



NATIONAL MUSEUM *of the*  
UNITED STATES NAVY

## **Tides and Typhoons: Weather Obstacles at the Inchon Landing**





# Activity #1

## Where can you find information on tides?

Rear Admiral Doyle and his staff needed to read tide tables to determine the best time to land on the day of the landing - September 15, 1950. You can also find information on tides to help your next trip out on the water!

### What you need:

- Device with internet access
- Writing utensil



Imagine your family is going out on a boat trip. Your job is to find out when and what high and low tides are. Where do you find it? One resource is the NOAA website. To start this activity, go to the web address below.

<https://tidesandcurrents.noaa.gov/>

You will see a map that has some states highlighted in yellow. Click on a state to select a zoomed-in map of the area. You should see pins around the map. Click on one of the pins that have two colors (Water level and Met). Use the information you find to fill out the chart below.

Time	Tide	Height
	High	
	Low	
	High	
	Low	



Which tide is better for landing your boat close to shore?

What is the difference in feet between high tide and low tide for this region?

## Weather

We have all been there before. You go outside with plans only to have a sudden storm appear, washing out our activity. What do you do to prevent that? Rear Admiral Doyle and other commanders had meteorologists on hand to help predict weather patterns. With only a three-day window to land at Inchon due to tide concerns, troops and materials' movement to the landing area had a strict schedule to maintain. In September 1950, two Category 3 typhoons formed.

What is a typhoon?



According to NOAA, a typhoon is a tropical cyclone with an organized system of rotating clouds and thunderstorms forming in tropical or subtropical waters. Typhoons are divided into categories based on wind speed.



Modern satellite image of a typhoon near Korea

Category	Windspeed (in miles per hour)
1	74-95
2	96-110
3	111-130
4	131-155
5	156+

U.S. Navy weather planes gave three days' notice that both storms were to hit southern Japan, where the task force was preparing. The Sailors hurried their pace, and the task force left Japan soon after to avoid damage to their ships. The taskforce faced extremely rough seas on their way but managed to survive and proceed to Inchon in time for the landing.

## Activity #2

### What you need:

- A container with approximately one gallon of water (like a bucket)
- Paperclip
- String
- Spoon



### How to do this

1. Attach the string to the end of your paperclip
2. Have someone stir the water with the spoon until the water is spinning
3. holding onto the string, lower your paper clip into the water without touching the bottom in three different places. The center of the "typhoon", the edge and in between the center and the edge.

Which location affects the paperclip most?

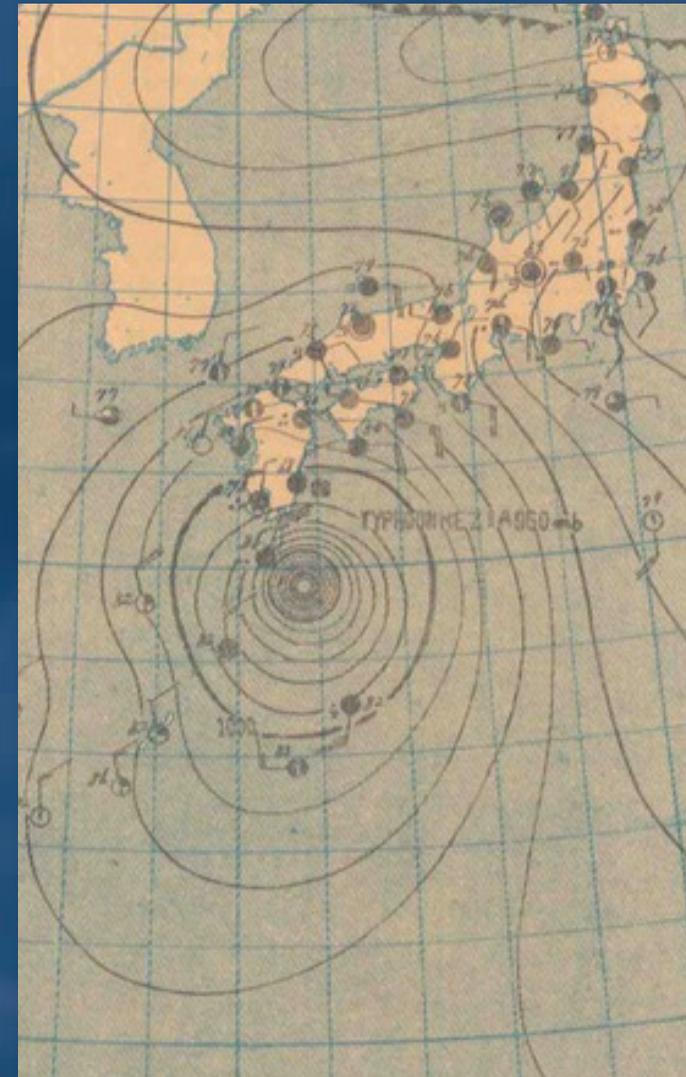
Which location the least?

What would be the safest area of the typhoon?



## Conclusion:

The landing at Inchon on September 15, 1950, was a success. Leadership adapted to the tricky tides and unforeseen weather issues to complete a challenging but rewarding operation that turned the flow of the Korean War.



Among the many variables to be calculated by Operation Chromite planners were typhoons. This is a weather map showing Typhoon Kezia, a Category 3 tropical storm, approaching Japan three days before the Inchon landings. The storm hit the landing force ships hard with 90-knot winds while they were en route to Inchon.



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