

Amerson

Humphrey
Ely
Gould
King
Amerson
Sibley
Thompson
Wilde

January 1965 BCF TOWNSEND CROMWELL Cruise

The January 1965 TOWNSEND CROMWELL Cruise from 5 January to 24 January was the eleventh of a series of cruises conducted by the U. S. Fish and Wildlife Service's Bureau of Commercial Fisheries covering a fixed grid to the east of the high Hawaiian Islands for the purpose of determining variations in the water types and currents of this area.

This was the tenth cruise on which Pacific Project personnel have taken part, maintaining daily sunrise to sunset bird observations. Observations on this cruise totalled 214.4 hours. In addition Project personnel aided in recording weather observations and in taking bathythermograph casts. Project personnel aboard were Patrick Gould and Warren King.

Warren King
Research Assistant
Pacific Project

Species Account

Black-footed Albatross

Numbers of this species increased to 82 in January from 55 in December. Distribution remained unchanged; birds were seen as far south as 22° in the east and in the immediate vicinity of Oahu in the west. On 21 January 3 birds were captured and banded, only one of which had an unfeathered brood patch.

Albatross sp.

On 23 January an albatross was observed resembling a Laysan Albatross except for a massive yellow bill with a dark nail. The bird was clearly seen at very close range. It may have been a Black-browed Albatross (Diomedea melanophris), a southern hemisphere bird previously unrecorded in the Central Pacific Ocean, but fitting the description accurately.

Wedge-tailed Shearwater

This species decreased further in numbers from 106 to 51, a 52% decline. Eight of these were southern dark phase birds. These were seen in the southwestern end of the area which is within 500 miles of the Line Islands. The greatest concentrations occurred around the high Hawaiian Islands, especially just east of Hawaii. Only three birds were observed east of 154°W. Many of the birds, especially in the vicinity of Hawaii, had distinctive immature plumage.

Newell's Shearwater

Only three birds were seen in January, two flying in close company at the southern end of the area and the third in the north.

Slender-billed Shearwater

Three birds observed in the northern end of the area in January were probably this species. They did not appear to be migrating.

Pink-footed Shearwater ?

A bird seen in a feeding flock on 16 January in the company of several Wedge-tailed Shearwaters may have been this species.

Kermadec Petrel

A new high record of sixteen birds was recorded in January, distributed throughout the area as far north as 22°N. Two were dark phase. The remainder were light or intermediate phase birds. Several of the light phase birds had white patches under the wing which appeared larger and more irregular in shape than normal.

Herald's Petrel

Two birds, presumably of this species, were observed in January in the middle of the area.

Phoenix Petrel

One bird either of this species or Tahiti Petrel (Pterodroma rostrata) was seen on 9 January at the southern end of the area.

Bonin Island Petrel

Three birds, thought to be this species because of their dark mantles, were seen. Unfortunately, as the plumage of the similar Cook's Petrel wears, it becomes darker, making distinction between the two more difficult.

Cook's Petrel

Only four birds were recorded, indicating that the species has now almost completely left the area presumably for its breeding grounds.

White-necked Petrel

Eight birds were observed in January, of which 5 were almost certainly this type, while the other 3 may have been this type or the very similar Juan Fernandez Petrel. Distinction between the two birds is not always possible.

Juan Fernandez Petrel

Forty-three individuals were recorded in January, a continuing decrease from the 156 seen in December. No marked distribution pattern was noted. Considering that the breeding season for this bird began two months ago it is surprising to find such a sizeable population still in the area. Evidently it is never wholly absent from the area. As the plumage of this bird wears, it more closely resembles the White-necked Petrel in that the dark edges of the white nape feathers wear off.

Bulwer's Petrel ?

One bird, thought to be this species, was seen imperfectly on 24 January. This species is not expected to appear in numbers in the area until March.

Leach's Petrel

Eighty-one birds of this species and an additional 7 presumed to be this species, although imperfectly observed, were recorded in January, a substantial increase over the 53 seen in December. Numbers were distributed fairly uniformly over the whole area except for one concentration around 18°N - 157°W where 37 birds were seen on 6 January, including a flock of 14. One bird flew aboard on the night of 6 January. It was collected.

Red-tailed Tropicbird

This species remained at its low winter level in the area; eight birds were seen. Five of these were at the extreme southern end of the area.

White-tailed Tropicbird

Numbers declined to 9 from 17 in December. These were distributed widely in the middle and northerly parts of the area; none were seen in the south.

Blue-faced Booby

Three were seen in January, all between 14°N and 16°N. All were sub-adult birds. A small number of birds apparently come regularly to the southern part of the area during the winter months.

Red-footed Booby

All 22 Red-footed Boobies seen in January were adult white phase birds. All were within 50 miles of Oahu.

Brown Booby

The four birds seen in January were all within sight of Oahu. All were adults.

Great Frigatebird

Ten of the 19 birds seen in January were observed within sight of Oahu. Most of the remaining birds were observed in the southern part of the area.

Sooty Tern

Numbers of this species rose sharply from 566 in December to 2354 in January concurrent with the start of breeding activity in the Oahu area. Two density centers were apparent; one within 200 miles of the high Hawaiian Islands, and a second at the southern end of the area.

Sooty Tern con't.

Very few individuals were seen in any other part of the area. The only immature birds recorded were seen in 2 flocks at 16°N; however others may have been present in flocks distant from the ship.

Noddy Tern

All but one of the 73 Noddies seen in January were within 25 miles from Oahu. The exception was seen in a feeding flock about 200 miles south of Oahu.

Hawaiian Noddy Tern

Six birds followed the ship briefly on 24 January 25 miles north of Oahu.

Fairy Tern

Twenty of the 23 Fairy Terns seen were within 250 miles of the high Hawaiian Islands and the remaining 3 were along the southern end of the area. This represents a slight increase in numbers over December's total of 8.

Pomarine Jaeger

Fifteen individuals were recorded in January, all within 50 miles of Oahu. The plumage of several was very ragged indicating that molt may have begun.

Gull sp.

Three gulls were observed in the channel at the mouth of Pearl Harbor on 5 January. No identification to species was made because they were only seen at considerable distance.

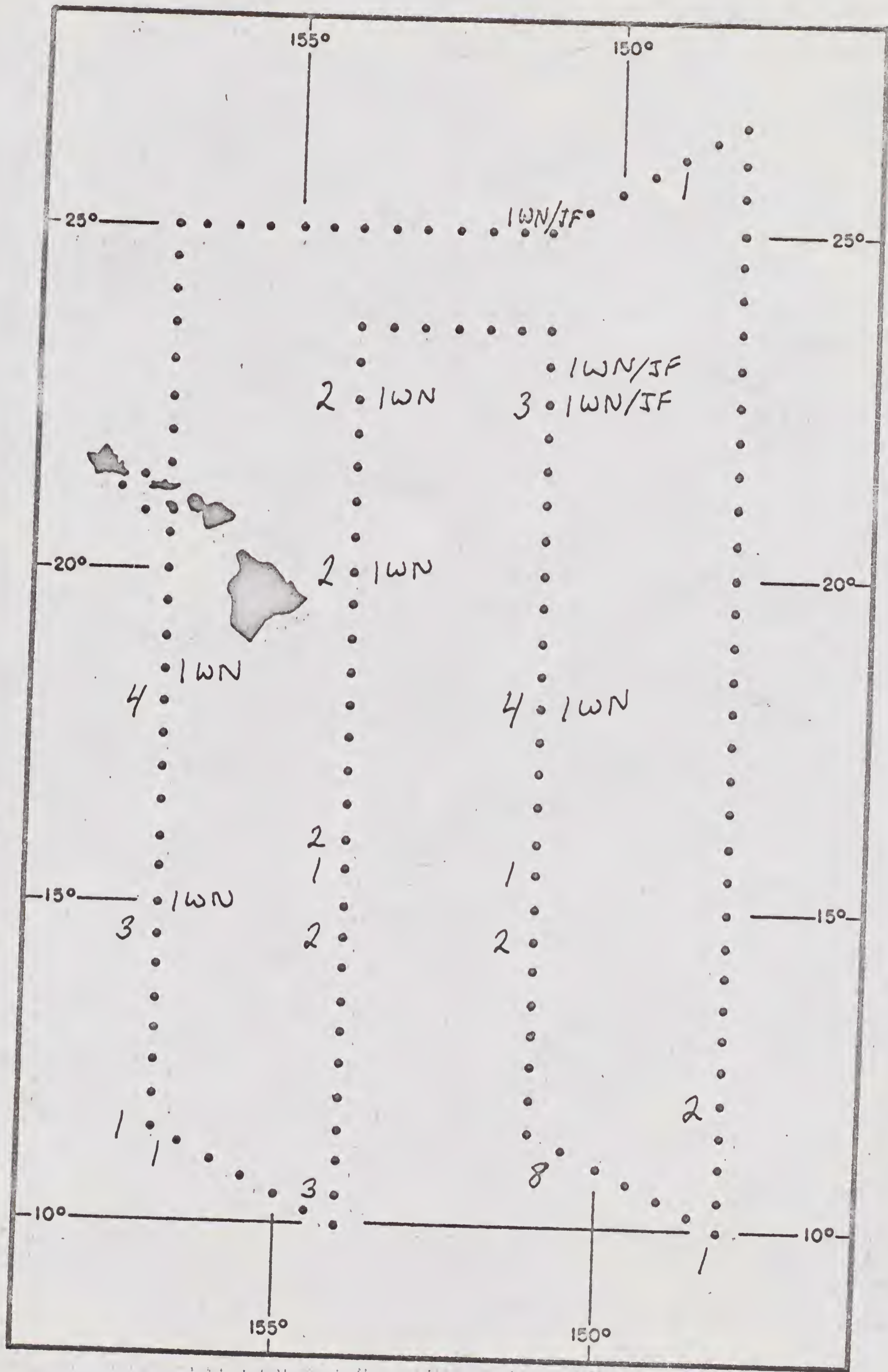
General Discussion

The considerable increase in total numbers from 1368 in December to 2960 in January was due wholly to a large movement of Sooty Terns into the area concurrent with the beginning of their breeding season on Moku Manu, Oahu. Birds in flocks comprised 2546 birds or 86% of the total. Sooty Terns alone comprised 90% of birds in flocks and 91% of total birds. This represents the greatest domination of the total population by a single species to date. Leach's Petrels, Black-footed Albatrosses and Fairy Terns also rose in numbers but their low total numbers are poorly reflected when the population of the area is considered as a whole.

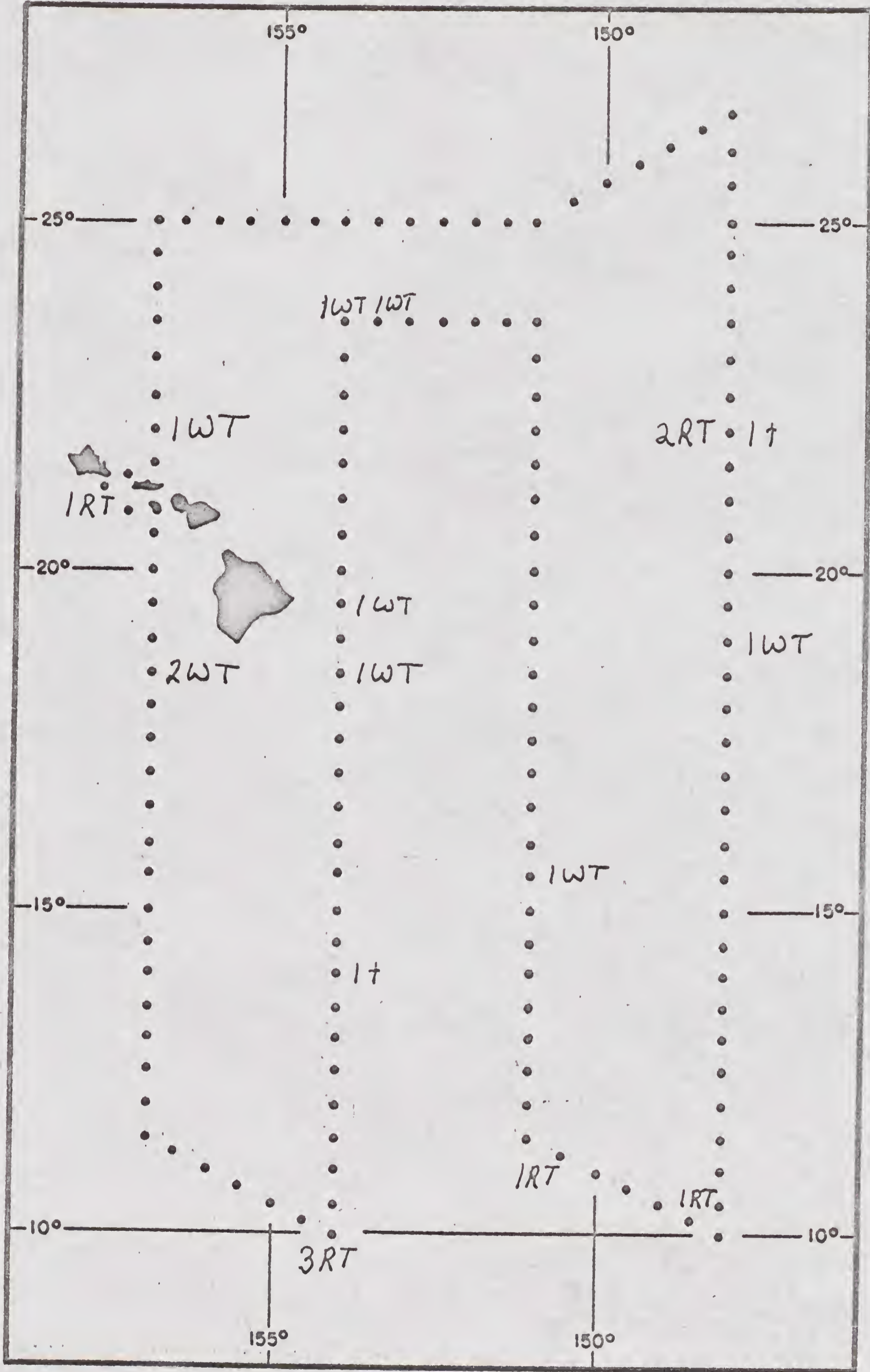
Direct migrants were almost totally absent from the area (3) and species which utilize the area mainly as a wintering range decreased in number sharply so that they accounted for only 6.1% of the total. Significant sight records included three gulls in Pearl Harbor, a possible Black-browed Albatross, a Phoenix or Tahiti Petrel, a possible Pink-footed Shearwater, and 16 Kermadec Petrels, a new high. Three Black-footed Albatrosses were banded and one Leach's Petrel was collected.

Two distinct areas of concentration occurred, within a 200 mile radius of the high Hawaiian Islands and in the extreme southern end of the area. These two areas were similarly densely populated in the early spring of 1964.

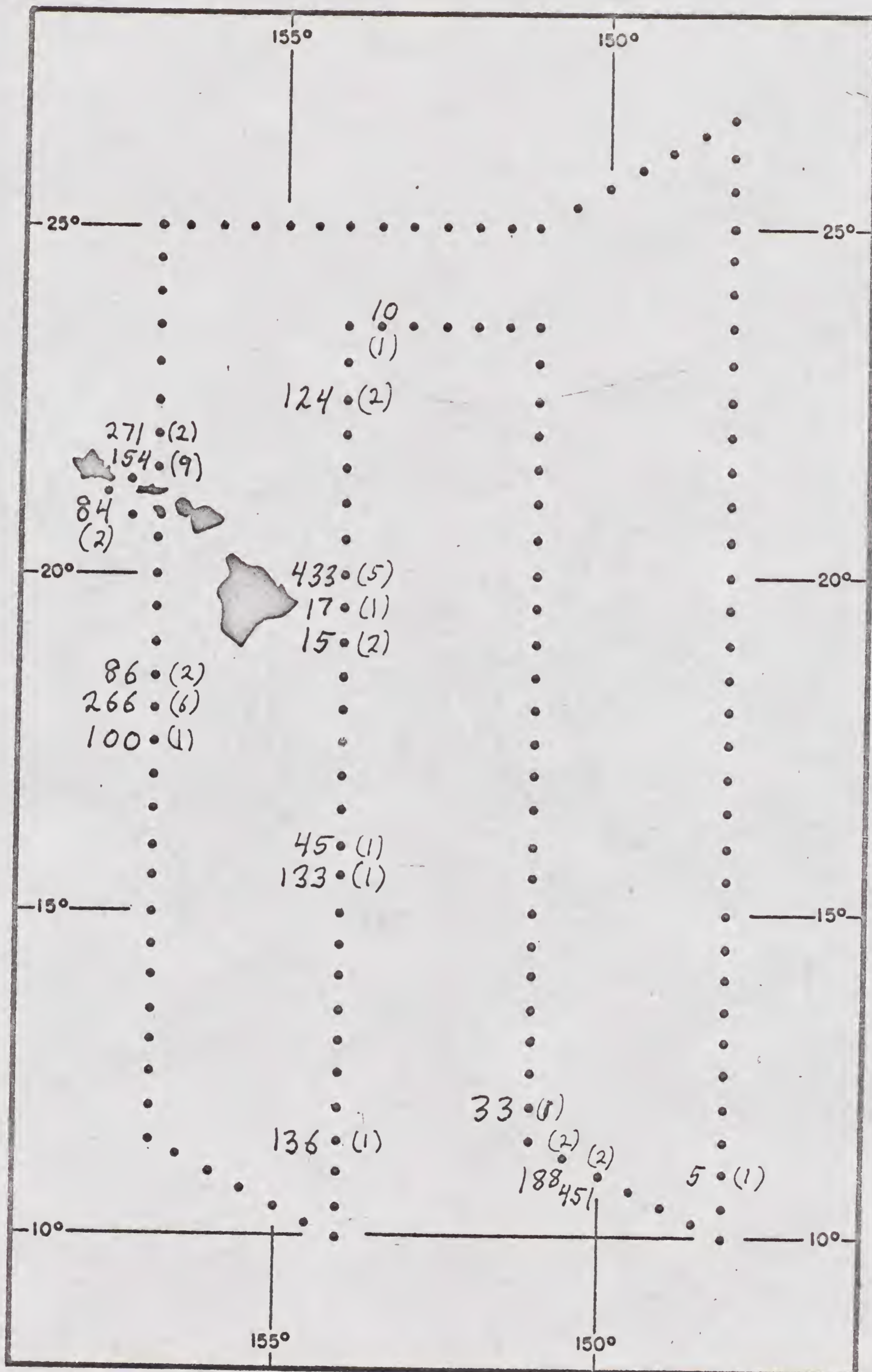
Juan Fernandez Petrel 43
White-necked Petrel 8



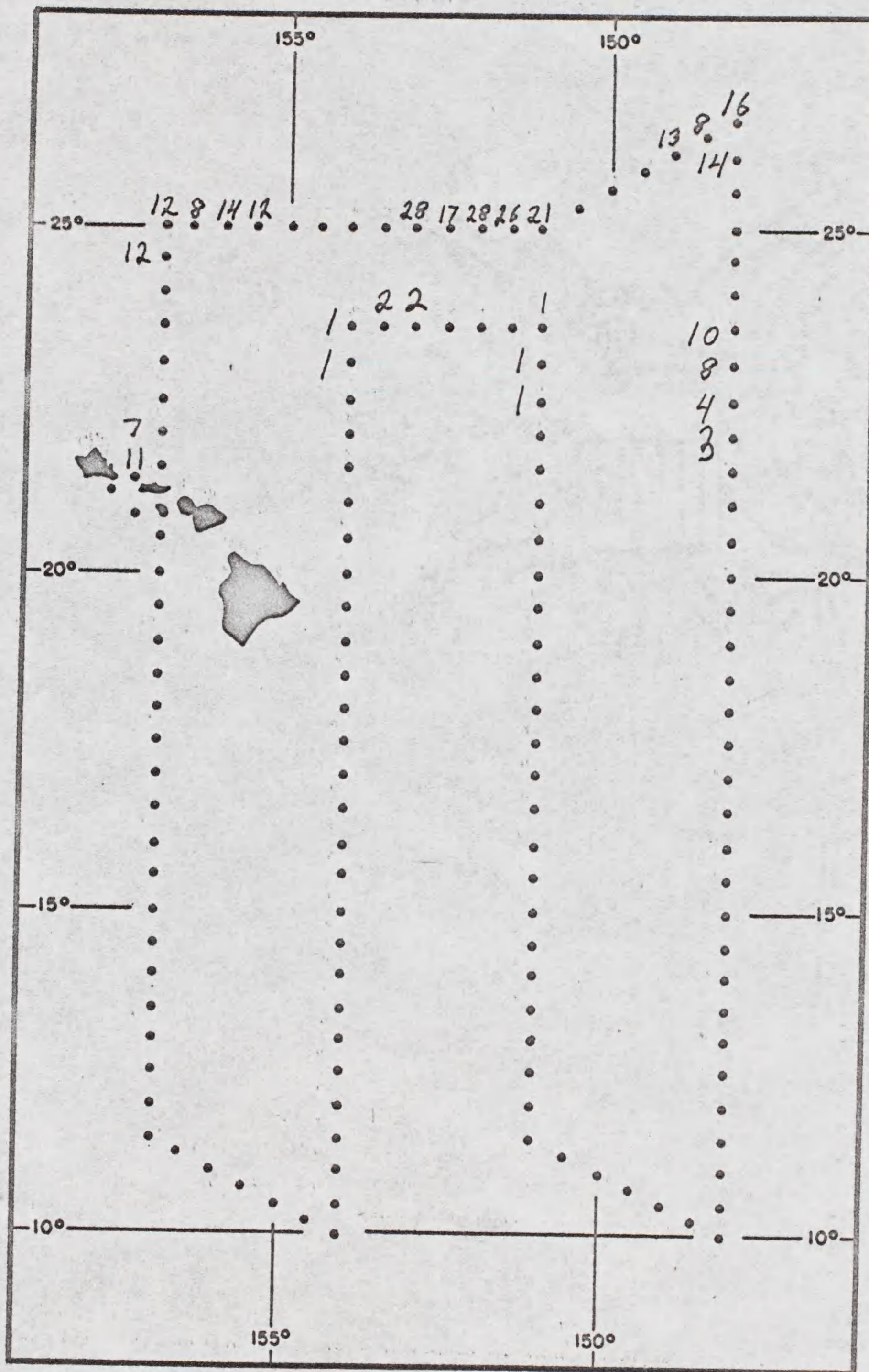
Red-tailed Tropicbird 8
White-tailed Tropicbird 9
Tropicbird sp. 2



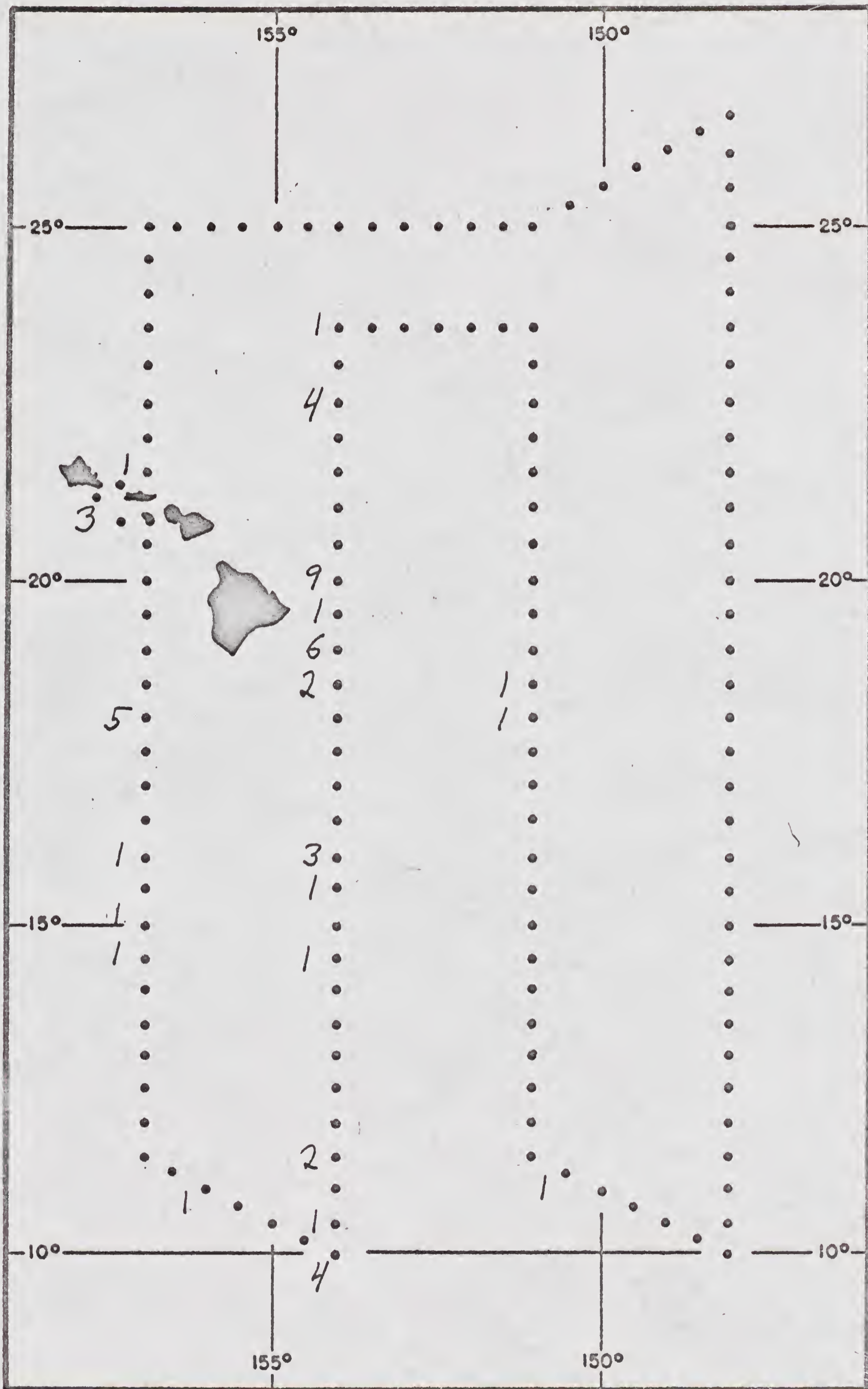
Flocks and Numbers in Flocks 2546 (41)



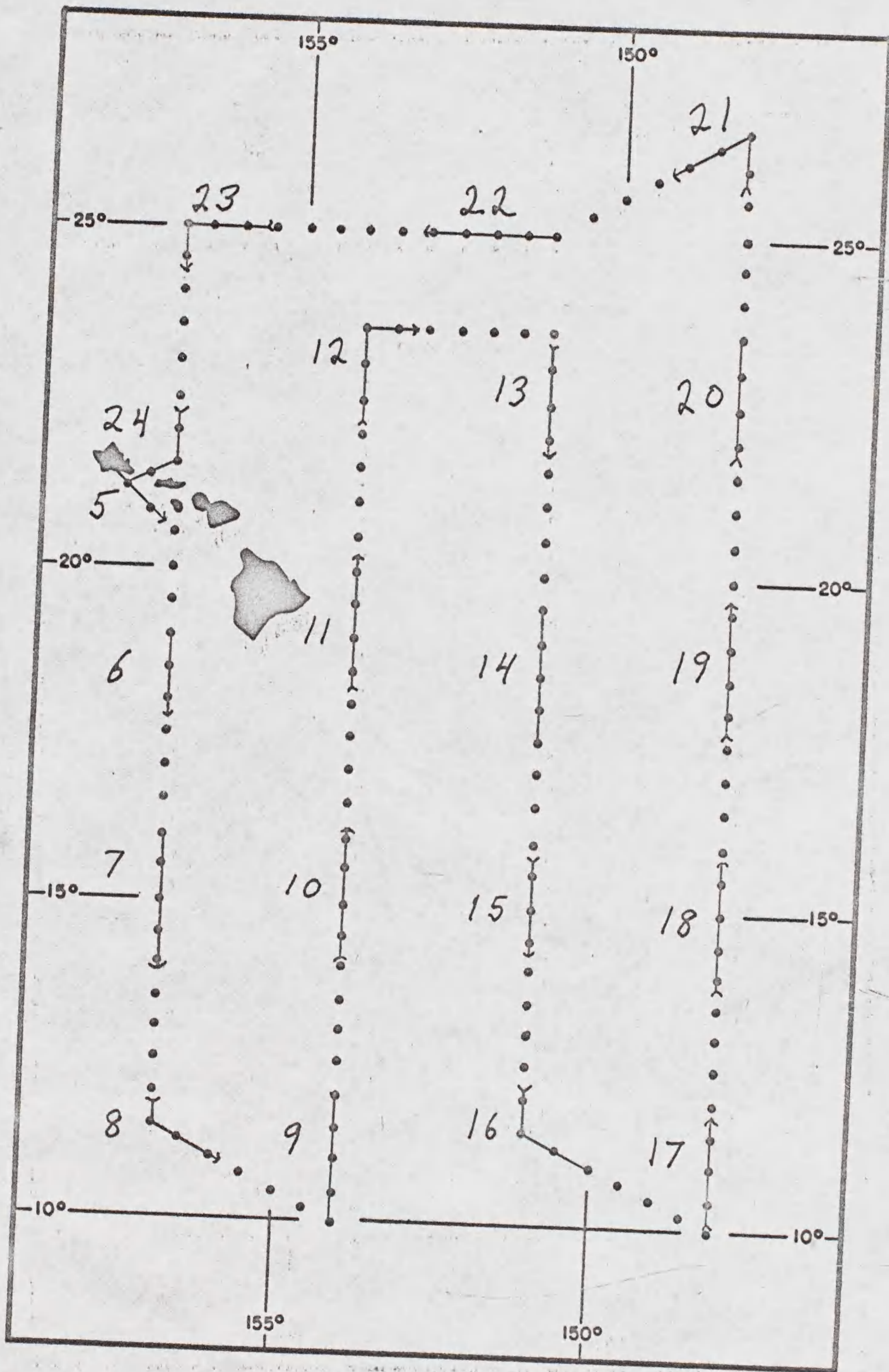
Black-footed Albatross 82

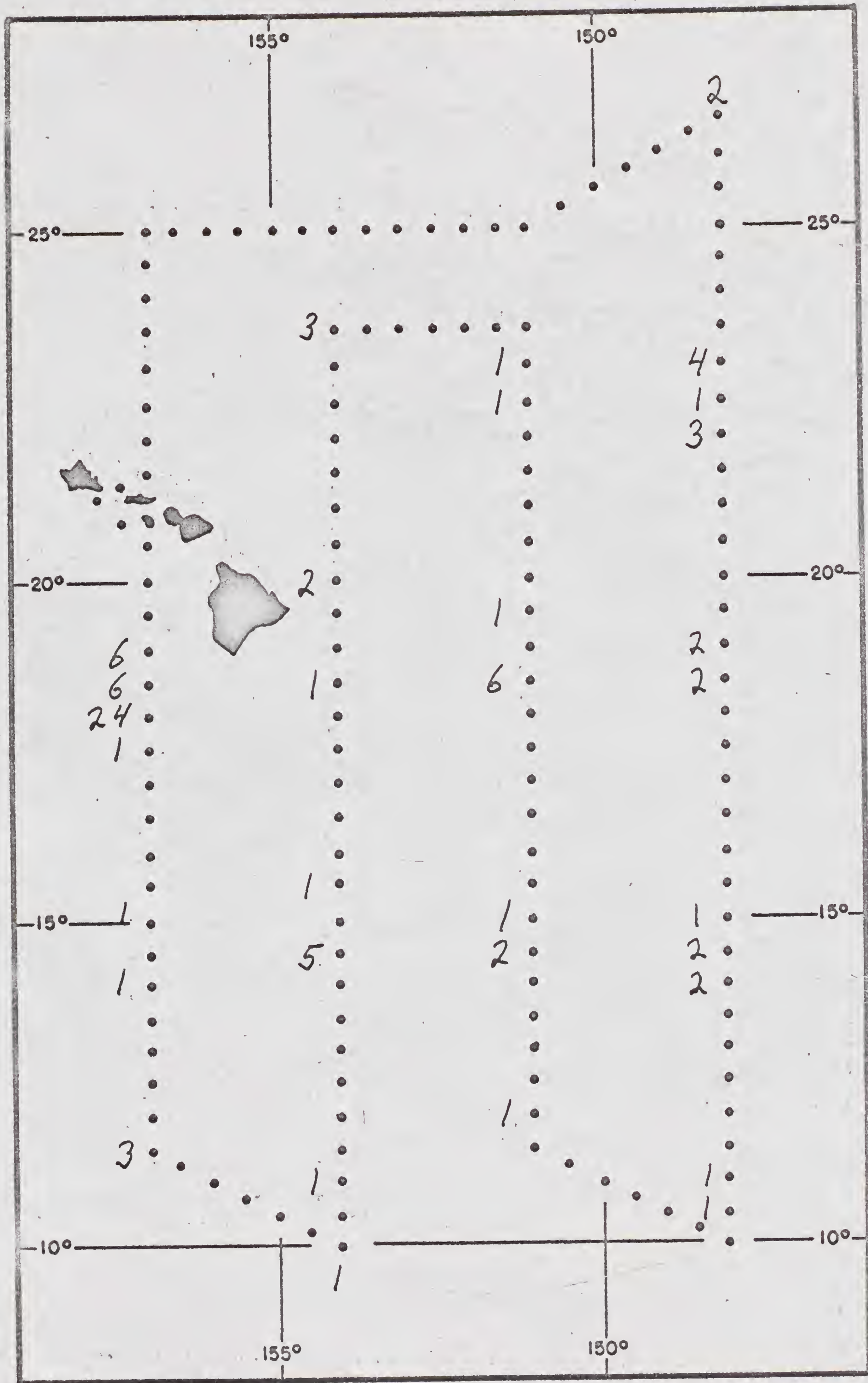


18 counts 28 17 28 26 21

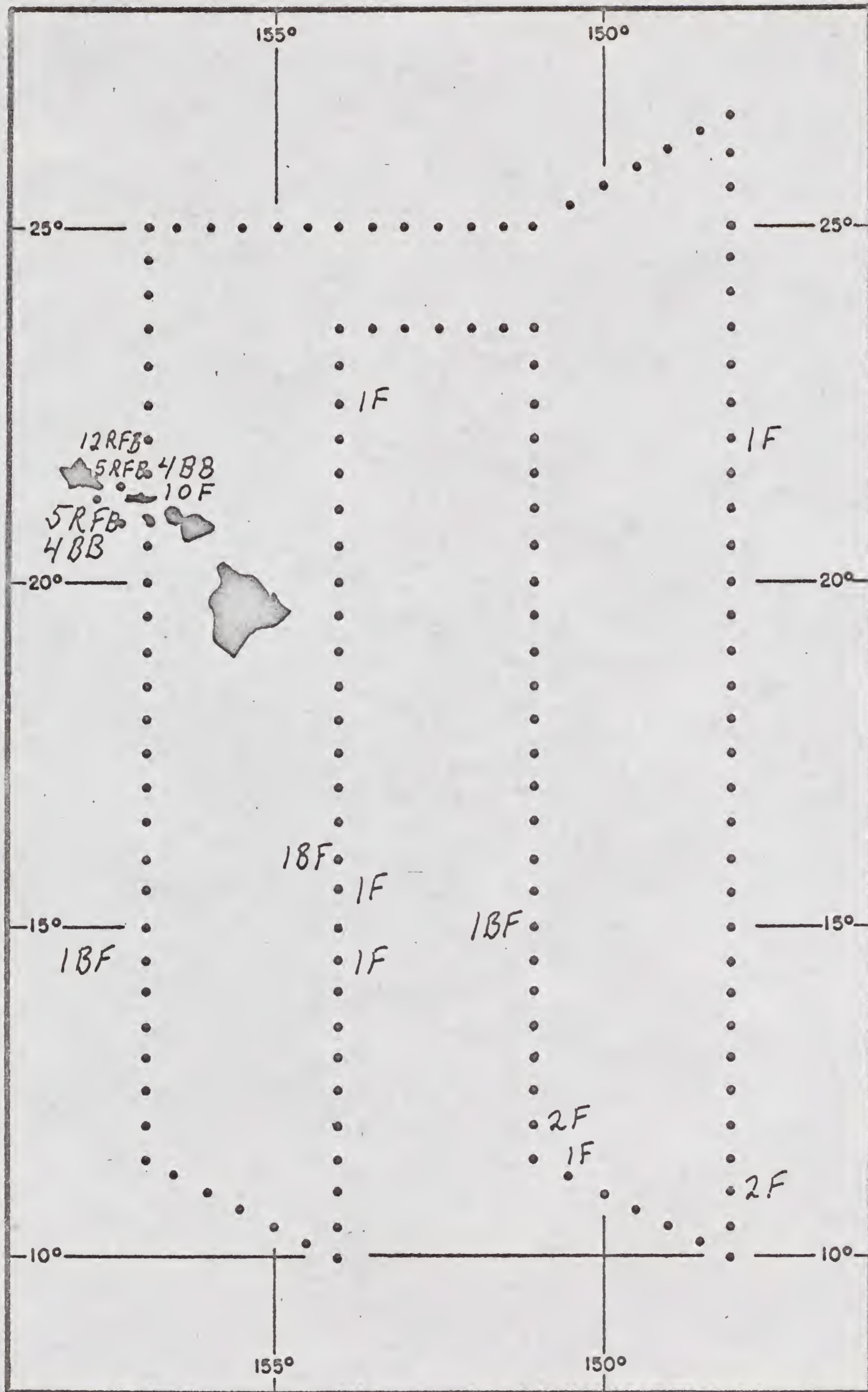


Diurnal Observation Locations

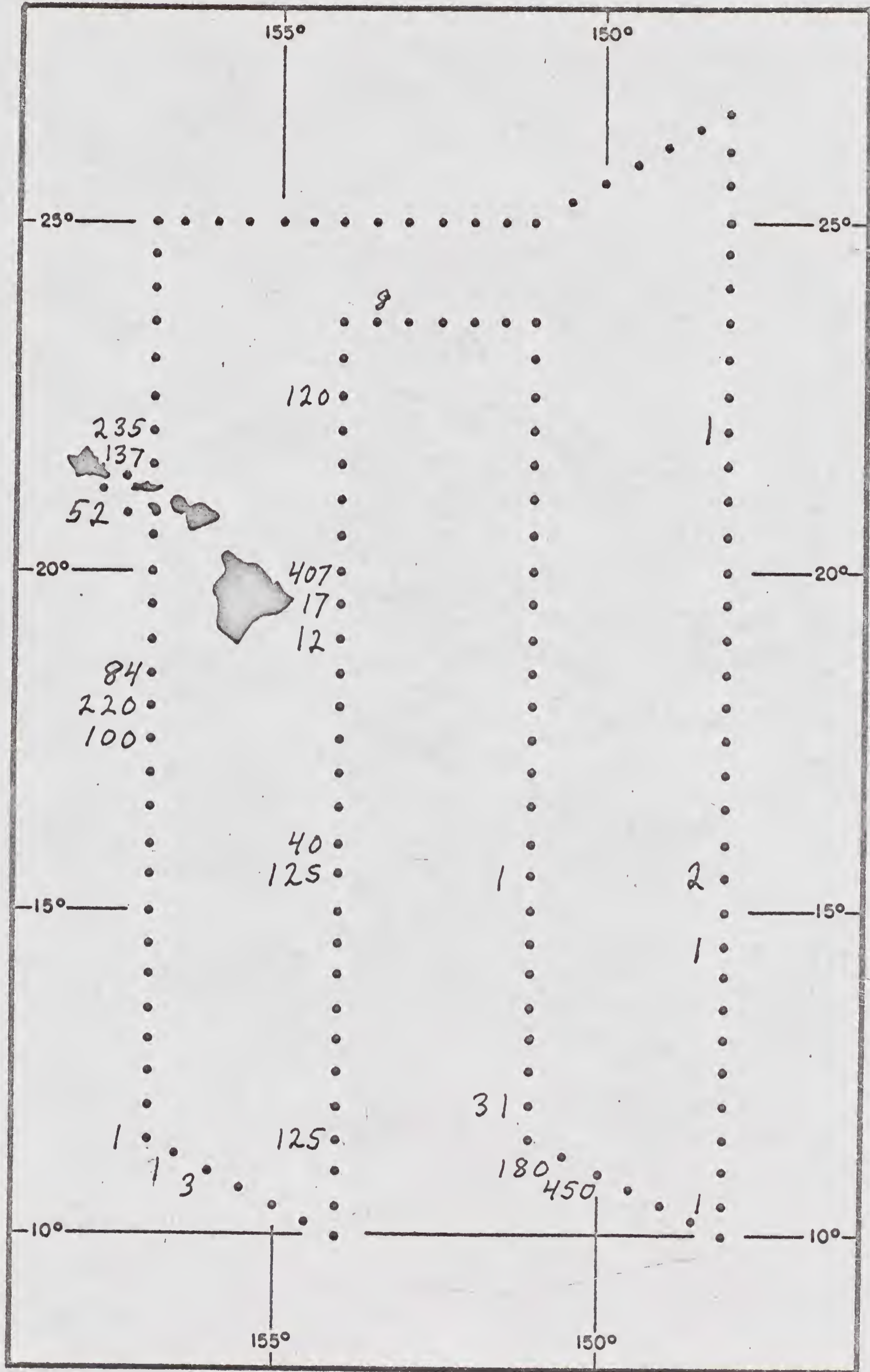




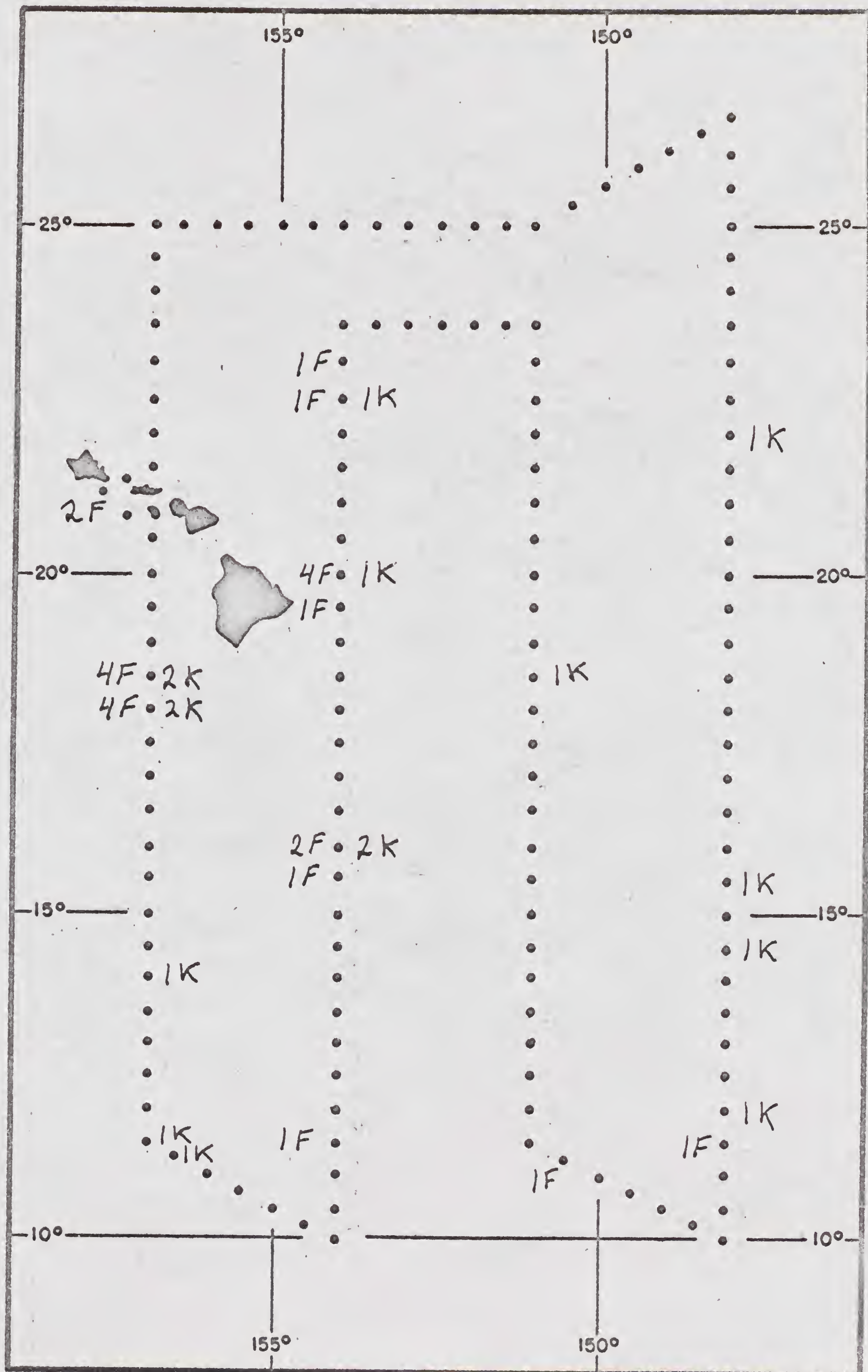
Red-footed Booby 22
 Brown Booby 8
 Blue-faced Booby 3
 Great Frigatebird 19



Sooty Tern 2354



Kermadec Petrel 16
Fairy Tern 22



January 1965 - BCF cruise

Table I

<u>Date</u>	<u>Total Minutes</u>	<u>Total Miles</u>
5 January	279	52
6	665	85
7	677	123
8	685	88
9	692	117
10	678	122
11	664	118
12	647	120
13	652	102
14	666	122
15	678	90
16	686	98
17	692	108
18	681	118
19	670	118
20	657	99
21	651	112
22	658	118
23	657	109
24	530	86
Total	12865	2105
Average	643.3	105.3

January 1965 - BCF cruise

Table II

<u>Date</u>	<u>Total Birds</u>	<u>Total Sightings</u>	<u>Birds/Sighting</u>	<u>Birds/Mile</u>	<u>Flocks</u>	<u>Total Birds in Flocks</u>
5 January	106	17	6.24	2.04	2	84
6	484	36	13.44	5.69	9	452
7	13	11	1.18	.11	0	0
8	19	14	1.36	.22	0	0
9	154	15	10.27	1.32	1	136
10	198	18	11.00	1.62	2	178
11	482	23	20.96	4.08	8	465
12	159	21	7.57	1.33	3	134
13	14	12	1.17	.14	0	0
14	19	13	1.46	.13	0	0
15	9	8	1.13	.10	0	0
16	681	12	56.67	6.94	5	672
17	15	11	1.36	.14	0	0
18	12	11	1.09	.10	0	0
19	6	5	1.20	.05	0	0
20	27	14	1.94	.27	0	0
21	20	5	4.00	.18	0	0
22	30	3	10.00	.25	0	0
23	16	3	5.33	.15	0	0
24	496	49	10.12	5.77	11	425
Total	2960	301	167.49	30.63	41	2546
Average	148.0	15.1	8.37	1.53	2.1	127.3

January 1965 - BCF cruise

Table III

<u>Date</u>	<u>Procellariids</u>	<u>Tropicbirds</u>	<u>Terns</u>	<u>Boobies</u>	<u>Frigatebirds</u>
5 January	6	1	79	9	0
6	69	2	413	0	0
7	12	0	0	1	0
8	14	0	5	0	0
9	24	3	126	0	0
10	27	0	168	1	2
11	38	2	441	0	0
12	25	2	130	0	1
13	14	0	0	0	0
14	19	0	0	0	0
15	6	1	1	1	0
16	15	1	662	0	3
17	7	1	5	0	2
18	9	0	3	0	0
19	4	1	0	0	0
20	21	3	1	0	1
21	20	0	0	0	0
22	30	0	0	0	0
23	16	0	0	0	0
24	15	1	442	21	10
Total	391	18	2476	33	19
Average	19.6	.9	123.8	1.7	1.0

January 1965 - BCF cruise

Table V

Date	Black-footed Albatross	Wedge-tailed Shearwater	Kermadec Petrel	White-necked Petrel	Juan Fernandez Petrel	Leach's and Storm Petrel sp.	Miscellaneous and Unidentified Procellariiformes
5 January	0	3	0	0	0	0	3
6	0	5	4	1	4	37	17
7	0	3	1	1	3	2	2
8	0	1	2	0	2	3	6
9	0	7	0	0	3	2	12
10	0	5	2	0	5	6	9
11	0	18	1	1	2	3	13
12	2	5	1	1	2	3	11
13	1	0	0	2*	3	2	6
14	0	2	0	1	4	7	4
15	0	0	0	0	3	3	0
16	0	1	0	0	8	0	5
17	0	0	1	0	3	2	1
18	0	0	2	0	0	5	2
19	0	0	0	0	0	4	0
20	10	0	1	0	0	8	2
21	16	0	0	0	1	1	1
22	28	0	0	1*	0	0	2
23	14	0	0	0	0	0	2
24	11	1	0	0	0	0	3
Total	82	51	16	8	43	88	101
Average	4.1	2.6	.8	.4	2.2	4.4	5.2

23 Jan 65

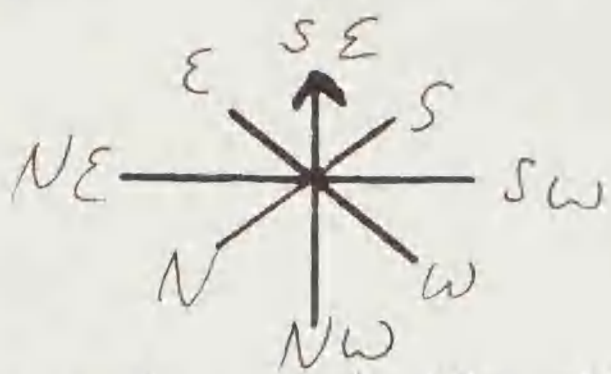
Time at sunrise 0709 position $24^{\circ}59'N$ $155^{\circ}38'W$
Time at sunset 1806 position $24^{\circ}20'N$ $156^{\circ}58'W$

Miles travelled 0000 to sunrise 88
" " sunrise to sunset 109
" " sunset to 2400 50

24 Jan 65

Time at sunrise 0710 position $22^{\circ}17'N$ $156^{\circ}59'W$
Time at sunset 1600 position $21^{\circ}14'N$ $157^{\circ}50'W$
18 53

Miles travelled 0000 to sunrise 73
" " sunrise to sunset 86
~~" " sunset to 2400~~



BCF

DATE 5 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

1315 begin observations

1320 gull sp. 3 all medium-sized - 2 brownish, one light grey or near white - seen feeding on left side of Pearl Harbor Channel. Birds hovered momentarily just over water, then dropped in + splashed around.

1512 RED-FOOTED BOOBY 1 SE 10W, To 20' Adult

1515 RED-TAILED TROPICBIRD 1 SE on water 5-10' low Adult

1518 JAEGER 1 NE 30-50' in distance

1540 PTERODROMA 1 SW 10W probably JUAN FERNANDEZ

1550 POMARINE JAEGER 1 S 50-60' Sub Adult, light phase

1602 WEDGE-TAIL SHEARWATER 1 SE 10W

PTERODROMA 1 SE 10W Small type like Cook's

1608 WEDGE-TAIL SHEARWATER 2 E 10W acting as if headed for a feeding flock

1612 POMARINE JAEGER 2 SE 10W 1 IMMATURE, 1 SUB ADULT

1630 Sooty Tern 40 ± 5

Noddy Tern 25 ± 5

Fairy Tern 2

Brown Booby 4

Red-footed B. 1

actively feeding

all adult

adult

1640 Red-footed B. 1 NW adult

1650 Red-footed B. 1 NW adult

1658 Pom Jaeger 1 E

1705 Red-footed B. 1 NW adult

1728 Brown IsP? 1 E

1735 Sooty Tern 12 N 100ft travelling

1750 POMARINE JAEGER 3 following ship

Sunset ca 1800 ± 5

1315
1858

1000

1000



DATE June 5
Pg. # 1

time species # dir. hgt. remarks loc.

0645	begin observations					
0721	SHEARWATER	1	--			All black, very thin wings, deep rapid series of wing beats followed by long glide, appeared most like sooty or slender-billed shearwater, sat in water
0850	Leach's Petrel	1				
0857	Leach's P.	1	NE			
0859	Leach's P.	1	SE			sat on water several times. feeding?
0904	Leach's P.	1				
0945	" "	2				flushed from water. flew parallel to ship for 5 minutes @ 9-10 kts. appeared to be feeding
1034	FAIRY TERN	1		50'		one was feeding
1114	Kermadec P.	1	S			dark phase
1120	Leach's P.	2	SE			flushed from water. flying very close together
1121	WTTB	1	E			adult
1122	Leach's P.	1				
1125	W.N. Petrel	1	S			probably flushed - primary missing
1135	Sooty Tern	65 ± 5	SE			scattered, some high, some low, no feeding at all
1146	Leach's P.	1				travelling flock
1205	WTTB	1				first seen flying over C. H. Gilbert, then came over Cromwell, adult
1210	Leach's P.	1	S			flushed
1217	Leach's P.	1				
1220	Sooty Tern	19				feeding
	Fairy Tern	2				
1231	Fairy Tern	1	S			
1245	KERMADEC or SOLANDERS Petrel	1	NE			Light phase, could not tell whether it was brown or grey.
1410	Sooty Tern	35 ± 2				feeding
	Noddy Tern	1				light
	S F Petrel	3				light
	Kermadec P.	2				
	Bonin Is P?	2				
	Wedgetail	1				
1420	Leach's P.	1	S			
1422	Sooty Tern	10 ± 2				feeding
	Shearpetrel	3+				
	Fairy Tern	2				



DATE 6 Jan 64
Pg. # 2

time species # dir. hgt. remarks loc.

1430 Sooty Tern 75 ±25
shear/petrel 104

feeding flock

1440 Sooty Tern 25
shear/petrel 2+

feeding flock

1450 Leach's P 2 S

1456 Leach's P 2

flushed

1504 Leach's P 1

1506 J. F. Petrel 1 S

1516 Leach's P 2 S

1558 " " 14±2 ⊙

spread out, most feeding either singly or in two or three

1601 " " 1 S

spread out

1620 STORM PETREL 1 W

1645 Flock

feeding - no flying fish or other fish noticed.

SOOTY TERN 75±5

WEDGE-TAIL SHEARWATER 4±1

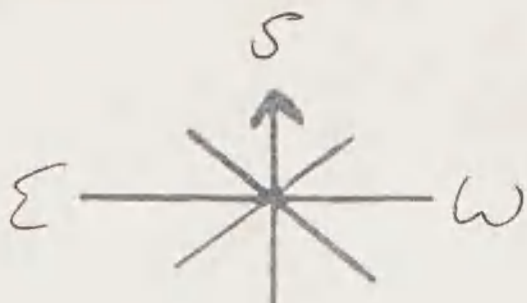
FAIRY TERN 2

1705 Sooty Tern 100±25

feeding - fairly far off

1706 Leach's P 1 S

1815 End observations



DATE 7 Jan 65
Pg. # 1

6 Jan 2030 - 2 tropicbirds

time species # dir. hgt. remarks loc.

0645 begin observations

0715 Wedgetail 1 light - immature type with white edging on
mantle feathers

1045 Leach's P. 1 b

1052 White-necked P. 1 h 11

1111 WEDGE-TAIL SHEARWATER 1 c 1

1518 SHEARWATER/or PETREL 1 n 11

1541 Masked Booby 1 NE - - - distant, looked like Sooty or Slender-billed migrating

1542 Wedgetail 1 immature

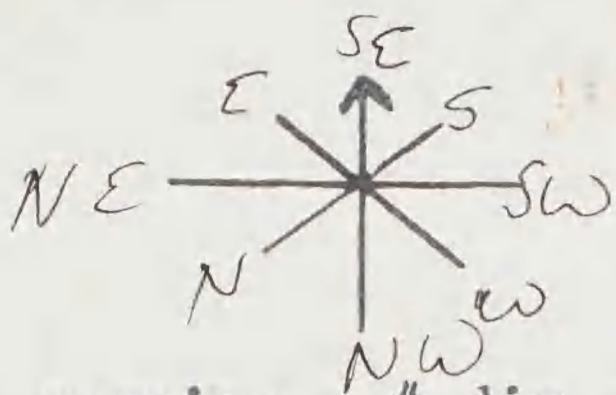
1557 J.F. Petrel 1 immature

1603 J.F. Petrel 1

1632 shear/petrel 1 medium-large shear/petrel - probably petrel loose flaps not too hurried - wedgetail sized or slightly smaller - dark grey-brown upperparts white underparts with underwing light grey with darker edges. Head white back as far as nape. Underwing not white, rather smoky or shimmering.

1736 Juan Fernandez Petrel 1 }
Kermadec Petrel 1 } - - - all together behind ship
Storm Petrel 1 } Kermadec was light phase

1815 end observations



DATE 8 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0630 begin observations 3 Tropicbirds reported by watch at ca. 0615 x

0720 Storm Petrel 1 - - -

0740 Kermadec Petrel 1 - - - all dark } reported by watch

0740 Sooty Tern 1 - - -

- - - 1000 small (ca. 5 ft.) Bat Ray - all black upper surface -

1205+ STORM PETREL 1 - - - in distance + sun

1215 shear/petrel 1 all dark - seen by watches

1222 J. F. Petrel 1 S

1240+ Leach's STORM PETREL 1 NNE

1435 Newell's S 2 SE

1458 Kermadec P. 1 S light

BIP/
BWP

1505+ Cook's P. type 1 SE pretty dark mantle - maybe B.F.P.

1528+ shear/petrel 1 NE just a glimpse

1535+ Sooty Tern 1 - - - by watch

1554 J. F. Petrel 1

~~Kermadec P.~~
petrel sp

light
no white spots visible although they may have been there - light not the best. Dark brown underwing, white breast + belly - might have been Harold's too

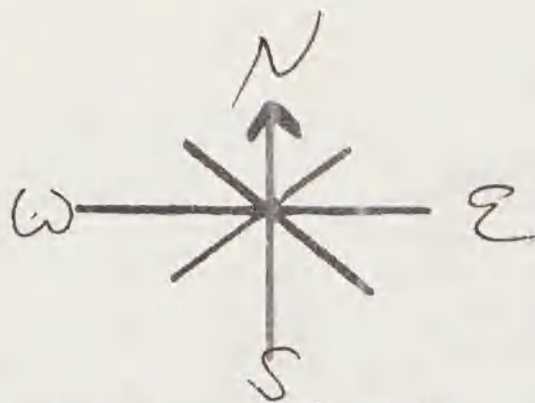
1815 Sooty Tern 3 75 ft

Wedgetail 1 light

1830 end observations

r 111
b HHHHHHHHHH
c HHHH50-111
u 1

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 9 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0625 begin observations

0640 Wedgetail 2

0645 Phoenix Is P. 1

0700 RTTB 3

0710 Wedgetail 2

1 light 1 dark (southern)
black above, black underwing and upper breast + throat, white lower breast + belly. Appeared smaller than Wedgetail. Seen at close range all with medium length central retrices and a trace of vermiculation on mantle.
southern dark phase

2 RTTBs seen at 0715 after completion of Hydro station were probably from group of 3. Birds were feeding, dropping into water from 40ft or so, breaking their fall slightly with their wings + steering as well. Did not appear to go below surface! Wings somewhat extended a split second after impact keeping bird on surface.

0900 storm Petrel 1 IN RAIN
by watch
small, black

0800 SHEARWATER/ov PETREL 1

0830 " " 1

0959 J. F. Petrel 1

1000 J. F. Petrel 1

1005 Wedgetail 1

1008 J. F. Petrel 1

1120 Leach's Petrel 1

1200 SHEARWATER/ov PETREL 1

1705 Sooty Tern 125 ±25

Wedgetail 2

shear/petrel 8+

Fairy Tern 1

1745 bird sp 1

- in distance
- in distance

dark phase

- distant

dark feeding

observation secured 1810

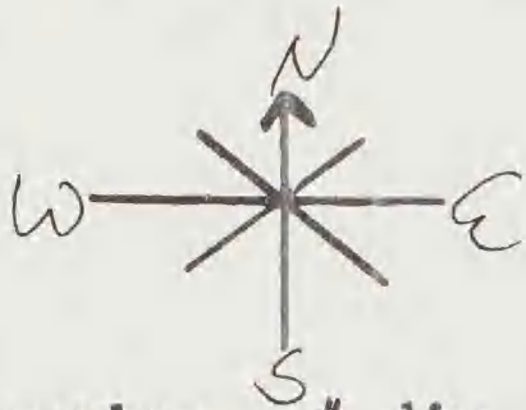
0930-1100

r
b IIII
c IIII
u

1230-1400

r
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SI-MNH-958e
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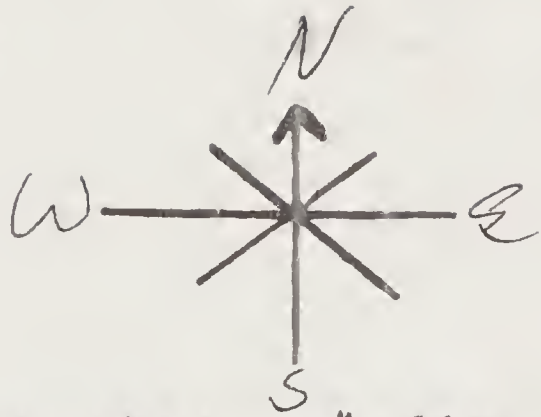


SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 10 Jan 65
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
					Tropicbird reported by watch at 0530	
0630	begin observations					
0732	Leach's Storm Petrel	2	N		close flying together	
0757	Leach's Storm Petrel	1				
0810	Cook's Petrel	1				
0810	Leach's P.	1			flushed	
0817	Wedgetail	1			dark	
0820	shear/petrel	2				
0915	J. F. Petrel	1				
0932	Frigate	1		100		
1007	J. F. Petrel	1				
1033	storm Petrel	1				
1420	Leach's P.	1			had something white in its bill	
1440	Sooty Tern	125	±25		feeding	
	Frigate	1				
	shear/petrel	6+				
	Fairy Tern	1				
1511	Wedgetail	1	N		light	
1520	J. F. Petrel	1				
1650	Bluefaced Booby	1			Sub Adult	
1651	Kermadec Petrel	1			light phase	
1700	Sooty Tern	38			feeding	
	Fairy Tern	2				
	Wedgetail	2			light	
	J. F. Petrel	2				
	Kermadec P.	1			light	
1740	Sooty Tern	1			imm.	
1740	Sooty Tern	1			imm.	
	wedge-tail shear	1			lt.	
					1815 end observations	

SI-MNH-958e
7-28-64

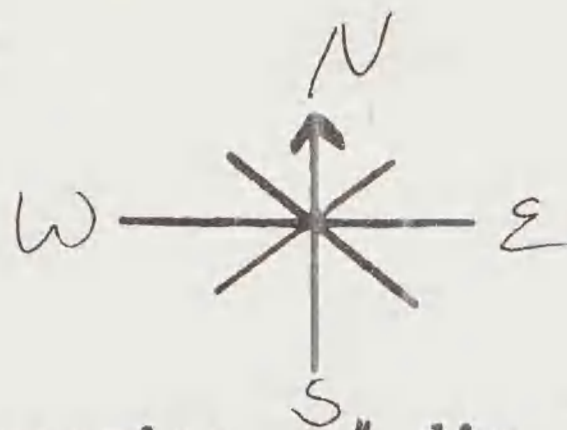


SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 11 Jan 65
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0642	begin observations				1 Flying fish flew around before dawn proved to be out as E. Volitans even though pectoral was all black.	
0655	Wedgetail	1			light	
0728	bird sp	1			seen by Asari - booby sized?	
0745	WTTB	1				
0833	Leach's Petrel	1				
0915	WEDGE TAIL SHEARWATER	1			light phase, young bird	0730-1100
1000	Wedgetail	1			light, probably young	r c b u l
1135	" "	5			all young birds, flying back & forth together fast off starboard.	
1210	Sooty Tern	10	W	100'	ca 100' not feeding flew off to west	
1215	" "	2	SW	35'		
1326	Sooty Tern	17	SE		travelling	
1327	Fairy Tern	1				
1443	WEDGETAIL	1			Southern Dark Phase	
1519	WHITE-TAILED TROPICBIRD	1	E		sitting on water, got up and flew low to the EAST	
1600	Sooty Tern	2	E		long dark rectrices but back with a lot of black markings.	
1610	Sooty Tern	75	±25		feeding	
	Fairy Tern	3				
	shear/petrel	10+				
1645	Sooty Tern	40			feeding	
	shear/petrel	2				
1646	Leach's Petrel	1				
1658	Sooty Tern	35			feeding	
1708	Leach's Petrel	1				
1720	Flock Terns	100 ± 20			feeding so far out on horizon that they fade in and out of view. Only shear also or petrels below them cannot be seen	
	Probably Sooty Terns	white below				
1720	Pterodroma	1			between ship & flat but not part of flock	
1730	Fairy Tern	1				
1745	Sooty Tern	55	E		immatures feeding	observation concluded
	Wedgetail	9				
	J.F. Petrel	2				
	W. N. Petrel	1	→		Kermadec P. 1 August	1805

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 12 Jan 65
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0645	begin observations					
0800	bird sp	1			larger seen by Sergeant Asari	
0845	Sooty Tern	75 ± 25			feeding	
	Frigate	1				
0840	Sooty Tern	2	E			
0902	W.N. Petrel	1	E		ventral anterior edge of wing fairly thick & dark esp. w/out to tip	
0920	Sooty Tern	40			light	
	wedgetail	4			feeding	
	J.F. Petrel	2	S			
	shear/petrel	1				
	Fairy Tern	1				
0924	Sooty Tern	2				
0925	Kermadec P.	1			light or intermediate	
	shear/petrel	1				
0933	Sooty Tern	1	NE			
1019	shear/petrel	1				
1034	FAIRY TERN	1				
1038	Black-footed Albatross	1			- did not follow ship	
1235	" "	1			dark phase	
1330	Wedgetail	1			bird of the year	
1350	WTTB	1				
1410	Leach's P.	1				
1446	Leach's Pet.	2				
1530	Flock	-	-	-	Actively feeding at edge of heavy rain squall far out in distance and impossible to get good count	
	Sooty Terns	5+				
	Shearwater/Petrel	5+				
1538	Shear/Petrel	1			1235-1800 1 BFA	
1546	Sooty Tern	3	S			
1546	white-tail Tropicbird	1			--- flying with tern when first observed	
1658	shear/petrel	1			1600 2 BFA	
1710	shear/petrel	1			very large - larger than any s/p I've ever seen. flushed from water & flew directly away from ship, very low over water - dark above, sooty brown below. I think wings belong to be jaeger type - several fairly loose flaps & glide	
1757	end observations					



time species # dir. hgt. remarks loc.

0645 begin observations

0725 BFA 1

all dark → 1100

0935 Shear/petrel 1

Wedgetail-like - brown above white below.

P. ex

0945 W.N. Petrel / J.F. Petrel 1

underwing shimmering, very light grey, with dark border. might have been a Wedgie but I don't think so.

1013 Leach's P 1

neck white but not particularly broad

1015 Slender-billed or Sooty Shear 1 N

1052 J.F. Petrel 2

1202 J.F. Petrel 1 E

1208 Leach's P. 1 E

1209 Herald's P. 1 E

brown above, white breast + belly - brownish undertail coverts, underwing brownish with white area in middle just noticeable - medium sized - white headed look - not entirely white but lighter colored brown than mantle.

P. ex

1229 W.N. / J.F.P. 1

not a very broad neck band but white

1235 shear/petrel 2

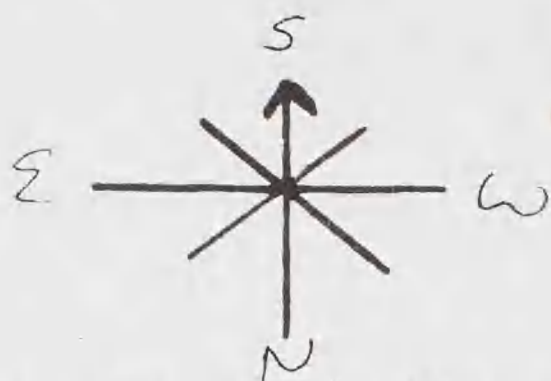
1611 Slender-billed S. 1 E

circled fairly close to ship over oil slick. all dark - slender, long wings, ~~fairly~~ medium sized - landed twice in water + flew off to E

1750 end observations

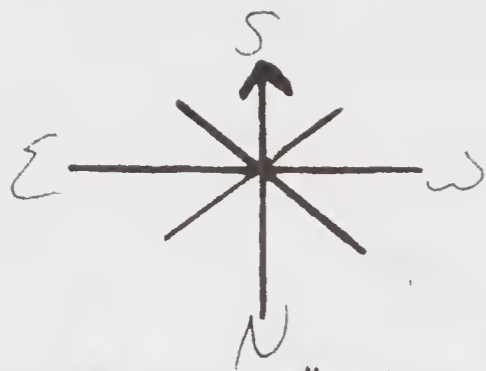
1729
1740
1750
1732
1742

Sam out ca 1739



DATE 14 Jan 65
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0640	begin observations					sunrise 0643
0745	Storm Petrel	1	NW		Reported by watch (log)	
0745	Shearwater/Petrel	2	NW		" " " "	
1132	Leach's P.	1	E			
1145	Leach's P.	1	E			
1150	Leach's P.	1	S		paced ship for 2 min. into wind at 12 kts.	
1155	Herald's P.	1	E		medium sized - flapped fairly loosely - dark above, white below with dark underwing + white along centerline -	
1157	Leach's P.	2			flushed (might have been 2 from 1132 + 1145 but I doubt it)	
1221	" "	1				
1320	wedge-tail	1				
1330	Kermadec Petrel	1			light phase	14-1500
1430	Wedgetail	1			bird of year	r b c u
1437	J.F. Petrel	1				#####111
1521	J.F. Petrel	3			on water	
	White-neck Petrel	1				
1700	Storm Petrel	1			may have been Dark-rump P. but too far out to be certain	
					observation ceased	sunset 1742 1749
					1750	



DATE 15 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0620 begin observations

0647 Sooty Tern 1 E

0847 WHITE-TRAIL TROPIC BIRD 1 ~~W~~ on water flew SW

0907 Juan Fernandez Petrel 1

1100 Blue faced Booby 1 sub-adult

1340 Leach's Petrel 1

1610 J.F. ~~Petrel~~ 1

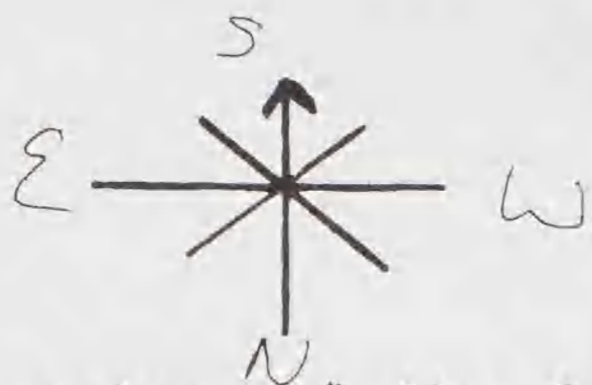
white collar but not at all pronounced

1647 " " 1 NE

1752 Leach's P 2 E

1810 end observations

Sunset 1756



DATE 16 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0634 begin observations

0740 Terns 2 - - - - merely silhouettes on the horizon
 0750 Flock - - - - not actively feeding, but ^{probably} flying
 Terns back & forth over deep school of fish
 Terns had white bellies & were probably
 Sooty Terns.

0808 Leach's P. 1

1357 J. F. Petrel 1

1435 J. F. Petrel 2

1440 Fairy Tern 1 SE

1457 RTTB 1

1600 J. F. Petrel 1

1615 Flock - - - - feeding on horizon in distance
 Terns had white bellies & were probably
 Sooty Terns, could only see one shear/pet
 but the flock too far away to be
 able to notice low flying birds. at this
 distance flock usually appear 1/2 the size
 they actually are. PFG.

1640 Sooty Tern 20 SE

Wedgetail 1

J. F. Petrel 4

Pink foot S. ? 1

light feeding

as large as J.F.P., perhaps larger - dark
 brown above underparts white, underwing
 white with thick dark edges, considerably
 thicker than wedgetail.

1649 Sooty Tern 100 ±5

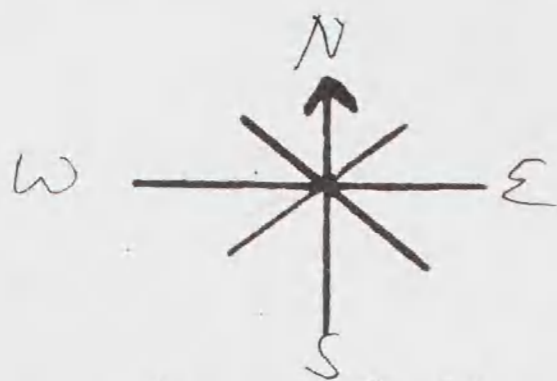
shear/petal 1+

feeding floor

1710 Sooty Tern 250 ±100

feeding

Sunset ~~0655~~
1955



DATE 17 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0610 begin observations

0829 Juan Fernandez Petrel 1

0917 Sooty Tern 1 - - - by watch

1033 Leach's P. 1 flushed

1042 RTTB 1 NE

1140 Frigatebird Terns 2 3+ > - - - black dots on horizon feeding? Yes they are

1239 Leach's P 1

1325 Shear/Pet 1 - - - reported by watch

1445 Fairy Tern 1 W 40'

1710 Kermadec Petrel 1 - - - light phase

1730 J. F. Petrel 1

1735 J. F. Petrel 1

1755 end observation

~~Handwritten scribbles and a diagonal line, possibly indicating a correction or deletion.~~



DATE 18 Jan 65
Pg. # 1

time species ^S# dir. hgt. remarks loc.

0615 begin observations

0720 Leach's Petrel 1 NW

0725 " " 1 NW

0755 Shear/Pet. 1 SW

0829 Sooty Tern 1 E

0830 Bonin's P.? 1 W

0903 Leach's P 1

0908 Leach's P 1

1120 Kermadec
Petrel 1 S

1420 Leach's Petrel 1

1450 Kermadec
Petrel 1 S

1540 Sooty Tern 2 SE

1800 end observations

— flying fast & on direct course on horizon
long outer rectrices
black mantle

----- light phase

----- light phase



DATE 19 Jan 65
Pg. # 1

time species ^S # dir. hgt. remarks loc.

0625 begin observations

0930 bird sp. 1

0959 Leach's P 1

1029 Leach's P 1

1135 white-tail 1

Tropical oil 1

1730 Leach's P. 2

seen by Capt. thru sextant

Secured watch @ 1737

274
21.0



DATE 20 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
0625	begin observations					
0630	Black-footed albatross	1	-	-	follows ship - light phase	
0715	" "	1	-	-	light phase - on water	
0832	Leach's P.	1			[now 2 BFAs follow ship]	
0844	tropicbird sp	1				
0845	Leach's P	1				
0902	Kermadec P	1			light phase with very large white underwing patches + lighter colored head	
0912	Leach's P.	1				
0932	Frigate	1			0910 3 BFA	
0945	Red-tail Tropicbird	2				
	Sooty (?) Tern	1				
1052	Leach's Petrel	1			1100 3 BFA 1115 4 BFA	
1130	bird sp	1			seen by Asari	
1342	Leach's Petrel	3	-	-	flying together beside ship flying faster than ship (ship moving ca 12 knots) at times flew both with fluttering wing beats + with stiff gliding motion -	
1345	Shear/Pet	1	-	-	by watch and black, much arcing	
1355	Black-footed albatross	6	-	-	in off ^{group} in water	
1357	Shearwater	1	-	-	[8 BFA's all together in area - looked all dark	
1424	Leach's P	1				
1630	-	-	-	-	There are 9 BLACKFOOTED ALBATROSS in the area now	
1735	end observations				10 BFA 1730	



DATE 21 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0645 begin observations

0645 BFA 14

0915 Pterodroma 1

seen by watch

1000 Leach's P 1

1005 Leach's P 1

16 BFA 1000 3 BFA banded 757-60907, 08, 09

1505 Juan Fernandez Petrel

acting like + flying with observations following ship

5 BFA 1300 26°30'N
148°00'W

07 brood patch fully feathered
08 bare brood patch
no molt

8 BFA 1430 around ship
probably more feather out

09 no molt

10 BFA 1500 ~~seen~~ on horizon & near ship

13 BFA 1615

Sunset ca 1935



DATE 22 Jan 65
Pg. # 1

time species # dir. hgt. remarks sunrise 0650 loc.

0640 begin observations

0700 Black footed 21 - - - 17 sitting together on water
Albatross

0851 Newell's 1

~~1000~~

14 BFA at 1000

P. 27

1046 ~~Juan Fernandez~~
~~w/white neck~~
Petrel 1

26+ BFA at 1020 most in raft on H₂O

1130 3 or 4+ Humpback Whales very
close to ship heading SE

1200/24 BFA

1230/28 BFA

1430 17 BFA

1600 14 BFA

1615 ~~10~~ 17+ BFA

1700 18+ BFA

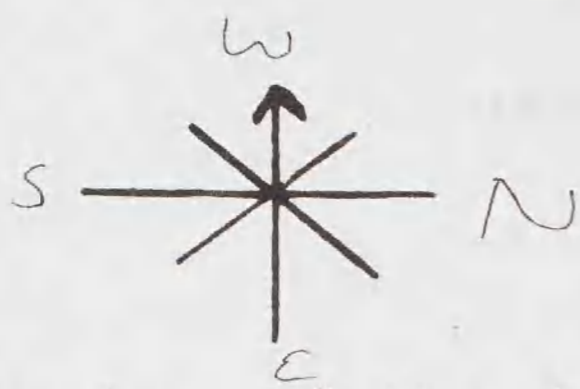
BWP 1750 ~~Cook's Petrel~~ 1 just after
sunset

1735 28 BFA

1800 end observations

21
18
16

63
39



DATE 23 Jan 65
Pg. # 1

time species # dir. hgt. remarks loc.

0650 begin observations

0650 BFA 7

0715 12 BFA

0745 13 BFA

0930 ~~Black-browed Albatross?~~
~~Albatross~~ 1

— An Albatross which looked like a Laysan with a definite deep yellow bill (black at tip)

Black-browed Albatross?

0815 14 BFA

0845 13 BFA

0945 8 BFA

1030 5 BFA

1115 5 BFA

1200 8 BFA

1345 12 BFA

1500 7 BFA

1515 9 BFA

1545 12 BFA

1658 shearwater 1

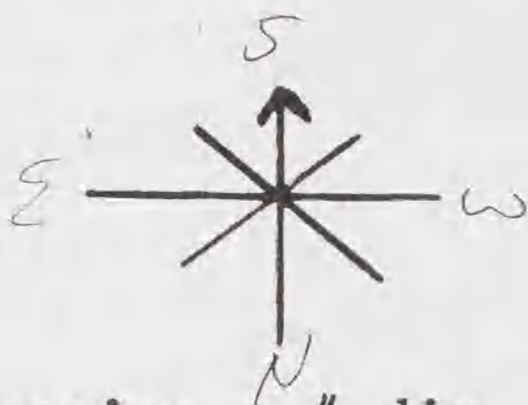
1700 10 BFA
all black, medium large, not chunky, thin wings, flew very fast underwing dark with light patches—



shaped like S.B.S.

1755 10 BFA

Sunset 1805



SCF

DATE 24 Jan 65
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0725	begin observations					
0730	BFA	3				
0800	Tern	1				
0810	Sooty Tern	1	N			
0815	Sooty Tern	2	NE			
0830	RFB	1	N			
BLIP 0835	Red-footed	1	N		adult 0830 4 BFA	
0840	Sooty Tern	70	±3			
0840	sooty Tern	150	±25		feeding flock } same flock	
	RFB	3			feeding flock	
					adult	
0902	WTTB	1				
0922	Sooty Tern	2			0900 7 BFA	
1014	Red-footed Booby	1			adult 0945 6 BFA	
1019	Sooty Tern	1				
1020	" "	2		low		
1030	Pomarine Jaeger	1			wings looked too rounded + had white spots	
1052	Red-footed Booby	1	adult		duplicated on top of wings, belly very	
1101	" " "	1	"		white	
1103	RFB	2	adult			
1108	Sooty Tern	2	SW			
1120	Sooty Tern	75	±25			
	Noddy Tern	40	±20			
	RFB	3			adult 1145 5 BFA	
1140	Sooty Tern	10			very high, not feeding	
1223	Pomarine Jaeger	1			adult light phase	
1232	Shear/Petrel	1				
1234	Sooty Tern	2	⊙		1230 5 BFA	
1240	Jaegers?	3			too far away, to be sure	
1300	Pomarine Jaeger	2				
1300	Hawaiian Noddy Tern	●6			following ship.	
					31	
					1305 - 3 Pomarine Jaeger	

0725
1019

239
236
231



time species # dir. hgt. remarks loc.

1306	Sooty Tern	2				
1306	" "	2				
1309	Tern	1				
1310	Brown Booby	1	-	-	-	adult
1325	Sooty Tern	3				
	Wedgetail (?)	1				1315 11 BFA
	Shearwater	1				
1327	Sooty Tern	2				
1330	Sooty Tern	2				
1330	Sooty Tern	4				
1331	Noddy	1				
1332	Sooty T.	4				
1333	Frigate	1				
1335	Terns	15				feeding
1339	Brown Boob	2				
1340	Noddy T.	1				
1341	Sooty Tern	45 ± 5				feeding - split into two
	RFB	4				
	Noddy Tern	5				
1343	Sooty T	17				travelling
1344	Bulwer's Petrel?	1				headed toward Oahu
1354	Brown Boob	1				dragonfly seen 8 miles off oahu
1400	Sooty Tern	16				travelling toward Oahu
1405	Sooty Tern	13				
	RFB	1				travelling
1410	Sooty Tern	14				
1428	Frigate	8				travelling
1458	Sooty Tern	1				travelling 1450 1 BFA
1545	Frigate	1				
1600	end observations					

69
4/10
2110

165
710
1488
7
1485
442

DATE: 5 Jan 65 Total Minutes: 279 Total Miles: 52

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
17	106	6.24	2.04

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
4	2	3	0	6	3	3	0	1.5	1.5	1.0	0	1.1	0.6	0.6	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	1	0	1	1	0	1.0	1.0	0	.02	.02	0

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	79	39.5	1.52

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
5	0	5	1	9	0	5	4	1.8	0	1.0	4.0	.17	0	.10	.08

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
2	84	.04	1	72	.02

DATE: 6 Jan 65 Total Minutes: 665 Total Miles: 85

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
36	484	13.44	5.69

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
29	2	5	0	69	5	11	0	2.38	2.5	2.2	0	.81	.06	.13	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2	0	2	2	0	2	1.0	0	1.0	.02	0	.02

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
9	413	45.89	4.86

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
9	452	.11	8	387	.09

DATE: 7 Jan 65 Total Minutes: 677 Total Miles: 123

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
11	13	1.18	.11

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
10	3	4	0	12	3	5	0	1.2	1.0	1.25	0	.10	.02	.04	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0	0	0	0	0	0	0	0	0	0	0	0

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
1	1	0	0	1	1	0	0	1.0	1.0	0	0	.01	.01	0	0

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0	0	0	0	0	0

DATE: 8 Jan 65 Total Minutes: 685 Total Miles: 88

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
14	19	1.36	1.22

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
12	1	5	0	14	1	6	0	1.17	1.0	1.2	0	.16	.01	.07	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0			0			0			0		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	5	1.67	.06

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0	0	0	0	0	0

DATE: 9 Jan 65

Total Minutes: 692

Total Miles: 117

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
15	154	10.27	1.32

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
13	4	4	0	24	7	4	0	1.85	1.75	1.0	0	.21	.06	.03	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	1	0	3	3	0	3.0	3.0	0	.03	.03	0

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	126	126.0	1.08

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	136	.01	1	136	.01

DATE: 10 Jan 65

Total Minutes: 678

Total Miles: 122

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>18</u>	<u>198</u>	<u>11.0</u>	<u>1.62</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
15	4	6	0	27	5	8	0	1.8	1.25	1.33	0	.22	.04	.07	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0			0			0			0		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>4</u>	<u>168</u>	<u>42.0</u>	<u>1.38</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
1	1	0	0	1	1	0	0	1.0	1.0	0	0	.01	.01	0	0

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>2</u>	<u>2</u>	<u>1.0</u>	<u>.02</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
<u>2</u>	<u>178</u>	<u>.02</u>	<u>2</u>	<u>178</u>	<u>.02</u>

DATE: 11 Jan 65 Total Minutes: 664 Total Miles: 118

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
23	482	20.96	4.08

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
12	6	2	0	38	18	5	0	3.19	3.0	2.50		.32	.15	.04	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2	0	2	2	0	2	1.0	0	1.0	.02	0	.02

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
11	441	40.09	3.74

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
8	465	.07	5	433	.04

DATE: 12 Jan 65 Total Minutes: 647 Total Miles: 120

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
21	159	7.57	1.33

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
12	2	3	0	25	5	4	0	2.08	2.5	1.33	0	.21	.04	.03	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2	0	2	2	0	2	2.0	0	2.0	.02	0	.02

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
8	130	16.25	1.08

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	.01

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
3	134	.03	3	134	.03

DATE: 13 Jan 65 Total Minutes: 652 Total Miles: 102

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
12	14	1.17	.14

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
12	0	5	0	14	0	6	0	1.17	0	1.2	0	.14	0	.06	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0			0			0			0		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0	0	0	0	0	0

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 14 Jan 65 Total Minutes: 666 Total Miles 122

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>13</u>	<u>19</u>	<u>1.46</u>	<u>.13</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>13</u>	<u>2</u>	<u>5</u>	<u>0</u>	<u>19</u>	<u>2</u>	<u>8</u>	<u>0</u>	<u>1.46</u>	<u>1.0</u>	<u>1.6</u>	<u>0</u>	<u>.13</u>	<u>.02</u>	<u>.07</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>0</u>			<u>0</u>			<u>0</u>			<u>0</u>		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 16 Jan 65 Total Minutes: 686 Total Miles 98

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>12</u>	<u>681</u>	<u>56.67</u>	<u>6.94</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>8</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>15</u>	<u>1</u>	<u>8</u>	<u>0</u>	<u>1.88</u>	<u>1.0</u>	<u>2.0</u>	<u>0</u>	<u>.15</u>	<u>.01</u>	<u>.08</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1.0</u>	<u>1.0</u>	<u>0</u>	<u>.01</u>	<u>.01</u>	<u>0</u>

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>7</u>	<u>652</u>	<u>94.57</u>	<u>6.76</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>2</u>	<u>3</u>	<u>1.5</u>	<u>.03</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>5</u>	<u>672</u>	<u>.05</u>	<u>5</u>	<u>672</u>	<u>.05</u>

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 17 Jan 65 Total Minutes: 692 Total Miles 108

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>11</u>	<u>15</u>	<u>1.36</u>	<u>.14</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>7</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>7</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>1.0</u>	<u>0</u>	<u>1.00</u>	<u>0</u>	<u>.06</u>	<u>0</u>	<u>.04</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1.0</u>	<u>1.0</u>	<u>0</u>	<u>.01</u>	<u>.01</u>	<u>0</u>

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>3</u>	<u>5</u>	<u>1.67</u>	<u>.05</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>1</u>	<u>2</u>	<u>2</u>	<u>.02</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 18 Jan 65 Total Minutes: 681 Total Miles 118

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>11</u>	<u>12</u>	<u>1.09</u>	<u>.10</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>9</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>1.0</u>	<u>0</u>	<u>1.0</u>	<u>0</u>	<u>.08</u>	<u>0</u>	<u>.03</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>0</u>			<u>0</u>			<u>0</u>			<u>0</u>		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>2</u>	<u>3</u>	<u>1.5</u>	<u>.03</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 19 Jan 65 Total Minutes: 670 Total Miles 118

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>5</u>	<u>6</u>	<u>1.2</u>	<u>.05</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1.33</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>.03</u>	<u>0</u>	<u>0</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1.0</u>	<u>0</u>	<u>1.0</u>	<u>.01</u>	<u>0</u>	<u>.01</u>

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 20 Jan 65 Total Minutes: 657 Total Miles 99

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>14</u>	<u>27</u>	<u>1.94</u>	<u>.27</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>10</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>21</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>2.1</u>	<u>0</u>	<u>1.0</u>	<u>0</u>	<u>.21</u>	<u>0</u>	<u>.01</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>2</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>1.5</u>	<u>2.0</u>	<u>0</u>	<u>.03</u>	<u>.02</u>	<u>0</u>

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>1</u>	<u>1</u>	<u>1.0</u>	<u>.01</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>1</u>	<u>1</u>	<u>1.0</u>	<u>.01</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

SI-MNH-955a
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 21 Jan 65 Total Minutes: 651 Total Miles 112

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
5	20	4.0	.18

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
5	0	2	0	20	0	2	0	4.0	0	1.0	0	.18	0	.02	0

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0			0			0			0		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				0				0			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
0	0	0	0	0	0

SI-MNH-955a
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 22 Jan 65 Total Minutes: 658 Total Miles 118

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>3</u>	<u>30</u>	<u>10.0</u>	<u>1.25</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>3</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>30</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>10.0</u>	<u>0</u>	<u>1.0</u>	<u>0</u>	<u>1.25</u>	<u>0</u>	<u>0.01</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>0</u>			<u>0</u>			<u>0</u>			<u>0</u>		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

SI-MNH-955a
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 23 Jan 65 Total Minutes: 657 Total Miles 109

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>3</u>	<u>16</u>	<u>5.33</u>	<u>.15</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>16</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5.33</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>.15</u>	<u>0</u>	<u>0</u>	<u>0</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>0</u>			<u>0</u>			<u>0</u>			<u>0</u>		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>0</u>				<u>0</u>				<u>0</u>				<u>0</u>			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

SI-MNH-955a
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART A

DATE: 24 Jan 65 Total Minutes: 530 Total Miles 86

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>49</u>	<u>496</u>	<u>10.12</u>	<u>5.77</u>

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
<u>5</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>15</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3.0</u>	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>	<u>.17</u>	<u>.01</u>	<u>.01</u>	<u>.01</u>

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1.0</u>	<u>0</u>	<u>1.0</u>	<u>.01</u>	<u>0</u>	<u>.01</u>

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>29</u>	<u>442</u>	<u>15.24</u>	<u>5.14</u>

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
<u>12</u>	<u>0</u>	<u>9</u>	<u>3</u>	<u>21</u>	<u>0</u>	<u>17</u>	<u>4</u>	<u>1.75</u>	<u>0</u>	<u>1.89</u>	<u>1.33</u>	<u>.24</u>	<u>0</u>	<u>.20</u>	<u>.05</u>

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
<u>3</u>	<u>10</u>	<u>3.33</u>	<u>.12</u>

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/MI.
<u>11</u>	<u>425</u>	<u>.13</u>	<u>4</u>	<u>340</u>	<u>.05</u>

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE 5 Jan 65

Time at sunrise = ¹³²⁵ Position at sunrise = ^{21° 17' N 157° 51' W}

Time at sunset = ¹⁸⁰⁴ Position at sunset = ^{20° 40' N 157° 21' W}

Miles traveled from 0000 hours to sunrise =

Miles traveled from sunrise to sunset = ⁵²

Miles traveled from sunset to 2400 hours = ⁴⁵

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

DATE 6 Jan 65

Time at sunrise = ⁷⁰² Position at sunrise = ^{19° 01' N 157° 20' W}

Time at sunset = ¹⁵³⁷ Position at sunset = ^{17° 25' N 157° 01' W}

Miles traveled from 0000 hours to sunrise = ⁵⁹

Miles traveled from sunrise to sunset = ⁷⁵

Miles traveled from sunset to 2400 hours = ³⁸

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART B

DATE 7 Feb 65

Time at sunrise = ⁰⁸⁵⁸ Position at sunrise = 18° 54' N 159° 43' W
Time at sunset = ¹⁸¹⁵ Position at sunset = 17° 53' N 159° 59' W
Miles traveled from 0000 hours to sunrise = 62
Miles traveled from sunrise to sunset = 123
Miles traveled from sunset to 2400 hours = 53

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.				
2.				
3.				
4.				
5.				
6.				

DATE 6 Feb 65

Time at sunrise = ⁰⁸⁵¹ Position at sunrise = 11° 45' N 156° 57' W
Time at sunset = ¹²¹⁶ Position at sunset = 10° 58' N 157° 52' W
Miles traveled from 0000 hours to sunrise = 75
Miles traveled from sunrise to sunset = 88
Miles traveled from sunset to 2400 hours = 57

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.				
2.				
3.				
4.				
5.				
6.				

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE

9 Jan 65

Time at sunrise = ⁰⁶³⁵ Position at sunrise = $12^{\circ} 40' N$ $154^{\circ} 00' W$

Time at sunset = ¹⁸⁰⁷ Position at sunset = $11^{\circ} 57' N$ $154^{\circ} 02' W$

Miles traveled from 0000 hours to sunrise = 66

Miles traveled from sunrise to sunset = 117

Miles traveled from sunset to 2400 hours = 63

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

DATE

10 Jan 65

Time at sunrise = ⁰⁶⁴³ Position at sunrise = $14^{\circ} 06' N$ $154^{\circ} 07' W$

Time at sunset = ¹⁸⁰¹ Position at sunset = $16^{\circ} 08' N$ $154^{\circ} 04' W$

Miles traveled from 0000 hours to sunrise = 66

Miles traveled from sunrise to sunset = 122

Miles traveled from sunset to 2400 hours = 56

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE 11 Jan 65

Time at sunrise = ⁰⁶⁵⁰ Position at sunrise = 18°15'N 154°00'W

Time at sunset = ¹⁷⁵⁴ Position at sunset = 20°13'N 154°00'W

Miles traveled from 0000 hours to sunrise = 71

Miles traveled from sunrise to sunset = 118

Miles traveled from sunset to 2400 hours = 52

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

DATE 12 Jan 65

Time at sunrise = ⁰⁶⁵⁷ Position at sunrise = 22°11'N 153°59'W

Time at sunset = ¹⁷⁴⁴ Position at sunset = 23°30'N 153°09'W

Miles traveled from 0000 hours to sunrise = 66

Miles traveled from sunrise to sunset = 120

Miles traveled from sunset to 2400 hours = 66

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE

13 Jan 65

Time at sunrise = ⁰⁶⁴⁹ Position at sunrise = 23° 24' N 150° 58' W

Time at sunset = ¹⁷⁴¹ Position at sunset = 21° 42' N 150° 55' W

Miles traveled from 0000 hours to sunrise = 57

Miles traveled from sunrise to sunset = 102

Miles traveled from sunset to 2400 hours = 66

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

DATE

14 Jan 65

Time at sunrise = ⁰⁶⁴² Position at sunrise = 19° 30' N 151° 08' W

Time at sunset = ¹⁷⁴⁸ Position at sunset = 17° 28' N 151° 02' W

Miles traveled from 0000 hours to sunrise = 66

Miles traveled from sunrise to sunset = 122

Miles traveled from sunset to 2400 hours = 36

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

1.

2.

3.

4.

5.

6.

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE 15 Jan 65

Time at sunrise = ⁰⁶³⁵ Position at sunrise = 15° 46' N 150° 59' W

Time at sunset = ¹⁷⁵³ Position at sunset = 14° 16' N 151° 04' W

Miles traveled from 0000 hours to sunrise = 66

Miles traveled from sunrise to sunset = 90

Miles traveled from sunset to 2400 hours = 65

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
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1.

2.

3.

4.

5.

6.

DATE 16 Jan 65

Time at sunrise = ⁰⁶³⁰ Position at sunrise = 12° 10' N 150° 57' W

Time at sunset = ¹⁷⁵⁶ Position at sunset = 11° 05' N 150° 04' W

Miles traveled from 0000 hours to sunrise = 61

Miles traveled from sunrise to sunset = 98

Miles traveled from sunset to 2400 hours = 63

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
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1.

2.

3.

4.

5.

6.

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE 17 Jan 65

Time at sunrise = ⁰⁶¹⁵ Position at sunrise = 10° 06' N 148° 10' W

Time at sunset = ¹⁷⁴⁷ Position at sunset = 11° 54' N 148° 03' W

Miles traveled from 0000 hours to sunrise = 74

Miles traveled from sunrise to sunset = 108

Miles traveled from sunset to 2400 hours = 64

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
-------------	-------------	-----------	----------

1.

2.

3.

4.

5.

6.

DATE 18 Jan 65

Time at sunrise = ⁰⁶²⁰ Position at sunrise = 13° 54' N 148° 00' W

Time at sunset = ¹⁷⁴¹ Position at sunset = 15° 52' N 148° 04' W

Miles traveled from 0000 hours to sunrise = 56

Miles traveled from sunrise to sunset = 118

Miles traveled from sunset to 2400 hours = 52

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
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1.

2.

3.

4.

5.

6.

SI-MNH-955b
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE 19 Jan 65

Time at sunrise = 0626 Position at sunrise = 17°45'N 147°58'W

Time at sunset = 1736 Position at sunset = 19°43'N 148°03'W

Miles traveled from 0000 hours to sunrise = 61

Miles traveled from sunrise to sunset = 118

Miles traveled from sunset to 2400 hours = 54

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

DATE 20 Jan 65

Time at sunrise = 0633 Position at sunrise = 21°51'N 147°55'W

Time at sunset = 1730 Position at sunset = 23°30'N 148°01'W

Miles traveled from 0000 hours to sunrise = 74

Miles traveled from sunrise to sunset = 99

Miles traveled from sunset to 2400 hours = 73

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS

AT SEA SURVEY CHART B

DATE

21 Jan 65

Time at sunrise = ⁰⁶⁴⁰ Position at sunrise = 25° 53' N 147° 56' W

Time at sunset = ¹⁷³¹ Position at sunset = 25° 52' N 149° 16' W

Miles traveled from 0000 hours to sunrise = 70

Miles traveled from sunrise to sunset = 112

Miles traveled from sunset to 2400 hours = 58

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

DATE

22 Jan 65

Time at sunrise = ⁰⁶⁵¹ Position at sunrise = 25° 03' N 150° 55' W

Time at sunset = ¹⁷⁴⁹ Position at sunset = 24° 59' N 153° 05' W

Miles traveled from 0000 hours to sunrise = 44

Miles traveled from sunrise to sunset = 118

Miles traveled from sunset to 2400 hours = 50

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

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3-4-64

1307

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 24 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	23 25	157 00														
0200	23 14	157 00	03		10	176	23.4	20		7		90-8-9	23.4	24	70	S-12
0300	23 03	156 59														
0400	22 52	156 59														
0500	22 41	156 58														
0600	22 30	156 58														
0700	22 19	156 59														
0800	22 08	157 00														
0900	22 00	157 01														
1000	21 59	157 03														
1100	21 50	157 10														
1200	21 41	157 17														
1300	21 32	157 24														
1400	21 23	157 31														
1500	21 14	157 39														
1600	21 14	157 50														
1700																
1800																
1900																
2000																
2100																
2200																
2300																
2400																

0530
0545
20
Rain on
Head
Sea →
buoy

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-955c
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

73 1228

DATE 5 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100																
0200																
0300																
0400																
0500																
0600																
0700																
0800																
0900																
1000																
1100																
1200																
1300	21 19	157 57														
1400	21 11	157 52														
1500	21 02	157 47														
1600	20 54	157 42														
1700	20 45	157 37														
1800	20 37	157 32														
1900	20 28	157 27														
2000	20 20	157 22														
2100	20 11	157 17														
2200	20 03	157 12														
2300	19 54	157 07														
2400	19 46	157 02														

1325

BCF

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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 6 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	17 52	157 58														
0200	17 43	157 51	03		10	1010.5	24.0	19		6		10-12 E	25.0	17	120	J-12
0300	17 34	157 44														
0400	17 25	157 37														
0500	17 16	157 30														
0600	17 07	157 23														
0700	16 57	157 16														
0800	16 48	157 09	54		10	1011.0	23.3	20		8		10-12 E	24.9	17	120	J-12
0900	16 39	157 02														
1000	16 30	156 55														
1100	16 21	156 48														
1200	16 12	156 41														
1300	16 03	156 34														
1400	15 54	156 27	51		10	1012.1	25.0	20		8		10-12 E	25.0	17	120	J-12
1500	15 45	156 20														
1600	15 36	156 13														
1700	15 27	156 06														
1800	15 18	155 59														
1900	15 09	155 52														
2000	15 00	155 45	02		10	1013.2	24.4	20		8		10-12 E	24.4	20	120	J-12
2100	14 51	155 38														
2200	14 42	155 31														
2300	14 33	155 24														
2400	14 24	155 17														

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-955c
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 7 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	15 43	157 00														
0200	16 37	157 00	02		10	1010.0	29.7	21		8		140-2.5	12	17	110	S-0
0300	16 32	157 00														
0400	16 25	157 00														
0500	16 20	157 00														
0600	16 15	157 00														
0700	16 10	157 00														
0800	16 42	157 00	01		25	1010.0	29.7	12		7		180-2.4	13	13	180	S-1.7
0900	16 38	157 00														
1000	16 33	157 00														
1100	16 28	157 00														
1200	16 23	157 00														
1300	16 18	157 00														
1400	16 13	157 00	01		20	1010.0	28.0	21		8		180-2.4	17	13	180	S-1.7
1500	16 08	157 00														
1600	16 03	157 00														
1700	16 08	157 00														
1800	16 03	157 00														
1900	15 58	157 00														
2000	15 53	157 00	02		10	1010.2	29.7	22		8		180-2.4	16	12	180	S-1.7
2100	15 48	157 00														
2200	15 43	157 00														
2300	15 38	157 00														
2400	15 33	157 00														

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-955c

3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 8 Jun 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100																
0200																
0300																
0400																
0500																
0600																
0700																
0800																
0900																
1000																
1100																
1200																
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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 9 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100																
0200																
0300																
0400																
0500																
0600																
0700																
0800																
0900																
1000																
1100																
1200																
1300	11 11	153 59														
1400	11 23	154 00														
1500	11 30	154 01														
1600	11 32	154 01														
1700	11 44	154 02														
1800	11 56	154 02														
1900	12 07	154 03														
2000	12 19	154 03														
2100	12 24	154 03														
2200	12 38	154 04														
2300	12 48	154 05														
2400	13 00	154 05														

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

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SMITHSONIAN INSTITUTION

DIVISION OF BIRDS

AT SEA SURVEY CHART C

DATE 10 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	13 04	154 05														
0200	13 11	154 05	02		10	1009.6	24.4	20		8		80-6-5	24.8	21	90	N-12
0300	13 23	154 06														
0400	13 35	154 07														
0500	13 46	154 07														
0600	13 57	154 07														
0700	14 10	154 07														
0800	14 23	154 08	02		10	1010.9	24.7	21		8		90-6-5	24.9	20	100	N-12
0900	14 35	154 09														
1000	14 35	154 09														
1100	14 45	154 09														
1200	14 57	154 09														
1300	15 08	154 04														
1400	15 21	154 04	02		10	1010.4	25.6	21		8		70-5-5	25.0	22	90	N-12
1500	15 34	154 04														
1600	15 47	154 04														
1700	16 00	154 04														
1800	16 08	154 04														
1900	16 08	154 04														
2000	16 21	154 03	02		10	1013.6	24.4	21		7		80-5-5	25.1	14	90	N-12
2100	16 26	154 03														
2200	16 39	154 03														
2300	16 52	154 03														
2400	17 04	154 03														

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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 11 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	17 17	154 03													
0200	17 30	154 03	02	10	1013.0	24.1	20		7		80-5-5	25.1	17	80	N-12
0300	17 32	154 02													
0400	17 40	154 02													
0500	17 53	154 02													
0600	18 05	154 02													
0700	18 17	154 02													
0800	18 28	154 01	03	10	1014.1	23.4	21		4		80-6-5	24.6	21	70	N-12
0900	18 39	154 01													
1000	18 50	154 00													
1100	18 58	154 00													
1200	19 00	154 00													
1300	19 13	154 00													
1400	19 26	154 00	02	10	1013.5	24.0	20		7		100-6-5	24.5	19	110	N-12
1500	19 38	154 00													
1600	19 50	154 00													
1700	20 02	154 00													
1800	20 14	154 00													
1900	20 26	154 00													
2000	20 30	154 00	01	10	1014.5	24.0	20		6		100-6-5	24.4	21	110	N-12
2100	20 30	154 00													
2200	20 42	154 00													
2300	20 53	154 00													
2400	21 05	154 00													

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

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 12 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	21 16	153 59														
0200	21 27	153 59	03		10	1014.6	23.2	20		3		110-6-5	24.5	15	130	N-12
0300	21 39	153 59														
0400	21 50	153 59														
0500	22 01	153 59														
0600	22 01	153 59														
0700	22 12	153 59														
0800	22 25	153 57	03		10	1015.0	23.2	20		7		150-6-3	24.3	14	150	N-12
0900	22 37	153 56														
1000	22 50	153 55														
1100	23 03	153 54														
1200	23 15	153 52														
1300	23 28	153 52														
1400	23 30	153 52	03		10	1012.2	24.6	19		3		160-6-5	23.5	18	170	N-12
1500	23 30	153 43														
1600	23 30	153 30														
1700	23 30	153 18														
1800	23 30	153 06														
1900	23 30	152 53														
2000	23 30	152 40	03		10	1013.4	23.0	20		7		160-6-5	23.4	22	180	S-12
2100	23 30	152 35														
2200	23 30	152 23														
2300	23 29	152 10														
2400	23 29	151 57														

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

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 13 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	23 28	151 45													
0200	23 28	151 32	01	10	1013.6	22.9	19		3		160-6-5	23.2	22	160	E-12
0300	23 27	151 20													
0400	23 26	151 08													
0500	23 26	150 58													
0600	23 26	150 58													
0700	23 22	150 58													
0800	23 11	150 58	03	10	1011.6	22.1	19		7		160-6-7	23.0	24	160	S-12
0900	23 01	150 58													
1000	22 51	150 57													
1100	22 41	150 57													
1200	22 31	150 57													
1300	22 21	150 56													
1400	22 11	150 55	02	10	1010.5	24.0	20		7		170-6-7	23.4	18	190	S-12
1500	22 00	150 54													
1600	21 56	150 54													
1700	21 50	150 55													
1800	21 39	150 55													
1900	21 28	150 56													
2000	21 19	150 57	07	10	1012.2	23.6	21		7		170-6-5	23.5	14	180	S-12
2100	21 10	150 56													
2200	20 59	150 59													
2300	20 48	151 00													
2400	20 36	151 01													

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

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SMITHSONIAN INSTITUTION

DIVISION OF BIRDS

AT SEA SURVEY CHART C

DATE

14 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	20 29	151 02														
0200	20 25	151 02	02		10	1012.0	23.4	20		8		170-6-5	23.8	16	170	S-12
0300	20 13	151 04														
0400	20 01	151 05														
0500	19 50	151 07														
0600	19 38	151 08														
0700	19 26	151 08														
0800	19 14	151 07	02		10	1012.0	22.1	21		8		170-5-3	23.6	16	170	S-12
0900	19 01	151 05														
1000	18 59	151 06														
1100	18 50	151 06														
1200	18 38	151 05														
1300	18 26	151 05														
1400	18 13	151 05	01		10	1010.6	24.5	20		7		140-6-5	24.2	13	180	S-12
1500	18 01	151 04														
1600	17 48	151 03														
1700	17 36	151 02														
1800	17 26	151 02														
1900	17 26	151 02														
2000	17 26	151 02	01		10	1011.8	23.8	20		3		160-6-3	24.4	09	180	S-12
2100	17 25	151 02														
2200	17 17	151 02														
2300	17 05	151 02														
2400	16 52	151 02														

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

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SMITHSONIAN INSTITUTION

DIVISION OF BIRDS

AT SEA SURVEY CHART C

DATE

15 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	16 40	151 01													
0200	16 29	151 01	02	10	1011.8	23.0	20		3		160-6-3	24.2	11	180	5-12
0300	16 19	151 00													
0400	16 02	150 59													
0500	15 58	150 59													
0600	15 53	150 59													
0700	15 41	150 59													
0800	15 29	151 00	02	25	1012.2	24.4	21		1		130-6-3	24.4	07	120	5-12
0900	15 17	151 01													
1000	15 14	151 02													
1100	15 15	151 02													
1200	15 16	151 03													
1300	15 03	151 03													
1400	14 51	151 03	03	10	1010.5	24.9	21		4		130-6-2	25.1	6	120	5-12
1500	14 39	151 03													
1600	14 30	151 04													
1700	14 27	151 04													
1800	14 15	151 04													
1900	14 04	151 03													
2000	13 52	151 02	02	10	1011.9	24.0	21		1		130-6-2	24.9	8	120	5-12
2100	13 47	151 02													
2200	13 35	151 02													
2300	13 23	151 01													
2400	13 11	151 00													

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-955c
3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 16 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	13 00	150 59														
0200	13 00	150 59	02		10	1011.6	24.1	20		3		80-6-2	24.8	8	70	S-12
0300	12 48	150 59														
0400	12 36	150 58														
0500	12 26	150 57														
0600	12 16	150 57														
0700	12 05	150 57														
0800	11 54	150 56	02		10	1012.0	24.0	20		3		130-6-2	24.7	15	70	S-12
0900	11 43	150 56														
1000	11 32	150 56														
1100	11 30	150 56														
1200	11 30	150 56														
1300	11 29	150 52														
1400	11 24	150 42	02		10	1010.8	25.9	20		3		90-6-3	24.7	15	60	SE-12
1500	11 19	150 32														
1600	11 14	150 22														
1700	11 09	150 12														
1800	11 04	150 03														
1900	10 59	149 53														
2000	10 54	149 43	02		10	1011.9	24.7	19		1		80-6-3	25.3	14	70	SE-12
2100	10 51	149 39														
2200	10 47	149 29														
2300	10 42	149 19														
2400	10 37	149 09														

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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 17 Jan 65

TIME	LAT	LONG	PRES	WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	10 32	148 59														
0200	10 27	148 50	03		10	1011.5	24.1	21		4		80-6-3	25.7	12	50	SE-12
0300	10 22	148 40														
0400	10 17	148 31														
0500	10 12	148 22														
0600	10 07	148 12														
0700	10 04	148 03														N
0800	10 06	148 03	03		10	1012.6	25.0	22		5		50-6-3	25.7	17	30	SE-12
0900	10 18	148 02														
1000	10 31	148 01														
1100	10 43	148 02														
1200	10 55	148 03														
1300	11 07	148 03														N
1400	11 17	148 03	03		10	1011.4	24.7	22		7		50-6-3	24.6	13	60	SE-12
1500	11 30	148 03														
1600	11 32	148 03														
1700	11 44	148 03														
1800	11 57	148 03														
1900	12 09	148 02														
2000	12 21	148 02	02		10	1013.6	24.2	21		6		50-6-3	24.7	20	40	N-12
2100	12 26	148 02														
2200	12 38	148 01														
2300	12 48	148 01														
2400	12 58	148 01														

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

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 18 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	12 59	148 01													
0200	13 09	148 01	02	10	1013.7	23.7	20		6		50-6-4	14.3	19	50	N-12
0300	13 19	148 00													
0400	13 29	148 00													
0500	13 40	148 00													
0600	13 51	148 00													
0700	14 01	148 00													
0800	14 13	148 00	01	10	1016.6	24.0	18		5		40-5-5	24.1	19	60	N-12
0900	14 24	148 00													
1000	14 29	148 01													
1100	14 34	148 01													
1200	14 46	148 02													
1300	14 57	148 02													
1400	15 07	148 02	01	10	1015.6	23.5	19		2		40-5-5	23.9	16	60	N-12
1500	15 21	148 03													
1600	15 33	148 03													
1700	15 44	148 04													
1800	15 56	148 04													
1900	16 02	148 05													
2000	16 05	148 05	02	10	1012.6	23.7	19		2		330-9-7	24.0	12	60	N-12
2100	16 10	148 05													
2200	16 21	148 04													
2300	16 33	148 03													
2400	16 44	148 03													

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

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 19 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	16 55	148 02													
0200	17 06	148 01	03	10	1018.0	23.4	20		7		320-9-7	24.0	15	50	N-12
0300	17 17	148 00													
0400	17 28	147 59													
0500	17 28	147 59													
0600	17 40	147 58													
0700	17 52	147 58													
0800	18 04	147 58	15	10	1019.6	22.8	20		6		320-9-7	23.9	22	50	N-12
0900	18 16	147 57													
1000	18 28	147 57													
1100	18 39	147 57													
1200	18 51	147 57													
1300	19 00	147 57													
1400	19 02	147 57	01	10	1018.8	23.6	19		4		320-9-14	24.1	18	40	N-12
1500	19 13	147 59													
1600	19 25	148 01													
1700	19 36	148 02													
1800	19 48	148 02													
1900	20 00	148 04													
2000	20 11	148 03	02	10	1019.6	23.1	19		3		320-9-12	23.2	17	40	N-12
2100	20 16	148 03													
2200	20 27	148 02													
2300	20 30	148 01													
2400	20 37	148 01													

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

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 20 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	20 49	148 00													
0200	21 00	147 59	03	10	1019.0	22.0	18		6		320-9-12	23.6	17	90	N-12
0300	21 11	147 58													
0400	21 22	147 57													
0500	21 33	147 56													
0600	21 45	147 55													
0700	21 56	147 54													
0800	22 00	147 53	01	10	1019.9	22.8	22		3		20-6-7	23.5	20	80	N-12
0900	22 04	147 53													
1000	22 12	147 53													
1100	22 22	147 54													
1200	22 38	147 56													
1300	22 47	147 57													
1400	23 00	147 58	03	10	1017.3	23.1	18		4		320-9-10	23.6	15	80	N-12
1500	23 11	147 59													
1600	23 23	148 00													
1700	23 38	148 01													
1800	23 55	148 01													
1900	23 48	148 01													
2000	24 02	148 01	01	10	1017.7	22.2	17		1		320-9-10	22.9	15	110	N-12
2100	24 05	148 01													
2200	24 18	148 00													
2300	24 31	148 00													
2400	24 43	147 59													

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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 21 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	24 55	147 28													
0200	25 08	147 57	03	10	1015.7	21.2	19		7		320-9-7	22.3	10	150	N-12
0300	25 08	147 52													
0400	25 20	147 32													
0500	25 20	147 32													
0600	25 42	147 56													
0700	25 58	147 56													
0800	26 07	147 58	15	10	1014.8	21.3	19		5		320-9-7	22.0	14	150	N-12
0900	26 21	148 00													
1000	26 27	148 00													
1100	26 25	148 33													
1200	26 21	148 11													
1300	26 15	148 23													
1400	26 10	148 35	01	10	1011.0	22.3	20		5		320-9-7	22.4	19	190	SW-12
1500	26 05	148 47													
1600	26 00	148 59													
1700	25 55	149 10													
1800	25 49	149 21													
1900	25 44	149 31													
2000	25 39	149 41	03	10	1013.4	20.0	18		8		111	22.5	27	310	SW-12
2100	25 37	149 45													
2200	25 33	149 54													
2300	25 29	150 03													
2400	25 25	150 12													

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

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SMITHSONIAN INSTITUTION

DIVISION OF BIRDS

AT SEA SURVEY CHART C

DATE

22 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	25 20	150 21													
0200	25 15	150 30	02	10	1014.4	20.4	14		8		280-6-7	21.7	17	280	SW-12
0300	25 10	150 40													
0400	25 05	150 50													
0500	25 03	150 55													
0600	25 03	150 55													
0700	25 03	151 02	02	10	1017.5	20.3	12		7		320-6-9	22.4	18	330	W-12
0800	25 03	151 02													
0900	25 02	151 15													
1000	25 01	151 28													
1100	25 00	151 41													
1200	24 59	151 54													
1300	24 58	152 06													
1400	24 58	152 19	07	10	1019.5	21.2	13		7		350-6-5	22.3	17	350	W-12
1500	24 59	152 31													
1600	24 59	152 43													
1700	24 57	152 55													
1800	24 59	153 07													
1900	25 00	153 19													
2000	25 00	153 30	02	10	1021.7	20.8	13		8		350-6-7	22.5	19	000	W-12
2100	25 00	153 36													
2200	25 00	153 49													
2300	25 00	154 00													
2400	25 00	154 00													

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

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3-4-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA SURVEY CHART C

DATE 23 Jan 65

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUM %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	25 01	154 14													
0200	25 01	154 20	02	10	1022.7	21.9	15		8		350-6-7	23.3	20	50	W-12
0300	25 00	154 42													
0400	24 59	154 56													
0500	24 59	155 10													
0600	24 59	155 23													
0700	24 59	155 36													
0800	24 54	155 49	02	10	1023.6	21.2	15		8		50-6-5	23.0	17	70	W-12
0900	24 58	156 01													
1000	24 58	156 14													
1100	24 57	156 27													
1200	24 57	156 39													
1300	24 57	156 52													
1400	24 56	156 58	01	10	1021.6	22.9	14		3		90-6-10	23.2	29	90	W-12
1500	24 51	156 58													
1600	24 42	156 58													
1700	24 32	156 58													
1800	24 21	156 58													
1900	24 10	156 54													
2000	24 00	156 59	03	10	1020.9	22.5	17		6		90-6-10	23.5	20	60	S-12
2100	23 56	156 59													
2200	23 45	156 59													
2300	23 34	157 00													
2400	23 30	157 00													

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