



NOAA WEATHER RADIO BROADCASTS			
CITY	STATION	FREQUENCY	BROADCAST TIMES
1. San Juan, PR	WXJ-69	162.40 MHz	Continuously, 24 hrs a day
2. Maricao, PR	WXJ-68	162.55 MHz	Continuously, 24 hrs a day
3. St. Thomas, V.I.	WXM-96	162.475 MHz	Continuously, 24 hrs a day
These VHF-FM radio stations (1 AND 2), locations shown on the map, are managed by the National Weather Service. VHF-FM radio station 3, shown on map, is a cooperative N.W.R. station. Broadcast tapes are updated frequently and amended as required.			
The contents vary, but in general contain the following information:			
1. Special bulletins and statements concerning hurricanes or other severe weather.			
2. Forecasts and warnings for nearby coastal areas.			
3. Forecasts for local areas.			
4. Description of weather patterns affecting the region.			
5. Tide and sunrise-sunset data.			
6. Daily climatollogy.			
7. Short - term forecasts.			
8. Other information as available.			

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS			
CITY	STATION	FREQUENCY (kHz)	BROADCAST TIMES
San Juan, PR	NMR-1 (USCG)	157.1 MHz (ch. 22)	1210, 2210 GMT
Portsmouth, VA	SSBHF	2670	0305, 1505 GMT
	NMN	4428.7	0400, 0530, 1000 GMT
		6506.4	
		8765.4	
		8765.4	
		6506.4	1130, 2330, 1600 GMT
		8765.4	
		13113.2	
		8765.4	1730 GMT
		13113.2	
	Navtex (RADIOTELEPHONE PRINTER)	17307.3	
San Juan, PR	NMR-1	518	0200, 0600, 1000, 1400 1800, 2200 GMT

SPECIAL BROADCASTS OF WARNING AND FORECAST MESSAGES			
City	Station	Freq. (kHz)	Broadcast times
Charlotte Amalie	WAH	401 - 4357 KHz	6:00 am, 2:00 pm, 10:00 pm
St. Thomas, V.I.		604 - 6510 KHz	
		804 - 8728 KHz	
		VHF CH85 - 161.875 MHz	8:00 am and pm
San Juan, PR	NMR-1 (USCG)	157.1 MHz (ch. 22)*	
*Preceeded by announcement on 156.8 MHz (ch. 16)			

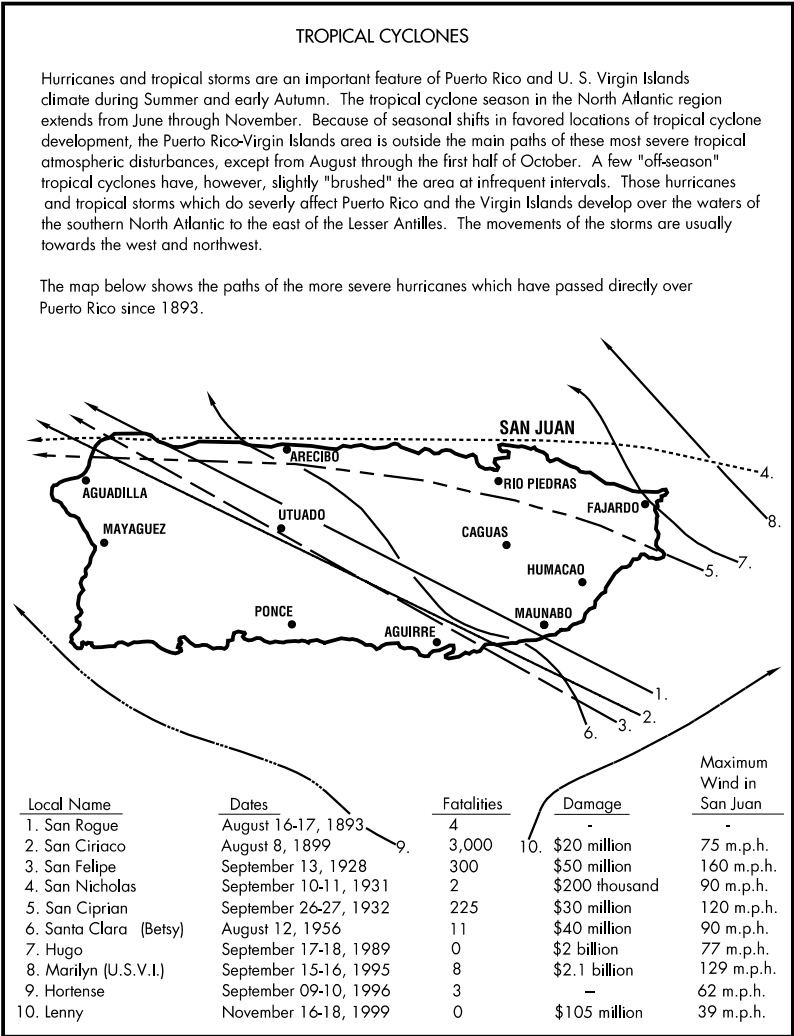
AM AND FM RADIO STATIONS BROADCASTING MARINE WEATHER FORECASTS AND WARNINGS		
City	Station	Freq. AM/FM kHz/MHz
Bayamon, PR	WLUZ	1600
Bayamon, PR	WRSJ-FM	100.7
San Juan, PR	WBMJ	1190
San Juan, PR	WOSO*	1030
San Juan, PR	WHOA	870
San Juan, PR	WKVM	810
San Juan, PR	WQBS	630
San Juan, PR	WKAQ	580
Note: Not all broadcasts are in English.		
Aguadilla, PR	WABA	850
	WIVA-FM	100.3
Arecibo, PR	WCMN	1280
Caguas, PR	WPRM-FM	98.5
Cayey, PR	WLEY	1080
Camuy, PR	WCHQ	1360
	WCHQ-FM	102.9
Fajardo, PR	WMDD	1480
	WMDD-FM	96.5
Humacao, PR	WALO	1240
Isabela, PR	WISA	1390
	WISA-FM	101.5
Mayaguez, PR	WKJB	710
	WKJB-FM	99.1
Mayaguez, PR	WORA	760
	WORA-FM	97.5
Mayaguez, PR	WTLI	1300
	WOYE-FM	94.1
Ponce, PR	WISO	1260
Ponce, PR	WLEO	1170
Ponce, PR	WEUC	1420
San German, PR	WRSG	1090
San Juan, PR	WIPR	940
	WIPR-FM	91.3
San Sebastian, PR	WFBA	1460
Utuaado, PR	WUPR	1530
	WUPF-FM	104.1
Viesques Island, PR	WIVV	1370
Yauco, PR	WKFE	1550
St. Thomas, V.I.	Weatherline phone # 774-4786	
Charlotte Amalie,	WGOD	1090
Charlotte Amalie,	WSTA	1340
Charlotte Amalie,	WYWI*	1000
St. Croix, V.I.		
Christiansted,	WSTX	970
Christiansted,	WAVI-FM	93.5
Christiansted,	WKJC-FM	95.1
Fredericksted,	WRRR	1290
* English only broadcasts		

ANCHORAGES	
Under ordinary conditions the first requirement for anchorage is shelter from the easterly trade winds. Anchorages in Puerto Rico are numerous except along the north coast. Strong northeasterly winds and heavy seas may occur from November to April. During the hurricane season strong winds may strike from any direction. The best hurricane harbors are the Bays (Bahias) of San Juan, Guanica, Guayanilla, Jobos, Salinas and Puerto Real, Cabo Rojo, Ensenada Honda on Culebra Island, and Coral Bay, St. John.	

WIND	
One of the most outstanding features of the wind in Puerto Rico and the U.S. Virgin Islands is the steadiness of the trade winds. They typically blow, with few and brief exceptions, from an easterly direction, i.e., between northeast and southeast. Local effects caused by these winds flowing around and over the mountainous terrain of the local islands can produce wind and sea conditions differing significantly from those conditions otherwise prevailing across the region. These varying conditions can often be found in the local passes and channels, both large and small, between the numerous islands. Wind across the open waters does not vary between night and day, while across the near shore and protected waters it can vary greatly. Significantly lighter wind and smoother seas are generally found from the early morning hours through one or two hours after sunrise across protected and near shore waters, with the wind gradually increasing to the prevailing off shore conditions by late morning. This cycle then begins to repeat itself after sunset, with near shore wind gradually diminishing through the early morning hours. Also, the prevailing trade wind flow can become enhanced or increased, due to daytime heating, along the coastlines parallel to the this flow, i.e., usually the north and south coasts. This phenomenon is most evident during the warmest days and months of the year and occurs predominantly along the coasts of the larger islands of Puerto Rico and St. Croix.	
Wind speeds across the open waters average about 13 to 15 knots during the Winter and Spring months and slightly less during the remainder of the year. However, migratory high pressure systems building off the east and southeast coast of the U.S. behind cold fronts during the Winter and Spring can produce sustained winds of 20 to 30 knots that may endure for several days. These wind patterns are usually maximized during the Winter from December through March. Gale force winds are rare across the area and winds of this strength and greater may be found during the Summer and early Fall season when they may accompany passing hurricanes, tropical storms, or strong tropical waves.	

WEATHER RULES FOR SAFE BOATING	
Before setting out: Obtain the latest available weather forecast for the boating area. The NOAA Weather Radio continous broadcasts (VHF-FM) are the best way to keep informed of expected weather and sea conditions. If you hear on the radio that warnings are in effect, don't venture out on the water unless you are confident that your boat can be navigated safely under forecast conditions of wind and sea.	
While afloat: 1. Keep a weather eye out for: the approach of dark, threatening clouds, which may foretell a squall or thunderstorm; any steady increase in wind or sea; any increase in wind velocity opposite in direction to a strong tidal current. A dangerous rip tide condition may form steep waves capable of broaching a boat. 2. Check radio weather broadcasts for the latest forecasts and warnings. 3. Heavy static on your AM radio may be an indication of nearby thunderstorm activity. 4. If a thunderstorm catches you while afloat, you should remember that not only gusty winds but also lightning pose a threat to safety. - stay below deck if possible. - keep away from metal objects that are not grounded to the boat's protection system. - don't touch more than one grounded object at the same time (or you may become a shortcut for electrical surges passing through the protection system). - put on a life jacket and prepare for rough sea conditions. 5. Waterspouts are common across the Northeastern Caribbean. If you observe a waterspout, do not try to outrun it. Steer perpendicular to it and away from it's direction of movement.	

OTHER MARINE WEATHER SERVICES CHARTS AVAILABLE	
MSC-1	Eastport, ME to Montauk Point, NY
MSC-2	Montauk Point, NY to Manasquan, NJ
MSC-3	Manasquan, NJ to Cape Hatteras, NC
MSC-4	Cape Hatteras, NC to Savannah, GA
MSC-5	Savannah, GA to Apalachicola, FL
MSC-6	Apalachicola, FL to Morgan City, LA
MSC-7	Morgan City, LA to Brownsville, TX
MSC-8	Mexican Border to Point Conception, CA
MSC-9	Point Conception, CA to Point St. George, CA
MSC-10	Point St. George, CA to Canadian Border
MSC-11/12	Great Lakes
MSC-13	Hawaiian Waters
MSC-14	Puerto Rico and Virgin Islands
MSC-15	Alaskan Waters
MSC-16	Guam and the Northern Mariana Islands
Copies of these charts are available for \$1.25 each from: FAA/National Aeronautical Charting Office Distribution Division, AVN-530 6303 Ivy Lane, Suite 400 Greenbelt, MD 20770 Telephone: 301-436-8301 800-638-8972 toll free, U.S. only 301-436-6829 FAX Email: 9-AMC-chartsales@faa.gov http://chartmaker.ncd.noaa.gov/nsd/states.html or your local chart agent: http://chartmaker.ncd.noaa.gov/nsd/states.html Marine Service Charts can be viewed at: http://www.nws.noaa.gov/om/marine/pub.htm	
For nautical charts on the web for navigation purposes please go to: http://www.oceanservice.noaa.gov/pubs/welcome.html These nauticl charts are also available from local marinas and marine supply stores.	



INTERNET ADDRESSES	
National Weather Service	<a href="http://www.nws.noaa.gov">http://www.nws.noaa.gov</a>
National Weather Service Southern Region Headquarters	<a href="http://www.srh.noaa.gov">http://www.srh.noaa.gov</a>
National Weather Service Puerto Rico - Virgin Islands Forecast Office	<a href="http://www.srh.weather.gov/sju/">http://www.srh.weather.gov/sju/</a>
National Data Buay Center	<a href="http://seaboard.ndbc.noaa.gov">http://seaboard.ndbc.noaa.gov</a>
U.S. Coast Guard Navigation Center	<a href="http://www.navcen.uscg.gov/marcomms">http://www.navcen.uscg.gov/marcomms</a>
National Weather Service Marine Dissemination	<a href="http://www.nws.noaa.gov/om/marine/home.htm">http://www.nws.noaa.gov/om/marine/home.htm</a>
NATIONAL WEATHER SERVICE RADIOFAX AND TEXT FORECASTS AVAILABLE VIA E-MAIL (FTPMAIL)	
National Weather Service radiofax charts and text forecasts are available via E-mail. The FTPMAIL server is intended to allow Internet access for mariners and other users who do not have direct access to the World Wide Web but who are equipped with e-mail system. Turnaround is generally in under 1 hour, however, performance may vary widely and receipt cannot be guaranteed. To get started in using the NWS FTPMAIL service, follow these simple directions to the FTPMAIL "help" file (11 bytes)	
Address:	ftpmail@weather.noaa.gov
Subject:	(not required)
Body:	help
Direct any questions to 301-713-1677, extension 128, or 301-713-0882, extension 122.	