Lesson Plan - 7.1-1 Navigation-Introduction to Tides and Weather	Date: 15/1/18 Jason Hughes Cowes Helm

AIM:

Trainer - To give crew a basic understanding of tides and weather, where to get tidal and weather information from and what it can mean to us.

Training Shoreside - Explaining what the tide is with basic terminology. Where to find tidal information. The effect of tides in our locality. Where to find weather information and the terminology.

- Explain tides is a general term for the movement of the sea around our shores
- Identify sources of tidal information
- Explain spring and neap tides
- Explain the effect of spring and neap tides on launch and recovery
- Talk through the hazards of tidal effect on our shores
- Describe where to find weather information
- Talk through the terminology associated with the weather

Training Afloat - in the appropriate conditions, crew should be shown the effects of a spring tide on a fixed object such as a buoy to illustrate the speed of the current as the tide floods or ebbs. This can be compared to a neap tide. Exceptionally high and low tides can also be observed along the shore.

Tides

Tides refer to the general movement of the sea around our shores as the oceans are affected by the gravitational pull of the sun and the moon. These movements can be predicted many years in advance.

Tidal Information

These predictions can be found in different resources such as: Reeds Almanac, Tide Tables, Tidal Stream Atlas, Internet, Local Publications. These give us the time of High and Low Water and the depth of tide. Cowes crew can utilise the Cowes tide table website; look at the tide table sheet above the chart table or in the boathouse. For the public they may find tidal information at the marinas, the gatehouse of the RYS or the County Press.

Springs and Neaps

Not all tides are exactly the same. Sometimes the tide is stronger than at other times. The strongest tides are known as Spring Tides and the weaker tides are known as Neap Tides. A Spring Tide has a larger range and stronger stream. A neap Tide has a smaller range and slower stream. The range refers to the difference between High Water and Low Water.

Safety Implications

On a spring tide if the height of the tide is very high or very low this could affect our ability to launch the SAR unit safely. Tides can be a hazard to people's safety. People on the shoreline can be cut off, trapped or immersed by an incoming tide. Top Tip - In the Solent the tide moves from West to East coming in (flooding) and East to West going out (ebbing). But watch out for those back eddies!

Strong tides can affect the lifeboat launch and recovery and more importantly greatly affect the drift of search.

Refer to the Local Knowledge LOP for additional information.

Sea State

Given as a description and wave height in metres:

Smooth	Wave Height less than 0.5m
Slight	0.5m to 1.25m
Moderate **(ILB Op limit night time 2.5m)**	1.25m to 2.5m
Rough **(ILB Op limit day time 4m)**	2.5m to 4m
Very Rough	4m to 6m
High	6m to 9m
Very High	9m to 14m
Phenomenal	Wave Height more than 14m

Weather

Weather Sources

It is essential we know what the weather is doing and what it is likely to do before we go afloat.

Weather information sources can be found: Online, WeatherApps, Local Sources eg Bramblemet, BBC Weather, Shipping Forecast etc. Top Tip - Don't forget to look out the window

Terminology

The Shipping Forecast and Inshore Forecast has specific terminology:

Wind

Given as a direction from a given compass point and a Beaufort Scale Force.

The Beaufort Scale

This is a scale of 1-12 and refers to a wind speed band in knots with a brief description of what you might expect at sea. (5 times force gives a close estimate of speed in knots)

Force	Knots	Description
0	0	Calm Sea like a mirror.
1	1-3	Light Air Ripples without crests.
2	4-6	Light Breeze Small wavelets, ripples formed but do not break.
3	7-10	Gentle Breeze Large wavelets. Crests begin to break.
4	11-16	Moderate Breeze Small waves - becoming longer; fairly frequent white horses.
5	17-21	Fresh Breeze Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray.
6	22-27	Strong Breeze Large waves begin to form; the white foam crests are more extensive with probably some spray.
7	28-33	Near Gale Sea heaps up and white foam breaking waves begins to be blown in streaks along direction of wind.
8	34-40	Gale Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks along the direction of the wind.

9	41-47	Strong Gale High waves;dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
10	48-55	Storm Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected.
11	56-63	Violent Storm Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white
12	64+	Hurricane The air is filled with foam and spray. sea completely white with driving spray; visibility very seriously affected.

Weather

A brief description of the precipitation expected eg showers, sleet, snow, rain etc

Visibility

This refers to how far we would expect to be able to see at sea level:

Fog - Visibility less than 1,000m

Poor - Visibility between 1,000m and 2 nautical miles

Moderate - Visibility between 2nm and 5nm

Good - Visibility of more than 5nm

Time Phrases

This tells us how long before the weather is expected:

Imminent - Expected within 6 hours of forecast

Soon - Expected in 6-12 hours of forecast

Later - Expected more than 12 hours from forecast

Reference Material:

Crew Handbook

Local knowledge LOP (Horizon)

https://www.tidetimes.org.uk/cowes-tide-times

http://www.bramblemet.co.uk/(S(mticxs451lkqsejtdnoaey2q))/default.aspx