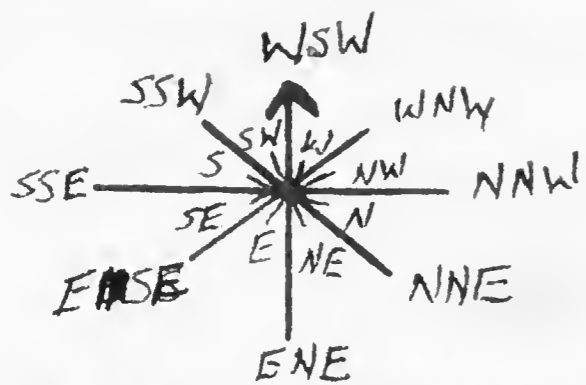




Total Terns 93  
Sightings 9

Flocks 2 both feeding



DATE 6 JUNE 64  
Pg. # 2

time species # dir. hgt. remarks loc.

0834 SOOTY TERN 1 N 20'  
0835 Bulwers 1 SSW low  
0840 " 1 WNW " (STORMS CLEARED - 0900 hrs.)  
0903 SHEARWATER 1 NNW "  
0910 Bulwers 1 ESE "  
0940 " 1 ESE "  
0947 " 1 ESE "

Sooty - 14  
Wedgetail - 5  
S - 4  
Newella 1  
RF Booby - 7  
Bulwers - 17  
S - 17

1010 Terns 2 NNE low  
1014 Bulwers 1 SE low  
1019 " 1 NNW "

*Flock*  
1023 Birds 9 sitting on water in group; dark with white forehead, did not look like terns. However,  
1024 Sooty Tern 5 NE to 80' 5 sooty terns appeared from same area, one after the other

1034 Newells 1 ENE low  
1035 R-F Booby 1 circling 75' immature plumage  
1052 " 1 " to 75' may have been same bird  
1056 Bulwers 1 NNE low

1108 Sooty TERN 2 NNE 100'  
1110 Bulwers 1 NNW low  
1118 " 1 NNW "  
1122 " 1 NNW "

*Flock*  
1123 Wedgetail 1 ENE "  
1134 TERNS 58-60 to 150' feeding

1139 Sooty TERN 2 SSE 50'  
1158 Bird 1 NNW 50' Gray or brown above, white belly, fairly distinct line across chest, throat + head gray, tail gray above, below: gull sized, smaller than booby. Slow flapping

1200 Bulwers 1 NNW low

1231 Bulwers 1 N low

1236 Bulwers 1 NW low

1252 Sooty 1 NE 50'  
1310 ~~1410~~ Wedgetail 2 along side of ship low

1315 Sooty 1 SSE  
1317 Sooty 2 NNE

1320 Bulwers 1 NE low

1320 Wedgetail 1 SW low

1330 Bulwers 1 @ low

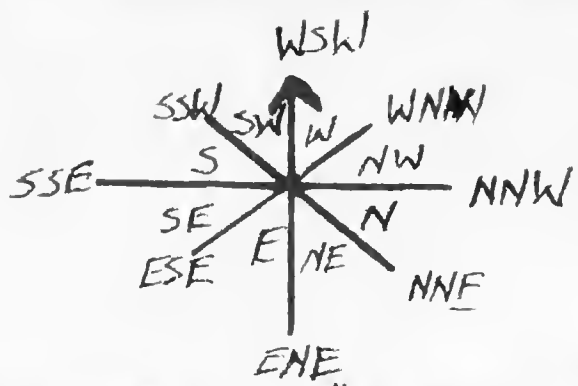
1348 Bulwer 1 N low

1403 Wedgetail 1 NW low

36

all Terns - 66  
sightings - 9

flocks. 2 feeding

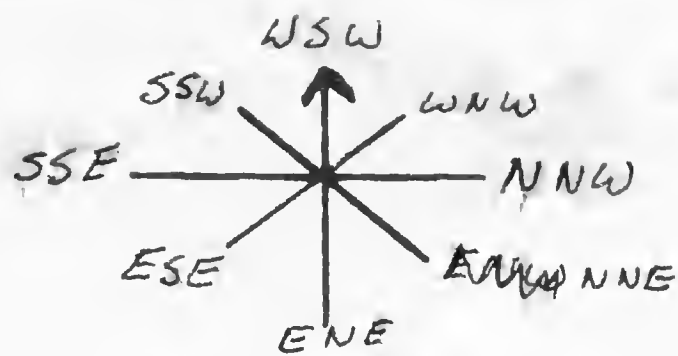


DATE 6 June  
Pg. # 3

time	species	#	dir.	hgt.	remarks	loc.
1424	Bulwer's	1	N	low		Sooty - 0
1429	Wedgetail	1	WNW	"		Bulwers 8
1434	Bulwers	1	ESE	"		S-7
1445	" (?)	1	ENE	"	- DISTANT OFF STERN	Wedgetail 38
1452	Wedgetail	1	NE	"		S-27
1459	Bulwers (?)	1	SSE	"		Newell's 7
1502	Wedgetail	1	ESE	"	Boat	S-2
1508	"	1	ESE	"		
1511	"	1	SE	"		
1515	"	1	SSE	"		
1517	" (?)	2	SE	"	DISTANT	
1520	Wedgetail	1	NNE	low		
1521	"	4	ESE	low		
1521	Bulwer's	1	ENE	low		D-flocks
1523	Wedgetail	2	ESE	low		
1526	"	1	E	"		
1527	Shear-Petrel	1	ESE	"	DISTANT	
1530	Wedgetail	1	NE	low		
1533	"	3	E	"		
1537	Bulwers	1	NNE	"		
1537	Wedgetail	1	NE	low	zig-zag pattern	
1539	Bulwer's	1	SSW	low	1st direction NE but changed when fired upon.	
1540	WEDGETAIL	1	ENE	"		
1540	"	1	ENE	"		
1541	"	2	ENE	"		
1542	Bulwers	1	ENE	"		
1546	NEWELL'S	1	NE	"		
1547	Wedgetail	1	ENE	"		
1550	NEWELL'S	1	SSE	"		
1551	WEDGETAIL	1	SE	"		
1551	"	1	SE	"		
1552	"	1	WNW	"		
1554	"	1	NNW	"	- collected by wow. - Lat. 19-32 N Long. 162°18' W	
1605	"	1	N	"		
1650	Wedgetail	1	NNW	"	} stream across bow	
1651	"	2	"	"		
1652	"	1	"	"		
1653	"	1	"	"		
1654	"	1	"	"		
1714	Bulwers	2	NW	"		
1724	Wedgetail	2	NW	"		
1725	"	1	NE	"		

42

32



DATE 6 June  
Pg. # 4

time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
1733	Sooty TERN	1	WSW	50		Sooty - 15
1735	Bulwer	1	NW	low		8 - 7
1736	Wedgetail	1	NW	low		see
1737	Sooty TERN	2	ENE	20'		Bulwer 6
1739	Wedgetail	2	NNW	low		5 - 5
1740	"	2	NNW	"		Wedgetail 2
1741	Sooty tern	1	ENE	50'		3-9
1741	"	1	NNW	50'		
1743	Wedgetail	1	NNW	low		
ca 1740	Sooty Tern	3	NW	"		
" 1740	Bulwers	2	NW	"		
" 1742	"	1	NW	"		
1752	Sooty Tern	1	NNW	"		
1752	Wedgetail	1	NNW	"		
1755	"	1	WNW	"		
1755	"	1	WNW	"		
1755	Bulwers	1	NNW	"		
1810	Wedgetail	1	⊙	"	shot by wow - NOT collected	
1900	Sooty TERN	6	⊙	0' to 50'	RESUME COURSE	
1902	Wedgetail	2	SSE	low		
1902	Bulwers	1	NNW	low		
1915	—	—	—	—	— CEASE OBSERVATIONS + RAIN	
21						
1927	Sunset					

Sunset 1927

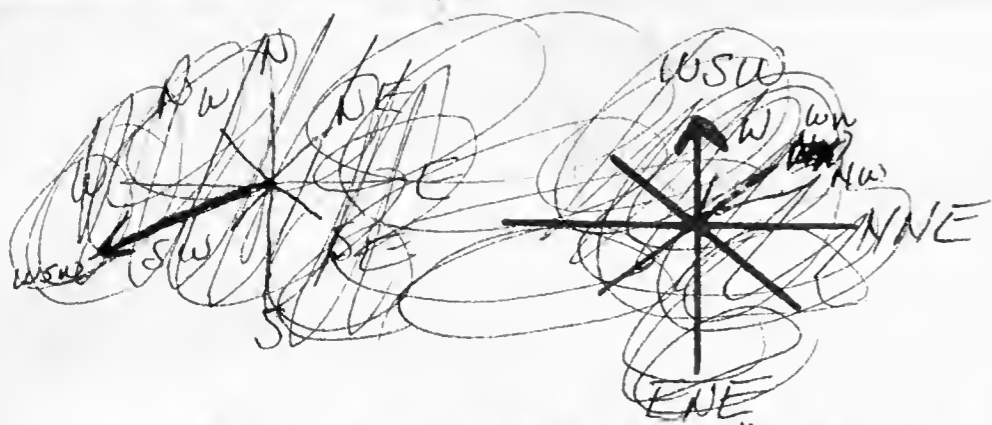
0.714

Terms


2191





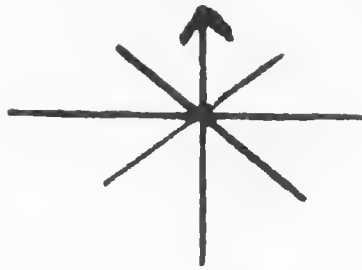


DATE 5 June  
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1400	bird	1	ENE	low		
1407	2 Sooty Tern	2	N	25 ft	change course when they saw the ship	
1408	RT. Tropicbird	1	⊙	100 ft		
1409	Wedgetail	1	SE	low		
1416	Common Noddy	1	NW	"		
1422	"	1	WSW	"		
1425	SOOTY TERN	1	N	TO 50'		
1430	Wedgetail	2	⊙	LOW		
1431	Common Noddy	1	NW	TO 50'		
1432	"	1	N	low		
"	"	2	N	to 30'		
"	"	2	N	to 50'		
"	Sooty Tern	2	S	100'		
1440	Wedgetail	1	N	low		
1441	Noddy	1	N	"		
1442	Bulwers(?) Pet	1	⊙	+		
1443	Albatross, Blk.	1	⊙	+		
1444	"	1	⊙	+		
1444	Wedgetail Shear	1	WNW	"		
1445	Noddy com	1	WSW	"		
1445	Red-ft. Tropic	1	S	"	- flushed from water by ship	
1445	Noddy com.	1	WSW	"		
1451	Common Noddy	1	WNW	"		
1453	SHEAR WATER	1	NW	"	- light under wing, high arched ft. (?) Light Belly	
1456	Wedgetail Shear	1	⊙	low		
1457	Com. Noddy	1	WSW	Low		
1459	Com. Noddy	1	WSW	15'		
1501	SOOTY TERN	1	NW	low		
1508	Bulwers Petrel	1	E	Low		
1508	Red-ft. BOOBY	1	ENE	low		
1510	SOOTY (?) TERN	1	NNW	"		
1514	Wedgetail	1	NE	"		
1514	TERN	1	WNW	70'		
1514	Com. Noddy	1	WSW	low		
1515	Wedge Tail	1	NNW	Low		
1517	FLOCK	4	⊙	LOW		
	SOOTY TERN	4	⊙	LOW		
	Wedgetail	4	⊙	LOW		
	Common Noddy?	36	⊙	—	- flock was feeding, Noddies may have included some imm Sooty Terns	
1521	Black-ft. Albatross	1	⊙	—	- Darker Phase PREVIOUS TWO	
1523	SOOTY TERN	1	ESE	100'		
1524	TERNS	3	NNW	Low		
1526	"	2	"	"		
1534	SOOTY TERN	2	ENE	80'		
1534	"	1	NNE	15'		
1537	Newell's SHEAR	1	NNW	Low		
1535	SOOTY TERN	1	WSW	"		
1539	FLOCK	60	ESE	TO 150'	only SOOTY TERNS identifiable due to distance species probably present.	
1542	SOOTY TERN	TO				
1542	Wedgetail Sh.	1				
1550	Pterodroma	1	WNW	LOW	 white belly, wings & tail underneath	



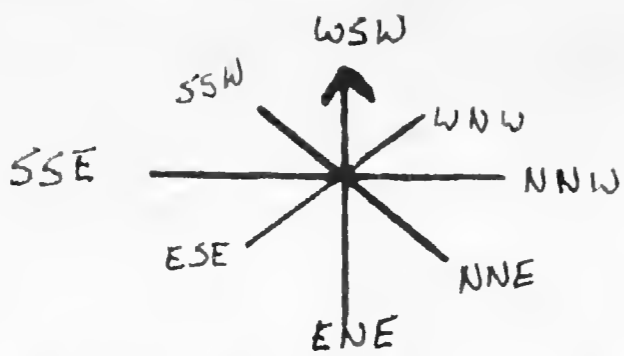
47 sightings (all)



DATE 5 JUNE 64  
Pg.# 2

time	species	#	dir.	hgt.	remarks	loc.
1552	Flock, Feeding SOOTY TERN Wedgetail Noddy	5 5 30±	ENE		Feeding	
1554	NEWELL'S	1	NNW			
1556	Flock — BROWN BOOBY Red-ft II Wedgetail Noddies SOOTIES	1 1 10± 90± 2			Feeding	
1557	Wedgetail	1				
1558	NEWELLS	1	NNW			
1558	"	1	NNW			
1600	Wedgetail	1	NNW	LOW		
1603	BF	1			sitting on water, joined by one flying around ship	
1605	Noddy } Sooty }	30±	ENE	10'	Feeding	
1612	Bulwer's ?	1	SSE	10'	seemed to have a fish in bill, sat on water for few seconds	
1612	Sooty TERN	1	ENE			
1613	Sooty TERN	1	ENE			
1615	Noddy	1	NNW	LOW		
1616	Flock Wedgetail	6		0-50	Wedgetails about 6 times jumping feeding	
1617	Terns	2	NNW	low		
1618	Sooty	1	SSE	100'	—	
1619	wedge tail	1	NE	low	—	
1622	Bulwers	2	SSE	low	—	
1624	Terns	60			not feeding	
1630	Wedgetail Newell's	1 1		low	flying together	
1632	sooty } WT } Newell's } Noddy } Bulwer }	30± 10± 2 2 2		10' 15' 50'	milling over water, no flying fish, no apparent feeding	
1640	Bulwer	1	NE	10'		
1642	shearwater	1	NNW	low		
1643	Sooty	1	ENE	75'		
1648	Sooty	1	NNW	<del>low</del>	50 ft	} one after another at distance
1648	"	1	"	"	55	
1648	"	1	"	"	50	
1648	"	1	"	"	100	

28 sightings (all)



DATE 5 June  
Pg. # 3

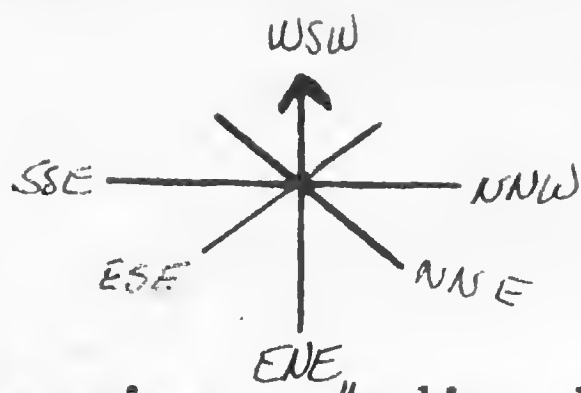
time species # dir. hgt. remarks loc.

1650	Newell's	1	NNW			
1657	Newell's	2	ENE		} together	
7	Sooty	1	ENE			
1702	Wedgetail	1	N			
1703	"	1	NNW			
<del>1705</del>	<del>Sooty</del>	<del>2</del>	<del>NNE</del>	50-100		
1705	2 Newell	2	N	low		
1705	2 wedgetails					
1710	SKUA (?)	1	NW	150' TO 0'	large & chunky, slow flapping; sat back on water far out.	
1712	Wedgetail	1	NE	Low		
1712	SOOTY TERN	1	NNE	"		
1713	" "	1	"	"		
1715	Wedge Tail	1	NE	"		
1715	SOOTY TERN	1	NNE	Low		
1717	Newell's Sh.	1	NNW	"		
1718	BTS	2	NNW	"		
1720	Wedgetail	1	—	Low		
1720	BF Albatross				at least 4	
1723	Newells	1	NE	"		
1726	"	1	NE	"		
1726	Wedgetail	1	NE	"		
1729	"	1	NNW	"		
1731	Pterodroma	1	NNW	"	Appeared white-headed, same pattern as 1550- Probably was <u>white neck</u> or dark rump	
1731	Newells	1	NNW	"		
1732	Wedgetail	1	E	"		
1734	Bulwers	1	NNW	"		
1734	Sooty TERN	1	NE	"		
1741	Wedgetail	1	ESE	"		
1745	Wedgetail	1	NNE	"		
1746	"	1	NNW	"	Dark phase	
1746	Bird	2	NNE	"	sooty terns or shearwater white below	
1747	Bulwers	1	SSW	"	Zig-zagging	
1750	Com. Noddy	1	NE	low		
1752	SOOTY TERN	2	ESE	"		
1754	Newells	1	S	"		
1755	Sooty TERN	1	NE	"		
1757	Sooty Tern	1	NE	"		
1757	Sooty Tern	1	UNE	25'		
1757	" "	1	"	"		
1759	Bulwers	1	NE	low		
1759	Sooty Tern	1	NNE	"		
1759	Bulwers	1	ESE	"		

41

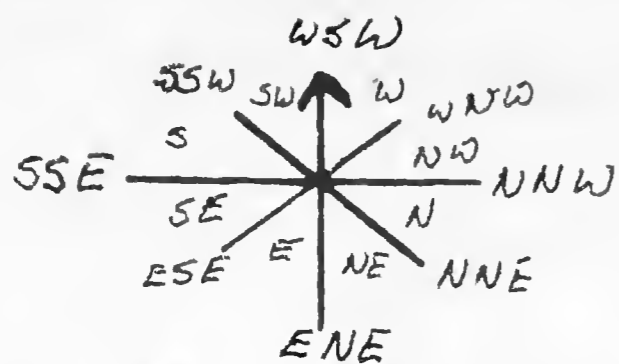
58

51



DATE 5 June  
Pg. # 4

time	species	#	dir.	hgt.	remarks	loc.
1800	Noddy	3	F		feeding (Noddies only)	
	Sooty	25			} all same spread out flock	
	Wedgetail	1				
	Fairy Tern	1				
<del>1807</del>	Wedgetail	1				
<del>1808</del>	Noddy	2				
<del>1808</del>	Wedgetail	1				
1816	Wedgetail	2	E	low	one dark phase one light phase.	
1817	Newells	1	NE	"		
1818	"	1	NE	"		
1818	Wedgetail	1	NE	"		
1819	Bulwer's	1	—	"	changed directions - irregular pattern	
1820	Bulwers	1	SSE	"		
1822	Sooty Tern	3	NNE	low		
1823	Bulwers	1	E	low		
1823	Sooty	1	N	80'		
1824	Wedgetail	1	NNE	low		
1828	Bulwers	1	ENE	low		
1831	"	1	ESE	"		
1831	SOOTY TERN	1	ENE	"		
1833	BULWERS	1	ESE	"		
1833	NEWELLS	1	"	"		
1835	SHEAR-PETREL	1	SSE	"		
1837	Newells	1	NNE	"		
1842	Flock		NNE			
	Sooty TERN	15			feeding	
	Wedgetail	3				
1849	TERN	6	ENE	100'		
1850	Wedgetail	1	NE	low		
1850	Sooty TERN	3	NE	25'		
1851	Frigate	1	ENE	200'	Ad. ♂	
1852	Wedgetail	1	NNE	low		
1855	TERNS	50	?	to 100'		
1859	Newells	1	NNE	low	flying in straight line fairly fast	
1859	Wedgetail	2	N	low		
1902	TERN	15		to 100'		
	Wedgetail	3		"	joined by 2 3 minutes later	
1902	Wedgetail	1	NNE	low		
1905	Sooty Tern	1	NE	low		
1915	NEWELLS	1	ENE	"		
1915	—	—	—	—	SUNSET!	
1919	White-t. Trop.	1	SSE	100'		
1921	—	—	—	—	CEASE OBSERVATIONS!	



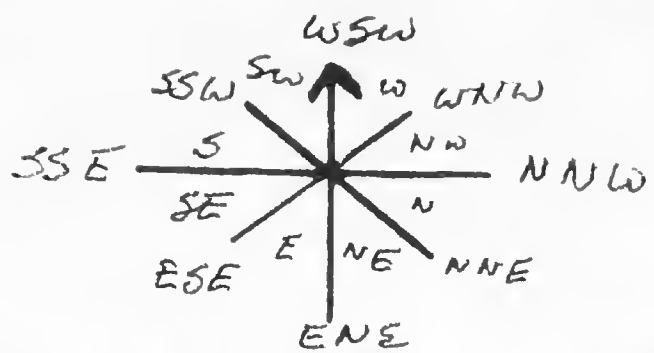
DATE 7 June 64  
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
1428	Sooty Tern	6	ENE	50'		
1440	Bulwers	1	WSW	low	shot by RS - collected	Terns 72 5-19
1441	Sooty Tern	2	WSW	40'	one shot by RS - collected	Bulwers - 1
1450	" "	12	⊙	40'	looked over towed bird	
1510					underway	
1522	Sooty Tern	1	ENE	40'		
1524	Tern	2	ENE	70'		
1603	R.T. Tropicbird	1	SSE	80'	changed to NNW when shot at	Wedgetail 3 5-3
1615	SOOTY TERN	4		75'	1 collected by wow	Terns - 3 RT 5-3
1630	" "	10		"		
1645	" "	1	INTO WIND	100'		
1655					RESUME ON COURSE - (TERN Pickup 40 MINUTES)	
1700	TERN	1	SSW	150'	DISTANT	
1707	Sooty TERN	1	NNE	LOW		
1713	" "	7	S	LOW	1 ORANGE LEG RIBBON	Sooty
1732	Sooty Tern	1	NNE	55'		
1734	Sooty Tern	7	SSW	60'		
1735	Wedgetail	1	SW	low		
1740	" "	1	NW	low		
1740	Terns	5	NW	50'		
1750	Sooty Tern	2	SE	55'	both collected. by w.o.w.	Sooty 69 5-17
1800	Sooty Tern	1	NE	60'		
1810	Sooty tern	1	ENE	50'	shot R.S.	
1812	Sooty tern	1	NE	100'		
1815	Wedgetail	1	W	low		
1838	Sooty Terns	2	SSE	60'		
1845	RTTB	1	NNE	150'		
1900	RTTB	1		low		

Days total  
Terns 72  
48  
Sooty Terns 69  
46  
Sightings 32  
115







DATE 8 June  
Pg. # 2

time species # dir. hgt. remarks loc.

0639	Sooty Tern	1	WUW	low
0646	HARCOURTS	1	NNW	"
0656	Wedgetail	1	WSW	low
0700	Sooty TERN	2	EWE	20'
0701	"	3	ENE	low
0703	"	2	ENE	low
0705	"	3	ENE	"
0705	"	1	NNW	"
0706	"	8	⊙	80'
0706	"	2	EWE	low
0707	"	4	ENE	"
0712	"	2	ENE	low
0712	"	5	ENE	50'
0712	"	1	ENE	low
0712	"	1	ENE	low
0714	"	6	ENE	60-50'
0715	"	5	ENE	low
0715	"	18	SSE	low
0715	"	2	ENE	20'
0715	Fairy Tern	1	ENE	50'
0716	<del>Pterodroma</del> Shearwater	1	ENE	low
0719	Sooty Tern	16	SSE	low
0720	"	1	NNW	50'
0722	"	6	ENE	50'
0722	"	1	ENE	20'
0724	"	1	ENE	70'
0725	Shear-Petrel	1	SSE	10-20'
0729	Sooty Tern	1	NE	30'
0730	"	12	SSE	60'
0731	"	2	SSE	low
0731	"	1	NNW	low
0733	"	12	NNW	low
0733	"	1	SE	"
0735	"	1	ENE	50'
0735	"	2	WSW	low
0736	"	11	SSE	low
0743	"	5	ENE	40'
0745	"	7	WSW	80'
0747	"	1	WNW	30'
0750	Pterodroma	1	SSE	low
0750	Terns	2000	⊙	
0752	Sooty Tern	2	SE	
0755	"	6	SSW	30'

Terminal  
156  
200  
357  
S = 37

ST - 156  
35  
Fairy Tern - 1  
Harcourts - 1  
Wedgetail 1  
Pter. 2  
3-2  
ShearPet. 1

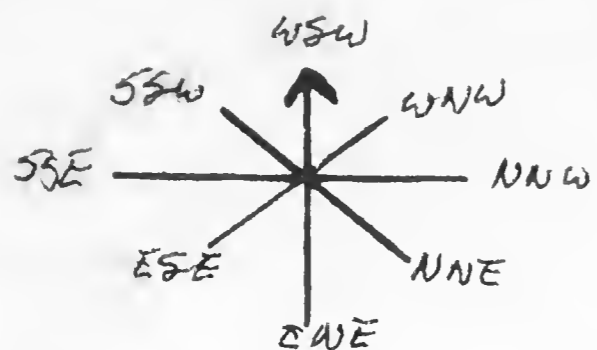
white  
upper pure white below  
orange tag

Flock

fading flock on horizon

43

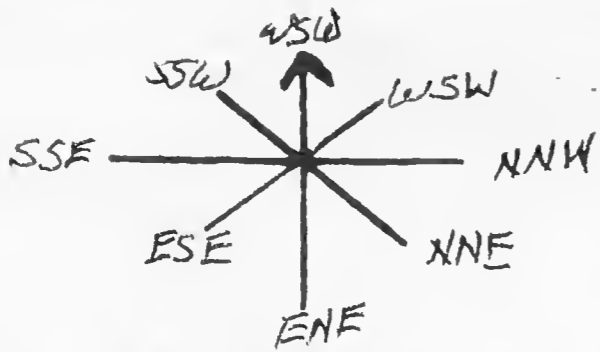
362



DATE 8 June  
Pg. # 3

	time	species	#	dir.	hgt.	remarks	loc.
	0756	Sooty Tern	4	WSW	30'		Sooty 320
	0758	"	1	ENE	20'		S-34
	0758	"	3	SSE	low		Fluo - 3
	0803	Sooty Tern	1	E	low		S-2
	0805	"	2	SSW	40'		Shaw - 1
	0808	"	3	SW	low		Frig. 4
	0809	"	1	SSE	low		S-1
	0811	"	4	SSW	60'		RT. Trop 1
	0813	Shearwater	1	NW	low	distant	Masked booby 1
	0818	Sooty Tern	2	SW	to 30'		
	0819	"	4	SW	60'		
	0822	Pterodroma	2	NW	low	1 on H <sub>2</sub> O	
Flock	0825	Sooty Tern	100	WSW	up 100'	large spread out flock several feeding.	
Flock	0830	"	50	SSE	30'		
	0833	"	1	SW	low		
	0833	"	1	NNE	low		
	0833	"	2	NE	30'		
Flock	0837	"	5	WSW	60'	3 groups (2+2+1) joined to form flock circling the ship and flying in various directions	
Flock	0842	Sooty Tern	9	WSW	60'	may be some of those seen at 0837.	
	0846	"	2	N	low		
	0850	"	1	SSW	50'	came out of E circled ship then headed SSW.	
	0902	"	1	SE	40'		
	0903	"	5	NNE	low		
	0905	"	5	SSE	low		
	0905	"	1	SW	30'		
	0907	"	1	S	low		
Flock	0915	Frigate	4	WSW	low	terms were feeding. frigates seen close to the water - feeding?	
		Sooty Terns	75+				
	0927	Sooty Terns	3	NNE	45'		
	0930	Pterodroma	1	NNW	low	flew off water?	
Flock	0930	Sooty Tern	10	WSW	25'		
	0933	"	1	WSW	60		
	0937	"	1	SSE	low		
	0940	"	3	N	low		
	0946	R-T TropicB	1	WSW	low	sitting on H <sub>2</sub> O headed SE then landed on H <sub>2</sub> O: disturbed by ship just seen headed WSW collected by R.S.	
	1003	Masked booby	1	ENE	low		
	1000 TO 1015	SOOTY TERN	8	ENE	LOW	DURING PICKUP OF SOOTY MASK. TERN + BOOBY.	
	1016	sooty TERN	2	ENE	"		
	1022	"	3	WNW	60'		
	1025	"	1	NNE	LOW		
	1024	"	2	ENE	40'		

Total 330  
S-40

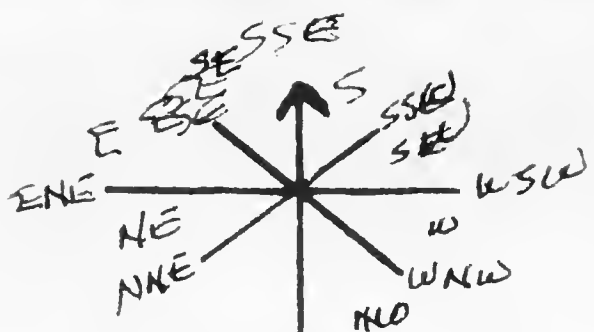


DATE 8 JUNE 64  
Pg. # 4



time	species	#	dir.	hgt.	remarks	loc.
1025	SOOTY TERN	1	ENE	LOW		Sooty 707
1026	" "	2	NNW	"		Tern 218
1028	" "	4	WSW	"		S-44
1029	" "	1	WSW	"		Noddy 10
1030	Feeding flock					Fairy 1
	SOOTY TERN	110	⊙	To 280'	feeding - no flying fish seen	Shear 1
	Noody "	10				Wedgetail
1040	SOOTY TERN	1	ENE	LOW		
1040	" "	1	ENE	"		
1041	" "	2	"	150'	soaring hawklike	
1045	" "	3	NNE	"		
1045	" "	1	WSW	"		
1046	" "	1	WSW	"		
1048	" "	2	SSE	80'		
1050	" "	4	SSE	"		
1051	" "	1	"	"	JOINED 1050 BIRDS	
1052	" "	2	"	"	" " " Now circling together	
					STORM SSE OF SHIP	
1101	" "	2	WSW	100'		
1102	" "	4	"	200'		
1107	" "	7	⊙	150'	- STORM AT SHIP	
1115	" "	1	ENE	LOW	- STORM PASSED	
1115	SHEAR-Petrel	1	WSW	"	Distant	
1119	SOOTY TERN	1	WSW	60'		
1121	" "	1	NNW	LOW		
1125	Wedgetail	1	SSW	LOW		
1126	SOOTY TERN	1	WSW	60'		
1128	" "	3	ENE	"		
1129	" "	3	"	LOW		
1130	" "	2	NNE	"		
1130	" "	1	"	"	Nearly hit FORWARD FLAGMAST	
1131	" "	1	"	"		
1132	" "	2	NNW	40'		
1136	FAIRY TERN	1	ESE	60'		
1136	SOOTY "	6	NNE	LOW		
1138	" "	9	SSW	70'		
1141	" "	3	WSW	80'		
1142	" "	8	⊙	100'		
1143	" "	1	WSW	90'		
1145	" "	1	ESE	-		
1145	" "	1	NNW	-		
1146	" "	2	SSE	LOW		
1147	" "	1	"	"		
1151	" "	1	S	"	ORANGE leg ribbon - following ship	
1152	" "	1	ENE	"		
1153					- JOHNSTON ISLAND SIGHTED	
1154	" "	1	ENE	90'	ORANGE leg Band	
1157	" "	4	⊙	LOW	3 " " "	
1200	Feeding flock				(NEXT PAGE)	

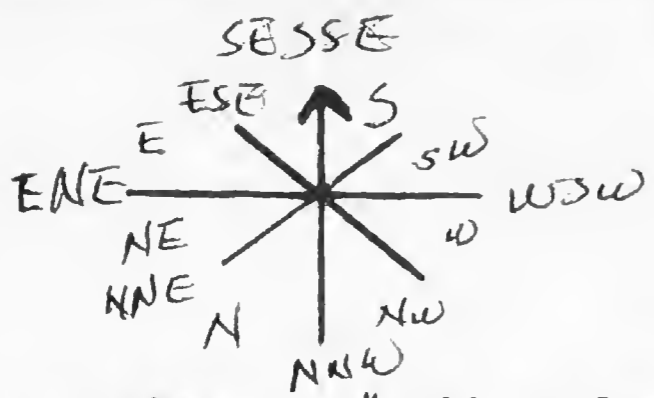
Total (270)  
S 46





DATE 8 June 1964  
Pg. # 6

time	species	#	dir.	hgt.	remarks	loc.
1330	Sooty Tern	2	SSE	50'		Sooty Tern 62
1333	Booby	1	SSE	low		Terns 62
1335	Sooty Tern	4	<del>ENE</del>	60'		S-32
1340	Pterodroma	1	N	low	 white under wing.	Booby 4
1347	Booby	2	NNW	low	immature	S-4
1349	Sooty Tern	1	NE	35'		Pter 6
1355	Pterodroma	1	WSW	low		S-5
1410	Sooty	4	SSE	low		Total 72
1415	"	1	SSE	low		\$ 44
1417	Pterodrom	2	S	low	dorsal  ventral	
1422	Sooty	2	NNW	25'		
1425	Pterodroma	1	WSW	low	white under wings	
1436	"	1	NNW	low		
1444	"	1	SW	low	light "W" pattern on top side light underneath.	
1447	Sooty Tern	5	E	low		
1453	"	1	SSE	50'		
1458	Pterodrom	1	WSW	low		
1501	"	1	SSE	low	same as above white under wings	
1505	Sooty Tern	1	NNW	low		
1507	"	2	NE	low		
1508	"	4	E	low		
1509	"	3	ENE	low 50'		
1510	"	1	N	low low		
1516	"	1	NNW	low		
1517	"	2	ENE	100ft		
1521	"	4	SSE	75ft		
1522	"	1	SSE	"		
1526	"	1	WSW	low		
1526	"	1	SSE	50'		
1528	"	1	N	50		
1528	"	1	NW	50		
1529	"	1	N	low		
1535	Booby	1	NNW	25ft	immature (marked?) very male mostly mottled brown	
1544	Booby	1	NNW	low	immature. Wings + tail brown neck lighter large than above bird	
1544	Sooty Tern	1	NNW	50ft		
1545	"	3	NNW	50		
1546	"	1	N	50		
1547	"	1	ENE	low	Orange tag	
1555	"	1	SSE	low		
1556	"	2	ENE	low		
1557	"	1	ENE	low		
1558	"	1	ENE	25ft		
1601	"	2	N	30ft		
1601	"	1	ENE	50		



DATE 8 June  
Pg. # 7

time species # dir. hgt. remarks loc.

1602	Sooty Tern	4	NNE	25'		
1603	Sooty Tern	2	NNE	25'		
1606	" "	1	NNW	20'		
1630	SOOTY TERN	2	ESE	LOW		
1633	Sooty Tern	2	NNE	LOW		
1636	Sooty Tern	2	NNE	LOW		
1640	Pterodroma	1	SSE	LOW		
1655	SOOTY TERN	2	NNW	"		
1700	SOOTY TERN	2	NNW	"		
1720	Pterodroma	1	SW	"		
1732	"	1	WSW	"		
1733	"	"	SE	LOW		
1738	BIRD	1	—	—	VERY DISTANT	
1747	SOOTY TERN	2	NNW	LOW		
1802	" "	1	NNE	40'		
1815	" "	2	NNW	LOW		
1833	" "	1	WSW	40'		
1834	Wedgetail	1	NNW	LOW		



undersurface all white  
typical flight - possibly  
white forehead - light not  
good!!

— white spots in tips of wings - upper surf.

Sooty - 23  
Pter #  
S-21  
Wedget. 1  
Bird - 1

18

9

Sooty 23

21 1200

Lower 23

	60
29	18
72	40
150	42
362	43
307	40
270	46
365	30
<hr/>	
1507	260

Ten 23

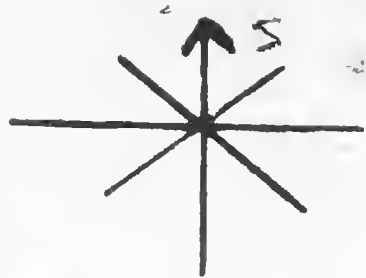
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157
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72

32
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44
34
36
33
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272

Tb.

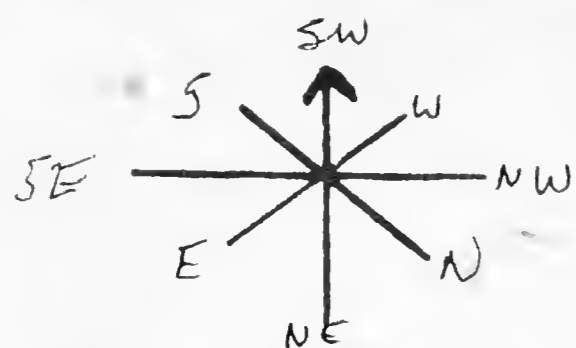
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6	2
2	2
4	3
4	4
7	6
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34	27




DATE June 8 1964  
Pg.# 8 Night watch

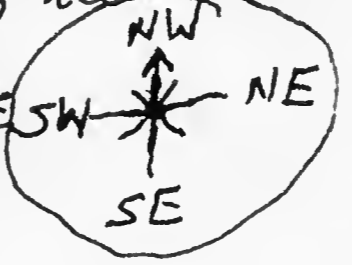
time	species	#	dir.	hgt.	remarks	loc.
19 25					change course to ENE ?	
2000					course change to SSE	
2130	shearwater	1	WNW		port side	
2202	bird	1	NW		passed over ship 100' up, Right underparts	
2214	"	1	NW		"	
0016	BIRD	1	NNW	15'	dark above, light below - Not flying like	
0523	Wedgetail	1	SSW	low	Sooty TERN - POSSIBLE SHEAR - Petrel	
0533	Wedgetail	1	NNW	low		





DATE 9 June  
Pg. # 1

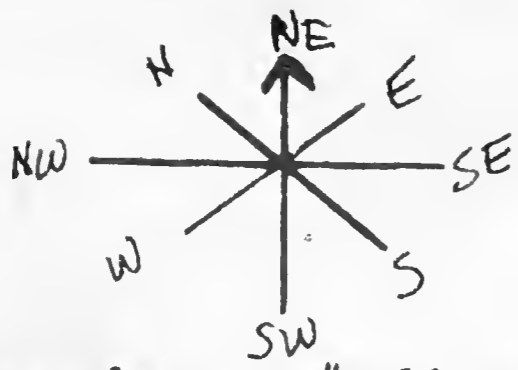
time	species	#	dir.	hgt.	remarks	loc.
0601	Wedgetail	2	NE	low	} together. 2 Pterodroma much smaller than Wedgetails, 2 same size	Tern - 3
0601	Pterodroma	4	NE	to 15'		
0602	"	1	NE	low		
0610	"	1	W	low		
0625	"	1	NW	to 20'		5:2
0725	Bulwer (?)	1	NW	low		Wedg - 3
ca 0630					set plankton detail	2
ca 0700					underway	
ca 0645-0720					rain squall	
0740	Wedgetail	1	N?	low		
0806	Pterodroma	1	NW	low	- white below, dark leading edge on <sup>white</sup> underwing, overwing-faint W, black mark down each side of neck, back gray-brown, High Arched Flight.	9
0829	shearwater?	1	NW	low	too far away; white underparts	1
0840	Pterodroma	1	NW	"	high arched flt.	4
0910	Red-H. Tropicbird	1	E	125'		
0920	SHEAR. - Petrel	1			" " "	4
0936	HARCOURTS	1	SW THEN NW NE	low	" " "	
1102	Sooty Tern	1	SW	75'		Harcont - 1
1115	Pisces ariel				less than 50; less than 4"	
1125	Pterodroma	1	SSW	low		Birds 2
1323	Birds	2	N	low	large dark birds dark head light underneath dark neck.	Tern?
1620	Sooty Tern	2	NE	low		
1631	sooty tern	1	NE	50'	shot by W.O.W.	
1633	Pterodroma	1	NE	low	prob. same as one collected today	
1719	sooty (?) shear.	1	S	to 60'	underwing flashes not seen but flight typical + sun behind bird.	
1723	Pterodroma	1	NW	to 40'	 white spots at bases of primaries; pure white below, white neck.	
1905	Shear-Petrel	1	SW or SE	low	too dark to see - may have been wedgetail	
1913	Tern?	1	NE	low		
2215					COURSE CHANGE	
0352	bird	1	SE	low		



between 0400 + 0600 a Brown Shear Petrel flew aboard + was collected

2)

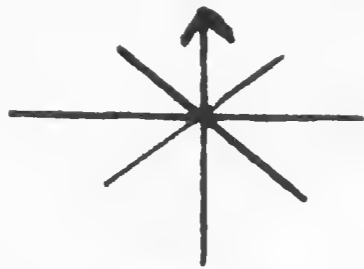
2)



DATE 10 June 1964

Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0350	Bird	1	SW	low	-	
0734	Bird	1	SW	low	white underneath; too far away	Sooty 32
0755	Shear petrel	1	SW	low	white underneath - high arching flight then low to H <sub>2</sub> O	S-5 14
0834	Pterodroma	1	SW?	to 25'		S 11
0845	"	1	SW	"		
0904	"	1	S	to 40'		
0923	Sooty Tern	1	E?	100'	Direction questionable due to wind + distance	Shear Pet. 4
0935	Red-fl. Tropic.	1	NE	to 200'	flying even with ship for ~ 10 min.	1 bird
0951	Pterodroma	1	N	to 50'		Tropic 2
1550	"	1	S?	low		S 2
1613	Tropicbird	1	NE	200'	Far off port side	IRT 1?
1618	Sooty tern	2	SW	100'		1 Wedgetail
1619	shearwater?	1	SW	low		
1637	Pterodroma	1	SW	low	pale gray above, leading edge of wing black, forehead light, underparts white	
1638	Pterodroma	1	WNW	low	white wing patches? white underneath gray above	
1655	Sooty tern	1	SW	100'		
1700	Wedgetail	1	SE	low		
1701	Pterodroma	1	NW	"		
1712	"	1	SW	"	white wing patches (upper)	
1758	white-necked petrel?? w.o.w	1	NW	low	size of wedgetail, gray above, lighter below, back of head + neck very light	
1805	Sooty tern	16	SW	50-75'		
	Pterodroma	4	SW	low	- IN GROUP	
1810	PTERODROMA	GROUP	SW	"	- over flock (school) of flying fish - Turned ship but couldn't find BIRDS. (20-25 BIRDS-WOVS) (THOUGHT MOSTLY TO BE FLYING FISH - SDW)	
1815	SOOTY TERN	12	NE	to 60'		
1825	Petrel	1	SE	low	- Dark Gray or Black above, white below, white forehead - Flying similarly to WTS. Dark-rumped or BONNIN.	
2008	Shear Pet	1	SW	low	dark (white) light underneath	

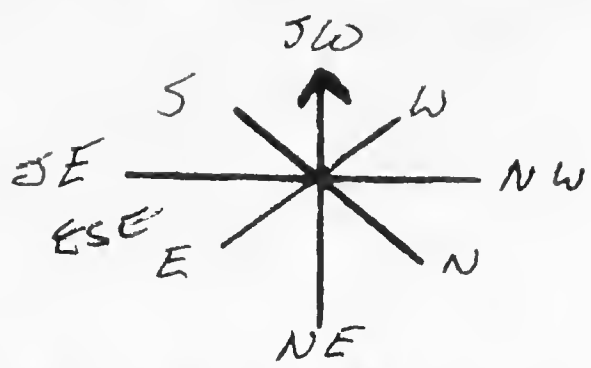


DATE 10 June 64  
Pg. # 2


Night

time	species	#	dir.	hgt.	remarks	loc.
2158	Pterodroma	1	NE	low	20 yards to starboard, travelling with ship in light for about 1 min; Pterodroma flight	
2225- 2250					surface sample	
0223					changed direction from NE to <u>NW</u>	
0407	<del>long</del>	1			calls overhead	



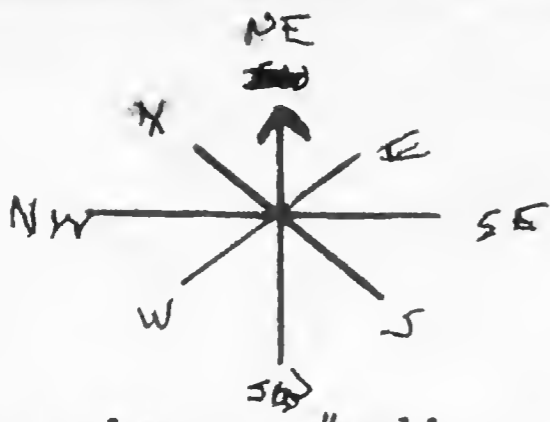


DATE 11 June 64  
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
0835	Pterodroma	1	NW	to 20'		Terns 91 S-17 Pterod- 13 S-13 Shear-Pet - 4 S-4 Impati 1 WT.
0835	Sooty Tern	1	SE-E	20'		
0837	"	1	ENE	30'		
0844	"	1	NE	50'		
Flock 0847	"	12	WSW	to 30'		
0855	Pterodroma	1	NW	to 25'		
0859	"	1	WNW	to 30'		
0906	Sooty Tern	5	S	1-50' low		
0906	Pterodroma	1	SSE	low		
0912	Shear-Pet	2	S	to 30'		
0913	Sooty Tern	2	N	low		
0916	Pterodroma	1	S	to 20'	appeared white headed, no other pattern above or below. White Neck? Dark Rump?	
0920	Pterodroma	1	NNW	low		
0923	"	1	WSW	low	changed direction SW to NNW	
flocks 0925	Sooty Tern	11	WSW	low.	 white underneath black wing edging Brown or light patch	
0932	"	6	SW	to 100'		
0936	"	3	SW	50'		
0947	"	5	S	low		
0948	Newell's Shear	1	S	low		
0948	Flock		water			
	Sooty Tern	7	E-N	to 100'		
	Shear-Pet	2	"	low	Newell's was headed for this group	
0952	Sooty Tern	15	SW → NW	to 100'		
0954	Sooty Tern	3	ESE	50-100 ft		
1006	"	6	SW	25-low		
1011	Pterodroma	1	SW	low		
1021	Sooty Tern	4	SE	low		
1022	Sooty Tern	1	SE			
1028	Pterodroma	1	NW	low		
1030	Newell's	1	@			
1037	Pterodroma	1	SE	low		
1040	Sooty Tern	1	SW	40'		
1040	"	7	SW	20'		
1053	Pterodroma	1	SE	low		
1058	WT Tropic	1	SE	50 low		
1111	Pterodroma	1	low WSW		trace of white at base of 10'. thick black leading edge beneath	
1126	Pterodroma	1	E	low		

Total 109  
535

Newell's 2



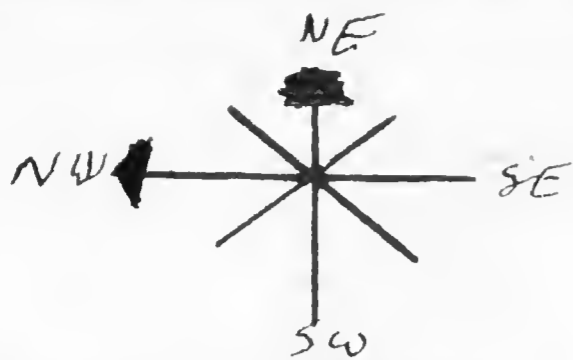
DATE 12 June 64  
Pg. # 1

Night Watch

time	species	#	dir.	hgt.	remarks	loc.
0135	Bird	1	SW	low	along side of ship	
0155	Tropicbird	1	NW	low	over fly bridge	
0300					COURSE CHANGE TO NW	
0600	CHRISTMAS IS. <del>Bird</del>	1	NW	LOW		
0600	Sooty Tern	1	NW	60'		
0603	SUNRISE				SUNRISE	
0629	Shear-petrel	1	SE	low		
0740	Pterodroma	1	W/SW	low	distant	
0745					change course to 45° NE	
0810	Whale	1	SE	-1'	about 15-20', all dark;	
0933	Pterodroma	1	SW	to 50'	appeared quite large; no dark marks on underwing, white neck, white spots on upper wing	
1110	Pterodroma	1	<del>NW</del> WNW	low.		
1154	Wedgetail	1	WNW	low		
1300	white-tailed tropicbird	1	SE	75'	shot by R.S.S. collected	
1440	Pterodroma	1	NNW	low		
1441	"	1	NW	low	small	
1443	"	1	WNW	low		
1448	Sooty Tern	2	S	55'		
1453	Pterodroma	1	S	low		
1500	"	1	WNW	low.	black wingtips, no other marks above	
1900	"	1	NW	<del>low</del>		
1815	"	1	NW	low		
1910	"	1	OS	low		
2000	Bird	1			very close	

3  
 Tropic 1  
 Pter 10  
 5-10  
 Shear Pet 2  
 2  
 Wedgetail 1  
 1  
 Total 16  
 15

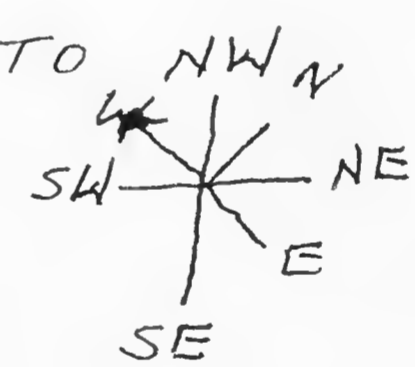
Sun

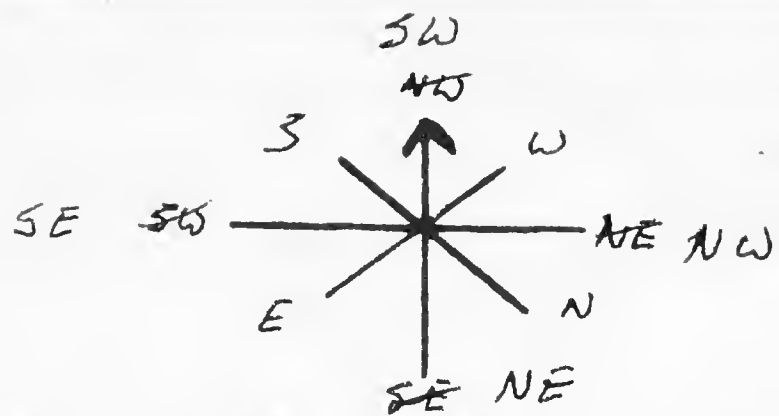


DATE 13 June  
Pg.# 1

time	species	#	dir.	hgt.	remarks	loc.
0518	Sooty Tern	1	N	60'		
0525	" "	1	SW	50'		
0545	Sunrise					
0600	Sooty TERN	2	E	125'		
0618	" "	1	SW	40'		
0620	" "	1	"	60'		
0620	" "	2	"	60'		
0630	" "	1	W	60'		
0638	" "	1	E	50'	stop for morning station 0630	
0643	" "	4	SSE	low		
0643	Pterodroma	1	SSE	low		
0646	SOOTY TERN	2	NNW	40'		
0648	Red-t Tropic	1	☉	30'	collected by J.D.W.	
0648	SOOTY TERN	1	—	25'		
0658	" "	1	SE	low		
0659	" "	5	W	low		
0700	SOOTY TERN	7	NNW	low to 150'		
0709	" "	4	☉	5-55	off stern	
0712	Pterodroma	1	NW	low	off stern	
0715	Sooty Tern	3	SSW	low		
0715	" "	1	W	low		
0718	COURSE CHANGE TO					
0721	Sooty Tern	1	N	low		
0726	" "	3	E	"		
0731	" "	2	N	"		
0733	" "	1	N	"		
0736	" "	1	N	"		
0737	" "	4	W	"		
0738	" "	1	E	30'	collected RSS fantastic shot!	
0752	Resume	Course				
0755	SOOTY TERN	2	W	low		
0755	" "	1	—	low		
0802	" "	2	W	"		
0802	" "	1	W	40'		
0803	" "	7	W	60'		
0804	" "	3	SW	low		
0805	" "	1	SW	55'		
0806	" "	2	SW	low		
0807	" "	1	SSW	low		
0809	" "	3	NW	low		
0814	" "	1	SSW	low		
0815	Pterodroma	1	WSW	50-60'	underneath wing flew in straight line about 50yds 50' before going down towards H <sub>2</sub> O and assuming normal flight behavior.	
0819	R-T Tropic	1	ESE	65'		
0821	Sooty Tern	2	SSW	low		
0832	" "	1	N	60'		
0850	Sooty Tern	1	WNW	To 30'		
0855	" "	3	SW	low		

Terns 80  
5-37 3  
Pter  
5-3  
Tropic 2  
R-T





DATE 13 June  
Pg.# 2

time	species	#	dir.	hgt.	remarks	loc.
0855	Sooty Tern	1	NW	55'		
0857	" "	1	SW	low		
0858	Sooty Tern	1	E	50'		
0913	" "	1	SW	55'		
0916	Sooty Tern	1	NW	100'		
0925	" "	1	NNE	30'		
0929	Sooty Tern	1	NW	low		
0932	Sooty Tern	4	SE	low		
0954	" "	1	SE	low		
1014	" "	3	NE	30'		
1024	" "	1	SE	30'		
1040	" "	1	NNW	30'		
1046	Pterodroma	1	NW	low		
1107	Sooty Tern	1	ESE	50'		
1200					Course change to SW	
1221	Sooty Tern	4	NW	70-75'		
1225	R-T Tropic B	1	SW	65'		
1230	Sooty Tern	6	NNE	60'	various directions following ship	
1240	" "	1	NNE	50'		
1242	" "	5	SW	30'		
1247	Sooty Tern	5	NNW	low		
1250	" "	1	NNE	55'		
1258	" "	2	SSE	low		
1347	Red-tl. TROPIC	1	☉	100'	- following ship	
1357	SOOTY TERN	1	N	60'		
1427	" "	1	SW	low		
1430	" "	2	NE	40'	came back to follow ship	
1431	" "	1	NE	40'	joined previous one	
1433	" "	2	N	50'		
1434	" "	3	SW	to 40'		
1516	" "	1	NE	low		
1535	" "	1	SW	40'		
1645	Pterodroma	1	NW	low		
1700	Sooty Tern	1	SSE	40'		
1703	Pterodroma	1	SSW	low		
1810	Sooty TERN	1	N	"		
1812	Wedgetail	1	SSW	low		
1843	Sooty Tern	2	SSW	low		
1855	" "	3	SE	50'		
1855	B.F. Booby	1	NW	30'	came in behind ship, across bow & off after being shot at	
1902	Birds	2	NNE	low		
2100	Bird	1	NNE	low		
2112	Bird	1	NNE	low		
2135	Sooty tern	2	S	50'	over ship	

Tern 60  
32  
Heron 3  
5-3  
Tropic 2  
Booby 1  
Wedgetail 1

56  
67  
152

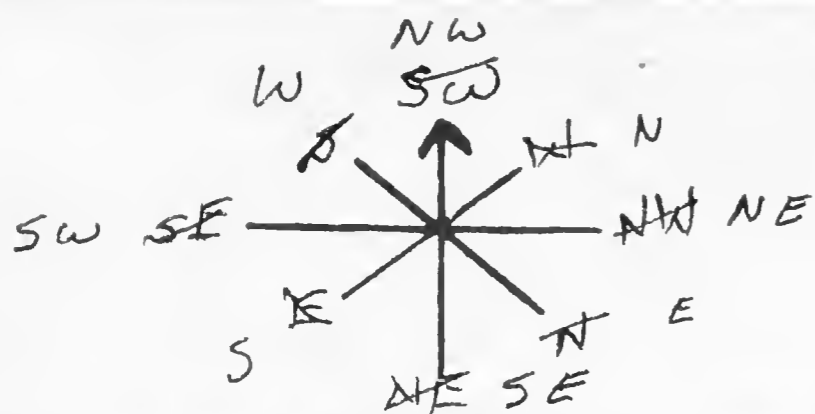
84

Red Foot

40


67



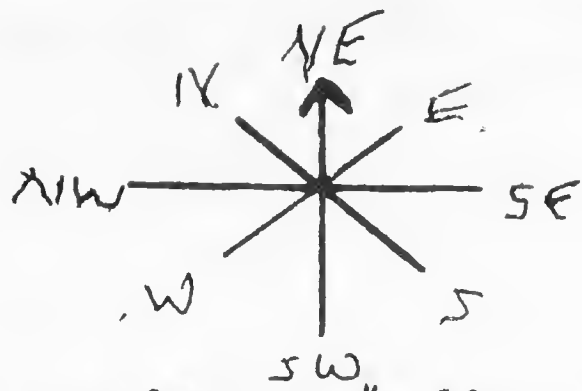


DATE 14 June  
Pg. # 1

time species # dir. hgt. remarks loc.

0001	tern ?	1	SW	75'		
0015	SOOTY TERN	1	S	175'		
<del>0015</del> 0150	SOOTY TERN	1	NE	"		
ca 0630					stop for plankton detail	
0706					underway on NW course	
0706	Pterodroma	1	SW	low		
0829	SOOTY TERN	1	SE	60'		
0905	Pterodroma	1	NW	70-80'	Brown Above (completely - head, back, wings, tail)	
0917	SHEAR-Pet.	1	SSE	70-80'	White (or light) below with darker (brownish or tan) areas at bend of wing. Highly Arched flight - Good VIEW! (Wedgetail size or larger)	
SAME AS 0905 ENTRY 0925	Pterodroma	1	NW	70-80'		
0927	"	1	"	"		
						
					Back with pattern, smaller than above described BIRD, black wing tips, white UNDERNEATH	
0928	Pterodroma	1	NW	70-80'	(Same as above - 0927 ENTRY - school of flying fish near by BIRD - Not seen to feed)	
0937	Pterodroma	1	NE	WT		
1230					changed course to NE	
1307	SOOTY TERN	1	SW	50'		
1343	Red-tl. TROPE	1	NE	125'		
1725	Pterodroma	1	NW	low		
1735	Pterodroma	1	ENE	low	distant	
1815	"	2	SE	70-80'		
1905	Bird	1				
2015	Bird Tern?	1				
2145	SHEAR-Petrel	1	NE	low	Possibly was on H <sub>2</sub> O + (NaCl) BEAUTIFUL MOONLIT NIGHT!	
2343					MOONSET	

10  
2  
1  
PTERODROMA

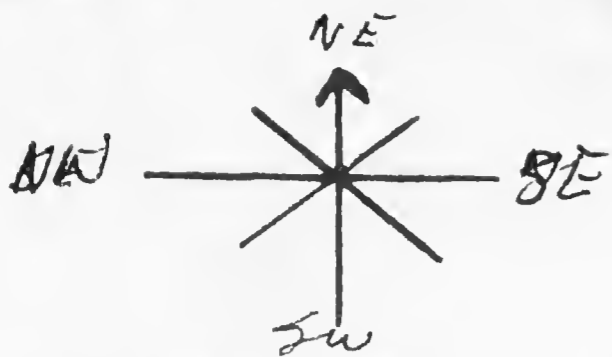


DATE 15 June 64  
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0035	Bird	1	SW	low	seen by Mr Ashton during plankton filtering	
0330	Pterodroma	1	E	40'	(flew into ship landed on deck collected by PWW)	1 Xmas Ptero 3 S 2 50
0545	Sooty Tern	1	NE	to 55'		
0553						
					Sunrise	
0609	Xmas I.	1	S	low		
0617	Pterodroma	1	SW	low		
0624	Sooty Tern	2	N	50'		Tern 3 S 26 1 part 3
0638	Sooty Tern	3	ESE	50'		
0648	"	2	N	50'		
0707	Sooty Tern	3	W	75'		Tropic 3 S 3
0741	Sooty Tern	1	S	10' low		
0743	"	3	SW	low		Shear Pet 3 3
0755	RTTB	1	NW	50'		
0900	PTERODROMA	1	SW	to 25'		
0907	Sooty Tern	1	SW	20'		
0919	"	1	E	low		
0927	SHEAR - Petrel	1	SE	low		
0931	SOOTY TERN	1	SW	50'		
0936	"	7	WSW	low		
0936	"	1	SW	50'		
0940	"	1	NE	30'		
0941	"	3	S	75'		
0942	"	2	W	"		
0943	"	1	SW	60'		
0946	"	6	NNE	low		
0946	Pterodroma	1	SE	"	- small, mottled brown + grayish on back, neck, head + upper wing. Under wing white with black leading + trailing edge. white underparts. narrow wings.	
1016	Sooty Tern	2	NW	low		
1032	Fairy Tern	1	NE	55'		
1051	R-T Tropic	1	NE	to 100'		
1110	Sooty Tern	1	NE	50'		
1127	"	1	NE	50'		
1131	"	1	NE	20'		
1151	R-T Tropic	1	E	low	sitting on H <sub>2</sub> O in front of ship. chased by ship	
1303	SHEAR-Pet.	1	NW	"		
1325	SOOTY TERN	1	NE	60'		
1350	"	5	-	30'		
1355	"	2	-	100'		
1455	"	1	NE	low		
1520	Shear-Petrel	1	NW	low		
1523	Sooty Tern	3	SW	40'		

36

6



DATE 15 June  
Pg. # 2

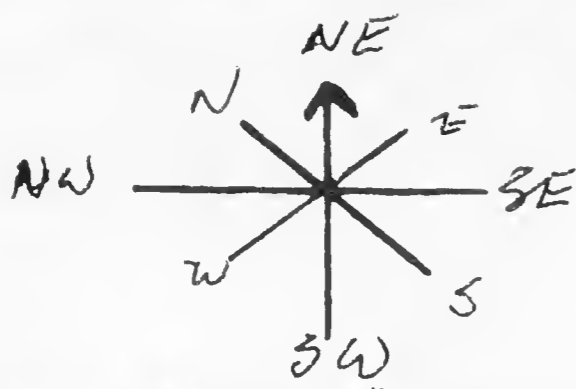
time species # dir. hgt. remarks loc.

1555	Sooty Tern	2	NE	50'		
1555	Wedgetail (?)	1	SE	WT		
1555	Pterodroma	1	WNW	low	appeared to have all white head	
1621	SHEAR-Pet.	1	SW	low		
1630	Pterodroma	2	O'	O'	- sitting ON H <sub>2</sub> O - SAME AS SKINS PREPARED THIS CRUISE.	
1647	Pterodroma	1	SE	O'	- Brown Back with black W, undersurface not seen, white body below. dark mark in front of wing on sides of breast. sitting ON H <sub>2</sub> O - Aroused by ship.	
1659	SOOTY (?) TERN	1	SE			
1703	Wedgetail	1	SW	low		
1708	Pterodroma	1	WNW	"		
1716	"	1	SW?	"	white head with dark mark on side	
1725	"	1	NW	"		
1726	"	1	NW	"		
1727	Shear-Pet	1	SW	"		
1735	" "	1	?	"		
1740	" "	1	SW?	"		
1743	Bird	1	SW	"		
1745	Sooty Tern	2	SW	"		
1748	" "	1	SW	15'	Shot by RS or KD; collected	
1808	Pterodroma	1	NNW	low		
1809	"	1	NNW	low		
1820	SOOTY TERN	7	SE	low		
1820	Pterodroma	1	"	"		
1820	"	1	"	"		
1822	SOOTY TERN	2	"	"		
1822	" "	1	SW	30'		
1828	" "	1	SW	40'		
1844	" "	1	SW	40'		
1855	" "	1	S	60'		
1905	Wedgetail	1	SW?	low		
1913	Sooty Tern	1	NNE	low		
1915	" "	1	NW	50'		
2137	" "	1	-	40'	HEARD	

Tern 17  
3-10  
Shear-Pet 5  
S-3  
B-1  
Pt. 12  
Wedg-1

28

2

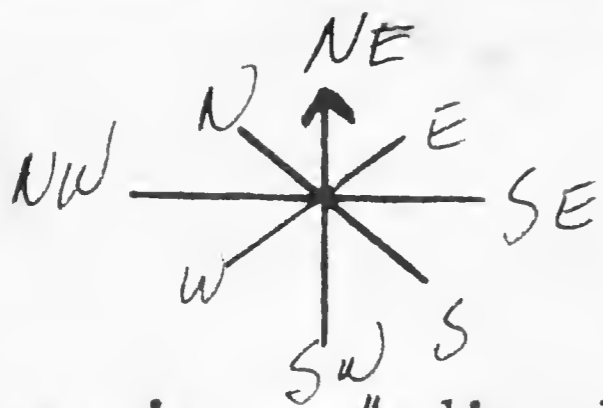


DATE 16 June  
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0600	Wedgetail	1	N	WT		
0612	Sooty Tern	2	NW	20'		
0645	Wedgetail	1	SE	low		
0708	Sooty tern	2	SSW	50'		
0708	Sooty Tern	1	NE	55'		
0708	Bird	1	SSE	low	Appeared all white; slow flapping.	
0714	Pterodroma	1	NNE	to 20'		
0727	"	1	SSW	to 20'		
0742	Sooty Tern	1	SW	55'		
0750	Pterodroma	1	S	low		
0755	Sooty Tern	1	SE	50'		
0824	Sooty TERN	30±	⊙	to 60'	Flock - ORANGE LEG RIBBON - followed for 15 MIN.	
	Wedgetail	8±	⊙			
0830	Pterodroma	1	NW	to 25'		
0848	Wedgetail	1	SE	low		
0922	Bulwers (?) Pet	1	SW	"		
0930	Pterodroma	1	NW	"	Brownish wings, gray back, white below.	
1042	Wedgetail	1	NNE	low		
1100	Sooty Tern	12	⊙	30'		
1100	Wedgetail	1	S	low		
1103	Sooty Tern	2	S	25'		
1120	Flock					
	Sooty Tern	75±	⊙	to 30'	at least the Terns were definitely feeding one collected WDW. Wedgetail?	
	Wedgetail	8	⊙	low		
1147	Wedgetail	1	ESE	low	one landed on H <sub>2</sub> O	
1206	Bird	1	SW	low	- bulwer or tern only saw it once.	
1209	Sooty tern	4	SE	25 ft		
1214	"	2	NE	25 ft	1 collected K Douglas	
1216	"	3	⊙	25 ft	around bird in H <sub>2</sub> O	
<del>1217</del>						
1231	"	1	SE	25 ft	under way	
1236	"	1	WNW	25 ft		
1238	Frigate	1	⊙	300 ft	♂ under frigate's tail	
1238	Sooty Tern	2	SE	25 ft		
1248	Sooty Tern	2	SW	25 ft		
1249	Frigate	1	SE	300 ft	♀	
1254	Terns Sooty	2	NW		joined together going N to the SE	
1255	"	1	NNE			
1326	Tern	1	SE	low		
1328	"	1	NW	30 ft		
1338	"	1	NW			
1339	"	1	NNE			
1358	RTTB	1	+	25'		
1359	Sooty Tern	2	E	low	- 1 collected	

Tern 155  
5-23  
Wedgetail - 22  
57  
Pt - 5  
55  
Skua 1  
Frigate 2  
5 2  
5  
Bulw 2  
Total 188  
5 40

1 flock feeding



DATE 16 June 1964  
Pg. # 2

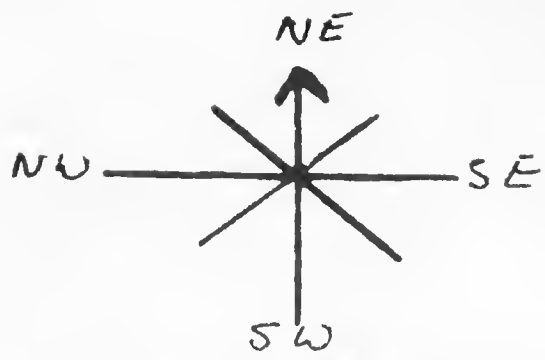
time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
1416	Pterodroma	1	SW	Low		
1417	SOOTY TERN	1	SE	100'		
1429	" "	1	NNE	100'		
1453	" "	3	SE	low		
1510	" "	1	SW	45'		
1542	Wedgetail	1	S	low		
1546	SOOTY TERN	2	S	"		
1548	" "	2	S	"		
1549	" "	2	S	"		
1549	" "	1	S	"		
1558	" (?) "	1	S	"		
1600	Sooty tern	4	S	Low		
1601	" "	1	SE	"		
1615	Pterodroma	1	NW	"	white head, dark side mark, both edges underwing dark	
1635	" "	2	N	low	one unpatterned above, white below; other with white spots toward end of upper wing, white head with dark mark	
1643	Pterodroma	1	NW	Low	may have been sitting on the water	
1645	Sooty tern	3	NW	Low		
1645	" "	1	S	"		
1645	Wedgetail	1	SE	"		
1645	Wedgetail	1	SE	"		
1646	Sooty tern	4	NE	50'		
1653	" "	1	NE	30'		
1653	Pterodroma	1	S	low		
1702	Flock	not 5			on horizon; terns, possibly 2 fairy terns	
1704	Wedgetail	1	S	low		
1705	" "	2	S	low		
1715	FLOCK 1000	30-33	S		Not feeding terns	
1714	Wedgetail	4	low			
1716	Shear Pet	1	low			
1723	SOOTY TERN	2	NNW	low		
1724	" "	4	low			
1725	" "	3	N	low		
1728	" "	1	N	"		

Tern 95  
S 21  
2 terns  
37 Sooty  
Ptero - 6  
S 5  
Wedgetail 7  
S 6

Shear Pet 1  
109  
3 33

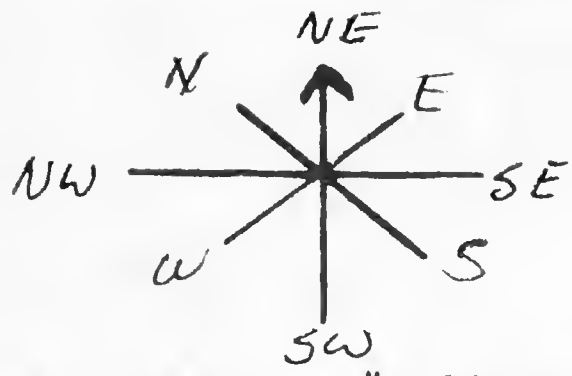
2  
3 terns  
not feeding



DATE 16 JUNE  
Pg. # 3

time	species	#	dir.	hgt.	remarks	loc.
1754	Pterodroma	1	N	low		
1758	"	1	NW	"	whitish head, dark wing tips, no other pattern	
1800	Sooty tern	1	SE	low		PT 2
1900	Wedgetable	1	SW	low		2
1956	Bird	1	-	-		S
2040	Pterodroma	1	SW	Low	- Came to light + flew away.	Sooty 1

1857

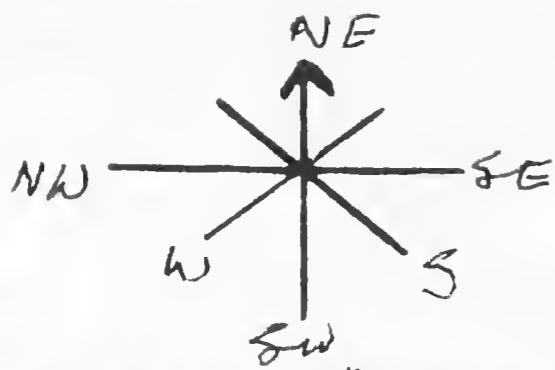


DATE 17 June  
Pg. # 1

time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks
0546	Wedgetail	1	S	low	
0550	Sooty TERN	1	SW	50'	
0552	Christmas Is	1	NE	low	
0557	Sooty Tern	1	NW	25'	
0557	Wedgetail	1	W	low	
0602	Sooty TERN	2	SE	30'	
0604	Wedgetail	1	NE	low	
0608	Terns Sooty	3	NW	low	
0613	" "	2	SSW	50'	
0620	" "	2	SW	50'	
0622	" "	1	SW	50'	
0623	Wedgetail	1	SW	low	
0627	Sooty Tern	2	WSW	low	
0633	" "	1	NW	low	
0635	Wedgetail	1	WSW	low	
0640	Sooty Tern	9	NW	50'	
0641	" "	1	SW	50'	
0642	" "	1	S	20'	
0647	" "	2	WNW	low	
0650	Wedgetail	2	WSW	low	
0653	" "	1	WSW	low	
0656	Newell's	1	NE	low	
0657	Sooty Tern	1	SW	low	
0658	Sooty Tern	1	SSW	low	
0659	" "	1	SSW	low	
0702	RTI Tropic	1	SE	low	after following ship
0702	Sooty Tern	3	ESE	20'	
0702	Wedgetail	1	WSW	low	
0703	Sooty Tern	2	NE	20'	
0704	" "	1	SE	low	
0706	" "	2	NW	75'	
0707	" "	1	NE	low	
0707	" "	1	N	low	joined 3 above birds
0708	" "	1	NE	low	
0714	" "	1	SE	low	
0716	" "	2	—	50'	
0718	" "	4	SW	low	
0720	" "	1	S	25'	
0722	" "	1	S	25'	
0725	" "	2	SW	25'	
0726	RT Tropic	1	—	25'	collected by RS.
0727	Wedgetail	1	—	low	
0730	Sooty Tern	9	—	25'	
0735	" "	1	—	—	

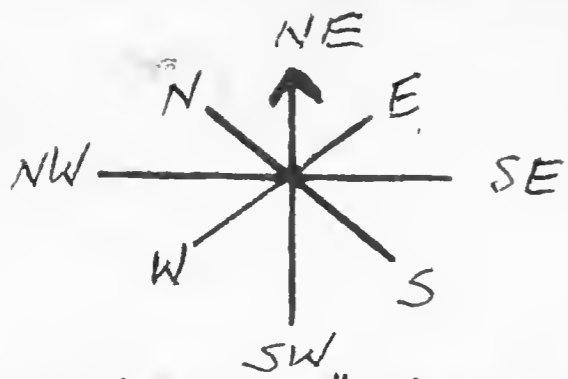
Sooty Tern 63  
S-25  
Xmas 10  
Wedge - 10  
S-10  
Newell's 1  
RT Tropic 2  
S 2  
T-77  
S-43



DATE 12 June  
Pg. # 2

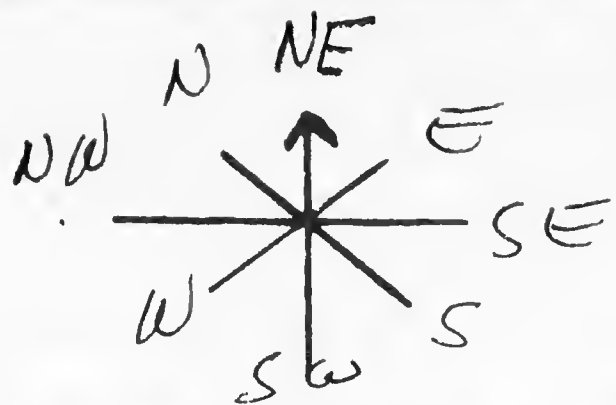
time	species	#	dir.	hgt.	remarks	loc.
0735	Sooty Tern	2	SW	30'		Tern 102
0739	"	1	W	30'		Sooty 98
0739	Gray Back	1	W	20'		Wedgetail 1
0742	Sooty Tern	4	WSW	low		gray back 1
0743	"	1	W	40'		
0745	"	1	W	30'		
0746	"	1	W	30'		
0747	"	11	NE	30-40'		Bird 1
0752	Bird	1	<del>SW</del> <sup>SSW</sup>	low	Booby or tropic bird	
0754	Sooty Tern	1	SW	30'		T-104
0754	"	2	NE	20'		S-51
0755	"	2	SSW	low		
0755	"	1	SW	low		
0756	"	1	SW	low		
0756	"	2	SW	low		
0758	"	2	SE	low		
0758	"	2	SSW	"		
0759	"	1	SW	"		
0800	"	2	SW	30'		
0802	"	2	SSW	low		
0808	"	1	N	60'		
0808	"	2	SE	low		
0810	"	2	"	"		
0811	"	2	"	"		
0812	"	2	"	"		
0813	"	3	"	"		
0817	"	1	"	"		
0818	"	2	ESE	"		
0819	"	1	SW	"		
0819	Wedgetail	1	SE	"		
0824	Sooty Tern	2	SSW	low		
0825	"	3	SE	60'		
0826	"	1	SE	low		
0826	"	1	SE	"		
0828	"	5	SE	"		
0830	"	8	⊙	To 25'		
0831	"	4	S	low		
0834	"	1	SE	40'		
0838	"	1	ESE	70'		
0842	"	1	SW	50'		
0849	"	2	NE	low		
0851	"	4	NE	40'		
0852	"	2	NE	low		
0856	"	1	NW	40'		
0858	"	3	E	low		
0859	Tern	2	SSW	low	- distant	
0859	Sooty Tern	1	SSW	50'		
0900	"	1	NW	low		
0902	"	1	SW	"		
0903	Tern	1	W	"		
0903	Sooty TERN	1	S	"		





DATE 17 June 64  
Pg. # 3

time	species	#	dir.	hgt.	remarks	loc.
0905	Sooty Tern	1	SSW	50'		S - 74
0905	"	1	SSW	low		Terns - 37
0906	"	1	S	low		Noddy 1
0907	"	1	NE	30'		Sooty - 35
0910	Wedgetail	1	SE	low		Wedgetail - 4
0913	SOOTY TERN	3	NE	60'		S - 4
0913	"	1	SW	50'		albatross - 3
0915	"	4	NE	60'		S - 3
0919	"	1	N	70'		Bulwers - 4
0920	"	2	NW	60'		S - 4
0925	Sooty Tern	1	S	low		RF Booby, 1
0926	Wedgetail	1	W/NW	low		
0946	SOOTY TERN	1	SW	40'		
0950	Bulwer's	1	NW	low		
1000	Wedgetail	1	NE	low		S 36
1008	Sooty tern	2	NE	75'		T. 49
1010	"	3	W	50'		
1015	"	1	NE	50'		
1027	"	1	W	25'		
1042	Black-foot	1			Following ship	
1043	Sooty tern	2	NW	50'		
1047	"	1	N	75'		
1050					albatross left	
1055	Bulwers	1	NE	low	landed on water twice	
1058	Black-foot	1			Following ship	
1100	"	2			" "	albatross 4 BFA
1101	"	3			" "	altogether full
1104	Bulwers	1	NE	low		
1104	Wedgetail	1	SW	"		
1105	Sooty tern	3	N	50'		
1106	Bulwers	1	NE	low		
1115	Red-foot	1	N	low	2nd year bird	
1127	Sooty tern	1	S	50'		
1138	"	1	W	50'		
1140	"	1	S	75'		
1142	Sooty Tern	2	W	50'		
1143	Noddy	1	NW	low		
1143	Tern	1	SW	low		



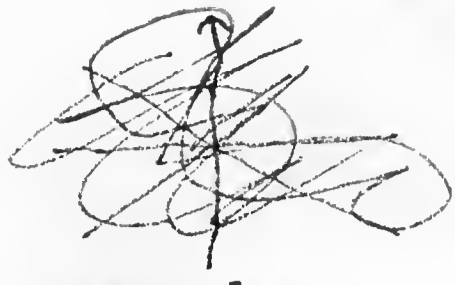
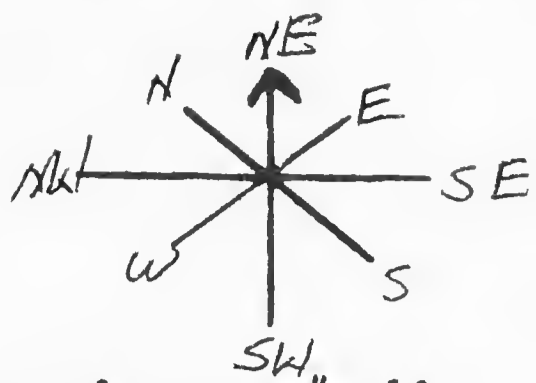
time species # dir. hgt. remarks loc.

✓ 1200	Flock				actively feeding; no flying fish, some small fish being chased by jacks	
	Sooty Tern	95			2-3 immatures; one adult collected	
	Common Noddy	1				
	Hawaiian N.	3-4				
	Fairy Tern	2				
	Wedgetail	3			one collected	
1240	Masked Booby	1	NE		flew through flock	
1305					resume course	
1308	Sooty Tern	2	NE	25'		
1316	" "	1	SSW	50'		
1329	Bulwers	1	NE	low		
✓ 1330	Flock				actively feeding; as before, no flying fish	
	Sooty Tern	200			2 collected	
	Fairy Tern	5				
	Wedgetail	6 ± 2				
	R.F. Booby	3			1 imm, 2 subadult	
1342					resume course	
1347	Bird	1	SE	low	KA - Noddy or imm. sooty; Paul - not a tern, not Bulwers. All dark. steady flapping.	
1347	Sooty Tern	5	NE	low		
1355	Bulwers	1	NNE	low		
1407	Gray-back	1	E	low		
1405	Black-foot	2			following the ship	
1409	sooty tern	1	W	50'		
1412	sooty tern	1	N	50'		
1415	Frigate	4	NE	300'	pair behind ship	
1415	Wedgetail	1	NE	low		
1421	Sooty tern	2	NE	50' to low		
1430	FRIGATE	2	E	7-25'		
1430	Wedgetail	2	-	Low		
1430	sooty TERN	1	SE	40'	imm.	
1430	" "	2	NE	Low		
1435	Phaenodroma	1	NW	Low		
1436	Bulwer's	1	NE	Low		
1435	" "	1	SW	"		
1437	Flock					

Terns - 321  
5-10  
1 Noddy - 1  
Masked Noddy - 3  
Fairy - 7  
S - 2  
Gramp - 1  
Wedgetail - 12  
S - 4  
Pter - 1  
S - 1  
Frigate - 6  
S - 2  
Bulwers - 4  
S - 4  
Booby - 2  
S - 2  
M.F. K. - 1  
+ 1 bird  
Flocks - 2  
Feeding

1-347  
5-24

Continued next Page



DATE 17 JUNE  
Pg. # 5

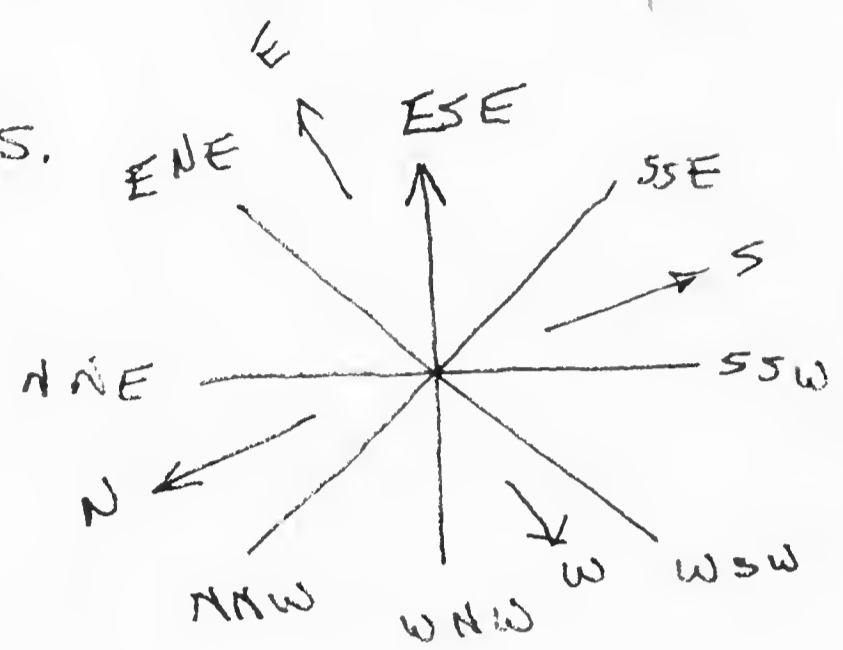
time species # dir. hgt. remarks loc.

✓ 1437 Flock of FEEDING BIRDS  
Sooty TERN 200-25  
FAIRY TERN 21  
GRAY-Back T. 1  
BROWN BOOBY 3  
FRIGATEBIRD 4  
MASKED BOOBY 1  
Red-ft. BOOBY 2

+ Seem  
100

S 21  
W 269  
Sooty 243  
GB 1  
Fairy 25  
RTTB - 2  
S 2  
Frigate 8  
SB 4  
Booby 2  
RE - 2  
Mask - 1  
BRN - 3  
S  
Widge - 1

- 1 collected P.S.S.



1450 Sooty TERN 1 SW 35'  
1454 Red-ft. Tropic 1 SW 125'

1456 LAND HO! - - - LA PERUSE

1507 Sooty tern 2 N 50'

1510 Sooty tern 2 E 50' one imm. turned about 1515

1511 " 1 SE 50'

1511 " 1 SE 10'

1511 " 1 SE 50'

1512 " 5 N 10'

1512 Frigate 1 ~~N~~ 100'

1513 Sooty tern 2 N 50'

1514 Booby 1 N low

1514 RTTB 1 E 75'

1515 Sooty tern 1 SE 50'

1516 " 1 N low

1517 " 6 S low

1517 " 4 S low

1518 Frigate 1 N 100'

1520 Fairy tern 1 SSW 50'

1522 Sooty tern 11 NW 50'

1522 Frigate 2 E 150'

way behind ship

1532 Wedgetail 1 NE low

1532 Fairy tern 2 NE low

1532 Sooty tern 1 SE 50'

1533 " 1 N low

1535 " 1 W 50'

1535 " 2 N 50'

1535 Fairy tern 1 E low

PASSING FRENCH

FRIGATE

SOOTY TERNS

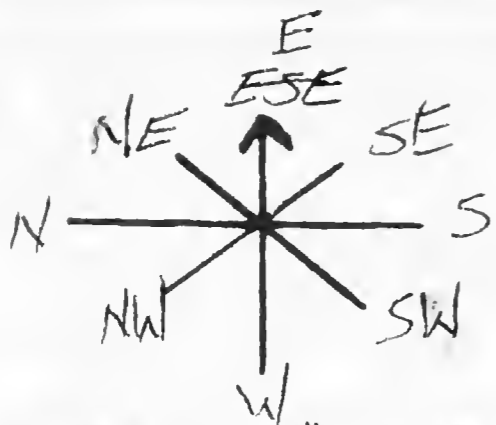
ALL OVER THE

PLACE !!

IMMS. FLYING

WOW

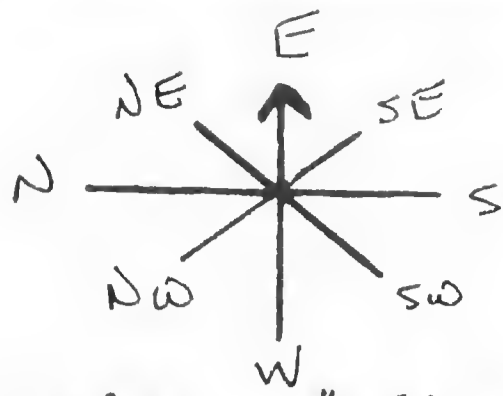
- 287  
5-28



DATE 17 JUNE  
Pg. # 6

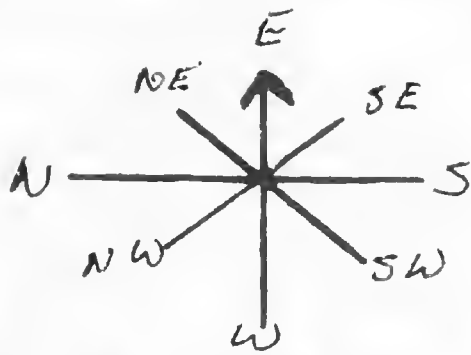
time	species	#	dir.	hgt.	remarks	loc.
✓ 1540	FAIRY TERN	2	NE			Terns 45
✓ 1540	LAYSAN A.	1	NW			3 25
✓ 1542	sooty tern	5	SE	low		3 fairy
✓ 1543	"	3	SE	"		albatross 1
✓ 1545	Red-foot	1	N	low		Bul 2
✓ 1547	sooty tern	2	NW	50'		5-2
✓ 1548	Red-foot	1	NW	low	immature	pt. 1-
✓ 1550	Wedgetail	1	SW	low		Wed 3
✓ 1556	sooty tern	3	NW	25'		5 3
✓ 1556	"	3	E	50'		Banding 3
✓ 1600	Pterodroma	1	E	low		20 F
✓ 1602	sooty tern	2	W	25'		1 Monitor
✓ 1603	Wedgetail	1	S	low		56
✓ 1603	"	1	W	low		
✓ 1605	Bulwer's	1	SW	low		
✓ 1608	sooty tern	1	NW	25'		
✓ 1610	"	1	NW	50'		
✓ 1612	"	1	NW	25'		
✓ 1612	Blue-faced	1	N	low		
✓ 1612	Fairy tern	1	NE	40'		
✓ 1612	sooty tern	6	E	low		
✓ 1613	Tattler ?? w.o.w.	1	N	low		
✓ 1615	sooty tern	1	N	25'		
✓ 1616	"	1	SE	25'		
✓ 1616	"	1	SE	low		
✓ 1616	"	2	NW	low		
✓ 1617	"	1	N	low		
✓ 1619	"	2	W	75'		
✓ 1619	"	2	N	low		
✓ 1620	"	2	N	"		
✓ 1620	"	1	N	"		
✓ 1620	"	1	N	"		
✓ 1621	Bulwer's	1	W	"		
✓ 1621	sooty tern	1	N	"		

5-34



DATE 17 June  
Pg. # 7

time	species	#	dir.	hgt.	remarks	loc.
1622	Sooty tern	3	N	low		
1623	"	1	N	"		Terns 110
1624	"	3	N	low		5-35
1624	Blue-faced	1	W	25'		Booby 3
1625	Sooty tern	1	W	25'		2 Blue-faced
1626	Blue-faced	1	W	low		Newell's 1
1630	SOOTY TERN	1	N	"		Wedge 2
1637	"	2	N	"		S 2
1637	BOOBY	1	N	"	- distant	
1640	SOOTY TERN	5	NW	"	- long string	
1643	"	1	W	40'		
1644	"	1	N	low		
1645	"	1	N	"		
1645	"	1111	N	"		114
1648	"	1	N	"		
1649	"	2	NW	40'		T-117
1649	"	1	NW	"		
1650	"	5	NNW	low		
1651	"	9	N	"	- in string	5-43
1651	NEWELL'S	1	NW	"		
1654	SOOTY TERN	3	NW	"		
1654	"	1	N	"		
1655	"	1	E	"		
1656	"	1	ESE	"		
1657	"	12	NNW	"	long string	
1658	"	2	NNW	"		
1700	"	12	NNW	"	"	
1701	"	1	⊙	"		
1701	Bulwers	1	⊙	"	} together	
1704	Sooty Tern	14	NNW	"	long string	
1705	"	2	NNW	"		
1708	Masked	2	NNE	"	sitting together on water	
1710	Wedgetail	1	N	"		
1711	Sooty Tern	3	NNW	"		
1712	"	3	N	"		
1713	"	2	NNW	"		
1713	"	1	W	"		
1715	"	2	NNW	"		
1714	"	1	NNW	"		
1716	Wedgetail	1	NNW	"		
1718	Sooty Tern	4	NNW	"		
1718	"	1	W NW	40'		
1725	"	4	NNW	low		



DATE 17 June  
Pg. # 8

time	species	#	dir.	hgt.	remarks	loc.
1727	Sooty Tern	2	NNW	low		
1728	" "	2	NNW	"		
1729	" "	6	NNW	"		
1732	" "	1	NNW	"		
1734	Wedgetailed	1	"	"		
1735	Flock				feeding	
	Sooty Tern	250 ± 50				
	Sooty Tern	3				
	Wedgetail	2				
	Bulwers	3				
	Red foot Booby	7 ± 1			one immature	
	Haw Noddy	2				
1747					resume course	
1748	Bulwers	1	S	low		
1758	Sooty Tern	2	NNW	low		
1800	" "	1	NNW	"		
1804	" "	4	NNW	"		
1805	" "	1	NNW	"		
1811	" "	1	N	900		
1823	" "	6	N	low		
1827	" "	2	N	35'		
1830	" "	1	NNE	low		
1840	Bulwer's	1	N	low		
1842	Frigate	1	E	70'		
1842	Sooty Tern	1	E	70'	Frigate was chasing tern.	
1848	Bulwer's P.	1	N	low		
1851	"	1	N	low		
1902	Sooty Tern	3	N	40'		
1908	" "	3	N	low		
2009	Sooty tern	1+	E	75'	may have been more than one	
2025	" "	2	SW	75'		

Asch  
Fairy 3  
Noddy 2

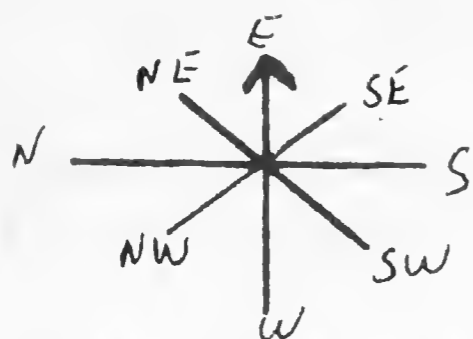
S 14  
Tern 285  
Sooty 282  
Wedg. 3  
S 2  
Bulwers 7  
S 5  
Frigate 1  
RF 8  
N

all-304  
S 21



DATE 17 June  
Pg.#           

time	species	#	dir.	hgt.	remarks	loc.
2054	Bird	1	S	Low		
2058	Bird	1	N	low		
2245	BIRD	1	SW		probably light phase Wedgetail.	
2310	Tern (?)	1	E	Low		



DATE 18 June  
Pg. # 1

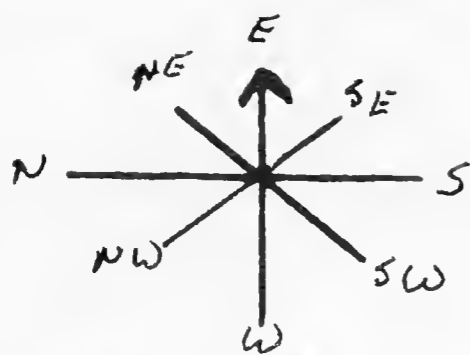
time	species	#	dir.	hgt.	remarks	loc.
0535	Bulwer's	1	N	low		
0536	Sooty Tern	1	WSW	40'		
0543	Sooty Tern	2	NW	55'		
0555	Bulwer's	1	NNW	Low		
0558	Bulwer's	1	SSE	Low		
0608	Sooty Tern	1	S	Low		
0613	Wedge Tail	1	SSE	Low		
0615	Sooty Tern	1	WNW	Low		
0629	Newell's	1	S	Low		
0630	Wedgetail	1	N	Low		
0632	Sooty Tern	1	S	Low		
0637	Sooty Tern	3	S	50'		
0648	Tern	1	E	45'	distant	
0649	Sher. pet.	1	S	low		
0650	Bulwer's	1	N	low		
0651	Sooty Tern	3	S	low		
0653	Sooty Tern	1	S	30'		
0654	Bulwer's	1	N	low		
0656	Sooty Tern	1	S	low		
0656	Bulwer's	1	N	low		
0700	Fairy Tern	1	E	low		
0704	R-F Booby	1	SE	low	immature	
0705	Sooty Tern	1	W	low		
0706	Bulwer's	1	N	low		
0706	Sooty Tern	2	S	low		
0708	Sooty Tern	3	S	low		
0711	Sooty Tern	2	S	low		
0714	Bulwer's	1	N	low		
0717	Sooty Tern	6	NNW	60'		
0720	Wedgetail	2	S	low		
0724	Sooty Tern	2	E	60'		
0733	Sooty Tern	2	E	55'		
Flock 0735	Sooty Tern	150	SE	1000'	seen from a distance.	
	Frigate	1	⊙			
0753	Wedgetail	2	W	low		
0757	Sooty Tern	1	S	low		
0804	"	1	N	50'		
0815	Wedgetail	1	W	low	sitting on water	
0815	Bulwers	2	E	low		
0816	Wedgetail	1	W	low		
0820	Wedgetail	1	SE	low		
0820	Frigate	1	⊙	100'	- diving for flying fish off stern	
0821	Sooty Tern	1	E	40'		
0822	Sooty Tern	2	S	40'		
0824	Bulwers	1	N	low		
0829	Sooty Tern	1	S	30'		
0830	Bulwers	1	NW	low		

Terns - 190  
S - 23  
Bulwers - 12  
S - 11  
Frigates - 2  
S - 2  
Pterod - 0  
S - 0  
Wedgetail - 9  
S - 7  
Sher. Pet - 1  
S  
Booby RF - 1  
Newells - 1

T-216  
S-46

Flocks  
1

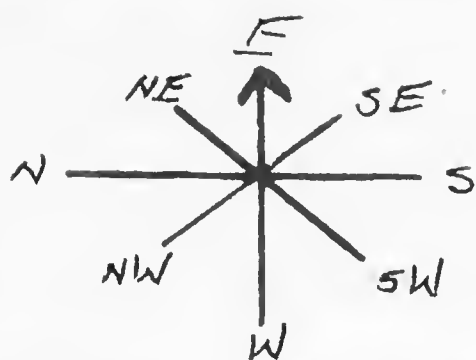




DATE 18 June  
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
0833	Sooty Tern	1	SW	50'		Terns - 4
0835	RT Tropic	1	E	40'	Shot by RS & collected	S-24
0835	Bulwers	1	SE	low		Sooty - 39
0836	Wedgetail	1	W	low		grayback - 3
0840	"	3	⊙	low	while picking up bud	fairy - 1
0842	Bulwers	1	⊙			
0844	Sooty Tern	4	E	50'		Bulwers 10
0845	"	2			joined above buds & were S	S-10
0848	Wedgetail	2	S	low		Wedgetail - 14
0852	Wedgetail	1	E	low		S-10
0855	Tern	1	ENE	40'		
0855	Sooty TERN	1	W	40'		
0857	Sooty Tern	1	NW	30'		RTTB - 1
0857	Tern	1	W	40'		
0900	Wedgetail	1	N	low		Shear Pet - 4
0910	Bulwers	1	S	low		S-3
0914	Bulwers (?)	1	N	low		Bird 1
0924	Wedgetail	1	E	low		
0926	Sooty Tern	1	NW	25'		
0937	Bulwers	1	W	low		
0943	Bulwers	1	W	low		
0945	Tern	1	NE	40'		
0951	Sooty Tern	2	NE	low		
0954	Sooty Tern	1	SW	25'		
0954	Sooty Tern	1	NE	50'		
0955	Sooty Tern	3	E	70'		
0958	Bird	1	?	low	appeared all white; few flaps & glide; distant	
1000	Sooty Tern	1	E	20'		
1011	Bulwer's	1	N	low		
1015	Sooty Tern	2	NE	low		
1015	Sooty Tern	2	W	40'		
1015	Bulwers	1	W	low		
1016	Wedgetail	2	NW	low		
1019	Sooty Tern	2	SE	low		
1021	Shear-Pet	2	SE	low	one Wedgetail + one Bulwers?	
1023	Wedgetail	1	E	low		
1025	Gray-backs	3	⊙	low	possibly feeding.	
1030	Sooty Tern	1	E	50'		
1031	Sooty Tern	3	BB'E	30'		
1031	Fairy Tern	1	S	45'		
1033	Sooty Shear (?)	1	S	low	19, dark, brief flash of underwing, steep water flight	
1034	Wedgetail	1	E	low		
1034	Bulwers	1	W	low		
1036	Bulwers	1	E	low		
1041	Wedgetail	1	NE	"		
1045	Bulwers	1	W	"		
1045	SOOTY TERN	1	E	"		
1047	"	1	E	40'		

T = 77  
S-48



DATE 18 JUNE 64  
Pg. # 3

time species # dir. hgt. remarks loc.

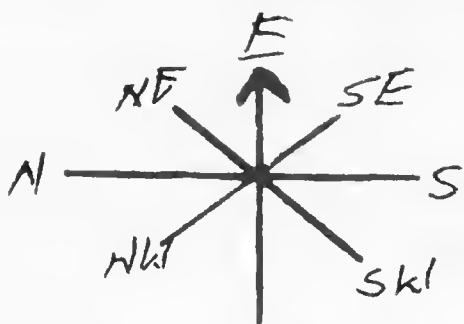
time	species	#	dir.	hgt.	remarks	loc.
1053	Newell's	1	N	low		Terns - 189
1114	Bulwer's	1	NNW	low		S 28
1117	Sooty tern	1	E	50'		Sooty - 180
1117	shear-petrel	1	E	low	distant - appeared black.	Fairy - 8
1122	BULWERS	1	E	low		GBak - 1
1125	"	1	NE	low		ShearPet - 1
1130	"	1	E	"		Frigate - 2
1137	Sooty TERN	1	E	40'		S - 2
1140	"	14	SE	to 65'	following ship for a while	Wedgetail - 28
1147	"	2	E	55'	joined above flock	- 4
1149	Fairy Tern	2	N	150'		Bulwer - 14
1150	Sooty Tern	2	S	low.		S - 10
1200	Wedgetail	1	E	"		Newell - 3
1204	Bulwers	1	NE	"		S - 2
1204	FRIGATE	1	E(?)	200'		
1205	Sooty Tern	1	ENE	58ft.		
1218	Bulwer	1	SW	low		
1227	sooty tern	1	N	50		
1230	"	1	W	50		
1230	"	4	ENE	50		
1234	"	1	ENE	50		
1241	"	1	E	75'	spread out, up + down to water	
1241	Fairy tern	1	E	25'		
1243	Fairy Tern	1	SW	low		
1244	Sooty Tern	2	@	50 ft around ship		
1245	Fairy Tern	1	N	25ft.		
1246	Bulwers	1	W	low		
1248	Sooty Tern	5	NE	50ft		
1253	"	4	NE	50 ft		
1254	Wedgetail	1	NW	low		
1255	Sooty Tern	6	NE	low		
1257	"	1	E	25ft.		
1259	"	4	E	25	joined above	
1300	Bulwers	1		low	collected WSW # 0.112	
1305	Sooty Tern	10			during pickups	
1315	Flock					
	Sooty TERN	100+				
	FRIGATE	1			♂ imm. - hitting wedgetails for food	
	Wedgetails	24+				
	FAIRY TERN	3				
	NEWELL'S	2				
	Bulwers	4				
AFTER 14:15	SOOTY TERN	5				
WHILE MAKING	"	2				
Pickup of	"	2				
Wedgetail	GRAY BACK	1				
	Bulwers	2				
	Wedgetails	2				

T - 237  
S - 37

Flock  
2  
1 feed

SMALL  
LARGE SCHOOL OF FLYING FISH

- Not necessarily in flock but area  
- CEASE Manuevers 2315



DATE 18 JUNE 64  
Pg. # 4

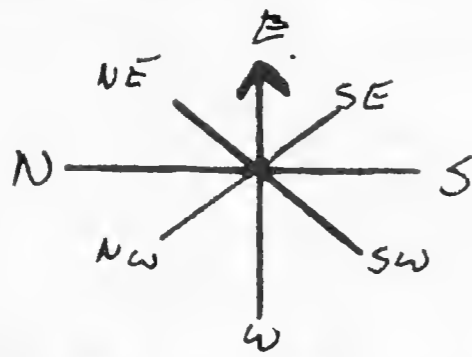
time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
1447	Bulwers	1	N	LOW		
1505	"	1	E	low		
1513	Bulwers	2	SW	"		
1513	Wedgetail	1	N	"	DK. Phase	
1513	Sooty TERN	1	W	40'		
1515	"	11	E	TO 60'		
1516	Bulwers	1	S?	low		
1522	SOOTY TERN	1	N	LOW		
1522	"	1	E	40'		
1528	Wedgetail	1	N	low		
1532	"	1	N	low		
1532	Newells	1	N	low		
1542	Bulwers	1	E	low		
1544	Newells	1	E→S	low		
1544	Wedgetail	1	S	low		
1544	Pterodroma(?)	1	S	low		
1545	Sooty Tern	2	NW	50'		
1554	Frigate	1	↻	100'	frigate chasing tern	
1554	tern	1	↻			
1555	Flock				no feeding observed	
	Sooty Tern	50				
	Fairy Tern	1				
	Wedgetail	3				
	Newells	1				
	Frigate	2				
1557	Pterodroma	1	S	low		
1613	HARCOURTS	1	NE	low		
1614	Bulwers	1	N	low		
1628	Red-ft. BOOBY	1	N	low	imm - or Brown Phase	
1629	Bulwers	1	NW	low		
1630	Flock					
	SOOTY TERN	40				
	GRAY BACK	2				
	NEWELL'S	1				
	Wedgetail	5				
	FRIGATE	1				
	Bulwers	1				
1645	Newell's	1	↻	low		
1658	Bulwers	1	S	low		
1700	Sooty tern	5	N	10-25'		
1711	"	1	NE	low		
1713	"	1	E	to 40'		

Terns - 122  
S - 13  
Fairy - 1  
GB - 2  
Sooty 68  
Bulwer - 10  
S - 9  
Newells 5  
S - 5  
Harcourt 1  
Frigate 4  
S - 3  
Wedge 12  
S - 6  
RF Booby 1  
Pt. 1  
Shearpet 1

T - 157  
S - 30

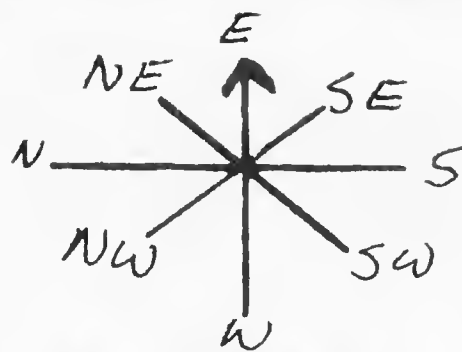
Flocks  
2



DATE 18 June  
Pg. # 5

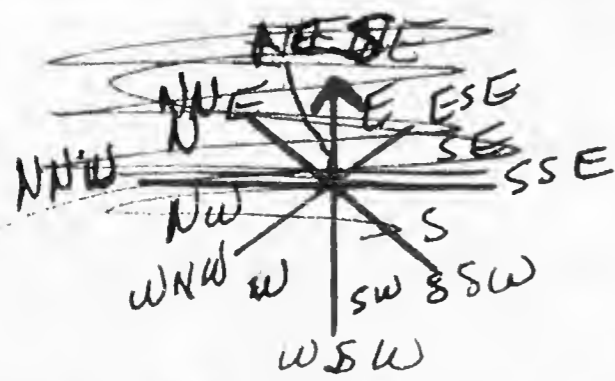
time	species	#	dir.	hgt.	remarks	loc.
1716	Sooty Tern	3	E	40'		Tern - (47)
1717	"	2	E	20'		Sooty - 5-10
1720	Wedgetail	1	N	low		
1727	Booby (E)	1	N	low	flying slowly over waves, whitish, large	Wedge - 4
1743	Sooty tern	2	E	50'		50 3
1808	"	13	NE	100'		Newell - 2
1808	Newells	1	NE	low		RTTB - 2
1810	RTTB	1	NE	150'		5-2
1817	Sooty Tern	1	ENE	low		FRIG - 1
1818	Bulwer's	1	S	low		Bulwer (3)
1822	SOOTY TERN	11	ENE	40'		5-2
1822	FRIGATE	1	N	200'		1 Bird (1)
1823	Red-ft. Tropic	1	NE	175'		
1827	SOOTY TERN	7	E	To 100'		
1828	"	1	E	low		
1828	"	4	E	40'		
1828	NEWELL'S	1	N	low		
1830	Bulwer's	1	E	low		
1832	Wedgetail	1	NW	"		
1833	"	1	NW	"		
1835	SOOTY TERN	2	NW	"		
1850	Bulwer's	3	E	"		
1855	Red-ft. BOOB	1	E	"		
1855	Red-ft. BOOB	1	NNE	Low		
1900	FRIGATE	1	E	250'	> JOINED	
1901	"	1	E	"		
1902	NEWELL'S	1	E	low		
1929	MASKED BOOBY	1	E	70'		
1930	Sooty Tern	7			calling over head	
1931	"	"			" " " "	
1934	Newells	1	E	low		
1944	"	1	E	low		
1953	Newells	1	E	low		
1953	Bird	1	W	low		
1955	"	1				
2000	"	1				
2000	"	1				
2001	Newell's	1	W	low		
2007	Bird	1				
2010	Bird	2	E			
2020	Bird	7	E	soft		
2030	Bird	1	E	low		
2032	Newells	1	E	low		
2043	Sooty	1			calling	
2044	Bird	1	E	low		
2103	Bird	1	S (E)	20'	across stem	
2110	"	1	S	25'	" "	

Sunset  
T - 59  
5-21



DATE 18 June  
Pg. # 6

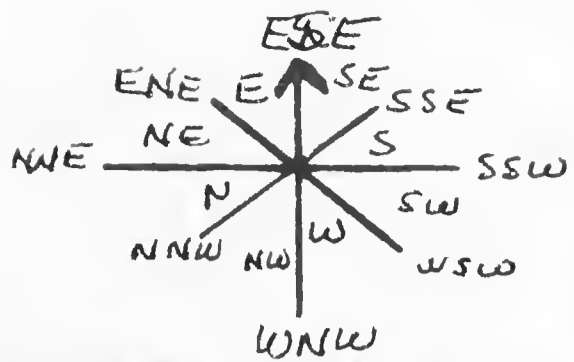
	time	species	#	dir.	hgt.	remarks	loc.
	2112	Newells	1	E	low		
	2134	Bird	1	E	50'	probably Sooty Tern but fluttering like a Newell's	
	2136	Sooty Tern	1	NE	40'		
	2138	Newells	1	E	low		
	2142	Sooty Tern	1	N	50'		
Port	2144	Newells	1	E	to 20'		
	2145	"	1	E	20'	possibly same bird as last entry	
	2148	"	1	E	20'		
	2150	N	1	SW	20'		
	2159	"	2	E	20'	across stem	
	2202	"	1	E	10'		
	2210	Bird	1	E	low		
	2211	Newells	1	N	30'	across stem; possibly 2010 entry	
Star	2218	Bird	1	W	low		
	2220	Newells	1	E	20'	probably last note	
	2226	Bird	1	N	20'	across stem	
	2230	Newells	2	E	low		
	2230					<del>scribble</del>	
	2240						
	2240	Newells	1	E	30'		
	2244	Bird	1	N	20'	across stem	
	2247	Newells	1	E	low		
	2250	Newells	1	NE	50'		
	2250	"	1	NE	50'		
	2253	"	1	NNE	low		
	2300	"	1	E	20'		
	2313	"	2	E	low		
	2315	"	1	E	low		
	2317	"	1	E	20'	zigzagging across stem } rain squall	
	2327	"	1	E	20'		
	2329	"	1	E	low		
	2336	"	1	E	low		
	2340	"	1	E	20'		
	2342	"	1	E	20'		
	2400	Newells				at least 3 individuals apparently following ship; probably most of observations are of these, if not all. They cross back & forth over ship at 50-60 feet.	



DATE 19 June 1964  
Pg. # 1

time species # dir. hgt. remarks loc.

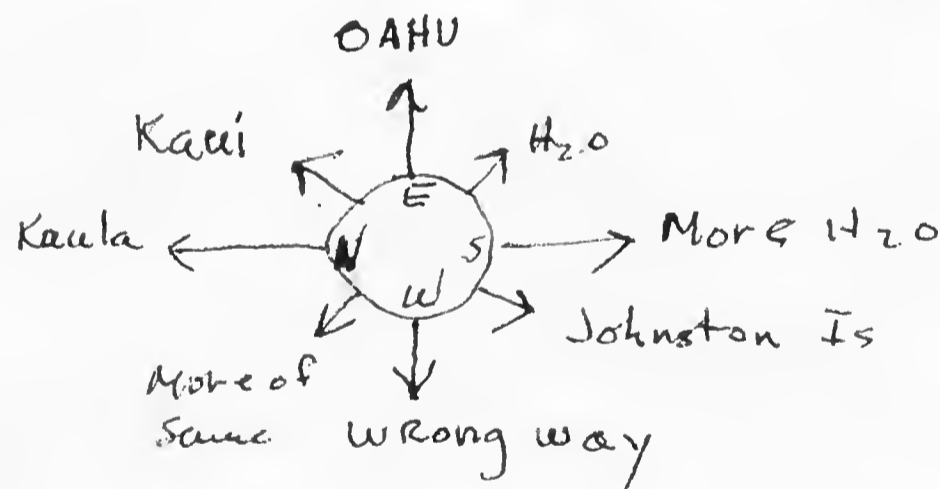
time	species	#	dir.	hgt.	remarks	loc.
0557	Booby RF	1	ESE	Low	imm.	Boobies 4
0558	NEWELLS	1	NNE	Low		3 RF
0600	Sooty Tern	1	NNE	50ft		45
0600	wedgetail	1	ESE	low		TERNS - 39
0600	Tern	1	WNW	50ft	0601 Surprise	30 sooty 3 terns S - 22
0602	11 Sooty	6	WNW	25ft		
0615	<del>Wedge-tail</del>	2	WNW	10ft	10 low	Newells 4 S - 4
0616	wedgetail	2	ESE	low	eg. 5ft	<del>Wedge-tail</del>
0617	"	1	SE	low		wedgetail 5
0619	wedgetail	1	WNW	low		S - 4
0620	Bulwers	1	WNW	11		Bul - 1
0620	Sooty	1	WNW	60		Shear Pet 7
0621	Sooty	4	WNW	60		S - 7
0622	Pterodroma	2	WNW	low		Bird - 2
0623	Sooty Tern	5	WNW	60		S - 2
0624	wedgetail	1	WNW	low		Pt - 2, 51
0628	Sooty Tern	1	SSW	50		61
0630	<del>Pterodroma</del>					T = 40
0631	Shear Pet	2	WSW	low		S - 40
0631	Sooty Tern	1	ESE			Flocks 0
0632	Newells	1	ESE			
0635	Sooty Tern	1	WNW	low		
0638	"	1	WNW	50		
0642	Shear Pet	2	ESE	low		
0643	Ad. RF Booby	1	SSW	low		
0644	Sooty Tern	1	WSW	low		
0644	Shear Pet	1	SSW	low		
0646	Imm RF Booby	1	SSW	low		
0651	shear Pet	1	SE	low		
0653	Sooty Tern	2	WSW	50ft		
0655	"	1	SSW	low		
0659	"	1	SE	low		
0659	RF Booby	1	SSW	low		
0700	Shear Pet	1	SSW	low		
0700	Sooty Tern	1	SSW	low		
0700	Booby	1	SSW	low		
0700	Sooty Tern	1	SE	low		
0701	Bird	1	NNE	low		
0702	white bird	1	WNW	100ft	in the distance could not tell size wing length or other markings	
0703	Sooty Tern	2	ESE	low		
0704	"	1	ESE	low		
0708	"	1	SSW	low		
0710	"	1	WNW	100ft		
0713	Terns	2	WNW	100ft		
0713	Sooty Tern	1	WSW	50ft		



DATE 19 June 1964  
Pg. # 2

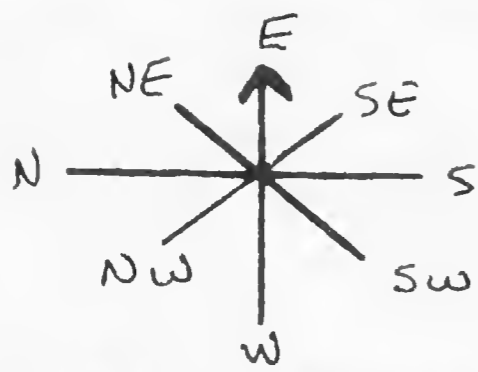
(THESE FIELD NOTES ARE FOR THE BIRDS) loc.

time	species	#	dir.	hgt.	remarks	loc.
0715	Sooty Tern	1	SSW	50	*NOTE ↓	TERNS - 28
0722	Gray back tern	1	SSW	50 ft		S - 20
0727	Fairy Tern	1	NW	50'		Shear Pet - 2
0727	Sooty Tern	5	SSW	50'		S - 2
0735	Shear-Pet	1	NNE	low		Bulwer 3
0738	" "	1	SW	low		S - 3
0737	Sooty TERN	1	WNW	low		Boobies 3
0738	Gray back	2	SSW	low		S - 3
0742	Bulwers	1	NNE	low		100
0743	"	1	NNE	low		1?
0752	Fairy TERN	1	WSW	low		Frig 1
0757	sooty TERN	1	WNW	50		Newell's 1
0754	Sooty TERN	1	WSW	50		Wed 2
0759	RF Booby	1	SSW	low		S 2
0800	CHANGE COURSE					T-40
0807	Gray back	1	E			S - 32
0807	Booby	1	W			
0809	Newell's	1	S			
0809	Breakfast	Below!				
0811	Gray-back	1	SW	low		
0816	Sooty tern	1	E	low		
0816	Fairy tern	1	E	25'		
0819	" "	1	E	25'	+ diving to water	
0820	Frigate	1	E	200'		
0821	Common nobby	1	SW	low		
0826	Wedgetail	1	N	low		
0827	tern	2	S	low		
0830	gray-back	2	S	40'		
0830	" "	1	S	40'		
0830	Bulwers	1	N	low		
0832	Sooty tern	1	S	low		
0836	Blue-faced	1	E	low	sitting on water beside a floating crate Plew when ship passed within 50 ft.	
0837	Wedgetail	1	SW	low		
0839	Gray-back	2	SW	low		
0840					DUE SOUTH OF KAULA	



40

\*See foot note pg. 1



time species # dir. hgt. remarks loc.

0843	Frigate	1	E	300'
0845	<del>How</del> Noddy	1	SE	low
0847	Wedgetail	1	NNW	low
0848	Noddy	1	W	low
0849	Bulwer's	2	⊙	low
0850	Sooty	1	E	40'
0850	Frigate	2	—	75'
0851	B-F Noddy	1	WNW	36'
0853	Bulwer's	1	NE	low
0854	- tern	2	E	low
0858	Wedgetail	1	E	low
0908	Gray-back	1	E	low
0909	Wedgetail	1	N	low
0911	Noddy	1	NE	low
0912	Bulwer's	1	NE	low
0915	tern	3	E	100'
0915	"	1	N	100'
0916	"	1	N	50'
0918	noddy	1	SE	low
0918	Wedgetail	1	SE	low
0920	Grayback	1	N	low
0921	tern	1	E	low
0930	<del>Blue gray</del> <del>(Sooty)</del>	1	⊙	low
0937	Wedgetail	1	N	low
0945	FLOCK Brown body Noddy (common?)	100 ± 10		
	Blue-gray	2		
	Wedgetail	6		
	Sooty tern	10		
	Newell's	1		
	Red-foot	1		
0950	Wedgetail	2	SE	low
1013	Gray-back	1	SE	low
1020	Sooty TERN	1	E	"
1024	Gray-back	1	E	"
1029	Wedgetail	1	SE	"
1037	"	1	E	"
1038	FAIRY TERN	2	W	"
1045	TERN	1	S	"
1047	Bulwers	1	E	"

one in H<sub>2</sub>O other ⊙  
chasing each other  
(not Brown)  
} Per ahead  
Feeding probably gray back  
2 blue-gray - collected by w.o.w.  
Feeding flock - no fish noted  
Sooty or Gray back

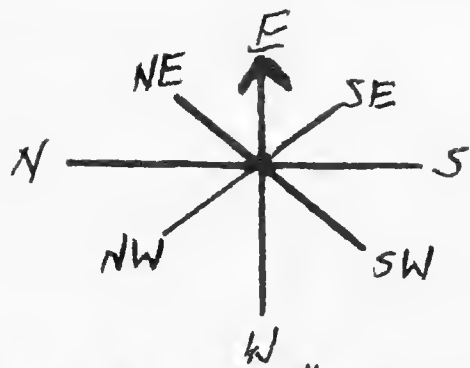
Tern - 135  
Noddy 102  
Gray GB. - 8  
Sooty - 3  
Wedgetail - 15  
Bulwers 5  
4  
Frigate 3  
S-2  
Booby 3  
S-3  
RF  
H  
Newell 1

Total  
165  
S-34

Feeding flock

Gray back  
tern - 4

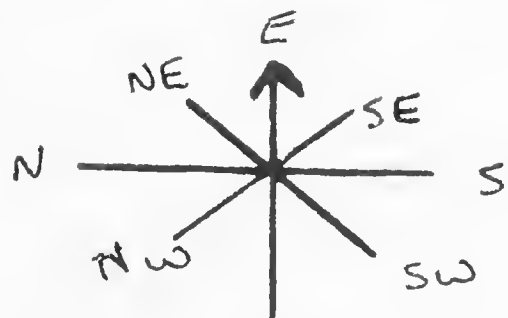




DATE 19 JUNE  
Pg. # 4

time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
1054	Wedgetail	1	E	Low		
1058	MASKED BOOBY	1	NONE	0	ON H <sub>2</sub> O	TERNS - 6
1059	GRAY BACK	1	W	40'		GB 3 5-6
1059	NEWELL'S	1	E	Low		Sooty 2
1115	Sooty Tern	1	N	40'		Noddy - 1
1117	FRIGATE	1	☉	200'	- Dist. ON HORIZON	
1121	Red-ft. BOOB	1	S	Low		
1125	BOOBIES	4	NONE	0	- EATING Garbage distant off fantail.	
1139	FRIGATE	1	W	200'	- imm ♂	Wedgetail - 15
1140	"	1	☉	"	- Has joined 1117 ENTRY	14
1144	Noddy	1	N	Low	- did not see head.	
1150	BIRD	1	N	"		
1151	GRAY BACK	1	E	"		Booby - 9
1154	Bulwers	1	S	"		Masked 5-6
1203	Bulwers	1	S	"		URF
1210	Bulwers	1	N	"		Frig - 5
1210	Frigate	2	☉	200'	crossing each other	3-4
1250	Wedgetail	1	NE	Low		Newell 6
1250	Sooty Tern	1	NE	20'		3-6
1253	Gray-back	1	E	Low		Bulwer 4
1315	Wedgetail	1	N	Low		RTTB 2-2
1355	RTTB	1	E	100'		1 Bird 1
1403	Wedgetail	1	NNW	Low		Ptc. 1
1408	"	1	N	"		
1414	"	1	N	"		
1424	R.F. BOOB	1	N	"		T 49
1425	W.T. SHEAR	1	N	"	- sitting ON H <sub>2</sub> O, flushed by ship	5-44
1436	W.T. TROPIC	1	N	"		
1437	NEWELL'S	1	N	"		
1504	R.F. BOOB	1	N	"		
1523	Newell's	1	N	Low		
1525	"	1	N	Low		
1526	Wedgetail	1	E	Low		
1546	Newell's	1	N	Low		
1545	R.f. Booby	1	N	Low		
1551	R.f. Tropic.	1	S	"	- sitting on H <sub>2</sub> O	
1551	Wedgetail	1	N	"		
1554	"	1	N	"		
1625	Wedgetail	2	NE	Low		
1626	Newells	1	NE	"		
1626	Pterodroma	1	S	"		
1629	Wedgetail	1	NE	"		
1631	Wedgetail	1	E	"		
1631	Bulwers	1	E	"		



DATE 19 June  
Pg. # 5

time	species	#	dir.	hgt.	remarks	loc.
1639	Bird ??	1	NE	low	gray above, white below, looks like a tern, flying like a Pterodroma	
1639	Wedgetail	2	NE	low		Terns 4 3 Sooty - 2 1 Bird Wedge - 19 5 17 Bulwer 3 5 - 3 Newell 15 5 12 Tropic - 3 2 WT S-3 3 booby 2 RF 5 2 Shear Pet 1 Total 47 5 34
1640	Bulwers	1	SE	"		
1643	"	1	⊙	"		
1643	Tropicbird	1			sitting on water off starboard side	
1653	Newell's	1	E	low		
1658	Wedgetail	1	N	low		
1703	Wedgetail	2	N	low		
1705	"	1	N	"		
1705	Newell's	3	N	low	ie. close to the tree	
1708	Wedgetail	1	N	low		
1715	Newell's	1	N	low		
1723	Wedgetail	2	E	low		
1730	R-ft Booby	1	SE	low		
1730	Shear-pet.	1	N	low	distant ie far away.	
1732	Newell's	1	N	low		
1732	Wedgetail	1	E	low		
1734	"	1	N	low		
1752	Newell's	1	NW	low		
1808	"	1	N	"		
1810	"	1	N	"		
1812	"	2	N	"		
1816	SOOTY TERN	3	NE	"		
1816	Wedgetail	1	E	"		
1818	"	1	E	"		
1821	"	1	N	"		
1822	SOOTY TERN	1	N	"	- dist	
1823	Wedgetail	1	N	"		
1824	NEWELL'S	1	N	"		
1825	Wedgetail	1	N	"		
1826	"	1	"	"		
1852	W.T. TROPIC	1	E	0'		
1853	Wedgetail	1	N	low		
1900	W.T. TROPIC	1	SE	0'	Same <sup>AS</sup> entry 1852	
1901	NEWELL'S	1	N	low		
omit 1902	W.T. TROPIC	2	-	0'	- SAME <del>AS</del> AS ENTERED ABOVE. <del>AS ENTERED ABOVE.</del>	
1904	Bulwers	1	N	low		
1906	NEWELL'S	1	NE	"		
1913	Red-ft Booby	1	⊙	To 60'		
1915	Wedgetail	1	⊙	low		
1922	NEWELL'S	1	N	"		
1925	Bulwer's (?)	1	SE	"	- could have been sooty storm Petrel!	
1933	NEWELL'S	1	N	"		
1940	Wedgetails	2	N	"		

DATE 5 June 1964

Time at sunrise 0549 Position at sunrise = 21°N 158°W  
 Time at sunset 1925 Position at sunset = 21°N 158°W  
 Miles traveled from 0000 hours to sunrise 2 =  
 Miles traveled from sunrise to sunset = 55  
 Miles traveled from sunset to 2400 hours = 42.5

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>2000</u>	<u>1/2 3</u>	<u>158 30 W</u>	<u>21 00 N</u>
2.	<u>2200</u>	<u>2 1/2 3</u>	<u>158 55 W</u>	<u>21 00 N</u>
3.	<u>2300</u>	<u>LORAN</u>	<u>159° 25' W</u>	<u>20° 48' N</u>
4.				
5.				
6.				

DATE 6 June 1964

Time at sunrise 0512 Position at sunrise = 20° 13' N 161° 30' W  
 Time at sunset 1927 Position at sunset = 19° 24' N 162° 43' W  
 Miles traveled from 0000 hours to sunrise = 62.5  
 Miles traveled from sunrise to sunset = 131.0  
 Miles traveled from sunset to 2400 hours = ~~48.0~~ 48.0

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>0106</u>	<u>4 Sta. Loran</u>	<u>159° 49' W</u>	<u>20° 37' N</u>
2.	<u>0300</u>	<u>4 Sta. Loran</u>	<u>160° 08' W</u>	<u>20° 28' N</u>
3.	<u>0400</u>	<u>LORAN</u>	<u>160 18 W</u>	<u>20 23 N</u>
4.	<u>0800</u>	<u>LORAN</u>	<u>161 50 W</u>	<u>20 10 N</u>
5.	<u>1000</u>	<u>LORAN</u>	<u>161-17 W</u>	<u>20-00 N</u>
6.	<u>1400</u>	<u>"</u>	<u>161-52 W</u>	<u>19-42 N</u>
7.	<u>1700</u>	<u>"</u>	<u>162° 27' W</u>	<u>19° 30' N</u>
8.	<u>1920</u>	<u>"</u>	<u>162° 43' W</u>	<u>19° 24' N</u>
9.	<u>2200</u>	<u>"</u>	<u>163-12 W</u>	<u>19° 13' N</u>

DATE 7 June 1964

Time at sunrise 0520 Position at sunrise = 18°42'N 164°42'W  
 Time at sunset 1841 Position at sunset = 18°01'N 166°37'W  
 Miles traveled from 0000 hours to sunrise = 66.0  
 Miles traveled from sunrise to sunset = 117  
 Miles traveled from sunset to 2400 hours = 58

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0020 (110)	Loran	163°38'W	19°05'N
2. 0300 (110)	Loran	164°04'W	18°55'N
3. 0445 (711)	Celestial	164°36'W	18°44'N
4. 1306 (711)	Loran	165°56'W	18°17'N
5. 1515	Loran	166°13'W	18°10'N
6. 1830	"	166°36'W	18°02'N ✓
7. 2200	"	167°06'W	17°46'N ✓

DATE 8 June

Time at sunrise 0538 Position at sunrise = 17°10'N 168°18'W  
 Time at sunset 1848 Position at sunset = 15°39'N 169°13'W  
 Miles traveled from 0000 hours to sunrise = 59  
 Miles traveled from sunrise to sunset = 136  
 Miles traveled from sunset to 2400 hours = 55

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0000	Loran	167°25'W	17°37'N ✓
2. 0200	Loran	167°45'W	17°25'N
3. 0400	"	168°04'W	17°17'N ✓
4. 0500	CELESTIAL	168°15'W	17°12'N
5. 1100	LAND	169°11'W	16°47'N
6. 1500	Loran & sun	169°22'W	16°16'N
1900	CELESTIAL	169°10'W	16°38'N

DATE 9 June 1964

Time at sunrise 0548 Position at sunrise = 14°03'N 169°20'W  
 Time at sunset 1848 Position at sunset = 12°32'N 170°52'W  
 Miles traveled from 0000 hours to sunrise = 65  
 Miles traveled from sunrise to sunset = 127  
 Miles traveled from sunset to 2400 hours = 50

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0018	LORAN	168°56'	14°49'N
2. <del>0500</del>	<del>LORAN</del>	<del>169°15'</del>	<del>13°57'N</del>
3. 0600	LORAN	169°21'W	14°04'N
4. 0815	LORAN	169-35W	13°-48'N
5. 1215	LORAN & SUN	170°05'W	13°18'N
6. 1905	Celestial	170°55'W	12°28'N
7. 2200	LORAN	171°15'W	12°10'N

DATE 10 June 1964

Time at sunrise = 0559 Position at sunrise = 13°06'N 171°28'W  
 Time at sunset = 1849 Position at sunset = 14°16'N 170°14'W  
 Miles traveled from 0000 hours to sunrise = 66.0  
 Miles traveled from sunrise to sunset = 101.0  
 Miles traveled from sunset to 2400 hours = 42

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0000	LORAN	171°30'W	12°19'N
2. 0500	CELESTIAL	171°28'W	13°06'N
3. 0800	CELESTIAL & LORAN	171°20'W	13°12'N
4. 1200	LORAN & SUN	170°56'W	13°35'N
5. 1630	LORAN & SUNLINE	170°31'W	14°00'N
6. 1916	CELESTIAL	170°13'W	14°16'N

DATE 11 June 1964

Time at sunrise 0548 Position at sunrise = 15°23'N 169°53'W  
 Time at sunset 1855 Position at sunset = 14°18'N 171°28'W  
 Miles traveled from 0000 hours to sunrise = 61.0  
 Miles traveled from sunrise to sunset = 132.0  
 Miles traveled from sunset to 2400 hours = 49.0

*log kept until  
1120 hrs. rest of day  
lost.*

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0300	Loran	169°28'W	15°06'N
2. 0506	CELESTIAL	169°47'W	10°17'N
3. 1200	LORAN & SUN	170°33'W	15°06'N
4. 1600	LORAN & SUN	171°04'W	14°39'N
5. 1916	Celestial	171°29	14°12'N
6.			

DATE 12 June 1964

Time at sunrise 0603 Position at sunrise = 13°39'N 172°53'W  
 Time at sunset 1858 Position at sunset = 12°12'N 174°50'W  
 Miles traveled from 0000 hours to sunrise = 60.0  
 Miles traveled from sunrise to sunset = 118.0  
 Miles traveled from sunset to 2400 hours = 36.0

TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1. 0519	CELESTIAL	172°47'W	13°34'N
2. 0800	CELESTIAL & LORAN	173°04'W	13°52'N
3. 1100	" "	172°42'W	14°12'N
4. 1230	"	172°32'W	14°22'N
5. 1600	Celestial	172°50'W	14°49'N
6. 1922	Celestial	171°48'W	15°04'N

DATE 13 June 1964

Time at sunrise = 0552 Position at sunrise = 16°02'N 170°42'W  
 Time at sunset = 1902 Position at sunset = 15°55'N 170°42'W  
 Miles traveled from 0000 hours to sunrise = 57.0  
 Miles traveled from sunrise to sunset = 176.0  
 Miles traveled from sunset to 2400 hours = 53.0

0718 *0718*

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>0552</u>	<u>Celestial</u>	<u>170°42'W</u>	<u>16°02'N</u>
2.	<u>1000</u>	<u>Celestial &amp; Loran</u>	<u>170°57'W</u>	<u>16°32'N</u>
3.	<u>1352</u>	<u>Celestial</u>	<u>171°30'W</u>	<u>16°34'N</u>
4.	<u>1700</u>	<u>Celestial</u>	<u>172°00'W</u>	<u>15°57'N</u>
5.				
6.				

DATE 14 June 1964

Time at sunrise = 0604 Position at sunrise = 15°20'N 173°30'W  
 Time at sunset = 1906 Position at sunset = 15°50'N 173°30'W  
 Miles traveled from 0000 hours to sunrise = 64.0  
 Miles traveled from sunrise to sunset = ~~129.0~~ 112.0  
 Miles traveled from sunset to 2400 hours = 44.0

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>0411</u>	<u>LORAN</u>	<u>173°57'W</u>	<u>14°47'N</u>
2.	<u>0530</u>	<u>Celestial</u>	<u>173°45'W</u>	<u>15°20'N</u>
3.	<u>1000</u>	<u>Celestial &amp; Loran</u>	<u>173°53'W</u>	<u>14°53'N</u>
4.	<u>1600</u>	<u>Celestial &amp; Loran</u>	<u>173°51'W</u>	<u>15°30'N</u>
5.	<u>1930</u>	<u>Celestial &amp; Loran</u>	<u>173°26'W</u>	<u>15°53'N</u>
6.				

DATE 15 June 1964

Time at sunrise = 0555 Position at sunrise = 17°05'N 173°21'W  
 Time at sunset = 1901 Position at sunset = 18°35'N 170°57'W  
 Miles traveled from 0000 hours to sunrise = 56.0  
 Miles traveled from sunrise to sunset = 122.0 39 in the grid  
 Miles traveled from sunset to 2400 hours = 41.0

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0515	Celestial	173°21'W	17°05'N
2.	0800	Celestial	172-08 W	17-07 N
3.	1100	" "	171-49 W	17-27 N
4.	1600	Celestial	171°14'W	18°03'N
5.	1920	Celestial	170°52'W	18°28'N
6.				

DATE 16 June 1964

Time at sunrise = 0500 Position at sunrise = 18°10'N 169°28'W  
 Time at sunset = 1857 Position at sunset = 21°16'N 168°20'W  
 Miles traveled from 0000 hours to sunrise = 49.0  
 Miles traveled from sunrise to sunset = 129.0  
 Miles traveled from sunset to 2400 hours = 49

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0200	Lozan	170°12'W	19°13'N
2.	0500	Celestial	169-35 W	19-35 N
3.	0800	Celestial	169-30 W	19-59 N
4.	1100	" "	169-09 W	20-21 N
5.	1920	Celestial	168°20'W	21°14'N
6.				



DATE 17 June 1964

Time at sunrise = 0524 Position at sunrise = 22°37'N 167°08'W  
 Time at sunset = 1857 Position at sunset = 23°22'N 165°43'W  
 Miles traveled from 0000 hours to sunrise = 54.0  
 Miles traveled from sunrise to sunset = 108.0  
 Miles traveled from sunset to 2400 hours = 40.0

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>0100</u>	<u>Loran</u>	<u>167°55'W</u>	<u>22°52'N</u>
2.	<u>0440</u>	<u>Celestial</u>	<u>167°13'W</u>	<u>22°31'N</u>
3.	<u>0820</u>	<u>Loran</u>	<u>166-51W</u>	<u>22-54N</u>
4.	<u>1630</u>	<u>Loran</u>	<u>166°04'W</u>	<u>23°31.0'N</u>
5.				
6.				

DATE 18 June 1964

Time at sunrise = 0522 Position at sunrise = 23°47'N 164°25'W  
 Time at sunset = 1837 Position at sunset = 23°12'N 162°-W  
 Miles traveled from 0000 hours to sunrise = 46.0  
 Miles traveled from sunrise to sunset = 100.0  
 Miles traveled from sunset to 2400 hours = 54.0

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	<u>0400</u>	<u>Loran</u>	<u>164°13'W</u>	<u>23°41'N</u>
2.	<u>0715</u>	<u>Loran</u>	<u>163°46'W</u>	<u>23°41'N</u>
3.	<u>1000</u>	<u>"</u>	<u>163-40 W</u>	<u>22-33 N</u>
4.	<u>1130</u>	<u>"</u>	<u>163-28 W</u>	<u>22-28 N</u>
5.	<u>1810</u>	<u>Loran</u>	<u>163°07'W</u>	<u>23°02'N</u>
6.				

*Handwritten note:* 23°41'N 163°46'W

DATE 19 June 1964

Time at sunrise = 06:20 Position at sunrise = 21°30'N 161°54'W

Time at sunset = 19:20 Position at sunset = 21°20'N 159°22'W

Miles traveled from 0000 hours to sunrise = 50.5

Miles traveled from sunrise to sunset = 113.0

Miles traveled from sunset to 2400 hours =

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0100	Lozan	161°46'W	21°49'N
2.	0530	Lozan	161°17'W	21°35'N
3.	0700	Radio Fix	160°51'W	21°38'N
4.	1300	Radio Fix	159°22'W	21°22'N
5.	1900	Lozan	159°25'W	21°18'N
6.				

DATE \_\_\_\_\_

Time at sunrise = Position at sunrise =

Time at sunset = Position at sunset =

Miles traveled from 0000 hours to sunrise =

Miles traveled from sunrise to sunset =

Miles traveled from sunset to 2400 hours =

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

June 1964

Date	Dist from Oahu		Dist from Johnston		Miles		
	1200	2400	1200	2400	S/R	S/S	S/R/S/S
5	20	93	725	652	0549	1915	55
6	241 <sup>ESW</sup>	361 <sup>ESW</sup>	507	382	0602	1927	131
7	503	606	243 <sup>ENE</sup>	139 <sup>ENE</sup>	0520	1841	117
8	721 <sup>WSW</sup>	749 <sup>WSW</sup>	7 <sup>SSE</sup>	122 <sup>SSW</sup>	0538	1848	136
9	885 SW	990 SW	212 S	298 SSW	0549	1848	127
10	912 SW	789 SW	209 SW	125 S	0559	1849	101
11	835 SW	960 SW	118 SSW	249 SSW	0548	1855	132
12	963 SW	865 SW	236 SSW	135 SW	0603	1858	118
13	832 SW	954 WSW	102 W	240 WSW	0552	1902	136
14	1030 WSW	935 WSW	295 SW	205 WSW	0604	1906	129
15	850 WSW	643 WSW	141 WNW	130 NW	0555	1901	122
16	662 W	578 W	238 N	340 NNE	0540	1857	112
17	517 WNW	437 WNW	464 NNE	484 NNE	0524	1857	108
18	329 WNW	232 W	522 NE	366 NNE	0512	1837	100
19	125 W	—	637 ENE	—	0601	1920	113

# June 1964- Progress Report- At Sea Survey

Trips  
✓ 5/21  
✓ 5/28  
✓ 6/4  
✓ 6/11  
✓ 6/18  
✓ 6/25  
✓ 7/2

## INTRODUCTION

This report is based on the results and experiences of the eleventh in a series of at-sea observations designed to investigate the flora and fauna of a particular oceanic area at regular monthly intervals. Observations cover a period from 5 June, 1964 through 19 June, 1964. The area investigated was the same as in preceding months with the exception that on the return trip (15-19 June) the ship moved directly from the grid area to French Frigate Shoals and returned to Oahu by way of the Leeward Chain of islands.

Five members of the Smithsonian Pacific Project were aboard and included: William Wirtz (biologist in charge), Douglas Whitman, Ken Amerman, Robert Standen and Paul Woodward. Kimo Douglas was aboard representing Dr. Maxwell Doty of the University of Hawaii, and was engaged in oceanographic studies.

The new ship proved to be much better than all previous ships used and the data thought to be comparable with all previous trips with the exception of April.

TABLE I

Distance and time covered by observations outside the grid

Date	Number of Hours	Number of Miles
05	5.3	55
06	13.5	131
07	13.3	117
08	13.2	136
15	9.3	83
16	13.3	129
17	13.5	108
18	13.3	100
19	13.3	113
Total	108.2	872

TABLE II

Distance and time covered by observations inside the grid

Date	Number of Hours	Number of Miles
09	13.0	127
10	12.8	101
11	13.1	132
12	12.9	118
13	13.8	136
14	13.0	129
15	4.8	39
Total	83.5	782

872  
 167

## SPECIES ACCOUNTS

### Laysan Albatross (Diomedea immutabilis)

One bird was observed near French Frigate Shoals on 17 June. No specimens were collected.

### Black-footed Albatross (Diomedea nigripes)

Four birds near Oahu on 5 June and 3 near French Frigate Shoals on 17 June indicates a general shift of this species from open ocean areas to areas closer to land. No specimens were collected.

### Wedge-tailed Shearwater (Puffinus pacificus)

A total of 366 individuals were recorded of which 170 were found between Oahu and the grid area, and only 8 within the grid area. This represents a considerable decrease in numbers, at least within the grid area, from May. This may be the result of the onset of incubation on the nesting grounds. Only two dark phase individuals were recorded, both near Oahu. Three specimens were collected.

### Christmas Island Shearwater (Puffinus nativitatus)

Three individuals were recorded, one within the grid area. No specimens were collected.

### Newell's Shearwater (Puffinus puffinus)

This species appears to be most abundant near the island of Oahu where 55 individuals were recorded. One bird was observed near Johnston Island while two were found within the grid area. Eleven were found between French Frigate Shoals and Niihau. No specimens were collected.

Gadfly Petrels (Pterodroma spp.)

The general inexperience of the observers on this trip made accurate identification of the species belonging to this group very difficult. One White-necked Petrel (Pterodroma externa) and several Bonin Island Petrels (Pterodroma hypoleuca) were identified. In general, however, the group as a whole appeared in increased numbers from April and May. Of the 101 individuals recorded during the trip 63 were within the grid area.

On 15 June one Bonin Island Petrel flew aboard ship at 0330 hours. Two Bonin Island Petrels were collected.

Bulwer's Petrel (Bulweria bulwerii)

Of the 142 birds observed most were found on the return trip down the Leeward Chain and near Oahu. None were found within the grid which completes the downward trend in numbers from the high found in April. This may be the result of the commencement of breeding activities on the islands. Two specimens were collected.

Harcourt's Storm Petrel (Oceanodroma castro)

Only three individuals were recorded representing a greatly reduced at sea population over May. None were recorded within the grid area. No specimens were collected.

Red-tailed Tropicbird (Fhaethon rubricauda)

Twenty seven birds were recorded of which 8 were within the grid area, and 7 were found between Oahu and Johnston Island. Three specimens were collected.

White-tailed Tropicbird (Phaethon lepturus)

Of the five birds recorded this month two were within the grid area. One specimen was collected.

Blue-faced Booby (Sula dactylatra)

The 9 individuals recorded on this trip were primarily found along the Leeward Chain of Islands. None were within the grid area and only one was found between Oahu and Johnston Island. This represents a continuous reduction in numbers since March. One specimen was collected.

Red-footed Booby (Sula sula)

Of the 18 individuals recorded only one was within the grid area and three were found between Oahu and Johnston Island. No specimens were collected.

Brown Booby (Sula leucogaster)

One bird near Oahu and three near French Frigate Shoals were the only individuals of this species recorded. No specimens were collected.

Great Frigatebird (Fregata minor)

A total of 18 birds were recorded between Oahu and Johnston Island and 35 along the Leeward Island Chain, but none were observed within the grid area. One specimen was collected.

Sooty Tern (Sterna fuscata)

Between Oahu and Johnston Island 1,692 individuals were observed while 361 individuals were found within the grid area. On the return trip along the Leeward Islands this species was very abundant and at times impossible to count. Red-tagged birds were again observed within the study area, but only one was within the grid area proper (see table IV). 16 specimens were collected.



TABLE III

## Locations of Observed Red Tagged Sooty Terns

Date	Time	No.	Flight	Latitude	Longitude	Mi. from Johnston
07	1713	1	S	18 06	166 26	ca. 200 NE
08	0720	1	NNW	17 00	168 40	ca. 54 NE
08	0735	1	ENE	16 59	168 41	ca. 52 NE
08	1151	1	WSW	16 38	169 29	ca. 7 S
08	1154	1	ENE	16 38	169 29	ca. 7 S
08	1157	3		16 38	169 29	Ca. 7 S
08	1300	1	NE	16 25	169 25	ca. 13 SSE
08	1547	1	ENE	16 15	169 18	ca. 37 SSE
11	0714	1	SE	15 34	169 58	ca. 75 SSW
16	0824	1	NE	20 03	169 27	ca. 200 N

Grey backed Tern (Sterna lunata)

A total of 28 individuals were observed, all along the Leeward Chain of Islands. No specimens were collected.

Common Noddy Tern (Anous stolidus)

Between Oahu and Johnston Island 145 individuals were observed while on the return trip along the Leeward Chain 108 were recorded. None were observed within the grid area. No specimens were collected.

Hawaiian Noddy Tern (Anous minutus)

Only three individuals were recorded and these were along the Leeward Chain of islands. No specimens were collected.

Blue-grey Noddy Tern (Procelsterna cerulea)

Three individuals were observed on 19 June between Kauai and Oahu. Two specimens were collected.

Fairy Tern (Gygis alba)

A total of 64 individuals were observed throughout the entire trip. Of these 4 were found between Oahu and Johnston and one was within the grid area. Greater abundance of this species was present in flocks of Sooty Terns (Sterna fuscata) than in previous months. No specimens were collected.

Pomarine Jaeger (Stercorarius pomarinus)

One individual of this species was tentatively identified on 8 June near Johnston Island. No specimens were collected.

Arctic Skua (Catharacta skua)

On 7 June a bird was sighted that was most likely of this species. The bird was well observed, but unfortunately the observers were not familiar with the species. Their description, however, was good enough to be fairly certain that this was indeed the species that they observed. No specimens were collected.

TABLE IV

## Diurnal Abundance of Species Groups Inside the Grid

<u>Group</u>	<u>Total Birds</u>	<u>Birds/square mile</u>	<u>Estimated Population</u>
Shearwater	99	0.07	3,500 ±
Boobies	1	>0.01	35 ±
Tropicbirds	10	0.01	355 ±
Frigatebirds	0	0.00	0
Terns	396	0.19	9,375 ±
Storm Petrels	1	>0.01	70 ±

501  
497  
13

TABLE V

Diurnal Density of Birds Outside the Grid

Date	No. Birds	No. Feeding Flocks	No. Species Identified
05	683	7	14
06	343	3	7
07	140	0	7
08	1513	5	10
15	57	0	5
16	300	1	6
17	1341	4	16
18	746	1	10
19	362	1	14
Total	5485	22	

TABLE VI

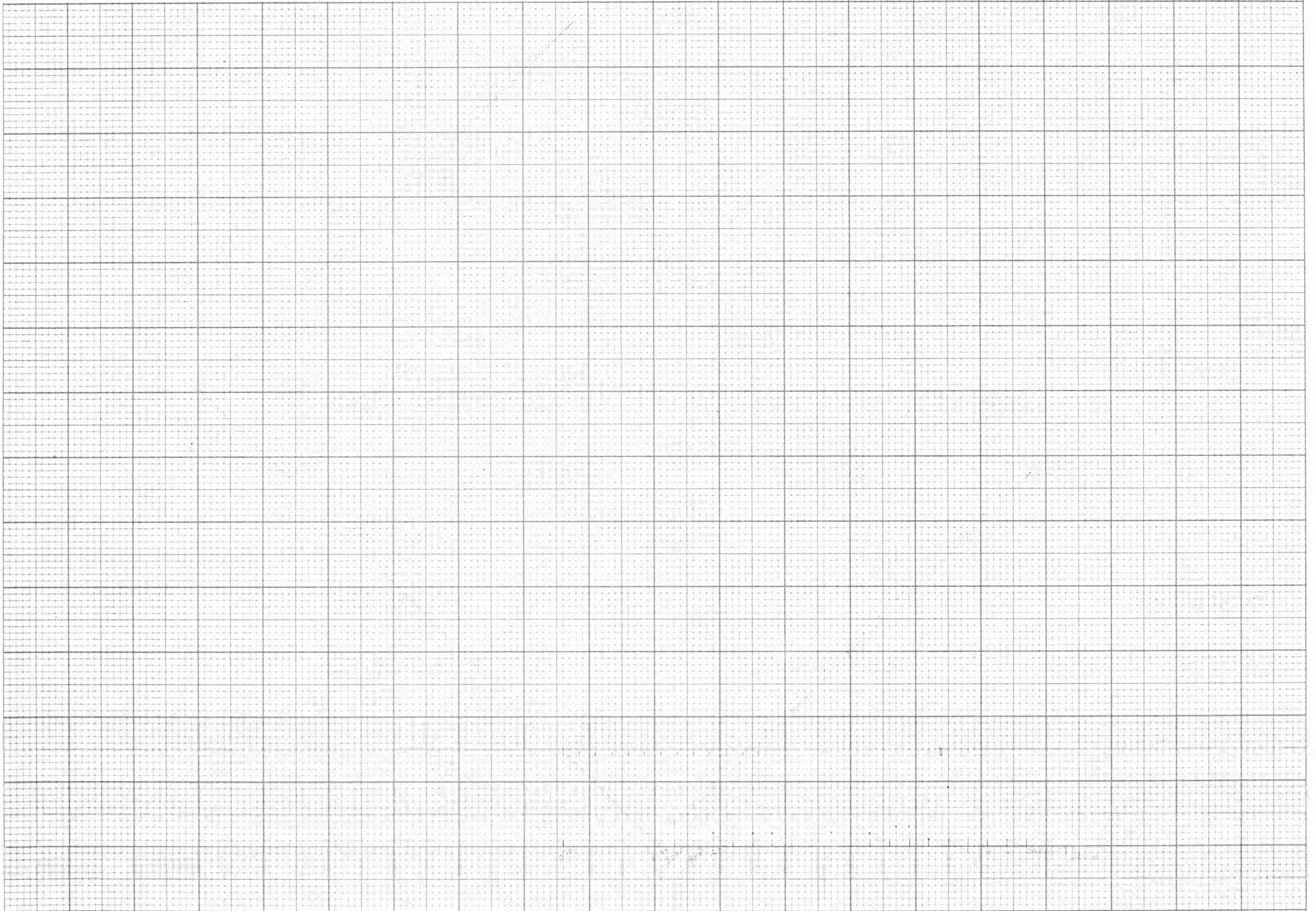
Diurnal Density of Birds Inside the Grid

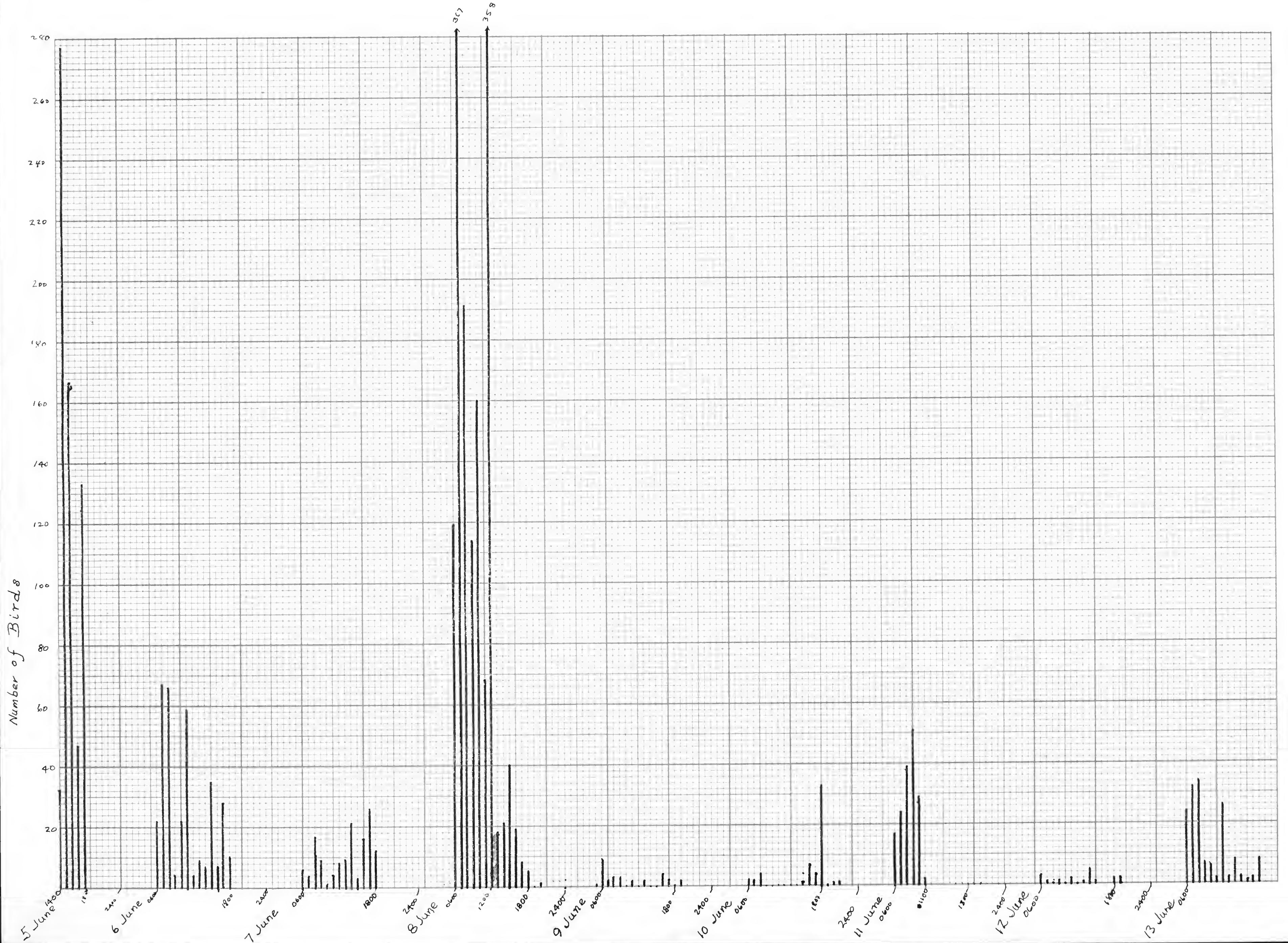
Date	No. Birds	No. Feeding Flocks	No. Species Identified
09	27	0	5
10	54	0	4
11	173	0	5
12	17	0	5
13	152	0	5
14	15	0	3
15	41	0	5
Total	479	0	

20  
2  
501

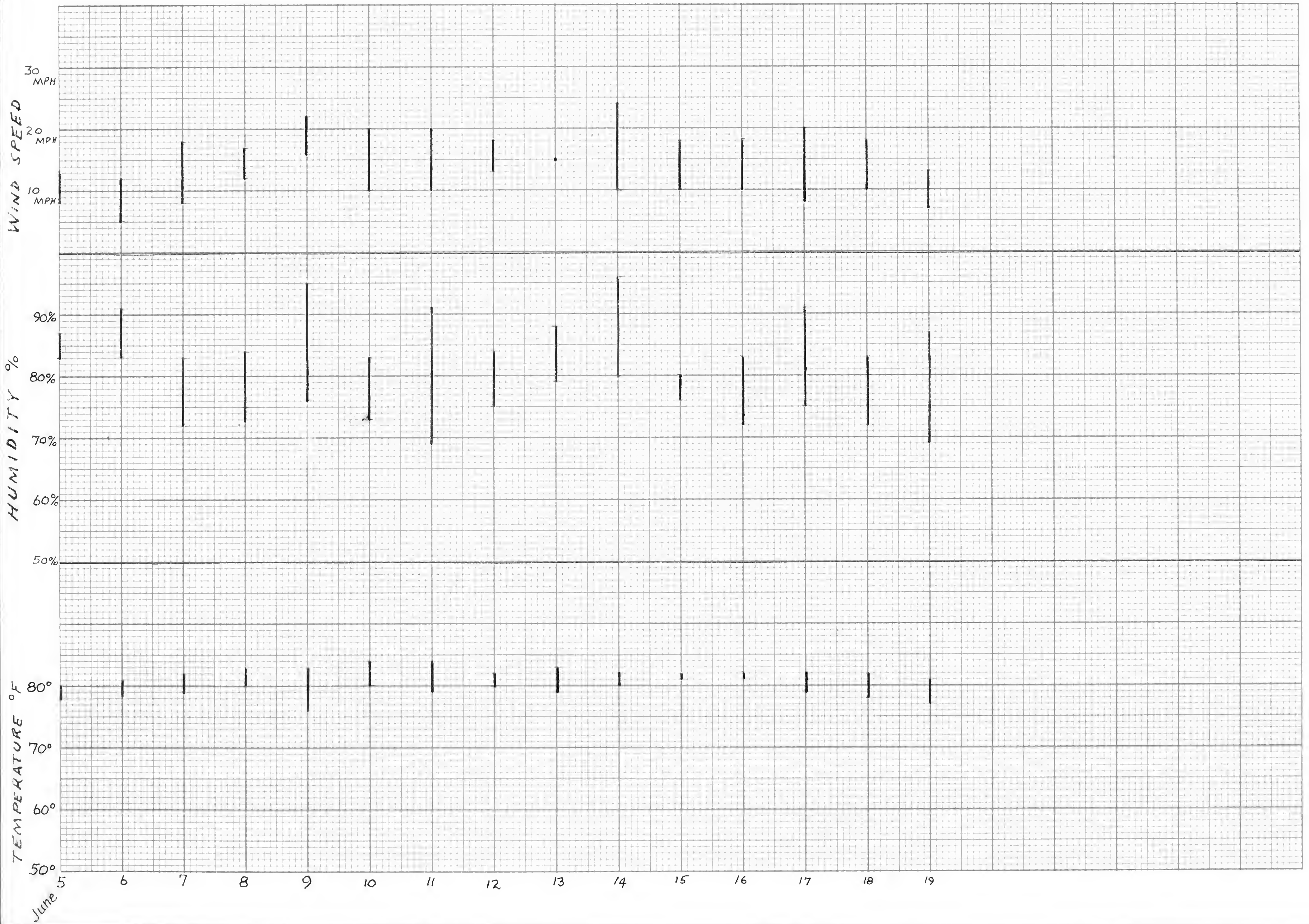
501  
211  
477

BEE 20x20 TO INCH

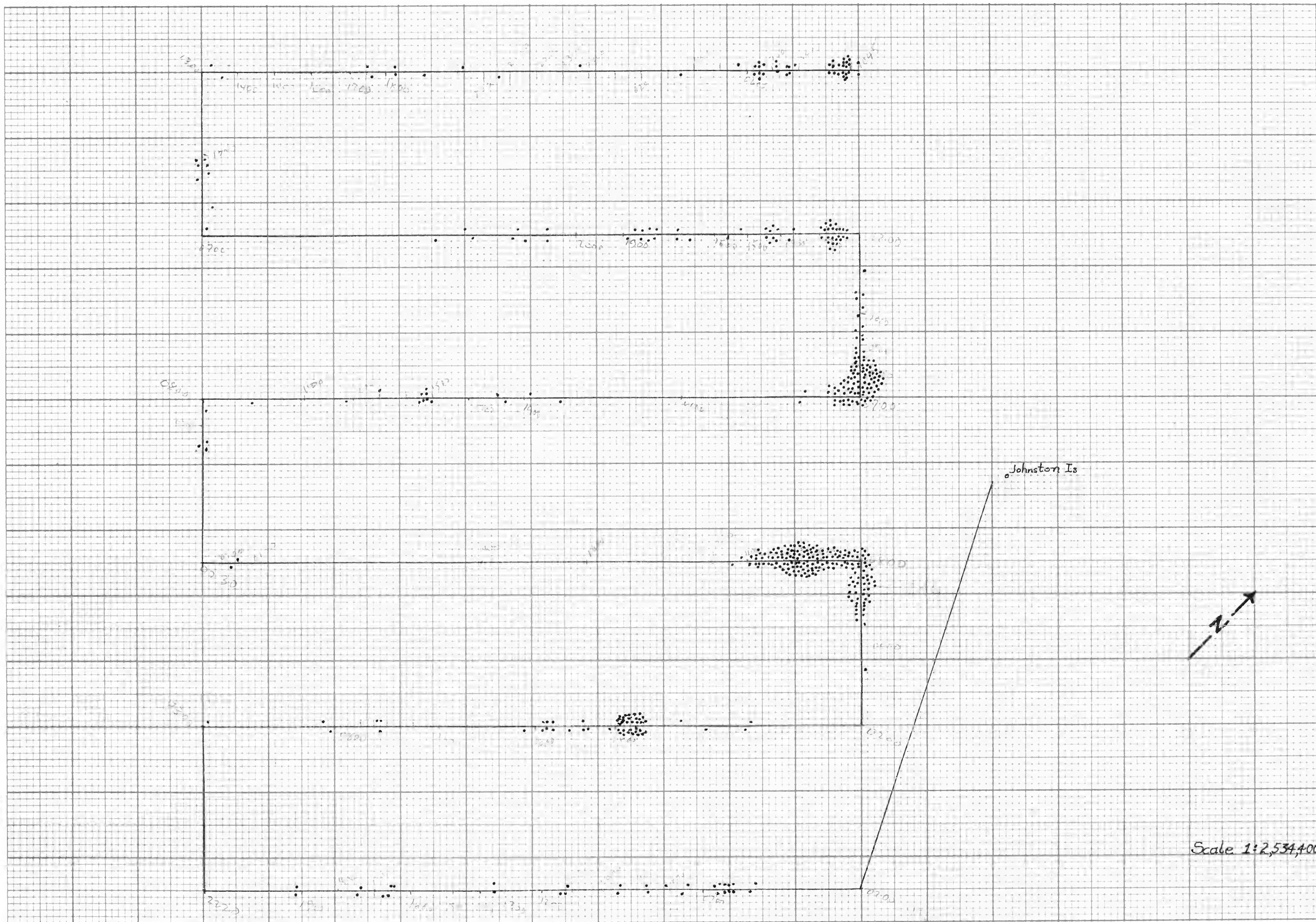




Daily Maximum and Minimum Temperature, Humidity, and Wind Speed



Dot Map of Bird Population in the grid June 1964 (each dot represents one bird).





# The Ocean

Roll on thou deep & dark blue Ocean, roll!  
 Ten thousand fleets sweep over thee in vain;  
 Man marks the earth with ruin, his control  
 stops with the shore; upon the watery plain  
 The wrecks are all thy deed, nor doth remain  
 a shadow of man's ravage, save his own  
 When, for a moment, like a drop of rain,  
 He sinks into thy depths with bubbling groan,  
 Without a grave, unknell'd uncoffin'd, and  
 unknown.

Sooty

62  
 10  
 3  
 ---  
 75

63  
 10  
 3  
 ---  
 76

37  
 0  
 3  
 4

49

4  
 356  
 102  
 212  
 505

65 1-1  
 200 208  
 Sooty 95 12  
 Reddy 1 321  
 Hawk 3  
 Tern 215  
 Gray back 1

347  
 321  
 26  
 4  
 6  
 20

G.B.-BG	Fairy	Noddy	Sisoutry	Terns 4-3.	Wedge
3	1	1	2	26-6	19-17
8	4	102	12	<del>135-19</del>	15-14
11		1	10	28-20	15-8
			36	<del>39-22</del>	2-2
			<u>63</u>	212 70	5-4
					<u>56 45</u>

4B

Fairy	Bulwer	Tropic	RT	Neuall
<del>5-4</del>	3-3	16-15		15-12
<del>3-2</del>	4-4	3-3		6-6
<del>1-1</del>	5-4	3-3		1-1
	3-3	1-1		1-1
	<u>1-1</u>			1-1
	WT 25-25		RT 2-2	<u>24 21</u>
<u>9-7</u>				

Masked	Booby	Shear Pet	Pterod
1-1	2-2	1-1	1-1
1-1	9-6	2-2	2-1
1-1	RF 3-3	7-7	<u>3 2</u>
	2-2		
	4-4		
	1-1		
	1-1		
	3-3		
	<u>9 9</u>		

5 June 64

First Day  
Sunset 1915

Total Mile 55

Group Name	Species	Number Sightings	(Total) birds per Sighting	Sightings Per mile	Birds / mile
Tropic birds	<del>RT</del> 3			$\frac{3}{55}$	
	RT 2	2	1	$\frac{2}{55}$	
	WT 1	1	1	$\frac{1}{55}$	
Frigate birds		1	1	$\frac{1}{55}$	
TERNs		509	64	$\frac{64}{55}$	$\frac{476}{55}$
Boobies		3	3	$\frac{3}{55}$	
	<del>WPKC</del>	-	-		
	RF 2	2	1	$\frac{2}{55}$	
	BFA 1	1	1	$\frac{1}{55}$	
Shearwaters-Pet.		123	5	$\frac{5}{55}$	$\frac{476}{55}$
Wedgetails		77	37	$\frac{37}{55}$	$\frac{476}{55}$
Pterodroma		2	2	$\frac{2}{55}$	
Bulwers		18	14	$\frac{14}{55}$	$\frac{476}{55}$
Newell's		22	20	$\frac{20}{55}$	$\frac{476}{55}$
Wed. She Pet		3	3	$\frac{3}{55}$	
Shore birds		0	-		
Flocks		7			
Flocks		14	-		
ALL		483			
Total birds		637	4.2	2.7	12.4

6 June '64

Sunrise 0602  
 Sun set 1927  
 No of miles 131

Group Name	Species	Number	Sightings	Birds/sighting	Bird/mile
------------	---------	--------	-----------	----------------	-----------

Tropicbird

~~RT~~ RT  
~~WT~~ WT

Frigates

Terns

Boobies

Masked →

RF

Brn

Shearwater-Petrels

WT

PL

Bul.

NWP

Shore

Flocks

Total birds

1	1	1	1		
1	1	1	1		
129	23	7	$\frac{23}{131}$	$\frac{169}{131}$	
3	3	1			
—	—	—			
3	3	1			
—	—	—			
146	99			$\frac{146}{131}$	
95	50	1.9			
—	—	—			
43	41				
9	6	1.5			
0					
4				$\frac{4}{131}$	
343	135	$\frac{135}{343}$	$\frac{135}{131}$	$\frac{343}{131}$	

3 flocks

DATE: 7 June 1964

Group Name	Species	Number	Sightings	b/s	S/mile	B/mile
Tropic birds		3	3	1	3/117	
	RT	3	3	1		
	WT	1	1	1		
Frigatebirds		1	1	1		
Terns		120	32	120/32		
Boobies		1	1	1		
	Musked	1	1	1		
	RF	1	1	1		
	Brn.	1	1	1		
Shearwater - Petrels		12	10	12/10		
Wedge tails		3	3	1		
Pterodrome		6	5	6/5		
Bulwers		1	1	1		
Shorebirds		1	1	1		
ALL Flocks		6	1			
Feeding Flocks		0				
ALL birds		138	52	140/52		

Sunrise 0520  
 Sunset 1841  
 Miles 117

2 after sunset

Date 8 June 64

Sunrise 0538

Sunset 1848

Miles 136

Group Name	Species	Number	Sightings	b/s	S/mile	b/mile
Tropic birds		1				
	RT	1				
	WT	1				
Frigates		17	5			
Terns		1472	232	$\frac{1272}{232}$	$\frac{232}{136}$	$\frac{1272}{136}$
Boobies		4	4			
	Masked	1	1			
	RF	1	1			
	Brn	1	1			
Shearwater		34	25			
Petrels						
wedge tails -		10	6			
Pterodroma -		10	7			
Bulwers -		1	1			
Shore birds		1				
All flocks						
Feeding flocks		5	5			
ALL Birds		1531	269	$\frac{1507}{269}$		

ENTER GRID AT 0200hrs

Date 9 June '64

Sunrise 0549

Sunset 1808

miles 127

Group Name

Species

Number

Sightings  
b/s

S/mile

b/mile

Tropicbirds

RT

WT

Frigates

terns

Boobies

Masked

RF

Bra

Shearwater  
Petrels

Wedgetails

Pterodroma

Bulwers

Shorebirds

Feeding flocks

Flocks

Total birds

Species	Number	Sightings b/s	S/mile	b/mile
Tropicbirds	1	1		
RT	1	1		
WT	1	1		
Frigates	1			
terns	3	2		
Boobies	1			
Masked	1			
RF	1			
Bra	1			
Shearwater Petrels	19	15		
Wedgetails	3	2		
Pterodroma	12	9		
Bulwers	1	1		
Shorebirds	1			
Feeding flocks	1			
Flocks	1			
Total birds	27	21		

Date 10 June '64

Sunrise 0559

Sunset 1849

miles 101.0

Group Name	Species	Number	Sightings	b/s	S/mile	B/mile
Tropic birds		2	2	1		
	RT	1	1			
	WT	—	—			
Frigates		—	—			
Terns		32	5			
Boobies		—	—			
	Masked					
	RF					
	Bm					
Shearwater		19	16			
Petrels		—	—			
wedgetail		1	1			
Pterodroma		14	11			
Bulwers		—	—			
shorebird		—	—			
Feeding Flocks		—	—			
Flocks		—	—			
Total birds		54	23	$\frac{54}{23}$	$\frac{23}{101}$	$\frac{54}{101}$



21 June '64

0548  
 1126  
 59

Group Name	Species	Number	sightings		S/mile	B/mile
				b/s		
Tropicbirds		1	1	1		
	RT	—	—	—		
	WT	1	1	1		
Frigates						
Terns		147	48	147/48		
Boobies						
	Musked					
	RF					
	Brn					
Shearwater Pet.		26	25	26/25		
Wedgetail		1	1	1		
Pterodroma		19	18	19/18		
Manx Shearwater		2	2	1		
ALL FLOCKS		—	—	—		
ALL Birds		173	72	173/72		

ALL RECORDS LOST  
 AFTER 1126 hr.  
 Above is figured for  
 miles traveled at that  
 time.

Date 12 June '64

Sunrise 0603

Sunset 1855

miles 118.0

Group Name	Species	Number	Sightings	b/s	s/mile	b/mile
Tropic birds		1	1	1		
RT		1	1	1		
WT		1	1	1		
Frigates		—	—	—		
Terns		3	2	1.5		
Boobies		—	—	—		
Mashed		—	—	—		
RF		—	—	—		
Born		—	—	—		
Shearwater - Petrels		13	13	1		
Wedgetail		1	1	1		
Pterodroma		10	10	1		
Christmas Is.		1	1	1		
Flocks.		—	—	—		
Total birds		17	16			

Date 13 June '64

Sunrise 552

Sunset 1902

miles 136

Group Name	Species	Number	Sightings		5/mile	6/mile
				b/s		
Tropic birds		4	4	1		
RT		4	4	1		
WT		—	—	—		
Frigates		—	—	—		
Terns		140	69	<del>140</del> 69		
Boobies		1	1	1		
Masked		—	—	—		
RF		1	1	1		
Bm		—	—	—		
Shearwater - Petrels		7	7	1		
Wedgetails		1	1	1		
Pterodroma		6	6	1		
Flocks		—	—	—		
all birds		152	82	<del>152</del> 82		

Date 14 June '69

Sunrise 0604

Sunset 1906  
miles 129.0

Group Name	Species	Number	Sightings	b/s	S/mile	Bird/mile
Tropicbirds		1	1	1		
RT		1	1	1		
WT		1	1	1		
Frigates		1	1	1		
Terns		2	2	1		
Boobies		1	1	1		
Masked		1	1	1		
RT		1	1	1		
Brn		1	1	1		
Shearwater - Petrels		11	10	11		
Wedgetails		1	1	1		
Pterodroma		10	9	10/9		
all flocks		0	0	0	0	0
all birds		15	14	15/14		

PN GRID UNTIL 1045hrs.

Date 15 June '64

Sunrise 0555

1901

Sunset miles 1770

↑ 39 in GRID

Group Name	Species	Number	Sightings	b/sightings	s/mile	Birds/mile
Tropicbird		3	3	1		
	OT	3	3	1		
	WT	-	-	-		
Frigates		-	-	-		
TERNs		69	36			
Boobies		-	-	-		
	Masked					
	RF					
	Bm.					
Shearwater		25	24			
Petrels						
Wedgetail		1	1	1		
Pterodroma		15	14			
Flocks		-	-			
All birds		98	64			

Date 16 June '64

Sunrise 0540

Sunset 1857

miles 129.0

Species Group	Species	Number	Sightings	b/s	S/mile	b/mile
Tropicbirds		1	1	1		
	RT	1	1	1		
	WT	—	—	—		
Frigates		2	2	1		
Terns		251	45	251/45		
Boobies						
	Mashed					
	RF					
	Bm					
Shearwater		44	28	44/28		
Petrels						
wedgetail		29	14	29/14		
Pterodrom		13	12	13/12		
terns						
Bulwers						
Flocks (all)		3	3			
Feeding Flocks		1	1			
all birds		300	76			

Date 17 June '64

Stress 0524

Sunset 1851

miles 108.0

Group Name	Species	Number	Sightings		B/mile	B/mile
			b	s		
Tropicbirds		4	4	1		
	RT	4	4	1		
	WT	—	—	—		
Frigates		15	7	<del>15</del> 7		
Terns		1232	201			
Boobies		24	12			
	Maska	5				
	RE	14				
	Ban	3				
Shear Pet.		63	52			
Wedgetail		36	27			
Pterodrom		2	2	1		
Bulwer		18	16			
Flocks (all)		4				
Feeding Flocks		4				
all birds		1341	280			

Date 18 June

Sunrise 0512

Sunset 1837

mile 100

Group Name	Species	number	sightings	b/s	S/mile	Birds/mile
Tropic birds		3	3	1		
RT		3	3	1		
WT		—	—	—		
Frigates		9	8	9/8		
Terns		595	98	$\frac{595}{98}$	$\frac{98}{100}$	$\frac{595}{100}$
Boobies		2	2	1		
Mackerel		—	—	—		
RF		2	2	1		
Brn		—	—	—		
Shearwater		134	89			
Petrel						
wedgetail		67	30			
Pterodroma		1	1	1		
Newell's		11	10			
Bulwers		48	42			
all flocks		5				
Feeding flocks		1				
Total Birds		746	182			



Date 19 June '64

Sunrise 0601

Sunset 1920

miles 113.0

Group Name	Species	Number	Lighting b/s	S/mile	Birds/mile
Tropicbirds		5	5	1	
	RT	2	2	1	
	WT	2	2	1	
Frigates		9	7		
Terns		212	70		
Boobies		21	18		
	Masked	3	3		
	RF	9	9		
	Brn	-	-		
Shearwater Petrels		109	93		
Wedgetail		56	45		
Pterodroma		3	2		
Newells		24	21		
Bulwers		16	15		
All Flocks		1			
Feeding Flocks		1			
Total Birds		362	189		

Location *Pacific O. 1st day from Oahu*  
 Observer \_\_\_\_\_ Date *5 June* Time \_\_\_\_\_ to \_\_\_\_\_  
 Weather *Scattered clouds calm seas no wind & very warm*

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross	<del>84</del>							
Wedge-tailed Shearwater		61						2 dark phase
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel		16						
Sooty Petrel								
Red-tailed Tropicbird	2							
White-tailed Tropicbird	1							
Masked Booby								
Brown Booby	1							
Red-footed Booby	2							
Great Frigatebird	1							
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern			192					
Gray-backed Tern								
Brown-winged Tern								
Common Noddy			145					
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern	1							
Newell's Shear.		22						
Pterodroma	2							
Skuu (?)	1							Total birds seen
								683
								flocks <del>14</del> - (7 feeding)



Location At sea 3rd day out of Oahu to Johnston Id.  
 Observer Wirtz, Whitman Amerman, Woodward Date 7 June 1964 Time 0520 to 1841  
 Weather Partly cloudy SE winds <sup>standen</sup> 117 miles

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross	.							
Black-footed Albatross								
Wedge-tailed Shearwater	4							
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel	1							
Phoenix I. Petrel	.							
Bulwer's Petrel	1							collected 1 # 0688
Sooty Petrel								
Red-tailed Tropicbird	3							
White-tailed Tropicbird								
Masked Booby								
Brown Booby								
Red-footed Booby								
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern *		115						collected 6 # 0687, 0689, 0690 0691, 0699, 0700
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
Pterodroma	5							
SKUA(?)	1							
* ORANGE								Total birds 140 Numerous small flock none feeding ORANGE Leg ribbon see on tern at 1713

~~200~~

Location Pacific Ocean South of Johnston Island. Port John Is 11:30  
 Observer \_\_\_\_\_ Date 8 June 1964 Time 0538 to 1848  
 Weather Early morning rain & windy rest of the day - partly cloudy

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater		10						
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird	1							
White-tailed Tropicbird								
Masked Booby	1							collected # 0693
Brown Booby								
Red-footed Booby								
Great Frigatebird	17							
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern			129					collected 1 # 0692
Gray-backed Tern								
Brown-winged Tern								
Common Noddy	10							
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern	3							
Jaeger	1							
manx Shear.	1							
Harcourts	1							

Total birds seen 1531  
 Feeding flocks 5  
 Passed Johnston Is about noon  
 ORANGE TAG SEEN 1547  
 1300, 1151, 1154, (1157), 0720  
 0735  
Swath Tags









Location *Pacific Ocean*

Observer *Witz, Whelan, Gummerman,*

Date *12 June 1964* Time *0603 to 1858*

Weather *windward + cloudy*

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross	1							
Wedge-tailed Shearwater	1							
Christmas I. Shearwater	1							
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird								
White-tailed Tropicbird	1							collected #0696
Masked Booby								
Brown Booby								
Red-footed Booby								
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern	3							
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
<i>Pterodroma</i>	10							

*Total birds 17  
no flocks.*







Location North of Johnston Is At Sea

Observer ~~Wintz~~ W. W. Wintz ~~W. W. Wintz~~ ~~W. W. Wintz~~ Date 16 June 1964 Time 0540 to 1857

Weather Clear or partly cloudy 129 miles

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater		29						
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird	1							
White-tailed Tropicbird								
Masked Booby								
Brown Booby								
Red-footed Booby								
Great Frigatebird	2							
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern	<del>2</del> 38							3 collected # 0803, 0804, 0805
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern	2							
<i>Pterodroma</i>	13							
								Total birds seen
								300
								Flocks 3 - 1 feeding
								0824-orange tag ON SOOTY TERN

Location La Paruse French Frigate 50-15 mile offshore  
 Observer \_\_\_\_\_ Date 17 June 1964 Time 0546 to 1857  
 Weather clear

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross	1							15 40 hr.
Black-footed Albatross	3							
Wedge-tailed Shearwater	36							1 collected # 0807
Christmas I. Shearwater	1							
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel	18							
Sooty Petrel								
Red-tailed Tropicbird	4							1 collected # 0806
White-tailed Tropicbird								
Masked Booby	5							
Brown Booby	3							
Red-footed Booby		14						
Great Frigatebird	15							1 collected ♀ # 0811
Golden Plover								
Ruddy Turnstone								
Wandering Tattler	12							
Sanderling								
Bristle-thighed Curlew								
Sooty Tern			1180					3 collected # 0808, 0809, 0810
Gray-backed Tern	3							
Brown-winged Tern								
Common Noddy	4							
Hawaiian Noddy	3							
Blue-gray Noddy	<del>3</del>							<del>1 collected</del>
Fairy Tern		38						
<i>Pterodroma</i>	2							
								Total birds 1341
								4 feeding flocks







June 1964- Progress Report - At Sea <sup>Ely</sup> ~~Survey~~

#### INTRODUCTION

This report is based on the results and experiences of the eleventh in a series of at-sea observations designed to investigate the flora and fauna of a particular oceanic area at regular monthly intervals. Observations cover a period from 5 June, 1964 through 19 June, 1964. The area investigated was the same as in preceding months with the exception that on the return trip (15-19 June) the ship moved directly from the grid area to French Frigate Shoals and returned to Oahu by way of the Leeward Chain of islands.

Five members of the Smithsonian Pacific Project were aboard and included: William Wirtz (biologist in charge), Douglas Whitman, Ken Amerman, Robert Standen and Paul Woodward. Kimo Douglas was aboard representing Dr. Maxwell Doty of the University of Hawaii, and was engaged in oceanographic studies.

The new ship proved to be much better than all previous ships used and the data thought to be comparable with all previous trips with the exception of April.

TABLE I

Distance and time covered by observations outside the grid

Date	Number of Hours	Number of Miles
05	5.3	55
06	13.5	131
07	13.3	117
08	13.2	136
15	9.3	83
16	13.3	129
17	13.5	108
18	13.3	100
19	13.3	113
Total	108.2	872

TABLE II

Distance and time covered by observations inside the grid

Date	Number of Hours	Number of Miles
09	13.0	127
10	12.8	101
11	13.1	132
12	12.9	118
13	13.8	136
14	13.0	129
15	4.8	39
Total	83.5	782

## SPECIES ACCOUNTS

### Laysan Albatross (Diomedea immutabilis)

One bird was observed near French Frigate Shoals on 17 June. No specimens were collected.

### Black-footed Albatross (Diomedea nigripes)

Four birds near Oahu on 5 June and 3 near French Frigate Shoals on 17 June indicates a general shift of this species from open ocean areas to areas closer to land. No specimens were collected.

### Wedge-tailed Shearwater (Puffinus pacificus)

A total of 366 individuals were recorded of which 170 were found between Oahu and the grid area, and only 8 within the grid area. This represents a considerable decrease in numbers, at least within the grid area, from May. This may be the result of the onset of incubation on the nesting grounds. Only two dark phase individuals were recorded, both near Oahu. Three specimens were collected.

### Christmas Island Shearwater (Puffinus nativitatus)

Three individuals were recorded, one within the grid area. No specimens were collected.

### Newell's Shearwater (Puffinus puffinus)

This species appears to be most abundant near the island of Oahu where 55 individuals were recorded. One bird was observed near Johnston Island while two were found within the grid area. Eleven were found between French Frigate Shoals and Niihau. No specimens were collected.

Gadfly Petrels (Pterodroma spp.)

The general inexperience of the observers on this trip made accurate identification of the species belonging to this group very difficult. One White-necked Petrel (Pterodroma externa) and several Bonin Island Petrels (Pterodroma hypoleuca) were identified. In general, however, the group as a whole appeared in increased numbers from April and May. Of the 101 individuals recorded during the trip 63 were within the grid area.

On 15 June one Bonin Island Petrel flew aboard ship at 0330 hours. Two Bonin Island Petrels were collected.

Bulwer's Petrel (Bulweria bulwerii)

Of the 142 birds observed most were found on the return trip down the Leeward Chain and near Oahu. None were found within the grid which completes the downward trend in numbers from the high found in April. This may be the result of the commencement of breeding activities on the islands. Two specimens were collected.

Harcourt's Storm Petrel (Oceanodroma castro)

Only three individuals were recorded representing a greatly reduced at sea population over May. None were recorded within the grid area. No specimens were collected.

Red-tailed Tropicbird (Fhaethon rubricauda)

Twenty seven birds were recorded of which 8 were within the grid area, and 7 were found between Oahu and Johnston Island. Three specimens were collected.

White-tailed Tropicbird (Phaethon lepturus)

Of the five birds recorded this month two were within the grid area. One specimen was collected.

Blue-faced Booby (Sula dactylatra)

The 9 individuals recorded on this trip were primarily found along the Leeward Chain of Islands. None were within the grid area and only one was found between Oahu and Johnston Island. This represents a continuous reduction in numbers since March. One specimen was collected.

Red-footed Booby (Sula sula)

Of the 18 individuals recorded only one was within the grid area and three were found between Oahu and Johnston Island. No specimens were collected.

Brown Booby (Sula leucogaster)

One bird near Oahu and three near French Frigate Shoals were the only individuals of this species recorded. No specimens were collected.

Great Frigatebird (Fregata minor)

A total of 18 birds were recorded between Oahu and Johnston Island and 35 along the Leeward Island Chain, but none were observed within the grid area. One specimen was collected.

Sooty Tern (Sterna fuscata)

Between Oahu and Johnston Island 1,692 individuals were observed while 361 individuals were found within the grid area. On the return trip along the Leeward Islands this species was very abundant and at times impossible to count. Red-tagged birds were again observed within the study area, but only one was within the grid area proper (see table IV). 16 specimens were collected.

TABLE III

## Locations of Observed Red Tagged Sooty Terns

Date	Time	No.	Flight	Latitude	Longitude	Mi. from Johnston
07	1713	1	S	18 06	166 26	ca. 200 NE
08	0720	1	NNW	17 00	168 40	ca. 54 NE
08	0735	1	ENE	16 59	168 41	ca. 52 NE
08	1151	1	WSW	16 38	169 29	ca. 7 S
08	1154	1	ENE	16 38	169 29	ca. 7 S
08	1157	3		16 38	169 29	Ca. 7 S
08	1300	1	NE	16 25	169 25	ca. 13 SSE
08	1547	1	ENE	16 15	169 18	ca. 37 SSE
11	0714	1	SE	15 34	169 58	ca. 75 SSW
16	0824	1	NE	20 03	169 27	ca. 200 N

Grey backed Tern (Sterna lunata)

A total of 28 individuals were observed, all along the Leeward Chain of Islands. No specimens were collected.

Common Noddy Tern (Anous stolidus)

Between Oahu and Johnston Island 145 individuals were observed while on the return trip along the Leeward Chain 108 were recorded. None were observed within the grid area. No specimens were collected.

Hawaiian Noddy Tern (Anous minutus)

Only three individuals were recorded and these were along the Leeward Chain of islands. No specimens were collected.

Blue-grey Noddy Tern (Procelsterna cerulea)

Three individuals were observed on 19 June between Kauai and Oahu. Two specimens were collected.

Fairy Tern (Gygis alba)

A total of 64 individuals were observed throughout the entire trip. Of these 4 were found between Oahu and Johnston and one was within the grid area. Greater abundance of this species was present in flocks of Sooty Terns (Sterna fuscata) than in previous months. No specimens were collected.

Pomarine Jaeger (Stercorarius pomarinus)

One individual of this species was tentatively identified on 8 June near Johnston Island. No specimens were collected.

Arctic Skua (Catharacta skua)

On 7 June a bird was sighted that was most likely of this species. The bird was well observed, but unfortunately the observers were not familiar with the species. Their description, however, was good enough to be fairly certain that this was indeed the species that they observed. No specimens were collected.

TABLE IV

## Diurnal Abundance of Species Groups Inside the Grid

<u>Group</u>	<u>Total Birds</u>	<u>Birds/square mile</u>	<u>Estimated Population</u>
Shearwater	99	0.07	3,500 ±
Boobies	1	>0.01	35 ±
Tropicbirds	10	0.01	355 ±
Frigatebirds	0	0.00	0
Terns	396	0.19	9,375 ±
Storm Petrels	1	>0.01	70 ±



TABLE V

## Diurnal Density of Birds Outside the Grid

Date	No. Birds	No. Feeding Flocks	No. Species Identified
05	683	7	14
06	343	3	7
07	140	0	7
08	1513	5	10
15	57	0	5
16	300	1	6
17	1341	4	16
18	746	1	10
19	362	1	14
Total	5485	22	

TABLE VI

## Diurnal Density of Birds Inside the Grid

Date	No. Birds	No. Feeding Flocks	No. Species Identified
09	27	0	5
10	54	0	4
11	173	0	5
12	17	0	5
13	152	0	5
14	15	0	3
15	41	0	5
Total	479	0	

DATE 12-5-63

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	21-08'N	159-24'W	30.02	PT. CLOUDY	25	30.02	80	74	83	3	2	170/5/2	77	13 KTS	090	247° 10 KTS
1700	21-08'N	159-24'W	30.02	PT. CLOUDY	25	30.02	80	74	83	2	1	170/5/2	77	8	090	247° 10 KTS
1800	21-08'N	159-24'W	30.02	PT. CLOUDY	25	30.02	80	74	83	2	1	170/5/2	77	8	090	247° 10 KTS
1900	21-08'N	159-24'W	30.02	PT. CLOUDY	25	30.02	80	74	83	2	1	170/5/2	77	8	090	247° 10 KTS
2000	21-08'N	159-24'W	30.02	PT. CLOUDY	25	30.02	80	74	83	2	1	170/5/2	77	8	090	247° 10 KTS
2100	20-54'N	159-06'W	30.04	PT. CLOUDY	20	30.04	78	72	83	3	-	080/5/3	79	10	100	245° 10 KT
2200	20-51'N	159-15'W	30.04	PT. CLOUDY	20	30.04	78	72	83	2	-	090/5/3	79	8	090	245° 10 KT
2300	20-48'N	159-25'W	30.06	PT. CLOUDY	20	30.06	78	72	83	2	-	090/5/2	79	8	090	245° 10 KT
2400	20-44'N	159-35'W	30.08	PT. CLOUDY	20	30.08	78	72	83	2	-	090/5/2	79	8	090	245° 10 KT

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 6 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	20°37'N	159°49'W	Scattered Cls	20	30.05	78	72	83	1	0	060/12	78	5	060	242 / 10 km
0200	20°31'N	159°58'W	PLy Cls	20	30.05	78	72	83	5	2	060/12	78	5	080	242 / 10 km
0300	20°28'N	160°08'W	Scattered Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0400	20°28'N	160°18'W	PLy Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0500	20°28'N	160°28'W	PLy Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0600	20°28'N	160°38'W	PLy Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0700	20°28'N	160°48'W	PLy Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0800	20°28'N	160°58'W	PLy Cls	20	30.04	78	72	83	2	0	080/12	78	8	080	245 / 10 km
0900	20°06'N	161°07'W	SQUALLY	10	3009	78	75	91	10	10	090/4/2	78	12	080	245 / 10 KTS.
1000	20-00 N	161-17 W	PARTY CLD	20	3009	79	73	91	3	0	090/4/3	78	10	090	245 / 10 KTS
1100	19-56 N	161-27 W	CLOUDY	20	3008	81	74	83	6	5	090/4/3	78	12	090	245 / 11 KTS.
1200	19-52 N	161-38 W	CLOUDY	20	3008	81	74	83	6	2	090/4/3	78	12	090	245 - 11 KTS
1300	19°48'N	161°47'W	Mostly Cls	20	30.06	80	74	83	1	5	120/4/3	78	12	110	245 / 11 km
1400	19°42'N	161-56 W	Mostly Cls	20	30.04	80	74	83	8	5	110/4/3	78	12	110	245 / 11 km
1500	19-37 N	162-07 W	" "	20	30.04	80	74	83	6	3	110/4/3	80	10	110	245 / 11 km
1600	19-32 N	162-18 W	" "	20	30.04	80	74	83	4	3	110/4/3	80	8	100	247 / 11 km
1700	19-30 N	162-27 W	PLY CLD	20	30.01	79	75	87	5	2	130/4/4	80	11	115	247 / 11 KTS.
1800	19°24'N	162°37'W	" "	20	30.01	79	75	87	5	5	130/4/4	80	12	115	247 / VAR
1900	19°24'N	162°37'W	" "	15	30.02	79	75	87	5	5	130/4/4	80	10	115	247 / 11 KTS
2000	19°21'N	162°51'W	CLD	15	30.02	79	73	83	8	8	130/4/4	80	11	115	247 / 11 KTS
2100	19°17'N	163°01'W	PLY CLD	15	30.04	79	73	83	4	0	130/4/3	80	10	120	247 / 11 KTS
2200	19 13 N	163-12 W	Few Cloud	15	30.04	79	73	83	3	0	130/4/3	80	10	130	247 / 11 KTS
2300	19°09'N	163-24 W	Few Cloud	15	30.08	79	73	83	3	0	130/4/3	80	10	130	247 / 11 KTS
2400	19 03 N	163-38 W	Few Cloud	15	30.08	79	73	83	3	0	130/4/3	80	10	130	247 - 11 KTS

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 7 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID%	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	19° 02' N	163° 45' W	Scattered Cls	20	30.06	79	74	83	1	0	Calm	80	110		247 11 kts
0200	18° 58' N	163° 53' W	" "	20	30.04	79	74	83	1	0	Calm	80	110		247 11 kts
0300	18° 55' N	164° 04' W	Clear	20	30.03	79	74	83	0	0	Calm	80	110		247 11 kts
0400	18° 57' N	164° 15' W	Clear	20	30.03	79	74	83	0	0	Calm	80	110		247 11 kts
0500	18° 42' N	164° 34' W	Clear	20	30.04	79	72	79	1	0	115/6/4	80	12	090	277 11 kts
0600	18° 39' N	164° 49' W	Clear	20	30.04	79	72	79	1	0	115/6/4	80	12	090	277 11 kts
0700	18° 38' N	164° 55' W	Few clouds	20	30.04	80	73	79	2	0	115/6/4	80	12	115	277 11 kts
0800	18° 34' N	165° 06' W	Scattered Cls	20	30.05	81	74	79	2	0	115/6/3	80	12	115	245 11 kts
0900	18° 29' N	165° 16' W	Few Cls	20	30.05	81	74	79	2	0	140/6/5	80	16	140	245 11 kts
1000	18° 24' N	165° 27' W	Few Cls	20	30.05	81	74	79	2	0	140/6/5	80	18	140	245 11 kts
1100	18° 20' N	165° 38' W	Few Cls	20	30.06	81	71	72	2	0	140-6-5	80	18	140	245 11 kts
1200	18° 15' N	165° 48' W	Few Cls	20	30.06	81	71	72	2	0	140-6-5	80	18	140	245 11 kts
1300	18° 17' N	165° 55' W	Scattered Cls	20	30.04	82	72	72	1	0	130/6/5	80	13	120	245 11 kts
1400	18° 15' N	166° 08' W	" "	20	30.03	82	72	72	3	0	130/6/5	80	12	110	245 11 kts
1500	18° 10' N	166° 18' W	Partly Cls	20	30.03	82	72	72	4	1	130/6/5	80	12	100	245 11 kts
1600	18° 09' N	166° 20' W	Partly Cls	20	30.03	81	74	75	6	1	130/6/5	80	12	100	245 11 kts
1700	18° 06' N	166° 26' W	" "	20	30.03	81	74	75	7	1	130/6/5	80	12	100	245 11 kts
1800	18° 03' N	166° 33' W	" "	20	30.04	81	74	75	7	2	130/6/5	80	12	100	245 11 kts
1900	18° 00' N	166° 39' W	" "	20	30.04	81	74	75	7	4	130/6/5	80	12	100	245 11 kts
2000	17° 56' N	166° 48' W	" "	20	30.04	80	72	75	7	5	130/6/5	80	8	100	241 11 kts
2100	17° 51' N	166° 58' W	Few Cls	20	30.05	80	72	75	4	—	130-6-5	80	8	120	241 11 kts
2200	17° 46' N	167° 06' W	Few Cls	20	30.05	80	72	75	4	—	130-6-5	80	8	130	241 11 kts
2300	17° 41' N	167° 16' W	Few Cls	20	30.04	79	72	79	2	—	130-6-5	80	10	130	241 11 kts
2400	17° 36' N	167° 27' W	Few Cls	20	30.04	79	72	79	2	—	130-6-5	80	10	130	241 11 kts

REMARKS:

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

SI-MNH-955  
12-5-63

2  
3520  
1641  
117 miles  
58  
0538

DATE 8 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	17° 30' N	167° 36' W	Pth. Cls	20	30.03	80	72	75	8	4	120/4/5	80	16	100	241 11kn
0200	17° 25' N	167° 45' W	Pth. Cls	20	30.01	80	72	75	3	1	120/4/5	80	16	100	241 11kn
0300	17° 20' N	167° 54' W	Pth. Cls	20	30.05	80	72	75	2	0	120/4/5	80	16	100	244 11kn
0400	17° 16' N	168° 04' W	Pth. Cls	20	30.20	80	72	75	4	1	120/4/5	80	16	090	244 11kn
0500	17-15N	168-13W	" "	20	30.26	80	72	75	6	6	120/4/5	80	16	090	244/11KTS
0600	17-08N	168-22W	" "	20	30.66	80	72	75	6	6	120/4/5	80	16	090	244/11KTS
0700	17-02N	168-30W	2-04	20	30.64	81	74	84	7	6	120/6/6	80	15	090	244/11KTS
0800	16-57N	168-43W	"	20	30.05	81	74	84	7	6	120/6/6	80	15	090	244/11KTS
0900	16-53N	168-57W	Clas	20	30.06	83	73	76	5	5	120-6-6	80	12	090	242-11KTS
1000	16-49N	169-05W	Part clw	20	30.06	82	73	76	5	5	120-6-6	80	15	090	240-10 KTS
1100	16-47N	169-11W	Cloudy	20	30.06	83	73	76	7	5	120-6-6	80	15	090	238-10 KTS
1200	16-42N	169-20W	Cloudy	20	30.06	83	73	76	7	5	120-6-6	80	15	090	238-10 KTS
1300	16-36N	169-27W	Sat. clds	20	30.53	81	72	76	3	0	090-6-6	80	16	075	161-12kn
1400	16-26N	169-29W	Sat. clds	20	30.51	81	72	76	3	0	090-6-6	80	16	070	166-12kn
1500	16° 16' N	169° 22' W	Sat. clds	20	29.98	81	72	76	4	0	090-6-6	80	17	070	161-10kn
1600	16° 06' N	169° 20' W	Sat. clds	20	29.97	81	72	76	3	0	090-6-6	81	17	070	161-10kn
1700	15° 56' N	169° 16' W	" "	20	29.98	81	74	75	4	1	100/5/7	81	16	055	159-10KTS
1800	15° 45' N	169° 12' W	" "	20	29.99	81	74	75	4	1	100/5/7	81	16	055	159-10KTS
1900	15-38N	169-10W	" "	20	30.00	80	73	79	6	2	100/5/7	81	16	055	159-10KTS
2000	15-31N	169-08W	" "	20	30.01	80	73	79	6	2	100/5/7	81	16	055	159-10KTS
2100	15-21N	169-05W	Few Clouds	20	30.01	80	73	79	5	2	100-5-7	81	15	060	159-10KTS
2200	15-11N	169-02W	Few Clouds	20	30.03	80	73	79	3	2	100-5-8	81	15	060	159-10KTS
2300	15-01N	168-57W	CLEAR	20	30.03	80	73	79	3	2	100-5-8	81	15	060	159-10KTS
2400	14-50N	168-55W	CLEAR	20	30.03	80	73	79	0	0	100-5-8	81	15	060	159-10KTS

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 9 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	14°40'N	165°58'W	Clear	20	29.98	80	74	83	0	0	0 80/6	81	18	045	161 10kts
0200	14°30'N	165°53'W	Few cl/A	19	29.94	80	74	83	2	1	0 80/6	81	18	050	161 10kts
0300	14°21'N	165°58'W	Passing sq	17	29.74	80	74	83	1	0	0 80/6	81	16	060	223 10kts
0400	14°14'N	169°06'W	" "	20	29.83	80	74	83	1	0	0 80/6	81	16	060	223 10kts
0500	13°51'N	169°15'W	RAIN	02	29.95	76	75	95	10	10	0 90/5/6	81	16	020	225 - 10KTS
0600	14°04'N	169°21'W	Cloudy	15	29.95	77	75	85	4	4	0 90/5/6	81	16	160	225 - 10KTS
0700	13°58'N	169°24'W	Cloudy over	15	29.96	80	74	83	7	7	0 90/5/6	81	16	090	VAR.
0800	13°57'N	169°32'W	Squally	15	29.98	75	74	95	9	8	0 90/5/6	81	20	090	223 - 10KTS
0900	13°42'N	169°41'W	Squally	15	29.99	80	74	83	5	5	0 90/5/6	81	20	090	221 - 10KTS
1000	13°34'N	169°49'W	PART-Cloud	15	29.99	82	75	80	5	5	0 90-5-6	81	20	090	221 - 10KTS
1100	13°27'N	169°55'W	PARTY Cld	15	29.97	83	76	76	4	3	0 90-5-6	81	20	090	221 - 10KTS
1200	13°19'N	170°02'W	Few Clnds	15	29.96	83	76	76	4	2	0 90-5-6	81	20	090	221 - 10KTS
1300	13°12'N	170°10'W	Sct. clbs	20	29.98	83	74	76	3	0	0 90-6-8	81	22	075	222 10kts
1400	13°07'N	170°16'W	" "	20	29.90	83	74	76	2	0	0 90-6-8	81	22	075	222 10kts
1500	12°59'N	170°24'W	" "	20	29.88	83	74	76	1	0	0 90-6-8	81	22	075	222 10kts
1600	12°51'N	170°31'W	" "	20	29.88	83	74	76	1	0	0 90-6-8	81	22	075	222 10kts
1700	12°44'N	170°40'W	" "	20	29.90	82	74	76	5	1	0 90-6-8	81	22	090	221 10KTS
1800	12°35'N	170°46'	" "	20	29.90	80	74	76	5	1	0 90-6-8	81	22	090	221 10KTS
1900	12°30'N	170°53'W	" "	20	29.90	82	74	76	4	3	0 90-6-8	81	22	090	221 10KTS
2000	12°24'N	171°00'W	" "	20	29.91	81	74	76	4	4	0 90-6-8	81	20	090	221 10KTS
2100	12°17'N	171°07'W	" "	20	29.93	80	73	79	2	1	0 90-6-8	81	16	090	221 10KTS
2200	12°10'N	171°15'W	Squally	20	29.96	80	73	79	2	1	0 90-6-8	81	20	090	221 10KTS
2300	12°11'N	171°22'W	Few ClDS	20	29.96	80	73	79	2	1	0 90-6-7	81	20	080	315 - 10KTS
2400	12°19'N	171°30'W	Few ClDS	20	29.96	80	73	79	2	1	0 80-6-8	81	20	070	315 10KTS

REMARKS:

CRAY

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

SI-MNH-955  
12-5-63

DATE 10 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID%	TOT SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	12° 24'N	171° 37'W	<del>FEW CLD</del>	20	29.91	81	73	79	0	0	080/7-8	83	17	070	316° 10kts
0200	12° 35'N	171° 45'W	FEW CLD	20	29.88	82	74	76	1	0	080/7-8	83	17	060	316 10kts
0300	12° 42'N	171° 51'W	FEW CLD	20	29.86	82	74	76	1	0	080/7-8	83	17	060	049 10kts
0400	12° 48'N	171° 45'W	FEW CLD	20	29.85	81	73	79	1	0	080/7-8	83	17	060	049 10kts
0500	12° 50'N	171° 34'W	FEW CLD	20	29.87	81	73	75	1	0	080/7-8	83	17	060	049 10kts
0600	13° 06'N	171° 29'W	" "	20	29.88	81	73	75	2	0	070/6-8	83	14	110	049 09kts
0700	13° 10'N	171° 28'W	" "	20	29.91	81	73	75	2	0	070/6-8	83	14	110	049 09kts
0800	13° 12'N	171° 20'W	" "	20	29.91	82	75	80	2	0	070/6-8	83	15	110	049 09kts
0900	13° 19'N	171° 13'W	" "	20	29.93	82	75	80	2	1	070-6-8	83	16	080	049-9kts
1000	13° 24'N	171° 08'W	" "	20	29.93	82	75	80	2	1	070-6-8	83	16	080	049-9kts
1100	13° 20'N	171° 01'W	FEW CLD	20	29.93	82	75	80	2	1	070-6-8	83	16	070	049-9kts
1200	13° 37'N	170° 54'W	FEW CLD	20	29.93	82	74	76	2	1	070-6-8	83	18	070	049-9kts
1300	13° 41'N	170° 50'W	" "	20	29.91	82	74	76	2	0	070-5-8	83	20	070	049 8kts
1400	13° 45'N	170° 46'W	" "	20	29.89	82	74	76	2	0	070-5-8	83	20	070	049 6kts
1500	13° 48'N	170° 43'W	" "	20	29.88	82	74	76	3	0	080-5-8	83	18	080	049 6kts
1600	13° 52'N	170° 37'W	FEW CLD	20	29.86	82	74	76	2	3	080-5-8	82	16	090	049 8kts
1700	14° 03'N	170° 28'W	" "	20	29.89	84	74	73	7	6	080-5-8	82	16	180	049 10kts
1800	14° 10'N	170° 20'W	" "	20	29.90	84	74	73	7	6	080-5-8	82	16	080	049-10kts
1900	14° 17'N	170° 12'W	" "	20	29.91	81	75	83	7	6	080-5-8	82	18	080	049-10kts
2000	14° 16'N	170° 13'W	" "	20	29.91	81	75	83	7	6	080-5-8	82	18	080	049-10kts
2100	14° 25'N	170° 04'W	FEW CLD	20	29.92	81	75	83	2	1	080-5-8	82	12	080	049-10kts
2200	14° 31'N	169° 57'W	FEW CLD	20	29.96	80	74	83	2	1	080-5-8	82	10	080	049-10kts
2300	14° 37'N	169° 50'W	FEW CLD	20	29.96	80	74	83	2	1	080-5-8	82	10	080	049-10kts
2400	14° 44'N	169° 43'W	" "	20	29.96	80	74	83	2	1	080-5-8	82	10	080	049-10kts

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 11 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID%	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	14°47'N	169°34'W	Partly Cldy	15	29.92	80	76	87	3	0	090/6/6	82	15	070	049 10 kts
0200	15°00'N	169°26'W	Clear	20	29.92	80	76	87	0	0	090/6/6	82	15	070	045 10 kts
0300	15°02'N	169°28'W	Clear	20	29.92	80	76	87	0	0	090/6/6	82	15	070	315 10 kts
0400	15°14'N	169°36'W	Clear	20	29.91	79	76	87	0	0	090/6/6	81	15	070	315 10 kts
0500	15°23'N	169°45'W	Cloudy	20	29.90	79	76	85	6	4	090/6/6	81	11	070	315 10 kts
0600	15°26'N	169°53'W	Few Cls	20	29.93	79	76	91	5	4	090/6/6	81	11	070	325 11 kts
0700	15°31'N	169°55'W	" "	20	29.95	81	77	87	4	0	090/6/6	81	11	070	315 10 kts
0800	15°35'N	170°02'W	" "	20	29.95	81	77	87	4	0	090/6/6	81	11	070	315 10 kts
0900	15°30'N	170°09'W	Clear	20	29.96	84	73	69	3	3	090-6-6	81	10	080	221 11 kts
1000	15°23'N	170°17'W	Few Cls	20	29.96	84	73	69	3	3	090-6-6	81	10	090	221 11 kts
1100	15°15'N	170°26'W	Few Cls	20	29.96	84	73	69	3	3	090-6-6	81	10	090	221 11 kts
1200	15°07'N	170°34'W	Few Cls	20	29.94	84	73	69	3	3	090-6-6	81	10	090	221 11 kts
1300	14°59'N	170°42'W	" "	20	29.91	82	74	76	3	1	090-6-6	82	13	090	221 11 kts
1400	14°50'N	170°47'W	" "	20	29.88	82	74	76	4	1	090-6-6	82	16	090	221 11 kts
1500	14°48'N	170°59'W	" "	20	29.87	82	74	76	2	0	090-6-6	82	16	090	221 11 kts
1600	14°45'N	171°00'W	" "	20	29.87	82	74	76	2	0	090-6-6	82	16	090	221 11 kts
1700	14°31'N	171°12'W	" "	20	29.87	82	74	76	1	0	090-6-6	82	16	080	221 10 kts
1800	14°27'N	171°20'W	" "	20	29.87	82	74	76	1	0	090-6-6	82	16	080	221 10 kts
1900	14°18'N	171°28'W	Few Cls	20	29.87	81	73	76	2	0	090-6-6	82	20	080	221 10 kts
2000	14°10'N	171°34'W	" "	20	29.87	81	73	76	4	1	090-6-6	82	20	090	221 10 kts
2100	14°02'N	171°42'W	Clear	20	29.89	81	73	72	1	0	090-6-6	82	20	090	221 10.5 kts
2200	13°55'N	171°50'W	Clear	20	29.92	82	71	69	2	1	090-6-6	82	20	090	221 10.5 kts
2300	13°48'N	171°58'W	Clear	20	29.94	82	71	69	2	1	090-6-6	82	20	090	221 10.5 kts
2400	13°40'N	172°06'W	Clear	20	29.94	82	71	69	2	1	090-6-7	82	20	090	221 10.5 kts

REMARKS:

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

SI-MNH-955  
12-5-63



DATE 12 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	13° 33' N	172° 14' W	Clear	20	29.90	81	73	79	0	0	090/6/6	82	15	090	221 11kn
0200	13° 25' N	172° 25' W	Clear	20	29.88	80	72	75	0	0	090/6/6	82	15	090	221 11kn
0300	13° 16' N	172° 29' W	Clear	20	29.88	82	72	75	0	0	090/6/6	82	17	080	221 11kn
0400	13° 24' N	172° 38' W	Clear	20	29.87	80	74	85	0	0	090/6/6	82	17	080	225 11kn
0500	13° 24' N	172° 41' W	Clear	20	29.85	80	74	85	0	0	090/6/6	82	15	080	225 11kn
0600	13° 40' N	172° 53' W	Few CLDS	20	29.90	80	74	83	1	0	090-6-7	82	19	050	315 11 KTS
0700	13° 42' N	173° 01' W	" "	20	29.90	81	73	75	1	0	090-5-7	82	15	050	315 11 KTS
0800	13° 50' N	173° 04' W	" "	20	29.91	82	73	75	1	0	090-5-7	82	15	080	315 11 KTS
0900	13° 53' N	172° 56' W	Few CLDS	20	29.93	82	75	80	1	0	090-5-8	82	17	090	048 - 9 KTS
1000	14° 05' N	172° 50' W	" "	20	29.94	82	75	80	1	0	090-5-8	82	18	090	048 - 9 KTS
1100	14° 12' N	172° 42' W	" "	20	29.94	82	75	80	1	0	090-5-8	82	18	080	048 - 9.5 KTS
1200	14° 19' N	172° 35' W	" "	20	29.94	82	75	80	1	0	090-5-8	82	18	080	048 - 9.5 KTS
1300	14° 25' N	172° 29' W	Partly Cl'd	20	29.90	82	75	80	6	3	090-5-8	83	13	090	048 - 9.5 KTS
1400	14° 31' N	172° 23' W	Partly Cl'd	20	29.90	82	75	80	4	2	090-5-6	83	13	090	048 - 9.5 KTS
1500	14° 37' N	172° 16' W	Few CLDS	20	29.89	82	75	80	2	0	090-6-6	83	13	090	048 - 9.5 KTS
1600	14° 43' N	172° 09' W	" "	20	29.88	82	75	80	1	0	090-6-6	83	15	090	048 - 9.5 KTS
1700	14° 50' N	172° 02' W	" "	20	29.88	82	75	80	1	0	090-6-6	83	15	090	048 - 9.5 KTS
1800	14° 56' N	171° 55' W	" "	20	29.88	82	75	80	1	0	090-6-6	83	15	090	048 - 9.5 KTS
1900	15° 02' N	171° 48' W	" "	20	29.88	82	75	80	1	0	090-6-6	83	15	090	048 - 9.5 KTS
2000	15° 08' N	171° 41' W	" "	20	29.91	82	75	80	1	0	090-6-6	83	15	090	048 - 9.5 KTS
2100	15° 10' N	171° 42' W	Few CLDS	20	29.92	82	77	84	2	1	090-6-6	83	15	085	046 - 9.5 KTS
2200	15° 16' N	171° 36' W	Few CLDS	20	29.93	82	77	84	2	1	090-6-6	83	15	085	046 - 9.5 KTS
2300	15° 23' N	171° 29' W	Few CLDS	20	29.93	82	77	84	2	1	090-6-6	83	15	085	046 - 9.5 KTS
2400	15° 29' N	171° 23' W	Few CLDS	20	29.94	82	77	84	2	1	090-6-6	83	15	085	046 - 9.5 KTS

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 13 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	15°39'N	171°12'W	Partly Cl'd	15	29.93	79	73	79	4	2	090-6-6	82	15	090	046 9 km
0200	15°43'N	171°09'W	Partly Cl'd	15	29.91	78	73	79	3	2	090-6-6	82	15	090	046 9 km
0300	15°50'N	171°03'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	82	15	090	046 9 km
0400	15°56'N	170°56'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	81	15	090	046 9 km
0500	15°57'N	170°52'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	81	15	090	046 9 km
0600	15°57'N	170°52'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	81	15	090	046 9 km
0700	15°57'N	170°52'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	81	15	090	046 9 km
0800	15°57'N	170°52'W	Partly Cl'd	15	29.91	80	74	83	1	0	090-6-6	81	15	090	046 9 km
0900	16°27'H	170°50'W	Part Cl'd	20	29.99	83	76	80	6	4	090-6-6	81	15	090	312 - 10.0 kts.
1000	16°32'H	170°57'W	Part Cl'd	20	29.99	83	76	80	6	4	090-6-6	81	15	090	312 - 10.5 kts
1100	16°39'H	171°06'W	"	20	29.98	83	79	82	7	1	090-6-6	81	15	090	312 - 10.5 kts.
1200	16°46'H	171°14'W	"	20	29.98	83	79	88	2	1	090-6-6	81	15	090	312 - 10.5 kts
1300	16°48'H	171°28'W	"	20	29.97	82	77	84	4	1	090-6-6	82	15	090	224 - 11 km
1400	16°32'H	171°31'W	"	20	29.85	82	77	84	2	0	090-6-6	82	15	090	224 - 11 km
1500	16°25'H	171°39'W	"	20	29.94	82	77	84	2	0	090-6-6	82	15	090	224 - 11 km
1600	16°17'H	171°49'W	"	20	29.83	82	77	84	3	1	090-6-6	82	15	090	223 - 11 km
1700	16°06'H	171°58'W	"	20	29.82	82	75	82	4	1	090-6-6	82	15	090	223 - 11 km
1800	16°02'H	172°09'W	"	20	29.81	82	75	81	4	1	090-6-6	82	15	090	223 - 11 km
1900	15°57'H	172°18'W	"	20	29.80	82	74	81	4	1	090-6-6	82	15	090	223 - 11 km
2000	15°57'H	172°28'W	"	20	29.80	82	74	81	4	1	090-6-6	82	15	090	223 - 11 km
2100	15°43'H	172°29'W	Part Cl'd	20	29.94	80	74	79	2	1	090-6-6	82	15	090	219 - 11 kts
2200	15°36'H	172°36'W	Part Cl'd	20	29.95	80	74	79	2	1	090-6-7	82	15	090	219 - 11 kts
2300	15°28'H	172°43'W	Part Cl'd	20	29.97	80	74	83	2	1	090-6-7	82	15	090	219 - 11 kts
2400	15°20'H	172°51'W	"	20	29.97	80	74	83	2	1	090-6-7	82	15	090	219 - 11 kts

REMARKS:

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

SI-MNH-955  
12-5-63

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57 mi

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1352  

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419.5  
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12  
38

DATE 14 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	15° 11' N	172° 58' W	Few clds	20	29.94	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0200	15° 09' N	173° 05' W	" "	20	29.92	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0300	14° 56' N	173° 13' W	" "	20	29.91	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0400	14 48 N	173 20 W	" "	20	29.91	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0500	14 40 N	173 28 W	" "	20	29.91	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0600	14 32 N	173 36 W	" "	20	29.91	80	74	83	1	0	110-6-7	82	18	090	219 11 km
0700	14 24 N	173 44 W	" "	20	29.93	81	76	83	1	0	110-6-7	82	18	090	219 10 KTS
0800	14 23 N	173 45 W	Cloudy	20	29.94	82	81	96	2	2	110-6-7	82	22	090	314 - 10.5 KTS
0900	14 41 N	173 48 W	Few clds	20	29.95	82	79	92	2	2	100-6-7	82	24	090	314 - 10.5 KTS
1000	14 53 N	173 53 W	Few clds	20	29.95	82	79	92	2	2	100-6-7	82	22	090	314 - 10.5 KTS
1100	15 01 N	174 01 W	"	20	29.95	82	79	92	2	2	100-6-7	82	22	090	314 - 10.5 KTS
1200	15 09 N	174 09 W	"	20	29.95	82	79	92	2	2	100-6-7	82	22	090	314 - 10.5 KTS
1300	15 11 N	174 13 W	"	20	29.93	82	79	92	2	0	100-6-7	81	20	100	048 - 10 km
1400	15 16 N	174 22 W	"	20	29.92	82	76	87	1	0	100-6-7	81	20	100	048 - 9.5 km
1500	15 24 N	173 55 W	"	20	29.91	80	76	87	2	0	100-6-7	81	20	100	048 - 9 km
1600	15 31 N	173 50 W	"	20	29.92	80	76	87	1	0	100-6-7	81	20	090	048 - 9 km
1700	15 37 N	173 44 W	"	20	29.93	82	75	80	4	2	100-6-7	81	20	090	048 - 9 km
1800	15 43 N	173 37 W	"	20	29.93	82	75	80	5	2	100-6-7	81	20	090	048 - 9 km
1900	15 49 N	173 31 W	SQUALLS	10	29.93	80	74	83	8	7	100-6-7	81	15	090	048 - 9 KTS
2000	15 57 N	173 23 W	RAINY	10	29.94	80	74	83	8	7	100-6-7	81	15	090	048 - 9 KTS
2100	16 03 N	173 16 W	Clear	20	29.94	80	74	83	2	1	100-6-7	81	10	090	048 - 9 KTS
2200	16 10 N	173 09 W	Clear	20	29.95	80	74	83	2	1	100-6-7	81	10	090	048 - 9 KTS
2300	16 17 N	173 01 W	Clear	20	29.95	80	74	83	2	1	100-6-7	81	10	090	048 - 9 KTS
2400	16 23 N	172 55 W	Clear	20	29.95	80	74	83	2	1	100-6-7	81	10	090	048 - 9 KTS

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 15 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TOT SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	16° 30' N	172° 48' W	Clean	20	2992	81	73	79	0	0	090-6-7	81	17	090	048 9.5 km
0200	16° 36' N	172° 41' W	Few clds	20	2991	81	73	79	1	0	090-6-7	81	18	090	048 9 km
0300	16° 42' N	172° 36' W	" "	20	2991	81	73	79	1	0	090-6-7	81	18	090	048 9 km
0400	16° 48' N	172° 28' W	Ply Cldy	20	2990	81	73	79	4	1	090-6-7	81	18	090	048 9 km
0500	16° 54' N	172° 20' W	" "	20	2989	81	73	79	3	1	090-6-7	81	18	090	048 9 km
0600	17° 00' N	172° 12' W	" "	20	2988	81	73	79	3	1	090-6-7	81	18	090	048 9 km
0700	17° 06' N	172° 04' W	" "	20	2987	82	74	79	3	1	090-6-7	81	18	090	048 9 km
0800	17° 12' N	172° 02' W	" "	20	2986	82	74	79	3	2	090-6-7	81	18	090	043-9 km
0900	17° 12' N	172° 02' W	Few Cld	20	2995	82	74	76	3	2	090-6-7	81	18	090	043-9 km
1000	17° 19' N	171° 56' W	Few Cld	20	2995	82	74	76	3	2	090-6-7	81	18	090	043-9 km
1100	17° 27' N	171° 49' W	Few Cld	20	2996	82	74	76	3	2	090-6-7	81	18	090	043-9 km
1200	17° 33' N	171° 43' W	Few Cld	20	2995	82	74	76	3	2	090-6-7	81	18	090	043-9 km
1300	17° 40' N	171° 36' W	" "	20	2993	82	74	76	2	0	090-6-7	81	18	090	043-9 km
1400	17° 48' N	171° 30' W	" "	20	2992	82	74	76	2	0	090-6-7	81	18	090	043-9 km
1500	17° 54' N	171° 23' W	" "	20	2991	82	74	76	2	0	090-6-7	81	18	090	043-9 km
1600	18° 02' N	171° 17' W	Ply Cldy	20	2991	82	74	76	4	1	090-6-7	81	18	090	043-9 km
1700	18° 10' N	171° 10' W	" "	20	2992	81	74	76	3	1	090-6-7	81	18	090	043-9 km
1800	18° 18' N	171° 04' W	" "	20	2992	81	74	76	3	1	090-6-7	81	18	090	043-9 km
1900	18° 25' N	170° 57' W	" "	20	2991	81	74	76	3	2	090-6-7	81	18	090	042-9 km
2000	18° 30' N	170° 50' W	" "	20	2994	81	74	76	3	2	090-6-7	81	18	090	042-9 km
2100	18° 38' N	170° 42' W	Few Cld	20	2994	81	74	76	2	1	090-6-7	81	18	090	042-9 km
2200	18° 44' N	170° 37' W	" "	20	2994	81	74	76	2	1	090-6-7	81	18	090	042-9 km
2300	18° 50' N	170° 32' W	Squalls	20	2997	81	74	76	2	1	090-6-7	81	10	090	042-9 km
2400	18° 57' N	170° 25' W	Clean	20	3000	81	74	76	2	1	090-6-7	81	10	090	042-9 km

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 16 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	19° 06' N	170° 20' W	ptly cldy	20	29.97	80	74	83	3	1	090-6-6	81	180	180	042-9kn
0200	19° 13' N	170° 12' W	" "	20	29.96	80	73	79	2	1	090-6-6	81	13	180	042-9kn
0300	19° 21' N	170° 06' W	" "	20	29.96	80	73	79	1	0	090-6-6	81	13	095	042-9kn
0400	19° 28' N	169° 59' W	" "	20	29.96	80	73	79	2	2	090-6-6	81	13	095	042-9kn
0500	19° 35' N	169° 52' W	" "	20	29.96	80	73	79	2	2	090-6-6	81	13	095	042-9kn
0600	19° 43' N	169° 50' W	" "	20	30.00	81	73	75	3	2	090-6-6	81	10	085	044-9kts
0700	19° 51' N	169° 43' W	" "	20	30.02	82	72	71	2	1	100-6-6	81	10	085	044-9kts
0800	19° 59' N	169° 30' W	" "	20	30.02	82	72	72	2	1	100-6-6	81	10	085	044-9kts
0900	20° 07' N	169° 20' W	ptly cldy	15	30.03	82	72	72	3	2	100-6-6	81	10	090	042-9kts
1000	20° 14' N	169° 16' W	ptly cldy	15	30.03	82	74	74	3	2	100-6-6	81	15	090	042-9.5 kts
1100	20° 21' N	169° 09' W	" "	20	30.02	82	74	76	3	2	100-6-6	81	15	090	044-9.7 kts
1200	20° 29' N	169° 02' W	" "	20	30.02	82	74	76	3	2	100-6-6	81	15	090	044-9.7 kts
1300	20° 37' N	168° 58' W	low cldy	20	30.00	82	74	76	2	0	100-6-6	81	17	100	042-9.5 kn
1400	20° 37' N	168° 58' W	" "	20	29.99	82	74	76	1	0	100-6-6	81	17	100	042-9.5 kn
1500	20° 45' N	168° 47' W	" "	20	30.00	82	74	76	1	0	100-6-6	81	17	100	042-9.5 kn
1600	20° 52' N	168° 41' W	" "	20	29.99	82	74	76	1	0	100-6-6	81	17	100	042-9.5
1700	21° 01' N	168° 34' W	" "	20	30.01	82	74	76	1	0	100-6-6	81	17	100	042-9.5
1800	21° 08' N	168° 26' W	" "	20	30.02	81	74	79	1	0	100-6-6	81	17	100	042-10kts
1900	21° 16' N	168° 19' W	" "	20	30.03	80	73	79	2	0	100-6-6	81	17	100	042-10kts
2000	21° 24' N	168° 11' W	" "	20	30.04	80	73	79	2	0	100-6-6	81	17	100	042-10kts
2100	21° 28' N	168° 09' W	" "	20	30.05	80	73	79	2	1	100-6-6	81	10	090	038-10kts
2200	21° 37' N	167° 54' W	" "	20	30.06	80	73	79	2	1	100-6-6	81	10	090	038-10kts
2300	21° 44' N	167° 48' W	" "	20	30.06	80	73	79	2	0	100-6-6	81	10	090	038-10kts
2400	21° 52' N	167° 42' W	" "	20	30.06	80	73	79	2	0	100-6-6	81	10	090	038-10kts

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 17 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SELP COURSE/SPD.
0100	22° 02' N	167° 35' W	PKly Cls	10	30.04	79	76	87	3	1	090-6-5	80	08	090	038 10 kts
0200	22° 08' N	167° 37' W	Few clbs	20	30.03	79	76	87	1	0	090-6-5	80	08	090	038 10 kts
0300	22° 17' N	167° 23' W	PKly Cls	10	30.03	79	76	87	2	1	090-6-5	80	08	090	038 10 kts
0400	22° 25' N	167° 18' W	PKly Cls	15	30.03	79	76	87	3	1	090-6-5	80	08	090	038 10 kts
0500	22° 33' N	167° 11' W	" "	20	30.05	78	75	91	4	4	090-6-5	79	10	090	038 - 10 kts
0600	22° 42' N	167° 04' W	" "	20	30.06	78	75	91	4	4	090-6-5	79	10	090	038 - 10 kts
0700	22° 50' N	166° 57' W	" "	20	30.10	78	75	87	8	7	090-6-5	78	10	090	040 - 10 kts
0800	23° 58' N	166° 50' W	PKly Cls	20	30.11	80	75	87	8	7	090-6-5	77	10	090	042 - 10 kts
0900	23° 02' N	166° 44' W	PKly Cls	20	30.11	80	74	83	6	6	090-6-6	77	12	080	039 10 kts
1000	23° 10' N	166° 37' W	" "	20	30.11	80	74	83	6	6	090-6-8	77	12	080	039 - 10 kts
1100	23° 16' N	166° 32' W	" "	20	30.11	80	74	83	6	6	100-6-8	77	20	080	039 9.5 kts
1200	23° 24' N	166° 25' W	" "	20	30.11	80	74	83	6	6	100-6-8	77	20	090	039 - 9.5 kts
1300	23° 28' N	166° 28' W	PKly Cls	20	30.09	81	73	79	4	1	100-6-8	77	17	100	042 - 9.5 kts
1400	23° 27' N	166° 22' W	" "	20	30.08	81	73	79	1	0	100-6-8	77	17	110	042 9.5 kts
1500	23° 34' N	166° 17' W	" "	20	30.07	81	73	79	1	0	100-6-8	77	13	110	042 - 10 kts
1600	23° 32' N	166° 06' W	" "	20	30.07	81	73	79	1	0	100-6-8	79	11	110	115 10 kts
1700	23° 38' N	166° 01' W	" "	20	30.04	82	75	80	3	2	100-6-8	79	11	110	111 10 kts
1800	23° 25' N	165° 52' W	" "	20	30.09	81	74	79	2	1	100-6-8	79	11	110	111 10 kts
1900	23° 25' N	165° 50' W	" "	20	30.10	81	73	79	2	2	100-6-8	79	11	110	111 10 kts
2000	23° 25' N	165° 50' W	" "	20	30.10	81	73	79	2	2	100-6-8	79	11	110	111 10 kts
2100	23° 15' N	165° 23' W	Bleak	20	30.11	79	73	83	3	2	100-6-10	78	15	100	111 - 9 kts
2200	23° 12' N	165° 14' W	Few clbs	20	30.13	79	73	83	2	2	100-6-10	78	15	100	111 - 6.5 kts
2300	23° 11' N	165° 14' W	" "	15	30.13	79	73	83	3	2	100-6-10	78	10	100	111 - 6.5 kts
2400	23° 11' N	165° 14' W	Squalls	15	30.13	79	73	83	6	6	100-6-10	78	10	100	111 - 6.5 kts

REMARKS:

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

SI-MNH-955  
12-5-63

DATE 18 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID%	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	23° 03' N	164° 57' W	Partly cl	15	30.08	79	73	79	4	3	090-6-8	78	13	090	111 9 kn
0200	22° 59' N	164° 48' W	" "	15	30.07	78	71	79	3	1	090-6-8	78	13	090	112 9.5 kn
0300	22° 55' N	164° 40' W	" "	15	30.06	78	71	79	4	0	090-6-8	78	13	090	111 9
0400	22° 52' N	164° 32' W	" "	15	30.06	78	71	79	5	3	090-6-8	78	13	090	111 9
0500	22° 48' N	164° 24' W	" "	15	30.05	78	72	79	5	5	111-6-8	78	13	090	111 9
0600	22° 44' N	164° 16' W	" "	15	30.05	78	72	79	5	5	111-6-8	78	13	090	111 9
0700	22° 40' N	164° 08' W	" "	15	30.05	78	72	79	5	2	111-6-8	78	13	090	111 9
0800	22° 36' N	164° 00' W	" "	15	30.05	78	72	79	5	2	111-6-8	78	13	090	111 9
0900	22° 35' N	163° 58' W	Partly cl	20	30.09	80	72	75	6	4	090-6-8	78	15	090	110 - 8.5 kts
1000	22° 33' N	163° 48' W	"	20	30.09	80	72	75	6	4	090-6-8	78	15	090	110 - 8 kts
1100	22° 30' N	163° 38' W	"	20	30.08	80	72	75	3	2	090-6-8	78	15	090	110 - 8 kts
1200	22° 26' N	163° 24' W	"	20	30.07	81	71	72	2	0	090-6-8	78	18	090	110 - 8 kts
1300	22° 24' N	163° 12' W	Partly cl	20	30.07	80	72	75	2	0	090-6-8	78	17	090	110 8 kn
1400	22° 24' N	163° 17' W	"	20	30.06	80	72	75	2	0	090-6-8	78	16	090	110 8 kn
1500	22° 23' N	163° 15' W	"	20	30.04	80	72	75	1	0	090-6-8	78	15	090	110 8.5 kn
1600	22° 21' N	163° 07' W	"	20	30.03	80	72	75	5	2	090-6-8	78	15	090	110 8.5 kn
1700	22° 17' N	162° 52' W	Partly cl	20	30.03	80	72	75	5	2	090-6-8	78	15	090	110 8.5 kn
1800	22° 13' N	162° 38' W	"	20	30.03	80	72	75	5	2	090-6-8	78	15	090	110 8.5 kn
1900	22° 11' N	162° 24' W	"	20	30.03	80	72	75	5	2	090-6-8	78	15	090	110 8.5 kn
2000	22° 07' N	162° 10' W	"	20	30.03	80	72	75	5	2	090-6-8	78	15	090	110 8.5 kn
2100	22° 04' N	162° 21' W	Squalls	15	30.06	78	72	83	6	6	090-6-7	78	10	090	110 9.5 kts
2200	22° 00' N	162° 12' W	Squalls	15	30.07	78	72	83	6	6	090-6-7	78	10	090	110 9.5 kts
2300	21° 57' N	162° 02' W	Partly cl	20	30.07	78	72	83	4	3	090-6-7	78	10	090	110 - 9.5 kts
2400	21° 54' N	161° 53' W	"	20	30.07	78	72	83	4	3	090-6-7	78	10	090	110 - 9.5 kts

REMARKS:

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

SI-MNH-955  
12-5-63



DATE 19 June 1964

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	21°49'N	161°46'W	PH. Hazy	15	30.04	78	72	83	3	1	090-5-6	78	09	090	110 9.5 kn
0200	21°47'N	161°39'W	"	15	30.01	78	72	83	1	0	090-5-6	78	09	090	105 9.5 kn
0300	21°43'N	161°28'W	"	15	30.00	78	72	83	1	0	090-5-6	78	100	106	105 9.5 kn
0400	21°41'N	161°18'W	"	15	30.00	78	72	83	2	2	090-5-6	79	10	100	105 10 kn
0500	21°35'N	161°04'W	PH. Hazy	15	30.00	77	72	83	2	2	090-5-6	78	10	100	105 10 kn
0600	21°30'N	160°52'W	"	15	30.00	77	72	83	2	2	090-5-6	78	10	100	105 10 kn
0700	21°24'N	160°41'W	PH. Hazy	15	30.00	77	72	83	2	2	090-5-6	78	10	100	105 10 kn
0800	21°20'N	160°31'W	PH. Hazy	15	30.00	77	72	83	2	2	090-5-6	78	10	100	105 10 kn
0900	21°29'N	160°31'W	SP. Hazy	15	30.06	80	73	79	6	6	100-5-5	79	12	100	097 - 9 KTS
1000	21°28'N	160°26'W	PH. Hazy	15	30.05	80	73	79	4	4	100-5-5	79	12	100	097 - 9 KTS
1100	21°28'N	160°17'W	"	20	30.05	81	69	69	3	3	110-5-5	79	12	100	097 - 9 KTS
1200	21°27'N	160°08'W	"	20	30.05	81	69	69	3	3	110-5-5	79	12	100	097 - 9 KTS
1300	21°26'N	159°59'W	"	20	30.04	80	72	75	2	0	090-5-4	79	10	090	097 - 9 KTS
1400	21°25'N	159°46'W	"	20	30.03	80	72	75	1	0	090-5-4	79	10	090	097 9.5 kn
1500	21°21'N	159°36'W	"	20	30.02	80	72	75	1	0	090-5-4	79	10	090	097 9.5 kn
1600	21°20'N	159°26'W	"	20	30.01	80	72	75	1	0	090-5-5	79	7	090	097 9.5 kn
1700	21°20'N	159°16'W	"	20	30.01	80	72	75	1	0	090-5-5	79	7	090	097 9.5 kn
1800	21°20'N	159°06'W	"	20	30.01	80	72	75	1	0	090-5-5	79	7	090	097 9.5 kn
1900	21°20'N	158°56'W	"	20	30.01	80	72	75	1	0	090-5-5	79	7	090	097 9.5 kn
2000															
2100															
2200															
2300															
2400															

REMARKS:

Clouds in vicinity 2100-2400 @ 5300 - 1100 - 2000 1000 1100

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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