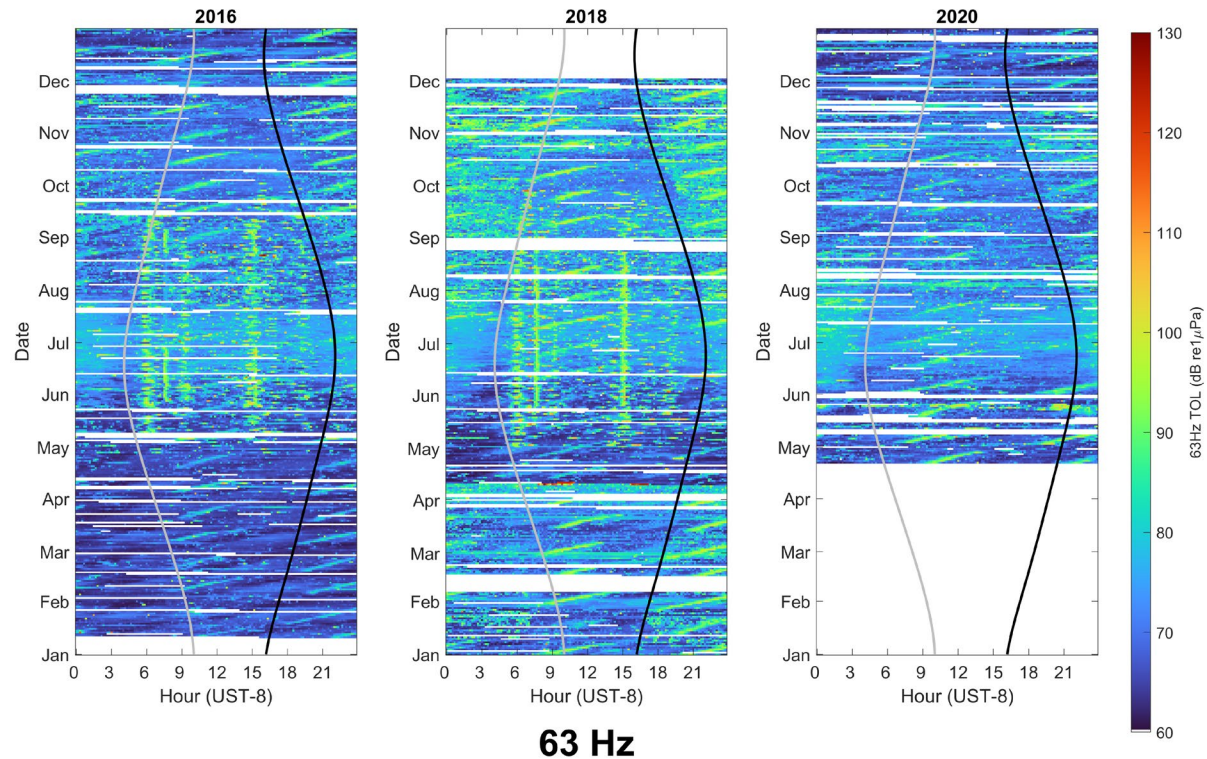


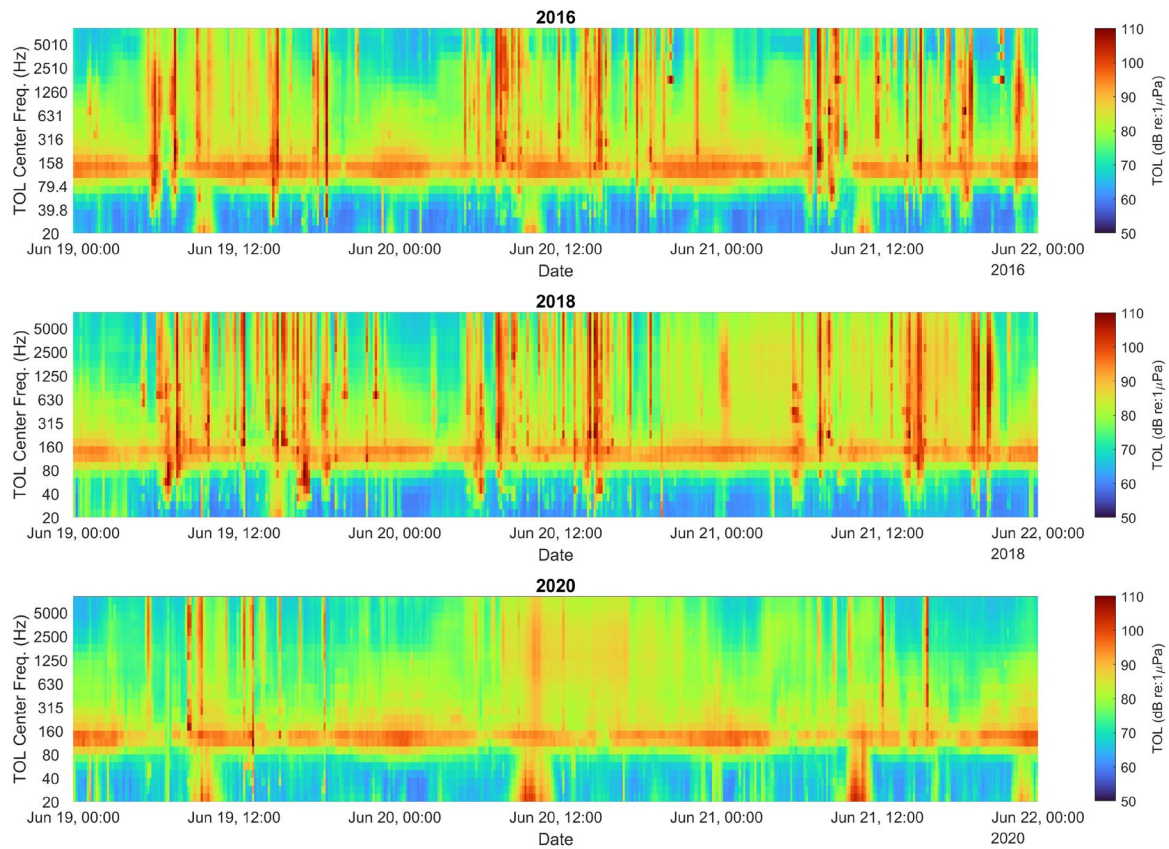
Supplemental Material for Gabriele, Ponirakis and Klinck 2021: *Underwater sound levels in Glacier Bay during reduced vessel traffic due to the COVID-19 pandemic* Frontiers in Marine Science 2021

Supplementary Table 1. Distribution of broadband sound levels (17.8-8,910 Hz dB re 1 μ Pa) at 10-minute resolution in Glacier Bay during the Visitor Season (May-September), Off-Season (October-April), Operating Hours (06:00-20:00 (UST-8)). The color shading denotes relative sound levels.

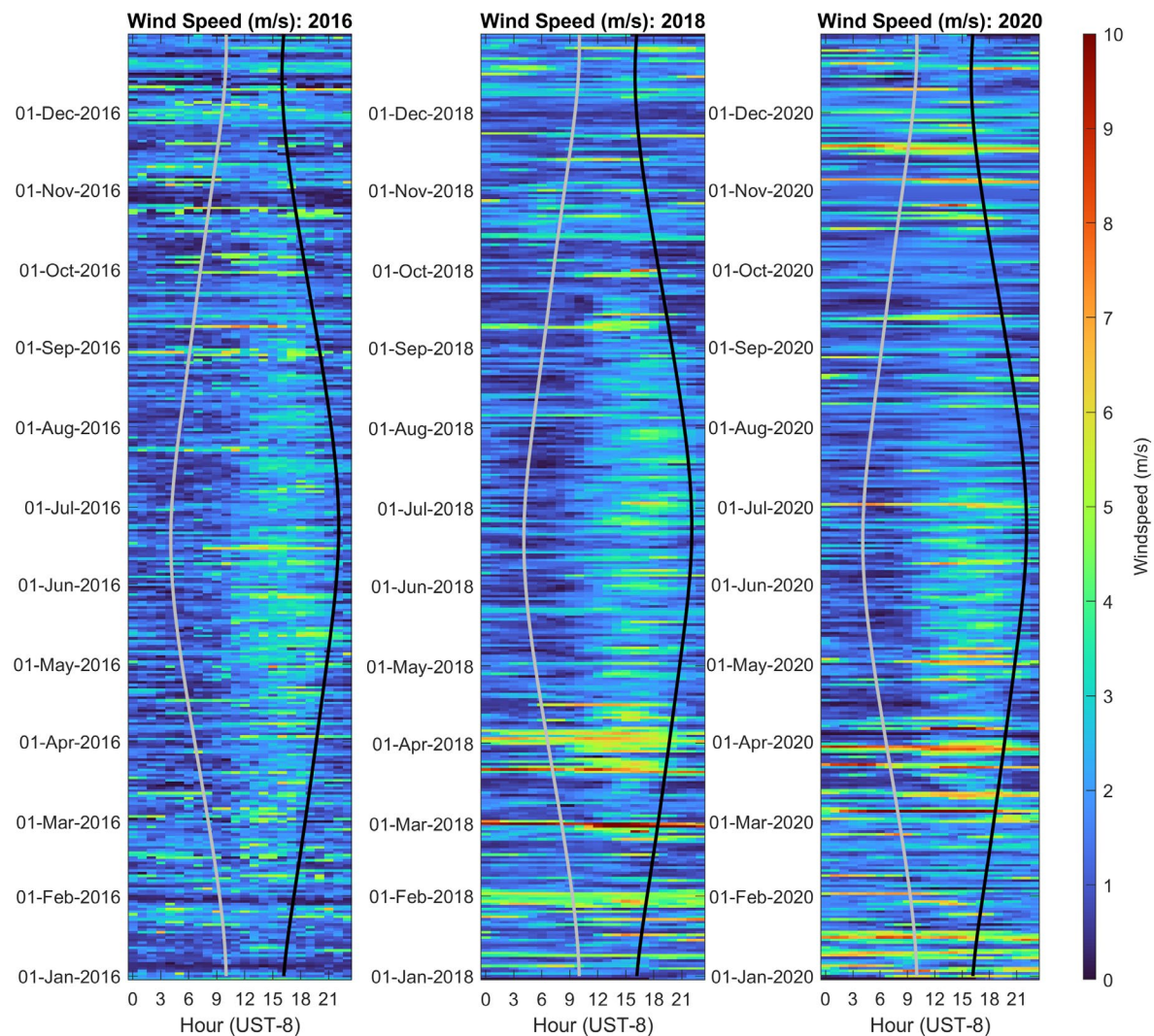
Time Period	Percentiles						
	1%	10%	25%	50%	75%	95%	99%
2016 - Visitor Season & Open Hours	82.6	87.6	92.9	98.8	104.7	113.2	118.9
2018 - Visitor Season & Open Hours	82.8	88.8	93.1	99.0	104.7	113.8	119.0
2020 - Visitor Season & Open Hours	81.9	86.1	90.8	96.3	100.5	109.1	114.9
2016 - Visitor Season & Off Hours	80.8	84.6	88.8	94.9	99.4	107.1	113.7
2018 - Visitor Season & Off Hours	79.6	87.2	92.4	97.2	100.5	108.0	114.0
2020 - Visitor Season & Off Hours	81.5	85.5	90.2	96.1	100.5	105.1	111.8
2016 - Off-Season & Open Hours	79.8	84.3	87.6	92.3	96.6	104.1	113.1
2018 - Off-Season & Open Hours	81.1	85.8	90.0	94.8	99.2	107.3	113.4
2020 - Off-Season & Open Hours	80.5	84.5	88.5	93.7	98.4	105.0	112.6
2016 - Off-Season & Off Hours	78.7	82.5	86.3	91.3	96.5	105.3	113.9
2018 - Off-Season & Off Hours	80.5	85.6	90.4	95.5	100.4	108.8	113.6
2020 - Off-Season & Off Hours	79.6	83.2	87.3	93.0	98.5	105.9	112.0



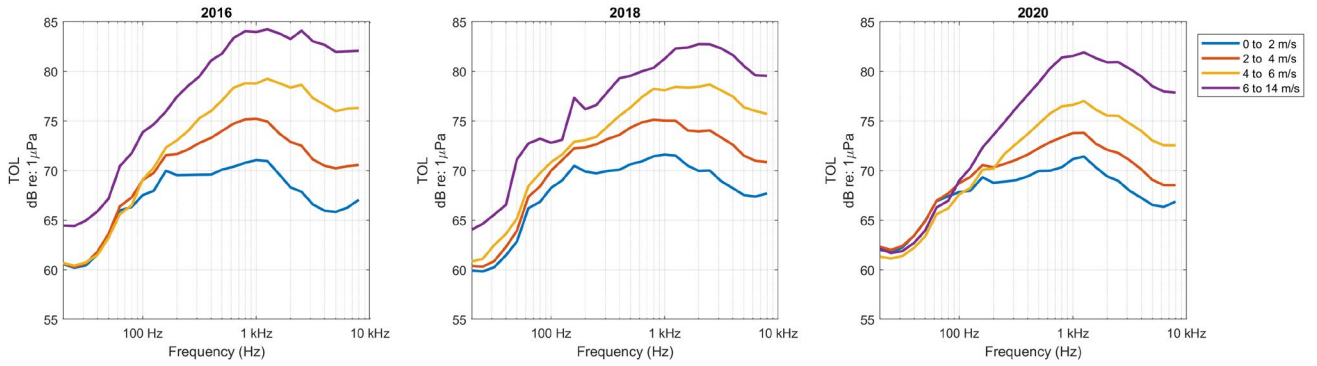
Supplemental Figure 1. Spectral density for the 63.1 Hz one-third octave band in lower Glacier Bay. The 63 Hz band is considered a standard metric for documenting the effect of shipping traffic on the underwater sound environment. The light gray line indicates sunrise time and the black line indicates sunset time. Spectral density plots for all one-third octave bands (8.91-8910 Hz) in 2016, 2018 and 2020 are compiled in [Video 1](#).



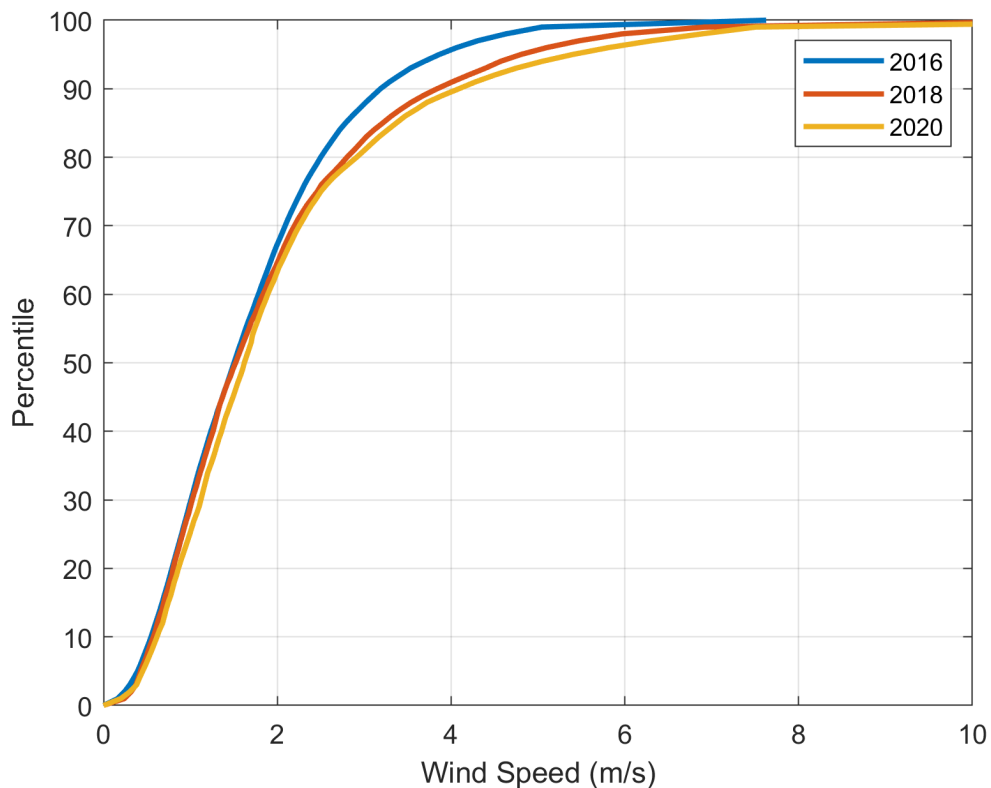
Supplemental Figure 2. One-third octave (TOL) long term spectral average plot for June 19-22 in 2016, 2018 and 2020. At this scale, individual noise events are visible including numerous vessel passages. The sound energy from harbour seal vocalizations is visible as the nearly continuous horizontal signal between 79.4 and 158 Hz. The periodic red energy at low frequencies (<39.8 Hz) is caused by tidal flow over the hydrophone sensor.



Supplemental Figure 3. Hourly wind speed data in Glacier Bay for 2016, 2018 and 2020 with wind speed indicated according to the color scale at right. Wind creates surface disturbances that result in wave, turbulence, droplet and bubble activity that create ‘wind noise’, long recognized as a primary source of underwater noise. Intense wind events (storms) are shown in yellow and red. The predominant summer wind pattern of increasing afternoon westerly or south-westerly winds is also evident. The light gray line indicates sunrise time and the black line indicates sunset time.

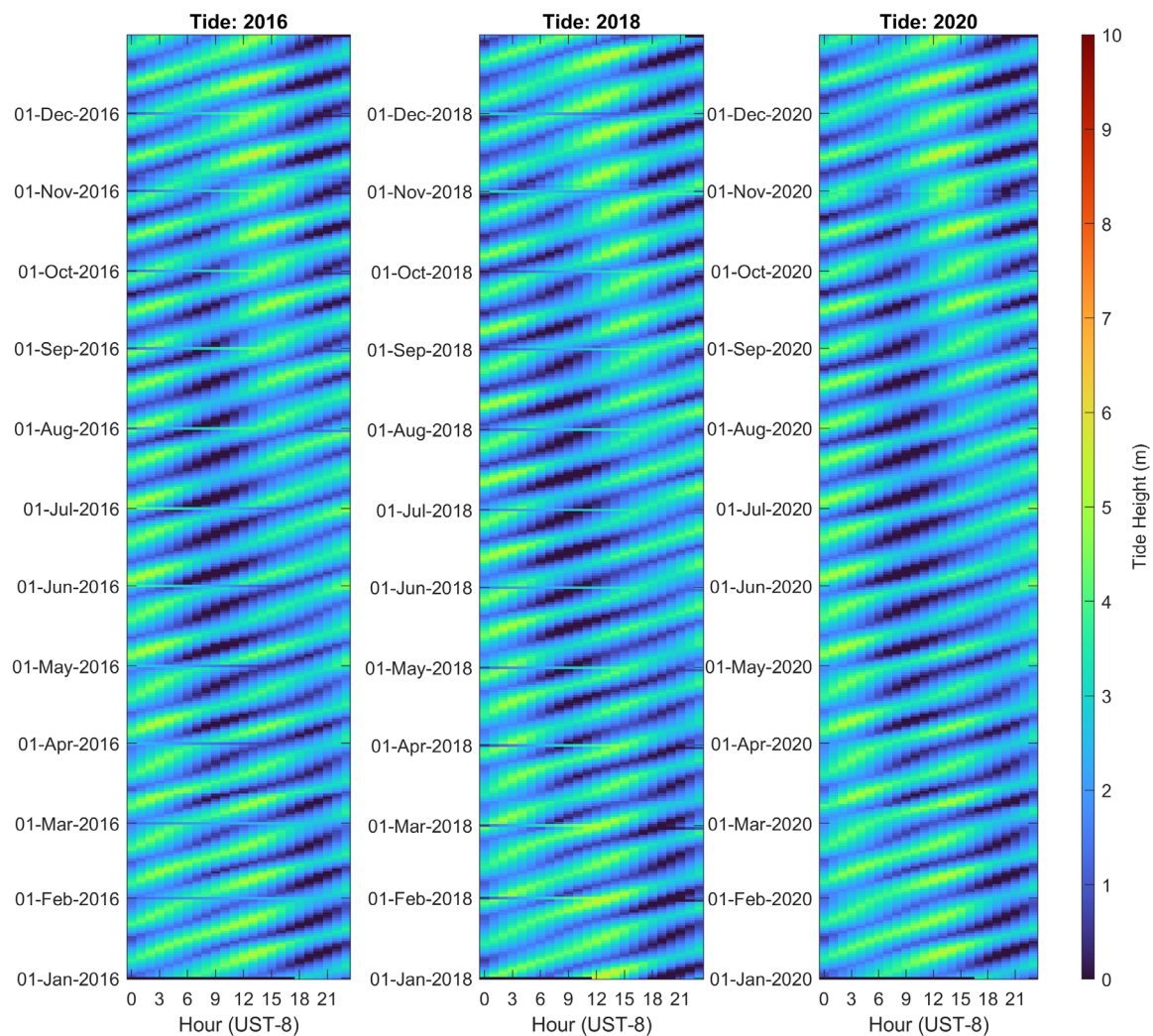


Supplemental Figure 4. 10th Percentile Distribution of Leq, 10-minute one-third-octave band sound levels (TOL) by year as a function of wind speed for the May-September Operating Season.



Supplemental Figure 5. Cumulative distribution of wind speeds in lower Glacier Bay in May-September 2016, 2018 and 2020. Wind speeds are based on data from DarkSky API in 2016 and from the NOAA National Data Buoy Center station BLTA2 in Bartlett Cove in 2018 and 2020.

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Supplemental Figure 6. Hourly magnitude of tidal flow in lower Glacier Bay in 2016, 2018 and 2020, based on data from DarkSky API. Tidal flow over the hydrophone sensor is an artifact that does not create sound but recognizing its pattern and impact on noise measurements is important.

Supplemental Figure 7. Cruise ship schedule for 2016

Sunday, April 24	Monday, April 25	Tuesday, April 26	Wednesday, April 27	Thursday, April 28 GB CRYSTAL SERENITY 07:00 - 15:00	Friday, April 29	Saturday, April 30 GB VOLENDAM 07:00 - 16:00
Sunday, May 1	Monday, May 2	Tuesday, May 3	Wednesday, May 4 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 5 GB NOORDAM 07:00 - 16:00	Friday, May 6	Saturday, May 7
Sunday, May 8 GB VOLENDAM 07:00 - 16:00 GB CROWN PRINCESS 11:00 - 19:30	Monday, May 9	Tuesday, May 10 GB NORWEGIAN PEARL 06:00 - 15:00 GB WESTERDAM 07:00 - 16:00	Wednesday, May 11 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 12 GB NOORDAM 07:00 - 16:00	Friday, May 13	Saturday, May 14
Sunday, May 15 GB VOLENDAM 07:00 - 16:00 GB CROWN PRINCESS 11:00 - 19:30	Monday, May 16 GB GRAND PRINCESS 06:00 - 15:00 GB ISLAND PRINCESS 06:00 - 15:00	Tuesday, May 17 GB STAR PRINCESS 06:00 - 15:00 GB WESTERDAM 07:00 - 16:00	Wednesday, May 18 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 19 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, May 20 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, May 21 GB CARNIVAL LEGEND 06:00 - 15:00
Sunday, May 22 GB VOLENDAM 07:00 - 16:00	Monday, May 23 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, May 24 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, May 25 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 26 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, May 27 GB NORWEGIAN SUN 06:00 - 15:00 GB ZAANDAM 07:00 - 16:00	Saturday, May 28 GB CARNIVAL LEGEND 06:00 - 15:00
Sunday, May 29 GB VOLENDAM 07:00 - 16:00	Monday, May 30 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, May 31 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, June 1 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 2 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, June 3 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, June 4 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, June 5 GB GRAND PRINCESS 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, June 6 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, June 7 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, June 8 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 9 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, June 10 GB ZAANDAM 07:00 - 16:00	Saturday, June 11
Sunday, June 12 GB VOLENDAM 07:00 - 16:00	Monday, June 13 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, June 14 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, June 15 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 16 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, June 17 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, June 18 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, June 19 GB VOLENDAM 07:00 - 16:00	Monday, June 20 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, June 21 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, June 22 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 23 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, June 24 GB ZAANDAM 07:00 - 16:00 GB CRYSTAL SERENITY 07:00 - 17:00	Saturday, June 25 GB GRAND PRINCESS 06:00 - 15:00
Sunday, June 26 GB VOLENDAM 07:00 - 16:00	Monday, June 27 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, June 28 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, June 29 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 30 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, July 1 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, July 2 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, July 3 GB VOLENDAM 07:00 - 16:00	Monday, July 4 GB GRAND PRINCESS 09:15 - 19:30 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, July 5 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, July 6 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 7 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, July 8 GB ZAANDAM 07:00 - 16:00 GB CRYSTAL SERENITY 07:00 - 17:00	Saturday, July 9
Sunday, July 10 GB VOLENDAM 07:00 - 16:00	Monday, July 11 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, July 12 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, July 13 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 14 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, July 15 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, July 16 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, July 17 GB VOLENDAM 07:00 - 16:00	Monday, July 18 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, July 19 GB NOORDAM 10:00 - 19:00	Wednesday, July 20 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 21 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, July 22 GB ZAANDAM 07:00 - 16:00 GB CRYSTAL SERENITY 07:00 - 18:00	Saturday, July 23
Sunday, July 24 GB VOLENDAM 07:00 - 16:00	Monday, July 25 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, July 26 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, July 27 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 28 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, July 29 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, July 30 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, July 31 GB VOLENDAM 07:00 - 16:00	Monday, August 1 GB SUN PRINCESS 06:00 - 15:00 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, August 2 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, August 3 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 4 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, August 5 GB ZAANDAM 07:00 - 16:00	Saturday, August 6
Sunday, August 7 GB VOLENDAM 07:00 - 16:00	Monday, August 8 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, August 9 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, August 10 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 11 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, August 12 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, August 13 GB NORWEGIAN SUN 06:00 - 15:00 GB CRYSTAL SERENITY 08:00 - 17:00

Supplemental Figure 7. Cruise ship schedule for 2016, continued

Sunday, August 14 GB GRAND PRINCESS 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, August 15 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, August 16 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, August 17 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 18 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, August 19 GB ZAANDAM 07:00 - 16:00	Saturday, August 20
Sunday, August 21 GB VOLENDAM 07:00 - 16:00	Monday, August 22 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, August 23 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, August 24 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 25 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, August 26 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, August 27 GB NORWEGIAN SUN 06:00 - 15:00
Sunday, August 28 GB VOLENDAM 07:00 - 16:00	Monday, August 29 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, August 30 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, August 31 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 1 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, September 2 GB ZAANDAM 07:00 - 16:00	Saturday, September 3 GB GRAND PRINCESS 06:00 - 15:00
Sunday, September 4 GB VOLENDAM 07:00 - 16:00	Monday, September 5 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, September 6 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, September 7 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 8 GB NORWEGIAN PEARL 06:00 - 15:00 GB CORAL PRINCESS 06:15 - 15:15	Friday, September 9 GB NOORDAM 07:00 - 16:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, September 10 GB NORWEGIAN SUN 06:00 - 15:00 GB CARNIVAL LEGEND 07:00 - 16:00
Sunday, September 11 GB VOLENDAM 07:00 - 16:00	Monday, September 12 GB GRAND PRINCESS 09:15 - 19:30 GB CORAL PRINCESS 09:15 - 19:30	Tuesday, September 13 GB WESTERDAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, September 14 GB CROWN PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 15 GB NORWEGIAN PEARL 06:00 - 15:00 GB STAR PRINCESS 06:15 - 15:15	Friday, September 16 GB ZAANDAM 07:00 - 16:00	Saturday, September 17
Sunday, September 18 GB VOLENDAM 07:00 - 16:00	Monday, September 19 GB STAR PRINCESS 09:15 - 19:30	Tuesday, September 20 GB WESTERDAM 07:00 - 16:00 GB ZAANDAM 10:00 - 19:00	Wednesday, September 21 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 22 GB NORWEGIAN PEARL 06:00 - 15:00 GB NOORDAM 07:00 - 16:00	Friday, September 23 GB NORWEGIAN SUN 06:00 - 15:00 GB NORWEGIAN JEWEL 07:00 - 16:00	Saturday, September 24
Sunday, September 25 GB VOLENDAM 07:00 - 16:00	Monday, September 26	Tuesday, September 27 GB WESTERDAM 07:00 - 16:00	Wednesday, September 28 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 29	Friday, September 30	Saturday, October 1
Sunday, October 2 GB VOLENDAM 07:00 - 16:00	Monday, October 3	Tuesday, October 4	Wednesday, October 5	Thursday, October 6	Friday, October 7	Saturday, October 8

Supplemental Figure 8. Cruise ship schedule for 2018

Sunday, April 29	Monday, April 30	Tuesday, May 1	Wednesday, May 2 GB RUBY PRINCESS 06:00 - 15:00	Thursday, May 3 GB NORWEGIAN PEARL 06:00 - 15:00 GB WESTERDAM 07:00 - 16:00	Friday, May 4 GB EMERALD PRINCESS 06:00 - 15:00	Saturday, May 5
Sunday, May 6 GB ISLAND PRINCESS 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, May 7 GB STAR PRINCESS 11:00 - 20:00	Tuesday, May 8	Wednesday, May 9 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 10 GB NORWEGIAN PEARL 06:00 - 15:00 GB WESTERDAM 07:00 - 16:00	Friday, May 11 GB GRAND PRINCESS 06:00 - 15:00	Saturday, May 12
Sunday, May 13 GB ISLAND PRINCESS 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, May 14 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, May 15 GB EURODAM 07:00 - 16:00 GB NOORDAM 08:00 - 17:00	Wednesday, May 16 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 17 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, May 18 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, May 19 GB CARNIVAL LEGEND 06:00 - 15:00
Sunday, May 20 GB NORWEGIAN JEWEL 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, May 21 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, May 22 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, May 23 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 24 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, May 25 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, May 26 GB CARNIVAL LEGEND 06:00 - 15:00
Sunday, May 27 GB VOLENDAM 07:00 - 16:00	Monday, May 28 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, May 29 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, May 30 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, May 31 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, June 1 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, June 2
Sunday, June 3 GB VOLENDAM 07:00 - 16:00	Monday, June 4 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, June 5 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, June 6 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 7 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, June 8 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, June 9
Sunday, June 10 GB VOLENDAM 07:00 - 16:00	Monday, June 11 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, June 12 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, June 13 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 14 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, June 15 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, June 16 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, June 17 GB VOLENDAM 07:00 - 16:00	Monday, June 18 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, June 19 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, June 20 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 21 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, June 22 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, June 23
Sunday, June 24 GB VOLENDAM 07:00 - 16:00	Monday, June 25 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, June 26 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, June 27 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, June 28 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, June 29 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, June 30 GB GRAND PRINCESS 06:00 - 15:00 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, July 1 GB VOLENDAM 07:00 - 16:00	Monday, July 2 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, July 3 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, July 4 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 5 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, July 6 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, July 7
Sunday, July 8 GB VOLENDAM 07:00 - 16:00	Monday, July 9 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, July 10 GB NOORDAM 10:00 - 19:00	Wednesday, July 11 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 12 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, July 13 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, July 14 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, July 15 GB VOLENDAM 07:00 - 16:00	Monday, July 16 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, July 17 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, July 18 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 19 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, July 20 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, July 21
Sunday, July 22 GB VOLENDAM 07:00 - 16:00	Monday, July 23 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, July 24 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, July 25 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, July 26 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, July 27 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, July 28 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, July 29 GB VOLENDAM 07:00 - 16:00	Monday, July 30 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, July 31 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, August 1 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 2 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, August 3 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, August 4
Sunday, August 5 GB VOLENDAM 07:00 - 16:00	Monday, August 6 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, August 7 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, August 8 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 9 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, August 10 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, August 11 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, August 12 GB VOLENDAM 07:00 - 16:00	Monday, August 13 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, August 14 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, August 15 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 16 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, August 17 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, August 18

Supplemental Figure 8. Cruise ship schedule for 2018, continued

Sunday, August 19 GB GRAND PRINCESS 06:00 - 15:00 GB VOLENDAM 07:00 - 16:00	Monday, August 20 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, August 21 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, August 22 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 23 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, August 24 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, August 25 GB NORWEGIAN JEWEL 06:00 - 15:00
Sunday, August 26 GB VOLENDAM 07:00 - 16:00	Monday, August 27 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, August 28 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, August 29 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, August 30 GB GOLDEN PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, August 31 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, September 1 GB CARNIVAL SPLENDOR 07:00 - 16:00 GB CARNIVAL LEGEND 07:00 - 16:00
Sunday, September 2 GB VOLENDAM 07:00 - 16:00	Monday, September 3 GB CORAL PRINCESS 06:00 - 15:00 GB GOLDEN PRINCESS 09:15 - 19:30	Tuesday, September 4 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, September 5 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 6 GB STAR PRINCESS 06:00 - 15:00 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, September 7 GB WESTERDAM 07:00 - 17:00 GB CORAL PRINCESS 09:15 - 19:30	Saturday, September 8 GB NORWEGIAN JEWEL 06:00 - 15:00 GB GRAND PRINCESS 07:00 - 16:00
Sunday, September 9 GB VOLENDAM 07:00 - 16:00 GB CARNIVAL LEGEND 07:00 - 16:00	Monday, September 10 GB ISLAND PRINCESS 06:00 - 15:00 GB STAR PRINCESS 09:15 - 19:30	Tuesday, September 11 GB EURODAM 07:00 - 16:00 GB WESTERDAM 10:00 - 19:00	Wednesday, September 12 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 13 GB NORWEGIAN PEARL 06:00 - 15:00	Friday, September 14 GB NOORDAM 07:00 - 17:00 GB ISLAND PRINCESS 09:15 - 19:30	Saturday, September 15
Sunday, September 16 GB VOLENDAM 07:00 - 16:00 GB GOLDEN PRINCESS 10:00 - 19:00	Monday, September 17 GB GRAND PRINCESS 07:00 - 16:00	Tuesday, September 18 GB EURODAM 07:00 - 16:00 GB NOORDAM 10:00 - 19:00	Wednesday, September 19 GB RUBY PRINCESS 06:00 - 15:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 20 GB NORWEGIAN PEARL 06:00 - 15:00 GB WESTERDAM 07:00 - 16:00	Friday, September 21	Saturday, September 22
Sunday, September 23 GB VOLENDAM 07:00 - 16:00	Monday, September 24	Tuesday, September 25 GB CORAL PRINCESS 07:00 - 16:00 GB EURODAM 07:00 - 16:00	Wednesday, September 26 GB STAR PRINCESS 07:00 - 16:00 GB NIEUW AMSTERDAM 07:00 - 16:00	Thursday, September 27 GB NORWEGIAN PEARL 06:00 - 15:00 GB NOORDAM 07:00 - 16:00	Friday, September 28	Saturday, September 29
Sunday, September 30	Monday, October 1	Tuesday, October 2	Wednesday, October 3 GB WESTERDAM 07:00 - 16:00	Thursday, October 4	Friday, October 5	Saturday, October 6