
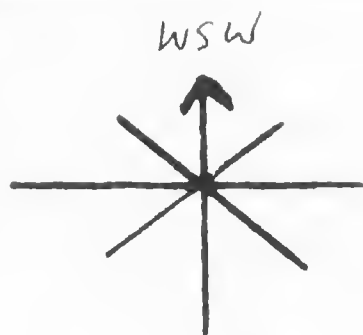


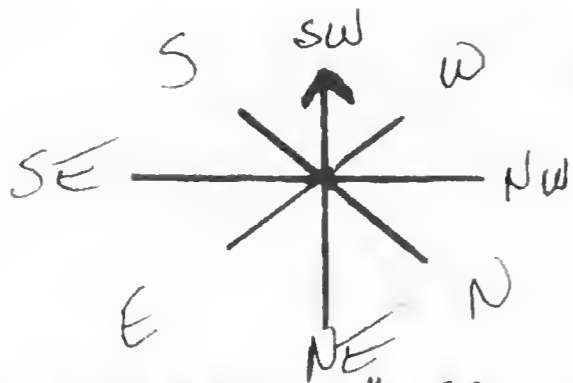
DATE 7 December, 1964
Pg. # 1

| time | species | # | dir. | hgt. | remarks | loc. |
|------|------------------------|---|-----------|----------------|--|------|
| 1335 | | | | | begin watch at entrance to Harbor | |
| 1342 | Jaeger? | 1 | | | | |
| 1403 | Pomarine Jaeger | 2 | S | low | light phase, 1 adult; 1? | |
| 1421 | BLACK-FOOTED ALBATROSS | 1 | following | low. | Lt. PHASE | |
| 1439 | POMERINE JAEGER | 1 | S | Low | Imm or sub-adult. Lt. Phase | |
| 1500 | POMERINE JAEGER | 1 | S | 40' | " " " " (ALBATROSS STILL FOLLOWING) | |
| 1509 | " " | 1 | NW | 60' | Adult - Lt. Phase | |
| 1516 | JAEGER SP. | 2 | | Low |  | |
| 1533 | POMERINE JAEGER | 3 | | 0' | MOULTING POMERINES - IMM. seen closely at 1547. Good deal of white in upper wings. seem smaller than previously seen Jaegers (Pomerines) faster wing beats than Pomerine, whitish at base of tail - underneath dull gray but Pomerine pattern. | |
| 1540 | POMERINE JAEGER | 2 | | 0' | 2 Light Phase, 1 dark - JOINED BY 2 JAEGER SP. OF 1516 AT GORRAGE. | |
| 1541 | " " | 1 | | 0' | Lt. Phase | |
| 1550 | | | | | Lt. Phase | |
| 1553 | Pomarine JAEGER | 1 | SW | 50' | GROUP OF 9 Pomarine JAEGERS PASSED SHIP GOING WSW. - dark Phase | |
| 1554 | WEDGETAILED SHEARWATER | 1 | SW | Low | | |
| 1556 | Pomarine Jaeger | 1 | SW | 40' | dark Phase | |
| 1557 | " " | 1 | " | " | distant. | |
| 1607 | " " | 1 | " | 100' | dark Phase | |
| 1610 | " " | 1 | | 25' | Light Phase | |
| 1615 | " " | 1 | SSE | 50' | Dark Phase | |
| 1621 | " " | 1 | " | 60' | Dark ph. | |
| 1629 | " " | 1 | ENE | 20' | Dark Phase bird still with immature feathers around sides of belly and under upper tail coverts | |
| 1633 | " " | 3 | SE | 20' | one landed on water beside the albatross which had just landed; all 3 flew away together again, again one landed, dunking its whole head & neck under water for 10 seconds. Flow. | |
| 1640 | " " | 3 | " | 20' | Semi-adults | |



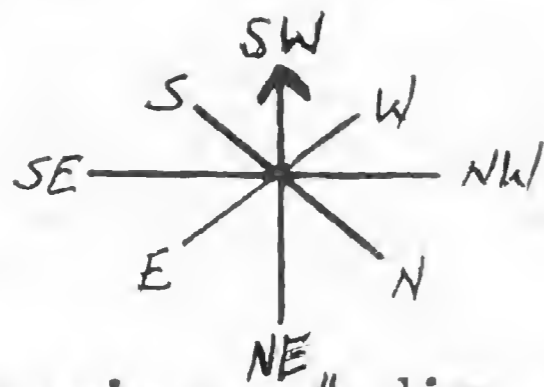
DATE 7 Dec 1964
Pg. # 2

| time | species | # | dir. | hgt. | remarks | loc. |
|------|----------------------|----|---------------------|------|--|------|
| 1644 | Pom. Jaeg. | 3 | SW | 15' | landed on water | |
| 1645 | Cook's Pet | 1 | follow ship | low | very white neck | |
| 1654 | Blue-faced b. | 1 | SW NW | low | Imm. | |
| 1655 | | | | | Same 3 jaegers, presumably. | |
| 1700 | wedgetail shearwater | 1 | E | low | * | |
| 1730 | Pom Jaeg | 6 | SW | 15' | Imm. | |
| 1735 | Wedgetail | 3 | SW | low | | |
| 1744 | POMERINE JAEGER | 10 | (IN AREA) ⊙ | LOW | - 1 collected R.S.S. | |
| 1754 | — | | | | Sunset complete with green flash | |
| 1805 | Red-footed Booby | 2 | ⊙ | | flying around ship trying to land still around at 1830 and later both immature | |
| | | 4? | | | | |



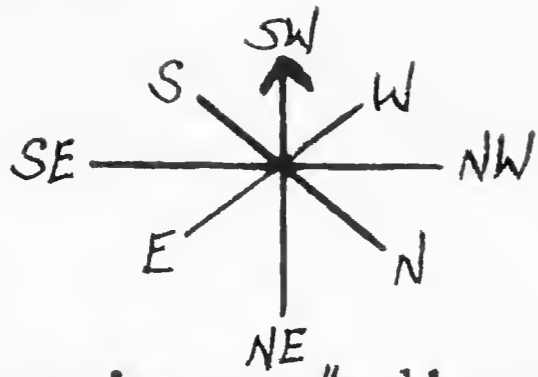
DATE 8 DEC. 1964
Pg. # 1

| time | species | # | dir. | hgt. | remarks | loc. |
|------|---------------------------------|--------|------|------|---|------|
| 0748 | Red-footed Booby | 1 | low | NW | Immature | |
| 0756 | Sooty Tern | 2 | low | W | | |
| 0701 | " " | 8 | W | low | | |
| | | | | | Apparent Sunrise ca 0700 | |
| 0715 | Tern | 1 | E | low | | |
| 0715 | wedge-tail shearwater | 2 | NE | " | | |
| 0722 | " " | 1 | ESE | " | flying fast + in a straight line (towards flock?) | |
| 0740 | Flock | | | | Actively feeding over large school of fish probably Aka (yellow fin tuna) | |
| 10 | | | | | | |
| 0751 | Sooty tern | 48 | | | may have been some Noddy Terns | |
| | wedge-tail shearwater | 6 ± 1 | | | | |
| | Terns | 10 ± 2 | | | | |
| | all dark shearwater | 1 | | | either Christmas Island or slender-billed | |
| 0751 | white-tailed Tropicbird | 1 | | | feeding | |
| 0805 | " " | 1 | ca | 75' | | |
| 0806 | WEDGETAILED SHEARWATER | 1 | NE | Low | | |
| 0807 | RED-FOOTED BOOBY | 1 | ca | Low | - Imm. | |
| 0819 | " " " | 1 | | 60' | - collected MT (possibly same bird as 0807) | |
| 0826 | SOOTY TERN | 2 | N | Low | | |
| 0826 | FAIRY TERN | 1 | E | 30' | | |
| 0908 | LEACHES/HARCOORT'S STORM PETREL | 1 | W | Low | | |
| 0920 | Pterodroma | 1 | NE | Low | - DISTANT | |
| 0926 | SOOTY TERN | 2 | W | Low | | |
| 0926 | WHITE-TAILED TROPICBIRD | 1 | ca | 60' | | |
| 0928 | SOOTY TERN | 1 | N | Low | - Feeding | |
| 0948 | WHITE-TAILED TROPIC BIRD | 4 | ca | 100' | - 1 collected MT | |
| 1005 | Wedgetail | 1 | NE | Low | | |
| 1008 | Wh-Tail Trop | 2 | SW | 100' | | |



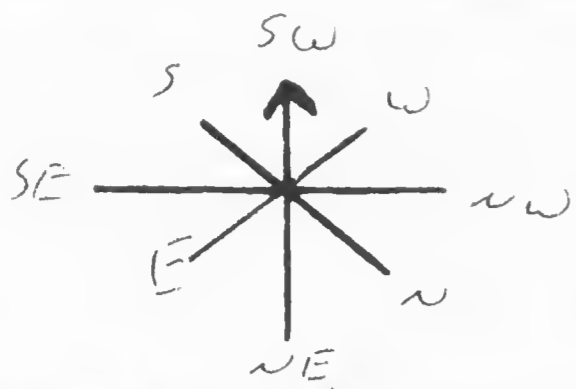
DATE 8 Dec. 1964
Pg. # 2

| | time | species | # | dir. | hgt. | remarks | loc. |
|----|------|------------------------|------------|------|--------|--|------|
| FF | 1015 | Sooty tern | 30 ±3 | | | collected 1 Sooty tern | |
| | | Fairy tern | 3 | | | | |
| | | Wedgetail | 3 | | | sitting on water | |
| | | Comm Nodd | 7 | | | | |
| | 1020 | Red-F Booby | 1 | NE | 10' | Imm. | |
| | 1029 | Tern | 1 | SW | low | | |
| | 1031 | Sooty tern | 2 | SW | low | | |
| | 1031 | Storm petrel | 1 | SW | " | Leach's or Hancock's | |
| FF | 1035 | Sooty tern | 115 ±10 | | | | |
| | | Fairy tern | 2 | | | | |
| | | wedgetail | 12 | | | collected 1 Wedge tail shearwater | |
| | | R-F Booby | 1 | | | Imm flock feeding on small silver fish | |
| | | Frigate | 4 | | | | |
| F | 1104 | Sooty tern | 40 ±10 | | | Distant; not seen feeding | |
| | | Fairy tern | 2 | | | | |
| | | Frigate | 2 | | | | |
| | 1105 | Storm petrel | 1 | SE | low | Leach's or Hancock's | |
| | 1113 | B-Faced Booby | 1 | S | " | Imm. | |
| | 1120 | Sooty tern | 1 | S | 30' | | |
| F | 1125 | Sooty tern | 19 | | | | |
| | 1129 | Wedgetail | 1 | NE | low | | |
| | 1130 | Cook's/Bonin | 1 | NE | " | | |
| F | 1138 | Tern | 30 ±10 | | | Distant | |
| | | Frigate | 1 | | | | |
| | 1138 | Sooty tern | 2 | NE | low | | |
| | 1317 | Storm Petrel | 1 | | | Leach's/Hancock's | |
| F | 1328 | SOOTY TERN | 10 | NE | TO 60' | -Not Feeding | |
| | 1330 | WEDGETAILED SHEARWATER | 1 | W | LOW | | |
| | 1337 | SOOTY TERN | 2 | E | LOW | | |
| | 1343 | RED-footed BOOBY | 1 | ⊙ | TO 40' | | |
| | 1402 | BONIN IS. PETREL | 1 | WNW | LOW | WELL SEEN <i>Sheel</i> | |



DATE 8 DEC. 64
Pg. # 3

| | time | species | # | dir. | hgt. | remarks | loc. |
|----|------|--------------------------|-----------|------|---------|--|------|
| F | 1413 | Sooty tern | 46 ±10 | | | | |
| | | Frigate | 1 | | | | |
| | 1415 | Red-footed booby | 1 | N | low | Collected | |
| | 1426 | Sooty Tern | 27 | E | 50-200' | | |
| | 1431 | White-tailed tropic bird | 1 | | 100' | | |
| FF | 1437 | Sooty Tern | 47 ±4 | | | | |
| | | Frigate | 1 | | | | |
| F | 1450 | Sooty tern | 55 | | NE | | |
| | 1453 | shearwater-petrel | 1 | W | low | | |
| | 1500 | Sooty tern | 2 | N | 80' | | |
| | 1505 | wedgetailed shearwater | 1 | NE | low | | |
| | 1533 | Storm petrel | 1 | SW | " | Pale to white sea Mumy | |
| | 1535 | Red-footed booby | 1 | NW | 20' | Imm. | |
| | 1544 | Storm petrel | 1 | SW | low | Harcourt's or Leach's | |
| F | 1553 | Sooty tern | 55± 15 | | | | |
| | | Frigate | 1 | | | | |
| | 1615 | White-tail Tropicbird | 1 | NW | | | |
| | 1628 | wedge-tail Shearwater | 1 | E | low | | |
| | 1657 | Red-tailed Tropic bird | 1 | E | low | sitting on water | |
| | 1715 | wedgetailed Shearwater | 1 | NE | " | | |
| | 1720 | Flock | | | | not feeding | |
| | | Sooty Tern | 15' | | | | |
| | | Fairy tern | 2 | | | | |
| | | great Frigatebird | 1 | | | | |
| | | wedge-tail shearwater | 3 | | | | |
| | | Juan Fernandez Petrel | 1 | | | | |
| | | Red-footed Booby | 1 | Imm | | | |



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Pg. # 4

time species # dir. hgt. remarks loc.

1722 Wedge-tail Shearwater 2 Z low

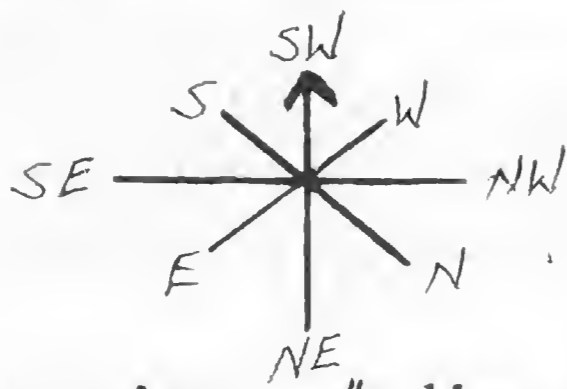
1737 " " 2 Z "

1750 Storm Petrel 1 SW "

1751 Red-footed Booby 1 @ ca 30' imm' collected by moy thompson

1800 " " 1 imm

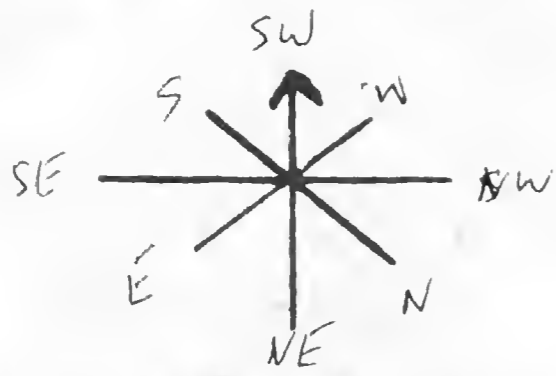
apparent sunset 1812



DATE 9 DEC 64
Pg. # 1

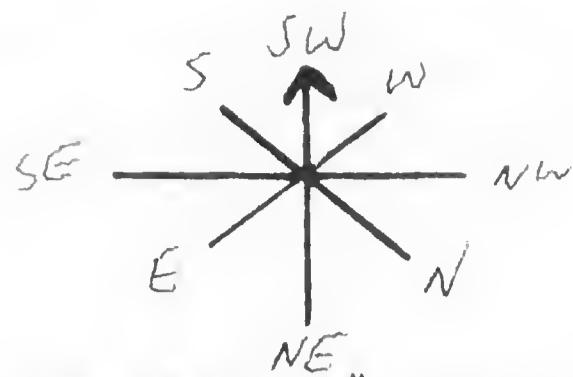
time species # dir. hgt. remarks loc.

| | | | | | | |
|------|----------------------------|---|-----|----------|--|----------|
| 0610 | | | | | COMMENCE OBSERVATIONS - APPARENT SUNRISE | |
| 0615 | | | | | SUNRISE | |
| 0622 | GREAT FRIGATEBIRD | 1 | ☉ | 150' | | |
| 0625 | Sooty(?) Tern | 2 | ☉ | Low | } feeding - very poor light | |
| | SHEARWATER PETREL | 1 | ☉ | Low | | |
| 0635 | Storm Petrel | 1 | SW | Low | - No distinguishing marks seen - distant | |
| 0637 | WEDGETAILED SHEARWATER | 2 | S | Low | | |
| | Pterodroma | 1 | S | Low | | |
| 0645 | RED-footed BOOBY | 1 | ☉ | Low | - IMM - very dark bird with non-distinct breast-belly demarcation. | |
| | WEDGETAILED SHEARWATER | 2 | ☉ | Low | | |
| | SHEARWATER-PETREL | 1 | ☉ | Low | - POSSIBLE Pterodroma | |
| 0650 | " " | 1 | NW | Low | | |
| 0652 | " " | 1 | NE | Low | | |
| 0655 | " " | 1 | ☉ | " | | |
| 0713 | Pale-footed (P) SHEARWATER | 1 | S | Low | all dark bird with SILVER (NOT WHITE) UNDERWING linings. Occasional arching flight but generally straight line | |
| 0717 | WHITE-TAILED TROPICBIRD | 1 | ☉ | 100' rel | -(shot down - arose & flew away). | |
| 0724 | SHEARWATER PETREL | 2 | SE | Low | - DISTANT | |
| 0729 | STORM PETREL | 1 | W | Low | - LEECHES' OR HARCOURT'S | } JOINED |
| 0731 | " " | 1 | ☉ | " | - " " " | |
| 0752 | COOK/BONIN PETREL | 2 | NW | Low | | |
| | WEDGETAILED SHEARWATER | 2 | NW | Low | | |
| 0757 | JUAN FERNANDEZ PETREL | 1 | ☉ | Low | | |
| 0819 | Wedgetailed Shearwater | 1 | E | " | | |
| 0829 | Shearwater-Petrel | 1 | ESE | " | | |



DATE 9 Dec. 1964
Pg. # 2

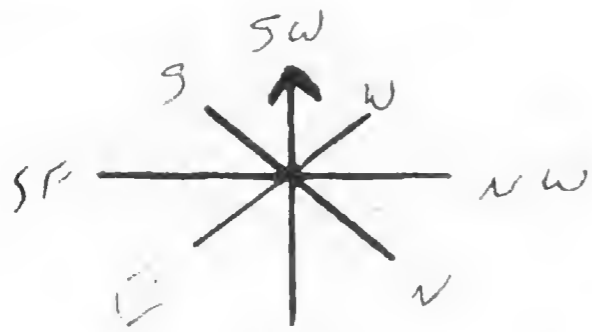
| time | species | # | dir. | hgt. | remarks | loc. |
|------|------------------------|---|----------------|------|--|---|
| 0947 | Black-footed albatross | 1 | N | low | light phase shot at; followed ship | } stayed together, following the same flight pattern. |
| 0953 | Blue-faced booby | 1 | | low | following ship; Imm. | |
| 0901 | Red-tailed tropic bird | 1 | NE | 90' | | |
| 0918 | Black-footed albatross | 1 | following ship | low | | |
| 0924 | Pterodroma | 1 | SW | " | | |
| 0929 | Cook/Bonin's Petrel | 2 | W. | " | | |
| 0929 | Juan Fernandez Petrel | 1 | SE | " | | |
| 0933 | Black-footed albatross | 1 | following ship | " | | |
| 0948 | Wedgetail | 1 | SW | low | | |
| 0948 | Shearwater | 1 | SW | " | all dark | |
| 0949 | Storm petrel | 1 | | " | White rump | |
| 0949 | Juan Fernandez Petrel | 1 | | " | | |
| 1003 | Storm Petrel | 2 | | " | Leach's or Harcourt's | |
| 1004 | Shearwater-Petrel | 1 | SE | " | | |
| 1035 | Black-footed Albatross | 1 | ☉ | " | collected RSS - (PROBABLE Bird of. 0933) | |
| 1052 | WEDGETAILED SHEARWATER | 1 | ☉ | Low | | |
| 1057 | LAYSAN ALBATROSS | 1 | NE | Low | | |
| 1058 | JOAN FERNANDEZ PETREL | 1 | NE | " | | |
| 1115 | " " | 3 | ☉ | " | | |
| 1135 | " " | 1 | ☉ | " | | |
| 1144 | " " | 1 | SE | " | | |



DATE 9 Dec 1964
Pg. # 3

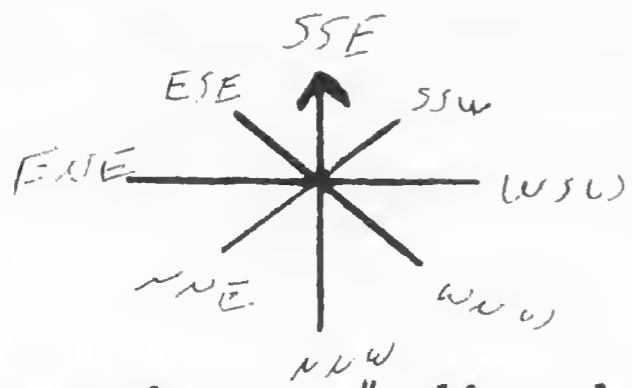
time species # dir. hgt. remarks loc.

| | | | | | | |
|------|-------------------------------|---|--------------|------|---|--|
| 1219 | Wedgetailed Shearwater | 1 | SW | low | | |
| 1255 | Blue-faced Booby | 1 | ca | 60' | collected | |
| 1314 | Wedgetailed Shearwater | 1 | NW | low | | |
| 1500 | Black-footed Albatross | 1 | follows ship | | - dark phase | |
| 1513 | Sooty(?) Shearwater | 1 | SSE | | | |
| 1515 | Wedge-tail Shearwater | 1 | SE | | | |
| 1519 | Kermadec Petrel | 1 | | | light phase - flying around Black-footed Albatross in the water. | |
| 1538 | Leeches/Harcourt Storm Petrel | 1 | | low | | |
| 1541 | Dark-rump(?) Petrel | 1 | NW | low | | |
| - | - | - | - | - | ca 1600 collected Black-footed Albatross Dark phase | |
| 1605 | White-tail Tropicbird | 1 | - | - | seen | |
| 1645 | WEDGETAILED SHEARWATER | 1 | 0 | low | | |
| 1646 | SHEARWATER | 1 | S | low | - All dark with silver UNDERWINGS - Arching occasionally slender-billed, Sooty, Pale-footed. (Avoiding ship). | |
| 1652 | Blue-faced BOOBY | 1 | ca | low | Sub-Adult. | |
| 1720 | Leecher/Harcourt Storm Petrel | 1 | NW | low | | |
| 1724 | Red-footed Booby | 1 | ca | low | Imm. | |
| | | | | | sunset ca 1725 | |
| 1730 | STORM PETREL | 1 | SW | low | Leach's or Harcourt's | |
| 2215 | SOOTY TERN | 2 | - | 100' | CALLING. (POSSIBLY 1-Immature, higher voice than normal) | |



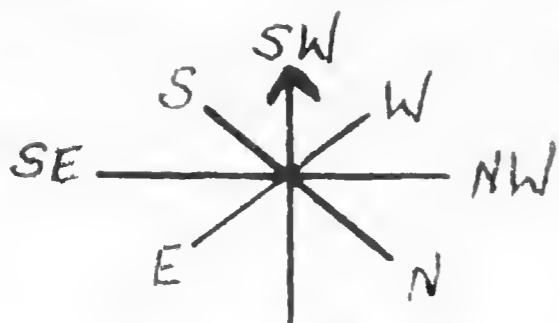
DATE 10 December, 1964
Pg. # 1

| time | species | # | dir. | hgt. | remarks | loc. |
|---------|--|----------|-----------------|--------------|--|------|
| 0630 | - - - | - | - | - | apparent sunrise | |
| 0704 | Sooty Shearwater | 1 | S | sealing high | | |
| 0711 | Wedge-tail Shearwater | 1 | WSW | low | | |
| 0730 | Sooty Shearwater | 2 | S | sealing high | | |
| 0747 | " " | 1 | S | " " | | |
| FF 0818 | SOOTY TERN | 175 ± 25 | TO 100' | | - feeding - No flying fish seen - flock broken up by ship. | |
| | GREAT FRIGATE-BIRD | 4 | 200' | 200' | - 1 collected MCT (imm) 3-females | |
| 0927 | STORM PETREL | 1 | NE | low | - LEACH'S OR HARCOURT'S | |
| 0944 | SHEARWATER | 1 | S | low | - slender billed, sooty, Pale-footed - All dark bird, Arching flt, | |
| 0956 | Blue-faced BOOBY | 1 | NW | low | - silver underwing linings. - Adult. | |
| 1014 | Blue-faced booby | 2 | NE | low | 1 adult, 1 imm. | |
| 1019 | Frigate | 2 | G | 120' | | |
| 1020 | Sooty shearwater | 1 | S | low | | |
| 1025 | Sooty shearwater | 1 | WSW | " | | |
| 1032 | " " | 2 | SSE | " | | |
| 1050 | Brown booby | 1 | G | low | | |
| F 1051 | Sooty tern | 60 ± 15 | | 200' | high; not feeding | |
| | Frigate | 1 | | 250' | | |
| 1055 | Storm petrel | 1 | NW | low | Harcourt's/Leach's | |
| F 1059 | Sooty tern | 30 ± 5 | NW | 100' | NOT feeding | |
| 1054 | School of 20-30 porpoises seen briefly | | | | | |
| 1103 | Shearwater-petrel | 1 | S | low | Probably sooty shearwater | |
| 1130 | 2 rays, about 7' across | | | | | |
| 1140 | Sooty shearwater | 1 | SSE | low | | |
| 1202 | Shearwater | 1 | SSE | " | | |



DATE 10 December 1964
Pg. # 2

| time | species | # | dir. | hgt. | remarks | loc. |
|------|-----------------------------|---|-----------------------|------|---|--------------------|
| - | - | - | - | - | turned SSE at 1200 | |
| 1315 | Cook/Bonin Petrel | 1 | NW | low | arching | |
| 1325 | Leach/Harcourt Storm Petrel | 1 | SE | low | | |
| 1345 | Wedgetail Shearwater | 5 | | low | 1 collected by Bob Stovden | |
| 1432 | LAYSAN ALBATROSS | 1 | ☉ | low. | | |
| 1457 | KERMADEC PETREL | 1 | ☉ | low | - light phase - Excellent view. | |
| 1506 | SHEARWATER | 2 | SE | low | - sooty or slenderbilled - arching, silver underwing | |
| 1600 | SHEARWATER/PETREL | 1 | SE | low | - distant. - Arching flight, white below, brownish above. | Uniform Gray-brown |
| 1604 | STORM Petrel | 1 | SSE | low | - Leach's or HARCOURT'S | |
| 1635 | Storm Petrel | 1 | NNW SSE | low | Leach's or Harcourt's | |
| 1720 | Wedgetailed shearwater | 1 | NNW | low | | |
| 1750 | | | | | sunset | |

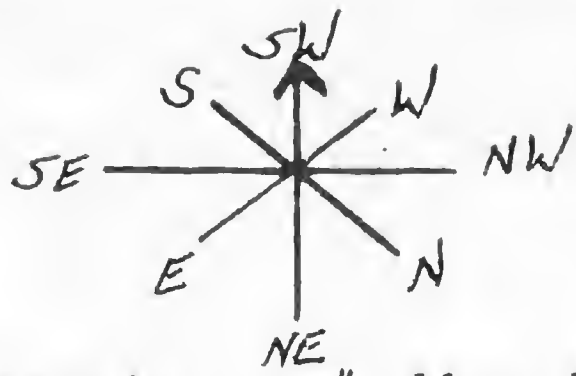


ENTER GRID - 0100 HRS.


DATE 11 DEC 64
Pg. # 1

time species # dir. hgt. remarks loc.

| | | | | | | | |
|--------|--|--------------|-----|------|---------------------------------|------------------|--|
| 0630 | - - - | - | - | - | - | APPARENT SUNRISE | |
| 0642 | SHEARWATER PETREL | 1 | S | Low | - Arching flight - distant | | |
| 0656 | JUAN FERNANDEZ PETREL | 1 | ENE | Low | | | |
| 0700 | - - - | - | - | - | - STOPPED FOR MORNING STATION | | |
| 0704 | BLUE-FACED BOOBY | 1 | - | Low | - Collected J.D.W. - sub-Adult. | | |
| 0710 | JUAN FERNANDEZ PETREL | 1 | NW | Low | | | |
| 0729 | " " | 1 | NW | Low | | | |
| 0805 | - - - | - | - | - | UNDERWAY | | |
| 0807 | Juan Fernandez Petrel | 1 | N | Low | | | |
| 0924 | Juan Fernandez/ White Neck Petrel | 1 | SE | Low | | | |
| F 1015 | Sooty tern Wedgetailed Shearwater Green Frigate | 21 1 1 | | | Not feeding Imm; collected | | |
| F 1042 | Flock Terns Shearwater/ Petrel | 12E 3 1 | | | not feeding; very distant | | |
| 1045 | Juan Fernandez Petrel | 1 | | | | | |
| 1125 | Sooty Shearwater | 1 | - | - | - sat on water | | |
| 1226 | WEDGE-TAILED SHEARWATER | 3 | ☉ | Low | | | |
| 1239 | " " | 2 | ☉ | " | | | |
| 1254 | " " | 1 | ☉ | " | - DARK Phase | | |
| 1304 | RED-TAILED TROPICBIRD | 1 | ☉ | 150' | | | |



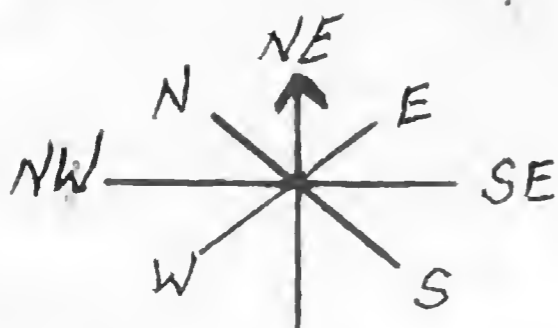
time species # dir. hgt. remarks loc.

| | | | | | | | |
|---|------|---|---|----|-----|---|--|
| | 1325 | SHEARWATER/ PETREL | 1 | ⊙ | low | - DISTANT. | |
| F | 1340 | WEDGETAILED SHEARWATER | 3 | ⊙ | LOW | | |
| | | SOOTY TERN | 2 | ⊙ | " | | |
| | | JUAN FERNANDEZ PETREL | 1 | ⊙ | " | - collected MCT. | |
| | 1350 | WEDGETAILED SHEARWATER | 4 | ⊙ | " | | |
| | 1355 | STORM PETREL | 2 | ⊙ | LOW | HARCOURT'S OR LEACH'S. | |
| | 1424 | Sooty shearwater | 1 | S | low | | |
| | 1457 | Kermadec Petrel | 1 | S | " | light phase, sitting on water | |
| | 1459 | Blue-faced booby | 1 | G | low | Finn. | |
| | 1500 | Juan Fernandez/ White-Necked Petrel | 1 | S | low | | |
| | 1530 | Juan Fernandez White-Necked Petrel | 1 | NE | low | | |
| | 1543 | " | 1 | NW | " | | |
| | 1602 | shearwater- Petrel | 1 | NE | " | Very dark bird, underwing like Juan Fernandez, rapid erratic flight, slightly larger than Bonin Is. Petrel. | |
| | | | | | |  <p>dark patch on head extending down in patch to cover eye</p> | |
| | | | | | | same size as, or close to, Bonin Island Petrel | |
| | 1624 | JUAN FERNANDEZ PETREL | 1 | S | low | | |
| | 1630 | STORM PETREL | 1 | SE | " | - HARCOURT'S OR Leach's. | |
| | 1645 | " " | 1 | NE | " | - " " " | |
| | 1723 | Pterodroma | 1 | NE | " | - distant. | |
| | 1800 | - - - | - | - | - | - APPARENT SUNSET. | |



DATE 11 DEC 64
Pg. # 3

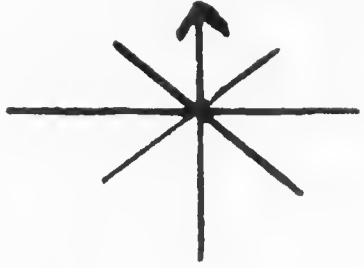
| time | species | # | dir. | hgt. | remarks | loc. |
|-----------------|----------------------------------|----------------|----------------|-----------------|--|------|
| 1810 | Shearwater/petrel | 1 | W | 10' | High arcing flight | |
| 2025 | Bird | 1 | NE | ? | Late morning area above ship presumed to be ave. | |
| 2100 | | | | | change course to NW | |
| 2157 | Tern | 1 | NE | 30' | | |
| 2204 | Bird | | | | calling; single note | |
| 2334 | Fairy tern | 1 | NE | 10' | | |
| 12 DEC. | | | | | | |
| 0130 | --- | 1 | NE | 30' | COURSE CHANGE TO NE. | |
| 0150 | TROPICBIRD | 1 | NE | 30' | PROBABLE WHITE-TAILED - slender body - quick alights. | |
| 0622 | Sooty Tern | 1 | SE | 50' | Arise from WATER. | |
| 0640 | --- | --- | --- | --- | Apparent sunrise | |
| 0700 | Frigate bird | 1 | SE | high | --- | |
| 0759 | Juan Fernandez Petrel | 1 | SW | low | --- | |



DATE 12 DEC 64
Pg. # 1

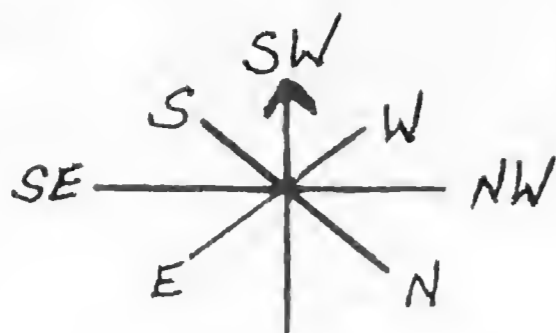
time species SW # dir. hgt. remarks loc.

| | | | | | | | |
|------|---------------------------|--------|-----|------|-----|---|--|
| 0130 | --- | --- | --- | --- | --- | COURSE CHANGE TO NE | |
| 0150 | TROPIC BIRD | 1 | NE | 30' | | - PROBABLE WHITE-TAILED - slender body - quick wingbeats Arose from water. | |
| 0622 | SOOTY TERN | 1 | SE | 50' | | | |
| 0640 | --- | --- | --- | --- | --- | APPARENT SUNRISE | |
| 0700 | FRIGATE BIRD | 1 | SE | HIGH | | | |
| 0759 | JUAN FERNANDEZ PETREL | 1 | SW | LOW | | | |
| 0836 | GREAT FRIGATE BIRD | 2 | ⊙ | 200' | | | |
| 0928 | " " | 1 | ⊙ | 50' | | | |
| 1125 | Jaeger | 2 | N | High | | 1 was all dark, the other an adult light phase with good black cap, but they were too far out to see tails They flew slow enough & looked big enough to be Pomarine. | |
| 1158 | Shearwater | 1 | SW | low | | Dark | |
| 1205 | Greater Frigate | 1 | NE | 70' | | | |
| 1238 | Juan Fernandez Petrel | 1 | NE | low | | | |
| 1246 | Wedgetailed Shearwater | 1 | SE | low | | | |
| 1343 | Juan Fernandez Petrel | 1 | E | low | | sitting on water | |
| 1345 | Storm Petrel | 1 | S | low | | White rump | |
| 1400 | " " | 1 | S | " | | " " | |
| 1420 | bird | 1 | E | low | | | |
| 1449 | shearwater/ petrel | 1 | SE | " | | | |
| 1542 | storm Petrel | 1 | SW | " | | | |
| 1550 | Flock | --- | --- | --- | | actively feeding | |
| | Sooty tern | 25 ± 5 | | | | | |
| | Wedgetail Shearwater | 20 ± | | | | 1 dark phase | |
| | Juan Fernandez Petrel | 2 ± | | | | | |
| | White-necked Petrel | 1 ± | | | | light phase | |
| | Kermadec Petrel | 1 | | | | | |
| | Pterodroma | 40 ± | | | | | |



DATE 12 Dec
Pg.# 2

| time | species | # | dir. | hgt. | remarks | loc. |
|------|--------------------------|---|------|------|-----------------------|------|
| 1615 | Guam Fernaldy Petrels | 3 | E | 2' | Together | |
| 1630 | " | 1 | E | 2' | | |
| 1750 | Red-footed Booby | 1 | NE | 20' | Shot at but flew off. | |



DATE 13 DEC 64
Pg.# 1

COURSE CHANGE TO SW AT 0400 hrs.

time species # dir. hgt. remarks loc.

0635 - - - - - SUNRISE

0642 GREAT FRIGATEBIRD 1 \odot 150' - Imm.

0700 - - - - - STOPPED FOR MORNING STATION.

0722 WEDGETAILED SHEARWATER 2 \odot low

0745 - - - - - UNDERWAY.

0826 WEDGETAILED SHEARWATER 1 N low

0830 WHITE-TAILED TROPIC BIRD 1 \odot 100-300 circled behind ship

0840 WEDGETAILED SHEARWATER 1 N low

0847 SHEARWATER or PETREL 1 N low FAR OUT

0944 SHEARWATER or PETREL 1 N low FAR OUT

1047 Juan Fernandez Petrel 1 NE low

1403 SHEARWATER/PETREL 1 N low - long slender wings & fast flight, quick wingbeats - somewhat like (but not as definite as) Newell's. All brown above light or white belly & breast. UNDERWING with very little or no white and possibly dark AUXILLARS. (flying with wedgetail.) (hooked very similar to wedgetail but with different flight). (2nd Bird said to be wedgetail by MCT, JOAN FERNANDEZ by RSS & same as above described bird by J.D.K.)

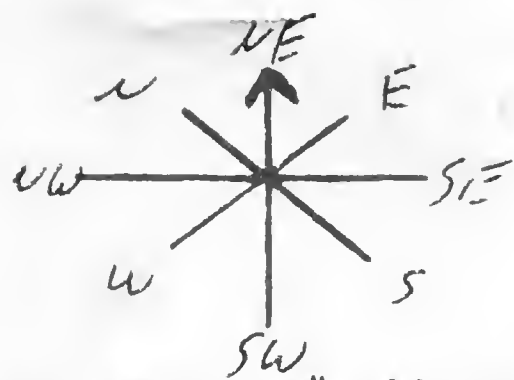
1435 wedgetail shearwater 1 N low

1445 Frigate bird 1 N 50ft collected R.S.S. & MCT.

Flock { 1500 Frigatebird 1 N high feeding saw white blow Resame course 1525
Wedgetail 5 low 1 collected R.S.S.

1705 BLUE-FACED BOOBY 1 \odot 70-80' Imm

1805 - - - - - APPARENT SUNSET.



DATE 14 December, 1964

Pg. # 1

(2234 hrs 13 DEC - 1, W.T. TROPICBIRD ♂)
 (1 SHEARWATER/PETREL GOING SW, LOW.)

time species # dir. hgt. remarks loc.

SUNRISE Ca. 0645

0655 FRIGATE-BIRD, Great 1 N High

RAIN Squall FROM 0700 to 0745

0845 Juan Fernandez Petrel 1 W low

0846 Wedgetailed Shearwater 1 S low

0850 Wedgetailed Shearwater 1 NE low

0924 Wedgetailed Shearwater 1 SE low

F 0946 Sooty tern 25± 5 Distant; not feeding

Wedgetailed Shearwater 30± 5

FF 1018 WEDGETAILED SHEARWATER 18 ☉ low - 1 DARK PHASE, SMALL SCHOOL of fish beneath flock. Feeding!

1031 " " 2 W "

1036 " " 1 S "

1119 JOAN FERNANDEZ PETREL 1 SE low

1149 WEDGETAILED SHEARWATER 1 ☉ low

1215 BIRD 1 N low - long ways off just above horizon could not see it with binoculars as it dipped below horizon 1255

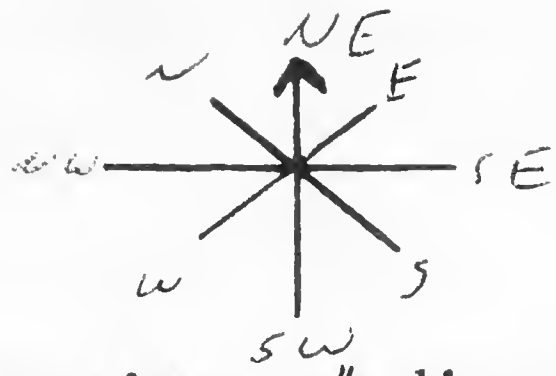
Wedgetail Shearwater 1 N low

1310 " " 1 N low

1430 " " 1 NE low

1530 - - - - - SHIP ON HORIZON TO ENE

1558 SHEARWATER PETREL 1 ☉ low - DISTANT.



DATE 14 DECEMBER 1964
Pg. # 2

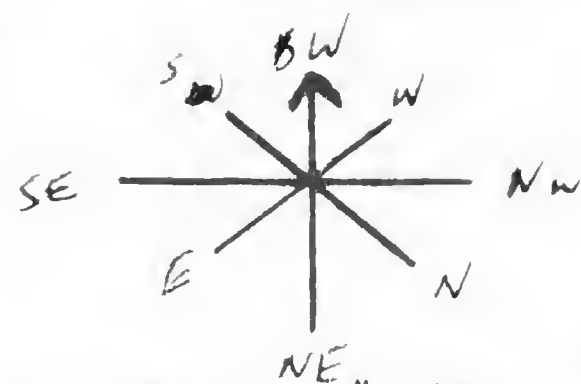
time species # dir. hgt. remarks loc.

1705 WEDGETAIL SHEARWATER 1 NE low

1737 BLUE-FACED BOOBY 1 S low IMMATURE

1755 TROPICBIRD 1 W 75'

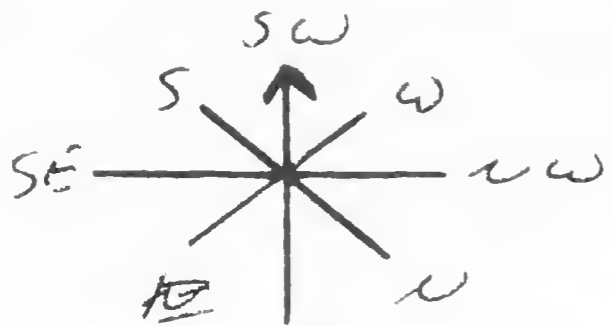
APPARENT SUNSET CA 1758



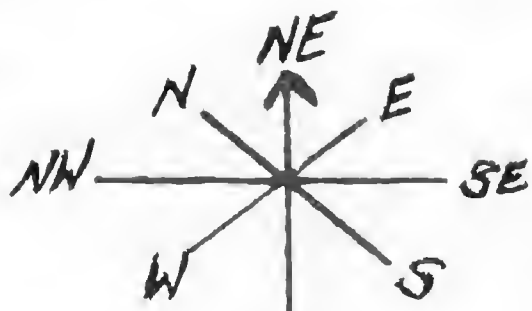
DATE 15 December 1964
Pg. # 1

| time | species | # | dir. | hgt. | remarks | loc. |
|------|-------------------------|---|------|------|---|------|
| 0645 | | | | | sunrise | |
| 0700 | | | | | change course to SW | |
| 0702 | | | | | stop for morning station | |
| 0710 | Wedgetailed Shearwater | 1 | E | low | | |
| 0740 | | | | | under way | |
| 0826 | WEDGE-TAIL SHEARWATER | 1 | NE | low | | |
| 0848 | " " | 1 | N | low | | |
| 0925 | BLACK-FOOTED ALBATROSS | 1 | ↻SW | low | dark phase | |
| 0927 | WEDGE-TAIL SHEARWATER | 1 | ⊙ | low | | |
| 0947 | " " | 1 | ⊙ | low | | |
| 1023 | Black-footed albatross | 1 | ↻NW | low | | |
| 1048 | Wedgetailed shearwater | 1 | N | low | | |
| 1048 | Black-footed albatross | 1 | N | low | light phase | |
| 1103 | Wedgetailed shearwater | 1 | E | low | | |
| 1140 | Frigatebird | 1 | E | low | chasing flying fish over H ₂ O | |
| 1445 | Juan Fernandez | 1 | W | low | - very close RSS. | |
| 1213 | SOOTY TERN | 1 | NE | low | | |
| 1313 | WHITE-TAILED TROPICBIRD | 1 | SW | 40' | collected - AHA | |
| 1454 | BLACK-FOOTED ALBATROSS | 1 | ⊙ | low | light phase | |
| 1524 | PTERODROMA | 1 | S | low | | |

this is the calmest weather I've ever seen with the grid (PJS)



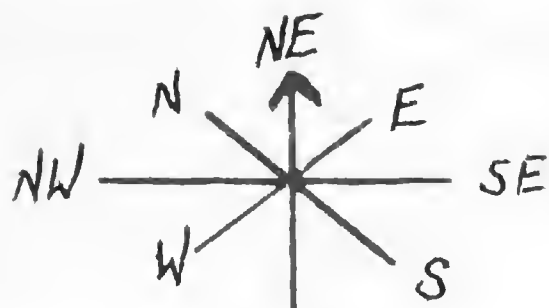
| time | species | # | dir. | hgt. | remarks | loc. |
|---------|-------------------------|------|---------|----------|---|--|
| 1552 | LARGE PTERODROMA | 1 | NW | low | | |
| 1557 | Flock | - | - | - | - Actively feeding - school of tuna breaking surface also dolphin (mahi-mahi) | |
| | GREAT FRIGATE BIRD | 1 | ♀ Ad. | | 1 tuna, 1 dolphin hooked by fishermen on fantail | |
| | Wedge-tail Shearwater | 4 | | | | |
| | Red-footed Booby | 1 | Ad | | | |
| | Harcourt/Leaches Petrel | 1 | | | | |
| 1629 | Wedgetailed Shearwater | 1 | NW | low | | |
| 1631 | " | 1 | sitting | on water | | |
| 1632 | Blue-faced booby | 2 | SE | 20' | one adult, one imm. | |
| 1636 | Storm petrel | 1 | SE | low | white-rump | |
| 1745 | Flock | - | - | - | - Actively feeding, large school of tuna breaking surface of water | |
| | WEDGETAIL SHEARWATER | 35±4 | - | - | - 3 collected | |
| | Sooty TERN | 9 | | | | |
| | Red-Footed BOOBY | 1 | - | - | sub ADULT | Black-footed ALBATROSS Following ship Did NOT Join flock |
| CA 1800 | | | | | SUNSET. | |



0440 - TROPICBIRD
 0510 - "
 0635 - STORM PETREL (A-YOUNG)

DATE 16 DEC. 64
 Pg. # 1

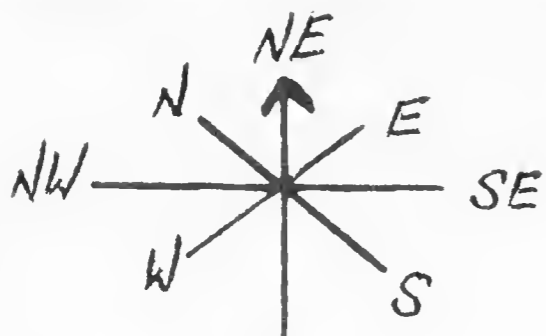
| time | species | SW # | dir. | hgt. | remarks | loc. |
|------------|-------------------------|------|------|------|---|------|
| 0643 | WEDGETAILED SHEARWATER | 3 | ⊙ | LOW | | |
| 0654 | | | | | SUNRISE | |
| 0702 | STORM PETREL | 1 | NW | LOW | - PROBABLE WHITE-RUMPED BIRD BUT POOR LIGHT. | |
| F 0706 | SOOTY TERN | 6 | NW | 50' | - Not feeding | |
| 0708 | WEDGETAILED SHEARWATER | 2 | - | LOW | - ONE ON WATER. | |
| 0712 | | | | | - STOPPED FOR MORNING STATION. | |
| 0715 | RED-TAILED TROPIC BIRD | 1 | E | 60' | - collected - J.D.W. | |
| 0736 | WEDGETAILED SHEARWATER | 1 | ⊙ | LOW | | |
| 0739 | " " | 1 | ⊙ | " | | |
| 0742 | " " | 1 | ⊙ | " | | |
| 0743 | | | | | UNDERWAY & COURSE CHANGE TO NE. | |
| 0830 | wedgetail shearwater | 1 | N | low | | |
| 0840 | " " | 1 | SW | low | | |
| 0845 | white Tailed Tropicbird | 1 | SW | 50 | | |
| 0915 | wedgetail shearwater | 2 | | | | |
| | Juan Fernandez Petrel | 1 | SW | low | | |
| 0930 | wedgetail shearwater | 4 | NE | low | | |
| 0935 | " " | 1 | SW | low | | |
| 0936 | Juan Fernandez Petrel | 1 | SW | low | | |
| FLOCK 0940 | wedgetail shearwater | 9 | | | } sitting on H ₂ O 4 collected wedgetail | |
| | Juan Fernandez Petrel | 1 | | | | |
| 0955 | Blue faced Booby | 1 | ⊙ | 50 | | |
| 1031 | Wedgetailed Shearwater | 1 | NW | LOW | | |
| 1039 | " " | 1 | W | " | | |
| F 1043 | " " | 8 | ⊙ | " | - ONE bird ON WATER - PROBABLY FEEDING | |



DATE 16 DEC 64
Pg. # 2

time species ^{SW} # dir. hgt. remarks loc.

| | | | | | | | |
|---|------|------------------------|-------------------|--------------------|-----|---|--|
| | 1128 | WEDGETAILED SHEARWATER | 1 | NE | LOW | | |
| | 1143 | Storm Petrel | 1 | E | low | Harcourt's or Leach's | |
| | 1217 | WEDGETAILED SHEARWATER | 1 | NW | low | collected by M. Thompson | |
| | 1240 | " " | 1 | SE | low | | |
| | 1257 | PORPOISE | 10± | SSE | — | skinny, had long snouts, jumping clear of WATER | |
| | 1320 | WEDGETAILED SHEARWATER | 1 | Q | low | | |
| F | 1357 | " " | 1 7 | NE | low | not feeding | |
| | 1425 | " " | 1 | NE | low | | |
| | 1450 | Shearwater-petrel | 1 | SE | low | Distant | |
| | 1455 | Wedgetailed Shearwater | 3 | NE | low | | |
| | 1505 | " | 3 | sitting on | | floating shell cases | |
| | 1507 | | | | | stop to pick up shell cases | |
| | 1515 | | | | | underway | |
| F | 1530 | Wedgetailed Shearwater | 24± 4 | several dark phase | | Feeding; large tuna and 1-20' whale in the area | |
| | | Sooty tern | 4 | | | | |
| | | Frigate | 1 | | | one dark phase collected | |
| | 1547 | Wedgetailed Shearwater | 2 | N | low | | |
| | 1549 | Juan Fernandez Petrel | 1 | NE | low | | |
| | 1558 | " | 1 | NE | low | } flying together, landing on water, feeding | |
| | 1558 | Wedgetailed Shearwater | 1 | NE | low | | |
| | 1610 | " " | 1 | E | " | | |
| | 1640 | " " | 1 | Q | " | | |
| | 1641 | " " | 1 | Q | " | | |




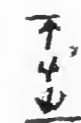
DATE 16 DEC. 64
Pg. # 3

| time | species | SW # | dir. | hgt. | remarks | loc. |
|--------------------------|---------------------------------------|------|------|------|--|------|
| 1720 | WEDGE-TAILED SHEARWATER | 2 | ☉ | low | | |
| 1730 | Christmas Isl. (?) SHEARWATER | 1 | S | low | could be Sooty or SLENDER billed | |
| 1730 | Leeches/ Harcourts Storm Petrel | 1 | NE | low | Keeping up with ship for over 5 minutes so flying at least 10 knots per hour. | |
| 1758 1758 | WEDGE-TAILED SHEARWATER | 2 | ☉ | low | | |
| APPARENT SUNSET CA. 1800 | | | | | | |



DATE 17 December 1964
Pg. # 1

time species # dir. hgt. remarks loc.

| | | | | | | |
|------|--------------------------|---|-----|-----|---|--|
| 0652 | | | | | Sunrise | |
| 0714 | Wedgetailed Shearwater | 2 | NE | Low | | |
| 0714 | | | | | stop for morning drops | |
| 0740 | | | | | under way | |
| 0743 | wedgetailed Shearwater | 1 | NE | low | | |
| 0750 | | | | | whale spout  |  |
| 0802 | Wedgetailed Shearwater | 1 | NE | low | | |
| 0813 | WEDGE TAILED SHEARWATER | 1 | ⊙ | low | | |
| 0840 | KERMADEC PETREL | 1 | WNW | low | dark brown color, white under wing patches small and restricted to primaries, typical Pterodroma flight. | |
| 1000 | RED-TAILED TROPIC BIRD | 1 | ⊙ | 60' | | |
| 1145 | WHITE-tailed TROPIC BIRD | 1 | ⊙ | 80' | | |
| 1235 | Greater Frigate | 1 | | | Imm; circling & diving over small area but not feeding | |
| 1507 | STORM PETREL | 1 | NW | low | - HARCOURT'S OR LEACH'S | |
| 1530 | Pterodroma | 1 | SW | low | - | |
| 1645 | Juan Fernandez petrel | 1 | NE | low | | |
| 1650 | Laysan Albatross | 1 | NE | low | | |
| 1745 | | | | | Apparent Sunset | |



DATE 18 DECEMBER
Pg. # 1

time species # dir. hgt. remarks loc.

0640
apparent sunrise

0745 SHEARWATER/
PETREL 2 NW Low

0842 Black-footed
Albatross 1 following — - DARK PHASE

0912 Wedge-tail
Shearwater 1 E Low

1040 Black-footed
albatross 1 low dark phase

1107 LEACHES /
HARCOURTS
STORM PETREL 2 S low

1128 RED-FOOTED
BOOBY 1 ☉ 20' IMMATURE

1235 SHEARWATER
/ PETREL 1 —

1322 Wedgetail 1 SW low — distant — POSSIBLE pterodroma - Arching

1327 Shearwater
/ Petrel 1 SW 50' long wings behind sleep

1328 Wedgetails 2 SW low

1344 Wedgetail
Shearwater 1 SW low

1405 Juan Fernandez
Petrel 1 W low

1505 Black-footed
Albatross 1 following —

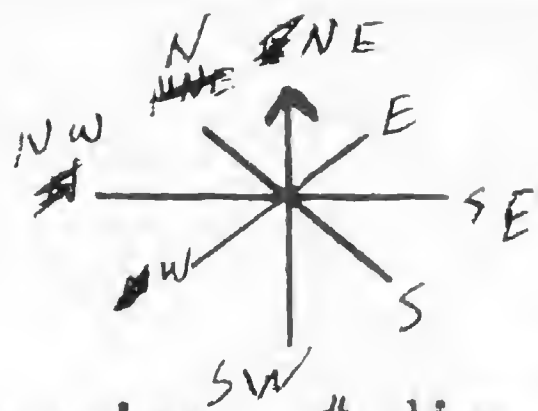
1522 " 2 " —

1547 Wedge-tail 2 SE low

1620 Black-footed
albatross 4 — all present now

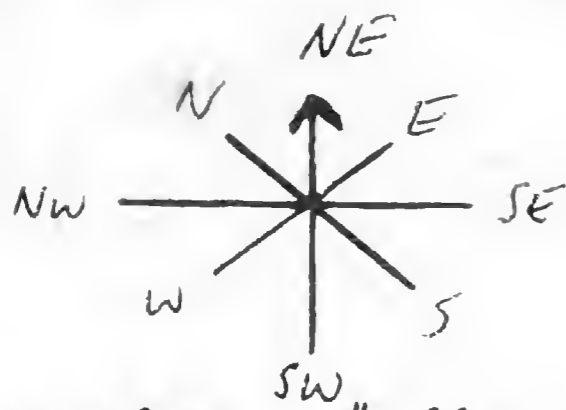
1703 LEACHES /
HARCOURTS
STORM PETREL 1 NE low

observation secured ca 1730



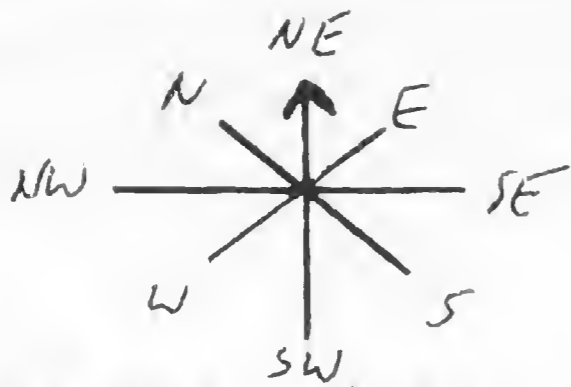
DATE 19 December, 1964
 PG.# 1

| time | species | # | dir. | hgt. | remarks | loc. |
|------|------------------------|-----|----------------|------|--|------|
| 0600 | Black-footed albatross | 4 | following | - | BIRDS (B.F.A.) seen around ship during Night. Possibly some of same followed ship all night. | |
| 0615 | wedge-tails | 40+ | NE | low | | |
| 0630 | " | 8 | NE | low | possibly part of same flock | |
| 0630 | Black-footed albatross | 5 | following | | | |
| 0638 | Red-footed booby | 1 | SW | | Apparent sun rise 0638 | |
| 0638 | Wedge-tail | 3 | NE | low | | |
| 0645 | Wedge-tails | 8 | NE | low | | |
| 0655 | Fairy Tern | 1 | SW | 20' | | |
| | Juan Fernandez Petrel? | 1 | SE | low | <u>Pterodroma</u> thought to be J.F. - following ship. | |
| 0700 | Wedge-tail | 2 | following | - | | |
| 0715 | Black-footed Albatross | 1 | " | - | TOTAL OF 6 FOLLOWING | |
| 0830 | - | - | - | - | - 6 BLACK-FOOTED ALBATROSS AND 2 WEDGE-TAILED SHEARWATERS still following the ship | |
| 0945 | - | - | - | - | - 3 BLACK-FOOTED ALBATROSS and 1 WEDGE-TAILED SHEARWATER now following the ship | |
| 0900 | - | - | - | - | 6 Albatross 1 wedgetailed Shearwater | |
| 0915 | Wedgetailed Shearwater | 1 | S | low | Dark phase | |
| 0916 | Storm petrel | 1 | S | low | White-rump | |
| 0920 | Wedgetailed Shearwater | 1 | NE | low | | |
| 0935 | " | 1 | following ship | | | |
| 0940 | Common Noddy | 1 | E | low | | |
| | Sooty tern | 7 | E | 15' | | |
| 0941 | Blue-faced booby | 1 | E | low | Ad | |



DATE 12-19-64
Pg. # 2

| time | species | # | dir. | hgt. | remarks | loc. |
|--------|-------------------------|----------|------|------|--|------|
| F 0954 | Sooty tern | 13 | | | Feeding heavily on large school | |
| | Wedgetailed Shearwater | 15 | | | | |
| | Common Noddy | 1 | | | | |
| 1004 | Juan Fernandez Petrel | 1 | | | very light neck | |
| | Blackfooted Albatross | 2 | | | | |
| | wedgetail Shearwater | 1 | | | | |
| 1010 | Red tailed Tropicbird | 1 | | | Too big for fairy tern no black on wings or back - could not see tail | |
| 1022 | sooty tern | 2 | SW | | | |
| 1022 | Juan Fernandez Petrel | 1 | SW | low | | |
| 1030 | wedgetail Shearwater | 3 | ⊙ | low | | |
| 1023 | Fairy Tern | 1 | - | 25' | | |
| 1053 | RF Booby | 1 | ⊙ | 50' | | |
| 1103 | Red Tailed Tropicbird | 1 | E | 100' | | |
| 1108 | Pterodroma | 1 | E | low | to mid breast the head & neck gray - wings dark | |
| 1145 | STORM PETREL | 1 | S | LOW | lower breast & belly white | |
| 1148 | WHITE-tailed TROPICBIRD | 1 | ⊙ | 175' | HARCOURT'S OR Leach's - alighting on water momentarily - probably feeding. | |
| 1158 | SOOTY TERN | 1 | S | 50' | | |
| 1211 | wedgetailed Shearwater | 1 | SE | low | | |
| 1215 | " | 2 | NE | low | | |
| F 1220 | Sooty tern | 30± 5 | | | Feeding; distant - could have seen noddi's also | |
| | Wedgetailed shearwater | 20± 5 | | | | |
| | Fairy tern | 6 | | | | |
| | Booby | 2 | | | Imm. | |
| | Frigate | 2 | | | Imm. | |



DATE 19 Dec 1964
Pg. # 3

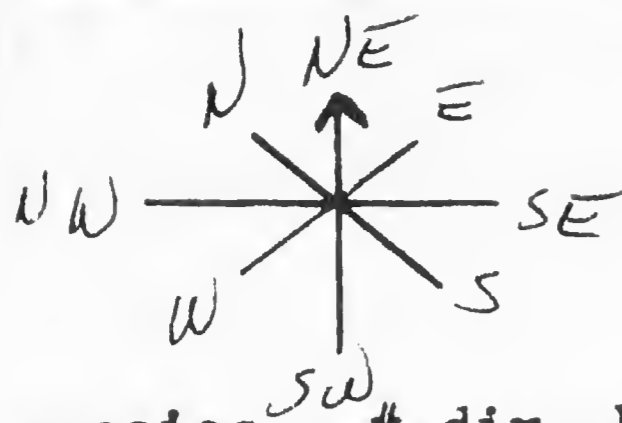
| time | species | # | dir. | hgt. | remarks | loc. |
|------|-----------------------------------|----------|----------------|------|---|-----------------------------|
| 1245 | | | | | only 3 Albatross left. | |
| 1307 | Leach/Harcourt Petrel | 1 | NE | low | | |
| 1332 | Pterodroma | 1 | NW | low | | |
| 1340 | Wedge-tail | 1 | NE | low | | |
| | FLOCK | | | | ACTIVELY FEEDING OVER LARGE | |
| 1425 | Sooty Tern | 100 ± 10 | | | FISH SCHOOL - one shearwater had a small | |
| | FAIRY Tern | 4 | | | silvery fish in its bill - flying fish were present | |
| 1445 | COMMON NODDY Tern | 1 | | | albatross did not join into flock | |
| | GREAT FRIGATE BIRD | 2 | 1♂, 1♀ | | | |
| | WEDGE-TAIL SHEARWATER | 25 + 5 | | | MANY on the water | |
| | WHITE NECKED PETREL | 1 | | | | |
| | RED-FOOTED BOOBY | 1 | IMM | | | |
| | BLUE-FACED BOOBY | 2 | 1 AD. & 1 IMM. | | | |
| 1503 | FAIRY TERN | 1 | ♂ | | | |
| 1507 | REDFOOTED BOOBY | 1 | | | follows ship with ALBATROSS down. | |
| 1538 | LEECHES/ov HARCOURTS STORM PETREL | 1 | NE | | | |
| 1540 | " " | 2 | NE | | | |
| 1541 | WEDGETAILED SHEARWATER | 1 | NE | | | |
| 1550 | " " | 1 | N | | | |
| 1600 | | | | | | |
| 1606 | Booby | 1 | N | low | - distant - PROBABLE RED-FOOTED. | MEETING GREEK SHIP POLICOS. |
| 1610 | WEDGETAILED SHEARWATER | 1 | N | " | | |
| 1615 | SOOTY TERN | 10 | N | " | | |
| 1629 | Red-footed Booby | 1 | SE | low | Immature | |
| 1630 | | | | | | |
| 1651 | WEDGETAILED SHEARWATER | 1 | ♂ | " | | |
| 1705 | Red-footed Booby | 1 | circling | | | |
| 1707 | Sooty Tern | 3 | N | 30' | 1711 Apparent Sunrise | |



DATE 20 DECEMBER 1964
Pg. # 1

time species ^{SW}# dir. hgt. remarks loc.

| time | species | ^{SW} # | dir. | hgt. | remarks | loc. |
|------|-------------------------------|-----------------|-------------|------|--|------|
| | | | | | Arrived ca 0655 | |
| 0656 | Black-FOOTED ALBATROSS | 1 | follow ship | low | | |
| 0702 | JUAN FERNANDEZ Petrel | 1 | W | low | | |
| 0710 | WEDGE TAIL SHEARWATER | 1 | ⊙ | low | | |
| 0714 | " " " | 1 | ⊙ | " | | |
| 0738 | " " " | 2 | NW | " | | |
| - | - | - | - | - | 0745 still only ^{B.F.} ONE ALBATROSS following the ship | |
| 0747 | SHEARWATER/ or PETREL | 1 | SW | " | | |
| 0750 | Large PTERODROMA | 1 | NNE | " | | |
| 0752 | JUAN FERNANDEZ PETREL | 1 | NNE | " | scaling up to ca 80' | |
| 0755 | SHEARWATER/ or PETREL | 1 | NW | " | | |
| 0757 | WEDGE TAILED SHEARWATER | 1 | NE | " | following ship | |
| 0801 | " | 1 | SW | " | | |
| 0803 | Laysan Albatross | 1 | NE | " | | |
| 0805 | Wedgetailed Shearwater | 1 | NE | " | | |
| 0812 | Sooty tern | 1 | SW | " | | |
| 0814 | Juan Fernandez Petrel | 1 | ⊙ | " | following ship | |
| 0820 | White-tailed Tropic Bird | 2 | S | 80' | | |
| 0827 | Storm petrel | 1 | N | low | White rump | |
| 0924 | Pterodroma sp | 1 | NE | low | long way off | |
| 0930 | Harcourt Leach's Storm Petrel | 1 | ⊙ | low | - | |
| 0940 | Pterodroma sp | 2 | NE | low | | |



DATE 20 December 1964
Pg. # 2

time species # dir. hgt. remarks loc.

| | | | | | | |
|------|-----------------------------|---|-----------|------|---|--|
| 1002 | FAIRY TERN | 1 | E | 20' | | |
| 1004 | JUAN FERNANDEZ PETREL | 1 | SW | LOW | | |
| 1008 | FAIRY TERN | 1 | SW | 40' | | |
| 1010 | Black-footed Albatross | 1 | following | — | - TOTAL OF 2 following. | |
| 1020 | " " " | 1 | " | — | - " " 3 " | |
| 1022 | WEDGETAILED SHEARWATER | 1 | SW | LOW | | |
| 1025 | — | — | — | — | LAND Ho! | |
| 1031 | WHITE-TAILED TROPIC BIRD | 1 | ⊙ | 100' | | |
| 1120 | Pterodroma | 2 | SW | low | | |
| 1140 | Bonin Is.? Petrel | 1 | SW | low | a <u>Pterodroma</u> which was quite small with white underwings with dark tipped primaries. Back solid grayish. | |
| 1145 | Wedge-tail Shearwater | 2 | ⊙ | low | | |

~~W. J. ...~~

DECEMBER AT-SEA SURVEY: GRID STUDY

This report is concerned only with the information obtained within the 50,000 square mile grid area for December, 1964. Data from investigations outside this area during the same month will be presented in a subsequent report. A total of six days, 11-16 December, 1964, were spent within the grid. During this period a total of 617 linear miles and 136.2 man hours of diurnal observation were concluded.

Table I

TIME AND MILAGE OF DIURNAL OBSERVATIONS WITHIN THE GRID

| <u>Date</u> | <u>No. Miles</u> | <u>No. Man Hours</u> |
|-------------|------------------|----------------------|
| 11 | 108 | 23.0 |
| 12 | 101 | 22.6 |
| 13 | 117 | 23.2 |
| 14 | 98 | 22.4 |
| 15 | 105 | 22.6 |
| 16 | 88 | 22.4 |
| Total | 617 | 136.2 |

Five members of the Pacific Ocean Biological Survey Program, Smithsonian Institution conducted the survey work: Patrick Gould, Biologist in Charge, Alan Anderson, Robert Standen, Max Thompson and Douglas Whitman. Two students: Robert Banner and Alan Young, representing Dr. Maxwell Doty of the University of Hawaii, conducted oceanographic studies.

No problems were encountered and excellent cooperation was provided by the officers and crew of the U.S.N.S. SHEARWATER. The shorter period of time required to make the full grid pattern this month was the result of exceptionally favorable seas and the relatively smaller numbers of birds encountered.

617
136.2

A grand total of 481 individual birds were recorded within this area, of which 16 were collected. This gives an estimated 0.39 birds per square mile, 19,490 estimated for the area as a whole, during this month. As expected this figure is considerably below that for the previous month and is a reflection of the lack of migrating birds in the area plus the absence of breeding populations.

A total of 11 species of birds, averaging 6.5 per day, were identified. This figure, as expected, is slightly below that of last month. Two species found last month were not recorded this month; Christmas Island Shearwater and Cooks Petrel. Only one species, Black-footed Albatross, was present this month that was not found in November.

Black-footed Albatross

Two individuals were recorded in very calm weather. This species, although expected in fair numbers nearer the major Hawaiian Islands, was not expected within the grid area this month. Its presence here at this time is probably accidental and should probably not be expected every December.

Wedge-tailed Shearwater

A total of 239 individuals were identified, all apparently birds of the year. Last months large numbers and the even larger numbers this month probably represent immature birds that have recently left their nesting burrows on the Hawaiian and Leeward Islands. The adults had presumably departed by the end of October.

Sooty Shearwater

Two individuals, both headed south, were recorded. They were presumed to be of this species since both had the typical silvery, or white, underwing pattern. Since a few others of this species were observed outside the

grid this month these birds are thought to represent the end of the fall migration. This is an exceptionally late date for these birds to be migrating since they should already be breeding in southern waters.

Juan Fernandez Petrel

The decrease in numbers to 24 individuals this month is to be expected since this is the beginning of their breeding season in southern areas.

White-necked Petrel

Only one individual bird was recorded. This decrease in numbers from November is the result of the beginning of their breeding season in southern areas.

Kermadec Petrel

The two individuals, both light phase, recorded this month represent no substantial change in status over November.

Leach's or Harcourt's Storm Petrel

It is still impossible to distinguish between these two species in the field, but it is felt that most, if not all, of these birds are Leach's Storm Petrels. A total of 12 were recorded. This increase is due to birds returning from their breeding grounds in the Alaskan area.

Red-tailed Tropicbird

Only two individuals were recorded this month. This decrease in numbers of birds appears to be due to normal fluctuation in numbers with a tendency to be less numerous during the winter months.

White-tailed Tropicbird

The three individuals recorded this month represents no substantial change in population size from November.

Blue-faced Booby

The seven individuals recorded this month represent an expected increase over November that should continue into January and February.

Red-footed Booby

The three individuals recorded represent no change in status from November.

Great Frigatebird

The 13 birds, mostly immatures, represent no change in status from November.

Sooty Terns

The surprisingly high total of 93 birds, at least in view of last months low number, is probably due to an influx of birds from an outside area. It is assumed that these birds are merely passing through the area.

Jaegers

Two individuals flying together, presumably one adult and one immature, were recorded on 12 December. From their size and shape it is thought that they were probably Pomarine Jaegers, but this identification is uncertain. This species is rarely found within the grid area.

It is interesting to note that the number of feeding flocks encountered in December (6) is twice that found in the same area in November. No explanation is available at this time.

Table II

DIURNAL ABUNDANCE OF SPECIES GROUPS WITHIN THE GRID

| <u>Species Group</u> | <u>No. Birds</u> | <u>Birds/sq.</u> <u>Mile</u> | <u>Estimated</u> <u>Population</u> | <u>Percent total</u> <u>Birds</u> |
|-----------------------|------------------|---------------------------------|---------------------------------------|--------------------------------------|
| Shearwater- Petrel | 330 | 0.27 | 13,370 | 69 |
| Tern | 105 | 0.06 | 2,850 | 22 |
| Storm Petrel | 12 | 0.02 | 970 | 02 |
| Booby | 10 | 0.01 | 400 | 02 |
| Frigatebird | 13 | 0.005 | 260 | 03 |
| Tropicbird | 6 | 0.005 | 250 | 01 |
| Shorebird | 0 | 0.00 | 0 | 00 |
| Total Birds | 481 | 0.39 | 19,490 | 100 |

Table III

DIURNAL ABUNDANCE OF BIRDS WITHIN DIFFERENT GRID QUADRANTS

| <u>Birds</u> | <u>South</u> <u>Miles</u> | <u>Birds/</u> <u>Mile</u> | <u>Birds</u> | <u>North</u> <u>Miles</u> | <u>Birds/</u> <u>Mile</u> | <u>Birds</u> | <u>East</u> <u>Miles</u> | <u>Birds/</u> <u>Mile</u> | <u>Birds</u> | <u>West</u> <u>miles</u> | <u>Birds/</u> <u>Mile</u> |
|--------------|------------------------------|------------------------------|--------------|------------------------------|------------------------------|--------------|-----------------------------|------------------------------|--------------|-----------------------------|------------------------------|
| 52 | 160 | 0.3250 | 77 | 121 | 0.5537 | 155 | 166 | 0.9337 | 197 | 170 | 1.1588 |

DECEMBER AT-SEA SURVEY

NON-GRID

The material covered in this report consists of the results and experiences accomplished during the December (7-10 and 17-20, 1964) at-sea survey in all areas located outside the primary grid area. During this period a total of 760 linear miles and 112.9 man hours of diurnal observations were concluded.

Table I

TIME AND MILEAGE OF DIURNAL OBSERVATIONS OUTSIDE THE GRID

| <u>Date</u> | <u>No. Miles</u> | <u>No. Man Hours</u> |
|-------------|------------------|----------------------|
| 07 | 42 | 8.6 |
| 08 | 103 | 22.0 |
| 09 | 111 | 22.2 |
| 10 | 115 | 22.6 |
| 17 | 112 | 11.0 |
| 18 | 114 | 10.9 |
| 19 | 111 | 10.7 |
| 20 | 52 | 4.9 |
| Total | 760 | 112.9 |

112.9
 106.2
 249.1
 99.1

The usual schedule was followed with the addition of collecting blood samples from all collected specimens. During this period a total of 12 specimens were collected, all of which were preserved as scientific study skins.

A total of 17 species of birds were identified with an average of 7.8 recorded per day. Eight species recorded last month were not found this month: Christmas-Island Shearwater, Golden Plover, Cooks Petrel, Dark-rumped Petrel, Newell's Shearwater, Pale-footed Shearwater, Herald's Petrel, and Japanese White-eye. Only one species was recorded this month but not found in November: Laysan Albatross.

Laysan Albatross: Three individuals recorded. This represents the first appearance of this species, at the beginning of its breeding season along the Leeward Islands.

Black-footed Albatross: A total of 16 birds represent a great increase over last month. As with the above species these birds are returning for their breeding season on the Leeward Islands.

Wedge-tailed Shearwater: Unlike the increase within the grid area, this species reduced its numbers, over the November total, to only 184 individuals recorded.

Sooty Shearwater: Only 11 individuals were recorded, the bulk having passed through the area during November.

Bonin-Island Petrel: As with last month only one individual was recorded.

Kermadec Petrel: Three individuals were recorded. This represents a population comparable to that found in November.

Juan Fernandez Petrel: The total of 18 individuals recorded represents a slight decrease in numbers from November.

Red-tailed Tropicbird: The total of four individuals recorded is comparable to the three found in November.

White-tailed Tropicbird: The total of 15 individuals recorded this month is identical to the total recorded for November.

Blue-faced Booby: Total of 11 individuals is a considerable increase over last months total.

Brown Booby: As in November one individual was recorded.

Red-footed Booby: The total of 19 individuals is a considerable increase over last months total.

Great Frigatebird: A slight decrease in numbers of birds, 32 to 24, from November was recorded.

Sooty Tern: The 960 individuals recorded this month is vastly greater than the number recorded in November. This is probably due to birds from outside the area moving through.

Fairy Tern: The total of 25 birds is considerably greater than that found in November.

Table II

| <u>Species Group</u> | <u>No. Birds</u> | <u>Birds/sq. Mile</u> | ABUNDANCE OF SPECIES GROUPS OUTSIDE THE GRID | |
|----------------------|------------------|-----------------------|--|-------------------------|
| | | | <u>Estimated Population</u> * | <u>Percent Total</u> ** |
| Shearwater-Petrel | 282 | 0.20 | 9,925 | 19 |
| Terns | 1039 | 0.46 | 22,785 | 72 |
| Booby | 34 | 0.02 | 1,195 | 02 |
| Storm Petrel | 32 | 0.04 | 2,105 | 02 |
| Frigatebird | 24 | 0.01 | 400 | 01.5 |
| Tropicbird | 20 | 0.01 | 700 | 01.5 |
| Total | 1451 | 1.02 | 51,090 | 100 |

* in a 50,000 square mile area

** of total birds recorded, not adjusted figures

Table III

DIURNAL ABUNDANCE OF BIRDS WITHIN A 50 MILE RADIUS OF JOHNSTON ATOLL

| <u>Date</u> | <u>Total Birds</u> | <u>Total Miles</u> | <u>Total Sooty Terns</u> | <u>Total Wedge-tail Shearwater</u> |
|-------------|--------------------|--------------------|--------------------------|------------------------------------|
| 10 Dec. | 302 | 89 | 265 | 6 |
| | Total bird density | 3.4 /sq. m. | 2.98 /sq. m. | |

DATE Sa 19 Dec 1964

Time at sunrise = 0623 Position at sunrise = λ 163°-25W

Time at sunset = 1712 Position at sunset = λ 161°-31W

Miles traveled from 0000 hours to sunrise = 64 mi

Miles traveled from sunrise to sunset = 111 mi

Miles traveled from sunset to 2400 hours = 66 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|-----------|----------|
| 1. | 0230 | LORAN | 164°-04W | 19°-33N |
| 2. | 0530 | STARS | 163°-32W | 19°-43N |
| 3. | 1054 | LORAN | 162°-37W | 19°-54N |
| 4. | 1505 | LORAN | 161°-53W | 20°-05N |
| 5. | 1740 | STARS | 161°-27W | 20°-13N |
| 6. | | | | |

DATE Sun 20 Dec 1964

Time at sunrise = 0705 Position at sunrise = ^{20°}19°-54N, 159°-17W

Time at sunset = Position at sunset =

Miles traveled from 0000 hours to sunrise = 63 mi

Miles traveled from sunrise to ~~sunset~~¹²⁰⁰ = 52 mi

Miles traveled from sunset to 2400 hours =

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|------------------------------|----------|
| 1. | 0553 | STAR | 20-05 159°-28W | 20°-51N |
| 2. | 1002 | LORAN | 158°-46W | 21°-05N |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

DATE 7 Dec 1964

Time at sunrise = Position at sunrise =
 Time at sunset = 1754 Position at sunset = 20-58N 158-44W
 Miles traveled from 0000 hours to sunrise =
 Miles traveled from ^{DEPT} sunrise to sunset = 43 MI
 Miles traveled from sunset to 2400 hours = 60 MILES

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|-----------|----------|
| 1. | 1700 | LORAN C | 158-25W | 21-05N |
| 2. | 1935 | LORAN | 158-49.5W | 20-55.5 |
| 3. | 2330 | LORAN | 159-23.5W | 20-44.8N |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

DATE 8 DEC 1964

Time at sunrise = 0706 Position at sunrise = 160° 32 W 20° 18 N
 Time at sunset = 1808 Position at sunset = 162-14W 19.37N
 Miles traveled from 0000 hours to sunrise = 67 mi.
 Miles traveled from sunrise to sunset = 103 mi
 Miles traveled from sunset to 2400 hours = 66 MILES

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|---------------|-----------|-----------|
| 1. | 0226 | Loran | 159-52.1W | 20°-34.6N |
| 2. | 0600 | LORAN | 160-26W | 20-21N |
| 3. | 0700 | CELESTIAL FIX | 160 34W | 20° 17 N |
| 4. | 1100 | LORAN | 161-11W | 20°-02'N |
| 5. | 2246 | LORAN | 163-08W | 19° 16' N |
| 6. | | | | |

DATE 9 Dec 64

Time at sunrise 0622 Position at sunrise = 164-34W 18-41N
Time at sunset 1228 Position at sunset = 166-20W 17-55N
Miles traveled from 0000 hours to sunrise = 66 MILES
Miles traveled from sunrise to sunset = 111 MILES
Miles traveled from sunset to 2400 hours = 68 MILES.

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|------------------|----------------|---------------|
| 1. | <u>0600</u> | <u>CELESTIAL</u> | <u>164-30W</u> | <u>18-43N</u> |
| 2. | <u>0800</u> | <u>LORAN</u> | <u>164-48W</u> | <u>18-33N</u> |
| 3. | <u>1112</u> | <u>"</u> | <u>165-21W</u> | <u>18-20N</u> |
| 4. | <u>1300</u> | <u>LORAN</u> | <u>167-21W</u> | <u>17-34N</u> |
| 5. | | | | |
| 6. | | | | |

DATE 10 Dec 64

Time at sunrise 0630 Position at sunrise = 168-35W 17-01N
Time at sunset 1745 Position at sunset = 169-07W 15-38N
Miles traveled from 0000 hours to sunrise = 70
Miles traveled from sunrise to sunset = 115 Mi
Miles traveled from sunset to 2400 hours = 60 MILES

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|------------------|----------------|---------------|
| 1. | <u>0600</u> | <u>CELESTIAL</u> | <u>168-30W</u> | <u>17-05N</u> |
| 2. | <u>1055</u> | <u>LAND.</u> | <u>169-15W</u> | <u>16-45N</u> |
| 3. | <u>1200</u> | <u>Vis/Radar</u> | <u>169-25W</u> | <u>16-35N</u> |
| 4. | <u>1910</u> | <u>CELESTIAL</u> | <u>169-05W</u> | <u>15-28N</u> |
| 5. | <u>2235</u> | <u>LORAN</u> | <u>168-58W</u> | <u>14-55N</u> |
| 6. | | | | |

50 mile point at 0700
1600

1/2 = 1200

60 | 28.000
24.0
4.0

DATE 11 Dec. 1964 FRI.

Time at sunrise 0632 Position at sunrise = 169-36 W 13-52 N
 Time at sunset 1800 Position at sunset = 170-52 W 12-32 N
 Miles traveled from 0000 hours to sunrise = 68 mi
 Miles traveled from sunrise to sunset = 108 mi
 Miles traveled from sunset to 2400 hours = 63 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|-----------|----------|
| 1. | 0600 | Celestial | 169-30 W | 13-56 N |
| 2. | 1200 | Noon | 170-08 W | 13-22 N |
| 3. | 1830 | Celestial | 170-50 W | 12-30 N |
| 4. | 2100 | Loran | 171-14 W | 12-08 N |
| 5. | | | | |
| 6. | | | | |

DATE SAT- 12 DEC. 1964

Time at sunrise 0634 Position at sunrise = 171-16 W 13-10 N
 Time at sunset 1750 Position at sunset = 170-05 W 14-25 N
 Miles traveled from 0000 hours to sunrise = 62 mi
 Miles traveled from sunrise to sunset = 101 mi
 Miles traveled from sunset to 2400 hours = 54 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|----------------------|-----------|----------|
| 1. | 0600 | Celestial | 176-13 W | 13-08 N |
| 2. | 1420 | 246 + 30 N + LIRN | 170-36 W | 14-07 N |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

1/2 = 1200

43

64



DATE Sun 13 Dec 1964

Time at sunrise 0622 Position at sunrise = 170-18W 15-18N
Time at sunset 1758 Position at sunset = 171-41W ^{W. of Pratt.} 13-52N
Miles traveled from 0000 hours to sunrise = 65 mi
Miles traveled from sunrise to sunset = ~~120 mi~~ 117
Miles traveled from sunset to 2400 hours = 61 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|------------------|------------------|-----------------|
| 1. | <u>1200</u> | <u>R/Fix @</u> | <u>171°-01'W</u> | <u>14°-38'N</u> |
| 2. | <u>1830</u> | <u>Celestial</u> | <u>171°-43W</u> | <u>13°-50N</u> |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

DATE Mon 14 Dec 1964

Time at sunrise 0645 Position at sunrise = 172-50W 14 02N
Time at sunset 1758 Position at sunset = 171-38W - 15-16N
Miles traveled from 0000 hours to sunrise = 63 mi
Miles traveled from sunrise to sunset = ~~120 mi~~ 98
Miles traveled from sunset to 2400 hours = 57 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|--------------------------------|-----------------|----------------|
| 1. | <u>1454</u> | <u>SUN + LORAN + LORAN</u> | <u>172°-00W</u> | <u>14°-55N</u> |
| 2. | <u>1830</u> | <u>Celestial</u> | <u>171°-36W</u> | <u>15-17N</u> |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

0215 - halfway along 129 (F) (315° course)

DATE

Tu 15 Dec 1964

Time at sunrise 0645 Position at sunrise = 171-12W 16-41N
 Time at sunset 1800 Position at sunset = 172-30W 15-32N
 Miles traveled from 0000 hours to sunrise = 66 MI
 Miles traveled from sunrise to sunset = 105 MI
 Miles traveled from sunset to 2400 hours = 62 mi.

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|-----------|----------|
| 1. | 0610 | Celestial | 171-05W | 16-38N |
| 2. | 1200 | LAN + LORAN | 171°-49'W | 16°-10'N |
| 3. | 1510 | SUN | 172°-10'W | 15°-50'N |
| 4. | 1830 | Celestial | 172-30W | 15-30N |
| 5. | 2000 | Celestial | 172-44W | 15-18N |
| 6. | | | | |

DATE

We 16 Dec 1964

Time at sunrise =0655 Position at sunrise = Lo 174°-13'W Lat. ~~14°-57'N~~
 Time at sunset =1808 Position at sunset = Lat. 16°-02'N Long. 173°-13'W
 Miles traveled from 0000 hours to sunrise = 74 mi
 Miles traveled from sunrise to sunset = 88 mi
 Miles traveled from sunset to 2400 hours = 59 mi.

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|-------------|-----------|----------|
| 1. | 0626 | Celestial * | 174°-12'W | 14°-53'N |
| 2. | 1200 | LAN/LORAN | 173°-46'W | 15°-26'N |
| 3. | 1500 | SUN/LORAN | 173°-34'W | 15°-40'N |
| 4. | 1830 | Celestial * | 173°-10'W | 16°-04'N |
| 5. | 2000 | LORAN | 172°-58'W | 16°-15'N |
| 6. | | | | |

DATE TH 17 Dec 1964

Time at sunrise 0648 Position at sunrise = L 17°-28'N λ 171-39'W

Time at sunset 1750 Position at sunset = L 18°-00'N λ 169-48'W

Miles traveled from 0000 hours to sunrise = 66 mi

Miles traveled from sunrise to sunset = 112 mi

Miles traveled from sunset to 2400 hours = 63 mi

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|--------------|------------------|-----------------|
| 1. | <u>0612</u> | <u>stars</u> | <u>171°-45'W</u> | <u>17°-25'N</u> |
| 2. | <u>1200</u> | <u>LORAN</u> | <u>170°-45'W</u> | <u>17°-43'N</u> |
| 3. | <u>1853</u> | <u>stars</u> | <u>169°-41'W</u> | <u>18°-02'N</u> |
| 4. | <u>2308</u> | <u>Loran</u> | <u>168°-56'W</u> | <u>18°-18'N</u> |
| 5. | | | | |
| 6. | | | | |

DATE FR 18 Dec 1964

Time at sunrise = 0640 Position at sunrise = L 18°-42'N λ 167°-36'W

Time at sunset = 1731 Position at sunset = L 19°-12'N λ 165°-42'W

Miles traveled from 0000 hours to sunrise = 71 mi

Miles traveled from sunrise to sunset = 114

Miles traveled from sunset to 2400 hours = 69

| | TIME OF FIX | TYPE OF FIX | LONGITUDE | LATITUDE |
|----|-------------|------------------|------------------|-----------------|
| 1. | <u>0600</u> | <u>STARS</u> | <u>167°-44'W</u> | <u>18°-40'N</u> |
| 2. | <u>1130</u> | <u>LORAN</u> | <u>166°-47'W</u> | <u>18°-58'N</u> |
| 3. | <u>1525</u> | <u>LORAN/SUN</u> | <u>166°-03'W</u> | <u>19°-07'N</u> |
| 4. | <u>1803</u> | <u>stars</u> | <u>165°-36'W</u> | <u>19°-13'N</u> |
| 5. | <u>2255</u> | <u>Loran</u> | <u>164°-42'W</u> | <u>19°-26'N</u> |
| 6. | | | | |

DATE 17 DEC. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SFD. |
|--------|-----------|------------|----------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | | | | | | | | | | | | | | | |
| 0200 | | | | | | | | | | | | | | | |
| 0300 | | | | | | | | | | | | | | | |
| 0400 | | | | | | | | | | | | | | | |
| 0500 | | | | | | | | | | | | | | | |
| 0600 | | | | | | | | | | | | | | | |
| 0700 | | | | | | | | | | | | | | | |
| 0800 | | | | | | | | | | | | | | | |
| 0900 | | | | | | | | | | | | | | | |
| 1000 | | | | | | | | | | | | | | | |
| 1100 | | | | | | | | | | | | | | | |
| 1200 | | | | | | | | | | | | | | | |
| 1300 | 26 | 08 | | | | | | | | | | | | | |
| 1400 | 27 | 09 | | | | | | | | | | | | | |
| * 1500 | 21° 18' N | 158-12 W | Pt CLD | 15 | 1017 | 86 | 70.74 | 78 | 3 | 8 | 120-6-3 | 79 | 13 | 040 | 247° 10 |
| 1600 | 21°-09' N | 158-15.8 W | Pt cloud | 15 | 1017 | 85 | 74 | 6.9 | 3 | 7 | 060-7' | 79 | 13 | 050 | 247° - 10 |
| 1700 | 21-05 N | 158-25 W | Pt CLDy | 15 | 1017 | 84 | 72 | 7.2 | 3 | 7 | 070-6-3 | 79 | 13 | 050 | 247 9.6 |
| 1800 | 20-54 N | 158-35 W | " " | 15 | 1017 | 82 | 72 | 7.2 | 3 | 7 | 080-6-3 | 79 | 13 | 050 | 247 9.6 |
| 1900 | 20-56 N | 158-44 W | " " | 15 | 1017 | 78 | 72 | 8.3 | 3 | 7 | 040-6-3 | 79 | 13 | 050 | 247 9.8 |
| 2000 | 20-53 N | 158-14 W | " " | 15 | 1017 | 78 | 72 | 8.3 | 3 | 7 | 090-6-3 | 79 | 13 | 050 | 247 9.8 |
| 2100 | 20-52 N | 159-00 W | Few CLds | 15 | 1017 | 78 | 72 | 8.3 | 2 | 7 | 090-6-3 | 79 | 10 | 090 | 247 10 |
| 2200 | 20-49 N | 159-10 W | " | 15 | 1017 | 78 | 72 | 8.3 | 2 | 7 | 090-6-3 | 79 | 10 | 090 | 247 10 |
| 2300 | 20-46 N | 159-19 W | " | 15 | 1017 | 78 | 72 | 8.3 | 2 | 7 | 090-6-3 | 79 | 10 | 090 | 247 10 |
| 2400 | 20-43 N | 159-28 W | " | 15 | 1017 | 73 | 72 | 8.3 | 2 | 7 | 090-6-3 | 79 | 10 | 090 | 247 10 |

REMARKS:

ALL TIMES LOCAL (~~WHSKEY~~); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE Wed 16 Dec 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID% | TL SKY | OPA SKY | SWELL WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|--------|---------|-----------|-----|------|-------|--------|--------|--------|---------|-------------|----------|--------|--------|------------------|
| 0100 | 14-44N | 173-26W | Clear | 15 | 1009 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 228-10.5 |
| 0200 | 14-37N | 173-33W | Clear | 15 | 1009 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 228-10.5 |
| 0300 | 14-30N | 173-42W | " | 15 | 1008 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 228-10.5 |
| 0400 | 14-36N | 173-49W | " | 15 | 1008 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 228-10.5 |
| 0500 | 14-44N | 173-56W | " | 15 | 1008 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 315-10. |
| 0600 | 14-51N | 174-03W | " | 15 | 1008 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 315-10. |
| 0700 | 14-58N | 174-11W | " | 15 | 1008 | 78 | 69 | 75 | 0 | 10 | 060-6-4 | 80 | - | - | 315-10. |
| 0800 | 15-02N | 174-17W | " | 15 | 1009 | 80 | 72 | 75 | 1 | 10 | 060-6-4 | 80 | - | - | 315-10 |
| 0900 | 15-08N | 174-06W | Few Cls | 15 | 1010 | 81 | 68 | 68 | 1 | 9 | 060-6-3 | 80 | AIRS | - | 045-9.5 |
| 1000 | 15-14N | 173-59W | " | 15 | 1010 | 81 | 68 | 68 | 1 | 9 | 060-6-3 | 80 | " | - | 045-9.5 |
| 1100 | 15-19N | 173-55W | " | 15 | 1010 | 81 | 68 | 68 | 1 | 9 | 060-6-3 | 80 | " | - | 045-9.5 |
| 1200 | 15-26N | 173-47W | " | 15 | 1010 | 81 | 68 | 68 | 1 | 9 | 060-6-3 | 80 | " | - | 045-10 |
| 1300 | 15-32N | 173-40W | Ptly cldy | 15 | 1009 | 81 | 68 | 68 | 2 | 8 | 060-6-3 | 81 | 6 | 180 | 045-10 |
| 1400 | 15-36N | 173-37W | " | 15 | 1008 | 81 | 68 | 68 | 3 | 7 | 060-6-3 | 81 | 8 | 130 | 045-10 |
| 1500 | 15-40N | 173-34W | " | 15 | 1008 | 81 | 68 | 68 | 3 | 7 | 060-6-3 | 81 | 7 | 120 | 045-10 |
| 1600 | 15-46N | 173-29W | " | 15 | 1008 | 81 | 68 | 68 | 3 | 7 | 060-6-3 | 81 | 5 | 110 | 045-10 |
| 1700 | 15-53N | 173-20W | " | 15 | 1008 | 81 | 68 | 68 | 5 | 5 | 060-6-3 | 81 | AIRS | - | 045-10 |
| 1800 | 16-00N | 173-13W | " | 15 | 1008 | 81 | 68 | 68 | 5 | 5 | 060-6-3 | 81 | AIRS | - | 045-10 |
| 1900 | 16-08N | 173-06W | " | 15 | 1008 | 80 | 68 | 68 | 2 | 8 | 060-6-3 | 81 | AIRS | - | 045- |
| 2000 | 16-15N | 172-58W | " | 15 | 1000 | 80 | 68 | 68 | 1 | 9 | 060-6-3 | 81 | AIR | - | 045- |
| 2100 | 16-22N | 172-51W | Few Cls | 15 | 1010 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 81 | " | - | 045-9.5 |
| 2200 | 16-28N | 172-44W | " | 15 | 1010 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 81 | " | - | 045-9.5 |
| 2300 | 16-35N | 172-37W | " | 15 | 1010 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 81 | " | - | 045-9.5 |
| 2400 | 16-42N | 172-30W | " | 15 | 1010 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 81 | " | - | 045-9.5 |

REMARKS:

XRAY
 ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES;
 WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
 12-5-63

1940 Half way Kila leg

DATE Thurs. 17 Dec 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID % | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|---------|----------|------------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 16-49 N | 172-23 W | Few Clouds | 15 | 1009 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 4 | 190 | 045-9.5 |
| 0200 | 16-56 N | 172-16 W | " | 15 | 1009 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 6 | 205 | 045-9.5 |
| 0300 | 17-03 N | 172-09 W | " | 15 | 1008 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 8 | 205 | 045-9.5 |
| 0400 | 17-10 N | 172-02 W | " | 15 | 1008 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 10 | 200 | 045-9.5 |
| 0500 | 17-15 N | 171-54 W | " | 15 | 1008 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 10 | 210 | 045-9.5 |
| 0600 | 17-21 N | 171-48 W | " | 15 | 1008 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 10 | 210 | 045-9.5 |
| 0700 | 17-26 N | 171-43 W | " | 15 | 1008 | 78 | 71 | 79 | 1 | 9 | 060-6-3 | 80 | 10 | 210 | 073-9.5 |
| 0800 | 17-30 N | 171-35 W | " | 15 | 1009 | 78 | 71 | 79 | 2 | 8 | CONF | 80 | 10 | 210 | 073-9.5 |
| 0900 | 17-32 N | 171-22 W | " | 15 | 1009 | 80 | 72 | 75 | 2 | 8 | CONF | 80 | 10 | 200 | 073-10 |
| 1000 | 17-35 N | 171-11 W | " | 15 | 1009 | 80 | 72 | 75 | 2 | 8 | " | 80 | 10 | 200 | 073-10 |
| 1100 | 17-38 N | 171-00 W | " | 15 | 1009 | 80 | 72 | 75 | 2 | 8 | " | 80 | 10 | 200 | 073-10 |
| 1200 | 17-41 N | 170-51 W | " | 15 | 1009 | 80 | 72 | 75 | 2 | 8 | " | 80 | 10 | 200 | 073-10 |
| 1300 | 17-46 N | 170-35 W | " | 15 | 1008 | 82 | 74 | 75 | 2 | 8 | " | 80 | 12 | 205 | 073-10 |
| 1400 | 17-49 N | 170-25 W | " | 15 | 1007 | 82 | 74 | 76 | 4 | 6 | " | 80 | 16 | 210 | 073-10 |
| 1500 | 17-52 N | 170-15 W | " | 15 | 1007 | 84 | 76 | 76 | 3 | 7 | " | 80 | 17 | 210 | 073-10 |
| 1600 | 17-54 N | 170-05 W | " | 15 | 1007 | 84 | 76 | 76 | 3 | 7 | " | 80 | 18 | 215 | 073-10 |
| 1700 | 17-58 N | 169-55 W | " | 15 | 1007 | 84 | 76 | 76 | 3 | 7 | " | 80 | 18 | 215 | 073-10 |
| 1800 | 18-02 N | 169-43 W | " | 15 | 1007 | 82 | 72 | 75 | 3 | 7 | " | 80 | 20 | 215 | 073-10 |
| 1900 | 18-04 N | 169-33 W | " | 15 | 1008 | 80 | 72 | 75 | 3 | 7 | " | 80 | 20 | 215 | 073-10 |
| 2000 | 18-05 N | 169-28 W | " | 15 | 1008 | 80 | 72 | 75 | 3 | 7 | " | 80 | 20 | 215 | 073-10 |
| 2100 | 18-10 N | 169-17 W | " | 15 | 1009 | 79 | 72 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 215 | 073-10.3 |
| 2200 | 18-14 N | 169-07 W | " | 15 | 1009 | 79 | 72 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 215 | 073-10.3 |
| 2300 | 18-17 N | 168-56 W | " | 15 | 1009 | 79 | 72 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 215 | 073-10.3 |
| 2400 | 18-20 N | 168-46 W | " | 15 | 1009 | 79 | 72 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 215 | 073-10.3 |

REMARKS:

ALL TIMES LOCAL ^{XRAY} (~~WISKEY~~); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE Fri. 18 Dec. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|---------|----------|----------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 18-23 N | 168-36 W | Few clds | 15 | 1008 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0200 | 18-26 N | 168-25 W | " | 15 | 1008 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0300 | 18-29 N | 168-14 W | " | 15 | 1008 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0400 | 18-22 N | 168-04 W | " | 15 | 1008 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0500 | 18-35 N | 167-57 W | " | 15 | 1008 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0600 | 18-38 N | 167-44 W | " | 15 | 1009 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0700 | 18-41 N | 167-32 W | " | 15 | 1009 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0800 | 18-43 N | 167-23 W | " | 15 | 1007 | 80 | 74 | 83 | 3 | 7 | 215-6-4 | 80 | 20 | 220 | 073-10.3 |
| 0900 | 18-49 N | 167-12 W | " | 15 | 1008 | 81 | 73 | 79 | 3 | 7 | 225-6-5 | 80 | 20 | 225 | 076-10.3 |
| 1000 | 18-53 N | 167-01 W | " | 15 | 1008 | 81 | 73 | 79 | 3 | 7 | 225-6-5 | 80 | 20 | 225 | 076-10.3 |
| 1100 | 18-57 N | 166-52 W | " | 15 | 1008 | 81 | 73 | 79 | 3 | 7 | 225-6-5 | 80 | 20 | 225 | 076-10.3 |
| 1200 | 19-00 N | 166-41 W | " | 15 | 1008 | 81 | 73 | 79 | 3 | 7 | 225-6-5 | 80 | 20 | 225 | 076-10.3 |
| 1300 | 19-03 N | 166-29 W | cloudy | 15 | 1007 | 81 | 74 | 79 | 6 | 4 | 225-6-5 | 80 | 22 | 235 | 076-10.3 |
| 1400 | 19-04 N | 166-18 W | " | 15 | 1006 | 81 | 74 | 79 | 7 | 3 | 230-6-5 | 80 | 22 | 240 | 076-10.3 |
| 1500 | 19-06 N | 166-07 W | " | 15 | 1006 | 81 | 74 | 79 | 7 | 3 | 230-6-5 | 80 | 20 | 240 | 076-10.3 |
| 1600 | 19-08 N | 165-56 W | " | 15 | 1006 | 81 | 74 | 79 | 7 | 3 | 220-6-5 | 80 | 18 | 245 | 076-10.3 |
| 1700 | 19-14 N | 165-47 W | " | 15 | 1006 | 80 | 72 | 75 | 7 | 3 | 230-6-5 | 80 | 18 | 245 | 076-10.3 |
| 1800 | 19-17 N | 165-37 W | " | 15 | 1006 | 80 | 72 | 75 | 7 | 3 | 230-6-5 | 80 | 18 | 245 | 076-10.3 |
| 1900 | 19-18 N | 165-26 W | " | 15 | 1008 | 80 | 72 | 75 | 7 | 3 | 230-6-5 | 80 | 18 | 245 | 076-10.3 |
| 2000 | 19-21 N | 165-15 W | " | 15 | 1008 | 80 | 72 | 75 | 7 | 3 | 230-6-5 | 80 | 15 | 245 | 076-10.3 |
| 2100 | 19-20 N | 165-03 W | SQUALLS | 15 | 1008 | 75 | 70 | 86 | 8 | 2 | 240-6-5 | 80 | 15 | 260 | 073-10.3 |
| 2200 | 19-23 N | 164-52 W | " | 15 | 1008 | 75 | 70 | 86 | 8 | 2 | 240-6-5 | 80 | 15 | 260 | 073-10.3 |
| 2300 | 19-26 N | 164-41 W | " | 15 | 1008 | 75 | 70 | 86 | 8 | 2 | 240-6-5 | 80 | 15 | 260 | 073-10.3 |
| 2400 | 19-29 N | 164-31 W | " | 15 | 1007 | 71 | 70 | 86 | 8 | 2 | 240-6-5 | 80 | 15 | 260 | 073-10.3 |

REMARKS:

XRAY

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE Sat. 19 Dec. 1964

Swells

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|----------------------|------------------------|-----------|-----|------|-------|--------|-------|--------|---------|-----------|----------|--------|--------|------------------|
| 0100 | 19 ² 30 N | 164 ⁰ -20 W | Squally | 5 | 1008 | 76 | 72 | 87 | 1 | 9 | 240-6-5 | 79 | 15 | 280 | 073 10.5 |
| 0200 | 19-32 N | 164-09 W | " | 3 | 1008 | 76 | 72 | 87 | 0 | 10 | 240-6-5 | 79 | 14 | 300 | 073 10.5 |
| 0300 | 19-34 N | 163-58 W | " | 5 | 1007 | 76 | 72 | 87 | 0 | 10 | 250-6-5 | 79 | 8 | 275 | 070 10.5 |
| 0400 | 19-38 N | 163-48 W | " | 6 | 1008 | 76 | 72 | 87 | 0 | 10 | 250-6-5 | 79 | 7 | 270 | 070-10.5 |
| 0500 | 19-42 N | 163-38 W | pt Cloudy | 15 | 1008 | 76 | 72 | 87 | 5 | 5 | 250-6-5 | 79 | 7 | 290 | 070-10.5 |
| 0600 | 19-45 N | 163-27 W | " | 15 | 1008 | 76 | 72 | 87 | 5 | 5 | 270-6-5 | 79 | 7 | 290 | 070-10.5 |
| 0700 | 19-50 N | 163-15 W | " | 15 | 1009 | 78 | 69 | 75 | 3 | 8 | 270-6-5 | 79 | 7 | 290 | 070 10.5 |
| 0800 | 19-53 N | 163-04 W | " | 15 | 1009 | 78 | 69 | 75 | 3 | 8 | 270-6-5 | 79 | 7 | 290 | 070-10.5 |
| 0900 | 19-50 N | 162-57 W | " | 15 | 1009 | 81 | 68 | 68 | 4 | 6 | 315-10-10 | 79 | 12 | 290 | 070 10.1 |
| 1000 | 19-53 N | 162-47 W | " | 15 | 1009 | 81 | 68 | 68 | 4 | 6 | 315-10-10 | 79 | 12 | 290 | 070 10.1 |
| 1100 | 19-56 N | 162-37 W | " | 15 | 1009 | 81 | 68 | 68 | 4 | 6 | 315-10-10 | 79 | 12 | 290 | 070 10.1 |
| 1200 | 19-59 N | 162-26 W | " | 15 | 1009 | 81 | 68 | 68 | 4 | 6 | 315-10-10 | 79 | 12 | 290 | 070 10.1 |
| 1300 | 20-02 N | 162-16 W | ov cast | 12 | 1009 | 80 | 68 | 68 | 2 | 8 | 315-10-10 | 78 | 13 | 290 | 070-10.1 |
| 1400 | 20-03 N | 162-06 W | ov cast | 10 | 1008 | 78 | 66 | 67 | 1 | 9 | 315-10-10 | 78 | 14 | 285 | 070-10.1 |
| 1500 | 20-05 N | 161-54 W | cloudy | 12 | 1008 | 78 | 68 | 71 | 4 | 6 | 315-10-10 | 78 | 12 | 290 | 070-10.1 |
| 1600 | 20-08 N | 161-45 W | pt cloudy | 15 | 1009 | 78 | 69 | 75 | 8 | 2 | 315-10-10 | 78 | 10 | 280 | 070-10.1 |
| 1700 | 20-11 N | 161-33 W | " | 15 | 1010 | 78 | 69 | 75 | 5 | 5 | 315-10-10 | 78 | 10 | 280 | 070-10.1 |
| 1800 | 20-15 N | 161-23 W | " | 15 | 1010 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 070-10.1 |
| 1900 | 20-20 N | 161-12 W | " | 15 | 1010 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 070-10.1 |
| 2000 | 20-22 N | 161-01 W | " | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 070-10.1 |
| 2100 | 20-26 N | 160-50 W | " | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 077 10.5 |
| 2200 | 20-28 N | 160-40 W | " | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 077 10.5 |
| 2300 | 20-33 N | 160-30 W | " | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 077 10.5 |
| 2400 | 20-36 N | 160-19 W | " | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-10 | 78 | 10 | 280 | 077 10.5 |

REMARKS:

XRAY

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE SAT 12 DEC 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | SWELL | | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|--------|---------|------------|-----|------|-------|--------|---------|--------|---------|---------|----------|----------|--------|-------------|------------------|
| | | | | | | | | | | | WAVES | SEA TEMP | | | | |
| 0100 | 12-37N | 171-44W | Clear | 15 | 1011 | 80 | 73 | 79 | 1 | 9 | 070-6-5 | 81 | 18 | 075 | 315-10.5 | |
| 0200 | 12-44N | 171-44W | " | 15 | 1011 | 80 | 73 | 79 | 1 | 9 | 070-6-5 | 81 | 18 | 075 | 315-10.5 | |
| 0300 | 12-51N | 171-36W | " | 15 | 1010 | 80 | 73 | 79 | 1 | 9 | 070-6-5 | 81 | 15 | 095 | 048-10.5 80 | |
| 0400 | 12-58N | 171-28W | " | 15 | 1010 | 80 | 73 | 79 | 1 | 9 | 070-6-5 | 81 | 14 | 090 | 048-10.5 | |
| 0500 | 13-05N | 171-25W | PT Cloudy | 15 | 1010 | 80 | 72 | 79 | 2 | 8 | 070-6-5 | 81 | 14 | 080 | 048-10.9 74 | |
| 0600 | 13-11N | 171-14W | " | 15 | 1010 | 80 | 72 | 79 | 2 | 8 | 070-6-5 | 81 | 14 | 080 | 048-10.9 77 | |
| 0700 | 13-18N | 171-06W | " | 15 | 1010 | 80 | 72 | 79 | 2 | 8 | 070-6-5 | 81 | 14 | 080 | 048-10.9 74 | |
| 0800 | 13-18N | 171-05W | " | 15 | 1011 | 81 | 72 | 79 | 2 | 8 | 070-6-5 | 81 | 12 | 070 | 046-9 | |
| 0900 | 13-23H | 170-59W | Few Cls | 15 | 1011 | 82 | 72 | 72 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 046-9 | |
| 1000 | 13-28H | 170-53W | " | 15 | 1011 | 82 | 72 | 72 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 046-9 | |
| 1100 | 13-32H | 170-47W | " | 15 | 1011 | 82 | 72 | 72 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 046-9 | |
| 1200 | 13-39H | 170-41W | " | 15 | 1011 | 82 | 72 | 72 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 041-9 | |
| 1300 | 13-48N | 170-36W | PT. Cloudy | 15 | 1009 | 82 | 72 | 72 | 3 | 7 | 040-6-5 | 81 | 10 | 080 | 041-10 | |
| 1400 | 13-56N | 170-31W | " | 15 | 1008 | 82 | 72 | 72 | 5 | 5 | 040-6-5 | 81 | 6 | 095 | 041-10 | |
| 1500 | 14-05N | 170-25W | " | 15 | 1008 | 82 | 72 | 72 | 5 | 5 | 040-6-5 | 81 | 6 | 100 | 041-10 | |
| 1600 | 14-13N | 170-19W | " | 15 | 1009 | 82 | 74 | 76 | 4 | 6 | 040-6-5 | 81 | 6 | 100 | 041-10 | |
| 1700 | 14-19N | 170-11W | " | 15 | 1009 | 82 | 74 | 76 | 4 | 6 | 040-6-5 | 81 | 6 | 100 | 041-9.5 | |
| 1800 | 14-25N | 170-05W | " | 15 | 1009 | 82 | 74 | 76 | 4 | 6 | 040-6-5 | 81 | 6 | 100 | 041-9.5 | |
| 1900 | 14-32N | 169-58W | " | 15 | 1009 | 81 | 74 | 76 | 8 | 2 | 040-6-5 | 81 | 8 | 100 | 045-9 | |
| 2000 | 14-38N | 169-52W | SPECIALY | 10 | 1010 | 80 | 74 | 76 | 7 | 3 | 040-6-5 | 81 | 8 | 100 | 045-9 | |
| 2100 | 14-46N | 169-46W | RAIN | 10 | 1011 | 74 | 71 | 91 | 8 | 2 | 045-6-5 | 81 | 10 | 070 | 045-9 | |
| 2200 | 14-52H | 169-39W | " | 10 | 1011 | 74 | 71 | 91 | 8 | 2 | 045-6-5 | 81 | 10 | 070 | 045-9 | |
| 2300 | 14-59H | 169-33W | " | 10 | 1011 | 74 | 71 | 91 | 8 | 2 | 045-6-5 | 81 | 10 | 070 | 045-9 | |
| 2400 | 15-05H | 169-27W | " | 10 | 1011 | 74 | 71 | 91 | 8 | 2 | 045-6-5 | 81 | 10 | 070 | 045-9 | |

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

Sat Dec 13-1300 half way Leg Charley

DATE SUN 13 Dec 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID% | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|---------|----------|-------------|------|------|-------|--------|--------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 15°-12N | 169°-37W | Rain Squall | 1 mi | 1010 | 74 | 71 | 91 | 10 | 10 | 045-6-5 | 80 | 26 | 050 | 314-10 |
| 0200 | 15°-18N | 169°-44W | " | 1 | 1010 | 74 | 70 | 86 | 10 | 10 | 045-6-5 | 80 | 24 | 095 | 314-10 |
| 0300 | 15°-25N | 169°-51W | ptly Cloudy | 10 | 1010 | 76 | 70 | 82 | 3 | 7 | 045-6-5 | 80 | 18 | 110 | 314-10 |
| 0400 | 15°-33N | 170°-00W | " " | 10 | 1010 | 76 | 70 | 82 | 3 | 7 | 045-6-5 | 80 | 16 | 110 | 314-10 |
| 0500 | 15°-27N | 170°-07W | " " | 12 | 1010 | 76 | 70 | 82 | 7 | 3 | 045-6-4 | 80 | 16 | 110 | 328-10 |
| 0600 | 15°-20N | 170°-16W | " " | 12 | 1010 | 76 | 70 | 82 | 8 | 3 | 045-6-4 | 80 | 16 | 110 | 225-10 |
| 0700 | 15°-13N | 170°-23W | " " | 15 | 1010 | 78 | 70 | 82 | 8 | 3 | 045-6-3 | 80 | 16 | 330 | 225-10 |
| 0800 | 15°-12N | 170°-23W | " " | 15 | 1010 | 79 | 70 | 82 | 7 | 3 | 050-6-4 | 80 | 6 | 050 | 225-10 |
| 0900 | 15-03N | 170-35W | Clear | 15 | 1009 | 80 | 68 | 68 | 1 | 9 | 090-6-5 | 80 | 15 | 090 | 225 10.5 |
| 1000 | 14-55N | 170-43W | " | 15 | 1009 | 80 | 68 | 68 | 1 | 9 | 090-6-5 | 80 | 15 | 090 | 225 10.5 |
| 1100 | 14-48N | 170-51W | " | 15 | 1009 | 80 | 68 | 68 | 1 | 9 | 090-6-5 | 80 | 15 | 090 | 225 10.5 |
| 1200 | 14-40N | 170-59W | " | 15 | 1009 | 80 | 68 | 68 | 1 | 9 | 090-6-5 | 80 | 15 | 090 | 225 10.5 |
| 1300 | 14-32N | 171-08W | " | 15 | 1008 | 80 | 72 | 75 | 1 | 9 | 090-6-5 | 80 | 12 | 090 | 227-10.5 |
| 1400 | 14-25N | 171-15W | " | 15 | 1008 | 80 | 72 | 75 | 1 | 9 | 090-6-5 | 80 | 11 | 095 | 227-10.5 |
| 1500 | 14-18N | 171-23W | " | 15 | 1008 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227-10.5 |
| 1600 | 14-11N | 171-30W | " | 15 | 1008 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227-10.5 |
| 1700 | 14-02N | 171-37W | PT CLOUDY | 15 | 1008 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227 10.5 |
| 1800 | 13-52N | 171-41W | " | 15 | 1008 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227 10.5 |
| 1900 | 13-47N | 171-48W | " | 15 | 1008 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227 10.5 |
| 2000 | 13-49N | 171-54W | " | 15 | 1010 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 227-10.5 |
| 2100 | 13-41N | 172-03W | Fog Cldy | 15 | 1010 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 225 10.5 |
| 2200 | 13-35N | 172-12W | " | 15 | 1010 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 225 10.5 |
| 2300 | 13-27N | 172-20W | " | 15 | 1010 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 225 10.5 |
| 2400 | 13-27N | 172-30W | " | 15 | 1010 | 80 | 72 | 75 | 2 | 8 | 090-6-5 | 80 | 10 | 090 | 225 10.5 |

REMARKS:

XRAY
 ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES;
 WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
 12-5-63

1400 half way mark easy grid

DATE MON. 14 DEC. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|--------|---------|-----------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 13-26N | 172-37W | Few Clds | 15 | 1009 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 10 | 095 | 315-10.5 |
| 0200 | 13-33N | 172-44W | " | 15 | 1009 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 9 | 105 | 315-10.5 |
| 0300 | 13-40N | 172-51W | " | 15 | 1008 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 10 | 060 | 315-10.5 |
| 0400 | 13-46N | 172-57W | " | 15 | 1008 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 10 | 040 | 315-10.5 |
| 0500 | 13-52 | 173-01W | " | 15 | 1008 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 10 | 040 | 315-9 |
| 0600 | 14-00 | 172-54W | " | 15 | 1008 | 80 | 73 | 79 | 2 | 8 | 090-6-5 | 80 | 10 | 040 | 045-9 |
| 0700 | 14-05 | 172-57W | " | 15 | 1010 | 80 | 73 | 79 | 2 | 8 | 070-6-4 | 80 | 7 | 040 | 045-9 |
| 0800 | 14-08 | 172-49W | " | 15 | 1012 | 80 | 72 | 79 | 5 | 8 | 070-6-4 | 80 | 7 | 130 | 048-9 |
| 0900 | 14-16N | 172-43W | " | 15 | 1011 | 82 | 74 | 76 | 2 | 8 | 050-6-6 | 80 | 5 | 050 | 045-9 |
| 1000 | 14-22N | 172-36W | " | 15 | 1011 | 82 | 74 | 76 | 2 | 8 | 050-6-6 | 80 | 5 | 050 | 045-9 |
| 1100 | 14-28N | 172-29W | " | 15 | 1011 | 82 | 74 | 76 | 2 | 8 | 050-6-6 | 80 | 5 | 050 | 045-9 |
| 1200 | 14-34N | 172-23W | " | 15 | 1011 | 82 | 74 | 76 | 2 | 8 | 050-6-6 | 80 | 5 | 050 | 045-9 |
| 1300 | 14-41N | 172-14W | ptly cldy | 15 | 1010 | 81 | 71 | 72 | 2 | 8 | 050-6-6 | 81 | 3 | 050 | 045-9 |
| 1400 | 14-48N | 172-07W | " | 15 | 1009 | 81 | 71 | 72 | 2 | 8 | 050-6-6 | 81 | 2 | 045 | 045-9 |
| 1500 | 14-56N | 172-00W | " | 15 | 1009 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 4 | 045 | 045-9.5 |
| 1600 | 15-02N | 171-53W | " | 15 | 1009 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 5 | 045 | 045-9.5 |
| 1700 | 15-08N | 171-45W | " | 15 | 1009 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 5 | 045 | 045-9.5 |
| 1800 | 15-16N | 171-38W | " | 15 | 1009 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 5 | 045 | 045-9.5 |
| 1900 | 15-21N | 171-31W | " | 15 | 1009 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 5 | 045 | 045-9.5 |
| 2000 | 15-29N | 171-25W | " | 15 | 1010 | 80 | 70 | 72 | 2 | 8 | 050-6-6 | 81 | 5 | 045 | 045-9.5 |
| 2100 | 15-36N | 171-18W | Clear | 15 | 1011 | 79 | 70 | 72 | 0 | 10 | 060-6-6 | 81 | 0 | - | 045-9.5 |
| 2200 | 15-42N | 171-11W | " | 15 | 1011 | 79 | 70 | 72 | 0 | 10 | 060-6-6 | 81 | 0 | - | 045-9.5 |
| 2300 | 15-48N | 171-04W | " | 15 | 1011 | 79 | 70 | 72 | 0 | 10 | 060-6-6 | 81 | 0 | - | 045-9.5 |
| 2400 | 15-56N | 170-58W | " | 15 | 1011 | 79 | 70 | 72 | 0 | 10 | 060-6-6 | 81 | 0 | - | 045-9.5 |

REMARKS:

XRAY

ALL TIMES LOCAL (WISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955

12-5-63

0215
~~0220~~ Half way into Fox Trot leg
 1800 " " " Golf "

DATE Tue. 15 Dec. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID % | TL SKY | OPA SKY | WAVES ^{SWELL} | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|----------|---------|-----------|-----|------|-------|--------|---------|--------|---------|------------------------|----------|--------|--------|------------------|
| 0100 | 16-02.5N | 170-50W | pty Cloud | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 2 | 025 | 045-9.5 |
| 0200 | 16-09N | 170-42W | " | 4 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 2 | 045 | 045-9.5 |
| 0300 | 16-16N | 170-43W | " | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 4 | 060 | 313-9.5 |
| 0400 | 16-23N | 170-50W | " | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 6 | 070 | 313-9.5 |
| 0500 | 16-30N | 170-59W | " | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 6 | 070 | 313-9.5 |
| 0600 | 16-38N | 171-05W | " | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 6 | 070 | 313-9.5 |
| 0700 | 16-42N | 171-15W | " | 15 | 1010 | 78 | 69 | 75 | 2 | 8 | 060-6-6 | 80 | 6 | 070 | 313-9.5 |
| 0800 | 16-43N | 171-16W | " | 15 | 1010 | 79 | 69 | 75 | 2 | 8 | 040-6-2 | 80 | - | - | 325-10 |
| 0900 | 16-31N | 171-27W | Few Cls | 15 | 1011 | 81 | 70 | 72 | 1 | 9 | 060-6-4 | 80 | - | - | 225-10.5 |
| 1000 | 16-23N | 171-35W | " | 15 | 1011 | 81 | 70 | 72 | 1 | 9 | 060-6-4 | 80 | - | - | 225-10.5 |
| 1100 | 16-16N | 171-43W | " | 15 | 1011 | 81 | 70 | 72 | 1 | 9 | 060-6-4 | 80 | - | - | 225-10.5 |
| 1200 | 16-09N | 171-50W | " | 15 | 1011 | 81 | 70 | 72 | 1 | 9 | 060-6-4 | 80 | - | - | 225-10.5 |
| 1300 | 16-03N | 171-56W | " | 15 | 1010 | 81 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | 2 | 030 | 225-10.5 |
| 1400 | 15-56N | 172-02W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | 4 | 010 | 225-10.5 |
| 1500 | 15-51N | 172-08W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-9.5 |
| 1600 | 15-45N | 172-15W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-9.5 |
| 1700 | 15-38N | 172-22W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-9.5 |
| 1800 | 15-30N | 172-30W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-9.5 |
| 1900 | 15-24N | 172-37W | " | 15 | 1009 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-9.5 |
| 2000 | 15-16N | 172-45W | " | 15 | 1010 | 80 | 70 | 72 | 1 | 9 | 060-6-4 | 81 | - | - | 225-10 |
| 2100 | 15-12N | 172-53W | Clear | 15 | 1010 | 79 | 68 | 71 | 0 | 10 | 060-6-4 | 81 | - | - | 228 10.5 |
| 2200 | 15-05N | 173-01W | " | 15 | 1010 | 79 | 68 | 71 | 0 | 10 | 060-6-4 | 81 | - | - | 228 10.5 |
| 2300 | 14-59N | 173-10W | " | 15 | 1010 | 79 | 68 | 71 | 0 | 10 | 060-6-4 | 81 | - | - | 228 10.5 |
| 2400 | 14-51N | 173-19W | " | 15 | 1010 | 79 | 68 | 71 | 0 | 10 | 060-6-4 | 81 | - | - | 228 10.5 |

REMARKS:

^{XRAY}
ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES;
WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

1730 Hoff way + through Itam Track.

DATE 8 December 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID % | TL SKY | OPA SKY | WAVES ^{swell} | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|----------|-----------|-------------|-----|------|-------|--------|---------|--------|---------|------------------------|----------|--------|--------|------------------|
| 0100 | 20-42.9N | 159-37.0W | Pf. cloudy | 15 | 1016 | 79 | 72 | 79 | 1 | 9 | 130-6-3 | 79 | 6 | 080 | 247-9 |
| 0200 | 20-36.0N | 159-46.0W | " | 15 | 1016 | 77 | 71 | 82 | 2 | 8 | 130-6-2 | 79 | 7-5 | 070 | 247-9 |
| 0300 | 20-32.5N | 159-57.5W | " | 15 | 1015 | 78 | 71 | 79 | 2 | 8 | 130-6-2 | 79 | 6 | 015 | 247-9 |
| 0400 | 20-28.8N | 160-06.5W | " | 15 | 1015 | 78 | 72 | 83 | 2 | 8 | 130-6-2 | 79 | 6 | 040 | 247-9 |
| 0500 | 20-20N | 160-15W | " | 15 | 1015 | 78 | 72 | 83 | 2 | 8 | 130-6-2 | 79 | 6 | 040 | 247-9 |
| 0600 | 20-21N | 160-25W | " | 15 | 1015 | 78 | 72 | 83 | 2 | 8 | 130-6-2 | 79 | 6 | 040 | 247-9 |
| 0700 | 20-17N | 160-34W | " | 15 | 1015 | 78 | 72 | 83 | 2 | 8 | 130-6-2 | 79 | 6 | 040 | 247-9 |
| 0800 | 20-14N | 160-44W | " | 15 | 1017 | 78 | 72 | 83 | 5 | 6 | 130-6-2 | 79 | 10 | 025 | 246-9.5 |
| 0900 | 20-09N | 160-53W | Pf. cl. brk | 15 | 1017 | 79 | 75 | 91 | 2 | 8 | 315-6-5 | 79 | 12 | 020 | 246-9.5 |
| 1000 | 20-05N | 161-01W | " | 15 | 1017 | 79 | 75 | 91 | 2 | 8 | 315-6-5 | 79 | 12 | 020 | 246-9.5 |
| 1100 | 20-02N | 161-11W | " | 15 | 1017 | 79 | 75 | 91 | 2 | 8 | 315-6-5 | 79 | 12 | 020 | 246-9.5 |
| 1200 | 19-58N | 161-20W | " | 15 | 1017 | 79 | 75 | 91 | 2 | 8 | 315-6-5 | 79 | 12 | 020 | 246-9.5 |
| 1300 | 19-54N | 161-29W | " | 15 | 1016 | 79 | 73 | 83 | 2 | 8 | 315-6-5 | 79 | 12 | 030 | 246-9.5 |
| 1400 | 19-52N | 161-39W | " | 15 | 1015 | 80 | 72 | 75 | 1 | 9 | 315-6-5 | 79 | 12 | 045 | 246-9.5 |
| 1500 | 19-50N | 161-49W | " | 15 | 1015 | 80 | 72 | 75 | 1 | 9 | 315-6-5 | 79 | 12 | 045 | 246-9.5 |
| 1600 | 19-45N | 161-57W | " | 15 | 1015 | 80 | 72 | 75 | 1 | 9 | 315-6-5 | 79 | 12 | 040 | 246-9.5 |
| 1700 | 19-42N | 162-05W | " | 15 | 1015 | 80 | 72 | 75 | 1 | 9 | 315-6-5 | 79 | 12 | 060 | 246-9.5 |
| 1800 | 19-37N | 162-12W | " | 15 | 1015 | 80 | 72 | 75 | 1 | 9 | 315-6-5 | 79 | 12 | 060 | 246-9.5 |
| 1900 | 19-33N | 162-24W | " | 15 | 1015 | 79 | 72 | 83 | 3 | 7 | 315-6-5 | 79 | 12 | 060 | 246-9.5 |
| 2000 | 19-30N | 162-33W | " | 15 | 1015 | 79 | 72 | 83 | 3 | 7 | 120-6-3 | 79 | 12 | 060 | 246-9.5 |
| 2100 | 19-26N | 162-43 | Cr. cl. brk | 15 | 1016 | 78 | 71 | 79 | 1 | 9 | 120-6-3 | 79 | 10 | 080 | 246-10 |
| 2200 | 19-21N | 162-53 | " | 15 | 1016 | 78 | 71 | 79 | 1 | 9 | 120-6-3 | 79 | 10 | 080 | 246-10 |
| 2300 | 19-17N | 163-05 | " | 15 | 1016 | 78 | 71 | 79 | 1 | 9 | 120-6-3 | 79 | 10 | 080 | 246-10 |
| 2400 | 19-12N | 163-19 | " | 15 | 1016 | 78 | 71 | 79 | 1 | 9 | 120-6-3 | 79 | 10 | 080 | 246-10 |

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE 9 Dec 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|--------|---------|----------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 19-06N | 163-31W | Clear | 15 | 1016 | 78 | 71 | 79 | 0 | 10 | 120-6-3 | 79 | 12 | 075 | 246-10 |
| 0200 | 19-02N | 163-42W | " | 15 | 1015 | 78 | 71 | 79 | 0 | 10 | 120-6-3 | 79 | 12 | 075 | 246-10 |
| 0300 | 18-57N | 163-54W | " | 15 | 1014 | 78 | 69 | 75 | 0 | 10 | 120-6-3 | 79 | 12 | 065 | 246-10 |
| 0400 | 18-53N | 164-03W | " | 15 | 1014 | 78 | 69 | 75 | 0 | 10 | 120-6-3 | 79 | 12 | 060 | 246-10 |
| 0500 | 18-48N | 164-15W | PT CLDY | 15 | 1014 | 78 | 69 | 75 | 1 | 9 | 120-6-3 | 79 | 12 | 060 | 246-10 |
| 0600 | 18-43N | 164-26W | " | 15 | 1014 | 78 | 69 | 75 | 1 | 9 | 120-6-3 | 79 | 12 | 060 | 246-10 |
| 0700 | 18-39N | 164-37W | " | 15 | 1014 | 78 | 69 | 75 | 1 | 5 | 120-6-3 | 79 | 12 | 060 | 246-10 |
| 0800 | 18-34N | 164-47W | " | 15 | 1015 | 80 | 72 | 75 | 2 | 9 | 120-6-3 | 80 | 12 | 060 | 246-10 |
| 0900 | 18-30N | 164-57W | FEW CLD | 15 | 1016 | 81 | 72 | 75 | 2 | 8 | 090-5-5 | 80 | 13 | 070 | 246 10.5 |
| 1000 | 18-26N | 165-07W | " | 15 | 1016 | 81 | 72 | 75 | 2 | 8 | 090-5-5 | 80 | 13 | 070 | 246 10.5 |
| 1100 | 18-21N | 165-17W | " | 15 | 1016 | 81 | 72 | 75 | 2 | 8 | 090-5-5 | 80 | 13 | 070 | 246 10.5 |
| 1200 | 18-16N | 165-29W | " | 15 | 1016 | 81 | 72 | 75 | 2 | 8 | 090-5-5 | 80 | 13 | 070 | 246 10.5 |
| 1300 | 18-13N | 165-40W | " | 15 | 1015 | 81 | 72 | 75 | 2 | 8 | 090-5-5 | 80 | 15 | 060 | 246 10.5 |
| 1400 | 18-10N | 165-50W | " | 15 | 1014 | 81 | 73 | 76 | 2 | 8 | 090-5-5 | 80 | 16 | 055 | 246 10.5 |
| 1500 | 18-05N | 166-01W | " | 15 | 1014 | 80 | 72 | 75 | 2 | 8 | 090-8-5 | 80 | 16 | 060 | 246 10.5 |
| 1600 | 18-01N | 166-11W | " | 15 | 1014 | 80 | 72 | 75 | 2 | 8 | 090-9-5 | 80 | 18 | 060 | 246 10.5 |
| 1700 | 17-58N | 166-14W | " | 15 | 1014 | 80 | 72 | 75 | 2 | 8 | 090-9-5 | 80 | 15 | 060 | 246 9 |
| 1800 | 17-54N | 166-24W | " | 15 | 1014 | 80 | 72 | 75 | 2 | 8 | 090-9-5 | 80 | 15 | 060 | 246 10.5 |
| 1900 | 17-50N | 166-36W | " | 15 | 1014 | 80 | 72 | 75 | 2 | 5 | 090-9-5 | 80 | 15 | 060 | 246 10.5 |
| 2000 | 17-45N | 166-46W | " | 15 | 1015 | 79 | 72 | 75 | 2 | 8 | 010-4-5 | 80 | 15 | 060 | 246 10.5 |
| 2100 | 17-42N | 166-57W | " | 15 | 1015 | 79 | 72 | 75 | 1 | 9 | 000-7-5 | 79 | 15 | 060 | 246 10.5 |
| 2200 | 17-39N | 167-07W | " | 15 | 1015 | 79 | 72 | 75 | 1 | 9 | 000-7-5 | 79 | 15 | 060 | 246-10.5 |
| 2300 | 17-35N | 167-20W | " | 15 | 1015 | 79 | 72 | 75 | 1 | 9 | 000-7-5 | 79 | 15 | 060 | 246-10.5 |
| 2400 | 17-31N | 167-31W | " | 15 | 1015 | 79 | 72 | 75 | 1 | 9 | 000-7-5 | 79 | 15 | 060 | 244-10.5 |

REMARKS:

VICTOR (#11)

ALL TIMES LOCAL (~~WHISKEY~~); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE 10 Dec. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID% | TL SKY | OPA SKY | SWELL WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPEED |
|------|----------|-----------|-------------|-----|------|-------|--------|--------|--------|---------|-------------|----------|--------|--------|-------------------|
| 0100 | 17° 26 N | 167° 41 W | Ptly Cloudy | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 15 | 065 | 244-10.5 |
| 0200 | 17° 21 N | 167° 50 W | Ptly Cloudy | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 14 | 075 | 244-10.5 |
| 0300 | 17° 17 N | 168° 00 W | " | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 15 | 070 | 244-10.5 |
| 0400 | 17° 13 N | 168° 09 W | " | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 16 | 070 | 244-10.5 |
| 0500 | 17° 10 N | 168° 20 W | " | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 16 | 070 | 244-10.5 |
| 0600 | 17° 05 N | 168° 30 W | " | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 15 | 070 | 244-10.5 |
| 0700 | 16° 59 N | 168° 40 W | " | 15 | 1014 | 79 | 72 | 79 | 2 | 8 | 000-7-5 | 79 | 15 | 070 | 244-10.5 |
| 0800 | 16° 55 N | 168° 49 W | " | 15 | 1015 | 80 | 72 | 75 | 2 | 8 | 000-7-4 | 80 | 15 | 070 | 244-10.8 |
| 0900 | 16° 51 N | 168° 59 W | Few Cls | 15 | 1015 | 85 | 70 | 62 | 1 | 9 | 000-6-7 | 80 | 20 | 070 | 240-11.0 |
| 1000 | 16° 48 N | 169° 08 W | " | 15 | 1015 | 85 | 70 | 62 | 1 | 9 | 000-6-7 | 80 | 20 | 070 | 240-11.0 |
| 1100 | 16° 44 N | 169° 15 W | " | 15 | 1015 | 85 | 70 | 62 | 1 | 9 | 000-6-7 | 80 | 20 | 070 | 240-11.0 |
| 1200 | 16° 39 N | 169° 25 W | " | 15 | 1015 | 85 | 70 | 62 | 1 | 9 | 000-6-7 | 80 | 20 | 070 | 240-11.0 |
| 1300 | 16° 35 N | 169° 22 W | " | 15 | 1014 | 80 | 70 | 72 | 1 | 9 | 000-6-7 | 80 | 16 | 075 | 162-10.5 |
| 1400 | 16° 21 N | 169° 21 W | " | 15 | 1013 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 1500 | 16° 15 N | 169° 19 W | " | 15 | 1013 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 1600 | 16° 05 N | 169° 16 W | " | 15 | 1013 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 1700 | 15° 44 N | 169° 10 W | " | 15 | 1013 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 1800 | 15° 35 N | 169° 05 W | " | 15 | 1014 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 1900 | 15° 26 N | 169° 02 W | " | 15 | 1014 | 80 | 70 | 72 | 2 | 8 | 000-6-7 | 80 | 15 | 065 | 162-10.5 |
| 2000 | 15° 18 N | 168° 58 W | " | 15 | 1014 | 80 | 70 | 72 | 2 | 8 | 000-6-6 | 80 | 15 | 065 | 162-10 |
| 2100 | 15° 08 N | 168° 03 W | " | 15 | 1014 | 79 | 69 | 72 | 1 | 9 | 070-6-7 | 80 | 15 | 070 | 162-10 |
| 2200 | 15° 00 N | 168° 00 W | " | 15 | 1014 | 79 | 69 | 72 | 1 | 9 | 070-6-7 | 80 | 15 | 070 | 162-10 |
| 2300 | 14° 50 N | 168° 56 W | " | 15 | 1014 | 79 | 69 | 72 | 1 | 9 | 070-6-7 | 80 | 15 | 070 | 162-10 |
| 2400 | 14° 40 N | 168° 53 W | " | 15 | 1014 | 79 | 69 | 72 | 1 | 9 | 070-6-7 | 80 | 15 | 070 | 162-10 |

REMARKS:

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ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE 11 Dec. 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|----------|-----------|------------|-----|------|-------|--------|---------|--------|---------|---------|----------|--------|--------|------------------|
| 0100 | 14°-31 N | 168°-50 W | Few Clouds | 15 | 1013 | 79 | 70 | 75 | 1 | 9 | 070-6-7 | 80 | 18 | 060 | 222-10.5 |
| 0200 | 14°-20 N | 169°-01 W | " | 15 | 1013 | 79 | 73 | 83 | 1 | 9 | 070-6-7 | 80 | 18 | 060 | 222-10.5 |
| 0300 | 14°-11 N | 169°-08 W | " | 15 | 1012 | 79 | 72 | 79 | 2 | 8 | 070-6-7 | 80 | 14 | 060 | 222-10.5 |
| 0400 | 14°-02 N | 169°-14 W | " | 15 | 1012 | 79 | 72 | 79 | 2 | 8 | 070-6-7 | 80 | 15 | 060 | 222-10.5 |
| 0500 | 13°-58 N | 169°-20 W | " | 15 | 1012 | 79 | 72 | 79 | 2 | F | 070-6-6 | 80 | 14 | 060 | 222-10.5 |
| 0600 | 13°-50 N | 169°-24 W | " | 15 | 1012 | 79 | 72 | 79 | 2 ✓ | 8 | 070-6-6 | 80 | 14 | 060 | 222-10.5 |
| 0700 | 13°-45 N | 169°-32 W | " | 15 | 1012 | 79 | 72 | 79 | 2 | 8 | 070-6-6 | 80 | 14 | 060 | 222-10.5 |
| 0800 | 13°-45 N | 169°-38 W | " | 15 | 1013 | 79 | 72 | 79 | 2 | 8 | 070-6-3 | 80 | 12 | 060 | 220-10.3 |
| 0900 | 13°-42 N | 169°-47 W | " | 15 | 1013 | 82 | 74 | 76 | 1 | 9 | 070-6-5 | 80 | 15 | 070 | 218-10 |
| 1000 | 13°-35 N | 169°-54 W | " | 15 | 1013 | 82 | 74 | 76 | 1 | 9 | 070-6-5 | 80 | 15 | 070 | 218-10 |
| 1100 | 13°-30 N | 170°-00 W | " | 15 | 1013 | 82 | 74 | 76 | 1 | 9 | 070-6-5 | 80 | 15 | 070 | 218-10 |
| 1200 | 13°-21 N | 170°-08 W | " | 15 | 1013 | 82 | 74 | 76 | 1 | 9 | 070-6-5 | 80 | 15 | 070 | 218-10 |
| 1300 | 13°-13 N | 170°-15 W | " | 15 | 1012 | 83 | 72 | 69 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1400 | 13°-05 N | 170°-22 W | " | 15 | 1011 | 83 | 72 | 69 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1500 | 12°-57 N | 170°-30 W | " | 15 | 1011 | 82 | 72 | 72 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1600 | 12°-49 N | 170°-38 W | " | 15 | 1011 | 81 | 73 | 75 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1700 | 12°-40 N | 170°-44 W | PT CLD | 15 | 1011 | 81 | 73 | 75 | 2 | 8 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1800 | 12°-32 N | 170°-52 W | " | 15 | 1011 | 81 | 73 | 75 | 2 | 8 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 1900 | 12°-25 N | 171°-01 W | " | 15 | 1011 | 80 | 73 | 75 | 2 ✓ | 8 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 2000 | 12°-20 N | 171°-13 W | " | 15 | 1011 | 80 | 73 | 75 | 2 | 8 | 070-6-5 | 81 | 15 | 070 | 218-10 |
| 2100 | 12°-07 N | 171°-15 W | Bleak | 15 | 1011 | 80 | 73 | 75 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 315-10.5 |
| 2200 | 12°-14 N | 171°-22 W | " | 15 | 1011 | 80 | 73 | 75 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 315-10.5 |
| 2300 | 12°-22 N | 171°-29 W | " | 15 | 1011 | 80 | 73 | 75 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 315-10.5 |
| 2400 | 12°-30 N | 171°-37 W | " | 15 | 1011 | 80 | 73 | 75 | 1 | 9 | 070-6-5 | 81 | 15 | 070 | 315-10.5 |

REMARKS:

XRAY

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE SUN 20 Dec 1964

| TIME | LAT | LONG | PRES WEA | VIS | SLP | DRY B | DEW PT | HUMID/O | TL SKY | OPA SKY | SWELL WAVES | SEA TEMP | WIND S | WIND D | SHIP COURSE/SPD. |
|------|----------|----------|----------|-----|------|-------|--------|---------|--------|---------|-------------|----------|--------|--------|------------------|
| 0100 | 20°-37N | 160-18 W | Cloudy | 15 | 1011 | 78 | 69 | 75 | 4 | 6 | 315-10-8 | 78 | 6 | 235 | 073-10.5 |
| 0200 | 20°-40N | 160-08 W | " | 15 | 1011 | 78 | 69 | 75 | 3 | 7 | 315-10-8 | 78 | 7 | 215 | 073-10.5 |
| 0300 | 20°-43 N | 159-58 W | " | 15 | 1010 | 77 | 71 | 82 | 4 | 6 | 315-10-8 | 78 | 5 | 220 | 073-10.5 |
| 0400 | 20°-46 N | 159-46 W | " | 15 | 1010 | 78 | 69 | 75 | 4 | 6 | 315-10-8 | 75 | 5 | 225 | 073-10.5 |
| 0500 | 20-49 N | 159-35 W | " | 15 | 1010 | 78 | 65 | 75 | 3 | 7 | 315 10 5 | 78 | 5 | 210 | 072-10.5 |
| 0600 | 20-52 N | 159-25 W | " | 15 | 1012 | 78 | 65 | 75 | 3 | 7 | 315 10 5 | 78 | 8 | 210 | 072-10.5 |
| 0700 | 20-54 N | 159-14 W | " | 15 | 1012 | 78 | 69 | 75 | 2 | 8 | 315 10 5 | 79 | 11 | 210 | 072-10.5 |
| 0800 | 20-56 N | 159-08 W | " | 15 | 1012 | 78 | 69 | 75 | 2 | 8 | 315 10 5 | 79 | 12 | 210 | 072-10.5 |
| 0900 | 21-01 N | 158-57 W | Few Cls | 15 | 1011 | 78 | 69 | 75 | 2 | 8 | 315-10-8 | 79 | 15 | 215 | 072-10.5 |
| 1000 | 21-04 N | 158-47 W | " | 15 | 1011 | 78 | 69 | 75 | 2 | 8 | 315-10-8 | 79 | 17 | 205 | 072-10.5 |
| 1100 | 21-06 N | 158-37 W | " | 15 | 1011 | 78 | 69 | 75 | 2 | 8 | 315 10-7 | 79 | 15 | 215 | 072-10.5 |
| 1200 | 21-09 N | 158-26 W | " | 15 | 1011 | 78 | 69 | 75 | 2 | 8 | 315-10-7 | 79 | 15 | 215 | 072-10.5 |
| 1300 | | | | | | | | | | | | | | | |
| 1400 | | | | | | | | | | | | | | | |
| 1500 | | | | | | | | | | | | | | | |
| 1600 | | | | | | | | | | | | | | | |
| 1700 | | | | | | | | | | | | | | | |
| 1800 | | | | | | | | | | | | | | | |
| 1900 | | | | | | | | | | | | | | | |
| 2000 | | | | | | | | | | | | | | | |
| 2100 | | | | | | | | | | | | | | | |
| 2200 | | | | | | | | | | | | | | | |
| 2300 | | | | | | | | | | | | | | | |
| 2400 | | | | | | | | | | | | | | | |

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955

12-5-63

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