Briefing Sheet: Hurricane Team

Instructions

The information and tools you will need:

- Hurricane Tracking Data Sheet
- Hurricane Tracking Map
- Calculator, Ruler, Compass

Steps:

1. Download and Read the Real-Time Data

Every few minutes, the LEO satellite will be relaying real-time data about the storm. This data may be downloaded by using the URL given to you by Mission Control.

EXAMPLE:

Real-Time Data

Adv	LAT	LON	TIME	WIND km(mi)	PR	STAT
1	16.40	47.2	08/28/0300	72(45)	1025	Trop Storm

In this example, the data is from August 28, 3 am Greenwich Mean Time (GMT). (GMT is the same as "Universal Coordinated Time" or "Zulu" time). The first data report reads, "Advisory 1 for August 28, Oh-Three Hundred Hours. Latitude 16.4, Longitude 47.2. Wind Speeds are at 45 miles (72 km) per hour. Pressure is 1025 millibars. Category: Tropical Storm"

Note: the Storm's Status, or Category, is described in the Saffir-Simpson Hurricane Intensity Scale:

Winds	Category	Severity
Less Than 118 kph (74 mph)	Tropical Storm	very weak
119-152 kph (74-95 mph)	1	weak
153-177 kph (96-110 mph)	2	moderate
178-209 kph (111-130 mph)	3	strong
210-248 kph (131-155 mph)	4	very strong
above 248 kph (155 mph)	5	devastating

2. Record the data

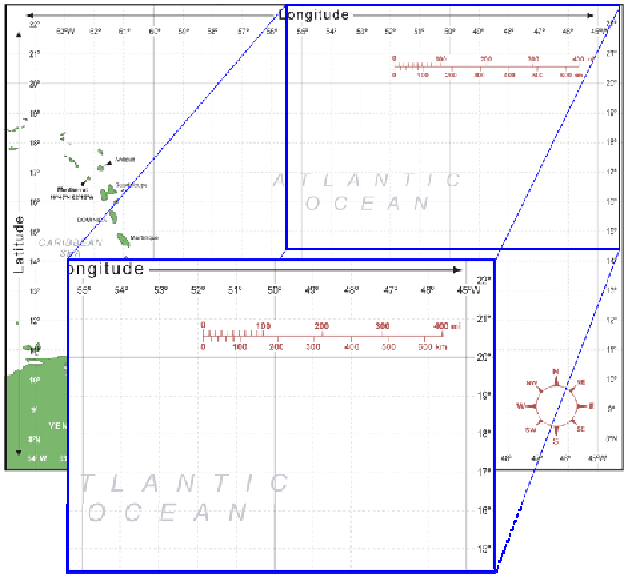
Record the data in Columns B-F on the Hurricane Tracking Data Sheet.

In the example at the top of the Hurricane Tracking Data Sheet, you can see we've recorded the data in Columns B-F for Advisories 1-10.

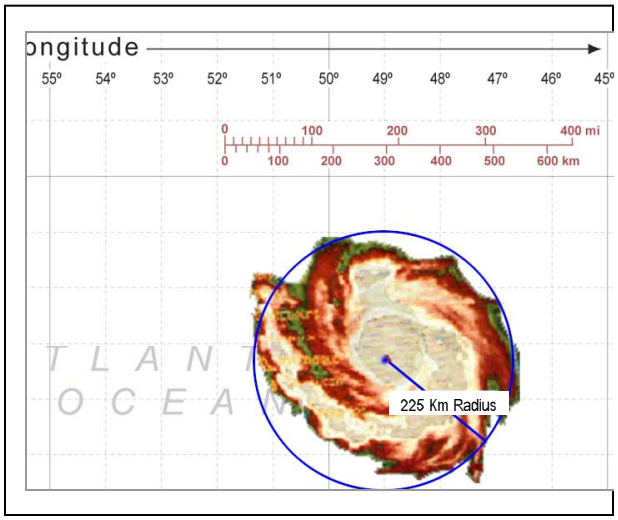
3. Plot the course of the hurricane.

A. On your Hurricane Tracking Data Sheet locate the latitude and longitude of the first advisory (ADV). Together, the latitude and longitude give you the storm's first coordinate.

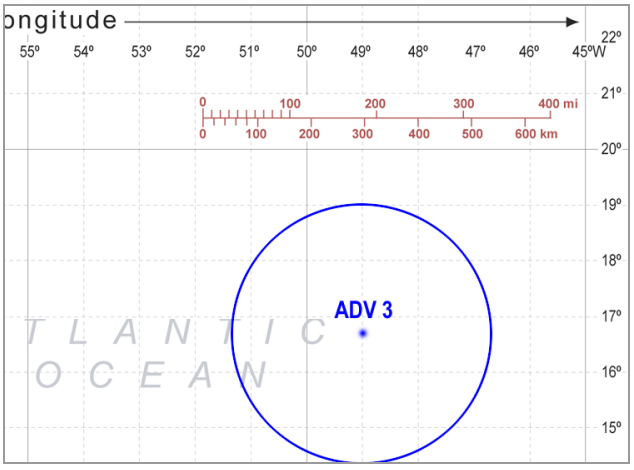
B. Plot the first coordinate on the Hurricane Tracking Map.



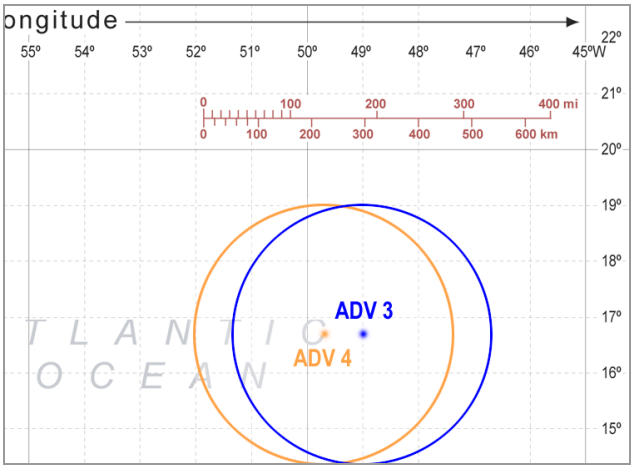
C. The first coordinate marks the position of the eye, or center, of the storm. The storm's winds form a circular weather cell around the eye. The average radius of this storm is 225 km (140 mi).



D. Use your ruler, compass, and the scale on the Hurricane Tracking Map and draw a circle with a radius of 225 km (140 mi) around the point marking the position of the eye. In the example here we have plotted Advisory 3.



E. Plot the coordinate of the next ADV on the Hurricane Tracking Map. Draw the circle around the second coordinate, again marking the position of the storm's eye.



F. Draw a line to connect the two coordinates. This line represents the storm's path (See A Below).

4. Column G: Determine the Hurricane Category.

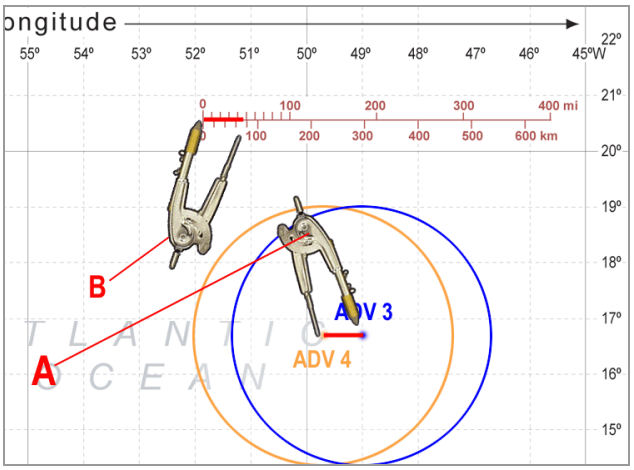
Use the Saffir-Simpson scale on the previous page. By examining the storm's wind speeds, you can determine the storm category. For example if the wind speed is 200 kph, then the storm is a Hurricane- Category 3.

*Note: Most weather stations and meteorologists measure wind speed in "knots". Popular media converts this to "kilometers per hour" (kph), or "miles per hour" (mph).

5. Column H: Determine the distance the hurricane has traveled.

A. Measure the length of the line using a compass, ruler, folded edge of a paper, or other device.

B. Compare this measurement to the scale to determine how far the storm has traveled. Record this number in **Column H.**



6. Column I: Calculate how fast the storm is moving toward the island.

A. First examine **Column D** to determine how much time passed between the first and second ADV. Example: If the first ADV is at 8/28, 0300 hours (August 28, 3 a.m.) and the second ADV was at 8/28, 0900 hours (August 28, 9 a.m.) then there were 6 hours between the two ADV reports.

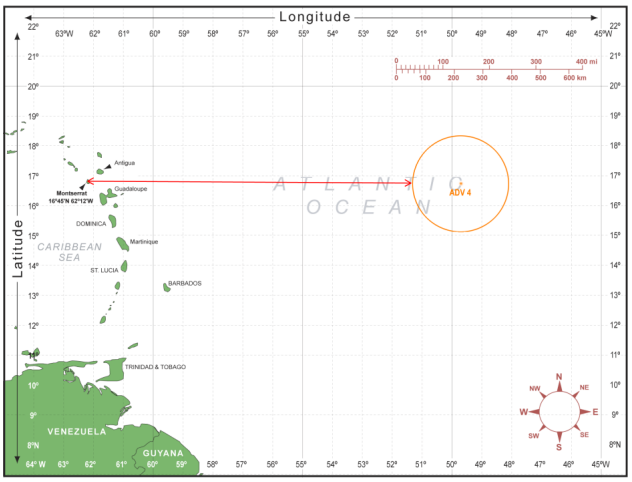
B. Calculate the speed of the hurricane. Divide the distance traveled between the two coordinates (Column H) by the number of hours between the two ADVs. The result is the speed of the hurricane. (Distance in miles divided by number of hours = miles per hour). Record this in **Column I.**

7. Column J: Determine the course of the hurricane. Will it hit land?

A. Use the compass on the map to determine the direction the storm is headed. Is it headed toward Montserrat? Record the direction in **Column J**.

8. Column K: Determine the Distance to the island.

A. Measure the distance from the outer radius of the storm to Montserrat. Compare this measurement to the scale to determine how far the storm has to travel until it hits.



9. Column L: Calculate the ETA (Estimated Time of Arrival).

Divide the distance to go (Column K) by the speed it is traveling (Column I). Record this number in **Column L**