

Geographic Considerations for D-Day

(Compiled by Gale Olp Ekiss for D-Day lesson by Suzanne Vogt)

Phases of the Moon

- Within one day before to four days after a full moon
- Late rising moon (fly in darkness but drop items and parachutists in moonlight)
- Full moon needed for landings

Pressure Systems

- High pressure needed
- Quiet weather for landing followed by 3 more quiet days
- Rough seas (Low pressure) would mean seasickness and trouble landing close to shore
- Rough weather meant that the line of sight of the pilots and gunners was difficult due to pitching of the craft
- Bad weather in June gave the Allies the element of surprise; May was nice and Allies passed it up. So why attack in bad weather? Rommel was home Germany celebrating his wife's birthday (June 6). Other generals were also away from their commands at a training session.

Tides

- Half tide conditions (low water in rising tide) so landing craft could get close to shore and since the tide would be rising, could turn about and get out of the way of the next craft)
- Half tide conditions so infantry would not have to cross as much beach
- Low tide meant visibility of exposed rocks (Juno) and obstacles (2500 on Gold)
- Germans thought the attack would come at high tide, so attackers would have less beach to cross. The Germans began their defenses at the high water mark and never finished the low water obstacles.

Winds

- Winds should be less than force 3 (8-12 mph) onshore and force 4 (13-18 mph) offshore
- Winds would clear away any smoke screens that might be used
- Less than 15 mph for parachutes

Clouds

- Cloud cover should be less than 30% coverage below 8,000 feet.
- Few low clouds meant pilots could accurately bomb
- With no clouds, pilots could use sight markers (rivers, roads, RRs) to guide them along with degrees north and minutes of flying time
- Radar was inaccurate

Visibility

- Visibility of more than 3 miles
- Planes could stay together and drop parachutists and supplies in the safest areas
- Planes could scout for obstacles and enemy troops

- Smoke screens could be used to reduce visibility and help troop movements
- Planes and ships could accurately bomb the Germans
- From Oct 1943 to Feb 1944, 8th Air Force was only able to make visual attacks on German targets for just 2 days
- When German tanks finally received permission to move, it was daylight. They were afraid of Allied air forces, so they wanted to wait until dark to move.

Other Geographic Considerations:

Location of Invasion

- Had to be within 300 miles of Britain to maintain heavy fighter cover
- Had to be close to stockpiles of supplies

Planning the event (Neptune 700 pages)

- Intelligence to find out and map:
 - Soil conditions
 - Level of water (ocean, fields, rivers)
 - Obstacles to movement
 - Human features (seawalls, roads, RRs, canals, villages, ports)
- Development of equipment to handle the geography:
 - Landing craft
 - Tanks (for all terrains and to handle obstacles) (DD—duplex drive) tank)
 - Midget subs to send frogmen to gather information
 - Panoramic photographs to give to landing craft so they could find their beachhead

Supplying the Allies

- One of the greatest challenges was to land a craft and get out of the way of advancing crafts
Once the beach was secure, 2 artificial harbors created (Mulberries) to assist in unloading ships
- Mulberries were formed from sunken ships and other transported units (400 separate units)
- PLUTO and underwater pipeline from tankers to shore for delivering fuel

Landforms

- Beaches
 - Omaha beach—4-5 valleys through the 100 ft sandy bluffs—each fortified by Germans
 - Shingle (loose stones) were obstacles to the movement of tanks, other vehicles, and people.
- Beyond beach
 - Flooded fields to prevent airplanes/gliders from landing (Rommel's

- asparagus), endanger parachutist (drown in fields), and slow down the attackers
- Flooded fields also grew back with plants and depth of water was hard to determine from the air
- Swampy areas would be difficult to cross
- Hedgerows
 - Earthen banks (1-4 foot thick) topped by bushes and small trees,
 - Usually there was a ditch on 1 side or both sides
 - Formed a patchwork of irregular fields with few straight pathways
 - Gave defenders unlimited concealment and obstacles for attackers
 - Made tank vulnerable when their bellies were exposed trying to cross the hedgerows
 - Tanks were fitted with bulldozer blades when possible to plow through the rows

Ocean Currents

- Carried invasion forces from targets to places other than planned

Sources:

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