THE AIR WAR IN THE PACIFIC
1941-1945

PEARL HARBOR TO NAGASAKI
• **1931** Mukden Incident (9.18 Incident) Japanese agents blow up a part of the Japanese owned Southern Manchurian RR at Mukden. Excuse to invade Manchuria.

• **1932** May 15 Japanese Prime Minister Inakai Tsuyoshi assassinated by a group of young army officers

• **1936** Feb 26 Incident. Junior army officers attempt a coup. Assassinate 2 former Prime Ministers. Coup fails.

• Japan signs Anti-Comintern Pact with Germany and Italy

• **1937** July 7 – Marco Polo Bridge Incident outside of Beijing. Japan attacks China – Second Sino-Japanese War.

• **1938** Japan provokes battle with Soviet troops at Lake Hassan in Manchuria. Japan loses.
1939  May-Sept  Series of clashes with Soviet troops and Japanese defeated again.
       July - U.S. withdraws from commercial treaty with Japan
1940  September – Tri-Partite Treaty with Germany and Italy – Rome-Berlin-Tokyo Axis.
1941  August – US initiates an oil embargo on Japan – 80% of oil.
       December 7 – Japan attacks Pearl Harbor
       December 8 – US declares war on Japan
       Japanese bomb Philippines
       December 11 – Germany and Italy declare war on US
1942  January – Japan invades Netherland East Indies
       February – Singapore falls
       April – Bataan falls; Doolittle Raid on Tokyo.
       May – Corregidor falls; Battle of the Coral Sea
       June – Battle of Midway
       August – Guadalcanal invaded.
       October - Battle of Santa Cruz
1943  November – Tarawa Invaded

       June – Invasion of Saipan; Battle of the Philippine Sea (Marianas Turkey Shoot)
       July – Invasion of Guam and Tinian
       September – Invasion of Peleliu
1944 cont.

September – Invasion of Peleliu

October – Invasion of the Philippines; Battle of Leyte Gulf; first appearance of kamikazes

1945

February – Invasion of Iwo Jima

April – Invasion of Okinawa
August 6 – Hiroshima
August 9 – Nagasaki
August 16 – VJ Day

September 2 – Surrender document signed on battleship Missouri.
WEAPONS - PLANES
GRUMMAN F4F WILDCAT

- YEAR – 1941 (F4F-4)
- MAXIMUM SPEED – 318 MPH @ 19,400 FT
- CEILING – 34,900 FT
- RANGE – 770 MI
- ARMAMENT – 6 50 CAL MACHINE GUNS; 200 LBS OF BOMBS
- ENGINE – PRATT & WHITNEY R-1830-86 TWIN WASP, 14 CYLINDER RADIAL, 1200 HP
GRUMMAN F6F HELLCAT
GRUMMAN F6F HELLCAT

- YEAR – 1942 (F6F-3); 1944 (F6F-5) 12,000
- MAX SPEED – 386 MPH @ 17,300 FT
- CEILING – 37,300 FT
- RANGE – 1040 MI
- ARMAMENT – 6 50 CAL MACHINE GUNS; 2000 LBS OF BOMBS
- ENGINE – PRATT & WHITNEY DOUBLE WASP, 18 CYLINDER RADIAL, 2200 HP
VOUGHT F4U-1 CORSAIR
VOUGHT F4U-1 CORSAIR

- YEAR – 1943  8,000 BUILT
- MAX SPEED – 417 MPH @ 19,900  FT
- CEILING – 36,900 FT
- RANGE – 1015 MI
- ARMAMENT – 6 50 CAL MACHINE GUNS, 2000 LBS OF BOMBS
- ENGINE – PRATT & WHITNEY DOUBLE WASP 18 CYLINDER RADIAL, 2000 HP
DOUGLAS SBD-3 DAUNTLESS

- YEAR – 1938 – DIVE BOMBER – 6,000 BUILT
- MAX SPEED – 250 MPH
- CEILING – 27,100 FT
- RANGE – 1345 MI
- ARMAMENT – 4 50 CAL MACHINE GUNS FRONT AND 2 30 CAL MACHINE GUNS REAR
- ENGINE – WRIGHT CYCLONE 9 CYLINDER RADIAL ENGINE 1,000 HP
- CREW – 2; PILOT AND REAR GUNNER
CURTISS SB2C-1 HELLDIVER

- YEAR - 1943 DIVE BOMBER; 7200 BUILT
- MAX SPEED – 281 MPH @ 16,700 FT
- CEILING – 25,100 FT
- RANGE – 1,110 MI
- ARMAMENT – 2 20 MM CANNON; 2 50 CAL MACHINE GUNS REAR 2,000 LBS BOMBS
- ENGINE – WRIGHT CYCLONE 14 CYLINDER RADIAL 1,700 HP
- CREW – 2; PILOT AND REAR GUNNER
DOUGLAS TBD DEVASTATOR
DOUGLAS TBD DEVASTATOR

- YEAR – 1937 – 100 IN SERVICE ON 12/7/41.
- MAX SPEED – 206 MPH @ 8,000 FT
- CEILING – 19,700 FT
- RANGE – 716 MI
- ARMAMENT – 2 50 CAL MACHINE GUNS, 1000 LBS OF BOMBS
- ENGINE – PRATT & WHITNEY TWIN WASP 14 CYLINDER RADIAL, 900 HP
- CREW – 3, PILOT, GUNNER, BOMBARDIER
GRUMMAN TBF -1 AVENGER
GRUMMAN TBF -1 AVENGER

- YEAR – 1942; 9836 BUILT
- MAX SPEED – 2712 MPH @ 12,000 FT
- CEILING – 22,400 FT
- RANGE – 1215 MI
- ARMAMENT – 2 30 CAL MACHINE GUNS, 1 50 CAL MACHINE GUN; 1 2000 LB TORPEDO
- ENGINE – WRIGHT CYCLONE 14 CYLINDER RADIAL, 1700 HP
- CREW – 3 PILOT, GUNNER, BOMBARDIER
NORTH AMERICAN B-25
NORTH AMERICAN B-25

- YEAR – 1941; 9,000 BUILT
- MAX SPEED – 315 MPH @ 15,000 FT
- CEILING – 27,000 FT
- RANGE – 1350 MI
- ARMAMENT – 5 50 CAL MACHINE GUNS; 3000 LBS BOMBS
- ENGINE – 2 WRIGHT CYCLONE 14 CYLINDER RADIALS, 1,700 HP EA
- CREW – 3-6
BOEING B-29 SUPERFORTRESS

ACES HIGH

B-29

jd Model: Waffle - External Texture: Creebo
BOEING B-29 SUPERFORTRESS

- **YEAR** – 1944; 3900 BUILT
- **MAX SPEED** – 358 MPH @ 25,000 FT
- **CEILING** – 31,580 FT
- **RANGE** – 4,100 MI
- **ARMAMENT** – 1 20 MM CANNON, 10 50 CAL MACHINE GUNS; 20,000 LBS OF BOMBS
- **ENGINE** – 4 WRIGHT CYCLONE 18 CYLINDER RADIAL, 2,200 HP EA
- **CREW** – 10
MITSUBISHI A6M REISEN (ZERO)
MITSUBISHI A6M REISEN (ZERO)

- YEAR – 1940
- MAX SPEED – 332 MPH @ 14,930 FT
- CEILING – 32,810 FT
- RANGE – 1930 MI
- ARMAMENT – 2 20MM CANNONS, 2 7.7MM MACHINE GUNS; 132 LBS OF BOMBS
- ENGINE – NAKAJIMA SAKAE 14 CYLINDER RADIAL, 950 HP
- CREW – 1
THE LEADERS
ADM HAROLD STARK
ADMIRAL STARK

- Graduated from U.S. Naval Academy (Annapolis) in 1903
- Involved with torpedo boats and destroyers in pre-WWI days.
- Staff of the Navy Commander in Europe in WWI
- Held a number of command positions in the interwar years.
- Became the Chief of Naval Operations in 1939.
ADMIRAL STARK

- Was a close personal friend of Admiral Kimmel, the senior Naval Officer in Hawaii.
- Passed on the “War Message” to Kimmel.
- After the attack on Pearl Harbor ordered unrestricted submarine warfare on Japan.
- Relieved in 1942 by Admiral King and went to Europe as the Commander of US Naval Forces Europe.
ADM ERNEST KING

- Born in Lorain, OH and graduated from Annapolis in 1901. He was fourth in his class.
- In WWI he served on the staff of the Commander in Chief of the Atlantic Fleet.
- Worked closely with the British and developed Anglophobia. Awarded the Navy Cross for his efforts.
- After war helps to prepare a report on naval training and career paths. Most is adopted.
ADM ERNEST KING

- Is then assigned to submarines.
- In 1926 he transfers to naval aviation. Passes his pilot training.
- 1930 he becomes the captain of the USS Yorktown. After a stint at the Naval War College he returns to aviation and rises steadily in rank.
- 1938 he conducts a war game raid on Pearl.
The raid proves that Admiral Yardley’s 1932 war game findings about the weakness of the defenses at Pearl Harbor were correct.

1939 he is posted to senior officers graveyard post. In 1940 Admiral Stark resurrects his career, posting him as Commander-in-Chief, Atlantic Fleet.

He is appointed as Chief of Naval Operations in 1942.
ADM ERNEST KING

- Very bright and capable. VERY sarcastic and notoriously difficult to work for.
- Was an advocate of the importance of the Pacific War. One of the movers for Guadalcanal.
- Actions in the Atlantic sub war were problematic.
ADM CHESTER W NIMITZ
Born in Fredericksburg, TX. An accidental appointee to Annapolis, he graduates in 1905, seventh in his class of 114.

As an Ensign the destroyer he was on ran aground on a sand bar in the Philippines while under his command. He was court-martialed, found guilty of dereliction of duty and reprimanded.
- Returns to the States and becomes a submarine officer. Serves with distinction.
- In WWI he commands the *Maumee* when it engages in the first successful at sea refueling operation. Then serves as aide to an admiral. He receives a Letter of Commendation for his service as executive officer of COMSUBLANT.
He serves with distinction in a number of posts in the interwar years. In 1939 he is appointed as chief of the Bureau of Navigation.

Ten days after Pearl Harbor he is appointed as Commander-in-Chief United States Pacific Fleet (CINCPACFLEET). Takes command on the deck of a submarine – there are no battle-ships available.
March of 1942 the Pacific Theater is divided and he becomes Commander-in-Chief, Pacific Ocean Areas.

Manages the “island-hopping” strategy as well as the aggressive Naval offensive at the Coral Sea and Midway.

Operation Starvation.

Advocate of unrestricted submarine warfare in the Pacific.
Signs for the United States when Japan formally surrendered on September 2, 1945.  
1944 he is promoted to Fleet Admiral and in December 1945 he becomes the Chief of Naval Operations.  
Museum in Fredericksburg, Tx commemorating his life and service.
ADVISER ISOROKUYAMAMOTO
Born Isoroku Takano in an intermediate rank *samurai* family.

Adopted into the Yamamoto family – of higher rank and income.

Graduates from the Imperial Japanese Naval Academy in 1904. Served in the Russo-Japanese War, losing two fingers on his left hand.

1916 graduates from Naval Staff College.
ADMIRAL ISOROKUYAMAMOTO

- Studied at Harvard University (1919-1921) and serves two tours in Washington as a naval attache. Speaks English fluently and has traveled extensively in US studying our customs and business practices.
- Promotes a strong fleet – not just one to support the Army’s invasions.
- Opposes the invasion of China.
- 1924 visits the Naval War College
Attends the 1930 and 1934 London Naval Conferences as an admiral. Has changed his specialty from gunnery to aviation.

Unpopular because of his opposition invasions of Manchuria and China, the Tripartite Pact and the bombing of the Panay.

1939 made Commander-in-Chief of the Combined Fleet to get him at sea.
Retains his position under the Tojo government.

He opposed war with the United States. However, when tasked to do so he developed the plan for the attack on Pearl Harbor.

Masterminded the swift moves into Indochina and Dutch East Indies.

Wants a decisive battle with the American fleet – a carrier battle. Dies 1943.
PEARL HARBOR
COMMANDERS AT PEARL HARBOR

- Navy – Admiral Husband Kimmel. 1904 Annapolis graduate. Appointed as CINCPACFLEET in May 1940. Concerned with training.
JAPANESE COMMANDER – CHUICHI NAGUMO

- Born in Northern Japan. Attended the Imperial Japanese Naval Academy, graduating 8th out of 191 in 1908.
- Expertise was in torpedo and destroyer tactics.
- Unlike Yamamotomo he is a member of the militaristic Fleet Faction.
- 1941 he is appointed commander of the First Air Fleet – seniority.
CHUICHI NAGUMO

- Not familiar with naval aviation. He is given a very capable air exec, Minoru Genda.
- Has aged considerably and become a very cautious officer.
- Opposed Admiral Yamamoto’s plan to attack Pearl Harbor.
US POLICY IN LATE 1930’S

- HELP GB IN EUROPE
  - TRANSFER OF SHIPS TO ATLANTIC
- AVOID WAR WITH JAPAN
  - WAS JAPAN GOING NORTH – SIBERIA;
    JAPANESE ARMY POSITION
  - WAS JAPAN GOING SOUTH – DUTCH E INDIES,
    INDO-CHINA, PHILIPPINES – JAPANESE NAVY
- GET JAPAN OUT OF CHINA
WHY JAPAN GOES SOUTH

- DEFEAT BY USSR IN BORDER CLASHES
- CRUCIAL NEED FOR OIL AND RUBBER
- WEAKNESS OF THE ABDF POWERS
  - GB AT WAR WITH GERMANY
  - DUTCH CAPTURED IN 1940
  - FRANCE DEFEATED BY GERMANY – VICHY GOV
  - AMERICA – WEAK MILITARILY, ISOLATIONIST
- NAVY BELIEVES THAT NOT NEED TOO MANY SOLDIERS
US WAR PLANS

- CASE ORANGE
- HOLDING ACTION IN PHILIPPINES
- US FLEET WILL STEAM OUT TO ENGAGE & DEFEAT THE JAPANESE FLEET
- FUELS THE MOVE OF PACIFIC FLEET TO PEARL HARBOR
- PROBLEMS
  - OLD BATTLESHIPS
  - 3 US CARRIERS VS 6 JAPANESE CARRIERS
US WAR PLANS

- JAPANESE NAVY
  - NEWER SHIPS
  - BETTER NIGHT GUNNERY
  - LONG LANCE TORPEDO
  - BETTER AIRCRAFT – ZERO FAR SUPERIOR TO US AIRCRAFT

- WEAKNESS OF OUR ALLIES
JAPAN MOVES TO ATTACK

- PHILIPPINES PROBLEM
- FAILURE OF DIPLOMACY – CHINA
- BELIEF THAT US WILL SUE FOR PEACE IF FLEET DESTROYED AT PEARL
- ADMIRAL YAMAMOTO
  - US EDUCATED
  - CARRIER ADMIRAL
  - NEED A QUICK VICTORY – CAN’T WIN A WAR OF ATTRITION
JAPAN MOVES TO ATTACK

- Develops plan for attack at Pearl Harbor
- Develops shallow running torpedos
- Wants to get the carriers

- Yamamoto’s plan
  - Absolute radio silence
  - Course north of shipping lanes
  - Admiral Nagumo to head fleet – not a carrier admiral
JAPANESE TRACK TO PEARL
PLAN IN ACTION

- JAPANESE ENVOYS DELAYED IN WASHINGTON
- FIRST AND SECOND STRIKES SUCCESSFUL
  - BATTLESHIP ROW DEVASTATED
  - HICKAM FIELD – PLANES IN ROWS AND MOST DESTROYED ON THE GROUND
  - RADAR PICKS THEM UP BUT BELIEVES ARE A IN-COMING FLIGHT OF B-17’S
  - CARRIERS ON MANEUVERS – NOT THERE
PLAN IN ACTION

- CAPTAIN GENDA THE AIR OFFICER WANTS A THIRD STRIKE
- NAGUMO IS WORRIED ABOUT ABSENT US CARRIERS AND BREAKS OFF AND HEADS BACK TO JAPAN
- GREAT TACTICAL SUCCESS; BUT A STRATEGIC DISASTER
ATTACK ON PEARL HARBOR

Diagram showing the Japanese attack on Pearl Harbor on December 7, 1941. The map illustrates the routes of the Japanese fleet and the waves of attack on different airstrips in the area.
SHIP LOCATIONS AT PEARL
TIMELINE OF THE JAPANESE ATTACK

- 12/7/41: Japanese launch first groups of warplanes from aircraft carriers 220 miles off Oahu, Hawaii
- 12/7/41: Japanese begin bombing Pearl Harbor
- 12/7/41: U.S. radar detects fleet of unknown aircraft heading toward Oahu
- 12/7/41: Japanese launch second group of 160 warplanes toward Pearl Harbor
- 12/7/41: Washington and Pacific fleets alerted about Japanese air assault
- 12/7/41: First radio announcement for American military to report to duty
- 12/7/41: Japanese warplanes desert Pearl Harbor, leaving the base in ruins and thousands of Americans dead or wounded
WHY THE SURPRISE?

- ISOLATIONISM
  - CONGRESS
  - AMERICAN PEOPLE
  - PRESS
  - MILITARY
- MILITARY DOES NOT APPRECIATE VALUE OF INTELLIGENCE
- FAILURE OF COMMAND AT THE TOP
Army message:

PRIORITY MESSAGE NO. 472 TO COMMANDING GENERAL HAWAIIIN DEPARTMENT:

Negotiations with Japan appear to be terminated with only the barest possibilities that the Japanese government might come back and offer to continue. Japanese future action unpredictable but hostile action possible at any moment. If hostilities cannot, repeat cannot, be avoided the United States desires that Japan commit the first act. This should not, repeat should not, be construed as restricting you to a course of action that might jeopardize your defense.
Army cont.
Prior to hostile Japanese action you are directed to undertake such reconnaissance and other measures as you deem necessary but these measures should be carried out so as not, repeat not, to alarm the civilian population or disclose intent. Report measures taken. Should hostilities occur you will carry out the tasks assigned in rainbow five so far as they pertain to Japan. Limit dissemination of this highly secret information to minimum essential officers.

MARSHALL
Navy message:
November 27, 1941
From: Chief of Naval Operations
Action: CINCAF, CINCPAC
Info: CINCLANT, SPENAVO

272337

This dispatch is to be considered a war warning X
Negotiations with Japanese looking toward stabilization of conditions in the Pacific have ceased and an aggressive move by Japan is expected within the next few days X The number and equipment of Japanese troops and the organization of naval task
Navy message cont.

forces indicates an amphibious expedition against the Philippines Thai or Kra peninsula or possibly Borneo X Execute an appropriate defensive deployment preparatory to carrying out the tasks assigned in WPL46 X Inform district and army authorities X A similar warning is being sent by War Department X Spenavo inform British X Continental districts Guam and Samoa directed to take appropriate measures against sabotage.
WHY THE SURPRISE?

FAILURE OF LOCAL COMMANDERS

NAVY – ADMIRAL HUSBAND KIMMEL

- NO RECONNAISSANCE
- TORPEDO NETS ARE DOWN
- TRAINING IS PRIMARY CONCERN, NOT PREPARATION
- UNDER-ESTIMATED THE JAPANESE
- DOES NOT UNDERSTAND OR APPRECIATE RADAR
- LACK OF COORDINATION WITH GENERAL SHORT.
FAILURE OF LOCAL COMMANDERS CONT.

- ARMY – GENERAL SHORT
  - ALL OF THE AMMUNITION FOR AA GUNS IS SECURELY LOCKED UP – AWAY FROM THE GUNS
  - PLANES LINED UP NEATLY ON THE TARMAC
  - BELIEVES THAT THE WAR MESSAGE MEANS HE SHOULD WORRY ABOUT SABOTAGE
  - DOESN’T APPRECIATE RADAR

- COMMUNICATIONS PROBLEMS – HF RADIOS DOWN – SEND TELEGRAM
United States:

- Of the 96 in the harbor 21 were sunk and others badly damaged
  - USS Arizona - sinks within 9 minutes  1177 killed.
  - USS Oklahoma – rolls over trapping 1000+ of that number 429 are killed.
  - USS West Virginia is sunk
  - USS Nevada is beached
  - USS Utah is sunk
RESULTS OF THE ATTACK

- United States cont.
  - 394 planes at Hickam, Wheeler and Bellows airfields 188 destroyed and 159 damaged. 47 are still ready for combat.
  - Total casualties – 2403 killed (including 68 civilians); 1178 wounded.
  - Japanese losses: 29 planes and a few midget submarines.
CONSPIRACY THEORIES

- Stephen Ambrose
- Major problem to me – Presumes that because something happened one could have reasonably foreseen that it would.
- Relationship between officers
- Lack of evidence – Prange books.
- US Foreign Policy aims in the 1930’s.
- De Seversky – “Some things are just dumb.”
THE LONG ROAD BACK
Beginning of the war we are using the Yorktown class carriers

- Yorktown, Enterprise, Hornet, Saratoga, Lexington.

- Characteristics
  - Speed 32.5 knots app. 37.4 mph
  - Range 12,500 mi
  - Planes – 90

- Most were commissioned in 1920’s and 1930’s.
<table>
<thead>
<tr>
<th></th>
<th>Bogue Class Escort Carrier</th>
<th>Independence Class Light Carrier</th>
<th>Essex Class Fleet Carrier</th>
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</thead>
<tbody>
<tr>
<td>Length</td>
<td>495 ft(151m)</td>
<td>625 ft(190m)</td>
<td>875 ft(266m)</td>
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<tr>
<td>Beam</td>
<td>69 ft(21m)</td>
<td>72 ft(22m)</td>
<td>92 ft(28m)</td>
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<tr>
<td>Displacement</td>
<td>9,800 Tons</td>
<td>11,000 Tons</td>
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<td>Armament</td>
<td>1x127 mm light AA</td>
<td>Light AA</td>
<td>12x127mm light AA</td>
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<tr>
<td>Armor</td>
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<td>50-125 mm</td>
<td>150-200 mm</td>
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<tr>
<td>Aircraft</td>
<td>24</td>
<td>33</td>
<td>90</td>
</tr>
<tr>
<td>Speed</td>
<td>17 knots(20 mph)</td>
<td>31 knots(36 mph)</td>
<td>33 knots(38 mph)</td>
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<tr>
<td>Crew</td>
<td>850</td>
<td>1569</td>
<td>3448</td>
</tr>
<tr>
<td>Conversion</td>
<td>Conversion of merchant hulls</td>
<td>Based on a Light Cruiser hull</td>
<td></td>
</tr>
</tbody>
</table>
Generally considered to have the finest naval air arm in the world in early 1940’s.

They have 7 fleet carriers

- Only one of them will survive the war.

- Characteristics.
  - Speed 34 knots
  - Range app. 9200 mi
  - Aircraft 66-72
Japanese attempt to invade Port Moresby to cut off Australia.
- Radio intercepts allow US to know of the plan.
- Admiral Fletcher and the *Lexington* steam to intercept and join up with the *Yorktown*. 
As you can see the Japanese plan is very complicated.

Three different forces all with different missions that must coordinate.

Admiral Hara is to protect the two invasion forces.
Adm Fletcher first attacks Tulagi on May 4th. Rest of the day goes without any luck.

May 5th both fleets are looking for each other.

Japanese find and attack a destroyer and an oiler.

Americans find the Japanese carrier Shoho.
On May 8th the two forces finally find each other's main body.

The US attacks the carrier Shokaku, hitting it three times setting it on fire and putting it out of action.

Japanese find and attack the Yorktown and Lexington. The Yorktown is struck by a bomb and damaged. The Lexington is hit by both bombs and torpedos.
Attempts to save the *Lexington* fail when a supply of aviation fuel explodes and she is sunk to prevent capture.

Results

- Invasion of Port Moresby canceled.
- Japanese lost a light carrier, a destroyer, and 1074 killed.
- *Shokaku* and *Zuikako* will miss Midway.
- US loses 543 killed, the carrier *Lexington*, a destroyer and an oiler.
US has been working on breaking the Japanese Naval Code (JN-25). They have finally broken it.

Using intercepts and a tag they determine that the next Japanese target is Midway Island.

*Yorktown* was heavily damaged at Coral Sea and is back in Pearl for repairs. Japanese feel it is impossible for her to be at Midway.
US fleet will be commanded by Adm Raymond Spruance.
- Annapolis graduate.
- Replaces Adm Halsey who has shingles.
- Spruance has an experienced air staff.
- VERY calm and unflappable.
Japanese plan is unduly complicated.
A feint to the Aleutians to fool the US.
Invasion Force to Midway.
Nagumo’s carriers to provide air cover for the attack on Midway AND attack the US Fleet.
The key here is who will find the other fleet first and get in the attack.

Japanese are convinced that the *Yorktown* is not available and that Spruance has only two carriers.

Nagumo must be ready to do two things:
- Provide air support for the landing.
- Be ready to attack the US fleet should it appear.

Each of these require different weapons.
BATTLE OF MIDWAY

- Japanese fleet under Nagumo has four carriers – *Hiryu, Soryu, Akagi, and Kaga*.
- US fleet has *Enterprise, Hornet, and Yorktown*.
- At Nimitz request the *Yorktown* is worked on 24/7 to get her ready to sail.
- Scout planes find the Japanese fleet and notify Spruance and a strike is sent out with *Hornet’s* torpedo planes and the *Enterprise’s* dive bombers.
Dive bombers are off course and are delayed. The torpedo bombers attack alone. They are slaughtered. No Japanese ships are hit. CAP is down to defend against the torpedo planes when the dive bombers finally find the Japanese carriers. The dive bombers hit and fatally damage the *Soryu*, *Akagi*, and *Kaga*. The *Hiryu* sends a strike against the Americans.
BATTLE OF MIDWAY

17. csoport (Fletcher)
Anyahajó: Yorktown

16. csoport
(Spruance)
Anyahajó: Enterprise, Hornet

24:00

1942. 06. 04. 04:30
a Midway elleni légítámadás indítása

1. anyahajó csoportműve (Nagumo)
Anyahajók: Akagi, Kaga, Soryu, Hiryu

05:10 Hiryu

17:00 Található a Hiryun

12:05 – 12:15

14:30 Található a Yorktownon

15:00 A Yorktown elhagyása

19:07

Amerikai tengeralatti járók

KURE

MIDWAY

06.05.05.00 Akagi

06.05.05.00 Soryu

19:25 Kaga

10:26 – 10:30
Található a Kagán, az Akagin és a Soryun

05:34-kor észleltek az amerikai repülőgépek

Légítámadások Midwayről

Főző (Jima moto)
(idejőbb)

1942. 06. 04. 04:30
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Légítámadások Midwayről

Főző (Jima moto)
(idejőbb)
Hiryu’s planes find the Yorktown and attack, severely damaging it. The Yorktown will later sink.

Near the end of the day, a scout plane finds the Hiryu. Spruance sends out a dive bomber strike and the final Japanese carrier is sunk.

Spruance is criticized in some circles for not pursuing the Japanese surface fleet. Morrison differs.
Results of the Battle of Midway.

- Japanese lose four fleet carriers and 200 experienced pilots.
- Japan can replace neither of these.
- The US seizes the initiative in the Pacific.
- Admiral Yamamoto’s attempt to destroy the American fleet and force a quick peace fails.
- Midway remains in American hands.
- American productivity will eventually end the war.
BATTLE OF EASTERN SOLOMONS

- August 24, 25 1942
- Centers around attempt to reinforce Guadalcanal.
- Four different Japanese forces with 2 fleet carriers, one light carrier, 2 battleships, 16 cruisers and 25 destroyers under Nagumo.
- US under Admiral Frank Fletcher have 2 fleet carriers, 1 battleship, 4 cruisers and 11 destroyers.
Convoy spotted on 22\textsuperscript{nd}; but no luck.

24\textsuperscript{th} Nagumo detaches light carrier (Ryujo) for an attack on Henderson Field. Ryujo spotted in morning; Fletcher launches a strike after noon. Ryujo is heavily damaged.

Japanese attack Enterprise – damaged but can continue ops.

25\textsuperscript{th} convoy attacked by land based planes and heavy damage. Break off engagement.
Losses

- US – 25 planes, 90 killed, Enterprise badly damaged.
- Japanese – 75 planes, 250 killed, light carrier, light cruiser, destroyer and troop ship.
BATTLE OF SANTA CRUZ
October 25-27, 1942
US under Rear Admiral Thomas Kinkaid. 2 fleet carriers, 1 battleship, 6 cruisers, 14 destroyers.
Japanese under Nobutake Kondo. 4 fleet carriers, 3 battleships, 10 cruisers, 22 destroyers.
Japanese spotted on 25\textsuperscript{th} but are too far away.

At 0700 on 26\textsuperscript{th} each spots the other. Scout planes attack Zuiho and damage the deck. Shokaku is hit by 3-6 bombs and heavily damaged.

Hornet is attacked and hit by 3 bombs and 2 torpedoes. Enterprise is hidden in a squall.
BATTLE OF SANTA CRUZ

- Enterprise is spotted by withdrawing aircraft and is later attacked and suffers 2 bomb hits.
- Hornet is attacked again and is damaged so severely that she is sunk.
- Japanese planes have suffered heavy losses due to anti-aircraft fire in these attacks.
- US losses – 81 planes, 266 killed, 1 carrier and a destroyer sunk and Enterprise damaged.
- Japanese losses – 90 planes, 400-500 killed, Shokaku out for 9 months, other 2 carriers withdrawn to Japan to train new air crews.
In 1943 we begin an attack on the Gilbert and Marshall Islands.

This is to begin to reduce the Japanese defensive perimeter.

This forces the removal of the Japanese fleet from Truk to Singapore.
Note that we have not seen the Japanese carriers for over a year and a half.

We are invading Saipan and Guam to use as bases to bomb Japan.

Admiral Toyoda is now the Commander of the Combined Fleet.

He decides that with his rebuilt air arm he can now engage the US Fleet in a major fleet action.
The US, on the other hand, is going after the land base planes in the Bonin Islands and on Guam.

Admiral Spruance is in charge and he is tasked with protecting the landings and taking on the Japanese fleet.

Spruance has set up a defensive line of battleships, cruisers and destroyers to screen his carriers.
BATTLE OF THE PHILIPPINE SEA
BATTLE OF THE PHILIPPINE SEA

- US order of battle
  - 7 fleet carriers
  - 8 light(escort, “jeep”) carriers
  - 7 battleships
  - 78 other warships
  - 28 submarines

- Japanese order of battle
  - 4 fleet carriers
  - 3 light carriers
  - 5 battleships
  - 43 other warships
Admiral Ninmitz notifies Spruance that the Japanese are about 350 miles west of him.
Admiral Mitscher wants to move west to set up for an AM strike. Spruance refuses.
June 18th Japanese first sight the American fleet. Too late for attack that day; set up for an attack the next day.
June 19th a Zero from Guam locates the fleet and an attack launched from Guam. 35 shot down by aircraft from Bellau Wood.
Ozawa’s initial strike seen on radar and Bellau Wood’s planes recalled.

Japanese attack with 69 aircraft. Met with 220 Hellcats 55 miles from the carriers. 41 of the 69 shot down in less than 35 minutes. Hit on South Dakota.

Second wave of 109 aircraft are engaged 60 miles out and lose 70 before reaching the battleship line. By the end 97 had been lost.
Third wave of 47 either lost their bearings or failed to attack.
Fourth wave of 82 planes launched. 42 got lost and headed to Guam. They are attacked by Hellcats and 30 shot down. Remainder attack the Americans with heavy losses and no damage to the fleet.
While they are attacking American subs sink two Japanese carriers (Taiyo and Shokaku)
June 20th the Japanese fleet is spotted. It is late in the day (4:00 PM) and Spruance elects to attack the Japanese.

At the end of both daylight and range of the planes.

Attack the Japanese fleet and sink two oilers, one carrier (Hiyo), and damage three other carriers and one battleship.

80 planes lost at night trying to get back.
BATTLE OF THE PHILIPPINE SEA

- American losses
  - 125 aircraft – 20 pilots lost.
  - Light damage to the USS South Dakota.
  - No carriers damaged or lost.

- Japanese losses
  - 600 aircraft – 400 carrier based and 200 land based.
  - 2 oilers
  - 3 aircraft carriers – two by submarines.
  - 3 carriers and one battleship damaged.
BATTLE OF LEYTE GULF

- Difference between Nimitz and MacArthur.
  - Nimitz feels an assault on the Philippines is a waste of time and material.
  - MacArthur has promised “I will return” and he wants to attack and capture the Philippines.
- General Marshall and the Joint Chiefs side with MacArthur.
- Admiral Halsey is tasked with defending the beaches and attacking the Japanese fleet should they appear.
Japanese carrier air arm is virtually non-existent following the Philippine Sea.

Admiral Toyoda devises a plan that uses the carriers and some battleships as a diversion to draw the American fleet from the beachhead. Other Japanese forces will then attack the transports to destroy them and force the Americans to withdraw.
Admiral Halsey’s planes find Admiral Kurita’s force and attack. Kurita loses one battleship and two cruisers and retreats.

Halsey believes that the beachhead is safe and heads for Admiral Ozawa’s northern force.
At night Kurita resumes steaming towards the landing area.

The first southern force under Admiral Nashimura comes through the Surigao Strait (#2). Admiral Oltendorf’s six battleships “cross the T” destroying two Japanese battleships and a cruiser.
The other southern force encounters the wreckage of the battleships and retreats.

Kurita’s force now runs into the destroyers and escort carriers (#4). Once he realizes that this is not the main force and that they are probably returning he beats a hasty retreat.
Meanwhile, back at the ranch, Halsey has caught up with Ozawa’s force and sinks four carriers (#3).

Halsey gets the calls for help from the bachhead and steams back at full speed.
Japanese losses:
- 4 carriers
- 3 battleships
- 8 cruisers
- 12 destroyers
- 10,000+ killed
- Assured fall of Philippines and cut-off contact w/ SE Asia
- Fleet will never be seen again.

American
- 1 light carrier
- 2 escort carriers
- 2 destroyers
- 2 destroyer escorts
- 1500 killed
- Beachhead is secured, assuring the liberation of the Philippines.
- End of Japanese fleet.
- Won the largest naval engagement in world history.
Why include this?
- This and Iwo Jima clearly affect American considerations regarding the end of the war.
- First appearance, in large numbers, of the kamikazes.

Okinawa will be a stepping stone for Japan.
- Bomber and fighter bases.
- Staging area for an invasion force.
Japanese choose not to contest the landings.

Americans move well inland before meeting resistance.

Japanese are defending in depth.

Japanese are in a series of well fortified defenses.
This battle lasts from April 1, 1945 until June 22, 1945.

US has the 1\textsuperscript{st} and 6\textsuperscript{th} Marine divisions and the 10\textsuperscript{th} Army – app. 287,000.

Japanese have the 32\textsuperscript{nd} Army – app 130,000.

US Casualties:

- Army – 7,374 killed; 31,807 wounded; 239 missing.
- Navy – 4,907 killed and missing; 4,874 wounded; 34 ships sunk, 368 damaged, 763 planes lost.
BATTLE OF OKINAWA

- Japan
  - Navy – flew app. 1900 kamikaze missions; 2800 planes; one battleship, one light cruiser, 4 destroyers; app. 10,000 killed
  - Army – approximately 77,000 killed.
- This is a departure from the norm. No banzai charges but a solid defense in depth designed to bleed the Americans.
Originally, attack from bases in China.

Problem is supplying the planes with fuel, bombs and ammunition.

You can see the targets from the map.
General Arnold pushes for a mission to Japan. He wants 100 planes.

58th Bomber Wing is headed initially by Brig. General Ken Wolfe. He is later promoted to Maj General and put in charge of 20th Bomb Group. Col. LaVerne (Blondie) Saunders replaces him.

Gen. Wolfe sends 92 bombers from India to Chengtu (China) on January 13, 1944. 12 aborts and 1 loss.

47 bombers reach the primary and results are very poor.

One plane lost to fighters, 5 lost to accidents and 6 suffered flak damage. 57 men and a war correspondent are killed or missing.

In 10 months of operation in China the 20th launched 49 missions. Only 9 targeted Japan.
After the first mission, Wolfe is “promoted” and Major General Curtis LeMay is appointed to command the 20th Bomb Group.

It took 3 weeks to get enough supplies to Chengtu to support the second mission to Japan.

August 20th a 75 bomber raid on Tokyo. 96T of bombs dropped and wrecked two coke ovens.

12 bombers lost two senior officers lost. Can’t sustain these losses.

August 21st LeMay arrives to take command.
BOMBING JAPAN

- Major General Curtis LeMay.
- 1929 Army ROTC commission – fighter pilot.
- Moves to bombers in 1936 – accomplished pilot and navigator.
- Navigated early B-17’s to South America and taught himself everything about the Norden bombsight.
1942 he is new Lt. Col. And becomes CO of 305th Bomb Group. Built it and took it to England.

Innovative – straight and level bombing, box formation, and lead crews.

Promoted to wing commander. Flies the Regensburg and Schweinfurt raid. Sept. 1943 he is a Brig. Gen. and 5 months later at 37 he is promoted to Major General, youngest since Grant.
BOMBING JAPAN

- Has an open door policy and is willing to listen to any suggestion that can improve efficiency. He is about results – not regulations.
- Comes back from England in 1944 and sent to command 20th Bomb Group. Learns to fly B-29 first.
- Appalled at what he finds.
Rides along on a mission and appalled again.
Stands them down and retrains them.
Before he leaves China in January 1945 he has doubled the monthly sorties, reduced the aborts, raised bomb tonnage on primary targets by 300% and on all targets by 250%.
First missions from Saipan on October 28, 1944.
Building runways

- Saipan – 15 Army engineering battalions between June 1944 and August 1945.
  - Level 2 coral mtns - 100 4 ton trucks delivered it to the construction site.
  - Constructed own asphalt plant.

- Guam – construction despite Japanese stragglers.
  - Two major airfields constructed – North and Northwest fields
  - Eventually had quonset huts – liquor was the currency.
BOMBING JAPAN

- Tinian - smallest of the islands.
  - Hosts 6 airfields.
  - 11 billion cu yds of dirt and coral, 12T of dynamite/day, construction material equaled 3 Boulder Dams.
  - Men worked 20 hrs a day.
  - 450 Superforts there.
BOMBING JAPAN

330th BG

Saito Field
Saipan 1945
From the Marianas to Japan was 1500 miles one way – all over water. About a 15 hour round trip.

First raid from Marianas was November 24, 1944. 112 bombers. Japanese had 80 minutes notice and put 125 interceptors in the air. Two B-29’s are lost. Only 24 planes found the target. Of the 240 bombs 48 hit the target.

Problem- 130 mph jet stream at bombing altitudes. In some cases ground speeds of 440 mph.
Iwo Jima used to launch raids on Saipan, Guam and Tinian. They are 720 miles apart.

December 8th 100 B-24’s and 60 B-29’s attack Iwo Jima airfields.

In December 1944 5 missions launched to Japan, 415 sorties with 19 losses. No target had been destroyed.

Problem is the cost of a B-29. At $605,000 a copy it is 3 times the cost of a B-17.
LeMay takes over in January and increases training dramatically. No better results.

Weather problems caused by an unholy alliance of Pacific currents and frigid winter winds from Asian landmass = almost perennial clouds.

He and his brain trust begin to think about the problem. All previous raids had been with high explosives.
90% of the structures in Tokyo are wood. Japanese are dispersing industry. Incendiaries do not require precise targeting.

Recommendations of his staff, including Gen. Norstad, are to try incendiaries. Rest of the equation is to build up B-29 wings and stockpile enough ordinance to overwhelm the Japanese defenses over a period of several days.
Next factor was the altitude. Some subordinates wanted to go below 20,000 ft. LeMay digs into the AA characteristics and concludes that heavy guns would be useless against low flying bombers. He next gambles on altitude – 5,000 ft.

To improve efficiency and to lessen the strain on the finicky engines all guns except the tail guns are removed.
The plan is to bomb Tokyo first and then in succeeding days Kobe, Nagoya, and Osaka. This will exhaust the incendiaries until 2\textsuperscript{nd} week in April.

March 9 the raid is launched. 325 bombers were launched; 270 unloaded 1,665T on the Tokyo area and 20 planes hit alternate targets.

Creates a firestorm that burns 7\% of metropolitan Tokyo – 16 sq mi.
The 10 previous attacks had killed less than 1300, this raid kills 84,000 and 40,000 are injured and 1.1 million are homeless.

Sixteen industrial facilities were destroyed or badly damaged, including the main power station.

March 12 it is Nagoya’s turn 310 bombers. No firestorm and only 2 sq mi destroyed.

March 13 Osaka destroying 8 sq mi – 13% of the built-up area, over 4,000 shops and factories destroyed.
March 16-17 330 planes hit Kobe.
Blitz week ends on the 19th with Nagoya II. This destroys or damages severely the freight yard, arsenal, Aichi aircraft factory, and the Yamada engineering works.
Fewer than 20 bombers are lost.
Low level attacks continue targeting aircraft factories and airplane engine factories.
Last attack on Tokyo is on May 23, 1945.
A record 550 bombers strike the city. All of the raids left over 50% of the city destroyed.

Operation Starvation – mining of the Sea of Japan and the inland Sea. By July they had achieved a near total blockade of Shimonoseki, Honshu and Kyushu.

Carrier planes have attacked all over Japan. Destroying ships, planes and coal ferries.
BOMBING JAPAN
With a fraction of the tonnage dropped in Europe the Americans have destroyed 40% of the built-up areas of 66 cities.

Over 500,000 houses were knocked down to serve as fire breaks. 8 million refugees clogged villages and the countryside.

Absenteeism in factories rose to 50%.

By July 1945 aluminum production reduced to 9%, oil refining and steel production to 15%.
OPTIONS FOR ENDING THE WAR

- Blockade of Japan.
  - Submarines.
  - Mining harbors.
  - Objective is to starve out the Japanese.

- Continue the air raids.
  - Force more of the population into the countryside.
  - Use Navy and USAAF fighters to destroy internal transportation.
OPTIONS FOR ENDING THE WAR
OPTIONS FOR ENDING THE WAR

- Invade Japan – Operation Downfall
  - Operation Olympic – Invasion of Kyushu.
  - Operation Coronet – Invasion of Honshu
  - Potential cost to both Japanese and Americans is controversial.

- Negotiate with less militaristic elements in the Japanese government.
  - Russia as a third party.
  - Problematic as we have insisted on unconditional surrender.
OPTIONS FOR ENDING THE WAR

- Use the Atomic Bomb.
  - A demonstration at some isolated place.
  - Actually drop the bomb on a Japanese city.
- President Roosevelt dies and his Vice President Harry Truman succeeds him.
- Truman has never been told of the existence of a program to develop the Atomic Bomb (the Manhattan Project), much less its existence.
Lt Col Paul Tibbets was ordered to prepare to conduct a double strike in Europe and Japan. Orders are modified with the surrender of Germany.

On August 6, 1945 he lifts off of Tinian in a specially modified B-29 carrying an Atomic Bomb. At 0815 Hiroshima time he drops the bomb. Approximately 70,000 people killed outright, roughly 1/3rd of them military.
On Tinian the feeling is that the war is over.

There is no word from Tokyo on either August 7 or 8. A second mission is readied and on the 9th a plutonium weapon known as “Fat Man” is loaded on Bock’s Car and it takes off early on August 9th.

Primary target is Kokura; the alternate is Nagasaki.

Bad weather over the primary sends the plane to Nagasaki.
Bombing continues. On August 14 LeMay puts up 749 bombers and got all of them back.

On August 15 Emperor Hirohito, overruling his wartime cabinet, announces the unconditional surrender.