

Operations Research in WWII

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Use of operations research in WWII

- WWII was the beginnings operations research
- Use of operations research involved
 - Analyzation and creation of networks
 - Intelligence
 - Transportation
 - Supply

Intelligence Networks

- **Intelligence Operations** — Process by which the government and military groups of organization systematically collect and evaluate info for the purpose of discovering the intentions of their rivals, protecting itself from their rivals and exploiting their rivals weaknesses.
- **2 Types of Intelligence**
 - **Strategic or National Intelligence** — encompasses national security, political, economic and social trends in target nation
 - **Military Intelligence** — Produce by specially trained analyst that includes strengths, weapons technology and estimated military capabilities of enemy

Creation of Intelligence Network

- Collection
 - Human Intelligence – Use of spies
 - Signal Collection – Tapping phone lines, monitoring radio signal: code breaking
 - Photographic – Satellite imagery, air photography
- Evaluation
 - Combines raw intelligence with relevant data
 - Utilization of intelligence

British “Ultra Secret”

- Spy Network
 - Collection: Intercepted encrypted German radio messages
 - Evaluation: Translated messages
 - Fitted them together to build up patterns
 - Transmitted secretly to allied officials
 - Similar tactics were used by the US to help win the battle of Midway

Intelligence Networks

- Communication involved with networks was very important
- US had no intelligence organization until 1942
 - Pearl Harbor
 - Office of Strategic Services
- Israel
 - Mossad: External Espionage and covert ops abroad
 - Shinbet: Counter intelligence and internal security
 - Aman: Military intelligence

Principle Objectives

- Offensive Operations
- Security
- Unity of Command
- Surprise
- Maneuver

Offensive Operations

- Offensive Operations
 - Seizing and Exploiting
 - Security
- Unity of Command
 - Strategic Perspectives
 - D-Day
 - Surprise
 - Pearl harbor
 - Maneuver

D Day Invasion

- How can we have a surprise attack with the least cost?
- 150,000 troops
- 11,000 aircrafts
- 5,000 ships
- Another 850,000 Allied troops were to enter France from the beaches of Normandy after D Day.

Where do we Invade?

- Barriers to invasion
 - Existing ports with harbors were heavily guarded
 - Cost
 - Money
 - Time
 - Human Life
 - No feasible existing location

Terms

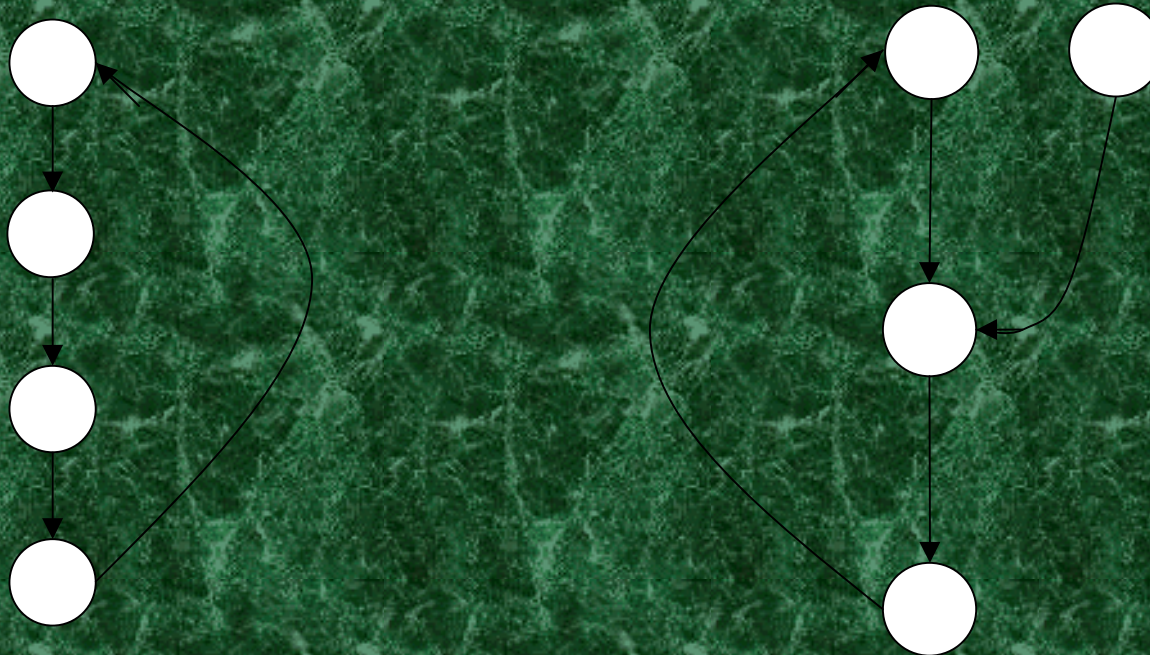
- Amphibious Warfare-A military operation launched from the sea by naval and landing forces which involve landing on a hostile shore
- Blitzkrieg-(lightning war) used to shock and disorganize defenders

Where to invade?

- Beaches of Normandy
 - 50 miles of half moon beaches
 - Tidal patterns allowed for ocean freighters to tie up and discharge cargo.
 - Easy to get transport troops from England to beaches

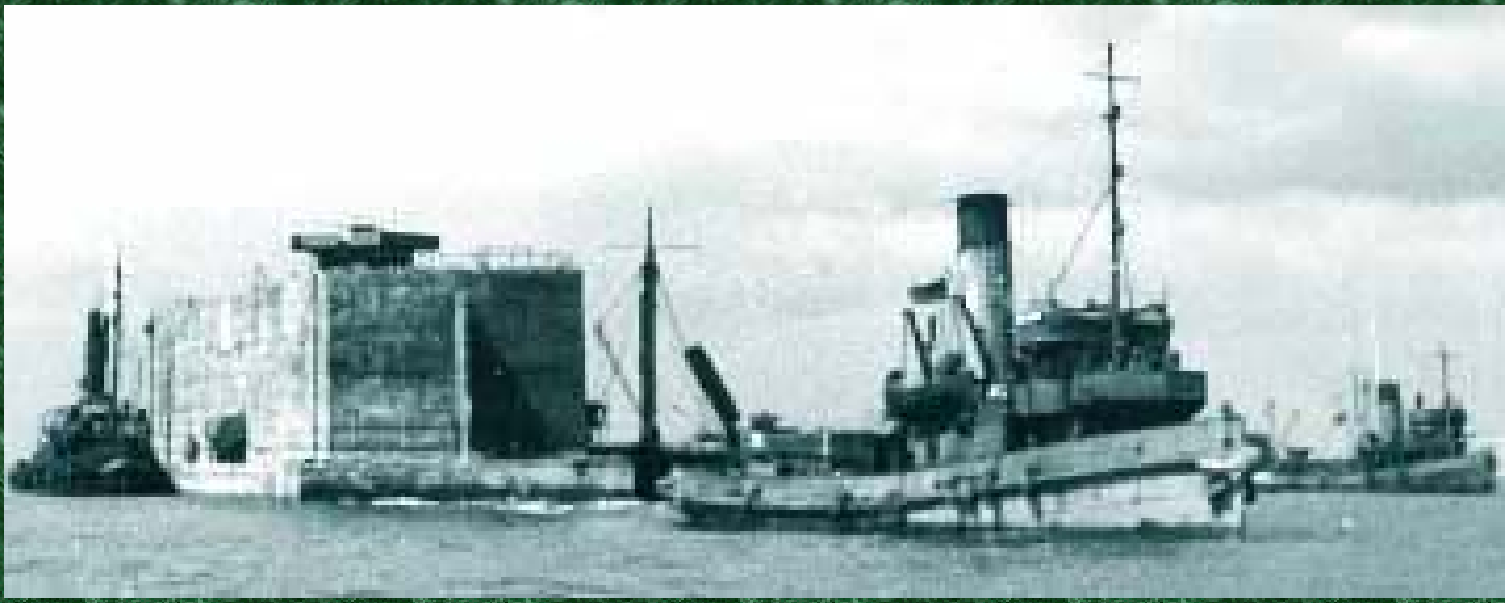


Origin Destination



Artificial Harbors

- Code name: Operation Mulberry
- Built in secret
- Towed into place





Supplying Troops

- Create a reliable supply chain
 - Petroleum
 - Food
 - Ammunition
- Barriers
 - Poor existing road structure
 - Bombing ruined roads

Flow of supplies

