.

SMS "NÜRNBERG"

Laid down: 1905
Completed: 1908
Max. speed: 26 knots
Displacement: 3,450 tons
Complement: 295

Ten 4.1-inch guns
Eight 5-pounders
Two 17.7-in. torp. tbs.

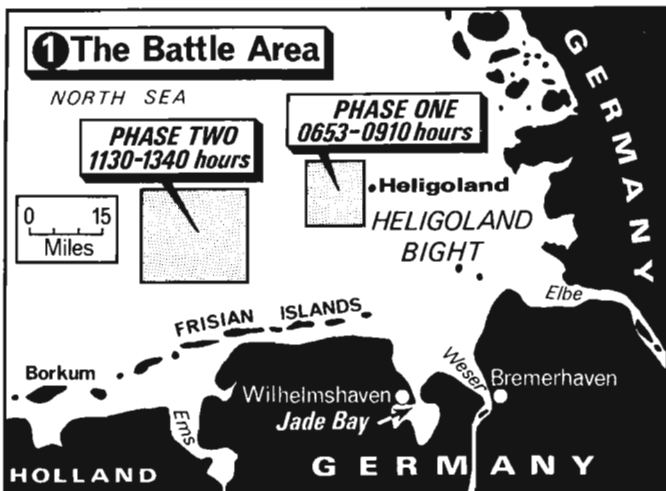
Commanded by Capt. von Schönberg

THE BATTLE OF HELIGOLAND BIGHT

28 AUGUST 1914

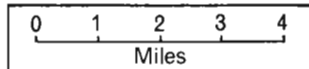
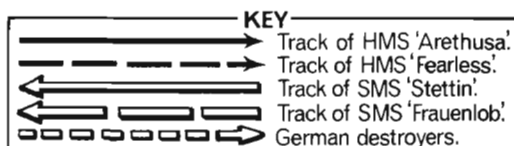
NOTE: GREENWICH MEAN TIME HAS BEEN ADOPTED FOR TRACK CALCULATIONS.

1 The Battle Area

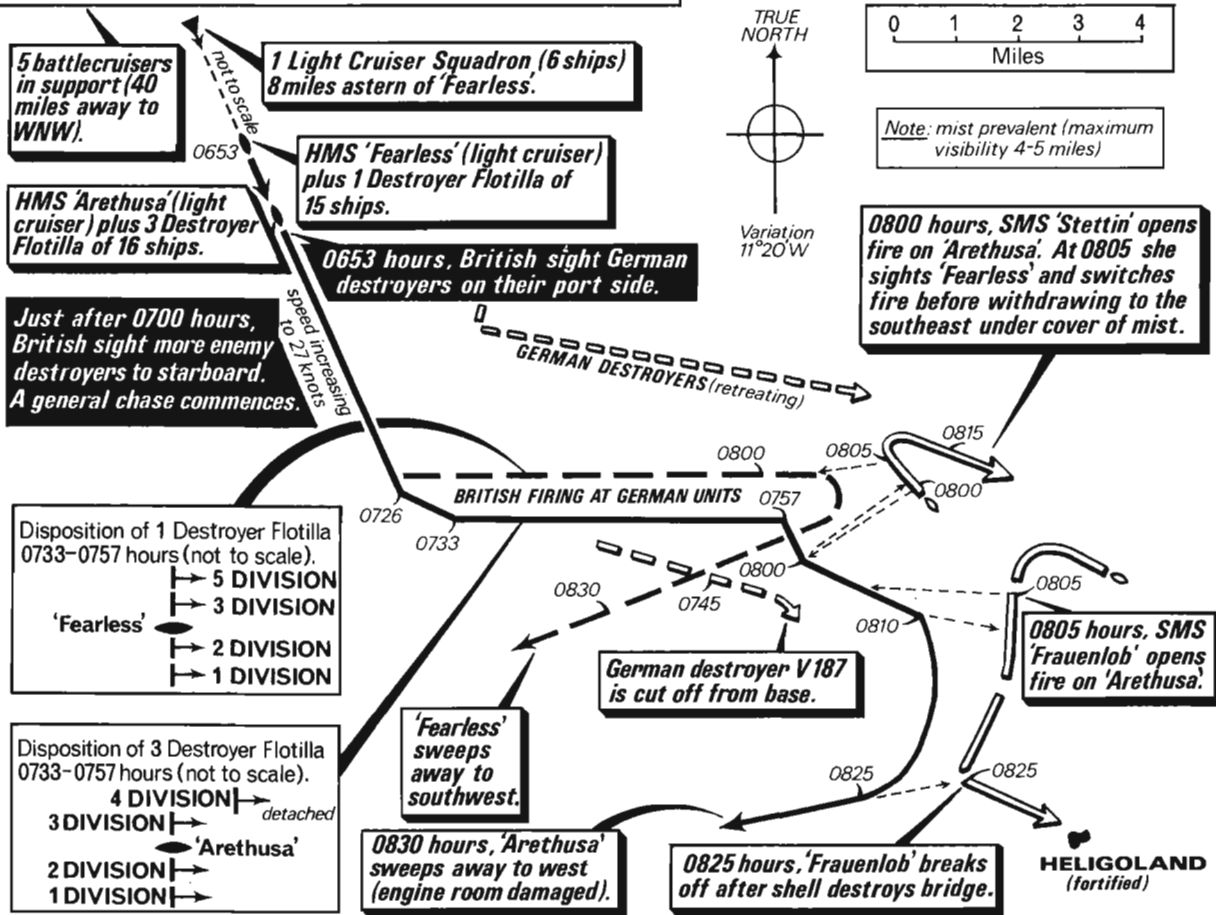


The British plan was to utilise light cruisers and destroyers to raid German patrols in and around the Heligoland Bight with the object of enticing enemy capital ships to venture out from their safe haven at the Jade. British submarines armed with 18-inch torpedo tubes would wait beneath the surface for the Germans to emerge, supported by five battlecruisers and 1 Light Cruiser Squadron (comprising six ships of the long-range 'Town' type).

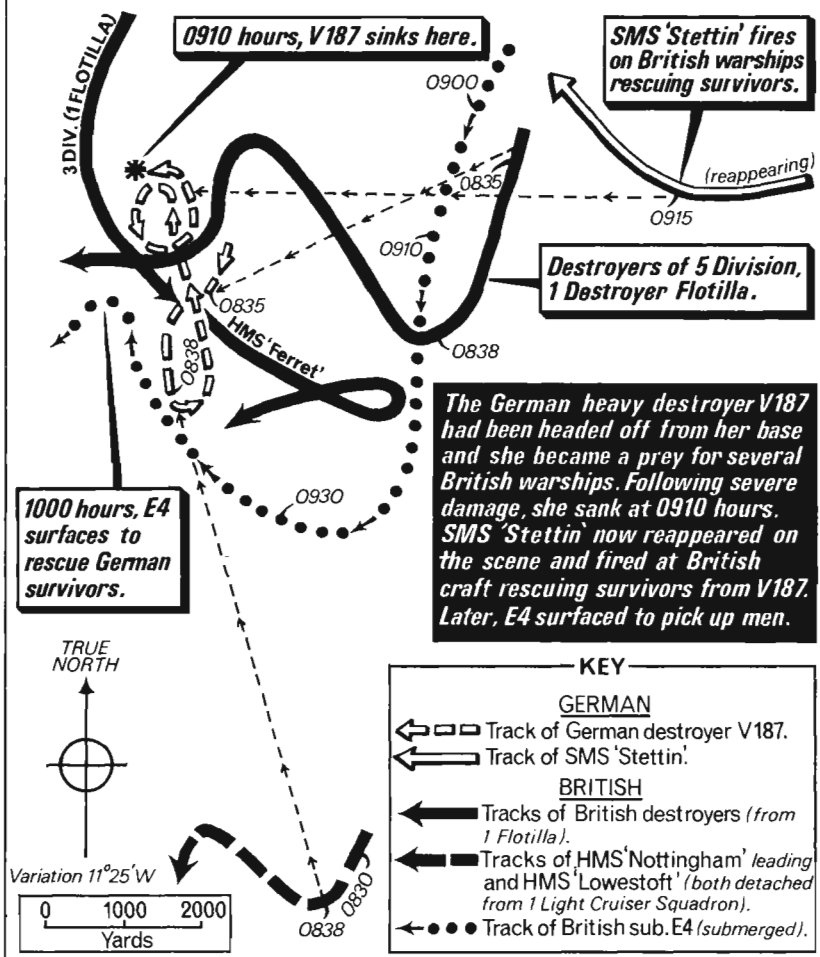
2 The First Moves 0653-0830



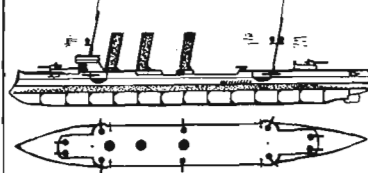
Note: mist prevalent (maximum visibility 4-5 miles)



③ The Sinking of German Destroyer V 187

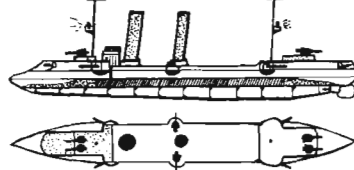


SMS 'STETTIN'



Ten 4-1-in. guns. Laid down: 1905.
Eight 5-pdrs. Completed: 1908.
Length: 360 feet. Complement: 320.
Beam: 44 feet. Displacement: 3,450 tons

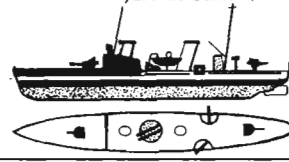
SMS 'FRAUENLOB'



Ten 4-1-in. guns. Laid down: 1900.
Ten 1-pdrs. Completed: 1903.
Length: 360 feet. Complement: 265.
Beam: 40 feet. Displacement: 2,715 tons

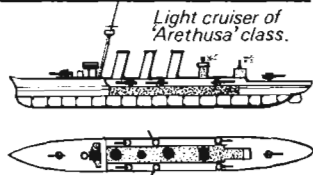
V 187

Note: the letter 'V' referred to the Vulkan construction yard at Stettin.



Two 24-pdr. guns. Complement: 84.
Three 18-in. torp. tbs. Max. speed: 35 knots.

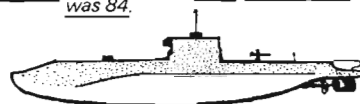
HMS 'ARETHUSA'



Laid down: 1912. Two 6-inch guns (as built; later a third was added, reolacing part of 4-inch armament).
Completed: 1914.
Length: 450 feet.
Beam: 39 feet. Six 4-inch guns.
Complement: 319. Two 3-inch guns.
Displacement: 3,512 tons. Eight 21-inch torp. tbs.
Max. speed: 29 knots. (four above water).

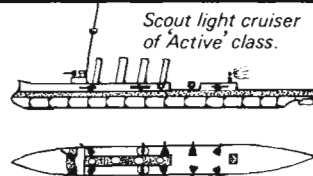
E 4

Built by Vickers at Chatham, the 'E' referred to the class. The serial no. was 84.



Five 18-in. torp. tubes. One 12-pdr. gun.
Displacement: 700 tons. Length: 181 feet.
Complement: 30. Beam: 22.5 feet.

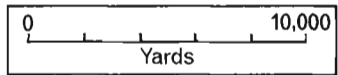
HMS 'FEARLESS'



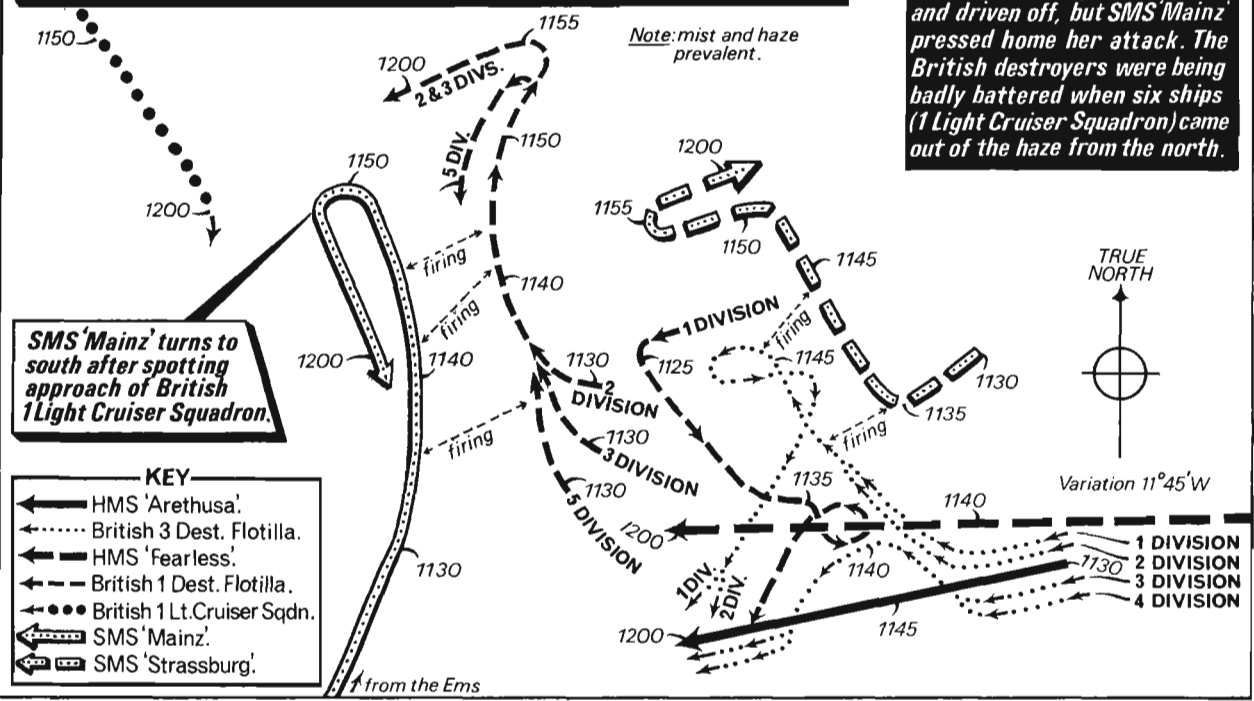
Laid down: 1911. Ten 4-inch guns.
Completed: 1913. Four 3-pounder guns.
Length: 385 feet. Two 21-inch torp. tbs.
Beam: 41.5 feet. Armour: nil. (double skin amidships).
Complement: 320.
Displacement: 3,440 tons. Mean draught: 14 feet.
Max. speed: 26 knots. H.P. 18,000.

The German battlecruisers were "trapped" behind the sand bar at the Jade and could not move out until high tide. Meanwhile, several cruisers were despatched at full speed to engage the enemy (unaware of the British battlecruisers being near at hand). SMS 'Strassburg' and SMS 'Mainz' were the first arrivals.

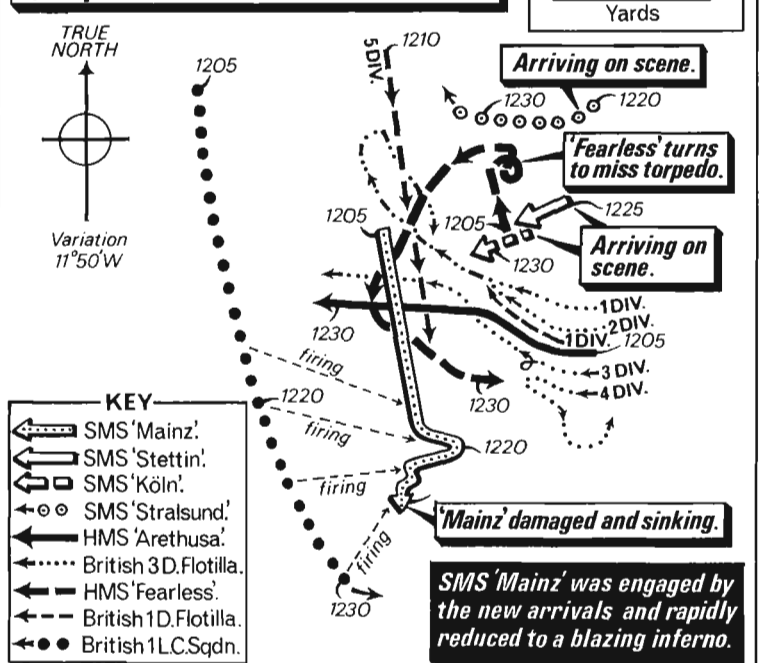
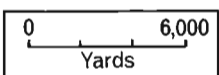
THE BATTLE OF HELIGOLAND BIGHT - continued



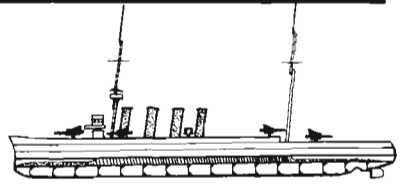
④ Start of Phase Two: Operations 1130-1200 hours



⑤ Operations 1205-1230 hours



HMS 'SOUTHAMPTON'



'Town' light cruiser of 'Chatham' class of 3 ships.

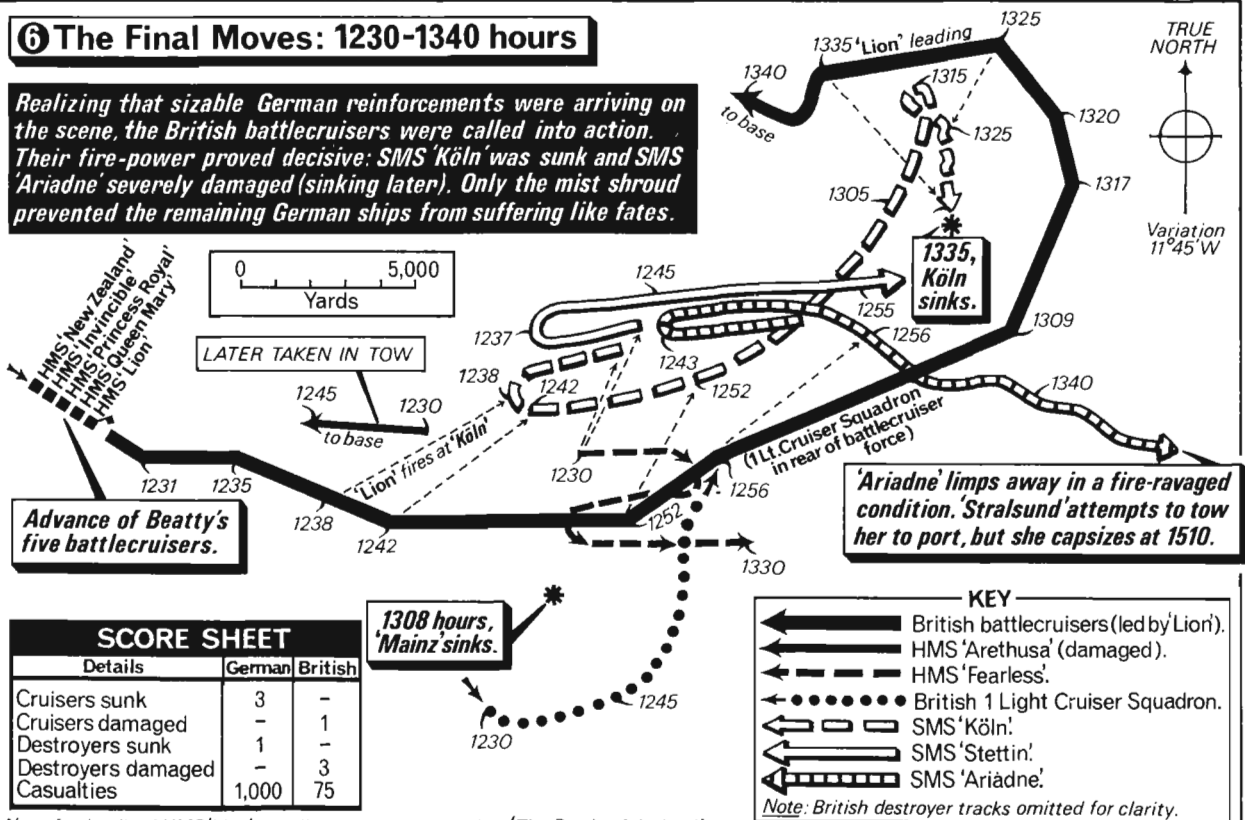
Laid down:	1911.	Eight 6-inch guns.
Completed:	1912.	Four 3-pounders.
Length:	435 feet.	Two 21-in. torp.tbs.
Beam:	48.75 feet.	Armour: 2-in. Deck.
Displacement:	5,400 tons.	Turbines: 2 screws.
Complement:	400.	H.P. 25,000.
Max. speed:	26 knots.	Mean draught: 15 ft.

BRITISH 1 LIGHT CRUISER SQUADRON (six)

HMS 'Southampton'.	HMS 'Lowestoft'.
HMS 'Birmingham'.	HMS 'Falmouth'.
HMS 'Nottingham'.	HMS 'Liverpool'.

⑥ The Final Moves: 1230-1340 hours

Realizing that sizable German reinforcements were arriving on the scene, the British battlecruisers were called into action. Their fire-power proved decisive: SMS 'Köln' was sunk and SMS 'Ariadne' severely damaged (sinking later). Only the mist shroud prevented the remaining German ships from suffering like fates.

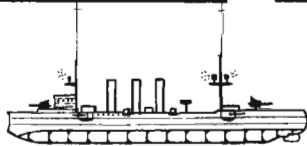


SCORE SHEET

Details	German	British
Cruisers sunk	3	-
Cruisers damaged	-	1
Destroyers sunk	1	-
Destroyers damaged	-	3
Casualties	1,000	75

Note: for details of HMS 'Lion', see diagrams accompanying 'The Battle of Jutland'.

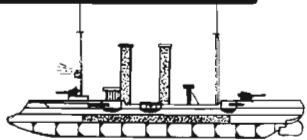
SMS 'MAINZ' & SMS 'KÖLN'



Note: both ships were light cruisers of the Kolberg class.

Laid down: 1907	} Mainz	Twelve 4.1-inch guns.
Completed: 1909		Four 5-pounder guns.
Laid down: 1908	} Köln	Four machine guns.
Completed: 1910		Two 18-inch torpedo tubes.
Length:	428 feet.	Complement: 375.
Beam:	46 feet.	Max. speed: 27 knots.
Displacement:	4,350 tons.	Max. draught: 18 feet.

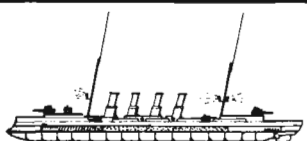
SMS 'ARIADNE'



Protected cruiser of 'Nympha' class.

Laid down: 1899.	Ten 4.1-inch guns.
Completed: 1901.	Fourteen 1-pounder guns.
Length: 328 feet.	Four machine guns.
Beam: 40 feet.	Two 17.7-inch torp. tubes.
Complement: 265.	Max. draught: 17.25 feet.
Displacement: 2,670 tons.	Armour: 2-in. Deck (amid.).
Max. speed: 21 knots.	1-in. Deck (ends).

SMS 'STRASSBURG'



Note: SMS 'Stralsund' was a sister-ship. (Similar details, including later armament alterations).

Light cruiser of 'Breslau' class.

Laid down: 1910.	Twelve 4.1-inch guns.
Completed: 1912.	(Note: later altered to seven 5.9-inch and two 3.4-inch A.A. guns).
Length: 445 feet.	
Beam: 43 feet.	Two 20-inch torp. tubes.
Complement: 370.	Displacement: 4,550 tons. Mean draught: 16.5 feet.
Displacement: 4,550 tons.	Max. speed: 28 knots. Armour: 2-in. Deck (amid.).

SUBMARINE WARFARE IN 1914

1 German U-boats in the North Sea

At the outbreak of war, British naval policy was to contain the German High Seas Fleet in the North Sea, and, believing the German U-boat range to be limited, Scapa Flow was utilised as the main British base. But, as this map illustrates, German submarines were fully capable of ranging over the whole of the North Sea and into the English Channel. After the sighting (false) of a U-boat in Scapa Flow on 1 September, the British moved their base, first to Loch Ewe, and then to Lough Swilly. This proved to be so remote that Scapa Flow's defences were strengthened in order that the British Grand Fleet could return to the North Sea area.

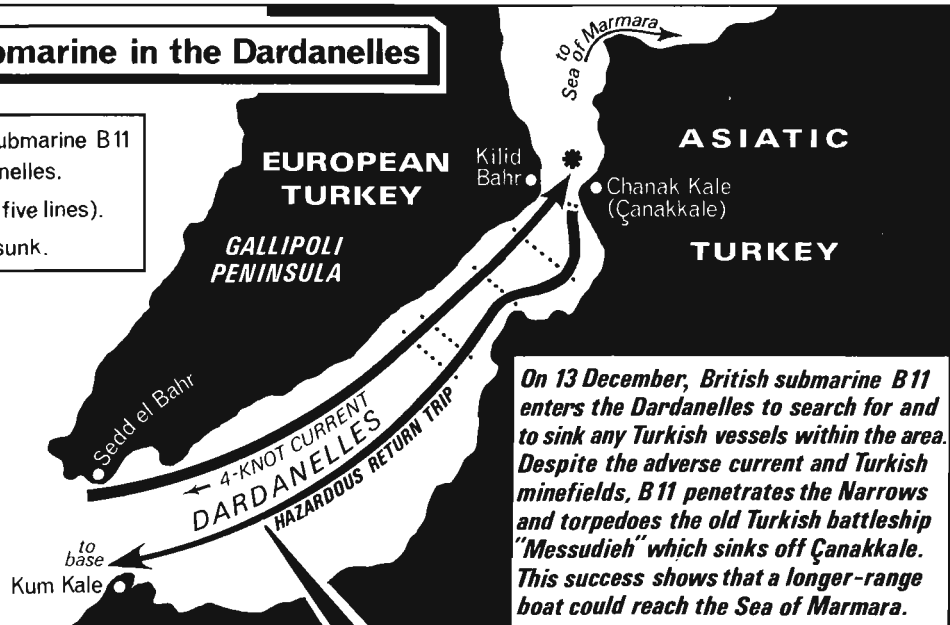
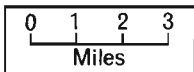
Note: whereas the British regarded their submarine force as a minor part of their navy, the Germans looked upon their U-boat arm as a major striking force.



2 A British Submarine in the Dardanelles

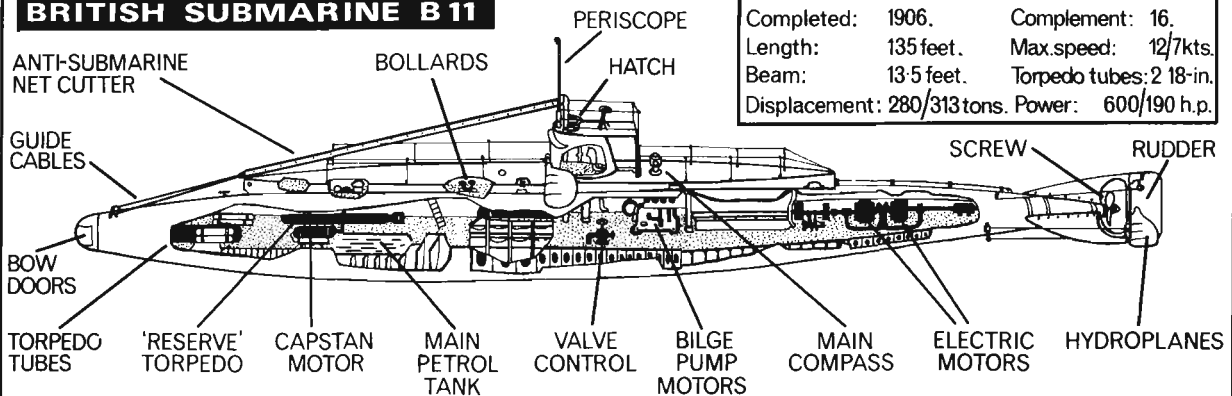
- KEY**
- Track of British submarine B11 within the Dardanelles.
 - Turkish mines (in five lines).
 - * Turkish warship sunk.

AEGEAN SEA

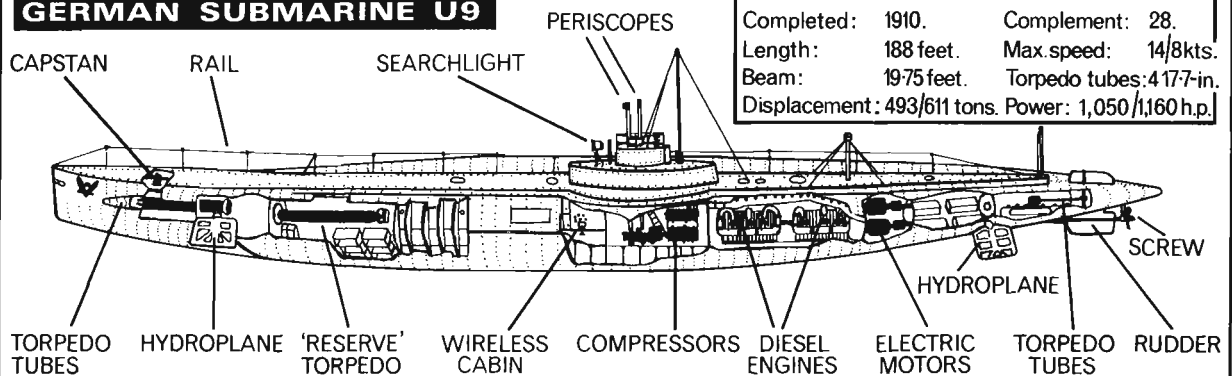


On 13 December, British submarine B11 enters the Dardanelles to search for and to sink any Turkish vessels within the area. Despite the adverse current and Turkish minefields, B11 penetrates the Narrows and torpedoes the old Turkish battleship "Messudieh" which sinks off Çanakkale. This success shows that a longer-range boat could reach the Sea of Marmara.

BRITISH SUBMARINE B11



GERMAN SUBMARINE U9

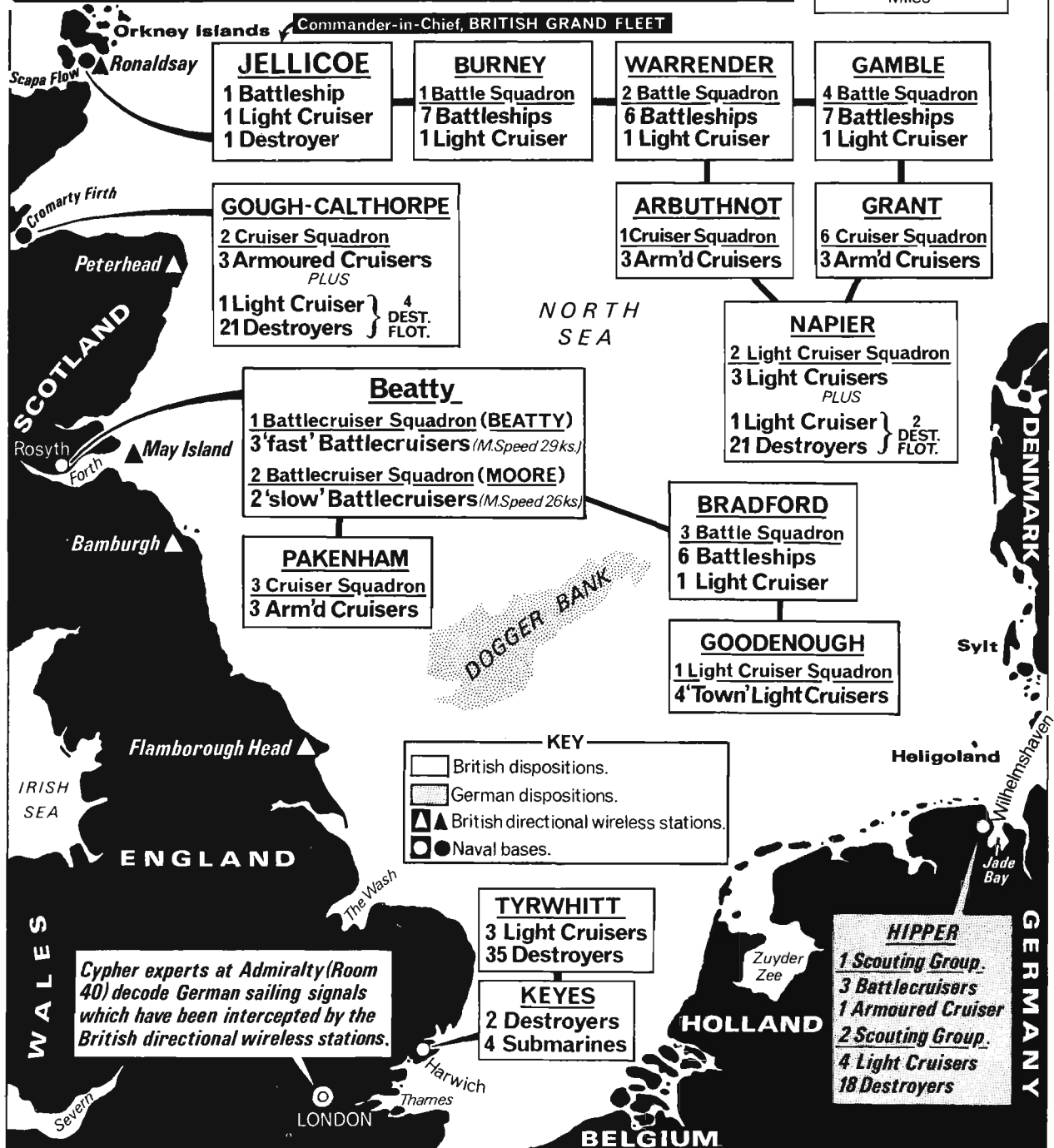
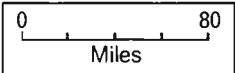


BATTLE OF THE DOGGER BANK

24 JANUARY 1915

Note: in August 1914, SMS 'Magdeburg' (a German light cruiser of the 'Breslau' class) was lost in the Baltic. The Russians recovered its signal code books and passed them to the Admiralty in London. British cypher experts utilised these for decoding purposes.

1 Eve of Battle: The Rival Commanders and Dispositions










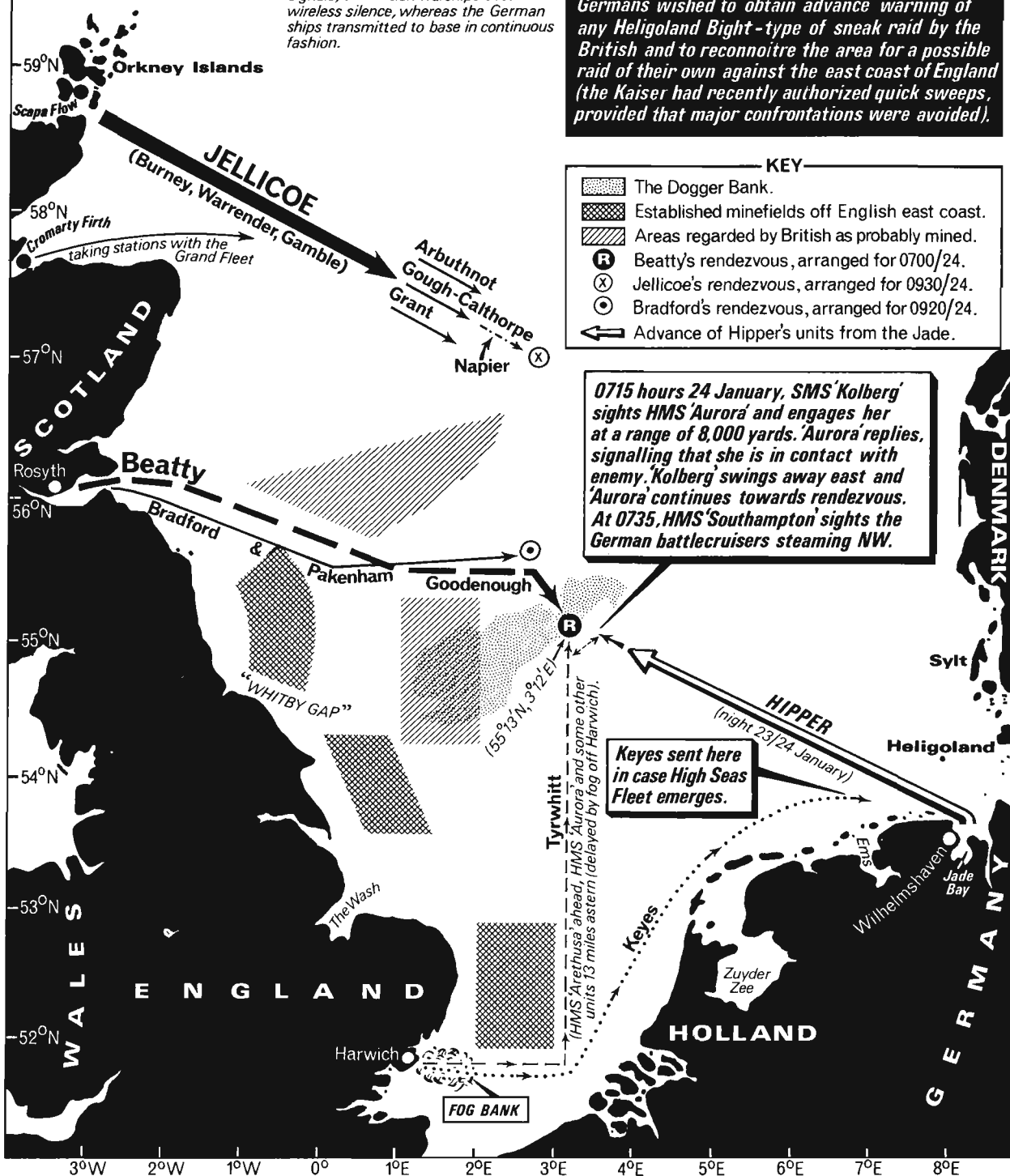
2 Convergence of the Rival Fleets

Fair Isle *Note: apart from a few brief important signals, the British warships observed wireless silence, whereas the German ships transmitted to base in continuous fashion.*

The German plan was to carry out a one-day sortie to disrupt British patrols escorting their fishing vessels off the Dogger Bank (which were regarded by the Germans as 'spy' ships). Also, the Germans wished to obtain advance warning of any Heligoland Bight-type of sneak raid by the British and to reconnoitre the area for a possible raid of their own against the east coast of England (the Kaiser had recently authorized quick sweeps, provided that major confrontations were avoided).

KEY

-  The Dogger Bank.
-  Established minefields off English east coast.
-  Areas regarded by British as probably mined.
-  Beatty's rendezvous, arranged for 0700/24.
-  Jellicoe's rendezvous, arranged for 0930/24.
-  Bradford's rendezvous, arranged for 0920/24.
-  Advance of Hipper's units from the Jade.

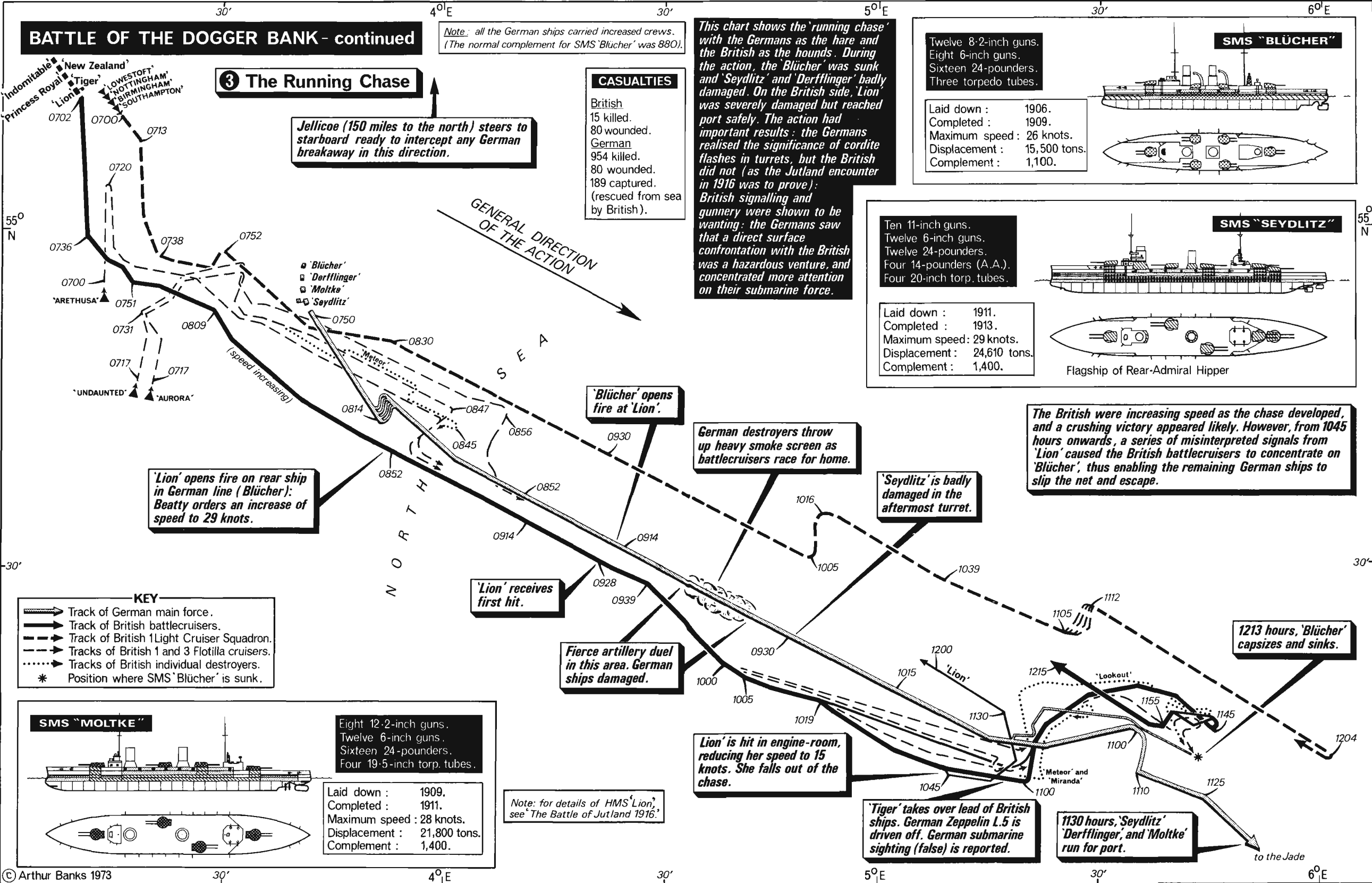


0715 hours 24 January, SMS 'Kolberg' sights HMS 'Aurora' and engages her at a range of 8,000 yards. 'Aurora' replies, signalling that she is in contact with enemy. 'Kolberg' swings away east and 'Aurora' continues towards rendezvous. At 0735, HMS 'Southampton' sights the German battlecruisers steaming NW.

Keyes sent here in case High Seas Fleet emerges.

BATTLE OF THE DOGGER BANK - continued

③ The Running Chase



Jellicoe (150 miles to the north) steers to starboard ready to intercept any German breakaway in this direction.

CASUALTIES

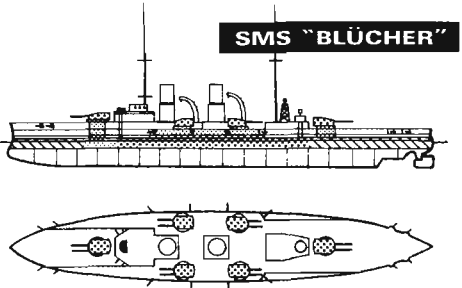
British
15 killed.
80 wounded.

German
954 killed.
80 wounded.
189 captured.
(rescued from sea by British).

This chart shows the 'running chase' with the Germans as the hare and the British as the hounds. During the action, the 'Blücher' was sunk and 'Seydlitz' and 'Derfflinger' badly damaged. On the British side, 'Lion' was severely damaged but reached port safely. The action had important results: the Germans realised the significance of cordite flashes in turrets, but the British did not (as the Jutland encounter in 1916 was to prove); British signalling and gunnery were shown to be wanting; the Germans saw that a direct surface confrontation with the British was a hazardous venture, and concentrated more attention on their submarine force.

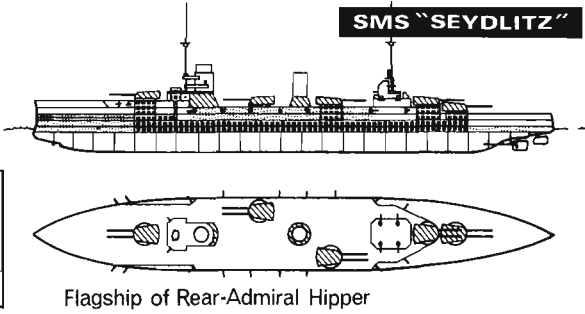
Twelve 8.2-inch guns.
Eight 6-inch guns.
Sixteen 24-pounders.
Three torpedo tubes.

Laid down : 1906.
Completed : 1909.
Maximum speed : 26 knots.
Displacement : 15,500 tons.
Complement : 1,100.



Ten 11-inch guns.
Twelve 6-inch guns.
Twelve 24-pounders.
Four 14-pounders (A.A.).
Four 20-inch torp. tubes.

Laid down : 1911.
Completed : 1913.
Maximum speed : 29 knots.
Displacement : 24,610 tons.
Complement : 1,400.



'Lion' opens fire on rear ship in German line (Blücher): Beatty orders an increase of speed to 29 knots.

'Blücher' opens fire at 'Lion'.

German destroyers throw up heavy smoke screen as battlecruisers race for home.

'Seydlitz' is badly damaged in the aftermost turret.

The British were increasing speed as the chase developed, and a crushing victory appeared likely. However, from 1045 hours onwards, a series of misinterpreted signals from 'Lion' caused the British battlecruisers to concentrate on 'Blücher', thus enabling the remaining German ships to slip the net and escape.

'Lion' receives first hit.

Fierce artillery duel in this area. German ships damaged.

'Lion' is hit in engine-room, reducing her speed to 15 knots. She falls out of the chase.

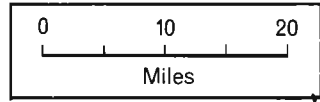
'Tiger' takes over lead of British ships. German Zeppelin L.5 is driven off. German submarine sighting (false) is reported.

1130 hours, 'Seydlitz', 'Derfflinger', and 'Moltke' run for port.

1213 hours, 'Blücher' capsizes and sinks.

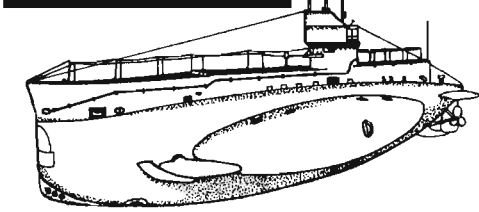
THE SUCCESSFUL ALLIED SUBMARINE CAMPAIGN AT THE TIME OF THE GALLIPOLI EXPEDITION MAY-DECEMBER 1915

Although some success attended early Allied infiltrations into the Sea of Marmara, it was not until the late summer (when guns were fitted to the decks of submarines) that major results began to be achieved. The Allies kept two submarines in continuous operation in the Sea of Marmara, and their activities consisted of sinking dhows, bombarding shore installations and railway lines, and generally harassing Turkish sea traffic until it was virtually non-existent. Thus, this campaign was an important supplement to the Allied land-effort on the Gallipoli peninsula. This map shows some of the submariners' exploits.

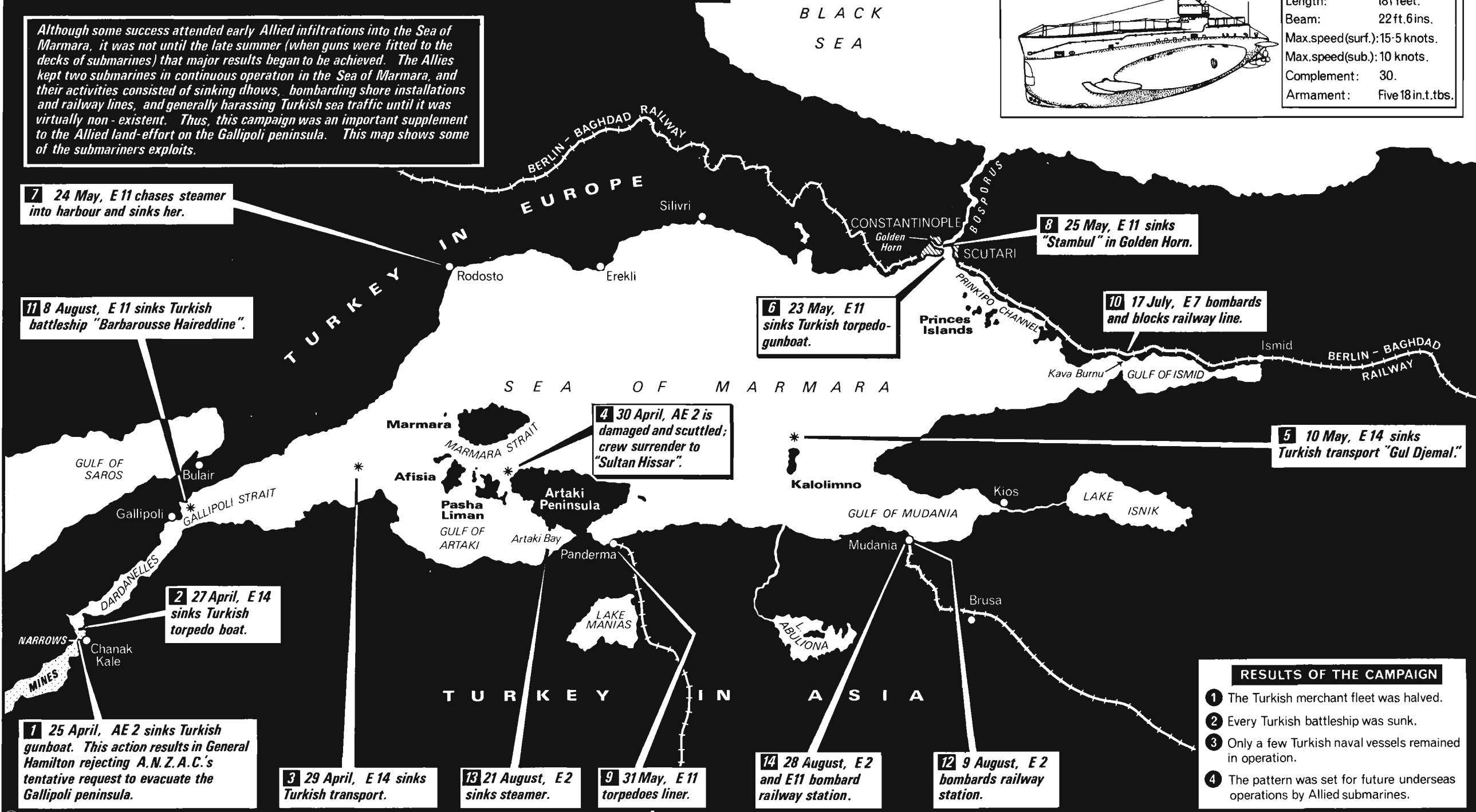


ROYAL AUSTRALIAN NAVY SUBMARINE 'AE 2'

AE 2 was the first Allied submarine to reach the Sea of Marmara via the Narrows.



Class and type:	'E'.
Built:	1913/1914.
Length:	181 feet.
Beam:	22 ft. 6 ins.
Max. speed (surf.):	15.5 knots.
Max. speed (sub.):	10 knots.
Complement:	30.
Armament:	Five 18 in. t.tbs.



7 24 May, E 11 chases steamer into harbour and sinks her.

11 8 August, E 11 sinks Turkish battleship "Barbarousse Haireddine".

6 23 May, E 11 sinks Turkish torpedo-gunboat.

8 25 May, E 11 sinks "Sambul" in Golden Horn.

10 17 July, E 7 bombards and blocks railway line.

5 10 May, E 14 sinks Turkish transport "Gul Djemal".

4 30 April, AE 2 is damaged and scuttled; crew surrender to "Sultan Hissar".

2 27 April, E 14 sinks Turkish torpedo boat.

1 25 April, AE 2 sinks Turkish gunboat. This action results in General Hamilton rejecting A.N.Z.A.C.'s tentative request to evacuate the Gallipoli peninsula.

3 29 April, E 14 sinks Turkish transport.

13 21 August, E 2 sinks steamer.

9 31 May, E 11 torpedoes liner.

14 28 August, E 2 and E 11 bombard railway station.

12 9 August, E 2 bombards railway station.

RESULTS OF THE CAMPAIGN

- 1** The Turkish merchant fleet was halved.
- 2** Every Turkish battleship was sunk.
- 3** Only a few Turkish naval vessels remained in operation.
- 4** The pattern was set for future undersea operations by Allied submarines.

BRITISH BATTLESHIP LOSSES DURING THE GALLIPOLI CAMPAIGN MAY 1915

KEY

- * Positions of the three British battleships when sunk during May.
- ★ Main forts.

On 12 May, HMS "Queen Elizabeth" was ordered home from the Aegean area to strengthen the British Grand Fleet. On 13 May, the British battleship HMS "Goliath" was sunk by a Turkish destroyer, and later in the month the U21 sank two more British battleships. The Allied heavy warships were withdrawn from the Gallipoli operations leaving the land troops with no large naval guns to support them until the new monitors arrived in August.

2 1225 hours 25 May, U 21 torpedoes HMS "Triumph" in full view of A.N.Z.A.C. troops. 3 British officers and 70 men are lost. De Robeck promptly recalls all large warships to Mudros: this causes a demoralizing effect upon the Allied troops on land. HMS "Majestic" is ordered to 'W' Beach on 26 May.

AEGEAN
SEA

'W' Beach

Cape Helles

Morto Bay

Eski Hissarlik Pt.

3 0645 hours 27 May, U 21 fires two torpedoes at HMS "Majestic". The "fish" penetrate the protecting torpedo-nets and British battleship sinks with the loss of 40 men.

1 0116 hours 13 May, HMS "Goliath" is sunk by Turkish destroyer "Muavenet-i-Millet." Operating under cover of a thick mist, the destroyer fires three torpedoes. 570 British officers and men are lost. This is the largest single disaster suffered by the Royal Navy throughout the Dardanelles and Gallipoli campaign.

GALLIPOLI
PENINSULA

Boghali

Maidos

Kilid Bahr

Chanak Kale

0 1 2 3
Miles

ROUTE OF U 21
TO THE AEGEAN

U 21 DEPARTS
25 APRIL.

U 21 ARRIVES HERE ON
13 MAY. CREW RESTS
FOR ONE WEEK WHILE
SUBMARINE IS
REFUELLED AND
STORES REPLENISHED.

Wilhelmshaven

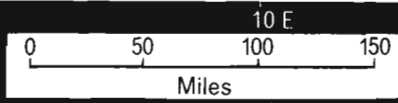
Cattaro

Cape Helles

0 600
Miles

25 MAY, U 21 ARRIVES
OFF CAPE HELLES.

NORTH SEA RIVAL STRATEGIES



KEY

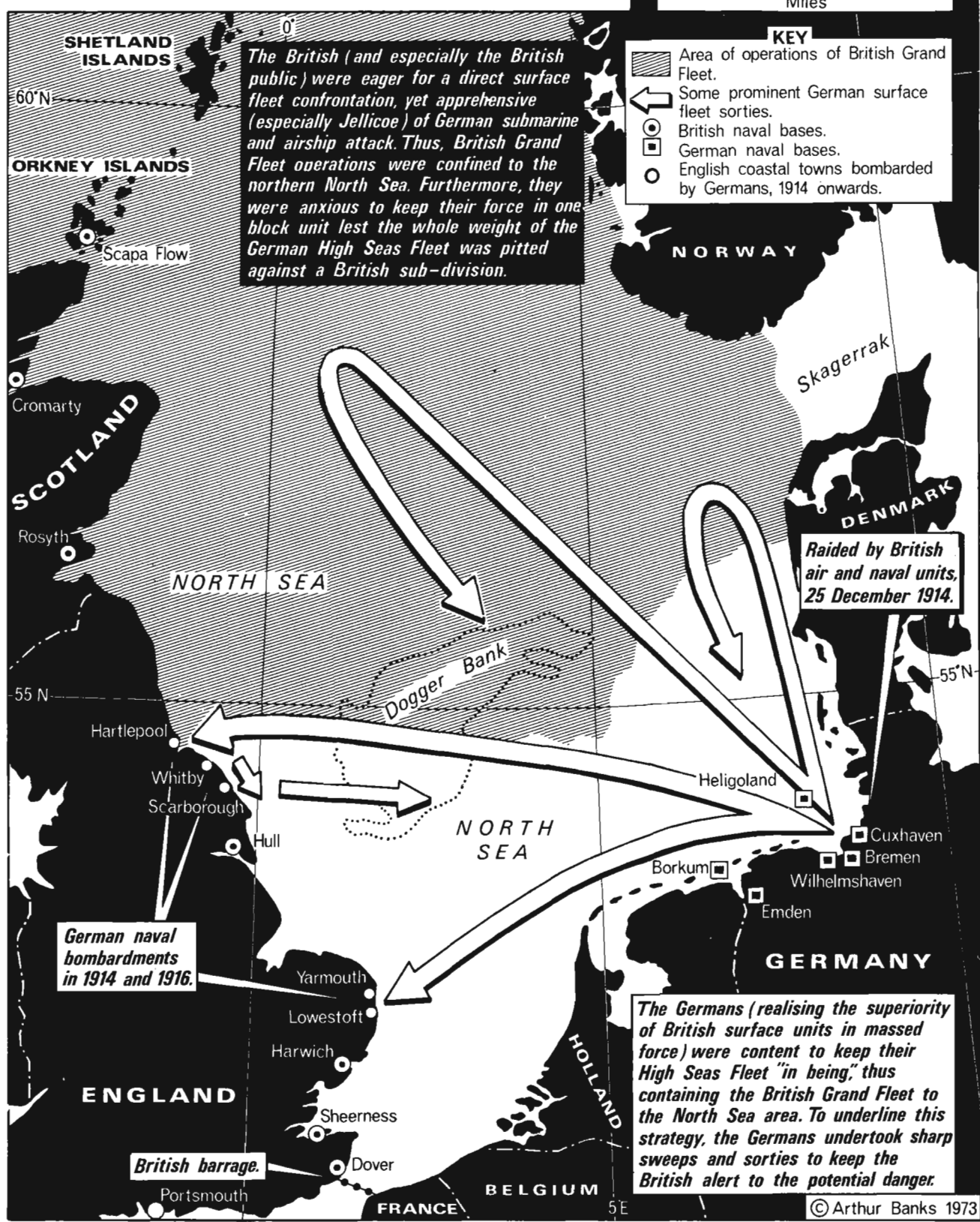
- Area of operations of British Grand Fleet.
- Some prominent German surface fleet sorties.
- British naval bases.
- German naval bases.
- English coastal towns bombed by Germans, 1914 onwards.

The British (and especially the British public) were eager for a direct surface fleet confrontation, yet apprehensive (especially Jellicoe) of German submarine and airship attack. Thus, British Grand Fleet operations were confined to the northern North Sea. Furthermore, they were anxious to keep their force in one block unit lest the whole weight of the German High Seas Fleet was pitted against a British sub-division.

Raided by British air and naval units, 25 December 1914.

German naval bombardments in 1914 and 1916.

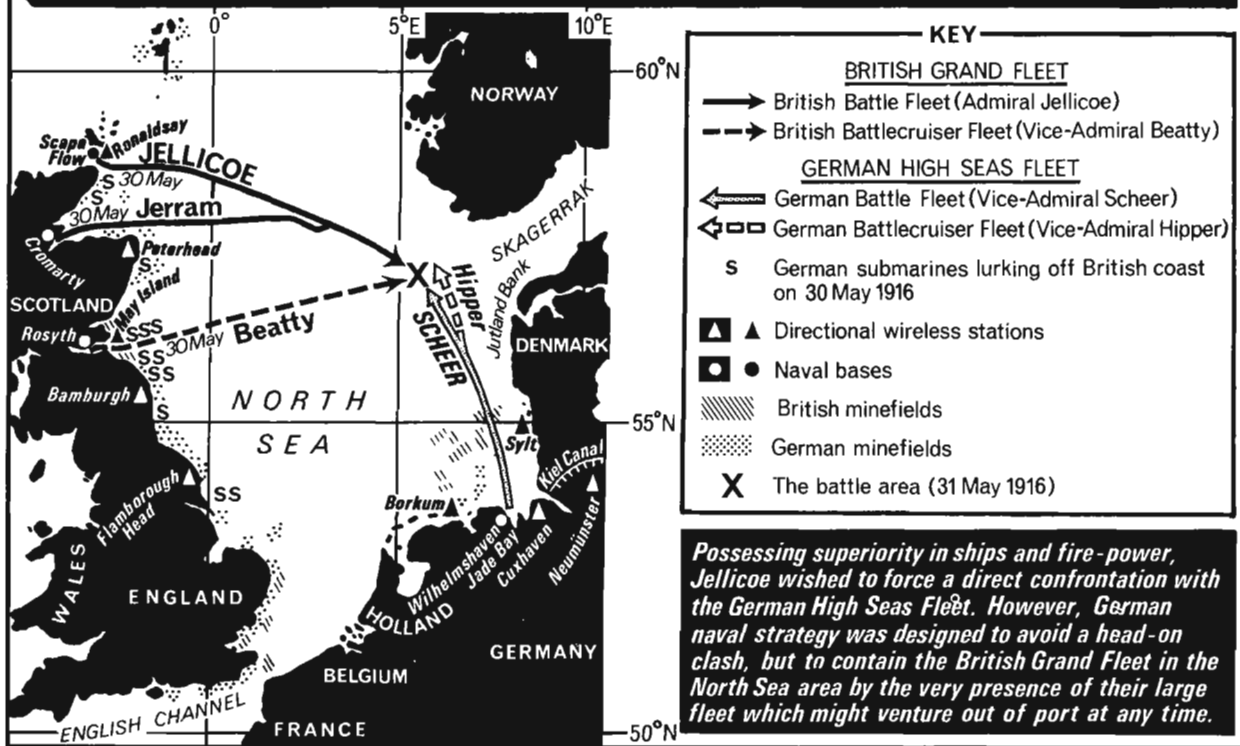
The Germans (realising the superiority of British surface units in massed force) were content to keep their High Seas Fleet "in being," thus containing the British Grand Fleet to the North Sea area. To underline this strategy, the Germans undertook sharp sweeps and sorties to keep the British alert to the potential danger.



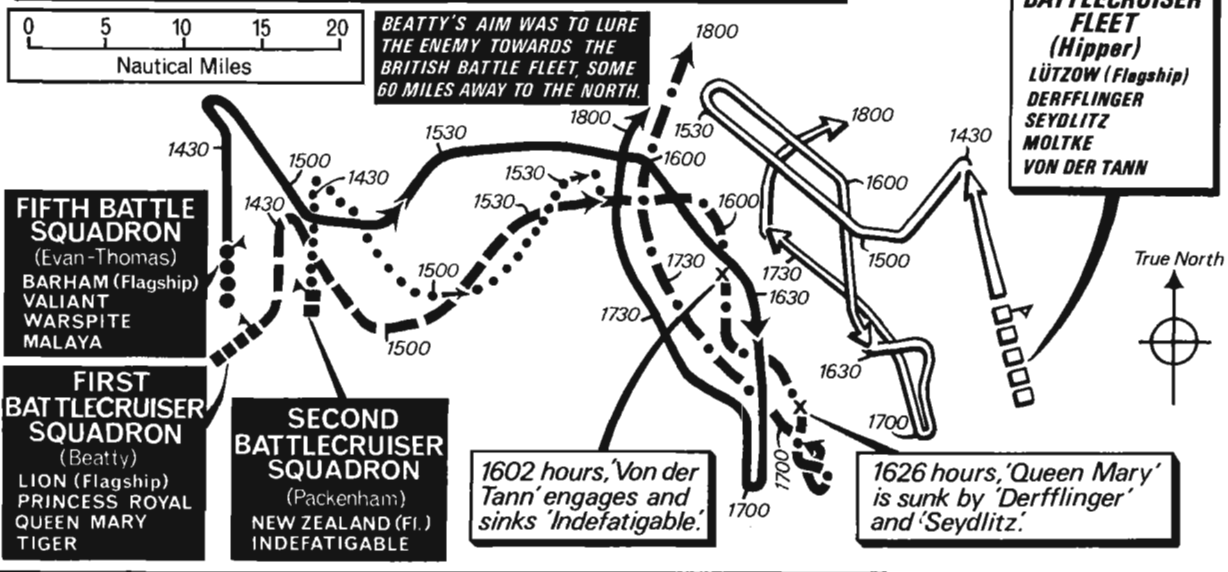
THE BATTLE OF JUTLAND 31 MAY 1916

Note; to avoid any possible confusion, times are based on the 24-hour clock system.

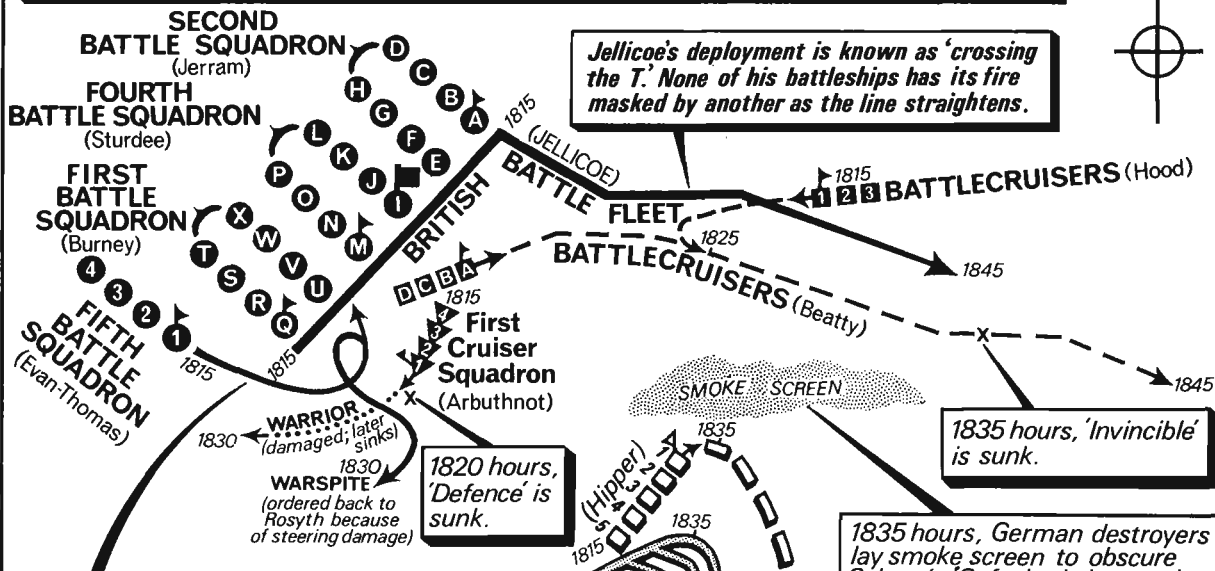
1 The advances of the British and German fleets to the scene of Jutland



2 The Opening Action—clash of the battlecruisers



③ Jellicoe's Deployment and Scheer's 'Gefechtskehrtwendung'



1815 hours, Jellicoe's maximum visibility from 'Iron Duke' (see key) is 5 miles.

1835 hours, 'Invincible' is sunk.

1835 hours, German destroyers lay smoke screen to obscure Scheer's 'Gefechtskehrtwendung' (battle-turn away).

1850 hours, Hipper orders badly-damaged 'Lützow' to break off and make for the Jade.

- GERMAN BATTLE FLEET** (now steaming in reverse order)
- König
 - Grosser Kurfürst
 - Kronprinz
 - Markgraf
 - Kaiser
 - Kaiserin
 - Prinzregent Luitpold
 - Friedrich der Grosse
 - Ostfriesland
 - Thüringen
 - Helgoland
 - Oldenburg
 - Posen
 - Rheinland
 - Nassau
 - Westfalen
 - Deutschland
 - Hessen
 - Pommern
 - Hannover
 - Schlesien
 - Schleswig Holstein
- THIRD BATTLE SQUADRON (Behrcke)**
- FIRST BATTLE SQUADRON (Schmidt)**
- SECOND BATTLE SQUADRON (Mauve)**

KEY TO GERMAN BATTLECRUISERS

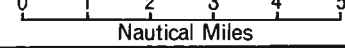
1	LÜTZOW
2	DERFFLINGER
3	SEYDLITZ
4	MOLTKE
5	VON DER TANN

KEY TO BRITISH BATTLESHIPS

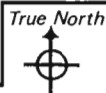
A King George V	B Ajax	C Centurion	D Erin
E Orion	F Monarch	G Conqueror	H Thunderer
I Iron Duke	J Royal Oak	K Superb	L Canada
M Benbow	N Bellerophon	O Téméraire	P Vanguard
Q Marlborough	R Revenge	S Hercules	T Agincourt
U Colossus	V Collingwood	W Neptune	X St. Vincent
1 Barham	2 Valiant	3 Warspite	4 Malaya

KEY TO BRITISH BATTLECRUISERS AND CRUISERS

A LION	1 INVINCIBLE	▽ Black Prince	■ Battlecruiser
B PRINCESS ROYAL	2 INFLEXIBLE	▽ Duke of Edinburgh	▽ Cruiser
C TIGER	3 INDOMITABLE	▽ Warrior	
D NEW ZEALAND		▽ Defence	



THE BATTLE OF JUTLAND-continued

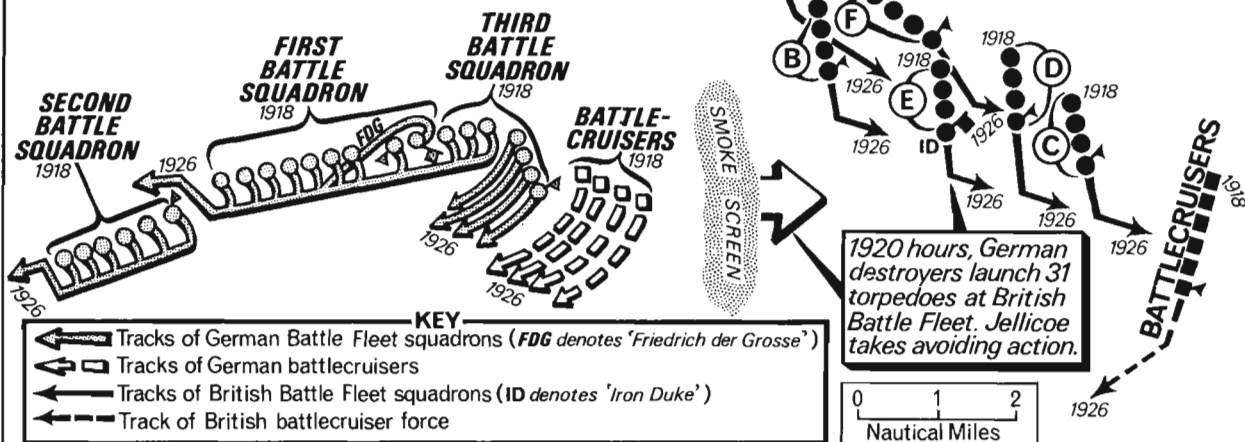


④ The Battle Fleets in action for the second time

Following its battle-turn away at 1835 hours, the German Fleet was steering west, away from its home base at the Jade. Realising his situation, Scheer turned east to head for home, noting that the advantageous hours of darkness were in the offing. Again the two fleets came into contact, whereupon the Germans executed a further battle-turn away from the British.

BRITISH BATTLE FLEET

- (A) } 1st. Battle Squadron
- (B) }
- (C) } 2nd. Battle Squadron
- (D) }
- (E) } 4th. Battle Squadron
- (F) }
- (G) } 5th. Battle Squadron

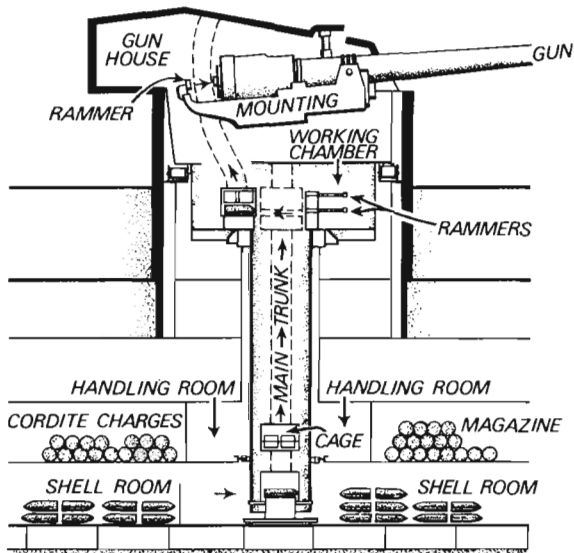


KEY

- ← Tracks of German Battle Fleet squadrons (FDG denotes 'Friedrich der Grosse')
- ← Tracks of German battlecruisers
- ← Tracks of British Battle Fleet squadrons (ID denotes 'Iron Duke')
- Track of British battlecruiser force

A BRITISH BATTLECRUISER GUN TURRET

The loss of three British battlecruisers at Jutland was attributed to lack of adequate anti-flash screening between magazine and handling-room.



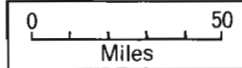
A shell exploding in the gun house of a turret could ignite a chain of charges down to the magazine section.

BRITISH AND GERMAN LOSSES AT JUTLAND

DETAILS	BRITISH	GERMAN
Total of ships engaged	151	99
Total of men employed	60,000	36,000
Battleships sunk	0	1
Battlecruisers sunk	3	1
Armoured cruisers sunk	3	0
Light cruisers sunk	0	4
Destroyers sunk	8	5
Casualties	6,097	2,551

The Battle of Jutland (known to the Germans as the 'Skagerrak') was a German success in terms of ships sunk and men lost, and contributed to Russia's exit from the war. Allied supplies to the hard-pressed Russian armies could not be guaranteed, as the Baltic approaches remained in possession of the High Seas Fleet. A controversy commenced in Britain to apportion the blame for the result, and a Jellicoe versus Beatty campaign ensued. Nevertheless, the German Fleet had been badly mauled, and U-boat warfare against British commerce was a consequence.

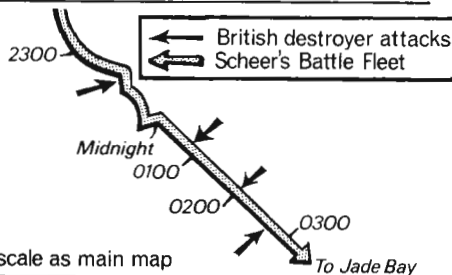
5 The escape of the German Fleet—the night chase



Throughout the hours of darkness, 31 May–1 June, there now followed a general chase towards the Jade, with the German warships intent on making their base with all haste, and the British warships bent on interposing themselves to block the various escape routes along the mine-swept channels. The bulk of the High Seas Fleet did, in fact, evade its pursuers, but arrived home in a severely battered condition, and unfit for further immediate service. The British squadrons re-formed, and, fearing a large submarine attack (German reconnaissance zeppelin L11 had shadowed him since 0319 hours), Jellicoe ordered the Grand Fleet back to its bases. Within 48 hours, Jellicoe had his fleet at a state of instant readiness for a fresh encounter – indicating how he had really fared at Jutland Bank!

Note: during the night chase, the British Admiralty in London intercepted various German wireless signals stating Scheer's positions en route for the Jade. The use to which this valuable information was put by the British, is still undetermined.

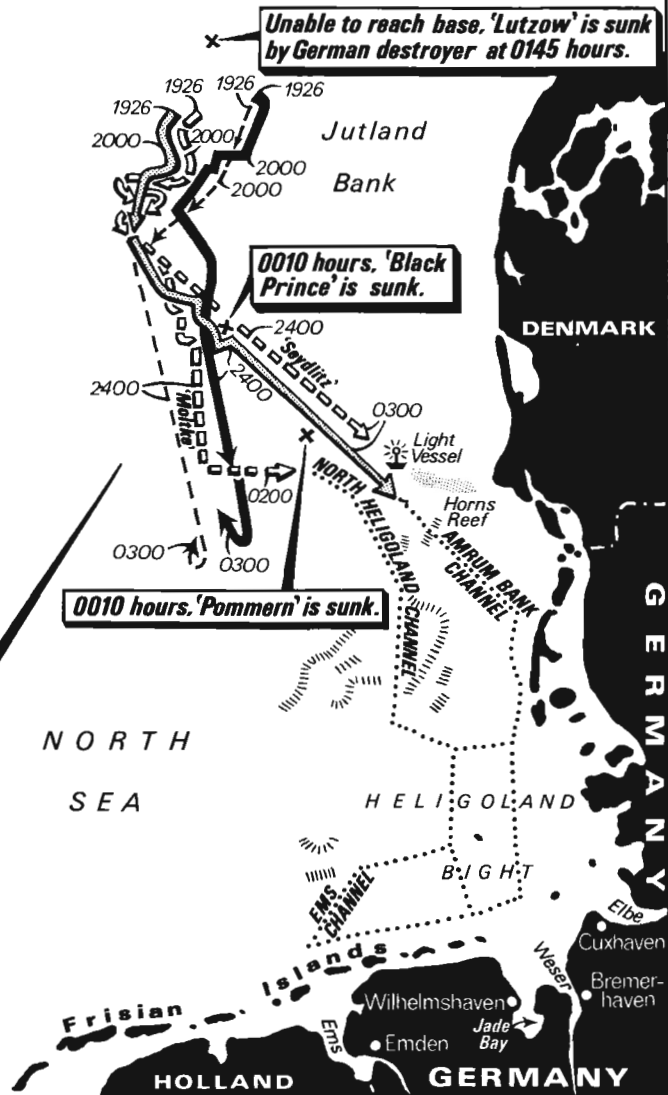
THE NIGHT ATTACKS BY BRITISH DESTROYERS



Same scale as main map

KEY

- Track of Jellicoe's Battle Fleet
- - - Track of Beatty's Battlecruisers
- Track of Scheer's Battle Fleet
- Tracks of Hipper's Battlecruisers
- ||||| British-laid minefields by 1 June, 1916
- German-swept channels 1 June 1916



Smaller units were operating with the British and German Battle and Battlecruiser Fleets – these are listed below
Abbreviations:– S= Squadron, F= Flotilla, AC= Armoured Cruiser, LC= Light Cruiser, D= Destroyer, SG = Scouting Group

BRITISH BATTLE FLEET

1st. ACS	4 ships
2nd. ACS	4 ships
4th. LCS	5 ships
4th. LCS (attached)	6 ships
4th. DF	19 ships
11th. DF	16 ships
12th. DF	16 ships
plus	
Minelayers	1 ship
D Tenders	1 ship

BRITISH BATTLECRUISER FLEET

1st. LCS	4 ships
2nd. LCS	4 ships
3rd. LCS	4 ships
1st. DF	10 ships
9th. & 10th. DF (comb)	8 ships
13th. DF	11 ships
plus	
Seaplane Carriers	1 ship

GERMAN BATTLE FLEET

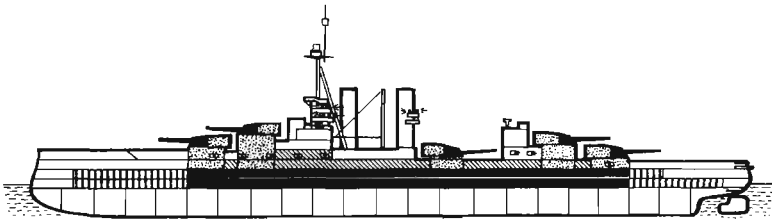
4th. SG (LC)	5 ships
LC	1 ship
1st. DF (half)	4 ships
3rd. DF	7 ships
5th. DF	11 ships
7th. DF	9 ships

GERMAN BATTLECRUISER FLEET

2nd. SG (LC)	4 ships
LC	1 ship
2nd. DF	10 ships
6th. DF	9 ships
9th. DF	11 ships

THE BATTLE OF JUTLAND - continued

HMS "IRON DUKE" (Flagship of Admiral Jellicoe)

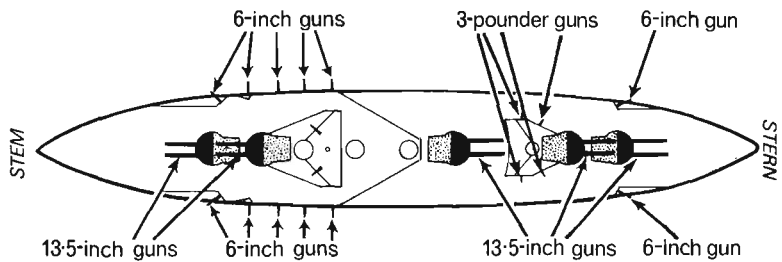


ARMAMENT

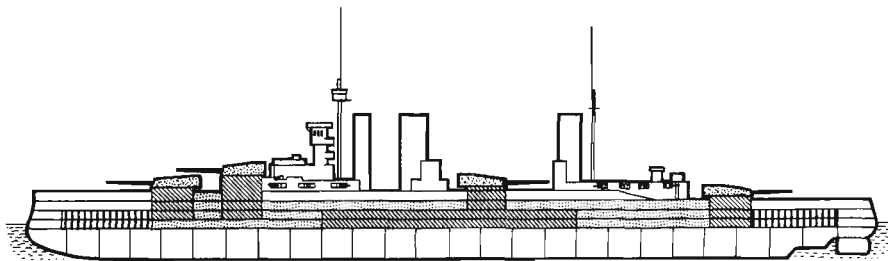
Ten 13.5-inch guns
 Twelve 6-inch guns
 Four 3-pounder guns
 Four 21-inch torpedo tubes

The 'Iron Duke' was a Dreadnought battleship, and the class was named after her. Sister-ships were 'Benbow', 'Emperor of India', and 'Marlborough'.

Laid down:	1912
Completed:	1914
Displacement:	25,000 tons
Waterline length:	620 feet
Maximum speed:	23 knots
Complement:	900



HMS "LION" (Flagship of Vice-Admiral Beatty)

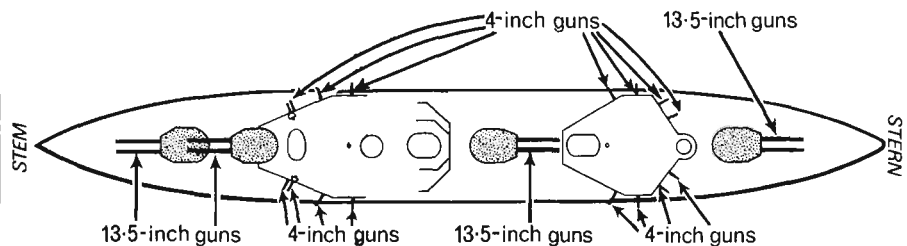


ARMAMENT

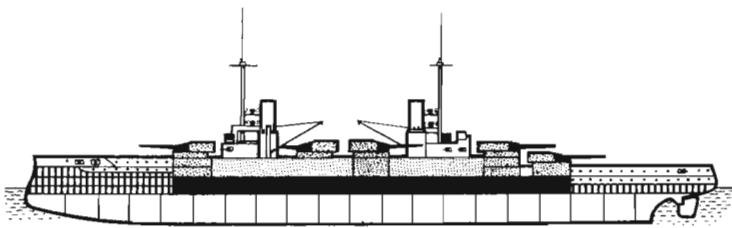
Eight 13.5-inch guns
 Sixteen 4-inch guns
 Three 21-inch torpedo tubes

The 'Lion' was a battlecruiser, and the class was named after her. There was one sister-ship, 'Princess Royal'.

Laid down:	1909
Completed:	1912
Displacement:	26,350 tons
Waterline length:	675 feet
Maximum speed:	29 knots
Complement:	1,000



SMS "FRIEDRICH DER GROSSE" (Flagship of Vice-Admiral Scheer)

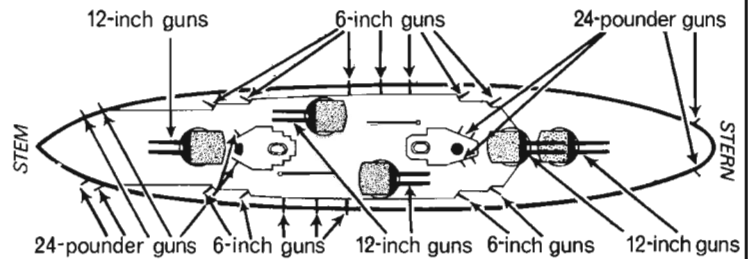


ARMAMENT

Ten 12-inch guns
 Fourteen 6-inch guns
 Twelve 24-pounder guns
 Four 14-pounder anti-aerial guns
 Five 20-inch torpedo tubes

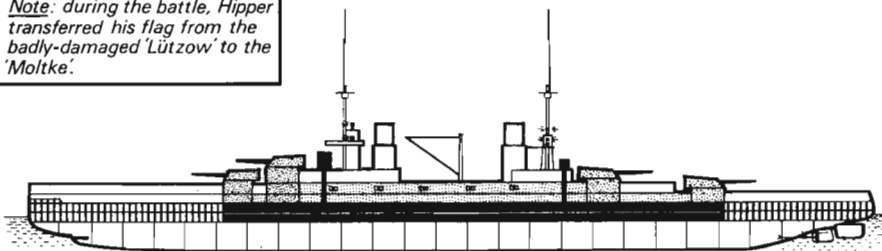
The 'Friedrich der Grosse' was a Dreadnought battleship of the 'Kaiser' class. Sister-ships were 'Kaiser', 'Kaiserin', 'Prinzregent Luitpold', and 'König Albert'.

Laid down: 1909
 Completed: 1912
 Displacement: 24,700 tons
 Waterline length: 564 feet
 Maximum speed: 23 knots
 Complement: 1,088



SMS "LÜTZOW" (Flagship of Vice-Admiral Hipper)

Note: during the battle, Hipper transferred his flag from the badly-damaged 'Lützow' to the 'Moltke'.

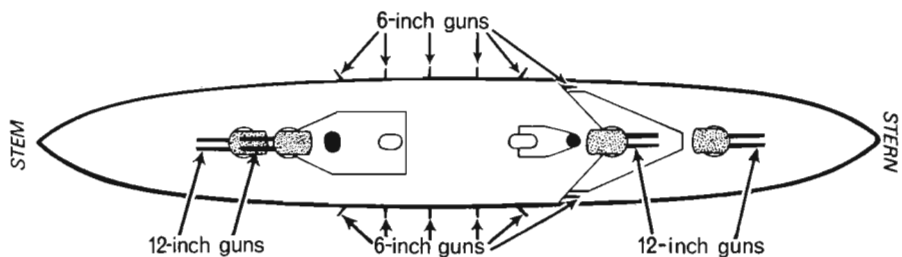


ARMAMENT

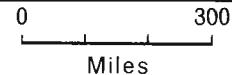
Eight 12-inch guns
 Twelve 6-inch guns
 Twelve 24-pounder guns
 Five 22-inch torpedo tubes

The 'Lützow' was a battlecruiser, and sister-ships were 'Derfflinger' and 'Ersatz Hertha'.

Laid down: 1912
 Completed: 1915
 Displacement: 28,000 tons
 Waterline length: 590 feet
 Maximum speed: 29 knots
 Complement: 1,100



GERMAN AND AUSTRIAN SUBMARINE LOSSES 1914-1918



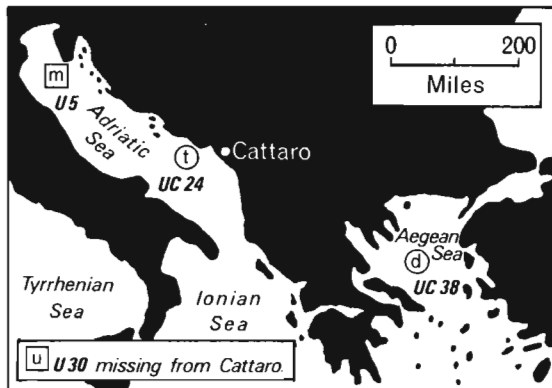
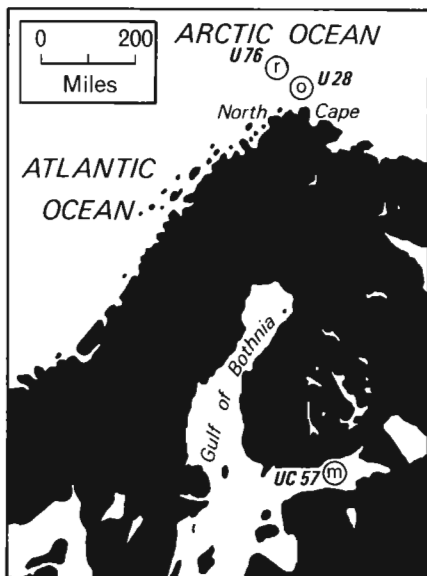
① From 1914 to 1916



A total of 307 German and 27 Austrian U-boats undertook wartime missions. Enemy mines accounted for 48 sinkings, depth charges for 30 sinkings, and gunfire for 20 sinkings. Other losses were due to rammings, torpedo attacks, sweeps, and unknown causes. Total U-boat losses amounted to 187.

The period February to April marked the period of unrestricted U-boat warfare and this was calculated to force Britain to sue for peace. British shipping losses reached 500,000 tons in April, and in May the convoy system was introduced. As U-boats were forced to attack the protected convoys, U-boat losses increased significantly.

2 In 1917



ATLANTIC OCEAN

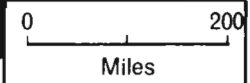
"WESTERN APPROACHES"

Note: U-boats lost off Goodwins:
UC 46 - rammed, U48 - stranded,
UC 63 - torpedoed. Shown thus ⊕

KE
○ German submarines lost.
□ Austrian submarines lost.

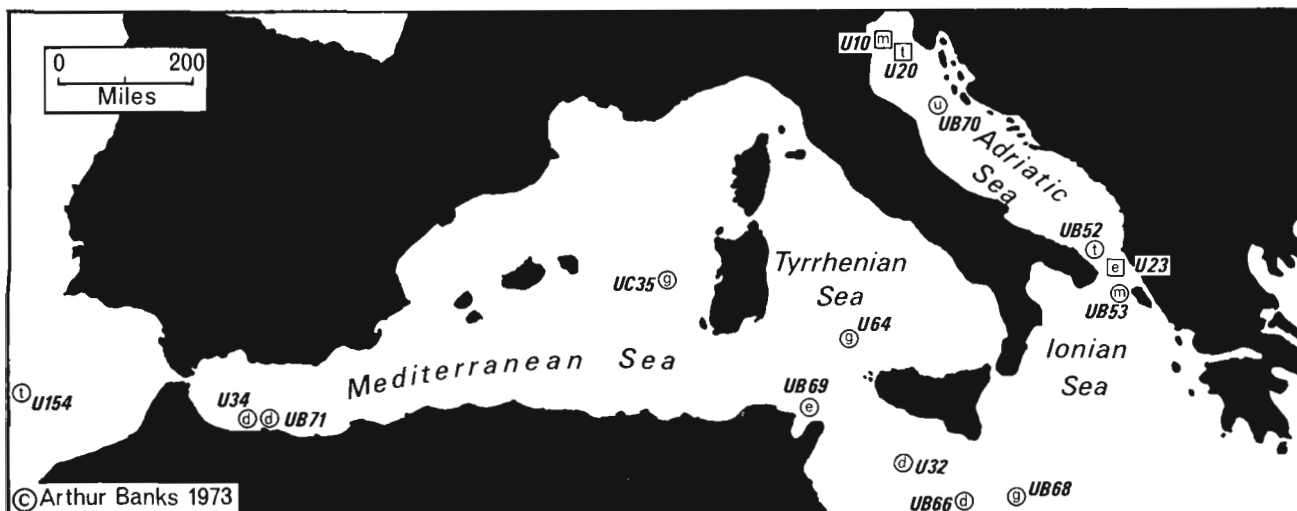
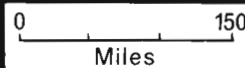


During June, there were 61 U-boats operating simultaneously, the largest total at sea at one given period.



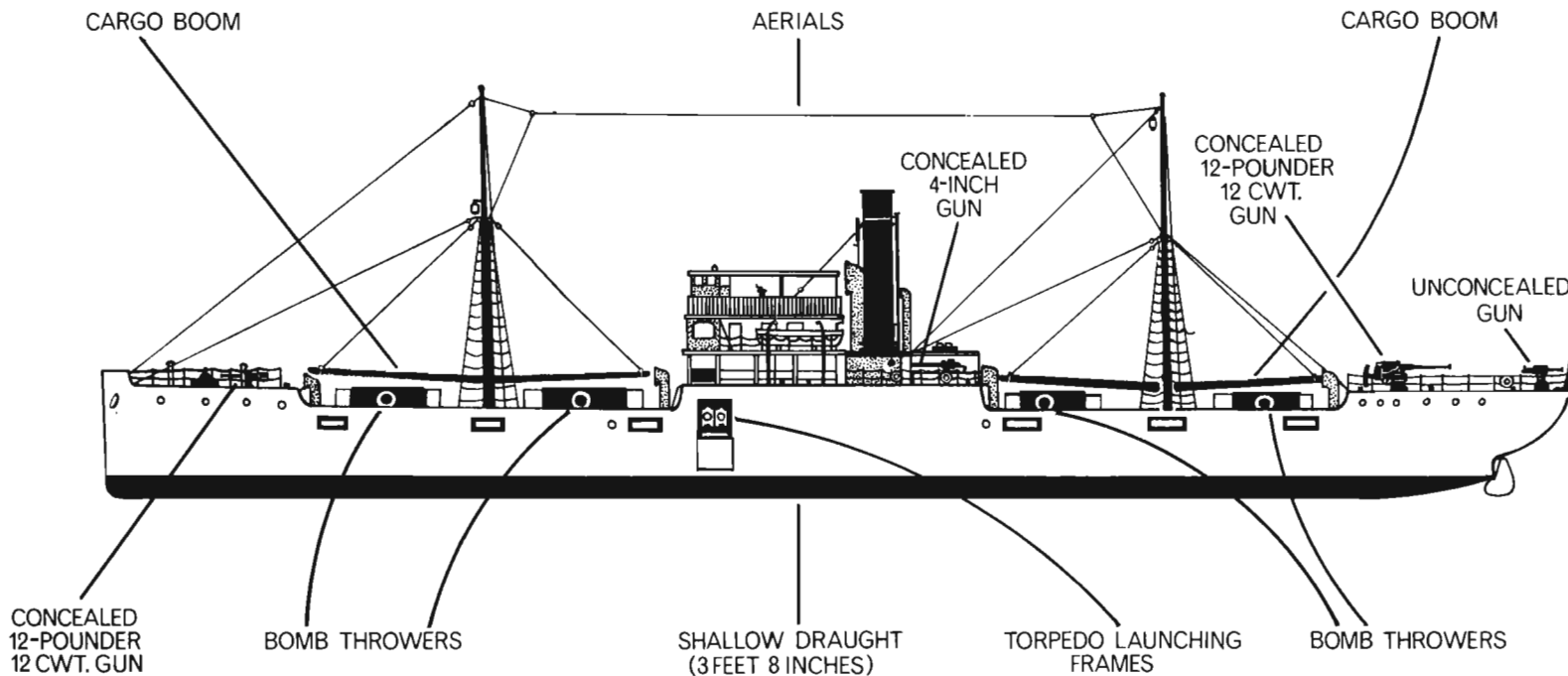
GERMAN AND AUSTRIAN SUBMARINE LOSSES—continued

③ In 1918



A SPECIALLY-CONSTRUCTED BRITISH 'Q'-SHIP: HMS "HYDERABAD"

Built by John I. Thornycroft & Co. Ltd., in four months during 1917.



*180 'Q'-ships were fitted out.
11 U-boats were sunk by them.*

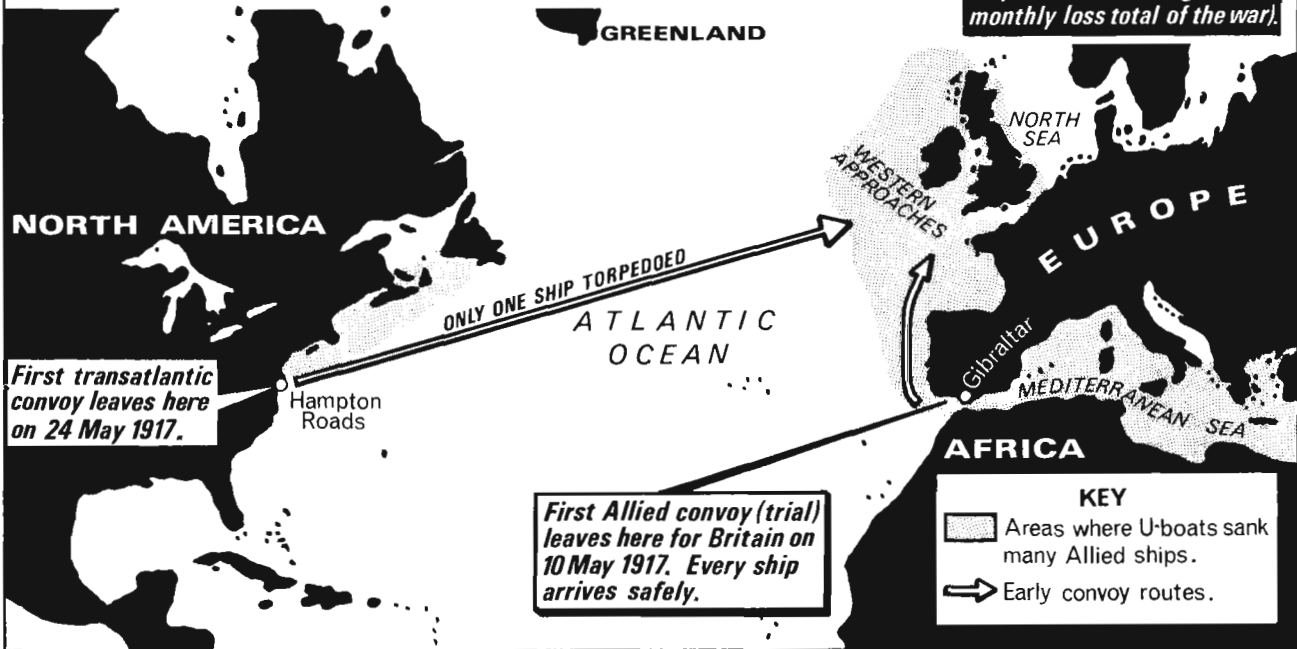
*The first 'Q'-ship in service
was the "Victoria" in November
1914.*

*First 'Q'-ship to sink a U-boat
was the "Prince Charles" on
24 July 1915.*

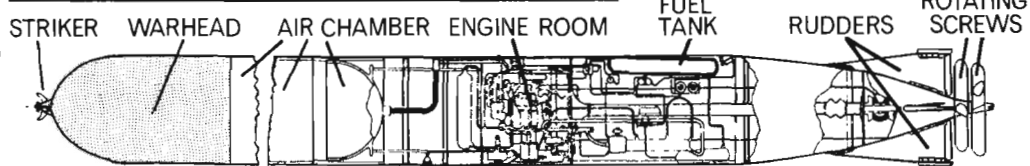
*On HMS "Hyderabad", funnel and masts
were adjustable. The after compass
pedestal and wheel collapsed to improve
field of fire.*

THE U-BOAT WAR AGAINST ALLIED MERCHANT SHIPPING IN 1917

April to July was the most worrying period for Britain. In April alone, 373 Allied ships were sunk (highest monthly loss total of the war).



A TYPICAL GERMAN TORPEDO



CONVOY DATA

TYPE	SHIPS SAILING	SHIPS SUNK
OCEAN	16,070	96
HOME WATERS	67,888	161

THE INTRODUCTION OF CONVOYS MAY 1917

U-BOAT (lurking)

'Q'-ship (merchant ship with concealed guns) posing as a convoy straggler.

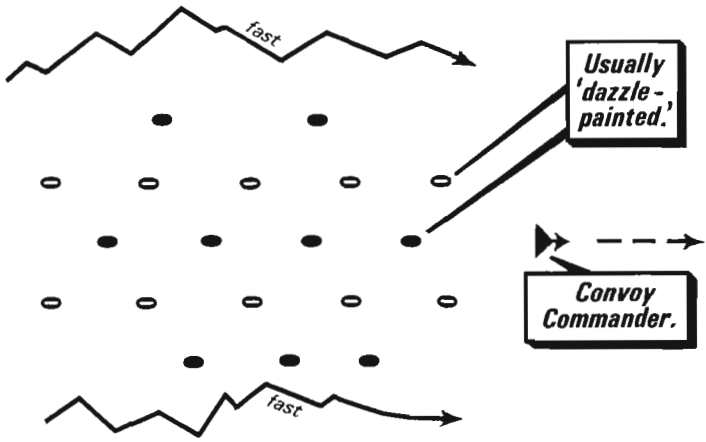
Acting as 'ramrod.'

Usually 'dazzle-painted.'

Convoy Commander.

KEY

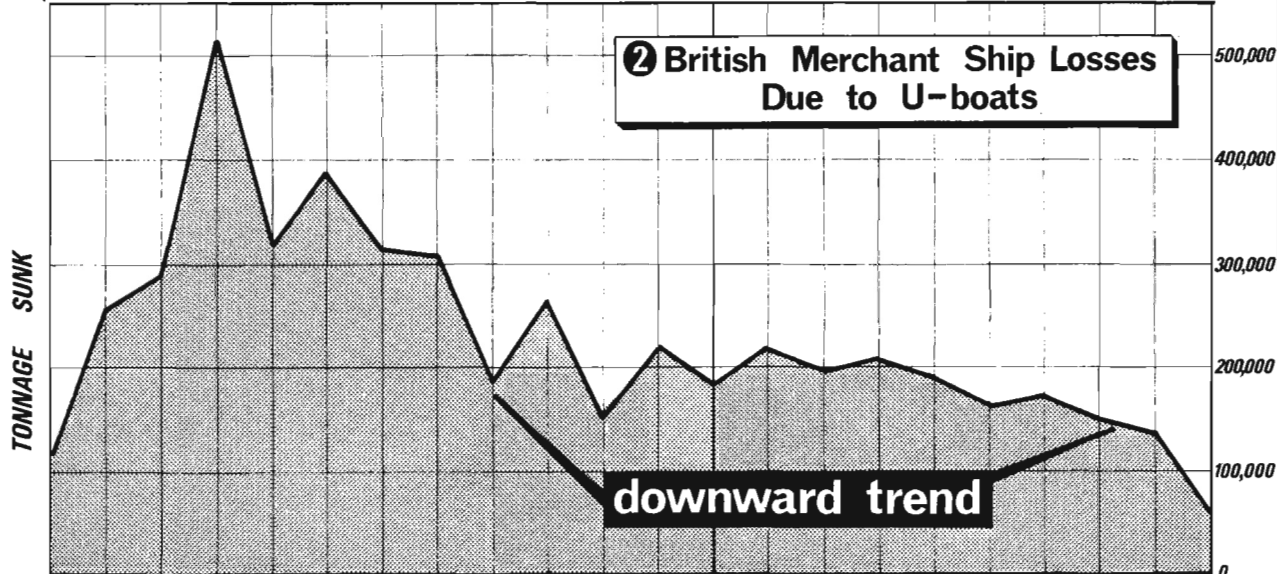
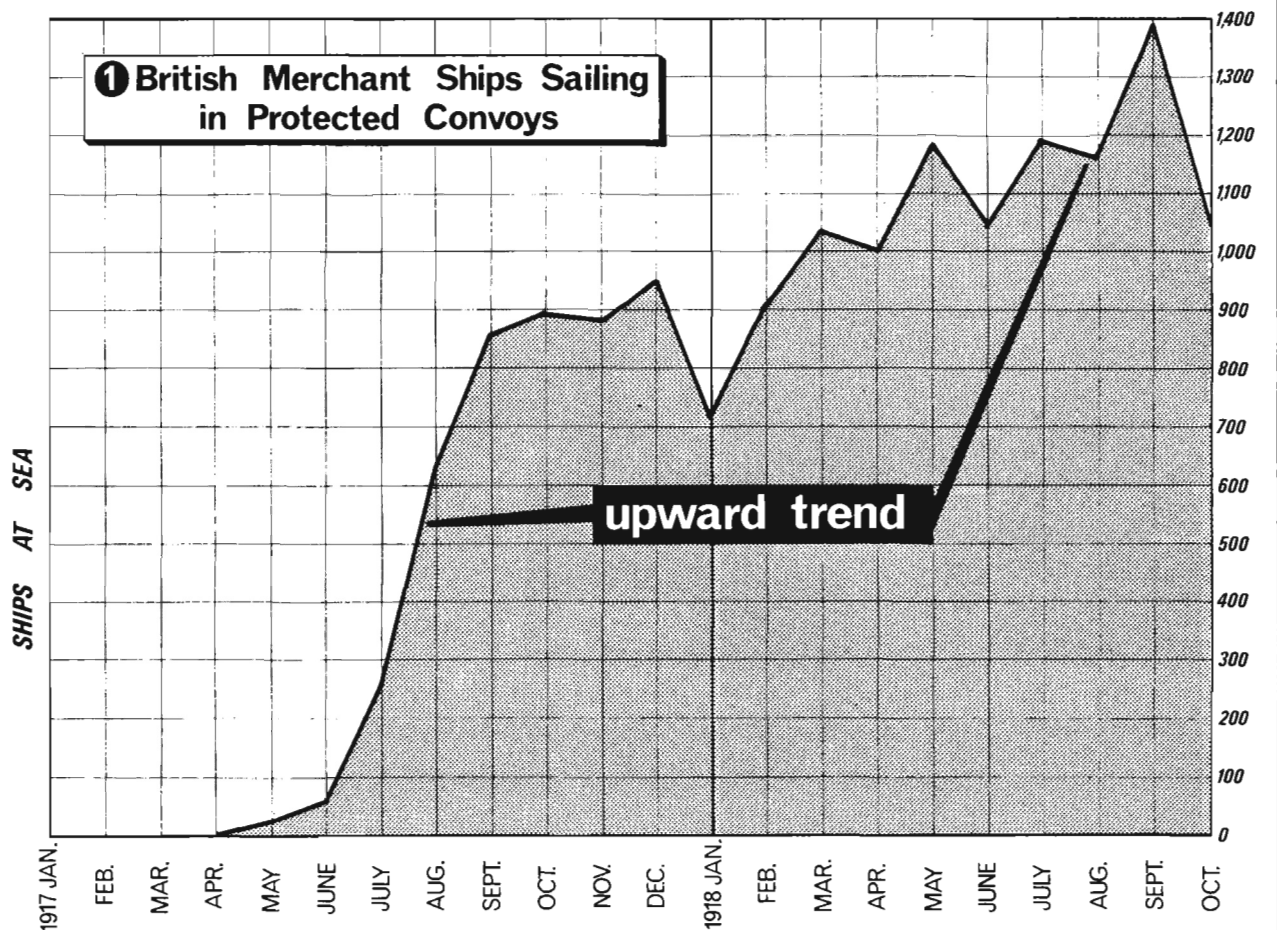
- Fast warship, scouting ahead.
- Merchant ship.
- ⚡ Destroyer (zigzagging).
- Armed trawler.
- ▶ Cruiser (or destroyer).
- ⦿ Fast ship with 'lookout' balloon.



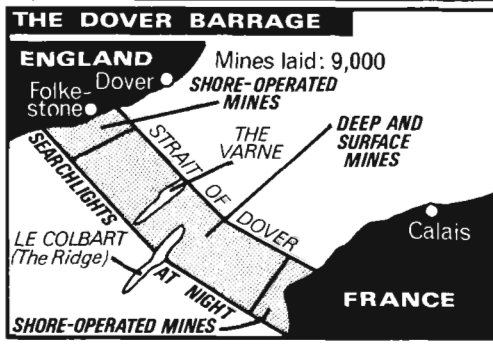
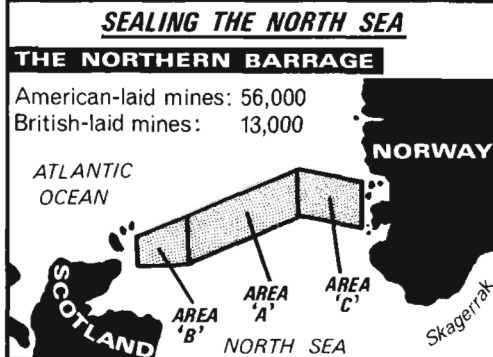
Speed of convoy is governed by the top speed of the slowest ship.

U-BOAT (lurking)

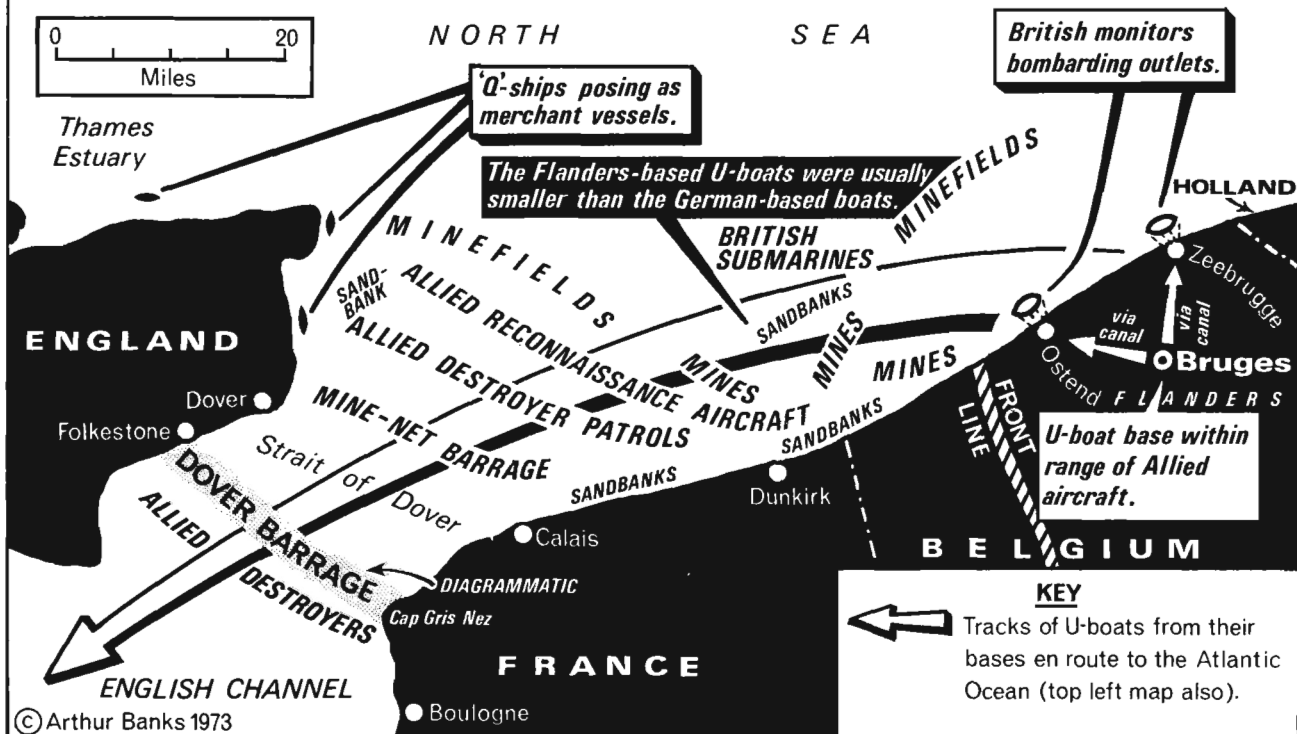
THE EFFECTIVENESS OF THE BRITISH CONVOY SYSTEM 1917-1918



HAZARDS CONFRONTING GERMAN-BASED U-BOATS

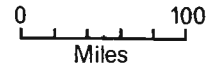


HAZARDS CONFRONTING FLANDERS-BASED U-BOATS



BRITISH SUBMARINES IN THE BALTIC

© Arthur Banks 1973



THE TWO SEA ROUTES TO RUSSIA FROM BRITAIN

BAD WEATHER AND ICE

Four 'C'-class boats 1917

'E'-class boats 1914-1915.

Via lakes rivers and canals.



KEY
P = Petrograd.
A = Archangel.

Swedish iron ore exports to Germany from here.

RUSSIA (Finland)

March 1918, British submarines are scuttled in approaches to prevent their capture by Germans (arriving to aid Finns against Reds).

Russian capital.

'E'-class base 1917-1918.

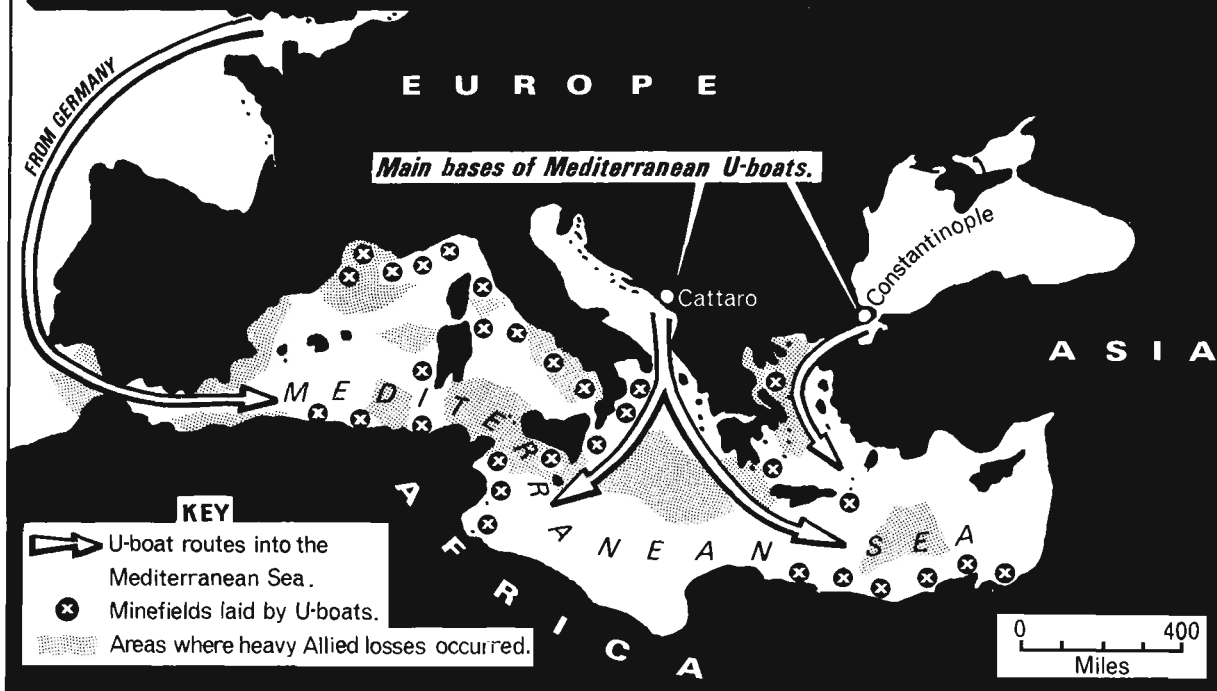


The British were keen to have some submarines operating in the Baltic for three basic reasons: **1** to demonstrate to the world that the Baltic was not an exclusive German "lake" **2** to assist the Russians in opposing German operations in the Gulfs of Finland and Riga **3** to disrupt the export of iron ore from Luleå in Sweden to Germany. The journey from the North Sea to Russia was extremely hazardous at all times.

THE MEDITERRANEAN SEA 1914 - 1918

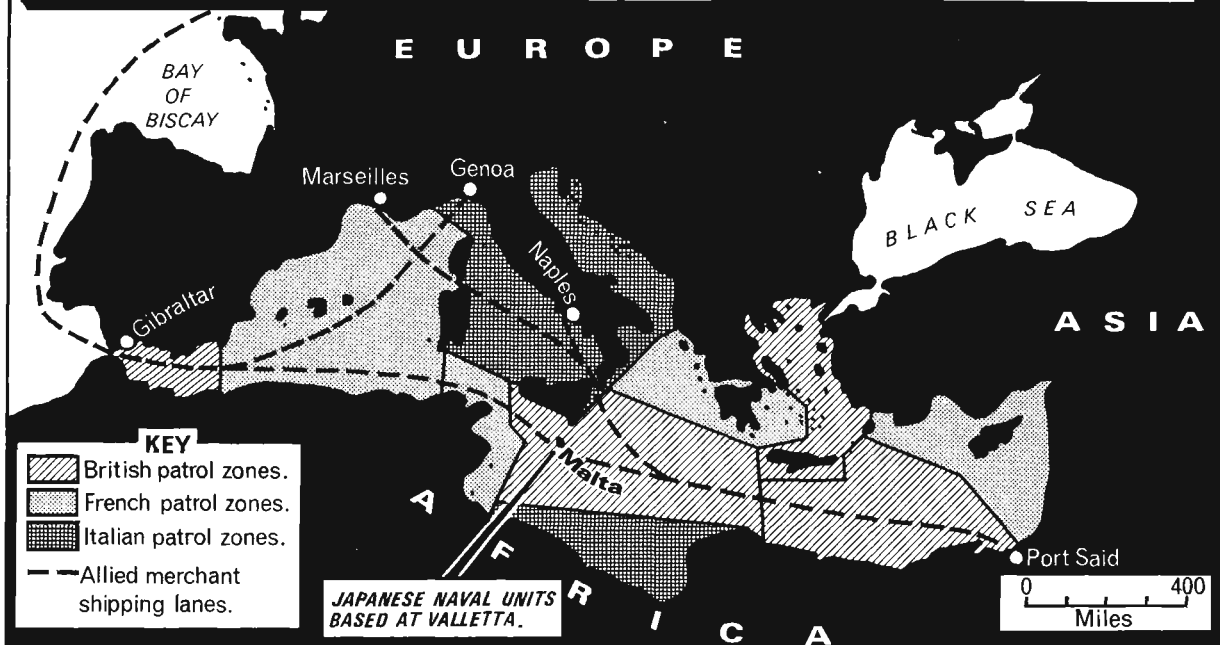
During 1917 alone, nearly 900 Allied merchant ships were sunk.

1 The U-boat Offensive Against Allied Merchant Shipping



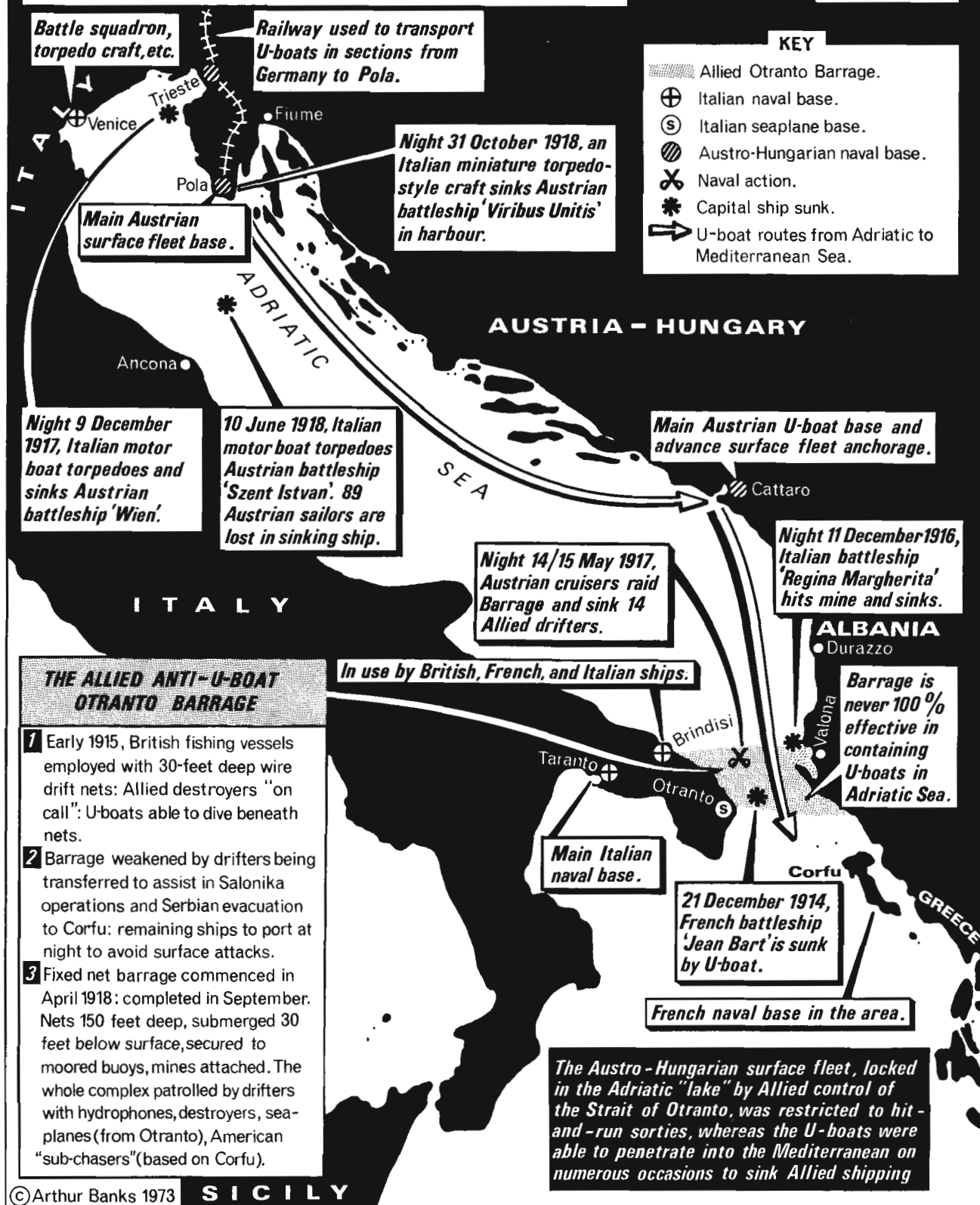
2 Allied Anti-U-boat Naval Patrol Zones

These zones were in use from early 1916 onwards.

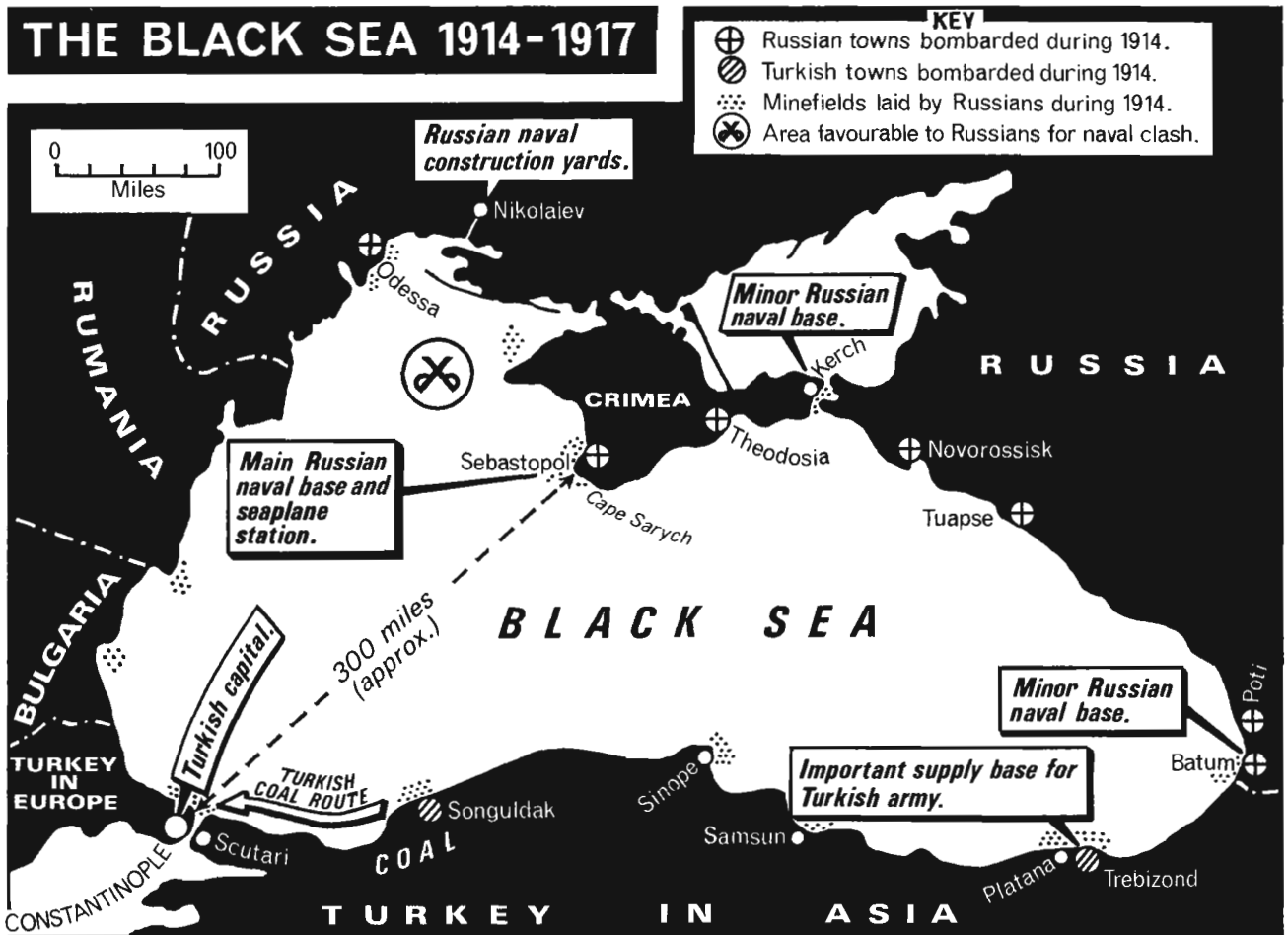


THE ADRIATIC SEA 1914 - 1918

0 50
Miles



THE BLACK SEA 1914-1917



RIVAL NAVAL STRENGTHS IN 1914

RUSSIAN FLEET

- 5 Pre-Dreadnought Battleships.
- 2 Cruisers.
- 4 Destroyers.
- 4 Submarines.

(3 Dreadnought Battleships and 2 Cruisers under construction)

TURKISH/GERMAN FLEET

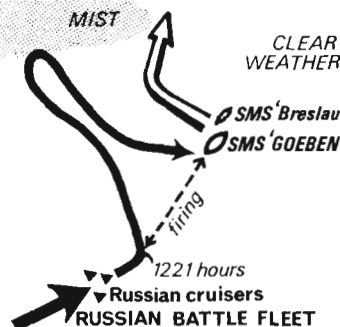
- 1 Battlecruiser (SMS 'Goeben').
- 3 Pre-Dreadnought Battleships.
- 3 Cruisers (including SMS 'Breslau').
- 2 Destroyers.

The importance of the German warships must be stressed. SMS 'Goeben' was the most powerful warship in the area in 1914.

© Arthur Banks 1973

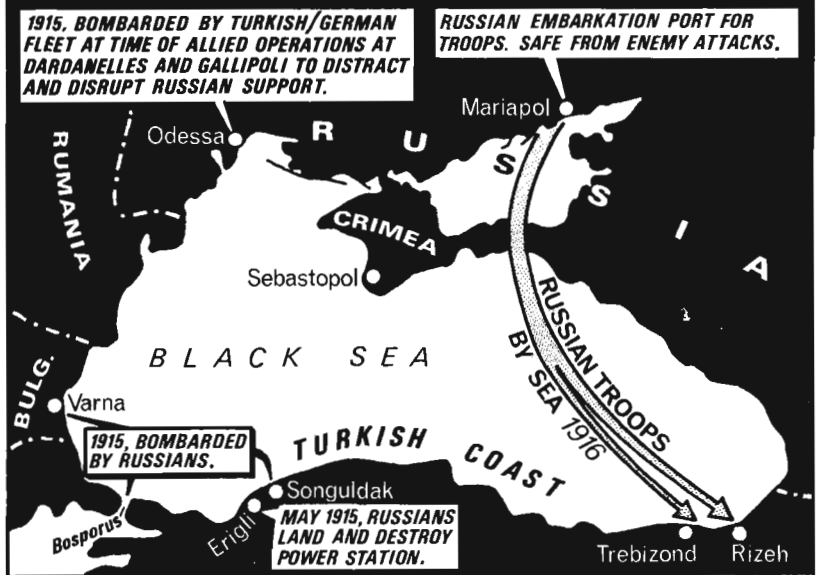
In 1914, the Black Sea naval scene was basically as follows: the Turkish/German fleet was intent on sorties from Constantinople to bombard Russian ports (spearheaded by SMS 'Goeben', the most powerful warship in the area). The Russians, eager to disrupt Turkish coal supplies by sea from Songuldak to Constantinople (there was no land railway link), yearned for a supply base on the Bulgarian coastline to shorten the distance between Sebastopol and Constantinople. They laid minefields off Turkish ports to impede enemy sorties, and entertained hopes that if a major naval confrontation occurred, it would take place between Odessa and Sebastopol, within range of Russian seaplanes.

THE NAVAL CLASH OFF CAPE SARYCH 18 NOVEMBER 1914

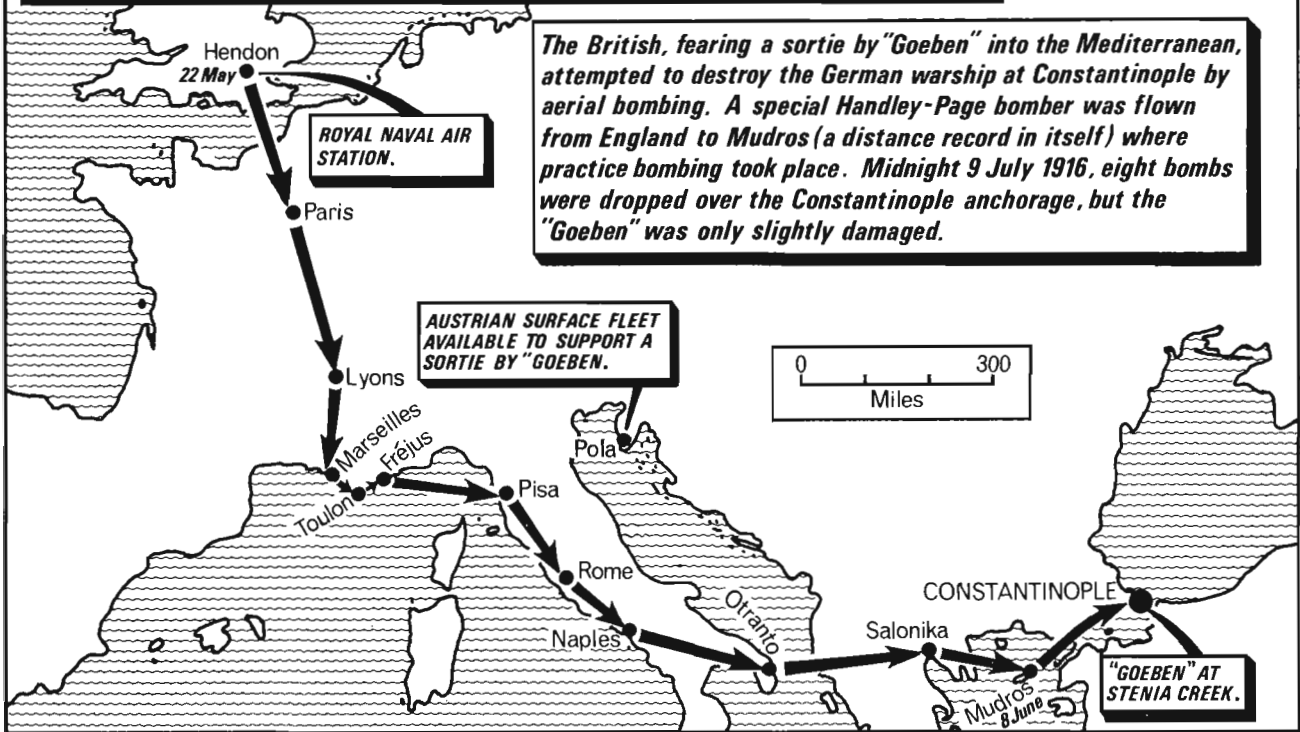


This 14-minute action marked the first encounter between 'Goeben' and Russian capital ships. The old pre-dreadnoughts equalled the 'Goeben's' hit-rate of 10% from salvos fired before the Germans broke off. There were 14 hits on 'Goeben' causing casualties of 115 killed and 59 wounded.

During 1915, two new dreadnoughts came into service with the Russian Black Sea fleet. These battleships, "Imperatritsa Maria" and "Ekaterina II," altered the naval balance of power, although the former was sunk at Sebastopol in the following year (27 October 1916). SMS "Goeben" made her final Black Sea sortie on 8 January 1916. In September 1915, U-boats appeared in the Black Sea, and in that year Bulgaria joined the Central Powers. Rumania became involved in 1916. There was no all-out naval clash, but several fights took place, sometimes involving Russian seaplanes. Russian troops were transported across the sea to fight on the Turkish shore. Trebizond was captured in April 1916 and used as a military port.



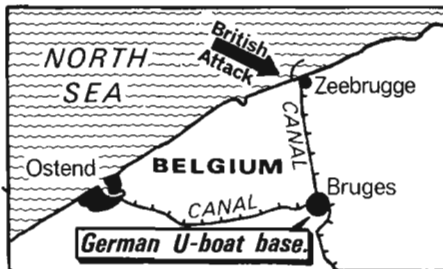
THE UNSUCCESSFUL BRITISH AERIAL BID TO SINK SMS "GOEBEN" MAY-JULY 1916



"GOEBEN" AND "BRESLAU" IN THE AEGEAN 20 JANUARY 1918

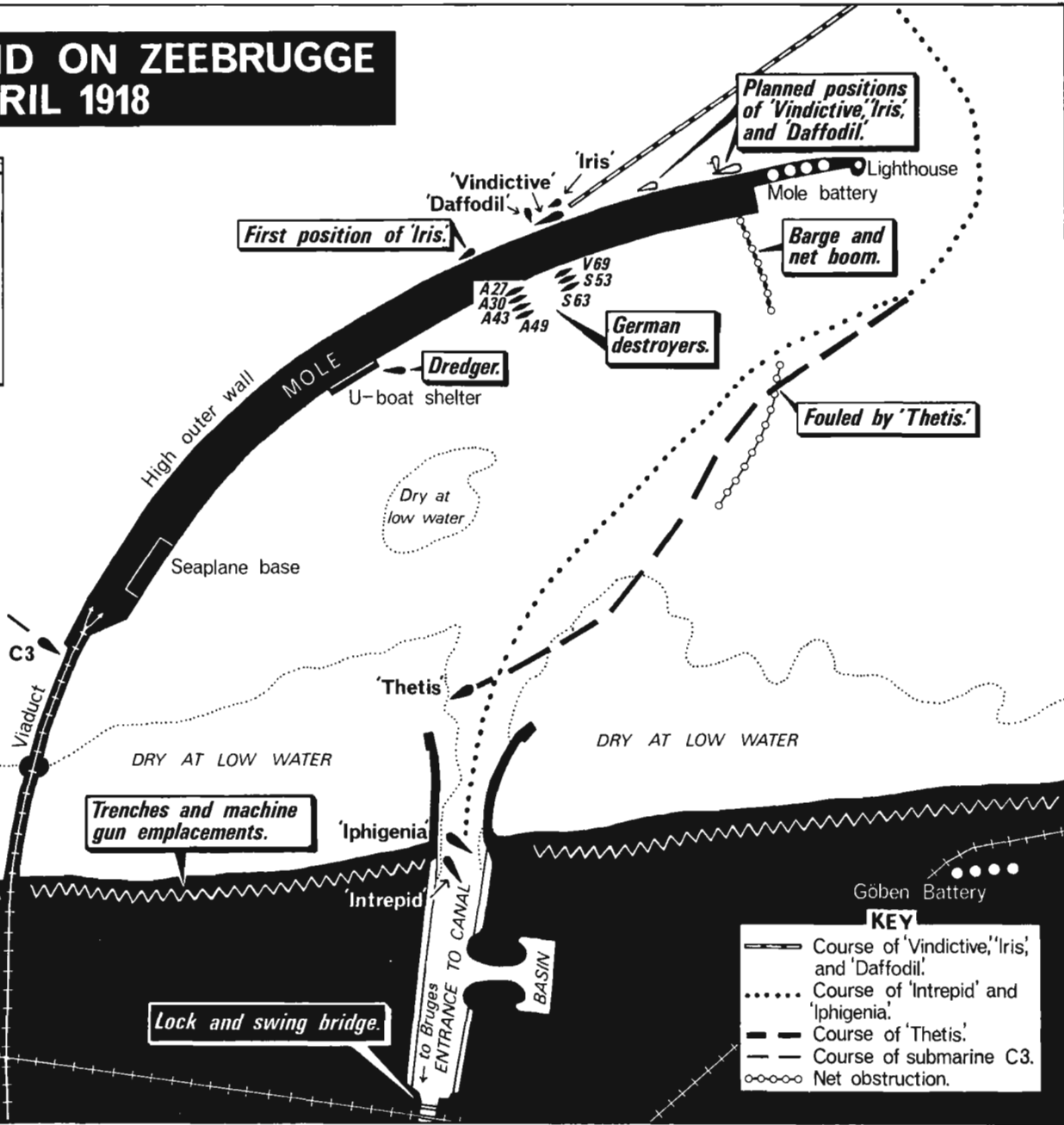


THE BRITISH RAID ON ZEEBRUGGE 23 APRIL 1918



Note: a similar attempt to block Ostend ended in failure. 9/10 May, 'Vindictive' was sunk in the exit channel (blocking approx. one-third of it).

The raid, on St. George's Day, blocked the harbour at Zeebrugge for a short period, but U-boats were soon operating normally. Nevertheless, the attack was a great morale booster for the British at this time.



KEY

- Course of 'Vindictive', 'Iris', and 'Daffodil'.
- Course of 'Intrepid' and 'Iphigenia'.
- Course of 'Thetis'.
- - - Course of submarine C3.
- o-o-o-o Net obstruction.

0 1,000
Feet

GERMAN PLANS FOR A FINAL NAVAL CONFRONTATION OCTOBER 1918

0 100
Miles

Night 28 October, UB 116 is destroyed by electrically-detonated loop-style minefield in Hoxa Sound.

Note: the Germans appeared to consider Scapa Flow as the main British naval base. In fact, this had been moved to Rosyth in April 1918.



U-boats to patrol this area.

British naval base.

German light cruisers to lay mines in British path.

Germans hope to bring about the action in this area (favourable for them).

28 October, U78 is torpedoed and sunk by the British sub. G2.

German naval base.

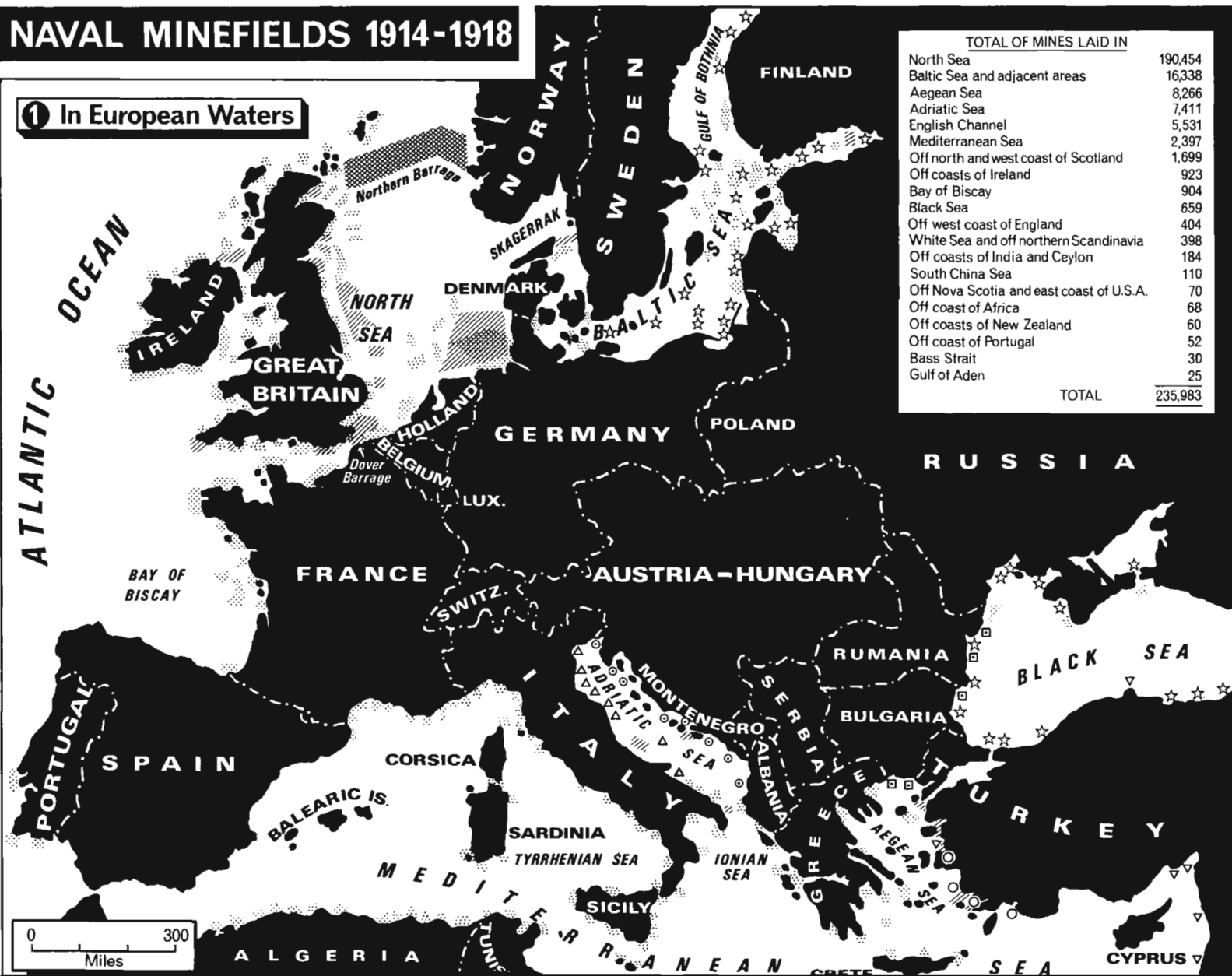
Light cruiser sorties to entice the British south from Scapa.

**Historical note: In June 1667, de Ruyter's Dutch raid on the Medway influenced the peace negotiations for the Treaty of Breda in July 1667.*

In an attempt to influence the Armistice negotiations, the German naval authorities formulated plans to bring about the long-awaited clash between the German and British battle fleets. It came to naught due to mutinies and demoralization among the German crews. However, twenty-five U-boats actually set sail on 25 October, and two were destroyed by the British*

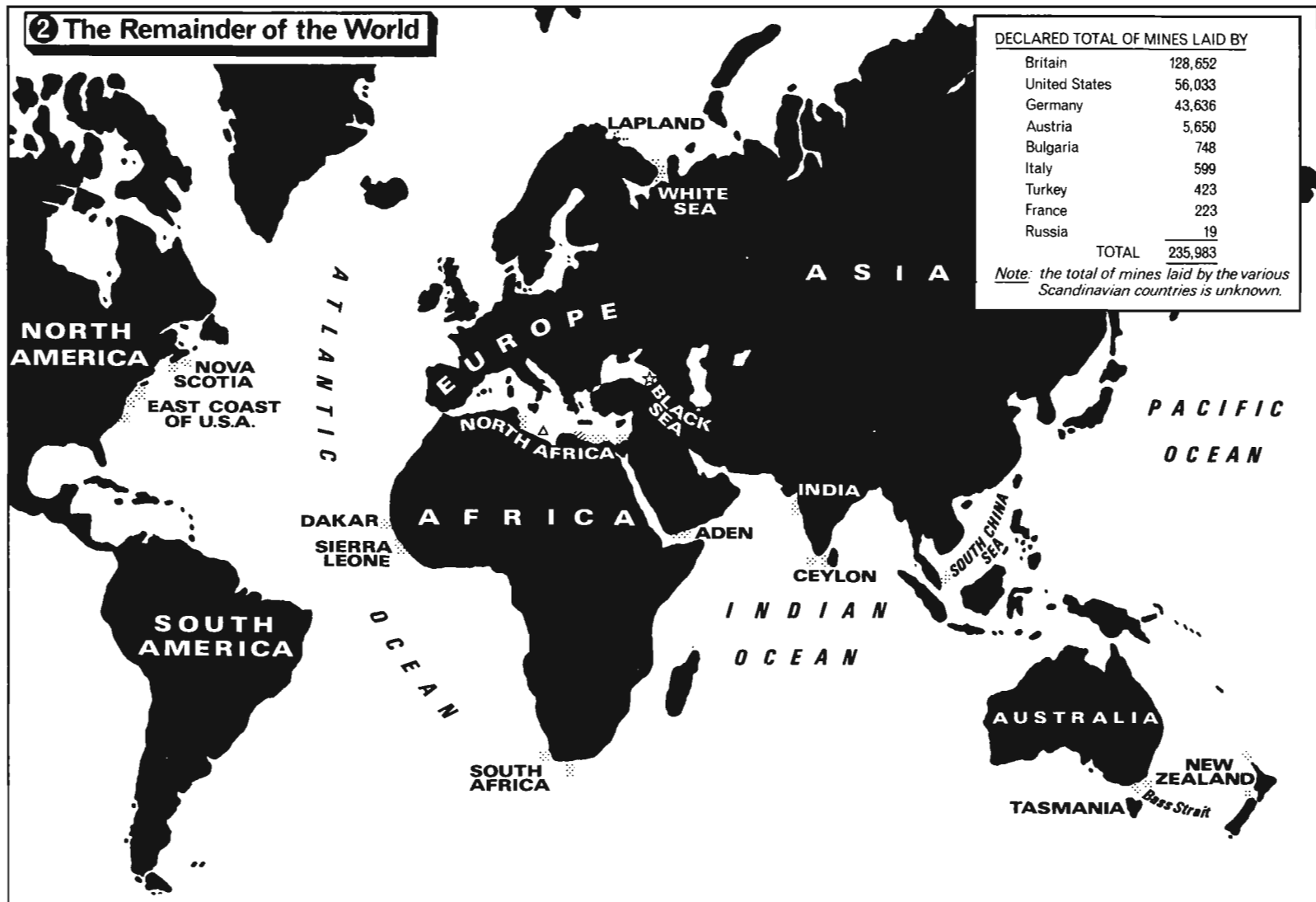
NAVAL MINEFIELDS 1914-1918

① In European Waters



TOTAL OF MINES LAID IN	
North Sea	190,454
Baltic Sea and adjacent areas	16,338
Aegean Sea	8,266
Adriatic Sea	7,411
English Channel	5,531
Mediterranean Sea	2,397
Off north and west coast of Scotland	1,699
Off coasts of Ireland	923
Bay of Biscay	904
Black Sea	659
Off west coast of England	404
White Sea and off northern Scandinavia	398
Off coasts of India and Ceylon	184
South China Sea	110
Off Nova Scotia and east coast of U.S.A.	70
Off coast of Africa	68
Off coasts of New Zealand	60
Off coast of Portugal	52
Bass Strait	30
Gulf of Aden	25
TOTAL	235,983

② The Remainder of the World



DECLARED TOTAL OF MINES LAID BY

Britain	128,652
United States	56,033
Germany	43,636
Austria	5,650
Bulgaria	748
Italy	599
Turkey	423
France	223
Russia	19
TOTAL	235,983

Note: the total of mines laid by the various Scandinavian countries is unknown.

KEY



British-laid minefields



American-laid minefields



German-laid minefields



Austrian-laid minefields



Bulgarian-laid minefields



Italian-laid minefields



Turkish-laid minefields



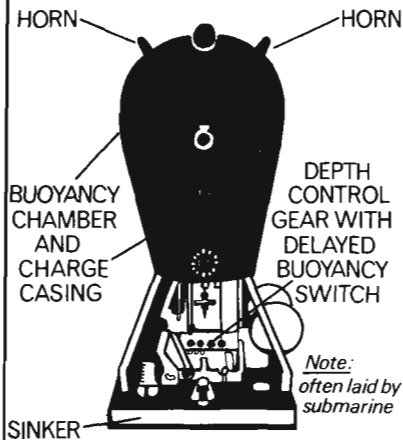
French-laid minefields



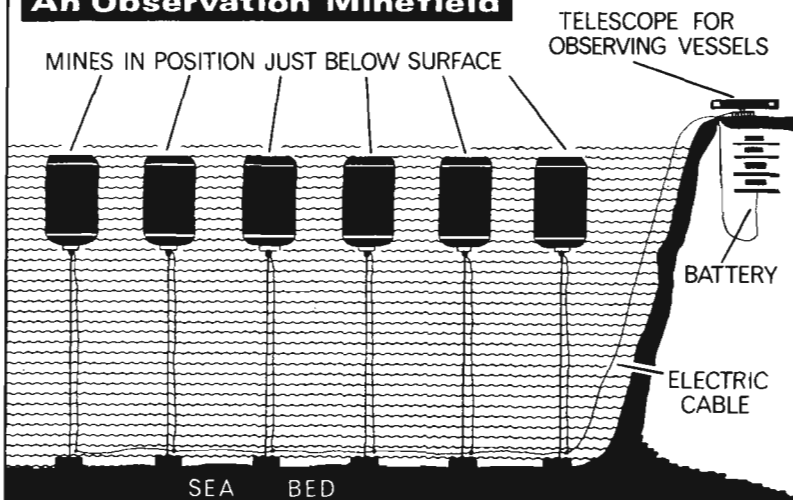
Russian-laid minefields

NAVAL MINING

German contact mine



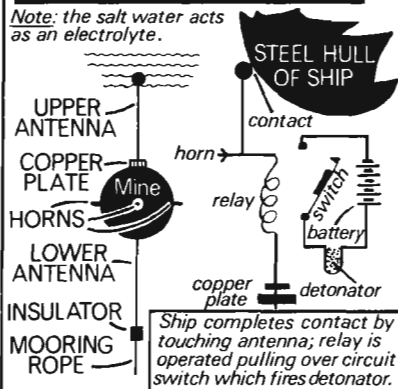
An Observation Minefield



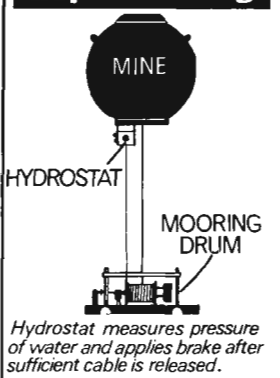
This system was employed at harbour entrances. Shore observers fired the mines by electrical methods at the moment when a hostile ship passed over the line.

The Antenna Mine

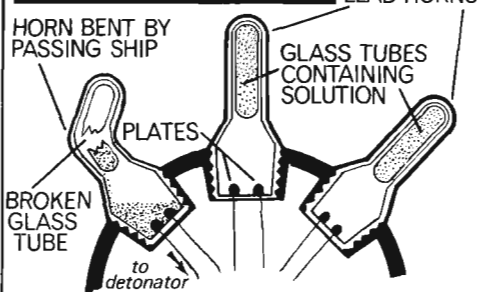
Note: the salt water acts as an electrolyte.



Hydrostatic depth-taking

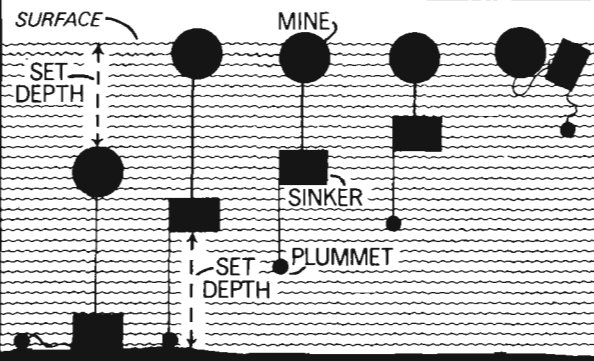


The "HERZ" Horn

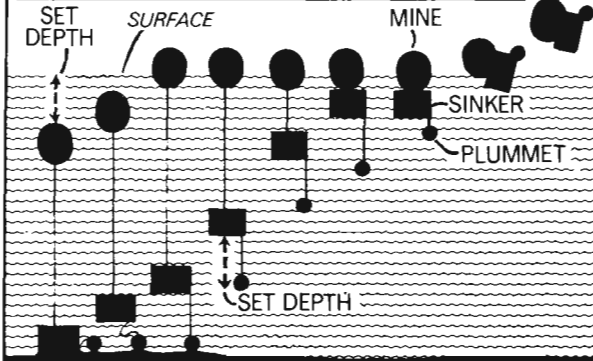


The inside of the horn is similar to an electrical battery. A bichromate solution comes in contact with zinc and carbon plates, thus making voltage.

Plummet system of automatic depth-taking (non-buoyant unit)



Plummet system of automatic depth-taking (buoyant unit)



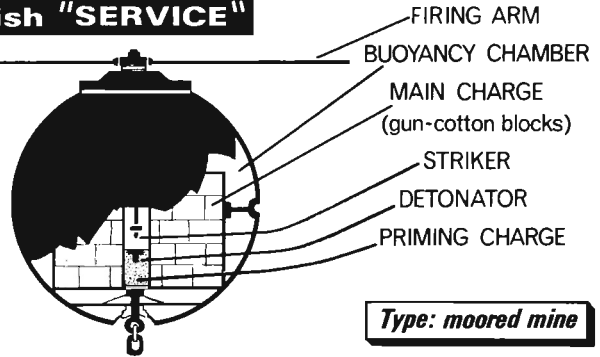
SEVEN IMPORTANT NAVAL MINES 1914 - 1918

TYPES OF MINE

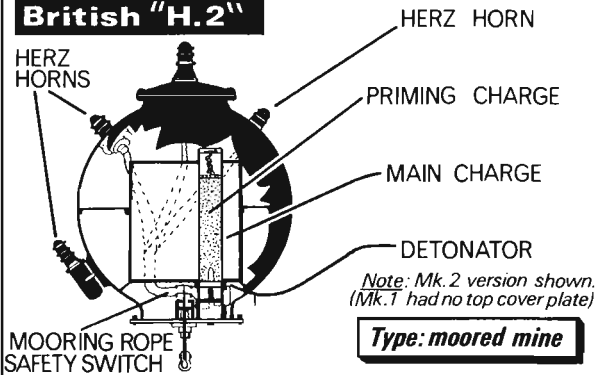
CONTROLLED MINES (employed defensively, e.g. placed at harbour entrances). Fired from shore via electric wire.

INDEPENDENT MINES (employed both offensively and defensively in open sea, off coasts, etc. Types included moored, sea-bed, drifting, creeping, and oscillating).

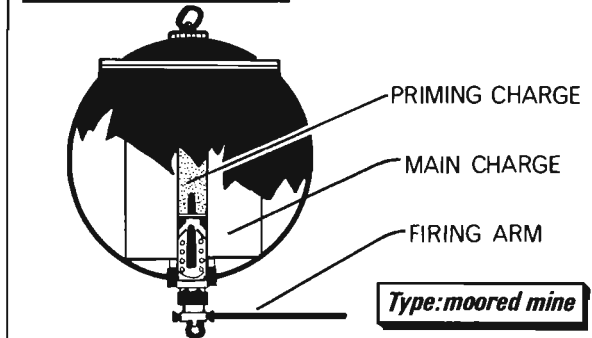
British "SERVICE"



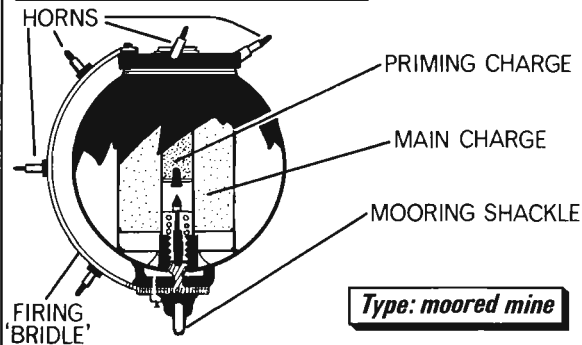
British "H.2"



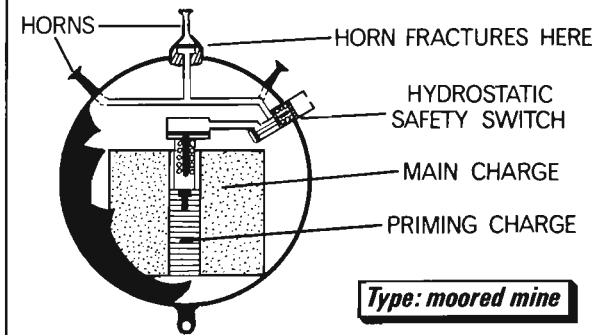
British "ELIA"



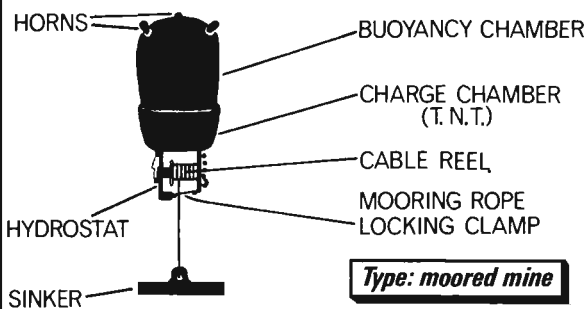
French "BREGUET"



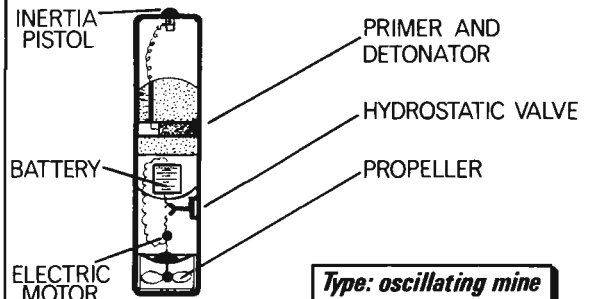
French "SAUTER-HARLÉ"



German "CARBONIT"



Swedish-designed "LÉON"



SUBMARINE DEVELOPMENT DURING THE WAR

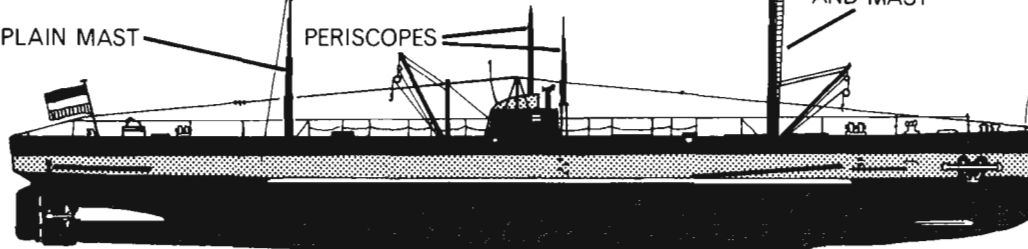
Surface displacement: 1512 tons.

'DEUTSCHLAND' - first commercial boat

PLAIN MAST

PERISCOPES

CARGO DERRICK AND MAST



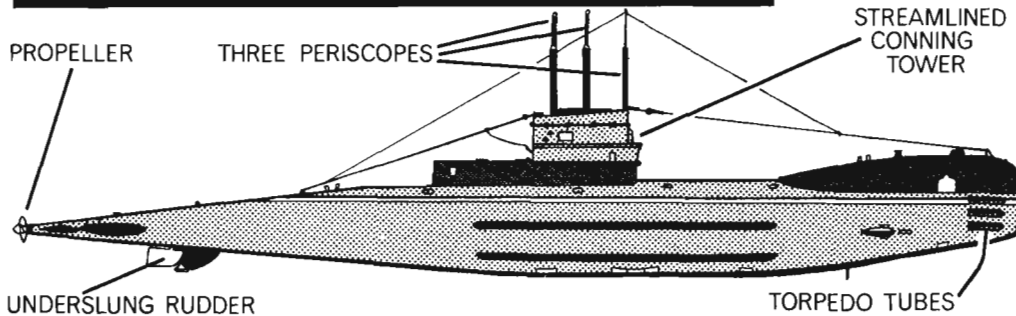
Length: 213 feet.
 Beam: 29 feet.
 Maximum surface speed: 12.4 knots.
 Maximum submerged speed: 5.2 knots.
 Complement: 56.

British R.1 - first hunter killer submarine

PROPELLER

THREE PERISCOPES

STREAMLINED CONNING TOWER



UNDERSLUNG RUDDER

TORPEDO TUBES

Surface displacement: 410 tons.
 Length: 163 feet.
 Beam: 16 feet.
 Maximum surface speed: 9.5 knots.
 Maximum submerged speed: 15 knots.
 Complement: 22.

British K.3 - first successful steam submarine

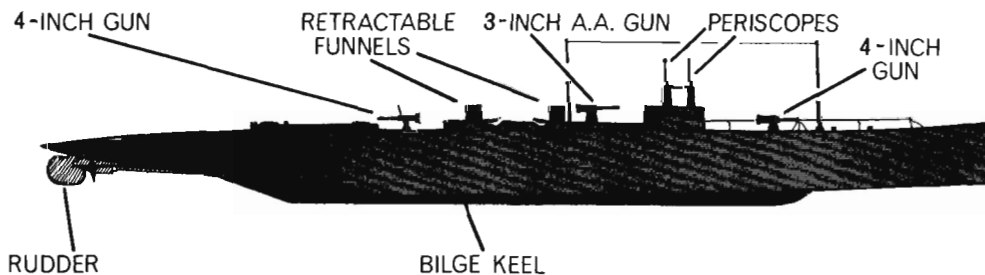
4-INCH GUN

RETRACTABLE FUNNELS

3-INCH A.A. GUN

PERISCOPES

4-INCH GUN



RUDDER

BILGE KEEL

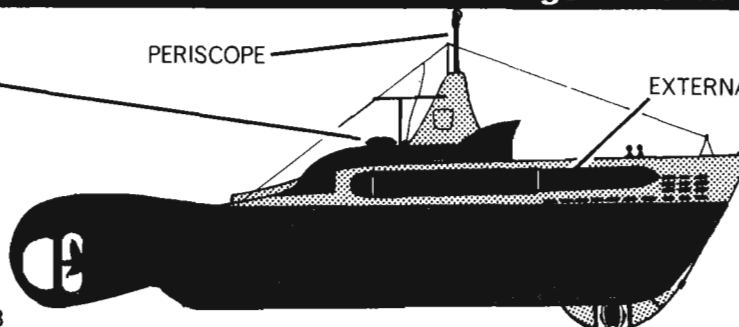
Surface displacement: 1,750 tons.
 Length: 351 feet.
 Beam: 28 feet.
 Maximum surface speed: 24 knots.
 Maximum submerged speed: 10 knots.
 Complement: 50.

Italian Class 'B' - first successful midget submarine

ENGINE AIR INTAKE

PERISCOPE

EXTERNAL TORPEDO



Surface displacement: 40 tons.
 Length: 50 feet.
 Beam: 7.5 feet.
 Maximum surface speed: 6.9 knots.
 Maximum submerged speed: 5 knots.
 Complement: 5.

THE WAR IN THE AIR

On 1 November 1911 a primitive Italian aeroplane, supporting military operations in Libya, dropped four specially modified grenades on Turkish troops near Zuwarah. The pilot of the aircraft, Lieutenant Cavotti, was thus inaugurating a new and terrible phase of warfare, less than eight years since the first heavier-than-air machine had lifted off the ground. The French, German and American armies were already, in 1911, experimenting with aircraft, though they were uncertain how to use them. The British War Secretary, Haldane, took the lead in establishing a Royal Flying Corps in 1912, while at the Admiralty Churchill warmly supported the aeronautical enterprises (and himself took flying lessons). But by 1914 military and naval leaders, if not actively hostile to 'an air arm', saw in planes and airships little more than reconnaissance machines and gunnery spotters.

The only combatant possessing an aerial fleet of any significance was Germany, with eleven rigid airships, all except one manufactured by Count Zeppelin. During the early months of the war these craft bombed Liège, Antwerp and Warsaw. They proved, however, vulnerable to gunfire when used in close support of the army, and, at the beginning of 1915, it was decided that they would be most effective against targets in England, bringing 'terror to the people of London'. Navigational difficulties saved London from raids on several occasions (and similarly ruled out projected attacks on Petrograd), but the British capital was attacked by Zeppelins twelve times between May 1915 and October 1917. There were forty other raids on Britain, with bombs dropped in the Midlands, Liverpool, Newcastle and Hull as well as East Anglia and the Home Counties. Night bombing by Zeppelins interfered with efficiency in vital factories. Subsequently this role was assumed by aircraft, and the ten night raids of September–October 1917 (see page 296) had a particularly bad effect on civilian morale.

The Zeppelins which raided England in August 1915 were faster and bigger than the craft of a year earlier:

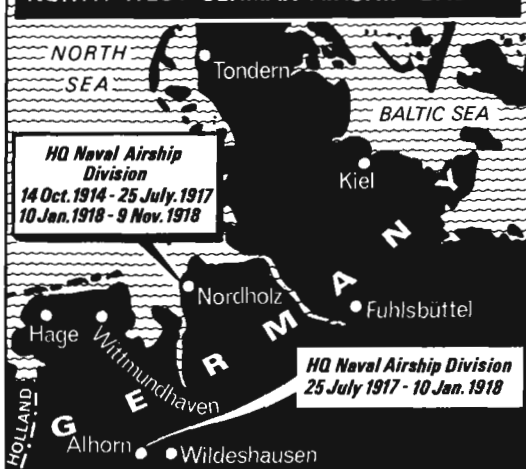
they carried twice the weight of bombs. Without these technological improvements, it would have been impossible to mount what was, in effect, a strategic air offensive against civilian and military targets. But improvements to airships were equalled by developments in aeroplane construction. The most revolutionary of these was Anthony Fokker's invention of an interrupter, a cam which could stop a machine gun firing when the propeller blade swept across the muzzle. This device made the fighter aircraft a weapon in itself. German Fokkers were able to check the mounting pressure by the French bombing planes, an arm in which Joffre himself had long been interested. The British developed DH 4s and DH 9s as light bombers to attack front line troops, and depended on the manoeuvrable Sopwith Camel and S.E. 5a as the principal fighters. The Royal Naval Air Service used seaplane carriers during the Dardanelles Operations and experimented with dropping torpedoes from aircraft, a technique which could be perfected only with more powerful engines, giving a greater impetus.

The 'dog fight', a new form of combat creating its own tactics, gave the opportunity for individualists to make themselves reputations as 'aces'. Yet by the spring of 1917 the most famous of these German aces, Richthofen, was himself perfecting a 'circus', a squadron which was standardising at a rate technical level the accumulated skills of air fighting. Nor were these developments limited to the German side.

By the last winter in the war the British Government had so far accepted the significance of air power that on 1 April 1918, it created a third military service, a Royal Air Force with an 'Air Staff', totally independent of army and navy. The light bombers of the R.A.F. played a prominent part in the final defeat of the Bulgarians in the Balkan mountains and of the Turks in the coastal plain of Palestine; but the authorities were more interested in the effects of strategic bombing on Germany's factories.

GERMAN AIRSHIPS

NORTH-WEST GERMAN AIRSHIP BASES



GERMAN AIRSHIP RAIDS ON BRITAIN 1915 - 1918

YEAR	NUMBER OF RAIDS	BOMBS DROPPED (All types)	CIVILIANS KILLED	CIVILIANS INJURED
1915	20	1,525	207	533
1916	22	3,458	293	691
1917	7	580	40	75
1918	4	188	16	59
TOTALS	53*	5,751	556	1,358

*Note: London was attacked on twelve occasions

L.3 - First Zeppelin to raid Britain

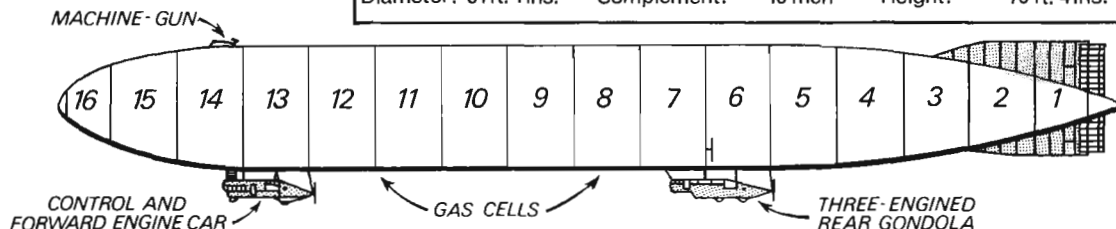
Complement: 16 men GAS CELLS Maximum speed: 48 m.p.h.



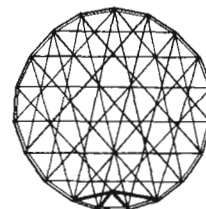
Completed: 11 May 1914 Gas volume: 794,500 cubic ft.
 Commissioned: 23 May 1914 Height: 60ft. 3ins.
 Length: 518 ft. 2ins. Diameter: 48ft. 6ins.

Zeppelin "P" Type

Length: 536 ft. 5ins. Maximum speed: 59 m.p.h. Gas volume: 1,126,400 cubic ft.
 Diameter: 61ft. 4ins. Complement: 16 men Height: 79ft. 4ins.



NAVAL NUMBER	COMMISSIONED	ACTUAL RAIDS	TOTAL FLIGHTS	TERMINATION OF SERVICE
L.10	17 May 1915	5	28	3 September 1915: destroyed off Neuwerk I.
L.11	8 June 1915	18	118	24 November 1917: dismantled at Hage.
L.12	22 June 1915	1	14	10 August 1915: burned at Ostend.
L.13	25 July 1915	17	159	11 December 1917: dismantled at Hage.
L.14	10 August 1915	17	127	23 June 1919: wrecked at Nordholz.
L.15	12 September 1915	3	36	1 April 1916: sank in sea at Knock Deep.
L.16	24 September 1915	16	132	19 October 1917: wrecked at Nordholz.
L.17	22 October 1915	11	73	28 December 1916: burned at Tondern.
L.18	6 November 1915	0	4	17 November 1915: burned at Tondern.
L.19	22 November 1915	1	14	2 February 1916: sank in North Sea.



MAIN RING BRACING

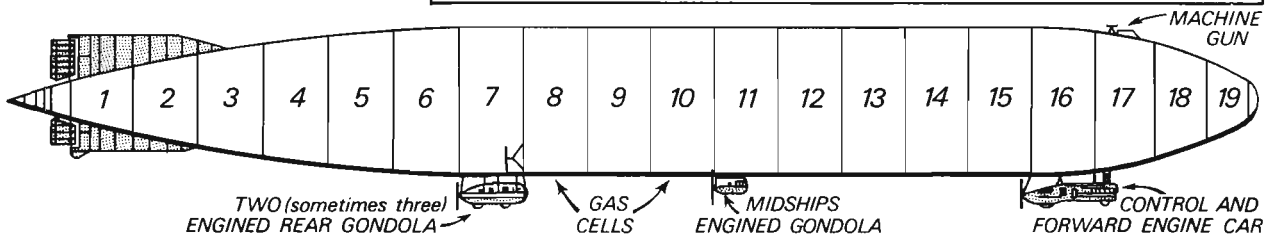
THE THREE BASIC TYPES OF AIRSHIP

- 1 Non-rigid**
A balloon, the shape of which was held by internal pressure.
- 2 Semi-rigid**
A shaped balloon with a rigid girder to which the main weights were slung.
- 3 Rigid**
A group of balloons inside a rigid frame with, usually, a fabric cover.

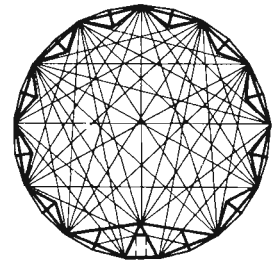
During the war, the Germans manufactured two main types of rigid airships, the Schütte-Lanz and the Zeppelin. The early S.L.'s were wooden-framed, and the Zeppelins metal-framed (the metal used was duralumin). Hydrogen was the gas employed, and Germany paid particular attention to purity to avoid explosions.

Zeppelin "R" Type

Length: 644 ft. 8 ins. Maximum speed: 64 m.p.h. Gas volume: 1,949,600 cubic ft.
 Diameter: 78 ft. 5 ins. Complement: 19 men Height: 90 ft. 10 ins.



NAVAL NUMBER	COMMISSIONED	ACTUAL RAIDS	TOTAL FLIGHTS	TERMINATION OF SERVICE
L.30	30 May 1916	9	115	Broken up in 1920: parts to Belgium.
L.31	14 July 1916	8	19	2 October 1916: destroyed at Potters Bar.
L.32	7 August 1916	3	13	24 September 1916: destroyed at Gt. Burstead.
L.33	2 September 1916	1	10	24 Sept. 1916: captured at Little Wigborough.
L.34	22 September 1916	2	11	27 November 1916: destroyed off Hartlepool.
L.35	12 October 1916	5	54	September 1918: broken up at Jüterbog.
L.36	7 November 1916	1	20	7 February 1917: crashed on frozen River Aller.
L.37	27 November 1916	4	50?	Broken up in 1920: parts to Japan.
L.38	26 November 1916	1	10	29 December 1916: captured at Seemuppen.
L.39	18 December 1916	1	24	17 March 1917: destroyed at Compiègne.
L.40	7 January 1917	2	30	17 June 1917: dismantled at Nevenwald.
L.41	30 January 1917	4	36	23 June 1919: destroyed at Nordholz.
L.45	7 April 1917	3	27	20 October 1917: captured at Sisteron.
L.47	3 May 1917	4	44	5 January 1918: destroyed at Alhorn.
L.50	12 June 1917	2	19	20 October 1917: lost in Mediterranean.



MAIN RING BRACING

Note: there were minor design variations in certain of the 'R'-type airships. Gondolas were altered here and there to improve the performance of engines and propellers.

GERMAN AIRSHIP BASES IN THE EASTERN BALTIC

On 26 January 1915, the German Naval Airship Division lost its first airship of the war when the Parseval PL.19 set out from the Army shed near Königsberg to raid the Russian naval base at Libau. It crashed in the Baltic seven miles from the coast after severe icing which jammed a propeller and fractured an engine. Finally, the envelope buckled due to loss of pressure.

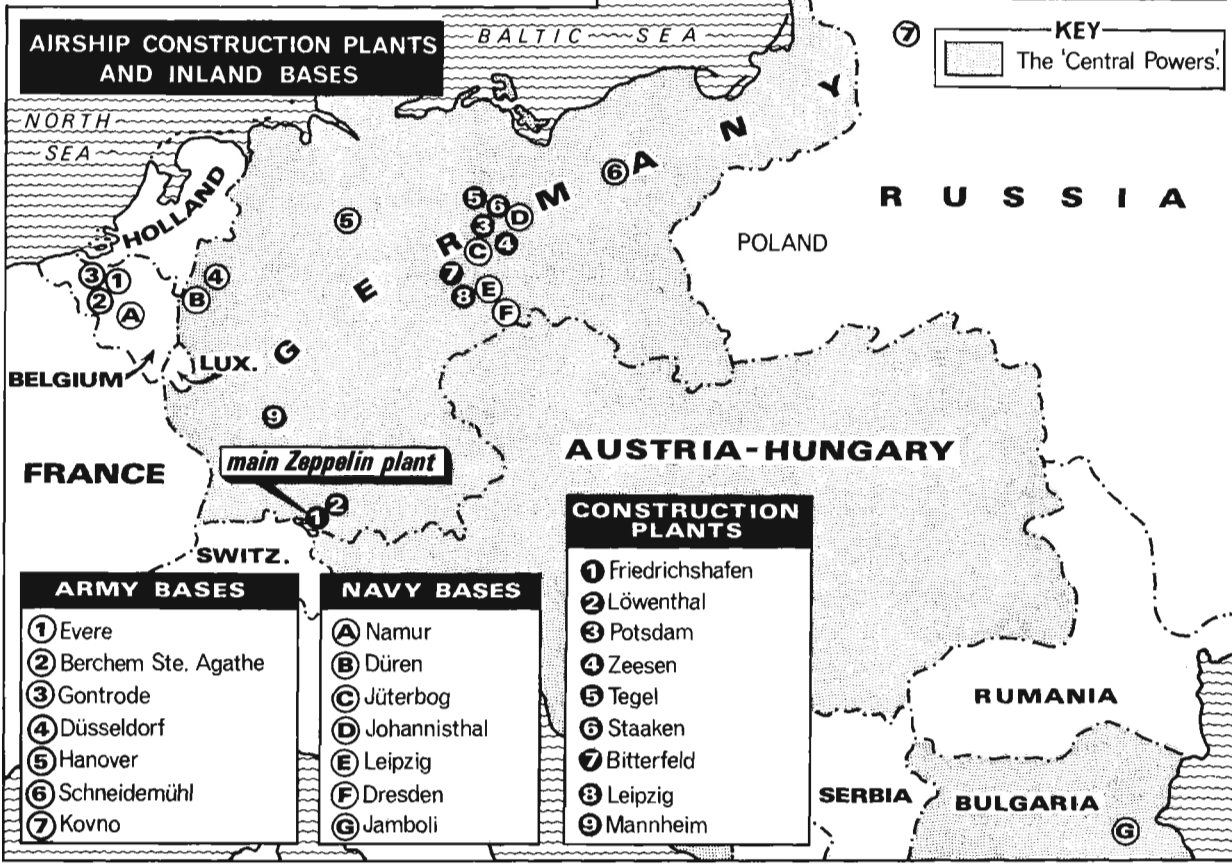
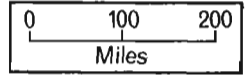


During the night of 21-22 March 1915, three German army airships attempted to raid Paris. The ZX and the LZ. 35 dropped seven high explosive and 45 incendiaries on Paris and its suburbs, killing one civilian and injuring a further eight. Hit by ground fire, the ZX was destroyed at St. Quentin on the return trip. Damaged by gunfire, the third airship (Schütte-Lanz SL.2) never reached the French capital, but distributed her bombs over Compiègne.

During the war, both the naval and the army airship services made unsuccessful attempts to raid the Russian capital of St. Petersburg (Petrograd). Distance alone prevented success during the early period, but the main problem throughout was bad weather. Ice and snow fouled engines and propellers, congealed oil, and made airships top-heavy and unstable.

Airships worked as scouts with the German navy and were present at a number of sea battles, such as Jutland and Dogger Bank. However, they were never used in conjunction with the U-boat offensive in the Atlantic.

GERMAN AIRSHIPS—continued



AIRSHIP CONSTRUCTION PLANTS AND INLAND BASES

- ### ARMY BASES
- ① Evere
 - ② Berchem Ste. Agathe
 - ③ Gontrode
 - ④ Düsseldorf
 - ⑤ Hanover
 - ⑥ Schneidemühl
 - ⑦ Kovno

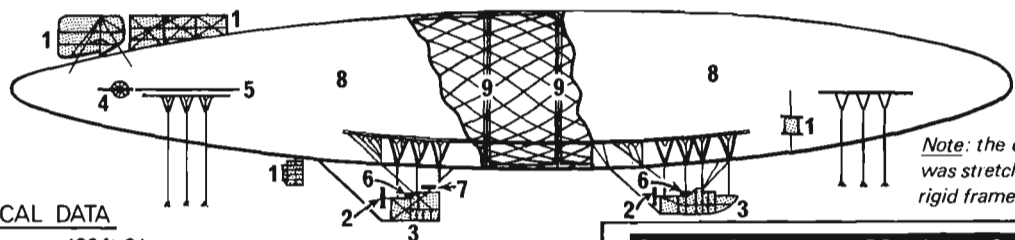
- ### NAVY BASES
- A Namur
 - B Düren
 - C Jüterbog
 - D Johannisthal
 - E Leipzig
 - F Dresden
 - G Jamboli

- ### CONSTRUCTION PLANTS
- ① Friedrichshafen
 - ② Löwenthal
 - ③ Potsdam
 - ④ Zeesen
 - ⑤ Tegel
 - ⑥ Staaken
 - ⑦ Bitterfeld
 - ⑧ Leipzig
 - ⑨ Mannheim

On 5 January 1918, five German airships were destroyed in a sudden and still-unexplained fire at Alhorn. Zeppelins L.46, L.47, L.51, and L.58, plus the Schütte-Lanz SL.20, were involved and the German Naval Airship Division lost 10 men dead, 30 seriously injured, and 104 slightly injured. A further 4 civilian technicians were killed. The most widely held theory is that the blaze originated in the rear gondola of L.51 through the use of petroleum as a cleaning agent by civilian workmen. The German airship service never properly recovered from this disaster.

Airship SCHÜTTE-LANZ

Designed by Professor Schütte and Dr. Lanz. Built in October 1912.



Note: the envelope was stretched on a rigid frame of plywood.

TECHNICAL DATA

- Length: 426 ft. 8 ins.
- Diameter: 59 ft. 1 in.
- Total weight: 17,196 lb.
- Engines: 2 Daimler's (total 500 h.p.)
- Gas employed: Hydrogen
- Gas capacity: 706,320 cubic ft.

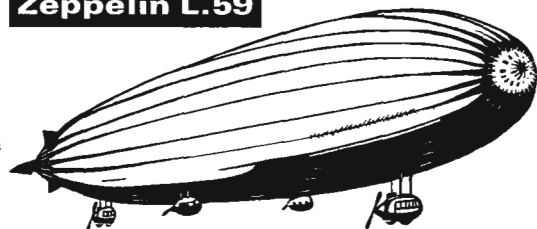
- ### KEY
- 1 Rudder. 2 Propeller.
 - 3 Gondola. 4 Elevator.
 - 5 Stabilizing plane.
 - 6 Engine. 7 Fuel tank.
 - 8 Envelope. 9 Frame.

GERMAN NAVAL AIRSHIP DIVISION 1914-18

AIRSHIPS IN SERVICE:	73
(59 Zeppelins, 8 Schütte-Lanz, 6 other types)	
AIRSHIP LOSSES IN RAIDS:	17
CREW LOSSES:	389
TOTAL RAID FLIGHTS:	342
TOTAL SCOUTING FLIGHTS:	1191

ZEPPELIN L.59 AND "THE AFRICA RAID" 21-25 NOVEMBER 1917

Zeppelin L.59



Length: 743 ft. 0 ins.
Diameter: 78 ft. 5 ins.

Max. speed: 64 m.p.h.
Height: 91 ft. 1 in.

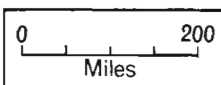
KEY



Route of Zeppelin L.59
21-25 November 1917.



Position where L.59
sank on 7 April 1918
after accidental fire
during flight to bomb
Malta. The entire crew
of 23 perished.

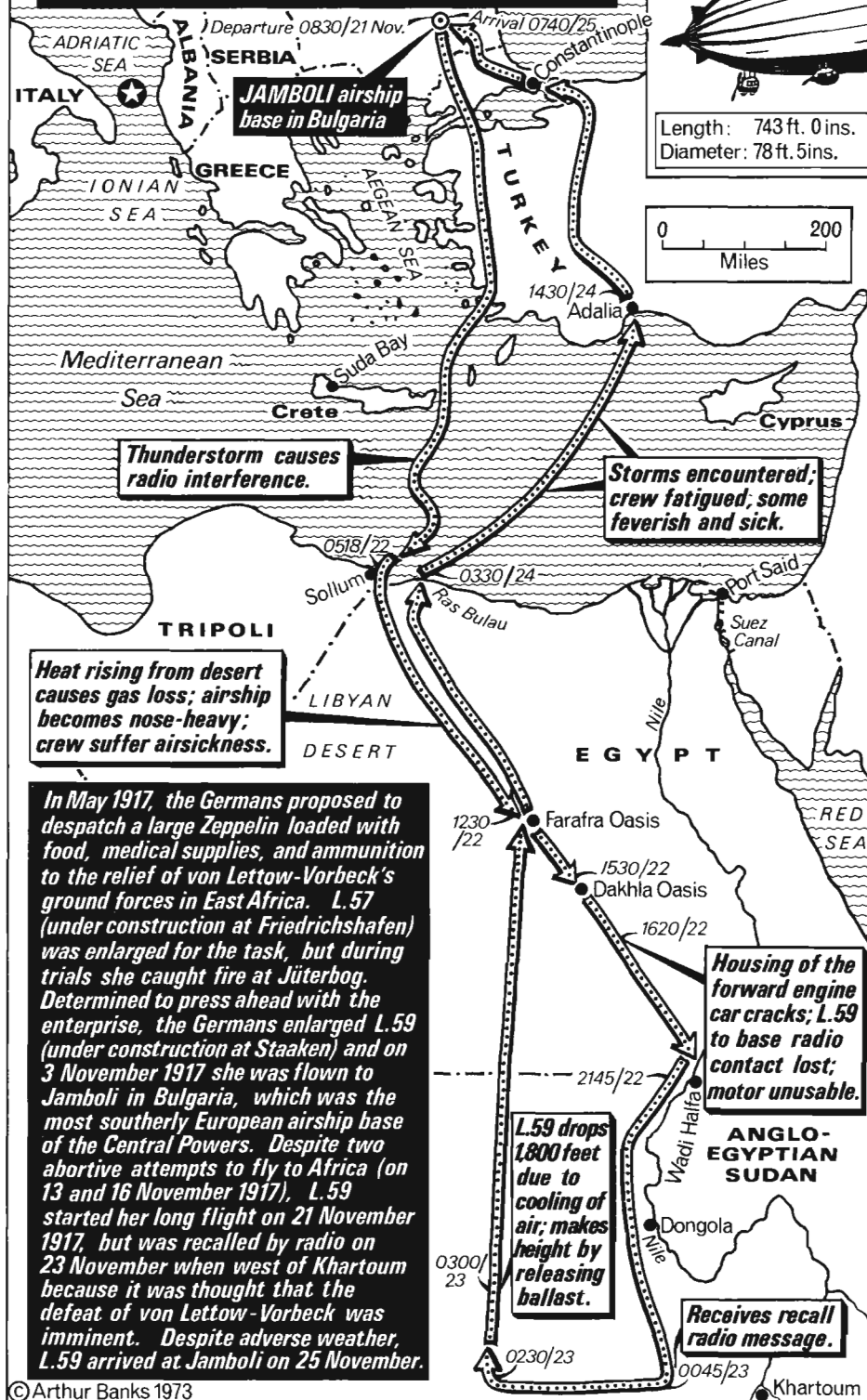


CARGO CARRIED DURING THE AFRICA FLIGHT

311,000 rounds rifle ammunition
57,500 machine-gun cartridges
in belts
13,500 machine-gun cartridges
in boxes
30 machine-guns
9 spare machine-gun
barrels
61 sacks medical supplies
plus
food, mail, binoculars, spare
radio parts, bush knives, etc.

AFRICA FLIGHT DETAILS

Time in air: 95 hrs. 10 mins.
Distance flown: 4,200 miles
Maximum altitude: 9,850 feet
Average speed: 44 m.p.h.
Complement: 22 men
Fuel carried: 47,800 lb.
Fuel consumed: 25,050 lb.
Oil carried: 3,360 lb.
Oil consumed: 1,107 lb.
Gas used: 930,000 cu. ft.
Ballast carried: 20,200 lb.
Cargo and bombs: 35,800 lb.



Thunderstorm causes
radio interference.

Storms encountered;
crew fatigued; some
feverish and sick.

Heat rising from desert
causes gas loss; airship
becomes nose-heavy;
crew suffer airsickness.

In May 1917, the Germans proposed to despatch a large Zeppelin loaded with food, medical supplies, and ammunition to the relief of von Lettow-Vorbeck's ground forces in East Africa. L. 57 (under construction at Friedrichshafen) was enlarged for the task, but during trials she caught fire at Jüterbog. Determined to press ahead with the enterprise, the Germans enlarged L. 59 (under construction at Staaken) and on 3 November 1917 she was flown to Jamboli in Bulgaria, which was the most southerly European airship base of the Central Powers. Despite two abortive attempts to fly to Africa (on 13 and 16 November 1917), L. 59 started her long flight on 21 November 1917, but was recalled by radio on 23 November when west of Khartoum because it was thought that the defeat of von Lettow-Vorbeck was imminent. Despite adverse weather, L. 59 arrived at Jamboli on 25 November.

L.59 drops
1,800 feet
due to
cooling of
air; makes
height by
releasing
ballast.

Housing of the
forward engine
car cracks; L.59
to base radio
contact lost;
motor unusable.

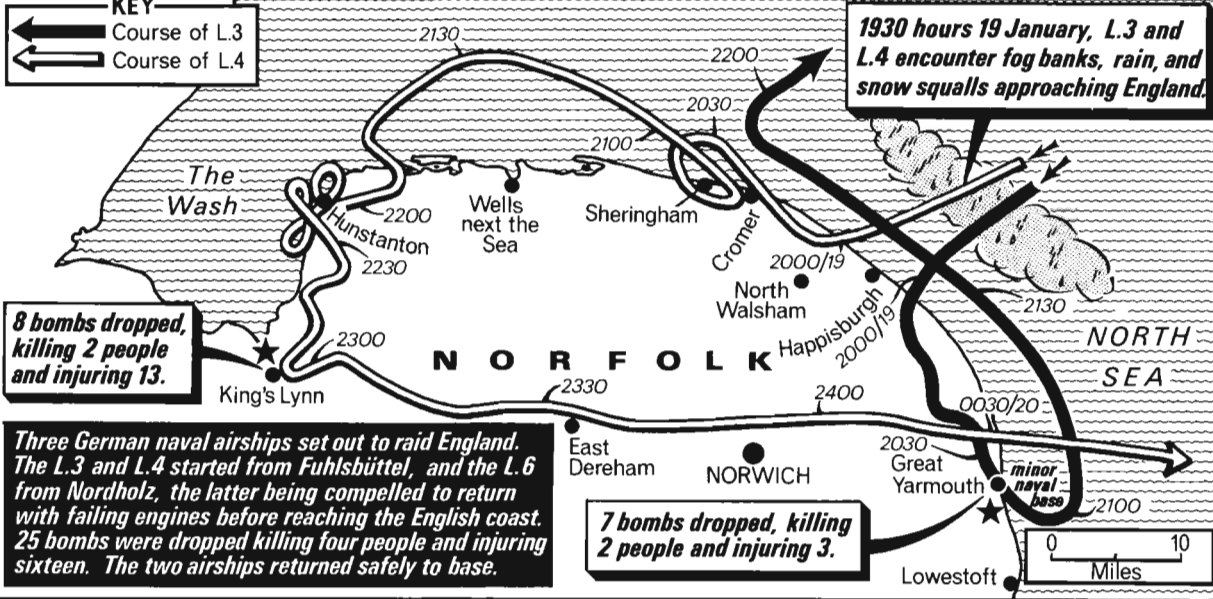
Receives recall
radio message.

In 1918, L.59 raided Naples, but
was unsuccessful in attempts to
raid Port Said and Suda Bay.

GERMAN AIRSHIP RAIDS ON BRITAIN 1915-1918

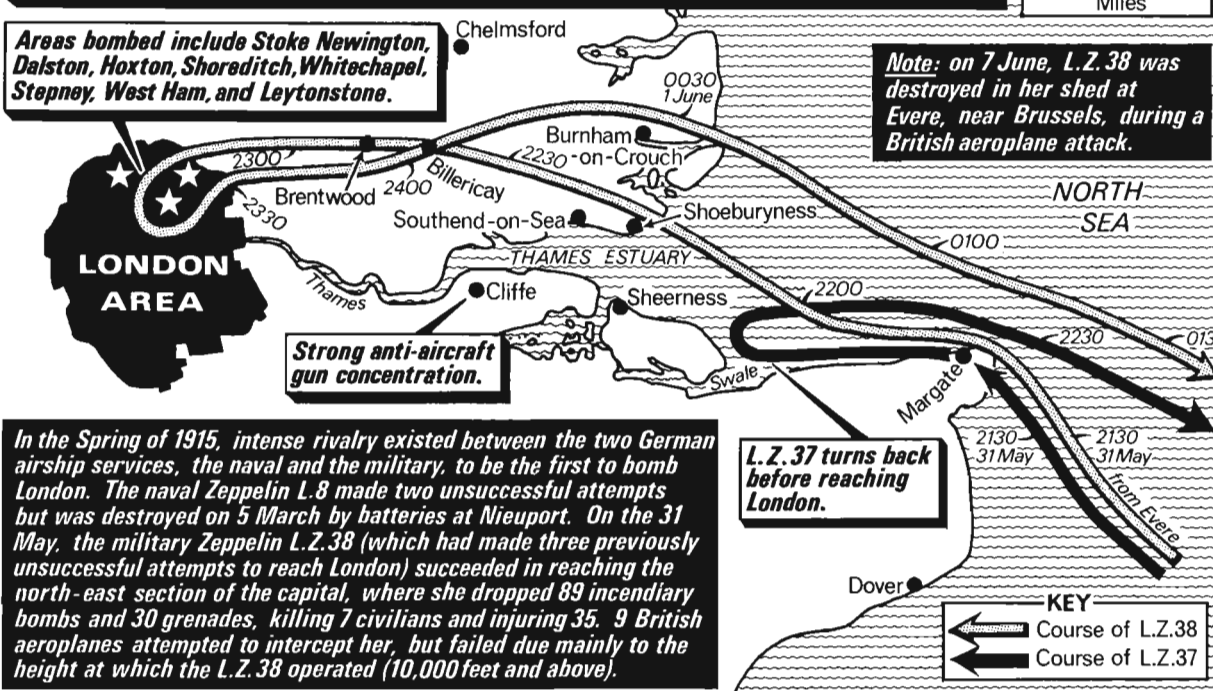
1 The First Airship Raid on Norfolk - Night 19/20 January 1915

KEY
 ← Course of L.3
 ← Course of L.4



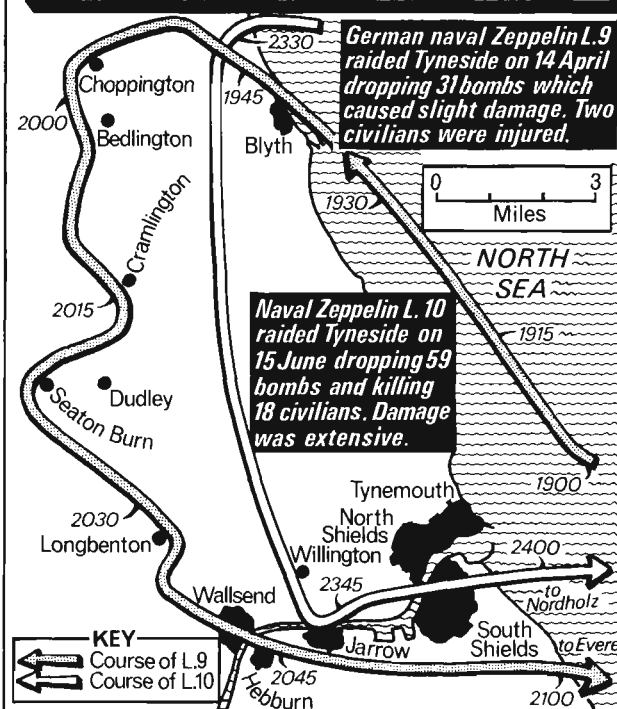
2 The First Zeppelin Raid on London - Night 31 May/1 June 1915

Areas bombed include Stoke Newington, Dalston, Hoxton, Shoreditch, Whitechapel, Stepney, West Ham, and Leytonstone.

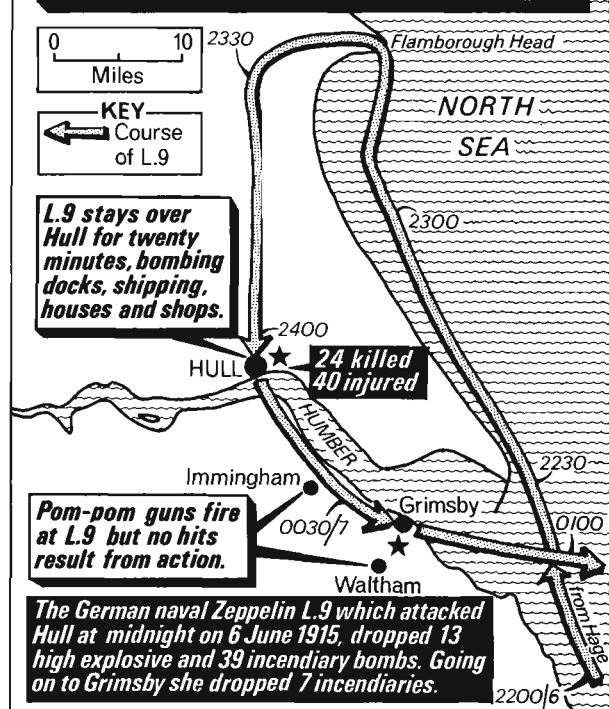


In the Spring of 1915, intense rivalry existed between the two German airship services, the naval and the military, to be the first to bomb London. The naval Zeppelin L.8 made two unsuccessful attempts but was destroyed on 5 March by batteries at Nieuport. On the 31 May, the military Zeppelin L.Z.38 (which had made three previously unsuccessful attempts to reach London) succeeded in reaching the north-east section of the capital, where she dropped 89 incendiary bombs and 30 grenades, killing 7 civilians and injuring 35. 9 British aeroplanes attempted to intercept her, but failed due mainly to the height at which the L.Z.38 operated (10,000 feet and above).

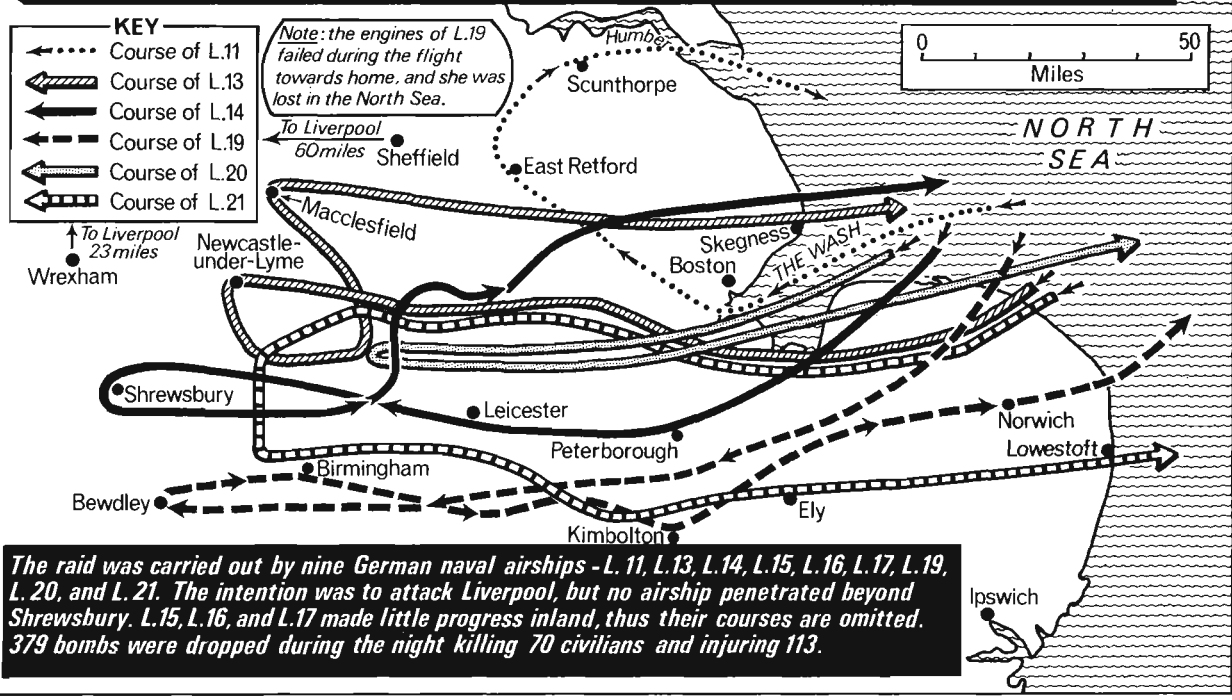
③ Early Tyneside Raids-April/June 1915



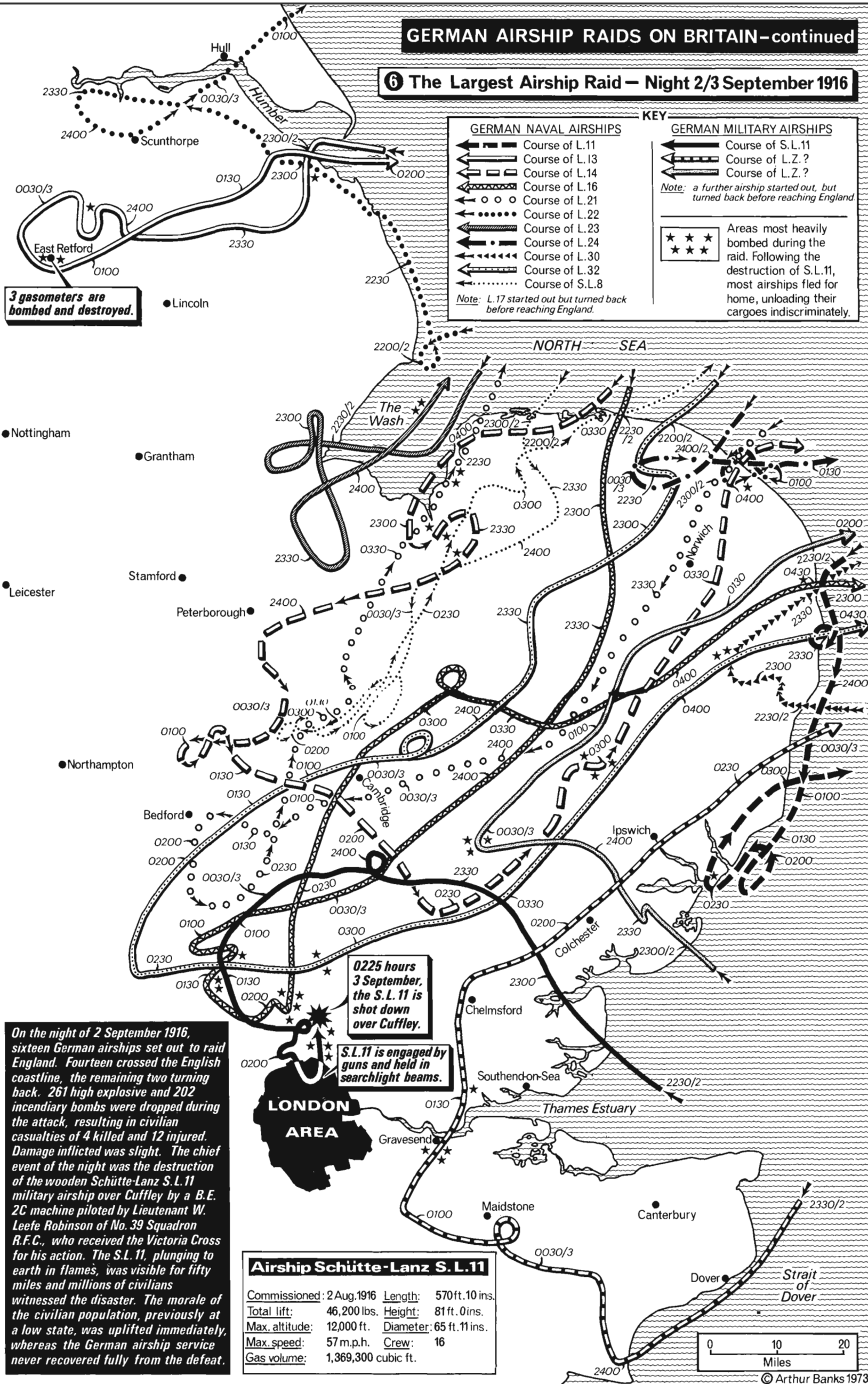
④ First Humber Raid-6/7 June 1915



⑤ The First Sizable Raid on the Midlands-Night 31 January/1 February 1916



6 The Largest Airship Raid — Night 2/3 September 1916



3 gasometers are bombed and destroyed.

0225 hours 3 September, the S.L. 11 is shot down over Cuffley.

S.L. 11 is engaged by guns and held in searchlight beams.

On the night of 2 September 1916, sixteen German airships set out to raid England. Fourteen crossed the English coastline, the remaining two turning back. 261 high explosive and 202 incendiary bombs were dropped during the attack, resulting in civilian casualties of 4 killed and 12 injured. Damage inflicted was slight. The chief event of the night was the destruction of the wooden Schütte-Lanz S.L.11 military airship over Cuffley by a B.E. 2C machine piloted by Lieutenant W. Leefe Robinson of No. 39 Squadron R.F.C., who received the Victoria Cross for his action. The S.L. 11, plunging to earth in flames, was visible for fifty miles and millions of civilians witnessed the disaster. The morale of the civilian population, previously at a low state, was uplifted immediately, whereas the German airship service never recovered fully from the defeat.

Airship Schütte-Lanz S. L. 11

Commissioned:	2 Aug. 1916	Length:	570 ft. 10 ins.
Total lift:	46,200 lbs.	Height:	81 ft. 0 ins.
Max. altitude:	12,000 ft.	Diameter:	65 ft. 11 ins.
Max. speed:	57 m.p.h.	Crew:	16
Gas volume:	1,369,300 cubic ft.		

288

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GERMAN AIRSHIP RAIDS ON BRITAIN - continued

7 The 'Silent Raid'-Night 19/20 October 1917

1 Eleven naval Zeppelins from four German bases cross North Sea to raid England. Weather good.

2 At height of four miles, fleet is caught in 60 m.p.h. gale which blows it off-course across south-eastern England.

3 London shrouded in ground mist. Defences remain silent as raiders pass over capital.

7 Believing herself over friendly territory, L.50 descends and sixteen men disembark. Rising again, she drifts southwards blown by winds.

5 L.49 is attacked by five French fighter aircraft and forced to land in the valley of Apance. The French prevent crew from destroying L.49. Thus, the Allies capture a fully operational model of the latest type of German airship.

6 L.45, out of fuel, attempts to land but is caught in gale and dashed against ground. Crew surrender after firing Zeppelin.

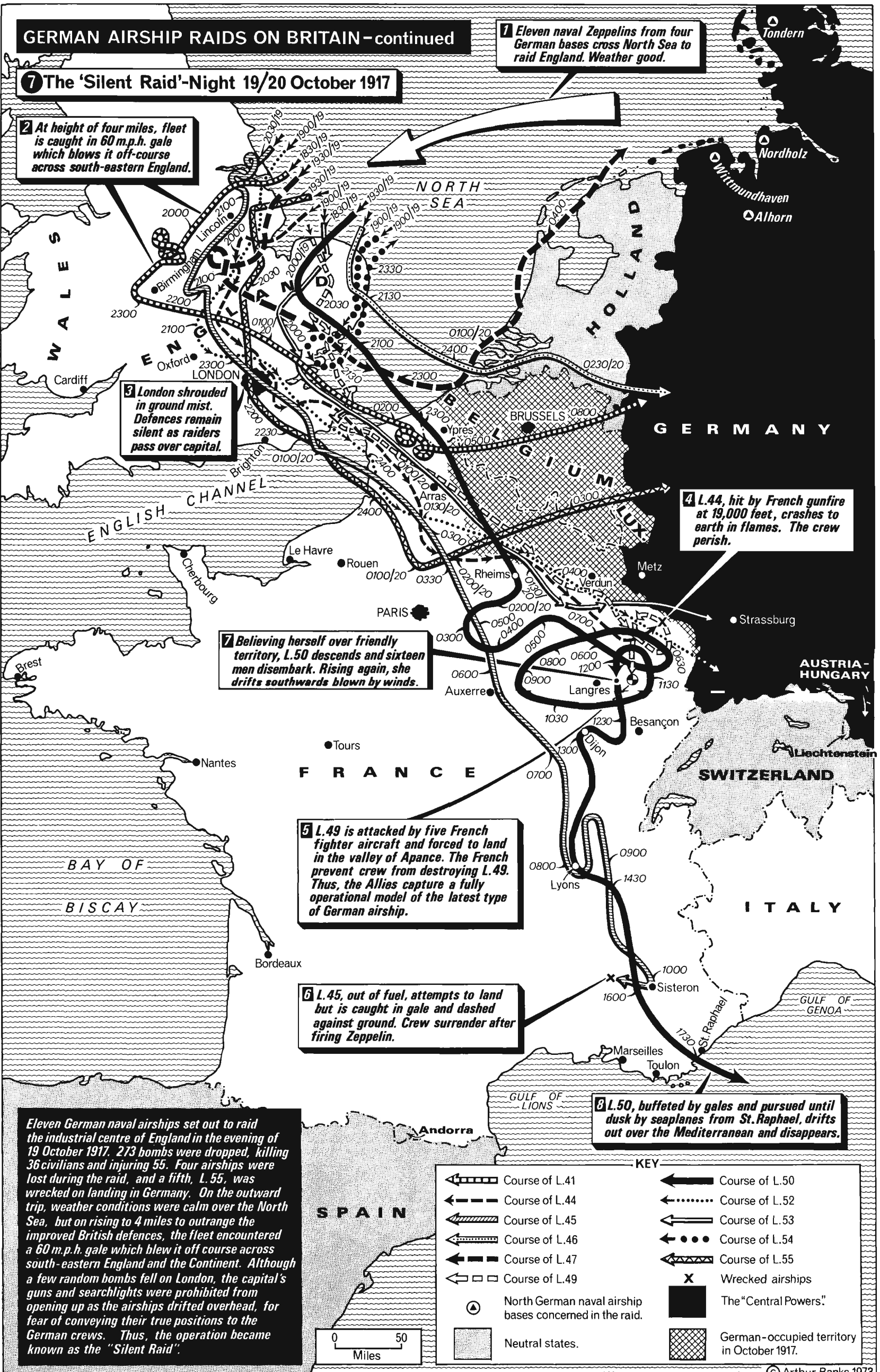
4 L.44, hit by French gunfire at 19,000 feet, crashes to earth in flames. The crew perish.

8 L.50, buffeted by gales and pursued until dusk by seaplanes from St. Raphael, drifts out over the Mediterranean and disappears.

Eleven German naval airships set out to raid the industrial centre of England in the evening of 19 October 1917. 273 bombs were dropped, killing 36 civilians and injuring 55. Four airships were lost during the raid, and a fifth, L.55, was wrecked on landing in Germany. On the outward trip, weather conditions were calm over the North Sea, but on rising to 4 miles to outrange the improved British defences, the fleet encountered a 60 m.p.h. gale which blew it off course across south-eastern England and the Continent. Although a few random bombs fell on London, the capital's guns and searchlights were prohibited from opening up as the airships drifted overhead, for fear of conveying their true positions to the German crews. Thus, the operation became known as the "Silent Raid".

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KEY

Course of L.41	Course of L.50
Course of L.44	Course of L.52
Course of L.45	Course of L.53
Course of L.46	Course of L.54
Course of L.47	Course of L.55
Course of L.49	Wrecked airships
North German naval airship bases concerned in the raid.	The "Central Powers."
Neutral states.	German-occupied territory in October 1917.

GERMAN BOMBER RAIDS ON ENGLAND 1917-1918

1 The German Bases near Ghent in Belgium

Gotha base (usually two flights).

Gotha base following British bombings of St. Denis-Westrem and Gontrode (Sept. 1917).

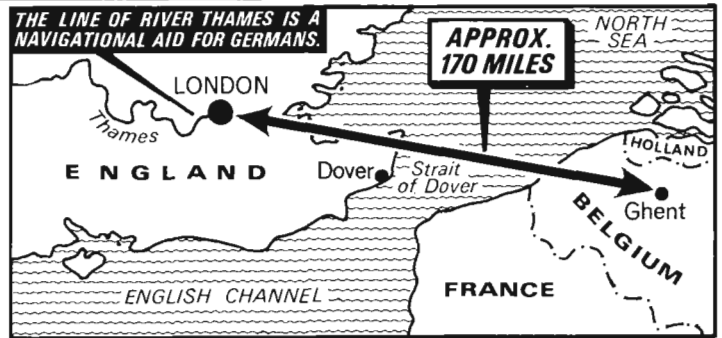
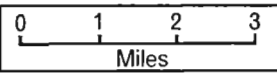
HQ Kagohl 3 (official title of England Squadron). Also Gotha base. HQ moves to Ghent after September 1917.

From 24 December 1914 onwards, German single-engined aircraft raided English coastal towns, notably Dover. On 28 November 1916, a lone German aeroplane reached London and dropped six bombs. Elated by this exploit, the Germans formed an 'England Squadron' equipped with heavy bombers to raid the British capital. Two basic types of aircraft were employed, the 'Riesenflugzeugen' (Giant) and the Gotha; their main bases are shown on this map. (Majority of raids were by Gothas).



Gotha base (some Giants in winter 1917).

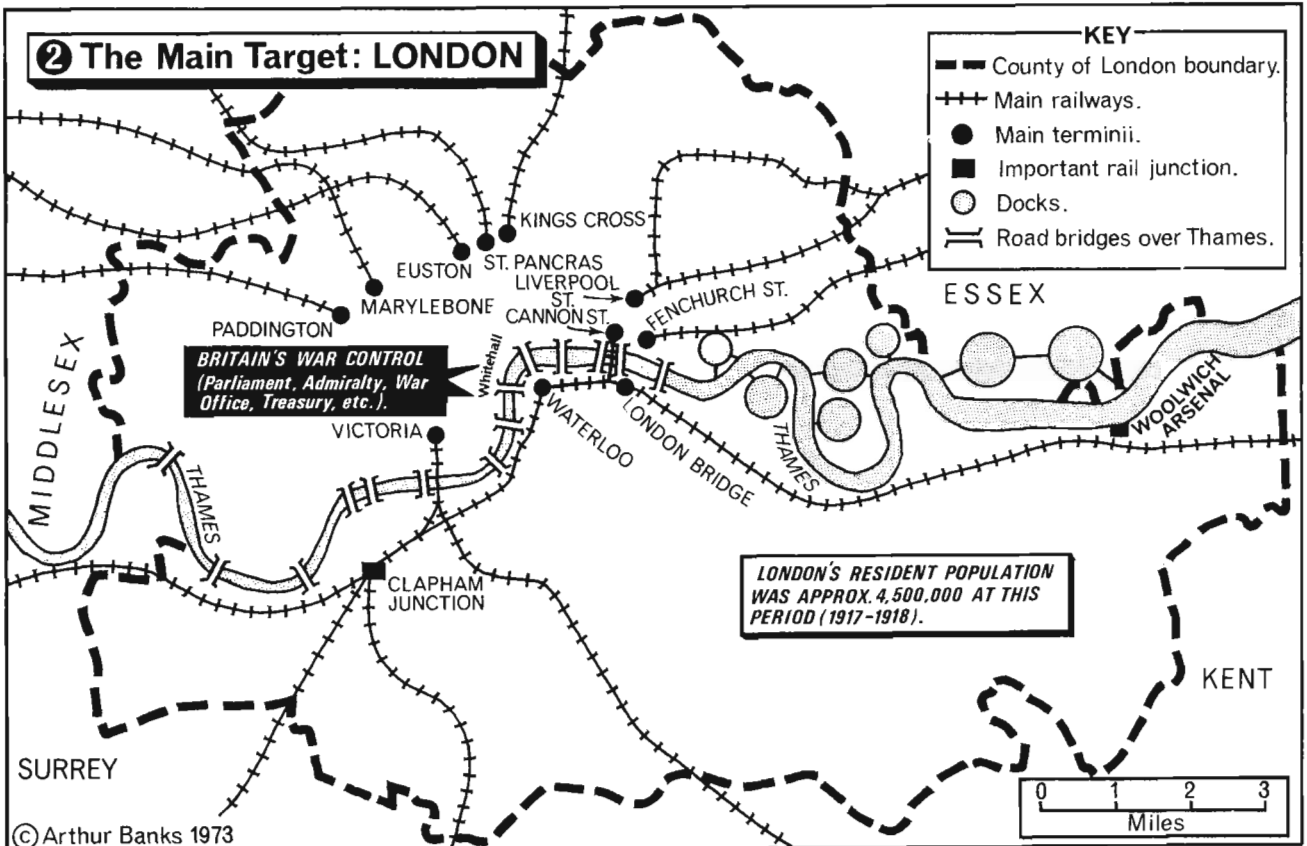
Permanent Giant base from 7 March 1918.



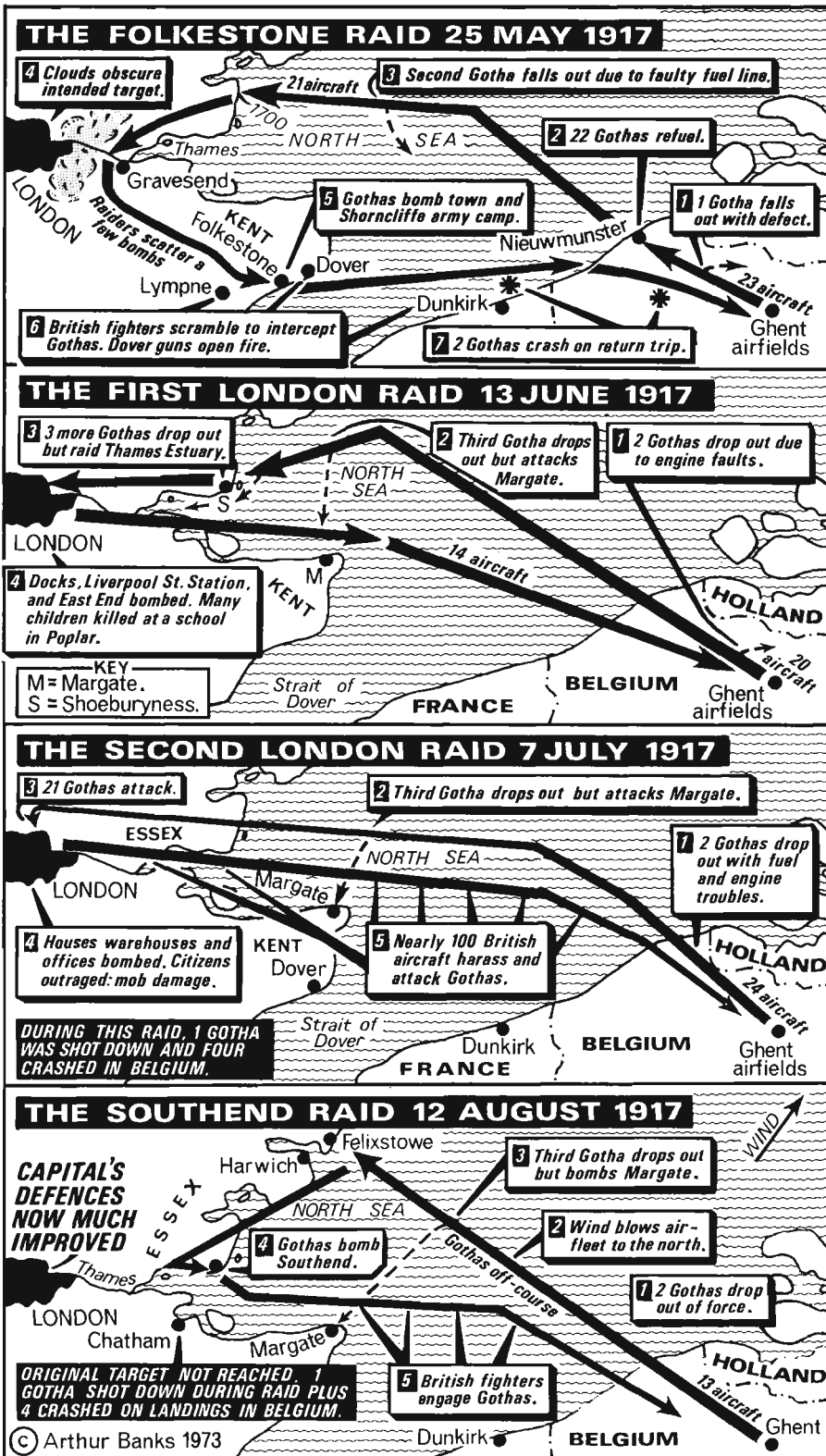
2 The Main Target: LONDON

KEY

- County of London boundary.
- +++ Main railways.
- Main termini.
- Important rail junction.
- Docks.
- Road bridges over Thames.



Employing Gotha bombers, the Germans made eight mass-attacks in daylight against England in 1917. 165 aircraft flights were involved and nearly 73,000 lbs. of bombs were dropped, killing or injuring 1,364 English civilians. Seventeen Gothas were destroyed during the period 25 May - 22 August 1917. Four of the attacks are shown below.



THE EIGHT DAYLIGHT RAIDS

1 25 MAY 1917

Aircraft employed: 23.
 Aircraft lost: 2.
 Damage caused: £19,500.
 Civilians killed: 95.

2 5 JUNE 1917

Aircraft employed: 22.
 Aircraft lost: 1.
 Damage caused: £5,000.
 Civilians killed: 13.

3 13 JUNE 1917

Aircraft employed: 20.
 Aircraft lost: Nil.
 Damage caused: £129,500.
 Civilians killed: 162.

4 4 JULY 1917

Aircraft employed: 25.
 Aircraft lost: Nil.
 Damage caused: £2,100.
 Civilians killed: 17.

5 7 JULY 1917

Aircraft employed: 24.
 Aircraft lost: 5.
 Damage caused: £205,500.
 Civilians killed: 57.

6 22 JULY 1917

Aircraft employed: 23.
 Aircraft lost: 1.
 Damage caused: £2,800.
 Civilians killed: 13.

7 12 AUGUST 1917

Aircraft employed: 13.
 Aircraft lost: 5.
 Damage caused: £9,600.
 Civilians killed: 32.

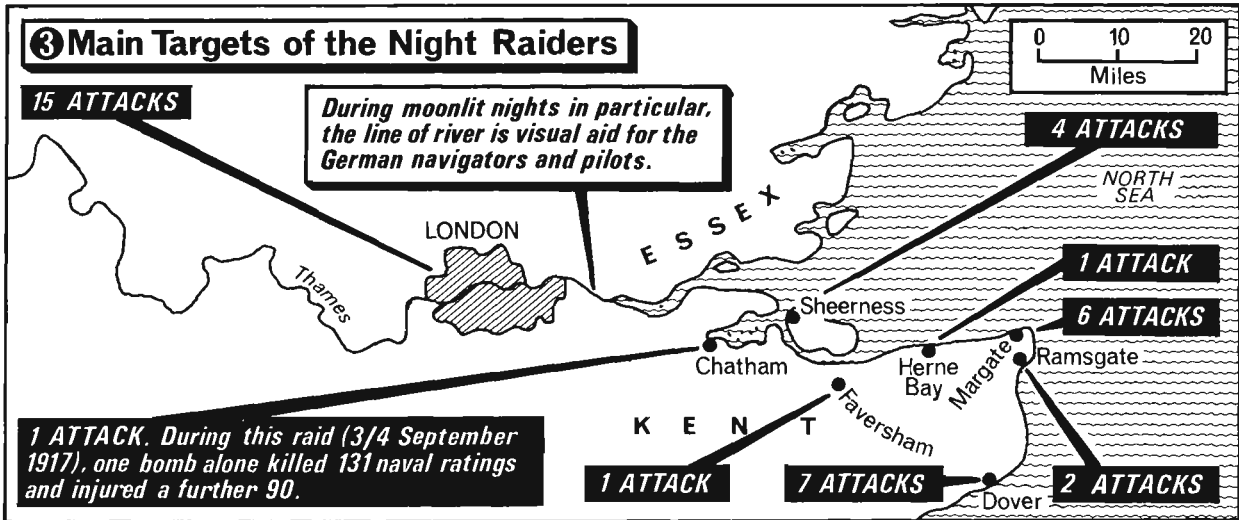
8 22 AUGUST 1917

Aircraft employed: 15.
 Aircraft lost: 3.
 Damage caused: £17,200.
 Civilians killed: 12.

GERMAN BOMBER RAIDS ON ENGLAND* - continued

*TOTAL MASS RAIDS (1917-1918) = 27.

Because of the increasing efficiency of Britain's defences, the Germans switched from daylight to darkness for their attacks. 19 raids were carried out between 3 September 1917 and 20 May 1918 and often several towns were bombed during a single raid. At one period, 300,000 Londoners sought refuge at Underground stations.



THE 19 DARKNESS RAIDS

- ① 3-4 September.
- ② 4-5 September.
- ③ 24 September.
- ④ 25 September.
- × ⑤ 28 September.
- ⑥ 29 September.
- ⑦ 30 September.
- ⑧ 1-2 October.
- ⑨ 29 October.
- * ⑩ 31 October-1 November.
- ⑪ 6 December.
- ⑫ 18 December.
- ⑬ 22 December.
- ⑭ 28-29 January.
- ⑮ 29-30 January.
- ⑯ 16 February.
- ⑰ 17 February.
- ⑱ 7-8 March.
- ⑲ 19-20 May.

1917

1918

× indicates first 'Giant' raid.
* indicates first incendiary bomb raid.

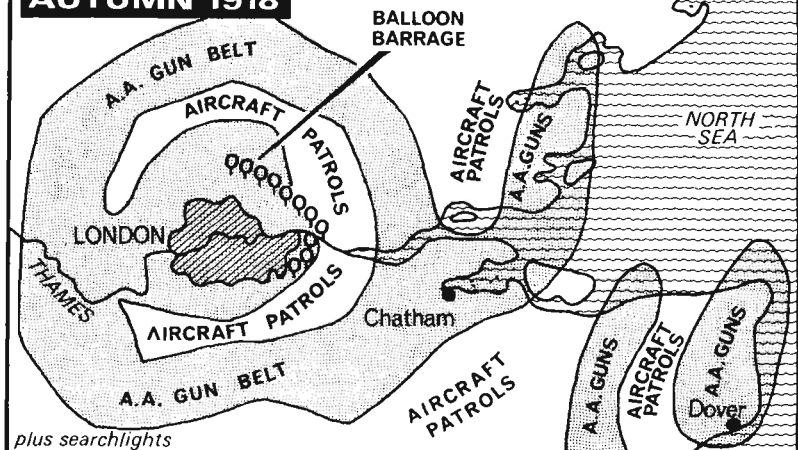
THE GERMAN 'ELEKTRON' BOMB (AUGUST 1918)

Weighing approx. one kilogram, this incendiary device ignited upon contact. Constructed of magnesium, its main feature was that when sprayed with water, the existing fire became even fiercer. The Germans planned to drop large numbers on London (and Paris), but the Allied offensives in the autumn of 1918 frustrated this idea.

GERMAN BOMBER LOSSES

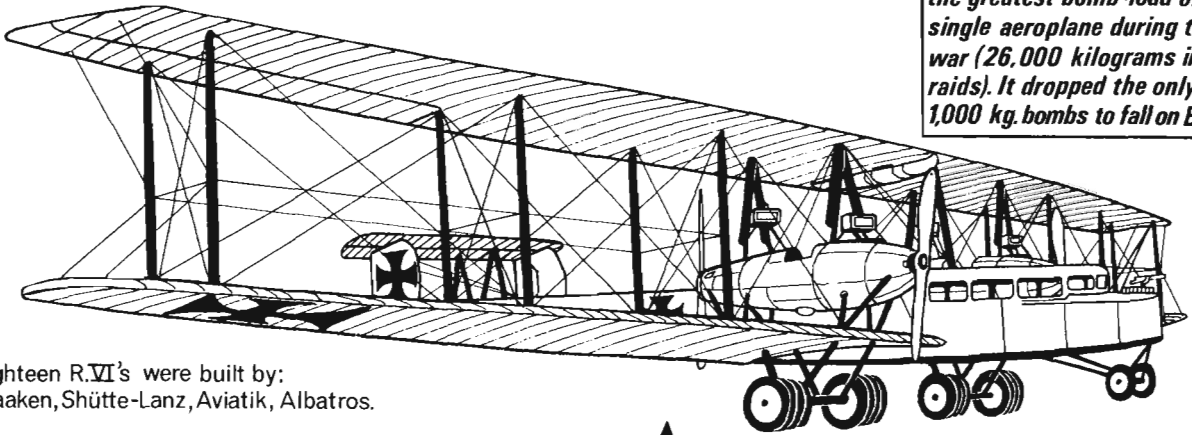
43 Gothas (from 383 flights) } ALL ATTACKS, { shot down, crashed,
2 Giants (from 30 flights) } NIGHT AND DAY { missing, etc.

SOUTH-EAST ENGLAND'S DEFENCES AUTUMN 1918



GERMAN Zeppelin-Staaken R.VI (Giant) Bomber

One R.VI, the R.39, delivered the greatest bomb-load of any single aeroplane during the war (26,000 kilograms in 20 raids). It dropped the only 3 1,000 kg. bombs to fall on Britain.



Eighteen R.VI's were built by: Staaken, Shütte-Lanz, Aviatik, Albatros.

SPECIAL FEATURES

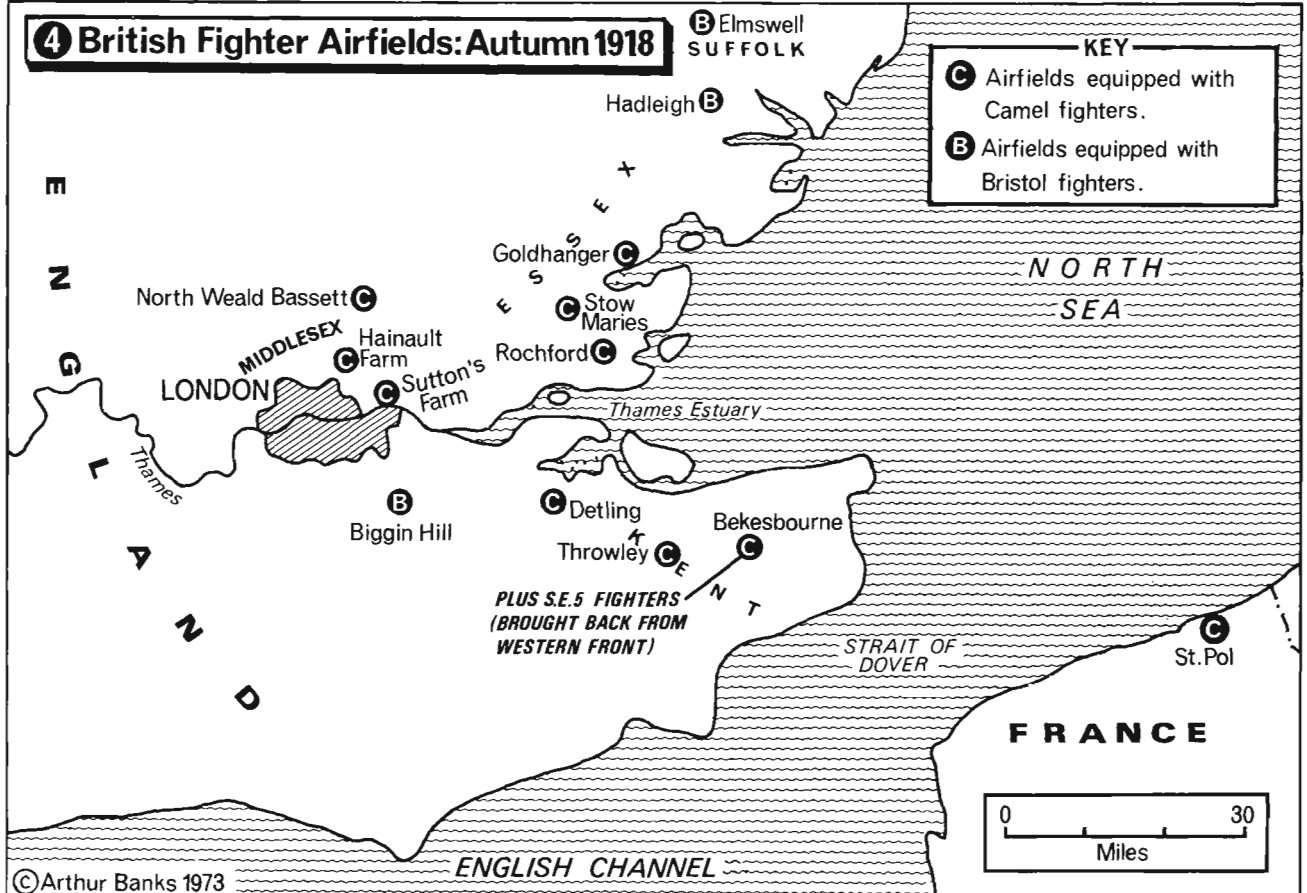
- 1 All engines accessible during flight.
- 2 Extra engine for powering wireless transmitter.
- 3 Inter-communication.
- 4 Dual control.
- 5 Separate bomb-aimer's position.
- 6 British Lewis guns used in armament.

VERSION: 4 Maybach engines	VERSION: 4 Mercedes engines
Length: 72 feet, 6 inches.	Length: 72 feet, 6 inches.
Span: 138 feet, 6 inches.	Span: 138 feet, 6 inches.
Speed: 84 m.p.h.	Speed: 80.8 m.p.h.
Ceiling: 14,200 feet.	Ceiling: 12,500 feet.
Endurance: 8-10 hours.	Endurance: 7-8 hours.

4 British Fighter Airfields: Autumn 1918

B Elmswell
SUFFOLK

- KEY
- C Airfields equipped with Camel fighters.
 - B Airfields equipped with Bristol fighters.



BRITAIN UNDER BOMBARDMENT 1914-1917

Between 16 December 1914 and 17 June 1917, there were 57 German aeroplane raids on Britain, 51 airship raids, and 12 naval bombardments from the North Sea. Total British casualties (civilian and military-naval) amounted to 5,620, 1,570 being killed and 4,050 injured. Damage amounted to over £3,500,000 (estimate based on 1914 values).



BRITISH CASUALTIES

1 DUE TO GERMAN AEROPLANE RAIDS	
Total:	2,908
2 DUE TO GERMAN AIRSHIP RAIDS	
Total:	1,914
3 DUE TO GERMAN NAVAL BOMBARDMENTS	
Total:	798

ANALYSIS OF FIGURES

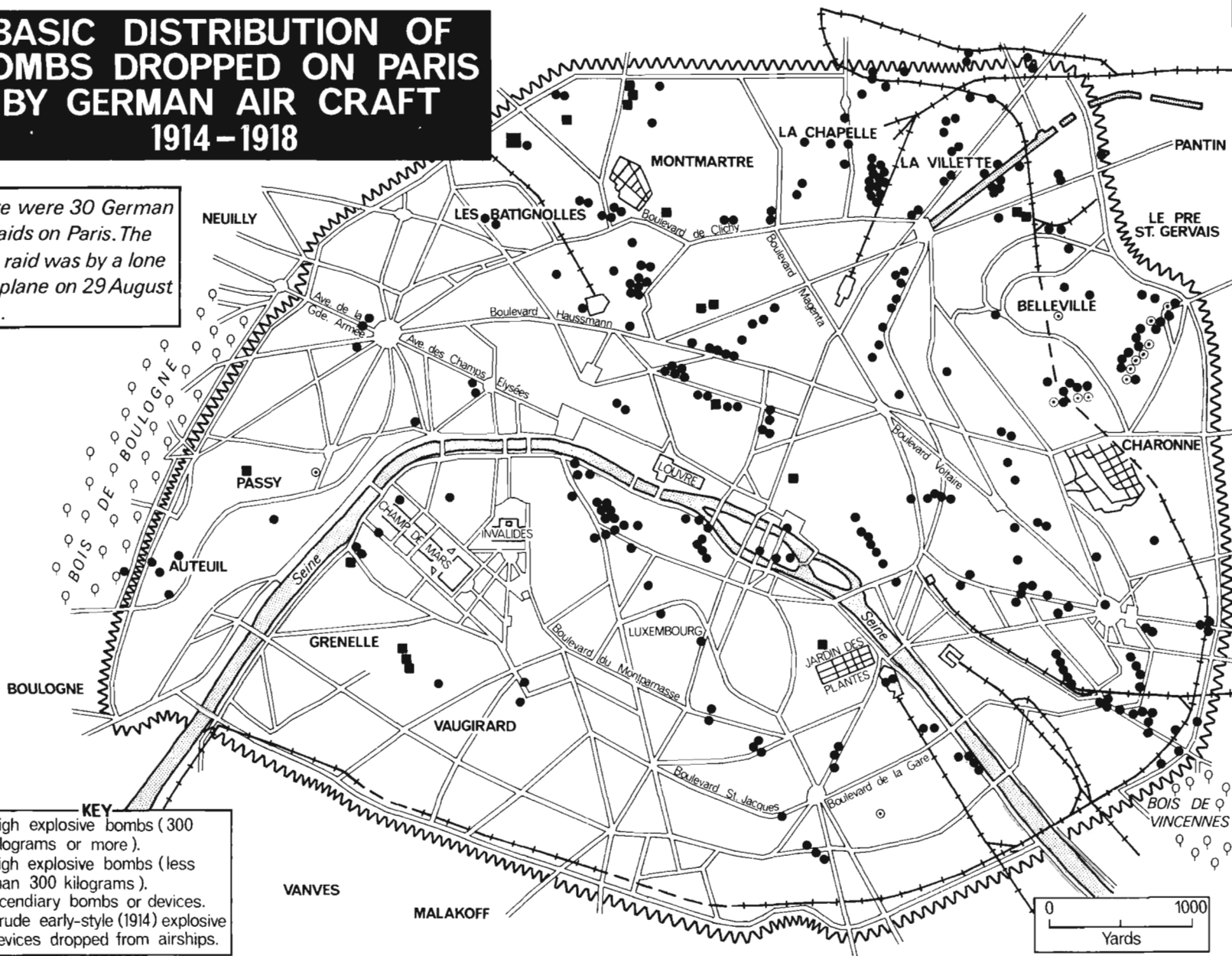
1 Killed: 857	Injured: 2,051
2 Killed: 556	Injured: 1,358
3 Killed: 157	Injured: 641

KEY

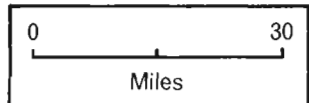
- Areas raided by German aeroplanes.
- Areas raided by German airships.
- Areas bombed by German naval units.

BASIC DISTRIBUTION OF BOMBS DROPPED ON PARIS BY GERMAN AIR CRAFT 1914-1918

There were 30 German air raids on Paris. The first raid was by a lone aeroplane on 29 August 1914.



THE BRITISH STRATEGIC BOMBING OFFENSIVE OF 1918

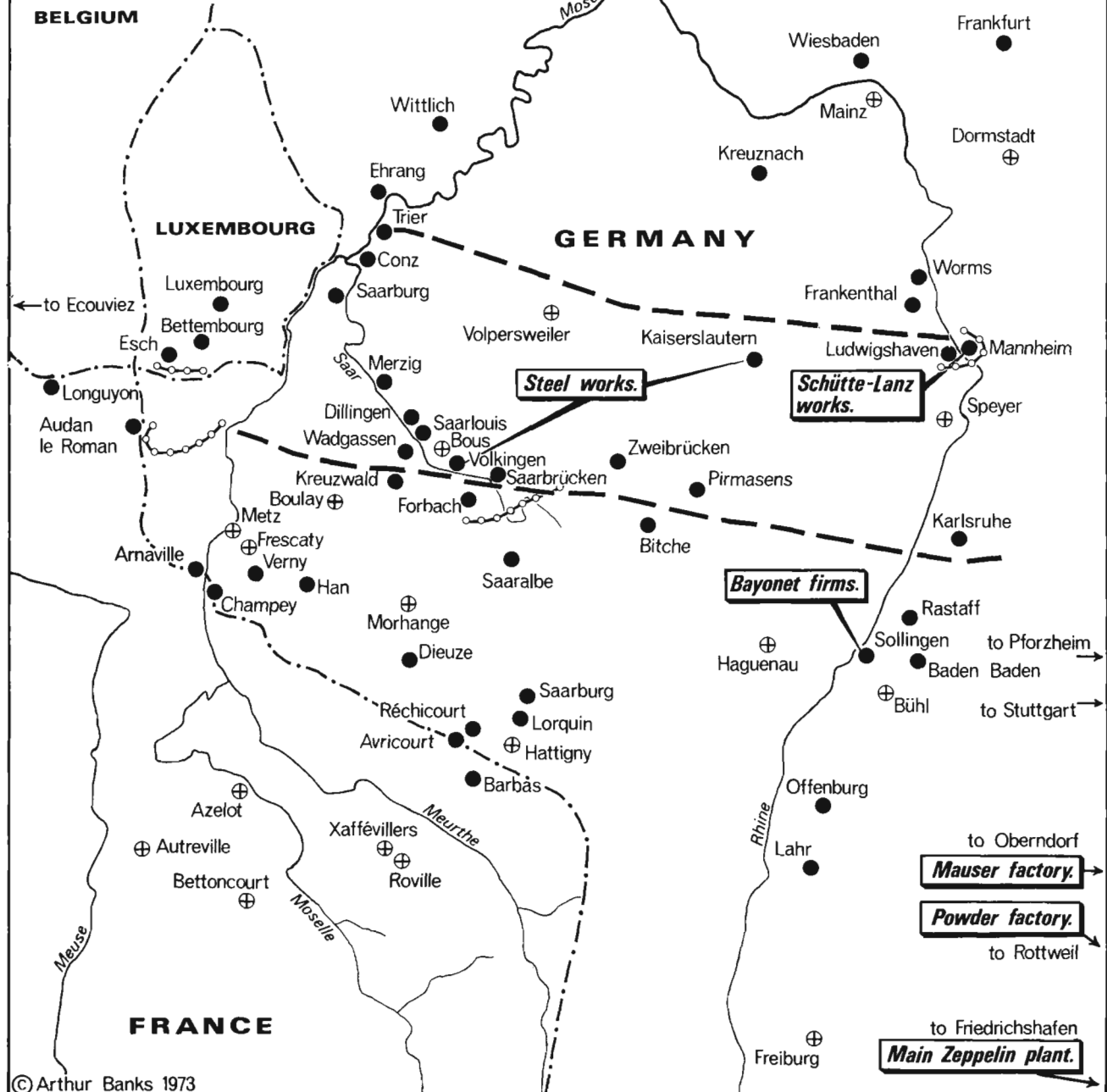


The Independent Air Force was formed to conduct operations against the heartland of Germany (rather than as a tactical support force) and to destroy the weapons in their factories before they reached the battlefield.

Steel works.

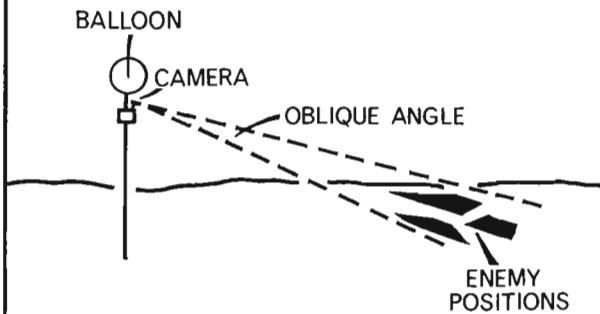
KEY

- Towns bombed by the British.
- ⊕ German aerodromes.
- German balloon barrages.
- - - German fighter patrol lines.



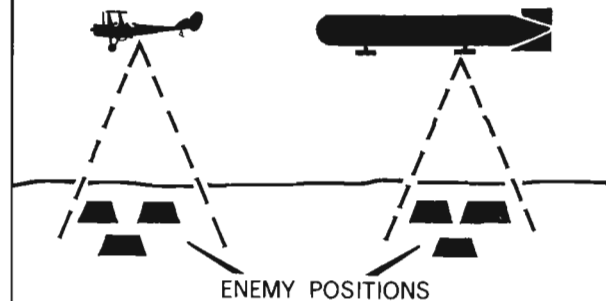
DEVELOPMENTS IN AERIAL SURVEYING 1914 - 1918

1 Balloon Photography



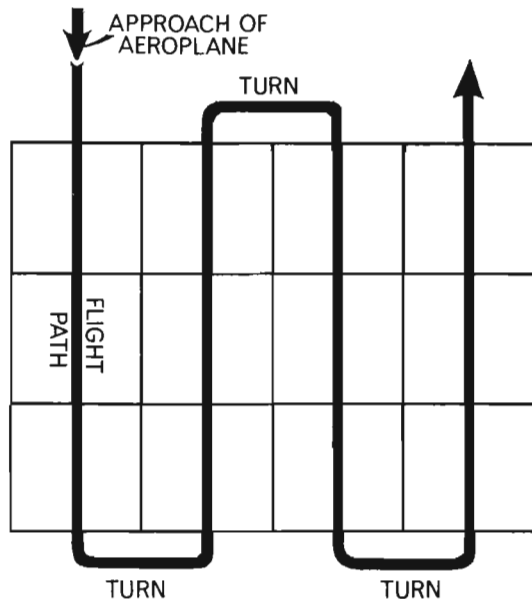
From the cartographic viewpoint, this method was unsatisfactory due to distortion of scale. What was required was overhead 'plan view' photography.

2 Overhead Photography



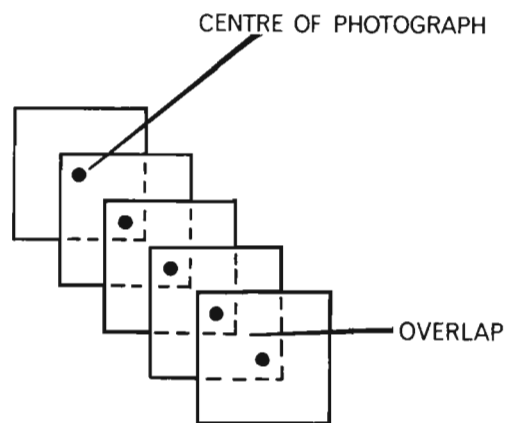
By utilising aeroplanes and airships, overhead views could be obtained. Battle maps improved both in scale accuracy and in detail shown.

3 The Mosaic Map



To cover large areas, photographs were butt-jointed together to form one vast panoramic spread.

4 The Overlap Refinement



The mosaic map left much to be desired as only the centres of photographs were true to scale, and these varied individually. By regulating camera shutters at fixed intervals while aircraft maintained a consistent height, resulting prints could be overlapped to register uniformly.

THE FIGHTER 'ACES'

Note: main decorations only shown.

THE INTERNATIONAL TOP TEN SCORERS

POSITION	NAME	COUNTRY	'KILLS'
1	RICHTHOFEN	GERMANY	80
2	FONCK	FRANCE	75 ?
3	MANNOCK	BRITAIN	73 ?
4	BISHOP	CANADA	72
5	UDET	GERMANY	62
6	COLLISHAW	CANADA	60
7	McCUDDEN	BRITAIN	57
8	BEAUCHAMP-PROCTOR	SOUTH AFRICA	54
8	MacLAREN	CANADA	54
8	GUYNEMER	FRANCE	54

GERMAN TOP SCORERS

1	Rittmeister Manfred von Richthofen	All six aces won <i>Pour le Mérite</i> (in Germany an 'ace' implied 10 or more victories).	80 kills
2	Oberleutnant Ernst Udet		62 kills
3	Oberleutnant Erich Loewenhardt		53 kills
4	Leutnant Werner Voss		48 kills
5	Hauptmann Rudolph Berthold		44 kills
6	Leutnant Paul Bäumer		43 kills

FRENCH TOP SCORERS

1	Capitaine Rene Paul Fonck, L d'H, C de G with 28 Palms, MC, CK	75 kills
2	Capitaine Georges M.L.J. Guynemer, L d'H, MM, C de G (26 Palms)	54 kills
3	Lieutenant Charles E J M Nungesser, L d'H, MM, C de G	45 kills
4	Capitaine Georges Felix Madon, L d'H, MM, C de G	41 kills
5	Lieutenant Maurice Bayau, L d'H, MM, C de G	35 kills
6	Lieutenant Michel Coifford, L d'H, MM, C de G	34 kills

BRITISH EMPIRE TOP SCORERS

1	Major Edward Mannoock, VC, DSO and 2 bars, MC and bar	73 kills
2	Lt. Colonel William A. Bishop, VC, DSO and bar, MC, DFC, L d'H	72 kills
3	Lt. Colonel Raymond Collishaw, DSO and bar, DSC, DFC, C de G	60 kills
4	Major James T.B. McCudden, VC, DSO and bar, MC and bar, MM	57 kills
5	Captain Anthony W. Beauchamp-Proctor, VC, DSO, MC and bar	54 kills
6	Major Donald R. MacLaren, DSO, MC and bar, DFC, L d'H, C de G	54 kills

RUSSIAN TOP SCORERS

1	Staff Captain Alexander A. Kazakov, (13 Russian), DSO, MC, DFC	17 kills
2	Captain d'Argueeff (Argeyev ?), Order of St. George	15 kills
3	Lt. Commander Alexander Prokofieff de Seversky, (all high Russian)	13 kills

THE RED BARON

Manfred von Richthofen was the highest scoring German fighter pilot 'ace' of the 1914-1918 war. He was credited with 80 enemy aircraft destroyed, and although the majority of these were reconnaissance machines, this total made him the top individual scorer of any country involved in the war. He began flying as an active fighter pilot in March 1916, and was associated with the red Fokker triplane, the machine gun of which was synchronised to fire through the propeller. He formed the group of squadrons known by the British as Richthofen's "circus", and was awarded the *Pour le Mérite* (the Blue Max) in February 1917. He was finally shot down on 21 April 1918, and was buried by the British with full military honours at Bertangles in France. After the war he was reburied with much pomp and ceremony in Berlin.

AUSTRO-HUNGARIAN TOP SCORER

Hauptmann Godwin Brumowski	40 kills
----------------------------	----------

BELGIAN TOP SCORER

Second Lieutenant Willy Coppens de Houthulst, DSO	37 kills
---	----------

ITALIAN TOP SCORER

Maggiore Francesco Baracca	34 kills
----------------------------	----------

UNITED STATES' TOP SCORER

Captain Edward V. Rickenbacker, CMH	26 kills
-------------------------------------	----------

DECORATIONS: abbreviations employed here

VC = Victoria Cross. MC = Military Cross.
 DSO = Distinguished Service Order. MM = Military Medal.
 DSC = Distinguished Service Cross. L d'H = Légion d'Honneur.
 DFC = Distinguished Flying Cross. C de G = Croix de Guerre.
 CK = Cross of Karageorgevitch.
 CMH = Congressional Medal of Honor.

EUROPEAN RANKINGS: Approx. equivalents

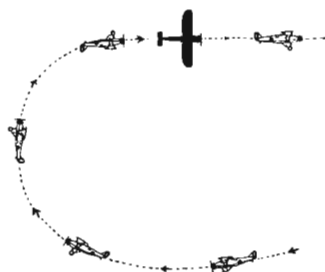
Rittmeister = Cavalry captain.
 Hauptmann = Captain.
 Oberleutnant = Lieutenant.
 Leutnant = Second Lieutenant.
 Maggiore = Major.
 Capitaine = Captain.

note:
army ranks

THE LOOP



HALF ROLL ON TOP OF LOOP



SLOW ROLL



THE TOP SCORER: AN ANALYSIS

MANFRED VON RICHTHOFEN: THE RED BARON

HIS TALLY

DH5 1 shot down	BE2e 4 shot down
FE2d 1 shot down	DH2 4 shot down
Martinsyde G100 1 shot down	BE12 4 shot down
FE8 1 shot down	Nieuport 17 5 shot down
AWFK8 1 shot down	Spad S7 5 shot down
Bristol F2A 2 shot down	BE2c 6 shot down
Sopwith Pup 2 shot down	BE2d 6 shot down
Sopwith 1 1/2 Strutter 3 shot down	Sopwith Camel 8 shot down
SE5A 3 shot down	RE8 8 shot down
Bristol F2B 3 shot down	FE2b 12 shot down

SOME OTHER FAMOUS 'ACES'

	KILLS
AUSTRALIAN Captain Robert A. Little, DSO and bar, DSC, C de G	47
BRITISH Captain Albert Ball, VC, DSO and 2 bars, MC	44
GERMAN Hauptmann Oswald Boelcke, Pour le Mérite	40
GERMAN Oberleutnant Max Immelmann, Pour le Mérite	15

ATTACK FROM ASTERN ①

FIXED MACHINE GUN FIRING FORWARD.

LINE OF ATTACK

HEIGHT ADVANTAGE (CLEAR VIEW).

This position was advantageous to the rear aircraft when the front machine carried only one occupant.

ATTACK FROM ASTERN ②

LINE OF ATTACK

OWN FUSELAGE IMPEDES REAR MACHINE GUNNER'S LINE OF FIRE.

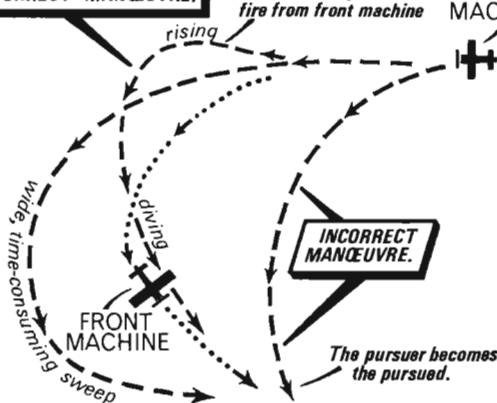
This position was advantageous to the rear aircraft when the front machine carried two occupants.

THE DECEPTIVE SIDE TURN

CORRECT MANŒUVRE.

veering away to avoid rear machine gunner's fire from front machine

REAR MACHINE

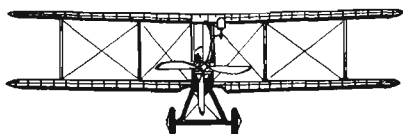


This diagram illustrates problems confronting a pilot when his quarry turned or banked to escape attack.

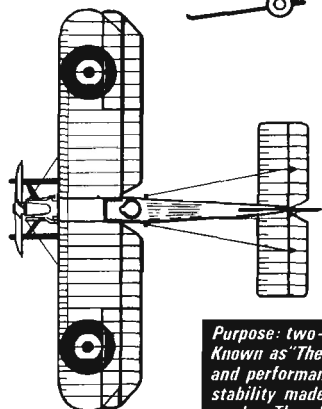
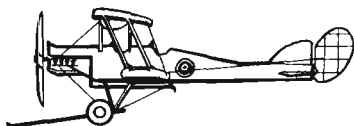
TWELVE IMPORTANT AIRCRAFT 1914-1918

BRITISH B. E. 2C

FRONT
ELEVATION



SIDE
ELEVATION



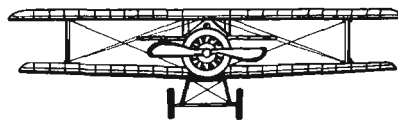
PLAN
VIEW

Span:	37ft.0ins.
Length:	27ft.3ins.
Height:	11ft.1in.
Max. speed:	72 m.p.h. (6,500ft.)
Endurance:	3 hrs. 15 mins.
Armament:	1 Lewis machine-gun
Ceiling:	11,000 ft.

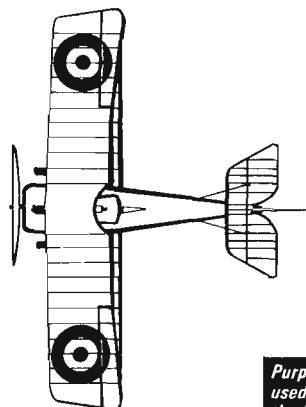
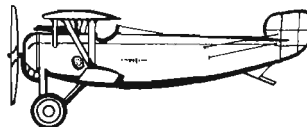
Purpose: two-seat reconnaissance biplane. Known as "The Quirk", it was poor in quality and performance as a fighter but its aerial stability made it useful for reconnaissance work. The observer occupied the forward cockpit thus limiting the field of fire. Lieutenant W. Leefe Robinson, V.C. piloted a B.E. 2C when destroying a Schütte-Lanz airship (S.L. 11) over Cuffley in 1916.

FRENCH Nieuport 17 C.1

FRONT
ELEVATION



SIDE
ELEVATION



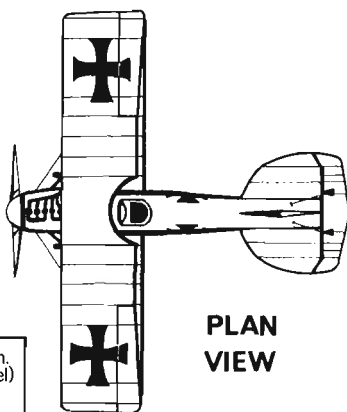
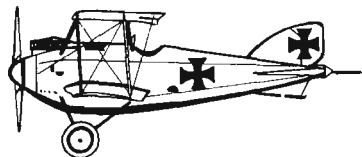
PLAN
VIEW

Span:	27ft.0ins.
Length:	19ft.6ins.
Height:	7 ft.0ins.
Max. speed:	107 m.p.h. (6,500ft.)
Endurance:	2 hrs.
Armament:	1 Lewis machine-gun
Ceiling:	17,400ft.

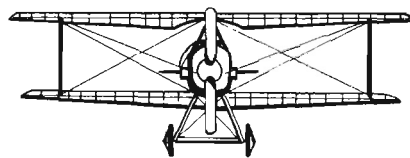
Purpose: single-seat scout. Widely used by French squadrons such as the famous "Stork" Group, it was a favourite of several British air "aces" among whom were Captain Albert Ball, V.C. and the Canadian Lt. Col. W. A. Bishop, V.C.

GERMAN Albatros D-1

SIDE
ELEVATION



PLAN
VIEW



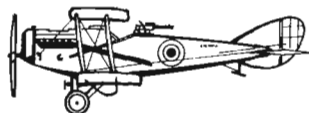
FRONT
ELEVATION

Span (upper):	28ft.3ins.	Max. speed:	110 m.p.h.
Span (lower):	25ft.11ins.		(sea level)
Length:	24ft.0ins.	Endurance:	4 hrs.
Height:	9ft.6ins.	Ceiling:	12,000ft.
Armament:	Twin Spandau machine-guns		

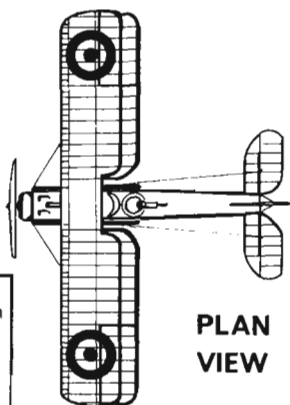
Purpose: single-seat scout. First deliveries to squadrons commenced on 3 September 1916, and the famous German "ace" Oswald Boelcke shot down eleven Allied aircraft within a short period of 16 days. It was supreme during the winter of 1916-1917 and its twin synchronised guns feature became incorporated into the design of all subsequent German and Allied fighters.

BRITISH Bristol F.2B

SIDE
ELEVATION



Span:	39ft.4ins.	Armament:	1 Vickers machine-gun for the pilot
Length:	26ft.2ins.		1 or 2 Lewis guns for the observer
Height:	10ft.1in.		Racks for light bombs
Max. speed:	125 m.p.h. (sea level)		
Endurance:	3 hrs.		
Ceiling:	20,000 ft.		



PLAN
VIEW

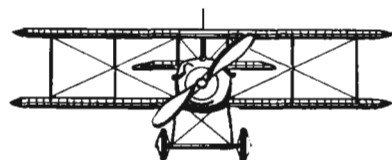
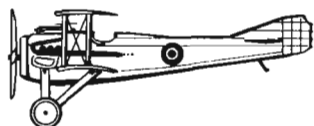
FRONT
ELEVATION



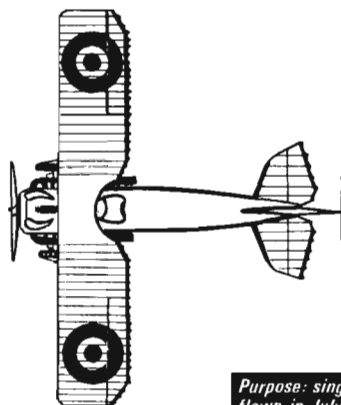
Purpose: two-seat fighter/reconnaissance aircraft. Possibly the finest all-round fighter of the Allies in the war, it was extremely manoeuvrable and carried the advantage of a "sting in the tail". Known as the "Brisfit" or "Biff", it was a favourite of British "ace" Captain McKeever who won most of his thirty victories with this type.

FRENCH Spad S-7 C.1

SIDE
ELEVATION



FRONT
ELEVATION



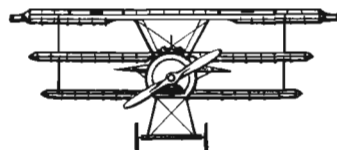
PLAN
VIEW

Span (upper):	25ft.8ins.
Span (lower):	25ft.0ins.
Length:	20ft.3ins.
Height:	7ft.0ins.
Max. speed:	120 m.p.h. (6,500ft.)
Endurance:	2½ hrs.
Armament:	1 Vickers machine-gun
Ceiling:	17,500 ft.

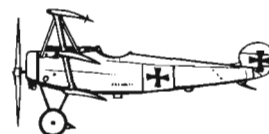
Purpose: single-seat scout. First flown in July 1916, over 5,000 Spad S-7's were built in France, and 400 in England. The famous French "Stark" Group, of which the "ace" Georges Guynemer was a member, flew this type.

GERMAN Fokker Dr-1 Triplane

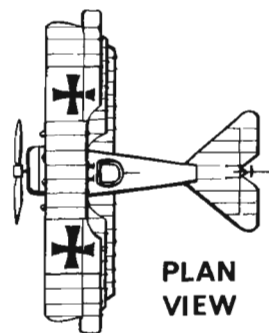
FRONT
ELEVATION



SIDE
ELEVATION



Span (upper):	23ft.7ins.
Span (centre):	20ft.6ins.
Span (lower):	18ft.9ins.
Length:	19ft.0ins.
Height:	9ft.0ins.
Max. speed:	122 m.p.h. at 8,000 ft.
Endurance:	2 hrs.30mins.
Armament:	Twin Spandau machine-guns
Ceiling:	20,000 ft.

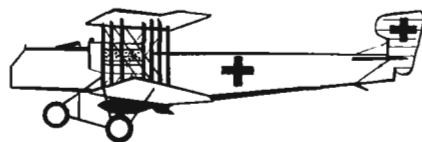
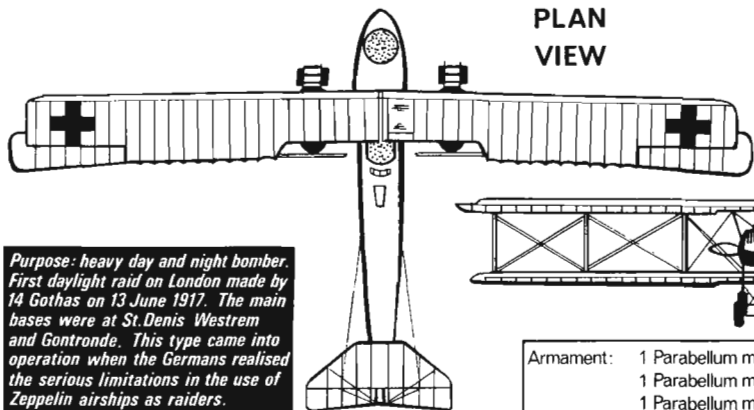


PLAN
VIEW

Purpose: single-seat scout. First employed in August 1917, it was a favourite of German "aces" such as Manfred von Richthofen and Werner Voss and was the supreme German "dogfighter" of the war.

TWELVE IMPORTANT AIRCRAFT-continued

GERMAN Gotha G-V



SIDE ELEVATION
FRONT ELEVATION

Span(upper):	77ft.8ins.
Span(lower):	71ft.10ins.
Length:	40ft.9ins.
Max.speed:	88m.p.h. (sea level)
Crew:	3
Ceiling:	21,300ft.

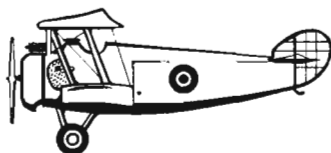
Purpose: heavy day and night bomber. First daylight raid on London made by 14 Gothas on 13 June 1917. The main bases were at St. Denis Westrem and Gontronde. This type came into operation when the Germans realised the serious limitations in the use of Zeppelin airships as raiders.

Armament: 1 Parabellum machine-gun: front cockpit. 12 H.E. bombs within fuselage.
1 Parabellum machine-gun: rear cockpit. 2 external bombs held in spring jaws.
1 Parabellum machine-gun: belly defence.

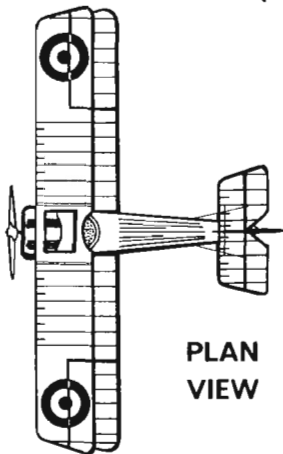
BRITISH Sopwith F.1 "Camel"



FRONT ELEVATION



SIDE ELEVATION

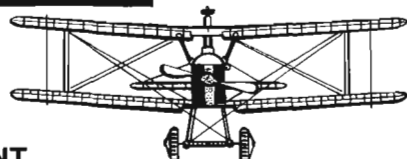


PLAN VIEW

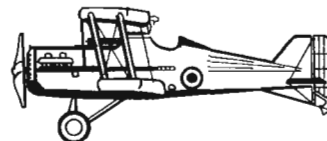
Span:	28ft.0ins.
Length:	18ft.8ins.
Height:	8ft.6ins.
Max.speed:	119m.p.h. (6,500ft)
Endurance:	2hrs. 45mins.
Armament:	2 Vickers machine-guns
Ceiling:	24,000ft.

Purpose: single-seat scout. The "Camel" destroyed more enemy aeroplanes than any other type during the war. The most manoeuvrable aircraft produced by either side, it spun rapidly, possessed sensitive elevator controls, and was capable of fast turns owing to the great gyroscopic force of the rotary motor coupled with the short fuselage.

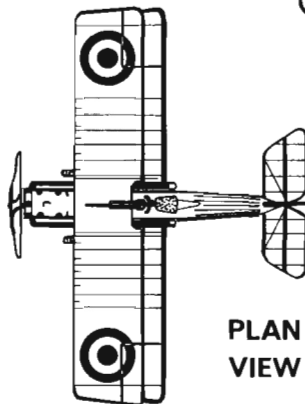
BRITISH S.E. 5a



FRONT ELEVATION



SIDE ELEVATION

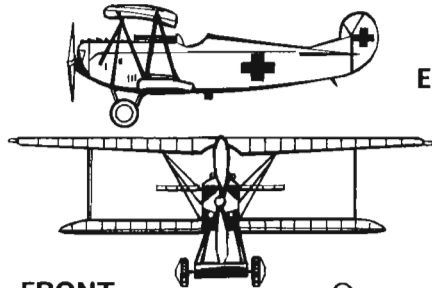


PLAN VIEW

Span:	28ft.0ins.
Length:	21ft.4ins.
Height:	9ft.5ins.
Max.speed:	135 m.p.h. (6,500ft)
Endurance:	2hrs. 30mins.
Armament:	1 Vickers machine-gun above cowling 1 Lewis gun above centre section
Ceiling:	20,000ft.

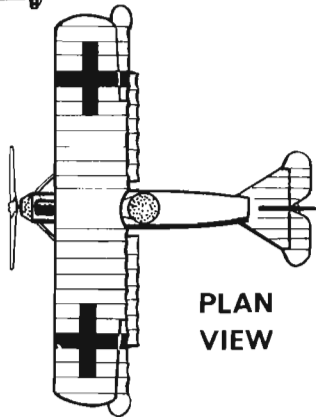
Purpose: single-seat scout. The S.E. 5a was remarkable for its "dog-fighting" qualities. Although less manoeuvrable than the Sopwith F.1 "Camel", it was notable for its marked stability as a gun-platform. It is to be noted that the famous "aces" Major E. Mannock, V.C. and Major J. T. B. McCudden, V.C. scored most of their victories in this scout.

GERMAN Fokker D-VII



SIDE
ELEVATION

FRONT
ELEVATION

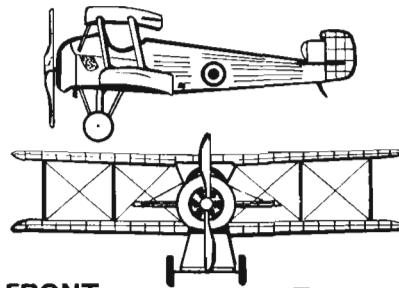


PLAN
VIEW

Span(upper): 29ft.4ins.
Span(lower): 22ft.10ins.
Length: 23ft.0ins.
Height: 9ft.3ins.
Max.speed: 135m.p.h.
(sea level)
Armament: 2 Spandau
machine-guns
above cowling
Ceiling: 21,000ft.

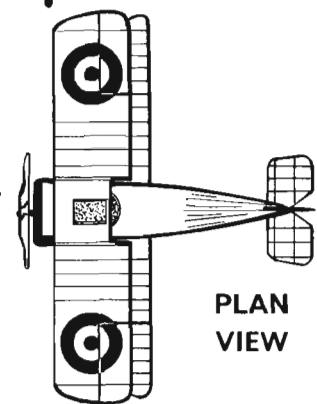
Purpose: single-seat scout. Possibly the finest of all German fighters produced during the 1914-1918 war, it was credited with 565 victims in August 1918 alone. Hermann Goering (also of 1939-1945 war fame) flew this type. By the autumn of 1918 every German scout squadron on the Western Front was equipped with this aircraft.

BRITISH Sopwith 7F. I "Snipe"



SIDE
ELEVATION

FRONT
ELEVATION

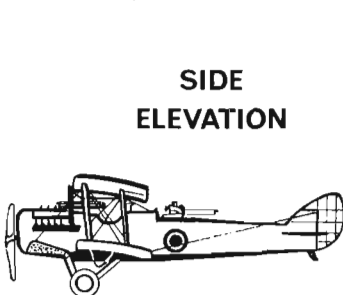


PLAN
VIEW

Span: 30ft.1ins.
Length: 19ft.9ins.
Height: 8ft.9ins.
Max speed: 121m.p.h.
(10,000ft)
Endurance: 3hrs.
Armament: 2 Vickers
machine-guns
above cowling
Ceiling: 20,000ft.

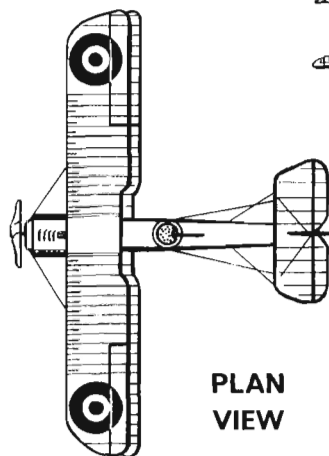
Purpose: single-seat scout. Although operational during only the final three months of the war, it showed itself to be a first-class fighter. Among those who piloted this type was the famous Canadian "ace" Major W.G. Barker, V.C. In all 264 "Snipes" were built, 97 being used on the Western Front. The plan was to fully replace the "Camel" with this newest scout, but the Armistice closed its brief military career.

BRITISH De Havilland 4



SIDE
ELEVATION

FRONT
ELEVATION



PLAN
VIEW

Span: 42ft.6ins.
Length: 29ft.8ins.
Height: 10ft.5ins.
Max.speed: 137m.p.h.(6,500ft)
Endurance: 4hrs.
Armament: 1 Vickers machine-gun (pilot)
2 Lewis guns (observer)
Bomb racks below lower wings
Ceiling: 23,500ft.

Purpose: two-seat day bomber. Despite its nickname of the "Flying Coffin", due to its reputation for catching fire in the air, this type was probably the finest day-bomber produced by any nation during the 1914-1918 war. Its ceiling of 23,500 ft. placed it out of the reach of most enemy scouts, and its high speed enabled it to outpace most German fighters.

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* Prepared by Mrs Brenda Hall, Society of Indexers.

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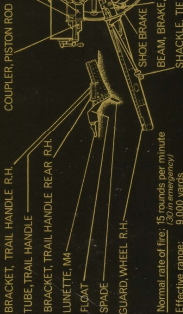
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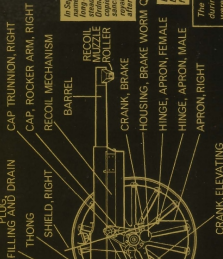
U.S.S. Dolphin, 214

£14.95

French 75-mm. field gun (Model 1897)



Normal rate of fire: 15 rounds per minute
(30 in emergency)
Effective range: 9,000 yards



The buffer recoil action enabled the gun to be fired repeatedly, thus avoiding relaying.

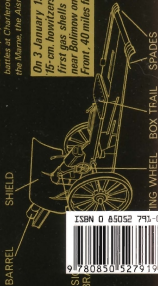
In September 1891, a German engineer named Konrad Haussner patented a long, recoil hydraulic brake to ensure steadiness during rapid fire. The French Ordnance Factory Director at Puteaux copied this, construction finally being sanctioned in February 1893, but no royalties were paid to the inventor after 1894.

By 1895 the German artillery had been rearmed with the 71-mm. field gun, a less-efficient weapon.

The majority of 75-mm's used during the campaigns of 1914 were of the 1897 version.

German 15-cm. field howitzer (Model 1913)

Normal rate of fire: 5 rounds per minute
Effective range: 9,300 yards

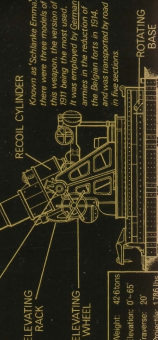


There were four models of this weapon. The 1913 version was employed during the 1914 battles at Charleroi, Dinant, Mons, the Marne, the Aisne, etc.

On 3 January 1915, German 15-cm. howitzers fired the first gas shells of the war near Bolinow on the Eastern Front, 40 miles from Warsaw.

Austrian 30.5-cm. howitzer (Model 1911)

Normal rate of fire: 1 round every 6 minutes
Effective range: 13,000 yards



Known as 'Schlanke Emma', there were three models of this weapon, the version of 1911 being the most used. It was employed by German armies in the reduction of the Belgian forts in 1914, and was transported by road in five sections.

Weight: 42 tons
Elevation: 0°-65°
Traverse: 20°
Projectile: 1,786 lbs.



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