

Course of World War II

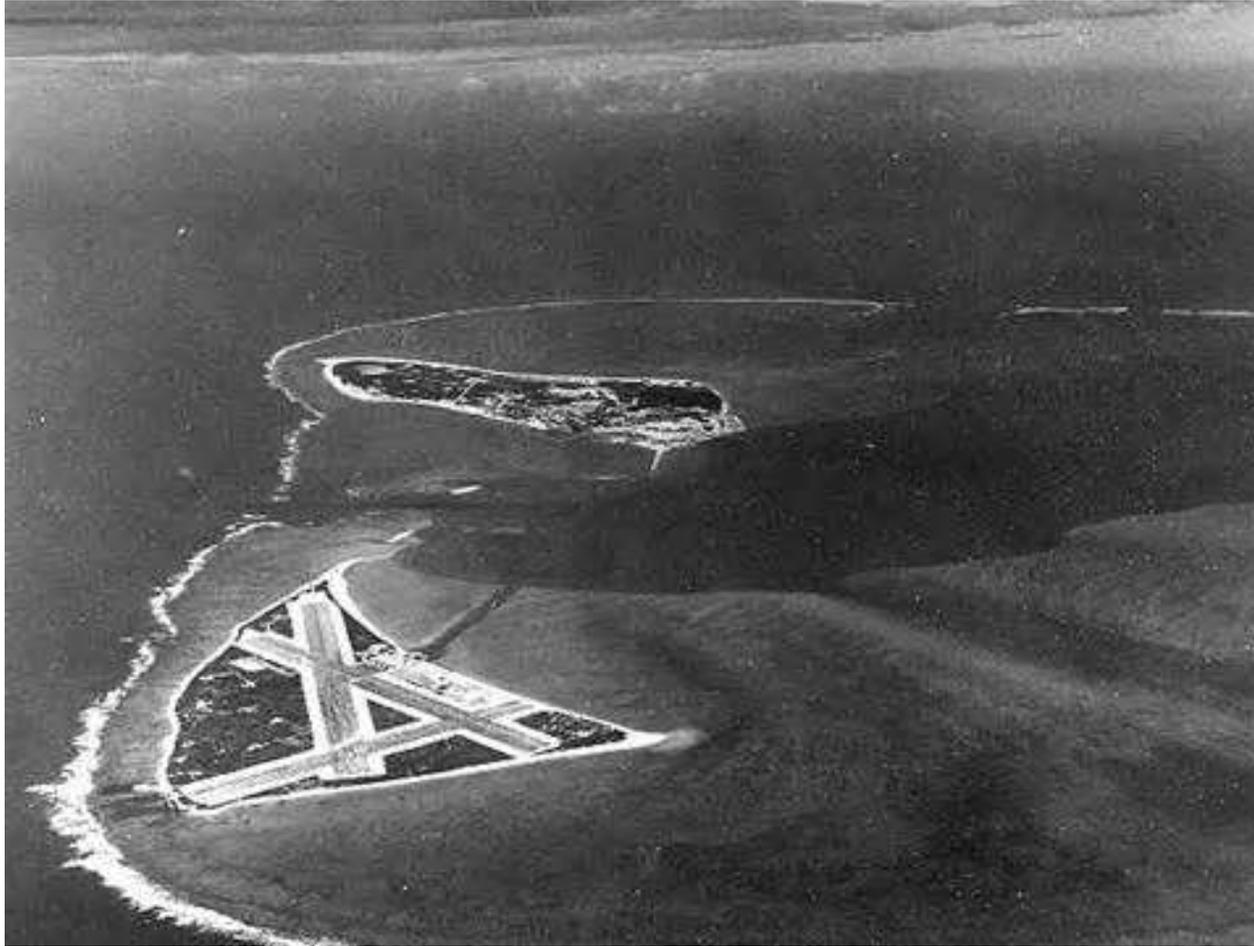
Class 6

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Effects of Midway

- With their carriers lost, the Japanese were forced to call off the invasion of Midway
- The Japanese lost 4 of their 6 large fleet carriers, over 300 planes, hundreds of experienced pilots and air crews, and over 3,000 naval crewmen – losses not easily replaced
- The losses at Midway prevented any new major Japanese naval offensive in either the South Pacific or the Indian Ocean
- It opened the way for an American counter-attack in the Solomon Islands
- With the threat to Midway and Hawaii removed, it made it possible for the U.S. to follow the Europe First strategy



Aerial view of Midway from the South

Eastern Island, then the site of Midway's airfield, is in the foreground. Sand Island, location of most other base facilities, is across the entrance channel. Picture was taken in November 1941

The War in the Atlantic

The British Merchant Marine

- In 1939, Britain needed to import 55 million tons of goods by sea to support its way of life
 - She depended on her ocean trade for half her food, most of her raw materials and all of her oil and gasoline
- It had a merchant marine of 3,000 ocean-going vessels and 1,000 large coastal ships – a total of 21 million gross-register tons
- Merchant marine manpower totaled 160,000
- The Germans estimated that if they could sink 700,000 tons a month, they could force Britain out of the war

4 Phases of the Sub War

1. From the outbreak of the war to the fall of France
 - U-boats operate only in the North Sea and around the British isles
2. After June 1940 to April 1941
 - U-boats operate in the Eastern Atlantic and along the African coast
3. From April 1941 to December 1941
 - U-boats operate in the Central and Western Atlantic and Arctic Atlantic (after June 1941)
4. After December 1941
 - U-boats begin to operate along the Atlantic coast of the U.S. and in the Gulf of Mexico

German Subs

- Submarines were not really true underwater ships
 - When submerged they could go only 7.5 knots per hr and only for a limited time since they could only use battery power
 - They could be outrun by most surface ships
 - On the surface, they could go 17.7 knots per hr
 - They had to spend most of their time on the surface so that their diesel engines could recharge their batteries and they could get to their designated attack areas in time
- The most common German sub, the Type VII, had a radius of 8,000 miles and carried 11 torpedoes
- In 1942, the newer Type IX, came on board. It had a radius of 13,450 miles and carried 22 torpedoes

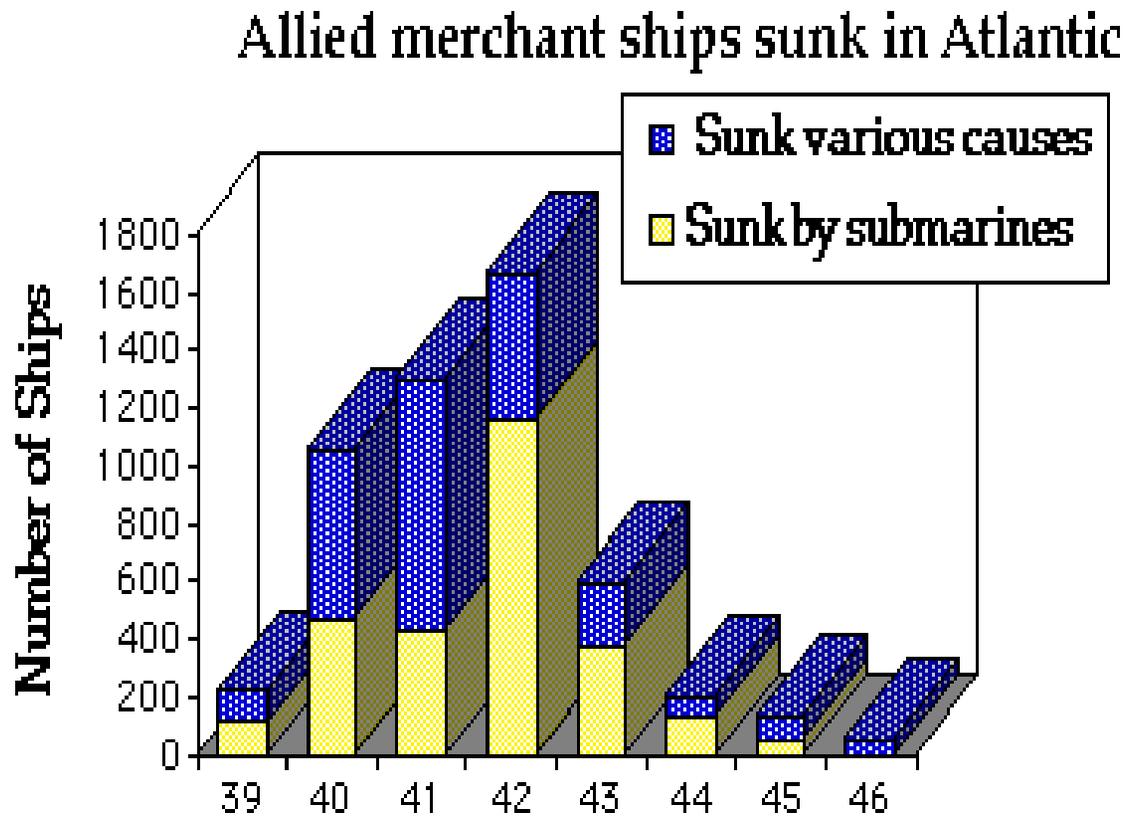
Sub Tactics

- Since the German Navy had few reconnaissance planes, the Germans had to use submarine scouts to locate Allied convoys and then use radio signals to direct other subs to the convoy where they could attack as a wolf-pack
- Typically, German subs would attack convoys at night, submerging only when they were being pursued by escort ships
 - During the day, they would attack the convoy submerged
- One thing that helped German subs locate convoys was the fact that the Germans had broken the British convoy codes

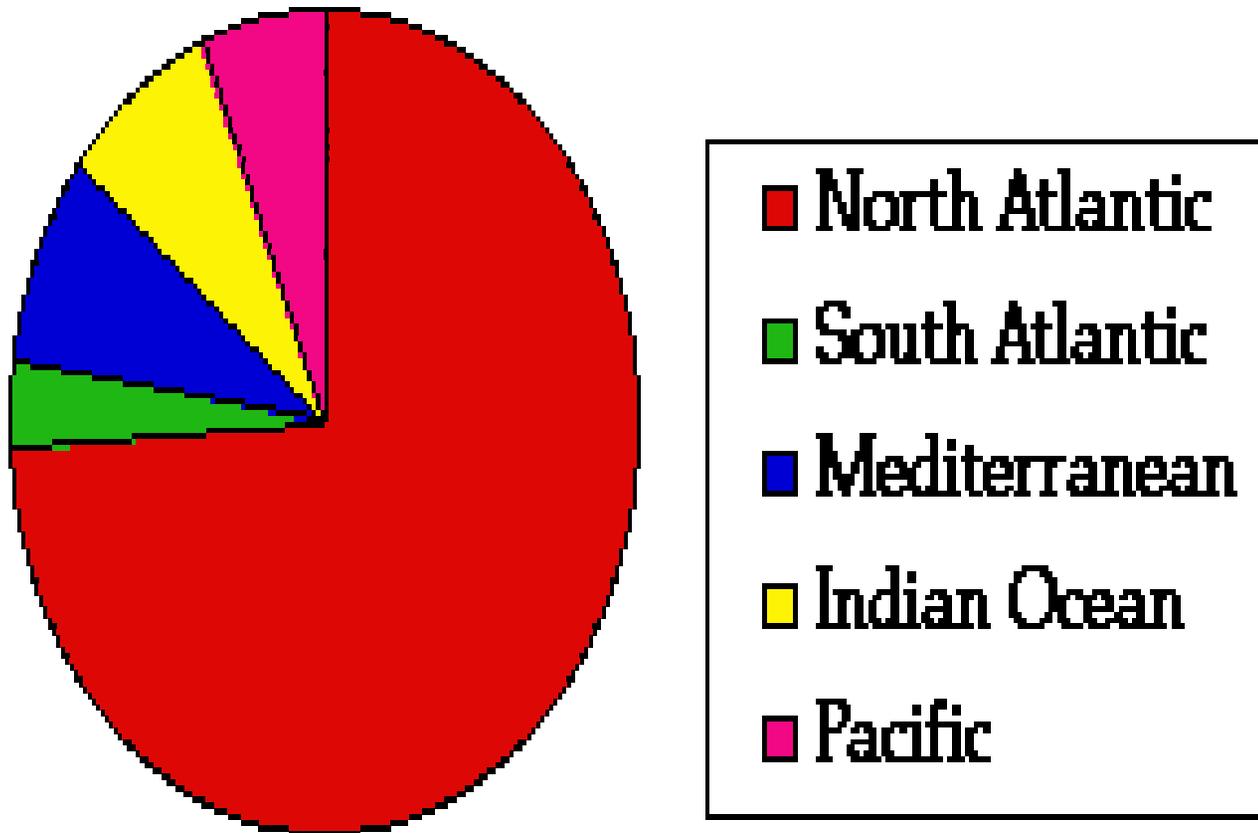
Convoys

- The best way of dealing with subs was to have the ships form convoys that were protected by destroyer escorts and overhead planes
 - Merchant ships and tankers were helpless at sea if not in a convoy
 - About 2/3rd of the ships sunk were out of convoy – these were either stragglers from the convoy or ships that had just left port
- Despite convoys, the Allies suffered a heavy loss of ships until early 1943 as noted in the subsequent chart
- After a series of Allied innovations, Allied shipping losses greatly declined while German submarine losses greatly increased

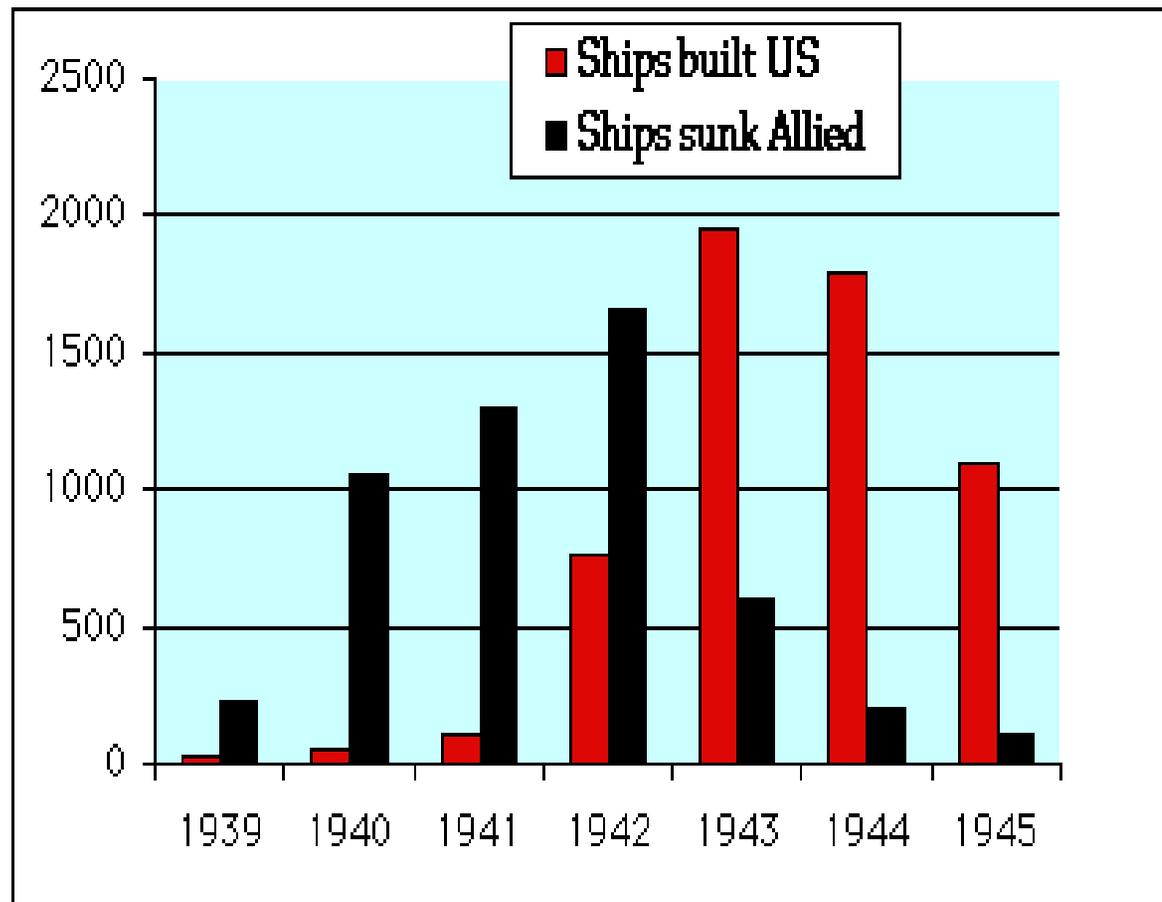
Allied Merchant Ship Losses



Ship Sinkings by Ocean Region



Ship Construction and Ship Losses



U-boat Losses

Year	1939	1940	1941	1942	1943	1944	1945
U-boats Lost	9	24	35	86	243	249	120
Cum Total		33	68	154	397	646	766

The Cost of the War in the Atlantic

- From September 1939 to May 1945, the Allies lost 2,452 merchant ships and tankers in the Atlantic and 175 escort warships
 - Merchant tonnage loss was nearly 13 million GRT
 - The British lost 55,800 merchant seamen; the Americans 9,400
- The Germans lost 766 out of their 1156 commissioned U-boats and 25,870 out of their 40,900 U-boat crewmen
 - 63 percent of the men were KIA and 75% became casualties
 - 66.3 percent of the U-boats were lost
- The German sub casualty rate far exceeded that suffered by any other service arm of any combatant country in the war

Notes on Losses

- It was not until February 1943 that Allied ship construction tonnage exceeded that sunk by German submarines in the same month
- It was not until September 1943 that Allied ship construction tonnage exceeded the tonnage of all Allied ship losses
 - I.e Those sunk by German subs, German surface ships, Axis mines, and marine accidents in which ships capsized, ran aground, or collided with an obstacle or another ship

What Won the Battle of the Atlantic

- The Allied use of airplanes and escort carriers (CVEs)
- The Allies had broken the German Navy code by use of Enigma
- The Allies found out that the Germans had broken the convoy codes and developed a new code that the Germans never broke
- The Allies developed a seaborne radio locator system
- The Allies developed an Air to Surface Vessel (ASV) radar capable of locating submarines on the surface of the ocean
- The Allies developed a type of sonar that could detect depth as well as range and bearing
- The development of the Leigh Light for aircraft

Effects of the War in the Atlantic - 1

- Before mid-1943, when the Germans were winning:
 - Forced the British standard of living down to near-subsistence levels
 - In 1942, British imports dropped to a third of their peacetime level
 - Precluded an Allied invasion of Western Europe in 1942 & 1943
 - Prevented a North African invasion on a scale sufficient to rapidly seize Tunisia, thus prolonging the North African campaign into 1943
 - Limited the amount of Lend-Lease aid that could be gotten to Russia
 - Created tensions between the Western Allies and Russia over the issue of a Second Front
- Led to massive merchant ship construction programs
 - Revolutionized ship construction techniques and procedures

Liberty Ship



USS John W. Brown – Pinup Art



Effects of the War in the Atlantic - 2

- After mid-1943 when the Allies had to a large extent neutralized the German submarine menace:
 - Allowed for large-scale movement of troops and supplies to England, making possible the Normandy invasion of 1944
 - Allowed large amounts of Lend-Lease aid to flow to Russia
- Gave rise to the field of Operations Research which used statistical analysis of available data to make military and convoy-handling decisions
 - Used to determine the optimal size of convoys & optimal color of aircraft
 - After the war, Operations Research began to be applied to all sorts of business problems, ranging from routing of buses & planes to supply chain management to personnel scheduling

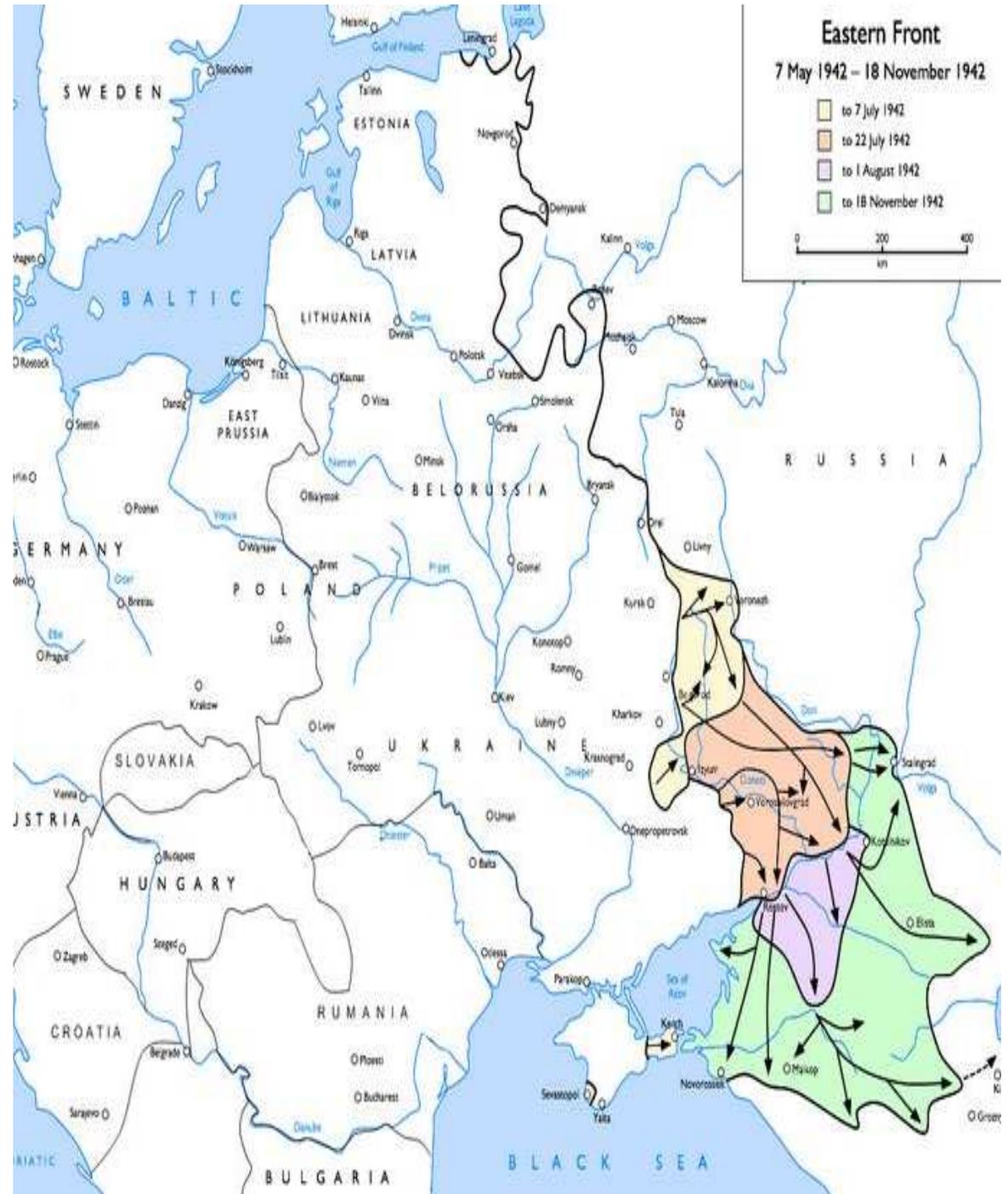
Towards Stalingrad

Towards Stalingrad & the Caucasus

- Initially, the German southern campaign went well
 - The First Panzer Army linked with the Sixth Army around Kharkov to capture 239,000 Russian prisoners and destroy 1,240 Russian tanks and then breakthrough to the steppe east of the Don River.
 - The Sixth Army aided by a part of the Fourth Panzer Army then drove towards Stalingrad while other German Armies drove into the area between the Black and Caspian Seas, heading toward Maikop, Grozny, and Baku – the heart of the Russian oil industry
 - In August, they captured Maikop and Mt Elbrus, the highest peak in the Caucasus mountains
 - On August 23rd , the Sixth Army began to attack Stalingrad

German Advance 1942

German
advance
towards
Stalingrad and
the Caucasus



Stalingrad

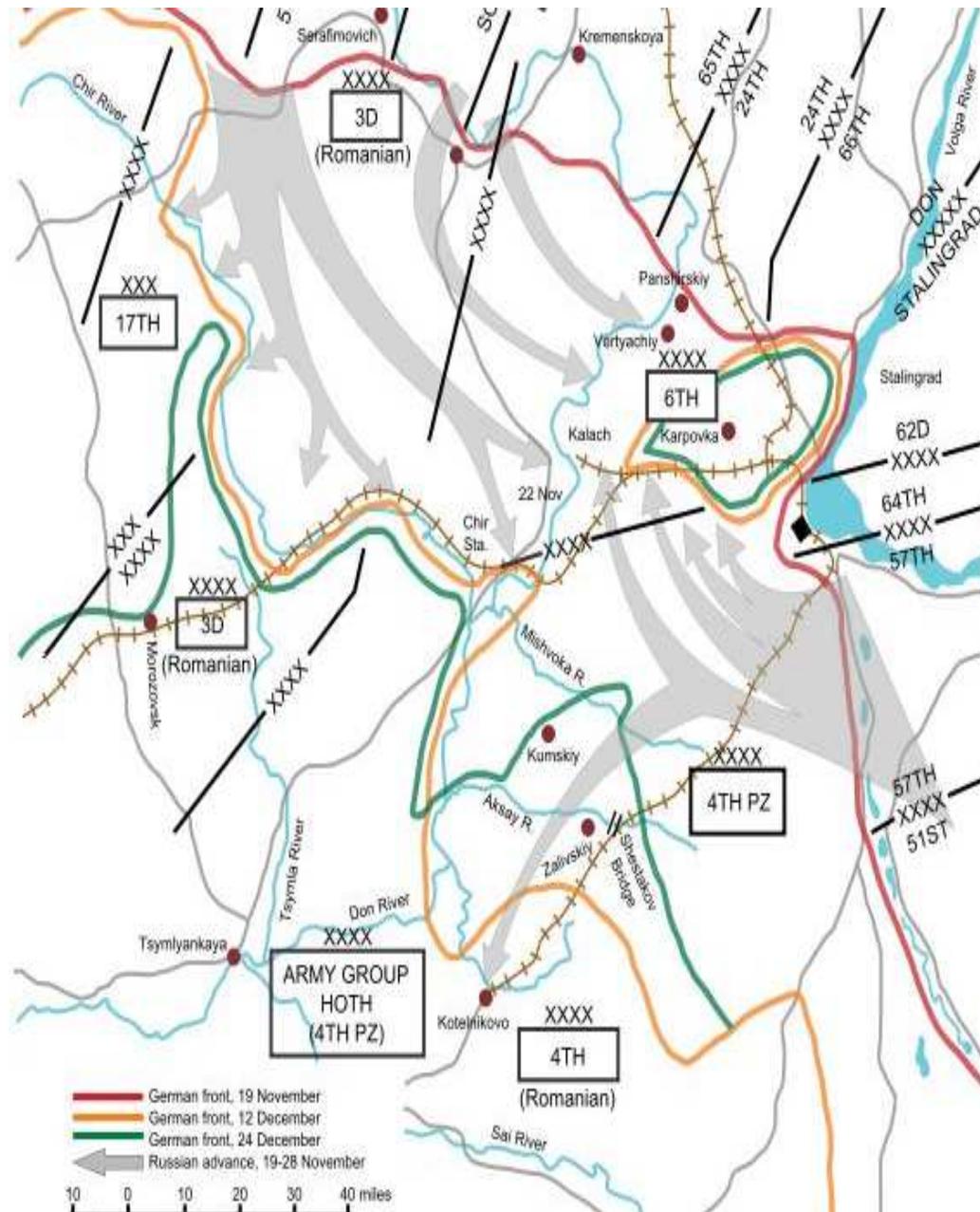
- Stalingrad was a 20-mile long city of modern factories and wooden buildings along the west bank of the Volga.
- As the Sixth Army prepared to attack, Stalin sent the 62nd Army under GEN Vasiliy Chuikov to defend the city
- With most of the city reduced to rubble by artillery fire and aerial bombing, the Germans had to fight in a face-to-face combat environment where their tanks were largely useless and casualties extremely high
 - The Battle of Stalingrad lasted from 19 August 1942 to 2 February 1943

The Russian Counterstroke

- In September, the Russians began planning a pincer operation that would strike from the Don in the North and the steppe in the South to surround the German forces attacking Stalingrad
- On 11 November, the Germans broke through to the Volga south of the city
- On 19 November, the pincer attacks began
 - They devastated the Third and Fourth Romanian Armies
- On 23 November, the pincers met at Kalach on the Don west of Stalingrad
 - This left the German Sixth Army surrounded

Stalingrad

Map showing
Soviet
encirclement
attack



Hitler Decisions that Led to Disaster

- Once the Soviet forces linked, they formed two defensive fronts – one facing toward Stalingrad to prevent a breakout and one facing westward to prevent a relief force from breaking through
- Hitler rejected advice that the Sixth Army should be ordered to attempt to break out of the encirclement
 - Instead he ordered the Luftwaffe to supply the army by air and a relief force to pry open the encirclement – Both failed
 - Hitler's decision doomed the Sixth Army
- A subsequent Russian offensive on 16 December both captured the airfields from which Stalingrad was being supplied and threatened the encirclement of Army Group Don – the Stalingrad relief force

The December Offensive

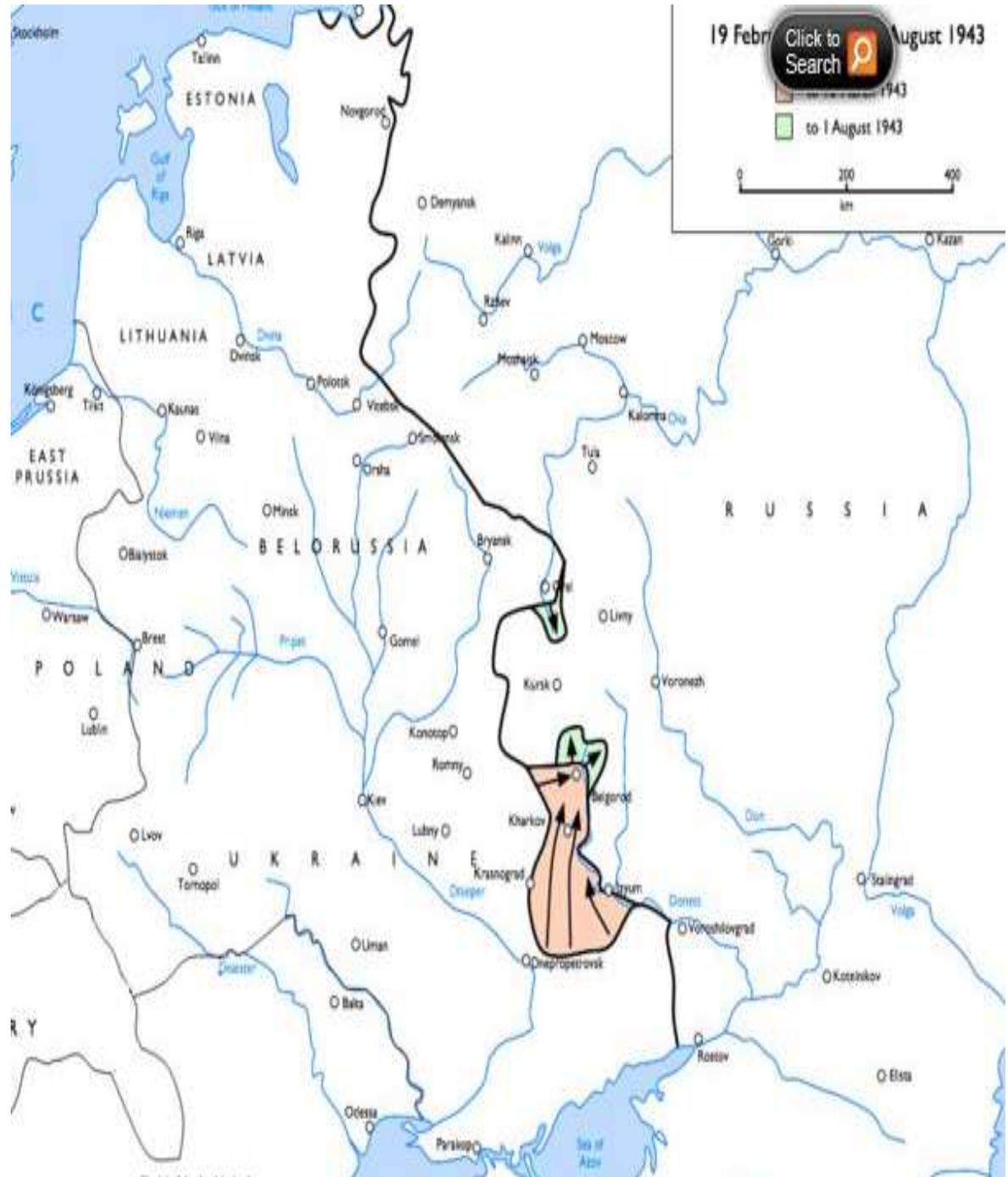
- The 16 December offensive
 - Halted the Stalingrad relief effort and ended all hope that the Sixth Army at Stalingrad could be saved
 - Forced the partial withdrawal of Army Group A from its positions in the Caucasus
- After all of the fighting that took place in the Winter of 1942-43, the front that remained was basically the front that existed before the German advances in the Summer-Fall of 1942 except for a bulge around Kursk

German POWs at Stalingrad



Eastern Front -- 1943

The map shows the gains made by the Germans in the Kursk Offensive



Kursk - 1

- With the spring thaw, fighting ground to a halt as dirt roads turned to quagmires and the surrounding steppe turned to swamp
 - The spring lull in the fighting gave both armies time to lick their wounds and replace their losses, at least partially, in men and equipment
 - It also created pressure for the *Ostheer* to attack before the Red Army had trained its latest cohort of conscripts and begun to receive the massive output of its relocated factories and the large donations of Lend-lease
 - The question was where to attack
 - The German generals decided on the Kursk salient
 - The Russians anticipated that Kursk was where the attack would come

Kursk - 2

- The attack was delayed to July by two factors
 - The northern face of the Kursk salient was attacked by the German Ninth Army and the southern by the Fourth Panzer Army
- After initial success, the Russians attacked the flanks of the two German armies, precipitating the largest tank battle in history
 - Over 900 tanks on each side took part , with the Russians losing over 450 and the Germans losing over 300
 - While Russian losses were heavier, the German offensive was halted
- Kursk deprived the Germans of the ability to go on the offensive in the future and gave the initiative permanently to the Russians

German soldiers at Kursk



Knocked-out Panther Tank



Consequences of Kursk

- For the first time, a major German offensive was stopped before achieving a breakthrough
- Though the location, plan of attack, and timing were determined by Hitler, he blamed the defeat on the General Staff
 - This led Hitler to progressively involve himself more and more in military operations
 - One consequence of this was Hitler's orders to the German Army to attempt to hold every inch of ground they had captured rather than a mobile defense which involved retreat followed by counterattack
- For the rest of the war, the German army was on the defensive, limited to reacting to Soviet initiatives and gradually being pushed back

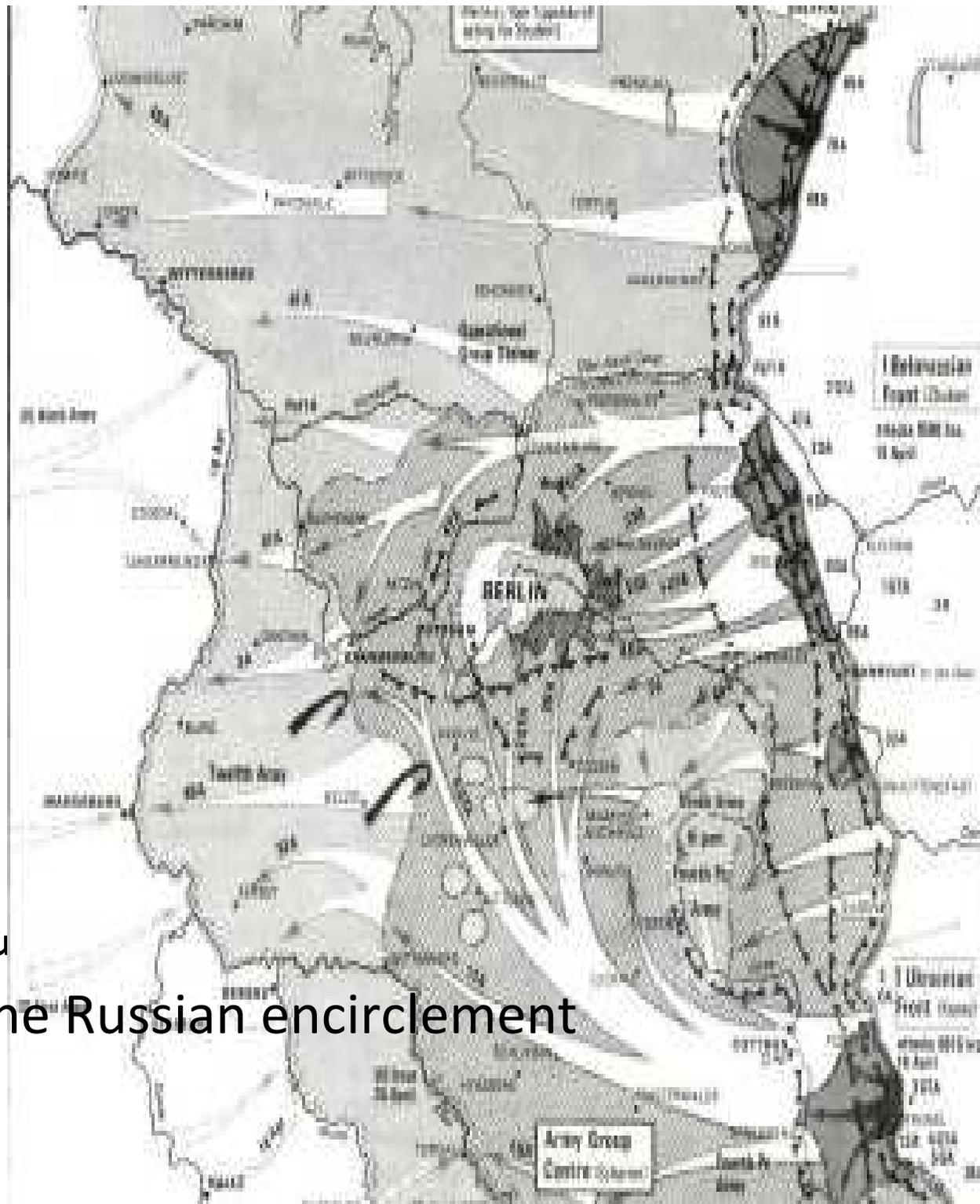
Russian Advances July 1943 to June 1944



Russian Advances June 1944 to January 1945



Janu
Map shows the Russian encirclement
of Berlin



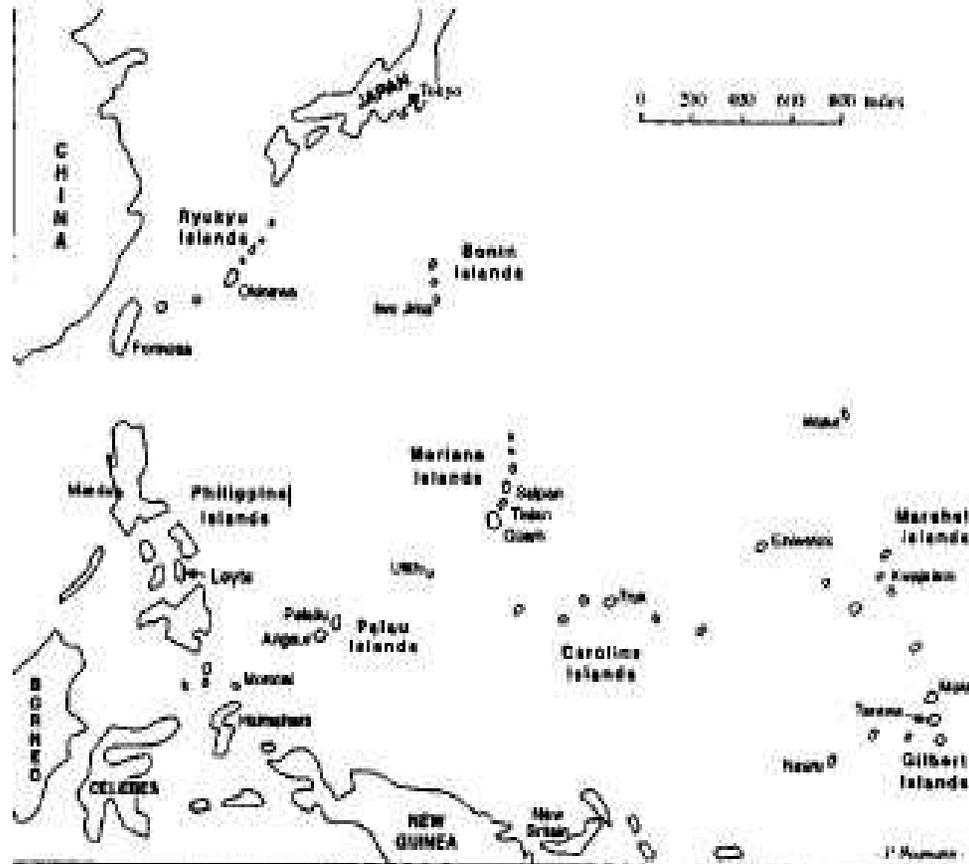
War in the Pacific

From Guadalcanal to Saipan

American Strategy

- After Midway, the Americans went on the offensive
- There were two routes to the ultimate objective – the home islands of Japan
 - The Southern Route along the New Guinea coast to the Palau Islands to the Philippines to Okinawa to Japan
 - The Northern Route across the coral atolls of the Marshalls and the islands of the Marianas to Iwo Jima to Japan
- While it was decided to go both routes, the primary emphasis was on the Southern Route, with the area divided to allot part to ADM Nimitz and the Navy and part to GEN MacArthur and the Army

South-Central Pacific



Guadalcanal

- One thing that precipitated the decision to invade Guadalcanal was the discovery that the Japanese were building an airfield from which planes could interdict American supply routes to Australia
- The 1st Marine Division landed on 7 August 1942 and quickly captured and finished constructing the airfield
- The arrival of the Marines provoked the Japanese to make a major effort to retake the island
- The struggle for Guadalcanal led to 6 major naval battles
- After months of intense fighting, the Americans finally secured the island on 9 February 1943

Solomon Islands & Guadalcanal



Consequences

- With Guadalcanal, the Japanese found themselves in a battle of attrition that was not only costly in men, ships, and planes (along with their experienced aircrews) that precluded Japanese action in the Indian Ocean to cut Allied supply lines to Russia and North Africa
- Once secured, Guadalcanal provided a base for advancing up the Solomon Islands and eventually encircling the major Japanese naval and air base at Rabaul
- During the battle, both American and Japanese troops suffered much more from disease than from battle casualties
 - This led MacArthur and Halsey to place major efforts on malaria control and later DDT spraying

Island Hopping

- As Halsey's forces advanced up the Solomons and MacArthur's advanced westward on the northern coast of New Guinea, they both soon realized that they need not attack every Japanese held island or every Japanese base on New Guinea
- Instead, if they seized just key islands or sites with air bases (or on which air bases could easily be constructed), they could use land-based air power to neutralize Japanese-held island or sites and let the troops there "wither on the vine."
 - In order to supply these by-passed garrisons, the Japanese had to divert a major portion of their submarine fleet to garrison supply operations. This precluded the use of such submarines to interdict Allied supply lines in the Indian Ocean and between the U.S. and Australia

Cargo Cults

Cargo Cults - 1

- A cargo cult is a religious movement that emerges in technologically-primitive tribal and isolated societies after they have had an encounter with a foreign and technologically-advanced society
 - One aspect is a focus on magical thinking and a variety of intricate rituals designed to obtain the material wealth or “cargo” of the technologically-advanced culture that they encountered
- Cargo cults exemplify the third law of Arthur C. Clarke: that any sufficiently advanced technology is indistinguishable from magic.

Cargo Cults - 2

- American (and Australian) military operations in the South Pacific and New Guinea brought GIs with 20th century technology into contact with island natives who were still living in the Stone Age
 - The Americans built bases on South Pacific islands and recruited the natives to help construct airfields, hospitals, jetties, roads, bridges, and Quonset huts – all of which were strange and wondrous to the natives
 - The natives also observed aircraft descending from the sky and delivering crates full of clothing, tents, weapons, tools, canned goods, and other goods – the likes of which they had never seen before
 - The natives learned that the Americans referred to this stuff as “cargo”

The Cargo Cults - 3

- In exchange for the help provided to them, the Americans gave some of this “cargo” – radios, watches, iceboxes, Coca-cola, SPAM, canned goods, and candy -- to the natives
- In many cases, some of the natives got to know individual Americans who had a key role in summoning and distributing the cargo
- The natives also observed the Americans engaging in certain behaviors that seemed to summon the cargo
 - Putting on radio headsets and erecting antennas
 - Engaging in marching around with rifles on their shoulders

The Cargo Cults - 4

- Then, all of a sudden, the Americans left – as their bases moved closer to Japan or when the war ended
- The South Pacific and New Guinea natives had beliefs that, in interaction with American GIs, their cargo, and their technology, generated the new cargo cult religions
 - That their dead ancestors could influence the well-being of the living
 - That their ancestors would one day come back to life and distribute to them unimaginable wealth
 - Consequently, the American GIs had connections to their own ancestors since they had this wondrous cargo – that they, like their ancestors, were gods

The Cargo Cults - 5

- To facilitate and inspire John Frum and his fellow GI “gods” to return with planeloads and shiploads of cargo, the natives created the “cargo cults” which engage in such ritualistic behavior as military-style parades, building landing strips and figurines of American airplanes and airfield-related equipment, hoisting the American flag, and eating ritual meals.
 - One symbol of the John Frum cargo cult was a Red Cross, adopted from the Red Cross emblem on wartime ambulances
- Some of these cults have persisted, despite the efforts of Christian missionaries and Western-educated politicians to wean the natives away from the cargo cults
- In some cases, the cult has persisted but the beliefs have changed

John Frum Cult Altar



John Frum Cult Marching



John Frum Cult Flag Raising



The Central Pacific -1

- While MacArthur's soldiers and Halsey's marines were island- and site-hopping in the South Pacific and New Guinea, Nimitz's forces were island-hopping in the Central Pacific
 - Makin and Tarawa in the Gilbert Islands – November 1943
 - Eniwetok and Kwajalein in the Marshall Islands – February 1944
 - Saipan, Guam, and Tinian in the Mariana Islands – June-August 1944
 - Saipan – Invaded 15 June 1944
- The invasion of Saipan led the Japanese to send their First Mobile Fleet (carriers and escort ships) to attack the American Task Force supporting the landing on Saipan

The Central Pacific – 2

- Battle of the Philippine Sea – 19-20 June 1944
 - The and battle saw 15 carriers commanded by ADM Marc Mitscher against 9 carriers commanded by ADM Jisaburo Ozawa
 - While the Japanese discovered Mitscher's carriers first, his fleet's fire control radar, fighter control, and superior F6F Hellcat fighters enable the Americans to shoot down 243 out of the 373 attacking Japanese planes at the cost of only 29 American planes – the “Great Marianas Turkey Shoot”
 - Later, American submarines and aircraft sank 3 Japanese carriers, damaged 2 others, and sank 2 cruisers
 - The sunk carriers included the *Taiho* (Japan's newest and largest carrier) and the *Shokaku* (veteran of Pearl Harbor)

Conquest of the Marianas

- The Battle of the Philippine Sea basically destroyed Japan as a major naval air power
 - It prevented Japan from reinforcing the garrisons it had on Saipan, Tinian, and Guam
- The conquest of Saipan and Tinian (and the liberation of Guam) provided bases from which the new B-29s could engage in strategic bombing of Japan
 - These islands also provided a base for attacking Iwo Jima
- Saipan was the first conquered island with a large Japanese civilian population
 - 2/3rds of the non-combatants (mostly women and children) committed suicide