PRELIMINARY REPORT

EASTERN AREA CRUISE 6
1-10 April 1967

including
EASTERN GRID SURVEY 5

Prepared by

Brian Harrington

This report is a summary of observations and collections made by P.O.B.S.P. personnel in the eastern Pacific Ocean from 1-10 April, 1967. Participating observers included Brian Harrington (biologist-in-charge), Richard Heiden, and James Lewis. Superior cooperation was received from the officers and crew of the U.S.N.S. SHEARWATER (T-AG 177). The grid cruise track (see map 1) was followed closely, and all positions are considered accurate within five miles except on 4 April when they may have been slightly less accurate due to continuous cloudy weather which prevented an accurate fix. One major deviation from the nominal cruise track on 8 April near point "M" was a result of orders directing the SHEARWATER to follow and identify a Russian fishing boat.

This report is divided into two sections; the first deals with the eastern grid survey while the second summarizes the non-grid portion of the cruise.

EASTERN GRID SURVEY NO. 5

The eastern grid survey was conducted from 1215 hours 2 April until 1900 hours 9 April, 1967. A total of 94.8 hours of diurnal survey was conducted over 967 linear miles. A summary may be found in table 1. An additional 14 hours of nocturnal observation were conducted and are summarized in table 5.

Weather data during this survey were recorded on appropriate forms and ADP sheets. In general, light winds and seas predominated during the first third of the survey, and were followed by moderate winds and seas over the remainder of the grid trip. These conditions were similar enough to those of the previous two surveys to make reasonable comparisons of populations between the three.

In general, the bird population data collected on this survey confirmed the occurrence of migrational movements suspected of being under way during the previous two surveys. These changes will be discussed in the species accounts.

Mammals comprised a very significant percentage of the total air-breathing animals recorded on this survey. In fact, from the standpoint of numbers, they were more common than birds by more than two to one. And as mammals are more

difficult to see than birds in uncalm seas, they may have been even more abundant than observations suggested. As no method of weighting which allows for the state of the sea has been devised, it is unreasonable to calculate comparative densities. Thus suffice it to say that there were many mammals seen, and probably more were unnoticed.

A total of forty-one bathythermograph casts was made over the grid track at four hour intervals. No analysis of these has yet been made.

FLOCKING

As on previous cruises, very little flocking was noticed in the grid except for Red Phalaropes and storm petrels. Flocking of these two species will be discussed in the grid species accounts.

GRID SPECIES ACCOUNTS

Black-footed Albatross (*Diomedea nigripes*) 54 + 1 nocturnal

Overall grid density was identical to that found on the last survey, and a north to south density decline was again observed. But east-west distribution was noticeably different, there being four times as great a density in the east than in the west. On previous surveys east-west distribution has been virtually even.

During this survey an effort was made to make note of any birds which had a white rump (indicative of adult plumage), but only one was seen. This would suggest that few, if any, of the 1967 Hawaiian nesting population have yet returned to this area.

Fulmar (*Fulmarus glacialis*) 4

The low numbers indicate that the grid winter population has migrated north. It is to be expected that a few stragglers will remain behind. All four sightings were of dark phase birds.

New Zealand Shearwater (Puffinus bulleri) 3

Three sightings in the northwest portion of the grid represent the first record for this species in the grid. All were traveling north.

Pink-footed Shearwater (Puffinus creotopus) 1

A single bird in the western half of the central section was the first grid recording for this species. Judging by non-grid observations, it was probably a migrant.

Sooty Shearwater (Puffinus griseus) 31

Although most were identified as being either Sooty or Slender-billed Shearwater, none with good Slender-bill field marks were recorded. Also, judging from large non-grid collections, all were probably Sooties. The influx from previous surveys is accounted for by a northward migration from the breeding grounds in southern latitudes; virtually all of the observations were of single birds traveling north. It hardly need be said that because of this, north-south densities as calculated on table two are practically meaningless. But in view of non-grid observations, it is quite interesting that east-west densities within the grid were virtually even. As large concentrations were found off the channel islands and around Cortez Bank, one would expect that grid densities of northward bound birds would have been much higher in the eastern part of the grid. Additional surveys may explain this phenomenon.

Herald's Petrel (Pterodroma heraldica) 1

The collection of this species constitutes the first reliable record for the grid. The field identification of one in January is the only other sighting for the grid.

Leach's Storm Petrel (Oceanodroma leucorhoa)	125+	7	Nocturnal
Storm Petrel Species (Unidentified)	12 +	4	nocturnal

Although not usually recorded to species, probably all of the storm petrels

noted in the grid were Leach's. As has been noted before, the density distribution followed no obvious pattern; although distribution changes since last cruise were evident, they are not explained.

The south section of the grid had three times as great a density as the central area, and there appeared to be a general trend of storm petrel movement towards the north. This, along with data suggesting an influx into the north section, indicates that a northward movement is underway.

Two specimens were collected during this survey. Both were in moderate fat condition, but neither had gonads near breeding condition.

Jaegers 0

This was the first eastern grid survey on which no jaegers were recorded.

Glaucous-winged Gull (Larus glaucescens) 1

A single immature was noted in the central section.

Herring Gull (Larus argentatus) 23 + 3 nocturnal

The population decline of this species in the grid is continuing. Highest density was recorded in the north section, with a virtual absence in the central and southern areas. The gonads of one adult collected within ten miles of the grid were near breeding condition.

Black-legged Kittiwake (Rissa tridactyla) 0

This is the first grid survey to date on which no kittiwakes were seen.

Sabine's Gull (Xema sabini) 1

A single sighting in the north section was the first grid record.

Red Phalarope (Fulicarius phalaropus) 285 + 23 nocturnal

As on the last survey, the Red Phalarope was the most abundant species in the grid, even though the density has decreased. The distribution again appeared to follow no pattern, except that the highest density has shifted to the north

section where none were seen on the last cruise. East-west density distribution again favored the western half.

Although some single birds were recorded, most sightings were of flocks of varying size.

Five specimens were collected; all were in fat condition, and none had enlarged gonads.

Alcids

This is the first grid cruise on which no alcids were seen.

Western Meadowlark	(Sturnella neglecta)	1
Land Bird sp.	(Unidentified)	2

A single Western Meadowlark was collected in the eastern half of the north section more than a hundred miles from the mainland. An additional two landbirds were seen flying aboard a passing ship within twenty miles of the area where the meadowlark was collected. More than likely, all of these birds were stray migrants.

Small Pterodroma	(Pterodroma sp.)	4

Three sightings were in the western half of the north section. Another sighting in the eastern half of the south section was identified as probably being Pterodroma leucoptera and had field marks resembling those of the brevipes population. To date most of the small Pterodroma which have been reasonably well seen have been thought to be P. leucoptera. A few, which have yet to be well viewed, may be Cook's Petrels (Pterodroma cookii).

GRID MAMMALS

As mentioned earlier in this report, mammals were noted in good numbers in the grid. A total of 1312 individuals of three identified and four unidentified species was recorded. The north section yielded the greatest number of sightings, but, as emphasized earlier, it was this area in which we had calm seas and hence better conditions for mammal sightings.

North section

The Otarids were not as common as on some earlier cruises. Seventeen unidentified seals (most were probably Fur Seals) and one unidentified sea lion were observed.

Cetaceans were recorded in good numbers. Most impressive were two schools of the rare Right Whale Dolphin (Lissodelphis borealis). One school of over a thousand was seen traveling north, and shortly after another group of 150, also moving north, was recorded. Other Cetaceans in the north area included 7 Sperm Whales (Physeter catodon), sixteen unidentified whales, and one whale or dolphin.

Central Section

Mammals in the central section were represented by two schools of Baird's Dolphin (Delphinus delphis) totaling one hundred individuals. Several swam ahead of the ship for varying lengths of time.

South Section

In the south area 12 Sperm Whales, seven Baird's Dolphin, and one unidentified whale were seen.

NON-GRID SUMMARY

The non-grid portion of this cruise includes two periods of observation . The first includes parts of two days while enroute from Long Beach to the grid, while the second was one day between the grid and Long Beach. Because the bird populations encountered on these two tracks are quite different, each is treated separately (see table 7). On the first track 9.2 hours of diurnal observation were conducted over 87 linear miles. Collecting of specimens was done shortly before entering the grid. On the second track, 11.7 hours of observation were made over 113 linear miles, and again collections were made.

The activity of birds in both non-grid areas was similar to that recorded last month, with the exception of an influx of Sooty and Pink-footed Shearwaters. The exodus of some of the winter residents was noted and the occurrence of some transients was also noted.

As on previous trips, an effort to determine movements of birds between the coast and the grid was made, but there are still insufficient data to make any reasonable statements. Coastal-types of gulls were noted within thirty miles of the north leg of the grid, and as far as 60 miles off of San Clemente Island. Herring Gulls were found in both pelagic and coastal waters, but whether they move freely between the two will not be possible to determine without more sophisticated methods than are presently employed. The same holds true for the Jaegers.

Flocking was a prominent activity on both non-grid tracks; most groups were resting or traveling migrants, but some flocks of resident gulls were also seen. This activity will be discussed in the species accounts.

NON-GRID SPECIES ACCOUNTS

Albatross

All but one of the sightings were outside the Channel Islands. On the north

track 9 were seen, several of which were following other ships.

One Laysan Albatross was seen on the north track.

Shearwaters

Fulmar were recorded in low numbers on the portion of the north track outside the Santa Barbara Channel. All were dark phase.

Pink-footed Shearwater were recorded in good numbers (55) on the south track where one was collected. Most were scattered among resting or traveling flocks of Sooty Shearwater. On the north track only two Pale-foots were seen.

Sooty Shearwater were very abundant (1980) on the south track. Many were just west of Cortez Banks, while most were between the Banks and San Clemente I. Most were sitting on the water in large flocks, but when flushed flew towards the north. A total of 27 was collected, and virtually all had full stomachs. On the north leg only five were seen, all of which were traveling north.

Although recorded on the log as either Sooty or Slender-billed Shearwaters, none of the birds observed or collected had the field marks of Slender-bills.

Storm Petrels

One Leach's-type storm petrel was seen on the south track outside the outer banks.

Cormorants

Nine unidentified Cormorants were seen on the north leg, and five on the south track. In addition a single flock of Pelagic Cormorants was seen near Catalina flying towards the north.

The sighting of a single cormorant about 60 miles off San Clemente was the farthest offshore record for the Eastern Area Cruises.

Black Brant

Two flocks totaling 140 birds were observed traveling north in the Santa Barbara Channel.

Red Phalarope

Sightings of one on the north leg and 12 (one collected) on the south track approximate the number seen on the last non-grid cruise.

Jaegers

Three unidentified Jaegers and one Pomarine Jaeger were seen on the north leg. On the south track two Long-tailed Jaegers and 21 unidentified Jaegers (probably mostly Pomarine) were seen. Most were in areas where the Sooty Shearwater were abundant, but none were seen chasing the shearwaters.

Gulls

Western Gulls were observed on the north and south tracks, but more commonly on the latter. Some individuals were seen 60 miles off San Clemente Island, but most were closer to shore.

Herring Gulls were not noted inside the channel islands on either leg, but may have been present in large groups of unidentified gulls. Outside the islands they were present in low numbers, increasing to seaward. Two specimens were collected on the north leg.

California Gulls are the most abundant gulls along this coast. Probably most of the gulls on both tracks were of this species, but as it is all but impossible to make the careful identification of each gull in a large flock, most were unidentified. On the south track California gulls were noted as far as 50 miles off San Clemente Isl[illegible].

One adult Ring-billed Gull was seen in the Santa Barbara Channel.

Highest numbers of Bonaparte's Gulls were noted on the north track. All sightings on both tracks (all inside the islands) were of adults in breading plumage.

A single Sabine's Gull was seen on the north track just before entering the grid.

Forster's Tern

Forster's Terns were seen only on the south track, and were also noted in Long Beach Harbor before departing on the cruise. None were seen outside the Channel Islands.

Alcids

Only a small percentage of the alcids seen were identified. Rhinoceros Auklets (2 specimens collected) comprised most of the identifications on both tracks, and three Xantus Murrelets were seen just south of Catalina Island. An additional five unidentified alcids were seen on the north track, and 34 on the southern leg.

Table 1: Diurnal Grid Summary, 2-9 April, 1967, Eastern Pacific Grid Cruise 5.

SPECIES	Number	% of Grid Total	no/lin mile	NO/sq. mile	No. Collected	No. Sera samples
Black-foot Albatross*	54	9.3	.056	.014		
Fulmar+	4	.7	.004	.002		
N.Z. Shearwater+	3	.5	.003	.002		
Pink-footed Shearwater+	1	.2	.001	.001		
Herald's Petrel+	1	.2	.001	.001	1	1
Leach's Storm Petrel :	125	21.6	.129	.129	2	1
Red Phalarope ~	285	49.3	.294	.588	6	2
Glaucous-winged Gull+	1	.2	.001	.001		
Herring Gull+	23	4.0	.024	.012		
Sabine's Gull+	1	.2	.001	.001		
W. Meadowlark	1	.2	-	-	1	
Shearwater/Petrel+	8	1.4	.008	.004		
Sooty/Slenderbill +	31	5.4	.032	.016		
Small Pterodroma +	4	.7	.004	.002		
Gull sp. +	12	2.9	.018	.009		
Land bird sp.	2	.3	-	-		
Bird sp. +	5	.9	.005	.003		
Storm Petrel sp. ~	12	2.1	.012	.012		
TOTALS:	578	100.1	.593	.797	10	4

NON-GRID COLLECTIONS:

Sooty Shearwater	29	2
Red Phalarope	1	0
Herring Gull	2	2
Rhinoceros Auklet	2	0

* Presumed visible for 2 miles
\+ Presumed visible for 1 mile
~ Presumed visible for 1/4 mile
: Presumed visible for 1/2 mile

Table 2: Sectional Breakdown of Eastern Pacific Grid Bird Populations, 1-9 April, 1967

	NORTHERN				CENTRAL				SOUTHERN			
	No.	% of Grid Species Total	% of total birds in North section	Birds/sq. mile	No.	%	%	B/sq. mi.	No.	%	%	B/sq. mi.
Black-footed Albatross*	34	51.5	12.4	.031	20	30.3	12.7	.017	12	18.2	7.6	.008
Fulmar	3	.75	1.1	.006	1	25	.6	.002	0			
N.Z. Shearwater	3	100.0	1.1	.006	0				0			
Pink-foot Shearwater	0				1	100.0	.6	.002	0			
Herald's Petrel	1	100	.4	.002	0				0			
Leach's Storm Petrel	42	33.6	15.3	.153	16	12.8	10.1	.054	67	53.6	42.7	.167
Red Phalarope	129	45.2	46.9	.938	99	34.8	62.6	.668	57	20.0	36.2	.284
Glaucous-winged Gull	0				1	100	.6	.002	0			
Herring Gull	19	82.6	6.9	.034	2	8.7	1.3	.004	2	8.7	1.3	.003
Sabine's Gull	1	100	.4	.002	0				0			
W. Meadowlark	1	100	.4	-	0				0			
Shearwater/Petrel	5	62.5	1.8	.009	0				3	37.5	1.9	.004
Sooty/Slenderbill	9	29.0	3.3	.016	13	42.0	8.2	.022	9	29.0	5.7	.011
Small Pterodroma	3	75.0	1.1	.006	0				1	25.0	.6	.001
Storm Petrel sp.	5	41.7	1.8	.009	4	33.4	2.5	.014	3	24.9	1.9	.007
Gull sp.	16	94.0	5.8	.030	0				1	6.0	.6	.001
Land Bird sp.	2	100	.7	-	0				0			
Bird sp.	2	40.0	.7	.004	1	20.0	.6	.002	2	40.0	1.3	.003
TOTALS	275		100.1	1.253	158		99.8	.787	157		99.8	.489
Total Miles		275				291				401		

* The total for Black-footed Albatross does not agree with the grid total due to an allowance for birds following the ship from one area to another.

Table 3: East-west Breakdown of Eastern Grid Bird Populations, 2-9 April, 1967

	EAST				WEST			
	No.	% of Grid species total	% of Total birds in East section	Birds/sq. mile	No.	%	%	B/sq. mi.
Black-footed Albatross*	49	88	13.8	.019	7	12	3.1	.005
Fulmar	4	100	1.1	.003	0			
N.Z. Shearwater	0				3	100	1.3	.005
Pink-footed Shearwater	0				1	100	.4	.002
Herald's Petrel	0				1	100	.4	.002
Leach's Storm Petrel	71	57	20.0	.111	54	43	24.0	.164
Red Phalarope	154	54	43.4	.482	131	46	58.3	.796
Glaucous-winged Gull	1	100	.3	.001	0			
Herring Gull	21	91	5.9	.017	2	9	.9	.003
Sabine's Gull	1	100	.3	.001	0			
W. Meadowlark	1	100	.3	-	0			
Shearwater/Petrel	4	50	1.1	.003	4	50	1.8	.006
Sooty/Slenderbill	22	71	6.2	.017	9	29	4.0	.014
Small Pterodroma	1	25	.3	.001	3	75	1.3	.005
Storm Petrel sp.	6	50	1.7	.009	6	50	2.7	.018
Gull sp.	17	100	4.8	.014	0			
Land Bird sp.	2	100	.6	-	0			
Bird sp.	1	20	.3	.001	4	80	1.8	.006
TOTALS	355		100.1	.679	225		100.0	1.026
Total miles		638				967		

* The total for Black-footed Albatross does not agree with the grid total due to an allowance for birds following the ship from one area to another.

Table 4: Cruise Data Summary, Eastern Area Cruise 6: 1-10 April, 1967

Date	1	2	3	4	5	6	7	8	9	10
No.hours diurnal watch	2.8	12.7	12.6	12.5	12.8	12.7	12.9	12.5	12.5	11.7
No. diurnal miles	32	113	115	131	130	132	126	142	133	113
Birds/lin. mile	9.91	.805	1.45	.542	.138	.910	.540	.274	.376	21.41
No. Birds	324	91	167	71	18	120	68	39	50	2423

Table 5: Summary of Nocturnal Observations, Eastern Grid Cruise 5

Date	2	3	4	5	6	7	8	Total
Hours of Observation	2	2	2	2	2	2	2	14
Gull sp.	3							3
Black-foot albatross			1					1
Storm Petrels		6		1	4			11
Red Phalarope		17	1	2		2	1	23
Bird sp.	3	4/27	2	3	4	2	1	4/42

EASTERN AREA CRUISE NO. 5 April, 1967

CRUISE PLAN

I. CRUISE PERIOD: April 1-10,1967 (Cruise 0050025)

II. CRUISE VESSEL: U.S.N.S. SHEARWATER (T-AG 177)

III. ITINERARY:

1 April	Depart Long Beach, California.
2-9 "	Conduct survey of eastern Pacific Grid following specified cruise track.
10 "	Return to Long Beach, California.

The biologist-in-charge has full authority, in consultation with the ship's master, to determine the use of available time in and out of the eastern grid, in accordance with bird populations encountered, so as to achieve cruise objectives most effectively.

IV. PERSONNEL:

Brian Harrington (biologist-in-charge), Richard Heiden, and James Lewis.

V. OBJECTIVES:

The objectives for this survey are the same as for former EAC cruise plans.

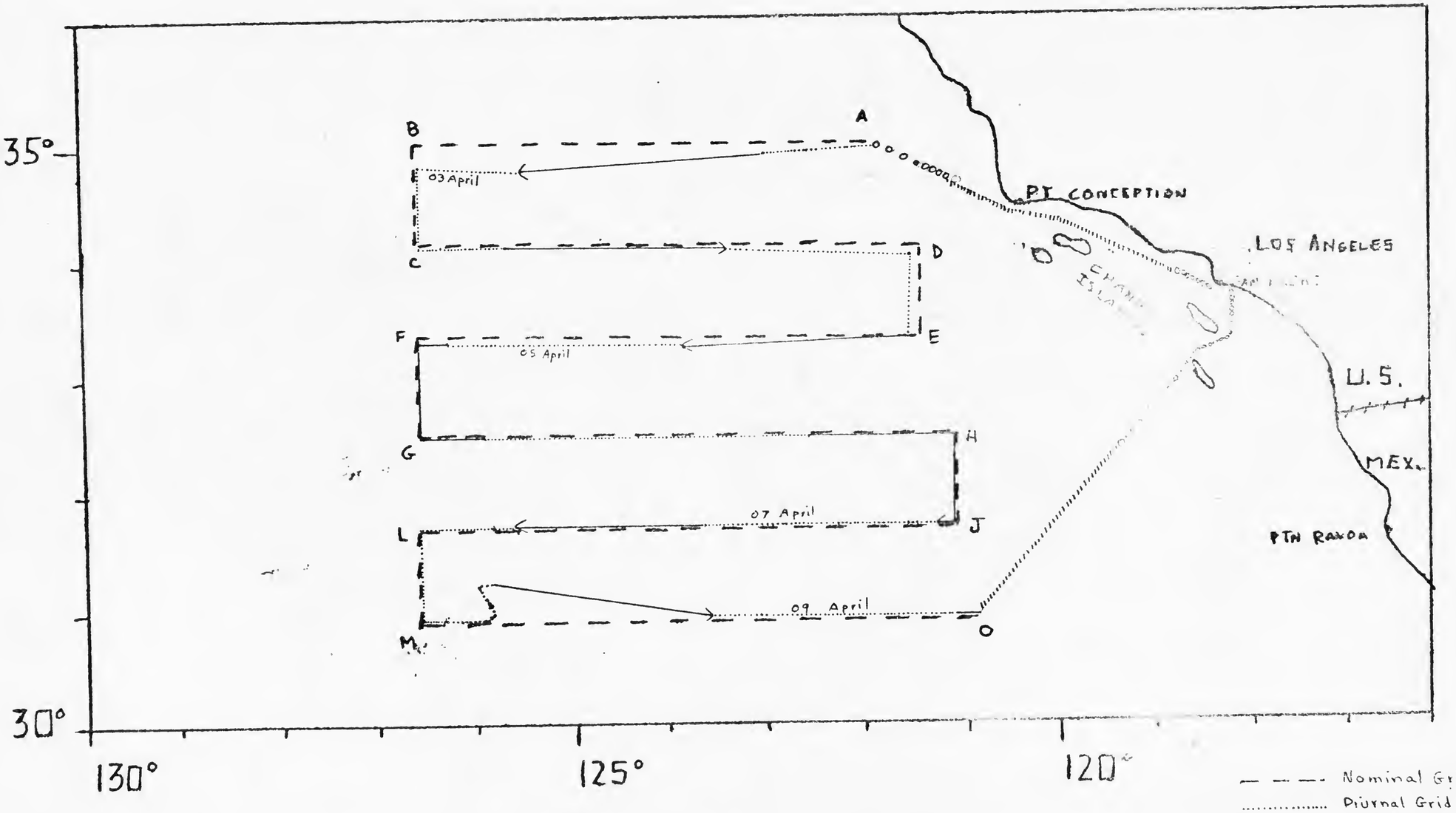
VI. PROCEDURES:

Follow procedures established on previous EAC trips.

Table 6: Diurnal Density of Species Groups in the Eastern Grid
2-9 April, 1967

Species Group	No.Birds	Birds/lin. mile	Birds/sq. mile	Percent of Total Birds
Albatross	54	.056	.014	9.3
Shearwater/Petrels	52	.053	.027	9.1
Storm Petrels	137	.141	.141	23.7
Phalaropes	285	.294	.588	49.3
Gulls	42	.044	.023	7.3
Miscellaneous	8	.011	.009	1.4

EASTERN PACIFIC OCEAN

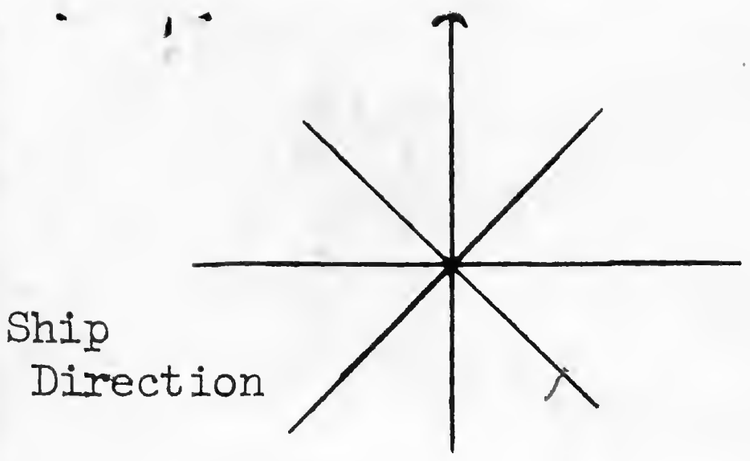


MAP 1: EASTERN AREA CRUISE NO. 6; CRUISE TRACK, 1-10 APRIL, 1967.

Table 7: Summary of non-grid Observations, Eastern Area Cruise 6,1-10 Apr.,1967

Species	Long Beach to Point "A" no. seen	Long Beach to Point "A" % of total birds	Long Beach to Point "A" birds/lin. mile	Point "O" to Long Beach no. seen	Point "O" to Long Beach % of total * birds	Point "O" to Long Beach birds/linear mile
Black-footed Albatross	9	2.4	.103	3	.7	.027
Laysan Albatross	1	.3	.011	0		
Fulmar	5	1.4	.057	0		
Pink-footed Shearwater	2	.5	.023	55	12.4	.487
Leach's Storm Petrel	0			1	.2	.009
Pelagic Cormorant	0			24	5.4	.212
Black Brant	140	37.8	1.069	0		
Red Phalarope	1	.3	.011	12	2.7	.106
Pomarine Jaeger	1	.3	.011	0		
Long-tailed Jaeger	0			2	.5	.018
Western Gull	3	.8	.034	16	3.6	.142
Herring Gull	6	1.6	.069	12	2.7	.106
California Gull	15	4.1	.172	4	.9	.035
Ring-billed Gull	1	.3	.011	0		
Bonaparte's Gull	9	2.4	.103	2	.5	.018
Black-legged Kittiwake	12	3.3	.138	1	.2	.009
Sabine's Gull	1	.3	.011	0		
Forster's Tern	0			4	.9	.035
Xantus Murrelet	0			5	1.1	.044
Rhinoceros Auklet	6	1.6	.069	10	2.3	.089
Loon sp.	0			28	6.3	.248
Shear/Petrel	2	.5	.023	0		
Sooty/Slenderbill	5	1.4	.057	1980	*	17.420
Cormorant sp.	9	2.4	.103	5	1.1	.044
Jaeger sp.	3	.8	.034	21	4.7	.186
Gull sp.	131	35.4	1.505	204	46.0	1.816
Alcid sp.	5	1.4	.057	34	7.7	.301

* Percentage figured excluding Sooty/Slenderbill Shearwater.

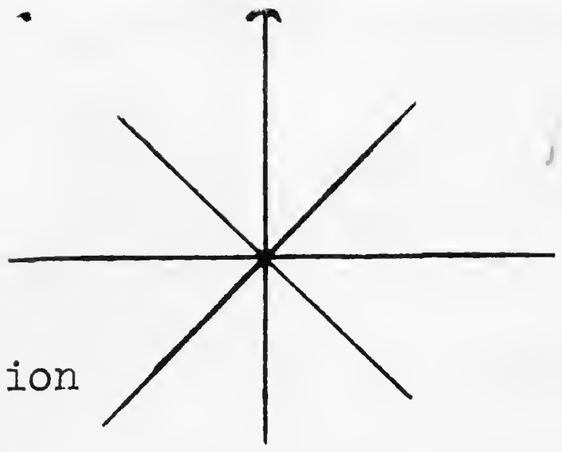


OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date April 1
Pg.# 1

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
1530					Begins Observations
1535	Gulls	5			following 2 Inm 3 Ad
1537	Bonaparte's Gull	4	N		
1545	Gulls sp.	50 ± 20			Between Ship + Islands to west
1547	BLK	7	on H_2O		Imm
1548	Bonapts	1	ee		
1550	Bonapts	3	ee		
1553	Bonapts	1	~~ee~~		on H_2O
1555	Cormorant	1	N		
1556	W. Gull	1	~~ee~~		Following Imm.
1557	W. Gull	1	ee		on H_2O
1600	Cormorant	5	N		
1601	BLK	1	ee		Sitting on H_2O Imm
1603	W Gull	1	E		~~Headed~~ Heavily Moulting in secondaries Imm
1605	whale Sp.	3	S		33-43 118-26 Pilot Whales
1605	Gulls sp	15	ee		on H_2O
1607	Pilot Whales	8-10	ee		Seen closely - 33-43 · 118-26
1618	Cormorants	3	~~ee~~	E.	
1620	Gulls sp	13	W		
1623	"	9	ee		
1628	"	14	ee		on H_2O
1635	"	5	ee		"
1643	"	9	ee		circling to E
1650	BLK	1	ee		ad, heavy molt.
52	Jaeger sp	1	W		
54	Bonapart Gull	5	N		
54	Cal Gull	6			following ship
58	Gull sp	9			feeding over jumping porpoise
1700	Jaeger sp.	1	N		Porpoise sp 5 → light — 33-48 118-35
1710	Bonapt sp	60 ± 5			NW
1711	Alcid sp.	1			on H_2O
1716	RA	2			on H_2O
1718	RA	2			" "
1725	Alcid sp	1	ee		
1720	BLK	1	ee		ad



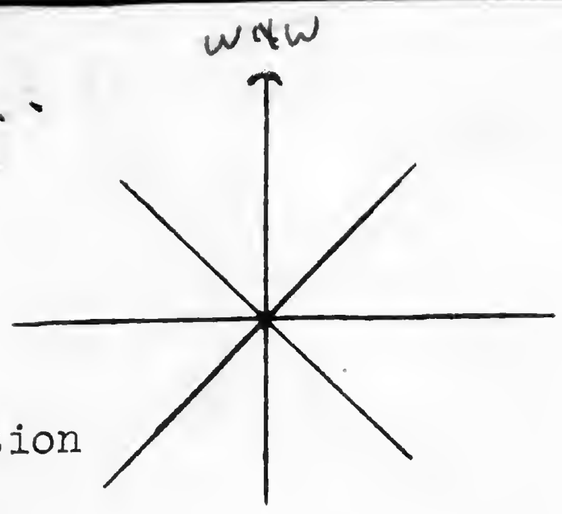
Ship Direction

OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date April 1
Pg.# 2

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
1747	Alcid sp	2	N/		
1748	Diant sp.	80±5	NW		
1748					Baird's porpoise 2 33-53 118-45
1754	GULL SP.	1	SE		Imm.
1759	Cal Gull				9 following
	Ring-bill	1			ad "
1815					Sunset
					Close observations.



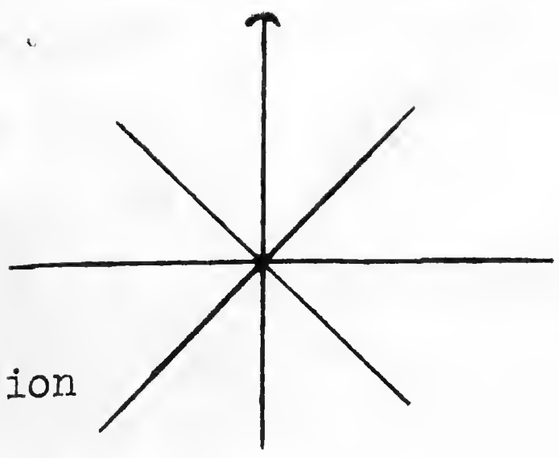
Ship Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 2 April '67
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0550					begin
56	Sooty/Slender	1	N		
56	H Gull	1			subadult
58	Bird	1			
0602					Harbor Seal 1 — 34-36 121-02
0604	Gull sp	1	NW		
07	sooty/sldr.	1	〃		
10	H Gull	1	〃		
14	Shear/pet	1	N		light underneath, probably P. creatopus
0625	BFA	1			Following.
0628					SEAL sp. (flippers in air) — 34-38 121-08
0631					" looked like fur " "
0643	S/slender	1	N		
45	Pom. Jaeger	1	NW		
50	Fulmar	1	〃		dark
50	bird	1			black, seen by skua
52	Gull sp.	1			immature
0704	Fulmar	1	〃		dark
0705	Jaeger sp	1			
0710					Fur Seal? 34-41 121-15
0714					seal
0740	P. Creatopus	1	O		34-41 121-16
0805	CAL. GULL	1	〃		
0808	SOOTY/Sl	1	〃		
0809	BF albatross	4	〃		
0810					2 seals flippers in Air 34-42 121 27
0816					Seals 2 flippers in Air 46 28
0844					Seal 1 47 32
0849	GULL SP.	2			2 sitting on log
0854	BFA	7			Following
0858	Shear/Pet	1	N		Distant
0902	P. Creatopus	1	NW		close
0910					Dahl Porpoise 3 milein Bowditch 34-49 121-36
0921	BLK	2	〃		on H_2O Std
0930					Skiff in H_2O



Ship Direction

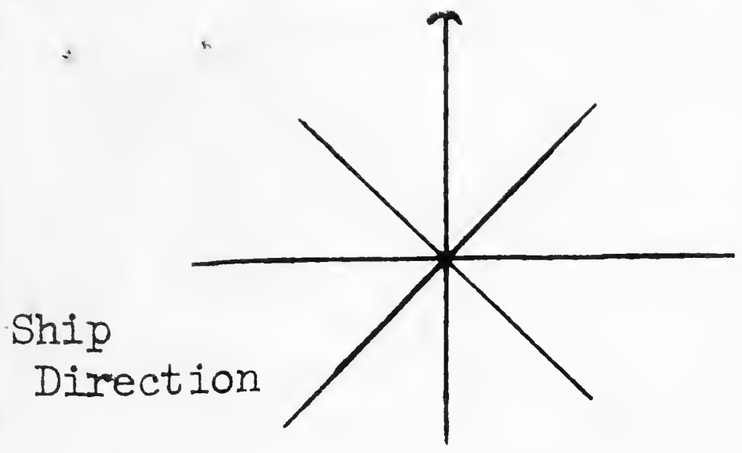
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN non G.
or

Date 02 April
Pg.# 2

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0940					skiff still over
0941	R. Phal.	1			on H_2O
0945	BFA	4			
0954	Fulmar	1			dark
1000					Cal. sea lion (?) carrying fish 1½' long. 34-51 121-43
1005	Fulmar	1			
1015	BFA	2			Following another ship.
1030	Laysan A	1			
1035	BFA	9			BFA
1035	Sooty Shear	1	S		
1037	HG	2			ad, imm, coll RH. sitting on log
1037	Sabine Gull	1			ad on H_2O
1038	Alcid	1			large
1050	H.G.	2			ad.
1100					Real Kf. 34-53 121 49
1103					" " "
1105					stop for skiff. bring on board
1115					underway
1135	R. Auklet	2			on H_2O
1155					SEAL SP.
1207	FULMAR	1	D		dark 34-54 121-55



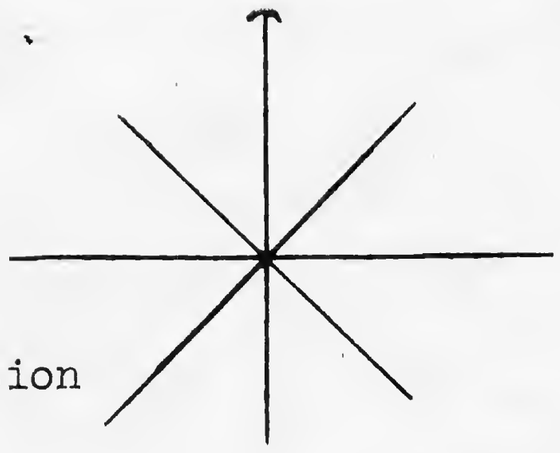
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN or GRID

Date 2 APRIL 1967
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1215					ENTER GRID
1216	GULL SP.	1	⊙		distant
1221					
1230	BF alb.	1	⊙		seal sp.; flippers out of H_2O · 34-56 122-01
1234					distant
1236	BF alb.	1			seal sp. — 34-57 122-03
1250					sitting on H_2O
1256					seal sp.; flip. extended " 34-58 122 07
1320					3459 122-09
1340					SKIF in H_2O
1343	shear/Pet	1	⊙		Whales ca 15, 10-12 ft. small dorsal, set
1350	fulmar	1	⊙		way back on body, Head very rapidly, 35 00
1350					I think rather blunt in front. Very dark 122-20
1358					Dorsal
1408	Shear/Pet	1	⊙		Seal 1 in.
1407	HG	3	⊙		Seal — flippers out of water H_2O 35-00 122-24 Globicephala ?
1420	Gulls	7	⊙		Following Ad 35-00 122-24
1430					small possibly BLK or Sabines
1454	~~Pet~~				
1518	Small Gull	1	W		Seals 2 35-00 122-34
1530	GULL SP.	1	W		~~Pet~~ either BLK or Sabines
1600	BF alb.	13			seal spp. 35-00 122-45
1600	MER. GULL	6			distant + calling
1634					following; 7 sitting on H_2O which skip to and momentarily
1640					following skip; 4 Imm.
1645	GULL SP.	1	E		seal spp. 3459 122-57
1701	~~Pet~~ HG	~~Pet~~ 5			seal spp. -58 122-58
1715	Fulmar	1	⊙		~~on body~~ 4 ad, 1 Imm
1730	BFA				dark
1740	BFA				Total 12 following.
1930	HG	10	⊙		Total 19 when garbage dumped. 1 had white rump,
1634					all others dark
					Following 2 Fmr & Ad
					Sunset Close of observations



OBSERVERS:

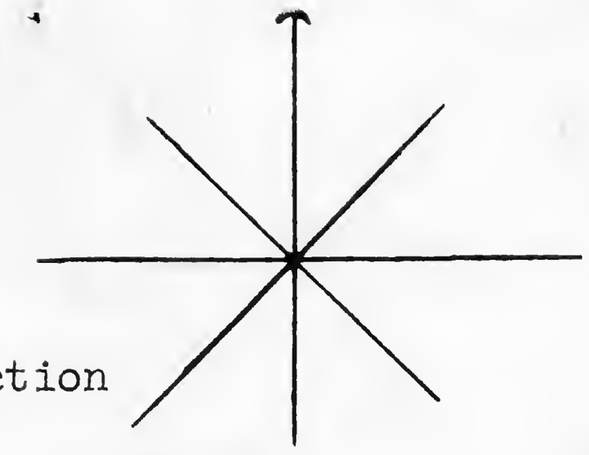
HEIDEN

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 2 APRIL 1967
Pg.# 1

SPECIMEN NOCTURNAL GRID
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2200					BEGIN OBS.
2217	GULL SP.	1	O		
2307	GULL SP.	2	O		
2325					5 min. count of squid eyes (to 2330) - 48
2400					CLOSE OBS.



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

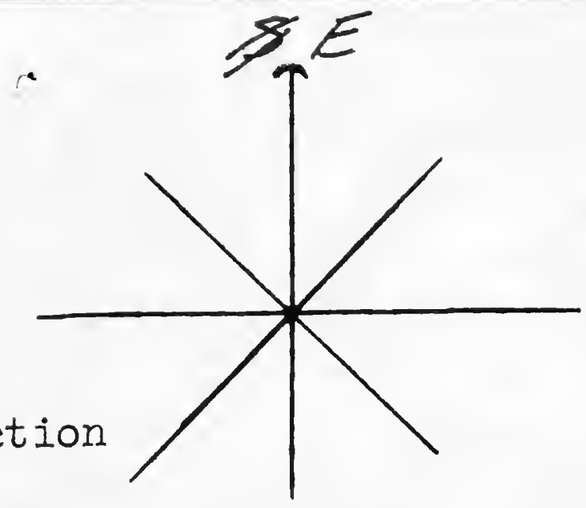
OBSERVERS:

Date 3 April 67
Pg.# 1

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
0605					Sunrise begin observations
0611	BFA	1	⊕		following
	Storm Pet	1	e		
0625	R Phalarope	12	ee		
0640	WRSP	1	ee		
0653	New Zeland Shearw	1	ee		All white bottom W pattern on back
0710	R Phalarope	10	ee		
0725	New Zeland	2	N		
0737	Procellaria	1	N		? sitting on H_2O
0820	Red Phal.	12			distant
0825	Phal. sp.	2	O		
0845	Small Pterod.	1	N		distant
0847	" "	1	N		
0852	R. Phalarope	16			on H_2O, none red
0906	WRSP	2	ee		
0906	Bird	1			small, circled 60' above H_2O for 2 min, then went low.
0910	HG	1			ad. following
0917					seal sp. 34-51 126-12
0920	HG				Now 2 ad.
1004	~~Storm Pet~~ WRSP	1	ee		
1015					cc To South
1017	WRSP	1	ee		
1110	WRSP	2	⊕		
1130	WRSP	1	⊕		
1145–1200					school of Right Whale Dolphin travelling north-northeast. Minimum estimate 1000, maximum 1500
1200	~~1200~~ WRSP	5	N		following Dolphin. Photographed.
1200	R. Phalarope	20±2			on H_2O
1220-25					ca 150 r.w. Dolphin: were feeding when first approached: ca. 125 took off to North, 25 followed ship for 5 min to south, then went north. When surfacing, most of school surfaced at same time. Sizes: Largest 8-10', smallest 5-6'
				34-29 126-22	
1230	R. Phal.	19			~~ee~~ 2 very red. on H_2O

34-35 126-21

SI-MNH-958-e
Rev. 5-66



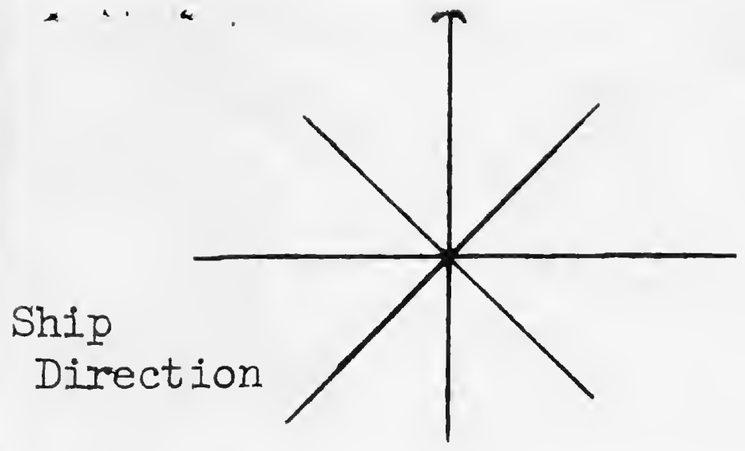
Ship Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 3 April 67
Pg.# 2

	TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
	1237	WRSP	1	S		
	1300					skiff over
ccc	1315	RED PHAL.	3			collected from skiff by T.J. LEWIS
	1330	STORM PET. SP.	1			
	1335	WRSP	1			sighted from skiff by Lewis
c	1345	HERALD'S PET.	1			collected from skiff by Lewis
	1350	~~PTERO. SP.~~ Shear/pet	1			
	1350	WRSP	2			large; sighted from skiff - white below
	1424	WRSP	1			sighted from skiff
	1450	"	1			
	1457	WRSP	2			1 coll (T J L.)
	1505	"	1			~~" (T J L.)~~
	1510	R. Phal	6	HW		
	1512	WRSP	1			
	1516	WRSP	2			
	1519	R. Phal	12			on H2O
	1530	WRSP	2			
	1530	"				SKIFF aboard
	1535					underway again Point C passed, CC TO E
	1550					
	1610	Sooty Shear	1			BFA 2
	1634	RED PHAL.	17			light underwings, chunky body
	1645	WRSP	1			
	1650	WRSP	2			sitting on H2O
	1655	"	1			
	1750	"	1			
	1830	BFA				now 3 following.
	1845					done



OBSERVERS:

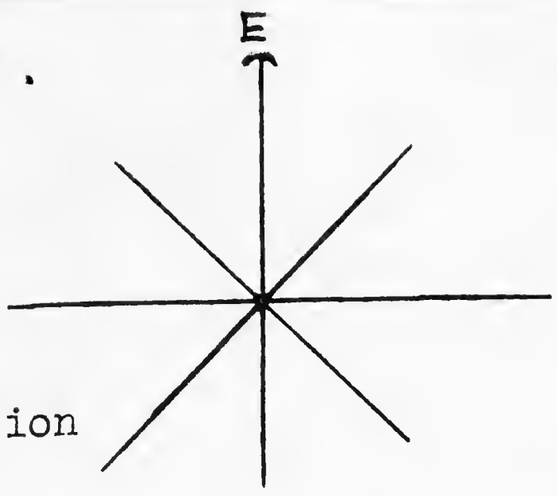
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 3 April '67
Pg.# 1

SPECIMEN *Nocturnal Grid*
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2030					open observations
2035	StormPet.	2			
2045	R Phal	1+			heard
2100	"	1			
2101	"	4			
2105	Bird	1			
06	"	1			
2111	R Phal	1			
2115	"	4			
2115	WRSP	1			
2130	R. Phal	5			
2134	WRSP	2			
2144	~~Bird~~ WRSP	1			
2145	R Phal.	1			
2154	Bird	1			Enter rain squall
2207	"	1			
2230					clear; still rain

TOTALS: Storm Pet sp. || (2)
WRSP: |||| (4)
Bird: |||| (4)
R Phal: |||| |||| || (17)



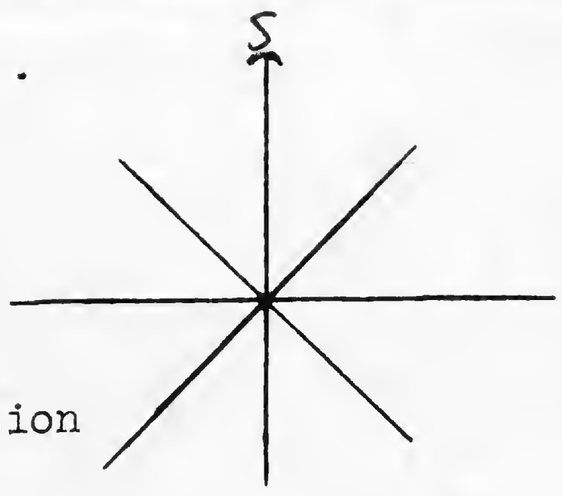
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN or DIURNAL GRID

Date 4 APRIL 1967
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0600					SUNRISE; BEGIN OBS.
0600	BFA	3			following ship
0620	SHEAR/PET	1			distant
0630	WRSP	1			
0645	HER. GULL	1			ad.; following ship
0707	WRSP	1			
0720	WRSP	1			
0745	HER. GULL	1			sitting on log in H2O
0800	PHAL. SP.	6	W		distant
0802	WRSP	1			
0805	Storm Pet	2			
0805					sperm whale 1 34-08 122-51
0807					whale. 1 " "
0814	Fulmar	1			
0817	WRSP	1			sitting on H2O
18	Bird	1			
0823	BFA	6			following
0825	WRSP	1			
33	R. Phal.	1			on H2O
45	WRSP	1			
55					cetacean sp. 34-05 122-34
0904	Storm Pet	1			
0910					sperm Whale 6 - 34-05 122-31
0910	Meadowlark	1			Coll. TJ Lewis
1004	WRSP	2			
1014	WRSP	1			
1100					seal sp. (2) 34-03 122-10
1110	HG	2			ad. following
1144					seal sp. 1 34-03 122-07
1120	Gull sp	7			Following another ship
	BF Albat.	2			" " "
1130					Land birds (2) on other ship - ca. size of meadowlark.
1305					Seal sp 1 34-02 121-42
1339	RED PHAL.	1			sitting on H2O
1349	RED PHAL.	2			sitting on H2O
1420	S/Sldr	1	N		
1420					change course to S.
1420	HG	[illegible]			2 ad, 2 imm following



Ship Direction

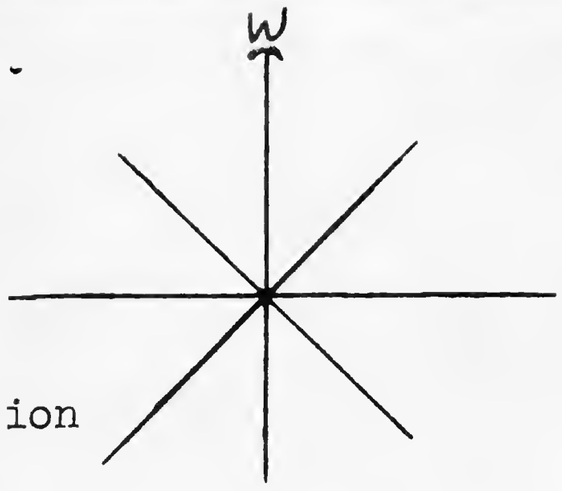
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 4 Apr. '67
Pg.# 2

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
1421					seal sp (Fur?) 1 .33-59 121-32
1433	sooty/slender	1	S		
1445	Sooty Shear	1	W		Following ship - white underwings
1454	"	1	W		white underwings
1500	BFA	10	W		Following ship
1505	Sooty/Slb.	1	N		
1517	Sootyshear	1	W		white underwings
1520	B. Phalarope	1	W		
1547	Shear/Pet	1	NE		
1600					seal sp. 1 33-44 121-28
1604	SOOTY/SB	2	N		
1630	PHAL. SP.	1	S		
1633	SOOTY/Slb	1	N		
1637	PHAL. SP.	1	S		
1710	Soot/Slder	1	NE		
1714	GWG	1			imm following
1735					at garbage Dumping: 12 BFA (none w/white rump.) 4 HG (2ad, 2imm) 1 GWG (imm)
1805	FULMAR	1	O		dark
1830					BFA 14 (None with white rump)
1530					change course to W.
1630					Sunset, close observations

North section ↑ central section ↓



Ship
Direction

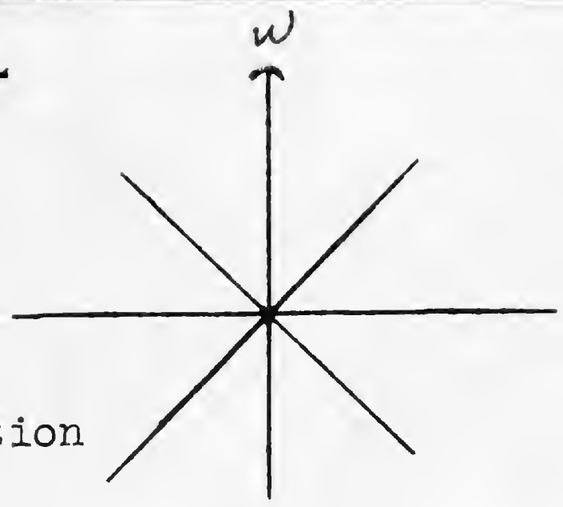
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 4 April 1967
Pg.# 1

SPECIMEN or NOCTURNAL Grid

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2130					Begin observations
2230	PFA	1	a		on H_2O
2305	R Phalaropes	1			Flew beside ship for 5 min.
2330					close observation.



Ship Direction

OBSERVERS:

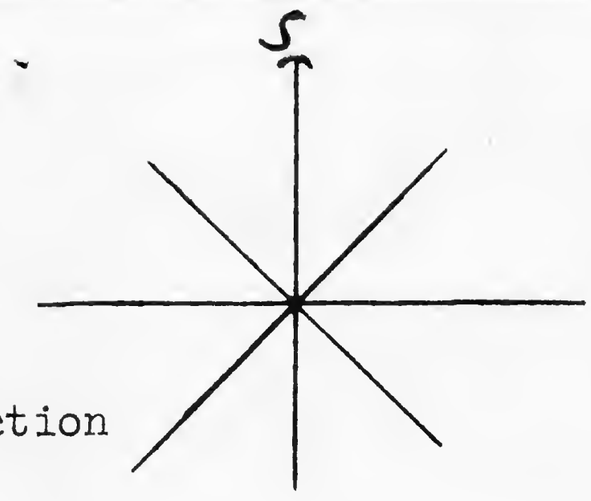
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 05 April '67
Pg.# 1

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
0559					Sunrise, begin observations
0607	WRSP	1	NW		black dividing line on romp.
0630	BFA	1			Following
0650	~~HG~~ HG	2			Ad. following.
0747	BFA	3			following
1224	WRSP	1	⓪		
1310	Red Phal	5			on H_2O
1428	"	3	IV		
1525	"	2			on H_2O
1623					Baird's Dolphin - 25±5 33-17 125-50 well viewed. Rode bow wave 5 min.
1638	R. Phal	1			on H_2O.
1800	BFA	1			following ship
1847					2 BFA following ship
1847					SUNSET - CLOSE OBS.

WRSP 2
RP 11
BFA 3
HG 2
18

SI-MNH-958-e
Rev. 5-66



Ship
Direction

OBSERVERS:

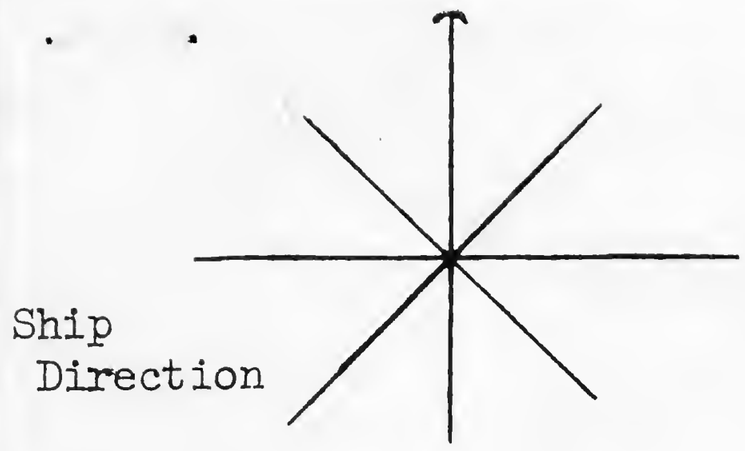
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN or NOCTURNAL GRID

Date 5 APRIL 1967
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2230					begin obs.
2255	PHAL. SP.	1	0		
2330	PHAL. SP.	1	60		
2347	WRSP	1	0		
0020					5 min. count of squid eyes — 59
0030					close obs. INTERMITTENT SQUALLS THROUGHOUT OBS.

SI-MNH-958-e
Rev. 5-66



OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 6 April 67
Pg.# 1

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
0603					Sunrise begin observation
0604	WRSP	1	E		on H_2O
	BFA	1	E		Following ship
0625	Sooty/Slb	1	N		In Rain Traveling
0629	"	1	N		" "
0647	P. Creatopus	1	ENE		" "
0652	Storm Petrel	1	E		" "
0800	" "	1			seen by capt.
0807	WRSP	1			in rain squall
0814	"	1			" "
0815	Sooty Shear	1	N		light underwing
0926					Stopped for Pickup of Gas drum
1010					underway after Pickup of Gas Drums
1020	Sooty Shear	1	N		light underwing
1020	Sooty/Slb	1	N		distant
1031	WRSP	1	ENE		
1049	Storm Pet	1	ENE		
1058	Bird	1	ENE		Seen by crew
1102	BFA	1	ENE		Following ship
1120	"	2			" " ;1 leucothea with white rump.
1125	Sooty/sled r.	1	N		light underwing. In rain squall.
1200	WRSP	1	E		
1208	SOOTY/Slb	1	N		light underwing
1218	WRSP	1	E		
1220	SOOTY/Slb	1	N		light UW
1245	SOOTY/Slb	1	N		" "
1350	R. Phalarope	1	NE		water-Plumage ups high
1415	BFA	3			Following.
1432	WRSP	2	N		
1447	"	1	N		
CC 1520	RED PHAL.	2			sitting on H_2O call R. Heiden
1525	WRSP	1	E		
1530	RED PHAL.	14			sitting on H_2O
1555	SOOTY/Slb	1	N		dark underwing
1556	PHAL. SP.	3	E		distant
1610	WRSP	1	ENE		
1618	R. Phal	9	E		Sitting on H_2O

$$\begin{array}{r} 56 \\ 115 \\ \hline 173 \end{array}$$

$$\begin{array}{r} 275 \\ 173 \\ \hline 102 \end{array}$$

$$\begin{array}{r} 131 \\ 102 \\ \hline 29 \end{array}$$

$$\begin{array}{r} 160 \\ 136 \\ \hline 296 \\ 29 \end{array}$$

OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Ship Direction

Date 6 April 67
Pg.# 2

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
1640	R. Phal	2			1 Man o'war type Jellyfish on H₂O
1704	R. Phal	40±5	N		
1722	R Phal	8	N		
1722					Baird Dolphin: 75 going north (32-29 / 122-46)
1727	s/sldr	1	N		light underwing
1727	R. Phal	1	N		
1730	storm Pet	1	SW		
1732	R. Phal	6	N		
1755	WRSP	1	0		
1812	WRSP	1	0		
1830	WRSP	1	0		
1835					3 BFA following ship
1847					SUNSET; close obs.

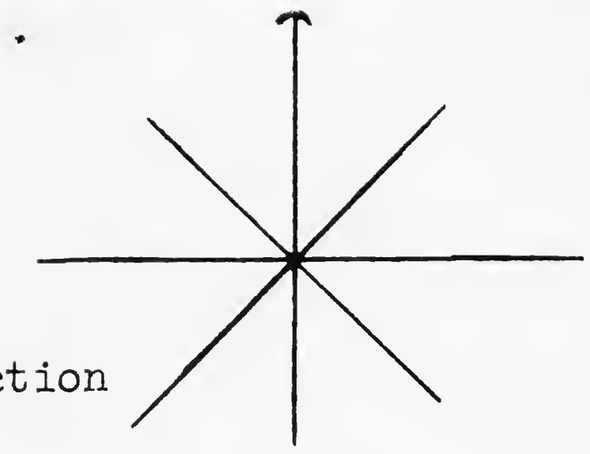
SP ////
WRSP ~~////~~ ~~////~~ ////
BFA ///
S/S ~~////~~ ~~////~~ /
creotopus 1
RP ~~////~~ //// 14, 9, 40, 8, 6 (86)
Bird 1

34
120

86
13
99
44
15
156

206
120
156

SI-MNH-958-e
Rev. 5-66



Ship
Direction

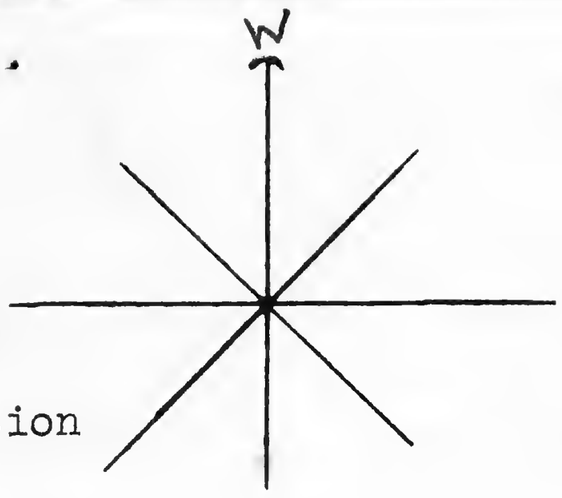
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 6 April '67
Pg.# 1

SPECIMEN or Noct. Grid

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2000					open observations
2100	Leach's Pet.	1			coll. BAH
2115					storm Pet seen by capt.
2135	~~Bird~~ Storm P	1			~~lost~~
2150	WRSP	1			
2200					close observations



Ship Direction

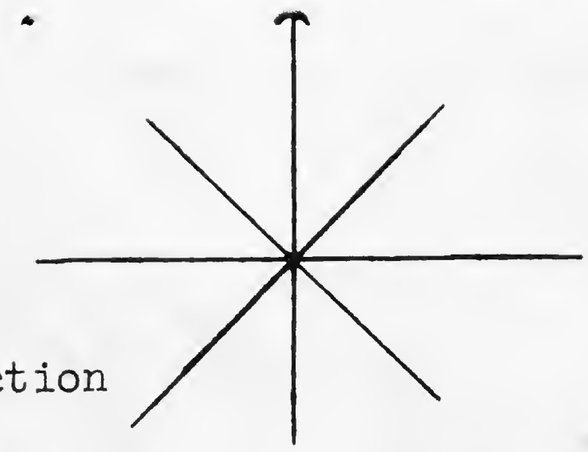
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 7 APRIL 1967
Pg.# 1

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
[redacted]	0344				
					— SUNRISE; BEGIN OBS.
0617	GULL SP.	1			sitting on log
0630					light squall
0640					hard squall
0645	WRSP	1			
0647	WRSP	1			
0730					Whale sp. (1); blowing; distant (Sp.?) 31-40 121-36
0740					Sperm Whale 6 W 31-40. 121-38
0800					Sperm Whale 6 NW 121-42
0840	R.Phal	5			on H_2O
0846	BFA	1			Following ship
0911	WRSP	1			
0934	HG	1			Following ship Imm
0950	BFA	2			Following Ship
1012	PHAL. SP.	1	S		
1031	RED PHAL.	5			on H_2O
1103	RED PHAL.	1			on H_2O
1110	"	20±5			on H_2O, flushed to S.
1204	P. leucoptera	1			close good looks, Heavy Wt Dark head, light Back Mottled underwings, light body underneath
1205	HG	1			
1215	Sooty/Slb	1	N		Ad following
1302	RED PHAL.	1			on H_2O
1314	" "	6	S		
1329	WRSP	1			
1342	WRSP	2			
1452	WRSP	3	N		
1542	BFA	3			Following ship
1624	Sooty/Slb	1	N		dark underwing
650	BFA	5			following.
1702	Soot Shear	1	N		close. white underwing
1704	Soot/Slbr	1	N		distant
1711	Soot	2	N		light underwing
1745	WRSP	1			
1758	Sooty/Slb	1	N		
1817	Sooty Shear	1			Following ship light underwing
	WRSP	1			" "
1820	Stormpet	1			No White Rump - deeply forked tail
1837	BFA	3			Following ship — Smaller Close

SI-MNH-958-e
Rev. 5-66



Ship
Direction

OBSERVERS:

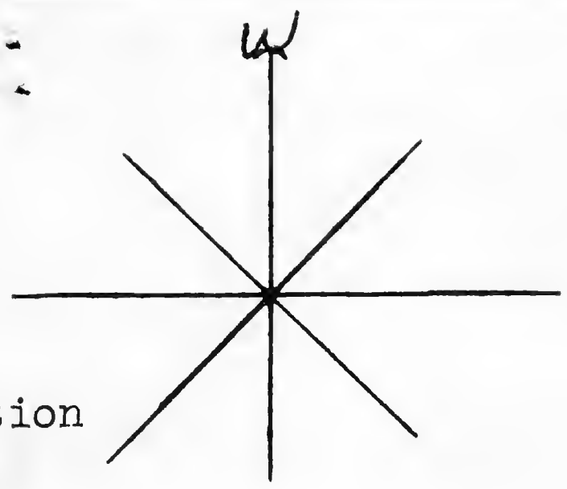
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN Nocturnal Grid
or

Date 7 April 67
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2040					Begin observations
2220	B. Phaeurgus	2			Called as netted & observed
2240					Close observations

SI-MNH-958-e
Rev. 5-66



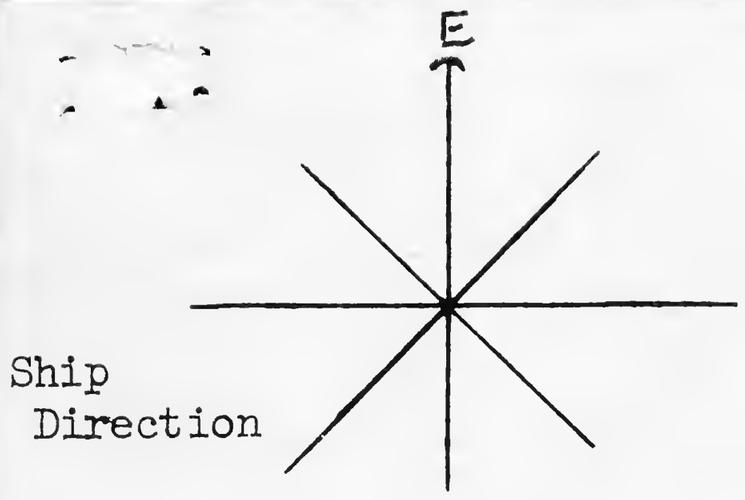
OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 8 April 67
Pg.# 1

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
0603					sunrise
0615					begin observations
0630	BFA	1			Following.
0640	Soot. Shear	1	N		
0704	Storm Pet	1	cee		
0720	WRSP	1			exceptionally white rump, no black dividing line seen although quite close. Flight not typical leach's: possibly a Harcourt's or Wilson's.
0730	WRSP	3	N		all looked like leach's
0740	"	1	N		
0744	"	1	N		
0810	WRSP	1			
0815	RED PHAL.	1	N		
0910	WRSP	1			
0930					CC To S
0933	Red Phal	1	NW		
0936	WRSP	2	cee		
0950	Bird sp	1			Probably Phaethon
1000	R. Phal	6	NW		
1003	"	1	NW		
1020	WRSP	1			black dividing line seen
1050	BFA	2			following
1200	Shear/Pet	1	NW		Possibly P. creatopus - flew like wedge-tail but was too distant for any color
1217	"	1	—		
1235	Bird	1	W		large white - size of Gull, All white seen by capt.
1310					change course to E
1400					
1432	WRSP	2			~~one medium-sized green finback~~
1455	WRSP	1			
1511	R. Phaethon	1	cee		
1600	R Phal.	1	N		Coll T. J. Lewis
1604	"	2			
1604	WRSP	1			
1640	Shear/Pet	1			
1752	WRSP	1			
1831	WRSP	1			
1847					SUNSET; CLOSE OBS.

SI-MNH-958-e
Rev. 5-66



OBSERVERS:

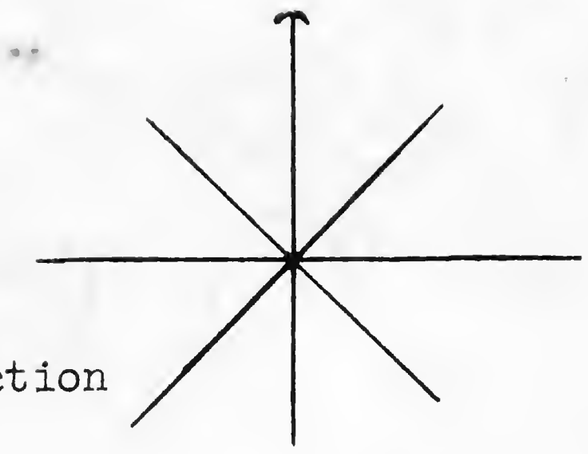
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN or NOCTURNAL GRID

Date 8 APRIL 1961
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2145					Begin obs.
2247	DNAL. SP.	2	SW		
2345					close obs.

SI-MNH-958-e
Rev. 5-66



OBSERVERS:

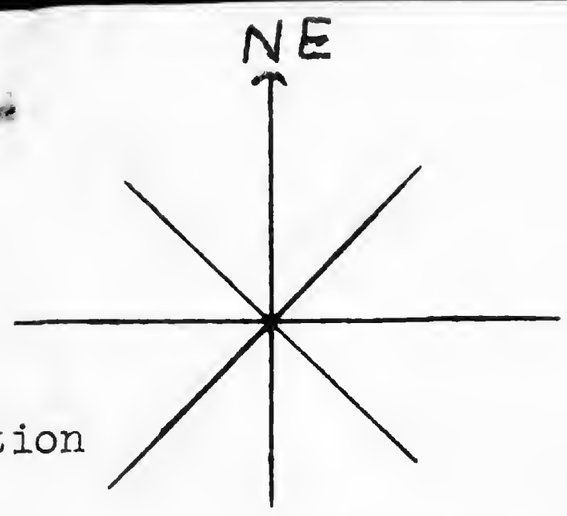
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

Date 9 April 67
Pg.# 1

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
0558					Sunrise begin observations
0611	WRSP	1	ca		
0657	WRSP	1	ca		
0714	Red Phal	1	ca		
0759	WRSP	1	E		
0828	Storm Pet	1			
0828	BFA	1			following.
0934	RED PHAL.	2	9		
0946	BFA	1			
1005	WRSP	1			very distant
1022	BFA	2	ca		
1145	RP	1			Following. on H_2O
1150	WRSP	1	N		
TF 1304	"	9	N		
1305	"	1	N		
1327	R. Phal	1	ca		on H_2O
1342	WRSP	3	W		
TF 1410	"	7	ca		dispersed by ship
1455	WRSP	6	N		
1456	"	2	N		
1507	"	1	W		
1600	BFA	2			following
1612	BFA	4			Following
1635	"	5			"
1639					Baird Dolphin originally 3, an Adult with small young about 4 ft. present. (still present 1715)
1730	WRSP	2			
1740	BFA	5			following
1745	WRSP	2			
1755	BFA	3			following
1756	WRSP	1			
1816	WRSP	1			
1827					SUNSET; CLOSE OBS.

12.5

30-51
121-30



Ship Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

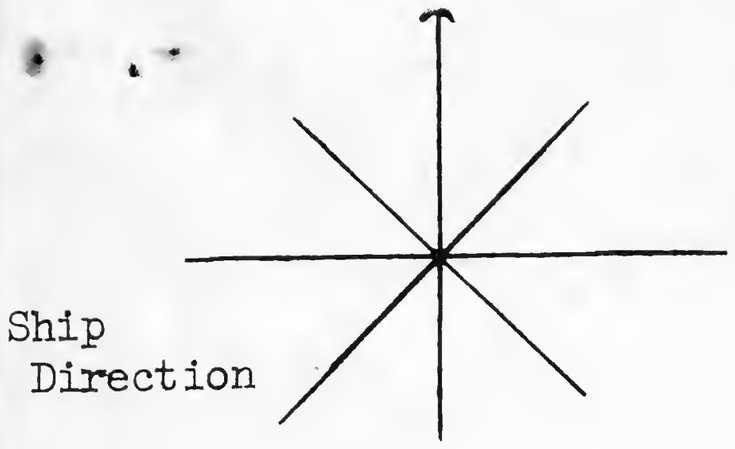
Date 10 APRIL 1967
Pg.# 1

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
0537					SUNRISE
0610					begin obs.
0644	H.GULL	1			1mm.; following
0645	BFA	2			following
0652	GULL SP.	1	N		1mm.; distant
0653	WRSP	1	N		
0655	H. GULL	3	NNE		2 1mm.. 1 Ad.
0707	SOOTY/Sd	1	N		underwing not discernible
0713	H.GULL	3	NNE		2 1mm.; 1 Ad.
0715	GULL SP.	1			1mm.; on H_2O
0724	RED PHAL.	9			on H_2O
0731	W GULL	1	N		Ad.
0732	CORMORANT	1	NNE		
0740	R. Phal	2			
0740	Sooty and				
	Slender shear	27	N		
	P. Creotopus	12	"		
	Jaeger sp	5	"		
	L.T. Jaeger	1			
0750	S/S/.	275	N		
	P. Creotopus	27	"		
	Jaeger sp.	5	"		
0750					seal sp 8 - 32-25-119-20
0751	Alcid sp	2	N		
0800	Soot/sldr	75	N		
0802	"	15	N		
0804	"	15	N		
0807	Jaeger sp.	2	N		
0810	S/Sld.	50	N		on Horizon
0810	P. Creotopus	1	N		
0810	Alcid	1	N		large
0820	S/S/.	15	N		
0820	BFA	3			follow
0420	L.T. Jaeg	1			

610

11.7

SI-MNH-958-e
Rev. 5-66

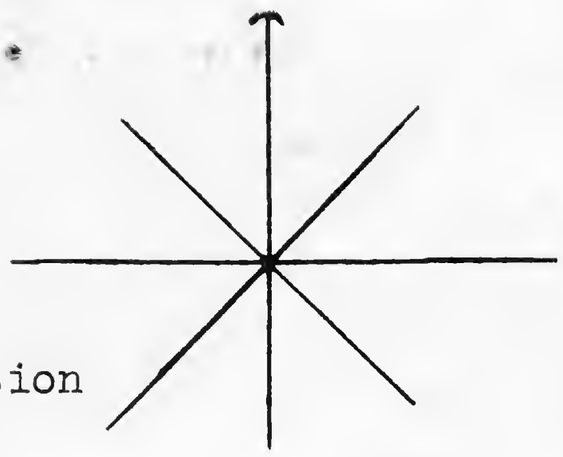


SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 10 Apr 67
Pg.# 2

TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
0825	S/Sl	35			on H_2O
	P. creatopus	2+			
0830	W. Gull	2			"
	Cal Gull	3			"
0832	Soot Shear	1			coll TJL
0835	" "	1	N		
0845	S/Sl.	7	N		
47	"	3	N		
50	Jaeger sp	1	N		L.T. on Para.
51	S/SL.	5	N		
	Creotopus	12	N		
52	S/SL	8	N		
55					seal sp. (32-30 119-13)
57	S/SL	2	N		
59	Alcid	1	N		
0900	S/Sl	16	N		
0903	S/Sl	25±5			on H_2O, flushed N.
0907	R. Phal	1			on H_2O
0910	S/SL	6	N		
0914	S/SL	4	N		
0917	"	1	N		
0920	Alcid	1	a		on H_2O Probably R. Auklet - That's it.
0921	S/SL	1	a		"
0925	Jaeger sp	2	a		on H_2O
0926	S/SL	1	N		
0929	"	2	N		
0932	Alcid	2	a		on H_2O
0935	"	1	a		"
0937	S/SL	2	N		
0939	"	1	N		
0945	S/SL	500±100	a		on H_2O — 1 Soot, Coll TJL
1010					Skiff over
					8 coll RA 11 " " } 27 Soot Shear Coll.
1030	Jaeger sp	3	a		
1050	whale				1 32-41 119-06
1055	S/S	300±50			
1030-55	Alcids	25±5			seen from skiff — 2 RA Coll
1120	RA	1			on H_2O

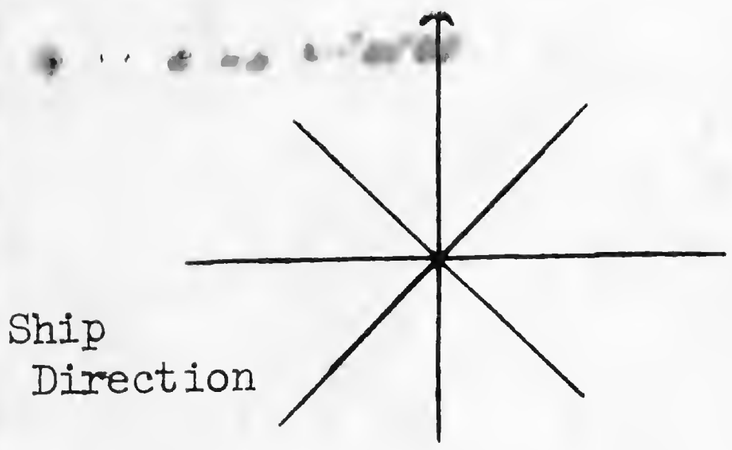


SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 10 Apr '67
Pg.# 3

	TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
	1120	P. creatopus	1			on H2O, heavy molt.
	1140	S/SL	75			"
	1152	S/SL	25			"
	1155	S/SL	200±50			"
	1156	S/SL	150±25			"
	1200	R. Auklet	1			on H2O
	1200	S/SL	3	N		
	1202	R. Auklet	1			on H2O
	1203	P. creatopus	1	N-		
	1203	S/SL	2	N		
	1208	S/SL	22			on H2O
	1210	S/SL	29			flushed from H2O to N
	1211	Rino	1	NW		
	1212	Gull sp.	11			Following 3 Im. 8 Ad
	1216	Rino	2			on H2O
	1223	BLIS	1	NW		Imm
	1225	Rino	2			on H2O
	1225					Seal SP. / 32-48 — 118-59
	1230					Sea lion
	1232	Rhino	1			on H2O
	1232	Jaeger SP	1	W		
	1232	S/SL	3	NW		
	1237	S/SL	50			all on H2O Together
		P. Creatopus	1			
		Gull SP	3			1 Ad 2 Im
	1239	Jaeger SP	1	N		Dark
	1243	" "	1	N		
	1245	S/SL	3	N		
	1247	S/SL	1	NW		
	1250	Rhino	1			on H2O
	1251	S/SL	1	N		
	1255					SEAL SP. (1) 32-51 118-57
	1258	SOOTY/SL	3	S		
	1300	W GULL	1			Ad.
F	1305	W GULL	5			Ads.
		GULL SP.	7			Imm.
		P. CREOPTUS	9			SITTING ON H20, Alarmed flushed to N
		SOOTY/SL	7			
	1325	W Gull	3			Ads.
	1345	GULL SP.	2			Imm. distant
	1346					SEAL SP. (1)
	1350	H. GULL	1			Ad. on H2O
	1351	BFA	1			on H2O, following



OBSERVERS:

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

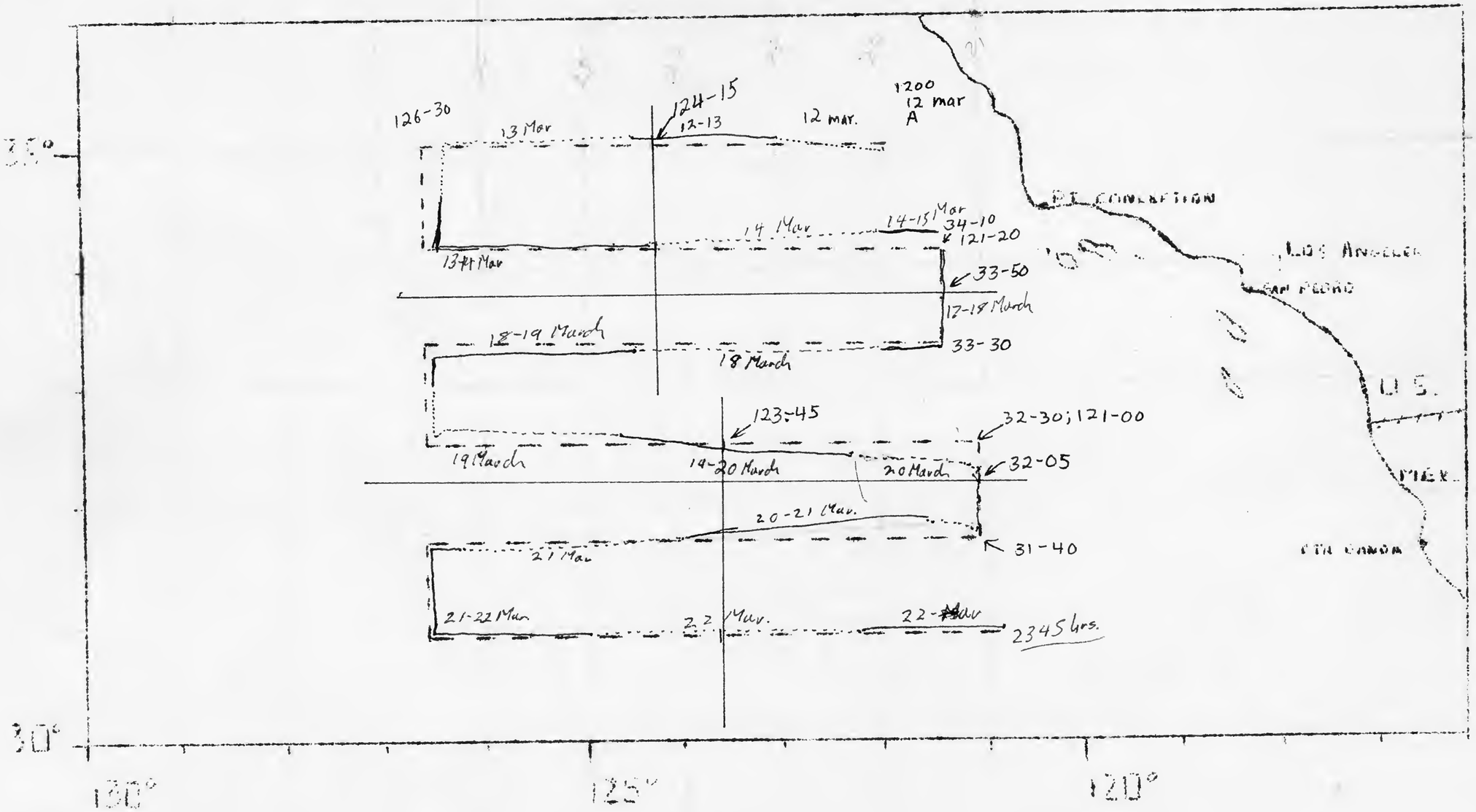
DIURNAL NONGRID

Date 10 APRIL 1967
Pg.# 4

	TIME	SPECIES	#	SPECIMEN or DIR.	BAND NO.	REMARKS
	1355	GULL SP.	1	W		distant
	1357	S/Sb	1	W		
	1408	[redacted] CORMORANT	2 4	N		conspicuous white flanks
	1428	"	1	W		
F	1430	GULL SP.	20 ± 4			on H_2O; distant
	1433	S/Sb	1	N		
	1442	H GULL	4			3 ad., 1 imm. on H_2O
	1450	CORMORANT	3	N		
	1451	ALCID	1			on H_2O
	1452	S/Sb	1	N		
	1453	H. GULL	2			ads; on H_2O
	1454	CORMORANT	1	N		
	1455	"	2	W		
	1503	S/Sb	1	N		
	1514	S/Sb	1	N		
	1515	H. GULL	2			ads. } following
		W. GULL	6			ads. }
	1520	CORM.	1	W		
	1556	LOONS	4	N		
	1557	XANTH'S	2			on H_2O
	1602					Bairds Dolphin 2 on Bow 33-13 118-24
	1608	Xantus M	1	ad		on H_2O
	1610	LOON	2 4	W		~~2 on H_2O~~
	1621	Xantus M	2	ad		on H_2O ♂
	1630	Gulls SP	50 ± 10			near shore of Santa Catalina Fs
	1640	" "	75			on H_2O off Santa Catalina
	1643	Cormorants	2	W		headed Toward " "
	1647	"	1	W		" " " "
	1700	Cal. Gull,	1	ad		
	1701	Gull SP.	~33			on H_2O
	1727					common
	1740	FORSTER'S TERN	3	W		8-10 dolphins riding bow wave
	1741	BON. GULL	1	W		33-31-118 17
	1750	F. TERN	1	W		
	1750	BON. GULL	1	W		
	1750					Laloo.

EAC#5

EASTERN PACIFIC OCEAN



Date 1 APR 67 Ship SHEARWATER (T-AGI77) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time _____ Position: Lat. _____, Long. _____

Sunset: Time 1815 hrs. Position: Lat. ~~H~~ 33-55 N Long. 118-48 W

Miles travelled from 0000 hours to sunrise = _____

Miles travelled from sunrise to sunset = _____ 32 miles

Miles travelled from sunset to 2400 hours = 62 miles =

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	1512 - Depart Long Beach		33°-41.5'N	115°-15'W
2.				
3.				
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500						
1600	33-42.5N	118-25'W	120°	10 Kn	120°	3 FT
1700	33-48 N	118-35.5'W	110	8 Kn	110°	4 FT
1800	33-54 N	118° 47 W	270	10	110	4 FT
1900	33 57° N	118° 58' W	300	7	235	3
2000	34 01 N	119° 05' W	300	7	235	3
2100	34-07 N	119-18 W	270	10	270	2
2200	34-09.5 N	119-28 W	270	10	270	2
2300	34-12 N	119-42 W	CALM		Calm	
2400	~~34-19.5 N~~ 34-15.0 N	~~120-01 W~~ 119-54 W	Calm		Calm	

10 knots 320

958b-SI-MNH
Rev. 9/28/66

Date 2 APR 1967 Ship SHEARWATER (T-AGOR 7) Cruise No. 177-67-05

Organization NOBSP Recorder Abiga bridge

Sunrise: Time 0551 Position: Lat. 34°36'N, Long. 121°00'W

Sunset: Time 1834 Position: Lat. 34°55'N, Long. 123°08'W

Miles travelled from 0000 hours to sunrise = 59

Miles travelled from sunrise to sunset = 113

Miles travelled from sunset to 2400 hours = 57

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0700	LORAN-USCG	34°40'N	121°13'W
2.	1900	CELESTIAL	34 55'N	123°14'W
3.	LORAN INOPERATIVE AFTER 1000 fix.			
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	34°-14'N	120°-04'W	295	5	295	3
0200	34°-21'N	120°-20'W	290	8	290	4
0300	34°-23'N	120°-29'W.	310	5	310	4
0400	34°-27.5'N	120°-42'W	350	2	350	4
0500	34°33'N	120°51'W	230	4	270	2
0600	34°36'N	121°02'W	230	4	270	2
0700	34°40'N	121°13'W	CALM		CALM	
0800	34°45'N	121°25'W	AIRS		CALM	
0900	34°48'N	121°35'W	AIRS		CALM	
1000	34°51'N	121°-43'W	AIRS		CALM	
1100	34°-53'N	121°-49'W	AIRS		CALM	
1200	34°54'N	121°-56'W	AIRS		CALM	12 FT SWELL
1300	34°59'N	122-10'W	AIRS		CALM	12 FT SWELL
1400	35-00'N	122-24'W	300	5	RIPPLES	12 FT SWELL
1500	35-00 N	122-42'W	AIRS		RIPPLES	10 FT SWELL
1600	35-00 N	122-53'W	AIRS		RIPPLES	10 FT SWELL
1700	34°58'N	123°00'W	AIRS		315	2
1800	34°55'N	123°07'W	AIRS		315	2
1900	34°55'N	123°14'W	OBS	9	315	2
2000	34°55'N	123°26'W	OBS	9	315	2
2100	34-56N	123°38W	010	10	010	2
2200	34-56N	123-50W	010	10	010	2
2300	34-56N	124-04W	010	10	010	2
2400	34-56N	124-16W	010	10	010	2

10 knots
32°

1215
34-56
121-51

Date 3 APR Ship SHEARWATER (T-AGOR 7) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0605 Position: Lat. 34°50'N, Long. 125°35'W

Sunset: Time 1846 Position: Lat. 34°10'N, Long. 125°41'W

Miles travelled from 0000 hours to sunrise = 59

Miles travelled from sunrise to sunset = 115

Miles travelled from sunset to 2400 hours = 56

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0530	CELESTIAL	34°50'N	125° 46' W
2.	Noon By L.A.N.			
3.	* ael Position D.R. after 1400 Sun Line.			
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	34°-57 N	124°-28' W	005	8	005	2
0200	34°57 N	125°-40' W	005	8	005	2
0300						
0400	34°50' N	125°06' W	320	10	325	3
0500	34°48' N	125°20' W	320	10	325	3
0600	34°50' N	125°34' W	320	10	325	3
0700	34°50' N	125°47 W	345	15	315	3
0800	34°50' N	126°00' W	345	15	315	3
0900	34-51 N	126-09 W	330	7	330	3
1000	34-52 N	126-21 W	330	7	330	3
1100	34-41 N	126-21 W	330	7	330	1-2
1200	34-32 N	126-20 W	330	9	330	1-2
1300	34-22 N	126-24 W	330	8	320	3
*1400	34-17 N	126-24 W	325	5	325	3
1500	34-13 N	126-23 W	320	10	320	3
1600	34-10 N	126-20 W	320	10	320	3
1700	34-10 N	126-07 W	345	10	340	3
1800	34-10 N	125°50 W	000	12	000	2
1900	34-10 N	125 39 W	000	12	000	2
2000	34-10 N	125 28 W	000	12	000	2
2100	34-09 N	125-15 W	320	06	325	2
2200	34-09 N	125-03 W	325	06	325	2
2300	34-09 N	124-49 W	325	06	325	2
2400	34-09 N	124 37 W	325	06	325	2

10 knots 27°

1015 PT Birch

1530 PT Cedar. 10 knots 18°

10 knots 09°

958b-SI-MNH
Rev. 9/28/66

Date 4 APR Ship SHEARWATER (T-AGS 17) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0600 Position: Lat. 34°08'N, Long. 123°18'W

Sunset: Time 1820 Position: Lat. 33°19'N, Long. 121°32'W

3321

Miles travelled from 0000 hours to sunrise = 65

Miles travelled from sunrise to sunset = 135

Miles travelled from sunset to 2400 hours = 55

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE

1. 1200 Fix by Lat-N & Sun Line.
2. 1830 Star Fix 33-19N - 121-31W
3.
4.
5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	34-09 N	124-24 W	330	10	330	2
0200	34-09 N	124-11 W	350	8	350	2
0300	34-09 N	123-57 W	000	8	000	2
0400	34-09 N	123-44 W	015	8	015	2
0500	34-08 N	123-31 W	000	8	000	2
0600	34-08 N	123° 15'W	315	12	315	2
0700	34-08 N	123-02 W	315	10	315	2
0800	34-08 N	122-49 W	CALM		315	2
0900	34-05	122-33 W	290	06	290	3
1000	34-04	122-22 W	290	06	290	3
1100	34-03	122-10 W	290	10	280	3
1200	34-02	121-57 W	270	16	270	5
1300	34-02	121-42 W	280	15	280	6
1400	34-02 W	121-34 W	280	16	280	6
1500	33 54	121-28	280	19	280	6
1600	33-44	121-28	280	18	280	6
1700	33-34 N	121-25 W	300	14	280	5
1800	33-03 N	121-25 W	325	18	290	4
1900	33-19 N	121-36 W	325	15	290	4
2000	33-19 N	121-50 W	325	16	290	4
2100	33-19 N	122-03 W	315	14	290	5
2200	33-19 N	122-15 W	315	14	290	5
2300	33-19 N	122-25 W	315	15	290	5
2400	33-19 W	122-37 W	315	15	290	5

10 knots 09°

Work Back from 1200 fix

10 kts 18°

Date 5 APR Ship SHEARWATER (TAG 177) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0559 Position: Lat. 33°55'N, Long. 123°44'W | 33°14 RLB

Sunset: Time 1847 Position: Lat. 33°17'N, Long. 126°20W

Miles travelled from 0000 hours to sunrise = 54

Miles travelled from sunrise to sunset = 130

Miles travelled from sunset to 2400 hours = 58 miles

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0530	CELESTIAL	33°55'N	123° 38'W
2.	HOURLY SUN LINES.			
3.	NOON R. FIX 1200 SUNLINE & 1223 LAN.			
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	33-18 N	122-49 W	320	10	320	5
0200	33-18 N	123-03W	330	8	330	4
0300	33-19 N	123-14W	280	10	280	4
0400	33-19 N	123-26W	235	10	235	5
0500	33°15'N	123-33'W	300	14	290	4
0600	33°15'N	123°44'W	300	14	290	4
0700	33°15'N	123 56 W	300	14	290	4
0800	33°17'N	124 08'W	320	10	280	3
0900	33-15 N	124-21 W	270	10	290	3
1000	33-15 N	124-36 W	270	10	290	3
1100	33-16 N	124-48 W	270	10	290	3
1200	33-16 N	125.00 W	270	10	290	3
1300	33-16N	125-12 W	270	12	290	3
1400	33-17	125-23W	270	12	290	3
1500	33-17	125-39W	270	12	290	3
1600	33-17	125-46W	270	12	290	3
1700	33-17 N	125-58W	270	12	290	4
1800	33-17N	126-12W	270	12	290	4
1900	33-17 N	126-26W	270	12	290	4
2000	33-09 N	126-28W	295	7	240	2
2100	32-57 N	126-28W	255	12	255	4
2200	32 46N	126-28W	255	18	255	4
2300	32-33N	126-28W	285	17	225	4
2400	32-30N	126-16W	225	17	225	4

10 km/2 27°

1915 at PT FIR

2315 at PT CINICO

Date 6 APR 67 Ship SHEARWATER (FAGI77) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0603 Position: Lat. 32° 30'N, Long. 124° 58'W 57

Sunset: Time 1834 Position: Lat. 32° 27'N, Long. 122° 33'W 55

Miles travelled from 0000 hours to sunrise = 55

Miles travelled from sunrise to sunset = 132

Miles travelled from sunset to 2400 hours = 59

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1. HOURLY SUN LINES			
2. L.A.N.			
3. 1900	CESTIAL	32°27'N	122°33'W
4.			
5.			

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	32-30N	126°-03W	230	8 Kn	280	5
0200	32-30 N	125°-49W	235	8 Kn	290	5
0300	32-30 N	125°-36W	230	6 Kn	270	5
0400	32-30 N	125-24W	230	8 Kn	270	5
0500	32-30 N	125-10 W	235	10	250	4
0600	32 30 N	124-58W	250	20	235	4
0700	32 30N	124-44W	250	20	235	4
0800	32 30 N	124-31W	250	15	250	3
0900	32 33 N	124-17W	250	16	250	3
1000	32-33 N	124-10W	250	15	250	3
1100	32-33N	124-00W	250	15	250	3
1200	32-33 N	123-51W	265	14	265	4
1300	32-33 N	123-37W	265	12	265	4
1400	32-32 N	123-26W	250	10	250	4
1500	32-32 N	123-15 W	250	10	250	4
1600	32-32 N	123-02 W	250	15	250	4
1700	32-30 N	122-49W	240	12	240	3
1800	32-28N	122-40W	230	10	240	3
1900	32-07 N	122-29W	230	10	240	3
2000	32-27 N	122-17'W	230	10	240	3
2100	32-27 N	122-02W	225	17	225	4
2200	32-27 N	121-47W	225	17	225	4
2300	32-27N	121-34W	225	17	225	4
2400	32-27N	121-22W	225	17	225	4

10 hours
090

Date 7 APR 1967 Ship SHEARWATER (TAGI77) Cruise No. 177-67-05

Organization P.O.B.S.P. Recorder Ship's bridge

Sunrise: Time 0544 Position: Lat. 31°40'N, Long. 121°12'W

Sunset: Time 1837 Position: Lat. 31°40'N, Long. 123°38'W

Miles travelled from 0000 hours to sunrise = 66

Miles travelled from sunrise to sunset = 126

Miles travelled from sunset to 2400 hours = 63

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0530	CELESTIAL	31°40'N	121°18'W
2.	LAN & 1100-1300	& FIX	31°42 N	122° 23W
3.	1900	CESTIAL	31°40'N	123041'W
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	32-28 N	121-10 W	235	14	235	5
0200	32-25N	121-09 W	235	14	235	5
0300						
0400	31 55 N	1510 12' W	250	15	250	5
0500	31°45·N	121° 15' W	270	15	270	5
0600	31°40N	121-18°W	310	10	290	4
0700	31°40'N	121-31 W	335	12	290	4
0800	31 40'N	121-42W	310	10	291	4
0900	31°-41N	121-44W	310	12	290	5
1000	31°-41N	121-55W	310	15	290	6
1100	31-41N	122-12W	310	15	290	6
1200	31-42N	122-23W	310	15	290	6
1300	31-42N	122-35W	320	18	310	8
1400	31-42N	122-43W	340	20	320	8
1500	31-42N	122-57W	340	20	320	8
1600	31-42N	123-05W	340	18	320	8
1700	31-41N	123-14W	340	18	340	6
1800	31-41N	1230 37'W	350	14	340	6
1900	31-40N	123° 41'W	350	16	340	6
2000	31-40N	123°53'W	000	14	341	6
2100	31-40N	124 04W	008	14	360	6
2200	31-40N	124 16 W	008	14	360	6
2300	31-40N	124 28W	008	14	360	6
2400	31-40N	124 40W	008	14	360	6

10 knots
27°

958b-SI-MNH
Rev. 9/28/66

Date 8 APR 67 Ship SHEARWATER (T-AG 177) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0603 Position: Lat. 31° 40'N, Long. 125° 43'W (44)

Sunset: Time 1847 Position: Lat. 31-07 N, Long. 125°52'W

Miles travelled from 0000 hours to sunrise = 65

Miles travelled from sunrise to sunset = 142

Miles travelled from sunset to 2400 hours = 55

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	STAR 0600		
2.	HOURLY SUN LINE		
3.	L.A.N.		
4.	1900	CELESTIAL	31° 10'N 125° 52W
5.			

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	31°-40 N	124-51 W	005	12	360	6
0200	31 -40 N	125°-03 W	010	10	360	6
0300	31 -40 N	125°-15 W	005	10	360	6
0400	31 -40 N	125°-27 W	005	10	360	6
0500	31 -40'N	125° 39' W	015	12	350	3
0600	31 40'N	125° 42' W	025	15	350	3
0700	31 40'N	125° 55' W	035	15	350	3
0800	31 40'N	126° 07' W	045	15	350	3
0900	31- 40 N	126 20W	045	12	045	4
1000	31- 25 N	126-30W	045	12	045	4
1100	31- 14 N	126-30 W	045	11	045	4
1200	31-01 N	126-30 W	045	11	045	4
1300	30-53 N	126-30 W	030	10	030	4
1400	30-50 N	126-17 W	025	10	025	4
1500	30-50 N	126-07 W	020	10	020	4
1600	30-50 N	125-51 W	025	10	025	4
1700	30.57 N	125-48W	025	10	030	4
1800	31-04 N	125°-53W	020	12	030	4
1900	31-10 N	125° 53'W	020	12	030	4
2000	31-10 N	125. 40 W	015	14	030	4
2100	31-08 N	125-27 W	015	14	350	6
2200	31-07 N	125-15 W	015	14	350	6
2300	31-05 N	125-02 W	015	14	350	6
2400	31-03 N	124-50 W	015	14	350	6

11 knots 27°

0930 ARRIVED PT LARCH C/C TO 180° 10 knots 1312 DEP. PT MAPLE C/C TO 090

Date 9 APR 67 Ship SHEARWATER (T-AGI77) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0558 Position: Lat. 30°54'N, Long. 123°38'W

Sunset: Time 1827 Position: Lat. 30°52'N, Long. 121-05W

Miles travelled from 0000 hours to sunrise = 65

Miles travelled from sunrise to sunset = 133

Miles travelled from sunset to 2400 hours = _____

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.			
2. HOURLY SUN LINES			
3. 1200 - BY L.A.N.			
4. 1830	CELESTIAL	30°50'N	121°07'W
5.			

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	31-02 N	124-42 W	015	12	350	6
0200	31-01 N	124-26 W	010	10	350	6
0300	31-00 N	124-11 W	015	14	350	6
0400	30-58 N	124-03 W	025	15	350	6
0500	30-55 N	123-51 W	015	15	355	4
0600	30 54 N	123-38W	001	14	000	4
0700	30-54 N	123-26W	000	14	000	4
0800	30-53 N	123-15W	000	14	000	4
0900	30-52 N	123-01W	355	14	350	8
1000	30-53 N	122-50W	340	12	330	8
1100	30-52 N	122-37W	340	11	330	8
1200	30-51 N	122-24W	340	11	330	8
1300	30-51 N	122-12W	335	11	340	8
1400	30-51 N	122-00W	330	11	350	8
1500	30-51 N	121-49W	330	10	350	8
1600	30-51 N	121-36W	330	12	350	8
1700	30 51 N	121-25W	350	14	010	4
1800	30 51 N	121-14W	355	17	010	6
1900	30-51 N	121-07W	335	13	010	6
2000	30-58 N	120-52W	335	13	010	4
2100	31-05 N	120-45W	325	15	010	6
2200	31-13 N	120-38W	325	15	010	6
2300	31-21 N	120-30W	325	15	010	6
2400	31-29 N	120-21W	325	15	010	6

10 knots
10°

09°

Date 10 APR 67 Ship SHEARWATER (T-AGOR 7) Cruise No. 177-67-05

Organization _____ Recorder _____

Sunrise: Time 0537 Position: Lat. 32°12'N Long. 119°39'W

Sunset: Time _____ Position: Lat. _____, Long. _____

Miles travelled from 0000 hours to sunrise = 53

Miles travelled from sunrise to sunset = _____

Miles travelled from sunset to 2400 hours = _____

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

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	31°35'N	120°-14W	330	15	010	10
0200	31°-42'N	120°-08W	330	12	010	12
0300	31°-48 N	119°-59W	330	12	010	10
0400	31°-56 N	119°-51W	330	15	010	10
0500	32° 03'N	119°43'W	320	16	335	4
0600	32° 11'N	119°35'W	320	16	335	4
0700	32°18'N	119-25W	300	9	335	4
0800	32°26'N	119°19'W	320	16	335	4
0900	32°30'N	119°15'W	300	10	330	3
1000	32°33'N	119°06'W	300	10	330	2
1100	32°43'N	119°06'W	320	5	330	2
1200	32-47 N	119-00 W	320	6	330	4
1300	32-51 N	118-57W	320	6	330	4
1400	33-00 N	118-47 W	320	6	330	4
1500	33-07 N	118-35 W	320	6	330	4
1600	33-13 N	118-24W	320	6	330	4
1700	33-20 N	118-17 W				
1800	33-36 N	118-17 W				
1900						
2000						
2100						
2200						
2300						
2400						

10 knots
05