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(東京海洋大学)

2018/2019 Annual Cruise Report of the T/V
Shinyo Maru Voyage : 【SY-18-13】 Cruise
Report

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| メタデータ | 言語: jpn 出版者: 公開日: 2020-02-28 キーワード (Ja): キーワード (En): 作成者: メールアドレス: 所属: |
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4. 【SY-18-13】航海報告 (SY-18-13 Cruise Report)

4.1 航海の概要及び航海日程 (Cruise Summary and Cruise Itineraries)

この航海は、海洋科学部 4 年次生のうち専攻科進学予定者を対象とした乗船漁業実習Ⅳ【SY-18-13】として実習生 20 名が乗船し、平成 30 年 12 月 20 日から 12 月 24 日まで操船訓練実習、平成 31 年 1 月 29 日から平成 31 年 3 月 12 日までの日程で長期航海実習を実施した。

この実習航海は、本学海洋科学部 4 年次生が専攻科へ進学する前の総まとめの航海であり、基本的な航海学（天文航法）、運用学を習得することを主目的とした航海である。東京出港後、本州南岸を航行し関門海峡を通過し、東シナ海を通り、南西諸島からマグロ操業を行いながら北太平洋を東航し、小笠原諸島に寄港、東京向け北航する航海を実施した（3316.4 マイル）。航海途中には、小部湾、長崎港、古仁屋港（奄美大島）、那覇港、二見港（小笠原）、三崎港へ寄港した。

実習生は漁業実習として奄美大島東方海上にて延縄操業実習を行い、漁具の構成、操業方法を学ぶとともに、漁獲物の分類及び処理法を習得した。操業後には操船訓練を実施し、落水者救助を想定した操船を経験した。那覇港では海技試験を受験した。

Table 4.1 実施表 (Cruise Itineraries)

| Port | Distance (miles) | Arrival Date | Departure Date |
|-------------------|------------------|---------------|----------------|
| Keihin (Tokyo) | | - | Jan, 29, 2019 |
| | 231.8 | | |
| Owase Bay | | Jan, 31, 2019 | Jan, 31, 2019 |
| | 362.8 | | |
| Mutsure Off | | Feb, 1, 2019 | Feb, 2, 2019 |
| | 155.1 | | |
| Nagasaki Off | | Feb, 2, 2019 | Feb, 3, 2019 |
| | 2.3 | | |
| Nagasaki | | Feb, 3, 2019 | Feb, 7, 2019 |
| | 328.8 | | |
| Fishing Groung | | Feb, 9, 2019 | Feb, 9, 2019 |
| | 199.1 | | |
| Koniya Bay | | Feb, 11, 2019 | Feb, 12, 2019 |
| | 201.2 | | |
| Naha | | Feb, 13, 2019 | Feb, 21, 2019 |
| | 904.5 | | |
| Fishing Groung | | Feb, 24, 2019 | Feb, 28, 2019 |
| | 279.3 | | |
| Futami | | Mar, 3, 2019 | Mar, 5, 2019 |
| | 600.9 | | |
| Misaki | | Mar, 9, 2019 | Mar, 11, 2019 |
| | 43.8 | | |
| Urayasu Off | | Mar, 11, 2019 | Mar, 12, 2019 |
| | 6.8 | | |
| Keihin (Tokyo) | | Mar, 12, 2019 | - |
| | | | |
| Total Distance | 3316.4 | | |

4.2 研究員・乗船学生 (Directories of Scientists and Cadets on Board)

教員

東京海洋大学 4名

研究員

株式会社セレス 2名

東京海洋大学 2名

乗船学生

東京海洋大学 3名

乗船実習学生

東京海洋大学 19名

4.3 航跡図 (Track Chart)

神鷹丸 SY-18-13 航跡図

2019年1月29日 (火) ~ 2019年3月12日 (火)

乗船漁業実習IV

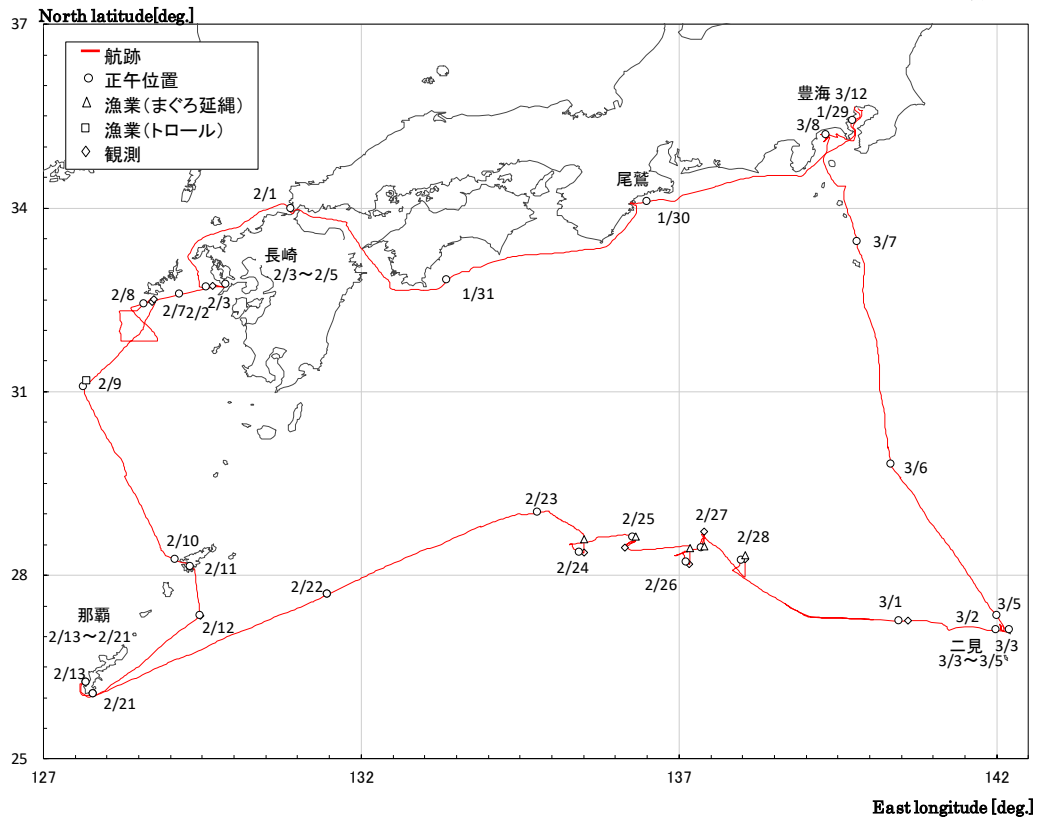


Fig. 4.3 航跡図 (Track Chart)

4.4 航海撮要日誌 (Abstract Log)

Table 4.2 航海撮要日誌 (Abstract Log)

| 月日 DATE | 正午位置Position | | 碇泊場所 LOCATION | 航海時間 Hour-Min | 航走距離 Run Miles | 平均速力 Ave.Sp'd | 碇泊時間 Hour-Min | 漂泊時間 Hour-Min | 天候 Wth | 風WIND | | 更正気圧 | | | 温度°C | |
|------------|----------------|-----------------|------------------|------------------|-------------------|------------------|------------------|------------------|-----------|-------|----|--------|------|------|------|--|
| | 緯度 Lat | 経度 Long | | | | | | | | 風向 | 風力 | hpa | 大気 | 海水 | | |
| 12/20 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | S/W | 2 | 1018.5 | 14.0 | 15.3 | | |
| 12/21 | 35 - 24.6428 N | 139 - 43.2484 E | | 02-05 | 19.2 | 9.216 | 21-52 | 00-00 | b | NE | 3 | 1024.8 | 11.3 | 14.0 | | |
| 12/22 | 35 - 9.1624 N | 139 - 15.2816 E | | 08-34 | 72.6 | 8.475 | 15-26 | 00-00 | r | NEN | 4 | 1017.3 | 11.6 | 18.5 | | |
| 12/23 | 35 - 7.8975 N | 139 - 29.8743 E | | 07-40 | 46.5 | 6.065 | 16-20 | 00-00 | r | NNW | 3 | 1015.5 | 12.4 | 18.6 | | |
| 12/24 | 35 - 8.4900 N | 139 - 36.6760 E | | 03-34 | 21.0 | 5.888 | 20-26 | 00-00 | bc | NEN | 4 | 1014.6 | 10.4 | 19.4 | | |
| 12/25 | 35 - 17.4250 N | 139 - 45.2246 E | | 05-08 | 37.2 | 7.247 | 18-52 | 00-00 | bc | NE | 4 | 1021.5 | 7.8 | 13.8 | | |
| 12/26 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 02-20 | 26.6 | 11.400 | 21-40 | 00-00 | o | N/W | 2 | 1013.1 | 11.7 | 14.5 | | |
| 12/27 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | N | 3 | 1005.6 | 12.4 | 14.6 | | |
| 12/28 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 5 | 1010.0 | 6.6 | 14.5 | | |
| 12/29 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | SSW | 2 | 1013.1 | 8.3 | 14.1 | | |
| 12/30 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/W | 3 | 1021.5 | 8.5 | 13.8 | | |
| 12/31 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 3 | 1028.3 | 8.2 | 13.7 | | |
| 1/1 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 2 | 1022.8 | 10.2 | 13.6 | | |
| 1/2 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/E | 3 | 1019.8 | 9.9 | 13.6 | | |
| 1/3 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 3 | 1020.5 | 10.2 | 13.4 | | |
| 1/4 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NNE | 1 | 1027.6 | 8.7 | 13.1 | | |
| 1/5 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NNW | 2 | 1011.1 | 12.7 | 13.1 | | |
| 1/6 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | N | 3 | 1018.8 | 6.0 | 13.0 | | |
| 1/7 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 3 | 1019.5 | 10.1 | 12.8 | | |
| 1/8 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | SE | 1 | 1013.3 | 9.2 | 12.5 | | |
| 1/9 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NW/N | 4 | 1021.8 | 6.1 | 12.4 | | |
| 1/10 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | NW | 1 | 1017.9 | 5.3 | 12.2 | | |
| 1/11 | 35 - 39.1767 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | NNW | 3 | 1016.3 | 10.5 | 12.2 | | |
| 1/12 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | NNW | 3 | 1020.3 | 4.8 | 12.0 | | |
| 1/13 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N | 2 | 1019.4 | 8.4 | 12.0 | | |
| 1/14 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/E | 2 | 1022.2 | 7.8 | 12.1 | | |
| 1/15 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | NNW | 2 | 1020.8 | 7.0 | 12.2 | | |
| 1/16 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/W | 4 | 1011.9 | 10.0 | 12.2 | | |
| 1/17 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | S/E | 3 | 1009.7 | 10.0 | 11.9 | | |
| 1/18 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NW/N | 2 | 1016.3 | 9.2 | 12.6 | | |
| 1/19 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NW/W | 1 | 1019.7 | 10.5 | 11.7 | | |
| 1/20 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | S | 2 | 1005 | 11.5 | 11.7 | | |
| 1/21 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | NNW | 3 | 1009.8 | 9.0 | 11.6 | | |
| 1/22 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/W | 3 | 1011.2 | 9.0 | 11.6 | | |
| 1/23 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | S/E | 2 | 1012.3 | 8.8 | 11.5 | | |
| 1/24 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/W | 4 | 1012.6 | 8.4 | 11.5 | | |
| 1/25 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | S | 4 | 1015.3 | 7.9 | 11.2 | | |
| 1/26 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | N/W | 4 | 1004.4 | 8.1 | 11.2 | | |
| 1/27 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | N/W | 3 | 1017.0 | 8.0 | 10.9 | | |
| 1/28 | 35 - 39.1756 N | 139 - 46.0226 E | Tsukishima F4 | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | Calm | | 1018.2 | 4.2 | 10.5 | | |
| 1/29 | 35 - 24.7599 N | 139 - 43.6862 E | | 02-05 | 18.7 | 8.976 | 21-55 | 00-00 | b | N | 5 | 1016.5 | 8.1 | 28.7 | | |
| 1/30 | 34 - 6.1217 N | 136 - 29.9432 E | | 24-00 | 199.4 | 8.308 | 00-00 | 00-00 | b | SSE | 3 | 1025.1 | 10.6 | 17.8 | | |
| 1/31 | 32 - 48.5166 N | 133 - 20.9612 E | | 21-30 | 202.5 | 9.419 | 02-30 | 00-00 | r | SSE | 1 | 1010.7 | 12.9 | 18.8 | | |
| 2/1 | 33 - 58.4010 N | 130 - 53.4560 E | | 23-06 | 174.0 | 7.532 | 00-54 | 00-00 | bc | W/N | 5 | 1021.6 | 6.6 | 13.1 | | |
| 2/2 | 32 - 42.0334 N | 129 - 33.4796 E | | 17-43 | 140.3 | 7.919 | 04-07 | 02-10 | o | E | 2 | 1024.9 | 11.5 | 17.2 | | |
| 2/3 | 32 - 44.4293 N | 129 - 52.0607 E | Dejima wh'f | 03-26 | 17.1 | 4.981 | 20-34 | 00-00 | r | S/W | 5 | 1015.7 | 16.9 | 15.6 | | |
| 2/4 | 32 - 44.4293 N | 129 - 52.0607 E | Dejima wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | N/W | 3 | 1022.2 | 12.3 | 15.4 | | |

| 月日 DATE | 正午位置Position | | 碇泊場所 LOCATION | 航海時間 Hour-Min | 航走距離 Run Miles | 平均速力 Ave.Sp'd | 碇泊時間 Hour-Min | 漂泊時間 Hour-Min | 天候 Wth | 風WIND | | 更正気圧 | | | 温度℃ | |
|------------|--------------|-----------|------------------|------------------|-------------------|------------------|------------------|------------------|-----------|-------|----|-------|----|--------|------|------|
| | 緯度 Lat | 経度 Long | | | | | | | | 風向 | 風力 | hpa | 大気 | 海水 | | |
| 2/5 | 32 | 44.4293 N | 129 | 52.0607 E | Dejima wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | N | 2 | 1021.5 | 10.8 | 15.2 |
| 2/6 | 32 | 44.4293 N | 129 | 52.0607 E | Dejima wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | N/W | 2 | 1016.1 | 14.3 | 15.3 |
| 2/7 | 32 | 34.8650 N | 129 | 8.5804 E | | 04-10 | 39.1 | 9.384 | 19-50 | 00-00 | o | N/W/N | 4 | 1015.8 | 16.1 | 18.6 |
| 2/8 | 32 | 25.3430 N | 128 | 34.6381 E | | 24-00 | 166.8 | 6.950 | 00-00 | 00-00 | o | NE/N | 4 | 1020.4 | 10.2 | 17.6 |
| 2/9 | 31 | 4.4224 N | 127 | 37.8217 E | | 21-54 | 114.9 | 5.247 | 00-00 | 02-06 | o | NNW | 5 | 1022.3 | 11.0 | 18.7 |
| 2/10 | 28 | 15.1975 N | 129 | 4.2124 E | | 24-00 | 192.2 | 8.008 | 00-00 | 00-00 | o | N | 3 | 1024.3 | 15.8 | 21.9 |
| 2/11 | 28 | 8.3288 N | 129 | 18.5416 E | | 01-41 | 14.9 | 8.851 | 22-19 | 00-00 | r | N/W/N | 4 | 1025.9 | 15.1 | 21.9 |
| 2/12 | 27 | 19.9487 N | 129 | 28.1909 E | | 04-57 | 51.6 | 10.424 | 19-03 | 00-00 | bc | NE | 4 | 1027.8 | 18.7 | 22.9 |
| 2/13 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 20-49 | 149.6 | 7.187 | 03-11 | 00-00 | o | N/E | 3 | 1021.5 | 20.7 | 22.7 |
| 2/14 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | ESE | 2 | 1021.8 | 22.5 | 22.5 |
| 2/15 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | SE/S | 3 | 1021.3 | 22.7 | 22.4 |
| 2/16 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | N | 3 | 1019.7 | 22.5 | 22.8 |
| 2/17 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | NE | 2 | 1021.9 | 17.8 | 22.6 |
| 2/18 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | E | 2 | 1021.8 | 22.1 | 22.3 |
| 2/19 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | S/W | 6 | 1019.6 | 26.0 | 22.5 |
| 2/20 | 26 | 14.3030 N | 127 | 40.7640 E | Shinko No.1 wh'f | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | E | 2 | 1022.5 | 23.6 | 23.2 |
| 2/21 | 26 | 3.0742 N | 127 | 46.8441 E | | 03-05 | 26.2 | 8.497 | 20-55 | 00-00 | o | NE/E | 4 | 1019.1 | 23.4 | 23.9 |
| 2/22 | 27 | 41.0574 N | 131 | 28.4009 E | | 24-00 | 221.9 | 9.246 | 00-00 | 00-00 | r | SW | 4 | 1013.8 | 22.5 | 22.6 |
| 2/23 | 29 | 1.2462 N | 134 | 46.4204 E | | 24-00 | 196.0 | 8.167 | 00-00 | 00-00 | o | N/E | 5 | 1013.3 | 16.8 | 20.7 |
| 2/24 | 28 | 21.7963 N | 135 | 25.9928 E | | 21-27 | 69.4 | 3.235 | 00-00 | 02-33 | o | E | 4 | 1019.2 | 17.6 | 20.6 |
| 2/25 | 28 | 36.4104 N | 136 | 16.3359 E | | 20-40 | 106.3 | 5.144 | 00-00 | 03-20 | o | S/W | 3 | 1015 | 21.0 | 21.4 |
| 2/26 | 28 | 12.2884 N | 137 | 6.8833 E | | 17-03 | 97.7 | 5.730 | 00-00 | 06-57 | o | NE/N | 4 | 1015.8 | 19.8 | 20.8 |
| 2/27 | 28 | 26.1033 N | 137 | 21.4591 E | | 14-59 | 79.2 | 5.286 | 00-00 | 09-01 | o | NE/E | 3 | 1020.4 | 18.2 | 20.7 |
| 2/28 | 28 | 14.4335 N | 137 | 59.4088 E | | 17-34 | 94.4 | 5.374 | 00-00 | 06-26 | bc | S/W | 4 | 1016.3 | 22.1 | 21.3 |
| 3/1 | 27 | 15.1484 N | 140 | 28.0126 E | | 24-00 | 169.4 | 7.058 | 00-00 | 00-00 | b | WNW | 4 | 1015.4 | 23.6 | 22.5 |
| 3/2 | 27 | 6.2669 N | 141 | 59.1326 E | | 12-00 | 83.1 | 6.925 | 00-00 | 12-00 | o | N/W | 4 | 1014.9 | 19.8 | 22.8 |
| 3/3 | 27 | 5.6930 N | 142 | 11.7140 E | Futami pier | 08-00 | 40.2 | 5.025 | 03-00 | 13-00 | o | E/N | 2 | 1014.1 | 21.9 | 22.1 |
| 3/4 | 27 | 5.6930 N | 142 | 11.7140 E | Futami pier | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | SW/S | 6 | 1008.6 | 24.3 | 22.1 |
| 3/5 | 27 | 19.7184 N | 142 | 0.0154 E | | 03-10 | 20.1 | 6.347 | 20-50 | 00-00 | bc | N/W | 5 | 1015.8 | 20.1 | 21.2 |
| 3/6 | 29 | 48.1053 N | 140 | 20.4727 E | | 24-00 | 171.5 | 7.146 | 00-00 | 00-00 | o | NE | 4 | 1017.8 | 17.2 | 19.8 |
| 3/7 | 33 | 26.5607 N | 139 | 47.9631 E | | 24-00 | 227.1 | 9.463 | 00-00 | 00-00 | r | N/W | 6 | 1000.8 | 15.2 | 20.8 |
| 3/8 | 35 | 11.3869 N | 139 | 18.4749 E | | 16-46 | 139.5 | 8.320 | 00-00 | 07-14 | b | NE | 3 | 1018.9 | 10.7 | 17.0 |
| 3/9 | 35 | 11.9917 N | 139 | 29.9860 E | | 06-20 | 34.1 | 5.384 | 00-00 | 17-40 | b | S/W | 3 | 1025.3 | 13.8 | 17.9 |
| 3/10 | 35 | 8.6890 N | 139 | 36.5770 E | Futamachiya wh'f | 01-26 | 8.5 | 5.930 | 22-34 | 00-00 | o | SW | 2 | 1019.2 | 16.7 | 17.0 |
| 3/11 | 35 | 5.8450 N | 139 | 42.4338 E | | 00-59 | 7.9 | 8.034 | 23-01 | 00-00 | bc | ESE | 4 | 993.1 | 15.4 | 17.3 |
| 3/12 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 04-10 | 42.8 | 10.272 | 19-50 | 00-00 | b | ESE | 2 | 1004.8 | 13.5 | 12.7 |
| 3/13 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | SW/S | 4 | 1001.7 | 16.4 | 12.8 |
| 3/14 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | W/N | 2 | 1016.9 | 10.5 | 12.7 |
| 3/15 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | E/N | 2 | 1020.7 | 11.9 | 12.9 |
| 3/16 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | o | NNW | 1 | 1009.6 | 11.4 | 12.9 |
| 3/17 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | SSE | 3 | 1015.9 | 12.1 | 12.9 |
| 3/18 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | b | SE | 2 | 1023.7 | 11.6 | 12.9 |
| 3/19 | 35 | 37.5160 N | 139 | 47.7410 E | Ariake MP | 00-00 | 0.0 | 0.000 | 24-00 | 00-00 | bc | SSE | 2 | 1012.8 | 17 | 13.1 |

航海累計 490-21 3539.5 7.218 1587-09 82-27

4.5 観測項目 (Observation Item)

Table 4.3 長崎ー那覇 (Nagasaki - Naha)

| Lat. | | | Long. | | | Observation Item | | | |
|------|---------|---|-------|---------|---|------------------|-----|-----|-------------|
| | | | | | | pump sampling | ROV | CTD | neuston net |
| 32 | 30.2770 | N | 128 | 44.4700 | E | ○ | | | |
| 28 | 8.3050 | N | 129 | 18.5430 | E | | ○ | | |
| 27 | 20.0320 | N | 129 | 28.3350 | E | | | ○ | |
| 27 | 18.4392 | N | 129 | 26.2215 | E | | | | ○ |