Invasion of western Europe, May 1940

Nine months after the declaration of war on Germany by France and Britain, Germany began an attack on its primary enemy in Europe: France. Germany's offensive, named Case Yellow, was launched on 10 May 1940 with the aim of capturing The Netherlands, Belgium, Luxembourg and France. The fight in western Europe, the Western Front, involved a substantial number of troops and equipment (see Source E).

Why was the German army successful in western Europe in 1940?

SOURCE E

Table of military forces of nations battling on the Western Front in May 1940.

Nation	Troops	Tanks	Aircraft	Artillery
Germany	3,350,000	2,500	5,000	7,300
France	2,500,000	3,200	1,500	10,700
Britain	240,000	300	1,000	1,300
Netherlands	200,000	<10	150	650
Belgium	650,000	10	<200	1,300

According to Source E, what advantages did Germany have over other nations? **?**

While these numbers were impressive for the Allies, their equipment was not as modern as that of Germany and tactics were not as effective. Very fast German tanks, in particular, used radio to co-ordinate attacks and communicate with other parts of the military, while French tanks, lacking radio, were used in small groups to support infantry which were mostly in defensive positions. Germany clearly had superiority in the air and used this dominance to attack bridges, tanks, airfields and cities, preventing enemy movements towards German positions and retreat from advancing German armies.

The Netherlands and Luxembourg fall, May 1940

France, The Netherlands, Belgium and Luxembourg were all attacked on 10 May in an awesome display of German organization and military strength, almost immediately overwhelming their opponents. The Netherlands fell to the German army on 14 May. Germany dropped **paratroops** behind the Dutch army's defences and then destroyed much of the city of Rotterdam with bombers. Belgium was better defended as Belgian forces were joined by three large French armies and a smaller British one. The main fortresses guarding the Belgian border were overrun, some captured or destroyed by German paratroopers, while German aircraft destroyed airfields and aircraft. Luxembourg capitulated almost as soon as the German army entered the country, further exposing Belgian and French borders to German assault. German tanks surged across these borders, protected by their aircraft and followed by hundreds of thousands of infantry.

🔑 KEY TERM

Paratroops Soldiers who jump from planes, usually to establish positions behind enemy armies.

Technology of the war: fighter aircraft

Fighters were small, fast aircraft that normally provided protection for bomber aircraft. Germany, however, successfully adapted fighters to also attack soldiers and tanks from the air, giving them further advantage on the battlefield in the first years of the war. Fighters consumed large amounts of fuel rapidly so that their range was not great. This meant that they could not accompany bomber aircraft on their longer missions and, in consequence, bombers from all nations initially had little protection from the fighters of their enemies, leading to high losses of bomber aircraft. Later in the war, the drop tank, a large fuel container attached to the bottom of the fighter, was employed to extend fighter range so that bombers were better protected. Fighter attacks on tanks, troops, railways, and factories dealt much devastation during the conflict. By the war's end, the jet engine was first introduced by Germany, giving fighter craft great speed which made them hard to destroy by other, slower fighters, but too few were produced to affect the war's outcome.

Some of the more important fighter aircraft are listed in the table.

Name	Nation producing	Range	Armament Number of machine guns/calibre/ rounds per gun[†]	Number produced
Hurricane	Britain	965 km	4/20 mm/60	14,500
Spitfire	Britain	760 km	2/20 mm/60	20,300
P-51 Mustang	USA	2755 km*	6/12.7 mm/400	15,000
Bell P-39 Airacobra	USA	840 km	2/12.7 mm/200	9,500
Focke-Wulf Fw 190	Germany	800 km	2/13 mm/475	20,000
Messerschmitt Bf 109	Germany	850 km	2/13/300	34,000
Yakovlev Yak-9	USSR	1360 km	1/12.7 mm/200	16,800

*Extended range was the result of the addition of drop tanks which carried extra fuel.

[†]Armaments could be altered to include cannon, bombs, rockets and different calibre guns.

Fall of Belgium and France, May–June 1940

The main German assault against France was through the Ardennes Forest, something French military planners believed impassable to tanks, avoiding the Maginot Line along the French–German border. By penetrating the Ardennes Forest, the German army entered northern France and moved towards the English Channel, cutting off the British and French armies that were either in Belgium or heading into it. By 28 May, most of Belgium was under German control and its army surrendered. Surrounded British and French armies retreated to the small port of Dunkirk on the English Channel. From 26 May to 3 June, approximately 330,000 British and French soldiers were evacuated to Britain, while all major equipment had to be left on the beach; over 20,000 French soldiers were captured by the German army.

The way was open for the German army to penetrate deeply into France. French armies continued to fight Germany and Italy after 10 June, when Italy attacked France along its southern border. France's capital, Paris, was captured by Germany on 13 June and nine days later France surrendered. Britain was the only state in Europe at war with Germany until 6 April 1941, when Germany invaded Greece. After France's surrender, Germany administered three-fifths of France. Remaining areas were ostensibly under French government control and known as **Vichy France** until November 1942, when they also came under direct German rule.

Invasion of the Balkan peninsula, 28 October 1940 to 1 June 1941

Albania was occupied and annexed to Italy in April 1939. This gave Italy a base from which to invade Greece on 28 October 1940, in a quest for empire. The invasion was a disaster and Greece soon drove Italian soldiers back into Albania, capturing about 30 per cent of Albania in the process. In March 1941, Italy again attacked Greek troops, trying to drive them out of Albania. This offensive also failed until they were joined in April by German troops, driving the Greek army out of Albania.

In order to invade Greece, Germany first conquered Yugoslavia, assisted by Bulgaria, which joined the Axis on 1 March 1941. The invasion of Yugoslavia began on 6 April 1941 and ended on 17 April. The country was divided between Germany, Italy, Hungary (which had joined the Axis in November 1940, along with Romania) and Bulgaria, with a large portion of it reorganized as the independent state of Croatia, allied to Germany and Italy, as was a Serbian **puppet-state**. A smaller independent state of Montenegro was organized and administered as an Italian puppet-state.
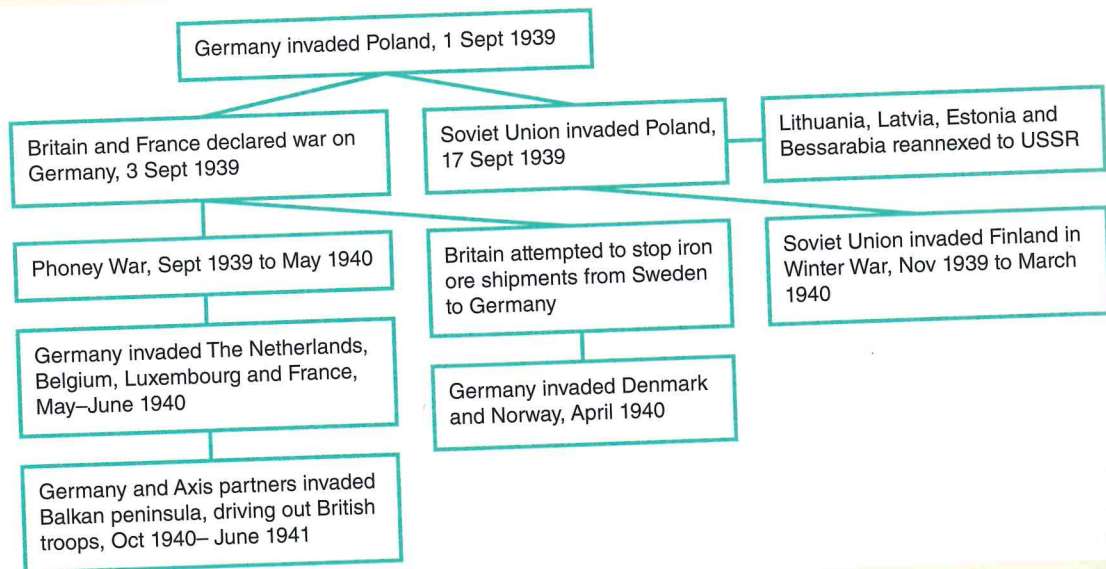
Germany also invaded Greece on 6 April, which was now defended by British troops, capturing Athens, the Greek capital, on 27 April. Britain hurriedly evacuated 50,000 troops to the Greek island of Crete. On 20 May 1941, Crete was invaded by German paratroops and conquered by 1 June.

> 🔑 **KEY TERM**
>
> **Vichy France** The remnant of France that was a German puppet-state between 1940 and late 1942, ruled from the city of Vichy.
>
> **Puppet-state** Government that operates at the will of and for the benefit of another government.

> ← What was the importance of the Axis invasion of the Balkan peninsula?

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┌─────────────────────────────────────────────┐
│         Germany invaded Poland, 1 Sept 1939   │
└─────────────────────────────────────────────┘

┌──────────────────────┐  ┌─────────────────────┐  ┌──────────────────────────┐
│ Britain and France    │  │ Soviet Union invaded │  │ Lithuania, Latvia, Estonia│
│ declared war on       │  │ Poland, 17 Sept 1939 │  │ and Bessarabia reannexed  │
│ Germany, 3 Sept 1939  │  │                      │  │ to USSR                   │
└──────────────────────┘  └─────────────────────┘  └──────────────────────────┘

┌──────────────────────┐  ┌─────────────────────┐  ┌──────────────────────────┐
│ Phoney War, Sept 1939 │  │ Britain attempted to │  │ Soviet Union invaded      │
│ to May 1940           │  │ stop iron ore        │  │ Finland in Winter War,    │
│                       │  │ shipments from Sweden│  │ Nov 1939 to March 1940    │
│                       │  │ to Germany           │  │                           │
└──────────────────────┘  └─────────────────────┘  └──────────────────────────┘

┌──────────────────────┐  ┌─────────────────────┐
│ Germany invaded The   │  │ Germany invaded      │
│ Netherlands, Belgium, │  │ Denmark and Norway,  │
│ Luxembourg and France,│  │ April 1940           │
│ May–June 1940         │  │                      │
└──────────────────────┘  └─────────────────────┘

┌──────────────────────┐
│ Germany and Axis      │
│ partners invaded      │
│ Balkan peninsula,     │
│ driving out British   │
│ troops, Oct 1940–     │
│ June 1941             │
└──────────────────────┘
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SUMMARY DIAGRAM

The course of the war in Europe 1939 to June 1941

5 The course of the war in Africa and Italy 1940–5

▶ *Key question: What factors contributed to Allied success in Africa and Italy during the Second World War?*

Italy joined the war as a member of the Axis, and therefore as a German ally, in 1940, with an attack on southern France after German armies had essentially defeated the country. Almost immediately there were battles between Britain and Italy in the Mediterranean Sea, on Africa's north coast, and in east Africa, where both Britain and Italy had colonies.

Africa 1940–3

Italy had a huge, but poorly defended, empire in east Africa and Libya along the north African coast. As Italy entered the war in 1940 against the Allies, it made moves to attack British territories which were quickly halted before Britain began invading Italian territories.

East Africa, January–November 1941

In January 1941, British troops from India and Sudan began a three-pronged invasion of Italy's east African empire. Eritrea was completely conquered by

April 1941 and, by May, most of Abyssinia and Somalia were under British control. The last Italian troops in Abyssinia held out near Lake Tana in the north-west of the region, finally surrendering in November 1941. Italy's east African empire came to an end and the former Emperor of Abyssinia, Haile Selassie, driven out in 1936, was reinstalled as ruler. Eritrea was ruled by the British until 1951, when it was granted to Abyssinia. Somalia was ruled by Britain until 1960, when it became independent.

North Africa 1940–3

Italy desired control of the Suez Canal, which would allow free access to the Italian colonies in east Africa and control oil shipments from the region. Egypt was also desired as it was rich in natural resources and agriculture and had a large, prosperous Italian community. It was hoped that by Italy invading Egypt, Egyptians and resident Italians would revolt against British domination of the government since 1882, assisting the invasion in the process. The revolt never materialized, although an Italian army entered Egypt on 13 September 1940, advancing 70 km within a few days. A British counter-offensive, with primarily Australian and Indian troops, pushed Italian troops out of most of Egypt by mid-December in a series of fierce battles.

Libya, January 1941 to May 1942

In early January 1941, Australian troops from the British army entered the Libyan city of Tobruk; they captured it by the end of the month. Other British forces moved towards the major port of eastern Libya, Benghazi. All eastern Libya was captured by Britain by mid-February. This was the first successful British military operation of any significance in the war up to that point. Germany began to support Italy's north African efforts in mid-February, landing huge numbers of troops and tanks in Libya's western port of Tripoli. By early April 1941, British troops had been forced out of Libya and into Egypt by German and Italian troops. Tobruk was held by Australian troops who were placed under siege.

Britain launched Operation Crusader in November 1941 to recapture eastern Libya and relieve the siege of Tobruk. Tobruk was finally reached on 7 December after a month of heavy fighting. In January 1942, most of eastern Libya was again temporarily under British control. At the end of the month German troops drove the British out of most of the region again, so that by the first week of February, British troops held on to only the easternmost areas of the country. At the end of May, German and Italian troops began another offensive, pushing British troops far back into Egypt.
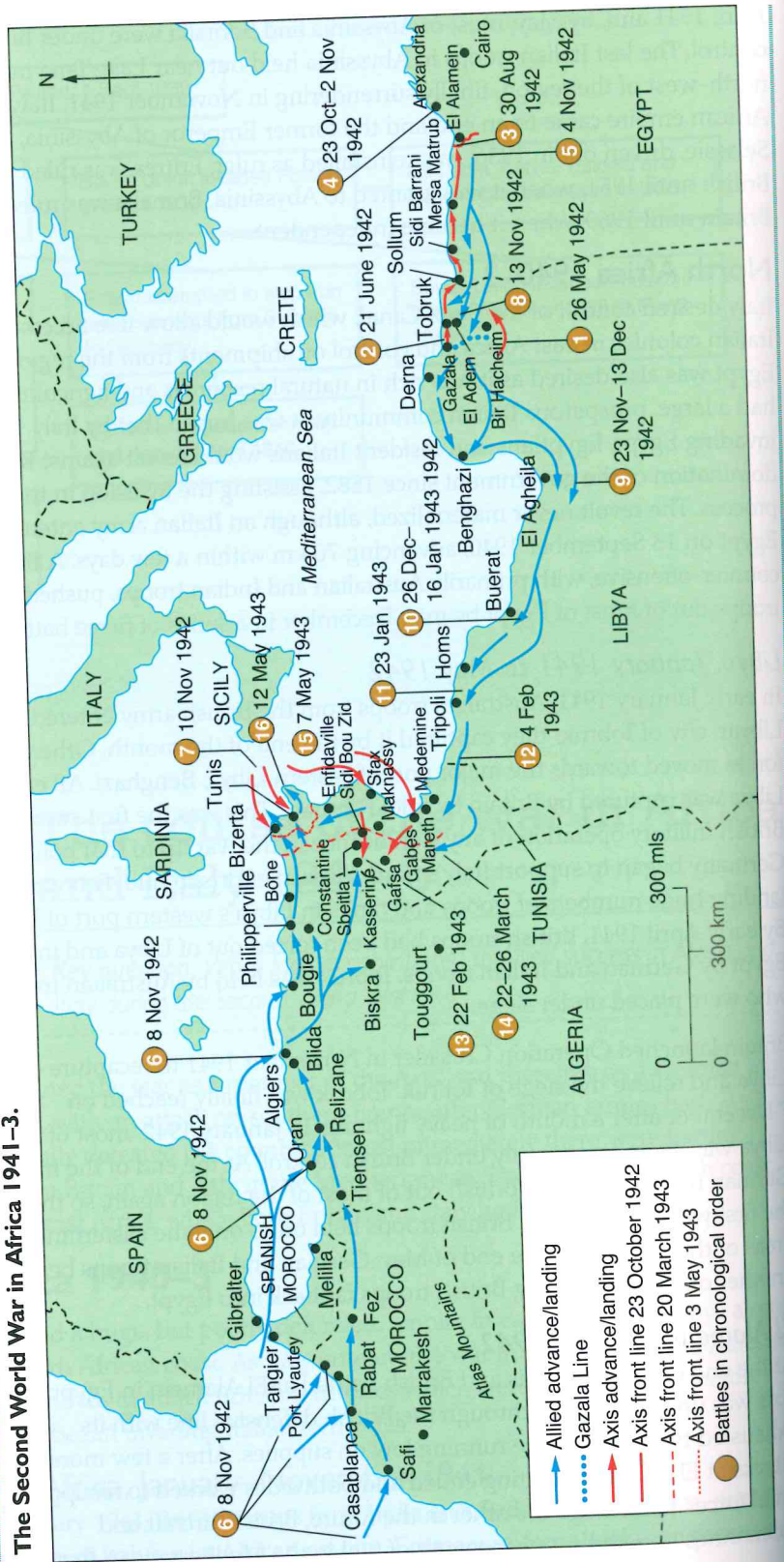
El Alamein, October 1942

At the end of June, the Axis and British battled at El Alamein in Egypt. The Axis was unable to break through the British defensive line with its exhausted troops that were running low on supplies. After a few more attacks at El Alamein, fighting ended and both sides worked to resupply and build forces to dislodge the other in the future. British aircraft and submarines targeted supply convoys of fuel in the Mediterranean that were

? According to Source F, in what year did the war in north Africa experience the most movement?

SOURCE F
The Second World War in Africa 1941–3.

N

TURKEY

GREECE

CRETE

Mediterranean Sea

EGYPT

Cairo
Alexandria
El Alamein
Mersa Matrub
Sidi Barrani
Sollum
Tobruk
Derna
Gazala
El Adem
Bir Hacheim
Benghazi
El Agheila
Buerat
Homs
Tripoli
Medemine
Mareth
Gabes
Sfax
Maknassy
Sidi Bou Zid
Enfidaville
Sbeitla
Kasserine
Gafsa
Tunis
Bizerta
Philipperville
Bône
Constantine
Touggourt
Biskra
Bougie
Blida
Relizane
Algiers
Oran
Tiemsen
Melilla
Tangier
Gibralter
Port Lyautey
Rabat Fez
Casablanca
Marrakesh
Safi
Atlas Mountains

ITALY
SICILY
SARDINIA
SPAIN
SPANISH MOROCCO
MOROCCO
ALGERIA
TUNISIA
LIBYA

4 · 23 Oct–2 Nov 1942
3 · 30 Aug 1942
5 · 4 Nov 1942
2 · 21 June 1942
8 · 13 Nov 1942
1 · 26 May 1942
9 · 23 Nov–13 Dec 1942
10 · 26 Dec–16 Jan 1943 1942
11 · 23 Jan 1943
12 · 4 Feb 1943
7 · 10 Nov 1942
16 · 12 May 1943
15 · 7 May 1943
6 · 8 Nov 1942
13 · 22 Feb 1943
14 · 22–26 March 1943
6 · 8 Nov 1942
6 · 8 Nov 1942

300 mls
300 km
0

Key:
→ Allied advance/landing
···· Gazala Line
→ Axis advance/landing
— Axis front line 23 October 1942
— Axis front line 20 March 1943
--- Axis front line 3 May 1943
···· Battles in chronological order

bound for Axis troops at El Alamein, preventing any further Axis offensive in Egypt for the time being.

On the evening of 23 October 1942, British troops, accompanied by Polish, Greek and **Free French** forces, launched a massive assault on German positions at El Alamein. In the previous months, Britain had been able to resupply its forces so that its army in Egypt was now twice the size of the Axis army there. With little fuel for tanks and trucks, the Axis army decided to retreat into Libya by 4 November; Egypt and the Suez Canal were not threatened by land forces again for the remainder of the war.

The USA joins the European war, 11 December 1941

The USA was attacked by Japan on 7 December 1941 (see page 194). Japan was a member of the Axis and therefore an ally of Germany, although there was no co-ordination of war strategy between them. As a consequence, Germany and Italy both declared war against the USA on 11 December. The USA had already participated in the war in Europe by supplying Britain and France with huge quantities of goods, including ships, weapons, ammunition and food. These shipments were the target of German submarines in the Battle of the Atlantic (see page 139). Only at the end of 1942, after building and supplying armies and ships to transport them, was the USA able to field large armies. It did so in north Africa first, while simultaneously fighting Japan in the Pacific. US aircraft joined British efforts in mid-1942 to bomb Germany (see page 145).

North Africa captured by Allies, November 1942 to May 1943

While British and Allied troops slowly pursued retreating Axis forces, a large British and US force began Operation Torch on 8 November, which saw the occupation of French-held Morocco and Algeria by 11 November. Germany moved to occupy Tunisia, held by France up to that point, and Vichy France was itself occupied by German troops as a response to Vichy French forces signing an armistice with Britain and the USA. While German troops battled US and British forces in Tunisia, British troops continued to pursue retreating Italian and German troops in Libya so that by 4 February 1943, the region was clear of any Axis forces. Fierce fighting in Tunisia finally ended on 12 May 1943, when all remaining Axis troops in north Africa surrendered.

The Italian Front 1943–5

After the fall of north Africa to the Allies, the large Italian island of Sicily was subject to a large amphibious and airborne invasion on 9 July 1943. Sicily was defended by almost 300,000 Axis troops, the vast majority of whom were Italian. The Allies landed almost 500,000 troops during the six-week campaign, conquering the island by 17 August. Around 170,000 Axis troops were killed, wounded or captured during the fighting. During the battle, the Italian king deposed and imprisoned Benito Mussolini, Italy's dictator,

How critical was the Italian Front to the outcome of the Second World War in Europe?

reflecting deteriorating support for the war with the Italian population. In addition, in 1943, Axis powers were in retreat on all fronts and Italy hoped either to join the Allies in order to save itself from punishment or to negotiate the best possible terms of surrender.

The Italian peninsula 1943–4

On 3 September, Italy secretly agreed to an armistice with the Allies that would begin on 8 September while Allied troops began landing in the south. Most Italian units quickly surrendered, but German troops did not. Germany moved to take control of the whole Italian peninsula on 8 September 1943, forcing Italian troops to surrender their weapons. The Allied invasion encountered major German resistance, but by November the Allies controlled most of Italy south of Rome. The Gustav Line, a German defensive position spanning the Italian peninsula, proved difficult to breach. All attempts to cross or outflank it failed until May 1944. Rome fell on 5 June and the Germans created a new defensive system, the Gothic Line, which held back Allied troops from 25 August until 17 December 1944.

Final battles in Italy 1945

By December 1944, northern Italy was organized as the Italian Social Republic and led by the former Italian dictator Mussolini, who had been rescued from prison by German troops. This meant that troops from the Kingdom of Italy fought Italian Social Republic troops, so that Italy was essentially fighting a civil war, as well as foreign occupation by German troops. In early 1945, Allied armies slowly captured parts of northern Italy. Italian **communist partisans** captured and killed Mussolini at the end of April and all fighting stopped with the surrender of German forces in Italy on 2 May.

War between Italy and Britain in Africa
- Italy invaded Egypt from Libya, Sept 1940
- British forces drove Italian troops back into Libya, Dec 1940–Feb 1941
- Germany joined war in north Africa, Feb 1941, driving British out of Libya by April
- British reinvaded Libya, Nov 1941–Jan 1942
- Axis troops forced British back into Egypt in May 1942
- Axis troops pushed back into Libya after Battle of El Alamein, Oct 1942

British colonial troops conquered Italy's east African colonies Jan–Nov 1941

US and British troops invaded north Africa from west, Nov 1942

Axis troops defeated in north Africa, May 1943

Sicily and Italian peninsula invaded by Allies from north Africa, 1943–5

Italy left Axis and joined Allies, Aug 1943
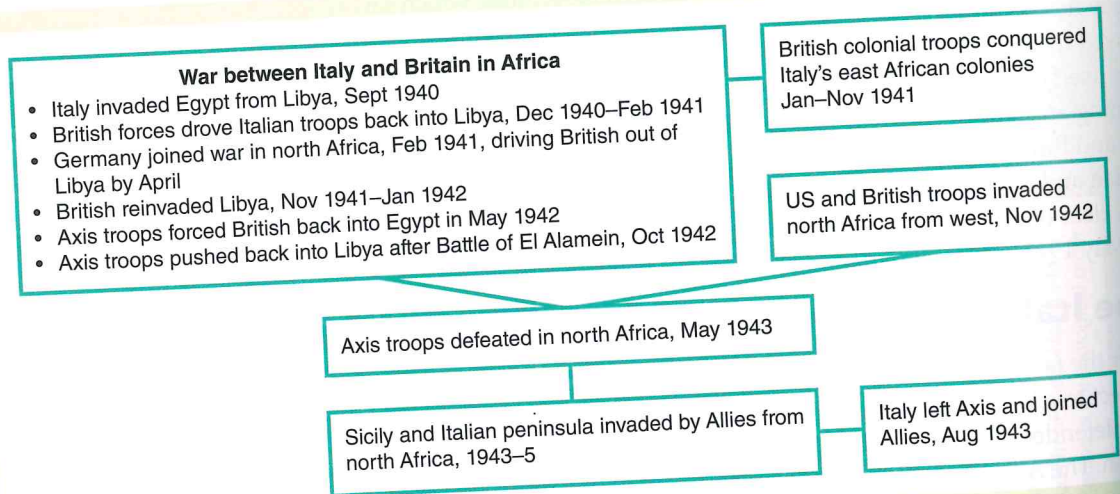
SUMMARY DIAGRAM

The course of the war in Africa and Italy 1940–5

6 The course of the war at sea 1939–45

▶ *Key question: What was the importance of the war at sea between the Allied and Axis powers?*

At the start of the war in Europe in September 1939, the British and French navies were massive compared to that of Germany. Germany initially feared a naval blockade such as the one the British effectively imposed during the First World War (see page 53). Any notion of blockade ended with the German occupation of Norway (see page 130), which was quickly followed by the fall of much of the rest of continental Europe. Controlling most of Europe meant access to food, supplies and numerous ports.

While Germany constructed massive numbers of modern, long-range submarines, it initially turned to sea **mines** to damage British and French shipping. By April 1940, 128 Allied merchant ships had been sunk by mines laid by German ships, submarines and aircraft.

Battle of the Atlantic 1939–45

The Battle of the Atlantic was the fight between primarily German submarines and aircraft and British and US merchant and war ships. While Britain moved quickly at the war's start to capture or destroy German merchant ships, Germany countered with submarine attacks on British shipping.

By mid-1940, large numbers of German submarines were deployed against increasingly large numbers of merchant ships travelling between the USA and Britain. These ships were carrying food and military equipment through the policy of **cash-and-carry** and the later **Lend–Lease** programme. The submarines were organized into groups called wolf-packs, co-ordinating

◀ **Why did the Battle of the Atlantic last throughout the Second World War?**

Technology of the war: submarines

Submarines were the most effective naval vessels of the Second World War. Submarines were relatively cheap and fast to build compared to larger surface ships that were vulnerable to aircraft. In addition, they required fewer men to operate than surface ships. Germany constructed several types of submarines, also referred to as U-boats, and in great numbers. Using torpedoes, surface ships could be destroyed without the submarine being exposed to attack. German submarines such as the type VII were impressive ships, able to stay submerged for up to 150 km at 230 m below the sea's surface. They carried up to 14 torpedoes and could travel over 15,000 km before refuelling if travelling at moderate speeds of around 19 km/h.

their attacks on convoys of merchant ships by radio, often attacking at night. Submarine attacks were joined by German aircraft when possible, often working in co-operation, so that by mid-1941, 30 per cent of all Allied ships sunk had been attacked by aircraft.

SOURCE G

A destroyer (the smaller ship alone in the rear, right) shepherds freighters across the Atlantic in a convoy during the Battle of the Atlantic on 1 June 1943.

🔑 KEY TERM

Codes A way of communicating information to prevent an enemy from understanding it.

Cruisers Fast, heavily armed warships that have less armour and fewer weapons than battleships.

Destroyers Fast, lightly armoured ships built specifically to locate and destroy submarines.

Germany's early success

Germany deciphered British naval **codes** early in the war, giving them a strategic advantage as they were able to locate large convoys crossing the Atlantic. This helped the Germans to sink 848 ships by July 1941, with the loss of only 43 submarines. Germany's few surface warships were also active in this period, sinking or capturing approximately 40 enemy ships. These German warships were mostly sunk during the war and were strategically unimportant, as were most large battleships and **cruisers** of all fleets, as they were vulnerable to attack by air (see page 142).

Allied counterattack

Britain countered the submarine threat by reintroducing the convoy system that was used during the First World War and by patrolling the sea with aircraft equipped with depth charges (see page 141). Iceland was invaded and occupied by British troops on 10 May 1940 to extend aircraft protection of convoys while Britain rapidly increased its number of **destroyers**. Britain achieved a major breakthrough in 1941 when German naval codes, known as Enigma, were broken, giving Britain knowledge of the location of Germany's submarine groups. British and US aircraft, after the USA joined

the war in late 1941, hunted German submarines, flying from bases in the USA, Canada, Greenland, Gibraltar, Britain and Iceland.

Technology of the war: anti-submarine warfare

The Allies used various weapons to destroy enemy submarines:

- Depth charges were bombs that were flung by catapults behind ships such as destroyers and dropped by aircraft. The bomb exploded when it reached a certain depth as determined by a pressure fuse.
- Hedgehog launched many smaller bombs at the same time in front of the ship. The bombs landed in a 30-m wide circle and sank, exploding only when they made contact with something. This made it easier to determine if a submarine, or the ocean floor, had been hit, whereas a depth charge always exploded after a specific, short period whether or not it made contact with anything, making it difficult to know if a submarine had been destroyed.
- ASDIC, or sonar, used sound waves to determine the location of submarines. This helped destroyers and other fast surface ships to chase and destroy these vessels.
- High-frequency direction finding, or HF/DF, used at least two machines to discover the exact location of a German submarine by focusing on German radio signals. These machines, working in tandem, could pinpoint a German radio transmission, allowing Allied ships and aircraft to bomb that location.

Allied victory

The extensive Battle of the Atlantic was eventually dominated by the Allies. This was the result of the convoy system, the use of aircraft, the deciphering of German naval codes, the use of radar and other technologies, and the inability of Germany to counter these measures while maintaining submarine construction. By the end of the war in Europe in May 1945:

- Germany had lost 780 submarines out of 1100 in service and 30,000 out of 40,000 submariners.
- The Allies had lost 175 warships, 3500 merchant vessels and 72,000 sailors.

Technology of war: radar

Radio detection and ranging, commonly known as radar, used radio waves to determine the distance, speed, direction and altitude of various objects such as aircraft, ships and surfaced submarines. Britain was the first nation to effectively use radar. It was used to determine the direction and numbers of German bombers attacking the country after July 1940. Later, radar was installed on Allied ships and aircraft, helping to reduce the threat of German submarines. German submarines were eventually fitted with radar detection devices which indicated when they had been detected by Allied radar, giving them time to go below the water's surface and escape.

Mediterranean Sea 1940–3

The Mediterranean Sea was another area of important naval action. With the fall of France in mid-1940, Britain feared that French warships would be turned over to Germany. This could help give the Axis powers control over the Mediterranean, which would allow them easier access to north Africa and potentially oilfields in the Middle East. Britain attacked these French warships while they were at port in France's north African province of Algeria in July 1940, damaging or destroying most of them.

British ships battled the Italian navy in the Mediterranean, culminating in a major defeat for Italy in mid-November 1940 when British aircraft, flying from an **aircraft carrier**, torpedoed three of Italy's six battleships while they were at port at Taranto. This victory by British aircraft clearly illustrated that the era of large surface warships was over, replaced by aircraft and submarines.

Italian and German aircraft and submarines battled British naval vessels that worked to protect troop and supply transports in the Mediterranean for the remainder of the war. British aircraft and submarines did much the same thing, limiting desperately needed supplies for Axis troops in north Africa.
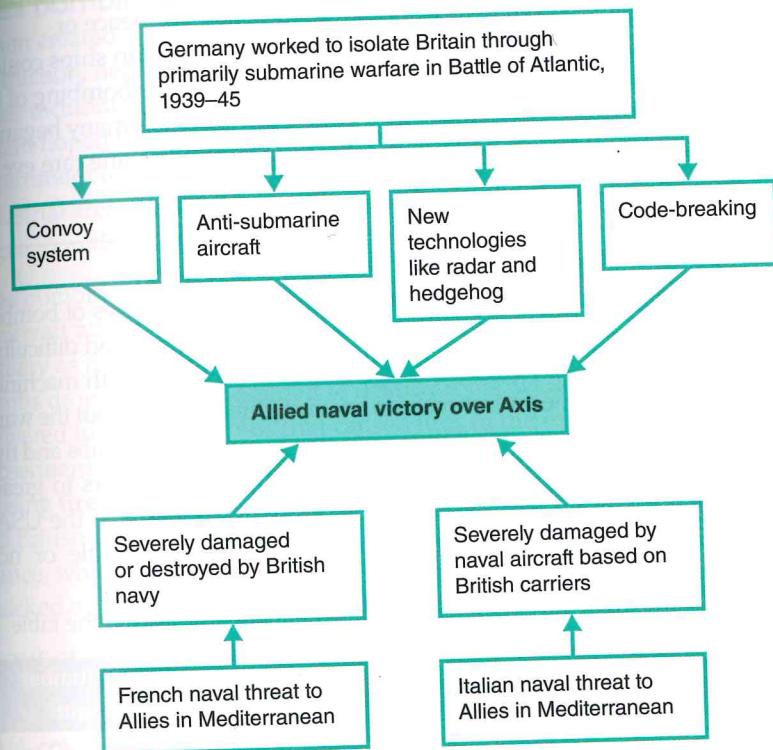
KEY TERM

Aircraft carriers Ships that functioned as floating, armed airfields that launched small bombers and fighters, as well as dive- and torpedo-bombers.

> **Technology of the war: naval aircraft**
> Britain and the USA used a number of aircraft in naval operations. The British Swordfish torpedo bomber was a slow, double-winged biplane that flew low over water, launching a single torpedo. This plane was responsible for some of Britain's most spectacular naval successes in the war, including the destruction of much of Italy's fleet at Taranto. Other aircraft were designed to land on the sea, known as sea-planes, which had boat-like bottoms. Dive-bombers, used also in the land war, were used to drop bombs on naval targets with great accuracy by diving towards the target at great speed before releasing their weapons. Aircraft carriers (see page 195) launched small bombers and fighters, as well as dive- and torpedo-bombers.

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┌─────────────────────────────────────────┐
│ Germany worked to isolate Britain through│
│ primarily submarine warfare in Battle of │
│ Atlantic, 1939–45                        │
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Convoy system	Anti-submarine aircraft	New technologies like radar and hedgehog	Code-breaking

Allied naval victory over Axis

Severely damaged or destroyed by British navy	Severely damaged by naval aircraft based on British carriers

French naval threat to Allies in Mediterranean	Italian naval threat to Allies in Mediterranean

SUMMARY DIAGRAM

The course of the war at sea 1939–45

⑦ The course of the air war 1939–45

▶ *Key question: How did the air war affect Allied and Axis nations?*

The Second World War used aircraft unlike any conflict before. Aircraft helped render surface warships almost obsolete (see page 142), could destroy enemy factories and cities, and brought civilians more directly into the war in western Europe. Aircraft were critical to German success in Poland in 1939, as well as for the invasion of other countries in 1940. Bombers allowed countries such as the island nation of Britain, as well as its ally the USA, to participate in the war in Europe when their armies were unable to participate on land.

Britain attacked, July 1940 to July 1941

Germany began bombing Britain by bomber aircraft in mid-July 1940, hoping either to force Britain to negotiate a peace treaty, or to prepare Britain for possible invasion by German armies. Bombing did destroy many urban

> To what extent was Germany successful in its bombing campaign against Britain?

143

areas, leaving two million people homeless and killing up to 60,000 others by July 1941. It failed, however, to force Britain to negotiate for peace or adequately reduce Britain's air power to an extent that German ships could safely transport troops to the island. Britain responded to the bombing of its cities by bombing those of Germany (see page 145). After Germany began an invasion of the USSR (see page 149), bombings of Britain became rare events for the remainder of the war.

Technology of the war: bomber aircraft

Bombers were large, but slow, aircraft that dropped various types of bombs on enemy positions or cities below them. Since fighter aircraft had difficulty protecting bombers far from their airfields, most were armed with machine guns to give them some protection from enemy fighters. Throughout the war, bombers were improved so that they were able to carry more bombs and fly at higher altitudes to be less vulnerable. Germany used bombers to great effect when combined with tanks and infantry, while Britain and the USA used bombers to destroy targets deep inside Europe with little or no integration with other aspects of military operations.

Some of the more important larger bomber aircraft are listed in the table.

Name	Producing nation	Range	Load	Number built
Avro Lancaster	Britain	4000 km	Up to 10,000 kg	7,400
Boeing B-17	USA	3200 km	Up to 7800 kg	12,700
Heinkel He177	Germany	5600 km	Up to 6000 kg	1,150
Tupolev TB-3	USSR	2000 km	Up to 2000 kg	800

The USA produced other important bomber aircraft as well (see page 206).

Bombing Germany 1940–5

Britain's first large-scale bombing campaign against Germany began in May 1940 when German industrial sites and railways were targeted while France was being invaded. It was hoped that attacking precious oil supplies, as well as targets in Germany, would slow the invasion of France by having Germany withdraw much of its aircraft from battle to protect its industrial centres. Germany produced no oil, so the destruction of oil supplies had the potential to bring any invasion to halt. British bombers lacked accuracy, partly as a result of having to fly at great altitude to avoid being shot down, and most targets were missed. These initial bomber raids on German targets were largely abandoned until Britain bombed German cities in response to its own urban centres being attacked (see page 143). The British government discovered that only about 30 per cent of all bombs it dropped landed within 8 km of the selected target.

Area bombing 1942–5

Britain created a new policy in which an entire area was selected for destruction, negating the need for precision. By destroying entire industrial areas, including homes, infrastructure, factories, schools and everything else, Britain hoped that suffering, demoralized civilians would compel their government to end the war. It was also hoped that bombing German industrial areas would hamper Germany's invasion of the USSR, which began in mid-1941.

Area bombing raids, also known as strategic bombing, often used hundreds of aircraft attacking at night to avoid German fighters and anti-aircraft artillery as much as possible. Bombing occurred in waves, with the first bombs dropped being designed to destroy roofs, while later bombers delivered incendiary bombs that caused fires in the exposed buildings. The subsequent fires often raged out of control, destroying entire city centres and causing **firestorms**. The first major attack occurred on 3–4 March 1942, when 235 British bombers destroyed much of an industrial complex in Billancourt, France, which took three months to rebuild. The German city of Lübeck was attacked on 28–29 March, destroying or damaging 62 per cent of the city.

> **🔑 KEY TERM**
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> **Firestorms** A fire of such magnitude and intensity that it creates its own wind system, usually as a result of rising heat causing cool air to be pulled towards the fire which provides more oxygen to make the fire more intense.

SOURCE H

Cologne, Germany, in ruins from area bombing by 1945.

How successful was area bombing against Cologne, Germany, according to Source H?

Expanded area bombing

Operation Millennium, the largest bombing raid up to that point of the war, was launched on 30–31 May 1942. Over 1000 British bombers attacked the German city of Cologne for two-and-a-half hours, destroying 3300 houses and damaging 10,000 more; 36 factories were completely destroyed and 270 others damaged. Area bombing continued to be employed, with US bombers joining the British in 1942, conducting daytime attacks. The largest death toll by area bombing was in Operation Gomorrah by British and US aircraft against Hamburg over a series of nights in late July and early August 1943, which left 45,000 civilians dead, destroying 215,000 houses and 600 factories. Towards the end of the war in February 1945, Dresden was bombed, killing 25,000 people in a single evening. This bombing remains controversial as it was clear by this date that Germany was all but defeated. The bombing of Dresden could serve little military purpose.

Other bombings

While Britain and the USA destroyed targets in Germany, they also bombed other Axis targets including Romania's oilfields and parts of Italy. Germans conducted their own version of area bombing, destroying Soviet cities by air, leading to approximately 500,000 civilian deaths. From German-occupied Crete, Alexandria and the Suez Canal in Egypt were bombed in support of the campaign in north Africa, and Italian and German aircraft repeatedly attacked Malta in the Mediterranean Sea, from 1940 to 1943. None of these attacks had any noticeable long-term effects on the conduct of the war.

Importance of strategic bombing

Although bombers destroyed most German cities, the effect of the bombing continues to be debated by historians today. Just as the bombing of British cities seems to have actually increased civilian morale and support for the government, attacks on German cities also led to more government support. The bombings themselves had little long-term effect on German industrial production as factories were quickly reconstructed or moved away from industrial centres. Hamburg, for example, was largely destroyed in mid-1943, including 600 factories. Within two months industrial production in the city had been largely restored.

Only towards the end of the war, when Allied fighter planes had been improved so that they could protect bombers over most of Germany, did bombers affect Germany's ability to conduct the war. Flying at lower altitudes as the threat of German fighters was reduced, accurate bombing of railways, factories and other targets could be effectively carried out. By the end of 1944, Allied air attacks on Germany's oil installations and railways had crippled the country and, by February 1945, these attacks had all but halted German industry.

Losses

Allied bombing of Germany and other Axis targets during the area bombing campaign resulted in major losses of aircraft, Allied pilots and crews, as well as German and Axis civilians. Allied and Axis losses can be generally summarized as:

- around 600,000 civilians killed and 800,000 wounded in Germany, with 7,500,000 made homeless
- around 500,000 Soviet civilians killed
- 50,000 Italian civilians killed
- 160,000 Allied air crew killed
- 40,000 Allied aircraft destroyed or damaged
- consumed up to 33 per cent of all British war production and 11 per cent of US military spending.

Many historians consider the Allied bombing campaign against Germany and its Axis partners to have been wasteful in terms of production and lives, both Allied and Axis. Many officials during the war, as well as later, believed that bombings by both sides were crimes against humanity. During the Nuremburg Trials at the war's end (see page 157), Germany was not prosecuted for the bombing of Allied, especially British, cities as this would also bring up the fact that the Allies did the same to Germany, killing substantially more German civilians than Germany did in Britain.

Technology of the war: rockets

Small rockets, also known as missiles, were increasingly installed on fighter aircraft towards the end of the Second World War. These rockets delivered bombs to enemy factories, railway locomotives, ships and other targets. They were largely inaccurate and machine guns remained the main fighter weapons. Germany, however, developed larger, more powerful rockets. The V-2 was a missile propelled by liquid fuel that Germany used primarily to attack London and Antwerp. These missiles travelled at 5700 km/h up to 320 km carrying a 1000-kg explosive warhead. Travelling far faster than the speed of sound, they were meant to destroy large areas and cause terror since they struck without warning. Germany launched over 3000 V-2 rockets, killing over 7250 people. Although impressive, they had no impact on the outcome of the war.