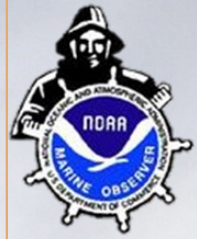




# Mariners

## Weather Log



**Volume 63 Number 1**

**May 2019**

**A VOS Publication**

### Mariners Weather Log

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U.S. Department of Commerce  
Benjamin Friedman

Deputy Undersecretary of Operations  
Performing the Duties of Undersecretary of  
Commerce for Oceans and Atmosphere and  
NOAA Administrator

National Weather Service

Dr. Louis Uccellini

NOAA Assistant Administrator for  
Weather Services

Layout and Design

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SOME IMPORTANT WEB PAGE  
ADDRESSES:

NOAA

<http://www.noaa.gov>

National Weather Service

<http://www.weather.gov>

AMVER Program

<http://www.amver.com>

VOS Program

<http://www.vos.noaa.gov>

Mariners Weather Log

<http://www.vos.noaa.gov/mwl.shtml>

Marine Dissemination

<http://www.nws.noaa.gov/om/marine/home.htm>

TURBOWIN E-Logbook Software

<http://www.knmi.nl/turbowin>

U.S. Coast Guard Navigation Center

<https://www.navcen.uscg.gov/>

See these Web pages for further links.

### Your Cooperation Is Appreciated:

The national Weather Service thanks ships' officers for participating in the Voluntary Observing Ship (VOS) Program and for taking the time to observe and transmit weather observations. Quality observations are how you can help improve the weather forecast and protect lives at sea.

### Change in *Mariners Weather Log* Publication Schedule:

Due to the government shutdown, the year-end edition that was schedule for release in January was cancelled. We will be including last year's total observation count by ship in the May release

The *Mariners Weather Log* schedule has been changed. Going forward the release will be moved to:

- January.
- May.
- September.

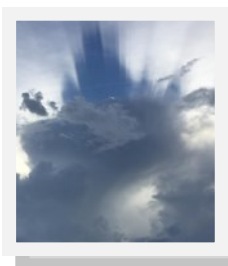
### In This Edition:

The magazine leads off with a correction to an old misstatement about the Southern Live Oak. There also appears an offbeat story of unusual weather phenomena. The issue also highlights the latest Mariners Decision Maker's Workshop. We have a NY Fleet Overview followed by another handy Barometer Tip.

Our regular features on the Tropical Atlantic and Tropical East Pacific, North Atlantic, and North Pacific Areas appear, along with an article about Buoy Measurements during Hurricane Jose. We also have our VOS Cooperative Ship Report.

### Cover:

The cover picture was provided by PMO David Dillinger. It is a picture of a Cumulonimbus Cloud (without anvil), taken over the Florida Everglades. The picture was taken in the evening, and there is a shadow of the cloud being superimposed on an upper layer of Altocumulus from the spreading of another Cumulonimbus cloud.



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Volume 63, Number 1, April 2019

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**The views and opinions stated herein are solely the opinions of the authors and should not be construed to reflect the views and opinions of NOAA or the Department.**

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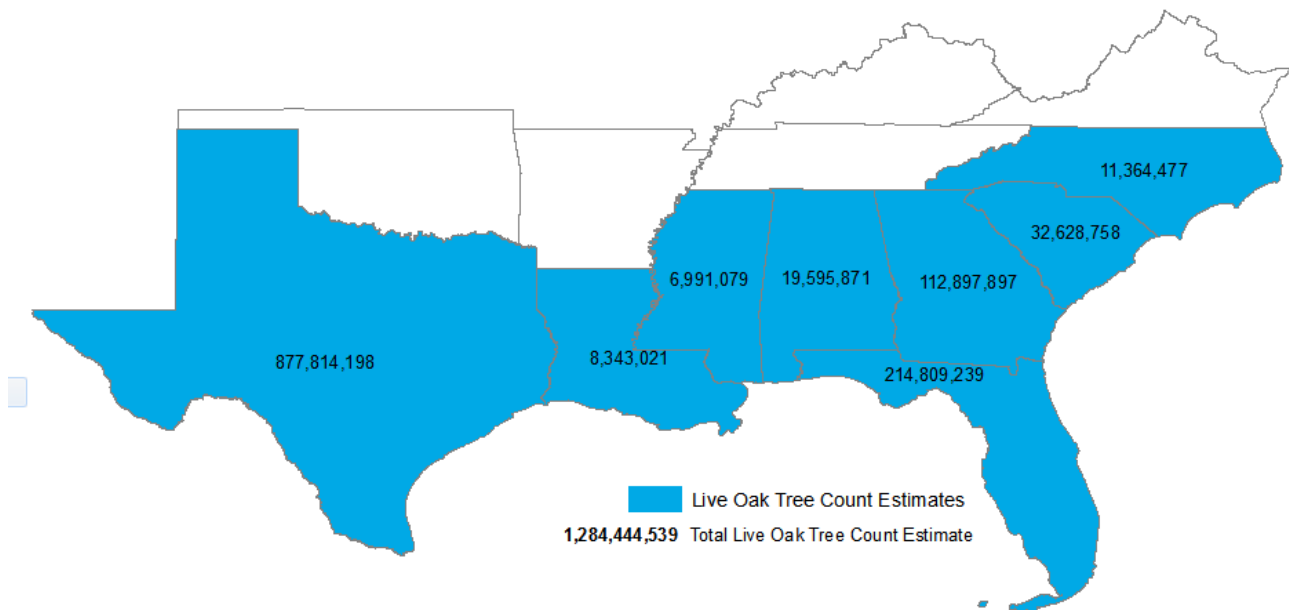


In one article in the *Mariners Weather Log*, Vol. 52, No. 2, August 2008, there was an article entitled, "The Charles W. Morgan: Restoring an Historic Icon." The article mentioned that the wood of choice came from the species Southern Live Oak (*Quercus virginiana*), which was a protected species. **This is an incorrect statement.** The Fish and Wildlife Service does not list the Southern Live Oak on its [roster](#) of endangered plants.

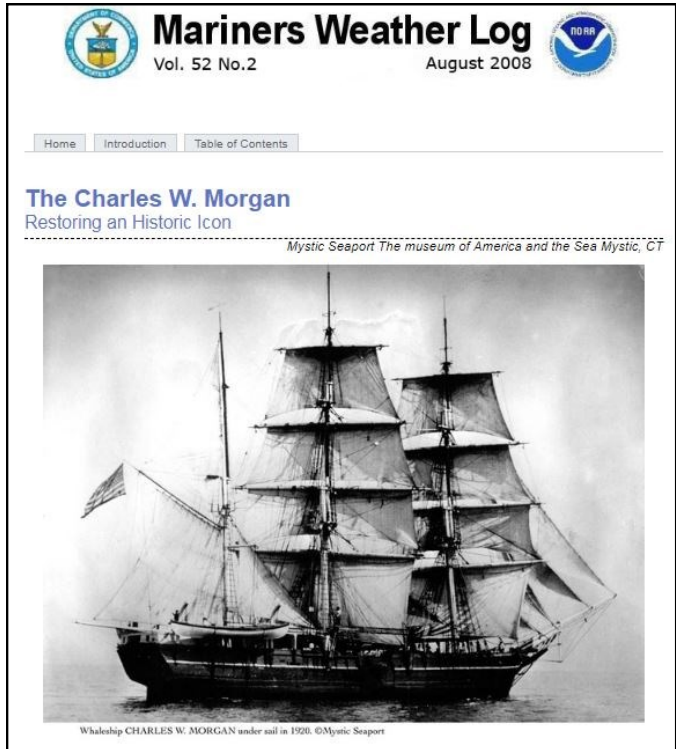


**Spoooner Live Oak**

Watch a [video](#) of commercial live-oak commercial milling.



**Figures for Live Oaks Distribution. (From U.S. Forest Service.)**



For information on the ground about this topic, call [Steve Cross](#) at (229) 726-5561.





## NY Fleet Overview

James Luciani  
PMO NY

The staff at the *Mariners Weather Log* asked each PMO to take a look at his or her fleet and provide the names of two ships that he or she believed were the top performers for his or her VOS fleet. I was briefly aghast: How was I to decide what the best ships were? Was it based mostly on the quantity of observations? What about my one ship that has an Automated Weather System (AWS) onboard? (While I do wish to acknowledge the research ship **ENDEAVOR**, which spends a great deal of time at sea and contributed over 7,000 observations, I will not be considering it for this article.) Should I base it mostly on the quality of the observations? Should I blend the categories of quantity and quality and chose from that? Does the number of years of devoted service factor in? How is the size of the fleet a factor? (A large fleet might have 10 or more ships that exceed the quantity and quality of those cited as top performers of other smaller fleets.) How can I choose only two ships to cite as top performers? Thanks to the great job all my ships have done, this is my dilemma!

I am truly blessed as a PMO to have over five ships that have provided more than 1,000 observations this past year that contributed more than 600 observations (**CMA CGM J. ADAMS**, **COSCO DEVELOPMENT**, **COSCO MALAYSIA**, **EVER LAUREL**, and **ZIM SAN DIEGO**), and another eight (**CMA CGM T. ROOSEVELT**, **COSCO PRINCE RUPERT**, **EVER LEGION**, **EVER LIVEN**, **EVER LOYAL**, **MAERSK PITTSBURGH**, **ORANGE SKY**, and **T/S KENNEDY**). I have presiously used this 50-observations-per-month threshold as a guide during the years that we provided annual VOS awards. It was a bit easier then because we did not have much in the way of tools for addressing quality at that time, so it was based mainly on quantity.

We now have some excellent tools at our disposal to address the quality as well, but I personally feel that, if a ship is providing pressure data that is suspect, that is more my fault than

theirs. A big part of my job is to keep instruments adjusted to ensure data is a benefit to the models. This aspect of the job is always complicated by the length of the routes as well. For example: If a ship is on a 120-day round trip, and I should be absent from the port and miss the ship when it arrives, it will be over 240 days since the last adjustment. That is no one's fault, just a reality of our situation. This proves why contact through e-mail has become an important part of our daily activities.

When I reviewed the longevity of these 13 vessels, I was surprised to find that the majority have been in the program for less than 2 years. It is great that so many new recruits are motivated to contribute in such a big way so quickly. A number of the ships however, have been in the program for a number of years, some as far back as 2004 and 2006. Those ships have been active at these levels for a number of years and have made a significant contribution for a long period! We want to give special thanks to **MAERSK PITTSBURGH**, **ORANGE SKY**, **TS KENNEDY**, and **ZIM SAN DIEGO** as the longest tenured of this stellar group!

With all that said and factoring my reservations about selecting two ships, I am highlighting the contributions and efforts of **ZIM SAN DIEGO** (1,268 observations) and **CMA CGM J. ADAMS** (1,644 observations). Both of these ships have been provided a Mintaka Star digital barometer based on their consistent and excellent performance, and neither of these ships appeared on the QC blacklist for pressure in 2018. The **CMA CGM J. ADAMS** has been participating since 20 November 2017 and contributed over 100 observations per month, right from its first month. The **ZIM SAN DIEGO** has been active in the VOS since 23 April 2010 and has steadily increased the number of observations year after year. They are both worthy of mention in this publication. We value and appreciate their effort and consistent excellence, as we value all VOS participants! THANKS for a job well done!

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## Fourth Annual Mariners Decision Maker's Workshop



Andy Latto  
Tropical Analysis and Forecast Branch  
National Hurricane Center, Miami, Florida  
NOAA National Centers for Environmental Prediction

The National Hurricane Center (NHC) hosted the fourth Annual Mariners Decision Maker's Workshop from March 19–21, 2019, at the NHC facility in Miami, Florida. The workshop attendees consisted of key decision makers, such as safety directors, port and fleet captains, and watchstanders from a variety of large maritime organizations. Staff from the various branches of NHC, as well as forecasters from the Miami and Key West National Weather Service (NWS) Weather Forecast Offices (WFOs), several Port Meteorological Officers, the Voluntary Observing Ship (VOS) Program Leader, staff from NWS Southern Region Headquarters, and the Ocean Prediction Center all worked together to host and facilitate the workshop. One purpose of the workshop was educating the maritime industry about the broad array of forecast and analysis products offered by the NWS that can assist them in making life-saving decisions. The decision makers also learned how weather forecast uncertainty is built into NWS forecasts and how to incorporate these uncertainties when they

route vessels for avoiding weather hazards. As in previous years, the workshop also provided a platform for the NWS to learn directly from major maritime industries and gain valuable insight into their vast knowledge and first-hand experience of how weather affects them. The NWS also received valuable feedback about a variety of potential product changes and improvements. Some comments from the attendees about the workshop included:

“I found it to be very valuable.” — Foss Maritime.

“Great experience that I can share with our office team and will recommend my colleagues to attend if you have a similar one in the future.” — Norwegian Cruise Line.

The dates for the 2020 workshop will be set this coming November. Those organizations interested in attending may contact the coordinator, [Andrew Latto](#), for more details.



The Cass of 2019 from the Mariners Decision Maker's Workshop. Attendees from outside of NOAA included those from maritime industries, including Foss Maritime Company, Holland America Group, Genesis Marine, CMACGM, Royal Caribbean International, Crowley, Norwegian Cruise Line, Seabulk Tankers, OSG, WeatherFlow, Disney Cruise Line, Carnival Cruise Line, U.S. Coast Guard, STAR Center, Carnival Corporation, American Waterways Operators, Shell Trading Company, and TOTE services.

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## More Tips for Barometer Placement

**James Luciani**  
**PMO NY**

This week's tip concerns the placement of barometers. As a PMO, it has become evident to me that there is no standard regarding placement of the barometer on the bridge. Some barometers are located near the compartments overhead, others are at eye level, and some below eye level. Most are located on a bulkhead, while others may be located on columns within the bridge, or on the side of a room divider.

Based on my own experience, I have some simple guidelines concerning placement: First, look at the barometers current location. If the user had to remove it from the bulkhead or column it is fixed to, would feet have to leave the deck? If yes, the barometer is likely too high or is too far from the observer (behind a wide chart table, for example) to get a consistent reading. Does the user have to look up to read the pressure? If yes, the user will have a degree of variability, based solely on the height of the person taking the observation. A person over 2 meters tall (6') will get a much different reading than one who is 1.6 m (5' 3"). Is your barometer more than 2 meters from the observer? I have poor eyesight, and some barometers are too far away for me to read the barometer to the 1/10th (the requested degree of accuracy).

Here are my recommendations about locating the barometer:

- The height of the aneroid barometer should be at a convenient eye level for all observers, in such a position that errors due to parallax may be avoided. Tall people can squat or bend, but short people cannot easily raise themselves to the desired height.
- If the user can touch a nose to the unit, it is at the optimal height and distance to be read. If the user must locate it behind some type of bench or shelf, please try to keep the distance less than a meter (remember the user should gently tap the unit before reading it). If the observer can't reach it, it is too far from the observer.
- Keep the barometer out of direct sunlight.

If the user follows the above guidelines, it will also make PMO adjustments to the barometers easier and safer (for the equipment) to complete.





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# All at Sea: Unusual Ocean Weather Phenomena

Frank McEvoy  
Syneren Technologies, Inc.  
Weather Ready Ambassador

The *Mariners Weather Log* outlines the day-to-day weather conditions various ships and sensors track throughout the months and years. Hurricanes, gales, high winds: All comprise the normal sea phenomenal ships encounter throughout their (and their crews') lives. However, just as on land, odd things do happen. Below are five phenomena any of our MWL readers will be lucky to encounter.

## St. Elmo's Fire



Image via [Senior Airman Brian Kelly](#), U.S. Air Force.

This is a real phenomenon and not just a catchy title for a Brat-Pack 1980s' movie. This is a colorful atmospheric electrical discharge sometimes popping up during a thunderstorm. When something sharp (e.g., a mast) hits an massively high electrical field sporting many electrons, these electrons can glow in many colors (imitating a neon sign). The name's etymology comes from St. Erasmus of Formia, one of the two patron saints of sailors. (The second is St. Brendan the Navigator.) St. Elmo may have become the patron because continued preaching even after a thunderbolt struck the ground near him.

## Fog Tsunami



Image via [Capt. Jim Freda](#), Manasquan Inlet, New Jersey.

Catching site of the phenomenon below is anything but comforting. Seeing what looks like a giant tsunami wrecking one's Sunday afternoon visit to the beach is not on anyone's bucket list. This is actually a tremendously large fog bank. When conditions permit in May or June, the warm air merging with the cold ocean can catch the bathers' attention.

## Metetsunami



Weather system that caused a metetsunami in New Jersey, June 2013. Image via [Buddy Denham](#).

These have characteristics much like tsunamis stemming from earthquakes, but these come from air-pressure disturbances than often come with quickly moving weather systems (e.g., squall lines). They can generate ocean waves that pace the overhead weather. Development stems from a multitude of factor, e.g., intensity, direction, and speed of the air pressure as the system travels over the ocean. Similar to the more familiar earthquake-related tsunami, a metetsunami influences the entire column of water and may become lethal when it arrives at shallow water (e.g., harbors, inlets, and bays), where it slows and increases in height and intensity.

## Waterspout



Image via [National Weather Service/Greg O'Neal of Hiram, Georgia](#).

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This is a spinning air and mist column that forms on lakes, rivers, and seas. There are two kinds of waterspouts: tornadic and fair weather. Tornadic waterspouts form over water or are tornados that move from water to land. They often come with thunderstorms, high winds and seas, large hail, and lethal lightening. These are more dangerous than the fair-weather variety. These are not part of thunderstorms and usually muster along the dark flat base of a line of forming cumulus clouds. Tornadic waterspouts develop downward, but the fair-weather ones develop on the water surface and vault upwards. Fair-weather waterspouts are often near stationary because of the light winds.

## Maelstrom

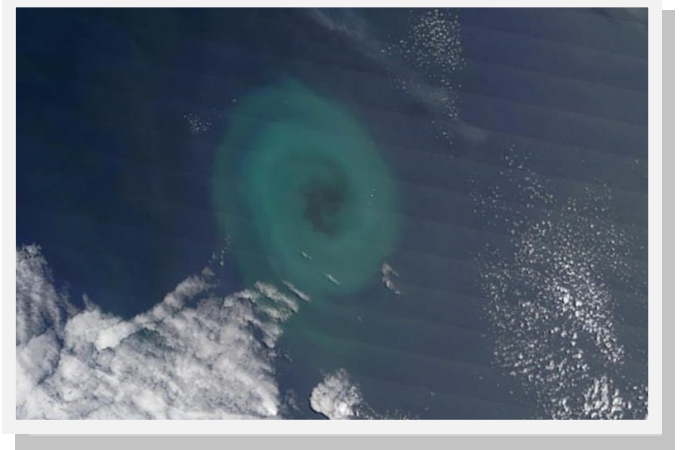


Image via [Jeff Schmaltz, MODIS Rapid Response Team, NASA/GSFC.](#)

This is a strong whirlpool forming when opposing currents meet to form the swirl. The word's etymology stems from the Dutch words *malen* (to grind or whirl) and *strom* (stream). These can be lethal due to subsurface currents that can pull nearby objects into the vortex.



The picture of the NOAA ship **Pisces** was taken on May 25, 2019, by Dolores Mitchell from a boat in Tampa Bay, Florida, south of Spoil Island 2 (background), north of Pine Key, to the east of MacDill Air Force Base.

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# Mean Circulation Highlights and Climate Anomalies



September–December 2018

Anthony Artusa  
Meteorologist, Operations Branch,  
Climate Prediction Center NCEP/NWS/NOAA

*All anomalies reflect departures from the 1981–2010 base period.*

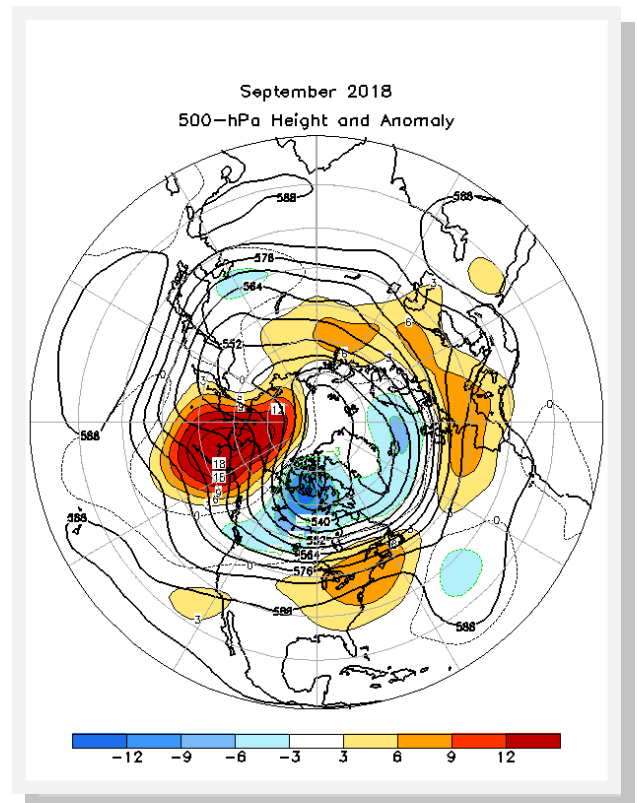
## September–October 2018

The 500-hPa mean circulation during September 2018 featured positive height anomalies from the high latitudes of the North Pacific poleward across Alaska and portions of the Arctic Ocean, eastern North America, Europe, and northwestern Russia. Negative height anomalies prevailed over northern and western Canada and the high latitudes of the North Atlantic (see **Figure 1**). The corresponding Sea-Level Pressure (SLP) and Anomaly map (see **Figure 2**) showed some resemblance to the height-anomaly pattern in terms of matching sign and was generally weak south of about the 40<sup>th</sup> parallel.

In October, a more-amplified midtropospheric flow pattern was observed across the Northern Hemisphere (see **Figure 3**). Below-average heights were noted for the north-central Pacific and from eastern Canada to Greenland. Above-average heights are depicted over northeastern Siberia, much of the Arctic Ocean and Alaska, and much of Europe. The corresponding SLP and Anomaly Map depicts a poor resemblance to the middle tropospheric configuration in terms of matching anomaly sign (see **Figure 4**).

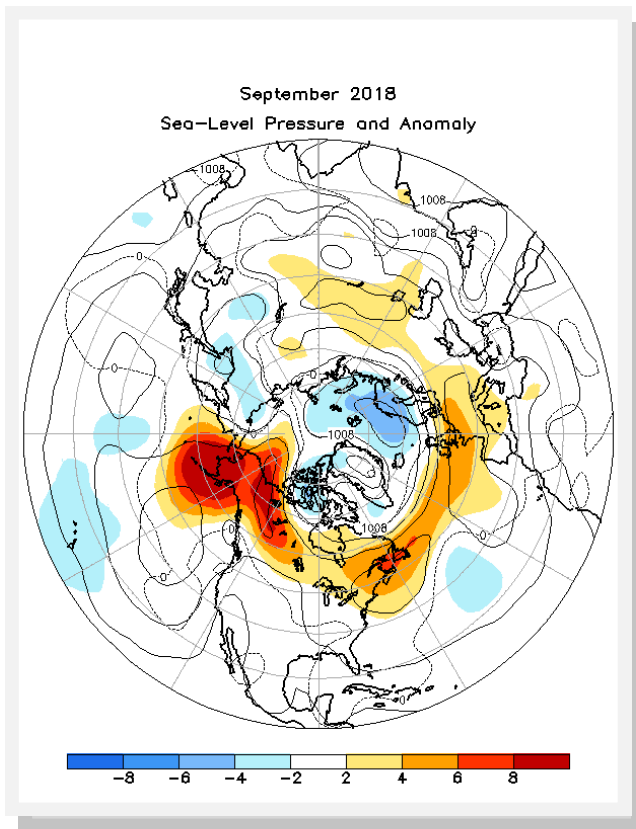
## The Tropics

Sea surface temperatures (SSTs) remained above average across the equatorial Pacific during this 2-month period. The latest monthly Niño index for the Niño 3.4 region was +0.3C (September) and +0.9C (October). The depth of the oceanic thermocline (measured by the depth of the 20C isotherm) was above average across the equatorial Pacific in September and October. Subsurface temperatures ranged from 1–3C above average in September and 1–4C above average in October. In the atmosphere, low-level easterly trade winds were below average across most of the equatorial Pacific (September) and the eastern Pacific (October). Upper-level wind

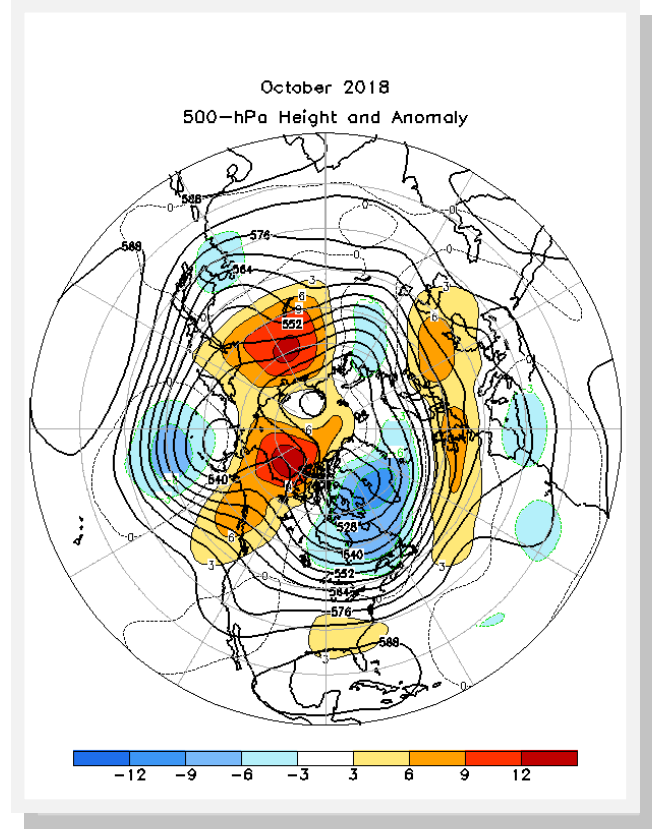


**Figure 1. Northern Hemisphere mean and anomalous 500-hPa geopotential height (CDAS/Reanalysis). Mean heights are denoted by solid contours drawn at an interval of 6 dam. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.**

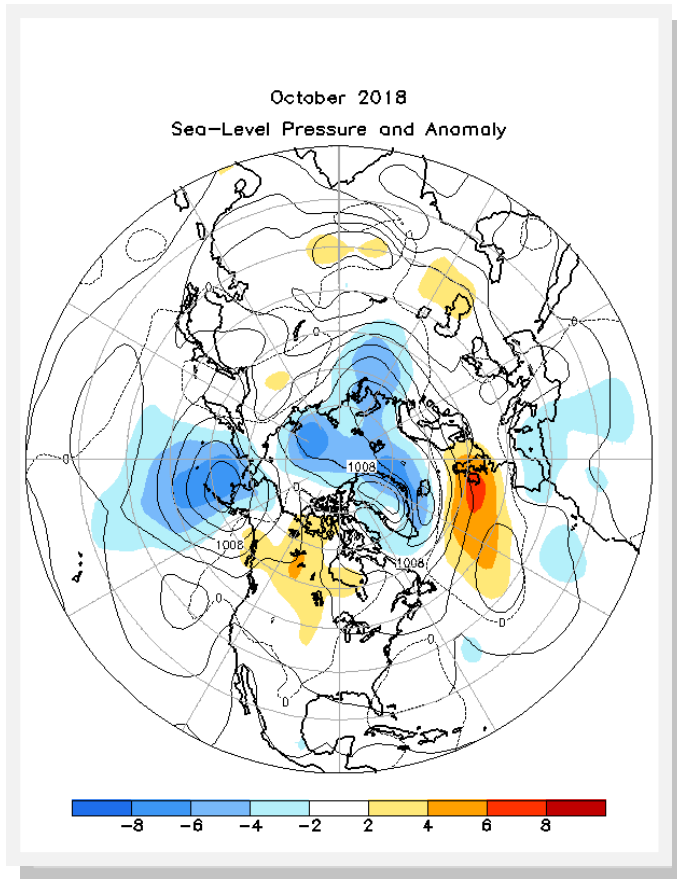




**Figure 2. Northern Hemisphere mean and anomalous sea-level pressure (CDAS/Reanalysis). Mean values are denoted by solid contours drawn at an interval of 4 hPa. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.**



**Figure 3. Northern Hemisphere mean and anomalous 500-hPa geopotential height (CDAS/Reanalysis). Mean heights are denoted by solid contours drawn at an interval of 6 dam. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.**



**Figure 4. Northern Hemisphere mean and anomalous sea-level pressure (CDAS/ Reanalysis). Mean values are denoted by solid contours drawn at an interval of 4 hPa. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.**

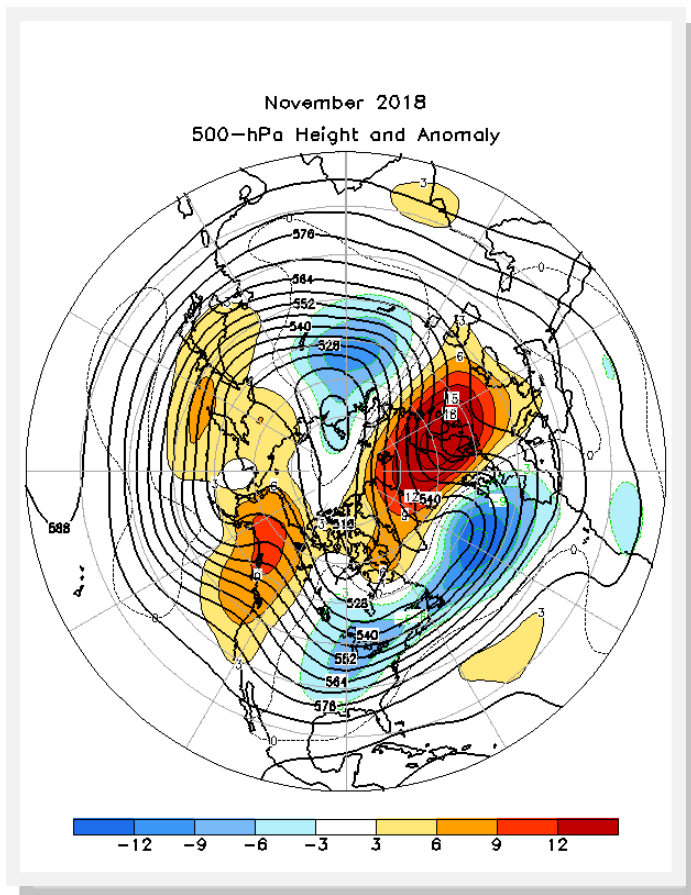
anomalies were easterly over the central and eastern Pacific (September), and the anomalies were westerly and near average in October. Tropical convection was suppressed over Indonesia and the central equatorial Pacific. Collectively, these oceanic and atmospheric anomalies reflect ENSO-neutral conditions with a tendency towards a developing El Niño.

### **November–December 2018**

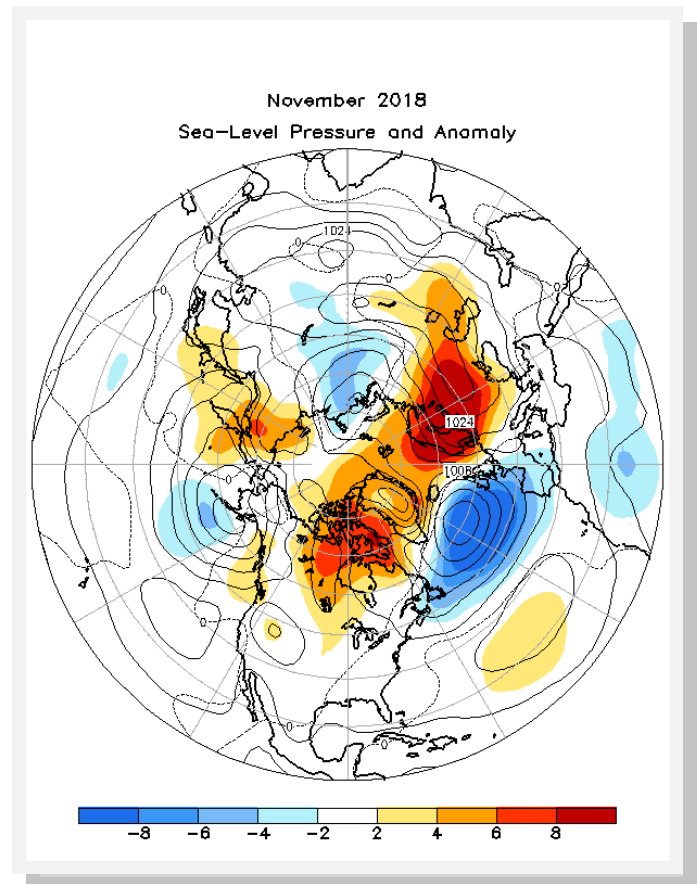
The November circulation pattern featured above average 500-hPa heights across Alaska, western Canada, Greenland, and Scandinavia (see **Figure 5**). Below-average heights were noted from central North America to western Europe and central Russia. Above-average SLP was observed from northern Canada across Greenland, much of Europe, and western Russia (see **Figure 6**). The mean 500-hPa circulation during December 2018 was characterized by above average heights across the central North Pacific, central Canada, the western Mediterranean region, and along an axis extending from Greenland to northwestern Russia (see **Figure 7**). Below-average 500-hPa heights were noted for much of Alaska, the Arctic Ocean, the central North Atlantic, and central Asia. The SLP and Anomaly pattern roughly mirrored that of the midtropospheric pattern in terms of anomaly sign (see **Figure 8**).

### **The Tropics**

SSTs remained above average across the equatorial Pacific in November and December. The latest monthly Nino index values for the Nino 3.4 region were +1.0C (both months). The depth of the oceanic thermocline remained above average in the central and eastern Pacific (November) and the eastern Pacific (December). Corresponding subsurface temperatures ranged from 1C to as much as 5C above average during the 2-month period. Low-level easterly anomalies were slightly weaker than average over portions of the central and eastern equatorial Pacific. Upper-level westerly-wind anomalies were near average across much of the equatorial Pacific. Deep convective cloudiness and tropical rainfall were suppressed over Indonesia and enhanced over the western equatorial Pacific (November), while near average over Indonesia and enhanced just west of the Date Line (December). Collectively, these oceanic and atmospheric anomalies reflect ENSO neutral, but with continued evolution towards El Niño.

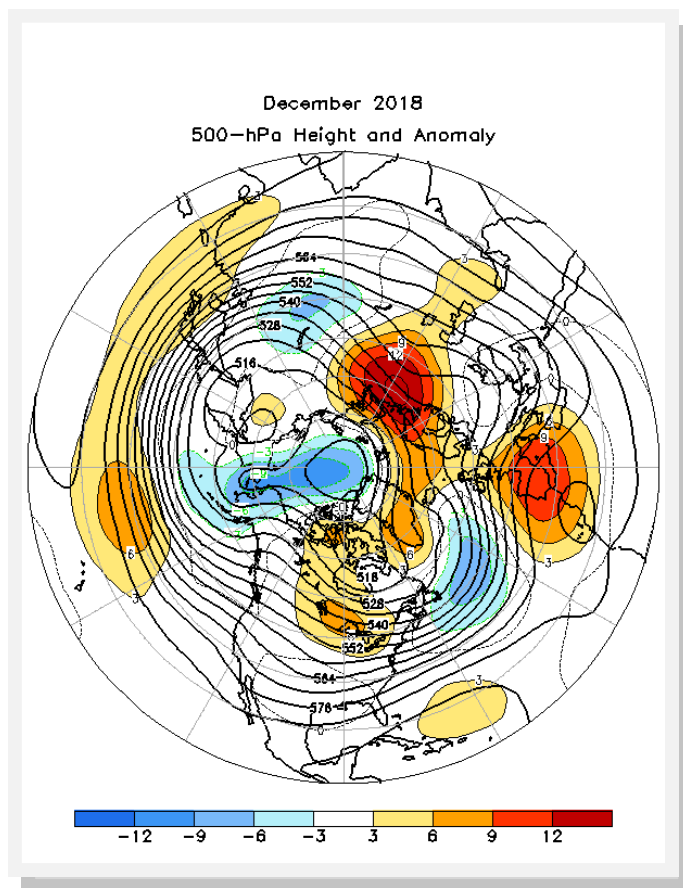


**Figure 5.** Northern Hemisphere mean and anomalous 500-hPa geopotential height (CDAS/Reanalysis). Mean heights are denoted by solid contours drawn at an interval of 6 dam. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.

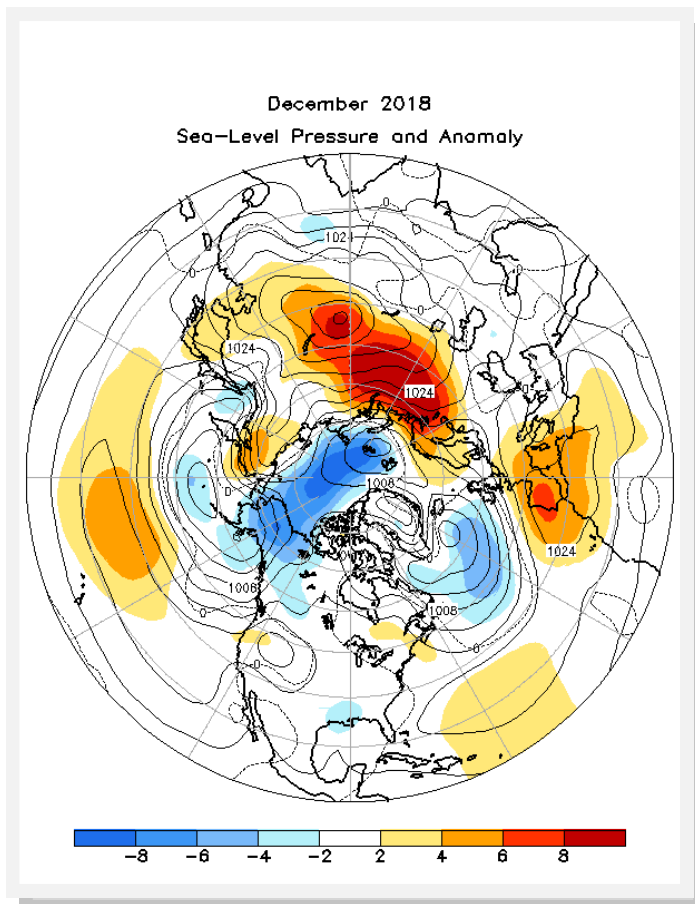


**Figure 6.** Northern Hemisphere mean and anomalous sea-level pressure (CDAS/Reanalysis). Mean values are denoted by solid contours drawn at an interval of 4 hPa. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.





**Figure 7.** Northern Hemisphere mean and anomalous 500-hPa geopotential height (CDAS/Reanalysis). Mean heights are denoted by solid contours drawn at an interval of 6 dam. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.



**Figure 8.** Northern Hemisphere mean and anomalous sea-level pressure (CDAS/Reanalysis). Mean values are denoted by solid contours drawn at an interval of 4 hPa. Anomaly-contour interval is indicated by shading. Anomalies are calculated as departures from the 1981–2010 base-period monthly means.

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## Selected Notable Events

Hurricane season 2018 was certainly newsworthy and, in some cases, for the record books, in the Atlantic, Eastern-Pacific, and Central-Pacific basins. According to the National Weather Service Forecast Office in Tallahassee, Florida, (**Reference 1**) Hurricane Michael made landfall in the Florida Panhandle on October 10<sup>th</sup>, causing catastrophic damage from wind and storm surge, particularly in the Panama City Beach to Mexico Beach to Cape San Blas areas. Preliminary reports show Michael came ashore with borderline Category 4/5 winds on the Saffir-Simpson Wind Scale, with peak sustained winds of about 250 km/hr. Poststorm studies are being conducted to see if even higher wind speeds occurred. Minimum pressure was 919 hPa, which makes Michael the third-most-intense hurricane (ranked by central pressure) to hit the continental U.S. in history, after the Florida Keys Labor Day hurricane in 1935 (892 hPa) and Hurricane Camille in 1969 (905 hPa). Michael edged out Andrew in 1992 (922 hPa), though Andrew's peak winds were near 265 km/hr. In addition, Hurricane Michael also has the distinction of being the strongest landfalling mainland U.S. hurricane so late in the season, as well as the strongest on record to make landfall in the Florida Panhandle. Incidentally, the previous year, Hurricane Maria (**Reference 2**) had a nearly identical intensity when it struck Puerto Rico and caused catastrophic damage there. Preliminary damage estimates for Hurricane Michael are near \$25 billion. Unfortunately, this hurricane decimated much of the timber industry in the Florida Panhandle. The eastern and central tropical Pacific also experienced an extremely active hurricane season in 2018. During September and early October, Hurricanes Olivia and Walaka had significant impacts on portions of the Hawaiian Islands (**References 3 and 4**). Although Hurricane Olivia's sustained winds peaked near 210 km/hr over the open ocean, by the time it reached the Islands, it had weakened to a tropical storm with winds of 72 km/hr. In fact, this tropical storm made a double landfall in Hawaii; one in Maui and one in Lanai, being the first landfall on record for these Islands. Heavy rain and flash flooding also affected the island of

Oahu. An even-stronger hurricane, Walaka, passed well south and west of the main Hawaiian Islands, reaching its peak intensity (Category 5, 257-km/hr winds, central pressure 920 hPa) as it recurved northward near 170W on October 2, 2018 (**Reference 5**). It passed very close to Johnston Atoll as a strong Category-4 hurricane and, as it continued northward, brought a devastating storm surge to French Frigate Shoals (the largest atoll in the remote Northwestern Hawaiian Islands). The small, low-lying East Island, about 885 km northwest of Honolulu, suffered a direct hit and was largely washed away. East Island was a key habitat for Hawaiian monk seals and green sea turtles, both of which are endangered species.

## References

1. <https://www.weather.gov/tae/HurricaneMichael2018>
2. <https://www.weather.gov/sju/maria2017>
3. <http://www.hawaiinewsnow.com/2018/11/30/destructive-hawaii-hurricane-season-comes-quiet-end/>
4. <https://www.wunderground.com/cat6/Hyperactive-2018-Eastern-Pacific-Hurricane-Season-Ends>
5. <https://www.wunderground.com/hurricane/central-pacific/2018/hurricane-walaka>

Much of the information used in this article originates from the [Climate Diagnostics Bulletin archive](#).

of

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# CLIMATE NARRATIVE AND NOTES: October 2018

## (Conditions during October and as noted)



**Jerrold Norton, Research Oceanographer  
Environmental Research Division**

### **NORTH PACIFIC**

At the end of October, much of the Pacific north of 40°N had weakly positive SST anomalies. However, negative SST anomalies ( $> -1.5^{\circ}\text{C}$ ) were found along the coasts of Mexico and the U.S. Some of these areas of weak negative anomaly extended westward as far as 130°W. Strongest positive SST anomalies ( $< 2^{\circ}\text{C}$ ) were observed in the Gulf of Alaska and west of 180°E/W between 30–50°N.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

[https://coastwatch.pfeg.noaa.gov/el\\_nino/coastal\\_conditions.html](https://coastwatch.pfeg.noaa.gov/el_nino/coastal_conditions.html)

Positive **SEA LEVEL ANOMALY** (SLA), to 10 centimeters (cm) was seen along the coast of Central America (5–20°N) and across the equatorial Pacific.

The seemingly coupled Transpacific trough of negative SLA ( $> -20$  cm), zonal at 10°N, persisted through October.

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ocean/weeklyenso\\_clim\\_81-10/wksl\\_anm.gif](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif)

During October, **Chlorophyll-a** (Chl-a) at 2 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ )

persisted in 200–400 km-wide coastal areas off Central California. Chl-a concentrations of 0.3–1.0  $\text{mg}/\text{m}^3$  were found offshore. Areas with Chl-a exceeding 2  $\text{mg}/\text{m}^3$  were seen in localized in-shore areas.

<https://coastwatch.pfeg.noaa.gov/coastwatch/CWBrowserWW180.jsp#>

### **EQUATORIAL AND SOUTH PACIFIC**

El Niño-Southern Oscillation (ENSO)-neutral conditions remained through October. Neutral to positive SST anomalies persisted across Equatorial and Tropical Pacific. Equatorial upper ocean (0–300m) heat-content anomaly from 180–100°W increased during October. Positive sea-level anomalies (SLA) to 10 cm occurred across the equatorial Pacific from 140°E to 100°W. Negative SST anomalies ( $> -2^{\circ}\text{C}$ ) occurred south of Australia and around the Antarctic continent.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

The **NOAA OCEANIC EL NIÑO INDEX (ONI)** (3-month running mean of ERSST.v4 SST anomalies in the Niño 3.4 region (5N–5S, 120–170W)) was positive (0.4), but neutral for the fifth consecutive 3-month mean (ASO).

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.pdf](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf)

### **MULTIVARIATE ENSO INDEX (MEI)**

The September–October MEI remained steady at 0.47, below the lowest El Niño rating. Of seven “analogue” years: 1951, 1952, 1968, 1969, 1979, 1990, and 2003, all remained in either high-neutral or weak El Niño conditions through the following few seasons (updated 9 November). <https://www.esrl.noaa.gov/psd/enso/mei/>

The **NOAA/NCEI PACIFIC DECADEAL OSCILLATION INDEX (PDO)** calculated from ERSST.v4 data, had nine consecutive negative or neutral PDO values, including  $-0.71$  (negative) for October. <https://www.ncdc.noaa.gov/teleconnections/pdo/>

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**PACIFIC/NORTH AMERICAN Teleconnection Index (PNA)**, computed from atmospheric pressure over the Pacific Ocean and North American Continent, dropped from a high monthly value of 1.44 in September to 0.21 in October. <http://www.cpc.noaa.gov/data/teledoc/pna.shtml>

During October 2018 the Bakun **ERD UPWELLING INDEX (UI)**, computed from monthly average sea-level atmospheric pressure fields, were weakly positive from 24°N to 42°N. Poleward of 51°N, the monthly means UI values were negative. <http://www.pfeg.noaa.gov/products/PFELData/upwell/monthly/table.1810>

### PRECIPITATION and RUNOFF

Summer and fall rainfall in the Pacific States and southern Canada was 20–60% of average during 2018. The Fraser River was flowing at about 55,000 cubic feet per second (cfs) in October, 40–65% less than median-range seasonal discharge. At the Dalles, the Columbia river fluctuating near seasonal median. The lower Sacramento River was below median flow in October.

[https://wateroffice.ec.gc.ca/search/real\\_time\\_results\\_e.html?](https://wateroffice.ec.gc.ca/search/real_time_results_e.html?)

<https://waterdata.usgs.gov/ca/nwis/current/?type=flow>

<https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php>

### NOTES:

In September and October, rockfish and other species were feeding on *Pleuroncodes planipes*) off Central California. Additional sightings and occasional stranding of *P. planipes* occurred around southern Monterey Bay through October 2018.

The commercial **Market Squid** (*Doryteuthis opalescens*) fishery landed 772 mt into Southern California ports in September and October combined. The **Northern Anchovy** (*Engraulis mordax*) fishery landed 3,733 mt during September and October combined for a season total of 16,713 mt landed into California ports.

### MARINE ALGAL TOXINS

During October 2018, California shellfish sport harvest advisories were

related to domoic-acid concentrations in recreational Dungeness crabs and bivalve shellfish from areas north of Mendocino County (40°N) and in lobster fisheries around Anacapa Island and the eastern Santa Barbara Channel Islands.

<https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/EMB/Shellfish/Marine-Biotxin-Monitoring-Program.aspx>.



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# CLIMATE NARRATIVE AND NOTES: November 2018

## (Conditions during November and as noted)



**Jerrold Norton, Research Oceanographer  
Environmental Research Division**

### WEST COAST OF UNITED STATES AND NORTH PACIFIC

During November 2018, the homogenous distribution of weak positive sea surface temperature (SST) anomaly across the North Pacific appeared to be breaking down. Seasonal SST means off southern California, northern California, and southern Oregon were above average ( $< 2^{\circ}\text{C}$ ). Below-average SST appeared off Central California between Monterey Bay and Point Arena ( $> -1.5^{\circ}\text{C}$ ). Negative SST anomalies ( $> -1.5^{\circ}\text{C}$ ) were found along the coasts of Mexico and the U.S. Positive SST anomalies ( $< 2^{\circ}\text{C}$ ) occurred in the Gulf of Alaska and between  $30^{\circ}\text{N}$ – $50^{\circ}\text{N}$  west of  $180^{\circ}\text{E/W}$ .

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

[https://coastwatch.pfeg.noaa.gov/el\\_nino/coastal\\_conditions.html](https://coastwatch.pfeg.noaa.gov/el_nino/coastal_conditions.html)

Positive **Sea Level Anomaly** (SLA), to 10 centimeters (cm) was seen across the equatorial Pacific and along the coast of north America. The Transpacific trough of negative SLA ( $> -2$  cm) with zonal axis near  $10^{\circ}\text{N}$  persisted through November, deepening and expanding west of  $180^{\circ}\text{E/W}$ . The Pacific between  $20^{\circ}\text{N}$ – $40^{\circ}\text{N}$  had extensive areas of negative SLA in the east and extensive areas positive SLA west of  $180^{\circ}\text{E/W}$ .

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ocean/weeklyenso\\_clim\\_81-10/wksl\\_anm.gif](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif)

During November, **Chlorophyll-a** (Chl-a) at 2 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) persisted in 200–500 km-wide coastal areas from Point Conception poleward past Vancouver Island, with areas exceeding  $3 \text{ mg}/\text{m}^3$  in localized inshore areas. Areas with Chl-a less than  $0.1 \text{ mg}/\text{m}^3$

occurred 700–1000 kilometers southwest of California. <https://coastwatch.pfeg.noaa.gov/coastwatch/CWBrowserWW180.jsp#>

At the **Cape San Martine Data Buoy** (46028), off Central California ( $35.7^{\circ}\text{N}$ ), the monthly mean temperature for November is  $14.1$ – $14.4^{\circ}\text{C}$ . Average SST for 1–10, 10–20, and 20–30 November was  $15.2^{\circ}$ ,  $16.3^{\circ}$ , and  $16.1^{\circ}$  respectively and  $15.6$  overall. At the **St. Georges Data Buoy** (46027), 8 nautical miles NW of Crescent City, California ( $41.9^{\circ}\text{N}$ ), mean SST was  $11.7^{\circ}$ ,  $10.4^{\circ}$ , and  $11.5^{\circ}$  for 1–10, 10–20, and 20–30 November, respectively, with an overall monthly mean of  $11.1^{\circ}\text{C}$ ; historical monthly mean is  $11.3$ – $11.6$  at 46027. At the **Tillamook Data Buoy** (46089), 85 nautical miles WNW of Tillamook, Oregon ( $46^{\circ}\text{N}$ ), historical November mean SST is  $12.8$ – $13.0$ . Mean SST was  $14.5^{\circ}$ ,  $13.8^{\circ}$ , and  $13.3^{\circ}$  for 1–10, 10–20, and 20–30, with an overall monthly mean of  $13.8^{\circ}\text{C}$  for November 2018. [https://www.ndbc.noaa.gov/station\\_page.php?station=46028](https://www.ndbc.noaa.gov/station_page.php?station=46028)

### WATER TEMPERATURES AT SHORE STATIONS

At **La Jolla** ( $32.9^{\circ}\text{N}$ ), water temperature varied between  $19^{\circ}\text{C}$  on the third and  $17.5^{\circ}\text{C}$  on 30 November. Southern **Monterey Bay** ( $36.6^{\circ}\text{N}$ ) STWT was between  $14.5^{\circ}\text{C}$  and  $15.5^{\circ}\text{C}$  on the first, dropping to  $12.7^{\circ}\text{C}$  on the eighth, increasing again to  $17^{\circ}\text{C}$  on 22 November, then ending the month at  $16^{\circ}\text{C}$ . A similar November temperature pattern was recorded at **Arena Cove** ( $38.9^{\circ}\text{N}$ ), where STWT was between  $11^{\circ}$  and  $11.8^{\circ}\text{C}$  on the first, dropping to  $9.6^{\circ}\text{C}$  on the ninth, then increasing to a max of  $13.5^{\circ}\text{C}$  on the 23 November, and then decreasing to  $12$ – $13^{\circ}\text{C}$  on 30 November.

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**Neah Bay**, (48.4°N) STWT was 12.0–12.2°C on the first, dropping to a minimum of 8.7°C on 13 November, then increasing to 10.1–0.4°C on 30 November.

<https://tidesandcurrents.noaa.gov/stations.html?type=Physical+Oceanography>

## EQUATORIAL AND SOUTH PACIFIC

Neutral-to-positive SST anomalies persisted across Equatorial and tropical Pacific. El Niño–Southern Oscillation (ENSO) conditions remained low intensity. Upper-ocean (0–300m) heat-content anomaly from 180–100°W held positive, but decreased in November. Negative SST anomalies (> –2°C) occurred south of 40°S off the coast of South America, southwest of Australia, around the Antarctic continent, and in the eastern Pacific at 15°S. Positive sea-level anomalies (SLAs) to 10 cm occurred across the equatorial Pacific and between 0–30°S west of 160°W.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ocean/weeklyenso\\_clim\\_81-10/wksl\\_anm.gif](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif)

The **NOAA OCEANIC EL NIÑO INDEX (ONI)** (3-month running mean of SST anomalies in the Niño 3.4 region) was 0.7, an El Niño positive value, for OND. Five consecutive positive values indicate a fully developed El Niño.

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.pdf](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf)

## MULTIVARIATE ENSO INDEX (MEI)

The October–November MEI increased to 0.70, surpassing the lowest El Niño ranking. The odds for continued El Niño conditions at least for some of the following 6 months has risen to about 67%. (updated 7 Dec) <https://www.esrl.noaa.gov/psd/enso/mei/>

The **NOAA/NCEI PACIFIC DECADEAL OSCILLATION INDEX (PDO)** series calculated from ERSST.v4 data has recently had 10 consecutive

negative or neutral PDO values, including –0.73 for November. <https://www.ncdc.noaa.gov/teleconnections/pdo/>

<http://research.jisao.washington.edu/pdo/PDO.latest.txt>

The **PACIFIC/NORTH AMERICAN TELECONNECTION INDEX (PNA)**, computed from atmospheric pressure over the Pacific Ocean and North American Continent, was near neutral, 0.22, in November. <http://www.cpc.noaa.gov/data/teledoc/pna.shtml>

During November 2018, the Bakun **ERD UPWELLING INDEX (UI)**, computed from monthly average sea-level atmospheric pressure fields, was low magnitude throughout the computation range (21–60°N). Weak positive UI anomalies north of 39°N indicate residual influences of atmospheric high pressure as winter develops and possibly an unseasonal upwelling tendency.

<https://upwell.pfeg.noaa.gov/products/PFELData/upwell/monthly/table.1811>

Positive and negative UI episodes were observed during November. At the 36°N computation point, positive UI was seen during 3–6 November and negative conditions during 21–30 November. [http://upwell.pfeg.noaa.gov/products/current\\_gifs/upwell\\_122W\\_36N.txt](http://upwell.pfeg.noaa.gov/products/current_gifs/upwell_122W_36N.txt)

Six hourly values for 42°N showed positive UI for 6–11 and 15–17 and negative values during 21–23 and 26–29 November.

[https://upwell.pfeg.noaa.gov/products/current\\_gifs/upwell\\_125W\\_42N.txt](https://upwell.pfeg.noaa.gov/products/current_gifs/upwell_125W_42N.txt)

## PRECIPITATION AND RUNOFF (Late November)

Rains came to the western U.S. near the end of November, after low rainfall in summer and fall. November and December storms in Southern California brought up to 200% of average to-date rainfall. Many rivers were temporally swollen during the last few days of November. The **Fraser River**, measured at Hope (130 km

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upstream from Vancouver, B.C.), was flowing at about 49,000 cubic feet per second (cfs), 80% of average discharge for November. <https://wateroffice.ec.gc.ca> The **Puyallup River at Puyallup**, Washington was flowing at 1,600 [1,900, approx. historical median: cfs in brackets]. The **Skagit River** was flowing at 27,000 [18,000 cfs] near Mount Vernon. The **Pend Oreille River** at Newport, Washington, had a discharge of 15,500 [16,000 cfs]. The **Columbia River** at International Boundary was at 70,000 cfs and at The Dalles 112,000 cfs, both near seasonal median. The **Rogue River** in Oregon was flowing at 1,800 [2,300 cfs] at Grants Pass and 2,100 [4,500 cfs] at Agnees. In California, the **Trinity River** near Hoopa was 2,100 [2,000 cfs] and the **Klamath River** near Klamath was 8,000 [11,000 cfs]. At the **Battle Creek** Coleman National Fish Hatchery, the flow was 900 [300 cfs]. **Butte Creek** at Chico had discharge of 900 [200 cfs]. The **Sacramento River** was transporting 13,000 [11,000 cfs] at Verona and 13,000 [15,000 cfs] at Freeport. **San Joaquin River** flow was 1,750 [1,900 cfs] at Vernalis.

<https://waterdata.usgs.gov/ca/nwis/current/?type=flow>

<https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php>

[https://wateroffice.ec.gc.ca/search/real\\_time\\_results\\_e.html](https://wateroffice.ec.gc.ca/search/real_time_results_e.html)

## NOTES

In September rockfish and other species were feeding on **pelagic red crabs** (*Pleuroncodes planipes*) off central California. Additional sightings and occasional stranding occurred around southern Monterey Bay until November, when a moderate stranding deposited the crabs 5–10 deep on the Pacific Grove shoreline in southern Monterey Bay. Photographs in local newspapers. <https://www.montereyherald.com/2018/11/15/a-carpet-of-crabs/>

<https://www.sfgate.com/local/article/red-crab-beach-lovers-point-pacific-grove-el-nino-13396006.php>

The **commercial market squid** (*Doryteuthis opalescens*) fishery started relatively well in April, but was meager in both northern and southern California ports in summer and fall. However, the squid fishery began again in Monterey Bay in late November.

<https://www.wildlife.ca.gov/Conservation/Marine/Pelagic/Landings>

The commercial **Dungeness crab** (*Metacarcinus magister*) harvest season opened 15 November in the area south of the southern boundary of the Bodega Head State Marine Reserve, Sonoma County (38.3°N). These restrictions off northern California were due to elevated concentrations of domoic acid in the viscera of some crabs north of 38.3°N. The crab harvest season was additionally delayed until 31 December due to crab maturity. <https://www.wildlife.ca.gov/Fishing/Ocean/Dungeness-Crab>

<https://www.wildlife.ca.gov/fishing/ocean/health-advisories>

Because of the **extensive forest fires in central and southern California** during November 2018, runoff from the fire areas and fire smoke have added extensive solid materials to the rivers, lakes, and ocean of California. The fire products of natural vegetation might be restorative under some conditions. However, larger burn-product loads may lower water quality and interfere with aquatic processes. Fire-remains of anthropogenic structures have not been analyzed or their impact assessed.



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# CLIMATE NARRATIVE AND NOTES: December 2018

## (Conditions during December and as noted)



**Jerrold Norton, Research Oceanographer  
Environmental Research Division**

### WEST COAST OF UNITED STATES AND NORTH PACIFIC

At the end of December 2018, positive SST anomaly ( $\leq 2^{\circ}\text{C}$ ) was found within 150 kilometers (km) the West Coast between Monterey and Cape Mendocino; otherwise, coastal anomalies were less strongly positive. Negative anomalies ( $> -1.5$ ) were seen in the eastern NP at  $15^{\circ}$ – $20^{\circ}\text{N}$ , off Central America and at  $33^{\circ}$ – $48^{\circ}\text{N}$ . In the western NP negative anomalies occurred north of  $40^{\circ}\text{N}$ . Positive SST anomalies were most developed ( $< 2.0^{\circ}\text{C}$ ) in the western NP between  $20^{\circ}$ – $50^{\circ}$  and across the eastern equatorial ocean.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

[https://coastwatch.pfeg.noaa.gov/el\\_nino/coastal\\_conditions.html](https://coastwatch.pfeg.noaa.gov/el_nino/coastal_conditions.html) [https://sharaku.eorc.jaxa.jp/cgi-bin/adeos2/seaice/seaice\\_v2.cgi?lang=e&mode=large](https://sharaku.eorc.jaxa.jp/cgi-bin/adeos2/seaice/seaice_v2.cgi?lang=e&mode=large)

### WATER TEMPERATURES AT WEST COAST SHORE STATIONS

At **La Jolla** ( $32.9^{\circ}\text{N}$ ), subtidal water temperature (STWT) varied between  $17.9^{\circ}\text{C}$  on the first and  $15.7$  at month's end. La Jolla STWT was stable near  $17^{\circ}\text{C}$  during 10–20 December. At Southern **Monterey Bay** ( $36.6^{\circ}\text{N}$ ), STWT was  $16^{\circ}\text{C}$  on 1 December,  $14.2^{\circ}\text{C}$  on 5 December,  $15.7^{\circ}\text{C}$  on 18 December, and  $13.7$  on 31 December. At **Neah Bay** ( $48.4^{\circ}\text{N}$ ), STWT was  $10.5^{\circ}\text{C}$  on the 1 December, dropping to the month's minimum of  $7.7^{\circ}\text{C}$  on 7 December, then increasing to  $9.7^{\circ}\text{C}$  on 20 December, ending the month at  $8.2^{\circ}$ – $8.7^{\circ}\text{C}$ .

<https://tidesandcurrents.noaa.gov/stations.html?type=Physical+Oceanography>

### EQUATORIAL AND SOUTH PACIFIC (late December)

El Niño–Southern Oscillation (ENSO) conditions remained low intensity, with greatest SST anomalies east of  $160^{\circ}\text{W}$ . Since mid-December 2018, positive sea-temperature anomalies have weakened across much of the equatorial Pacific. Upper 300-m heat-content anomaly of the eastern equatorial Pacific decreased in December. In the central Pacific south of  $30^{\circ}\text{S}$ , positive SST anomalies ( $\leq 2.0^{\circ}\text{C}$ ) occurred in the east and west.

Areas of negative SST anomaly ( $\geq -2.0^{\circ}\text{C}$ ) occurred north of  $20^{\circ}\text{S}$ , along the coast of southern Chile, north of Australia, and south of  $40^{\circ}\text{S}$ . <http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/> [http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ocean/weeklyenso\\_clim\\_81](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81)

The **NOAA OCEANIC EL NIÑO INDEX (ONI)** (3-month running mean of SST anomalies in the Niño 3.4 region) was 0.7 for SON and 0.9 for OND, both El Niño positive values. [http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution\\_status\\_fcsts\\_web.pdf](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution_status_fcsts_web.pdf)

The **NOAA/NCEI PACIFIC DECADEAL OSCILLATION INDEX (PDO)** series calculated from ERSST.v4 data, has recently had 10 consecutive negative or neutral PDO values, including  $-0.78$ ,  $-0.14$ , and  $-0.29$  for November through January 2019. <https://www.ncdc.noaa.gov/teleconnections/pdo/>

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The **PACIFIC/NORTH AMERICAN TELE-CONNECTION INDEX (PNA)**, computed from atmospheric pressure over the Pacific Ocean and North America, had consistently neutral to positive values during August–December 2018. Daily values were consistently positive through December. Positive PNA values are associated with warm-phase ENSOs. [https://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/pna\\_index\\_ensm.shtml](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/pna_index_ensm.shtml)

During December 2018, the Bakun **ERD UPWELLING INDEX (UI)**, computed from monthly average sea-level atmospheric pressure fields, were weakly positive from 36°N southward and strongly negative from 45°N to 57°N. UI anomalies were generally small. <https://upwell.pfeg.noaa.gov/products/PFELData/upwell/monthly/table.1812>

#### **PRECIPITATION AND RUNOFF** (Late December)

December rains were 65%–110% of monthly normal (8–24 inches) throughout western Washington and 70%–90% (6–13 in) of monthly normal over much of western Oregon. In northern, central, and southern California 3–10 in, 1–6 in and 1–4 in indicated 60%, 80%, and 70–110%, respectively, of average rainfall. The **Fraser River**, measured at Hope (130 km upstream from Vancouver, B.C.), was flowing at about at about 33,000 cubic feet per second (cfs). <https://wateroffice.ec.gc.ca> The **Puyallup River at Puyallup**, Washington, was flowing at 5,000 [3,300, approx. historical median as cfs in brackets].

The **Skagit River** was flowing at 17,500 [15,500 cfs] near Mount Vernon. The **Columbia River** at International Boundary was at 75,000 [70,000 cfs] and at The Dalles 120,000 [110,000 cfs]. The **Rogue River** in Oregon had discharge of 1,100 [1,300 cfs] at Grants Pass and 3,000 [4,000 cfs] at Agnees. In California, the **Trinity River** near Hoopa was 2,000 [3,900 cfs], and the **Klamath River** near Klamath was 8,000 [10,700 cfs]. **Sacramento**

**River** transport was 10,200 [10,750 cfs] at Verona and 10,500 [19,000 cfs] at Freeport. **San Joaquin River** transport was 1,100 [2,500 cfs] at Vernalis. <https://waterdata.usgs.gov/ca/nwis/current/?type=flow> <https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php>

#### **NOTES:**

The **Multivariate ENSO Index (MEI)** is not currently being updated. Staff is exploring a new method for calculating the MEI using re-analysis data rather than observational data. <https://www.esrl.noaa.gov/psd/enso/mei/>

The California commercial **Dungeness Crab** (*Metacarcinus magister*) harvest season opened 15 November in the area from Sonoma County (38.3°N) to the Mexican border, but was closed in the north due to elevated domoic acid in northern crabs.

Additional delay was because of crab maturity. <https://www.wildlife.ca.gov/Fishing/Ocean/Dungeness-Crab> <https://www.wildlife.ca.gov/fishing/ocean/health-advisories>

Because of the **extensive forest fires in central and southern California** during November 2018, runoff from the fire areas and fire smoke have added extensive solid materials to the rivers, lakes, and ocean of California. <https://www.hakaimagazine.com/news/what-happens-to-fish-after-a-wildfire/>

Edited versions of this report may be found at [https://coastwatch.pfeg.noaa.gov/el\\_nino/coastal\\_conditions.html](https://coastwatch.pfeg.noaa.gov/el_nino/coastal_conditions.html).

The interpretations in this report, assembling climate information, are those of the author (jgn) and may not be official positions of NOAA or the Federal Government or any agency or persons referenced. [Jerold G. Norton](mailto:Jerold.G.Norton), (831) 648-9031.



## Wind-Wave Relation during Hurricane Lane in 2018 near Hawaii

[Professor S. A. Hsu](#), Louisiana State University

In August 2018, Hurricane Lane (see <http://www.prh.noaa.gov/cphc/tcpages/archive.php?stormid=EP142018>) or (<http://weather.unisys.com/hurricanes/2018/east-pacific/lane>) affected the National Data Buoy Center (NDBC) [Buoy Station 51002](#) near Hawaii as shown in **Figure 1**. The barometric pressure decreased from normal mean sea-level value of 1013 to 957 millibar (mb). At the same time, the wind speed at 4 m increased from 9 to 37 m/s and its gust from 11 to 47 m/s as depicted in **Figure 2**.

During the growing wind seas from 1340UTC on 21 to 1840UTC on 23 in August 2018, **Figure 3** indicates that, according to Hsu et al. (2017) during Hurricane Matthew in 2016 in the Atlantic,

$$U_{10} = 35H_s/T_p, \quad (1)$$

And from Hsu (2018) during Hurricane Maria in 2017 in the Atlantic,

$$H_s = 0.4 U_{10} - 1. \quad (2)$$

Here,  $U_{10}$  is the wind speed at 10 meters in meters per second,  $H_s$  is the significant wave height in meters, and  $T_p$  is the peak or dominant wave period in seconds.

As shown in **Figure 3**, since both slope (= 0.90) and correlation coefficient,  $R =$

0.97, are near unity, Equation (2) is useful during tropical cyclones in the Pacific for a rapid estimation of  $H_s$  from  $U_{10}$  or vice versa. In this regard, further verification of Equation (2) during Typhoon Russ in 1990 near Guam appears in **Figure 4**. For datasets used, see [Joint Typhoon Warning Center, JTWC](#) () and [NDBC](#). For analysis techniques, see Hsu (2018). It is concluded that Equation (1) is applicable when values of both  $H_s$  and  $T_p$  are available to estimate  $U_{10}$  and Equation (2) is valid between  $H_s$  and  $U_{10}$ .

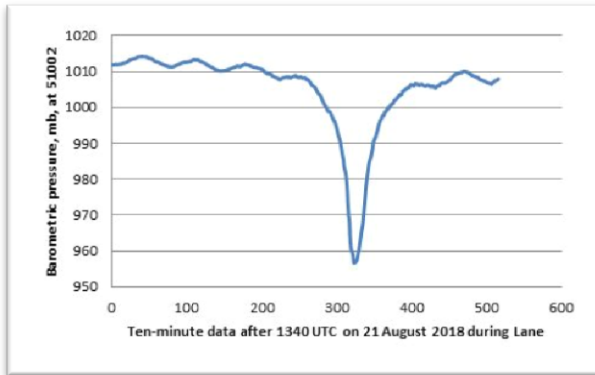
**Acknowledgments:** Appreciation goes to the NDBC for proving the datasets used in this report.

### References:

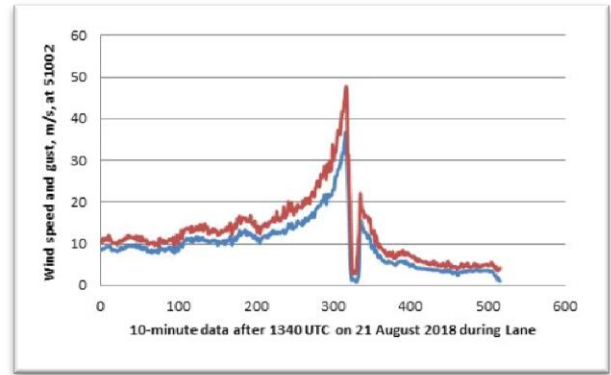
Hsu, S. A., Y. He, and H. Shen, 2017, Buoy measurements of wind-wave relations during Hurricane Matthew in 2016, *Journal of Physical Oceanography*, Vol. 47, No. 10, pp. 2603-2609.

Hsu, S. A., 2018, Buoy Measurements of Wind-Wave Relation during Hurricane Maria in 2017, *Mariners Weather Log*, August 2018.

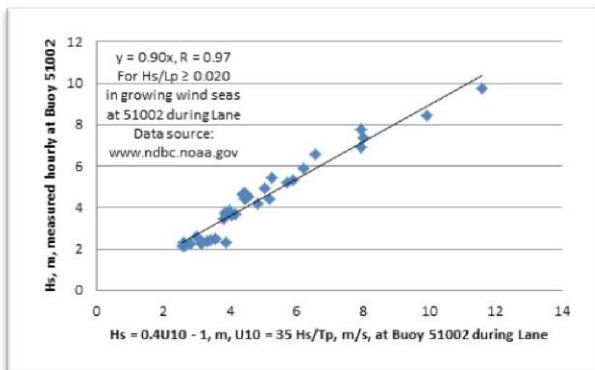




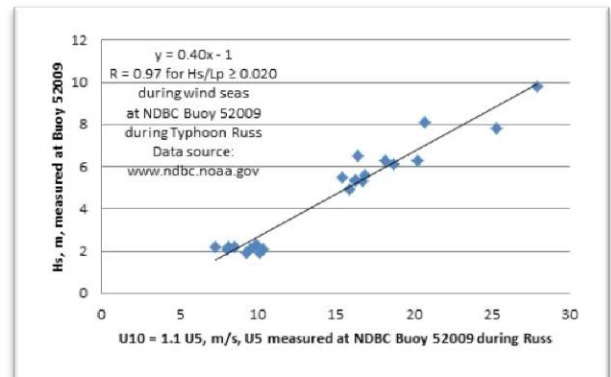
**Figure 1. Variation of Barometric Pressure at NDBC Buoy 51002 near Hawaii during Hurricane Lane in August 2018.**



**Figure 2. Variation of Wind Speed and Its Gust at 4 Meters at Buoy 51002 near Hawaii during Hurricane Lane.**



**Figure 3. Validating Equation (2) at Buoy 51002 near Hawaii during Hurricane Lane in 2018.**



**Figure 4. Validating Equation (2) at NDBC Buoy 52009 near Guam during Typhoon Russ in 1990.**



# A Practical Formula Relating Wind Speed and Significant Wave Height during Tropical Cyclones

[Professor S. A. Hsu](#), Louisiana State University

During a tropical cyclone such as a hurricane or typhoon, interactions between winds and waves are intense. To protect life and property at sea, one needs to know the relation between the wave height and the wind speed. Using limited datasets from Hurricane Matthew in 2016, Hsu et al. (2017) derived following formula that, under the wind-sea conditions,

$$U_{10} = 35H_s/T_p . \quad (1)$$

Here  $U_{10}$  is the wind speed at 10 meters (33 feet) in meters per second or m/s,  $H_s$  is the significant wave height in meters, and  $T_p$  is the dominant wave period in seconds. Note that  $H_s$  is defined as the average height of the highest one-third of the waves observed at a specific point and is approximately equal to the wave height that a trained observer would visually estimate for a given sea state (see, e.g., Bishop, 1984).

On the basis of more datasets provided in **Table 1** for three major hurricanes during wind seas, Equation (1) is further verified as shown in **Figure 1**. When Hurricane Katrina in 2005 was near the NDBC Buoy 42040, an extreme value of  $H_s = 17$  m was measured. In addition, values of  $T_p$  were also provided the NDBC at [www.ndbc.noaa.gov](http://www.ndbc.noaa.gov). Analysis of these datasets as depicted in **Figure 2** indicates that,

$$H_s/T_p = 0.062 H_s + 0.15, \quad (2)$$

Using the datasets provided in **Table 1**, Equation (2) is further validated as shown in **Figure 3**. Since the correlation coefficient for Equation (2),  $R = 0.98$ , by substituting Equations (2) into (1), we have

$$U_{10} = 2.2 H_s + 5.3. \quad (3)$$

Equation (3) is further verified as shown in Figure 4 using the datasets provided in **Table 1**, in **Figure 5** during Typhoon Russ in 1990, and in **Figure 6** during Hurricane Michael in 2018. If one accepts the statistics shown in the figures, Equation (3) is verified.

To further validated Equations (3) against (1), **Figure 7** is presented. The independent datasets provided in Hwang and Walsh (2018, **Table 1**) during six hurricanes are employed. Since the slope is 0.94, which is close to unity and  $R = 0.95$ , we can say that Equation (3) is a practical formula to use. Therefore, it is concluded that, on the basis of aforementioned analysis and discussions, **Figures 8** (in metric units) and **9** (in British units) are presented for a rapid estimation of the relation between significant wave height and the wind speed. These graphs may be useful for both forecasting (such as voyage planning) and hindcasting (such as forensic marine meteorology).

Acknowledgments: Appreciation goes to the NDBC for providing the datasets used in this analysis.

**Acknowledgments:** Appreciation goes to the NDBC for providing the datasets used in this report.

**References:**

Bishop, J. M., 1984, *Applied Oceanography*, Wiley, New York.

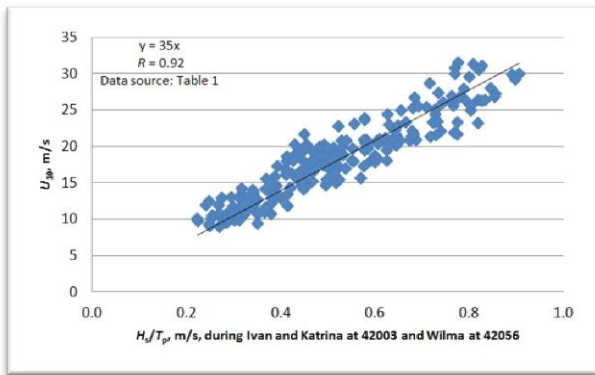
Hwang, P. A., and E. J. Walsh, 2018, "Propagations directions of ocean

surface waves inside tropical cyclones," *Journal of Physical Oceanography*, 48, 1495–1511.

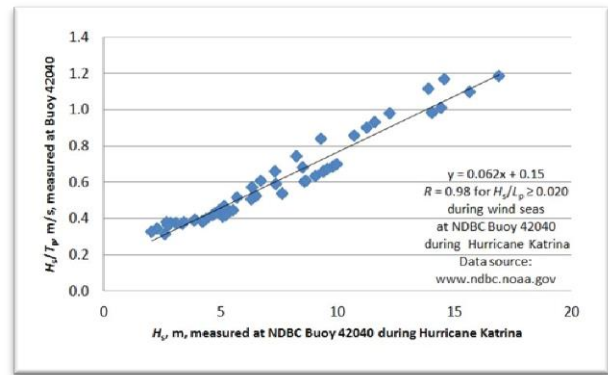
Hsu, S. A., Y. He, and H. Shen, 2017, "Buoy measurements of wind-wave relations during Hurricane Matthew in 2016," *Journal of Physical Oceanography*, 47, 2603–2609.

**Table 1. Data sources used in this study based on buoy measurements by the National Data Buoy Center (NDBC) (see [www.ndbc.noaa.gov](http://www.ndbc.noaa.gov)) during wind seas when  $U_{10} \geq 9 \text{ m s}^{-1}$  and the wave steepness,  $H_s/L_p \geq 0.020$  (see Hsu et al., 2017).**

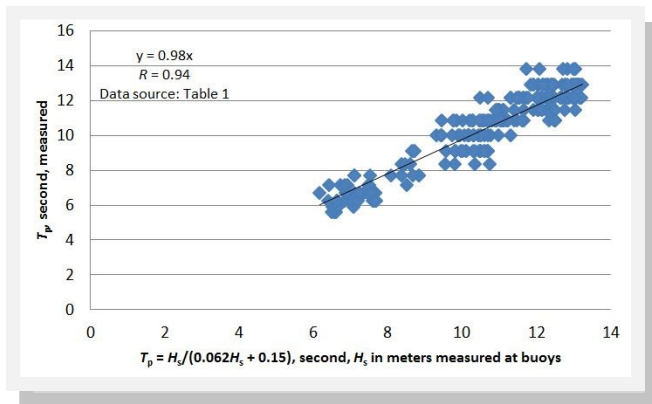
Hurricane	Year	Month	Date	Buoy	$U_{10}$ , m/s
Ivan	2004	9	12-16	42003	9-28
Katrina	2005	8	26-28	42003	9-29
Wilma	2005	10	19-24	42056	12-32



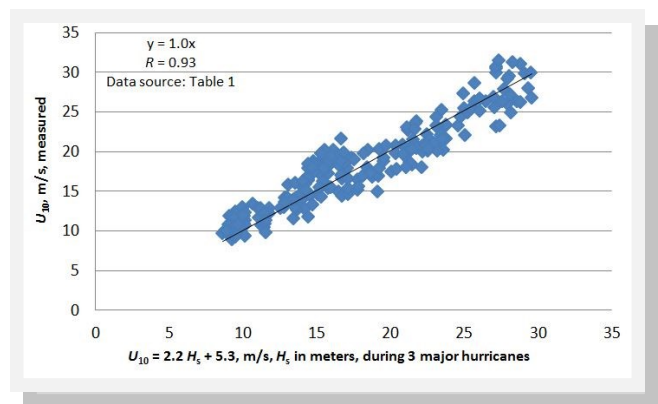
**Figure 1. Relation between  $U_{10}$  and Wave Parameter  $H_s/T_p$  during Three Major Hurricanes.**



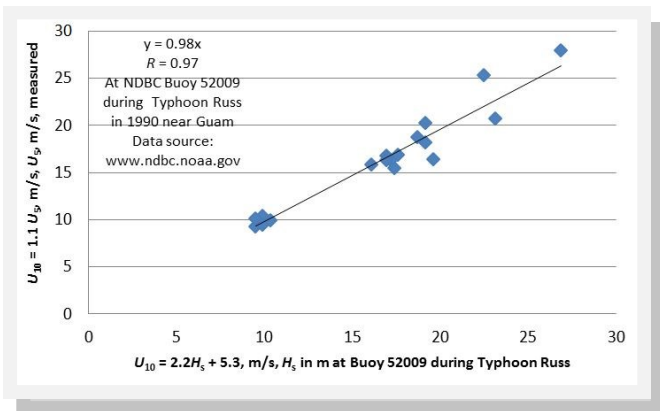
**Figure 2. Relation between  $H_s$  and  $H_s/T_p$  at NDBC Buoy 42040 during Hurricane Katrina.**



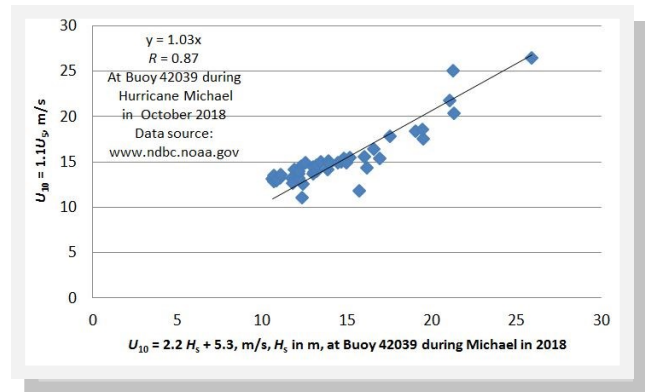
**Figure 3. Verifying Equation (2) Based on the Datasets Provided in Table 1.**



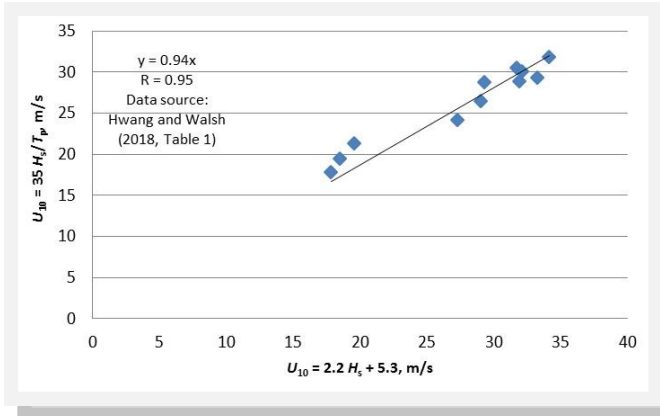
**Figure 4. Verifying Equation (3) Based on the Datasets Provided in Table 1.**



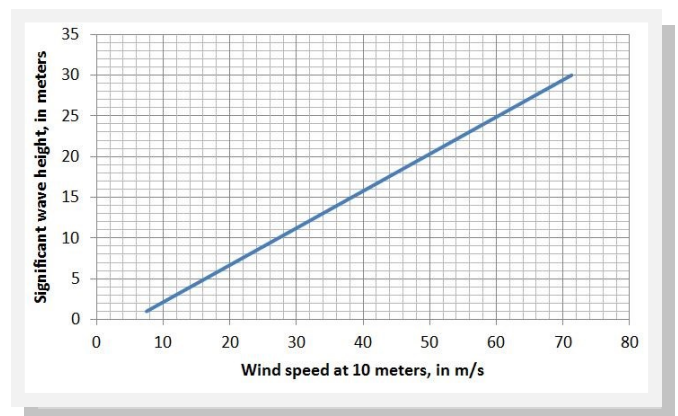
**Figure 5. Verifying Equation (3) at the NDBC Buoy 52009 during Typhoon Russ in 1990.**



**Figure 6. Verifying Equation (3) at the NDBC Buoy 42039 during Hurricane Michael in 2018.**



**Figure 7. A Comparison of Equations (1) and (3).**



**Figure 8. A Graph between Significant Wave Height and the Wind Speed (in metric units).**



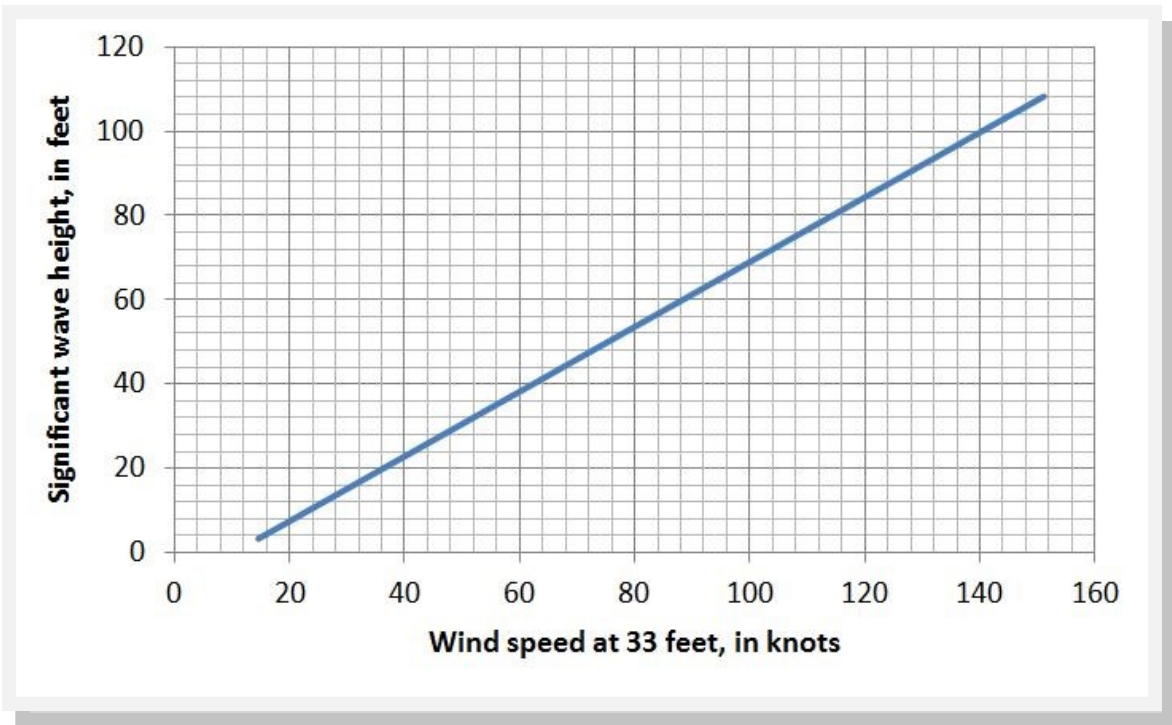


Figure 9. A Graph between Significant Wave Height and the Wind Speed (in British units).

# Tropical Atlantic and Tropical East Pacific Areas

September through December 2018



Scott Stripling and Michael Formosa  
Tropical Analysis and Forecast Branch,  
National Hurricane Center, Miami, Florida  
NOAA National Centers for Environmental Prediction

## North Atlantic Ocean to 31N and Eastward to 35W, including the Caribbean Sea and the Gulf of Mexico

### Atlantic Highlights

The period of Sep–Dec 2018 proved to be active in terms of gale and storm-force conditions across the National Hurricane Center/Tropical Analysis and Forecast Branch (TAFB) Area of Responsibility (AOR). The 22 nontropical cyclone marine warnings issued for the Tropical North Atlantic and the 17 nontropical cyclone marine warnings issued for the Tropical Northeast Pacific basins during this time were about average compared to the past several years.

**Table 1** below shows the nontropical marine warnings that occurred across the Tropical Atlantic, Gulf of Mexico, and Caribbean Sea

during this period. In addition to the typical gales brought about by cold fronts and baroclinic low-pressure systems, three of these warned events were tropical in nature, twice with remnant lows of Kirk and one during the development of Oscar. ([NOAA NHC 2018 Atlantic Tropical Cyclone Seasonal Summary](#)) Improved remote-sensing technologies in recent decades provide forecasters crucial data over the open oceans, such as scatterometer surface winds and altimeter-derived wave-height measurements. In these three tropical cases, gale-force winds were verified with scatterometer data prior to, and afterwards during the decaying phase, of these Atlantic Tropical Cyclones.

**Table 1.** Nontropical Cyclone Warnings Issued for the Atlantic Basin between 01 Sep and 31 Dec 2018. (Storm-force events are shaded.)

Onset	Region	Peak Wind Speed	Duration	Forcing
1800 UTC 22 Sep	Tropical N Atlc	35 kts	15 hr	Cold front
1200 UTC 24 Sep	Tropical N Atlc	35 kts	42 hr	Remnant of TC Kirk
0600 UTC 26 Sep	Tropical N Atlc	35 kts	12 hr	Cold front
0000 UTC 29 Sep	Caribbean	35 kts	06 hr	Remnant of TC Kirk
0000 UTC 16 Oct	Gulf of Mexico	40 kts	72 hr	Cold front
1800 UTC 26 Oct	Central Atlc	35 kts	06 hr	Low pres/pre TC Oscar
0000 UTC 10 Nov	Gulf of Mexico	35 kts	18 hr	Cold front
0000 UTC 13 Nov	Gulf of Mexico	50 kts	54 hr	Cold front
1200 UTC 23 Nov	Tropical N Atlc	35 kts	24 hr	Cold front
1200 UTC 25 Nov	Tropical N Atlc	40 kts	33 hr	Cold front
0600 UTC 26 Nov	Gulf of Mexico	40 kts	24 hr	Cold front
0000 UTC 28 Nov	Tropical N Atlc	35 kts	30 hr	Cold front
1800 UTC 04 Dec	Gulf of Mexico	35 kts	12 hr	Cold front

**Table 1.** Nontropical Cyclone Warnings Issued for the Atlantic Basin between 01 Sep and 31 Dec 2018. (Storm-force events are shaded.)

1200 UTC 09 Dec	Tropical N Atlc	35 kts	24 hr	Cold front
1200 UTC 09 Dec	Gulf of Mexico	35 kts	12 hr	Cold front
1800 UTC 11 Dec	Tropical N Atlc	35 kts	18 hr	Cold front
0000 UTC 14 Dec	Gulf of Mexico	40 kts	24 hr	Cold front
0600 UTC 16 Dec	Eastern Atlc	35 kts	06 hr	Cold front
1800 UTC 20 Dec	Tropical N Atlc	40 kts	42 hr	Cold front
1200 UTC 21 Dec	Gulf of Mexico	40 kts	18 hr	Low pres/Cold front
0000 UTC 23 Dec	Caribbean	40 kts	216 hr	Pres gradient
0600 UTC 28 Dec	Eastern Atlc	35 kts	30 hr	Cold front

The first nontropical cyclone marine warnings of the season occurred 22 Sep and 26 Sep as southwesterly gale-force winds developed briefly ahead of cold fronts moving slowly across the central Atlantic and lifting NE out of the TAFB AOR. The first significant cold front to move into the Gulf of Mexico occurred during the afternoon of 15 Oct, with gales commencing by 0000 UTC 16 Oct across the Texas offshore waters and peaking at 40 kts further southeast and offshore around 0600 UTC. The supporting upper-level pattern associated with this frontal passage into the Gulf of Mexico, namely broad middle- to upper-level troughing from the Great Lakes region SW into Texas and northeastern Mexico, would become the dominant upper-level pattern throughout much of Nov and early Dec. This pattern allowed for the strongest wind event of the cold season to develop across the Gulf of Mexico during mid Nov, when storm-force winds were realized across the SW Gulf.

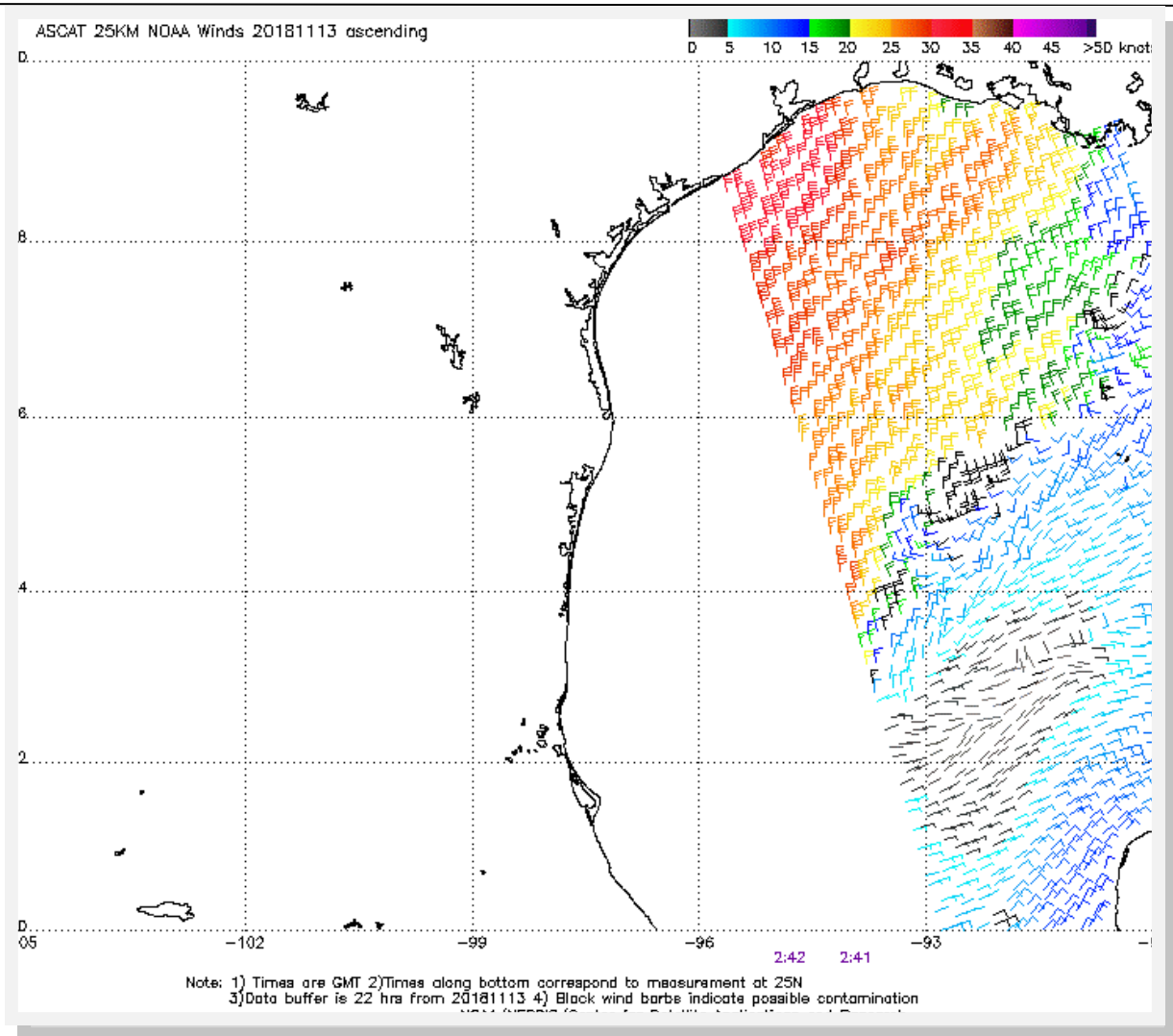
## Gulf of Mexico Gale Storm 13–16 Nov

During the second week of Nov 2018, a lingering upper trough across the Northern Plains States of the U.S. began to dig SSW across the Southern Plains and into western Texas and the northern states of Mexico. This supported a strong cold front that swept southeastward across the Plains states and into north Texas on 11 and 12 November, reaching the southeast coast of Texas by 1800 UTC 12 Nov. A strong and broad high-pressure ridge behind

this frontal boundary dominated the western U.S. during this time, centered on 1044-hPa high pressure over Idaho. The front was consistently forecast by the global models to move across the western Gulf of Mexico, with the associated postfrontal pressure gradient expected to produce a large area of strong gale-force northerly winds behind the front, commencing almost immediately after moving off the coast. In addition, the GFS model had forecast winds to increase to storm force of 50–55 kts along the coast of Veracruz, Mexico, a few days in advance of this event.

As the front moved southeastward and farther into the NW Gulf late on 12 Nov, NNW gales almost immediately started across the central and southeast coastal waters of Texas, where frequent gusts to gale force prevailed. The first verification of this were seen during the late afternoon and evening hours of 12 Nov, where several of the buoys and met stations across the Texas coastal waters reported winds around 30 kts, with frequent gusts of 35–40 kts. As the front shifted further southeastward and well offshore of the Texas and Louisiana coasts, a 0241 UTC ASCAT pass captured a broad area of northerly winds around 30 kts with several wind vectors at and near gale force to the west of 94W, **Figure 1**.

The front continued southeastward overnight, reaching from the Florida Big Bend region to the central Bay of Campeche by 1200 UTC 13 Nov, **Figure 2**. **The Overseas Martinez (WPAJ)** reported gales for several hours that morning as it was moored offshore of Galveston, Texas. Northerly gales had shifted southward overnight behind the progressing front, from the northern Mexican waters to along the coast of Veracruz by 1200 UTC, where winds had increased to around 40 kt. Developing seas



**Figure 1. European Advanced Scatterometer (ASCAT  
A) Wind Vectors (kts) Valid 0241 UTC 13 Nov.**

behind the front built to near 20 ft across the southwestern Gulf within the dynamic fetch of strong northerly gales shifting behind the front. Wave heights of 17–19 ft were captured by altimeter during this time, from roughly 20.5N to 23N between 94W and 96W, as measured by 1136 UTC Jason2 and 1204 UTC Altika passes, **Figures 3 and 4**. NOAA buoy 42055 located at 22.12N 93.94W, or 214 nm NE of Veracruz, Mexico, also began reporting gale-force winds behind the front by 1230 UTC, which lasted at the buoy for 23 hours.

The cold front then began to slow its forward progress across the NE Gulf and NW Florida, while progressing forward across the SW Gulf and Bay of Campeche through 0000 UTC 14 Nov. During this period, the strong high pressure behind the front shifted further SSE, with a 1042-hPa high

becoming centered over western Colorado. This pattern is typical of western Gulf of Mexico postfrontal gales, where very strong continental high pressure noses southward across Texas, eastern Mexico, and the western Gulf waters, bounded by a cold front to the east and the eastern flanks of the Sierra Madre Orientales of Mexico to the west. The slowing forward motion of the cold front and strong pressure gradient initiated a brief period of storm-force winds along the coastal waters near Veracruz from 1800 UTC 13 Nov to 0600 UTC 14 Nov. **Figure 5** shows near-storm-force winds along the coast of Veracruz, Mexico, as captured by a 0322 UTC 14 Nov ASCAT METOP-B pass.

It is assumed that storm-force winds occurred during the warning period prior to this data and potentially farther offshore, where the instrument did not sample. By this time, wave heights behind



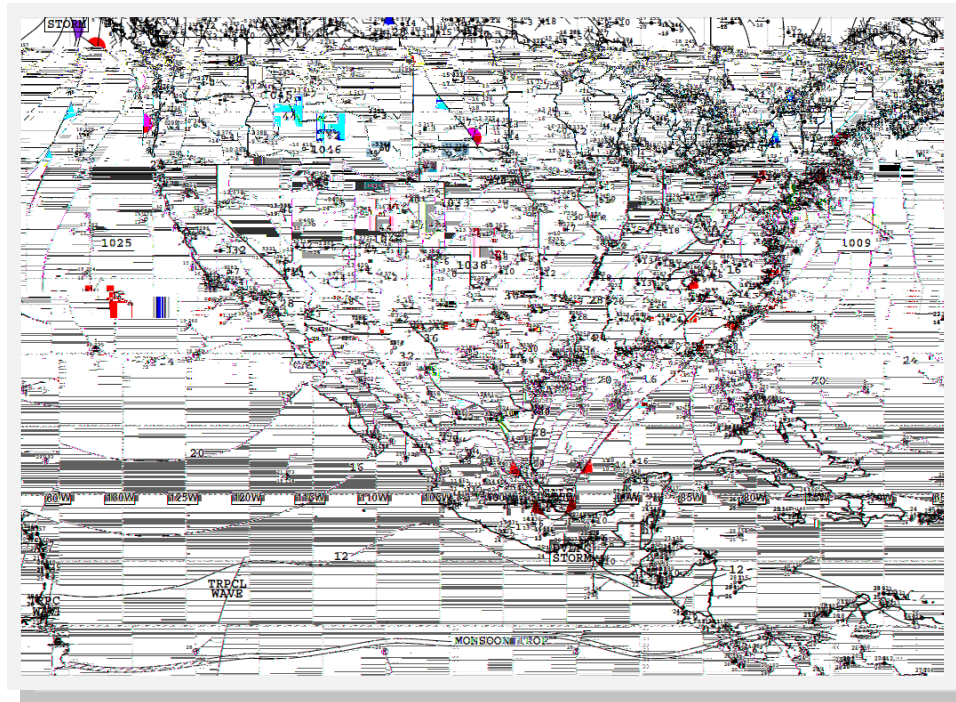


Figure 2. National Weather Service Unified Surface Analysis Valid 1200 UTC 13 Nov, Centered over North America.

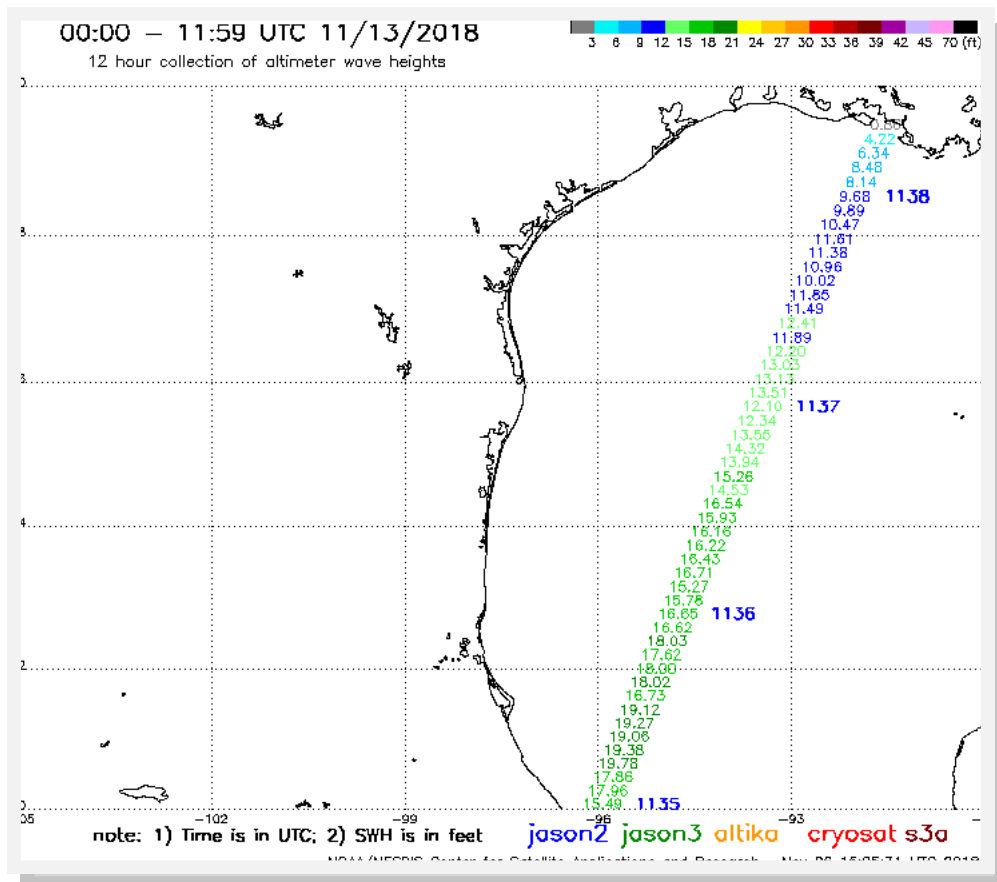
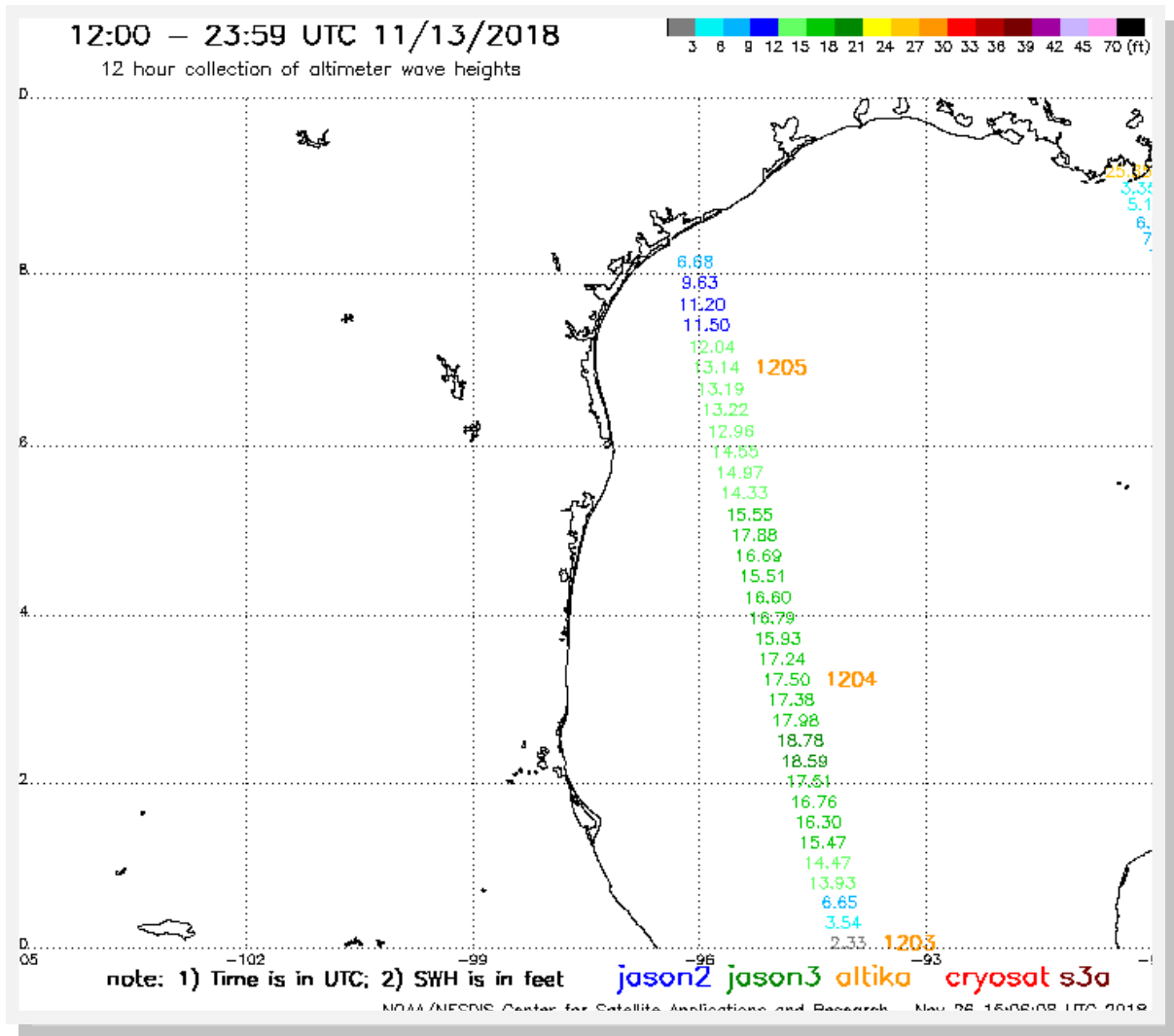


Figure 3. NASA Jason 2 Altimeter Wave-Height Data (ft) Valid 1136 UTC 13 Nov.



**Figure 4. Centre National d'Etudes Spatiales (CNES)/Indian Space Research Organisation (ISRO) AltiKa Altimeter Wave-Height Data (ft) Valid 1204 UTC 13 Nov.a**

the cold front had built to 20–28 ft to the south of 23N and west of 92W, as confirmed by altimeter data from a 0026 UTC AltiKa pass, **Figure 6**. Buoy 42055 also reported peak seas near this time of 6.85 m (22.5 ft) in NNW swell of 11 seconds at 0340 UTC.

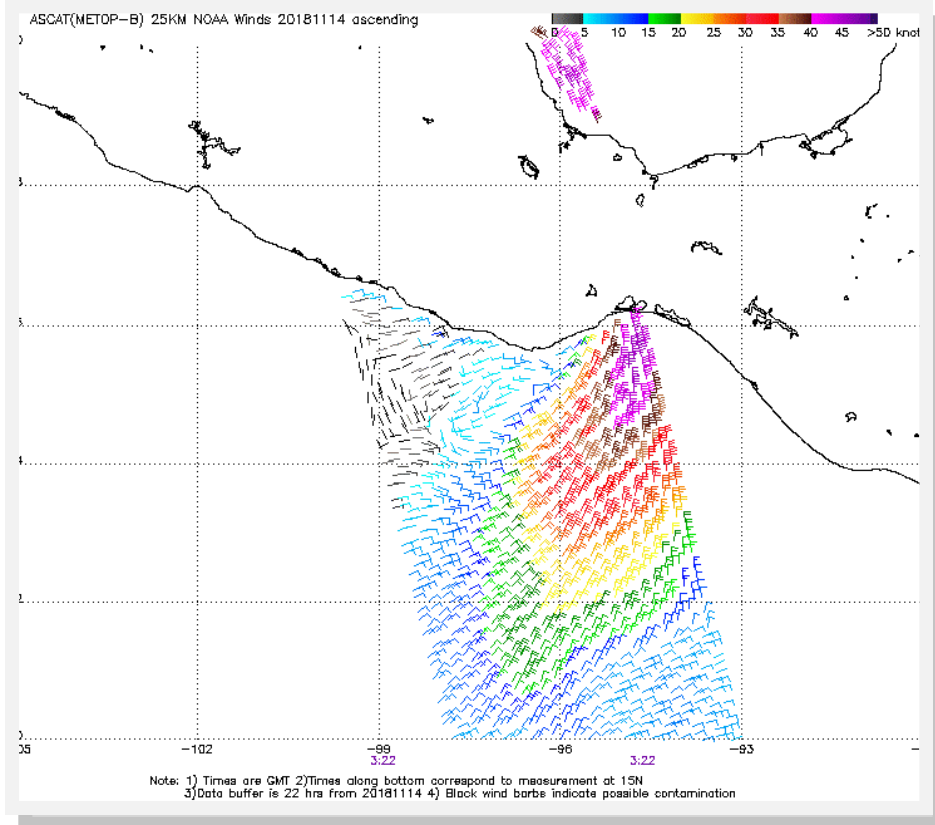


Figure 5. European Advanced Scatterometer (ASCAT B) Wind Vectors Valid 0322 UTC 14 Nov. (Note the medium purple-colored vectors off of Veracruz, Mexico, suggesting winds > 45 kt. Also obvious is a Gulf of Tehuantepec strong gale with peak winds also > 45 kt.)

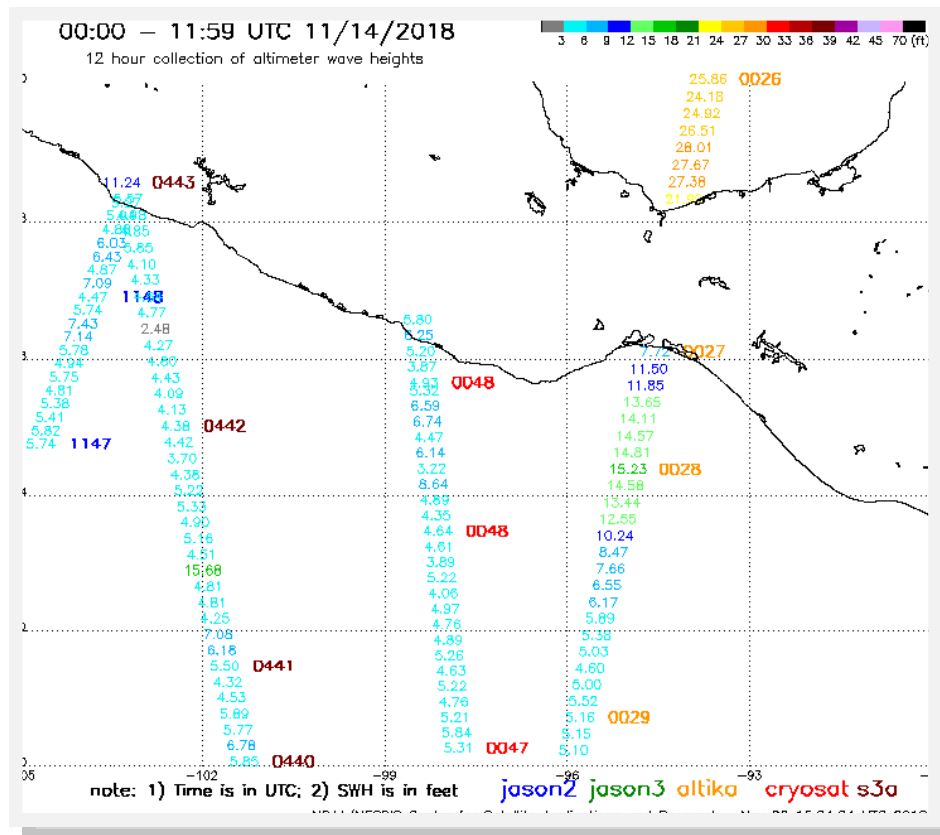


Figure 6. Centre National d'Etudes Spatiales (CNES)/Indian Space Research Organisation (ISRO) AltiKa Altimeter Wave-Height Data (ft) Valid 0026 UTC 14 Nov. (Note the SWH values of 25–28 ft across the Bay of Campeche.)

The front slowed its forward progress during the next 24 hours, as a blocking middle- to upper-level ridge prevailed from the western Caribbean north-eastward across the southeast Bahamas and into the central Atlantic. The pressure gradient behind the front supported gales across the southwest and south central Gulf through 0000 UTC 15 Nov, before the front moved eastward across the Florida Peninsula and Straits of Florida shortly after 1200 UTC 15 Nov, allowing for a diminishing trend in both wind and seas. Gale-force winds were observed during the morning and afternoon of 14 Nov by the **Jenny N (A8PQ7)**, the **Genmar Compatriot (ZCDK2)**, and the **Carnival Triumph (C6FN5)** as they moved northward across the central Gulf.

The upper trough supporting these storm-force winds gradually shifted eastward into the Atlantic during late Nov through Dec, moving the focus of additional gales across the central and eastern Atlantic portions of the TAFB AOR. However, five more gales event occurred across the Gulf of Mexico during late Nov and Dec, although each lasted 24 hours or less.

During the last week of Dec 2018, migratory mid-latitude high-pressure systems oscillated across the southeastern U.S. and the western Atlantic between 65W and 85W to maintain a tight pressure gradient across the central Caribbean and produce strong trade winds. This produced a very lengthy 9-day period of near-gale-force winds prevailing across the south-central Caribbean offshore of Columbia that increased to gale force each night beginning at 0000 UTC 23 Dec and continued into the new year.

Mariners are encouraged to use the referenced scatterometer wind data and altimeter wave-height data currently available online in near-real-time, via the NOAA-NESDIS Ocean Surface Winds Team [Web page](#). A list of available products and product descriptions are available per the table on the top-left side of this page.

## Eastern North Pacific Ocean to 30N and East of 140W

The most dangerous threat to maritime navigation over this portion of the Eastern Pacific Ocean for the time period of 1 September to 31 December 2018 is tropical cyclone activity, which reaches a peak during the middle of September. However, the fall and early winter months usher in the westerlies over the Eastern Pacific Ocean region south of 30N. Occasional gale and storm activity occurs in conjunction with the passage of strong frontal systems. These gales and storms are baroclinic in nature and are usually stronger later in the fall months and early winter. Another source for gales and storms occurs on the lee side of mountain gaps such as the Gulf of California, Gulf of Tehuantepec, Gulf of Papagayo, and Gulf of Fonseca. Gales are typically most frequent over the Gulf of Tehuantepec. The 2018 fall season had nine Gulf of Tehuantepec gales, four Gulf of California gales, two Gulf of Papagayo gales, and two nongap wind gales. **Table 2** provides details on these events. Ship reports received through the Voluntary Observing Ship (VOS) program are a vital source of data in verifying gales and storms. Some select ship reports that directly verified some of this season's gales are listed in **Table 3**.

**Table 2.** Nontropical Cyclone Warnings Issued for the Eastern Pacific Basin between 01 September 2018

Onset	Region	Peak Wind	Duration	Forcing
0600 UTC 07	Gulf of California	35 kts	6 hr	Front
1200 UTC 15	Gulf of California	30 kts, frequent	18 hr	Front
1200 UTC 10	Gulf of Tehuantepec	40 kts	24 hr	Gap
0600 UTC 13	W of Baja California	35 kts	18 hr	Front
1800 UTC 13	Gulf of Tehuantepec	50 kts	96 hr / 36 hr	Gap



**Table 2. Nontropical Cyclone Warnings Issued for the Eastern Pacific Basin between 01 September 2018 and 31 December 2018. Storm-Force Events Are Shaded.**

Onset	Region	Peak Wind Speed	Duration	Forcing
0000 UTC 21 Nov	Gulf of Tehuantepec	35 kts	18 hr	Gap
0000 UTC 22 Nov	Gulf of Tehuantepec	35 kts	12 hr	Gap
0600 UTC 22 Nov	13N-17N, 127W-133W	35 kts	12 hr	Trade winds
0000 UTC 27 Nov	Gulf of Tehuantepec	40 kts	36 hr	Gap
0000 UTC 05 Dec	Gulf of Tehuantepec	35 kts	36 hr	Gap
0000 UTC 10 Dec	Gulf of California	45 kts	60 hr	Gap
0000 UTC 15 Dec	Gulf of Tehuantepec	45 kts	84 hr	Gap
0000 UTC 21 Dec	Gulf of Tehuantepec	45 kts	42 hr	Gap
0600 UTC 22 Dec	Gulf of Papagayo	35 kts	12 hr	Gap
0600 UTC 23 Dec	Gulf of Papagayo	35 kts	12 hr	Gap
0000 UTC 24 Dec	Gulf of Tehuantepec	40 kts	42 hr	Gap
1800 UTC 25 Dec	Gulf of California	35 kts	12 hr	Gap

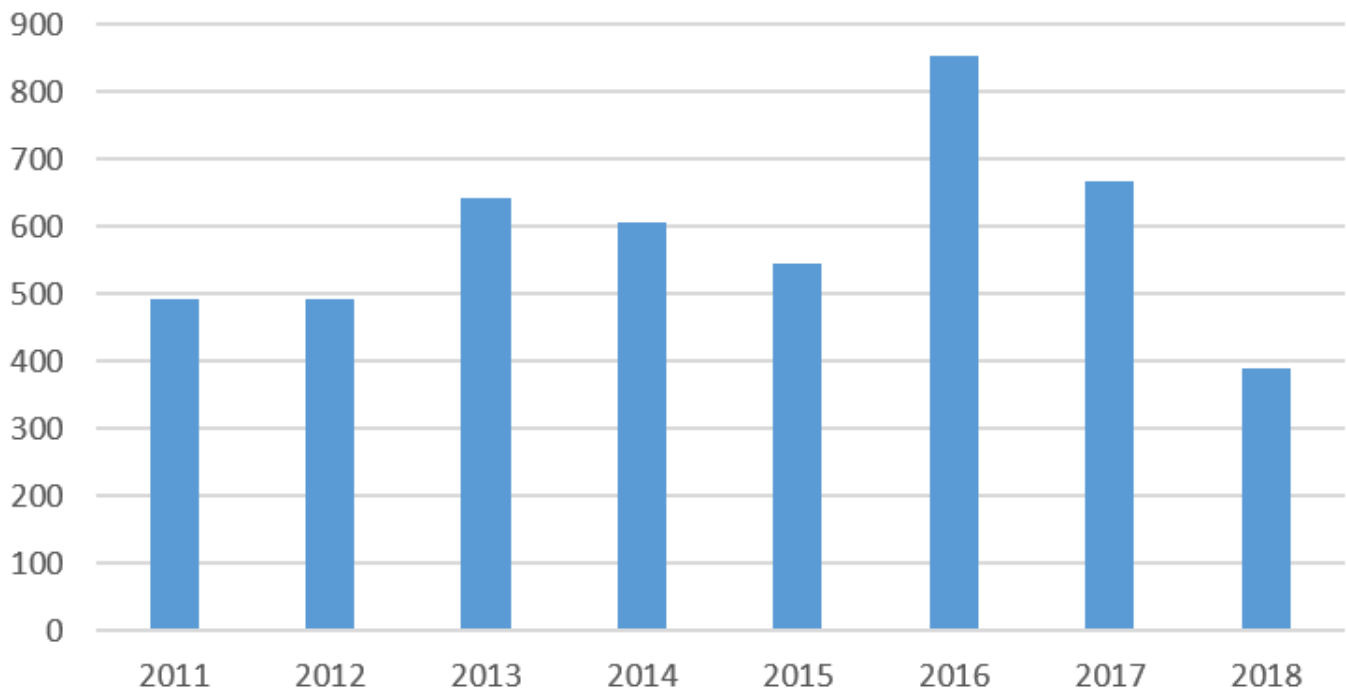
**Table 3. Ship Reports That Verified Gales over the Gulf of Tehuantepec and West of Baja California between 01 Sep 2018 and 31 Dec 2018.**

TIME/DATE	SHIP	LOCATION	WIND SPEED and SEAS
0600 UTC 13 Nov	<b>BUDAPEST EXPRESS (DGWE2)</b>	25.7N 115.2W	40 kts 16 ft (5 m)
0600 UTC 14 Nov	<b>SANTA LORETTA (DFDH2)</b>	14.2N 95.9W	35 kts 13 ft (4 m)
1000 UTC 28 Nov	<b>VOLENDAM (PCHM)</b>	14.8N 93.8W	40 kts 13 ft (4 m)
1700 UTC 09 Dec	<b>NORWEGIAN STAR (C6FR3)</b>	15.0N 95.3W	36 kts 10 ft (3 m)
0600 UTC 11 Dec	<b>GEMNAR COMPATRIOT (ZCDK2)</b>	16.1N 95.1W	45 kts
1200 UTC 11 Dec	<b>ERNEST N (A8PQ6)</b>	13.7N 95.8W	52 kts
1200 UTC 11 Dec	<b>FAUST (SLKQ)</b>	14.0N 96.0W	62 kts
1200 UTC 15 Dec	<b>COSCO EXCELLENCE (VRJT8)</b>	13.7N 95.5W	48 kts 16 ft (5 m)
1700 UTC 15 Dec	<b>GEMNAR COMPATRIOT (ZCDK2)</b>	16.1N 95.1W	50 kts
1000 UTC 21 Dec	<b>GEMNAR COMPATRIOT (ZCDK2)</b>	16.1N 95.1W	40 kts 6 ft (2m)
1700 UTC 21 Dec	<b>CMA CGM J. ADAMS (MAZS6)</b>	14.1N 94.6W	46 kts 13 ft (4m)
1800 UTC 21 Dec	<b>RICHMOND VOYAGER (C6DQ4)</b>	14.1N 95.9W	40 kts 13 ft (4m)
0600 UTC 25 Dec	<b>GEMNAR COMPATRIOT (ZCDK2)</b>	16.1N 95.1W	38 kts

The Gulf of Tehuantepec winds are usually driven by midlatitude cold-frontal passages through the narrow Chivela Pass in the Isthmus of Tehuantepec between the Sierra Madre de Oaxaca Mountains on the west and the Sierra Madre de Chiapas Mountains on the east. The northerly winds from the southwest Gulf of Mexico funnel through the pass, delivering stronger winds into the Gulf of Tehuantepec. The events are of various duration, with the longer events associated with reinforcing secondary cold fronts in the Gulf of Mexico. The Gulf of Tehuantepec gales and storms for the Sep–Dec 2018 season totaled 390 hours, which is well below the 2011–2017

average of 614 hours and is less than all years from 2011–2017, as shown in **Figure 7**. The first Gulf of Tehuantepec gale did not occur until 10 Nov, which is anomalously late. The decrease in Gulf of Tehuantepec gale frequency in 2018 along with the late date of the first gale may be related to the active hurricane season in the eastern North Pacific in Oct and early Nov and the tendency for western Gulf of Mexico cold fronts to weaken significantly as they reached the southern Gulf of Mexico. In Nov and Dec 2018, the progressive nature of the flow pattern and the lack of arctic fronts limited the number of long-lasting gales, with only two of these lasting for 48 hours or more.

### Gulf of Tehuantepec Gale Hours (Sep-Dec)



**Figure 7. Number of Hours of Gale-Force Winds in the Gulf of Tehuantepec (Sep–Dec) from Events not Associated with Tropical Cyclones.**

The most significant and longest-lasting gale of the season was the Gulf of Tehuantepec gale of 13–17 Nov 2018. Gale-force northerly winds in the southwest Gulf of Mexico behind a cold front funneled through the Chivela Pass, resulting in gales in the Gulf of Tehuantepec that began on 18 UTC on 13 Nov (**Figure 8**). Storm-force winds began in the Gulf of Tehuantepec at 00 UTC on 14 Nov and continued for 36 hours until 12 UTC on 15 Nov. Gale-force winds continued until 18 UTC on 17 Nov. Note the high pressure in the 1030s hPa over south Texas and

Mexico. The strong gradient between the high pressure to the north and low pressure over the east Pacific to the south of the Gulf of Tehuantepec created the storm-force winds. One of the main ingredients fueling the strength of the cold front was the strong mid- to upper-level trough that dug southward across Texas and Mexico. **Figure 9** shows the GFS 500-mb analysis from 00 UTC on 14 Nov, which illustrates the strength of the trough. High values of positive vorticity advection ahead of the 500-mb trough increased surface convergence and thus the strength of the cold front.

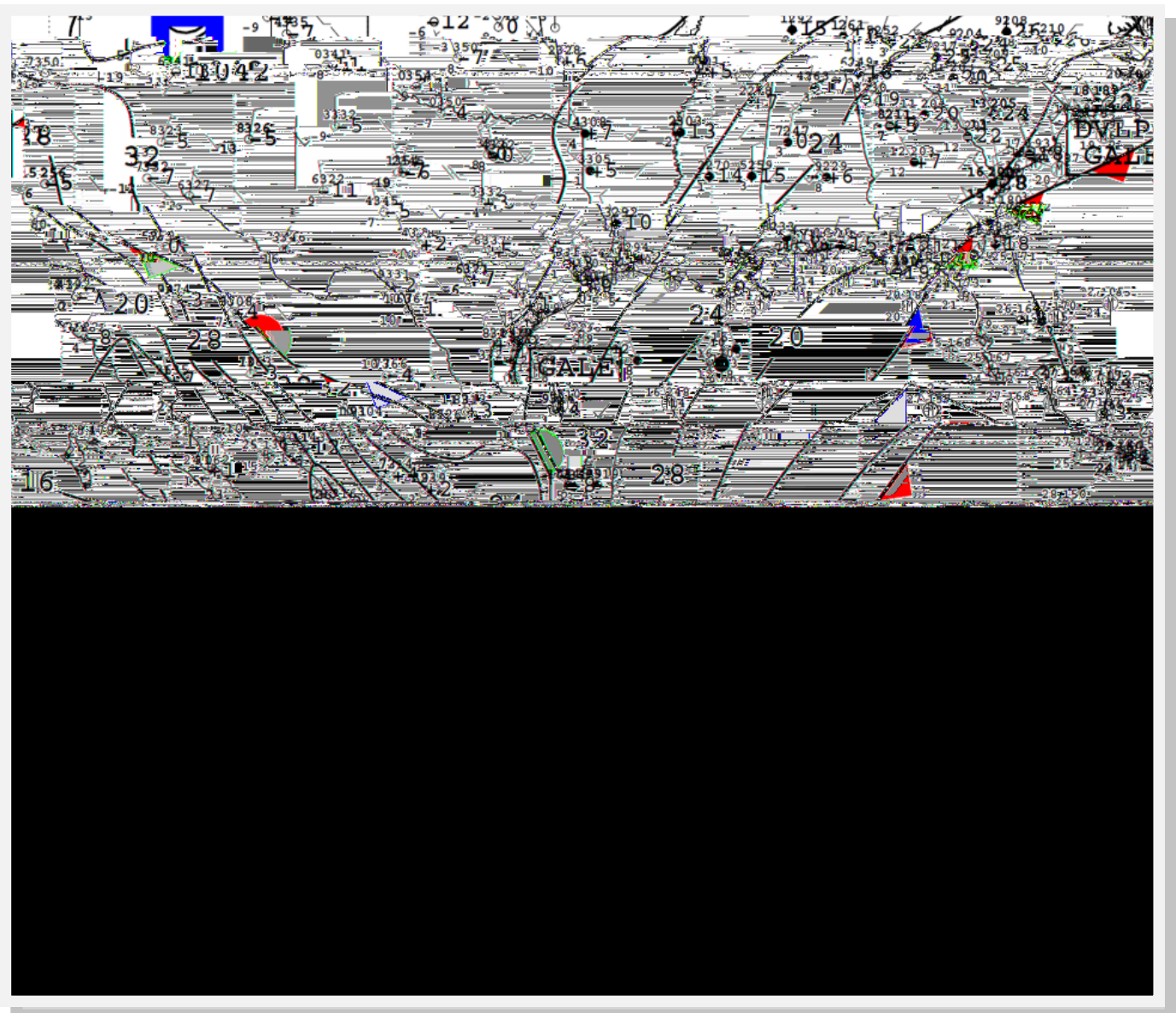
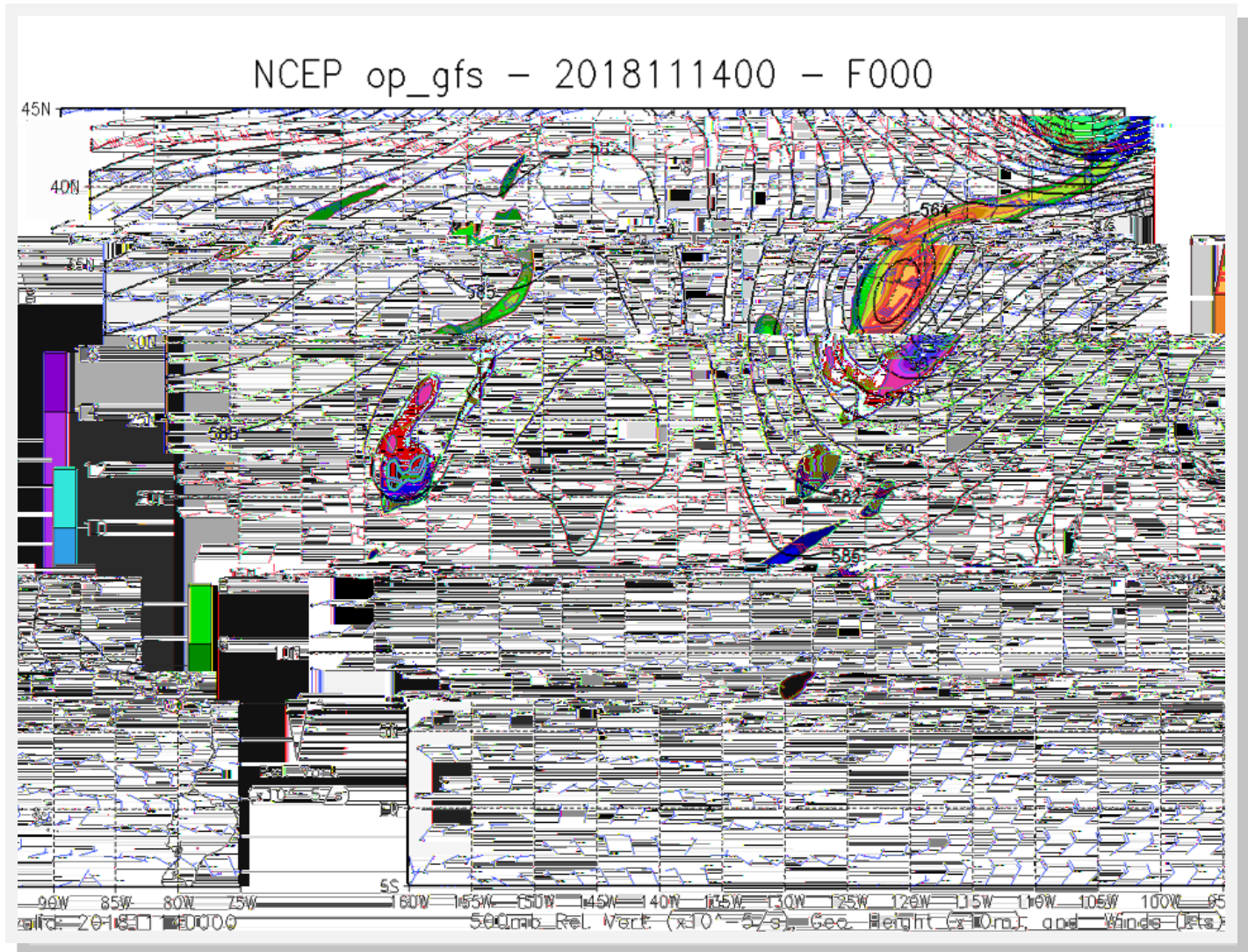


Figure 8. National Weather Service Unified Surface Analysis Valid 0000 UTC 14 Nov 2018.





**Figure 9. 500-mb Chart (GFS Hour 00 Analysis) from 14 Nov at 0000 UTC. Credit: HFIP.**

A European Advanced Scatterometer (ASCAT B) pass captured the storm portion of the event in the Gulf of Tehuantepec at 0322 UTC on 14 Nov (**Figure 10**). Although the highest wind barbs are in the 45–47-kt range, storm-force winds of 50 kt were likely occurring at the time due to the 25-km resolution of the ASCAT instrument. The ASCAT pass suggests that storm-force winds were likely occurring from 15N to 16N between 94.5W and 95W, while gale-force winds were likely occurring north of 13N between 93W and 96.5W. The **Santa Loretta (DFDH2)** reported gale-force winds of 35 kt at 0600 UTC on 14 Nov at 14.2N 95.9W, a location where the ASCAT pass also showed winds of around 35 kt.

The gales produced high seas over the waters within and south of the Gulf of Tehuantepec. At 0000 UTC on 14 Nov, the 24-hour forecast called for winds up to 50 kt persisting with waves to 22 ft in the Gulf of Tehuantepec at 0000 UTC on 15 Nov (**Figure 11**). The East Pacific High Seas Forecast issued 24 hours later indeed stated that at the initial time of 0000 UTC on 15 Nov, peak winds were 50 kt with seas up to 22 ft in the Gulf of Tehuantepec. Furthermore, a JASON-3 altimeter pass (**Figure 12**) at 0415 UTC on 15 Nov showed a large swath of 17–19-ft waves in the Gulf of Tehuantepec.



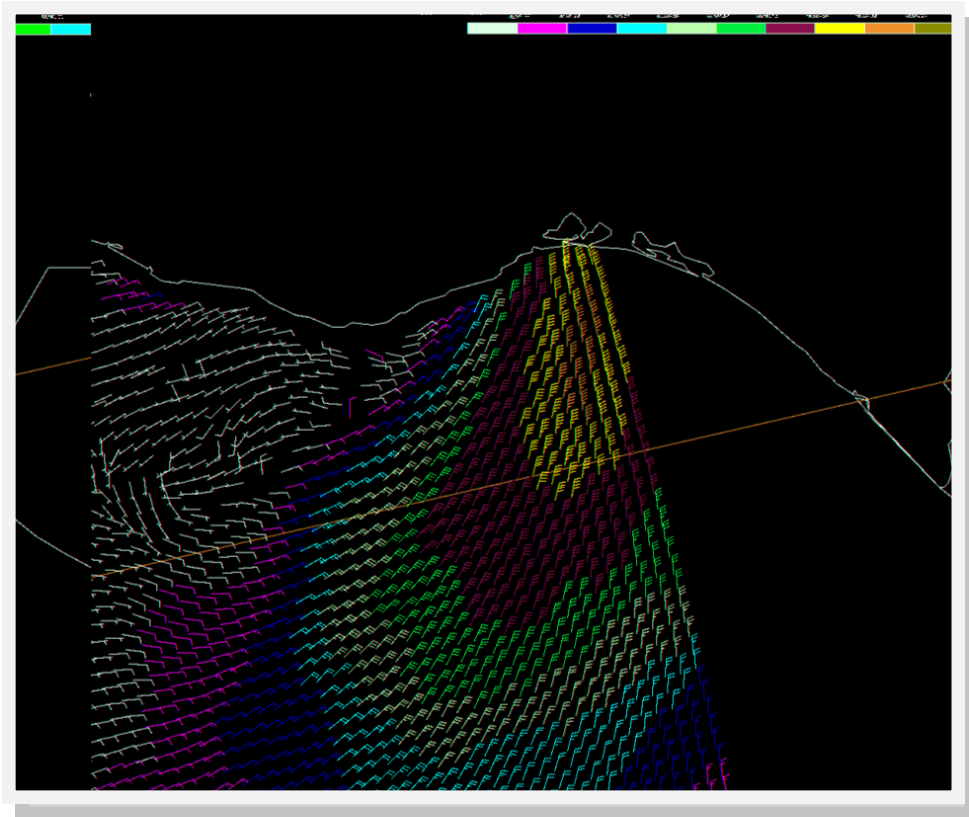


Figure 10. European Advanced Scatterometer (ASCAT B) Pass Valid at 0322 UTC 14 Nov 2018. Note Numerous 45-kt Wind Barbs in the Gulf of Tehuantepec.

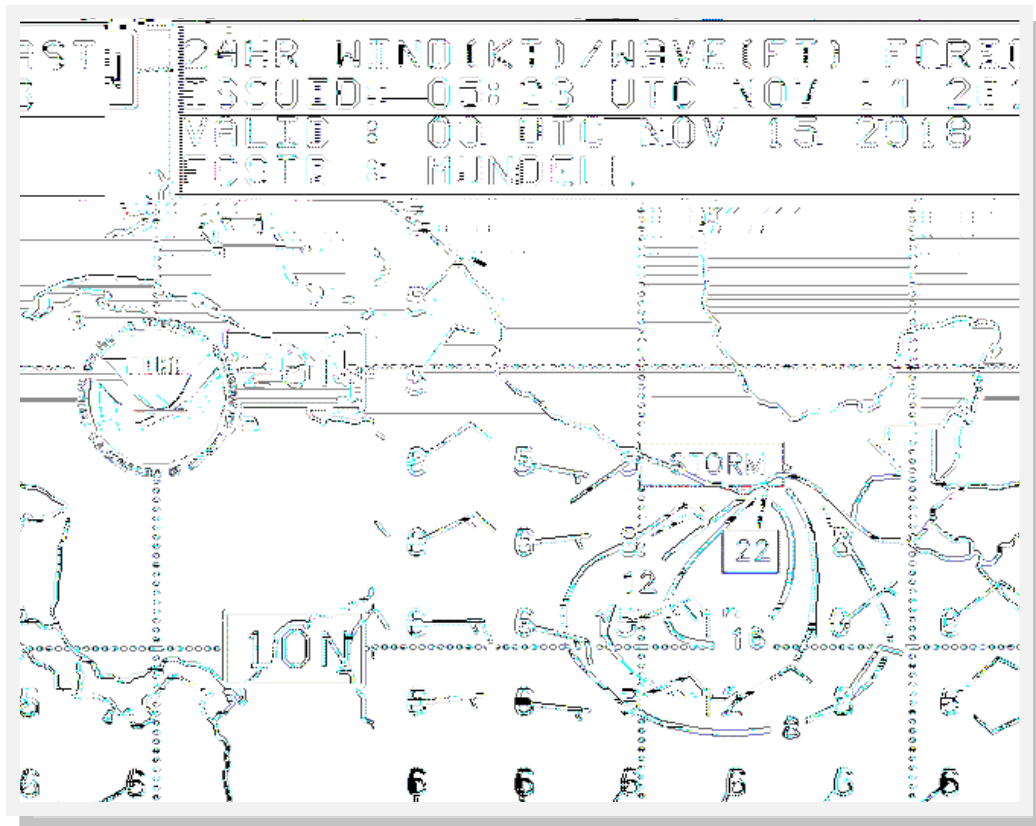


Figure 11. The 24-Hour Wind/Wave Forecast for the Tropical East Pacific Valid at 00 UTC on 15 Nov.

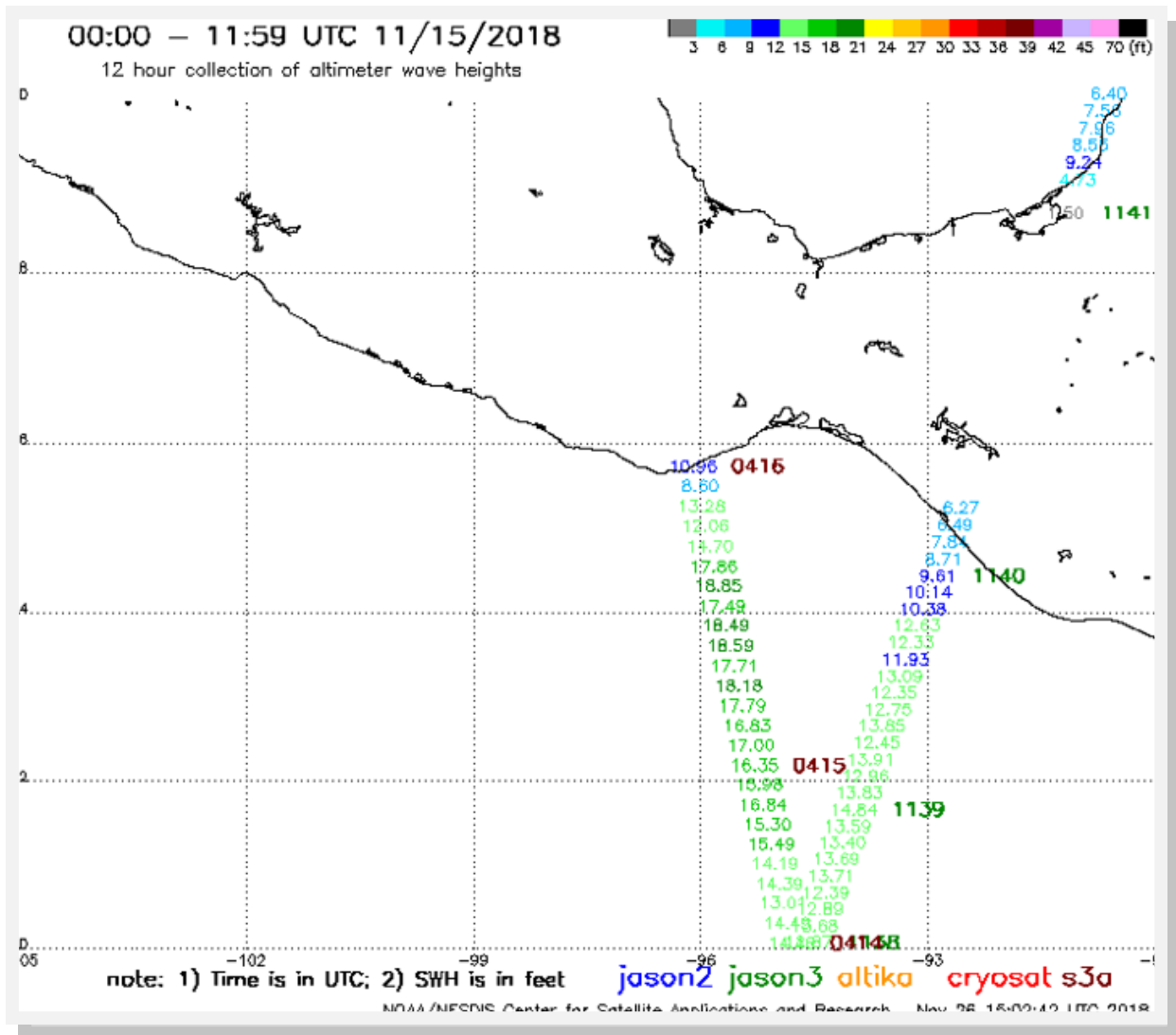


Figure 12. Observed Significant Wave Height from the Jason3 Altimeter on 15 Nov at 0415 UTC. Credit: NOAA/NESDIS.

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# Tropical Atlantic, May through August 2018

Atlantic Ocean including the Caribbean Sea  
and the Gulf of Mexico

o o o

**Table 1**

Indonesia )

**Cosco**

**Esmeralda**

**CMA CGM T. Roosevelt**

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**Table 1. Nontropical cyclone warnings issued for the subtropical and tropical Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea between 1 May and 31 August 2018.**

Onset	Region	Peak Wind Speed	Gale Duration	Weather Forcing
18 UTC 08 Jul	Caribbean Sea	45 kts	30h	Tropical Wave-Post Beryl
00 UTC 13 Jul	Caribbean Sea	35 kts	12h	Low Pressure
00 UTC 14 Jul	Caribbean Sea	35 kts	12h	Pressure Gradient
06 UTC 15 Jul	Caribbean Sea	35 kts	9h	Pressure Gradient
00 UTC 16 Jul	Caribbean Sea	35 kts	12h	Pressure Gradient
00 UTC 18 Jul	Caribbean Sea	35 kts	12h	Pressure Gradient
00 UTC 19 Jul	Caribbean Sea	35 kts	12h	Pressure Gradient
00 UTC 09 Aug	Caribbean Sea	35 kts	12h	Pressure Gradient
00 UTC 12 Aug	Caribbean Sea	35 kts	15h	Pressure Gradient
00 UTC 13 Aug	Caribbean Sea	35 kts	12h	Pressure Gradient



This is a photo of the **Paul R. Tregurtha** (also known as the “Queen of the Lakes”) as she is the longest ore freighter trading across the Great Lakes with a length of 1013 ft. She was built in 1981, and of significance is she is our newest bulk carrier on the American Fleet. Our ships on the Great Lakes for the American side do not trade in salt water, so the longevity of these ships is quite long. We still have ships that are built around the turn of the 20<sup>th</sup> century and many around 1950 circa. This photo looks to be in late December with the start of the ice season on the Great Lakes.



**VOS Program  
Cooperative Ship Report:**

**January 1, 2018, through December 31, 2018**



Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AMERICAN CENTURY	WDD2876	A	Duluth	151	0	72	221	137	110	57	140	198	332	340	222	1980
AMERICAN ENDURANCE	KAED	A	Anchorage	1	0	0	0	4	1	1	0	7	2	0	0	16
AMERICAN FREEDOM	KAFK	A	Anchorage	0	0	6	3	9	8	7	0	2	5	3	4	47
AMERICAN INTEGRITY	WDD2875	A	Duluth	0	0	0	0	5	4	61	35	63	23	22	25	238
AMERICAN LIBERTY	KLIO	A	Anchorage	0	0	0	0	0	0	0	0	0	1	0	0	1
AMERICAN MARINER	WQZ7791	A	Duluth	4	0	0	2	10	21	20	47	12	53	41	5	215
AMERICAN NO. 1	WCD7842	A	Anchorage	0	6	0	5	10	5	0	7	2	14	5	0	54
AMERICAN SPIRIT	WCX2417	A	Duluth	2	0	0	11	13	9	7	22	30	30	41	15	180
AMERICAS SPIRIT	C6FW2	I	Anchorage	40	36	17	0	0	0	0	0	0	0	0	0	93
AMSTEL OSPREY	3FRX8	I	Anchorage	6	24	9	14	0	0	0	0	0	0	0	0	53
AMSTEL STORK	3FOP7	I	Anchorage	0	12	0	10	1	0	0	0	0	0	0	0	23
AMSTEL TIGER	HPRH	A	Anchorage	0	0	0	0	0	0	2	0	0	0	24	13	39
AMSTERDAM	PBAD	A	Anchorage	111	168	142	98	117	204	100	108	98	104	276	248	1774
ANDROMEDA VOYAGER	C6FZ6	A	Anchorage	17	13	3	5	0	16	6	3	1	27	21	0	112
ANSAC MOON BEAR	3FKS5	A	Anchorage	8	23	5	22	7	19	16	15	8	21	0	0	144
ANTARES VOYAGER	C6ZJ5	A	Anchorage	10	2	51	54	20	8	0	0	28	7	0	0	180
ANTHEM OF THE SEAS	C6BI7	A	New York	0	0	0	34	41	42	35	37	19	32	33	31	304
ANTWERPEN	VRBK6	A	Anchorage	0	0	0	0	8	1	13	0	2	32	6	4	66
APL BARCELONA	9V9402	A	Anchorage	6	6	9	6	6	5	10	15	4	11	0	8	86
APL CHINA	9HA4867	A	Los	39	109	81	108	85	54	36	0	0	0	29	29	570
APL CHONGQUING	9V9373	A	Anchorage	69	15	18	32	47	13	1	0	0	0	0	0	195
APL COLUMBUS	9V9920	A	New York	0	0	0	2	3	18	5	81	27	116	75	63	390
APL DANUBE	9HA3553	A	New York	0	0	17	39	0	81	67	56	24	18	88	82	472
APL DETROIT	9V9925	A	Charleston	0	0	18	55	17	29	31	39	41	84	51	47	412
APL DUBLIN	9V9404	A	Anchorage	0	0	0	2	6	10	9	8	0	0	17	9	61
APL ENGLAND	9VDD2	I	Anchorage	0	21	4	0	0	0	0	0	0	0	0	0	25
APL ESPLANADE	S6LT4	A	Los	27	18	24	38	31	27	35	34	49	13	17	23	336
APL FLORIDA	9V8987	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	60	60
APL FULLERTON	S6NQ	A	Anchorage	20	14	13	18	12	18	13	23	13	13	0	0	157
APL GUAM	WAPU	A	Anchorage	14	13	17	29	35	32	35	61	53	41	36	77	443
APL HOLLAND	9VKQ2	A	Charleston	15	14	0	3	14	29	22	29	0	16	28	42	212

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
APL HOUSTON	9V9921	I	Los	10	0	0	0	0	0	0	0	0	0	0	0	10
APL JAPAN	9V2165	I	Charleston	0	0	0	0	0	0	0	4	0	0	4	2	10
APL KOREA	9HA4871	A	Los	41	45	34	42	157	208	236	0	16	42	47	38	906
APL LE HAVRE	9V9375	A	Anchorage	75	28	4	49	76	111	94	54	13	0	106	89	699
APL LION CITY	S6LT6	A	Anchorage	4	0	0	0	0	6	115	142	91	77	119	137	691
APL MEXICO CITY	9V9926	A	Norfolk	0	0	0	23	0	47	16	45	45	89	3	67	335
APL NEW YORK	9V9916	I	Anchorage	10	7	4	14	0	0	0	0	0	0	0	0	35
APL PARIS	9V9403	A	Anchorage	0	8	5	32	53	76	86	21	56	5	58	65	465
APL PHILIPPINES	WCX8884	A	Los	26	20	53	28	44	54	8	0	0	0	0	0	233
APL PHOENIX	9V9918	A	Los	49	8	28	0	1	0	0	0	0	0	1	0	87
APL QINGDAO	9V9376	A	Anchorage	7	5	10	3	34	66	94	31	86	0	0	54	390
APL SAIPAN	WDJ2573	A	Anchorage	105	50	61	64	72	113	98	100	50	31	84	84	912
APL SALALAH	9V9400	A	Anchorage	0	0	0	0	0	4	0	0	0	6	0	31	41
APL SANTIAGO	9V9924	A	Charleston	0	0	0	0	0	3	24	39	87	96	81	65	395
APL SAVANNAH	9V9919	I	New	0	1	0	0	0	0	0	0	0	0	0	1	2
APL SCOTLAND	9VDD3	A	Anchorage	0	0	0	0	2	102	11	37	6	94	28	0	280
APL SENTOSA	S6LT5	A	Anchorage	12	23	23	21	57	39	86	35	19	33	23	56	427
APL SINGAPORE	9HA4870	A	Los	1	0	4	7	13	20	14	0	9	13	14	30	125
APL SOUTHAMPTON	9V9399	A	Anchorage	0	2	1	8	3	9	7	13	5	8	0	3	59
APL TEMASEK	S6LT9	I	Anchorage	0	0	5	13	32	0	0	0	0	0	0	0	50
APL THAILAND	9HA4872	A	Los	34	31	44	26	20	42	59	2	0	4	30	53	345
APL VANCOUVER	9V9915	A	Anchorage	0	0	0	0	0	53	17	27	16	3	1	0	117
APL YANGSHAN	9V9401	A	Anchorage	0	0	4	8	0	57	76	40	34	40	2	0	261
AQUARIUS VOYAGER	C6UC3	A	Jacksonvill	74	77	47	37	63	63	37	29	71	84	21	7	610
ARCTIC BEAR	WBP3396	A	Anchorage	0	0	0	0	19	4	0	0	0	14	0	0	37
ARCTIC TITAN	WDG2803	A	Anchorage	5	12	13	17	9	21	11	19	10	24	15	7	163
ARCTURUS VOYAGER	C6YA7	A	Anchorage	69	58	41	39	33	34	36	21	99	0	0	0	430
ARI CRUZ	WDG9588	A	Anchorage	0	0	0	0	1	20	37	38	13	6	7	0	122
ARIES VOYAGER	C6UK7	A	Anchorage	9	2	18	0	0	0	15	51	44	22	44	4	209
ARNOLD MAERSK	OXES2	I	New	68	48	18	0	0	0	0	0	0	0	0	0	134
ASIA ENDEAVOUR	C6AX6	A	Anchorage	144	58	20	30	306	253	205	259	228	94	134	239	1970



Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ASIA ENERGY	C6AX4	A	Anchorage	20	42	50	33	53	53	33	51	9	12	59	64	479
ASIA EXCELLENCE	C6AX5	A	Anchorage	79	76	80	71	57	22	66	76	42	4	49	66	688
ASIA INTEGRITY	C6BC8	A	Anchorage	93	72	32	69	59	69	117	62	43	22	28	69	735
ASIA VENTURE	C6BC9	A	Anchorage	112	96	84	28	30	34	32	48	21	84	79	60	708
ASIA VISION	C6AX3	A	Anchorage	34	28	34	46	69	176	136	37	38	38	101	169	906
ASPEN SPIRIT	C6BQ3	A	Anchorage	0	0	0	0	0	0	0	15	65	54	43	17	194
ASTORIA BAY	VRKB6	A	Anchorage	7	5	3	11	5	10	7	6	8	14	6	10	92
ATLANTIC BRAVE	D5LQ8	A	New	56	21	0	46	4	0	56	33	0	1	0	0	217
ATLANTIC EXPLORER (AWS)	WDC9417	I	Anchorage	0	0	78	0	0	0	0	0	0	0	0	0	78
ATLANTIC FRONTIER	VRDJ7	A	Anchorage	0	0	0	0	0	0	0	0	8	1	2	0	11
ATLANTIC GEMINI	VRDO9	I	Anchorage	34	41	50	35	2	0	0	0	0	0	0	0	162
ATLANTIC HURON	VCQN	A	Duluth	1	0	1	2	0	0	3	1	0	0	0	0	8
ATLANTIC OLIVE	VREF8	A	Anchorage	10	9	9	8	4	23	8	1	6	2	0	0	80
ATLANTIS (AWS)	KAQP	A	Anchorage	715	669	740	702	739	716	728	708	720	740	718	728	8623
ATTENTIVE	WCZ7337	A	Anchorage	1	0	4	3	0	0	2	0	0	0	0	0	10
AURORA	WYM9567	A	Anchorage	9	2	0	67	149	85	102	40	60	0	7	59	580
AVIK	WDB7888	A	Anchorage	0	0	0	0	7	27	44	44	1	0	0	0	123
AVONBORG	PCOF	I	New	0	0	0	10	50	15	0	0	0	0	0	0	75
AWARE	WCZ7336	A	Anchorage	1	0	1	0	0	0	2	0	0	0	0	0	4
AZAMARA JOURNEY	9HOB8	A	Anchorage	35	5	2	5	4	3	21	42	88	90	59	48	402
AZAMARA PURSUIT	9HA4800	A	Anchorage	22	8	0	0	0	0	0	35	91	55	51	29	291
AZAMARA QUEST	9HOM8	A	Anchorage	0	0	23	66	34	25	20	39	18	19	52	56	352
AZUL LIBERO	9VMU5	A	Anchorage	29	22	21	20	23	22	21	18	21	25	15	18	255
BADGER	WBD4889	A	Duluth	0	0	0	0	18	40	60	84	48	22	0	0	272
BAI CHAY BRIDGE	3FAD8	A	Anchorage	56	150	116	92	145	149	121	108	124	129	69	113	1372
BAIE COMEAU	CFN6357	A	Duluth	0	0	1	2	2	8	1	2	3	20	3	0	42
BAINBRIDGE	WDJ9373	A	Anchorage	0	0	0	0	0	0	1	1	0	4	0	12	18
BAKER RIVER	VRMV3	A	Anchorage	16	17	16	15	31	16	54	78	20	55	42	53	413
BAKER SPIRIT	C6BQ4	A	Anchorage	33	57	23	17	20	9	8	7	17	56	10	0	257
BALTIC BEAR	V7QN4	A	Anchorage	0	0	0	14	16	24	18	22	23	0	3	7	127
BALTIC LEOPARD	V7PX7	A	Anchorage	0	0	0	0	0	0	0	0	0	1	0	0	1



Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CALIFORNIA	KEBO	A	Anchorage	7	19	20	0	0	1	20	8	0	0	8	17	100
CALUMET	WDE3568	A	Duluth	2	0	16	15	36	22	36	45	82	30	46	12	342
CAMPBELL BAY (AWS)	AUXE	A	Anchorage	247	206	162	0	1	0	51	72	0	1	28	221	989
CAPE ANN	WDJ8731	A	Anchorage	0	0	0	0	0	0	0	0	0	0	4	15	19
CAPE AZALEA	9V9450	I	Anchorage	2	26	0	0	0	0	0	0	0	0	0	0	28
CAPE LILY	9V8843	A	Baltimore	30	32	19	29	21	23	22	24	8	31	14	14	267
CAPE MORETON	VRGG6	A	Anchorage	8	29	13	14	13	19	15	18	17	12	16	15	189
CAPE NELSON	VRWZ5	A	Anchorage	13	15	35	4	0	0	0	0	0	0	6	26	99
CAPE YORK	VRXE9	A	Anchorage	0	0	0	0	0	0	0	13	18	21	14	4	70
CAPRICORN VOYAGER	C6UZ5	A	Anchorage	53	31	22	40	30	31	36	12	8	54	66	60	443
CAPT CAE	WDJ4956	A	Anchorage	0	0	0	2	5	1	0	0	6	5	21	0	40
CARNIVAL BREEZE	3FZO8	A	Jacksonvill	3	0	1	114	93	86	92	79	59	7	44	53	631
CARNIVAL CONQUEST	3FPQ9	A	Miami	49	60	46	17	21	18	43	23	11	72	28	23	411
CARNIVAL DREAM	3ETA7	A	New	51	22	92	146	114	39	9	94	35	108	97	79	886
CARNIVAL ECSTASY	H3GR	A	Miami	87	74	62	43	48	55	54	61	74	46	38	8	650
CARNIVAL ELATION	3FOC5	A	Jacksonvill	70	100	133	102	27	5	35	45	41	25	40	94	717
CARNIVAL FANTASY	H3GS	A	New	3	70	69	25	78	64	125	82	66	35	4	31	652
CARNIVAL FASCINATION	C6FM9	A	Jacksonvill	0	0	112	101	92	15	18	32	107	142	132	110	861
CARNIVAL FREEDOM	3EBL5	A	Houston	3	3	28	100	84	52	7	43	15	85	61	17	498
CARNIVAL GLORY	3FPS9	A	Miami	2	74	77	28	46	34	73	67	36	59	43	28	567
CARNIVAL HORIZON	H3WI	A	Miami	0	0	0	13	9	9	38	147	150	173	270	336	1145
CARNIVAL IMAGINATION	C6FN2	A	Los	79	65	87	63	44	13	46	57	50	38	53	63	658
CARNIVAL INSPIRATION	C6FM5	A	Los	7	9	9	23	55	27	20	7	1	1	8	27	194
CARNIVAL LEGEND	9HA3667	A	Miami	162	201	257	316	67	135	119	75	100	27	11	85	1555
CARNIVAL LIBERTY	HPYE	A	Jacksonvill	34	15	58	24	22	59	64	106	123	66	23	14	608
CARNIVAL MAGIC	3ETA8	A	Jacksonvill	101	45	14	138	111	115	89	54	76	66	45	48	902
CARNIVAL MIRACLE	H3VS	A	Miami	5	18	27	154	112	43	36	37	55	77	38	30	632
CARNIVAL PARADISE	3FOB5	A	Miami	80	40	1	35	8	21	32	70	74	128	119	99	707
CARNIVAL PRIDE	H3VU	A	Baltimore	10	3	10	17	56	103	55	28	0	36	40	54	412
CARNIVAL SENSATION	C6FM8	A	Miami	54	18	19	42	6	1	0	0	41	72	59	38	350
CARNIVAL SPLENDOR	3EUS	A	Anchorage	0	0	2	58	64	38	54	99	125	178	124	107	849

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CARNIVAL SUNSHINE	C6FN4	A	Jacksonville	30	14	11	63	25	4	6	2	1	0	89	221	466
CARNIVAL TRIUMPH	C6FN5	A	New	66	39	41	47	28	23	9	2	21	10	43	85	414
CARNIVAL VALOR	H3VR	A	Houston	15	9	2	0	1	0	0	0	50	68	58	12	215
CARNIVAL VICTORY	3FFL8	A	Miami	34	63	40	32	28	8	14	48	42	34	42	12	397
CARNIVAL VISTA	3EMB9	A	Houston	76	66	59	46	46	29	18	55	30	69	66	22	582
CAROLINE MAERSK	OZWA2	A	Seattle	93	56	68	0	20	75	41	1	0	55	54	29	492
CASCADE SPIRIT	C6BQ5	A	Anchorage	4	0	0	0	0	2	8	0	0	0	0	0	14
CASON J. CALLAWAY	WDH7556	A	Duluth	30	0	25	61	34	34	43	72	61	63	67	23	513
CASTOR VOYAGER	C6UZ6	A	Anchorage	0	0	16	0	3	20	18	34	11	12	32	2	148
CAUQUENES	D5HF2	A	Anchorage	0	0	0	0	5	0	2	0	8	9	23	16	63
CAVEK	WDF7988	A	Anchorage	0	0	0	0	5	5	1	1	0	12	11	0	35
CELEBRITY CONSTELLATION	9HJB9	A	Miami	34	10	0	101	23	0	0	0	0	0	26	169	363
CELEBRITY ECLIPSE	9HXC9	A	Miami	270	296	434	423	318	189	191	114	186	120	141	224	2906
CELEBRITY EDGE	9HA4612	A	Miami	0	0	0	0	0	0	0	0	0	0	0	50	50
CELEBRITY EQUINOX	9HXD9	A	Miami	346	247	267	155	224	164	159	166	227	190	112	142	2399
CELEBRITY INFINITY	9HJD9	A	Miami	257	56	21	69	199	271	243	140	168	185	246	290	2145
CELEBRITY MILLENNIUM	9HJF9	A	Anchorage	142	118	110	103	103	87	106	90	51	109	173	149	1341
CELEBRITY REFLECTION	9HA3047	A	Miami	135	166	183	169	180	169	171	172	150	156	156	155	1962
CELEBRITY SILHOUETTE	9HA2583	A	Miami	145	123	154	148	151	124	91	78	77	100	142	181	1514
CELEBRITY SOLSTICE	9HRJ9	A	Miami	297	142	143	223	172	403	361	375	252	216	151	244	2979
CELEBRITY SUMMIT	9HJC9	A	Miami	105	29	88	118	112	91	116	119	168	199	162	172	1479
CHALLENGE POLLUX	9V5639	A	Anchorage	0	0	0	0	0	0	89	274	338	481	0	0	1182
CHALLENGE PROCYON	3EXV7	A	Anchorage	11	16	4	0	0	5	7	0	11	44	67	84	249
CHALLENGER	WDJ9412	A	Anchorage	0	0	0	0	0	0	0	5	5	0	2	0	12
CHAMPION	WDJ9411	A	Anchorage	0	0	0	0	0	0	0	1	6	4	10	8	29
CHAMPION BAY	VRYP3	A	Anchorage	99	1	0	20	0	43	22	0	24	0	0	21	230
CHARLES ISLAND	C6JT	I	Miami	0	0	21	30	7	0	0	0	0	0	0	0	58
CHARLESTON EXPRESS	WDD6126	A	Houston	18	4	24	53	107	95	61	62	27	31	40	11	533
CHERRY POINT	VRLR2	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	16	16
CHILEAN REEFER	C6UM2	A	Anchorage	0	0	0	2	16	7	25	23	0	0	0	0	73
CHILOE ISLAND	VRMO4	A	Anchorage	0	0	7	2	0	0	0	0	0	8	0	3	20





Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COLUMBIA RIVER	VRNB4	A	New	0	12	5	13	14	0	0	0	0	0	0	5	49
COLUMBINE MAERSK	OUHC2	I	Baltimore	2	9	0	0	0	0	0	0	0	0	0	0	11
COMMANDER	WDJ8318	A	Anchorage	0	0	0	0	0	0	0	2	11	0	0	0	13
COMMITMENT	WDE3894	A	Anchorage	0	0	0	0	0	1	16	7	1	1	0	0	26
CONSTELLATION	WDB5401	A	Anchorage	0	1	0	1	0	0	0	7	0	0	0	0	9
CONTENDER	WDJ9374	A	Anchorage	0	0	0	0	0	0	0	3	1	6	2	2	14
COOK STRAIT	VRAE5	A	Anchorage	0	0	0	0	10	9	2	0	29	9	68	36	163
COOPER ISLAND	VRRD6	A	Anchorage	0	13	2	50	14	51	23	4	0	0	0	0	157
CORCOVADO	D5HF3	A	Anchorage	22	27	0	0	17	75	107	8	0	0	8	0	264
CORIO BAY	VRBU9	A	Anchorage	0	0	0	0	4	17	10	13	22	1	0	0	67
CORWITH CRAMER	WTF3319	A	Anchorage	0	0	0	0	24	0	0	0	0	11	29	0	64
COSCO AMERICA	3EPH4	A	Anchorage	8	7	7	5	4	7	4	0	2	5	3	16	68
COSCO DEVELOPMENT	VRIZ9	A	New York	65	78	77	170	154	191	172	138	150	48	25	22	1290
COSCO EUROPE	3EOC5	A	Anchorage	0	0	0	0	5	7	11	3	8	12	1	5	52
COSCO EXCELLENCE	VRJT8	A	New York	0	0	0	56	54	65	70	89	55	46	24	58	517
COSCO FAITH	VRJL6	A	New York	2	11	32	38	13	65	73	41	25	31	30	55	416
COSCO FORTUNE	VRKE9	A	Anchorage	1	0	53	145	32	12	2	15	3	0	8	28	299
COSCO GLORY	VRIR7	A	New York	19	33	25	61	40	63	34	51	45	47	52	74	544
COSCO HARMONY	VRJA4	A	Anchorage	0	3	0	0	0	0	123	27	5	5	162	58	383
COSCO HOPE	VRKF2	A	New York	0	14	5	0	23	40	76	71	64	41	52	33	419
COSCO INDONESIA	VRHE3	A	New York	1	11	14	33	59	36	84	61	46	67	58	33	503
COSCO JAPAN	VRFX5	A	New York	19	8	0	0	4	0	0	0	0	0	9	14	54
COSCO KOREA	VRGH3	A	New York	9	19	34	17	18	11	20	36	31	37	14	31	277
COSCO MALAYSIA	VRGV9	A	New York	25	25	50	14	57	152	302	150	85	107	136	287	1390
COSCO PHILIPPINES	VRGM7	A	New York	57	27	18	13	19	12	0	0	0	0	0	34	180
COSCO PRIDE	VRIV3	A	New York	0	0	0	0	0	7	57	48	39	46	100	145	442
COSCO PRINCE RUPERT	VRID6	A	New York	0	30	61	21	29	33	65	66	73	107	119	120	724
COSCO TAICANG	VREV9	A	Anchorage	0	5	8	4	12	0	5	6	3	4	3	10	60
COSCO THAILAND	VRHM2	A	Anchorage	4	13	56	32	33	33	20	28	5	5	10	23	262
COSCO VALENCIA	VRLY7	I	Anchorage	0	5	0	0	4	0	2	0	0	0	5	4	20
COSCO VIETNAM	VRID5	A	New York	43	32	37	60	54	57	32	7	8	6	0	12	348

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COSTA DELIZIOSA	IBJD	A	Anchorage	0	0	0	0	107	137	60	0	0	0	28	44	376
COSTA DIADEMA	IBCX	A	Anchorage	31	23	10	0	82	55	39	2	0	4	77	77	400
COSTA FORTUNA	IBNY	A	Miami	106	48	73	93	63	15	132	101	69	131	74	85	990
COSTA NEOCLASSICA	ICIC	I	Anchorage	17	58	72	11	0	0	0	0	0	0	0	0	158
COSTA PACIFICA	ICJA	A	Anchorage	0	0	129	128	36	0	0	98	169	126	92	0	778
COSTA SERENA	ICAZ	A	Anchorage	2	33	13	16	83	12	67	48	3	0	0	24	301
COURAGEOUS	WDJ8976	A	Anchorage	0	0	0	0	0	0	1	1	2	3	3	11	21
COYHAIQUE	D5HF5	A	Anchorage	0	11	1	3	12	1	15	1	0	3	0	11	58
CROSS POINT	WDA3423	A	Anchorage	0	0	0	1	2	0	1	1	0	1	0	0	6
CROWNED EAGLE	V7QP4	A	Anchorage	0	0	0	0	0	0	14	0	0	0	0	0	14
CRYSTAL MARINE	9VIC4	A	Anchorage	0	9	47	60	22	1	19	0	0	0	0	31	189
CRYSTAL SERENITY	C6SY3	A	Anchorage	105	127	105	85	141	131	173	124	113	46	174	157	1481
CRYSTAL SUNRISE	9V2024	I	Anchorage	18	10	8	0	0	0	0	0	0	0	0	0	36
CRYSTAL SYMPHONY	C6MY5	A	Anchorage	0	0	0	0	0	15	71	32	8	10	5	13	154
CS GLOBAL SENTINEL	KGSU	A	Baltimore	63	49	42	0	45	5	0	7	3	15	27	1	257
CSCL AFRICA	VRBI3	A	New York	69	39	6	21	22	14	11	40	82	64	57	23	448
CSCL ASIA	VRAB8	A	Anchorage	7	18	13	9	17	13	6	9	2	12	1	0	107
CSCL AUTUMN	VRNA7	A	Anchorage	3	10	6	2	5	6	6	5	15	5	8	5	76
CSCL BOHAI SEA	VRNG8	A	Anchorage	6	7	0	6	0	6	7	1	6	6	8	12	65
CSCL BRISBANE	VRBJ9	A	Anchorage	29	3	0	0	0	1	64	36	15	45	13	4	210
CSCL CALLAO	VRFB4	I	Anchorage	4	7	0	0	0	0	0	0	0	0	0	0	11
CSCL EAST CHINA SEA	VRNM3	A	Anchorage	1	2	8	5	2	3	4	7	3	8	8	8	59
CSCL LONG BEACH	VRCZ7	A	Anchorage	12	16	0	0	16	20	11	2	1	12	3	8	101
CSCL MELBOURNE	VRBI8	A	Anchorage	0	0	0	0	9	34	17	26	19	0	0	0	105
CSCL MONTEVIDEO	VREI4	A	Anchorage	0	0	0	0	0	0	0	0	0	0	49	44	93
CSCL NEW YORK	VRBH7	A	Anchorage	0	0	0	0	9	6	3	0	0	0	0	0	18
CSCL SAN JOSE	VREP4	A	Anchorage	0	0	0	0	5	0	0	0	0	0	0	0	5
CSCL SOUTH CHINA SEA	VRNT8	A	Anchorage	5	8	0	5	9	4	5	10	2	4	9	11	72
CSCL SPRING	VRMT6	A	Anchorage	0	2	1	1	1	0	0	5	2	4	0	6	22
CSCL SUMMER	VRMZ7	A	Anchorage	0	10	8	2	4	2	13	6	0	0	0	0	45
CSCL SYDNEY	VRBH9	A	Norfolk	0	0	0	0	5	82	67	65	80	48	79	17	443

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CSCL WINTER	VRNA3	A	Anchorage	0	1	5	1	5	2	8	5	4	5	7	19	62
CSCL YELLOW SEA	VRNG9	A	Anchorage	0	8	9	4	4	8	0	0	8	0	0	0	41
CSCL ZEEBRUGGE	VRCS2	A	Anchorage	0	0	0	0	0	11	22	10	0	0	5	0	48
CSL ASSINIBOINE	VCKQ	A	Duluth	0	0	0	0	17	82	103	121	101	103	69	44	640
CSL LAURENTIEN	VCJW	A	Duluth	2	0	0	3	18	8	9	31	21	4	0	4	100
CSL NIAGARA	VCGJ	A	Duluth	16	0	3	20	9	24	25	29	19	8	12	10	175
CSL ST-LAURENT	CFK5152	A	Duluth	0	0	0	0	3	5	9	23	26	18	31	21	136
CSL TADOUSSAC	VDWB	A	Duluth	0	0	0	0	0	0	28	38	56	85	28	11	246
CSL WELLAND	CFK5151	A	Duluth	0	0	0	0	0	0	0	0	1	0	0	0	1
DANA CRUZ	WDF4762	A	Anchorage	0	0	0	0	5	14	10	6	4	9	0	0	48
DANCING BRAVE	9V3867	A	Anchorage	0	0	0	0	0	0	0	30	9	63	35	5	142
DARLING RIVER	DARI	A	Anchorage	0	0	0	0	3	16	10	10	21	9	14	24	107
DARYA DEVI	VRLG6	A	Anchorage	0	0	0	0	0	0	5	10	2	0	0	0	17
DARYA GAYATRI	VRKC8	A	Anchorage	0	0	0	0	0	0	0	0	14	21	28	2	65
DARYA LOK	VRKQ7	A	Anchorage	28	52	69	3	0	0	0	0	11	43	24	26	256
DARYA MA	VRJH5	A	Anchorage	0	0	0	0	3	0	0	0	0	0	0	1	4
DARYA SATI	VRQO5	A	Anchorage	0	0	0	9	25	0	21	15	18	0	0	0	88
DEFENDER	WBN3016	I	Jacksonvill	0	0	0	0	0	42	16	0	0	0	0	0	58
DELTA MARINER	WCZ7837	A	New	0	0	0	0	0	0	9	19	0	2	0	9	39
DEPENDABLE	V7DI6	A	Baltimore	34	31	2	1	1	36	49	22	16	54	0	12	258
DERING (AWS)	VTVS	A	Anchorage	248	209	239	233	247	237	246	239	232	212	224	224	2790
DESERT ORCHID	9V3865	A	Anchorage	0	0	0	0	17	41	9	1	1	0	0	0	69
DESH ABHIMAAN	AWUU	A	Anchorage	3	5	1	3	0	27	51	7	0	4	0	0	101
DESH GARIMA	AVBC	A	Anchorage	3	0	6	2	39	76	50	38	30	1	28	17	290
DESH MAHIMA	AVBF	A	Anchorage	0	0	28	36	19	85	70	6	4	1	6	0	255
DESH PREM	AUBC	A	Anchorage	0	0	0	1	0	6	0	8	0	7	7	5	34
DESH SAMMAN	AVBE	A	Anchorage	0	0	1	5	0	1	15	19	0	0	5	8	54
DESH SHAKTI	AUCU	A	Anchorage	3	2	2	4	1	0	0	0	8	6	3	1	30
DESH SHOBHA	AVWF	A	Anchorage	0	0	4	2	0	0	13	11	3	0	0	11	44
DESH UJAALA	AUFI	A	Anchorage	0	0	0	22	27	15	22	30	7	1	0	0	124
DESH VIBHOR	AVQU	A	Anchorage	0	0	0	5	18	7	4	7	6	0	0	0	47



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DESH VISHAL	AUTP	A	Anchorage	3	3	0	0	8	13	10	3	0	0	2	3	45
DETROIT EXPRESS	VRLX4	A	Anchorage	0	0	0	52	51	40	64	47	3	1	11	12	281
DIAMOND HARBOUR	VREI6	A	Anchorage	0	0	0	0	0	4	8	0	6	1	0	0	19
DIANE H	WUR7250	A	Anchorage	0	0	0	0	0	0	2	1	0	0	0	0	3
DIAPOROS	A8VP5	A	Anchorage	0	0	0	0	1	3	5	0	7	4	3	18	41
DISCOVERER INSPIRATION	V7MO3	A	Houston	123	109	120	115	122	117	113	114	104	46	24	117	1224
DISHA	9HSJ7	A	Anchorage	0	0	0	0	7	19	17	28	22	27	3	0	123
DISNEY DREAM	C6YR6	A	Jacksonvill	43	35	71	194	114	14	15	38	203	34	44	141	946
DISNEY FANTASY	C6ZL6	A	Jacksonvill	0	0	26	126	175	31	6	67	170	230	107	19	957
DISNEY MAGIC	C6PT7	A	Miami	0	26	4	14	30	1	0	0	8	9	41	19	152
DISNEY WONDER	C6QM8	A	Jacksonvill	20	41	75	52	14	0	25	48	19	10	30	67	401
DOMINATOR	WBZ4106	A	Anchorage	0	0	27	35	0	42	70	10	0	0	0	0	184
DUNCAN ISLAND	C6JS	I	Miami	0	0	20	0	0	0	0	0	0	0	0	0	20
DUNEDIN STAR	D5FF5	A	Anchorage	0	0	5	0	0	0	24	5	3	3	0	0	40
DURABLE	V7DI8	A	Baltimore	0	0	0	0	0	2	0	0	10	12	41	3	68
EAGLE KUCHING	9V8132	I	Houston	11	0	0	0	0	0	0	0	0	0	0	0	11
EAGLE STAVANGER	3FNZ5	I	Houston	21	22	0	0	0	0	0	0	0	0	0	0	43
EAGLE SYDNEY	3FUU	A	New	10	17	9	0	0	0	10	0	0	0	0	0	46
EAGLE TAMPA	S6NK6	I	Houston	17	1	0	0	0	0	0	0	0	0	0	0	18
EARTH SUMMIT	9V2911	A	Anchorage	0	3	0	0	0	1	43	23	102	110	70	124	476
EASTER N	3FMO7	A	New	28	21	8	17	25	33	32	2	0	20	32	2	220
EASTERN CAPE	VRLD8	A	Anchorage	0	0	0	0	10	22	26	15	5	0	8	13	99
EDGAR B. SPEER	WDH7562	A	Duluth	46	0	27	130	117	109	216	67	200	272	139	156	1479
EDWIN H. GOTT	WDH7558	A	Duluth	115	0	27	135	72	92	30	107	168	167	33	151	1097
EL COQUI	WDJ4838	A	Jacksonvill	0	0	0	0	0	0	8	42	32	18	30	33	163
EL SEGUNDO VOYAGER	C6DQ2	A	Anchorage	0	0	0	0	0	0	0	0	0	0	9	8	17
ELCIE	WDF2656	A	Baltimore	5	16	7	8	0	3	0	7	11	1	7	8	73
ELIZABETH RIVER	VRBJ5	A	Anchorage	10	14	14	13	10	22	2	0	7	8	14	79	193
ELLINGTON	9V2908	A	Anchorage	0	0	0	0	0	0	0	3	3	0	0	0	6
ELRINGTON	WDJ8313	A	Anchorage	0	0	0	0	0	0	8	21	4	9	13	13	68
ELVIRA BULKER	OWLC2	A	Jacksonvill	0	0	0	0	0	0	0	24	50	76	41	46	237

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
EMERALD SPIRIT	C6BC3	I	Anchorage	0	0	111	28	50	0	0	0	0	0	0	0	189
EMERY ZIDELL	WDH7301	A	Anchorage	0	0	0	0	0	12	6	4	2	4	6	0	34
EMILIUS	9V2909	A	Anchorage	97	120	133	142	146	158	156	66	0	0	0	0	1018
EMPERY	9V2907	I	Anchorage	24	0	0	0	0	0	0	0	0	0	0	0	24
EMPIRE STATE	KKFW	A	New York	0	0	0	0	120	127	148	53	0	0	0	0	448
EMPRESS OF THE SEAS	C6CM8	A	Miami	0	0	74	42	13	21	22	32	7	0	27	44	282
ENCHANTMENT OF THE SEAS	C6FZ7	A	Jacksonvill	16	23	10	79	17	0	11	62	51	7	0	82	358
ENDEAVOR (AWS)	WCE5063	A	New York	716	594	735	715	741	718	730	725	599	740	696	62	7771
ENDURANCE	WDF7523	I	Anchorage	7	0	7	2	3	0	0	0	0	0	0	0	19
ENDURANCE	WDE9586	A	Baltimore	74	61	58	54	154	87	83	31	36	100	124	116	978
ENGLISH BAY	VRYQ9	A	Anchorage	4	10	0	0	0	0	2	10	7	15	12	20	80
ENSIGN	WBN3012	I	Jacksonvill	0	14	42	25	0	0	0	0	0	0	0	0	81
ERNEST N	A8PQ6	A	Anchorage	0	0	0	0	0	0	0	0	0	1	2	16	19
ESPERANCE BAY	VRHM6	A	Anchorage	0	0	7	0	7	20	0	5	0	0	0	7	46
EURODAM	PHOS	A	Miami	108	63	99	88	59	32	40	39	58	85	67	95	833
EVER DAINTY	9V7951	A	Baltimore	0	0	5	0	0	0	0	12	0	0	0	0	17
EVER DIVINE	9V7956	I	Norfolk	0	0	0	0	32	19	6	3	0	0	0	0	60
EVER EAGLE	ZNZH6	A	Seattle	14	11	0	14	12	4	1	0	0	0	0	0	56
EVER ELITE	VSJG7	A	Los	46	19	15	28	29	33	29	32	0	0	2	63	296
EVER ETHIC	VQFS4	A	Seattle	4	2	24	6	0	5	35	18	22	27	18	20	181
EVER EXCEL	VSXV3	A	Los	65	0	0	0	0	0	0	0	0	0	13	0	78
EVER LAMBENT	2FRE8	A	New York	2	1	0	52	10	66	34	50	79	16	2	1	313
EVER LASTING	2FRK7	A	New York	0	0	0	0	0	0	0	0	0	7	5	0	12
EVER LAUREL	9V9287	A	New York	43	39	87	92	240	285	309	245	195	27	4	17	1583
EVER LEADER	9V9289	A	New York	12	15	35	12	29	19	49	14	9	17	34	16	261
EVER LEADING	2FRK8	A	Norfolk	78	0	0	27	56	45	55	78	89	69	103	255	855
EVER LEARNED	2GNG3	I	Baltimore	0	0	0	0	0	0	0	0	0	0	3	0	3
EVER LEGACY	9V9290	A	New York	0	9	7	6	12	1	2	0	8	21	102	181	349
EVER LEGEND	9V9724	I	New York	15	2	0	3	17	17	14	4	0	0	0	0	72
EVER LEGION	9V9725	A	New York	35	21	61	78	69	79	86	107	95	110	12	1	754
EVER LENIENT	2HDF9	A	Los	0	14	9	10	11	23	9	8	0	0	0	0	84



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EXCELSIOR	ONCD	I	Houston	39	11	0	0	0	0	0	0	0	0	0	0	50
EXPLORER	WBN7618	I	Jacksonvill	0	0	0	0	7	0	0	0	0	0	0	0	7
EXPLORER OF THE SEAS	C6SE4	A	Jacksonvill	51	67	56	45	8	10	12	52	46	56	45	52	500
EXPRESS	ONFL	A	Houston	54	30	28	47	35	23	3	0	0	0	0	16	236
FAIRCHEM EDGE	V7EC4	A	Anchorage	0	0	0	0	0	0	0	0	135	98	58	8	299
FAIRCHEM FILLY	V7MS4	A	Anchorage	0	0	0	0	0	0	1	0	0	0	0	0	1
FAIRCHEM STEED	V7LF9	I	Anchorage	0	0	0	9	0	0	0	0	0	0	0	0	9
FAIRWEATHER	WDB5604	A	Anchorage	0	0	0	0	0	1	0	2	2	2	4	1	12
FALKONERA	D5LH4	A	Anchorage	0	0	0	0	0	0	0	0	0	3	10	0	13
FALKOR (AWS)	ZCYL5	A	Anchorage	0	0	0	0	0	0	0	51	448	403	349	308	1559
FEDERAL BALTIC	V7DS8	A	Anchorage	0	0	3	4	12	24	9	1	0	0	0	0	53
FEDERAL BARENTS	V7FY7	A	Anchorage	0	0	0	0	0	0	0	0	44	0	0	0	44
FEDERAL BEAUFORT	V7MF7	A	Anchorage	1	0	0	0	22	38	97	22	3	0	1	0	184
FEDERAL BRISTOL	V7NB9	A	Anchorage	0	0	0	0	59	36	7	0	0	0	0	0	102
FEDERAL CHAMPLAIN	V7NK2	A	Anchorage	0	0	0	0	1	0	0	0	0	0	0	0	1
FEDERAL CHURCHILL	V7NK3	I	Anchorage	8	0	1	0	0	0	0	0	0	0	0	0	9
FEDERAL CLYDE	V7NK4	A	Anchorage	0	0	0	16	16	8	10	9	0	0	0	0	59
FEDERAL COLUMBIA	V7NK5	A	Anchorage	0	0	0	0	0	50	38	4	0	0	0	0	92
FEDERAL DART	V7GG7	A	Anchorage	0	0	0	13	14	0	20	7	0	0	0	0	54
FEDERAL DELTA	V7PX5	A	Anchorage	0	0	0	0	0	0	0	0	0	26	3	15	44
FEDERAL IBERVILLE	3EXN6	A	Anchorage	0	0	0	0	0	0	4	9	1	7	8	0	29
FEDERAL IRIS	3EXR8	A	Anchorage	0	0	11	9	24	15	16	22	5	21	14	13	150
FEDERAL ISLAND	3FNO5	A	Anchorage	1	0	0	0	0	0	0	1	0	2	3	14	21
FEDERAL KIVALINA	V7RF2	A	Anchorage	0	0	36	37	46	27	25	8	5	15	7	19	225
FEDERAL KUMANO	V7RF4	A	Anchorage	25	6	1	0	0	0	2	1	0	0	0	0	35
FEDERAL MACKINAC	V7RI8	A	Anchorage	0	0	0	0	0	0	0	0	2	15	8	2	27
FEDERAL MARGAREE	V7RI7	I	Anchorage	11	15	1	0	0	0	0	0	0	0	0	0	27
FEDERAL MAYUMI	V7YF2	I	Anchorage	0	0	25	8	0	0	0	0	0	0	0	0	33
FEDERAL NAGARA	V7HU4	A	Anchorage	0	0	0	0	0	9	26	0	7	7	7	11	67
FEDERAL NAKAGAWA	V7RF9	A	Anchorage	0	0	0	0	0	0	0	0	54	26	24	1	105
FEDERAL SABLE	V7WS4	A	Anchorage	0	1	25	23	15	23	49	25	5	0	0	0	166

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
FEDERAL SCHELDE	8POF	I	Anchorage	30	10	14	0	0	0	0	0	0	0	0	0	54
FEDERAL SWIFT	V7WS6	A	Anchorage	0	0	0	0	14	7	42	7	1	0	11	0	82
FEDERAL TAKASE	V7NJ9	A	Anchorage	29	25	25	17	10	19	15	11	7	12	10	22	202
FEDERAL TAMBO	V7YW3	A	Anchorage	0	0	0	0	9	19	22	18	25	20	16	0	129
FEDERAL TIBER	V7YW2	A	Anchorage	0	0	0	0	0	0	0	0	15	11	15	24	65
FEDERAL TRIDENT	V7NJ6	A	Anchorage	0	0	0	0	8	3	0	10	2	0	0	0	23
FEDERAL TYNE	V7YW5	A	Anchorage	110	88	138	15	49	67	4	0	0	0	0	0	471
FEDERAL WELLAND	V7RG7	I	Anchorage	0	0	0	18	1	0	0	0	0	0	0	0	19
FEDERAL WESER	V7WU4	A	Anchorage	0	0	0	11	173	47	3	0	0	0	0	0	234
FEDERAL YELLOWSTONE	V7ZC6	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	1	1
FEDERAL YUKINA	VRHN7	A	Anchorage	7	9	6	17	5	12	6	4	0	0	0	0	66
FISH HAWK	WDF2995	A	Anchorage	0	0	0	16	23	11	8	3	19	57	35	4	176
FLORIDA	WFAF	A	Houston	14	24	0	0	0	1	3	0	0	0	0	0	42
FLORIDA VOYAGER	WDF4764	A	New	40	12	25	4	42	0	0	57	11	3	2	0	196
FMG AMANDA	VRRD3	A	Anchorage	0	0	0	0	0	0	16	12	17	12	10	18	85
FMG MATILDA	VRRD2	I	Anchorage	0	23	20	21	12	0	0	0	0	0	0	0	76
FOMENTO TWO	9V5542	A	Anchorage	10	7	3	2	9	17	17	19	14	10	0	0	108
FPMC 25	A8YV4	A	Anchorage	0	0	0	0	0	0	0	10	0	0	0	0	10
FREEDOM	WDB5483	A	Jacksonvill	13	21	11	20	27	35	19	9	14	8	2	44	223
FREEDOM OF THE SEAS	C6UZ7	A	Miami	2	17	1	0	10	8	21	0	0	35	39	30	163
FRIO	V7UU3	A	Anchorage	0	0	0	128	111	86	73	52	125	92	54	19	740
FRITZI N	A8PQ4	A	Anchorage	8	28	39	52	44	51	137	0	0	0	0	0	359
FRONTIER ISLAND	VRID4	A	Anchorage	0	15	12	0	0	0	3	0	0	0	0	0	30
G. L. OSTRANDER	WCV7620	A	Duluth	1	0	0	1	13	20	20	1	6	21	17	4	104
G. SYMPHONY	3FCJ9	A	Anchorage	13	15	16	17	12	30	30	91	8	0	0	0	232
G3 MARQUIS	XJBO	A	Duluth	6	0	2	46	9	2	29	23	11	19	28	0	175
GARDEN STATE	KGSG	A	Anchorage	0	0	0	0	1	2	3	0	0	0	2	11	19
GENCO AUGUSTUS	VRDD2	A	Anchorage	0	5	0	0	0	0	0	0	0	3	0	0	8
GENCO CLAUDIUS	V7SY6	A	Anchorage	34	44	30	2	0	5	0	0	0	0	0	0	115
GENCO MAXIMUS	V7SJ3	A	Anchorage	0	7	11	3	0	0	0	0	0	0	0	0	21
GENCO RAPTOR	V7NB8	A	Anchorage	0	0	0	0	0	0	0	1	0	0	0	0	1



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GENCO TITUS	VRDI7	A	Anchorage	16	0	0	9	1	14	16	22	0	0	0	0	78
GENER8 COMPANION	ZCDI4	A	Anchorage	550	582	619	486	0	42	8	27	6	2	0	0	2322
GENERAL RUDDER	WTAU	A	Houston	0	0	0	0	0	0	0	32	0	0	0	0	32
GENMAR COMPATRIOT	ZCDK2	A	Anchorage	0	0	18	37	10	23	7	0	1	21	51	87	255
GENOA EXPRESS	VRLX5	A	Anchorage	23	28	2	0	0	0	0	0	0	0	0	48	101
GEORGE N	A8PQ5	A	Anchorage	14	23	16	48	15	15	5	0	37	36	22	26	257
GLEN CANYON BRIDGE	3EFD9	A	Norfolk	6	21	30	0	62	26	18	10	35	19	34	0	261
GLOBAL PRIME	C6AT2	A	Anchorage	0	0	0	0	1	0	0	0	0	0	0	0	1
GLOBAL SUCCESS	3FYT2	A	New	0	0	0	0	0	70	0	67	25	71	25	0	258
GOLDEN BEAR	WDL2000	I	San	0	0	0	0	28	26	0	0	0	0	0	0	54
GOODWYN ISLAND	VRRL7	A	Anchorage	5	0	8	1	0	0	3	0	0	1	0	0	18
GORDON JENSEN	WDG3440	A	Anchorage	0	0	15	5	0	0	0	0	0	0	0	3	23
GRANDEUR OF THE SEAS	C6SE3	A	Jacksonvill	36	88	87	54	235	262	273	156	213	121	141	336	2002
GRANVILLE BRIDGE	3EGM7	A	Anchorage	6	3	11	8	9	10	3	5	4	11	6	6	82
GREAT REPUBLIC	WDH7561	A	Duluth	16	0	0	5	11	78	83	120	56	51	42	29	491
GREBE ARROW	C6OM7	A	Anchorage	0	0	0	0	0	0	0	0	0	0	52	28	80
GREEN BAY	WDI3177	A	Jacksonvill	5	7	15	8	18	23	18	8	1	37	30	26	196
GREEN COVE	WDG5660	A	Baltimore	7	3	9	21	0	0	0	0	19	33	11	5	108
GREEN LAKE	WDDI	A	Jacksonvill	1	27	12	1	17	29	29	12	13	12	43	60	256
GREEN RIDGE	WZZF	A	Jacksonvill	0	0	0	0	51	47	4	0	0	0	0	3	105
GREENWICH BRIDGE	3EEX5	A	Anchorage	5	7	6	5	11	4	3	5	10	7	8	7	78
GUANG DONG BRIDGE	3EFI	A	New York	28	13	25	31	34	25	26	31	19	22	0	7	261
GUARDSMAN	WBN5978	A	Anchorage	5	0	3	3	0	5	4	0	0	0	0	0	20
GULF CAJUN	WDE2831	I	Anchorage	1	8	20	10	6	12	0	0	0	0	0	0	57
GULF RELIANCE	WDD2703	A	Anchorage	0	0	0	10	5	20	10	9	9	3	10	15	91
H A SKLENAR	C6CL6	A	Houston	3	13	147	72	96	132	75	141	146	172	139	124	1260
H. LEE WHITE	WZD2465	A	Duluth	3	0	0	27	26	24	6	39	43	21	4	9	202
HAINAN ISLAND	VRMY3	A	Anchorage	16	4	0	1	0	0	0	0	0	0	3	0	24
HALIFAX EXPRESS	VRMW7	A	New	2	16	0	23	13	16	17	12	50	18	41	39	247
HAPPY CLIPPER	VRWX9	A	Anchorage	3	11	5	4	7	0	0	0	0	8	7	0	45
HARDANGER	9VAW6	A	Anchorage	0	0	0	0	6	0	0	0	0	0	5	225	236

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HARMONY OF THE SEAS	C6BX8	A	Miami	25	8	45	10	21	1	0	0	0	29	12	17	168
HAWAII	WDI5794	A	Anchorage	0	0	0	7	10	5	16	38	38	17	0	0	131
HENRY GOODRICH	YJQN7	A	Houston	200	122	211	210	220	202	213	213	205	220	211	218	2445
HERBERT C. JACKSON (AWS)	WL3972	A	Duluth	291	2	309	666	741	696	714	395	716	743	717	667	6657
HERCULES VOYAGER	C6AB9	A	Anchorage	10	6	15	18	77	23	14	24	13	55	28	36	319
HIGH FORCE	3FMA2	A	Anchorage	0	0	0	0	0	27	2	14	26	5	0	4	78
HOEGH CHIBA	LAVD7	I	Jacksonvill	20	21	15	27	9	0	0	0	0	0	0	0	92
HON. JAMES L. OBERSTAR	WL3108	A	Duluth	211	123	741	720	741	719	744	744	695	739	703	744	7624
HONEY ISLAND	VRPT5	A	Anchorage	0	0	0	0	0	6	64	53	29	45	16	0	213
HONOR	WDC6923	A	Baltimore	2	31	13	9	11	23	20	5	1	22	11	11	159
HORIZON ENTERPRISE	KRGB	A	Seattle	90	69	67	0	0	0	64	49	37	40	44	54	514
HORIZON PACIFIC	WSRL	A	Seattle	66	29	33	68	75	42	76	68	46	49	61	82	695
HORIZON RELIANCE	WFLH	A	Los	32	0	18	37	54	45	47	46	59	54	57	45	494
HORIZON SPIRIT	WFLG	I	Los	18	21	60	54	39	12	0	0	0	0	0	0	204
HOS RED DAWN	WDG8133	A	Anchorage	0	0	0	0	0	0	0	0	0	2	14	10	26
HOUSTON	KCDK	A	New	17	13	19	13	13	9	9	33	0	0	34	25	185
HOVDEN SPIRIT	V7UT7	A	Anchorage	6	0	1	0	16	13	2	9	45	23	25	49	189
HUNTER	WBN3744	A	Anchorage	2	2	9	0	0	0	2	0	0	0	0	0	15
HYDRA VOYAGER	C6AB8	A	Anchorage	0	0	1	0	15	14	0	33	45	40	38	3	189
HYUNDAI BUSAN	5BZN3	A	Anchorage	39	21	74	23	30	51	20	52	51	43	24	25	453
HYUNDAI GOODWILL	3EQO	A	Anchorage	0	14	10	13	16	7	9	15	12	10	10	18	134
HYUNDAI GRACE	V7QC3	A	Anchorage	1	0	2	6	6	7	1	9	4	8	3	13	60
HYUNDAI HONGKONG	5BZL3	A	Anchorage	0	12	5	10	2	0	4	1	0	4	5	7	50
HYUNDAI JAKARTA	3EJM4	A	Anchorage	5	8	11	4	14	8	7	14	8	7	9	9	104
HYUNDAI OAKLAND	2CFV2	A	Anchorage	6	4	3	0	3	0	1	12	12	0	0	0	41
HYUNDAI SHANGHAI	5BZM3	A	Anchorage	2	17	12	8	21	10	11	12	4	14	9	10	130
HYUNDAI SINGAPORE	5BZP3	A	Anchorage	1	0	0	0	0	1	0	1	1	7	5	12	28
HYUNDAI TOKYO	5BZK3	A	Anchorage	13	8	8	19	11	11	5	6	50	27	18	41	217
HYUNDAI VANCOUVER	2DTQ2	A	Anchorage	4	7	6	8	4	6	0	12	0	0	0	0	47
HYUNDAI VOYAGER	3EQF9	A	Anchorage	4	3	12	5	5	4	0	0	0	8	1	13	55
IKAN SEMBAK	3FDX5	A	New	0	0	0	0	0	0	0	27	89	74	0	0	190

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ILE DE BATZ	FOSU	A	Anchorage	0	0	0	0	7	3	0	7	0	1	0	0	18
ILLUSION (AWS)	WBA4557	A	Anchorage	0	0	0	0	0	0	0	0	146	11	0	0	157
IMABARI LOGGER	VRNE6	A	Anchorage	22	16	10	19	3	0	0	0	0	9	19	18	116
IMKE SELMER	V7PI7	A	Anchorage	0	0	0	0	0	0	0	0	5	13	0	0	18
IMPRESSION BAY	VROV6	A	Anchorage	8	0	13	6	17	0	0	9	17	5	0	0	75
INCE POINT	VRSF6	A	Anchorage	0	0	0	0	0	0	0	0	0	0	5	6	11
INCHEON BAY	VRQO6	A	Anchorage	0	0	0	0	0	0	0	9	18	27	19	25	98
INDEPENDENCE II	WGAX	A	Baltimore	51	38	37	12	48	38	44	54	45	47	17	31	462
INDEPENDENCE OF THE SEAS	C6WW4	A	Miami	0	0	3	0	0	2	0	34	16	0	0	4	59
INDIAN OCEAN	VROQ8	A	Anchorage	0	0	0	0	0	0	0	0	0	0	8	13	21
INDIANA HARBOR	WXN3191	A	Duluth	5	0	0	5	26	25	28	25	22	31	19	3	189
INDIGO LAKE	VROY7	A	Anchorage	28	2	16	6	16	13	13	15	0	4	8	12	133
INGOT	WDJ9413	A	Anchorage	0	0	0	0	0	0	8	18	18	17	17	12	90
INLAND SEAS	WCJ6214	A	Duluth	0	0	0	0	8	7	6	10	9	8	0	0	48
INTEGRITY	WDC6925	A	Baltimore	20	11	4	20	29	34	27	22	24	28	5	15	239
IPANEMA BEACH	PB105	A	Anchorage	0	0	0	0	0	0	0	3	1	0	2	31	37
ISLA BELLA	WTOI	A	Jacksonvill	25	51	70	47	62	54	42	57	55	73	57	47	640
ITAL UNICA	IBSM	A	Anchorage	2	10	1	9	4	0	8	0	5	0	0	0	39
ITAL UNIVERSO	IBSP	A	Anchorage	0	2	4	5	8	5	2	1	0	0	0	0	27
ITAL USODIMARE	IBPO	A	Anchorage	4	1	7	12	4	4	0	0	0	0	0	0	32
IVER FOSS	WYE6442	A	Anchorage	0	0	0	0	0	21	2	4	1	3	39	0	70
JAG ARYA	AVHV	A	Anchorage	0	0	0	0	0	0	0	6	6	12	10	0	34
JAKOB SELMER	V7OX8	A	Anchorage	0	0	0	0	0	0	12	12	0	0	0	0	24
JAMAICA BAY	VRMC9	A	Anchorage	6	18	17	3	15	17	9	22	7	25	22	7	168
JAMES BAY	VRLU4	A	Anchorage	16	14	21	7	21	18	20	12	20	12	16	31	208
JAMES L. KUBER	WDF7020	A	Duluth	6	0	0	63	57	15	0	3	11	1	30	27	213
JAMES R. BARKER (AWS)	WYP8657	A	Duluth	0	0	386	716	743	719	744	744	720	744	717	675	6908
JANE S	V7JJ4	A	Anchorage	0	1	0	0	1	0	2	0	0	0	0	0	4
JAVA SEA	WDB5557	A	Anchorage	0	3	2	0	4	2	2	0	18	0	0	0	31
JEAN ANNE	WDC3786	A	Los	36	2	1	7	18	27	6	0	36	44	45	38	260
JENNY N	A8PQ7	A	Houston	664	659	728	695	688	695	722	681	348	308	366	415	6969

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JERICO BEACH	VRMQ5	A	Anchorage	0	0	0	10	14	0	10	10	0	5	0	0	49
JERVIS BAY	VRMM1	A	Anchorage	7	0	11	6	1	0	0	0	20	17	13	12	87
JEWEL OF THE SEAS	C6FW9	A	Miami	49	28	56	57	38	11	23	11	1	23	46	40	383
JIANGMEN TRADER	VRK2	A	Anchorage	0	0	15	17	13	0	0	2	1	7	3	5	63
JOHN D. LEITCH	VGWM	A	Duluth	0	0	0	0	0	0	0	1	0	0	0	0	1
JOHN G. MUNSON	WDH7557	A	Duluth	0	0	1	14	26	26	25	40	81	94	80	37	424
JOHN J. BOLAND	WZE4539	A	Duluth	0	0	0	17	10	32	48	29	9	2	4	2	153
JONATHAN SWIFT	A8SN5	I	New York	17	38	43	23	8	15	21	0	0	0	0	0	165
JOSEPH L. BLOCK	WXY6216	A	Duluth	0	0	0	588	612	719	741	744	716	701	477	744	6042
JOYCE L. VANENKEVORT	WDB9821	A	Duluth	1	0	0	0	2	0	2	0	6	2	4	4	21
JULES POINT	VRMR7	A	Anchorage	0	0	0	0	0	0	0	0	0	7	1	11	19
KAHYASI	9V2738	I	Anchorage	0	0	0	0	9	0	0	0	0	0	0	0	9
KAI XUAN	V7YL7	A	Anchorage	11	6	28	0	7	19	0	11	16	15	8	6	127
KAMBOS	3ESY5	A	New	0	0	0	0	0	0	0	0	0	0	11	9	20
KANDA LOGGER	VRPN7	A	Anchorage	16	5	16	5	19	20	21	20	8	16	11	14	171
KAPRIJKE	ONIK	A	Houston	126	83	69	10	84	27	81	91	56	98	108	107	940
KAREN ANDRIE	WBS5272	A	Duluth	1	1	0	0	1	0	1	0	6	1	2	1	14
KAROLINE N	A8PQ8	A	Anchorage	7	0	10	9	1	0	265	726	503	37	4	49	1611
KAUAI	WSRH	A	Seattle	2	1	2	6	19	31	5	24	11	16	8	0	125
KAYE E. BARKER (AWS)	WCF3012	A	Duluth	207	0	318	716	528	713	737	257	714	741	714	743	6388
KENDAL	C6XE9	A	Anchorage	238	40	72	76	8	15	0	0	0	0	2	35	486
KENNICOTT	WCY2920	A	Anchorage	0	0	0	1	25	2	13	2	14	0	2	0	59
KESTREL	WDE7804	A	Anchorage	0	0	0	3	6	0	3	1	1	0	0	0	14
KESWICK	C6XE5	A	Anchorage	0	0	0	0	0	0	0	0	0	11	31	27	69
KEY WEST	VRQK2	A	Anchorage	0	0	0	2	13	6	5	0	3	8	3	7	47
KILO MOANA	WDA7827	A	Honolulu	2	4	74	74	72	48	57	55	36	41	24	4	491
KINGCRAFT	9V2737	A	Anchorage	15	85	69	64	165	66	29	31	31	85	122	112	874
KISBER	9V2736	I	Anchorage	10	0	0	0	0	0	0	0	0	0	0	0	10
KIWI TRADER	VRWN7	A	Anchorage	0	0	8	30	5	7	5	6	23	5	0	0	89
KN ARCADIA	9V3913	A	Anchorage	59	43	36	59	11	15	1	0	0	0	0	0	224
KODIAK ISLAND	VRQO7	A	Anchorage	8	7	7	11	6	13	3	0	0	7	8	3	73





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LUZON STRAIT	VRCJ2	A	Anchorage	0	18	5	22	25	9	47	55	3	13	17	12	226
M.F.V. SAGARIKA (AWS)	VTLX	A	Anchorage	191	70	163	214	183	154	0	190	234	232	175	83	1889
M.V. IRELAND	C6DD6	A	Jacksonvill	0	0	0	0	0	21	38	25	45	40	19	40	228
MAASDAM	PFRO	A	Miami	97	49	55	5	6	7	13	45	53	353	246	62	991
MAERSK ATLANTA	WNLT	A	Charleston	7	5	15	33	22	0	24	44	74	52	14	35	325
MAERSK CHICAGO	WMCS	A	Norfolk	58	36	20	20	37	60	48	29	23	22	31	37	421
MAERSK COLUMBUS	WMCU	A	Norfolk	9	9	23	39	32	36	47	27	22	32	28	38	342
MAERSK DENVER	WMDQ	A	New York	10	16	5	23	25	22	0	48	36	21	17	62	285
MAERSK DETROIT	WMDK	A	Norfolk	98	8	84	26	54	49	68	73	61	18	50	40	629
MAERSK HARTFORD	WMHA	A	New York	36	30	31	47	41	36	17	0	40	26	9	42	355
MAERSK IDAHO	WKPM	A	Houston	22	12	22	18	9	51	33	36	21	47	49	49	369
MAERSK IOWA	KABL	A	Norfolk	70	39	48	55	35	39	50	55	49	102	31	0	573
MAERSK KENSINGTON	WMKN	A	Charleston	84	83	42	69	140	117	85	68	51	95	83	90	1007
MAERSK KENTUCKY	WKPY	A	Norfolk	25	41	46	65	91	93	90	70	77	64	58	65	785
MAERSK KINLOSS	WMKA	A	New York	0	0	0	0	9	2	53	21	7	49	46	42	229
MAERSK KOTKA	D5OV9	A	Charleston	0	27	35	0	0	0	0	0	0	0	0	0	62
MAERSK MEMPHIS	WMMK	A	Charleston	62	6	11	51	77	63	49	72	92	89	48	51	671
MAERSK MONTANA	WCDP	A	Norfolk	60	30	49	41	35	28	18	15	61	68	50	33	488
MAERSK OHIO	KABP	A	Houston	64	44	31	93	100	61	56	62	90	118	59	19	797
MAERSK PEARY	WHKM	A	Houston	36	33	34	11	11	4	10	13	26	32	19	4	233
MAERSK PITTSBURGH	WMPP	A	New York	84	58	58	42	27	97	91	35	3	50	60	66	671
MAERSK SELETAR	WTAA	A	New York	26	35	38	25	49	58	51	50	52	36	12	20	452
MAERSK SENTOSA	WSEP	A	New York	0	6	15	17	8	55	55	24	61	31	50	30	352
MAERSK TAIKUNG	VROX2	A	Anchorage	0	0	0	0	0	0	0	0	8	1	45	24	78
MAERSK VALLVIK	9V8839	A	Charleston	0	0	0	30	26	21	11	35	38	18	8	1	188
MAERSK VARNA	9V8838	A	Anchorage	0	0	0	0	0	0	30	55	49	33	22	32	221
MAHIMAH	WHRN	A	Los	35	15	27	35	16	7	19	36	19	14	24	13	260
MAIPO RIVER	VREZ3	A	Anchorage	0	0	10	13	24	12	26	16	7	26	15	19	168
MAJESTY OF THE SEAS	C6FZ8	A	Miami	31	0	9	24	9	9	23	39	51	42	34	20	291
MALASPINA	WI6803	A	Anchorage	0	0	0	0	0	0	0	1	1	0	0	1	3
MALOLO	WYH6327	A	Anchorage	29	32	28	25	37	27	27	22	22	33	1	0	283

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MANIFESTO	9V9574	A	Anchorage	0	0	0	77	91	97	58	15	94	26	70	155	683
MANITOULIN	XJBX	A	Duluth	0	0	0	0	0	13	8	5	4	1	0	0	31
MANITOWOC	WDE3569	A	Duluth	0	0	0	112	48	47	94	134	112	149	73	111	880
MANOA	KDBG	A	Los	5	5	16	25	27	17	8	28	17	21	36	25	230
MANUKAI	WRGD	A	Los	10	23	16	36	10	18	0	34	34	23	20	18	242
MANULANI	WECH	A	Los	21	29	6	1	30	18	0	3	2	0	2	7	119
MARCELLUS LADY	9V3144	A	Anchorage	0	0	15	26	38	6	0	0	0	20	5	17	127
MARCUS G. LANGSETH (AWS)	WDC6698	A	Anchorage	542	672	695	428	214	714	712	715	431	649	716	737	7225
MARINER OF THE SEAS	C6FV9	A	Miami	0	2	0	0	0	7	25	4	0	17	11	19	85
MARJORIE C	WDH6745	A	Los	5	11	29	16	7	2	39	53	39	5	15	46	267
MARSDEN POINT	VRNF3	A	Anchorage	21	18	33	45	13	13	9	11	2	9	0	0	174
MATAKANA ISLAND	VRGM4	A	Anchorage	9	19	51	35	58	6	18	0	13	5	11	16	241
MATSON ANCHORAGE	KGTX	A	Anchorage	28	18	23	53	29	46	25	51	92	96	45	27	533
MATSON CONSUMER	WCHF	A	Seattle	0	0	0	0	0	0	0	0	39	0	0	0	39
MATSON KODIAK	KGTZ	A	Anchorage	29	19	74	45	26	65	57	46	54	54	72	61	602
MATSON TACOMA	KGTY	A	Anchorage	69	79	107	67	77	61	61	81	125	104	68	33	932
MATSONIA	KHRC	A	Los	0	0	0	0	0	0	3	1	0	0	8	1	13
MATSYA VARSHINI (AWS)	ATVK	A	Anchorage	245	3	0	0	0	0	0	0	88	227	231	216	1010
MAUNALEI	KFMV	A	Los	22	36	38	33	41	10	18	14	30	35	14	8	299
MAUNAWILI	WGEB	A	Los	37	35	33	8	11	14	6	34	20	27	12	3	240
MEDEIA	WDE6486	A	Anchorage	0	0	3	0	11	5	7	5	0	1	0	0	32
MEHUIN	A8SG8	I	Charleston	0	0	0	0	0	0	0	37	0	15	0	0	52
MEIN SCHIFF 1	9HA4683	A	Miami	0	0	0	0	0	0	0	0	0	15	10	21	46
MEIN SCHIFF 2	9HJG9	A	Miami	0	0	0	0	0	0	0	0	0	0	120	124	244
MEIN SCHIFF 3	9HA3062	A	Miami	0	0	0	0	0	0	0	0	0	1	45	2	48
MEIN SCHIFF 4	9HA3513	A	Miami	0	0	0	0	0	0	0	0	0	21	37	40	98
MEIN SCHIFF 5	9HA3858	A	Miami	0	0	0	0	0	0	0	0	0	0	12	52	64
MEIN SCHIFF 6	9HA4330	A	New York	0	0	0	0	0	0	0	0	0	43	59	58	160
MERCURY HOPE	3FRE6	A	Anchorage	0	9	24	26	4	7	1	1	1	1	3	0	77
MERMAID HOPE	3FOJ2	A	Anchorage	5	0	1	0	0	0	0	44	18	0	0	0	68
MESABI MINER (AWS)	WYQ4356	A	Duluth	339	0	204	716	744	691	734	744	717	742	717	744	7092

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MGS SAGAR (AWS)	YJUP4	A	Anchorage	246	210	248	82	1	0	0	0	0	0	0	0	787
MICHELE FOSS	WDH8371	A	Anchorage	0	3	0	0	3	7	3	0	21	0	0	0	37
MIDNIGHT SUN	WAHG	A	Seattle	16	15	24	45	41	22	8	29	48	33	13	20	314
MIKE O'LEARY	WDC3665	A	Anchorage	0	0	0	16	21	23	24	12	10	0	0	0	106
MILLENNIUM STAR	WDA2184	A	Anchorage	0	0	0	0	0	13	3	0	0	0	0	0	16
MINERAL BEIJING	ONAR	A	Anchorage	10	0	0	2	4	7	33	12	0	0	19	8	95
MINERAL CHARLIE	VRJZ9	A	Anchorage	11	19	24	23	22	31	44	47	28	5	0	0	254
MINERAL CHINA	ONAC	A	Anchorage	33	47	44	37	10	21	43	53	54	21	12	23	398
MINERAL CLOUDBREAK	VRLA6	A	Anchorage	11	5	68	55	97	73	56	27	32	18	15	85	542
MINERAL DALIAN	ONFW	A	Anchorage	48	39	61	49	84	71	55	63	41	58	54	33	656
MINERAL DRAGON	ONFN	A	Anchorage	0	7	31	24	134	16	8	20	39	36	5	0	320
MINERAL FAITH	VRKS4	A	Anchorage	30	25	31	24	0	21	14	9	11	19	17	26	227
MINERAL HONSHU	D5QV7	A	Anchorage	0	3	37	15	15	22	15	14	15	13	28	31	208
MINERAL HOPE	VRKS3	I	Anchorage	23	11	7	0	0	0	0	0	0	0	0	0	41
MINERAL KYOTO	ONFI	A	Anchorage	32	37	53	2	19	23	31	9	65	19	52	34	376
MINERAL MAUREEN	VRKK2	A	Anchorage	13	9	35	42	25	15	35	42	23	27	32	37	335
MINERAL NEW YORK	ONGI	A	Anchorage	19	12	16	7	6	3	13	5	10	25	12	8	136
MINERAL NINGBO	ONGA	A	Anchorage	0	7	6	25	3	21	3	11	16	27	8	23	150
MINERAL NOBLE	ONAN	A	Anchorage	71	26	5	8	14	23	40	26	39	50	24	42	368
MINERAL STONEHENGE	ONGR	A	Anchorage	19	15	14	56	105	99	151	314	651	126	17	21	1588
MINERAL SUBIC	VRIF9	A	Anchorage	12	21	32	36	21	20	1	17	12	19	11	20	222
MINERAL TIANJIN	D5RN8	A	Anchorage	5	11	15	20	25	16	23	22	32	26	22	17	234
MINERAL YARDEN	D5LJ2	A	Anchorage	15	25	18	20	28	48	32	41	47	38	42	28	382
MISSISSIPPI VOYAGER	WDD7294	A	San	0	0	0	0	0	0	6	2	46	18	40	27	139
MOKIHANA	WNRD	A	Los	18	25	29	11	1	0	10	21	52	30	32	53	282
MOL BEACON	VROB9	A	Anchorage	27	14	22	52	82	59	93	52	54	53	32	16	556
MOL BEAUTY	VROG7	A	Anchorage	19	4	36	61	399	96	15	42	53	51	23	0	799
MOL BELIEF	VROD3	A	Anchorage	0	0	0	0	3	0	2	3	0	4	0	6	18
MOL BELLWETHER	VROG8	A	Anchorage	0	7	0	9	0	5	6	0	0	0	0	4	31
MOL BENEFACTOR	VRPJ6	A	Anchorage	18	8	43	8	34	27	32	56	61	44	25	25	381
MOL BREEZE	VRNL8	A	Anchorage	11	20	16	18	25	7	21	21	15	23	17	12	206

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MOL BRIGHTNESS	VRNL9	A	Anchorage	7	11	0	47	59	50	31	25	11	22	7	15	285
MOL BRILLIANCE	VRNL2	A	Anchorage	22	1	0	24	113	86	70	60	13	21	23	25	458
MOL CELEBRATION	C6WW7	A	Anchorage	0	3	9	2	7	7	3	10	4	6	6	9	66
MOL EMINENCE	VRFN8	A	Anchorage	0	0	0	0	0	0	0	0	33	40	18	4	95
MOL EMISSARY	VRFX6	A	New	56	18	8	0	0	21	25	15	12	11	12	21	199
MOL GLIDE	VRJF2	I	Charleston	103	54	58	30	0	0	0	0	0	0	0	0	245
MOL MAJESTY	V7SV4	I	Los	0	1	0	0	3	5	0	0	0	0	0	0	9
MOL MANEUVER	V7VC5	A	Charleston	0	10	7	4	2	0	4	0	0	0	4	6	37
MOL PARADISE	9V3118	A	Anchorage	0	2	2	0	0	0	0	0	7	12	11	9	43
MOL PRESTIGE	9V3122	A	Anchorage	4	0	7	3	5	0	0	29	31	41	73	48	241
MOMO GLORY	3EWL5	A	Anchorage	0	0	0	5	11	9	9	2	8	5	9	2	60
MONARCH	9HA3314	A	Anchorage	0	0	0	0	0	0	0	0	0	9	56	69	134
MORNING HARUKA	A8GK7	A	Anchorage	0	0	0	0	13	9	7	0	0	0	0	1	30
MORSTON	9V9144	A	Anchorage	0	3	47	5	24	17	14	28	22	0	0	0	160
MOTIVATOR	9V9143	A	Anchorage	25	43	17	0	0	0	0	1	1	0	24	13	124
MOUNT ADAMS	VRCB7	A	Anchorage	0	0	0	0	0	30	6	0	0	10	30	3	79
MOUNT ASO	VROV7	I	Anchorage	0	4	12	2	6	0	0	0	0	0	0	0	24
MOUNT BAKER	VRMN6	A	Anchorage	15	18	15	0	18	0	9	6	7	17	13	21	139
MOUNT DRUM	WDJ7294	A	Anchorage	0	0	17	55	16	17	15	12	10	21	7	18	188
MOUNT HIKURANGI	VRMC8	A	Anchorage	114	111	10	100	30	22	60	139	159	80	47	42	914
MOUNT OWEN	VRDU6	A	Anchorage	61	262	0	71	55	0	0	41	0	0	1	1	492
MOUNT RAINIER	VRBG6	A	Anchorage	3	3	12	8	4	2	7	7	0	0	0	10	56
MOUNT SEYMOUR	VRPT4	A	Anchorage	0	9	15	0	28	0	0	1	0	3	50	0	106
MOUNT TARANAKI	VRRW9	A	Anchorage	0	0	0	0	0	0	7	16	13	2	0	0	38
MOUNT TRAVERS	VRXP2	A	New	0	0	0	5	7	2	0	16	0	0	0	19	49
MSC ARUSHI R	A8RL3	A	Anchorage	0	0	0	0	0	0	0	0	0	0	17	22	39
MSC DIVINA	3FFA5	A	Anchorage	17	16	24	23	0	0	0	0	0	69	125	124	398
MSC MAGNIFICA	3FLO4	A	Anchorage	0	0	0	0	0	0	8	28	7	0	3	1	47
MSC ORNELLA	H3RF	A	Charleston	11	9	6	11	1	0	0	0	0	0	28	20	86
MSC POESIA	3EPL4	A	Miami	0	0	0	0	0	0	0	0	0	0	0	13	13
MSC SEASIDE	9HA4638	A	Miami	65	105	117	108	104	76	49	104	94	46	50	37	955

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MSC SEAVIEW	9HA4777	A	Anchorage	0	0	0	0	0	0	0	1	30	31	0	0	62
MUSTAFA DAYI	TCZF2	A	New York	0	1	23	42	45	36	44	36	31	36	2	0	296
MY NY	5BYB4	A	New	21	27	21	7	29	27	50	53	83	48	31	61	458
NACHIK	WDE7904	A	Anchorage	0	0	0	0	1	0	0	15	47	25	0	0	88
NAMSEN	V7QJ6	A	Anchorage	0	0	0	0	0	0	0	0	13	109	44	39	205
NANCY P	V7GK5	A	Anchorage	0	0	0	0	8	17	19	11	0	0	0	0	55
NANIQ	WDF7990	A	Anchorage	0	0	0	0	0	0	0	0	0	4	22	3	29
NANNING	9V5409	A	Anchorage	7	11	3	0	21	20	55	93	31	0	0	0	241
NATHANIEL B. PALMER (AWS)	WBP3210	A	Seattle	219	617	743	720	683	0	234	744	720	744	720	737	6881
NATIONAL GEOGRAPHIC	WDJ3521	A	Anchorage	0	0	0	0	0	0	5	9	1	0	0	0	15
NATIONAL GEOGRAPHIC SEA	WAK8004	A	Anchorage	0	0	0	0	0	0	1	7	2	0	0	0	10
NATIONAL GEOGRAPHIC SEA	WUR9646	A	Anchorage	0	0	0	0	0	0	1	3	0	0	0	0	4
NATIONAL GLORY	WDD4207	A	Houston	27	15	18	16	22	23	27	0	0	7	17	13	185
NATOMA	WBB5799	A	Anchorage	0	0	0	5	4	0	9	0	0	2	10	0	30
NAUTILUS	J8B3605	A	Anchorage	0	0	0	0	0	0	53	84	39	99	0	0	275
NAVAJO	WCT5737	A	Anchorage	0	0	0	3	11	0	3	1	11	4	4	5	42
NAVIGATOR OF THE SEAS	C6FU4	A	Miami	18	17	34	32	27	8	0	15	10	0	0	3	164
NEIL ARMSTRONG (AWS)	WARL	A	Anchorage	532	0	194	717	695	671	742	727	720	735	715	742	7190
NEVZAT KALKAVAN	TCMO2	A	New York	14	30	31	36	18	60	14	20	50	19	18	7	317
NICOLE FOSS	WDJ4108	A	Anchorage	14	4	11	16	8	14	5	8	10	14	5	10	119
NIEUW AMSTERDAM	PBWQ	A	Miami	185	296	102	123	99	48	28	146	104	128	70	143	1472
NIJINSKY	9VAX2	A	Anchorage	30	5	0	0	0	0	0	0	0	0	17	22	74
NOAA BELL M. SHIMADA	WTED	A	Seattle	0	0	0	0	0	0	344	542	440	452	398	0	2176
NOAA FAIRWEATHER (AWS)	WTEB	A	Seattle	0	0	0	0	195	383	467	609	515	2	0	0	2171
NOAA GORDON GUNTER	WTEO	A	New	48	0	0	0	0	105	677	689	572	9	486	93	2679
NOAA HENRY B. BIGELOW	WTDF	A	Seattle	0	0	0	1	459	266	493	408	513	380	305	0	2825
NOAA HI'IALAKAI (AWS)	WTEY	A	Seattle	0	0	0	0	0	405	385	302	262	144	0	0	1498
NOAA NANCY FOSTER (AWS)	WTER	A	Seattle	0	0	0	0	353	622	501	541	623	676	713	68	4097
NOAA OKEANOS EXPLORER	WTDH	A	Seattle	0	0	216	489	353	544	508	0	171	580	542	186	3589
NOAA OREGON II (AWS)	WTD0	A	New	0	0	0	0	0	171	436	516	637	419	371	0	2550
NOAA OSCAR DYSON (AWS)	WTEP	A	Seattle	0	190	388	510	535	405	248	413	156	0	0	0	2845



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NOAA OSCAR ELTON SETTE	WTEE	A	Seattle	0	0	0	157	237	536	642	395	599	548	1	0	3115
NOAA PISCES (AWS)	WTDL	A	New	0	0	0	1	0	409	509	460	621	469	104	0	2573
NOAA RAINIER (AWS)	WTEF	A	Seattle	0	0	0	0	0	473	202	693	646	711	111	0	2836
NOAA REUBEN LASKER (AWS)	WTEG	A	Seattle	0	0	0	2	2	354	630	622	417	482	368	79	2956
NOAA RONALD H. BROWN	WTEC	A	Seattle	0	0	62	61	75	316	664	728	512	519	0	0	2937
NOAA THOMAS JEFFERSON	WTEA	A	Seattle	0	0	0	0	0	207	586	556	524	579	296	0	2748
NOLA GAIL	WDK3678	A	Anchorage	0	0	0	0	0	0	0	0	0	1	2	0	3
NOORDAM	PHET	A	Anchorage	281	324	459	377	223	217	243	163	248	348	312	304	3499
NORDISLE	5BWH2	A	Anchorage	0	11	11	0	19	28	28	19	28	19	0	0	163
NORDSEINE	9HA3825	A	New	0	0	20	19	17	4	0	0	0	0	0	0	60
NORSEMAN II	WDD6688	A	Anchorage	0	0	0	0	0	1	7	8	0	0	0	0	16
NORTH STAR	KIYI	A	Seattle	0	16	74	69	43	64	41	61	80	66	85	64	663
NORTHERN SPIRIT	VRRU4	A	Anchorage	0	0	0	0	0	0	0	0	10	22	10	22	64
NORTHWEST EXPLORER	WCZ9007	A	Anchorage	2	0	0	0	0	0	4	2	8	0	0	0	16
NORTHWEST SWAN	ZCDJ9	A	Anchorage	123	83	55	68	76	106	80	123	107	71	78	41	1011
NORWEGIAN BLISS	C6DL4	A	Miami	0	0	0	0	31	58	33	40	50	56	42	55	365
NORWEGIAN BREAKAWAY	C6ZJ3	A	New York	79	69	35	11	0	0	10	0	6	0	0	0	210
NORWEGIAN DAWN	C6FT7	A	New	122	19	60	41	128	89	33	14	5	21	32	16	580
NORWEGIAN EPIC	C6XP7	I	Miami	0	0	0	21	1	0	0	0	0	0	4	0	26
NORWEGIAN ESCAPE	C6BR3	A	Miami	67	121	87	77	118	60	52	63	84	99	87	94	1009
NORWEGIAN GEM	C6VG8	A	Jacksonvill	25	41	38	48	53	47	53	23	1	0	0	1	330
NORWEGIAN GETAWAY	C6ZJ4	A	Miami	2	0	0	0	0	0	0	0	1	114	110	111	338
NORWEGIAN JADE	C6WK7	A	Miami	93	94	37	7	0	2	0	1	0	104	56	60	454
NORWEGIAN JEWEL	C6TX6	I	Jacksonvill	35	3	0	0	0	0	0	0	0	0	3	0	41
NORWEGIAN JOY	C6CX3	A	Anchorage	16	17	15	4	55	103	97	82	78	131	109	117	824
NORWEGIAN PEARL	C6VG7	A	Anchorage	535	485	573	566	293	148	89	117	14	7	2	42	2871
NORWEGIAN SKY	C6PZ8	A	Miami	0	0	0	0	0	0	43	45	1	48	42	28	207
NORWEGIAN SPIRIT	C6TQ6	A	Jacksonvill	229	136	93	135	109	174	161	133	99	115	217	203	1804
NORWEGIAN STAR	C6FR3	A	Miami	123	127	71	61	6	0	0	0	0	0	0	257	645
NORWEGIAN SUN	C6RN3	A	Miami	69	3	53	33	7	0	0	26	63	27	48	40	369
NUNAVIK	V7CK9	A	Anchorage	11	19	19	3	0	14	16	17	16	14	9	4	142

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NYK ARTEMIS	HOVU	A	Los	38	61	25	43	3	0	0	0	0	9	7	15	201
NYK ATHENA	HPDY	A	Anchorage	95	62	39	44	24	18	8	33	27	33	59	17	459
NYK FUTAGO	9V8739	A	Anchorage	0	0	0	17	19	12	56	33	27	24	6	11	205
NYK NEBULA	3ENG6	A	Charleston	12	8	7	18	0	12	5	9	9	2	17	0	99
NYK RUMINA	9V7645	A	New York	0	0	0	0	0	0	98	75	58	105	105	46	487
NYK TRITON	3FUL2	A	Los	7	25	5	5	1	10	0	33	7	9	27	0	129
OAK BAY	VRMA2	A	Anchorage	65	11	20	6	14	3	18	0	12	15	117	80	361
OAK HARBOUR	VRMO3	A	Anchorage	0	0	0	0	6	0	0	0	0	32	22	23	83
OASIS OF THE SEAS	C6XS7	A	Jacksonvill	54	59	34	74	60	124	97	103	117	78	40	31	871
OCEAN AMBITION	VRNM9	A	Anchorage	24	14	9	10	4	19	28	17	0	0	0	0	125
OCEAN CRESCENT	WDF4929	A	Houston	18	6	2	26	13	44	20	41	1	0	0	17	188
OCEAN EXPORTER	VRXJ4	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	9	9
OCEAN FORTE	VRNZ9	A	Anchorage	24	19	21	26	10	0	2	21	6	0	0	0	129
OCEAN GIANT	WDG4379	A	Jacksonvill	14	6	0	0	0	0	39	9	14	12	0	0	94
OCEAN GLOBE	KOGE	A	Houston	11	27	0	0	0	6	26	26	27	14	21	29	187
OCEAN JAZZ	WDJ4909	A	Anchorage	7	51	3	0	0	1	1	1	0	0	0	0	64
OCEAN RANGER	WAM7635	A	Anchorage	0	10	14	0	0	2	15	8	9	14	0	0	72
OCEAN RELIANCE	WADY	A	Anchorage	31	4	17	0	0	0	14	10	0	0	0	0	76
OCEAN TITAN	WDJ3639	A	Anchorage	0	0	0	0	0	0	2	0	0	0	0	0	2
OCEAN TITAN	WDB9647	A	Anchorage	0	0	0	0	0	0	0	0	0	1	0	0	1
OCEANUS	WXAQ	A	Seattle	1	0	0	0	27	44	2	21	27	11	0	0	133
OLEANDER III	V7SX3	A	New York	37	36	28	32	30	34	33	28	32	34	33	34	391
OLIVE BAY	VRON5	A	Anchorage	6	0	9	4	0	86	15	69	13	31	6	27	266
OLIVE L. MOORE	WDF7019	A	Duluth	0	0	0	51	73	102	93	182	141	193	185	124	1144
ONE CURE	WDJ7457	A	Anchorage	5	2	7	0	7	5	6	9	0	7	2	2	52
OOCL PANAMA	VRDU8	A	Anchorage	0	0	0	0	0	9	46	26	22	8	8	12	131
OOCL POLAND	VRLJ2	A	Anchorage	0	0	0	0	0	0	44	64	54	21	19	13	215
OOCL TAIPEI	VRNR6	A	Anchorage	0	0	0	0	0	0	0	0	11	12	23	10	56
OOSTERDAM	PBKH	A	Anchorage	153	121	102	54	271	122	74	83	207	88	94	55	1424
ORANGE BLOSSOM 2	D5DS3	A	New York	55	84	78	66	68	35	9	25	51	34	33	25	563
ORANGE OCEAN	D5DS2	A	New York	1	15	23	33	45	59	102	80	74	71	47	34	584

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ORANGE RIVER	VRMY6	A	Anchorage	0	0	0	0	0	63	70	25	56	4	35	37	290
ORANGE SKY	ELZU2	A	New York	59	43	13	56	43	36	57	61	85	63	42	97	655
ORANGE STAR	A8WP6	A	New York	53	49	7	0	0	9	0	19	33	57	49	29	305
ORANGE SUN	A8HY8	A	New York	27	20	40	45	30	46	60	22	14	14	12	13	343
ORANGE WAVE	ELPX7	A	New York	8	34	13	22	10	0	34	45	52	23	53	31	325
ORE BRASIL	VRPY5	A	Anchorage	66	28	97	170	74	0	40	88	50	124	88	23	848
ORE GUAIBA	9V9040	A	Anchorage	703	585	522	696	734	318	140	500	481	592	644	520	6435
ORE ITALIA	VRPY6	A	Anchorage	3	21	57	101	47	91	132	51	26	7	2	0	538
ORE KOREA	VRPY7	A	Anchorage	427	608	392	68	285	289	271	344	389	475	287	159	3994
OREGON VOYAGER	WDF2960	A	New	11	0	0	0	0	4	15	8	13	35	23	18	127
ORIENTAL JUBILEE	VRPP5	A	Anchorage	1	0	0	0	13	0	26	180	19	48	0	0	287
ORIENTAL KING	VRQZ7	A	Anchorage	42	57	55	87	272	281	284	64	43	57	105	68	1415
ORIENTAL QUEEN	VRAC9	A	Anchorage	2	25	50	31	10	0	1	48	11	0	0	0	178
ORION LEADER	3FSG9	I	Seattle	0	0	0	0	0	16	0	0	0	0	0	0	16
OSAKA BAY	VRQS2	A	Anchorage	0	12	15	20	23	14	0	0	4	1	26	11	126
OTAGO BAY	VRQK3	A	Anchorage	17	1	12	1	11	2	0	2	12	0	1	0	59
OTAGO HARBOUR	VRNI7	A	Anchorage	17	8	28	2	29	30	33	32	4	0	0	5	188
OURO DO BRASIL	ELPP9	A	Baltimore	59	52	54	28	64	56	40	45	41	32	39	81	591
OVATION OF THE SEAS	C6BX9	A	Anchorage	56	65	14	46	44	29	26	21	14	33	49	32	429
OVERSEAS ANACORTES	KCHV	A	Miami	9	15	7	1	0	14	5	19	19	6	17	25	137
OVERSEAS BOSTON	WJBU	A	Anchorage	31	25	25	35	5	6	1	14	3	1	1	1	148
OVERSEAS CASCADE	WOAG	A	Houston	2	1	133	130	123	15	5	0	0	0	0	0	409
OVERSEAS CHINOOK	WNFQ	A	Houston	1	2	11	24	6	2	3	35	24	15	16	25	164
OVERSEAS HOUSTON	WWAA	A	Houston	2	5	1	1	1	0	11	1	11	0	0	1	34
OVERSEAS LONG BEACH	WAAT	A	Jacksonvill	11	30	8	28	24	7	0	16	23	46	14	3	210
OVERSEAS LOS ANGELES	WABS	A	Los	40	3	21	126	76	87	5	39	60	71	41	22	591
OVERSEAS MARTINEZ	WPAJ	A	Houston	44	33	84	26	64	41	124	115	122	110	31	4	798
OVERSEAS NIKISKI	WDBH	A	Houston	23	6	0	10	4	25	4	15	2	1	6	0	96
OVERSEAS SANTORINI	WOSI	A	Houston	25	23	47	25	6	0	3	3	23	0	0	1	156
OVERSEAS TAMPA	WOTA	A	Houston	0	3	4	2	0	0	0	11	0	0	1	0	21
OVERSEAS TEXAS CITY	WHED	A	Houston	40	3	19	51	82	36	21	32	31	10	33	62	420

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OYSTER BAY	VRQE9	A	Anchorage	0	0	1	0	0	1	17	13	17	25	26	28	128
PACIFIC LOGGER	VRWL4	A	Anchorage	10	25	116	42	98	165	101	77	47	74	5	1	761
PACIFIC SANTA ANA	A8WI3	A	Houston	11	27	27	25	29	0	18	6	11	15	2	0	171
PACIFIC SHARAV	D5DY4	A	Houston	22	9	22	4	31	5	24	15	27	31	20	23	233
PACIFIC WOLF	WDD9286	A	Anchorage	1	8	8	5	9	4	4	4	4	4	6	51	108
PANDALUS	WAV7611	A	Anchorage	0	0	0	0	8	21	14	15	0	0	0	0	58
PARAMOUNT HAMILTON	2CWB2	I	Houston	4	0	0	0	0	0	0	0	0	0	0	0	4
PARAMOUNT HYDRA	2CWC3	A	Anchorage	0	0	0	0	0	4	6	6	0	0	1	0	17
PATRIARCH	WBN3014	I	Jacksonvill	0	0	0	4	0	0	32	0	0	0	0	0	36
PATRIOT	WAIU	A	Charleston	16	27	32	19	21	13	24	28	16	19	11	14	240
PAUL GAUGUIN	C6TH9	A	Anchorage	257	237	222	172	131	94	131	172	200	124	74	54	1868
PAUL R. TREGURTHA (AWS)	WYR4481	A	Duluth	65	0	0	0	269	523	722	684	543	741	699	670	4916
PECOS	V7UU5	I	Anchorage	8	8	5	0	0	0	0	0	0	0	0	0	21
PEGASUS OCEAN	9V2597	A	Anchorage	0	9	9	10	6	0	2	8	8	8	7	0	67
PEGASUS VOYAGER	C6AP3	A	Anchorage	0	0	0	0	5	30	19	2	14	25	21	10	126
PELICAN ISLAND	VRRD7	A	Anchorage	0	0	0	0	0	0	100	40	81	119	138	433	911
PELICAN STATE	WDE4433	A	New	0	0	0	0	0	3	0	0	0	2	1	3	9
PENGUIN ISLAND	VRSC8	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	42	42
PERLA DEL CARIBE	KPDL	A	Jacksonvill	31	3	12	29	19	53	79	69	14	41	30	25	405
PERSEVERANCE	WDE5328	A	Anchorage	1	2	0	0	0	0	0	0	0	0	0	1	4
PHILADELPHIA EXPRESS	WDC6736	A	Houston	91	44	20	35	12	45	63	71	107	52	43	45	628
PHILIP R. CLARKE	WDH7554	A	Duluth	15	0	24	57	17	38	22	52	63	41	65	73	467
PHYLLIS DUNLAP	WDA6552	A	Anchorage	0	3	7	4	9	6	8	11	13	17	23	7	108
POLAR ADVENTURE	WAZV	A	Seattle	26	18	22	54	26	12	58	70	19	20	36	5	366
POLAR CLOUD	WDJ8729	A	Anchorage	0	0	0	12	18	15	24	56	36	11	3	4	179
POLAR DISCOVERY	WACW	A	Seattle	7	22	68	0	0	0	22	71	39	17	15	84	345
POLAR ENDEAVOUR	WCAJ	A	Seattle	25	18	32	32	33	51	46	21	81	107	49	31	526
POLAR ENTERPRISE	WRTF	A	Seattle	28	27	39	22	9	25	71	42	42	74	64	48	491
POLAR KING	WDC7562	A	Anchorage	0	0	1	13	12	7	1	0	4	3	3	5	49
POLAR RANGER	WDC8652	A	Anchorage	0	0	0	22	11	31	19	13	10	0	0	1	107
POLAR RESOLUTION	WDJK	A	Seattle	23	63	61	70	35	26	55	18	0	3	25	51	430

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POLAR STORM	WDE8347	A	Anchorage	0	20	25	8	17	11	21	15	0	0	0	0	117
POLAR WIND	WAZ9548	A	Anchorage	0	0	7	24	22	11	9	9	0	27	13	0	122
POLARIS VOYAGER	C6AP4	A	Anchorage	0	0	0	0	19	12	18	7	9	20	12	5	102
PORT ALBERNI	VRDT3	A	Anchorage	20	20	17	16	12	9	11	10	11	14	17	18	175
PORT ALFRED	VRLZ7	A	Anchorage	0	0	0	2	0	0	0	0	0	10	0	0	12
PORT ALICE	VRIC6	A	Anchorage	19	17	14	10	19	20	4	19	6	0	1	0	129
PORT ANGELES	VRCW8	A	Anchorage	0	0	2	0	1	0	0	0	0	0	3	30	36
PORT KENNY	VRGP2	A	Anchorage	7	15	24	13	19	14	21	0	0	0	2	0	115
PORT PEGASUS	VRAA8	A	Anchorage	26	13	16	28	12	18	15	5	16	9	10	8	176
PORT PHILLIP	VRDY4	A	Anchorage	0	0	0	0	0	0	0	13	10	31	20	40	114
PORTLAND BAY	VRHR2	A	Anchorage	0	0	0	9	0	0	0	0	0	7	0	0	16
PRABHU DAS	AUQV	A	Anchorage	0	0	0	0	5	4	14	14	13	14	8	4	76
PREMIUM DO BRASIL	A8BL4	A	Baltimore	15	0	15	30	21	0	0	1	1	0	0	0	83
PRESIDENT CLEVELAND	WCEU	A	Anchorage	0	0	0	0	0	0	0	21	55	71	40	80	267
PRESIDENT EISENHOWER	KPES	A	Anchorage	0	0	0	0	0	0	0	163	169	217	171	139	859
PRESIDENT FD ROOSEVELT	WROT	A	Anchorage	0	0	0	0	0	0	5	58	110	119	110	113	515
PRESIDENT KENNEDY	WPKW	A	Anchorage	0	0	0	0	0	0	30	63	44	47	49	102	335
PRESIDENT TRUMAN	WPTC	A	Anchorage	0	0	0	0	0	0	0	20	51	117	127	20	335
PRESIDENT WILSON	WDG8555	A	Los	57	24	4	9	8	14	50	43	35	61	51	41	397
PRESQUE ISLE	WDH7560	A	Duluth	48	0	32	89	36	33	42	54	32	81	0	94	541
PRIME EXPRESS	3FUZ4	A	Anchorage	0	0	13	30	39	12	10	7	0	16	53	16	196
PRINSENDAM	PBGH	A	Miami	93	86	109	119	170	52	86	19	83	46	71	19	953
PSU SEVENTH	9V3964	I	Anchorage	566	649	69	0	28	0	0	0	0	0	0	0	1312
PUGET SOUND	VRDD9	A	Anchorage	8	5	10	9	0	0	0	0	0	0	9	0	41
PYXIS ALFA	9V3776	A	Anchorage	84	0	52	4	0	2	5	0	0	0	5	39	191
QUALIFIER 105	WDH9546	A	Anchorage	0	0	0	0	0	0	13	0	3	0	0	0	16
QUANTUM OF THE SEAS	C6BH8	A	Miami	19	41	50	37	42	13	40	18	59	31	0	1	351
R J PFEIFFER	WRJP	A	Los	42	47	50	40	29	45	47	34	45	37	64	32	512
R/V KIYI	KAO107	A	Duluth	0	0	0	1	24	52	42	60	0	11	29	0	219
RAAHI	9HYO7	A	Anchorage	0	0	0	13	3	12	4	3	4	9	13	25	86
RADIANCE OF THE SEAS	C6SE7	A	Anchorage	25	10	52	18	17	42	33	27	26	25	40	52	367



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RAINBOW STAR	VREU4	A	Anchorage	0	0	5	6	0	0	0	0	0	0	0	0	11
RAINBOW WARRIOR	PF7197	I	Anchorage	13	1	0	16	51	5	0	0	0	0	0	0	86
RED	V7UU2	A	Anchorage	0	0	2	47	36	88	54	2	1	0	0	0	230
REDOUBT	WDD2451	A	Anchorage	0	0	0	2	34	0	0	22	22	23	0	0	103
REGATTA	V7DM3	A	Seattle	0	0	0	35	10	3	2	0	0	0	0	0	50
RESOLVE	WCZ5535	A	Baltimore	52	25	34	16	1	30	30	31	24	43	36	10	332
RESOLVE PIONEER	WDD8846	A	Anchorage	0	0	0	0	0	0	2	3	2	6	0	0	13
RESPONDER	V7CY9	A	Baltimore	39	34	52	22	14	1	0	0	0	0	15	0	177
RHAPSODY OF THE SEAS	C6UA2	A	Miami	38	23	4	0	3	14	10	1	4	11	6	4	118
RICHARD BRUSCO	WDC3031	A	Anchorage	2	0	1	0	0	0	0	0	0	0	16	0	19
RICHMOND VOYAGER	C6DQ4	A	Anchorage	0	0	0	0	0	0	0	0	0	0	44	7	51
RIO GRANDE	V7UT9	A	Anchorage	2	17	12	1	43	26	3	36	30	13	2	9	194
RIO GRANDE EXPRESS	VRCE5	A	Anchorage	14	15	13	19	18	20	19	12	4	6	2	0	142
RIVIERA	V7WO5	I	Anchorage	0	0	3	27	9	0	0	0	0	0	0	0	39
ROBERT C. SEAMANS	WDA4486	A	Anchorage	0	24	26	69	8	10	10	28	0	0	15	17	207
ROBERT GORDON SPROUL	WSQ2674	A	Los	713	672	543	653	739	718	490	658	720	735	187	0	6828
ROGER BLOUGH	WDH7559	A	Duluth	0	0	99	283	180	143	228	282	277	279	283	390	2444
ROGER REVELLE (AWS)	KAOU	A	Los	294	8	646	710	738	718	613	706	720	741	720	744	7358
RONALD N	A8PQ3	A	Anchorage	68	41	49	41	22	52	45	1	10	10	0	0	339
ROSS CHOUEST	WCW7550	A	Anchorage	0	0	0	0	0	0	6	15	10	27	32	34	124
RT. HON. PAUL J. MARTIN	VGJF	A	Duluth	0	0	0	0	0	0	0	0	0	15	0	0	15
RTM CARTIER	9V2774	A	Anchorage	0	0	0	0	0	0	34	3	0	0	0	0	37
RTM COLUMBUS	9V2781	A	Anchorage	18	87	11	0	1	0	0	0	0	16	31	0	164
RTM DAMPIER	9V2775	A	Anchorage	10	0	0	26	76	11	4	1	0	0	0	0	128
RTM DHAMBUL	9V2783	I	Anchorage	4	0	26	19	0	0	0	0	0	0	0	0	49
RTM DRAKE	9V2779	A	Anchorage	225	0	0	0	0	1	66	47	4	7	6	4	360
RTM TASMAN	9V2782	A	Anchorage	0	102	324	293	89	11	29	40	43	27	16	0	974
RUBY INDAH	9VND	A	Anchorage	0	8	12	0	0	0	4	3	7	0	0	39	73
S. S. LEGACY	WDG8495	A	Anchorage	0	0	0	0	0	4	3	10	2	2	1	0	22
SAFARI ENDEAVOUR	WDG2742	A	Anchorage	0	0	0	0	7	28	18	26	13	0	0	9	101
SAFARI EXPLORER	WCY5674	A	Anchorage	0	0	0	0	1	4	2	2	0	2	0	0	11

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SAFARI QUEST	WDH4957	A	Anchorage	0	0	0	0	0	3	8	9	0	0	0	0	20
SAFMARINE KURAMO	KSFF	A	New York	0	0	0	0	0	0	0	0	0	0	0	43	43
SAFMARINE NGAMI	WSNA	A	New York	0	0	0	0	0	0	0	0	0	0	0	4	4
SAFMARINE NIMBA	WSNU	A	New York	0	0	0	0	0	0	0	0	0	0	0	17	17
SAGA ADVENTURE	VRBL4	I	Anchorage	26	64	42	4	1	0	0	0	0	0	0	0	137
SAGA ANDORINHA	VRMV6	A	Anchorage	0	0	40	24	10	50	4	0	41	35	14	63	281
SAGA BEIJA-FLOR	VRVN8	A	Anchorage	1	28	25	22	13	0	0	0	1	0	0	0	90
SAGA CREST	VRWR7	A	Anchorage	0	0	0	0	0	0	0	0	0	16	4	0	20
SAGA DISCOVERY	VRBR8	A	Seattle	1	0	16	50	0	58	34	75	36	59	1	0	330
SAGA ENTERPRISE	VRCC8	A	Anchorage	0	0	0	0	8	0	44	39	25	38	35	3	192
SAGA FALCON	VRKX7	A	Anchorage	23	36	19	9	19	27	57	82	5	4	1	46	328
SAGA FANTASY	VRLT9	A	Anchorage	15	2	34	23	0	26	31	24	12	23	22	54	266
SAGA FJORD	VRL2	A	Anchorage	27	0	0	0	62	103	36	55	70	38	64	38	493
SAGA FORTUNE	VRLF8	A	Anchorage	0	0	0	0	0	0	1	0	0	0	0	0	1
SAGA FRAM	VRL3	A	Anchorage	4	0	0	0	0	0	0	0	0	63	41	161	269
SAGA FREYA	VRRA4	A	Anchorage	0	0	0	56	74	59	54	49	34	11	15	50	402
SAGA FRIGG	VRLK7	A	Anchorage	16	35	22	33	11	5	6	0	0	2	8	27	165
SAGA FRONTIER	VRCP2	A	Anchorage	0	0	0	60	65	209	192	313	75	48	34	83	1079
SAGA FUJI	VRMS3	A	Anchorage	14	7	21	12	0	0	0	0	0	9	1	0	64
SAGA FUTURE	VRKX8	A	Anchorage	71	112	130	83	89	0	0	0	2	33	6	70	596
SAGA HORIZON	VRUZ9	A	Anchorage	0	0	0	0	0	0	0	0	0	0	4	2	6
SAGA JANDAIA	VRYO9	A	Anchorage	26	3	0	0	21	86	25	36	55	8	0	0	260
SAGA JOURNEY	VRCY8	A	Anchorage	0	0	0	0	0	0	7	72	30	47	91	69	316
SAGA MONAL	VRZQ9	A	Anchorage	202	94	9	36	13	42	1	0	0	0	0	57	454
SAGA MORUS	VRZQ8	A	Anchorage	0	0	0	0	0	0	0	23	1	65	26	32	147
SAGA NAVIGATOR	VRDA4	A	Anchorage	0	0	0	106	4	24	37	25	20	52	0	56	324
SAGA ODYSSEY	VRDU9	A	Anchorage	133	196	329	8	88	81	42	104	112	196	114	17	1420
SAGA PIONEER	VRED4	A	Anchorage	52	55	85	48	97	1	49	104	64	61	3	0	619
SAGA SPRAY	VRWW5	A	Anchorage	17	0	9	19	23	0	26	17	21	25	9	13	179
SAGA TIDE	VRYO8	A	Anchorage	28	18	43	19	4	26	15	9	22	32	42	102	360
SAGA TUCANO	VRVP2	A	Anchorage	114	348	366	115	74	104	99	58	0	119	115	0	1512

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SAGA VIKING	VRXO6	A	Anchorage	0	0	9	3	0	38	0	0	35	38	8	73	204
SAGA VOYAGER	VRXL8	A	Anchorage	12	120	209	194	244	85	311	218	38	307	219	72	2029
SAGA WAVE	VRYO7	A	Anchorage	0	0	66	34	25	18	19	13	23	23	0	0	221
SAGA WIND	VRUR7	A	Anchorage	0	0	0	0	0	0	0	67	261	367	254	197	1146
SAGAR MANJUSHA (AWS)	AUKJ	A	Anchorage	133	137	166	156	186	135	163	121	140	31	131	139	1638
SAGAR NIDHI (AWS)	AUCE	A	Anchorage	241	193	245	230	213	227	244	238	236	229	232	214	2742
SAGAR PURVI (AWS)	VWFQ	A	Anchorage	230	188	239	222	232	229	229	225	147	195	222	167	2525
SAIPEM 7000	C6NO5	A	Anchorage	0	0	0	0	0	0	0	33	0	0	0	0	33
SAKURA OCEAN	3FRC8	A	New	29	0	33	40	34	63	20	0	19	7	1	18	264
SALLY MAERSK	OZHS2	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	31	31
SALLY RIDE (AWS)	WSAF	A	Seattle	503	610	743	712	743	715	461	692	713	739	717	480	7828
SALTRAM	9V2312	A	Anchorage	7	14	24	22	6	0	0	0	0	0	1	0	74
SAM M. TAALAK	WCX5321	A	Anchorage	0	0	0	0	0	0	0	0	7	7	0	0	14
SAMSON MARINER	WCN3586	A	Anchorage	0	0	0	6	0	3	0	5	3	0	5	3	25
SAMUDRA KAUSTUBH (AWS)	VWSM	A	Anchorage	228	109	200	114	218	211	126	140	23	0	93	59	1521
SAMUDRA SHAUDHIKAMA	VWSK	A	Anchorage	238	196	207	229	220	214	235	236	132	113	228	221	2469
SAMUEL DE CHAMPLAIN	WDC8307	A	Duluth	0	0	9	15	11	4	16	3	16	4	9	0	87
SAN JACINTO	V7QJ4	I	Anchorage	7	2	1	2	0	0	0	0	0	0	0	0	12
SAN SABA	V7UT8	A	Anchorage	11	0	0	0	0	0	0	17	21	17	23	11	100
SANDRA FOSS	WYL4908	A	Anchorage	0	0	0	0	0	12	10	3	0	32	19	0	76
SANSOVINO	9V2729	A	Anchorage	116	111	88	93	143	151	59	0	0	0	0	0	761
SANTA SERENA	7JVN	A	Anchorage	9	0	14	3	3	4	7	8	3	8	8	9	76
SANTIAGO BASIN	VREO2	A	Anchorage	0	0	0	0	0	0	20	1	60	0	54	2	137
SBI ARIES	V7CS8	A	Anchorage	0	0	0	0	0	0	0	0	52	68	34	36	190
SBI ECHO	V7KD7	A	Anchorage	0	0	0	0	0	0	0	0	27	31	28	31	117
SBI SAMBA	V7IU6	A	Anchorage	0	0	0	0	0	0	0	0	0	0	5	31	36
SBI ZUMBA	D5KR9	A	Anchorage	0	0	0	0	0	0	0	3	12	24	4	31	74
SCI MUMBAI	AUTQ	A	Anchorage	0	0	0	0	0	0	0	4	21	13	5	0	43
SCI NALANDA (AWS)	AVFV	A	Anchorage	236	195	232	229	231	187	233	239	233	226	228	211	2680
SEA BIRD	9V2730	A	Anchorage	0	0	19	21	6	1	9	12	3	1	19	0	91
SEA HAWK	WDE8543	A	Anchorage	0	0	0	0	28	27	21	27	29	30	14	8	184

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SEA HAWK	WDD9287	A	Anchorage	0	0	0	0	17	5	11	6	5	0	1	45	90
SEA PRINCE	WYT8569	A	Anchorage	0	0	28	108	80	122	65	65	81	3	1	0	553
SEA VOYAGER	WCX9106	A	Anchorage	13	0	17	5	3	1	2	0	0	0	0	0	41
SEABOARD AMERICA	5BAW3	A	New	18	13	42	55	53	43	42	45	46	45	38	27	467
SEABOARD PERU	5BZE2	A	New	46	33	44	29	31	25	27	39	7	31	28	35	375
SEABOURN ENCORE	C6CG4	A	Anchorage	0	0	3	113	70	31	37	100	167	121	96	107	845
SEABOURN OVATION	C6CV5	A	Anchorage	0	0	0	0	0	0	0	177	50	43	1	0	271
SEABOURN QUEST	C6YZ5	A	Miami	3	29	64	5	0	0	0	0	0	14	10	1	126
SEABOURN SOJOURN	C6YA5	A	Anchorage	352	558	500	276	184	356	570	301	155	440	504	560	4756
SEABULK ARCTIC	WCY7054	A	Miami	31	35	27	8	32	42	36	30	32	29	26	25	353
SEAFISHER	WDD6122	A	Anchorage	0	4	0	10	23	1	0	0	1	3	0	0	42
SEAFREEZE ALASKA	WDE7203	A	Anchorage	1	6	0	14	10	9	0	7	10	10	0	0	67
SEAFREEZE AMERICA	WDH8281	A	Anchorage	16	21	18	3	8	18	25	3	2	15	17	0	146
SEAMAX GREENWICH	V7ER3	A	Charleston	0	0	0	0	0	37	0	61	65	17	17	0	197
SEASPAN GANGES	VRMV8	A	Anchorage	5	8	6	17	30	22	32	23	33	34	38	51	299
SEASPAN HUDSON	VRNY4	A	Anchorage	0	0	0	57	34	39	13	14	9	2	3	0	171
SEASPAN OCEANIA	VRBI2	A	New York	25	1	9	1	0	9	40	28	33	3	0	17	166
SEASPAN RIO DE JANEIRO	VRCR9	A	Anchorage	99	17	14	2	13	3	199	330	303	232	76	46	1334
SEASPAN YANGTZE	VRNA8	A	Anchorage	1	7	0	18	0	0	5	2	7	13	10	39	102
SEASPAN ZAMBEZI	VRNF7	A	Anchorage	0	0	0	0	0	6	26	48	36	21	17	18	172
SECRETO	9V2732	A	Anchorage	54	43	50	42	24	28	65	51	44	10	0	0	411
SENTINEL (AWS)	VTFG	A	Anchorage	170	22	244	233	247	237	246	224	238	233	234	222	2550
SENTRY	WBN3013	I	Jacksonvill	0	0	0	0	24	9	0	0	0	0	0	0	33
SERENADE OF THE SEAS	C6FV8	A	Miami	0	0	0	0	0	0	0	0	0	12	69	48	129
SESOK	WDE7899	A	Anchorage	0	0	0	0	11	7	8	6	3	2	0	0	37
SEVEN SEAS EXPLORER	V7QK9	A	Anchorage	42	50	96	56	32	30	40	42	59	61	40	3	551
SEVEN SEAS MARINER	C6VV8	A	Jacksonvill	9	37	19	12	1	59	33	10	0	0	0	0	180
SEVEN SEAS VOYAGER	C6SW3	A	Anchorage	74	112	214	173	10	94	351	539	431	288	222	504	3012
SG FRIENDSHIP	HPOP	A	Anchorage	0	0	0	0	0	50	13	0	0	0	0	0	63
SHAHRASTANI	9V2733	A	Anchorage	0	0	0	0	0	0	0	0	1	0	0	0	1
SHAKESPEARE BAY	VRQW9	A	Anchorage	0	0	4	6	6	18	5	0	2	19	2	2	64

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SHANDONG DA CHENG	VRRB5	A	Anchorage	569	485	688	618	736	712	539	472	42	85	123	180	5249
SHANDONG DA DE	VRRB6	A	Anchorage	73	80	222	102	194	220	154	472	256	385	330	61	2549
SHANDONG DA REN	VRR15	A	Anchorage	77	76	88	365	728	717	737	741	713	727	698	732	6399
SHANDONG DA ZHI	VRR14	A	Anchorage	7	164	21	123	367	378	583	697	696	711	691	308	4746
SHARP ISLAND	VRRD5	A	Anchorage	0	0	2	0	0	18	28	6	0	0	4	6	64
SHERGAR	9V2731	A	Anchorage	0	0	0	13	93	89	4	37	18	13	24	1	292
SHIRLEY C	WDJ9554	A	Anchorage	0	0	0	0	0	0	0	0	5	0	0	0	5
SIANGTAN	9V9832	I	Seattle	57	33	29	18	0	0	0	0	0	0	0	0	137
SIGAS SILVIA	S6ES6	I	Anchorage	20	0	0	0	0	0	0	0	0	0	0	0	20
SIGRID DUNLAP	WDJ9975	A	Anchorage	0	0	0	0	0	6	11	13	9	14	8	13	74
SIKU	WCQ6174	A	Anchorage	0	0	0	126	180	135	127	118	86	99	0	0	871
SIKULIAQ (AWS)	WDG7520	A	Anchorage	162	668	742	562	641	537	740	635	718	659	720	239	7023
SILVER LAKE	VRDN6	A	Anchorage	17	27	28	7	9	7	19	28	17	12	18	1	190
SILVER SHADOW	C6FN6	A	Anchorage	0	0	0	0	1	2	0	3	1	0	0	0	7
SILVIO	9V2727	A	Anchorage	81	98	43	4	0	24	145	163	67	0	11	1	637
SINDHU SANKALP (AWS)	AUYB	A	Anchorage	240	98	77	231	9	1	1	1	1	1	86	217	963
SINNDAR	9V2735	A	Anchorage	0	0	28	61	39	48	70	39	16	0	0	0	301
SNOHOMISH	WDB9022	A	Anchorage	0	0	0	0	0	0	0	7	0	0	0	0	7
SOL DO BRASIL	ELQQ4	A	Baltimore	52	39	40	51	60	62	46	20	47	39	34	57	547
SOMBEKE	ONHD	A	Houston	0	0	2	0	0	0	33	110	69	58	87	101	460
SONANGOL BENGUELA	C6YM7	A	Anchorage	44	17	5	11	32	22	25	16	42	14	12	10	250
SONANGOL ETOSHA	C6YM5	A	Anchorage	74	77	65	15	2	16	16	44	45	72	49	12	487
SONANGOL SAMBIZANGA	C6YM6	A	Anchorage	43	54	103	49	6	14	13	56	85	98	79	33	633
SOUND RELIANCE	WXAE	A	Anchorage	0	0	0	2	4	1	2	0	0	0	0	0	9
SOVEREIGN	9HUE9	A	Anchorage	0	0	0	0	0	0	0	0	0	12	27	11	50
SPICA	A8QJ5	A	New	19	16	16	16	11	14	10	11	4	0	0	0	117
SPIRIT OF LISBON	V7RD6	A	Charleston	0	0	0	0	0	0	0	0	28	0	0	0	28
SPIRIT OF SYDNEY	MCMB8	A	Anchorage	0	0	0	0	0	0	0	0	0	20	29	30	79
SPREAD EAGLE	9V2314	I	Anchorage	34	14	0	0	0	0	0	0	0	0	0	0	48
ST LOUIS EXPRESS	WDD3825	A	Houston	15	17	25	16	27	11	18	11	5	14	27	43	229
ST PAUL RESEARCH	KEY796	A	Anchorage	15	0	10	9	8	7	7	8	8	8	4	2	86



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ST. CLAIR	WZA4027	A	Duluth	19	0	0	0	0	0	1	0	0	0	0	0	20
ST. CLEMENS	3FSR7	A	New	0	0	0	0	0	0	0	0	0	0	12	14	26
STACEY FOSS	WYL4909	A	Anchorage	0	0	0	0	0	22	3	20	33	13	1	0	92
STALWART	WBN6512	A	Anchorage	0	0	0	0	0	0	3	0	0	0	0	0	3
STAR EOS	LAUZ7	I	Anchorage	7	3	1	0	1	0	0	0	0	0	0	0	12
STAR FUJI	LAVX4	A	Seattle	3	0	0	0	0	6	6	2	7	0	0	0	24
STAR GRAN	LADR4	I	Jacksonvill	6	15	0	0	0	0	0	0	1	0	0	0	22
STAR GRIP	LADQ4	A	Charleston	8	13	6	0	19	8	0	0	34	36	16	5	145
STAR HANSA	LAXP4	I	Jacksonvill	0	0	1	0	0	0	0	0	4	0	0	0	5
STAR HARMONIA	LAGB5	A	Baltimore	0	0	0	0	0	0	0	0	0	0	0	34	34
STAR HERDLA	LAVD4	A	New	43	6	34	22	13	13	0	64	27	39	17	6	284
STAR HIDRA	LAVN4	A	Baltimore	0	4	13	0	0	17	0	19	0	11	25	22	111
STAR ISFJORD	LAOX5	A	New	0	25	47	0	17	36	6	7	37	19	16	16	226
STAR ISMENE	LANT5	A	New	7	1	18	27	2	15	14	5	1	8	0	0	98
STAR ISTIND	LAMP5	A	Seattle	25	0	27	10	0	0	0	0	0	31	20	0	113
STAR JAPAN	LAZV5	A	Seattle	46	64	59	26	0	0	0	0	17	1	2	32	247
STAR JAVA	LAJS6	A	Baltimore	8	45	18	2	22	2	0	0	3	2	0	0	102
STAR JUVENTAS	LAZU5	A	Baltimore	0	0	0	7	0	1	5	16	35	40	56	64	224
STAR KILIMANJARO	LAIG7	A	Anchorage	0	0	2	13	10	22	24	45	11	22	20	18	187
STAR KINN	LAJF7	A	Anchorage	36	30	25	39	17	62	9	49	45	52	44	49	457
STAR KIRKENES	LAHR7	A	New	14	26	0	1	57	0	42	0	0	0	0	0	140
STAR KVARVEN	LAJK7	I	Seattle	4	0	19	51	0	0	0	0	0	0	0	0	74
STAR LAGUNA	LAPD7	A	Anchorage	0	0	0	0	0	0	22	18	12	0	15	0	67
STAR LIMA	LAPE7	A	Jacksonvill	17	37	0	53	4	8	3	2	0	0	5	0	129
STAR LINDESNES	LAQJ7	A	Jacksonvill	0	51	0	26	6	10	31	0	0	22	38	0	184
STAR LIVORNO	LAQM7	A	Houston	57	0	0	0	0	0	12	31	0	13	3	0	116
STAR LOEN	LAQN7	A	Anchorage	0	0	30	48	4	6	54	0	0	22	2	0	166
STAR LOFOTEN	LAQL7	A	Charleston	5	58	59	7	15	0	10	16	21	6	31	3	231
STAR LOUISIANA	V7SD8	A	New	18	68	2	24	41	10	0	13	34	16	35	19	280
STAR LUSTER	LAQO7	A	Anchorage	28	32	1	76	0	26	22	1	15	0	0	14	215
STAR LYGRA	V7FA7	A	Anchorage	1	9	0	0	0	5	34	0	19	0	0	0	68

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STAR LYSEFJORD	LAQQ7	A	New	8	22	15	1	20	0	21	21	14	0	36	13	171
STAR MINERVA	V7GR8	A	Jacksonvill	43	8	0	18	22	6	66	12	39	67	10	102	393
STATE OF MAINE	WCAH	A	New York	0	0	0	0	25	74	52	0	0	0	0	0	151
STEWART J. CORT (AWS)	WDC6055	A	Duluth	384	0	77	602	736	709	688	742	720	744	717	734	6853
STI BATTERY	V7DR9	A	Anchorage	0	0	0	0	0	29	38	12	14	16	27	23	159
STI BROADWAY	V7EQ4	A	Anchorage	0	0	0	0	0	0	0	5	30	31	25	28	119
STI OPERA	V7CJ3	A	Anchorage	0	0	0	0	0	0	0	0	0	9	6	0	15
STI RUBY	V7XP4	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	1	1
STIMSON	WDG2051	A	Anchorage	3	0	0	0	0	0	0	5	0	0	0	0	8
SUN RUBY	VRZU4	A	Anchorage	1	24	12	11	20	13	11	17	11	18	9	14	161
SUNLIGHT EXPRESS	3FMK7	A	Anchorage	8	18	29	4	1	4	43	25	32	6	13	10	193
SUNSHINE STATE	WDE4432	A	Miami	19	9	17	18	10	20	9	0	11	18	8	5	144
SUNSTAR	9V2728	A	Anchorage	0	0	0	0	0	1	0	0	0	0	32	77	110
SUPERSTAR GEMINI	C6LG5	A	Anchorage	29	25	26	28	26	23	27	27	27	31	30	38	337
SUPERSTAR LIBRA	C6DM2	A	Anchorage	104	78	97	77	114	103	34	29	1	0	0	0	637
SWARNA BRAHMAPUTRA	AUYI	A	Anchorage	26	18	1	3	3	6	11	3	1	1	0	1	74
SWARNA GANGA	AUYJ	A	Anchorage	29	57	6	13	6	2	0	0	1	3	0	7	124
SWARNA JAYANTI	AUYL	A	Anchorage	5	17	4	28	2	6	7	7	2	0	0	0	78
SWARNA KALASH	AUYM	A	Anchorage	0	4	26	5	27	14	8	11	2	1	42	95	235
SWARNA KAMAL	AUYN	A	Anchorage	37	29	2	15	25	13	13	3	2	0	33	9	181
SWARNA KAVERI	AUYO	A	Anchorage	21	44	36	25	0	0	0	0	0	0	0	0	126
SWARNA KRISHNA	AUYP	A	Anchorage	3	15	14	17	17	4	0	33	5	5	19	22	154
SWARNA PUSHPA	AUYQ	A	Anchorage	0	0	6	5	0	14	2	5	0	0	0	0	32
SWARNA SINDHU	AUYR	A	Anchorage	15	15	13	9	4	0	1	9	10	9	4	5	94
SYLVIE	VRCQ2	A	Anchorage	16	20	2	0	0	0	0	0	17	30	13	18	116
SYMI I	D5FL9	A	Anchorage	12	27	56	20	41	39	29	35	23	14	22	0	318
SYMPHONY OF THE SEAS	C6DF6	A	Miami	0	0	0	126	46	25	55	24	136	60	67	22	561
SYROS I	D5IV5	A	Anchorage	16	10	12	6	0	0	0	0	0	0	0	13	57
TAIHUA STAR	VRCT4	A	Anchorage	0	0	0	0	9	21	17	16	19	0	5	41	128
TAKU WIND	WDI9036	A	Anchorage	2	4	4	5	2	4	3	9	2	2	4	6	47
TALISMAN	PJCY	A	Anchorage	0	3	17	0	0	6	30	17	32	4	2	9	120

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TALISMAN	LAOW5	A	Jacksonville	7	5	42	41	57	48	65	37	76	57	72	48	555
TAMPA BAY	VRLQ9	A	Baltimore	22	10	16	15	18	0	3	13	18	9	24	10	158
TANGGUH HIRI	C6XC2	A	Anchorage	118	51	74	80	86	109	101	106	61	61	60	95	1002
TARGET	9HA4710	I	Anchorage	0	0	19	4	0	0	0	0	0	0	0	0	23
TASMAN SEA	VRWX4	A	Anchorage	0	0	0	0	0	7	0	0	0	0	9	4	20
TEMPANOS	A8VP9	A	New York	0	0	0	0	0	0	0	0	0	0	42	16	58
TENO	A8VP7	A	New York	0	0	0	0	0	0	0	0	0	19	14	26	59
TEXAS ENTERPRISE	KSDF	A	Houston	0	0	0	0	0	19	27	15	0	3	27	31	122
TEXAS VOYAGER	WLIY	A	New	0	0	0	0	0	0	0	0	11	6	4	0	21
THOMAS G. THOMPSON	KTDQ	A	Seattle	1	72	17	40	17	1	8	8	0	0	4	1	169
THUNDER BAY	CFN6288	A	Duluth	6	0	0	5	6	12	7	4	0	0	12	2	54
TIGLAX	WZ3423	A	Anchorage	0	3	0	0	0	12	15	27	9	0	0	0	66
TIM S. DOOL	VGPY	A	Duluth	0	0	0	5	12	13	23	2	33	25	22	43	178
TIWAI POINT	VRFS8	A	Anchorage	0	0	0	0	0	0	0	0	0	0	7	35	42
TODD E PROPHET	WDJ8094	A	Anchorage	6	0	3	1	1	5	1	3	0	2	3	3	28
TORRENTE	A8VQ2	A	New York	0	0	0	0	0	9	31	12	33	35	3	26	149
TRF KIRKENES	V7MT7	A	Anchorage	4	4	1	0	0	0	0	0	0	1	0	0	10
TROPIC CARIB	J8PE3	A	Miami	108	97	17	34	33	97	121	105	115	111	98	93	1029
TROPIC EXPRESS	J8QB8	A	Miami	7	6	15	29	64	62	54	32	43	26	26	109	473
TROPIC FREEDOM	J8QX6	A	Miami	0	0	0	0	0	0	0	0	0	1	96	116	213
TROPIC JADE	J8NY	A	Miami	106	53	62	62	87	25	27	89	39	44	40	24	658
TROPIC LURE	J8PD	A	Miami	28	85	94	112	128	120	125	219	232	160	104	59	1466
TROPIC MIST	J8NZ	A	Miami	23	22	99	71	32	159	91	24	2	59	77	116	775
TROPIC NIGHT	J8NX	A	Miami	158	102	51	23	75	60	235	239	234	209	190	232	1808
TROPIC OPAL	J8NW	A	Miami	119	120	174	154	168	184	216	195	207	108	17	43	1705
TROPIC PALM	J8PB	A	Miami	58	48	49	35	45	46	59	61	45	78	87	79	690
TROPIC SUN	J8AZ2	A	Miami	91	87	99	91	76	99	76	129	91	107	108	123	1177
TROPIC TIDE	J8AZ3	A	Miami	79	48	125	150	113	52	48	58	68	69	79	107	996
TROPIC UNITY	J8PE4	A	Miami	96	83	69	52	35	30	38	45	38	32	93	129	740
TRYSIL SPIRIT	V7UT6	A	Anchorage	0	0	0	0	0	0	0	1	2	8	9	0	20
TS KENNEDY	KVMU	A	New York	105	100	0	0	0	204	194	0	0	0	0	0	603

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
TUG DEFIANCE	WDG2047	A	Duluth	60	0	2	36	25	55	72	143	67	93	85	53	691
TUG DOROTHY ANN (AWS)	WDE8761	A	Duluth	32	321	737	201	516	509	744	521	469	744	660	744	6198
TUG MICHIGAN	WDF5344	A	Duluth	21	2	28	9	11	20	13	48	66	44	42	18	322
TUG SPARTAN	WDF5483	A	Duluth	0	0	0	1	2	7	1	0	0	0	0	0	11
TURANDOT	9V9825	A	Anchorage	0	0	0	0	0	0	0	0	0	0	11	0	11
TUSTUMENA	WNGW	A	Anchorage	34	38	14	0	47	74	57	36	35	50	42	43	470
TYCO DECISIVE	V7DI7	A	Baltimore	21	20	0	9	14	0	5	1	0	86	72	90	318
UACC RAS LAFFAN	A8VG7	A	Anchorage	0	0	0	0	8	27	21	27	25	21	4	0	133
UNIQUE CARRIER	VRCV5	A	Anchorage	0	0	0	16	21	14	27	0	0	0	0	0	78
UNIQUE GUARDIAN	VRJM6	A	New	21	14	1	0	0	0	0	0	0	0	12	0	48
UNITY FORCE	C6BY4	A	Anchorage	0	0	0	0	0	0	0	6	0	0	8	15	29
UNITY SPIRIT	C6BW3	A	Anchorage	11	0	16	10	0	7	8	0	0	0	0	0	52
USCGC HEALY (AWS)	NWS0003	A	Anchorage	0	0	0	0	0	110	743	730	711	731	716	47	3788
USCGC POLAR STAR	NBTM	I	Seattle	59	22	26	0	0	0	0	0	0	0	0	0	107
UST LUGA	VRAA9	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	43	43
VAERDAL	WDF6582	A	Anchorage	1	3	0	1	0	3	0	1	0	13	2	0	24
VAIL SPIRIT	C6BQ8	A	Anchorage	4	4	0	0	4	7	5	4	2	0	0	0	30
VEENDAM	PHEO	A	Miami	193	147	193	154	108	50	49	75	88	51	72	66	1246
VENTA MAERSK	OWHH2	A	Anchorage	0	0	0	0	0	0	0	0	69	0	0	0	69
VERMONT TRADER	9HYN7	A	Charleston	36	43	27	41	7	6	0	36	23	34	34	10	297
VISION	WDF6306	A	Anchorage	0	0	0	3	1	2	2	3	0	1	4	1	17
VISION OF THE SEAS	C6SE8	A	Miami	1	107	46	0	13	30	48	48	24	43	27	21	408
VOLENDAM	PCHM	A	Anchorage	361	303	436	377	323	419	547	416	339	360	401	415	4697
VOYAGER OF THE SEAS	C6SE5	A	Miami	39	37	23	6	0	2	5	7	38	98	95	91	441
W. H. BLOUNT	C6JT8	A	New	40	54	49	53	53	50	17	29	45	0	0	0	390
WALTER J. MCCARTHY JR.	WXU3434	A	Duluth	5	0	12	40	18	3	19	72	3	4	22	3	201
WASHINGTON	WDI5795	A	Anchorage	0	1	4	11	37	6	6	5	0	0	0	3	73
WASHINGTON	KLBO	A	Anchorage	1	4	1	0	0	2	7	27	5	2	2	3	54
WASHINGTON EXPRESS	WDD3826	A	Houston	22	12	3	3	0	1	20	42	17	17	17	40	194
WEST BAY	VRZP8	A	Anchorage	7	29	23	0	0	11	12	4	0	15	17	18	136
WESTERDAM	PINX	A	Miami	54	143	136	161	131	45	58	117	103	42	10	106	1106

Ship Name	Call Sign	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WESTERN NAVIGATOR	WDE6616	A	Anchorage	0	0	0	0	0	0	14	7	4	0	0	0	25
WESTERN RANGER	WBN3008	A	Anchorage	0	0	1	5	17	31	1	0	0	0	0	0	55
WESTWOOD COLUMBIA	C6SI4	A	Seattle	20	8	7	15	12	5	4	9	7	12	8	9	116
WESTWOOD OLYMPIA	C6UB2	A	Seattle	18	23	20	13	14	10	11	0	2	0	0	0	111
WESTWOOD RAINIER	C6SI3	A	Seattle	30	28	18	46	14	23	12	8	17	11	10	14	231
WHITE BAY	VRMR6	A	Anchorage	0	0	0	0	0	0	0	0	0	0	0	28	28
WHITEFISH BAY	CFN6287	A	Duluth	0	0	0	3	1	0	1	18	18	0	0	0	41
WILDERNESS ADVENTURER	WDF6885	A	Anchorage	0	0	0	1	5	9	8	12	1	0	0	0	36
WILDERNESS DISCOVERER	WDF7009	A	Anchorage	0	0	0	0	20	52	46	44	16	0	0	0	178
WILDERNESS EXPLORER	WDG2904	A	Anchorage	0	0	0	0	2	0	2	0	0	0	0	0	4
WILFRED SYKES (AWS)	WC5932	A	Duluth	0	0	0	0	368	717	308	658	484	742	720	741	4738
WOLDSTAD	WDI9874	A	Anchorage	0	0	0	3	0	0	1	1	3	3	0	3	14
XPEDITION	HC2083	A	Anchorage	6	2	9	12	5	3	16	3	5	0	2	0	63
YM ANTWERP	VRET5	A	Anchorage	15	14	10	13	13	33	1	48	42	0	0	0	189
YM MANDATE	A8UU7	A	Anchorage	5	9	6	6	7	4	6	5	0	6	6	7	67
YM MASCULINITY	A8ZD2	A	Anchorage	11	6	6	0	7	9	8	10	3	12	15	17	104
YM MATURITY	A8UU8	A	Anchorage	16	17	27	1	4	5	3	2	23	116	86	68	368
YM MILESTONE	A8ZC9	A	Anchorage	7	6	9	2	3	7	6	7	5	5	17	2	76
YM MOBILITY	A8XY6	A	Anchorage	0	3	7	5	10	2	0	6	1	8	0	6	48
YM MOVEMENT	3FVL4	I	New York	0	0	0	19	0	0	3	0	5	0	0	0	27
YM MUTUALITY	A8XY5	A	Anchorage	1	7	6	10	4	8	7	9	4	8	16	9	89
YM OAKLAND	VREZ5	A	Charleston	18	17	18	10	0	0	0	0	0	0	0	0	63
YM UBERTY	A8OR4	A	Anchorage	0	0	0	0	7	7	5	6	3	9	3	12	52
YM ULTIMATE	V7IK7	A	Charleston	23	37	27	8	22	61	71	130	121	106	69	76	751
YM UNICORN	BLHI	A	Anchorage	0	0	8	18	48	331	2	3	8	6	18	12	454
YM UNIFORM	A8OR8	A	Anchorage	2	9	0	0	9	8	0	0	8	3	8	9	56
YM UNIFORMITY	BLHQ	A	Charleston	3	0	4	5	5	6	0	6	1	27	17	31	105
YM UNISON	V7HU7	A	Anchorage	46	48	52	47	38	44	28	33	1	17	55	62	471
YM UNITY	A8HZ4	A	Anchorage	1	0	48	13	11	15	27	16	18	66	0	0	215
YM UPSURGENCE	BLHJ	A	Anchorage	3	8	0	5	10	10	11	1	5	13	12	12	90
YM UTILITY	A8OR7	A	Anchorage	0	0	0	23	18	22	4	24	9	12	7	0	119





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**VOS Program  
Cooperative Ship Report:**

**January 1, 2019, through April 30, 2018**

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Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
ADVENTURE OF THE SEAS	C6SA3	Miami	33	51	45	52	181
AENEAS	VROV2	New York	78	0	0	0	78
AFRICAN ROOK	C6BO3	Anchorage	0	0	0	5	5
ALASKA BEAUTY	WDC9161	Anchorage	3	13	0	0	16
ALASKA ENDEAVOR	WDF7174	Anchorage	0	0	11	18	29
ALASKA MARINER	WSM5364	Anchorage	12	7	19	12	50
ALASKA PROVIDER	WDE7478	Anchorage	5	0	3	0	8
ALASKAN EXPLORER	WDB9918	Anchorage	15	18	30	11	74
ALASKAN LEGEND	WDD2074	Anchorage	0	30	312	124	466
ALASKAN NAVIGATOR	WDC6644	Anchorage	165	63	35	241	504
ALBANY SOUND	VRXM4	Anchorage	8	17	19	15	59
ALBEMARLE ISLAND	C6LU3	Miami	14	22	12	3	51
ALEXANDER SPIRIT	C6XT9	Anchorage	14	15	14	9	52
ALGOMA DISCOVERY	CFK9796	Duluth	0	0	0	1	1
ALGOMA SPIRIT	CFN4309	Duluth	0	0	11	35	46
ALLIANCE FAIRFAX	WLMQ	Jacksonville	28	71	25	9	133
ALLIANCE NORFOLK	WGAH	Jacksonville	62	41	19	142	264
ALLIANCE ST LOUIS	WGAE	Charleston	75	75	77	57	284
ALLURE OF THE SEAS	C6XS8	Miami	72	54	35	42	203
ALPENA	WAV4647	Duluth	0	0	0	9	9
ALPINE MATHILDE	VRDW6	Anchorage	2	0	0	0	2
ALPINE MOMENT	VREV7	Anchorage	0	3	0	0	3
AM ANNABA	V7BY3	Anchorage	0	7	4	0	11
AM GHENT	A8ZA8	Anchorage	96	176	46	115	433
AM HAMBURG	V7ZZ5	Anchorage	2	0	0	0	2
AM QUEBEC	V7AE7	Anchorage	0	0	297	511	808
AM TUBARAO	A8ZA9	Anchorage	133	239	202	425	999
AM ZENICA	V7FJ8	Anchorage	0	0	0	35	35
AMERICA	P3XP9	Charleston	10	6	3	6	25
AMERICAN CENTURY	WDD2876	Duluth	99	0	58	238	395
AMERICAN ENDURANCE	KAED	Anchorage	0	6	2	0	8
AMERICAN FREEDOM	KAFK	Anchorage	6	11	5	2	24
AMERICAN INTEGRITY	WDD2875	Duluth	0	0	0	37	37
AMERICAN MARINER	WQZ7791	Duluth	0	0	23	28	51
AMERICAN NO. 1	WCD7842	Anchorage	6	7	0	0	13
AMERICAN SPIRIT	WCX2417	Duluth	0	0	0	24	24
AMSTEL TIGER	HPRH	Anchorage	0	14	6	0	20
AMSTERDAM	PBAD	Anchorage	241	218	107	53	619
ANNA MAERSK	OXBA2	New York	1	9	4	22	36
ANSAC MOON BEAR	3FKS5	Anchorage	0	23	11	20	54
ANTHEM OF THE SEAS	C6BI7	New York	12	48	59	24	143
ANTWERPEN	VRBK6	Anchorage	1	1	3	3	8
APL BARCELONA	9V9402	Anchorage	13	0	2	94	109
APL BOSTON	9V9917	Anchorage	0	0	31	41	72

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
APL CHARLESTON	9V9923	Anchorage	4	0	0	0	4
APL CHINA	9HA4867	Los Angeles	35	33	38	25	131
APL COLUMBUS	9V9920	New York	68	62	29	43	202
APL DANUBE	9HA3553	New York	48	27	39	8	122
APL DETROIT	9V9925	Charleston	82	73	56	51	262
APL DUBLIN	9V9404	Anchorage	10	0	11	80	101
APL ESPLANADE	S6LT4	Los Angeles	52	70	75	67	264
APL FLORIDA	9V8987	Anchorage	3	0	33	50	86
APL GUAM	WAPU	Anchorage	27	12	18	0	57
APL HOLLAND	9VKQ2	Charleston	24	28	29	39	120
APL JAPAN	9V2165	Los Angeles	0	2	10	79	91
APL KOREA	9HA4871	Los Angeles	48	39	53	50	190
APL LE HAVRE	9V9375	Anchorage	96	134	104	80	414
APL LION CITY	S6LT6	Anchorage	129	22	0	0	151
APL MEXICO CITY	9V9926	Norfolk	47	33	17	85	182
APL PARIS	9V9403	Anchorage	31	47	0	19	97
APL PHOENIX	9V9918	Los Angeles	0	0	0	4	4
APL QINGDAO	9V9376	Anchorage	33	0	32	38	103
APL SAIPAN	WDJ2573	Anchorage	46	43	47	38	174
APL SALALAH	9V9400	Anchorage	0	0	27	24	51
APL SANTIAGO	9V9924	Charleston	18	29	14	66	127
APL SENTOSA	S6LT5	Anchorage	60	61	50	52	223
APL SINGAPORE	D5TB2	Los Angeles	90	63	76	67	296
APL SOUTHAMPTON	9V9399	Anchorage	15	0	0	65	80
APL THAILAND	D5TB3	Los Angeles	56	37	57	53	203
APL VANDA	S6LT8	Anchorage	0	1	138	92	231
APL YANGSHAN	9V9401	Anchorage	55	16	0	9	80
AQUARIUS VOYAGER	C6UC3	Jacksonville	32	35	78	26	171
ARCTIC BEAR	WBP3396	Anchorage	0	0	0	4	4
ARCTIC TITAN	WDG2803	Anchorage	13	13	26	3	55
ARDMORE SEALANCER	V7NM7	Anchorage	0	0	0	25	25
ARIES VOYAGER	C6UK7	Anchorage	0	21	11	16	48
ARNOLD MAERSK	OXES2	New Orleans	0	8	7	10	25
ASPEN SPIRIT	C6BQ3	Anchorage	18	14	0	1	33
ASTORIA BAY	VRKB6	Anchorage	21	14	15	0	50
ATLANTIC HURON	VCQN	Duluth	0	0	0	4	4
ATLANTIS (AWS)	KAQP	Anchorage	332	0	124	710	1166
AURORA	WYM9567	Anchorage	12	0	32	0	44
AZAMARA JOURNEY	9HOB8	Anchorage	36	25	67	113	241
AZAMARA PURSUIT	9HA4800	Anchorage	44	22	148	120	334
AZAMARA QUEST	9HOM8	Anchorage	49	65	24	27	165
AZUL LIBERO	9VMU5	Anchorage	18	21	18	11	68
BAI CHAY BRIDGE	3FAD8	Anchorage	104	102	57	29	292
BAIE COMEAU	CFN6357	Duluth	0	0	0	3	3

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
BAINBRIDGE	WDJ9373	Anchorage	9	7	2	7	25
BAKER RIVER	VRMV3	Anchorage	46	15	19	18	98
BALTIC BEAR	V7QN4	Anchorage	4	5	1	0	10
BALTIC LEOPARD	V7PX7	Anchorage	1	0	0	0	1
BALTIC PANTHER	V7TY2	Anchorage	1	5	0	0	6
BARCELONA EXPRESS	VRLX6	Anchorage	41	4	2	2	49
BARRINGTON ISLAND	C6QK	Miami	0	0	0	17	17
BARROW ISLAND	VRMK7	Anchorage	0	0	0	8	8
BASS STRAIT	VRBR6	Anchorage	20	26	12	19	77
BEAR MOUNTAIN BRIDGE	3FBQ5	Anchorage	14	14	19	10	57
BELL BAY	VRBY9	Anchorage	19	23	21	16	79
BERGE NANTONG	VRBU6	Anchorage	0	0	86	44	130
BERING LEADER	WDC7227	Anchorage	1	0	0	0	1
BERING TITAN	WDI6469	Anchorage	10	2	1	7	20
BERLIN BRIDGE	VRIM5	Norfolk	0	16	6	13	35
BILBAO BRIDGE	VRHY6	New York	46	44	49	31	170
BLACK FOREST	VRZA8	Anchorage	27	16	11	13	67
BLACKHAWK	WDG2439	Anchorage	1	0	2	0	3
BLC FIRST	9V5877	Anchorage	0	0	16	0	16
BLUEFIN	WDC7379	Seattle	0	0	54	82	136
BOB FRANCO	WDG8180	Anchorage	26	2	16	6	50
BRAZOS	V7UU4	Anchorage	16	38	2	2	58
BREVIK BRIDGE	VRHY7	New York	8	54	8	0	70
BRILLIANCE OF THE SEAS	C6SJ5	Miami	53	49	161	112	375
BROOKE CHAPMAN	WDI8453	Anchorage	3	0	0	0	3
BTS SELENA	9V5723	Anchorage	0	5	39	22	66
BUDAPEST BRIDGE	VRIZ5	New York	0	19	49	64	132
BURNS HARBOR	WDC6027	Duluth	41	0	0	16	57
BUSAN TRADER	9HA3806	Charleston	0	20	0	0	20
CALIFORNIA	KEBO	Anchorage	30	20	24	25	99
CALUMET	WDE3568	Duluth	5	0	0	0	5
CAMPBELL BAY (AWS)	AUXE	Anchorage	248	176	130	0	554
CAPE ANN	WDJ8731	Anchorage	7	4	5	5	21
CAPE AZALEA	9V9450	Anchorage	19	6	0	0	25
CAPE LILY	9V8843	Baltimore	15	6	0	0	21
CAPE MORETON	VRGG6	Anchorage	4	15	6	17	42
CAPE NELSON	VRWZ5	Anchorage	6	23	30	11	70
CAPE SOUNIO	9HA4509	Charleston	0	0	9	16	25
CAPE YORK	VRXE9	Anchorage	17	19	4	0	40
CAPRICORN VOYAGER	C6UZ5	Anchorage	71	56	37	18	182
CARNIVAL BREEZE	3FZO8	Jacksonville	204	228	128	196	756
CARNIVAL CONQUEST	3FPQ9	Miami	77	65	17	7	166
CARNIVAL DREAM	3ETA7	New Orleans	70	49	53	32	204
CARNIVAL ECSTASY	H3GR	Miami	27	12	46	87	172

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
CARNIVAL ELATION	3FOC5	Jacksonville	114	34	32	31	211
CARNIVAL FANTASY	H3GS	New Orleans	15	27	32	72	146
CARNIVAL FASCINATION	C6FM9	Jacksonville	87	59	66	53	265
CARNIVAL FREEDOM	3EBL5	Houston	17	8	8	25	58
CARNIVAL GLORY	3FPS9	Miami	8	8	60	103	179
CARNIVAL HORIZON	H3WI	Miami	362	358	405	428	1553
CARNIVAL IMAGINATION	C6FN2	Los Angeles	41	16	9	26	92
CARNIVAL INSPIRATION	C6FM5	Los Angeles	47	44	51	114	256
CARNIVAL LEGEND	9HA3667	Miami	45	23	81	149	298
CARNIVAL LIBERTY	HPYE	Jacksonville	9	14	65	54	142
CARNIVAL MAGIC	3ETA8	Jacksonville	50	24	126	121	321
CARNIVAL MIRACLE	H3VS	Miami	23	14	35	29	101
CARNIVAL PARADISE	3FOB5	Miami	33	4	32	40	109
CARNIVAL PRIDE	H3VU	Baltimore	46	7	34	85	172
CARNIVAL SENSATION	C6FM8	Miami	8	10	9	0	27
CARNIVAL SPLENDOR	3EUS	Anchorage	76	54	48	216	394
CARNIVAL SUNSHINE	C6FN4	Jacksonville	127	77	59	76	339
CARNIVAL TRIUMPH	C6FN5	New Orleans	93	58	29	8	188
CARNIVAL VALOR	H3VR	Houston	84	25	227	188	524
CARNIVAL VICTORY	3FFL8	Miami	0	2	40	79	121
CARNIVAL VISTA	3EMB9	Houston	12	112	208	130	462
CAROLINE MAERSK	OZWA2	Seattle	61	0	0	0	61
CASCADE SPIRIT	C6BQ5	Anchorage	1	0	0	0	1
CASON J. CALLAWAY	WDH7556	Duluth	29	0	0	10	39
CASTOR VOYAGER	C6UZ6	Anchorage	0	0	59	0	59
CAUQUENES	D5HF2	Anchorage	37	26	17	15	95
CAUTIN	D5HE8	Anchorage	6	3	14	13	36
CELEBRITY CONSTELLATION	9HJB9	Miami	176	150	174	136	636
CELEBRITY ECLIPSE	9HXC9	Miami	219	220	281	259	979
CELEBRITY EDGE	9HA4612	Miami	87	93	88	76	344
CELEBRITY EQUINOX	9HXD9	Miami	141	131	153	173	598
CELEBRITY INFINITY	9HJD9	Miami	243	139	115	218	715
CELEBRITY MILLENNIUM	9HJF9	Anchorage	8	17	53	105	183
CELEBRITY REFLECTION	9HA3047	Miami	130	104	59	91	384
CELEBRITY SILHOUETTE	9HA2583	Miami	185	167	186	179	717
CELEBRITY SOLSTICE	9HRJ9	Miami	201	268	187	408	1064
CELEBRITY SUMMIT	9HJC9	Miami	165	84	31	198	478
CELSIUS RAVENNA	V7A2198	Anchorage	0	18	29	8	55
CHALLENGE POLLUX	9V5639	Anchorage	0	18	33	90	141
CHALLENGE PROCYON	3EXV7	Anchorage	46	42	34	0	122
CHALLENGER	WDJ9412	Anchorage	0	7	13	17	37
CHAMPION	WDJ9411	Anchorage	13	7	18	13	51
CHAMPION BAY	VRYP3	Anchorage	8	37	6	30	81
CHARLESTON EXPRESS	WDD6126	Houston	48	35	59	36	178



Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
CHERRY POINT	VRLR2	Anchorage	16	17	10	11	54
CHILEAN REEFER	C6UM2	Anchorage	1	9	0	0	10
CHILOE ISLAND	VRMO4	Anchorage	26	29	0	17	72
CHINOOK	WCY2791	Anchorage	2	1	0	0	3
CHOWRA (AWS)	VTGB	Anchorage	170	184	223	165	742
CHUKCHI SEA	WDE2281	Anchorage	0	5	1	11	17
CISNES	D5HF4	Anchorage	27	30	30	26	113
CMA CGM CALCUTTA	OXGL2	Anchorage	6	61	40	107	214
CMA CGM CHENNAI	VRRQ5	Charleston	5	4	24	67	100
CMA CGM COCHIN	VRRQ4	Anchorage	41	11	13	14	79
CMA CGM ELBE	9HA3731	Anchorage	0	0	0	10	10
CMA CGM ESTELLE	9HA4743	Anchorage	0	11	13	8	32
CMA CGM G. WASHINGTON	9HA5003	Anchorage	24	19	36	23	102
CMA CGM J. ADAMS	9HA4999	New York	133	130	139	171	573
CMA CGM LA SCALA	2CSE5	Anchorage	48	35	51	45	179
CMA CGM LIBRA	9HA2021	Anchorage	0	0	8	23	31
CMA CGM LISA MARIE	9HA4652	Anchorage	15	0	0	42	57
CMA CGM LOIRE	9HA3739	Anchorage	0	0	8	18	26
CMA CGM LYRA	9HA4972	Anchorage	0	5	9	0	14
CMA CGM MUMBAI	VRRP8	Anchorage	54	25	15	0	94
CMA CGM MUNDRA	VRRP7	Anchorage	13	14	0	5	32
CMA CGM NABUCCO	FMEK	Anchorage	17	25	8	0	50
CMA CGM OHIO	9HA4132	Anchorage	24	13	72	46	155
CMA CGM RHONE	9HA3778	Anchorage	0	0	2	4	6
CMA CGM T. JEFFERSON	9HA4970	Anchorage	46	35	53	38	172
CMA CGM T. ROOSEVELT	9HA5029	New York	91	77	58	61	287
CMA CGM TANCREDI	9HA2837	Anchorage	0	10	0	0	10
CMA CGM THAMES	9HA3851	Anchorage	112	105	147	119	483
CMA CGM TIGRIS	9HA3801	Anchorage	7	5	1	8	21
CMA CGM TUTICORIN	VRNY5	Anchorage	0	8	28	23	59
CMB PAUILLAC	VROS3	Anchorage	12	11	0	15	38
CMB WEIHAI	V7NG2	Anchorage	0	0	0	1	1
COASTAL NAVIGATOR	WCY9686	Anchorage	11	17	8	7	43
COASTAL NOMAD	WDC6439	Anchorage	3	11	5	5	24
COASTAL PROGRESS	WDC6363	Anchorage	3	8	10	4	25
COASTAL STANDARD	WDI5038	Anchorage	7	0	0	0	7
COASTAL TRADER	WSL8560	Anchorage	5	10	18	12	45
COCHRANE	D5HE9	Anchorage	19	16	13	11	59
COLUMBIA	WYR2092	Anchorage	1	1	2	0	4
COLUMBIA RIVER	VRNB4	New Orleans	7	67	87	137	298
COMMANDER	WDJ8318	Anchorage	0	5	1	6	12
CONSTELLATION	WDB5401	Anchorage	1	0	0	0	1
CONTENDER	WDJ9374	Anchorage	17	21	10	4	52
COOK STRAIT	VRAE5	Anchorage	82	16	3	0	101

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
COOPER ISLAND	VRRD6	Anchorage	0	9	26	15	50
CORCOVADO	D5HF3	Anchorage	9	4	51	27	91
CORWITH CRAMER	WTF3319	Anchorage	0	0	0	69	69
COSCO AMERICA	3EPH4	Anchorage	7	9	13	6	35
COSCO DEVELOPMENT	VRIZ9	New York	50	126	137	135	448
COSCO EUROPE	3EOC5	Anchorage	9	11	8	8	36
COSCO EXCELLENCE	VRJT8	New York	48	43	54	109	254
COSCO FAITH	VRJL6	New York	38	11	48	35	132
COSCO FORTUNE	VRKE9	Anchorage	51	66	0	0	117
COSCO GLORY	VRIR7	New York	59	47	71	73	250
COSCO HARMONY	VRJA4	New York	121	191	56	74	442
COSCO HOPE	VRKF2	New York	53	15	86	60	214
COSCO INDONESIA	VRHE3	New York	16	58	46	11	131
COSCO JAPAN	VRFX5	New York	29	52	31	17	129
COSCO JASMINE	VRRY2	Anchorage	16	2	26	16	60
COSCO KOREA	VRGH3	New York	27	45	33	11	116
COSCO MALAYSIA	VRGV9	New York	267	247	140	42	696
COSCO PHILIPPINES	VRGM7	New York	5	0	0	10	15
COSCO PRIDE	VRIV3	New York	134	39	55	74	302
COSCO PRINCE RUPERT	VRID6	New York	73	33	59	90	255
COSCO TAICANG	VREV9	Anchorage	3	0	15	0	18
COSCO THAILAND	VRHM2	Anchorage	21	6	5	6	38
COSCO VALENCIA	VRLY7	Anchorage	9	0	0	5	14
COSCO VIETNAM	VRID5	New York	24	12	88	57	181
COSTA DELIZIOSA	IBJD	Anchorage	1	0	0	0	1
COSTA DIADEMA	IBCX	Anchorage	85	0	0	0	85
COSTA FORTUNA	IBNY	Miami	20	214	169	15	418
COSTA SERENA	ICAZ	Anchorage	60	14	0	0	74
COURAGEOUS	WDJ8976	Anchorage	12	10	13	2	37
COURAGEOUS	VRQH5	Anchorage	0	0	0	12	12
COYHAIQUE	D5HF5	Anchorage	1	1	0	0	2
CRAMOND ISLAND	VRQJ9	Anchorage	0	0	51	82	133
CRYSTAL MARINE	9VIC4	Anchorage	37	6	0	0	43
CRYSTAL SERENITY	C6SY3	Anchorage	134	114	149	140	537
CRYSTAL SUNRISE	9V2024	Anchorage	13	18	12	29	72
CRYSTAL SYMPHONY	C6MY5	Anchorage	15	8	2	1	26
CS GLOBAL SENTINEL	KGSU	Baltimore	6	0	0	0	6
CSCL AFRICA	VRBI3	New York	37	13	24	0	74
CSCL ASIA	VRAB8	Anchorage	3	0	0	0	3
CSCL AUTUMN	VRNA7	Anchorage	6	12	6	0	24
CSCL BOHAI SEA	VRNG8	Anchorage	7	10	14	10	41
CSCL EAST CHINA SEA	VRNM3	Anchorage	6	12	7	0	25
CSCL LONG BEACH	VRCZ7	Anchorage	12	2	11	30	55
CSCL MONTEVIDEO	VREI4	Anchorage	35	5	0	0	40

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
CSCL SATURN	VRJS5	Anchorage	3	4	9	3	19
CSCL SOUTH CHINA SEA	VRNT8	Anchorage	10	8	4	6	28
CSCL SPRING	VRMT6	Anchorage	8	0	5	5	18
CSCL SUMMER	VRMZ7	Anchorage	1	15	7	7	30
CSCL SYDNEY	VRBH9	Norfolk	0	2	0	0	2
CSCL WINTER	VRNA3	Anchorage	6	6	0	4	16
CSCL YELLOW SEA	VRNG9	Anchorage	0	0	3	5	8
CSCL ZEEBRUGGE	VRCS2	Anchorage	4	15	0	6	25
CSL ASSINIBOINE	VCKQ	Duluth	22	0	3	86	111
CSL LAURENTIEN	VCJW	Duluth	0	0	0	9	9
CSL NIAGARA	VCGJ	Duluth	0	0	0	2	2
CSL TADOUSSAC	VDWB	Duluth	6	0	0	14	20
DANCING BRAVE	9V3867	Anchorage	546	606	137	593	1882
DANIEL K. INOUYE	WDJ3192	Anchorage	7	1	15	56	79
DARLING RIVER	DARI	Anchorage	0	17	20	2	39
DARYA JAYA	VRPV6	Anchorage	0	26	54	0	80
DARYA LOK	VRKQ7	Anchorage	5	6	8	3	22
DARYA MA	VRJH5	Anchorage	0	1	0	0	1
DARYA TIANA	VRNZ2	Anchorage	4	6	9	0	19
DEFENDER	WBN3016	Jacksonville	0	0	10	9	19
DEPENDABLE	V7DI6	Baltimore	8	32	22	10	72
DERING (AWS)	VTVS	Anchorage	210	182	226	219	837
DESH ABHIMAAN	AWUU	Anchorage	0	3	11	9	23
DESH GARIMA	AVBC	Anchorage	0	5	2	0	7
DESH MAHIMA	AVBF	Anchorage	38	33	6	0	77
DESH PREM	AUBC	Anchorage	3	0	2	0	5
DESH SAMMAN	AVBE	Anchorage	8	2	0	0	10
DESH SHAKTI	AUCU	Anchorage	3	3	0	0	6
DESH SHOBHA	AVWF	Anchorage	10	1	0	1	12
DESH UJAALA	AUFI	Anchorage	0	11	4	2	17
DESH VISHAL	AUTP	Anchorage	2	0	0	0	2
DETROIT EXPRESS	VRLX4	Anchorage	11	30	20	21	82
DIANE H	WUR7250	Anchorage	0	0	0	3	3
DISCOVERER INSPIRATION	V7MO3	Houston	40	109	123	76	348
DISHA	9HSJ7	Anchorage	18	9	7	2	36
DISNEY DREAM	C6YR6	Jacksonville	166	70	56	136	428
DISNEY FANTASY	C6ZL6	Jacksonville	225	154	83	22	484
DISNEY MAGIC	C6PT7	Miami	26	11	8	15	60
DISNEY WONDER	C6QM8	Jacksonville	54	18	73	100	245
DOMINATOR	WBZ4106	Anchorage	0	13	50	27	90
DUNCAN ISLAND	C6JS	Miami	0	0	1	7	8
DUNEDIN STAR	D5FF5	Anchorage	0	0	9	0	9
DURABLE	V7DI8	Baltimore	9	47	42	16	114
EARTH SUMMIT	9V2911	Anchorage	158	42	2	0	202

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
EASTER N	3FMO7	New Orleans	39	28	0	0	67
EASTERN CAPE	VRLD8	Anchorage	5	12	10	17	44
EDGAR B. SPEER	WDH7562	Duluth	103	0	0	151	254
EDWIN H. GOTT	WDH7558	Duluth	138	0	0	56	194
EL COQUI	WDJ4838	Jacksonville	37	21	25	37	120
EL SEGUNDO VOYAGER	C6DQ2	Anchorage	38	16	55	11	120
ELCIE	WDF2656	Baltimore	22	2	0	0	24
ELIZABETH RIVER	VRBJ5	Anchorage	0	4	0	0	4
ELRINGTON	WDJ8313	Anchorage	17	20	28	31	96
ELVIRA BULKER	OWLC2	Jacksonville	22	0	0	0	22
EMERY ZIDELL	WDH7301	Anchorage	4	2	0	0	6
EMILIUS	9V2909	Anchorage	61	18	7	0	86
EMPRESS OF THE SEAS	C6CM8	Miami	34	3	40	33	110
ENCHANTMENT OF THE SEAS	C6FZ7	Jacksonville	19	22	15	4	60
ENDEAVOR (AWS)	WCE5063	New York	0	0	651	711	1362
ENDURANCE	WDE9586	Baltimore	47	0	58	70	175
ENDURANCE	WDF7523	Anchorage	1	0	0	0	1
ENGLISH BAY	VRYQ9	Anchorage	21	9	11	16	57
ERIK SPIRIT	C6FZ4	Anchorage	0	0	6	23	29
ERNEST N	A8PQ6	Anchorage	10	13	4	3	30
ESPERANCE BAY	VRHM6	Anchorage	4	0	0	0	4
EURODAM	PHOS	Miami	83	34	84	56	257
EVER EAGLE	ZNZH6	Anchorage	7	6	0	0	13
EVER ELITE	VSJG7	Los Angeles	32	18	25	74	149
EVER ENVOY	VSQJ9	Anchorage	0	0	12	7	19
EVER ETHIC	VQFS4	Anchorage	6	0	0	0	6
EVER EXCEL	VSXV3	Los Angeles	48	1	0	3	52
EVER LAUREL	9V9287	New York	12	8	15	24	59
EVER LAWFUL	9V9288	New York	7	5	23	0	35
EVER LEADER	9V9289	New York	5	19	14	0	38
EVER LEADING	2FRK8	Norfolk	28	13	43	17	101
EVER LEGACY	9V9290	New York	369	308	235	211	1123
EVER LENIENT	2HDF9	Los Angeles	6	0	0	0	6
EVER LIBERAL	2HDG2	New York	12	22	23	2	59
EVER LIBRA	BKIC	New York	8	12	14	16	50
EVER LIFTING	2ILJ7	New York	17	11	11	0	39
EVER LINKING	2GLI9	New York	0	4	29	2	35
EVER LISSOME	2HDG3	New York	47	16	2	8	73
EVER LIVELY	9V9726	Anchorage	10	7	0	0	17
EVER LIVEN	BKIE	New York	58	54	91	49	252
EVER LIVING	9V9791	Baltimore	12	6	45	49	112
EVER LOADING	2HDG4	New York	8	2	9	29	48
EVER LOGIC	BKIF	New York	9	0	17	10	36
EVER LOTUS	3FWH8	Charleston	5	9	10	9	33

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
EVER LOVELY	9V9793	Charleston	0	3	32	25	60
EVER LOYAL	BKIZ	New York	97	132	89	0	318
EVER LUCENT	9V9792	Norfolk	5	0	0	0	5
EVER LUCID	BKIY	New York	0	58	25	19	102
EVER LUCKY	3FAE4	New York	6	25	46	16	93
EVER LUNAR	BKKF	New York	0	0	46	45	91
EVER LYRIC	BKKH	Anchorage	7	0	23	5	35
EVER SALUTE	3ENU5	Anchorage	56	28	25	14	123
EVER SHINE	MJKZ4	Anchorage	0	0	0	7	7
EVER SIGMA	MKKZ7	Anchorage	10	14	15	11	50
EVER SMART	MLBD9	Anchorage	27	22	0	0	49
EVER SMILE	MLTH5	Anchorage	28	24	41	75	168
EVER STEADY	3EHT6	Anchorage	9	1	1	2	13
EVER STRONG	9V5282	Anchorage	5	0	8	53	66
EVER SUMMIT	3EKU3	Anchorage	0	7	10	1	18
EVER UNIFIC	9V7961	Anchorage	9	0	0	0	9
EVER URANUS	3FCA9	Anchorage	0	0	0	5	5
EXCALIBUR	ONCE	Houston	47	27	30	15	119
EXCELERATE	ONDY	Houston	3	0	0	0	3
EXEMPLAR	ONFZ	Houston	0	4	50	10	64
EXPLORER OF THE SEAS	C6SE4	Jacksonville	78	30	74	32	214
EXPRESS	ONFL	Houston	5	0	0	0	5
FAIRCHEM EDGE	V7EC4	Anchorage	40	48	8	84	180
FALKOR (AWS)	ZCYL5	Anchorage	484	30	187	0	701
FEDERAL ASAHI	V7NK7	Anchorage	0	26	27	8	61
FEDERAL BEAUFORT	V7MF7	Anchorage	0	1	0	0	1
FEDERAL COLUMBIA	V7NK5	Anchorage	0	0	0	1	1
FEDERAL CRIMSON	9V2687	Anchorage	0	5	6	0	11
FEDERAL DELTA	V7PX5	Anchorage	7	8	7	0	22
FEDERAL IBERVILLE	3EXN6	Anchorage	7	4	4	0	15
FEDERAL IBUKI	H9RX	Anchorage	14	0	11	3	28
FEDERAL IMABARI	3FPV4	Anchorage	0	8	15	0	23
FEDERAL IRIS	3EXR8	Anchorage	11	15	17	0	43
FEDERAL ISLAND	3FNO5	Anchorage	14	10	5	5	34
FEDERAL KIVALINA	V7RF2	Anchorage	46	25	26	1	98
FEDERAL KUSHIRO	V7UY9	Anchorage	0	0	2	14	16
FEDERAL MACKINAC	V7RI8	Anchorage	7	33	22	17	79
FEDERAL MAYUMI	V7YF2	Anchorage	0	0	21	32	53
FEDERAL NAGARA	V7HU4	Anchorage	8	30	32	16	86
FEDERAL NAKAGAWA	V7RF9	Anchorage	28	14	16	0	58
FEDERAL SABLE	V7WS4	Anchorage	0	16	11	18	45
FEDERAL SATSUKI	V7YE6	Anchorage	1	0	0	0	1
FEDERAL SCHELDE	8POF	Anchorage	0	0	0	5	5
FEDERAL SWIFT	V7WS6	Anchorage	26	47	34	22	129

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
FEDERAL TAKASE	V7NJ9	Anchorage	33	89	82	55	259
FEDERAL TIBER	V7YW2	Anchorage	25	15	11	10	61
FEDERAL TRIDENT	V7NJ6	Anchorage	0	0	10	0	10
FEDERAL YELLOWSTONE	V7ZC6	Anchorage	23	0	0	0	23
FISH HAWK	WDF2995	Anchorage	2	0	0	4	6
FLORIDA	WFAF	Houston	8	3	1	0	12
FLORIDA VOYAGER	WDF4764	New Orleans	42	34	30	23	129
FMG AMANDA	VRRD3	Anchorage	18	42	62	54	176
FMG NORTHERN SPIRIT	VRRU4	Anchorage	50	13	42	26	131
FPMC 25	A8YV4	Anchorage	0	6	0	0	6
FREEDOM	WDB5483	Jacksonville	26	4	23	6	59
FREEDOM OF THE SEAS	C6UZ7	Miami	1	0	80	32	113
FRIO	V7UU3	Anchorage	4	1	0	0	5
G. L. OSTRANDER	WCV7620	Duluth	1	0	0	0	1
G3 MARQUIS	XJBO	Duluth	0	0	6	8	14
GARDEN STATE	KGSG	Anchorage	1	0	11	15	27
GENCO AUGUSTUS	VRDD2	Anchorage	0	1	4	0	5
GENMAR COMPATRIOT	ZCDK2	Anchorage	75	56	106	33	270
GENOA EXPRESS	VRLX5	Anchorage	84	84	30	50	248
GEORGE N	A8PQ5	Anchorage	18	2	47	41	108
GH POWER	VRDR5	Anchorage	0	0	9	3	12
GLEN CANYON BRIDGE	3EFD9	Norfolk	26	26	76	0	128
GORDON JENSEN	WDG3440	Anchorage	0	0	38	0	38
GRANDEUR OF THE SEAS	C6SE3	Jacksonville	176	100	347	307	930
GRANVILLE BRIDGE	3EGM7	Anchorage	16	2	5	6	29
GREAT REPUBLIC	WDH7561	Duluth	0	0	0	3	3
GREEN BAY	WDI3177	Jacksonville	19	45	10	7	81
GREEN COVE	WDG5660	Baltimore	0	0	0	2	2
GREEN LAKE	WDDI	Jacksonville	76	63	23	33	195
GREEN RIDGE	WZZF	Jacksonville	43	1	4	0	48
GREENWICH BRIDGE	3EEX5	Anchorage	9	11	8	1	29
GROUSE HUNTER	D5KT4	Anchorage	0	0	0	12	12
GUANG DONG BRIDGE	3EFI	New York	15	14	14	0	43
GULF RELIANCE	WDD2703	Anchorage	5	1	3	0	9
GYR FALCON	WCU6587	Anchorage	0	0	0	1	1
H A SKLENAR	C6CL6	Houston	131	47	28	0	206
H. LEE WHITE	WZD2465	Duluth	6	0	1	17	24
HAINAN ISLAND	VRMY3	Anchorage	0	9	4	3	16
HALIFAX EXPRESS	VRMW7	New Orleans	2	38	27	35	102
HANGZHOU BAY BRIDGE	3FMK3	New York	0	34	51	7	92
HAPPY CLIPPER	VRWX9	Anchorage	16	7	0	0	23
HARDANGER	9VAW6	Anchorage	436	366	480	274	1556
HARMONY OF THE SEAS	C6BX8	Miami	39	93	80	55	267
HENRY GOODRICH	YJQN7	Houston	200	194	214	123	731



Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
HERBERT C. JACKSON (AWS)	WL3972	Duluth	533	0	236	710	1479
HERCULES VOYAGER	C6AB9	Anchorage	10	27	6	8	51
HIGH FORCE	3FMA2	Anchorage	3	1	0	0	4
HON. JAMES L. OBERSTAR	WL3108	Duluth	375	0	179	720	1274
HONOR	WDC6923	Baltimore	27	29	15	14	85
HORIZON ENTERPRISE	KRGB	Seattle	65	57	59	69	250
HORIZON PACIFIC	WSRL	Seattle	38	0	7	75	120
HORIZON RELIANCE	WFLH	Los Angeles	37	50	48	29	164
HORIZON SPIRIT	WFLG	Los Angeles	115	172	45	23	355
HOS RED DAWN	WDG8133	Anchorage	20	0	12	3	35
HOUSTON	KCDK	New Orleans	21	6	27	25	79
HOUSTON VOYAGER	C6DP7	Anchorage	0	0	10	31	41
HOVDEN SPIRIT	V7UT7	Anchorage	27	21	0	7	55
HYDRA VOYAGER	C6AB8	Anchorage	9	2	61	10	82
HYUNDAI BUSAN	5BZN3	Anchorage	28	0	0	0	28
HYUNDAI CONFIDENCE	D7MT	Anchorage	10	9	7	11	37
HYUNDAI GOODWILL	3EQO	Anchorage	12	10	10	10	42
HYUNDAI GRACE	V7QC3	Anchorage	12	6	6	2	26
HYUNDAI HONGKONG	5BZL3	Anchorage	7	8	1	3	19
HYUNDAI JAKARTA	3EJM4	Anchorage	27	11	10	9	57
HYUNDAI SHANGHAI	5BZM3	Anchorage	17	4	18	9	48
HYUNDAI SINGAPORE	5BZP3	Anchorage	5	11	5	2	23
HYUNDAI TOKYO	5BZK3	Anchorage	33	54	23	6	116
HYUNDAI VOYAGER	3EQF9	Anchorage	12	2	3	7	24
IMABARI LOGGER	VRNE6	Anchorage	14	24	1	11	50
IMPRESSION BAY	VROV6	Anchorage	8	8	0	8	24
INCE POINT	VRSF6	Anchorage	3	22	12	0	37
INCHEON BAY	VRQO6	Anchorage	21	20	22	23	86
INDEPENDENCE II	WGAX	Baltimore	47	44	40	32	163
INDEPENDENCE OF THE SEAS	C6WW4	Miami	26	11	27	31	95
INDIAN OCEAN	VROQ8	Anchorage	15	16	8	5	44
INDIANA HARBOR	WXN3191	Duluth	0	0	0	5	5
INDIGO LAKE	VROY7	Anchorage	14	19	23	22	78
INGOT	WDJ9413	Anchorage	5	11	15	0	31
INTEGRITY	WDC6925	Baltimore	75	55	12	25	167
IPANEMA BEACH	PB105	Anchorage	10	38	11	16	75
ISABELA ISLAND	VRQK4	Anchorage	0	0	19	28	47
ISLA BELLA	WTOI	Jacksonville	50	65	69	70	254
JAG AKSHAY	AWRA	Anchorage	0	0	9	13	22
JAMAICA BAY	VRMC9	Anchorage	15	17	32	10	74
JAMES BAY	VRLU4	Anchorage	22	16	14	20	72
JAMES L. KUBER	WDF7020	Duluth	0	0	1	19	20
JAMES R. BARKER (AWS)	WYP8657	Duluth	0	0	154	720	874
JANE S	V7JJ4	Anchorage	0	0	2	0	2

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
JEAN ANNE	WDC3786	Los Angeles	49	39	71	61	220
JENNY N	A8PQ7	Houston	63	2	0	7	72
JERVIS BAY	VRMM1	Anchorage	9	18	15	7	49
JEWEL OF THE SEAS	C6FW9	Miami	26	2	0	38	66
JIANGMEN TRADER	VRLK2	Anchorage	12	0	0	0	12
JOHN G. MUNSON	WDH7557	Duluth	0	0	0	8	8
JOHN J. BOLAND	WZE4539	Duluth	0	0	6	26	32
JOIDES RESOLUTION	5BMM3	Anchorage	9	46	9	0	64
JOSEPH L. BLOCK	WXY6216	Duluth	70	328	600	581	1579
JULES POINT	VRMR7	Anchorage	0	0	0	8	8
JUMEIRAH BEACH	VRMY5	Anchorage	14	2	6	11	33
KAHYASI	9V2738	Anchorage	40	0	0	0	40
KAI XUAN	V7YL7	Baltimore	0	0	1	0	1
KALIGHAT (AWS)	VWTI	Anchorage	0	36	226	212	474
KAMBOS	3ESY5	New Orleans	0	13	3	1	17
KANDA LOGGER	VRPN7	Anchorage	19	16	9	15	59
KAPRIJKE	ONIK	Houston	119	105	94	89	407
KAROLINE N	A8PQ8	Anchorage	76	6	26	17	125
KAUAI	WSRH	Seattle	0	0	32	22	54
KAYE E. BARKER (AWS)	WCF3012	Duluth	309	0	172	714	1195
KENNICOTT	WCY2920	Anchorage	0	0	0	1	1
KESTREL	WDE7804	Anchorage	0	0	0	1	1
KEY WEST	VRQK2	Anchorage	0	0	0	1	1
KILO MOANA (AWS)	WDA7827	Anchorage	632	648	548	641	2469
KINGCRAFT	9V2737	Anchorage	77	46	40	77	240
KISBER	9V2736	Anchorage	0	0	10	3	13
KIWI TRADER	VRWN7	Anchorage	0	12	13	16	41
KN ARCADIA	9V3913	Anchorage	28	103	60	28	219
KODIAK ISLAND	VRQO7	Anchorage	11	20	5	0	36
KONINGS DAM	PBGJ	Miami	0	0	89	36	125
KOOMBANA BAY	VRHQ9	Anchorage	25	59	15	9	108
KOTA PANJANG	9V5294	Anchorage	2	6	9	18	35
KOTA PEKARANG	9V5295	Anchorage	74	0	40	108	222
KOTA PERABU	VRRN8	Anchorage	7	9	5	0	21
KOTA PERDANA	VRRQ7	Anchorage	14	14	12	8	48
KOTA PURI	VRSB5	Anchorage	8	12	8	5	33
KRIS KIN	9V2739	Anchorage	1	1	0	0	2
KULTUS COVE	VRQD7	Anchorage	18	11	22	11	62
LA STELLA	ONIS	Anchorage	0	0	2	9	11
LA TONDA	ONiy	Anchorage	56	15	21	17	109
LAKE DOLPHIN	ONHA	Anchorage	96	184	21	45	346
LATOUCHE	WDJ8973	Anchorage	24	12	13	12	61
LAURENCE M. GOULD (AWS)	WCX7445	Anchorage	744	671	744	710	2869
LECONTE	WZE4270	Anchorage	0	22	53	59	134

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
LEE A. TREGURTHA (AWS)	WUR8857	Duluth	332	0	220	720	1272
LEGACY	WDI5321	Anchorage	11	10	7	12	40
LEGACY	WDF7311	Anchorage	6	0	11	10	27
LENI SELMER	V7OM6	New Orleans	4	15	17	0	36
LEO VOYAGER	C6AB7	Anchorage	0	14	0	0	14
LIBERTY	KLIG	Baltimore	67	50	8	2	127
LIBERTY EAGLE	WHIA	Houston	27	20	11	0	58
LIBERTY GLORY	WADP	Houston	46	30	18	0	94
LIBERTY GRACE	WADN	Houston	15	0	38	0	53
LIBERTY ISLAND	VRLK3	Anchorage	219	53	28	3	303
LIBERTY OF THE SEAS	C6VQ8	Houston	43	32	38	61	174
LIBERTY PEACE	WLIU	Houston	38	20	23	20	101
LIBERTY PRIDE	KRAU	Charleston	15	10	7	8	40
LOIRE	V7QJ5	Anchorage	0	40	10	13	63
LONGVIEW LOGGER	VRDK7	Anchorage	428	223	105	23	779
LOWLANDS LIGHT	9V5343	Anchorage	0	23	2	3	28
LUZON STRAIT	VRCJ2	Anchorage	10	4	13	1	28
M.F.V. SAGARIKA (AWS)	VTLX	Anchorage	37	160	87	80	364
M.V. IRELAND	C6DD6	Jacksonville	23	58	52	51	184
MAASDAM	PFRO	Miami	89	72	217	208	586
MAERSK ATLANTA	WNTL	Charleston	7	91	59	48	205
MAERSK CHICAGO	WMCS	New York	13	9	52	79	153
MAERSK COLUMBUS	WMCU	New York	36	31	55	52	174
MAERSK DENVER	WMDQ	New York	79	43	47	29	198
MAERSK DETROIT	WMDK	New York	33	58	58	20	169
MAERSK DURBAN	KSKM	New York	0	10	30	46	86
MAERSK HARTFORD	WMHA	New York	13	18	63	46	140
MAERSK IDAHO	WKPM	Houston	322	394	313	266	1295
MAERSK IOWA	KABL	Houston	48	55	32	66	201
MAERSK KENSINGTON	WMKN	Charleston	144	99	148	200	591
MAERSK KENTUCKY	9V6172	Baltimore	63	56	48	19	186
MAERSK KINLOSS	WMKA	New York	56	17	22	61	156
MAERSK MEMPHIS	9V6171	New York	22	13	63	26	124
MAERSK MICHIGAN	WGDW	New York	0	0	17	86	103
MAERSK MONTANA	WCDP	Houston	86	129	154	98	467
MAERSK OHIO	KABP	Houston	140	251	271	321	983
MAERSK PEARY	WHKM	Houston	14	7	16	53	90
MAERSK PITTSBURGH	WMPP	New York	70	39	30	67	206
MAERSK SANTANA	9V5245	Anchorage	0	33	15	0	48
MAERSK SELETAR	WTAA	New York	91	88	79	80	338
MAERSK SENTOSA	WSEP	New York	73	47	46	29	195
MAERSK SEVILLE	9V5243	Anchorage	0	0	54	50	104
MAERSK VARNA	9V8838	Baltimore	30	42	24	16	112
MAHIMAHI	WHRN	Los Angeles	29	26	34	43	132

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
MAIPO RIVER	VREZ3	Anchorage	16	11	18	17	62
MAJESTY OF THE SEAS	C6FZ8	Miami	14	3	49	47	113
MALASPINA	WI6803	Anchorage	0	3	4	1	8
MALOLO	WYH6327	Anchorage	11	8	15	29	63
MANIFESTO	9V9574	Anchorage	8	0	0	0	8
MANITOULIN	XJBX	Duluth	0	0	0	4	4
MANITOWOC	WDE3569	Duluth	19	0	0	30	49
MANOA	KDBG	Los Angeles	10	0	5	8	23
MANUKAI	WRGD	Los Angeles	25	5	25	26	81
MANULANI	WECH	Los Angeles	24	23	23	4	74
MARCELLUS LADY	9V3144	Anchorage	26	0	0	0	26
MARCUS G. LANGSETH (AWS)	WDC6698	Anchorage	694	460	636	692	2482
MARINER OF THE SEAS	C6FV9	Miami	18	16	52	72	158
MARJORIE C	WDH6745	Los Angeles	55	10	0	32	97
MARSDEN POINT	VRNF3	Anchorage	0	10	23	20	53
MATAKANA ISLAND	VRGM4	Anchorage	26	17	17	14	74
MATSON ANCHORAGE	KGTX	Anchorage	26	52	32	46	156
MATSON KODIAK	KGTZ	Anchorage	63	57	67	36	223
MATSON TACOMA	KGTY	Anchorage	77	29	42	57	205
MATSONIA	KHRC	Los Angeles	0	0	1	0	1
MATSYA DRUSHTI (AWS)	8TAP	Anchorage	160	147	133	158	598
MATSYA VARSHINI (AWS)	ATVK	Anchorage	239	188	219	208	854
MATSYA VRUSHTI (AWS)	8TAO	Anchorage	127	151	185	204	667
MAUNALEI	KFMV	Los Angeles	2	0	34	4	40
MAUNAWILI	WGEB	Los Angeles	9	10	13	6	38
MEHUIN	A8SG8	Charleston	6	2	11	0	19
MEIN SCHIFF 1	9HA4683	Miami	24	2	0	0	26
MEIN SCHIFF 3	9HA3062	Miami	0	15	2	57	74
MEIN SCHIFF 4	9HA3513	Miami	116	61	41	90	308
MEIN SCHIFF 5	9HA3858	Miami	54	52	59	62	227
MEIN SCHIFF 6	9HA4330	New York	58	40	31	37	166
MEIN SCHIFF HERZ	9HJG9	Miami	105	44	59	34	242
MERCURY HOPE	3FRE6	Anchorage	10	7	10	11	38
MERIDIAN EXPRESS	3FQH2	Anchorage	5	0	0	0	5
MERMAID HOPE	3FOJ2	Anchorage	0	0	55	11	66
MESABI MINER (AWS)	WYQ4356	Duluth	304	0	267	720	1291
MGS SAGAR (AWS)	YJUP4	Anchorage	0	135	214	191	540
MICHELE FOSS	WDH8371	Anchorage	0	1	12	4	17
MIDNIGHT SUN	WAHG	Anchorage	10	15	49	37	111
MIGHTY SERVANT 1	PJVZ	Anchorage	2	3	0	0	5
MIKE O'LEARY	WDC3665	Anchorage	0	0	0	9	9
MILLENNIUM STAR	WDA2184	Anchorage	3	0	0	0	3
MINERAL BEIJING	VRSP5	Anchorage	8	1	0	22	31
MINERAL CHARLIE	VRJZ9	Anchorage	0	0	0	51	51

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
MINERAL CHINA	ONAC	Anchorage	58	30	21	13	122
MINERAL CLOUDBREAK	VRLA6	Anchorage	64	100	110	102	376
MINERAL DALIAN	ONFW	Anchorage	24	14	103	61	202
MINERAL DRAGON	ONFN	Anchorage	15	31	34	49	129
MINERAL ENERGY	D5KS4	Anchorage	0	0	9	26	35
MINERAL FAITH	VRKS4	Anchorage	29	27	27	20	103
MINERAL HONSHU	D5QV7	Anchorage	27	26	31	26	110
MINERAL KYOTO	ONFI	Anchorage	13	29	3	9	54
MINERAL MAUREEN	VRKK2	Anchorage	56	23	3	11	93
MINERAL NEW YORK	ONGI	Anchorage	1	9	16	0	26
MINERAL NINGBO	ONGA	Anchorage	0	0	9	68	77
MINERAL NOBLE	ONAN	Anchorage	55	27	29	29	140
MINERAL STONEHENGE	ONGR	Anchorage	19	9	3	3	34
MINERAL SUBIC	VRIF9	Anchorage	17	28	25	9	79
MINERAL TIANJIN	D5RN8	Anchorage	19	20	21	36	96
MINERAL YARDEN	D5LJ2	Anchorage	7	8	28	12	55
MISSISSIPPI VOYAGER	WDD7294	Anchorage	2	6	21	22	51
MOKIHANA	WNRD	Los Angeles	57	33	26	26	142
MOL BEACON	VROB9	Anchorage	60	47	79	84	270
MOL BELIEF	VROD3	Anchorage	5	43	38	45	131
MOL BELLWETHER	VROG8	Anchorage	5	5	3	5	18
MOL BENEFACTOR	VRPJ6	Anchorage	11	1	10	0	22
MOL BEYOND	VRPN8	Anchorage	0	20	0	17	37
MOL BREEZE	VRNL8	Anchorage	14	0	15	15	44
MOL BRIGHTNESS	VRNL9	Anchorage	4	22	27	47	100
MOL BRILLIANCE	VRNL2	Anchorage	94	109	33	16	252
MOL CELEBRATION	C6WW7	Anchorage	10	5	10	4	29
MOL EMINENCE	VRFN8	Anchorage	6	4	12	17	39
MOL EMISSARY	VRFX6	New Orleans	18	11	16	18	63
MOL MAESTRO	3EKT9	Charleston	6	6	7	8	27
MOL MAJESTY	V7SV4	Los Angeles	0	0	4	25	29
MOL MANEUVER	V7VC5	Charleston	0	4	3	5	12
MOL MODERN	V7VS6	Los Angeles	6	4	4	0	14
MOL MOTIVATOR	V7VG6	Los Angeles	7	6	0	6	19
MOL PARADISE	9V3118	Anchorage	7	28	6	0	41
MOL PRESTIGE	9V3122	Anchorage	44	41	12	34	131
MOMO GLORY	3EWL5	Anchorage	26	5	14	5	50
MONARCH	9HA3314	Anchorage	25	25	48	16	114
MORSTON	9V9144	Anchorage	0	0	0	4	4
MOTIVATOR	9V9143	Anchorage	2	0	0	0	2
MOUNT ADAMS	VRCB7	Anchorage	0	1	0	0	1
MOUNT ASO	VROV7	Anchorage	0	16	5	17	38
MOUNT BAKER	VRMN6	Anchorage	18	13	9	18	58
MOUNT DRUM	WDJ7294	Anchorage	12	17	1	11	41

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
MOUNT HIKURANGI	VRMC8	Anchorage	65	28	1	4	98
MOUNT OWEN	VRDU6	Anchorage	0	16	6	22	44
MOUNT RAINIER	VRBG6	Anchorage	12	13	17	18	60
MOUNT SEYMOUR	VRPT4	Anchorage	33	27	9	13	82
MOUNT TARANAKI	VRRW9	Anchorage	0	31	26	116	173
MOUNT TRAVERS	VRXP2	New Orleans	30	11	0	0	41
MSC ARUSHI R	A8RL3	Anchorage	18	21	18	1	58
MSC DIVINA	3FFA5	Anchorage	128	110	135	106	479
MSC FANTASIA	3ETR7	Anchorage	0	0	19	0	19
MSC MAGNIFICA	3FLO4	Anchorage	4	23	9	11	47
MSC MUSICA	3EFK6	Anchorage	0	0	0	18	18
MSC ORNELLA	H3RF	Charleston	1	9	4	0	14
MSC POESIA	3EPL4	Miami	23	8	14	22	67
MSC SEASIDE	9HA4638	Miami	45	51	16	10	122
MUKADDES KALKAVAN	V7AP5	New York	0	25	6	35	66
MUSTAFA DAYI	TCZF2	New York	16	0	3	10	29
MY NY	5BYB4	New Orleans	27	26	43	21	117
NACHIK	WDE7904	Anchorage	0	0	0	2	2
NAMSEN	V7QJ6	Anchorage	45	48	81	87	261
NANCY P	V7GK5	Anchorage	1	0	0	0	1
NANIQ	WDF7990	Anchorage	4	0	0	0	4
NATHANIEL B. PALMER (AWS)	WBP3210	Anchorage	744	671	744	720	2879
NATIONAL GEOGRAPHIC	WDJ3521	Anchorage	0	0	0	1	1
NATIONAL GEOGRAPHIC SEA	WUR9646	Anchorage	0	0	0	1	1
NATIONAL GLORY	WDD4207	Houston	0	0	0	51	51
NATOMA	WBB5799	Anchorage	2	2	10	7	21
NAVAJO	WCT5737	Anchorage	1	5	9	0	15
NAVIGATOR OF THE SEAS	C6FU4	Miami	3	0	0	0	3
NEIL ARMSTRONG (AWS)	WARL	Anchorage	574	0	0	594	1168
NEVZAT KALKAVAN	TCMO2	New York	8	18	8	0	34
NICOLE FOSS	WDJ4108	Anchorage	12	14	8	1	35
NIEUW AMSTERDAM	PBWQ	Miami	115	116	111	42	384
NIEUW STATENDAM	PBCO	Anchorage	1	16	145	117	279
NIJINSKY	9VAX2	Anchorage	34	0	2	0	36
NOAA BELL M. SHIMADA	WTED	Anchorage	0	265	498	25	788
NOAA HENRY B. BIGELOW	WTDF	Anchorage	0	0	493	493	986
NOAA NANCY FOSTER (AWS)	WTER	Anchorage	0	396	588	540	1524
NOAA OREGON II (AWS)	WTDO	New Orleans	0	0	0	142	142
NOAA OSCAR DYSON (AWS)	WTEP	Anchorage	0	0	0	385	385
NOAA OSCAR ELTON SETTE	WTEE	Anchorage	0	0	9	313	322
NOAA PISCES (AWS)	WTDL	New Orleans	0	0	1	423	424
NOAA RAINIER (AWS)	WTEF	Anchorage	0	0	0	142	142
NOAA REUBEN LASKER (AWS)	WTEG	Anchorage	0	161	41	505	707
NOAA RONALD H. BROWN	WTEC	Anchorage	0	68	602	475	1145



Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
NOORDAM	PHET	Anchorage	307	401	592	603	1903
NORTH STAR	KIYI	Anchorage	52	48	55	52	207
NORTHERN PATRIOT	WDA2025	Anchorage	2	4	10	0	16
NORTHWEST SWAN	ZCDJ9	Anchorage	54	38	15	0	107
NORWEGIAN BLISS	C6DL4	Miami	81	98	100	53	332
NORWEGIAN DAWN	C6FT7	New Orleans	38	21	1	25	85
NORWEGIAN EPIC	C6XP7	Miami	0	0	0	99	99
NORWEGIAN ESCAPE	C6BR3	Miami	111	84	202	114	511
NORWEGIAN GEM	C6VG8	Jacksonville	0	57	36	41	134
NORWEGIAN GETAWAY	C6ZJ4	Miami	90	13	74	34	211
NORWEGIAN JADE	C6WK7	Miami	24	69	59	43	195
NORWEGIAN JOY	C6CX3	Anchorage	99	260	250	206	815
NORWEGIAN PEARL	C6VG7	Anchorage	55	74	63	166	358
NORWEGIAN SKY	C6PZ8	Miami	2	0	0	43	45
NORWEGIAN SPIRIT	C6TQ6	Jacksonville	184	66	101	87	438
NORWEGIAN STAR	C6FR3	Miami	195	76	157	255	683
NORWEGIAN SUN	C6RN3	Miami	31	50	138	93	312
NUNAVIK	V7CK9	Anchorage	15	15	16	2	48
NYK ARTEMIS	HOVU	Los Angeles	11	0	0	0	11
NYK ATHENA	HPDY	Anchorage	25	20	0	13	58
NYK FUTAGO	9V8739	Anchorage	15	0	0	0	15
NYK NEBULA	3ENG6	Charleston	5	13	0	8	26
NYK RUMINA	9V7645	New York	50	8	9	19	86
NYK TRITON	3FUL2	Los Angeles	39	30	68	13	150
OAK BAY	VRMA2	Anchorage	230	394	168	325	1117
OAK HARBOUR	VRMO3	Anchorage	19	30	12	9	70
OASIS OF THE SEAS	C6XS7	Jacksonville	50	63	93	35	241
OCEAN CRESCENT	WDF4929	Houston	14	0	0	0	14
OCEAN EXPORTER	VRXJ4	Anchorage	23	25	27	19	94
OCEAN FREEDOM	WDF9323	Houston	0	0	0	33	33
OCEAN GIANT	WDG4379	Jacksonville	26	0	0	0	26
OCEAN GLOBE	KOGE	Houston	7	30	15	24	76
OCEAN HOPE 3	WDF2354	Anchorage	1	0	0	1	2
OCEAN JAZZ	WDJ4909	Charleston	36	22	0	0	58
OCEAN RANGER	WAM7635	Anchorage	2	12	1	20	35
OCEAN RELIANCE	WADY	Anchorage	4	1	3	0	8
OCEANUS	WXAQ	Seattle	0	0	0	5	5
OLEANDER III	V7SX3	New York	17	13	2	0	32
OLIVE BAY	VRON5	Anchorage	17	11	18	14	60
OLIVE L. MOORE	WDF7019	Duluth	70	0	1	100	171
OLYMPIA LOGGER	VRQS4	Anchorage	8	6	4	0	18
ONE CURE	WDJ7457	Anchorage	6	2	5	5	18
OOCL PANAMA	VRDU8	Anchorage	4	3	4	9	20
OOCL POLAND	VRLJ2	Anchorage	16	4	29	15	64

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
OOCL TAIPEI	VRNR6	Anchorage	1	6	5	11	23
OOSTERDAM	PBKH	Anchorage	55	60	156	163	434
ORANGE BLOSSOM 2	D5DS3	New York	42	25	42	28	137
ORANGE OCEAN	D5DS2	New York	19	31	21	43	114
ORANGE RIVER	VRMY6	Anchorage	30	11	5	8	54
ORANGE SKY	ELZU2	New York	64	60	73	76	273
ORANGE STAR	A8WP6	New York	49	53	44	1	147
ORANGE SUN	A8HY8	New York	1	0	47	13	61
ORANGE WAVE	ELPX7	New York	0	29	22	0	51
ORE BRASIL	VRPY5	Anchorage	2	0	3	6	11
ORE GUAIBA	9V9040	Anchorage	248	211	0	0	459
ORE ITALIA	VRPY6	Anchorage	1	67	62	115	245
ORE KOREA	VRPY7	Anchorage	174	101	33	75	383
OREGON VOYAGER	WDF2960	New Orleans	23	0	0	0	23
ORIENTAL KING	VRQZ7	Anchorage	54	20	2	0	76
ORIENTAL QUEEN	VRAC9	Anchorage	0	0	2	1	3
OSAKA BAY	VRQS2	Anchorage	2	11	5	0	18
OTAGO HARBOUR	VRNI7	Anchorage	13	51	46	15	125
OURO DO BRASIL	ELPP9	Baltimore	57	0	0	19	76
OVATION OF THE SEAS	C6BX9	Anchorage	30	39	57	60	186
OVERSEAS ANACORTES	KCHV	Miami	18	40	45	46	149
OVERSEAS BOSTON	WJBU	Anchorage	0	3	7	0	10
OVERSEAS CASCADE	WOAG	Houston	0	0	7	0	7
OVERSEAS CHINOOK	WNFQ	Houston	7	36	34	49	126
OVERSEAS HOUSTON	WWAA	Houston	2	0	0	6	8
OVERSEAS LONG BEACH	WAAT	Jacksonville	8	0	4	4	16
OVERSEAS LOS ANGELES	WABS	Los Angeles	66	53	51	14	184
OVERSEAS MARTINEZ	WPAJ	Houston	65	69	51	35	220
OVERSEAS NIKISKI	WDBH	Houston	0	1	15	0	16
OVERSEAS SANTORINI	WOSI	Houston	3	0	0	0	3
OVERSEAS TAMPA	WOTA	Houston	0	0	13	0	13
OVERSEAS TEXAS CITY	WHED	Houston	38	19	0	0	57
OYSTER BAY	VRQE9	Anchorage	31	27	19	14	91
PACIFIC LOGGER	VRWL4	Anchorage	9	18	6	14	47
PACIFIC SHARAV	D5DY4	Houston	15	20	52	31	118
PACIFIC TITAN	WCZ6844	Anchorage	0	2	0	2	4
PACIFIC WOLF	WDD9286	Anchorage	3	0	0	9	12
PAQUETA ISLAND	VRQO8	Anchorage	0	0	12	16	28
PARAMOUNT HYDRA	2CWC3	Anchorage	1	0	0	0	1
PASCAGOULA VOYAGER	C6DP9	Anchorage	13	6	45	54	118
PATRIOT	WAIU	Baltimore	9	6	19	7	41
PAUL GAUGUIN	C6TH9	Anchorage	20	42	70	86	218
PAUL R. TREGURTHA (AWS)	WYR4481	Duluth	509	0	109	625	1243
PEARL ISLAND	VRRX9	Anchorage	0	2	15	9	26

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
PEGASUS OCEAN	9V2597	Anchorage	0	0	0	7	7
PEGASUS VOYAGER	C6AP3	Anchorage	1	29	45	93	168
PELICAN ISLAND	VRRD7	Anchorage	0	231	475	276	982
PELICAN STATE	WDE4433	New Orleans	4	8	3	24	39
PENGUIN ISLAND	VRSC8	Anchorage	0	3	2	0	5
PERLA DEL CARIBE	KPDL	Jacksonville	28	30	45	38	141
PERSEVERANCE	WDE5328	Anchorage	8	0	1	0	9
PHILADELPHIA EXPRESS	WDC6736	Houston	145	108	76	72	401
PHILIP R. CLARKE	WDH7554	Duluth	46	0	0	48	94
PHYLLIS DUNLAP	WDA6552	Anchorage	0	0	0	1	1
PINZA	9V3706	Anchorage	0	0	31	2	33
POLAR ADVENTURE	WAZV	Anchorage	16	69	63	19	167
POLAR CLOUD	WDJ8729	Anchorage	10	5	6	4	25
POLAR DISCOVERY	WACW	Anchorage	129	41	40	181	391
POLAR ENDEAVOUR	WCAJ	Anchorage	29	34	30	202	295
POLAR ENTERPRISE	WRTF	Anchorage	55	82	41	39	217
POLAR KING	WDC7562	Anchorage	2	0	8	19	29
POLAR RANGER	WDC8652	Anchorage	0	2	11	28	41
POLAR RESOLUTION	WDJK	Anchorage	44	15	65	79	203
POLAR WIND	WAZ9548	Anchorage	0	0	0	18	18
POLARIS VOYAGER	C6AP4	Anchorage	24	36	30	21	111
PORT ALBERNI	VRDT3	Anchorage	14	14	6	7	41
PORT ALFRED	VRLZ7	Anchorage	0	34	12	33	79
PORT ALICE	VRIC6	Anchorage	19	11	2	6	38
PORT ANGELES	VRCW8	Anchorage	27	36	13	17	93
PORT KENNY	VRGP2	Anchorage	10	0	0	24	34
PORT PEGASUS	VRAA8	Anchorage	12	17	17	0	46
PORT PHILLIP	VRDY4	Anchorage	34	57	41	15	147
PORTLAND BAY	VRHR2	Anchorage	0	0	2	34	36
PRABHU DAS	AUQV	Anchorage	17	0	0	0	17
PREMIUM DO BRASIL	A8BL4	Baltimore	0	0	26	22	48
PRESIDENT CLEVELAND	WCEU	Anchorage	77	56	58	60	251
PRESIDENT EISENHOWER	KPES	Anchorage	191	187	306	89	773
PRESIDENT FD ROOSEVELT	WROT	Anchorage	49	59	17	345	470
PRESIDENT KENNEDY	WPKW	Anchorage	309	348	473	293	1423
PRESIDENT TRUMAN	WPTC	Anchorage	34	55	110	53	252
PRESIDENT WILSON	WDG8555	Los Angeles	69	18	22	44	153
PRESQUE ISLE	WDH7560	Duluth	0	0	0	76	76
PRIME EXPRESS	3FUZ4	Anchorage	15	29	2	6	52
PRINSENDAM	PBGH	Miami	17	43	29	37	126
PROSPEROUS	VRIA3	Anchorage	8	9	22	7	46
PUGET SOUND	VRDD9	Anchorage	5	0	0	0	5
PYXIS ALFA	9V3776	Anchorage	3	4	0	0	7
QUALIFIER 105	WDH9546	Anchorage	0	0	7	10	17

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
QUANTUM OF THE SEAS	C6BH8	Miami	1	1	42	28	72
R J PFEIFFER	WRJP	Los Angeles	36	33	57	63	189
RAAHI	9HYO7	Anchorage	11	13	9	7	40
RADIANCE OF THE SEAS	C6SE7	Anchorage	16	7	33	52	108
RAINBOW STAR	VREU4	Anchorage	0	0	0	71	71
RAINBOW WARRIOR	PF7197	Anchorage	0	0	28	91	119
RED	V7UU2	Anchorage	0	0	22	1	23
REGATTA	V7DM3	Seattle	1	0	0	0	1
RESOLVE	WCZ5535	Baltimore	34	11	57	16	118
RESOLVE PIONEER	WDD8846	Anchorage	1	0	0	2	3
RESPONDER	V7CY9	Baltimore	0	1	0	0	1
RHAPSODY OF THE SEAS	C6UA2	Miami	3	25	38	3	69
RICHARD BRUSCO	WDC3031	Anchorage	8	6	7	6	27
RICHMOND VOYAGER	C6DQ4	Anchorage	37	28	5	20	90
RIO GRANDE	V7UT9	Anchorage	0	0	1	0	1
ROBERT C. SEAMANS	WDA4486	Anchorage	0	0	0	63	63
ROBERT GORDON SPROUL	WSQ2674	Los Angeles	0	79	713	706	1498
ROGER BLOUGH	WDH7559	Duluth	152	0	0	380	532
ROGER REVELLE (AWS)	KAOU	Los Angeles	744	663	218	0	1625
RONALD N	A8PQ3	Anchorage	0	0	0	3	3
ROSS CHOUEST	WCW7550	Anchorage	10	1	0	7	18
RTM COLUMBUS	9V2781	Anchorage	0	0	37	14	51
RTM DRAKE	9V2779	Anchorage	0	0	4	0	4
RUBY INDAH	9VND	Anchorage	73	0	17	23	113
S. S. LEGACY	WDG8495	Anchorage	0	0	0	3	3
SAFARI ENDEAVOUR	WDG2742	Anchorage	4	19	16	0	39
SAFMARINE KURAMO	KSFF	New York	72	37	9	30	148
SAFMARINE NGAMI	WSNA	New York	9	1	21	261	292
SAFMARINE NIMBA	WSNU	New York	35	40	28	40	143
SAGA ANDORINHA	VRMV6	Anchorage	27	41	39	3	110
SAGA CREST	VRWR7	Anchorage	0	0	29	35	64
SAGA ENTERPRISE	VRCC8	Anchorage	49	18	31	23	121
SAGA FALCON	VRKX7	Anchorage	30	24	0	0	54
SAGA FANTASY	VRLT9	Anchorage	20	14	21	24	79
SAGA FJORD	VRL2	Anchorage	21	18	31	50	120
SAGA FLORA	VRRM5	Anchorage	11	0	0	0	11
SAGA FRAM	VRL3	Anchorage	9	75	235	141	460
SAGA FREYA	VRR4	Anchorage	9	4	6	0	19
SAGA FRIGG	VRL7	Anchorage	27	10	7	11	55
SAGA FRONTIER	VRCP2	Anchorage	58	21	36	26	141
SAGA FUJI	VRMS3	Anchorage	0	25	11	14	50
SAGA FUTURE	VRKX8	Baltimore	125	218	0	0	343
SAGA HORIZON	VRUZ9	Anchorage	19	22	6	2	49
SAGA JANDAIA	VRYO9	Anchorage	15	53	79	77	224

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
SAGA JOURNEY	VRCY8	Anchorage	138	76	40	31	285
SAGA MONAL	VRZQ9	Anchorage	28	7	7	38	80
SAGA MORUS	VRZQ8	Anchorage	6	14	10	9	39
SAGA NAVIGATOR	VRDA4	Anchorage	29	1	5	0	35
SAGA ODYSSEY	VRDU9	Anchorage	0	0	14	28	42
SAGA PIONEER	VRED4	Anchorage	0	0	0	16	16
SAGA SKY	VRYB8	Anchorage	0	0	0	26	26
SAGA SPRAY	VRWW5	Anchorage	3	0	1	0	4
SAGA TIDE	VRYO8	Anchorage	94	24	35	13	166
SAGA TUCANO	VRVP2	Anchorage	0	3	0	0	3
SAGA VIKING	VRXO6	Anchorage	95	43	34	47	219
SAGA VOYAGER	VRXL8	Anchorage	186	165	156	202	709
SAGA WAVE	VRYO7	Anchorage	0	0	0	11	11
SAGA WIND	VRUR7	Anchorage	454	435	350	70	1309
SAGAR MANJUSHA (AWS)	AUKJ	Anchorage	126	108	137	133	504
SAGAR NIDHI (AWS)	AUCE	Anchorage	238	190	222	217	867
SAGAR PURVI (AWS)	VWFQ	Anchorage	155	177	195	163	690
SALLY MAERSK	OZHS2	Anchorage	31	0	1	21	53
SALLY RIDE (AWS)	WSAF	Anchorage	599	0	544	711	1854
SALTRAM	9V2312	Anchorage	7	2	0	0	9
SAM LAUD	WZC7602	Duluth	0	0	0	6	6
SAMSON MARINER	WCN3586	Anchorage	1	0	4	7	12
SAMUDRA KAUSTUBH (AWS)	VWSM	Anchorage	88	18	10	17	133
SAMUDRA SHAUDHIKAMA	VWSK	Anchorage	234	181	217	211	843
SAMUEL DE CHAMPLAIN	WDC8307	Duluth	0	0	0	1	1
SAN RAMON VOYAGER	C6DP8	Anchorage	0	0	108	63	171
SANTA SERENA	7JVN	Anchorage	8	11	2	13	34
SANTIAGO BASIN	VREO2	Anchorage	68	17	62	5	152
SBI ACHILLES	D5KQ2	Anchorage	0	0	5	66	71
SBI ANTARES	V7IH7	Anchorage	0	0	0	10	10
SBI APOLLO	D5LR3	Anchorage	0	3	33	13	49
SBI ARIES	V7CS8	Anchorage	31	27	50	22	130
SBI ATHENA	V7IG7	Anchorage	0	8	21	21	50
SBI BOLERO	V7LE8	Anchorage	6	17	28	21	72
SBI CAPOEIRA	V7JY6	Anchorage	0	0	0	13	13
SBI CONGA	V7LN4	Anchorage	3	18	1	24	46
SBI COUGAR	V7VM5	Anchorage	2	45	62	58	167
SBI CRONOS	V7KD5	Anchorage	0	50	74	59	183
SBI ECHO	V7KD7	Anchorage	31	28	30	29	118
SBI ELECTRA	V7JA4	Anchorage	0	2	0	0	2
SBI FLAMENCO	V7JA5	Anchorage	0	30	77	69	176
SBI GEMINI	V7TO2	Anchorage	0	16	13	14	43
SBI HERA	D5LB5	Anchorage	0	3	30	29	62
SBI HERCULES	D5KQ3	Anchorage	1	462	710	706	1879

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
SBI HERMES	D5KR2	Anchorage	1	40	74	55	170
SBI JAGUAR	V7VR2	Anchorage	0	28	29	29	86
SBI JIVE	D5LW7	Anchorage	0	101	155	112	368
SBI LEO	V7IV6	Anchorage	0	0	14	10	24
SBI LIBRA	V7NQ9	Anchorage	0	9	59	35	103
SBI MACARENA	D5LD7	Anchorage	0	8	16	4	28
SBI MAZURKA	D5LD4	Anchorage	0	14	30	27	71
SBI ORION	V7IY5	Anchorage	0	25	30	29	84
SBI PARAPARA	D5LB9	Anchorage	0	77	160	112	349
SBI PEGASUS	V7IY4	Anchorage	0	70	121	91	282
SBI PERSEUS	D5KQ9	Anchorage	0	11	0	17	28
SBI PHOEBE	D5LA7	Anchorage	0	15	20	28	63
SBI PHOENIX	D5LK8	Anchorage	0	73	158	78	309
SBI PISCES	V7KJ2	Anchorage	0	0	38	16	54
SBI POSEIDON	D5LK9	Anchorage	0	20	32	31	83
SBI PUMA	V7VT9	Anchorage	13	58	83	8	162
SBI REGGAE	D5KQ6	Anchorage	0	15	27	28	70
SBI ROCK	D5KO4	Anchorage	0	21	31	30	82
SBI RUMBA	V7KD8	Anchorage	4	101	163	129	397
SBI SAMBA	V7IU6	Anchorage	4	17	30	30	81
SBI SAMSON	D5LB8	Anchorage	0	23	5	1	29
SBI SOUSTA	V7LE7	Anchorage	0	19	16	16	51
SBI SWING	D5LW6	Anchorage	1	28	31	30	90
SBI TANGO	V7KC3	Anchorage	0	6	5	10	21
SBI TAURUS	V7TR6	Anchorage	0	0	26	23	49
SBI THALIA	V7IY6	Anchorage	0	38	60	6	104
SBI URSA	V7IW2	Anchorage	4	25	1	0	30
SBI VIRGO	V7TY9	Anchorage	0	16	25	16	57
SBI ZEUS	D5LA6	Anchorage	0	13	32	39	84
SBI ZUMBA	D5KR9	Anchorage	31	5	17	20	73
SCI MUKTA (AWS)	AUZY	Anchorage	244	137	57	220	658
SCI NALANDA (AWS)	AVFV	Anchorage	210	181	212	213	816
SEA BIRD	9V2730	Anchorage	0	0	0	5	5
SEA HAWK	WDD9287	Anchorage	20	0	0	0	20
SEA HAWK	WDE8543	Anchorage	2	0	0	0	2
SEA RELIANCE	WEOB	Anchorage	1	0	1	0	2
SEABOARD AMERICA	5BAW3	New Orleans	30	38	29	41	138
SEABOARD PERU	5BZE2	New Orleans	35	34	46	37	152
SEABOURN ENCORE	C6CG4	Anchorage	58	55	52	0	165
SEABOURN OVATION	C6CV5	Anchorage	3	0	0	0	3
SEABOURN QUEST	C6YZ5	Miami	0	16	50	44	110
SEABOURN SOJOURN	C6YA5	Anchorage	516	517	611	514	2158
SEABULK ARCTIC	WCY7054	Miami	25	20	36	31	112
SEAFISHER	WDD6122	Anchorage	2	20	19	3	44



Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
SEAFREEZE ALASKA	WDE7203	Anchorage	16	16	23	0	55
SEAFREEZE AMERICA	WDH8281	Anchorage	1	0	13	29	43
SEASPAN DUBAI	VRBN8	New York	0	33	5	0	38
SEASPAN EMERALD	VRFB8	Anchorage	0	0	8	4	12
SEASPAN GANGES	VRMV8	Anchorage	50	35	26	39	150
SEASPAN LUMACO	VRFB5	Charleston	0	0	0	17	17
SEASPAN MELBOURNE	VRBI8	Anchorage	0	0	0	8	8
SEASPAN NEW DELHI	VRBK5	Charleston	0	0	118	39	157
SEASPAN OCEANIA	VRBI2	New York	19	6	4	0	29
SEASPAN RIO DE JANEIRO	VRCR9	Anchorage	12	0	0	0	12
SEASPAN YANGTZE	VRNA8	Anchorage	34	5	0	0	39
SEASPAN ZAMBEZI	VRNF7	Anchorage	42	25	39	37	143
SECRETO	9V2732	Anchorage	0	0	11	38	49
SENTINEL (AWS)	VTFG	Anchorage	243	190	222	207	862
SERENADE OF THE SEAS	C6FV8	Miami	57	33	35	39	164
SERJEANT	9V2313	Anchorage	0	15	0	1	16
SEVEN SEAS EXPLORER	V7QK9	Anchorage	174	83	286	429	972
SEVEN SEAS VOYAGER	C6SW3	Anchorage	647	541	623	509	2320
SG PEGASUS	3FZE	Anchorage	0	2	25	3	30
SHAKESPEARE BAY	VRQW9	Anchorage	5	7	19	5	36
SHANDONG DA CHENG	VRRB5	Anchorage	52	331	427	95	905
SHANDONG DA DE	VRRB6	Anchorage	3	87	40	161	291
SHANDONG DA REN	VRR15	Anchorage	735	668	734	709	2846
SHANDONG DA ZHI	VRR14	Anchorage	304	551	205	669	1729
SHARP ISLAND	VRRD5	Anchorage	9	27	51	8	95
SIDER GUYANA	9HA904	New Orleans	15	0	0	0	15
SIGRID DUNLAP	WDJ9975	Anchorage	21	14	22	14	71
SIKU	WCQ6174	Anchorage	0	0	0	53	53
SIKULIAQ (AWS)	WDG7520	Anchorage	0	28	721	711	1460
SILVER LAKE	VRDN6	Anchorage	32	16	11	0	59
SILVIO	9V2727	Anchorage	2	0	0	0	2
SINDHU SANKALP (AWS)	AUYB	Anchorage	174	82	217	216	689
SINNDAR	9V2735	Anchorage	5	13	7	2	27
SOL DO BRASIL	ELQQ4	Baltimore	57	31	47	30	165
SOMBEKE	ONHD	Houston	103	75	16	0	194
SONANGOL BENGUELA	C6YM7	Anchorage	20	16	33	19	88
SONANGOL ETOSHA	C6YM5	Anchorage	20	67	38	22	147
SONANGOL SAMBIZANGA	C6YM6	Anchorage	42	94	97	47	280
SOUND RELIANCE	WXAE	Anchorage	1	3	0	2	6
SOVEREIGN	9HUE9	Anchorage	6	22	24	22	74
SPECTRUM OF THE SEAS	C6DQ5		0	0	0	9	9
SPIRIT OF SINGAPORE	MCMB7	Anchorage	30	19	0	1	50
SPIRIT OF SYDNEY	MCMB8	Anchorage	6	31	24	0	61
ST LOUIS EXPRESS	WDD3825	Houston	191	171	144	77	583

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
ST PAUL RESEARCH	KEY796	Anchorage	6	3	2	0	11
ST. CLEMENS	3FSR7	New Orleans	19	24	36	51	130
STAR FIRST	C6EE9	Anchorage	0	0	0	3	3
STAR GRIP	LADQ4	Charleston	0	16	12	4	32
STAR HARMONIA	LAGB5	Baltimore	29	0	0	0	29
STAR HERDLA	LAVD4	New Orleans	12	8	23	10	53
STAR HIDRA	LAVN4	Baltimore	27	2	12	9	50
STAR ISFJORD	LAOX5	New Orleans	51	17	54	13	135
STAR ISMENE	LANT5	New Orleans	11	1	8	16	36
STAR JAPAN	LAZV5	Seattle	27	3	0	45	75
STAR JAVA	LAJS6	Baltimore	15	0	15	0	30
STAR JUVENTAS	LAZU5	Baltimore	124	122	1	24	271
STAR KILIMANJARO	LAIG7	Anchorage	20	21	54	34	129
STAR KINN	LAJF7	Baltimore	112	24	52	63	251
STAR KIRKENES	LAHR7	New Orleans	0	0	2	1	3
STAR LIMA	LAPE7	Jacksonville	15	1	0	0	16
STAR LINDESNES	LAQJ7	Jacksonville	67	24	40	29	160
STAR LIVORNO	LAQM7	Houston	19	43	5	29	96
STAR LOFOTEN	LAQL7	Charleston	22	15	0	71	108
STAR LOUISIANA	V7SD8	New Orleans	0	20	3	6	29
STAR LUSTER	LAQO7	Anchorage	14	3	0	18	35
STAR LYGRA	V7FA7	Anchorage	0	0	0	41	41
STAR LYSEFJORD	LAQQ7	New Orleans	6	51	9	0	66
STAR MINERVA	V7GR8	Jacksonville	2	24	103	0	129
STEWART J. CORT (AWS)	WDC6055	Duluth	345	0	273	676	1294
STI ALEXIS	V7JD6	Anchorage	0	1	10	5	16
STI BATTERY	V7DR9	Anchorage	21	236	189	150	596
STI BERYL	V7YN4	Anchorage	0	0	6	10	16
STI BLACK HAWK	V7HK6	Anchorage	8	0	0	0	8
STI BROADWAY	V7EQ4	Anchorage	28	25	32	30	115
STI BRONX	V7DQ4	Anchorage	1	54	99	39	193
STI CONNAUGHT	V7DJ7	Anchorage	0	22	19	17	58
STI DONALD C TRAUSSCHT	V7VE2	Anchorage	18	21	8	2	49
STI GALLANTRY	V7HH2	Anchorage	0	5	8	25	38
STI GRAMERCY	V7BN9	Anchorage	0	16	25	22	63
STI MANHATTAN	V7DP9	Anchorage	0	4	17	24	45
STI MAYFAIR	V7BN6	Anchorage	0	1	13	39	53
STI NAUTILUS	V7HH3	Anchorage	0	24	10	10	44
STI OPERA	V7CJ3	Anchorage	0	0	0	9	9
STI OXFORD	V7DJ5	Anchorage	0	15	30	28	73
STI RUBY	V7XP4	Anchorage	5	0	0	0	5
STI SENECA	V7FK6	Anchorage	11	12	5	18	46
STI SLOANE	V7DI9	Anchorage	0	6	190	278	474
STI TOPAZ	V7XP3	Anchorage	0	0	0	9	9

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
STI TRIBECA	V7BN7	Anchorage	0	14	17	11	42
SUN RUBY	VRZU4	Anchorage	9	18	21	10	58
SUNLIGHT EXPRESS	3FMK7	Anchorage	6	3	0	0	9
SUNSHINE STATE	WDE4432	Miami	4	5	5	1	15
SUNSTAR	9V2728	Anchorage	80	10	1	6	97
SUPERSTAR GEMINI	C6LG5	Anchorage	41	39	36	44	160
SWARNA BRAHMAPUTRA	AUYI	Anchorage	15	3	4	9	31
SWARNA KALASH	AUYM	Anchorage	80	89	88	10	267
SWARNA KAMAL	AUYN	Anchorage	15	17	13	27	72
SWARNA KAVERI	AUYO	Anchorage	1	0	0	0	1
SWARNA KRISHNA	AUYP	Anchorage	20	25	45	29	119
SWARNA MALA	AVEY	Anchorage	0	0	26	0	26
SWARNA PUSHP	AUYQ	Anchorage	0	1	0	6	7
SWARNA SINDHU	AUYR	Anchorage	0	0	8	18	26
SYLVIE	VRCQ2	Anchorage	22	17	0	0	39
SYMPHONY OF THE SEAS	C6DF6	Miami	4	2	77	168	251
SYROS I	D5IV5	Anchorage	42	6	0	0	48
TAIHUA STAR	VRCT4	Anchorage	28	44	43	34	149
TAINO	WDJ6598	Jacksonville	0	5	34	7	46
TAKU WIND	WDI9036	Anchorage	2	7	2	1	12
TALISMAN	LAOW5	Jacksonville	64	59	29	0	152
TALISMAN	PJCY	Anchorage	2	0	6	0	8
TAMPA BAY	VRLQ9	Baltimore	12	17	21	19	69
TANGGUH HIRI	C6XC2	Anchorage	168	150	162	76	556
TASMAN SEA	VRWX4	Anchorage	2	4	13	4	23
TEMPANOS	A8VP9	New York	59	39	29	29	156
TENO	A8VP7	New York	22	0	14	4	40
TEXAS ENTERPRISE	KSDF	Houston	21	7	3	8	39
TEXAS VOYAGER	WLIY	New Orleans	2	0	2	1	5
THOMAS G. THOMPSON	KTDQ	Seattle	2	7	2	0	11
THUNDER BAY	CFN6288	Duluth	2	0	0	20	22
TIM S. DOOL	VGPY	Duluth	1	0	0	0	1
TIMARU STAR	VRAA7	Anchorage	0	12	16	0	28
TIWAI POINT	VRFS8	Anchorage	11	8	30	1	50
TODD E PROPHET	WDJ8094	Anchorage	4	9	7	8	28
TROPIC CARIB	J8PE3	Miami	89	63	110	124	386
TROPIC EXPRESS	J8QB8	Miami	116	83	92	104	395
TROPIC FREEDOM	J8QX6	Miami	113	88	73	58	332
TROPIC JADE	J8NY	Miami	61	72	54	110	297
TROPIC LURE	J8PD	Miami	67	46	38	34	185
TROPIC MIST	J8NZ	Miami	105	142	171	161	579
TROPIC NIGHT	J8NX	Miami	170	35	60	164	429
TROPIC OPAL	J8NW	Miami	122	77	32	109	340
TROPIC PALM	J8PB	Miami	95	123	104	42	364

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
TROPIC SUN	J8AZ2	Miami	126	103	88	76	393
TROPIC TIDE	J8AZ3	Miami	101	102	103	119	425
TROPIC UNITY	J8PE4	Miami	121	92	103	94	410
TRYSIL SPIRIT	V7UT6	Anchorage	0	0	0	55	55
TS KENNEDY	KVMU	New York	83	18	0	0	101
TUG DEFIANCE	WDG2047	Duluth	39	0	0	91	130
TUG DOROTHY ANN (AWS)	WDE8761	Duluth	521	0	584	719	1824
TUG MICHIGAN	WDF5344	Duluth	17	0	8	11	36
TUG SPARTAN	WDF5483	Duluth	0	0	0	3	3
TURANDOT	9V9825	Anchorage	7	0	0	0	7
TUSTUMENA	WNGW	Anchorage	28	17	0	0	45
TYCO DECISIVE	V7DI7	Baltimore	15	0	0	25	40
UNITY SPIRIT	C6BW3	Anchorage	2	14	0	7	23
USCGC POLAR STAR	NBTM	Anchorage	90	85	40	0	215
UST LUGA	VRR9	Anchorage	68	1	0	3	72
VAERDAL	WDF6582	Anchorage	9	20	15	3	47
VEENDAM	PHEO	Miami	109	33	54	19	215
VERMONT TRADER	9HYN7	Charleston	1	0	0	26	27
VISHVA ANAND	AVLW	Anchorage	0	7	6	10	23
VISION	WDF6306	Anchorage	4	2	5	3	14
VISION OF THE SEAS	C6SE8	Miami	30	34	56	48	168
VOLENDAM	PCHM	Anchorage	422	454	547	493	1916
VOYAGER OF THE SEAS	C6SE5	Miami	23	1	54	49	127
WALTER J. MCCARTHY JR.	WXU3434	Duluth	0	0	0	14	14
WAN HAI 805	VRSB3	Anchorage	7	8	13	60	88
WASHINGTON	KLBO	Anchorage	10	8	43	102	163
WASHINGTON	WDI5795	Anchorage	1	0	0	0	1
WASHINGTON EXPRESS	WDD3826	Houston	39	51	200	79	369
WELLINGTON STAR	C6TJ9	Anchorage	3	6	7	4	20
WEST BAY	VRZP8	Anchorage	17	7	7	0	31
WESTERDAM	PINX	Miami	90	83	41	97	311
WESTERN NAVIGATOR	WDE6616	Anchorage	0	2	0	4	6
WESTWOOD COLUMBIA	C6SI4	Seattle	22	14	6	23	65
WESTWOOD RAINIER	C6SI3	Seattle	13	0	28	6	47
WHITE BAY	VRMR6	Anchorage	13	14	23	0	50
WHITEFISH BAY	CFN6287	Duluth	0	0	0	7	7
WILDERNESS ADVENTURER	WDF6885	Anchorage	0	0	0	1	1
WILFRED SYKES (AWS)	WC5932	Duluth	546	42	190	445	1223
WOLDSTAD	WDI9874	Anchorage	0	0	8	20	28
XPEDITION	HC2083	Anchorage	0	6	8	9	23
YM MANDATE	A8UU7	Anchorage	0	34	9	0	43
YM MASCULINITY	A8ZD2	Anchorage	14	18	0	13	45
YM MATURITY	A8UU8	Anchorage	136	94	125	80	435
YM MILESTONE	A8ZC9	Anchorage	6	1	0	0	7

Ship Name	Call Sign	PMO	Jan	Feb	Mar	Apr	Jan-Apr Totals
YM MOBILITY	A8XY6	Anchorage	7	6	0	7	20
YM MUTUALITY	A8XY5	Anchorage	9	12	8	8	37
YM UBERTY	A8OR4	Anchorage	0	4	2	2	8
YM ULTIMATE	V7IK7	Charleston	65	103	21	15	204
YM UNICORN	BLHI	Anchorage	18	11	14	21	64
YM UNIFORM	A8OR8	Anchorage	11	1	15	38	65
YM UNIFORMITY	BLHQ	Charleston	18	0	13	19	50
YM UNISON	V7HU7	Anchorage	28	29	179	241	477
YM UNITY	A8HZ4	Anchorage	0	1	1	0	2
YM UPSURGENGE	BLHJ	Anchorage	10	11	13	12	46
YM UPWARD	A8OR6	Charleston	4	5	0	3	12
YM UTILITY	A8OR7	Anchorage	5	33	6	6	50
YM UTMOST	A8HZ5	Anchorage	13	6	8	4	31
YM WARMTH	VROO5	Anchorage	62	64	68	87	281
YM WELLHEAD	VROH8	Anchorage	18	29	62	32	141
YM WHOLESOME	VROO4	Anchorage	31	13	27	25	96
YORKTOWN EXPRESS	WDD6127	Houston	34	12	16	23	85
YUHSAN	H9TE	Anchorage	0	1	0	0	1
ZAANDAM	PDAN	Anchorage	477	432	629	564	2102
ZAO GALAXY	V7YK9	Anchorage	0	0	10	6	16
ZENITH	9HXM8	Miami	0	0	110	118	228
ZHOUSHAN ISLAND	VRLY2	Anchorage	11	15	27	23	76
ZIM DJIBOUTI	A8SI4	Charleston	90	99	129	46	364
ZIM ROTTERDAM	A8SI8	Charleston	65	103	70	40	278
ZIM SAN DIEGO	A8SI7	New York	75	57	20	0	152
ZIM SHEKOU	A8KX2	New York	22	16	0	0	38
ZIM YOKOHAMA	4XFD	Charleston	0	22	24	20	66
ZUIDERDAM	PBIG	Anchorage	153	90	176	133	552
Totals			48412	41659	54136	62434	206641

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# Points of Contact

## U.S. Port Meteorological Officers

### HEADQUARTERS

**Michael W. Potochney**

NOAA – Voluntary Observing Ship Program Manager  
National Weather Service Headquarters  
Office of Observations  
1325 East-West Highway  
Room 4162  
Silver Spring, MD 20910  
Office: (301) 427-9644  
E-mail: [michael.potochney@noaa.gov](mailto:michael.potochney@noaa.gov)

### ATLANTIC PORTS

**David Dellinger, PMO Miami, Florida**

National Weather Service, NOAA 2550  
Eisenhower Blvd  
Suite 312  
Port Everglades, FL 33316  
Tel: (954) 463-4271  
Cell: (954) 295-2084  
Fax: (305) 229-4553  
E-Mail: [pmomia@noaa.gov](mailto:pmomia@noaa.gov)

**Robert Niemeyer, PMO Jacksonville, Florida**

National Weather Service, NOAA  
13701 Fang Road  
Jacksonville, FL 32218-7933  
Tel: (904) 741-5186, ext.117  
Fax: (904) 741-0078  
E-Mail: [pmojax@noaa.gov](mailto:pmojax@noaa.gov)

**Tim Kenefick, PMO Charleston, South Carolina**

NOAA Coastal Services Center  
2234 South Hobson Avenue  
Charleston, SC 29405-2413  
Tel: (843) 709-0102  
Fax: (843) 740-1224  
E-Mail: [pmochs@noaa.gov](mailto:pmochs@noaa.gov)

**Vacant, PMO Norfolk, Virginia**

National Weather Service, NOAA 104  
Hemlock Court  
Yorktown, VA 23693-4544  
Tel: (757) 617-0897  
E-Mail:

**Lori Evans, PMO Baltimore, Maryland**

National Weather Service, NOAA  
P. O. Box 3667  
Frederick, MD 21705-3667  
For UPS/FEDEX delivery:  
5838 Shookstown, Road  
Frederick, MD 21702  
Tel: (443) 642-0760  
Fax: (410) 633-4713  
E-Mail: [pmobal@noaa.gov](mailto:pmobal@noaa.gov)

**Jim Luciani, PMO New York, New York**

New York/New Jersey  
National Weather Service, NOAA  
110 Main St., Suite 201  
South Amboy, NJ 08879  
Tel: (908) 217-3477  
Fax: (732) 316-7643  
E-Mail: [pmony@noaa.gov](mailto:pmony@noaa.gov)

### GREAT LAKES PORTS

**Ron Williams, PMO Duluth, Minnesota**

National Weather Service, NOAA  
5027 Miller Trunk Highway  
Duluth, MN 55811-1442  
Tel: (218) 729-0651  
Fax: (218) 729-0690  
E-Mail: [pmoglakes@noaa.gov](mailto:pmoglakes@noaa.gov)

### GULF OF MEXICO PORTS

**Rusty Albaral****PMO New Orleans, Louisiana**

62300 Airport Rd.  
Slidell, LA 70460-5243  
Tel: (985) 649-0469  
Cell: (504) 289-2294  
Fax: (985) 649-2907  
E-Mail: [pmomsy@noaa.gov](mailto:pmomsy@noaa.gov)

**Chris Fakes, PMO**

National Weather Service, NOAA  
1353 FM646, Suite 202  
Dickinson, TX 77539  
Tel: (281) 534-2640 Ext. 277  
Fax: (281) 534-4308  
E-Mail: [pmohou@noaa.gov](mailto:pmohou@noaa.gov)

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## PACIFIC PORTS

### **Timothy Harris, PMO Los Angeles, California**

National Weather Service, NOAA  
501 West Ocean Blvd., Room 4480  
Long Beach, CA 90802-4213  
Tel: (562) 980-4090  
Fax: (562) 436-1550  
E-Mail: [pmolax@noaa.gov](mailto:pmolax@noaa.gov)

### **VACANT**

#### **PMO Oakland/San Francisco, California**

National Weather Service, NOAA  
1301 Clay Street, Suite 1190N  
Oakland, CA 94612-5217  
Tel: (510) 637-2960  
Fax: (510) 637-2961  
E-Mail: [pmooak@noaa.gov](mailto:pmooak@noaa.gov)

#### **Vacant, PMO Seattle, Washington**

National Weather Service, NOAA  
7600 Sand Point Way, N.E.,  
BIN C15700  
Seattle, WA 98115-6349  
Tel: (206) 526-6100  
Fax: (206) 526-6904  
E-Mail:

## ALASKA AREA PORT

### **Larry Hubble, Anchorage, Alaska**

National Weather Service Alaska Region  
222 West 7th Avenue #23  
Anchorage, AK 99513-7575  
Tel: (907) 271-5135  
Fax: (907) 271-3711  
E-Mail: [pmoanc@noaa.gov](mailto:pmoanc@noaa.gov)

## U.S. Coast Guard AMVER Center

### **Ben Strong**

AMVER Maritime Relations Officer,  
United States Coast Guard  
Battery Park Building  
New York, NY 10004  
Tel: (212)668-7762  
Fax: (212) 668-7684

## AOML SEAS PROGRAM MANAGER

### **Dr. Gustavo Goni**

AOML  
4301 Rickenbacker Causeway  
Miami, FL 33149-1026  
Tel: (305) 361-4339  
Fax: (305) 361-4412

## DRIFTER PROGRAM MANAGER

### **Dr. Rick Lumpkin**

AOML/PHOD  
4301 Rickenbacker Causeway  
Miami, FL 33149-1026  
Tel: (305) 361-4513  
Fax: (305) 361-4412

## ARGO PROGRAM MANAGER

### **Dr. Claudia Schmid**

AOML/PHOD  
4301 Rickenbacker Causeway  
Miami, FL 33149-1026  
Tel: (305) 361-4313  
Fax: (305) 361-4412

## GLOBAL DRIFTER PROGRAM

### **Shaun Dolk**

AOML/PHOD  
4301 Rickenbacker Causeway  
Miami, FL 33149-1026  
Tel: (305) 361-4546  
Fax: (305) 361-4366

## NORTHEAST ATLANTIC SEAS REP.

### **Jim Farrington**

SEAS Logistics/AMC  
439 West York Street  
Norfolk, VA 23510  
Tel: (757) 441-3062  
Fax: (757) 441-6495

## SOUTHEAST ATLANTIC SEAS REP.

### **Francis Bringas**

AOML/GOOS Center  
4301 Rickenbacker Causeway  
Miami, FL 33149-1026  
Tel: (305) 361-4316  
Fax: (305) 361-4412

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**OTHER PORT METEOROLOGICAL OFFICERS USEFUL CONTACTS:**

[www.jcomm.info/pmos](http://www.jcomm.info/pmos)

Intergovernmental Oceanographic Commission:

<http://www.ioc-unesco.org/>

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## **NOAA Weather Radio Network**

- (1) 162.550 MHz
- (2) 162.400 MHz
- (3) 162.475 MHz
- (4) 162.425 MHz
- (5) 162.450 MHz
- (6) 162.500 MHz
- (7) 162.525 MHz

Channel numbers (e.g., WX1, WX2) have no special significance, but are often designated this way in consumer equipment. Other channel numbering schemes are also prevalent.

The NOAA Weather Radio network provides voice broadcasts of local and coastal marine forecasts on a continuous cycle. The forecasts are produced by local National Weather Service Forecast Offices.

Coastal stations also broadcast predicted tides and real-time observations from buoys and coastal meteorological stations operated by NOAA's National Data Buoy Center. Based on user demand, and where feasible, Offshore and Open Lake forecasts are broadcast as well.

The NOAA Weather Radio network provides near-continuous coverage of the coastal U.S., Great Lakes., Hawaii, and populated Alaska coastline. Typical coverage is 25 nautical miles offshore, but may extend much further in certain areas.

**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Weather Service  
1325 East-West Highway  
Silver Spring, MD 20910-3283  
Attn: Mariners Weather Log

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