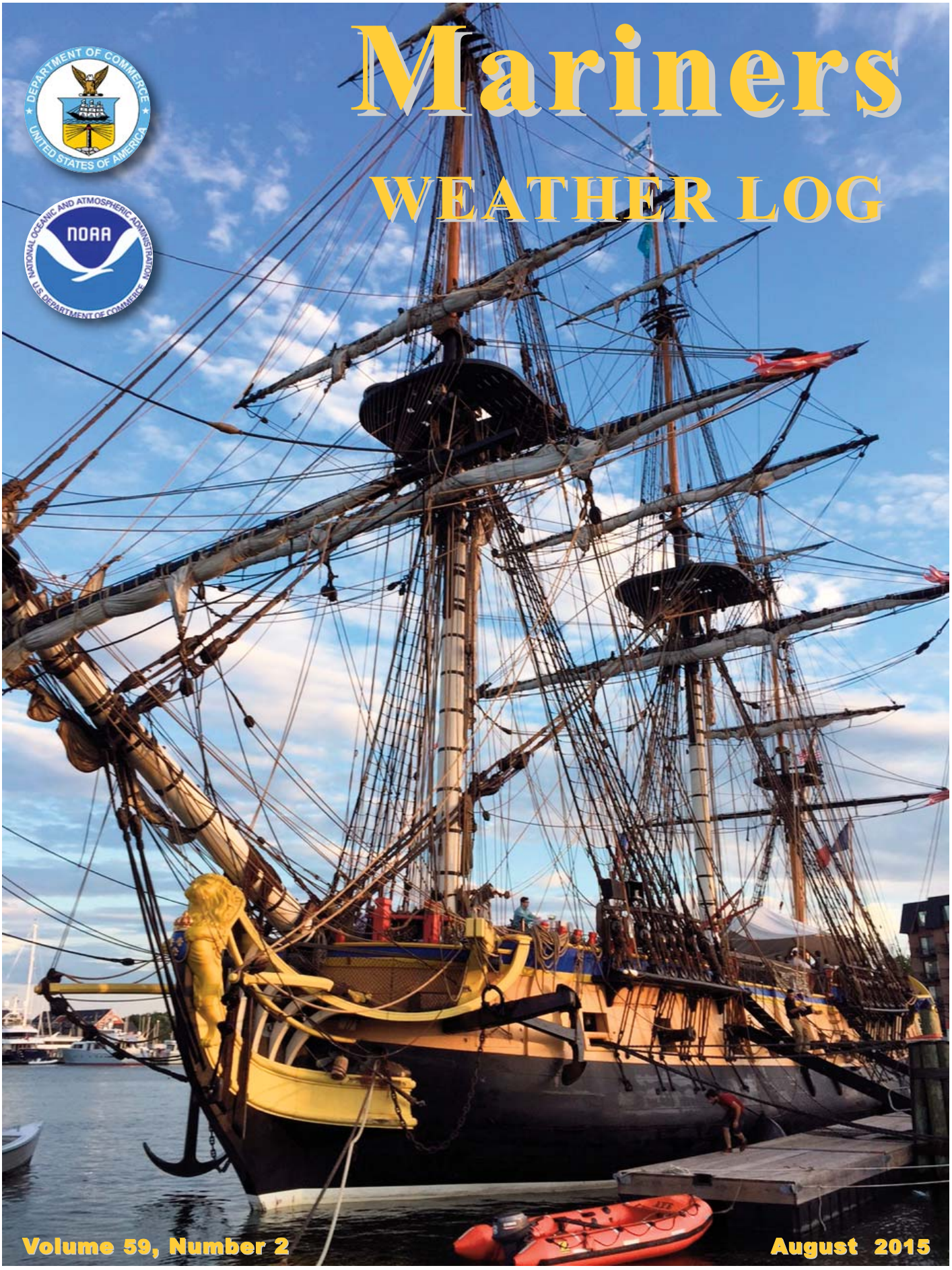
Mariners WEATHER LOG



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

TURBOWIN e-logbook software
http://www.knmi.nl/turbowin

U.S. Coast Guard Navigation Center
http://www.navcen.uscg.gov/marcomms/

See these Web pages for further links.

From the Editor

Welcome to another edition of the Mariners Weather Log. This August issue will continue with another great article on the Hermione Voyage 2015; giving voice to Emmy Nicklin and her story of the L'Hermione returning to the Chesapeake Bay, Maryland. Thank you Emmy!

Our PMO Corner is spotlighting our New York City PMO, James Luciani. Jim has been offering "tips of the week" for all of you out there… his diligence in this effort is making a difference. Great job Jim!

Hurricane season is well upon us, so once again I would like to ask that you please make special efforts in getting those marine observations in to us. Providing accurate and timely marine observations are key for providing good forecasts and analysis. For all information and guidance for marine safety, please go to:
http://www.nhc.noaa.gov/prepare/marine/php

During July, the 5th International Port Meteorological Officers Workshop was held in Vina del Mar, Chile. The workshop was sponsored by the Servicio Meteorologico de la Armada de Chile. For an entire week, PMO's along with trainers and various topic experts got together and worked towards ensuring standard procedures and best practices are closely followed to World Meteorological Organization (WMO) standards. This workshop emphasized best practices for ship recruitments, proper training tools, instrument standards and procedures, collection of metadata and insuring that standard procedures proposed by WMO are followed throughout the whole VOS fleet in every country and the data produced are homogenous and comply with WMO standards. The last international PMO workshop was held in 2010, in Orlando Florida. It was obvious, over the last five years, that our PMO's have been hard at work strengthening our relationships in a role, which relies heavily on international cooperation and is becoming more complex in requiring new skill sets in computer and IT understanding, drifting buoy and float deployments, using e-logbooks and the installation and management of Automated Weather Sensors (AWS). This was a great opportunity to emphasize the need for recruiting strategies, concentrating on ships within data sparse areas and partner with developing countries that have valuable ship logistical resources. I would like to take this opportunity to thank the WMO and the Servicio Meteorologico de la Armada de Chile for providing such a great week of collaboration. You were a superior host and were most welcoming, thank you again from us all.

Now, sit back and enjoy….

Paula

On the Cover: L'HERMIONE Returns to the Chesapeake. Photo by Emmy Nicklin

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L'HERMIONE Returns to the Chesapeake

Text and photos by Emmy Nicklin
CBF's Senior Manager of Digital Media

Annapolis City Dock can be an eerily empty place at dawn. But that was hardly the case last Thursday when a French frigate readied to sail north. A replica of the 18th-century, square-rigged vessel that carried Revolutionary War Hero Marquis de Lafayette to the Americas 235 years ago, **L'HERMIONE** is the largest and most authentically built tall ship in the last century. And she is currently (June 6-July 15) touring 12 iconic Revolutionary War ports from Yorktown, Virginia, to Castine, Maine. The voyage, which originated in Rochefort, France, celebrates the extraordinary French-American bond and Lafayette's indomitable spirit of adventure (as exemplified in his motto: "Cur Non" or "Why not").

Roughly 10 months before I found myself on City Dock that morning, my sister, who has the unfortunate burden of living in Paris, City of Light, with her French husband and two young daughters, stood along the shores of Île d'Aix to bear witness to the historic moment when **L'HERMIONE** sailed for the first time. The ship that took 17 years to build uses the same materials and techniques (such as oak timbers, linen sails, and hemp lines) that were available in the 18th century. And she's gorgeous—155 ft high, 217 ft long, drawing 16 ft, powered by 17 sails and two electric propulsion engines (connected to diesel generators), and intricately detailed with yellow trim and ornate carvings.

L'HERMIONE as Science Lab

Not only does **L'HERMIONE** serve as a history lesson, she also serves as science lab and research vessel. Throughout the ship's Atlantic crossing, the Director of Maritime Operations for the Friends of Hermione-Lafayette in America Marc Jensen worked with the U.S. National Oceanic and Atmospheric Administration (NOAA) and its global counterpart, the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM), to deploy a series of 11 climate buoys (one of which he placed about 100 miles from the mouth of the Chesapeake). These buoys join a network of hundreds of others that collect and transmit data like water temperature, barometric pressure, position, and salinity back to the Global Drifter Program website.

"There's no doubt that we as human beings are having a huge impact," says Jensen. "The trade winds are farther south than they are normally; we had our first tropical storm May 7 instead of June 1." This network of buoys provides the critical information needed to study the long-term trends and possible effects we're having on our oceans and weather patterns. While crossing, Jensen and his team also collected 13 water samples to be tested for levels of microplastics with Adventurers and Scientists for Conservation. The results are forthcoming.

In addition to better understanding our environment and the ways that we can protect and restore it, Jensen has other aspirations for what this **L'HERMIONE** voyage can teach us: "I certainly hope that when people walk aboard the ship [they realize that] the reason this is all happening is that a young man convinced his king to support a revolution. [He had] the understanding that an individual's freedom is a right that you're born with . . We can't ever underestimate the power of what young people can do once they set their mind to something."

Lafayette and the Chesapeake

What would Lafayette have eaten on his voyages in the Chesapeake? That's what CBF's Senior Naturalist (and all-around Bay/History/Life Expert in my mind), John Page Williams and I find ourselves discussing the day that **L'HERMIONE** leaves Annapolis.

"It was a different Bay, for sure, back then," Williams says as he waxes poetic about the spot, croaker, sheepshead, American shad, salt herring, and rockfish (some averaging 60 pounds!) that swam thick and healthy across the Bay and its rivers in Lafayette's time. Not to mention the massive, vertical oyster reefs that grew so abundantly in the Chesapeake that they posed navigational hazards to passing ships.

"Our ability to alter the system was much lower [back then]—we didn't have the tools to do it," says Williams referring to trawl nets, dredging, and clear-cutting machinery. "The worst damage we did came in the last 180 years," Williams continues, "[when we were] beating up the land without realizing it during the Industrial Revolution and the 20th Century." The numbers speak for themselves. Since Lafayette's time, we have lost more than 40 percent of our forested buffers that once grew deep and undisturbed across 110,000 miles of rivers and streams and that filtered and cleaned our water; roughly 80 percent of our underwater grasses that once flourished across 400,000 acres, sheltering sea horses, juvenile fish, blue crabs, and more; and more than 90 percent of our water-filtering oysters.

"But this is not the way it has to be," Williams insists. Perhaps he, in persistent Lafayette fashion, cannot lose hope that that we can impact powerful, lasting change on the world around us—whether it be the birth of a nation or the rebirth of the Chesapeake.

"We've seen improved sewage treatment bring the Potomac and James Rivers back from the dead," says Williams. "Bald eagles and ospreys rebound; and Atlantic sturgeon begin to spawn again in several of the Chesapeake's rivers. There are still plenty of problems, but improvements like these tell us that the Chesapeake system wants to live, and that with a lot of thought and effort, we can restore more of its riches than any of us has seen in a long time."

"Cur Non"

Back at City Dock on that early morning, as the rain starts to fall and a small crowd of Annapolitans gathers to wish **L'HERMIONE** adieu, a strange thing happens. A girl, not so unlike my eldest French-American niece 20 years from now, clambers up the rat-lines—why exactly, I can't be sure. She climbs higher and higher, with determination and perseverance, throwing leg over leg, hand over hand, refusing to look down. She climbs high above the heads of her crewmates who serenade us with loud French sea chanties as they leave the dock. And I imagine her still climbing in the distance as the ship passes by the old Naval Academy transmitter towers, where, rumor has it, the D-Day Invasion orders were sent across the Atlantic. She keeps climbing as high as she can possibly go because . . . Why Not?

Sign up to learn more about our Bay, rivers, and streams, and how you can help save them now and for generations to come: http://www.cbf.org/news-media/enewsletters/registration

PMO Corner:
Observing Tip of the Week

Have you noticed?

Jim Luciani
Port Meteorological Officer - New York

Our New York Port Meteorological Officer, Jim Luciani, has been sending out weekly tips to help improve marine weather observing practices and to invite questions and answers that you may have in those regards. I encourage you all to provide feedback or ask any questions you may have to Jim at: James.Luciani@noaa.gov. Below is an example of what you can look forward to via email:

Good Day Everyone,

I hope today finds you and your crews safe and in good health. Today's tip concerns why we ask you and your officers to participate in VOS. The information comes directly from the NWSOH1 Introduction, Page vii:

Importance Of Observations From Ships

Accomplishments in the atmospheric sciences have their roots in observations. They are a critical first step in the end-to-end forecast process. This process consists of the taking and coding of observations, the transmission and receipt of data, the processing and analysis of data (including numerical and computer modeling), followed by the preparation and issuance of forecasts and warnings.

More specifically, observations are used by meteorologists to evaluate your local weather conditions, and to locate and determine the strength of weather systems such as fronts, air masses, high and low pressure systems, tropical storms, and hurricanes. Your observations are especially important in the preparation of the surface weather chart. Isobars (lines of equal barometric pressure), which are crucial for defining and delineating all weather systems, could not be drawn over marine areas without ship reports.

Ships observations are not only important for weather forecasts at sea, but also for forecasts over land areas, because marine weather systems often move inland. Notable examples include (1) North Pacific Ocean weather systems, which frequently move eastward to effect the weather over much of North America, especially during the winter season, (2) tropical storms and hurricanes, which develop over the oceans, and can cause great devastation over highly populated coastal areas, (3) weather systems over the North Atlantic Ocean, which have a great impact on the weather of Europe.

Accurate marine data is also used to prepare long range forecasts of climate, temperature, and precipitation, in the monitoring of climatic change, ocean currents, and eddies, and to study the interaction of air and sea. This is important for agriculture, industrial planning, ship routing, fishing, and many other activities. Pilot charts and climatological atlases of the oceans are largely based on observations from ships. Your weather observations will also help you interpret the forecast and changes in weather that occur at your position or along your route.

What you do is very important. Accurate Marine observations matter, and your care and dedication make our program effective and an integral part of the observing scheme.

Shipwreck: TRANSATLANTIC and HERMES

By Skip Gillham

HERMES on the St. Lawrence – Capt. John Low photo

TRANSATLANTIC and HERMES Collided a Half-Century ago

Two ocean going freighters collided in the Lake St. Peter section of the St. Lawrence River on April 10, 1965; and one became a total loss. The casualty was the West German general cargo ship **TRANSATLANTIC**. A 406 ft, 11 inch vessel was part of the Poseidon Line and had served them well after being completed at Lubeck, in May 1954. While designed for saltwater service, the opening of the St. Lawrence Seaway in 1959 allowed ships of this size to enter the Great Lakes and **TRANSATLANTIC** began trips to the freshwater lakes with four visits in 1961. It returned on a regular basis and had made 16 inland voyages to the end of the 1964 season. There was supposed to be more but this ended tragically 50 years ago last April.

HERMES, the second ship involved in the collision, was a much newer carrier. It was launched at Capelle, Netherlands, on Oct. 6, 1961, and was completed the following April for Dutch flag service. This 424 ft long freighter could handle refrigerated cargoes and had a capacity of 6,897 tons deadweight.

While **HERMES** had not been a Great Lakes trader, it had come inland as far as Sorel, Quebec; and departed there, for the sea, on April 10, 1965. Visibility was clear as **HERMES** approached the inbound **TRANSATLANTIC** and as it moved over to give plenty of room to pass, the stern got sucked into the shore sending the **HERMES** out of control. The bow veered into up bound lane and struck **TRANSATLANTIC** on the port side.

TRANSATLANTIC was heavily damaged, burst into flames, and was soon on the bottom of the river. Three lives were lost on the latter ship while **HERMES** suffered considerable bow damage and ultimately had to go to Montreal for bow repairs.

TRANSATLANTIC at the Iroquois Lock on Sept. 1, 1963 – George Ayoub photo

The sunken freighter was salvaged in August 1965, taken to Sorel, and laid up. There was some thought of using equipment parts for a new tanker under construction. But the Canadian Government said the local shipyard would still have to pay customs duties on the 11 year old equipment so the hull was broken up for scrap at Sorel in 1967.

HERMES never did reach the Great Lakes. It returned to Montreal as the Panamanian flag carrier **NIKI R.** in October 1978, and was eventually dismantled as such at Calcutta, India, during 1984-1985. A $13.5 million lawsuit followed with the Canadian Department of Transport being blamed for the fact that the channel range lights had shifted resulting in **HERMES** getting into shallower water close to shore causing the suction that sent it out of control. As a result of the inquiry, blame was assigned to all quarters but the heaviest responsibility of liability fell to the Canadian Government as the lights had been out of alignment for some time.

The burned out TRANSATLANTIC at Sorel – Harry Stott photo

Validating Ship Reports during Hurricane Katrina

S. A. Hsu, Coastal Studies Institute, Louisiana State University
email: sahsu@lsu.edu

Abstract: Wind speeds as measured by the ships during Hurricane Katrina are compared to those based on the operational cyclostrophic equation using atmospheric pressure measurements. It is shown that, on the average, they are in good agreement for operational applications.

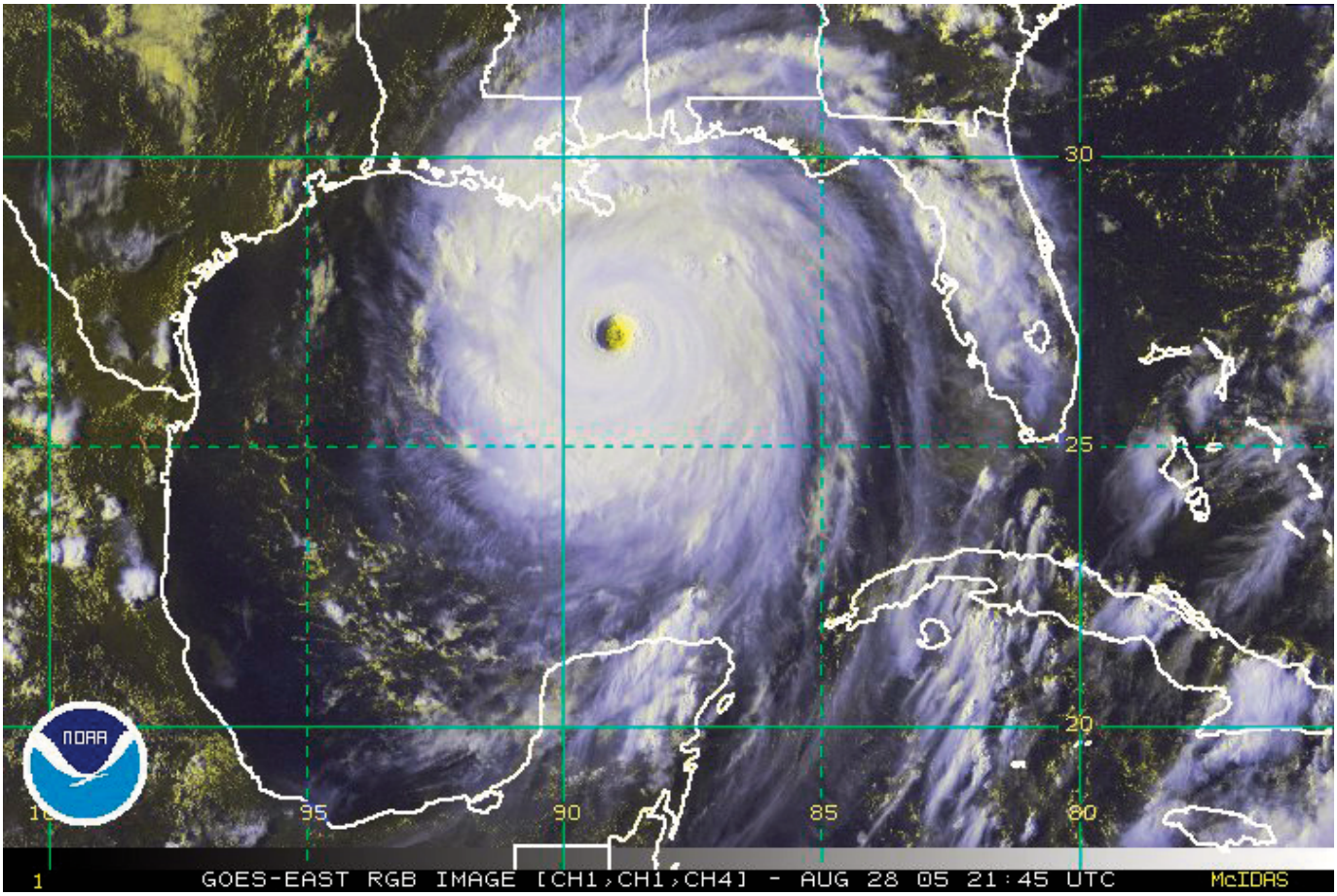


Figure1. Image of Katrina over the central Gulf of Mexico near its peak wind conditions (see Table 1)

1. Introduction

A decade ago in August 2005 Hurricane Katrina (see **Figures 1** and **2**) devastated north-central Gulf of Mexico and southeastern Louisiana and Mississippi Gulf Coast (see, e.g., Wang and Oey, 2008).

The timeline of Katrina is provided in **Table 1** and ship reports are in **Table 2**. The purpose of this study is to evaluate these ship reports.

NDBC Stations within 300 nm of Hurricane Katrina: 23-30 August 2005

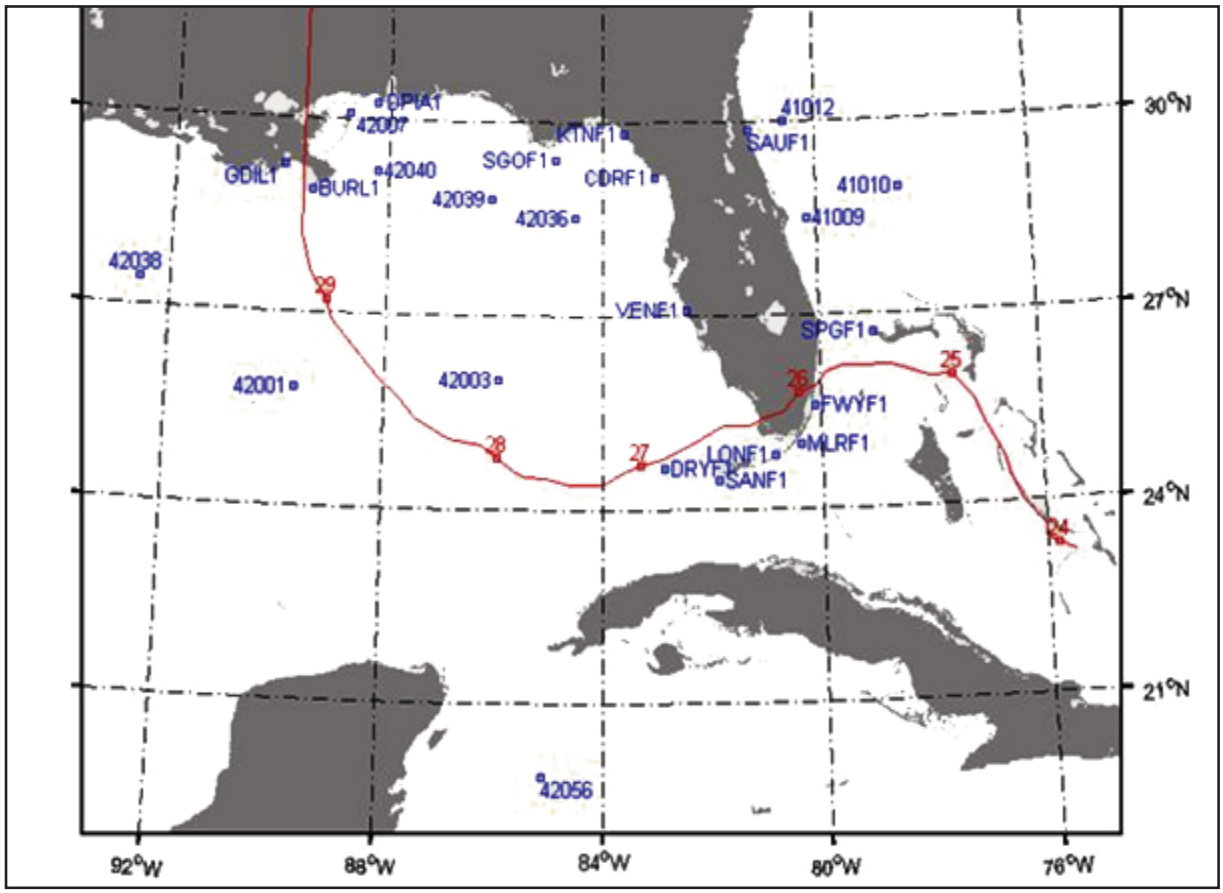


Figure 2. Hurricane Katrina's Track and NDBC Stations. Katrina's track (in red with the start of each day numbered) from the positions of the National Hurricane Center's Forecasts / Advisories (http://www.ndbc.noaa.gov/hurricanes/2005/katrina/)

Table 1 (below). Timeline and characteristics of Hurricane Katrina over the Gulf of Mexico in August 2005 (data source, www.nhc.noaa.gov)

Advisory Number	Latitude Degrees	Longitude Degrees	Time UTC	Wind Speed, kts	Minimum sea-level pressure	Saffir / Simpson Category
11	25.3	-81.5	08/26/09Z	65	987	Hurricane-1
11A	25.3	-81.8	08/26/11Z	65	987	Hurricane-1
11B	25.2	-82	08/26/13Z	65	987	Hurricane-1
12	25.1	-82.2	08/26/15Z	70	981	Hurricane-1
13	25.1	-82.2	08/26/15Z	85	971	Hurricane-2
13A	24.9	-82.6	08/26/18Z	85	969	Hurricane-2
14	24.8	-82.9	08/26/21Z	85	965	Hurricane-2
14A	24.7	-83.3	08/27/00Z	85	965	Hurricane-2
15	24.6	-83.6	08/27/03Z	90	965	Hurricane-2
15A	24.4	-84	08/27/06Z	95	963	Hurricane-2

Advisory Number	Latitude Degrees	Longitude Degrees	Time UTC	Wind Speed, kts	Minimum sea-level pressure	Saffir / Simpson Category
16	24.4	-84.4	08/27/09Z	100	945	Hurricane-3
16A	24.4	-84.6	08/27/12Z	100	940	Hurricane-3
17	24.5	-85	08/27/15Z	100	940	Hurricane-3
17A	24.5	-85.4	08/27/18Z	100	949	Hurricane-3
18	24.6	-85.6	08/27/21Z	100	945	Hurricane-3
18A	24.8	-85.9	08/28/00Z	100	944	Hurricane-3
19	25	-86.2	08/28/03Z	100	939	Hurricane-3
20	25.1	-86.8	08/28/06Z	125	935	Hurricane-4
21	25.4	-87.4	08/28/09Z	125	935	Hurricane-4
22	25.7	-87.7	08/28/12Z	140	908	Hurricane-5
23	26	-88.1	08/28/15Z	150	907	Hurricane-5
23A	26.5	-88.6	08/28/18Z	150	906	Hurricane-5
24	26.9	-89	08/28/21Z	145	902	Hurricane-5
24A	27.2	-89.1	08/29/00Z	140	904	Hurricane-5
25	27.6	-89.4	08/29/03Z	140	904	Hurricane-5
25A	27.9	-89.5	08/29/03Z	140	908	Hurricane-5
25B	28.2	-89.6	08/29/07Z	135	910	Hurricane-5
26	28.8	-89.6	08/29/09Z	130	915	Hurricane-5
26A	29.1	-89.6	08/29/11Z	125	918	Hurricane-5
26B	29.7	-89.6	08/29/13Z	115	923	Hurricane-4

Table 2 (below). Ship reports during Katrina
(data source, www.nhc.noaa.gov)

Date / Time UTC	Ship Call Sign	Latitude (^{0}N)	Longitude (^{0}W)	Pressure (mb)	Wind Speed	Cyclostrophic Equation U10=12(1013-P)^0.5, kts
25/1800	ZCAM5	28.8	79.3	1005.5	37	33
26/0600	WNDG	24.5	80.3	1005	45	34
26/0600	WTER	24.6	81.8	999.3	40	44
26/0600	KSYP	24.8	80.4	1004.5	36	35
26/1200	WFJN	24	81.8	1003	37	38
26/1400	WTER	24.6	81.8	1000.8	50	42

Date / Time UTC	Ship Call Sign	Latitude (^{0}N)	Longitude (^{0}W)	Pressure (mb)	Wind Speed	Cyclostrophic Equation U10=12(1013-P)^0.5, kts
26/1500	WTER	24.6	81.8	1000.8	55	42
26/1800	WTER	24.6	81.8	1002.9	39	38
26/1900	WTER	24.6	81.8	1002.2	52	39
26/2100	C6FM9	24.4	80.4	1007	40	29
26/2100	WTER	24.6	81.8	1001.4	35	41
27/0000	ELQQ4	24.1	82	1000.5	37	42
27/0600	V7DW6	22.8	84.3	999	45	45
27/1200	KS049	22.7	84.5	994.1	36	52
27/1800	H3VR	23.2	83.3	1001	40	42
27/1800	KS049	23.5	82.6	994.5	41	52
27/1800	ELQQ4	25.5	83.1	1003.5	37	37
27/2100	WDB325	23.8	86.8	995.2	38	51
27/2100	WGXO	23.8	82.8	1001.2	37	41
28/0000	PFSK	21.1	84.4	1005.5	35	33
28/0000	WGXO	23.5	83.2	1000.3	37	43
28/0300	WGXO	23.2	83.8	1002	37	40
28/0300	WDB325	23.7	85.5	996	37	49
28/0000	WGXO	23	84.5	1001.2	44	41
28/0600	WDB325	23.7	84.7	999.5	54	44
28/0800	V7HD3	27.6	92.1	994	35	52
28/0900	WDB325	23.7	84	1001.2	48	41
28/1200	WGXO	23	85.9	999.5	44	44
28/1200	PFSK	23	85.9	1001.9	37	40
28/1200	PJOJ	27.6	83	1007.3	35	29
28/1400	AUBK	24	88.3	1000	37	43
28/1500	WGXO	23	86.8	1000.8	40	42
28/1500	C6FE5	23.1	86.5	1006.5	36	31
28/1500	V7HD2	27.1	91.6	1003	40	38
28/1800	C6FE5	23.8	87	1004.5	36	35
28/1800	MCLQ4	26	84.9	1005	42	34
28/1800	V7HC8	27.5	90.6	998	40	46

Date / Time UTC	Ship Call Sign	Latitude (^{0}N)	Longitude (^{0}W)	Pressure (mb)	Wind Speed	Cyclostrophic Equation U10=12(1013-P)^0.5, kts
28/2100	WGXO	23.5	88.2	998.5	37	46
28/2100	V7HC6	26.2	91.4	993	35	54
28/2100	V7EA2	26.9	91.7	989.4	37	58
28/2100	V7HD2	27	92.3	1001	35	42
28/2100	V7HC8	27.4	90.9	997	35	48
29/0000	WGXO	23.7	89.1	998.8	37	45
29/0000	C6KJ5	24.9	89.4	994.5	38	52
29/0000	V7HC6	26.2	91.4	993.1	40	54
29/0000	ELXL3	26.6	90.9	990	55	58
29/0000	V7EA2	26.8	91.7	986.8	44	61
29/0000	V7HD2	27	92.7	1001	40	42
29/0000	V7HC9	27.1	92.6	998.6	37	46
29/0200	VRZN8	26.5	92.7	997	54	48
29/0300	C6KJ5	25.2	89.7	995.7	38	50
29/0300	ELXL3	26.5	90.8	991	52	56
29/0300	V7EA2	26.8	91.7	988.2	44	60
29/0400	V7HC8	27.1	91.4	996	40	49
29/0500	VRZN8	26.4	92.2	996	54	49
29/0600	C6KJ5	25.5	90	997	38	48
29/0600	ELXL3	26.4	90.8	994	45	52
29/0600	V7HC9	27	92.7	998.3	37	46
29/0600	MCLQ4	27.6	85.2	1005.6	36	33
29/0700	V7EA2	26.8	91.7	988	40	60
29/0800	V7HC9	27	92.7	998.6	38	46
29/0900	C6KJ5	25.9	90.5	997.5	35	47
29/0900	VRZN8	26.3	91.4	995	54	51
29/0900	ELXL3	26.4	90.8	996	44	49
29/0900	V7EA2	26.8	91.7	989	35	59
29/1100	C6FM8	22.3	88	1009	35	24
29/1200	VRZN8	26.5	91	995	47	51
29/1200	MCLQ4	28.3	85.5	1004.3	36	35

Date / Time UTC	Ship Call Sign	Latitude (^{0}N)	Longitude (^{0}W)	Pressure (mb)	Wind Speed	Cyclostrophic Equation U10=12(1013-P)^0.5, kts
29/1500	VRZN8	26.9	90.7	999	54	45
29/1800	MCLQ4	28.3	86.4	1004.8	39	34
				Mean:	41	44
			Standard Deviation		6	8
			Coefficient of Variation		15 percent	19 percent

2. Relation between Minimum Sea-level Pressure and Wind Speed at 10m

On the basis of the balance between centrifugal force and pressure gradient force Hsu (2005) has formulated an operational cyclostrophic equation such that:

$$U10 \text{ (in m/s)} = 6.3 (1013 - Pmin) \wedge (1/2) \quad (1)$$

$$U10 \text{ (in knots)} = 12 (1013 - Pmin) \wedge (1/2) \quad (2)$$

Where U10 is the wind speed at 10m and Pmin is the minimum sea-level pressure (hPa or mb).

Further validations of Equation (1) are presented in **Figure 3** based on estimations from the National Hurricane Center (NHC) as listed in **Table 1** during Katrina. Because nearly all anemometers on NDBC buoys were damaged, we employ the buoy measurement during Hurricane Lili in 2002 at NDBC Buoy 42001. **Figure 4** illustrates that Equation (1) is in good agreement with the measurements made at 42001 (for location, see **Figure 2**) in 2002 over the Gulf of Mexico during Hurricane Lili. These results indicate that Equation (1) is very useful operationally.

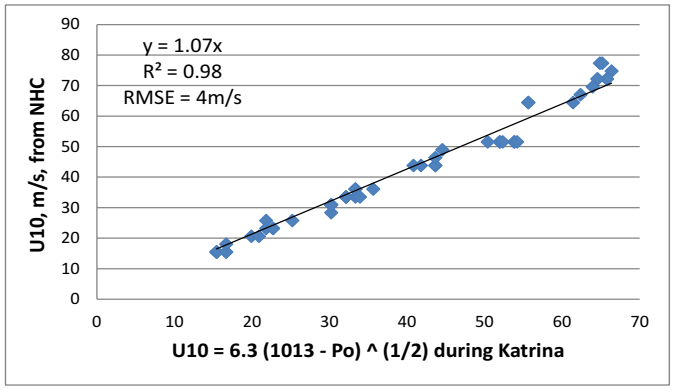


Figure 3. A verification of Equation (1) based on data as listed in Table 1

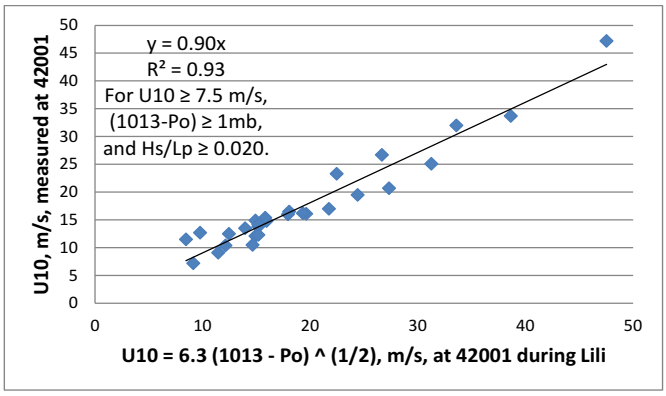


Figure 4. Further verification of Equation (1) using the Hurricane Lili measurements made at Buoy 42001 during Lili in 2002

3. Validating the Ship Reports

Now, if we substitute the pressure measurements from ship reports as listed in the 5th column in **Table 2** into Equation (2), we get the estimated wind speed at 10m. Our results are shown in the-last column in **Table 2**. Since the difference between the averaged value of all ship reports (=41kts) and that of our computed averaged (=44 kts) based on the cyclostrophic equation is only 3 kts, we can say that these ship reports are consistent on the average with our theoretical reasoning. Furthermore, since the coefficient of variability of ship reports is 15% vs. that of 19% based on the cyclostrophic equation, these ship reports are validated to be reasonable.

4. Conclusions

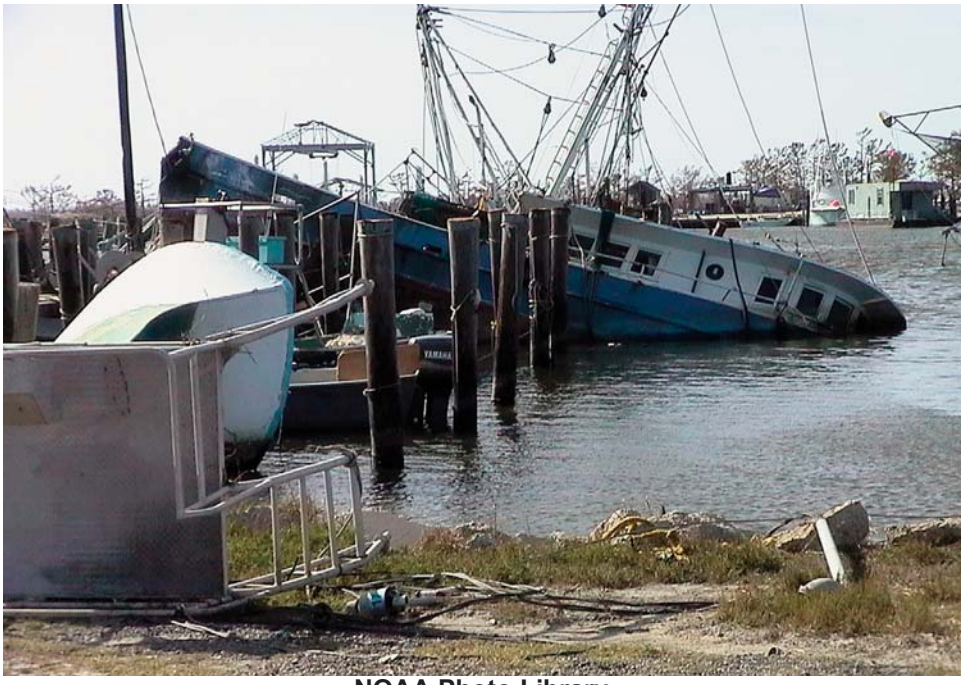
On the basis of aforementioned evaluations and because of the composite effects of airflow distortion on and the height variation in the anemometer on ships, it is concluded that, on the average, these ship reports are reasonable and indispensable for operational applications such as the incorporation of these data onto the surface weather maps.

References

Hsu, S. A., 2005. "Air-Sea Interaction". In *Water Encyclopedia*, Vol. 4, pp. 1 - 4, Wiley - Interscience.

Wang, D.-P., and L.-Y. Oey, 2008, Hindcast of Waves and Currents in Hurricane Katrina, Bulletin of American Meteorological Society, 89 (4), 487-495.

Damaged Vessels along the Mississippi coast following Katrina
Images coutesy NOAA Photo Library



NOAA Photo Library
http://www.photolib.noaa.gov/

Mandatory Ship Reporting System for North Atlantic Right Whales (MSR)

The National Marine Fisheries Service, the federal agency responsible for the stewardship of living marine resources and their habitats, is sponsoring a survey to obtain mariner's feedback on the North Atlantic right whale Mandatory Ship Reporting (MSR) system.

The purpose of the survey is to evaluate and improve the MSR program – and mariner feedback is needed. If you are a mariner operating or working on a vessel 300 gt or greater on the east coast of the United States, or who has operated in this area in the past, NMFS is seeking your input. The survey consists of 9 questions, and also allows for additional comments. Completing the survey is expected to take less than 10 minutes. The survey is voluntary and all responses are anonymous and confidential. To take the survey, log on to:

http://www.marinerrightwhaleopinionsurvey.com/Survey/NMFSMarinerSurvey.aspx

Collisions with ships are a major source of injury and death of the critically endangered North Atlantic right whale. In an effort to reduce the number of ship strikes, NOAA and the U.S. Coast Guard (USCG) developed and implemented Mandatory Ship Reporting Systems. The systems were endorsed by the International Maritime Organization, a specialized organization of the United Nations. The systems became operational in July 1999.

Reporting Requirements

When ships 300 gross tons and greater enter two key right whale habitats--one off the northeast U.S. and one off the southeast U.S.--they are required to report to a shore-based station.
In return, ships receive a message about right whales, their vulnerability to ship strikes, precautionary measures the ship can take to avoid hitting a whale, and locations of recent sightings.

Right Whale Mandatory Ship Reporting System: What do you think?

Please Take Our Survey!

- Brochure: MSR Requirements (pdf)
- USCG Notice to Mariners (1999) (pdf)
- U.S. Coast Pilot Requirements (pdf)
- USCG Commandant Instruction 16214.3 (pdf)
- Final Rule (11/20/2001, 69FR 58066)
- Steps to avoid collisions (pdf)

For more information go to: http://www.fisheries.noaa.gov/pr/shipstrike/msr.htm

For comments or other suggestions contact:
greg.silber@noaa.gov or kristy.wallmo@noaa.gov

Mean Circulation Highlights and Climate Anomalies

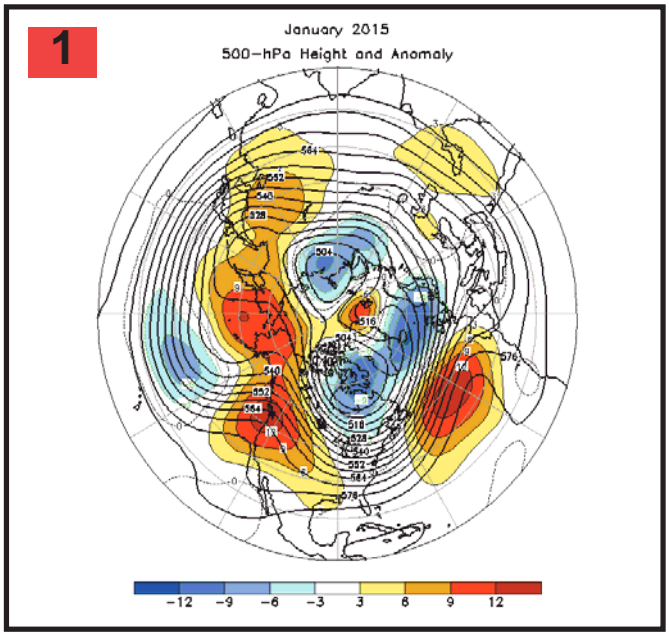
January through April 2015

All anomalies reflect departures from the 1981-2010 base period.

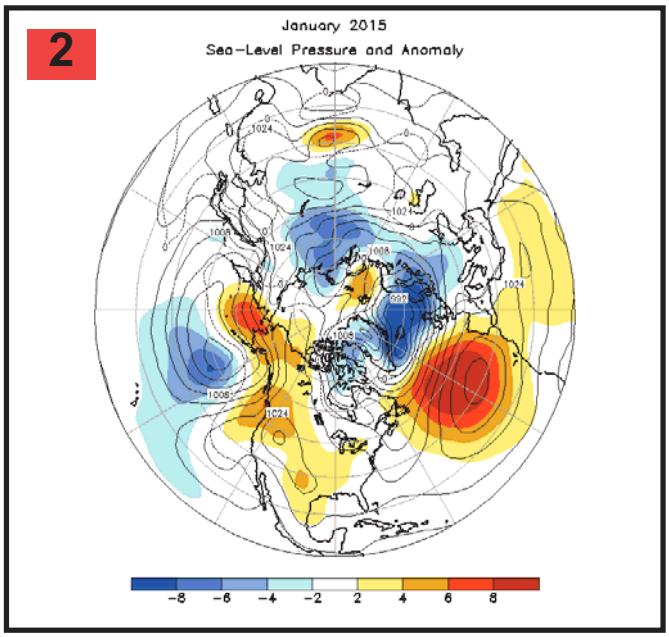
Anthony Artusa, Meteorologist, Operations Branch, Climate Prediction Center NCEP/NWS/NOAA

January-February 2015

The mean 500 hPa circulation during January 2015 featured positive height anomalies from East Asia across the Bering Sea to most of western North America and over the mid-latitude North Atlantic. Negative height anomalies prevailed across eastern Canada, the northern North Atlantic, north-central Russia, and just north of Hawaii in the North Pacific (**Figure 1**). The corresponding sea level pressure (SLP) and anomaly map (**Figure 2**) featured near to below normal SLP over East Asia (despite notable above normal mid-tropospheric heights), and a positive North Atlantic oscillation (NAO) characterized by abnormally low SLP from Baffin Island, Canada, to northern Europe and abnormally high SLP across the mid-latitude North Atlantic.

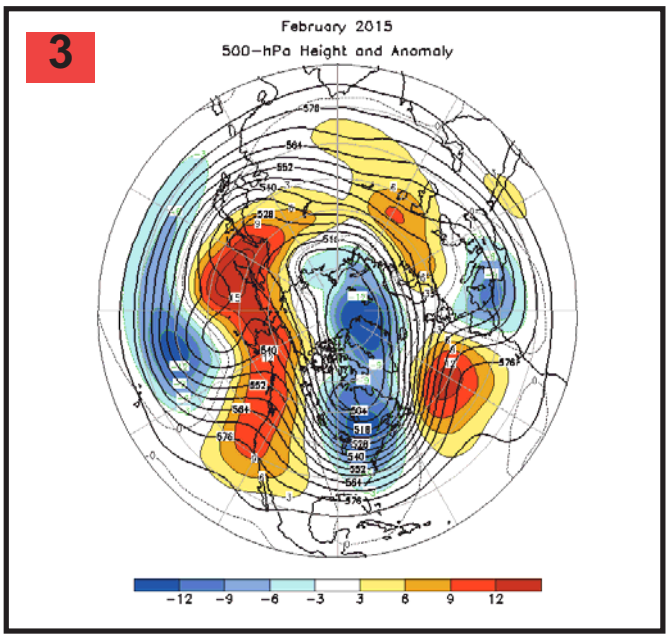


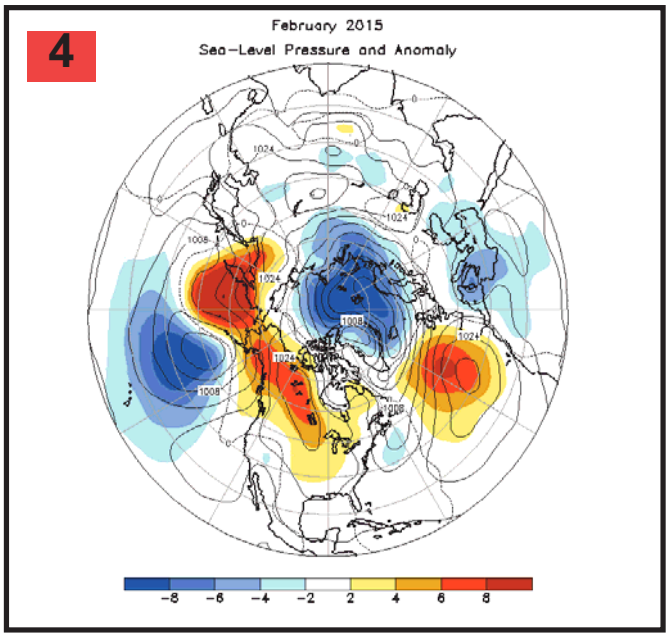
During February, a highly amplified mid-tropospheric flow pattern developed over North America, with ridging well above normal; 500 hPa heights over the western half of the continent, and troughing. Well below normal; 500 hPa heights observed over the eastern half of the continent. Well below normal heights were also observed over the North Pacific (mostly between Hawaii and Alaska), from Greenland and Spitsbergen to the Russian island of Novaya Zemlya, and across most of the Mediterranean Sea. Well above normal heights were also noted over northeast Asia, western Russia, and the North Atlantic between about the 30th and 60th parallels (**Figure 3**). The corresponding SLP and Anomaly map depicts a similar pattern that generally matches the mid-tropospheric configuration in anomaly sign. However, one area that shows clear disagreement is eastern North America, where near to above normal SLP prevailed, despite the presence of a 500 hPa trough (**Figure 4**).



Caption for 500 hPa Heights and Anomalies: Figures 1,3,5,7
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.

Caption for Sea-Level Pressure and Anomaly: Figures 2,4,6,8 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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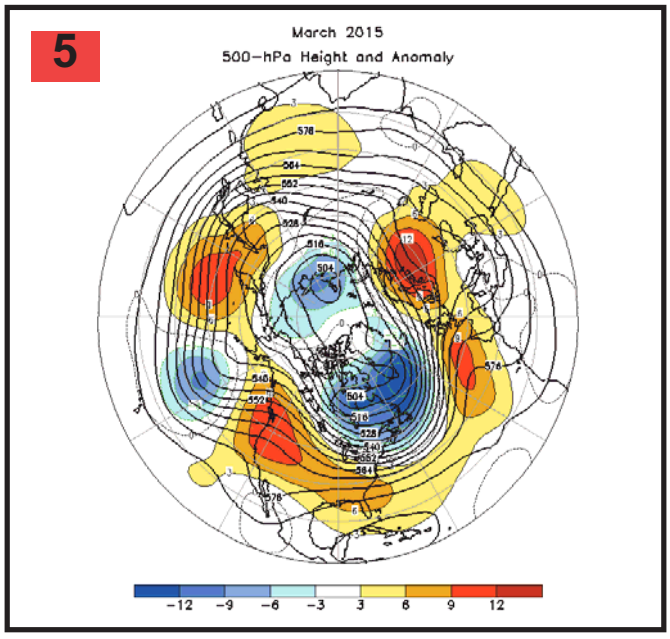
The Tropics

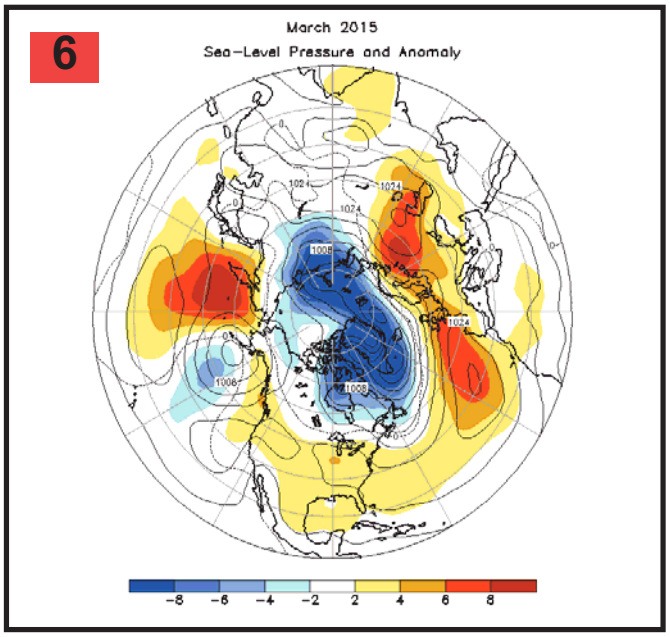
Sea surface temperatures (SST) were above average in the central and western equatorial Pacific in January and February and below average in the eastern Pacific in January. The latest monthly El Nino index for the El Nino 3.4 region was +0.5C (January) and +0.6C (February). The depth of the oceanic thermocline (measured by the depth of the 20C isotherm) remained close to average. However, an extensive area of positive subsurface anomalies was noted near the Date Line. Negative subsurface anomalies prevailed closer to the surface, east of 110W. . In February, the thermocline was deeper than usual across the central and east central equatorial Pacific, with subsurface anomalies ranging from 1-4C above average. Equatorial low level easterly trade winds remained near average in January, and weaker than average in February. Tropical convection was enhanced across Indonesia and the western Pacific in January, and primarily the western Pacific in February. Suppressed convection was observed near the Date Line (January), and over the east-central Pacific (February). Collectively, these oceanic and atmospheric anomalies reflect ongoing ENSO-neutral conditions.

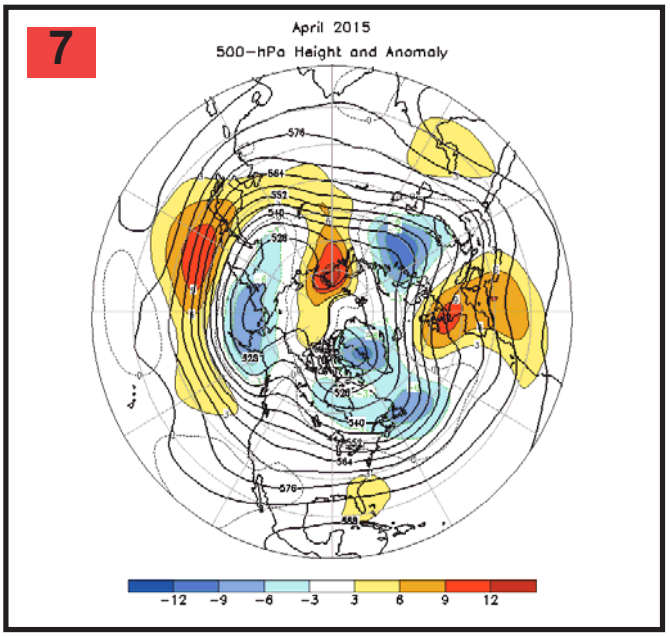
March-April 2015

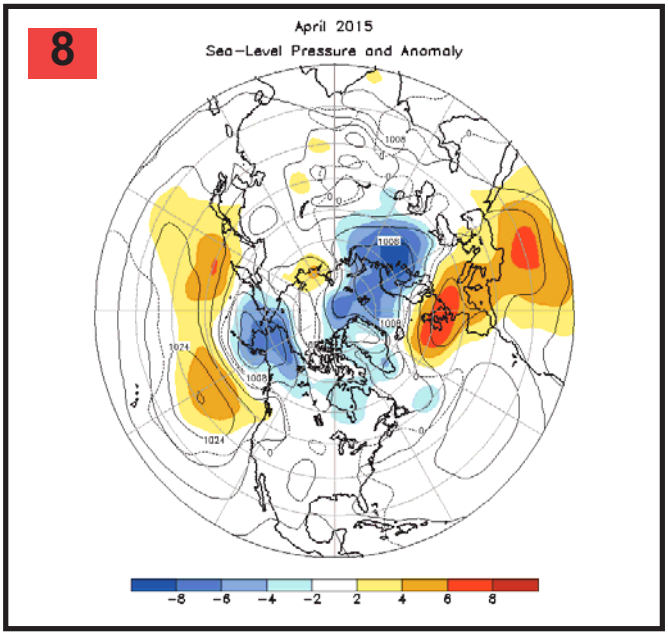
In March, a positive Arctic Oscillation (AO) dominated the northern hemispheric circulation, with above normal 500 hPa heights over the middle latitudes, and below normal 500 hPa heights over the polar region (**Figure 5**). The one exception was a very persistent trough and its associated negative 500 hPa height anomalies just north of Hawaii; a feature also observed during the previous two months. The SLP and anomaly map generally reflected the mid-tropospheric height anomaly pattern (**Figure 6**).

The mean 500 hPa circulation during April 2015 was characterized by a pole ward shift of the height anomaly pattern, which is a sign of the approaching warm season. Below normal 500 hPa heights were noted over the Bering Sea/Alaska domain, eastern Canada including the Grand Banks region, Greenland and northwestern Russia (**Figure 7**). Above normal heights were observed across Western Europe and portions of North Africa, north-central Russia, and from Japan eastward across the western Pacific to about the Date Line. The SLP and anomaly map generally mirrors the mid-tropospheric pattern (**Figure 8**).









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Caption for Sea-Level Pressure and Anomaly: Figures 2,4,6,8 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.

The Tropics

A waning neutral ENSO transitioned to a weak Nino during March and April 2015. Sea surface temperatures (SST) were above average in the western and central equatorial Pacific (March) and above average in most areas of the equatorial Pacific (April). The latest monthly Nino indices for the Nino 3.4 region were +0.6C (March) and +0.8C (April). The depth of the oceanic thermocline (as measured by the a 20C isotherm) was above average in the central and east-central Pacific during March, and the east-central and eastern equatorial Pacific during April. Subsurface temperature anomalies exhibited a large range, from 1-5C warmer than average (March) and 1-6C warmer than average (April). Low level westerly wind anomalies prevailed across the western Pacific in March, and most of the equatorial Pacific in April. Deep tropical cloudiness and thunderstorm activity was enhanced over the central equatorial Pacific during the two-month period.

Caption for 500 hPa Heights and Anomalies: Figures 1,3,5,7 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.

Caption for Sea-Level Pressure and Anomaly: Figures 2,4,6,8 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.

Much of the information used in this article originates from the Climate Diagnostics Bulletin archive:

(**http://www.cpc.ncep.noaa.gov/products/CDB/CDB_Archive_html/CDB_archive.shtml**)

National Weather Service VOS Program New Recruits:

January through June 2015

SHIP NAME	CALL SIGN
BILLIE H.	WCY4992
BREMEN BRIDGE	3EIZ7
CHUKCHI SEA	WDE2281
COASTAL VENTURE	WDF3547
DANIEL FOSS	WTS3171
HANJIN AMI	VRNF8
JOHN D. LEITCH	VGWM
LOWLANDS OPAL	ONGH
MAERSK KINLOSS	WMKA
MARINE EXPRESS	3FHX2
OCEAN GLOBE	KOGE
ORANGE OCEAN	D5DS2
REGATTA	V7DM3
SEA PRINCE	WYT8569
SNOHOMISH	WDB9022
STAR GRAN	LADR4
STAR LIVORNO	LAQM7

United Kingdom Voluntary Observing Fleet

May 2015

In May 2015 Sarah North, Ship Observation Manager, and Steve Bond, Southampton Port Meteorological Officer recruited the new P&O cruise ship **'BRITANNIA'** to the UK Voluntary Observing Fleet. The luxury cruise ship is capable of carrying 3600 passengers, was officially named by Queen Elizabeth Ii during a naming ceremony held in Southampton. Captain Paul Brown was presented with a Ship Observations Team certificate and a VOS Climate (VOSClim) Certificate.

Captain Paul Brown of the BRITANNIA with Sarah North, Ship Observation Manager

At left, Steve Bond, Southampton Port Meteorological Officer

Got Weather Photo Submissions

Weather Images from Our Readers:

Photos: Matt Thompson PMO, Seattle, USA

VOS Program
Cooperative Ship Report:
January 1 through June 30, 2015

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ADRIAN MAERSK	OXLD2	A	New York City	0	5	9	0	0	5							19
ADVANTAGE	WPPO	A	Norfolk	0	20	2	12	2	0							36
ADVENTURE OF THE SEAS	C6SA3	A	Miami	0	0	0	0	0	0							0
ADVENTURER	WBN3015	A	Jacksonville	0	0	0	0	0	0							0
AKINADA BRIDGE	H9PN	A	New York City	0	2	1	0	8	0							11
AL HUWAILA	C6VG2	A	Anchorage	0	0	0	0	0	0							0
ALASKA MARINER	WSM5364	A	Anchorage	0	0	0	0	0	8							8
ALASKA TITAN	WDE4789	A	Anchorage	16	30	40	11	21	17							135
ALASKAN EXPLORER	WDB9918	A	Anchorage	85	53	70	92	99	100							499
ALASKAN FRONTIER	WDB7815	A	Anchorage	82	61	65	47	46	77							378
ALASKAN LEGEND	WDD2074	A	Anchorage	31	24	32	71	100	32							290
ALASKAN NAVIGATOR	WDC6644	A	Anchorage	185	135	120	140	158	142							880
ALBEMARLE ISLAND	C6LU3	A	Miami	47	24	17	26	28	18							160
ALBERT MAERSK	OUOW2	A	New York City	27	28	40	11	35	0							141
ALERT	WCZ7335	A	Kodiak	0	5	0	8	4	2							19
ALGOLAKE	VCPX	A	Chicago	0	0	0	0	0	0							0
ALGOMA GUARDIAN	CFK9698	A	Chicago	0	0	0	3	41	40							84
ALGOMA MARINER	CFN5517	A	Chicago	0	0	2	5	1	9							17
ALGOMA NAVIGATOR	VGMV	A	Chicago	0	0	0	3	20	43							66
ALGOMA SPIRIT	CFN4309	A	Chicago	0	0	0	0	0	0							0
ALGOSOO	VGJD	A	Chicago	0	0	0	0	0	0							0
ALGOSTEEL	VDJB	A	Chicago	26	21	0	0	0	0							47
ALGOWAY	VDFP	A	Chicago	0	0	0	0	5	1							6
ALGOWOOD	VCTD	A	Chicago	0	0	0	0	1	1							2
ALLIANCE FAIRFAX	WLMQ	A	Jacksonville	15	22	67	59	28	0							191
ALLIANCE NORFOLK	WGAH	A	Jacksonville	9	0	16	0	0	0							25
ALLIANCE ST LOUIS	WGAE	A	Charleston	8	3	0	12	24	0							47
ALLURE OF THE SEAS	C6XS8	A	Miami	35	28	15	42	5	8							133
ALPENA	WAV4647	A	Chicago	13	0	0	27	22	31							93
ALTAIR VOYAGER	C6OK	A	Baltimore	0	0	0	0	0	0							0
AM HAMBURG	V7ZZ5	A	Anchorage	18	1	0	0	16	0							35
AMERICAN CENTURY	WDD2876	A	Chicago	168	1	0	153	173	140							635
AMERICAN COURAGE	WDD2879	A	Chicago	0	0	0	0	26	31							57
AMERICAN INTEGRITY	WDD2875	A	Chicago	0	0	0	0	0	0							0
AMERICAN MARINER	WQZ7791	A	Chicago	37	0	0	11	55	21							124
AMERICAN SPIRIT	WCX2417	A	Chicago	9	0	0	17	44	35							105
AMSTERDAM	PBAD	A	Anchorage	102	71	55	181	176	134							719
ANDROMEDA VOYAGER	C6FZ6	A	Anchorage	214	4	49	47	58	27							399
ANNA MAERSK	OXBA2	A	New York City	14	37	3	9	8	0							71

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ANTONIS I. ANGELICOUSSIS	C6FP5	A	Anchorage	0	0	0	0	0	0							0
ANTWERPEN	VRBK6	A	Anchorage	0	0	0	0	0	0							0
APL AGATE	WDE8265	A	Charleston	60	55	34	37	60	75							321
APL ANTWERP	3FRT9	A	Charleston	0	0	0	0	0	0							0
APL BELGIUM	WDG8555	A	New York City	42	27	69	68	75	37							318
APL CHINA	WDB3161	A	Los Angeles	43	44	46	61	78	0							272
APL CORAL	WDF6832	A	Charleston	38	48	48	34	56	42							266
APL CYPRINE	WDE8293	A	Charleston	39	37	37	45	45	45							248
APL ENGLAND	9VDD2	A	Anchorage	0	0	0	0	0	0							0
APL HOLLAND	9VKQ2	A	Los Angeles	0	0	0	0	0	0							0
APL JAPAN	9V2165	A	Charleston	12	15	8	0	2	3							40
APL KOREA	WCX8883	A	Los Angeles	56	78	42	2	42	116							336
APL PEARL	WDE8264	A	Charleston	26	45	55	15	0	0							141
APL PHILIPPINES	WCX8884	A	Los Angeles	19	3	46	63	56	63							250
APL SAVANNAH	9V9919	A	New Orleans	0	0	0	0	0	0							0
APL SCOTLAND	9VDD3	A	New York City	71	46	69	19	20	15							240
APL SHANGHAI	A8SN5	A	New York City	44	49	60	44	20	0							217
APL SINGAPORE	WCX8812	A	Los Angeles	50	46	54	27	45	17							239
APL THAILAND	WCX8882	A	Los Angeles	36	22	0	30	41	28							157
APL TOURMALINE	9VVP	A	Charleston	0	0	4	8	0	0							12
APL WASHINGTON	VRFD6	A	Los Angeles	38	2	3	3	0	0							46
AQUARIUS VOYAGER	C6UC3	A	Jacksonville	6	0	16	9	46	3							80
ARCTIC BEAR	WBP3396	A	Anchorage	0	0	0	5	39	14							58
ARCTIC TITAN	WDG2803	A	Anchorage	38	23	33	11	9	28							142
ARCTURUS VOYAGER	C6YA7	A	Anchorage	13	10	23	34	41	61							182
ARI CRUZ	WDG9588	A	Anchorage	1	0	0	1	0	0							2
ARIES VOYAGER	C6UK7	A	Anchorage	26	16	27	14	11	24							118
ARNOLD MAERSK	OXES2	A	Seattle	38	0	33	0	0	31							102
ARTHUR M. ANDERSON	WDH7563	A	Chicago	99	5	0	0	0	0							104
ASIAN KING	3FYS8	A	Charleston	78	49	6	0	0	0							133
ATLANTIC BREEZE	VRDC6	A	Anchorage	0	0	42	73	42	72							229
ATLANTIC CARTIER	SCKB	A	Norfolk	32	25	46	28	45	44							220
ATLANTIC EXPLORER (AWS)	WDC9417	A	Anchorage	196	185	322	281	195	150							1329
ATLANTIC GEMINI	VRDO9	A	Anchorage	23	28	29	14	0	0							94
ATLANTIC GRACE	VRDT7	A	Anchorage	9	0	0	0	0	0							9
ATLANTIC ROSE	VREF7	A	Anchorage	0	0	0	0	0	0							0
ATLANTIS (AWS)	KAQP	A	Anchorage	727	444	740	694	318	560							3483
ATTENTIVE	WCZ7337	A	Kodiak	0	0	0	2	3	1							6
AURORA	WYM9567	A	Anchorage	30	0	0	0	48	387							465
AURORA LEO	V7GI7	A	Anchorage	10	0	0	0	0	0							10
AURORA TAURUS	V7EX3	A	Anchorage	0	7	0	0	12	5							24
AVIK	WDB7888	A	Anchorage	0	0	0	0	5	4							9
AWARE	WCZ7336	A	Kodiak	4	0	0	0	3	1							8
AZAMARA QUEST	9HOM8	A	Anchorage	0	0	0	0	0	0							0
BADGER	WBD4889	A	Chicago	0	0	0	0	16	78							94

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
BAIE COMEAU	CFN6357	A	Chicago	0	0	0	0	0	0							0
BALTIC COVE	A8VG9	A	Anchorage	7	17	3	0	0	0							27
BALTIC WOLF	V7QX8	A	Anchorage	6	7	0	0	13	0							26
BANSUI	3FMI5	A	Los Angeles	0	0	0	0	0	0							0
BARBARA ANDRIE	WTC9407	A	Chicago	0	0	0	0	0	0							0
BARBARA FOSS	WYL4318	A	Anchorage	84	14	0	0	0	1							99
BARRINGTON ISLAND	C6QK	A	Miami	45	32	37	31	41	41							227
BBC TASMANIA	V2CZ2	A	Charleston	0	0	0	0	0	0							0
BELL M. SHIMADA (AWS)	WTED	A	Seattle	18	227	233	377	173	304							1332
BERGE NANTONG	VRBU6	A	Anchorage	1	0	1	0	0	0							2
BERGE NINGBO	VRBQ2	A	Anchorage	12	5	32	13	44	38							144
BERLIAN EKUATOR	HPYK	A	Anchorage	1	0	0	0	0	3							4
BERNARDO QUINTANA A.	C6KJ5	A	New Orleans	63	62	45	60	80	76							386
BILLIE H.	WCY4992	A	Anchorage	0	0	0	3	6	4							13
BISMARCK SEA	WDE5016	A	Anchorage	0	0	0	2	4	2							8
BLS ABILITY	ELXX8	A	Anchorage	13	10	98	0	0	0							121
BLS LIWA	VREF5	A	Anchorage	20	24	14	20	20	16							114
BLUEFIN	WDC7379	A	Seattle	0	0	52	62	82	82							278
BOMAR QUEST	V7JX5	A	Anchorage	3	0	1	0	0	0							4
BREMEN BRIDGE	3EIZ7	A	New York City	0	0	0	0	0	23							23
BRILLIANCE OF THE SEAS	C6SJ5	A	Miami	0	0	0	0	0	0							0
BUCCANEER	WYW5588	A	Kodiak	0	0	3	0	0	0							3
BUFFALO	WXS6134	A	Chicago	10	0	0	0	56	56							122
BULK SPAIN	A8VL9	A	Anchorage	82	4	0	2	0	0							88
BULWARK	WBN4113	A	Anchorage	98	85	49	4	64	22							322
BUNGA KELANA 3	9MCY6	A	Anchorage	0	0	0	0	0	0							0
BURNS HARBOR	WDC6027	A	Chicago	1	0	0	19	71	45							136
CAFER DEDE	V7PR8	A	New York City	24	20	30	5	39	18							136
CALIFORNIA VOYAGER	WDE5381	A	New Orleans	22	7	25	22	29	17							122
CALUMET	WDE3568	A	Chicago	0	0	0	8	25	27							60
CAPRICORN VOYAGER	C6UZ5	A	Anchorage	23	0	0	5	13	5							46
CAPT. HENRY JACKMAN	VCTV	A	Chicago	1	0	0	2	5	0							8
CAPT. STEVEN L. BENNETT	KAXO	A	Houston	10	17	25	0	76	1							129
CARNIVAL BREEZE	3FZO8	A	Miami	28	17	30	11	0	1							87
CARNIVAL CONQUEST	3FPQ9	A	Miami	8	11	14	13	13	4							63
CARNIVAL DREAM	3ETA7	A	Jacksonville	8	3	0	15	19	18							63
CARNIVAL ECSTASY	H3GR	A	Miami	17	0	0	31	56	64							168
CARNIVAL ELATION	3FOC5	A	New Orleans	13	19	25	16	12	11							96
CARNIVAL FANTASY	H3GS	A	Charleston	5	1	0	0	42	77							125
CARNIVAL FASCINATION	C6FM9	A	Jacksonville	52	55	26	6	12	20							172
CARNIVAL FREEDOM	3EBL5	A	Miami	0	34	11	53	55	63							216
CARNIVAL GLORY	3FPS9	A	Miami	48	35	40	39	40	33							235
CARNIVAL IMAGINATION	C6FN2	A	Miami	13	5	3	1	0	8							30
CARNIVAL INSPIRATION	C6FM5	A	Los Angeles	12	16	5	4	2	1							40
CARNIVAL LEGEND	H3VT	A	Miami	0	0	0	0	0	0							0

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CARNIVAL LIBERTY	HPYE	A	Jacksonville	36	27	15	2	2	3							85
CARNIVAL MAGIC	3ETA8	A	Houston	30	3	18	26	30	86							193
CARNIVAL MIRACLE	H3VS	A	Seattle	12	10	17	75	47	2							163
CARNIVAL PARADISE	3FOB5	A	Miami	13	9	1	1	103	18							145
CARNIVAL PRIDE	H3VU	A	Jacksonville	93	46	32	14	14	15							214
CARNIVAL SENSATION	C6FM8	A	Jacksonville	25	2	19	24	0	10							80
CARNIVAL SPLENDOR	3EUS	A	Anchorage	44	29	20	28	6	0							127
CARNIVAL SUNSHINE	C6FN4	A	Jacksonville	0	65	9	10	12	12							108
CARNIVAL TRIUMPH	C6FN5	A	Houston	0	0	0	0	0	10							10
CARNIVAL VALOR	H3VR	A	Jacksonville	0	6	12	14	0	23							55
CARNIVAL VICTORY	3FFL8	A	Miami	17	25	4	19	14	1							80
CAROLINE MAERSK	OZWA2	A	Seattle	0	0	0	0	0	91							91
CASON J. CALLAWAY	WDH7556	A	Chicago	16	1	0	56	65	87							225
CASTOR VOYAGER	C6UZ6	A	Anchorage	47	17	9	10	6	0							89
CELEBRITY CENTURY	9HJI9	A	Seattle	0	0	0	0	0	0							0
CELEBRITY CONSTELLATION	9HJI9	A	Miami	187	184	99	142	99	200							911
CELEBRITY ECLIPSE	9HXC9	A	Miami	123	137	172	159	230	96							917
CELEBRITY EQUINOX	9HXD9	A	Miami	0	17	73	61	17	0							168
CELEBRITY INFINITY	9HJD9	A	Miami	105	116	105	71	69	52							518
CELEBRITY MILLENNIUM	9HJF9	A	Anchorage	178	99	118	119	95	67							676
CELEBRITY REFLECTION	9HA3047	A	Miami	95	67	99	86	53	108							508
CELEBRITY SILHOUETTE	9HA2583	A	Miami	116	125	90	55	12	38							436
CELEBRITY SOLSTICE	9HRJ9	A	Seattle	336	372	170	8	240	207							1333
CELEBRITY SUMMIT	9HJC9	A	Miami	138	52	49	122	173	156							690
CENTURION	WBN3022	A	Jacksonville	0	0	0	0	0	0							0
CHARLES ISLAND	C6JT	A	Miami	24	19	32	18	33	23							149
CHARLESTON EXPRESS	WDD6126	A	Houston	189	87	57	57	34	59							483
CHEMICAL PIONEER	KAFO	A	New York City	1	7	0	0	10	5							23
CHENEGA	WDC3997	A	Anchorage	0	0	0	0	1	0							1
CHUKCHI SEA	WDE2281	A	Anchorage	0	0	0	3	2	1							6
CLIPPER TRITON	3FSC3	A	Anchorage	0	0	0	0	0	0							0
CMB BIWA	ONED	A	Anchorage	23	8	3	0	0	0							34
CMB MAXIME	VRHM4	A	Anchorage	0	0	0	1	0	0							1
COASTAL NOMAD	WDC6439	A	Anchorage	5	3	6	2	4	3							23
COASTAL PROGRESS	WDC6363	A	Anchorage	3	2	6	7	8	7							33
COASTAL TRADER	WSL8560	A	Anchorage	7	9	1	8	0	7							32
COASTAL VENTURE	WDF3547	A	Charleston	0	0	0	0	0	0							0
COLUMBIA	WYR2092	A	Anchorage	0	0	0	0	1	2							3
COLUMBINE MAERSK	OUHC2	A	Norfolk	0	0	0	4	0	10							14
CORNELIA MAERSK	OWWS2	A	New York City	0	0	9	23	24	3							59
CORWITH CRAMER	WTF3319	A	Anchorage	0	0	0	0	0	50							50
COSCO DEVELOPMENT	VRIZ9	A	Anchorage	60	68	60	53	72	53							366
COSTA ATLANTICA	IBLQ	A	Miami	0	0	0	0	0	0							0
COSTA FASCINOSA	ICPO	A	Anchorage	0	0	0	0	0	0							0
COSTA FORTUNA	IBNY	A	Miami	7	5	43	50	20	8							133

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COSTA LUMINOSA	ICGU	A	Miami	14	0	0	0	0	0							14
COSTA MAGICA	IBQQ	A	Anchorage	0	0	0	0	0	0							0
COSTA MEDITERRANEA	IBCF	A	Anchorage	0	0	0	0	0	0							0
COURAGE	WDC6907	A	Baltimore	15	20	1	0	0	0							36
CROSS POINT	WDA3423	A	Anchorage	0	0	0	0	2	6							8
CROWNED EAGLE	V7QP4	A	Anchorage	0	0	0	0	0	0							0
CRYSTAL MARINE	9VIC4	A	Anchorage	54	78	23	16	55	33							259
CRYSTAL SUNRISE	9V2024	A	Anchorage	0	0	0	0	0	0							0
CSAV LONCOMILLA	VRFB3	A	Charleston	10	0	0	8	2	0							20
CSAV LUMACO	VRFB5	A	Charleston	3	0	23	45	58	10							139
CSCL MANZANILLO	VRFO2	A	Anchorage	102	0	0	0	0	0							102
CSCL MELBOURNE	VRBI8	A	Anchorage	15	0	1	0	0	0							16
CSL ASSINIBOINE	VCKQ	A	Chicago	0	0	0	0	16	5							21
CSL LAURENTIEN	VCJW	A	Chicago	0	0	0	0	16	31							47
CSL NIAGARA	VCGJ	A	Chicago	0	0	0	2	15	0							17
CYGNUS VOYAGER	CO6B	A	San Francisco	45	8	0	0	15	7							75
DANIEL FOSS	WTS3171	A	Anchorage	0	0	0	0	6	3							9
DARYA MA	VRJH5	A	Anchorage	0	0	0	0	0	0							0
DARYA SHREE	VRZZ2	A	Anchorage	0	0	0	0	0	0							0
DARYA TARA	VRWS5	A	Anchorage	0	0	0	0	0	0							0
DEEPWATER CHAMPION	YJVM9	A	Houston	69	75	49	63	41	13							310
DEEPWATER MILLENNIUM	V7HD2	A	Houston	0	0	0	0	0	0							0
DEFENDER	WBN3016	A	Jacksonville	6	1	4	0	0	0							11
DELIVERANCE	WDE2632	A	Kodiak	0	0	1	0	1	1							3
DEPENDABLE	V7DI6	A	Baltimore	0	0	0	14	0	0							14
DIANE H	WUR7250	A	Anchorage	0	0	0	0	3	10							13
DISCOVERER CLEAR LEADER	V7MO2	A	Houston	119	101	114	118	108	103							663
DISCOVERER DEEP SEAS	V7HC6	A	Houston	134	182	182	146	173	110							927
DISCOVERER ENTERPRISE	V7HD3	A	Houston	0	0	0	0	0	0							0
DISCOVERER INSPIRATION	V7MO3	A	Houston	121	110	120	111	120	94							676
DISCOVERER SPIRIT	V7HC8	A	Houston	19	2	7	15	29	73							145
DISNEY DREAM	C6YR6	A	Jacksonville	30	54	34	0	0	22							140
DISNEY FANTASY	C6ZL6	A	Jacksonville	0	0	30	20	0	0							50
DISNEY MAGIC	C6PT7	A	Jacksonville	33	28	29	48	17	0							155
DISNEY WONDER	C6QM8	A	Miami	48	6	6	74	25	5							164
DOMINATOR	WBZ4106	A	Anchorage	22	47	38	12	0	0							119
DUNCAN ISLAND	C6JS	A	Miami	8	36	34	25	0	29							132
DUSK	WDE6955	A	Kodiak	0	0	0	0	0	0							0
EAGLE AUSTIN	S6TB	A	Houston	0	0	0	7	8	0							15
EAGLE BALTIMORE	9VHG	A	New York City	124	84	86	63	41	52							450
EAGLE BIRMINGHAM	S6LO	A	Houston	12	0	0	0	0	0							12
EAGLE BOSTON	9VHI	A	New York City	0	13	15	23	24	14							89
EAGLE FORD	KQXZ	A	Anchorage	0	0	0	0	0	0							0
EAGLE KANGAR	9V8472	A	Houston	0	0	0	0	0	0							0
EAGLE KINABALU	9V8779	A	Houston	0	0	0	0	0	0							0

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EAGLE KINARUT	9V8908	A	Houston	0	0	0	0	0	0							0
EAGLE KLANG	9V8640	A	Houston	0	0	0	4	10	11							25
EAGLE KUANTAN	9V8376	A	Houston	0	36	56	77	14	15							198
EAGLE KUCHING	9V8132	A	Houston	0	0	12	26	47	23							108
EAGLE MILAN	3FBJ6	A	Anchorage	0	0	0	0	0	0							0
EAGLE OTOME	S6FM	A	New Orleans	0	0	0	0	0	0							0
EAGLE PHOENIX	9VKH2	A	Houston	0	0	0	0	0	0							0
EAGLE SIBU	9VIJ3	A	New York City	0	0	0	45	42	47							134
EAGLE STAVANGER	3FNZ5	A	Houston	54	5	0	0	0	0							59
EAGLE SYDNEY	3FUU	A	New York City	0	0	0	0	22	64							86
EAGLE TACOMA	S6NK2	A	Houston	12	13	13	27	19	1							85
EAGLE TAMPA	S6NK6	A	Houston	1	36	37	32	6	10							122
EAGLE TOLEDO	S6NK3	A	Houston	0	59	75	57	0	0							191
EAGLE TORRANCE	9VMG5	A	Houston	150	180	0	0	0	0							330
EAGLE TURIN	9VMG6	A	Houston	10	5	15	16	22	19							87
EDGAR B. SPEER	WDH7562	A	Chicago	2	0	0	48	111	15							176
EDWIN H. GOTT	WDH7558	A	Chicago	136	0	5	75	165	109							490
EL FARO	WFJK	A	Jacksonville	16	4	15	17	7	4							63
EL YUNQUE	WGJT	A	Jacksonville	20	40	51	38	54	43							246
EMPIRE STATE	KKFW	A	New York City	0	0	0	0	97	45							142
ENCHANTMENT OF THE SEAS	C6FZ7	A	Jacksonville	0	0	0	0	0	1							1
ENDEAVOR (AWS)	WCE5063	A	New York City	743	597	697	720	701	716							4174
ENDURANCE	WDE9586	A	Houston	13	10	24	34	35	37							153
ENDURANCE	WDF7523	A	Kodiak	17	3	7	6	45	30							108
ENSIGN	WBN3012	A	Jacksonville	4	0	0	0	10	2							16
EOT SPAR	WDE9193	A	Miami	10	5	0	0	0	0							15
ERNEST N	A8PQ6	A	Anchorage	8	5	0	0	13	13							39
ESHIPS FALCON	A8VG7	A	Anchorage	0	0	0	0	0	0							0
EURODAM	PHOS	A	Miami	24	68	142	112	28	28							402
EURUS LIMA	A8MH9	A	New Orleans	0	0	0	0	0	0							0
EURUS LISBON	A8MI2	A	New Orleans	0	0	0	0	0	0							0
EURUS LONDON	A8MH7	A	New Orleans	0	0	0	0	0	0							0
EVER DECENT	9V7952	A	New York City	0	2	59	53	65	97							276
EVER DELIGHT	3FCB8	A	New York City	8	1	0	9	5	14							37
EVER DELUXE	9V7953	A	New York City	0	0	4	2	5	0							11
EVER DEVELOP	3FLF8	A	New York City	0	0	4	9	17	17							47
EVER DIADEM	9V7955	A	New York City	0	0	6	5	10	28							49
EVER DIAMOND	3FQS8	A	New York City	0	15	19	15	6	0							55
EVER DYNAMIC	3FUB8	A	New York City	0	10	16	14	9	11							60
EVER EAGLE	ZNZH6	A	Seattle	22	20	23	11	14	21							111
EVER ELITE	VSJG7	A	Los Angeles	0	0	0	0	0	0							0
EVER ETHIC	VQFS4	A	Seattle	22	12	0	0	15	18							67
EVER EXCEL	VSXV3	A	Los Angeles	0	0	0	0	0	42							42
EVER LEADING	2FRK8	A	Norfolk	65	7	31	10	38	17							168
EVER LEGACY	9V9290	A	New York City	0	0	50	20	52	62							184

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
EVER LISSOME	2HDG3	A	New York City	0	32	25	29	36	5							127
EVER LIVEN	BKIE	A	New York City	0	3	5	12	51	13							84
EVER LIVING	9V9791	A	New York City	33	20	0	16	6	22							97
EVER SAFETY	3EMQ4	A	Anchorage	18	12	7	2	4	0							43
EVER SALUTE	3ENU5	A	Anchorage	0	0	7	1	0	1							9
EVER SHINE	MJKZ4	A	Anchorage	0	0	29	5	35	17							86
EVER STEADY	3EHT6	A	Anchorage	7	34	6	1	0	0							48
EVER STRONG	3EJG3	A	Seattle	0	10	3	9	13	32							67
EVER SUMMIT	3EKU3	A	Anchorage	1	0	11	0	4	0							16
EVER SUPERB	3EGL5	A	Anchorage	9	3	10	8	10	5							45
EVER UBERTY	9V7960	A	Seattle	0	0	0	0	0	2							2
EVER ULYSSES	9V7962	A	Anchorage	3	1	1	0	0	0							5
EVER UNIFIC	9V7961	A	Anchorage	0	0	0	0	0	0							0
EVER URSULA	3FCB9	A	Seattle	1	0	7	1	4	0							13
EVER USEFUL	3FCC9	A	Anchorage	5	0	0	6	8	19							38
EVER UTILE	3FZA9	A	Seattle	13	30	15	0	8	21							87
EVEREST SPIRIT	C6FY8	A	Anchorage	0	0	0	0	0	0							0
EVERGREEN STATE	WDE4430	A	San Francisco	0	0	0	12	1	0							13
EXCALIBUR	ONCE	A	Houston	35	20	24	51	39	2							171
EXCEL	ONAI	A	Houston	20	21	30	48	49	55							223
EXCELERATE	ONDY	A	Houston	0	7	61	83	76	95							322
EXCELLENCE	ONBG	A	Houston	99	69	45	21	11	5							241
EXCELSIOR	ONCD	A	Houston	22	22	44	43	80	85							296
EXPEDIENT	ONFY	A	Houston	0	0	0	0	0	0							0
EXPLORER	ONFE	A	Houston	0	0	0	0	0	0							0
EXPLORER	WBN7618	A	Jacksonville	0	0	0	13	0	0							13
EXPLORER OF THE SEAS	C6SE4	A	Jacksonville	21	15	0	0	0	0							36
EXQUISITE	ONFX	A	Houston	25	0	0	0	0	0							25
FAIRCHEM FILLY	3EJM9	A	Anchorage	21	24	2	0	0	0							47
FAIRCHEM FRIESIAN	V7PU7	A	Anchorage	1	9	21	21	49	2							103
FAIRCHEM MAVERICK	V7EP2	A	Anchorage	1	0	5	12	0	0							18
FAIRCHEM MUSTANG	HPOW	A	Anchorage	4	0	4	1	21	22							52
FAIRCHEM STEED	3EBR5	A	Anchorage	0	0	0	0	0	0							0
FAIRWEATHER	WDB5604	A	Anchorage	3	2	4	3	2	0							14
FAIRWEATHER (AWS)	WTEB	A	Anchorage	0	0	0	0	0	357							357
FEDERAL KIVALINA	VRWK5	A	Anchorage	3	0	0	0	0	31							34
FEDERAL SCHELDE	8POF	A	Anchorage	122	43	0	0	0	0							165
FEDERAL SETO	VRZT5	A	Anchorage	30	8	2	0	0	0							40
FEDERAL SEVERN	V7WS8	A	Anchorage	0	0	0	0	0	0							0
FEDERAL TAMBO	V7YW3	A	Anchorage	0	0	0	0	0	0							0
FEDERAL TIBER	V7YW2	A	Anchorage	0	0	0	0	0	0							0
FEDERAL YUKINA	VRHN7	A	Anchorage	8	18	10	35	26	24							121
FERDINAND R. HASSLER	WTEK	A	Norfolk	0	0	0	27	0	0							27
FISH HAWK	WRB5085	A	Anchorage	0	0	0	11	10	19							40
FLORIDA VOYAGER	WDF4764	A	Baltimore	56	21	5	0	1	37							120

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
FREEDOM	WDB5483	A	Jacksonville	7	14	32	19	24	19							115
FREEDOM OF THE SEAS	C6UZ7	A	Jacksonville	0	0	12	24	22	24							82
FRITZI N	A8PQ4	A	Anchorage	1	0	11	2	14	5							33
G. L. OSTRANDER	WCV7620	A	Chicago	103	0	0	114	115	126							458
GARDEN CITY RIVER	S6AJ8	A	Anchorage	0	0	0	0	0	0							0
GENCO AUGUSTUS	VRDD2	A	Anchorage	51	13	0	0	0	0							64
GENCO CLAUDIUS	V7SY6	A	Anchorage	9	0	0	0	0	0							9
GENCO CONSTANTINE	VRDR8	A	Anchorage	2	0	43	89	32	0							166
GENCO HADRIAN	V7QN8	A	Anchorage	1	1	34	0	0	78							114
GENCO RAPTOR	V7NB8	A	Anchorage	0	0	0	13	2	29							44
GENCO THUNDER	V7LZ4	A	Anchorage	1	0	0	0	0	0							1
GENCO TIBERIUS	VRDD3	A	Anchorage	8	3	3	17	50	1							82
GENCO TITUS	VRDI7	A	Anchorage	0	0	0	0	0	0							0
GENE DUNLAP	WAS2433	A	Kodiak	0	0	0	0	0	0							0
GENERAL RUDDER	WTAU	A	Houston	0	0	0	0	0	41							41
GEORGE N	A8PQ5	A	Anchorage	36	20	51	9	15	5							136
GLEN CANYON BRIDGE	3EFD9	A	Norfolk	33	44	64	28	54	52							275
GOLDEN BEAR	NMRY	A	San Francisco	0	0	0	7	8	4							19
GORDON GUNTER (AWS)	WTEO	A	New Orleans	0	0	547	341	392	409							1689
GORDON JENSEN	WDG3440	A	Kodiak	0	0	0	0	0	0							0
GRANDEUR OF THE SEAS	C6SE3	A	Jacksonville	31	59	48	67	65	51							321
GREAT REPUBLIC	WDH7561	A	Chicago	90	0	0	9	46	35							180
GREEN COVE	WDG5660	A	Baltimore	156	132	114	43	10	0							455
GREEN LAKE	WDDI	A	Jacksonville	0	53	19	0	1	0							73
GREEN RIDGE	WZZF	A	Jacksonville	26	21	5	18	4	9							83
GRETA	WDF3298	A	Anchorage	0	0	0	0	0	0							0
GRETCHEN H	WDC9138	A	Anchorage	12	14	7	7	2	0							42
GSF DEVELOPMENT DRILLER I	YJSW5	A	Houston	0	0	0	0	0	0							0
GSF GRAND BANKS	YJUF7	A	Houston	0	0	143	144	143	111							541
GUANG DONG BRIDGE	3EFI	A	New York City	6	7	0	22	0	0							35
GUARD	WCY2823	A	Kodiak	0	0	0	0	0	0							0
GUARDIAN	WBO2511	A	Kodiak	10	2	4	24	6	17							63
GUARDSMAN	WBN5978	A	Anchorage	0	0	1	0	0	0							1
GULF TITAN	WDA5598	A	Anchorage	4	5	16	8	13	26							72
GUTHORM MAERSK	OUJN2	A	Los Angeles	0	0	0	0	0	0							0
H A SKLENAR	C6CL6	A	Houston	138	128	102	131	133	160							792
H. LEE WHITE	WZD2465	A	Chicago	70	0	0	2	26	7							105
HALLE FOSS	WCF3930	A	Kodiak	0	0	0	0	0	0							0
HANJIN AMI	VRNF8	A	Los Angeles	125	67	46	53	62	52							405
HANJIN MILANO	V7SG8	A	New York City	36	47	38	16	31	31							199
HELENKA B	WAH5520	A	Anchorage	0	0	0	0	0	0							0
HENRY B. BIGELOW (AWS)	WTDF	A	New York City	0	0	335	498	422	393							1648
HENRY BRUSCO	WDC9691	A	Anchorage	0	0	0	2	0	0							2
HENRY GOODRICH	YJQN7	A	Houston	141	112	0	0	0	0							253
HERBERT C. JACKSON	WL3972	A	Chicago	284	0	5	694	670	699							2352

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
HI'IALAKAI (AWS)	WTEY	A	Honolulu	303	607	703	681	220	319							2833
HOEGH CHIBA	LAVD7	A	Jacksonville	0	0	0	0	0	0							0
HOEGH MASAN	S6HK	A	Charleston	0	0	19	21	14	22							76
HOLLYHOCK	NHHF	A	Chicago	0	0	0	0	0	0							0
HON. JAMES L. OBERSTAR	WL3108	A	Chicago	263	0	0	693	722	713							2833
HONOR	WDC6923	A	Baltimore	24	33	10	11	50	23							151
HOOD ISLAND	C6LU4	A	Miami	13	47	4	18	23	14							119
HORIZON ANCHORAGE	KGTX	A	Anchorage	54	62	52	65	53	45							331
HORIZON CONSUMER	WCHF	A	Seattle	0	5	46	45	35	20							151
HORIZON DISCOVERY	WZJD	A	Jacksonville	0	0	0	0	0	0							0
HORIZON ENTERPRISE	KRGB	A	Seattle	78	63	73	71	80	61							426
HORIZON KODIAK	KGTZ	A	Anchorage	30	40	32	6	41	50							199
HORIZON PACIFIC	WSRL	A	Seattle	50	51	28	16	0	56							201
HORIZON RELIANCE	WFLH	A	Los Angeles	39	62	18	19	67	49							254
HORIZON SPIRIT	WFLG	A	Los Angeles	75	30	64	64	26	34							293
HORIZON TACOMA	KGTY	A	Anchorage	55	125	58	51	38	25							352
HORIZON TRADER	KIRH	A	Jacksonville	10	0	0	0	0	0							10
HOS ACHIEVER	YJVG4	A	Houston	49	18	52	26	46	5							196
HOUSTON	KCDK	A	Miami	18	17	63	59	28	4							189
HUNTER	WBN3744	A	Kodiak	5	27	7	14	25	23							101
HYDRA VOYAGER	C6AB8	A	Anchorage	70	40	63	21	30	13							237
IBRAHIM DEDE	V7QW6	A	New York City	0	0	0	7	0	5							12
INCENTIVE	WCW9879	A	Kodiak	0	0	0	0	0	0							0
INDEPENDENCE II	WGAX	A	Baltimore	0	0	0	24	53	40							117
INDEPENDENCE OF THE SEAS	C6WW4	A	Miami	20	7	0	0	1	0							28
INDIANA HARBOR	WXN3191	A	Chicago	0	0	0	0	1	15							16
INTEGRITY	WDD7905	A	Anchorage	0	0	0	81	52	21							154
INTEGRITY	WDC6925	A	Baltimore	55	40	34	33	49	39							250
ISLAND SCOUT	WDC6588	A	Kodiak	0	0	0	0	0	0							0
IVER FOSS	WYE6442	A	Anchorage	0	0	0	0	0	3							3
JAMES L. KUBER	WDF7020	A	Chicago	80	0	0	30	83	75							268
JAMES R. BARKER	WYP8657	A	Chicago	644	0	75	598	654	682							2653
JEAN ANNE	WDC3786	A	Los Angeles	33	13	13	16	6	21							102
JENNY N	A8PQ7	A	Anchorage	45	1	4	19	3	5							77
JEPPESEN MAERSK	OWTW2	A	Norfolk	0	16	70	50	36	40							212
JEWEL OF THE SEAS	C6FW9	A	Miami	25	18	15	11	6	8							83
JOHN B. AIRD	VCYP	A	Chicago	0	0	0	12	22	38							72
JOHN BRIX	WDD9277	A	Anchorage	7	2	9	11	1	3							33
JOHN D. LEITCH	VGWM	A	Chicago	0	0	0	12	22	7							41
JOHN G. MUNSON	WDH7557	A	Chicago	5	0	9	19	28	20							81
JOSEPH L. BLOCK	WXY6216	A	Chicago	501	0	258	445	711	631							2546
JUSTINE FOSS	WYL4978	A	Anchorage	0	37	41	42	18	20							158
KAAN KALKAVAN	TCTX2	A	New York City	2	18	18	13	13	0							64
KAREN ANDRIE	WBS5272	A	Chicago	0	0	0	0	0	0							0
KAROLINE N	A8PQ8	A	Anchorage	13	5	23	33	65	33							172

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
KATRINA EM	WTK2245	A	Kodiak	1	3	5	0	0	0							9
KAUAI	WSRH	A	San Francisco	0	0	0	1	0	0							1
KAYE E. BARKER	WCF3012	A	Chicago	282	0	11	662	701	705							2361
KENNICOTT	WCY2920	A	Anchorage	0	0	4	8	24	10							46
KESWICK	C6XE5	A	Anchorage	0	0	0	0	0	0							0
KILO MOANA	WDA7827	A	Honolulu	16	0	17	17	34	8							92
KOTA HARUM	9VFF8	A	Anchorage	0	0	0	0	0	0							0
KOTA JATI	VRWJ7	A	Anchorage	0	0	0	0	0	0							0
LAHORE EXPRESS	VRBY8	A	Anchorage	34	25	22	18	27	8							134
LAURENCE M. GOULD (AWS)	WCX7445	A	Seattle	27	151	26	426	671	719							2020
LAVENDER PASSAGE	3FJY6	A	Anchorage	0	0	0	0	0	0							0
LECONTE	WZE4270	A	Anchorage	0	0	0	0	0	2							2
LEE A. TREGURTHA	WUR8857	A	Chicago	284	0	2	685	691	683							2345
LIBERTY DESIRE	V7AB6	A	Anchorage	0	0	0	0	0	0							0
LIBERTY EAGLE	WHIA	A	Houston	35	0	0	0	0	0							35
LIBERTY GLORY	WADP	A	Houston	0	0	3	59	40	47							149
LIBERTY GRACE	WADN	A	Houston	15	5	0	1	29	8							58
LIBERTY OF THE SEAS	C6VQ8	A	Miami	0	0	0	16	4	0							20
LIBERTY PRIDE	KRAU	A	Charleston	46	16	34	29	36	45							206
LIBERTY PROMISE	WWMZ	A	Jacksonville	28	1	2	0	6	0							37
LION CITY RIVER	9VJC5	A	Anchorage	0	0	0	0	0	0							0
LOIS H	WTD4576	A	Anchorage	0	0	1	4	7	0							12
LOWLANDS OPAL	ONGH	A	Baltimore	1	0	0	0	0	0							1
LOWLANDS ORCHID	ONFP	A	Anchorage	70	74	17	7	38	23							229
LOWLANDS PHOENIX	9HIY9	A	Anchorage	6	1	0	24	8	5							44
LYLA	V7QK3	A	Anchorage	15	0	0	0	0	0							15
MAASDAM	PFRO	A	Miami	385	366	410	408	335	293							2197
MADRID SPIRIT	ECFM	A	Anchorage	0	0	0	0	0	0							0
MAERSK ATLANTA	WNTL	A	Charleston	8	21	84	84	49	21							267
MAERSK CAROLINA	WBDS	A	Charleston	35	9	4	20	34	37							139
MAERSK CERES	D5DG4	A	Charleston	0	0	0	0	0	0							0
MAERSK CHICAGO	WMCS	A	Norfolk	21	20	27	5	25	42							140
MAERSK COLUMBUS	WMCU	A	Norfolk	0	0	0	0	0	0							0
MAERSK DENVER	WMDQ	A	New York City	35	58	44	8	3	28							176
MAERSK DETROIT	WMDK	A	Norfolk	55	42	27	67	69	69							329
MAERSK HARTFORD	WMHA	A	New York City	36	17	32	24	32	15							156
MAERSK HEIWA	9V9746	A	Anchorage	3	1	4	0	7	7							22
MAERSK IDAHO	WKPM	A	New York City	28	47	54	63	71	63							326
MAERSK IOWA	KABL	A	Norfolk	66	33	18	21	70	51							259
MAERSK JAUN	HBDD	A	Charleston	0	0	0	0	0	0							0
MAERSK KENSINGTON	WMKN	A	Charleston	0	0	14	16	17	14							61
MAERSK KENTUCKY	WKPY	A	New York City	22	5	0	8	16	35							86
MAERSK KINLOSS	WMKA	A	New York City	0	0	0	0	14	1							15
MAERSK MEMPHIS	WMMK	A	Charleston	44	76	82	64	65	48							379
MAERSK MISSOURI	WAHV	A	Norfolk	55	52	54	37	56	38							292

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MAERSK MONTANA	WCDP	A	New York City	8	38	53	56	71	37							263
MAERSK NIAGARA	VREO9	A	Anchorage	17	18	0	0	0	0							35
MAERSK OHIO	KABP	A	New York City	61	21	74	108	112	47							423
MAERSK PEARY	WHKM	A	Houston	113	81	64	34	20	34							346
MAERSK PITTSBURGH	WMPP	A	New York City	86	54	20	32	63	73							328
MAERSK UTAH	WKAB	A	Norfolk	94	80	89	68	71	77							479
MAERSK WISCONSIN	WKPN	A	New York City	71	49	13	47	47	16							243
MAHIMAHI	WHRN	A	Los Angeles	0	0	6	15	2	11							34
MAIA H	WYX2079	A	Kodiak	0	0	0	0	0	0							0
MAJESTY OF THE SEAS	C6FZ8	A	Miami	24	28	50	46	41	30							219
MALASPINA	WI6803	A	Anchorage	1	1	0	0	0	0							2
MALOLO	WYH6327	A	Anchorage	3	2	1	7	27	30							70
MANISTEE	WDB6831	A	Chicago	0	0	0	0	69	60							129
MANITOWOC	WDE3569	A	Chicago	15	0	0	22	65	76							178
MANOA	KDBG	A	San Francisco	29	7	21	29	12	10							108
MANUKAI	WRGD	A	Los Angeles	20	36	27	25	34	29							171
MANULANI	WECH	A	Los Angeles	3	28	43	0	7	2							83
MARCHEN MAERSK	OUIY2	A	Seattle	0	7	33	0	3	11							54
MARCUS G. LANGSETH (AWS)	WDC6698	A	Anchorage	0	0	389	599	699	701							2388
MARINE EXPRESS	3FHX2	A	Anchorage	0	0	0	0	28	35							63
MARVELLOUS	VRJI2	A	Baltimore	34	4	0	0	16	0							56
MATANUSKA	WN4201	A	Anchorage	0	0	0	0	1	0							1
MATHILDE MAERSK SKAGEN	OUJS2	A	Los Angeles	0	0	1	19	4	0							24
MATSONIA	KHRC	A	Los Angeles	0	5	9	15	29	9							67
MAUNALEI	KFMV	A	Baltimore	50	28	34	28	28	6							174
MAUNAWILI	WGEB	A	Los Angeles	27	6	22	30	33	45							163
MEIN SCHIFF 2	9HJG9	A	Miami	0	0	0	0	0	0							0
MELVILLE (AWS)	WECB	A	Los Angeles	743	501	697	719	744	720							4124
MESABI MINER	WYQ4356	A	Chicago	497	0	209	684	712	708							2810
MIDNIGHT SUN	WAHG	A	Seattle	22	22	15	14	18	20							111
MIKE O'LEARY	WDC3665	A	Anchorage	0	0	0	0	24	14							38
MINERAL BEIJING	ONAR	A	Anchorage	47	0	0	0	0	0							47
MINERAL BELGIUM	VRKF5	A	Anchorage	23	28	25	27	31	24							158
MINERAL DALIAN	ONFW	A	Anchorage	11	2	10	6	18	26							73
MINERAL FAITH	VRKS4	A	Anchorage	48	3	44	46	0	0							141
MINERAL KYOTO	ONFI	A	Anchorage	8	28	55	40	31	1							163
MINERAL NEW YORK	ONGI	A	Anchorage	25	17	18	15	1	18							94
MINERAL NINGBO	ONGA	A	Anchorage	205	189	209	179	75	56							913
MINERAL NOBLE	ONAN	A	Anchorage	47	32	27	27	25	20							178
MINERAL TIANJIN	ONBF	A	Anchorage	9	20	20	36	16	21							122
MISS ROXANNE	WCX4992	A	Kodiak	0	0	0	0	0	0							0
MISSISSIPPI VOYAGER	WDD7294	A	San Francisco	51	21	20	1	16	14							123
MOKIHANA	WNRD	A	San Francisco	63	59	62	52	13	18							267
MOKU PAHU	WBWK	A	San Francisco	5	1	0	0	0	0							6
MOL PARADISE	9V3118	A	Anchorage	0	12	5	17	10	17							61

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
MONITOR	WCX9104	A	Jacksonville	0	0	1	0	0	0							1
MORNING HARUKA	A8GK7	A	Anchorage	8	21	10	0	0	0							39
MSC POESIA	3EPL4	A	Miami	0	0	0	0	0	0							0
MV GEYSIR	WDF3296	A	Norfolk	0	0	54	60	61	11							186
NACHIK	WDE7904	A	Anchorage	0	0	0	0	0	0							0
NANCY FOSTER (AWS)	WTER	A	Charleston	0	0	110	543	473	477							1603
NANUQ	WDF2026	A	Kodiak	0	0	0	0	0	0							0
NATHANIEL B. PALMER (AWS)	WBP3210	A	Seattle	146	32	299	301	347	316							1421
NATIONAL GLORY	WDD4207	A	Houston	36	34	21	21	39	49							200
NAVIGATOR	WBO3345	A	Jacksonville	0	0	0	0	0	0							0
NAVIGATOR OF THE SEAS	C6FU4	A	Houston	5	10	53	27	14	19							128
NEPTUNE VOYAGER	C6FU7	A	New Orleans	29	12	38	17	10	20							126
NEVZAT KALKAVAN	TCMO2	A	New York City	46	36	36	29	27	45							219
NEW HORIZON (AWS)	WKWB	A	Los Angeles	743	669	690	619	0	0							2721
NIEUW AMSTERDAM	PBWQ	A	Miami	265	178	135	112	234	113							1037
NOKEA	WDD6946	A	Anchorage	0	0	0	4	17	10							31
NOORDAM	PHET	A	Miami	100	182	135	32	28	14							491
NORTH STAR	KIYI	A	Seattle	12	28	16	21	32	11							120
NORTHERN VICTOR	WCZ6534	A	Kodiak	10	0	0	4	0	0							14
NORTHWEST SWAN	ZCDJ9	A	Anchorage	33	40	50	8	10	14							155
NORWEGIAN BREAKAWAY	C6ZJ3	A	New York City	74	42	42	24	16	1							199
NORWEGIAN DAWN	C6FT7	A	Miami	195	58	98	141	167	59							718
NORWEGIAN EPIC	C6XP7	A	Miami	61	70	115	65	3	0							314
NORWEGIAN GEM	C6VG8	A	Jacksonville	15	47	67	71	246	235							681
NORWEGIAN GETAWAY	C6ZJ4	A	Miami	50	68	53	101	62	15							349
NORWEGIAN JADE	C6WK7	A	Anchorage	320	263	311	243	193	171							1501
NORWEGIAN JEWEL	C6TX6	A	Jacksonville	181	203	207	160	101	201							1053
NORWEGIAN PEARL	C6VG7	A	Anchorage	495	505	629	676	694	611							3610
NORWEGIAN SKY	C6PZ8	A	Miami	34	55	37	35	43	34							238
NORWEGIAN SPIRIT	C6TQ6	A	New Orleans	332	303	189	156	100	32							1112
NORWEGIAN STAR	C6FR3	A	Anchorage	425	257	11	3	30	13							739
NORWEGIAN SUN	C6RN3	A	Miami	546	407	173	147	327	279							1879
NOVA STAR	C6AZ4	A	New York City	0	0	0	0	1	14							15
NUNANIQ	WRC2049	A	Anchorage	0	0	0	1	2	2							5
NYK DIANA	3EOS4	A	New York City	50	29	35	39	34	0							187
NYK FUSHIMI	9V8741	A	Anchorage	0	0	0	0	23	13							36
NYK LIBRA	HOJY	A	Los Angeles	0	0	0	0	0	0							0
NYK ROSA	3FJM9	A	Los Angeles	0	0	0	0	0	0							0
NYK RUMINA	9V7645	A	New York City	20	19	26	16	3	33							117
NYK TRITON	3FUL2	A	New York City	62	3	42	28	53	39							227
NYK VERONICA	3EYJ5	A	Anchorage	0	0	0	0	0	0							0
OASIS OF THE SEAS	C6XS7	A	Miami	0	0	12	22	11	16							61
OCEAN CRESCENT	WDF4929	A	Houston	43	0	6	21	12	45							127
OCEAN EAGLE	WDG8082	A	Anchorage	0	5	1	0	10	7							23
OCEAN GIANT	WDG4379	A	Jacksonville	32	0	0	0	0	0							32

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OCEAN GLOBE	KOGE	A	Houston	0	0	20	21	7	17							65
OCEAN HOPE 3	WDF2354	A	Anchorage	1	3	9	8	0	0							21
OCEAN MARINER	WCF3990	A	Anchorage	0	0	0	0	6	11							17
OCEAN RANGER	WAM7635	A	Anchorage	13	7	0	0	0	5							25
OCEAN TITAN	WDB9647	A	Anchorage	0	0	0	0	0	0							0
OCEAN WAVE	WDG3180	A	Kodiak	0	0	0	0	0	0							0
OCEANUS	WXAQ	A	Seattle	0	0	0	52	77	29							158
OKEANOS EXPLORER (AWS)	WTDH	A	New York City	7	198	608	378	316	358							1865
OLEANDER	V7SX3	A	New York City	29	34	40	34	31	31							199
OLIVE L. MOORE	WDF7019	A	Chicago	108	0	0	152	264	292							816
OOCL AMERICA	VRWE8	A	Seattle	15	3	0	19	4	5							46
OOCL HALIFAX	VQUQ4	A	New York City	0	12	42	20	14	22							110
OOCL VANCOUVER	3EBG2	A	New York City	5	15	10	18	41	69							158
OOSTERDAM	PBKH	A	Anchorage	415	268	382	294	282	331							1972
ORANGE BLOSSOM 2	D5DS3	A	New York City	10	3	16	11	3	0							43
ORANGE OCEAN	D5DS2	A	New York City	31	17	20	19	34	39							160
ORANGE SKY	ELZU2	A	New York City	0	0	0	8	11	2							21
ORANGE STAR	A8WP6	A	New York City	0	0	0	0	0	14							14
ORANGE SUN	A8HY8	A	New York City	10	13	11	30	15	6							85
ORE DONGJIAKOU	9V9116	A	Anchorage	104	63	78	79	15	0							339
ORE ITALIA	9V9129	A	Anchorage	28	33	43	7	16	9							136
OREGON II (AWS)	WTDO	A	New Orleans	88	0	292	198	514	0							1092
OREGON VOYAGER	WDF2960	A	San Francisco	1	1	1	7	6	3							19
ORIENTAL QUEEN	VRAC9	A	Anchorage	12	11	0	0	0	0							23
OSCAR DYSON (AWS)	WTEP	A	Kodiak	190	372	462	147	644	555							2370
OSCAR ELTON SETTE (AWS)	WTEE	A	Honolulu	0	0	1	494	695	551							1741
OSHIMANA	9VAH9	A	Anchorage	0	0	0	0	0	0							0
OURO DO BRASIL	ELPP9	A	Baltimore	0	0	0	0	9	7							16
OVERSEAS ANACORTES	KCHV	A	Miami	12	13	20	16	18	7							86
OVERSEAS ANDROMAR	V7HP4	A	Los Angeles	0	0	0	0	0	0							0
OVERSEAS BOSTON	WJBU	A	Anchorage	83	48	43	24	32	52							282
OVERSEAS CASCADE	WOAG	A	0Miami	0	21	21	25	23	1							91
OVERSEAS CHINOOK	WNFQ	A	Houston	11	77	78	80	43	14							303
OVERSEAS HOUSTON	WWAA	A	Miami	0	2	6	6	4	5							23
OVERSEAS LONG BEACH	WAAT	A	Houston	38	36	12	2	0	7							95
OVERSEAS LOS ANGELES	WABS	A	Seattle	144	58	60	45	75	95							477
OVERSEAS LUXMAR	WDC7070	A	Miami	0	0	0	0	0	0							0
OVERSEAS MARTINEZ	WPAJ	A	Anchorage	14	41	18	8	16	12							109
OVERSEAS NIKISKI	WDBH	A	Anchorage	18	23	24	20	21	31							137
OVERSEAS SANTORINI	WOSI	A	Houston	16	31	50	14	0	36							147
OVERSEAS TAMPA	WOTA	A	Baltimore	1	1	1	0	2	2							7
OVERSEAS TEXAS CITY	WHED	A	New York City	9	37	15	14	17	12							104
PACIFIC CHALLENGER	WDD9281	A	Anchorage	3	2	3	3	0	0							11
PACIFIC FREEDOM	WDD3686	A	Anchorage	0	0	0	4	2	1							7
PACIFIC RAVEN	WDD9283	A	Anchorage	1	0	0	0	6	6							13

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PACIFIC SANTA ANA	A8W13	A	Houston	0	0	0	0	0	14							14
PACIFIC STAR	WDD3686	A	Kodiak	1	0	1	1	0	0							3
PACIFIC WOLF	WDD9286	A	Anchorage	2	1	4	4	4	2							17
PANDALUS	WAV7611	A	Anchorage	0	3	5	7	12	48							75
PARADISE ACE	H9CL	A	Jacksonville	0	0	0	0	0	0							0
PARAGON	WDD9285	A	Anchorage	0	0	0	0	0	0							0
PARTICA	A8UF9	A	New York City	12	8	9	31	18	14							92
PATRIARCH	WBN3014	A	Jacksonville	3	9	0	0	0	3							15
PAUL GAUGUIN	C6TH9	A	Anchorage	7	73	67	40	45	64							296
PAUL R. TREGURTHA	WYR4481	A	Chicago	420	0	309	689	700	675							2793
PELICAN STATE	WDE4433	A	New Orleans	0	0	0	0	0	0							0
PERSEVERANCE	WDE5328	A	Anchorage	54	86	49	56	0	0							245
PHILADELPHIA EXPRESS	WDC6736	A	Houston	73	168	104	101	128	151							725
PHILIP R CLARKE	WDH7554	A	Chicago	0	0	2	18	17	20							57
PILOT	WBN3011	A	Jacksonville	0	0	0	0	0	0							0
PISCES (AWS)	WTDL	A	New Orleans	36	0	0	0	5	345							386
POINT SUR	WSC2276	A	Anchorage	0	0	2	0	0	0							2
POLAR ADVENTURE	WAZV	A	Seattle	28	29	6	6	37	8							114
POLAR CLOUD	WDF5296	A	Anchorage	0	0	1	7	15	19							42
POLAR DISCOVERY	WACW	A	Seattle	15	34	104	16	0	6							175
POLAR ENDEAVOUR	WCAJ	A	Seattle	46	12	28	20	4	0							110
POLAR ENDURANCE	WDG2085	A	Anchorage	0	21	0	1	8	6							36
POLAR ENTERPRISE	WRTF	A	Seattle	24	28	26	3	23	20							124
POLAR KING	WDC7562	A	Kodiak	0	0	0	0	0	0							0
POLAR RANGER	WDC8652	A	Anchorage	0	0	0	0	3	1							4
POLAR RESOLUTION	WDJK	A	Seattle	314	157	111	41	93	84							800
POLAR STORM	WDE8347	A	Anchorage	1	1	13	6	6	3							30
POLAR VIKING	WDD6494	A	Anchorage	0	9	13	21	0	0							43
PREMIUM DO BRASIL	A8BL4	A	Baltimore	0	0	0	0	0	16							16
PRESQUE ISLE	WDH7560	A	Chicago	42	0	0	34	35	47							158
PRESTIGE NEW YORK	KDUE	A	Jacksonville	0	0	0	0	0	0							0
PRIDE OF AMERICA	WNBE	A	Anchorage	17	0	0	0	0	0							17
PRIDE OF BALTIMORE II	WUW2120	A	Baltimore	0	0	0	0	0	0							0
PRINSENDAM	PBGH	A	Miami	111	72	105	67	88	73							516
PROSPEROUS	VRIA3	A	Anchorage	26	36	31	24	0	0							117
PSU EIGHTH	9V6346	A	Anchorage	474	321	208	290	166	301							1760
PT. THOMPSON	WBM5092	A	Kodiak	0	0	0	0	0	0							0
R. J. PFEIFFER	WRJP	A	Los Angeles	47	47	48	45	34	25							246
R/V KIYI	KAO107	A	Chicago	0	0	0	0	0	1							1
RADIANCE OF THE SEAS	C6SE7	A	Anchorage	77	10	17	33	20	0							157
RAINIER (AWS)	NWS0011	A	Seattle	0	0	0	0	0	0							0
RAINIER (AWS)	WTEF	A	Seattle	0	0	0	82	684	323							1089
RANGER	WBN5979	A	Jacksonville	0	6	0	14	6	0							26
REBECCA LYNN	WCW7977	A	Chicago	0	0	0	0	14	7							21
REDOUBT	WDD2451	A	Anchorage	0	0	18	0	11	40							69

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
REGATTA	V7DM3	A	Seattle	0	30	8	15	4	11							68
RESOLVE	WCZ5535	A	Baltimore	15	14	21	18	31	37							136
RHAPSODY OF THE SEAS	C6UA2	A	Anchorage	58	44	58	17	26	36							239
ROBERT C. SEAMANS	WDA4486	A	Anchorage	2	0	0	33	8	14							57
ROBERT GORDON SPROUL (AWS)	WSQ2674	A	Los Angeles	0	0	0	0	0	0							0
ROBERT BLOUGH	WDH7559	A	Chicago	200	0	93	338	325	295							1251
ROGER REVELLE (AWS)	KAOU	A	Los Angeles	743	495	744	719	744	675							4120
RONALD H. BROWN (AWS)	WTEC	A	Charleston	310	279	693	440	407	592							2721
RONALD N	A8PQ3	A	Anchorage	6	1	1	6	13	30							57
RTM DHAMBUL	9V2783	A	Anchorage	10	1	3	22	6	18							60
RYNDAM	PHFV	A	Miami	32	60	64	55	48	49							308
S/R AMERICAN PROGRESS	KAWM	A	Miami	5	2	0	0	5	21							33
SAGA ADVENTURE	VRBL4	A	Anchorage	0	0	0	0	0	2							2
SAGA ANDORINHA	VRMV6	A	Anchorage	0	0	0	0	0	0							0
SAGA FRONTIER	VRCP2	A	Anchorage	23	0	17	11	14	4							69
SAGA FUTURE	VRKX8	A	Anchorage	109	59	85	30	37	2							322
SAGA MONAL	VRZQ9	A	Anchorage	38	36	11	10	10	5							110
SAGA NAVIGATOR	VRDA4	A	Anchorage	15	16	5	0	0	0							36
SAGA PIONEER	VRED4	A	Anchorage	512	452	261	348	371	58							2002
SAGA SPRAY	VRWW5	A	Anchorage	4	14	0	0	0	0							18
SAGA VIKING	VRXO6	A	Anchorage	10	17	19	12	1	8							67
SAIGON EXPRESS	VRBT7	A	New York City	0	0	9	68	14	62							153
SAIPEM 7000	C6NO5	A	Anchorage	0	0	0	0	0	0							0
SALLY MAERSK	OZHS2	A	Seattle	12	0	0	0	4	0							16
SAM B	WDD5741	A	Kodiak	0	0	0	0	0	0							0
SAM LAUD	WZC7602	A	Chicago	84	0	0	3	66	72							225
SAMSON MARINER	WCN3586	A	Anchorage	4	3	0	6	2	4							19
SAMUEL DE CHAMPLAIN	WDC8307	A	Chicago	3	7	3	22	24	13							72
SAN SABA	V7UT8	A	Anchorage	16	13	7	1	4	2							43
SANDRA FOSS	WYL4908	A	Anchorage	0	0	0	0	0	6							6
SEA HAWK	WDD9287	A	Kodiak	0	0	0	0	0	0							0
SEA PRINCE	WYT8569	A	Anchorage	0	0	15	4	8	6							33
SEA VOYAGER	WCX9106	A	Kodiak	41	42	36	36	41	47							243
SEABOURN ODYSSEY	C6XC6	A	Anchorage	37	33	4	0	0	0							74
SEABULK ARCTIC	WCY7054	A	Miami	36	42	77	74	18	5							252
SEABULK TRADER	KNJK	A	Miami	0	0	10	33	49	36							128
SEA-LAND CHARGER	WDB9948	A	Los Angeles	26	34	0	0	0	0							60
SEA-LAND COMET	WDB9950	A	Los Angeles	35	29	11	7	0	0							82
SEA-LAND INTREPID	WDB9949	A	Los Angeles	18	16	16	0	0	0							50
SENTINEL	WBN6510	A	Jacksonville	0	5	11	0	5	4							25
SENTRY	WBN3013	A	Jacksonville	0	0	0	0	0	0							0
SERENADE OF THE SEAS	C6FV8	A	Miami	0	0	0	0	0	0							0
SESOK	WDE7899	A	Anchorage	0	0	0	4	22	34							60
SEVEN SEAS MARINER	C6VV8	A	Anchorage	219	163	117	145	141	112							897
SEVEN SEAS NAVIGATOR	C6ZI9	A	Anchorage	0	43	118	183	114	306							764

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SEVEN SEAS VOYAGER	C6SW3	A	Anchorage	25	21	20	13	0	2							81
SHANDONG DA CHENG	9V9131	A	Anchorage	88	10	4	23	58	32							215
SHANDONG DA DE	9V9128	A	Anchorage	191	255	57	40	51	38							632
SHEILA MCDEVITT	WDE2542	A	New Orleans	0	0	0	0	0	0							0
SIDNEY FOSS	WYL5445	A	Anchorage	2	46	0	0	0	2							50
SIERRA	WSNB	A	Seattle	2	13	35	0	0	0							50
SIGAS SILVIA	S6ES6	A	Anchorage	521	584	490	450	114	302							2461
SIKU	WCQ6174	A	Anchorage	0	0	0	77	225	215							517
SIKULIAQ (AWS)	WDG7520	A	Anchorage	715	632	743	383	0	0							2473
SILVER SHADOW	C6FN6	A	Anchorage	0	0	0	0	15	13							28
SIRIUS	WDD9272	A	Kodiak	0	0	0	0	0	0							0
SIRIUS VOYAGER	C6FG9	A	Anchorage	0	0	0	0	0	0							0
SNOHOMISH	WDB9022	A	Anchorage	0	0	0	17	7	0							24
SOL DO BRASIL	ELQQ4	A	Baltimore	28	13	26	80	62	58							267
SOVEREIGN MAERSK	OYGA2	A	Seattle	0	1	2	0	0	6							9
SPAR	NJAR	A	Kodiak	0	0	0	0	5	4							9
SPLENDOUR OF THE SEAS	C6TZ9	A	Anchorage	157	168	114	132	91	48							710
SS MAUI	WSLH	A	Seattle	24	29	21	20	0	0							94
ST LOUIS EXPRESS	WDD3825	A	Houston	168	174	65	160	174	117							858
ST. CLAIR	WZA4027	A	Chicago	12	0	0	3	25	39							79
STACEY FOSS	WYL4909	A	Anchorage	0	0	0	0	0	14							14
STAR ATLANTIC	LAYG5	A	Anchorage	31	0	0	1	17	11							60
STAR BREEZE	C6FR4	A	Anchorage	0	0	0	0	0	0							0
STAR DIEPPE	LEQZ3	A	Anchorage	19	58	38	23	0	0							138
STAR EAGLE	LAWO2	A	New Orleans	1	4	0	1	29	3							38
STAR EVVIVA	LAHE2	A	Seattle	26	33	41	2	14	0							116
STAR FLORIDA	LAVW4	A	Jacksonville	0	0	0	0	0	0							0
STAR FUJI	LAVX4	A	Seattle	41	9	10	5	0	0							65
STAR GRAN	LADR4	A	Jacksonville	0	0	0	0	0	20							20
STAR HANSA	LAXP4	A	Jacksonville	0	0	0	0	0	0							0
STAR HARMONIA	LAGB5	A	Baltimore	0	0	0	0	0	0							0
STAR HERDLA	LAVD4	A	New Orleans	28	0	8	38	23	31							128
STAR HIDRA	LAVN4	A	Baltimore	6	7	0	0	7	13							33
STAR ISMENE	LANT5	A	Baltimore	8	19	11	0	45	0							83
STAR ISTIND	LAMP5	A	Seattle	17	28	0	5	0	48							98
STAR JAPAN	LAZV5	A	Seattle	18	18	2	25	36	50							149
STAR JAVA	LAJS6	A	Baltimore	0	0	0	0	0	0							0
STAR JUVENTAS	LAZU5	A	Baltimore	0	0	0	0	0	11							11
STAR KILIMANJARO	LAIG7	A	Anchorage	0	0	0	0	0	1							1
STAR KINN	LAJF7	A	Anchorage	0	0	0	0	0	0							0
STAR KVARVEN	LAJK7	A	Seattle	28	0	3	31	0	29							91
STAR LEGEND	C6FR6	A	Anchorage	65	44	177	80	0	0							366
STAR LIMA	LAPE7	A	Jacksonville	0	15	26	21	3	11							76
STAR LINDESNES	LAQJ7	A	Jacksonville	48	50	30	29	20	12							189
STAR LIVORNO	LAQM7	A	Houston	0	0	0	0	0	39							39

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STAR PRIDE	C6FR5	A	Anchorage	0	0	0	0	0	0							0
STATE OF MAINE	WCAH	A	New York City	45	0	0	0	64	20							129
STATENDAM	PHSG	A	Miami	105	80	200	233	240	113							971
STEWART J. CORT	WDC6055	A	Chicago	445	0	44	692	700	710							2592
STIKINE	WDC8583	A	Anchorage	3	0	0	9	9	9							30
SUNSHINE STATE	WDE4432	A	Miami	7	10	0	1	1	8							27
SUPERSTAR LIBRA	C6DM2	A	Anchorage	122	110	118	117	123	114							704
SYLVIE	VRCQ2	A	Anchorage	9	11	0	0	0	0							20
TAKU	WI9491	A	Anchorage	1	1	1	2	1	0							6
TALISMAN	LAOW5	A	Jacksonville	54	14	28	44	84	89							211
TAN'ERLIQ	WDF2025	A	Kodiak	0	0	0	0	0	0							0
TANGGUH HIRI	C6XC2	A	Anchorage	43	43	29	44	84	89							332
TAURUS	WDF4091	A	Kodiak	0	0	0	0	0	0							0
TECUMSEH	CFN5905	A	Chicago	0	0	0	15	11	14							40
TEXAS	VRFH2	A	Seattle	5	0	0	29	0	0							34
THOMAS G. THOMPSON	KTDQ	A	Seattle	0	53	66	18	24	27							188
THOMAS JEFFERSON (AWS)	WTEA	A	Norfolk	25	0	38	164	443	531							1201
TIGLAX	WZ3423	A	Anchorage	0	0	0	0	0	0							0
TIM S. DOOL	VGPY	A	Chicago	0	0	0	22	36	18							76
TRIUMPH	WDC9555	A	Anchorage	0	0	0	0	0	1							1
TROPIC CARIB	J8PE3	A	Miami	60	64	65	0	1	0							190
TROPIC EXPRESS	J8QB8	A	Miami	57	66	70	58	94	102							447
TROPIC JADE	J8NY	A	Miami	16	11	27	31	12	0							97
TROPIC LURE	J8PD	A	Miami	11	3	31	65	63	58							231
TROPIC MIST	J8NZ	A	Miami	21	20	6	13	24	10							94
TROPIC NIGHT	J8NX	A	Miami	40	33	44	31	30	41							219
TROPIC OPAL	J8NW	A	Miami	6	23	47	44	31	16							167
TROPIC PALM	J8PB	A	Miami	34	12	16	22	24	23							131
TROPIC SUN	J8AZ2	A	Miami	92	87	117	11	41	89							437
TROPIC TIDE	J8AZ3	A	Miami	37	31	35	42	18	40							203
TROPIC UNITY	J8PE4	A	Miami	0	5	24	41	72	34							176
TS KENNEDY	KVMU	A	New York City	90	95	0	0	0	0							185
TUG DEFIANCE	WDG2047	A	Chicago	20	0	0	4	51	27							102
TUG DOROTHY ANN	WDE8761	A	Chicago	0	53	742	633	718	716							2862
TUG MICHIGAN	WDF5344	A	Chicago	107	29	0	11	21	18							186
TUG SPARTAN	WDF5483	A	Chicago	0	0	1	9	29	24							63
TUSTUMENA	WNGW	A	Anchorage	66	35	20	0	29	65							215
TYCO DECISIVE	V7DI7	A	Baltimore	0	0	0	0	0	0							0
TYCO DURABLE	V7DI8	A	Baltimore	0	0	0	0	0	0							0
TYCO RESPONDER	V7CY9	A	Baltimore	0	0	0	20	21	57							98
TYCOM RELIANCE	V7CZ2	A	Baltimore	0	0	0	0	0	0							0
UBC SAIKI	P3GY9	A	Seattle	8	4	16	13	14	23							78
UBC SANTA MARTA	5BDK2	A	New Orleans	5	15	14	6	14	1							55
UMANG	A8PF6	A	Anchorage	0	0	0	0	0	0							0
UNIQUE BRILLIANCE	VRXK4	A	Anchorage	0	0	0	0	0	0							0

SHIP NAME	CALL	Status	PMO	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
UNIQUE EXPLORER	VRGT8	A	Anchorage	117	44	56	87	23	0							327
USCGC ALDER	NGML	A	Chicago	6	0	8	3	31	0							48
USCGC BRISTOL BAY	NRLY	A	Chicago	3	0	28	32	17	1							81
USCGC HEALY	NEPP	A	Seattle	0	0	0	0	1	33							34
USCGC MACKINAW	NBGB	A	Chicago	0	0	0	7	16	0							23
VALDEZ RESEARCH (AWS)	WXJ63	A	Anchorage	743	669	721	690	713	690							4226
VEENDAM	PHEO	A	Miami	289	433	361	357	25	140							1805
VEGA VOYAGER	C6FV3	A	Anchorage	0	0	0	0	0	0							0
VISION OF THE SEAS	C6SE8	A	Miami	21	28	19	1	1	0							70
VOLENDAM	PCHM	A	Anchorage	56	129	212	158	125	72							752
VOYAGER OF THE SEAS	C6SE5	A	Miami	0	0	0	0	0	0							0
W. H. BLOUNT	C6JT8	A	New Orleans	60	55	40	47	44	55							301
WALTER J. MCCARTHY JR.	WXU3434	A	Chicago	18	0	0	60	88	29							195
WASHINGTON EXPRESS	WDD3826	A	Houston	63	30	53	102	120	100							468
WEST VELA	3FNX5	A	Houston	0	0	0	0	0	0							0
WESTERDAM	PINX	A	Miami	183	112	113	108	50	92							658
WESTERN NAVIGATOR	WDE6616	A	Anchorage	0	0	1	0	0	0							1
WESTERN RANGER	WBN3008	A	Anchorage	3	5	0	0	1	19							28
WESTWOOD CASCADE	ELWZ5	A	Seattle	38	39	66	41	8	5							197
WESTWOOD COLUMBIA	C6SI4	A	Seattle	16	14	27	29	31	37							154
WESTWOOD OLYMPIA	C6UB2	A	Seattle	0	3	26	9	8	0							46
WESTWOOD RAINIER	C6SI3	A	Seattle	1	10	10	12	16	11							60
WHITTIER RESEARCH (AWS)	KXI29	A	Anchorage	743	669	744	720	744	720							4340
WILFRED SYKES	WC5932	A	Chicago	0	0	0	501	744	719							1964
WOLSTAD	WCY2270	A	Kodiak	0	0	0	0	0	0							0
XPEDITION	HC2083	A	Anchorage	8	0	0	16	0	1							25
YACHT EXPRESS	PJVV	A	Miami	0	0	0	0	0	0							0
YM ANTWERP	VRET5	A	Anchorage	24	28	30	8	4	0							94
YORKTOWN EXPRESS	WDD6127	A	Houston	35	41	18	21	2	35							152
YUHSAN	H9TE	A	Anchorage	0	0	0	7	32	25							64
YUYO SPIRITS	3FNF4	A	Anchorage	33	0	0	0	0	20							53
ZAANDAM	PDAN	A	Anchorage	498	524	499	105	80	162							1868
ZIM CHICAGO	A8SI9	A	Seattle	0	0	0	4	4	0							8
ZIM DJIBOUTI	A8SI4	A	Seattle	0	12	29	40	6	30							117
ZIM SHANGHAI	VRGA6	A	New York City	18	12	16	19	26	18							109
ZIM YOKOHAMA	A8MY4	A	Charleston	13	17	21	4	6	0							61
ZUIDERDAM	PBIG	A	Anchorage	141	81	175	163	197	135							892

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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) etc. 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.

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