

SEA TURTLES MIDWAY ATOLL

GH BALAZS

1970s

MICKEY MOSS

MIDWAY - 2
GH BALAZS

HAWAII INSTITUTE OF MARINE BIOLOGY
TELEPHONE MESSAGE

Date 7/22/75

Time 3:40 P.M.

For Geo. Balazs

From Bob Kenzie

Return call at _____

He will call again

Nature of call or message:

The animals you
sent him to identify
are called **V**elella.

Call taken by: Margaret

Neand
Box 6

Honolulu

old dirty (seawater)
M. D. VAY

Plant matter:

major component - Codium edule Silva

various small fragments - Spyridia filamentosa (Wulfen) Harvey

determined by Mr. Bruce M. Allender 7 April 1975

Veilella

Animal matter: 8619 ✓

by the wind-sucker ✓ *coelenterates*

Porpita Chondropheran

Portugese Marubon ✓

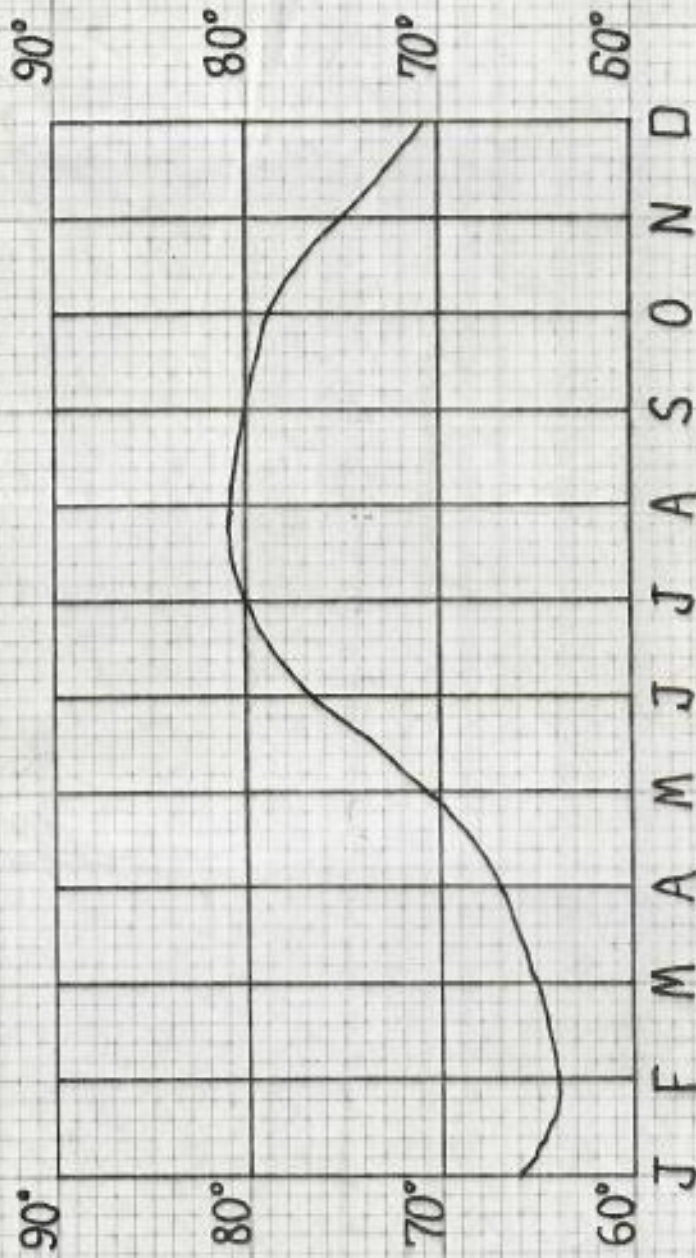
A planktonic colonial coelenterate

determined by Dr. Robert Kinzie 9 April 1975

from the
1975
1975

From Juvenile
green -
Midway
Scotto Mc Bradley

SEA SURFACE TEMPERATURES



MEAN SEA SURFACE TEMPERATURES IN VICINITY OF MIDWAY

FIGURE 10

Jan. 28, 1978

Dear George & Linda,

I wanted to write and thank you for getting the things for Joshua. He really needed them. Everything fit really well except the pants which were too long.

We had planned to take you out to dinner when we went through Hono. but now we won't be staying we are planning on a night flight out on the 11th. So we'll only be there for a couple of ~~days~~ ^{hours}.

We are making it easy on the packers out here by packing ourselves. It's mostly because they do a really lousy job. It's really not very hard except that Curt & Josh have cooled so they aren't much help.

Well I have lots to do so I'll close for now.

Love

Candi Curt & Josh.

Harry
Box #146
Alpena Co
95004

NOVEMBER

<u>DAY</u>	<u>TEMP °F</u>	MIDWAY ISLAND SEA-WATER TEMPERATURES RECORDED BETWEEN 0700-0830
1	75	
2	75	
3	75	
4	75	
5	74	
6	75	
7	77	
8	76	
9	75	
10	75	
11	74	
12	75	
13	74	
14	74	
15	73	
16	73	
17	73	
18	74	
19	73	
20	73	
21	73	
22	76	
23	75	
24	74	
25	73	
26	73	
27	74	
28	75	
29	74	
30	73	

October Midway
1976

LIBRARY OF
GEORGE H. BALAZS

DATE	SEA-WATER TEMP IN °F
01	79
02	79
03	79
04	79
05	75
06	77
07	77
08	78
09	78
10	78
11	78
12	77
13	77
14	77
15	77
16	78
17	78
18	77
19	77
20	77
21	76
22	75
23	76
24	77
25	78
26	77
27	77
28	76
29	77
30	76
31	76

March 76

1	69	22	69
2	66	23	68
3	68	24	68
4	68	25	70
5	68	26	68
6	66.5	27	64
7	65	28	65
8	66	29	67
9	66	30	68
10	65	31	68

11

~~12 66~~

13

14

15 66

16 65

17 67

18 67

19 67

20 67

21

taken off the
Cargo price at approx
0830.

September, 1976

DEPARTMENT OF THE NAVY
U. S. NAVAL WEATHER SERVICE
ENVIRONMENTAL DETACHMENT
U. S. NAVAL STATION, BOX 35
FPO SAN FRANCISCO 96614

DAY	SEA WATER TEMP.	DAY	SEA WATER TEMP.
01	78	16	81
02	79	17	80
03	79	18	80
04	80	19	80
05	80	20	79
06	80	21	79
07	80	22	79
08	80	23	78
09	80	24	80
10	79	25	80
11	79	26	80
12	79	27	79
13	79	28	78
14	79	29	77
15	80	30	78

TEMPERATURE IS USUALLY TAKEN BETWEEN
0800 AND 0900 DAILY.

US Naval Station
Midway Islands
Box 19
FPO San Francisco
96614



Dear George & Linda

I just wrote to let you know all is well on "the King's most beautiful island".

George, I certainly enjoyed the Society term article and was ~~so~~ surprised at some of the information.

There isn't much going on or far on turtle logging but the temperatures are coming along nicely. I saw one small turtle not tagged yesterday while diving but was unable to catch it. Matter of fact I saw it just before I saw a small pack of sharks 6 of them 3-5 feet, grey reef. This prompted my quick escape from the ocean.

The last week the weather has been just beautiful 68°-73° and we all have been taking advantage of it.

We are still waiting to hear from you and Linda when you will visit. We certainly would enjoy your company and an spare room is waiting.

We first received a letter from the "Martin's" and they both enjoyed your lecture. George I don't know if you recall the or not. But they send you their regards.

Will look for name and hope I haven't kept you article too long. I appreciated the use of it.

Trying to ~~see~~ see both of you soon

Clairfin & the girls



9 May, 1976

Dear George & Linda,

Received your note, George, and regret we do not have any Club records showing turtle tagging prior to May, 1969. Perhaps Gene Kridler may have something as he was the one who set this up, but this is doubtful. I tagged a seventeen incher the other day.

I will be in Honolulu for a week at another school from July 17th and hope to see you then.

Enjoy FPS and we will be looking forward to hearing from Linda.

Aloha,

Jim + Elaine

Sea-water temperatures

April 1976

Midway

1st	68°	25	69
2	68	26	68
3	68	27	68
4	68	28	68
5	68	29	69
6	68	30	70
7	68		
8	69		
9	69		
10	69		
11	69		
12	69		
13	68		
14	68		
15	69		
16	68		
17	68		
18	68		
19	68		
20	68		
21	70		
22	70		
23	70		
24	71		



Dear George & Linda

Sorry about my letter writing, but here I am.

We received both the report on the terns and the Defender issue. We are enjoying the Defenders and hopefully I will get to the tern report soon. The Defenders is great as we have been closely associated with many of the authors and enjoy the Hawaiian Wildlife.

George I will be in there for a week starting the 17th ^{Saturday} of ~~July~~ and hopefully we may all get together for a evening or so. Will you be able to come up here this summer or not? We would love to have both you and Linda visit.

Our orders are here and we will be leaving for Australia late in Oct. We are real pleased ~~about~~ about going to Australia and this will probably be our last tour of duty before I retire. Claire's parents are looking forward to seeing all of us and we are fortunate indeed in getting just what we asked for.

Have been quite busy here with

with a Fellow from the B13C doing a program
on wildlife. He is quite interesting and the
program he is putting on is great the states
will put Highway Wildlife back on the map.

I enclose and enclosing a report done
by the N.W.F.S which may be of some interest to
you in regards to the turtles. Possibly I will
be in your team study book for my seal study.
Also the sea temperature may be included.

Best regards from all

Jim & Elaine

Lucy Sea Water temperatures

1.	70	25.	72
2.	70	26.	71
3.	70	27.	72
4.	71	28.	72
5.	71	29.	72
6.	71	30.	73
7.	72	31.	75
8.	72		
9.	71		
10.	72		
11.	70		
12.	70		
13.	71		
14.	72		
15.	72		
16.	72		
17.	72		
18.	72		
19.	72		
20.	73		
21.			
22.	72		
23.			
24.	73.5		

June 1976 from Jim Bradley
Midway J

1	74	25	77
2	74	26	76
3	74	27	76
4	74	28	75
5	73	29	76
6	73	30	76
7	70		
8	71		
9	73		
10	72		
11	73		
12	73		
13	73		
14	73		
15	73		
16	76		
17	75		
18	75		
19	74		
20	74		
21	76		
22	76		
23	76		
24	76		

C.W. Haney

Box 6

P.O. S.F. CAL.

96614

April 6-77

Hi! George.

Well, a lot has been happening out here since you were here last. Today is my last day as Pres. of K.K. I decided not to run for office again & let someone else in, and also so I could get some more time for myself & family. Either Peckhelder, McDonald or Loesh the Padii instructors will be the New Pres.

Our Club also has bought the N.X. store out of diveing equipment, so we are the sole sellers of dive equipment on Midway now & have the Monopoly on Safety of the Worker.

Last week Wolfgang Bayer & his wife were out here shooting some film footage on the Hawaiian Seaward Dr. and me & Mac took him out & got some Underwater footage of Monk seals to pose for him. He was fishing for the Time Life Magazine.

Me & Mac have two classes going on Right Now. On Sat & Sun. Mornings we have an advanced Course going on. & on the weekend afternoons is our Basic Course. Then on Midway Monday nights we have Class Room lectures for the Classes.

Then on Tues. of Thurs. nights one of Conli & Mac & a few others of the Club Members attend a class being taught by Gary Means on Oceanography. we have just completed our Mid term. Gary & Mac are in Hono now on Easter Vacation. they went directly to Maui.

Then on Wed. nights is Koral K. meetings & fri night I bowl. So im keeping pretty busy.

Just recently we found two anchors off the K.K. Beach in about 25' of water. they are fluke anchors & one weights about 3000 lb & the other about 1000 lbs. We are in the process of salvaging them in our advanced course.

Also about two weeks ago I found an old submerged buoy that used to mark the channel. It was about 1/4 mile off the beach & in about 30' of water. It was one of the old gas light type Buoys. Me & Kurashima salvaged the light off of it & are in the process of cleaning it up. It weights about 150 lbs or so, is three feet high and is solid Brass with three layers of glass lenses. You'll see it when you come out.

Also we have decided to have you bring out
(50) of your Books with you for a sale we are
going to have. It would be easier if you
hand carried them out. Enclosed is a check for
\$50.00

If you aren't going to come out in April,
then hang onto the Books for us. Because
I will be coming into town about the (28th)
of April & I will pick them up then.

I'm coming in for the Second Class Drivers
test & quals at Pearl Harbor Sub Basin. I should
be coming in on the (28th) & going back to Midway on
the 30th. I sure would like to go Back to Mama's
Mexican Restraint while I'm there & treat you
& your wife to dinner one night that I'm there.
Well, that's about all I have for now I guess so
I hope you both fine and I hope to see you
soon.

Love Aunt
Condie
of
Josh.



(Grandparents) 431

O.A. Robbins
Bobby Robbins

Box 5

Seymour, Ill. 961875

plastron $12\frac{3}{4}$ length (straight)
carapace $13\frac{1}{2}$ width (straight)
" $16\frac{1}{4}$ length (")

carapace $17\frac{1}{4}$ length (curved)
" 16 width (")

tail length $2\frac{3}{8}$

24 lbs. $\left. \begin{array}{l} 1532 \\ 1533 \end{array} \right\}$ tag #'s

J. Bradley Mars call 10:30 AM
8/20/76

tag # 1485
captured Nov. 8, 1975

round measurement
cava. length. 17.75
" width 17.50

tail length $2\frac{1}{4}$ "
plastron " 13.50"
carapace width 14.25"
" length 16"

weight 26 lbs.

thickness 6.50"

orbital plates 4

Liholani Park

ALMAZEA

weather station May 31, 76
2' green

Sept 8th.

Dear George & Linda,

Here is the Wildlife Management plan draft, as promised. Hope it goes into effect one day! We just received your letter today, Linda, and hope the tuna tasted as good as it sounded... So glad you really enjoyed yourselves here.

We certainly enjoyed having you and will be looking forward to doing it again in Australia (with no dirty red carpet involved - body that a job!) In the same mail we heard back from the Gullivers and they are already planning a trip to the Cape, bless them... I hope I'm as adventurous when in their age.

You'll be glad to know we did, in fact, survive the packers, and now the house is so empty it echoes.

Jim got another modification to his order, a school in Communication Management Security, so that will presumably keep him a little busier but no big changes anywhere thank goodness.

By the way, we also received our deposit back from the Hale Koa. Quite a mail day

All the girls are fine and we will be looking forward to seeing you on the 30th or shortly after.

Best wishes,

Jim & Elaine

Robyn, Rhodi & Mauna

SS

32

U. S. NAVAL STATION
FPO SAN FRANCISCO 96614

SOPAMIDWAYINST 1710.4A
212:SPG:swd
1 July 1976

SOPAMIDWAY INSTRUCTION 1710.4A

From: Commanding Officer, U. S. Naval Station, Midway Island

Subj: U. S. Naval Station, Midway Island, General Boating
Instruction

Encl: (1) ~~Midway Island General Boating Instructions~~
(2) Boat Ownership/Boat Safety Inspection Request

1. Purpose. To promulgate, U. S. Naval Station, Midway Island
General Boating Instruction.

2. Cancellation. SOPAMIDWAYINST 1710.4

3. Contents. This instruction governs recreational boating in
the waters around Midway Island. The contents of this instruction
supersedes any conflicting previously issued directives.

4. Action. All users of Navy and Privately Owned Boats shall be
knowledgeable of the contents of this instruction.


D. H. FISCHER

Distribution List:
NAVSTAMIDWAYINST 5216.1
List I, II

1 July 1976

MIDWAY ISLAND GENERAL BOATING INSTRUCTION

FOREWARD. Boating in the waters surrounding the Midway Atoll is controlled by the Commanding Officer, Midway Island, to ensure personnel safety and prevent damage to government owned boating equipment. Boat operators are responsible for all information contained herein.

SECTION ONE:

General Boating Regulations1. Licensing of Operators

- a. All personnel will be licensed before operating boats in the waters around the Midway Atoll. Completion of a written examination and demonstration of practical knowledge will be required before a license is issued.
- b. Boat license will be issued at the Special Services boathouse during normal working hours.
- c. License will be divided into four categories:
 - (1) Power boats - any boat powered by an engine
 - (2) Sailboat - any boat powered by sail
 - (3) Rowboat - any boat powered by paddles or oars
 - (4) Fishing Boat - any boat operating outside of the reef
- d. Formal classes in boating operations will be offered by the Special Services Department on a periodic basis.
- e. License may be revoked for violation of this instruction or any unseaman like boating conduct.

2. Operator Age Requirements

- a. Rowboats, Canoes, Sailboats - 11 Years Old
- b. Private power boats - 16 Years Old
- c. Special Services power boats - 17 Years Old
- d. Outside of the reef operation - 18 Years Old

3. Physical Requirements for Boats

- a. Constructed with a built in buoyancy feature. (UNSINKABLE)
- b. Powerboats operating inside the reef will be at least 10 feet long.
- c. Powerboats operating outside the reef will be at least 14 feet long.
- d. Sailboats will be at least 9 feet long.
- e. Non-power boats will be approved on a case by case basis.
- f. The use of rafts is prohibited unless specifically authorized.
- g. Inflatable floats (except scuba) will be used in designated swimming areas only.
- h. Private boats must be inspected and licensed in accordance with Section Three of this instruction.

1 July 1976

4. Safety and Emergency Equipment

a. Minimum Equipment:

- (1) One Coast Guard approved life preserver per person.
- (2) An anchor with at least 50 feet of line attached to the boat.
- (3) A bailing container.
- (4) Two Paddles.
- (5) Four chemical emergency safety light markers.
- (6) One signal mirror.
- (7) Two dye markers.
- (8) An accurate time piece aboard the boat.
- (9) A radar reflector.

b. Additional items for operation outside the reef:

- (1) A "CB" radio capable of operating on band 13 with 3 or more watts of output power. (Hand held transceivers are not authorized).
- (2) A compass affixed to the boat.
- (3) A sea anchor.
- (4) A fire extinguisher containing CO2 or Purple K Agent
- (5) A first aid kit containing a minimum of a tourniquet, a pressure bandage, and disinfectant.

5. Designated Areas of Operation

a. Open Boating Area: The open boating area (see illustration #1 on page 1-3) is the safest and most secure area for general boating. It is almost totally encircled by some form of land mass and is shallow enough for anchoring. This area may be used by all boats when the Special Services Boathouse is open. During periods when the Special Services Boathouse is closed, two non radio equipped boats operating together or one radio equipped boat may use the Open Boating Area.

b. Controlled Boating Area. The controlled boating area (see illustration #1 on page 1-3) may not be used by Special Services rental boats. This area may be used by two non radio equipped boats operating together or by a single radio equipped boat whenever boating is authorized.

c. Areas Outside the Reef: Boats certified for outside the reef operation may operate in an area that allows visual contact with Sand Island, Eastern Island, or the Reef Hotel at all times. Boats must use the shipping channel or seaward roads to enter or leave the area outside the reef.

d. Water Skiing Area, Sailboat Area, Rowboat and Canoe Areas: These are all subdivisions of the open boating area (see illustration #2 on page 1-4). These types of boats will operate only in the areas designated for their use.

e. Eastern Island Small Boat Area: This area may be used for water skiing exercising due caution for swimmers, divers, and shallow water. This is the area along the west shore of Eastern Island, extending out 500 yards from the shore.

f. Restricted Areas: (see illustration #1 below)

(1) All swimming areas are off limits to power boats. Swimming areas are marked by red buoys. They are the Officers, Enlisted, and Eastern Island swimming areas.

(2) The areas on and around Spit Islands are restricted.

(3) The areas south of Sand Island, from Frigate Point on the marine dump are restricted.

(4) The areas south (behind) Eastern Island to Sand Spit are restricted.

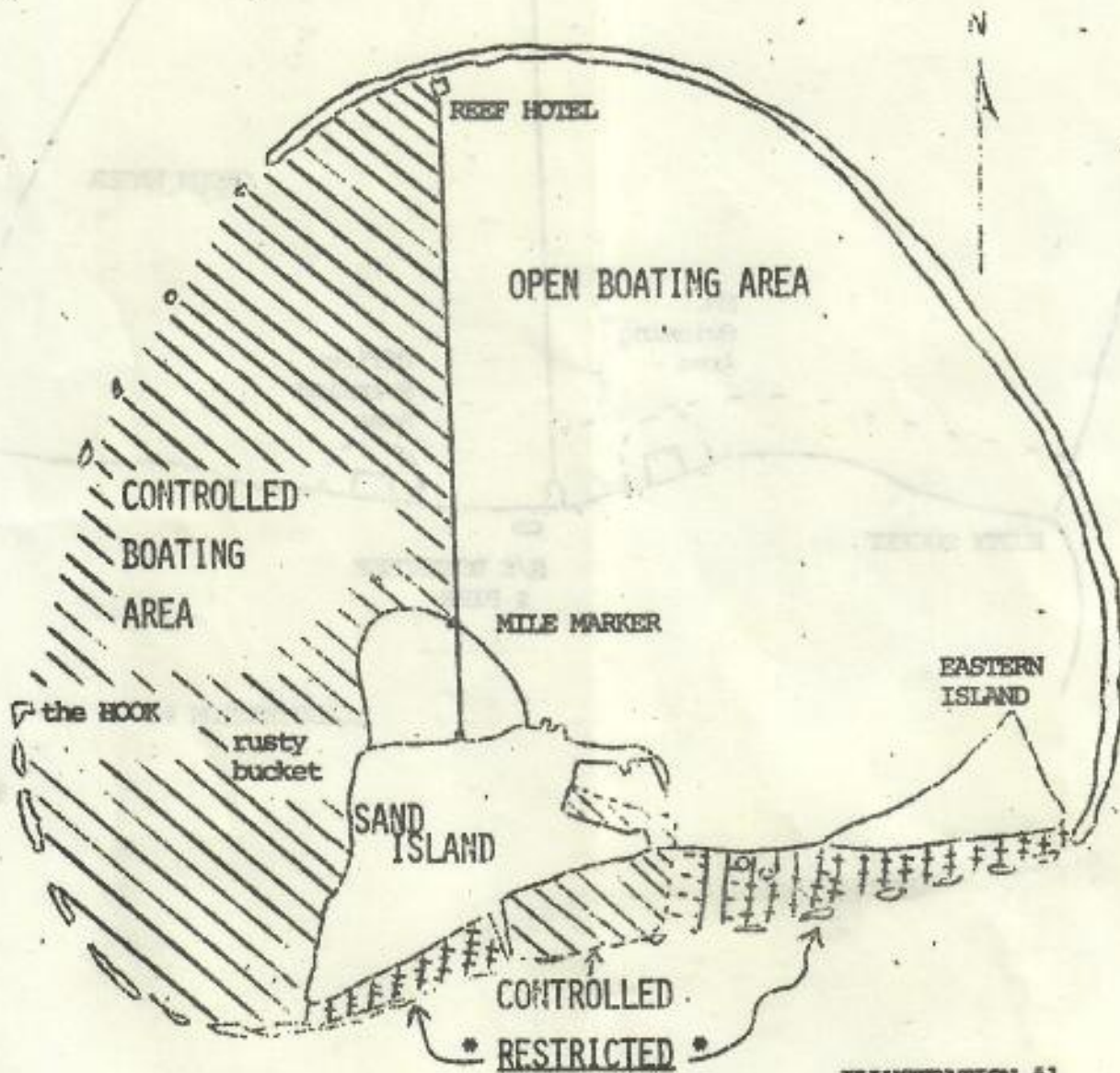


ILLUSTRATION #1

SOPAMIDWAYINST 1710.4A
1 July 1976

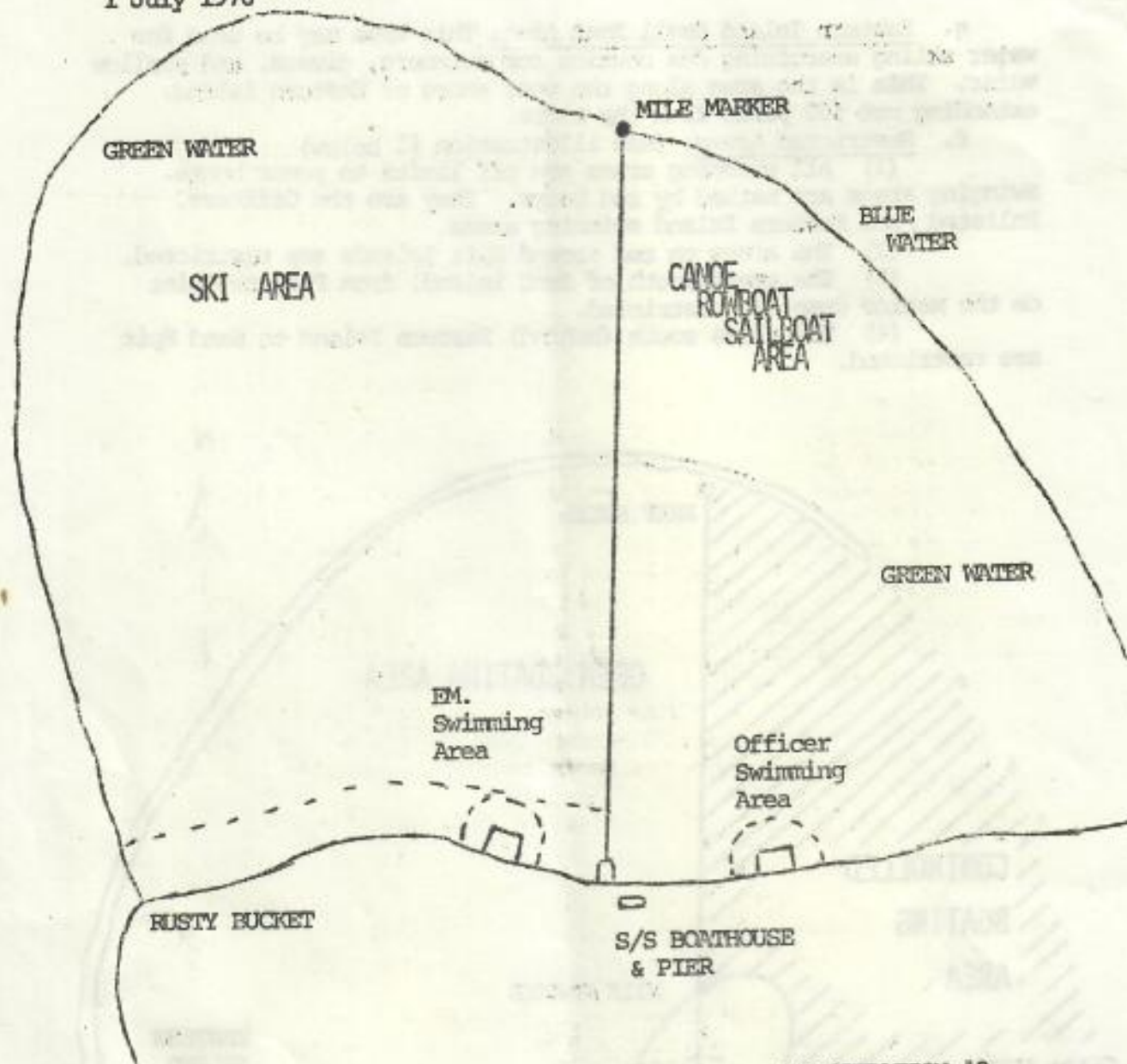


ILLUSTRATION #2

1 July 1976

6. General Regulations

- a. No individual will operate a boat without a valid license for the type of boat he is operating.
- b. All boats must operate with at least 2 people aboard.
- c. The operator who either signed out a boat or whose name appears on the float plan is responsible for the proper and safe operation of the boat.
- d. All boats will operate within the boundaries set forth herein for their class.
- e. All boats will operate at idle rpm when within 200 yards of shore.
- f. Orders issued by the patrol boat coxswain are official and will be followed.
- g. The term radio equipped boat applies only to boats monitoring their radio at all times.
- h. All boats will render immediate assistance if requested by another boat.
- i. Boats may be launched at the Special Services Boathouse, Koral Kings Ramp, and Inner Harbor Ramp.
- j. All boats must file a float plan prior to departing their launching areas. Float plans will include: boat number, operator's name, names of all passengers, time of departure, time of return, and operating area. They will be logged as follows:
 - (1) Special Services Boats: Logged with boathouse attendant
 - (2) Koral Kings and Private Boats: Logged with the OOD
 - (3) Special Services Boats operating outside the reef with the OOD
 - (4) Float plans may be extended by one of the following methods:
 - (a) Radio Controlled Private and Koral King Boats. Call Midway Tower requesting ETR extension. Midway Tower will in turn notify the OOD of your request and then notify you if it has been granted.
 - (b) Non radio equipped private and Koral King boats must return to shore and request ETR extensions by telephone to the OOD.
 - (c) Special Services boats must return to the Special Services Boathouse and request extensions from the boathouse attendant.
- k. Boats may not operate within 500 feet of a ship underway.
- l. Boats may not tie up to or operate around aids to navigation. (Buoys)
- m. Ships and sailboats have right of way over power boats.

1 July 1976

7. Water Skiing Regulations

- a. Water skiing will be done only in designated skiing areas.
- b. Each boat must have a qualified driver and a safety observer aboard.
- c. All skiers must wear an approved ski belt or kapok type life vest.
- d. Divers will not continue to pull a skier if he begins to show signs of fatigue.
- e. Ski boats must keep clear of designated swimming areas, swimmers, divers, and all other boats when pulling skiers.

8. Radio Procedures

- a. Recreational boating on Midway utilize channel 13 of the CB radio band for normal boating operations.
- b. Net control is Midway Tower.
- c. Your call sign is your boat number.
- d. Standard radio procedures are required.
- e. When operating during times, or in areas, that require radio communications the following procedures will apply:
 - (1) Establish communications with Midway Tower before departing the launching area.
 - (2) File a float plan with Midway Tower identical to that filed with the boathouse or OOD.
 - (3) Establish contact with Midway Tower every hour of operation giving your condition, location, and intentions.
 - (4) If communications are lost and cannot be re-established return to your launching area immediately and notify the OOD.
 - (5) Upon normal return to your launching area, close out your float plan with Midway Tower via radio and the OOD by phone.

9. Emergency Procedures

- a. Disabled boat procedures:
 - (1) Drop anchor. If it does not catch, leave it deployed because it may snag a coral head. If outside the reef deploy the sea anchor.
 - (2) Check your fuel supply.
 - (3) Attempt to restart engine (do not drain the battery).
 - (4) If radio equipped, call the tower, tell them your situation, and give an accurate description of your location.
 - (5) If other boats are within hailing distance, ask them to tow you back to land or to go for help.
 - (6) If there are no boats within hailing distance, sweep the horizon with the signal mirror, deploy the radar reflector, then wait for the patrol boat. If the patrol boat does not arrive by dark, energize a chemical light marker holding it as high as possible. Repeat this procedure until help arrives.
 - (7) If an aircraft or boat is heard in your area, use the signal mirror, dye marker, or any other means available to attract attention.

Enclosure (1)

1 July 1976

b. Boat Sinking Procedures

(1) If radio equipped, attempt a mayday call giving the following information: "Mayday, Mayday, Mayday, this is (hull number) sinking at (location)". Repeat this procedure as many times as possible.

(2) Ensure that all personnel are wearing their life preservers.

(3) Take all survival equipment with you if abandoning the boat. However, do not abandon the boat unless there is greater danger in staying with the boat than abandoning it. A boat even partially submerged is easier to locate than a swimmer in the water.

(4) Stay together as a group.

(5) Light a chemical light marker after sunset holding it as high as possible.

c. Capsized Boat Procedures:

(1) Stay with the boat.

(2) Retrieve all life preservers and emergency equipment if possible.

(3) Put on life preservers.

10. Overdue Boat Procedures

a. Any boat which has not returned to its launching area and closed out its float plan by the time of return listed on the float plan, or any boat which is late in making a scheduled radio check is an overdue boat. The following procedures will apply when a boat is overdue:

(1) During the first 30 minutes in which a boat is overdue the OOD, Special Services Boathouse, and Midway Tower will make every effort to determine the whereabouts of the missing boat.

(2) If after 30 minutes, the whereabouts cannot be decided, the OOD will notify the Executive Officer and the ODO that a SAR is imminent. The ODO will in turn alert the air operations SAR crew and tug crew.

(3) If after 1 hour the OOD, boathouse, and Midway Tower have failed to locate the missing boat, using all the means available at their disposal, the OOD will direct the ODO to launch a SAR.

(4) The OOD will keep himself and the Executive Officer informed of the situation as the SAR progresses.

11. Hours of Operation

a. Small boating may be authorized by the OOD from 0800 until one hour before sunset.

b. Night operations must be authorized in writing by the Executive Officer.

1 July 1976

12. Exceptions

a. Exceptions to any portion of this instruction must be authorized in writing by the Executive Officer. Request will be submitted with original and one copy via the Special Services Officer for endorsement.

SECTION TWO

Responsibilities

1. Executive Officer. The Executive Officer, Midway Island, has administrative control over all recreational boating activities.
2. Special Services Officer. The Special Services Officer shall act as an assistant to the Executive Officer for recreational boating activities. He will inspect all boats, boating equipment, and safety equipment prior to its use on Midway, license operators, register private boats, and recommend changes in boating policy to the Executive Officer. When directed by the Executive Officer he will take administrative action against violators of the boating instruction.
3. Koral Kings President. The Koral Kings President will ensure that all Koral Kings boating activities are in accordance with the boating instruction. When directed by the Executive Officer, he will take administrative action against club related violations of this instruction.
4. The OOD. The OOD is in direct control of all boating activities. He is responsible for determining if the water and wind conditions are safe for recreational boating. When boating is authorized, he will maintain the float plan log of all private, Koral King, and Special Services fishing boat operations. The OOD will:
 - a. Restrict recreational boating if the Naval Weather Service Environmental Detachment has posted any severe weather warnings, Tsunami warnings, or small boat warnings. (Small boat warnings are posted by NWSED when sustained winds are 18 knots or wind gusts exceed 23 knots.)
 - b. Restrict recreational boating when sea conditions are considered to be dangerous for small boat operations.
 - c. Consult with the duty forecaster and the Special Services boathouse supervisor for inputs prior to authorizing or restricting recreational boating.
 - d. Recall all boats whenever weather conditions change enough to warrant a recall of boats already operating. To issue a boating recall the OOD will inform the boathouse supervisor, and Midway Tower watch who will inturn recall all boats.

1 July 1976

e. Restrict recreational boating at any time he feels boating may be hazardous.

5. Midway Tower. The Midway Tower watch is responsible for receiving hourly operations reports from boats operating outside of the reef and boats operating inside of the reef when they are required to maintain radio contact. He will maintain a float plan log for all such boats containing the same information as the float plan log on the quarter deck by the OOD. At any time a radio equipped boat is late in making a required radio check an attempt will be made to contact the boat using communications equipment and by requesting other boats in the area to establish contact. If contact is not made with the boat after 20 minutes the tower watch will notify the OOD that there is an overdue boat.

6. Special Services Boathouse. The Special Services Boathouse is responsible for the safe operation of all special services boating activities and for assisting the OOD in controlling the operation of private and Koral King boats. The boathouse supervisor will:

a. Obtain a local forecast from NWSED and permission from the OOD prior to commencing small boat operations for the day.

b. Notify the OOD when all of special services boating activities are completed for the day.

c. Provide a patrol boat and qualified coxswain who will be the direct representative of the OOD in enforcing the provisions of this instruction over special services boats, Koral King boats, and all other private boats.

(1) The patrol boat will patrol the waters within the reef as frequently as is directed by the boathouse supervisor.

(2) The patrol boat will render assistance to disabled boats.

(3) The patrol boat will report all sighted violations of the boating instruction to the boathouse supervisor.

d. Dispatch the patrol boat to recall all boats operating inside of the reef when requested by the OOD.

e. When a boat is overdue, takes every available means to determine the boats whereabouts and status. If after 30 minutes from the time the boat was overdue he will notify the OOD that he has an overdue boat.

7. Your Responsibilities. Boat operators must use sound judgement and common sense, act with courtesy toward others, keep an eye on the weather, and comply with provisions of this instruction.

SECTION THREE

Private Boat Ownership, Authorization, Registration

1. Prior to entering any boat, or purchasing any boat, on Midway Island authorization must first be obtained by submitting enclosure (1) of this instruction to the Executive Officer, Midway Island, via the Special Services Officer.
2. Upon arrival on the island all boats must be inspected for compliance with the provisions of this instruction and registered. The Special Services Officer will complete this upon request by the owner. The Special Services Officer will retain a file of all safety inspection reports and provide the boat owner with a copy. Upon successful completion of the inspection the Special Services Officer will issue a boat registration number which must be painted on the boat prior to operation. The number will be either black or white lettering, whichever is most suitable against the background color of the hull and at least three inches high. It will be located on each side of the bow.

1 July 1976

SECTION FOUR

Special Services Boat Operation:

1. Special Services Boat Operations and Regulations.

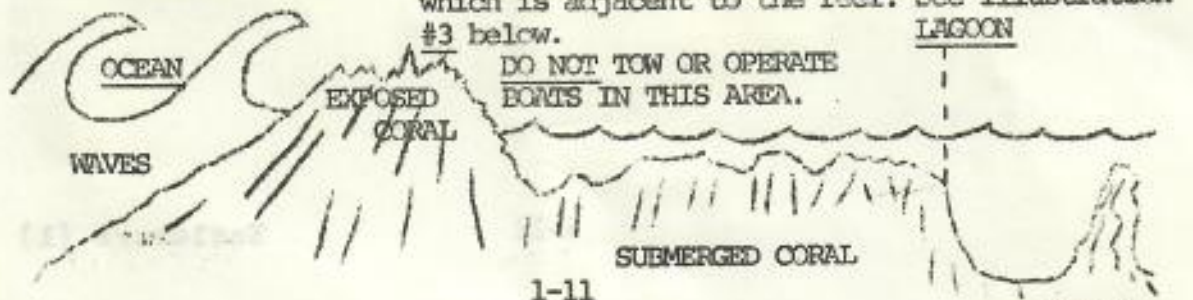
a. Services Provided

- (1) Boat operator licensing.
- (2) Rent, to qualified operator, small boats controlled by special services in accordance with the provisions of this instruction.
- (3) A ski boat with a qualified coxswain available for hire.

b. Special Services General Regulations

- (1) Dependents may participate in small boat trips provided that they are qualified swimmers. Dependents under 17 years of age must have on file at the recreational boathouse a certificate signed by a parent or guardian giving permission to use the recreational boathouse facilities.
- (2) Children under 11 years of age must be accompanied by a parent who shall assume all responsibility for the child's safety. All children under 11 years of age must wear a life vest at all time while in the boat.
- (3) Personnel checking out special services boats will launch, wash and beach their boat and flush the engine in the tank provided. All marine life will be disposed of by the person bringing it back. Boathouse personnel will assist in launching and recovering a boat to the extent required to ensure a safe operation.
- (4) No person will operate or be a passenger in a special services small boat while under the influence of intoxicating beverages. No alcoholic beverage, including beer, shall be carried or consumed aboard special services small boats.
- (5) Personnel embarking in small boats shall wear rubber soled shoes or be bare footed. Hard soled shoes are not permitted.
- (6) Maximum number of people allowed in small outboard boats (12 to 14 feet) is four adults including the operator. The minimum is 2 persons. Sailboats will not carry more than 2 people.
- (7) Operations in shallow water close to the reef or in coral head areas should be at very low speeds with one person conning from the bow of the boat. Damage to boating equipment resulting from culpable negligence will be a matter for disciplinary action and the person responsible may be required to pay for the damages incurred. In no instance will boats be operated or towed in the submerged coral zone

which is adjacent to the reef. See illustration #3 below.



1-11

Enclosure (1)

RANDOM
CORAL HEADS

1 July 1976

(8) The person checking out a special services boat will be responsible for ensuring that the required safety equipment is secured in the boat and for ascertaining what members of the party must wear a life jacket if they cannot remain afloat for ten minutes of their own accord.

(9) In the event an engine is dropped overboard, the boat operator will anchor the boat immediately. If the water is too deep to anchor, take as many bearings as possible, preferably three or more and have other members of the party do the same. Engines will have safety chains or links which must remain attached to the transom.

(10) When skin diving in water deeper than four feet or over coral heads, which are surrounded by water deeper than four feet, one member of the party will be required to remain in the boat as anchor and safety watch.

(11) Scuba diving will not be permitted from special services boats, unless the patron is a member in good standing with the Koral Kings Diving Club.

c. Operation of Special Services Sailboats:

(1) Qualified sailboat operators may check out and operate sail boats as defined below:

(a) License will be divided into three classes - mates, skippers, and racing skippers.

(b) Two mates together may check out any sailboat and operate in the sailboat area.

(c) One skipper may check out any sailboat but must operate the boat with two persons aboard at all times.

(d) One racing skipper may check out a boat and operate it alone in the sailboat area providing he is wearing a life jacket at all times.

(e) Two catamarans operating together, each with two people aboard (one being a skipper on each boat), may operate in the open boating area if approved by the boathouse supervisor.

DOAT OWNERSHIP/DOAT SAFETY INSPECTION REQUEST

Date _____

From: _____
To: Executive Officer

Subj: Boat Ownership; request for

Ref: (a) SCPAMIDWAYINST 1710.4A of 1 July 1976

1. It is requested that I be allowed to enter and operate a small pleasure craft on Midway Island.

2. I have read and understand the applicable provisions of reference (a) and the boat which I am requesting authority to purchase/enter fully conforms to said provisions.

Very respectfully,

Name _____
Rate/Rank _____

Date _____

From: Executive Officer
To: _____

1. Returned approved/disapproved.

Executive Officer

Date _____

1. In accordance with reference (a), subject boat was inspected this date and found to be in full conformance with the applicable provisions of reference (a) for a small boat to be operated inside/outside the reef.

2. Boat description:

TYPE _____ LENGTH _____
ENGINE _____ H.P. _____
COLOR _____
ASSIGNED REGISTRATION NUMBER FC _____

Special Services Inspector

Enclosure (2)

An Atlas of Pacific Islands Rainfall
Data Report No. 25 HIG-73-9

FRENCH FRIGATE SH 23°52' 166°17'W RAINFALL IN INCHES
23-52N 166-17W

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1952	M	M	2.20	1.58	0.57	0.74	1.29	0.15	1.28	1.22	0.63	1.37	M
1953	2.19	2.83	1.22	0.34	0.72	0.94	1.63	0.61	2.00	1.79	1.00	2.76	18.03
1954	6.05	2.03	M	4.51	0.53	0.58	1.73	2.25	2.77	2.12	3.33	2.51	M
1955	4.51	2.24	3.53	3.44	1.03	0.52	1.26	1.75	1.88	2.13	3.09	15.53	40.91
1956	11.23	11.01	15.40	1.08	0.92	2.13	5.96	0.98	2.56	8.93	1.55	0.79	62.54
1957	10.25	2.08	0.69	2.73	0.66	2.25	1.60	1.73	1.29	4.29	4.48	3.08	35.13
1958	3.64	2.31	3.72	0.24	0.38	0.80	1.32	1.32	3.19	6.92	M	0.78	M
1959	8.07	0.60	0.23	0.16	0.63	1.43	1.58	M	3.90	1.59	1.22	4.57	M
1960	M	4.22	M	0.34	1.40	4.02	0.85	1.65	1.52	3.23	1.63	1.20	M
1961	1.58	0.33	0.67	9.20	2.10	1.39	2.36	1.04	0.62	4.51	1.18	4.12	29.10
1962	7.89	3.44	8.11	3.63	6.80	3.65	5.10	1.11	0.72	1.31	4.40	2.20	48.36
1963	5.08	1.64	8.34	3.33	4.40	1.80	2.54	3.99	1.96	2.12	8.15	1.84	45.19
1964	0.74	1.00	8.61	6.65	11.98	1.02	1.98	0.77	2.06	2.29	2.79	11.99	51.38
1965	6.08	0.66	2.37	9.90	3.58	0.93	0.93	2.04	2.49	5.11	M	7.49	M
1966	2.50	1.58	0.81	0.26	1.89	0.95	1.77	2.47	1.30	9.33	8.51	3.72	35.09
1967	3.35	6.67	5.37	8.28	2.25	2.07	2.36	1.35	1.16	1.89	3.59	3.06	41.40
1968	4.09	4.95	0.86	2.53	0.49	0.74	3.43	2.20	2.91	9.05	8.52	14.45	54.77
1969	2.14	4.20	1.48	0.90	1.11	0.67	1.25	2.68	2.29	2.74	3.90	M	M
1970	3.45	0.64	0.60	1.01	2.58	1.35	2.02	3.23	1.59	4.41	2.10	5.77	28.75
1971	7.71	3.04	5.72	2.02	0.45	1.48	1.17	2.12	3.98	6.19	7.60	12.53	54.01
1972	11.31	5.01	4.13	2.15	0.71	1.43	1.62	1.57	0.54	4.62	3.00	1.89	37.98
MEAN	5.36	3.02	3.90	3.06	2.15	1.47	2.08	1.75	2.00	4.09	3.69	5.08	37.66
N	19	20	19	21	21	21	21	20	21	19	20	20	14
SIGMA	3.26	2.55	3.94	3.03	2.76	0.94	1.30	0.92	0.98	2.64	2.65	4.73	9.49
MEDIAN	4.51	2.27	2.37	2.15	1.03	1.35	1.63	1.69	1.96	3.23	3.09	3.07	41.15
MAX	11.31	11.01	15.40	9.90	11.98	4.02	5.96	3.99	3.98	9.33	8.52	15.53	62.54
MIN	0.74	0.33	0.23	0.16	0.38	0.52	0.85	0.15	0.54	1.22	0.63	0.78	18.03

SUMMARY IN MILLIMETERS

MEAN	136.2	76.8	99.0	77.7	54.4	37.4	52.9	44.5	50.8	103.8	93.8	129.1	956.6
N	19	20	19	21	21	21	21	20	21	19	20	20	14
SIGMA	82.8	64.7	100.1	76.9	70.2	23.9	33.0	23.3	25.0	67.0	67.3	120.0	241.7
MEDIAN	114.6	57.8	60.2	54.6	26.2	34.3	41.4	42.9	49.8	82.0	78.5	78.0	1045.3
MAX	287.3	279.7	391.2	251.5	304.3	102.1	151.4	101.3	101.1	237.0	216.4	394.5	1588.5
MIN	18.8	8.4	5.8	4.1	9.7	13.2	21.6	3.8	13.7	31.0	16.0	19.8	458.0

by Ronald C. Taylor
August 1973
HIG
UH

MIDWAY

28°13'N 177°22'W

RAINFALL IN INCHES

28-13N 177-22W

91066

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1917	M	M	M	M	2.81	3.30	2.66	1.26	1.32	7.46	0.54	5.60	M
1918	8.19	3.63	3.28	0.46	0.97	0.35	2.84	5.64	7.43	10.01	0.70	1.54	45.04
1919	0.76	2.30	5.42	3.40	0.53	3.87	1.57	0.04	5.44	2.83	0.70	1.52	28.38
1920	1.50	4.20	6.81	6.07	3.87	6.53	0.91	2.94	4.79	12.41	2.56	5.36	57.95
1921	1.27	6.05	2.84	5.11	6.43	0.54	8.22	2.76	3.65	5.50	1.61	2.65	46.63
1922	2.30	4.61	3.71	0.36	2.46	2.33	4.56	4.70	5.25	3.69	5.12	6.03	45.12
1923	1.12	3.99	3.52	0.96	12.59	2.86	4.33	4.14	7.41	0.85	1.72	0.46	43.95
1924	8.63	1.31	2.58	1.52	0.86	5.06	1.17	3.10	3.92	3.47	0.43	6.28	38.33
1925	11.79	3.23	5.78	22.77	1.86	5.34	1.44	5.24	5.92	0.62	2.24	3.03	69.26
1926	2.48	2.30	2.81	0.83	3.75	0.49	2.42	4.14	1.18	1.12	6.92	3.25	31.69
1927	4.32	2.56	0.59	5.69	2.79	0.36	2.40	2.34	4.11	4.40	2.80	2.58	34.94
1928	2.21	2.35	8.14	1.78	0.14	2.40	10.58	6.73	8.14	0.71	2.50	0.98	46.65
1929	6.77	7.17	1.41	1.06	0.25	1.40	1.07	2.68	0.57	3.57	1.34	2.69	29.98
1930	3.43	1.92	2.98	2.87	0.62	1.58	5.13	1.29	10.96	1.63	1.21	0.77	34.39
1931	2.61	2.11	3.84	0.50	0.28	0.73	1.69	6.09	6.42	0.77	1.53	0.77	27.34
1932	7.40	3.56	1.51	0.60	0.55	0.90	3.58	3.87	4.67	5.02	5.70	9.08	46.44
1933	9.73	5.88	1.55	0.68	4.44	0.58	2.08	2.22	1.79	1.21	5.76	15.59	51.51
1934	6.33	2.67	2.88	0.26	1.69	4.25	2.28	3.98	2.89	2.85	9.34	3.63	43.05
1935	6.71	2.96	4.79	5.10	2.97	0.41	3.73	14.47	3.58	4.45	2.12	3.21	54.50
1936	3.67	5.26	2.31	0.59	0.63	1.68	7.63	8.46	2.09	1.69	0.48	1.68	36.17
1937	4.70	0.76	1.74	3.59	0.15	0.12	1.77	2.65	2.15	3.16	14.69	6.73	42.21
1938	3.38	3.55	2.17	0.36	0.64	2.31	2.24	14.45	0.92	5.15	7.39	1.59	44.15
1939	8.62	4.51	4.86	16.98	5.61	6.66	1.82	3.77	4.58	2.01	0.43	2.31	62.16
1940	11.27	3.96	3.11	4.58	1.51	0.26	4.60	5.69	9.60	4.14	2.32	1.98	52.02
1941	M	M	M	M	M	M	M	M	M	M	M	M	M
1942	3.19	1.90	0.77	2.77	2.06	3.06	5.00	1.11	2.39	3.07	3.22	3.19	31.73
1943	5.89	4.19	6.12	1.93	0.91	8.68	3.96	8.55	2.43	0.92	0.20	2.94	46.72
1944	7.48	4.28	4.49	1.37	2.54	0.62	1.55	9.16	8.24	6.76	2.82	3.39	52.70
1945	3.46	3.14	2.75	0.70	0.97	2.02	3.16	0.79	1.69	5.80	4.26	7.14	35.88
1946	1.76	1.70	2.16	1.32	5.19	6.36	3.60	4.52	12.52	3.25	6.90	3.12	52.40
1947	6.93	2.53	2.19	0.37	0.18	1.51	3.58	4.28	2.42	3.46	2.44	3.55	33.44
1948	1.10	7.11	2.76	6.11	1.40	0.80	2.93	6.01	9.59	1.54	2.90	10.65	52.90
1949	3.67	5.83	1.26	0.54	0.98	1.73	4.82	1.56	0.84	0.52	1.51	5.92	29.18
1950	4.14	1.19	1.97	0.98	1.15	0.90	3.50	0.72	0.72	1.51	3.09	3.07	22.94
1951	4.18	3.54	2.72	1.79	1.71	2.85	3.57	4.08	4.54	2.98	3.04	4.56	39.50
1952	M	M	M	M	0.65	13.42	3.06	4.18	4.11	2.88	1.96	1.10	M
1953	9.28	2.44	2.74	3.80	4.92	2.66	3.00	2.01	7.38	3.39	2.79	2.03	46.44
1954	2.76	0.89	1.76	5.78	0.27	1.56	3.09	1.19	5.73	0.70	1.66	1.80	27.14
1955	1.76	5.42	0.66	2.41	0.23	0.92	3.11	4.90	2.09	8.77	2.92	5.65	38.84
1956	5.03	4.60	0.87	0.46	1.34	6.68	6.83	9.37	5.17	8.74	0.67	4.43	54.19
1957	5.21	7.41	1.18	1.18	1.73	0.70	4.49	10.20	2.41	1.68	1.49	3.34	41.02
1958	8.29	3.28	3.70	0.22	0.91	1.82	1.41	1.40	2.46	2.96	2.84	2.35	31.84
1959	3.76	1.14	1.71	2.12	0.38	2.58	1.82	5.72	6.43	1.14	1.29	1.12	29.21
1960	6.90	3.79	1.22	4.70	12.85	1.56	0.96	10.69	2.69	3.60	1.95	1.77	52.65
1961	4.90	7.26	4.46	2.37	1.52	7.74	0.83	2.94	1.98	9.80	1.27	6.51	51.50
1962	7.47	6.14	5.82	11.81	0.29	3.11	5.82	2.79	1.87	2.92	2.69	5.77	56.50
1963	6.67	3.16	13.14	3.28	1.53	1.55	6.62	3.02	3.12	6.18	10.89	1.97	61.13
1964	4.66	2.25	9.22	2.05	3.07	2.22	2.63	1.24	1.07	6.11	9.08	5.58	49.18
1965	2.55	3.46	3.14	2.21	0.20	5.51	1.34	1.50	3.46	0.80	M	M	M
1966	2.36	0.88	1.71	0.91	2.49	0.77	2.18	1.63	4.49	8.74	2.68	1.44	30.28
1967	2.86	8.07	2.17	2.32	1.06	3.09	13.28	6.77	1.90	1.53	10.36	4.75	58.16
1968	6.32	4.55	0.04	0.99	2.48	2.44	2.85	7.18	5.43	1.37	3.85	17.85	55.35
1969	1.81	1.34	1.90	0.80	0.53	0.51	1.80	7.39	3.11	2.33	5.89	1.98	29.39
1970	5.28	2.60	4.31	2.30	11.10	1.08	2.57	2.66	5.29	5.53	11.99	4.65	59.36
1971	6.72	7.98	0.65	0.34	1.86	0.89	2.15	10.83	3.41	1.92	1.56	3.97	42.28
1972	5.22	3.15	3.05	7.59	1.27	1.43	6.50	1.95	5.79	0.73	1.62	0.95	39.25
MEAN	4.92	3.70	3.19	3.05	2.29	2.64	3.50	4.60	4.25	3.64	3.52	4.00	43.30
N	53	53	53	53	55	55	55	55	55	55	54	54	52
SIGMA	2.73	1.94	2.36	4.10	2.83	2.57	2.41	3.36	2.72	2.80	3.25	3.33	10.11
MEDIAN	4.66	3.46	2.75	1.79	1.40	1.73	2.93	3.98	3.65	2.98	2.53	3.15	44.05
MAX	11.79	8.07	13.14	22.77	12.85	13.42	13.28	14.47	12.52	12.41	14.69	17.85	69.26
MIN	0.76	0.76	0.04	0.22	0.14	0.12	0.83	0.04	0.57	0.52	0.20	0.46	22.94

SUMMARY IN MILLIMETERS

MEAN	125.0	94.0	81.1	77.5	58.3	67.0	89.0	116.8	107.9	92.5	89.4	101.5	1099.9
N	53	53	53	53	55	55	55	55	55	55	54	54	52
SIGMA	69.4	49.3	60.0	104.1	71.8	65.3	61.2	85.3	69.1	71.2	82.5	84.7	256.6
MEDIAN	118.4	87.9	69.8	45.5	35.6	43.9	74.4	101.1	92.7	75.7	64.3	80.1	1118.9
MAX	299.5	205.0	333.8	578.4	326.4	340.9	337.3	367.5	318.0	315.2	373.1	453.4	1750.2
MIN	19.3	19.3	1.0	5.6	3.6	3.0	21.1	1.0	14.5	13.2	5.1	11.7	582.7

WAKE I

19°17'N 166°39'E

RAINFALL IN INCHES

19-17N 166-39E

91245

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1935	M	M	M	M	M	M	8.65	6.29	2.75	7.46	3.69	0.60	M
1936	0.39	1.43	1.38	1.72	3.45	1.63	2.73	7.60	6.76	1.79	2.26	3.48	34.62
1937	0.63	2.81	0.75	1.48	0.74	2.12	5.25	3.87	3.05	2.86	0.55	1.99	26.10
1938	0.44	0.55	2.33	2.35	0.86	0.86	3.05	7.06	5.20	5.87	2.10	1.38	32.09
1939	1.77	1.55	3.04	1.63	1.27	1.49	12.81	15.42	7.40	2.89	2.40	2.98	56.65
1940	1.35	1.22	1.06	0.61	2.21	0.99	3.70	12.92	5.69	M	2.31	4.16	M
1941	1.39	1.93	1.18	6.30	4.05	2.56	5.04	6.06	3.08	12.00	4.57	M	M
1942	M	M	M	M	M	M	M	M	M	M	M	M	M
1943	M	M	M	M	M	M	M	M	M	M	M	M	M
1944	M	M	M	M	M	M	M	M	M	M	M	M	M
1945	M	M	M	M	M	M	M	M	M	M	M	M	M
1946	M	0.71	1.67	1.59	2.53	3.12	10.55	19.54	6.01	5.34	1.72	0.92	M
1947	1.56	0.65	1.79	0.99	1.78	1.15	0.74	3.75	6.94	5.46	2.59	2.71	30.11
1948	2.58	2.02	0.99	2.46	4.33	1.14	2.19	9.82	4.71	15.45	5.54	1.15	52.38
1949	0.34	3.29	1.23	1.51	2.82	1.49	4.24	9.50	9.11	3.46	2.75	0.64	40.38
1950	1.27	0.44	0.65	1.49	2.00	3.42	10.15	12.40	6.34	5.08	8.54	3.12	56.90
1951	2.16	1.57	0.73	1.19	1.66	1.64	1.30	1.51	4.18	4.83	2.19	1.75	24.71
1952	0.74	0.35	0.36	2.42	3.63	1.93	7.76	4.47	17.66	3.36	1.27	1.43	45.38
1953	0.38	3.16	1.55	1.45	1.69	4.51	3.70	11.49	1.47	3.19	2.39	2.22	37.20
1954	2.32	2.96	1.15	2.32	1.53	1.19	5.24	5.78	4.10	5.40	7.25	2.99	42.23
1955	1.26	2.13	5.58	2.40	1.19	1.42	0.80	3.50	4.44	6.93	1.27	1.70	32.62
1956	1.92	0.27	1.86	0.74	1.53	1.52	4.94	2.58	2.05	6.26	5.53	0.96	30.16
1957	0.88	0.39	2.99	1.80	2.53	2.25	1.78	8.71	5.17	2.11	1.35	0.91	30.87
1958	0.80	0.42	0.67	2.01	1.38	0.86	4.13	2.22	4.33	5.34	3.09	0.76	26.01
1959	1.02	0.57	0.55	2.22	2.07	2.10	2.37	3.00	3.37	2.36	2.12	3.09	24.84
1960	0.41	0.73	0.52	1.94	0.95	3.74	3.10	3.20	4.93	6.70	4.48	0.65	31.35
1961	0.83	0.56	3.47	1.09	0.50	1.09	4.94	8.06	10.81	8.19	3.32	0.76	43.62
1962	0.49	1.63	1.00	0.58	1.02	5.19	8.49	8.54	6.30	11.70	1.23	2.44	48.61
1963	0.55	0.32	1.09	2.86	3.66	3.37	1.38	4.38	2.09	5.54	3.12	1.74	30.10
1964	0.92	0.61	1.08	3.68	0.42	5.25	4.46	5.85	6.92	2.80	2.53	1.67	36.19
1965	0.06	1.08	1.38	3.31	2.23	1.41	0.78	4.02	1.44	8.31	1.92	0.51	26.45
1966	0.67	1.34	0.64	1.30	3.20	1.59	1.70	4.85	5.15	2.53	0.32	0.62	23.91
1967	1.17	1.90	6.14	3.80	2.25	4.18	10.56	8.71	16.60	3.12	2.08	1.85	62.36
1968	1.20	0.15	0.74	6.22	3.65	2.26	3.48	6.10	3.69	7.12	4.29	2.03	40.93
1969	1.15	0.74	0.91	1.62	1.38	1.64	1.15	1.63	4.18	2.41	2.92	4.74	24.47
1970	0.95	1.50	1.66	0.31	4.55	0.98	10.74	5.44	2.88	3.26	1.61	1.91	35.79
1971	1.79	3.34	1.62	3.01	2.38	3.52	2.40	6.51	17.08	5.00	5.01	0.98	52.64
1972	1.75	0.75	1.77	1.21	0.67	1.30	3.38	1.44	8.05	3.36	1.77	4.15	29.60
MEAN	1.10	1.31	1.62	2.11	2.12	2.21	4.64	6.65	6.00	5.38	2.94	1.91	37.99
N	32	33	33	33	33	33	34	34	34	33	34	33	30
SIGMA	0.63	0.96	1.32	1.37	1.16	1.27	3.36	4.13	4.10	3.11	1.82	1.16	8.21
MEDIAN	0.98	1.08	1.18	1.72	2.00	1.64	3.70	5.95	5.04	5.08	2.39	1.74	33.62
MAX	2.58	3.34	6.14	6.30	4.55	5.25	12.81	19.54	17.66	15.45	8.54	4.74	62.36
MIN	0.06	0.15	0.36	0.31	0.42	0.86	0.74	1.44	1.44	1.79	0.32	0.51	23.91

SUMMARY IN MILLIMETERS

MEAN	27.9	33.2	41.2	53.6	54.0	56.1	117.8	169.0	152.3	136.6	74.8	48.5	966.9
N	32	33	33	33	33	33	34	34	34	33	34	33	30
SIGMA	16.0	24.3	33.6	34.8	29.4	32.2	85.2	104.8	104.2	79.0	46.2	29.4	208.4
MEDIAN	25.0	27.4	30.0	43.7	50.8	41.7	94.0	151.3	128.0	129.0	60.8	44.2	853.9
MAX	65.5	84.8	156.0	160.0	115.6	133.3	325.4	496.3	448.6	392.4	216.9	120.4	1593.9
MIN	1.5	3.8	9.1	7.9	10.7	21.8	18.8	36.6	36.6	45.5	8.1	13.0	607.3

RD ROADS

Middle Ground

North Breakers

W E L L E S
H A R B O R

SAND ISLAND

Approx. elevation 12 feet

AERO
R Bn 379
Approach

WATER
OBSERV
TOWER

AERO
Rotating W&G

NOTE 4

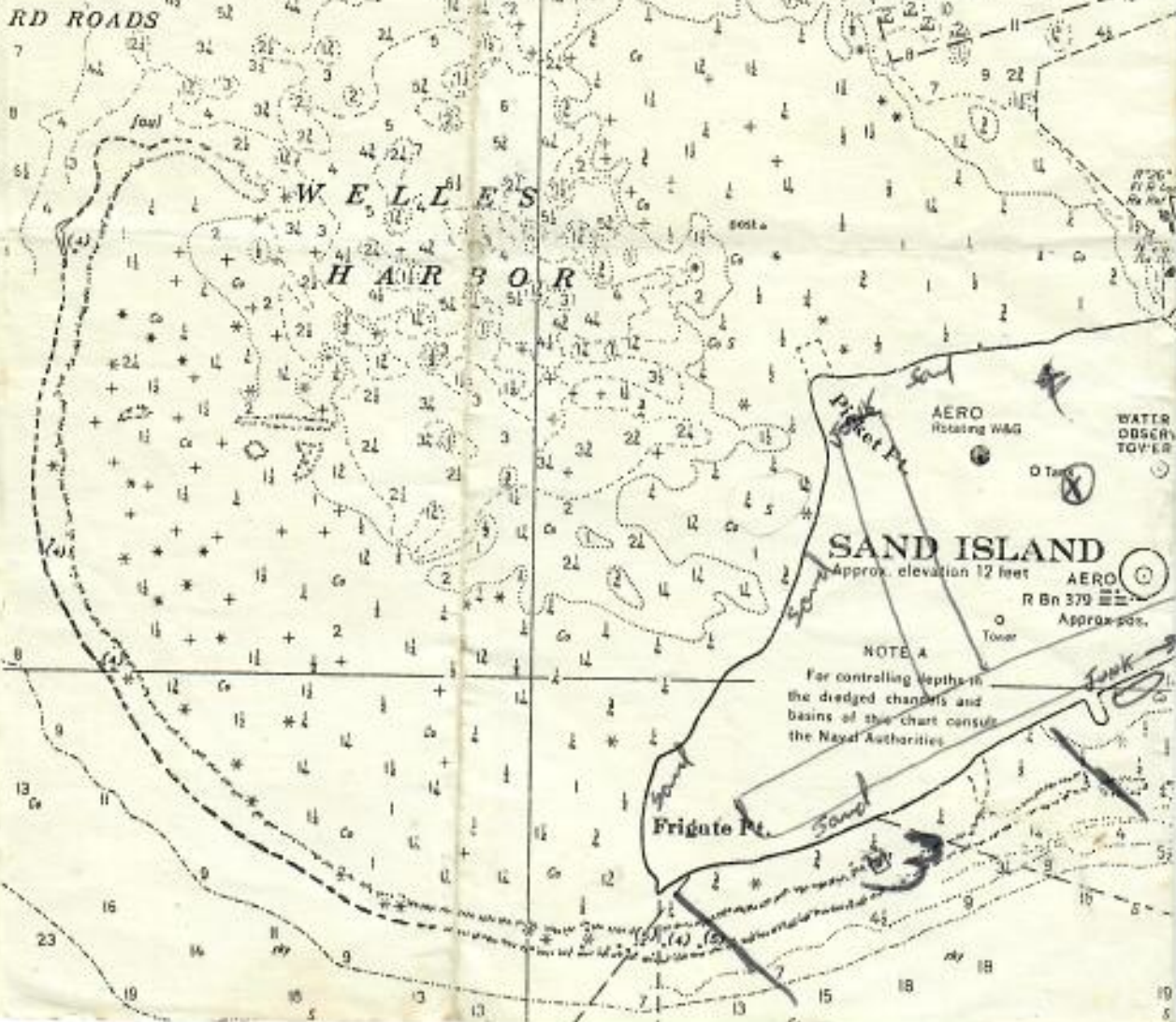
For controlling depths in
the dredged channels and
basins of the Chart consult
the Naval Authorities

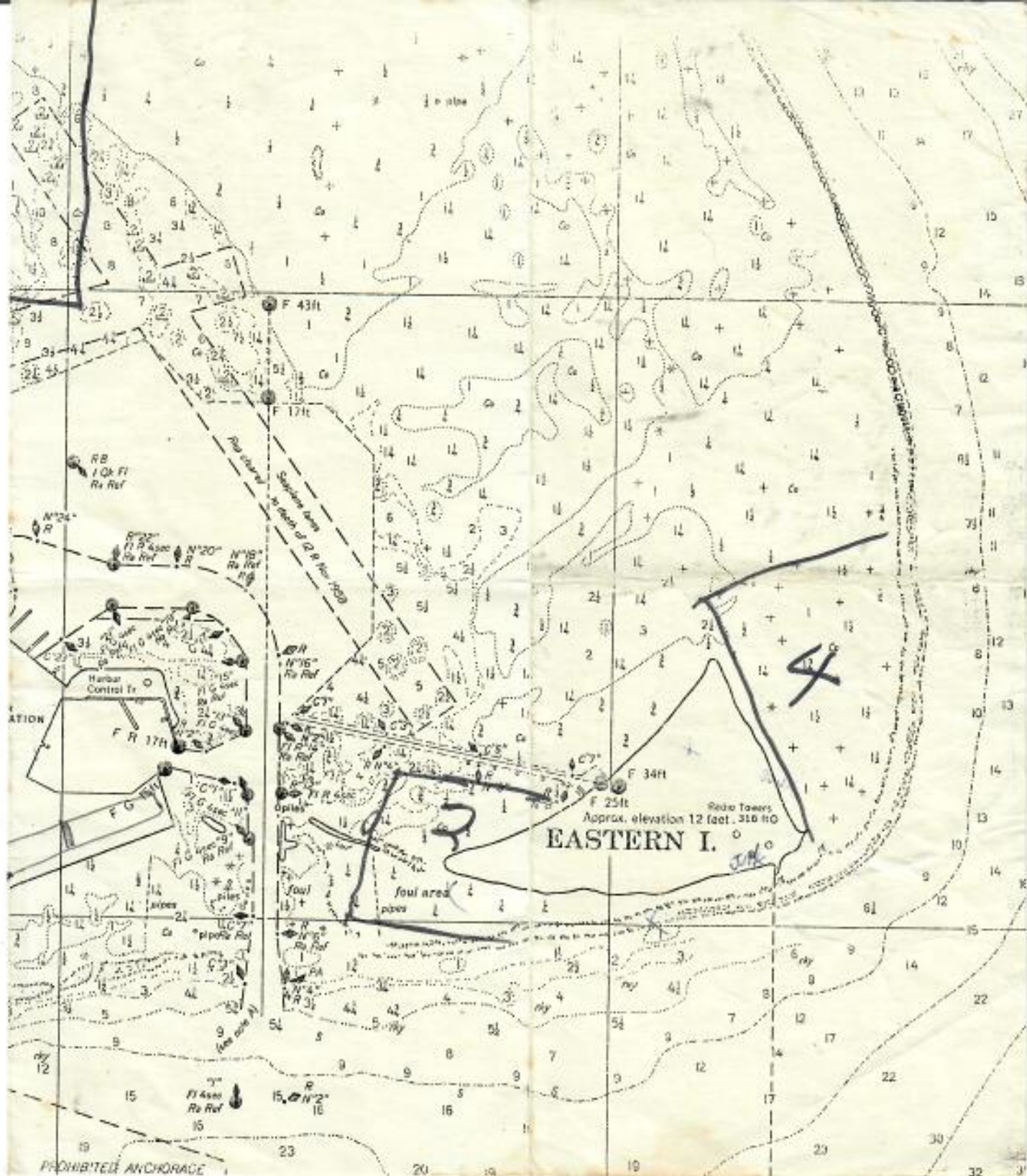
Frigate Pt.

Sand

Point Pt.

Point







University of Hawaii at Manoa

Hawaii Institute of Marine Biology
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744
Cable Address: UNIHAW

September 9, 1976

Dr. Kenneth F. Rhea
Principal
Dependents Schools
George Cannon School
FPO San Francisco 96614

Dear Dr. Rhea:

Thank you very much for your inquiry of September 1 concerning George Balazs' role in your school. I've discussed the matter with George and he is looking forward, very greatly, to interact with your students at George Cannon School. It would certainly be very much in the interest of this institution if he were to do so and I encourage him in every way.

He tells me that his next trip to Midway would be in about three months and he will contact you well in advance of his departure.

Yours sincerely,

John E. Bardach, Director

mk

cc: G. Balazs ✓



PACIFIC

DEPARTMENT OF DEFENSE

DEPENDENTS SCHOOLS
GEORGE CANNON SCHOOL
FPO SAN FRANCISCO 96614

1 September 1976

S.
Comments?
J.B.

Director
Hawaii Institute of Marine Biology
P. O. Box 146
Kaneohe 96744

Dear Dr. Bardach,

Your junior marine biologist, Mr. George Balaza, has visited with the science teacher and me relative to his working with the turtles in the Hawaiian chain.

Mr. Means and I feel he would be a wonderful resource person for the students at George Cannon School, Midway. With your permission, we would like to feature him in assembly programs during his next visit to the island.

Our plan would be to separate the elementary children from the secondary in two separate programs.

Kindly, acknowledge at your convenience.

Respectfully,

KENNETH F. RHEA, Ph.D.
Principal

Midway.

Jan 8, 1976

Dear George,

Sorry about the Islanders lapse; we've been putting them in the drawer and forgetting them. I just called up Mr Hale the Public Affairs Officer to plead your case but he said he could only send them for a month and that it was too much for postage! Anyway I shall hereinafter send them faithfully every two weeks.

Jim & I think it was closer to 65 birds killed last year. Incidentally this season we have only heard of one small kill of six birds. We read your article in the 'Elepaio' and thought it excellent - all the way down from the White House, huh!

We've had 3 or 4 different birds call at Midway this last season and Jim has prepared an item on those, plus one on the Shorttail. He will be going to a school in Hono for 2 weeks from 24th Jan. and hopes you will be in town then. Will get these away right now. All the best,
Jim & Elaine.

HELPFUL INFORMATION
FROM YOUR MEDICAL DEPARTMENT

The information in this brochure has been compiled to answer some of the more common questions pertinent to the medical services available on Midway Island. A section dealing with general health hazards has been included.

MEDICAL DEPARTMENT

Your Medical Department is a well staffed and well equipped facility capable of handling most medical problems. Facilities are available for Outpatient care, minor surgery, and inpatient care to a limited degree. Medical problems requiring specialty care or prolonged hospitalization are referred to an appropriate facility in Honolulu. For military personnel and their dependents, the Honolulu facility most frequently used is U. S. Army Tripler General Hospital. Most civilian personnel and their dependents are covered by some type of health care insurance and may select their source of medical care in Honolulu. In an emergency, civilian personnel will be admitted and treated in U. S. Army Tripler General Hospital.

MEDICAL SERVICES

ROUTINE SICK CALL: Military personnel, and male civilian employees are seen Monday through Friday, between the hours of 0730 and 0900 and on Saturdays, Sundays and Holidays from 1000 to 1100. Emergencies will be seen at any time.

PHYSICAL EXAMINATIONS: Military personnel may schedule flight physicals, reenlistment physicals, and other special physical examinations by calling extension 884. Flight physicals must be performed by a Flight Surgeon who visits this activity about four or five times a year, so it is best to make your appointment well in advance of the date on which the physical is required. Other types of physicals are accomplished weekly, usually on Tuesdays. Dependents may schedule routine physical examinations through the Dependents Clinic, extension 590.

IMMUNIZATION CLINIC: For immunization purposes, Midway Island has the same area classification as the Continental United States. This means that only minimum immunizations are required for military personnel, and no immunizations are required for military dependents and civilians. It is advisable, however, that dependents (especially children) receive certain routine immunizations. All personnel will be immunized to meet the requirements of a country to which they will be traveling. Military personnel may receive immunizations Monday through Friday between the hours of 1000 and 1100. Dependent immunization clinic is held on Thursdays at 1500.

DEPENDENTS CLINIC: Except in emergencies, dependents of all categories of personnel are seen by appointment only. Clinic hours are 0900 to 1130 and 1300 to 1500 on Monday, Tuesday, Thursday and Friday. Clinic hours on Wednesdays are 0900 to 1130. Please call extension 590 during clinic hours for an appointment.

HEALTH BENEFITS COUNSELING: The purpose of this program is to provide information on the medical care program available to dependents of active duty members, retired members and their dependents, and survivors of active duty and retired members. The Medical Administrative Officer has been designated Health Benefits Counselor and may be contacted at extension 884.

HEALTH HAZARDS ON MIDWAY

Midway has a moderate and healthful climate with clean air and abundant sunshine. Most of our personnel and their dependents find this conducive to a wide variety of outdoor activities. Health hazards are few, and an effort will be made here to acquaint you with those which are considered significant.

SUNBURN: Our most common casualty is usually the result of underestimating the intensity of the sun's rays. Newcomers, particularly, are misled by the cool balmy breezes on our beaches. You are advised to use a good suntan lotion, and not remain in the sun for prolonged periods. It is best to start with a few minutes a day and gradually increase exposure time as your skin builds up tolerance.

STINGING JELLYFISH: Two types of stinging jellyfish are occasionally encountered. There is a small man-of-war with an oval shaped bladder or float measuring about $1\frac{1}{2}$ to 2 inches long. Stinging tentacles trail from the float to a depth of about 2 feet. The sting is painful but not serious. Treatment consists of removing any portion of the tentacle adhering to the skin and applying an alkaline preparation such as baking soda or spirits of ammonia. The other stinging jellyfish is known as a sea wasp. It is an almost transparent, elongated, squid shaped body about 4 to 6 inches long. The sting is extremely painful and may also cause cramps and pain in the joints. Treatment is the same as for the man-of-war. Report to the Dispensary in case of cramps or joint pain. Occurrence of the above sea animals at our swimming beaches is relatively rare. In most instances they drift in after a strong and prolonged offshore wind.

CORAL CUTS AND SCRATCHES: This is a hazard only to the skin and scuba divers and those who visit the reef area. Live coral causes the problem, and live coral formations are not found

near the beach areas. Cuts and scratches from live coral leave minute particles of the coral animal in the tissues. These particles are alkaline in reaction and are very irritating to the tissues, causing delayed healing. The best treatment for minor cuts and scrapes is a vigorous cleansing with a weak acid solution. Regular household vinegar is recommended. The object is to dissolve and destroy all traces of the coral deposit, so scrub hard. It will burn, as you would expect of vinegar in an open wound, but it is the best treatment. A mild antiseptic may be applied afterwards. For more serious cuts, report to the Dispensary.

SEA URCHINS: This is another animal not found near the swimming beaches. There are several species found near coral formations and around the outer reef. These may be grouped into two basic types - those with large, blunt spines and those with long, slender, sharp spines. The blunt-tipped type presents no hazard. Its spines are often collected and made into wind chimes. An encounter with the sharp spine type, however, can be a most unpleasant experience. These spines have been known to penetrate gloves, swim fins, and even tennis shoes. They are quite brittle and usually break off in the wound. Serious cases require surgical removal, so divers beware! Watch where you put your hands and feet. Report to the Dispensary for evaluation and treatment of sea urchin puncture wounds.

EELS: Of the several eel varieties found in Midway waters, only the Moray is considered significant. Moray eels are wicked looking animals with needle sharp teeth, but are normally unaggressive. The only bites reported have resulted from a diver putting his hand into a hole to retrieve a lobster (langouste) which had been shot. The Moray is known to live in lobster habitats, so don't put your hand in his living room without first looking very carefully. There is a small eel, often seen near the piers and seawalls, which is sometimes mistaken for a sea snake by the newcomers. He is a little white fellow with brown spots and is quite harmless. There are no sea snakes in Midway waters.

SHARKS: Anyone who engages in skin diving within Midway's lagoon will occasionally find that he is sharing his recreation ground with one or more sharks. While the sharks have not proven aggressive in this area, it is well to bear in mind that they are unpredictable and are therefore potentially dangerous. If you spot a shark in your area, get out of the water and move to another location. Those of you who frequent the beaches have very little to fear from sharks. The area is patrolled regularly by station aircraft and shark warnings are issued if a shark is spotted close to shore. Past observations indicate that sharks rarely come near our beaches.

SEA SHELLS: Certain living sea shells of the cone family have the capability of poisoning by injecting a venom with a harpoon-like stinger. Of the poisonous cones, only the conus pennaceus and striptus cone are found on Midway and the incidence of this shell is uncommon. They cannot be ignored, however, because the sting can be fatal. Gloves should be worn when collecting live shells, and cones should be picked up and handled by the large end only. Cones should not be placed in pockets or in cloth bags that will touch the body, since these animals can sting through cloth. If stung by a cone shell, get out of the water immediately (paralysis may be an early symptom) and report to the Dispensary as quickly as possible. Bring the shell with you for identification.

The station library has several fine books on shell collecting. You are advised to consult one of these books before venturing out on a shell collecting trip.

CIGAUTERA POISONING: This is a type of poisoning caused by eating the flesh of a fish which has become toxic. The greatest hazard lies in the fact that no practical method is available for determining if a fish is poisonous. Studies of over 300 species of fish indicate that they may be toxic at one time or another. Most of the fish species found within our surrounding reef are poisonous at one time or another. Cigautera poisoning is a serious illness, even in mild cases. Recovery may be extremely slow if a person has been severely poisoned, sometimes requiring many months. Some of the more severe cases have resulted in death. Here are the rules to follow regarding eating fish caught in Midway waters:

1. Never eat fish caught within the surrounding reef.
2. Never eat a barracuda, no matter where caught.
3. Tuna, Wahoo, Mahi-Mahi (Dolphin fish) and Marlin are usually safe to eat when caught well outside the reef.
4. All species of lobster (languoste) and octopus are safe to eat, wherever caught.

POISONOUS PLANTS: Midway has three types of plants which are known to be poisonous. They are the Oleander, the "be still tree" and the wild Poinsetta. The Oleander is grown as a shrub around many of the quarters. All parts of this plant are poisonous. Children have been poisoned from using sticks of this wood for roasting hot dogs or marshmallows. The "be still tree" is found largely in the B.O.Q. and splinterville areas. It is a small twisted tree with fine leaves and a yellow or orange elongated bell-like flower. The seeds of these trees are considered to be deadly poisonous. The Poinsetta, sometimes known as the Christmas Flower, is found throughout a large portion of the island. The milky juice and leaves of this plant are moderately poisonous. In addition to the above, many of the shrubs and

house plants brought to the island may be poisonous. Here are the basic rules to follow:

1. Never eat or taste any strange fruit, seed, leaf, flower, or root.

2. Be cautious of contact with any plant you don't know, particularly those with hairy leaves, milky sap, or thorny leaves, fruit or seed pods.

3. In case of suspected plant poisoning, notify the Dispensary and obtain a sample of suspected plant for identification.

CONCLUSION

It is our hope that this brochure will help you enjoy our beautiful island a little more. Please keep it handy for future reference. If you have questions which aren't covered here, please don't hesitate to give us a call.

YOUR MEDICAL STAFF

James M. Bradley,
U.S. Naval Station,
Midway Island, Box 19,
P.O. San Francisco 96614

29 March, 1974

Mr George H. Balazs,
Jr. Marine Biologist,
University of Hawaii at Manoa,
P.O. Box 1346,
COCONUT ISLAND, KANEHOE, Hawaii 96744

Dear Mr. Balazs,

I am in receipt of your letter dated March 5 and must apologize for the delay in responding. Enclosed you will find statistics of all the tagging of turtles on Midway Island since May, 1969.

As you will see from a careful review of the statistics, the tagging program here on Midway Island is done on a complimentary basis for the Department of Wildlife and Fisheries, and, as a result, there are a lot of turtles that are seen within the area that are not tagged. In answer to some of your questions the following is offered:-

Diving in the most part is restricted to the lagoon area and the most frequent sightings of turtles takes place around Eastern Island, although turtles have been taken throughout the lagoon. You will notice that the turtles within this area are, in general, small. As of yet there is no known reason for this; however at Pearl and Hermes Reef the majority of turtles tagged average in size about 30" or over in carapice length. In years to come it is hoped that some of the turtles that we have tagged here will be sighted at Pearl and Hermes, giving some insight on their life cycle.

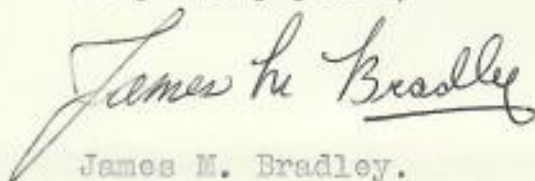
I am unable to answer the question on stomach content as the turtles must be a minimum of 24" in carapice length before they can be kept. This is very infrequent.

I hope this information will assist you in some way in your research work and if I or the Koral Kings can be of further assistance to you please do not hesitate in calling upon us.

My family and I will be in Honolulu from
14 to 21 April and would be very interested in contacting
you and touring your facilities.

Thank you for the interesting articles on sea
turtles.

Very truly yours,

A handwritten signature in cursive script that reads "James M. Bradley". The signature is written in dark ink and is positioned above the typed name.

James M. Bradley.

James M. Bradley,
U.S. Naval Station,
Midway Island, Box 19,
F.P.O. San Francisco 96614.

June 7th, 1974

Mr. George H. Balazs,
Jr. Marine Biologist,
University of Hawaii at Manoa,
P.O. Box 1346,
KANEOHE, Hawaii 96744

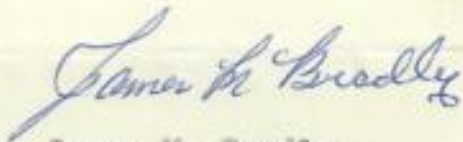
Dear George,

On June 1st some young men were caught with a speared undersized green turtle - it measures only 17-3/4" in length on a straight line from front to back of the top shell.

The wheels are in motion for them to be brought before Captain's mast for this violation of our Midway regulations, and in the meantime I have the unfortunate turtle in my freezer. Do you want it? Would you please let me know one way or the other as my wife informs me that it takes up a lot of space and has a slight odour! If you do want it I could probably have someone take it as far as Hickam Airport on the Saturn flight leaving here on Sunday.

The weather is nice now for diving and I'm hoping you will be able to make it out our way soon.

Sincerely,



James M. Bradley.

	1	2	3	4	5	6	7	8	9
	Tail Length	CW	CL	T	CW	CL	WT		
T 89	5.1	27.9	33.5	14.0	35.3	35.6	6810		
L 609	10.2	32.0	41.4	18.0	39.1	43.2	12258		
T 88	8.4	33.8	38.9	15.5	40.1	41.4	9534		
T 409	6.4	32.8	39.9	16.0	38.1	41.7	8626		
T 410	10.2	35.6	42.4	15.0	40.4	44.5	9080		
913	7.1	32.8	38.9	13.7	38.1	40.6	7718		
T 100	15.2	35.4	66.3	26.2	66.8	69.9	44038		
NDTAG	19.0	56.1	70.1	28.7	70.1	74.9	54480		
T 99	6.4	32.5	38.6	16.0	37.6	40.1	7080		
T 100	15.2	55.4	66.3	26.2	66.8	69.9	44038		
T 401	11.4	46.0	57.4	23.6	54.6	59.7	28148		
T 402	12.7	47.5	58.9	23.4	58.4	62.5	30872		
T 403	7.4	31.0	35.6	15.5	36.0	37.1	8172		
T 404	8.7	32.8	40.6	15.7	38.6	42.7	9988		
T 405	11.4	41.2	56.6	23.9	54.6	62.7	28602		
T 406	7.6	31.8	41.4	16.3	37.8	43.9	10896		
T 407	12.2	44.9	55.1	21.8	54.6	57.9	24970		
T 408	8.7	35.8	43.7	15.5	41.7	45.5	11350		
T 409	6.4	32.8	39.9	16.0	38.1	41.7	8626		
T 410	7.1	35.3	42.4	17.0	40.4	44.5	9534		
T 411	11.4	47.2	57.4	21.8	56.1	59.9	23608		
T 412	10.2	43.4	53.3	20.8	50.8	55.9	22700		
T 413	10.7	40.6	51.3	20.8	49.5	54.4	19068		
T 414	8.7	38.1	47.5	18.3	45.7	50.3	13620		
T 415	15.2	46.2	57.2	23.8	57.2	61.0	28148		
T 416	11.2	45.7	55.4	21.1	53.1	58.2	24970		
T 417	10.2	37.6	48.3	17.8	44.2	50.2	14982		
T 418	7.6	34.3	40.6	17.2	40.6	43.2	10442		
T 419	8.4	32.5	38.9	15.5	38.1	41.4	8172		
T 76	10.2	40.6	50.8	20.3	50.8	56.8	20430		
T 77	7.6	35.6	44.5	15.9	41.9	41.9	12258		
T 78	7.0	33.0	40.0	16.5	38.1	41.9	9988		
T 79	7.0	33.0	41.3	17.8	40.6	43.2	12258		
T 80	7.0	37.5	45.1	15.2	43.2	48.3	12258		
T 81	6.4	33.7	39.4	16.5	41.9	43.2	10442		
T 82	3.8	28.6	36.2	12.7	33.0	38.1	8172		
T 83	7.0	33.0	38.1	15.2	38.1	40.6	9534		
T 84	5.7	33.0	39.4	15.2	39.4	42.5	9080		
T 85	7.6	35.6	43.8	16.5	43.2	47.0	13620		
T 86	7.0	35.6	44.5	17.8	40.6	46.4	13620		
T 87	7.0	35.6	41.9	17.8	40.6	44.5	12258		
T 88	6.4	38.7	40.6	15.2	38.1	40.6	9988		
T 89	3.8	27.9	33.7	14.0	33.0	35.6	7264		
T 90	10.2	41.9	52.1	21.6	50.8	55.9	22700		
T 91	8.9	39.4	49.5	19.1	47.0	50.8	17906		
T 92	7.6	35.6	41.9	17.8	41.9	46.7	11804		
T 93	8.9	38.1	48.3	21.6	48.3	50.8	19068		

	1	2	3	4	5	6	7	8	9
	Tail Length	CW	CL	T	CW	CL	WT		
T 94	9.5	43.2	52.1	22.9	53.3	57.2	24062		
T 95	7.6	33.0	43.2	15.2	40.6	40.6	10896		
T 96	7.6	42.4	40.6	15.5	40.6	44.5	11350		
T 97	9.5	39.1	47.5	18.5	43.2	49.5	15890		
T 98	8.9	38.6	47.0	20.3	45.0	50.3	17706		
?	7.0	33.0	39.4	15.2	39.4	40.6	9988		
911	6.4	34.3	40.6	17.1	43.2	43.8	10896		
	Tail length	CW*	CL*	CL	T	WT			
340	10.2	48.3	50.8	48.3	20.3	17706			
341	6.4	40.6	44.5	43.2	16.5	10896			
342	7.6	39.4	43.2	40.6	16.5	9172			
343	6.4	38.1	43.2	40.6	15.2	9080			
Killed	6.4	43.2	52.1	54.0	22.9	23608			
344	5.7	40.6	45.7	41.9	17.8	12712			
345	5.1	36.8	40.6	39.4	15.2	9534			
346	10.2	59.7	63.5	61.0	24.1	36774			
347	5.1	43.2	48.3	45.7	19.1	14528			
348	10.2	50.8	53.8	50.8	22.9	22700			
349	9.6	40.6	45.7	43.2	15.9	11850			
350	6.4	39.4	43.2	40.6	16.5	9534			
901	10.2	39.4	43.2	41.9	17.8	10442			
902	10.2	43.8	48.9	46.4	20.3	16798			
903	7.6	41.9	47.0	43.8	16.5	12712			
904	7.6	40.6	45.7	43.2	17.8	11804			
905	7.6	48.3	49.5	53.3	19.1	20430			
906	12.7	58.4	61.0	58.4	22.9	31780			
907	6.4	29.2	39.4	36.2	14.0	9172			
908	7.6	40.6	43.2	40.6	14.0	10442			
910	8.3	39.4	43.8	41.3	15.2	9543			
911	6.4	41.3	43.2	40.6	15.9	10442			
912	5.9	38.7	41.9	39.4	15.2	9080			
913	6.4	38.7	40.6	38.1	15.2	9080			
914	10.2	49.6	55.9	53.3	20.3	20430			
915	8.9	46.4	54.0	49.5	17.8	17252			
916	7.6	34.3	43.8	40.6	15.2	11350			
917	10.2	52.1	53.3	49.5	20.3	17706			
620	5.7		40.6	39.4	13.3	7718			
621	7.6		41.3	39.4	14.6	8172			
622	7.6		41.9	39.4	16.5	9534			
623	7.6		48.3	36.8	16.5	12258			
624	6.4		40.6	38.1	14.0	6810			
Keeper	10.2		63.5	61.0	22.9	30418			
625	8.9		52.1	49.5	20.3	17706			
328	8.9		50.8	47.0	21.6	18160			
333	7.6		49.5	45.7	20.3	13620			
334	8.9		50.8	48.3	21.6	19522			
335	11.4		52.1	48.3	19.1	16798			
336	6.1		39.4	36.8	14.0	8626			
337	9.6		44.5	43.2	16.5	10442			
338	8.9		44.5	43.2	17.8	12712			
339	8.9		44.5	43.2	15.2	9080			

May 12, 1975

Dr. Harvey I. Fisher
Department of Zoology and
School of Medicine
Southern Illinois University
Carbondale, Illinois 62901

Dear Dr. Fisher:

Recently I returned from a one week reconnaissance visit to Midway where preliminary studies are underway on the sub-adult green turtle (Chelonia sp.) population. Hopefully, this work will eventually aid in our understanding of recruitment to the Archipelago's only remaining breeding colony at French Frigate Shoals. As this was my first contact with the Midway Naval Station, I find myself particularly interested in the albatross situation, both past and present. In order to become better acquainted with this subject, I would be most appreciative if you would send reprints of papers you have published. For your information, I am sending several reprints and news items which you may find interesting.

Thank you very much for your assistance in this matter.

Sincerely,

George H. Balazs
Jr. Marine Biologist

mk

MIDWAY ISLANDS TURTLE TAGGING INFORMATION

G. H. Balazs

Hawaii Institute of Marine Biology

TAG NOS.	CURVED CARAPACE length	width	STRAIGHT CARAPACE ³ length	width	Plastron length	Tail length ⁴	weight ³	Area	Remarks ⁵
1									

1 attach to left front flipper close to body and turn end for end (see photo)

2 attach to right front flipper at central location and turn end for end (see photo)

3 to be taken only if calipers and scale are readily available

4 measure from end of plastron to end of tail

5 coloration, injuries, previously tagged turtle, etc.

On the subject of Bird Abatement, I'm afraid that I am not exactly an expert on the subject, however until I can assemble a list of documentation, I'm afraid all I can offer is excerpts from personal experience. This past fall, perhaps the worst or best (depending on your point-of-view) example that I have witnessed was that time I spoke to you of earlier.

There were two men on a tractor pulling a trailer down the apron of the main runway. On this trailer was a 50-gallon plastic trash container. Into this container these two gentlemen were throwing eggs taken from nests of hapless albatross' who had been unfortunate enough to lay their eggs in nests on this runway apron. This event occurred late in the afternoon sometime around 4 p.m. and the two men were very near the end of the runway apron. They appeared to be close to the end of their task. While I watched they finished this job on the side of the runway which they were working. In this short period of time I observed them (about 5 - 10 minutes) I observed them remove perhaps 10 - 15 eggs from nests and throw them into the container. As I left the scene I was able to glance down into the trash container. It was perhaps 1/3 to 1/2 full of broken eggs. The unfortunate birds which had had their offspring removed were lined up around their nests "talking" to the eggs which were not there any longer. It was not a good feeling to see these poor birds and to know that my fellow man was responsible and there was nothing short of revolting against the system that I could do about it.

RMC J.M. Bradley,
USN# Dox 19,
WFO San Fran. 96614

Midway

12 April, 1975

Dear George,

Just a few lines to let you know that everything is well in hand for your visit to Midway. Please find enclosed your authorization and some other papers that may be of interest to you - they being a mean temperature chart for Midway and other information regarding tagging of turtles here. I am sad to report that the one number you wanted me to check on had a hole punched through it and there is no way for me to get the tag number.

When Elaine and I returned from our trip to Hono I noticed a large depression on the beach at Eastern and a track that could have been made by a sea turtle. Although it was not confirmed, it reminds me of those I saw in Exmouth. Since that time, high winds and waves have washed away all evidence. It appeared to have been a false nest.

Also of late, March 28th and 4 April, several large 30" or over turtles have been seen inside the lagoon. They were feeding on algae and I myself saw two well over 30" in ~~shell~~ shell length and three other smaller turtles in the general vicinity. I also had a report of the same siting several days earlier. The weather was very rough and both sitings were in early evening and it appeared that the turtles were feeding on green moss near the inner harbor.

Best regards to you and your wife.

Yours sincerely,

Jim & Elaine

15 May 76

DEAR GEORGE

I received your letter today and was pleased to receive the articles on the turtles. On first scan they appear to be quite interesting. I am looking forward to examining them at length. I must say I was very interested and quite enjoyed your lecture on your work and knowledge of the green sea turtle while you were here.

On the subject of Bird abatement, I'm afraid that I am not exactly an expert on the subject however until I can assemble a bit of documentation, I'm afraid all I can offer is excerpts from personal experience.

This past fall, perhaps the worst or best (depending on your point-of-view) example that I have witnessed was that time I spoke to you of earlier.

There were two men on a tractor pulling a trailer down the apron of the main runway. ~~Attached~~ on this trailer was a 50-gallon plastic trash container. Into this container, these two gentlemen were throwing eggs taken from nests of Laysan albatrosses who had been unfortunate enough to lay their eggs in nests on this runway apron. This event occurred late in the afternoon sometime around 7 PM

and the two women were very near the end of the runway apron. They appeared to be close to the end of their task. While I watched they finished this job on the side of the runway which they were working on. In this short period of time I observed them (about 5-10 minutes) I observed them remove perhaps 10-15 eggs from nests and throw them into the container. As I left the scene (on a bus which I take from work to home) ~~noticed that~~ I was able to glance down into the trash container it was perhaps $\frac{1}{3}$ to $\frac{1}{2}$ full of broken eggs. The unfortunate birds which had had their offspring removed were lined up around their nests "talking" to the eggs which were not there any longer. It was not a good feeling to see these poor birds and to know that my fellow man was responsible and there was nothing short of ~~revo~~ ^{revo}lving against the ^{system} that I could do about it.

Well there you have what I can give you from personal experience. I can and will send you some more definitive figures and any documentation I can get together at some future date if you are interested in that sort of thing.

I'm getting off my crutches next week and

hope to do some snorkling this weekend if
the weather will stay nice.

Again I appreciate the note & articles. Write
when you get the chance and let me know
how French Frigate Shoals was on your
last visit. Did you see any Turtles from
Midway?

Bob Lancaster

P.S. My actual address is below

ENS. R.L. Lancaster
U.S. NAVAL FACILITY
Box 100
FPO SAN FRANCISCO Ca
96614

P.S.S. Let me know if you need anything on
turtles that I may be able to help you
with from here. Also any other Marine Biology
Project that a layman from Midway might
provide info on.

James M. Bradley,
U.S. Naval Station,
Midway Island, Box 19,
F.P.O. San Francisco 96614.

May 3, 1974

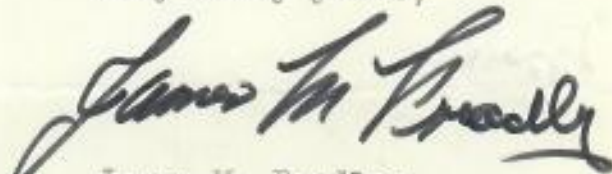
Mr George H. Balazs,
Jr. Marine Biologist,
University of Hawaii at Manoa,
P.O. Box 1346,
KANEHOHE, Hawaii 96744

Dear George,

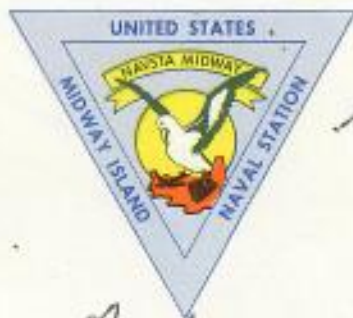
Thankyou for your letter and after discussing with various members of the Club I have marked the areas on your map as to where turtles are found in the lagoon here at Midway Atoll. The majority of turtles are found at either areas one or two. A few have been found in areas three and four.

Any time you wish to visit Midway my wife and I would be happy to have you stay with us and I would certainly enjoy some diving with you - just give us a month's notice as there is some red tape involved in getting a landing permit.

Very truly yours,

A handwritten signature in cursive script that reads "James M. Bradley". The signature is written in dark ink and is positioned above the typed name.

James M. Bradley.



early 1976

Dear George & Linda.

Hi!! All is well on the western
front and hope the same in the land of people
We enjoyed the article and would like
all others on both subjects, also please
keep us in touch with what the legislation
is doing in regards to the wildlife protection
bill.

I am happy for you to use my
bird pictures and have enclosed some that I
feel are suitable. The arrangement in your
letter is fine with me. I do not have one
on the greyback but could get you one in a
month or so let me know.

I have a system set up to get you news
regularly. Right now the temp is running in
the mid 60's. The weather has been horrible.

Hope it changes for the best soon.

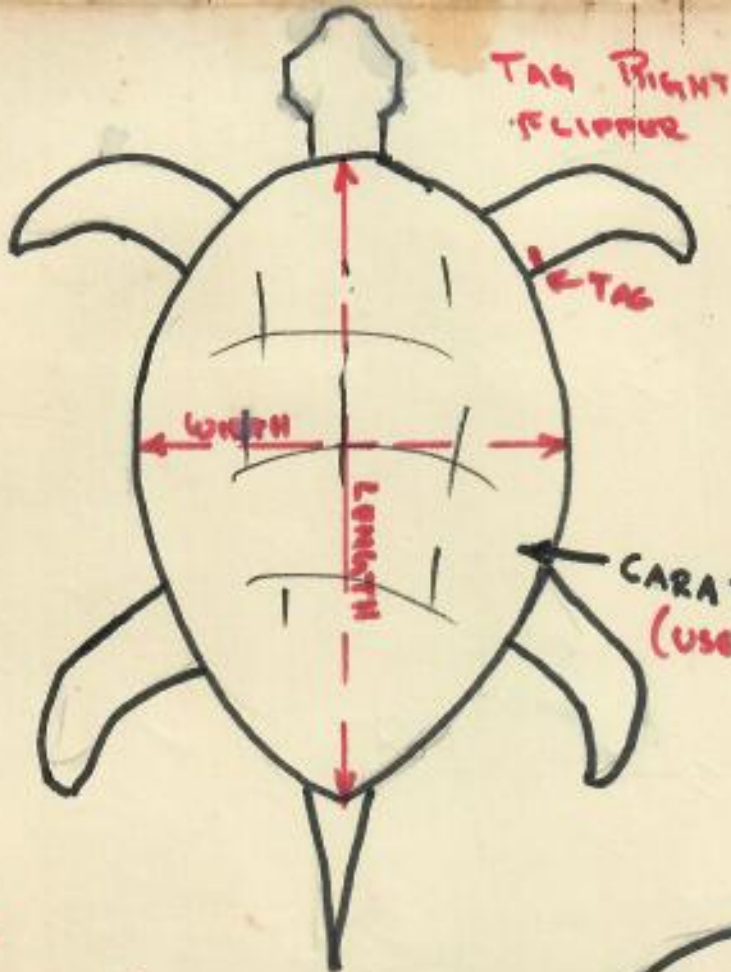
We are still looking forward to you and
Linda visiting in May let us know.

Best regards from all of us

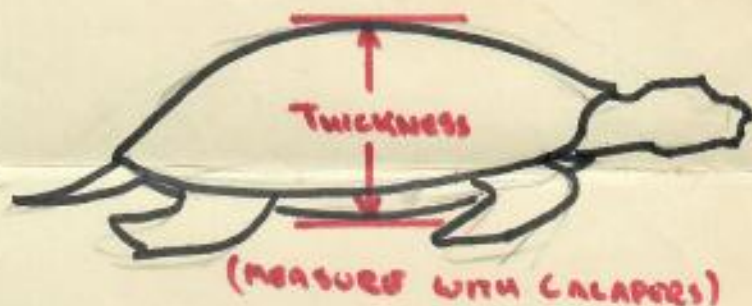
Jim Elan and girls

P.S. would appreciate the Defender in Hawaii
thanks again

TOP

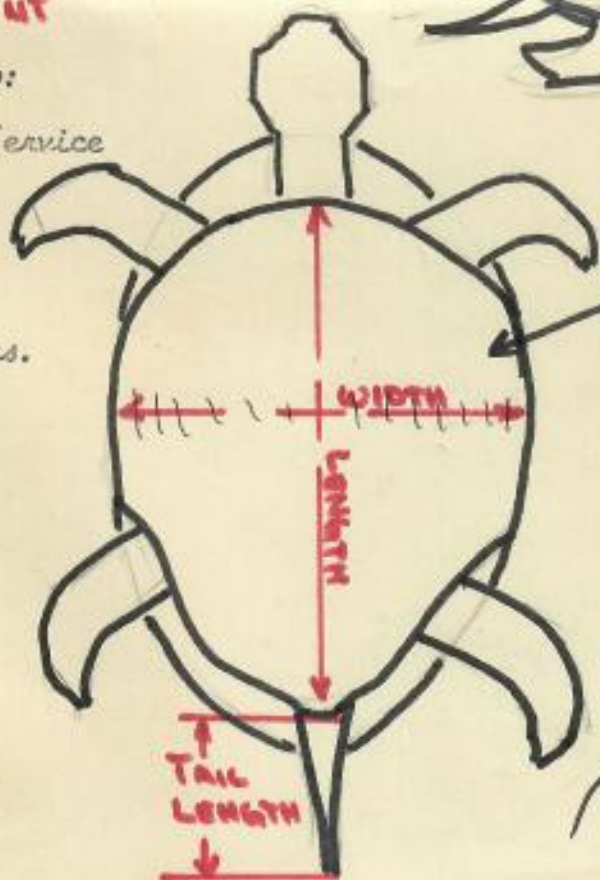


MAKE ALL MEASUREMENTS AT WIDEST POINT



Mail all reports to:
 Mr Eugene Knidler
 Fish and Wildlife Service
 337 Ulukou Street
 Box 157
 Kailua, Hawaii 96734
 Phone: 262 5466
 Call when needed tags.

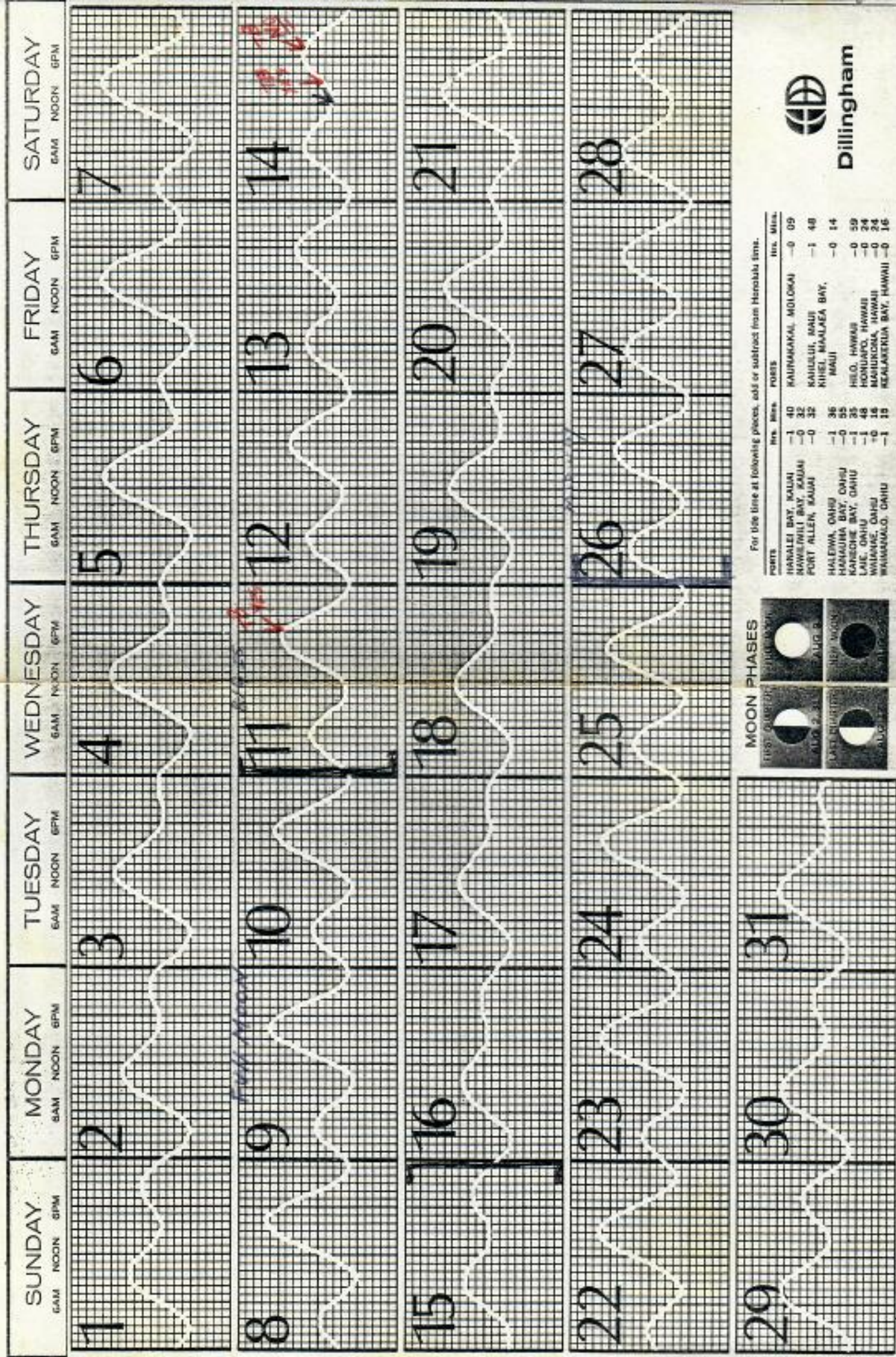
BOTTOM



PLASTRON
(MEASURE WITH CALIPERS)



AUGUST 1976 TIDE CHART



For use time at following places, add or subtract from Honolulu time.

PORTS	Hrs. Min.		Hrs. Min.		
	Plus	Minus			
HAWAII BAY, KAUAI	-1	40	KAUNAKAKAI, MOLOKAI	-0	09
KAHILU BAY, MAUI	-0	32	KAHILUUI, MAUI	-1	48
PORT ALLEN, MAUI	-0	32	KIHIEI, HAWAII	-0	14
HALEIWA, OAHU	-1	36	HONOLOULU, HAWAII	-0	59
HANALEIUA BAY, OAHU	-0	55	HONOLULU, HAWAII	-0	24
KAPUNAHU BAY, OAHU	-1	35	KAHUKOHOA, HAWAII	-0	24
LAIE, OAHU	-1	48	KAHUKOHOA, HAWAII	-0	24
WAIKANE, OAHU	-0	16	KEALEKUA BAY, HAWAII	-0	16
WAIMANALO, OAHU	-1	15			



Dillingham

STATION NO. ON SUMMARY: 22701	STATION NAME: Midway Island	LATITUDE: 28° 12' N	LONGITUDE: 177° 23' W	STATION ELEV. (FT): 13'	CALL SIGN: PNDY	WMO NUMBER: 91066
-------------------------------	-----------------------------	---------------------	-----------------------	-------------------------	-----------------	-------------------

STATION LOCATION AND INSTRUMENTATION HISTORY

NUMBER OF LOCATION	GEOGRAPHICAL LOCATION & NAME	TYPE OF STATION	AT THIS LOCATION		LATITUDE	LONGITUDE	ELEVATION ABOVE MSL		OBS PER DAT
			FROM	TO			(FT)	TYPE BAROMETER	
	Barometer								
1.	Weather service office on top of command post building	Navy	1949	1958	28° 12' N	177° 23' W	42.4	Mercurial	24
2.	same as above	"	1958	1961	"	"	32	"	24
3.	Weather office	"	1961		"	"	34.0	"	24
1a.	GMQ-14 console	"	1972		"	"	34		

NUMBER OF LOCATION	DATE OF CHANGE	SURFACE WIND EQUIPMENT INFORMATION			REMARKS, ADDITIONAL EQUIPMENT, OR REASON FOR CHANGE
		Transmitter	Location	HT ABOVE MSL	
1.		Selsyn	Atop building #521	91'	1. Barograph (ML-3)
2.	Relocated 1954	"	Atop building #585	82'	2. Semi-auto met station (AN/GMQ-14A)
3.	Installed 1955	AN/GMQ-5	Atop building #581	72'	3. Ceiling light (ML-121)
4.	1958	"	Air operations hangar roof	93'	4. Cloud height set (AN/GMQ-B)
5.	1960	AN/GMQ-5C	2051' S. weather office	15' Abv. Ground	5. Theodolite (ML-247)
					6. Radiosonde/Rawinsonde set (AN/GMD-10B)
					7. APT System (AN/GKR-7)



PACIFIC

DEPARTMENT OF DEFENSE

DEPENDENTS SCHOOLS
GEORGE CANNON SCHOOL
FPO SAN FRANCISCO 96614

1 September 1976

9.
Comments?
JB

Director
Hawaii Institute of Marine Biology
P. O. Box 146
Kaneohe 96744

Dear Dr. Bardach,

Your junior marine biologist, Mr. George Balaza, has visited with the science teacher and me relative to his working with the turtles in the Hawaiian chain.

Mr. Means and I feel he would be a wonderful resource person for the students at George Cannon School, Midway. With your permission, we would like to feature him in assembly programs during his next visit to the island.

Our plan would be to separate the elementary children from the secondary in two separate programs.

Kindly, acknowledge at your convenience.

Respectfully,

KENNETH F. RHEA, Ph.D.
Principal

J & E Gradley,
USNS Box 19,
APO San Fran.
Calif. 96614.

Midway

August 15th, 1976

Dear George and Linda,

Hi, and thank you for your letter, Linda. Glad you are looking forward to your Midway trip and I hope it comes up to expectations. It's awfully quiet here now with all the goonies gone, but of course there are still several other varieties of birds around and the beach is especially beautiful at this time of the year. The water is so warm you can jump in without any "ooh's!" We will probably want to keep the tennis playing for the evening as it's a big hot for it most days, but that will be fun too. We have a court practically opposite us and can give it a bash.. I was in an elimination match last weekend and just about melted - had to play three ~~sets~~ games in one day. I tell you I was really glad when we lost the semi-finals. I don't think I could have made it through another match!

Linda, you've talked me into giving you some shopping to do. The most urgent thing is an address book. Shauna got to mine and now it is just a pile of papers and in no condition to go travelling. One about 6" x 4" or so would be just great. A couple of little items from Robyn would be a pencil-case and a pencil sharpener (one of those little 20¢ jobbers), if these should be easy to find - if not, don't worry, she can live without them! The last item I think could be found fairly easily in any children's shoe store, and that is a pair of Buster Brown, medium width, size 10½ shoes for Jhodi. They are quite expensive (probably about \$13.) and the ones I would particularly like if it's possible are tan with a navy blue saddle effect and on the Navy blue is a yellow and orange bee hovering over a flower.

They are a lace-up shoe.

If you can get those they would match some Robyn has and they would look extra nice together in some little matching dresses I have for them. But if you don't find them in the first two places you try, just any pair of tan shoes would be very much appreciated. The poor girl doesn't have any shoes and the store here has been out of them in her size for the last six months!

Thanks very much for getting the Sea-Flite tickets - it does look a nice way to travel, doesn't it. We are really looking forward to it. We have a change of plans, but luckily it won't affect that. Jim has to go to a school after we leave here. It's in California (San Francisco) and only lasts a week, but it doesn't commence until Dec. 6th. We can't go with him so we will go on ahead down to Australia and stay with my folk while we wait - about six weeks, which won't really be hard to take! I've got to write and break the news to them.

Enclosed is your authorization which you may be called upon to show at the airport, so be sure to take it along. We will be waiting for you at this end and greatly looking forward to your company.

*Best regards,
Jimi + Elaine.*

VZCZCLAA105
RTTUZYUW RUHPSGG2562 2230630-UUUU--RUHPLVA.
ZNR UUUUU

R 100624Z AUG 76
FM COMFOURTEEN PEARL HARBOR HI
TO RUHPLVA/NAVSTA MIDWAY ISLAND
INFO RUHVAAA/NATCO HICKAM AFB HI
BT

-A-ADMIN
-I-OPS

RECEIVED
10 AUG 1976 09 44

UNCLAS //N04650//
TRANSP HIK/NDY/HIK

- A. YOUR 051933Z AUG 76
- B. YOUR 051935Z AUG 76
- C. YOUR 051937Z AUG 76
- D. YOUR 051939Z AUG 76
- E. CNO WASHINGTON DC 121804Z MAY 76

1. MAC SPACE REQ TVL AT INTL TARIFF RATE REQUESTED BY REF A THRU REF D IS AUTH HIK/NDY/HIK ON A ONE-TIME BASIS FOR THE FOLLOWING: MRS ANTONINA KRATOCHVIL GUEST OF CMC LARRY EDMONDS; MR AND MRS G. BALAZS GUEST OF RMC JAMES BRADLEY; MR AND MRS MARSHALL DEASY GUEST OF HM1 M. P. DEASY; MRS MARY MOENY GUEST OF AE1 CHRISTOPHER ALLEN, AS EXCEPTION TO DOD 4515.13R PARA 14.5A CATEGGRY EIGHTEEN, IAW REF E
2. REQUEST PAX BE NOTIFIED CONFIRMED MAC FLT Y531H ETD 21 SEP 76 FOR KRATOCHVIL; ETD 26 AUG 76 FOR BALAZS; 16 SEP 76 FOR DEASY;

PAGE 02 RUHPSGG2562 UNCLAS

9 SEP 76 FOR MOENY. CHECK IN AT NATCO MAC TERMINAL HICKAM NLT 0630
21 SEP 76 FOR KRATOCHVIL; 26 AUG 76 FOR BALAZS; 16 SEP 76 FOR DEASY;
9 SEP 76 FOR MOENY; TO PICK UP ORDERS, MIA, AND PAY COST OF TRAVEL \$219.00 EACH. BAGGAGE ALLOWANCE 66 LBS EACH.

3. IF PAX CANNOT UTILIZE THIS TRAVEL REQ SPONSOR NOTIFY THIS HEADQUARTERS.

BT

#2562

Midway

Thurs. Aug 19th.

Dear George and Linda,

Oh boy, I'm about to really strain a friendship! Our Master, the Navy, has decided that we should leave here a month earlier now - there's nothing we can do about it, so there go all our carefully made plans. I'm afraid the trip on Seaflite is going to have to go as they only operate on Sundays and our new date is Thursday September 30th to depart Midway. What we would like you to do, Linda, is now cancel the Seaflite trip (hope they will give you all the money back) and then enquire about planes going into Hilo. If there is one departing Honolulu for Hilo at 6 pm. or later that evening of the 30th September, could you book us a passage on it please? If not the next day would be fine. We would certainly appreciate it and apologize for putting you to all this trouble.

Have a good trip over - we are so looking forward to your visit.

Aloha,

Elaine + Jim.

J & E Bradley,
USNS Box 19,
FPO San Fran.
Calif. 96614

PS Hope you got my letter of a few days ago, with your authorization enclosed.

Curt Haney
Box 6 USNS
FPO San Fran
96614

November 22, 1976

Dear George,

I recieved your letter to the club about the turtles found on Wakeand Hilo all the members were glad to hear from you and alot of people are looking forward to your return.

Well I am now the president of Koral Kings and Gary Means is the safety officer we have also appointed a conservation officer.

You mentioned your return in your letter and my wife and I would be happy to have you and your wife as our guests when you do return. We however will be in Honolulu for the delivery of our first baby from approximately the 16th of December to the 4th of January. So if your visit will fall between these times Gary and Linda Means have also said they would be happy to have you as thier guests during this or any other time.

I have also set up with the command a weekend outing on Eastern Island, to consist of one or two night dives to catch and tag turtles. It will be set up for a Friday and Saturday night while you are on the island. In past night dives we have seen many turtles behind Eastern.

Gary and I are curious if the Green Sea Turtle has been placed on the endangered species list. If so Gary was saying we wouldn't be able to catch and tag them without breaking the law. So you may have to set up some arrangements with the proper authorities in Honolulu for the necessary paper work.

Contents?
We had a strange thing happen here last week a mass of internal organs were found offthe sea wall, near the pier. They were fished out of the water and at first thought to be human. After furthur examination by the station doctor, they turned out to be turtle organs, consisting of stomach, liver and intestines. We think maybe a shark got one and missed part of the meal or maybe someone poached a turtle and gutted it near the water.

About two weeks ago I had an accident myself. I was pretesting my regulator and had the low pressure hose blow up about six inches from my right ear. When it happened I could hardly hear out of the ear and there was a bad ringing. I went to the doctor who gave me some pills and sid to return in two weeks if it wasn't better. It is still ringing and I have about 1/3 hearing loss. The possibility is that I will bein Honolulu in about a week for furthur tests on the ear. If I can I'll get in touch with you while I am there.

Lokking forward to hearing from you.

sincerely,

Curt Haney

P.S. please send your residential address & phone number.

March 5, 1974

Koral Kings Dive Club
U. S. Naval Station
Box 40
Midway, FPO San Francisco 96614

Dear Koral Kings Dive Club Members:

Your organization has been suggested to me as a possible source of up-to-date information on sea turtles in the waters surrounding Midway. For the past two years I have been involved in research studies on the life history of the green turtle in the Hawaiian archipelago. In addition, growth and nutrition experiments on captive animals are in progress here at our facilities on Coconut Island in Kaneohe Bay. During 1973 I conducted an intensive tagging project on nesting animals at French Frigate Shoals. This is the last major nesting site in our island chain, therefore we are extremely concerned about the status of the population. All work in the Northwestern Islands is of course conducted with the approval and assistance of the U.S. Bureau of Sport Fisheries and Wildlife which administers the area.

For the club members' information, I have enclosed several articles on sea turtles both in Hawaii and other areas of the world. Being a sport diver myself, I feel sure that you will find this material interesting. I would very much like to communicate with individuals about sea turtles in order to assist in the collection of valuable data. Some of the points of immediate interest include: 1) areas most commonly frequented by turtles, 2) average sizes, 3) smallest turtles sighted, 4) stomach contents (if turtles are now taken for food), 5) relative abundance (number sighted per dive), 6) tagging now in progress. I understand that turtle tagging has been conducted in past years as a courtesy to the U. S. Bureau of Sport Fisheries and Wildlife, however, I am unaware to what extent this now takes place. Any and all information that can be provided will be greatly appreciated.

Koral Kings Dive Club
March 5, 1974

Page 2

If you find time while on Oahu and would like to tour our research facility and discuss sea turtles, please call me at 247-6631 or (946-1760 evenings).

Aloha and good diving!

Sincerely,

George H. Balazs
Jr. Marine Biologist

GHB:ah

November 18, 1976

Mr. Gary Means
U.S. Naval Station, Box 5
F.P.O. San Francisco 96614

Dear Mr. Means:

The spider from Midway Island, forwarded through Mr. George Balazs, of the University of Hawaii at Manoa, is the brown widow spider, Latrodectus geometricus. This species is widely distributed in the Pacific basin and Austral-Indonesian areas and is a relative to the common black widow spider, L. mactans, found on mainland United States.

I am not familiar with the medical aspects of this particular species, however, I assume its bite can cause symptoms similar to those caused by the mainland species, L. mactans. I suggest you contact your doctor or local health agency for information on its medical importance and bite symptoms.

I greatly appreciate the opportunity of examining this specimen, since I have not seen this species before. Thank you very much.

Sincerely,

VECTOR AND WASTE
MANAGEMENT SECTION

Franklin Emmik
Public Health Biologist

FE/mj

cc: Richard F. Peters
George H. Balazs ✓

807-270
STATE OF CALIFORNIA
DEPARTMENT OF HEALTH
2151 BERKELEY WAY
BERKELEY, CALIFORNIA 94704

June 12th, 1975

Dear George,

Sorry it has taken me so long to answer some of the questions required, however the information that I thought was readily available was lost in the bureaucracy of Midway Island.... I have the following to report:

The mean sea-water temperature chart came from U.S. Hydrographic Office, Washington, D.C. and is a compilation of thirty years of reports. These reports are given by ships transiting the area and sending their weather observations to that Office. I realize that when I sent you the chart the impression I gave was that these figures were taken from Midway Island Inner Harbor - that is not so and I hope this hasn't caused any problem. So, as a result, I am unable to provide you with high and low means as our Weather Detachment does not keep these figures for any length of time and they would definitely not correspond to those of the Hydrographic Office. Suggestions? The location was anywhere from 50 to 100 miles on either side of the Island, which gives a large variation.

Here's some happier news - I am enclosing the changes to Midway instructions in regard to sea turtles. These changes are to the basic instruction and if you need a copy of the basic instruction I shall be happy to send you a copy.

Two corroded tags which have not been placed on animals are forwarded as per your request. Club members enjoyed your article on the return of sea turtles to French Frigate; also your algae pictures and data sheet have been posted. Some green algae was found recently at the South end of Eastern Island, floating, and it seems reasonable to assume that it is coming from outside the reef on the South Eastern side of Eastern Island. I am also enclosing the chart of Midway that you requested.

Elaine is still with us and it looks like it might be a couple of weeks before the new arrival takes its place in our happy home. The children are well, of course, and we are all getting fat eating garlic bread (thank you.) Give our best regards to Linda and hopefully we will be in Hono at the end of Summer and can spend another enjoyable evening with you both.

Best regards,

Jim + Elaine

U. S. NAVAL STATION
FLEET POST OFFICE
SAN FRANCISCO 96614

SOPAMIDWAYINST 11015.1 CH-2
116:LFB:scl
24 February 1975

SOPAMIDWAY INSTRUCTION 11015.1 CHANGE TRANSMITTAL 2

From: Commanding Officer, U. S. Naval Station, Midway Island

Subj: Midway Island Navy Wildlife Refuge, Management Plan

1. Purpose. To transmit Change 2 to the basic instruction.

2. Action. Make changes as follows:

a. Page 5, paragraph 9c, delete and replace with the following:

"c. Turtle - Hawksbill turtles are on the endangered species list (reference (c)) and will not be killed, captured, molested, or disturbed under any circumstances. Green sea turtles may be captured by hand only, and no method will be employed which precludes the unharmed return of the undersized turtles to the sea. Specimens measuring less than 36 inches in length on a straight line from front to back of the top shall will be released. The daily green sea turtle limit is one per diver. Consumption will be for home use only."

b. Page 7, paragraph 10e, line 1, after "bag limits," add "of green sea turtle."

c. Page 7, paragraph 10c, lines 3 and 4, delete "size limits will be increased to 36 inches in length or."

3. Cancellation. When above change has been entered.

V. J. PAUDIO
By direction

Distribution:
NAVSTAMIDWAYINST 5216.1A
Lists I and II

DEPARTMENT OF THE NAVY
U. S. NAVAL STATION
FPO SAN FRANCISCO 96614

SOPAMIDWAYINST 11015.1
CH-1
OA/CTN:rlj
16 December 1974

SOPAMIDWAYINST 11015.1 CHANGE TRANSMITTAL ONE

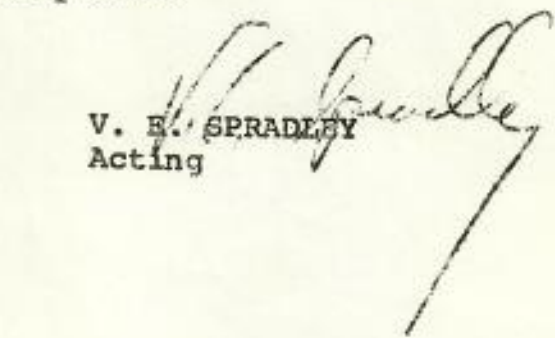
From: Commanding Officer, U. S. Naval Station, Midway Island

Subj: Midway Island Navy Wildlife Refuge Management Plan

1. Purpose. To transmit Change 1 to the basic instruction.
2. Action. Add the following to paragraph 11:

Killing, attempting to kill, capturing, attempting to capture, molesting, attempting to molest, injuring, attempting to injure any wildlife, without proper authority, or disturbing or attempting to disturb their habitats or eggs, without proper authority, is prohibited. Persons violating the above may be prosecuted by Federal Authorities. Those adjudged guilty of a misdemeanor may be fined as much as \$500 and imprisoned for not more than six months or both.

3. Cancellation. When required action is completed or for record purposes on 1 February 1974.


V. E. SPRADLEY
Acting

DISTRIBUTION:
SOPAMIDWAYINST 5216.1A
List I & II

U. S. NAVAL STATION
FLEET POST OFFICE
SAN FRANCISCO 96614

SOPAMIDWAYINST 11015.1
PL:GLM:dcc
10 April 1973

SOPAMIDWAY INSTRUCTION 11015.1

From: Commanding Officer, U. S. Naval Station, Midway Island

Subj: Midway Island Navy Wildlife Refuge, Management Plan

Ref: (a) DI/USN ISSA of 1 July 1972
(b) NAVFACINST 11015.10 Series
(c) Endangered Species Conservation Act of 1969
(d) Marine Mammals Act of 1972
(e) National Wildlife System Administration Act of 1966
(f) NAVSTAMIDWAYINST 5420.1.

Encl: (1) List of mammals, birds, reptiles, fish and mollusca
inhabitating Midway.
(2) Map of bird abatement areas

1. Purpose. By reference (a), the Midway Islands have been designated a U.S. Navy Wildlife Refuge. In cooperation with the Department of Interior, through the Bureau of Sports Fisheries and Wildlife, this plan is designed to protect and maintain the abundance and diversity of Fish and wildlife found at Midway consistent with the primary military mission of the station. This plan sets forth policies and procedures concerning conservation and management of Fish and Wildlife Resources at Midway and supports the provisions of references (a) through (f).

2. Cancellation. SOPAMIDWAY Instruction 5000.1G

3. Background. There is little evidence that the water within or immediately adjacent to Midway is used for commercial fishing although Japanese and Russian Fishing Vessels operate periodically from the western end of the Hawaiian Archipelago. Recreational Fishing by station personnel occurs within and adjacent to the atoll and is limited to Tuna, Dolphin and related species. Records of early day naturalists show that large seabird colonies nested on Eastern Island. Sand Island however, was barren and few birds frequented it. With the introduction of vegetation through the years, shifting sands were stabilized and large numbers of albatross and terns now occupy Sand as well as Eastern Island. Little effort was expended to manage bird life until albatross and sooty terns nesting within close proximity of, or soaring over aircraft runways on Sand Island, created a hazard for aircraft operating there. In 1956 an extensive study was initiated under a joint Navy - Wildlife Bureau Program to determine methods to minimize or eliminate

SOPANMIDWAY INSTRUCTION 11015.1

10 April 1973

hazards to aircraft without destruction of large numbers of birds. After completion of a decade of studies and experiments, solutions were crystalized to reduce the hazard and means generated to accommodate both aircraft and birds. Intensive albatross studies were undertaken by scientists from public agencies and private institutions some of which remain in progress. Such research has yielded valuable data concerning the birds especially the important role that the Midway Island complex serves in the Ecology of these and other species of sea birds.

4. Management Responsibility

a. Commanding Officer, U.S. Naval Station, Midway Island is responsible for implementing the provisions of the management plan.

b. In accordance with reference (b), a conservation and beautification committee shall be appointed. Membership shall include station Department Heads, Commanding Officer/Officer in Charge of Tenants concerned and the presidents of each Midway military wives associations with the Executive Officer serving as chairman. Meetings shall be scheduled at the discretion of the chairman. The committee shall initiate and/or develop local procedures and regulations in support of this plan.

c. Military Game Wardens shall be appointed in accordance with reference (f) and assigned to the station Security Officer. Wardens shall be instructed and perform duties as set forth in reference (c) and applicable station regulations. Bureau of Sport Fishery and Wildlife personnel shall assist station warden personnel in interpretation of applicable Federal Law and shall provide briefing and technical assistance when required.

5. Resource Management Implementation. Coordination of the program will be the responsibility of the Plans Officer with a review scheduled annually for a meeting of station and Bureau authorized representatives. Such meetings shall be convened during the month of May each year when progress will be reviewed and plans outlined for the forthcoming year.

6. Resource Management Objectives

a. Hunting - The station does not permit hunting due to a lack of hunting species and the potential hazard to island inhabitants.

b. Fishing - The fishing resources will be utilized to provide recreational fishing opportunities for island inhabitants. Such utilization should not damage the resource level and be exclusively for personal consumption or scientific research.

10 April 1973

- c. Turtles: - Limited harvesting of turtles will be permitted only for personal consumption or scientific research. Limits are regulated by applicable station and/or federal directives.
- d. Other marine resources may be utilized only for personal use and/or scientific research providing that there is no damage to these resources. Collecting of coral is discouraged since collecting over the years may endanger ecuatic ecosystems.
- e. Preservation of Rare and Endangered Species of Fish and Wildlife. The Midway Island complex once harbored a substantially large breeding population of the rare Hawaiian monk seal but uncontrolled disturbance has reduced this inventory to almost zero. A small breeding population is trying to re-establish itself and every effort will be made to protect the animal in the future.
- f. Since the albatross constitute a hazard to aircraft operating at Midway, it is the objective of this plan to keep the hazard minimal.
- g. Although the major objective is to protect the seabird population their nesting areas and related habitat, oppertunities to study and photograph, fish and wildlife species is outstanding. Such activities will be encouraged within existing regulatory constraints.
- h. Conservation Education - An active conservation education program utilizing station TV-Radio and the weekly station Newsletter will be pursued with lectures provided by Bureau Personnel and visiting scientists. Teachers from George Cannon School will be encouraged to study fish and Wildlife and foster conservation through the classroom and field trips. Newly arriving military and civilian personnel and dependents will attend indoctrination lectures stressing the necessity to preserve the Fish and Wildlife habitat.

7. Management Plan

- a. Vegetative Control - Control will be limited to that required to maintain operational control and sustain facilities requirements. This will include but not be limited to clearances necessary for runways, taxiways, and water collecting areas. Bird abatement surfaces will be cleared of vegetative growth to discourage occupation by nesting birds. Treatment or clearance of such areas shall be in such manner and be so timed so as to least affect wildlife populations. Such control may be best accomplished when bird populations are at their lowest or when not nesting. Chemicals used for control shall be those cleared for such use under the conditions of Public Law 92-516.
- b. Water Management - Control of water drains will be maintained

10 April 1973

to ensure that runoff does not endanger nesting birds. Current station oil pollution directives will support bird and fish safety.

c. Facilities Management - The entire atoll shall be designated the Midway Islands Navy Wildlife Refuge and signs calling attention to its status as a Wildlife Refuge shall be posted in conspicuous locations throughout the land areas. Signs will be provided by the station with Bureau personnel assisting in designation of sign text. The Station Security Officer will be responsible for access control to military restricted areas. The Public Works Officer will be responsible for maintenance of abatement areas. The Plans Officer will serve as liaison officer and be responsible for implementation of the Management Plan.

8. Inventory Control.

a. Bureau Biologists with assistance of station personnel will conduct censuses of Fish and Wildlife resources. Because of the vast number of seabirds present throughout the year, these tabulations will be limited primarily to the more abundant or important species. Priority, time, extent and method of census will be determined jointly by the station Commanding Officer and Bureau Biologists. High priority species include the Hawaiian monk seal, the Laysan and black footed albatrosses. Research biologists and other scientists from various scientific, educational institutions and agencies have completed a considerable amount of research on bird populations, life histories, migrations and general ecology, however, little information concerning the results of these studies has been made available to the station. Accordingly, future research will not be allowed unless the researcher agrees in writing to the station commander that the results of the research, including progress reports, thesis and publications will be provided the station commander. Persons desiring to conduct research of the station Flora and Fauna will submit study proposals to the station commander for review and approval prior to receiving authorization to conduct research or study. Assistance of Bureau Biologists or other competent scientists may be requested to determine the suitability and feasibility of such research. The Plans Officer shall maintain a library of research proposals, approved research projects and published reports. Presently scientific surveys of Fish and other marine life is lacking and efforts will be made to encourage competent fishery and marine biologists from scientific institutions or agencies to conduct research on such resources.

b. Banding and Marking - At present scientists are engaged in long term abtross research which involves banding and marking such birds. Station personnel from the Koral Kings Diving Club have been cooperating with Bureau personnel on green turtle research. This has included tagging, measuring and weighing turtles caught in waters

adjacent to the station. Such cooperation will be encouraged. With assistance from station personnel, Bureau biologists have been tagging the few seal pups produced on the station. This procedure will continue so long as the seal population persists. Other species of fish and wildlife will be marked as required by Bureau biologists, other scientists and their collaborators.

9. Harvest Regulations

a. Fishing - Fishing within the Lagoon will be permitted for recreational purposes, however, since these fish carry Ciguatera poison, none will be consumed. Fishing outside the Lagoon will be limited to sport fishing from authorized fishing craft only. Presently there are no set size or catch limits nor are any planned unless subsequent studies demonstrate over harvest.

b. Lobster - Lobsters may be taken by skin diving only. Consumption will be for home use only with the daily limit set at six per diver. Should surveys indicate a serious decline in population, a closed season may be established by the command from June through August.

c. Turtle - Turtles will be captured by hand only and no method will be employed which precludes the unharmed return of undersized turtles to the sea. Specimens measuring less than 24 inches in length on a straight line from front to back of the top shell will be released. The daily turtle limit for consumption at home is one per diver.

10. Management Goals. The objective is to maintain current population levels as high as possible while at the same time minimizing the chances of aircraft bird strikes.

a. Methods - Present bird abatement areas will be kept devoid of vegetation. Runway overrun approach areas and water catchment areas will also be kept clear of vegetation and be rendered unattractive for nesting birds. During the egg laying period in November and December, Public Works personnel will patrol the abatement areas twice a week collect and relocate eggs so that birds do not develop a strong affinity for the nest site. Although the base mission takes priority and may dictate the need for new facility construction, planning will ensure minimal impact as possible on the wildlife habitat. Planned construction will be conducted before nesting begins, when populations are absent or at the annual low. Bureau biologists will provide assistance in establishing best times for inception of construction projects. Since albatross are protected by federal statute, no birds will be destroyed without a federal permit. Approval for collection of albatross must be obtained from the Director of the Bureau of Sport Fisheries and Wildlife and be limited when possible to problem birds occupying

SOPAMIDWAY INSTRUCTION 11015.1
10 April 1973

abatement areas.

b. Other Bird Species - Numerous seabirds other than albatross nest on Midway and are of considerable aesthetic and scientific value to station personnel and visiting scientists. Most breeding colonies are located well away from runways or are too small to constitute a problem. An exception is the sooty tern but relocation programs were successful in moving these colonies to Eastern Island where they cause little trouble. Bonin petrels construct nesting burrows within residential and recreational areas. Canaries, introduced around the turn of the century existed in relatively small numbers until recently, but now are very abundant. The common pigeon occurred in large numbers and constituted a problem in the residential areas and the hangars because of their uncleanness. A control program during the past ten years has reduced them to few birds. Several common Indian mynah birds have been recently introduced to Sand Island and during 1972 several active nests were noted.

(1) Management Goal - Maximum numbers of seabirds will be maintained in areas where they will not be a hazard to aircraft. This will be accomplished by careful control of human and canine activity in nesting areas. Accordingly, canaries have been inhabiting Midway for years and present populations should persist. Pigeon and mynahs will be eliminated by judicious shooting and live trapping lest they become problem. Bureau personnel will provide technical assistance to the station concerning these control program.

c. Finned Fishes - Populations of various species of fishes inhabiting the Lagoon and adjacent deep ocean waters are not well known. Little intensive research has been accomplished to date. Fishing outside the reef is limited to yellow finned tuna, skipjack tuna, mahimahi and occasionally marlin and wahoo. These species are approved for human consumption when caught outside the reef.

(1) Management Goal - Fishing within the Lagoon will be restricted to recreational purposes and human consumption is prohibited. Fishing outside the reef is restricted to suitable craft under favorable weather conditions. Pollution of local waters will be kept to the minimum possible.

d. Lobster - the lobster population status at Midway is unknown. Since most lobster locate in caves within the Lagoon or within holes of coral formations, they may be retrieved by spearing.

(1) Management Goal - Research will be encouraged to gain more knowledge on population and rate of recruitment. If lobster populations decline substantially, retrieval during June, July and August when females are with egg will be prohibited. Commercial use

1. The following is a list of mammals, birds, reptiles, fish and molluscs commonly occurring at Midway. Rare stragglers have not been included for purposes of this plan. Much work needs to be done on the presence, status and distribution of marine invertebrates thus the list is very incomplete.

a. Mammals

- (1) Game - none
- (2) Non-game
 - House mouse (Mus musculus)
 - Black rat (Rattus rattus)
 - Norway rat (Rattus norvegicus)
 - Sperm whale (outside lagoon) (Physeter catodon)
 - Dense beaked whale (Mesoplodon densirostris)
 - Goose beaked whale (Ziphius cavirostris)
 - Bottlenose porpoise (Tursiops sp)
 - Spinning porpoise (Stenella longirostris)
- (3) Rare or endangered Hawaiian monk seal (Monachus schauinslandi)

b. Birds

- (1) Game
 - (a) Upland - none
 - (b) Waterfowl
 - (r) Cackling goose (Branta canadensis minima)
 - (r) Mallard (Anas platyrhynchos)
 - (u) Pintail (Anas ocularis)
 - (r) Green-winged teal (Anas carolinensis)
 - (u) Shoveler (Spatula clypeata)
 - (r) Scaup (Aythya sp.)
 - (r) Bufflehead (Bucephala albeola)
- (2) Non-game
 - (a) Seabirds
 - (a) Sooty tern (Sterna fuscata)
 - (a) grey-backed tern (Sterna lunata)
 - (a) Common noddy tern (Anous stolidus)
 - (a) white-capped (Hawaiian) noddy tern (Anous minutus)
 - (a) Fairy tern (Gygis alba)
 - (a) Black-footed albatross (Diomedea nigripes)
 - (a) Laysan albatross (Diomedes immutabilis)
 - (a) Wedge-tailed shearwater (Puffinus pacificus)
 - (a) Christmas Island shearwater (Puffinus nativitatus)

- (a) Bonin petrel (Pterodroma hypoleuca)
 - (u) Bulwer's petrel (Bulweria bulwerii)
 - (a) Red-tailed tropicbird (Phoebastria rubricauda)
 - (u) Blue-faced booby (Sula dactylatra)
 - (u) Brown booby (Sula leucogaster)
 - (u) Red-footed booby (Sula sula)
 - (c) Greater frigatebird (Frigata minor)
- (b) Shorebirds
- (c) Sanderling (Crocethia alba)
 - (c) Wandering tattler (Heteroscelus incanum)
 - (c) Ruddy turnstone (Arenaria interpres)
 - (r) Sharp-tailed sandpiper (Erolia acuminata)
 - (u) Bristle-thighed curlew (Numenius tahitiensis)
 - (a) Golden plover (Pluvialis dominica)
 - (r) Glaucous-winged gull (Larus glaucescens)
- (c) Other birds
- (u) Rock dove (Columba livia)
 - (a) Canary (Serinus canaria)
 - (r) Common Indian mynah (Acridotheres tristis)
- c. Fish
- Carangidae (uluas, jack crevall)
 - Chanidae (milk fish, awa)
 - Elopidae (lady fish, awaswa)
 - Gobiidae (gobies)
 - Kuhliidae (sholehole)
 - Mugilidae (millet)
 - Sphyreanidae (barracudas)
 - Acanthuridae (surgeonfishes)
 - Albulidae (bonefish)
 - Apogonidae (cardinal fish)
 - Atherinidae (silversides, iao)
 - Aulostomidae ((trumpetfish)
 - Belontiidae (needlefish)
 - Canthigasteridae (sharpback puffer)
 - Diodontidae (spiny puffer)
 - Engraulidae (nehu)
 - Fistulariidae (cornet fish)
 - Hemiramphidae (half-beaks)
 - Holocentridae (squirrel fishes)
 - Labridae (wrasses)
 - Mullidae (goatfishes)
 - Muraenidae (eels)
 - Kyliobatidae (eagle ray)
 - Ostraciontidae (boxfishes)
 - Polynemidae (threadfins)

Pomacentridae (damsel fishes)
Priacanthidae (aweweewee)
Scorpaenidae (scorpion fishes)
Scorpididae (convict fish)
Sphyrnidae (hammerhead shark)
Tetraodonidae (puffers)
Balistidae (triggerfishes)
Carcharhinidae (sharks)
Chaetodontidae (butterflies)
Cirrhitidae (hawkfishes)
Monacanthidae (filefishes)
Scaridae (parrotfishes)

d. Reptiles

Green sea turtle (*Chelonia mydas japonica*)
Mourning gecko (*Lepido tactylus ugubris*)
Snake-eyed skink (*Cryptoblepharus Poecidopleurus*)

e. Crustacea

Spiny lobster (*Panulirus* sp.)
Slipper lobster (*Scyllarides* sp.)
Horn-eyed ghost crab (*Ocypode ceratophthalma*)
Hermit crabs
Various other crustaceans

f. Molluscs

Octopus (*Octopus* sp.)
Squid
Gastropods (single shell) spindles, augers, cones, nerites,
conch, cowries, turbans, hornshells, miters, etc.
Pelecypods (bivalves) jewel boxes, clams, etc.
Various other molluscs

g. Echinoderms

Sea stars
Brittle stars
Sea cucumbers
Sea urchins
Various other echinoderms

h. Corals

Acropora sp.
Porites sp.
Montipora sp.

10 April 1973

is prohibited. Lagoon water pollution will be kept minimal.

e. Sea Turtles

(1) Management Goal - Present size and daily bag limits with restriction to home use consumption will be continued. Should research reveal number decline, size limits will be increased to 36 inches in length or a harvest moratorium will be established. If the State of Hawaii declares a moratorium or complete harvest closure, the command will comply accordingly.

f. Other Marine Resources - Little is known about other marine Flora or Fauna, however, coral and molluscs are collected as curios.

(1) Management Goal - Since much information is needed to establish a preliminary management program, scientific research of all marine resources will be encouraged. Collecting of coral will be discouraged due to the erosive effect on parent formations.

g. Hawaiian Monk Seal - Although Midway supported a breeding population of 75 of these rare mammals at one time, human disturbance through the past two decades has virtually reduced the count to zero. Since 2-3 pups have been born annually on the small islets lying between Sand and Eastern Islands over the past three years, these islets will be restricted to station personnel during the pupping season.

(1) Management Goal - Since the objective is to increase the mammal population, curtailment of existing breeding areas to human interference will be fostered. Station personnel will be briefed concerning seal ecology in accordance with reference (d). Accordingly, animals located on island beaches and islets will not be disturbed. Any planned research program must be approved by the Commanding Officer, U. S. Naval Station, Midway and the Bureau of Sport Fisheries and Wildlife. A federal permit will be required before any seal is taken for research utilization.

h. Other Mammals - Occasionally porpoises are noted within the Lagoon waters. The common house rat and mouse are found throughout the island buildings. Canines that have liberal run of the island, tend to harass and/or kill chicks in residential areas. Felines are not permitted on Midway.

(1) Management Goal - Porpoise management is virtually impossible. Rat and mouse extermination is the responsibility of the station Pest Control Officer and the population of both species are kept in check. Canines will be kept in close check by owners.

SOPAMIDWAY INSTRUCTION 11015.1

10 April 1973

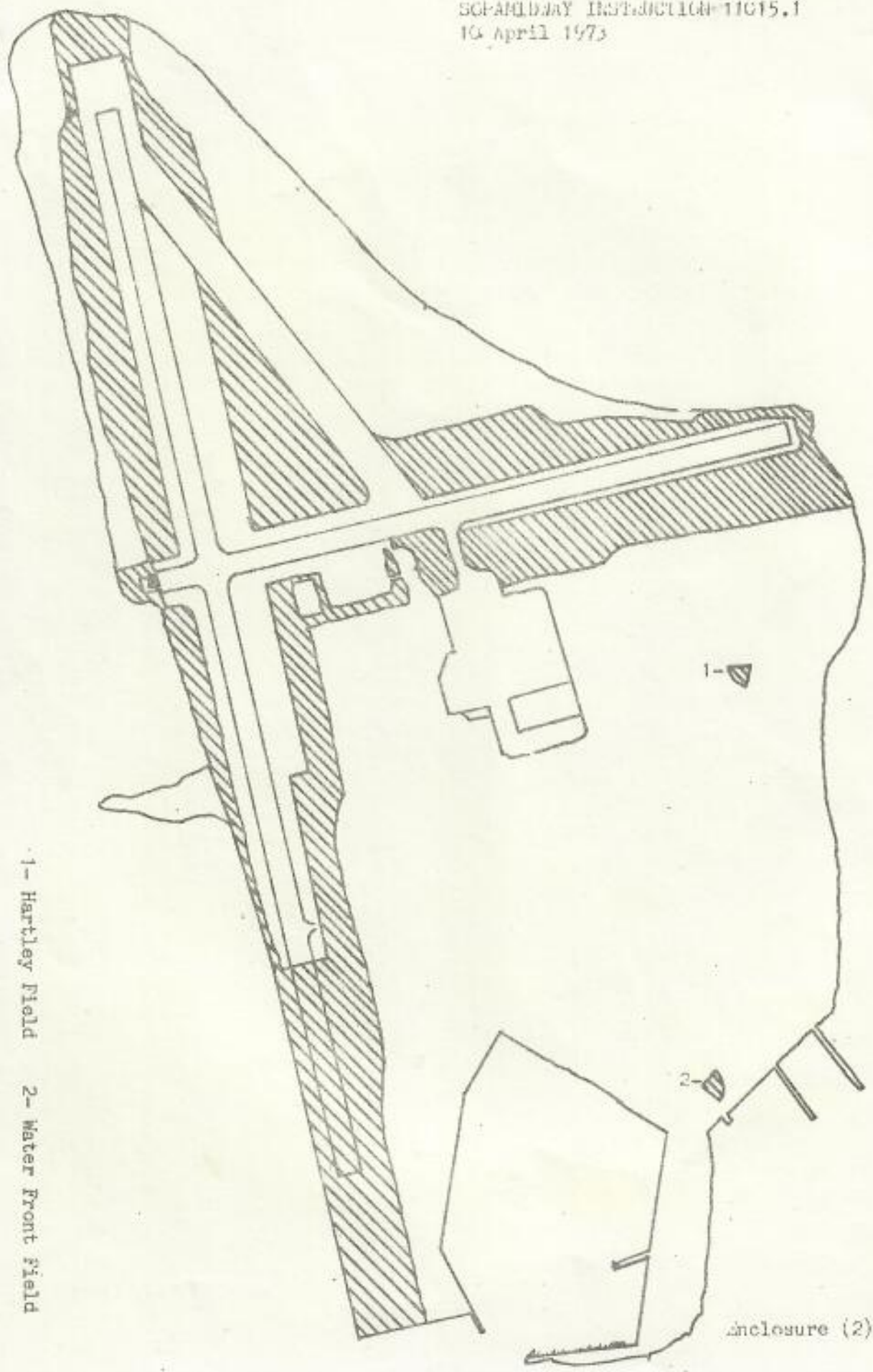
11. Enforcement. Provisions of applicable Naval Station Regulations, Federal Fish and Wildlife Laws will be enforced including migratory bird treaties with foreign countries. References (c) through (e) refer. Canines that present a threat to the safe habitability of island Flora and Fauna will be removed from the island or disposed of locally. Violations of this and existing directives pertaining to conservation of island Fauna will be subject to appropriate federal penalties.

12. Reports. An annual report tabulating the progress made during the previous year will be submitted by Commanding Officer, U.S. Naval Station, Midway Island to signatory agencies within sixty days following the annual May meeting.



R.F. ROEMER

Distribution List:
List I & II, Case 1



1- Hartley Field
2- Water Front Field

enclosure (2)

8/24/77 S-B

Midway's Closure Should Be Reviewed

A recently-discovered fishing ground may mean the Navy should review its policy of maintaining Midway Island as a closed base.

Two vessels that returned to Honolulu this week loaded with tuna say they have established that north of Midway Island there is one of the world's richest fishing potentials. Tuna can be caught there, the captains believe, on their migratory route from the Japan Sea to the U.S. Pacific Northwest.

But for best exploitation of the grounds, they say, fishing boats need to be able to refuel at Midway and to store their catches there. The 2,000-mile distance from Hawaii is too great for Hawaii to be a feasible base, they say, but a Midway base might make the Emperor Seamount fishing area north of Midway attractive to dozens of boats.

Since the fish eventually might be brought to Hawaii for processing, Gov. George Ariyoshi is interested in seeing the grounds developed and members of the Hawaii congressional delegation are apt to be sympathetic.

The Navy's initial answer on use of Midway is "no" but a persuasively prepared case might put this "no" up for review.

Albacore Bonanza Found off Midway

By Lyle Nelson
Star-Bulletin Writer

They went fishing and made \$50,000 in 10 days.

The albacore (tuna) were so thick the fishermen almost could walk across the waters in any direction.

Where? Midway between Midway Island and Attu, the westernmost anchor of the Aleutian chain, in the deep waters of the North Pacific where the warm waters of the Kurshio Current clash with the frigid Arctic Ocean.

The lure? Aye, that's the secret.

The fishermen: Keith Colburn of the Typhoon, and Bill Michael of the Jo Anne Marie, both out of San Diego.

Yesterday, fresh from five months fishing, Colburn and Michael sat down to a table that didn't move at Fisherman's Wharf and told their story to Gov. George R. Ariyoshi, legislators and State economic development specialists.

Paid \$50,000 to make the exploratory charter trip into little-fished waters, and \$1,190 a ton at Kewalo for their catch, Michael is looking at a \$100,000 payday before he subtracts expenses.

The pair investigated seamounts northwest of Midway, cruised to within 400 miles of Japan, and found their happy fishing ground quite by accident about 840 miles from Midway.

Andrew Gerakas, head of economic development for the State Department of Planning and Economic Development, said negotiations are under way with the Navy to make the port at Midway available to commercial fishermen flying the American flag.

The Western Pacific Regional Fishery Management Council has discussed a Midway fishing base already but found the Navy unresponsive.

Now, armed with evidence of great schools of fish near Midway, Ariyoshi indicated he will renew the pitch to the Navy for cooperation in developing the tuna industry.

Colburn and others said the Navy plans to reduce its personnel at Midway, opening up freezers, now used to feed the population there, for tuna storage.

"We are going to need help from the Navy and the State," Colburn said. "Midway is the key."

He said why the fish hit their lines in such great numbers "is an absolute mystery."

Each boat boasted more than 5,000 fish. Albacore are blue-grey on top and white on the bottom, have big eyes and the white meat goes great on sandwiches or in casseroles.

"I have never seen anything like it," said Colburn. He and Michael have been fishing the West Coast from British Columbia to Mexico for more than 15 years.

"It was like finding gold," Colburn said. "There cannot be another place like it."

The exploratory fishing trip was sponsored by the Pacific Tuna Development Foundation with an assist from the Navy at Midway, as well as other federal and State agencies.

Ariyoshi said, "We really support this type of research and I think their finding can mean a great deal to Hawaii."

The Governor visited the two fishing boats and said he will take up the essential requirements for future fishermen in that area when he attends next week's Western Governor's Conference in Alaska.

Colburn and Michael said use of Midway Island, now under Navy jurisdiction, is an absolute must to tap the North Pacific site where they found the albacore. "What we'll need out there is use of their port for provisions, fuel and transshipment of the catch in container ships," Colburn said.

"No fisherman can afford to travel more than 2,000 miles and gamble on making a catch. It is too far to go," he said, referring to the time it takes a fishing boat to travel from Kewalo to Midway to the North Pacific fishing grounds.

They are the most elusive fish to catch but ours was a real candy bar operation," Michael said.

The boats were trolling without bait or nets in what is called jig fishing.

The fish were on the surface, the water about 72 degrees in a warm thermocline about 100 feet deep sitting atop very cold water.

They said the Kuroshio Current is full of nutrients tuna like.

Only the summer months would be suitable for fishing this migratory fish, they said.

The two boats also visited the Emperor Seamount area north of Midway where Russian, Japanese and Taiwan fishing boats often operate, but using bait or nets and seeking other types of fish.

"The area is too far for Japanese boats to go and too far for American fishermen unless they can use Midway," Colburn said.

The research trip by Colburn and Michael is one of many such State projects to improve the fishing industry.

"I hope this will encourage others to try next year," said Gerakas, "but we will need Midway for transshipment. The cannery at Kewalo doesn't have enough fish to can now."

"It was exciting thinking about what really could be done in that area," said Colburn.

The two boats between them used only five persons to haul in the chicken "gold" of the deep.

Stocks

Dow average down 4.82
to 962.43 in active trading.

Stock tables on B-6
Business news on B-7-8

Honolulu

VOL. 66, NO. 18

Three Sections

HONOLULU, HA

Rescue of Cre



TANKER BREAKS UP—The Liberian tanker Irene Challenger breaks in two 200 miles southeast of Midway Island. In photo at right, three crewmen stand atop the pilot house in

Star-Bulletin

Home



WALL

Tuesday, January 18, 1977

40 Pages

20c on Oahu
25c on the Neighbor Islands

women Under Way



the forward section of the broken ship. Later they went into the water and the Coast Guard was searching for them. —Coast Guard Photos.

Oil Tanker Breaks Up Off Midway

A 640-foot Liberian tanker full of crude oil split in half 200 miles southeast of Midway Island last night and the Coast Guard is looking for three missing crewmen.

The three had been dramatically positioned on the pilot house on the forward section which was drifting a mile from the stern of the *Irenes Challenger*. They were last seen in the water awaiting rescue.

Twenty-eight men from the ship were picked up uninjured.

An oil spill 15 miles wide and 10 miles long, originating from the stern section, is threatening the abundant wildlife on nearby islands.

The *Irenes Challenger* was carrying 5.5 million gallons of fuel.

THE RESCUE SCENE is between Pearl and Hermes Reef and Lisianski Island of the northwestern chain some 1,000 miles from Honolulu. The areas are abundant with birdlife, green turtles and Hawaiian monk seals.

The Coast Guard in Honolulu is awaiting word from rescue vessels on the fate of the three men who apparently decided against remaining on the sinking stern.

"Close by is the Norwegian tanker *Rona River*," Jim Gilman of the Coast Guard reported.

There was no storm in the area and it is not known what caused the *Irenes Challenger* to break up.

Gilman said, "The captain reported that the crew noticed a noise in the No. 5 tank and investigated. They noticed bent deck plates.

"Later, while they were dining, they heard a crack and the bow bent away from the stern," he said.

A Coast Guard search plane spotted the oil slick before sunset yesterday not long after the ship had radioed a distress call that was monitored in Honolulu.

Irenes Challenger was en route from the oil fields of Venezuela to Japan.

Twenty-eight crewmen, all uninjured, were transferred to the Japanese container ship *Pacific Arrow* last night.

SLIGHTLY TO THE north of the rescue scene, the smaller freighter

Oil Tanker Near Midway Splits Up

Continued from Page One

logs, was abandoned Saturday morning when it took water over the bow into the forward hold.

Weather in the rescue area is good, the Coast Guard reports, with seas up to eight feet and winds up to 15 knots.

The ships were making normal North Pacific crossings which bring them near Midway. Every year some get in trouble in severe weather and occasionally break up and sink, often with loss of life.

THE COAST GUARD buoy tender *Mallow* was diverted to the scene of the *Irenes Challenger* rescue but doesn't expect to arrive until tomorrow.

Meanwhile a C-130 plane from *Barbers Point* took off early this morning and was expected to be over the scene at daybreak.

The *Irenes Challenger* is owned by *Tsakos Shipping and Trading Co.* of Piraeus, Greece.

Midway Island--albatrosses and the jet age:

We can report that, as of October 2, 1961, the threatened slaughter of gooney birds on Midway Island by the U. S. Navy has not yet taken place. When the plan to eliminate these albatrosses because of the hazard of collisions between them and planes was publicized in 1959 such a protest arose from organizations and individuals that the action was deferred. Investigations were carried out to see if the birds could not be frightened or coaxed away from the runways.

A number of ideas were tried out, including the use of various noise-makers, smoke, and "habitat improvement" on nearby Kure Island, designed to attract the Midway albatross population to Kure. These had little or no effect. Leveling the small dunes near the runway and asphaltting the ground, to eliminate the updrafts of air on which the birds soar and to make the ground unattractive for the birds, was also initiated. These measures were remarkably successful, in terms of reduced number of birds soaring over the runway and in terms of reduced number of collisions with planes. If and when this operation is completed, it may eliminate the collisions without eliminating the birds. The other measures do not seem to be promising. We hope that the suggestion of planting Casuarina on Laysan and other nearby atolls "to make them more attractive to the albatrosses" will not be carried out.

In the summer of 1961 Dr. Harvey I. Fisher studied the Midway albatrosses, both from the standpoint of population dynamics and that of experimenting with possible "imprinting" of young birds by moving them to a new location, to see if they tend to return to the new location for breeding when they reach maturity.

One of the disturbing things reported by Mr. Chandler Robbins, Fish and Wildlife Service biologist who has been handling the Midway investigation, is a general irritation among the personnel stationed at Midway with the noises made by birds of various sorts and especially with the burrowing habits of the shearwaters. This has resulted in a certain amount of killing and harassment of the birds. There may be some connection between this and the reported recent reduction of the Midway albatross population, attributed to accident and vandalism. It appears, as also demonstrated by the negative correlation between people and sea-birds in the Marshall Islands, that sea birds and people do not very successfully occupy the same habitats.

Mr. Robbins has prepared a report on the success of leveling experiments and on the current situation involving these birds which will soon be issued in the Fish and Wildlife Service Special Scientific Reports; nos. 38, January 1958, and 44, July 1959 includes earlier information.

Wake Island:

In September 1961 after the Tenth Pacific Science Congress, Dr. Bruce Halstead, director of the World Life Research Institute, conducted a scientific party to Wake Island to collect poisonous fish, in continuation of his previous studies of the "ciguatera" poisoning problem. Participants were Dr. and Mrs. Halstead, Drs. Donald Hessel and Richard Beltz, chemists, Messrs. Don Ollis and Robert Rutherford, photographers

ATOLL RESEARCH BULLETIN

LIBRARY

JAN 22 1962

FISH & WILDLIFE SERVICE

76. *Observations on Puluwat and Gaferut, Caroline Islands*
by William A. Niering
Historical and climatic information on Gaferut Island
by Marie-Helene Sachet
77. *A check list of marine algae from Ifaluk Atoll, Caroline Islands*
by Isabella A. Abbott
78. *Narrative report of botanical field work on Kure Island,
3 October 1959 to 9 October 1959*
by Horace F. Clay
79. *Botanical observations on Leeward Hawaiian Atolls*
by Charles H. Lamoureux
80. *The tropical coral reef as a biotope*
by Sebastian A. Gerlach
81. *Qualitative description of the coral atoll ecosystem*
by F. R. Fosberg
82. *Heron Island, Capricorn Group, Australia*
by F. R. Fosberg, R. F. Thorne and J. M. Moulton
83. *Notes on some of the Seychelles Islands, Indian Ocean*
by C. J. Piggott
84. *Atoll News and Comments*



Issued by

THE PACIFIC SCIENCE BOARD

National Academy of Sciences—National Research Council

Washington, D.C., U.S.A.



Oct 82

Dear George,

I saga of the Midway pumice continues! I discussed the problem with the resident volcanologist here at UCSB, where I am on sabbatical. He has done some experiments on how long it would take for pumice to sink. He gave up after a few years and spoke to someone else that had an on-going experiment for over 8 years (still floating). Therefore, it is unlikely give the large pore size of the pumice (better floatation) ~~to~~ and extremely fine grained size that we are going to determine the origin / source of it. Perhaps, I will try a chemical analysis when I return to Hawaii this next summer. Sorry.

I like your post cards and wondered what it cost to have them made up. \$6.00 for 50 is very reasonable. I looked in having some made for my department. The printer wanted almost a \$1/card. I would greatly appreciate your assistance.

Sincerely yours,

Michael Garcia

U.S. NAVAL STATION
MIDWAY ISLAND
BOAT LICENSE

232

Issued to Linda R. Balazs

Rate Civilian SM

Age 31 Division

Type of Boat Power Boat

Date of Issue 7/2/76

Signature Linda R. Balazs

Issuing Authority Amy Gerson

Midway, Jan 8 '83

Dear George,

Well, I'm up here at Midway working w/ the Hawaii Cooperative Fishery Research Unit. I'll be here a month doing transect work & fish census. The proj. I'm involved in is the predator-prey relationships on the reef. It's cold here. The temps $\approx 55^{\circ}\text{F}$. Freezing. - even in a wet suit.

I saw you notice up in the Kt dive area abt. turtles. I'm writing to inform you that since Dec 28th to now, we've seen only 2 green sea turtles. ~~For~~ ^{2 foot} shell width & $\approx 1\text{m}$ long. The 2nd sighting was of a slightly larger turtle. One was seen near the pier coming in from open ocean, the other, out at sea $\approx 30\text{m}$ from shore.

Well, I hope this info is useful to you. I could not see

any markings on them, as we didn't
(or probably couldn't) stop to grab them
to look.

Well, will return to doing our
data sheets now. Will be up here
till Jan 28th, after which I'll be
working full time at HCFRU, Edmonson
Hall, UH. Ext. X8350.

Happy New Year!

Aloha,


P.S. Will inform you, when I
get back, of any turtle
sightings if at all.

LISA GOUW
U.S. Fish & Wildlife
Naval Air Facility, Midway Island.
F.P.O. San Fran, Ca 94114 ZIP CODE

9-1-77

Hi! George & Linda.

Well, just thought I'd drop a note to see how you all were.

"Me & Gary are still waiting to hear from you on the Report Gary gave you about the turtle that was spotted a few weeks ago on Star-Fac Beach" one night in the Egg laying Process, there were two ~~beach~~ witnesses.

Me & Candis are doing fine, fish too, he's starting to walk now & get into everything.

Me & Gary have just about got the Raft finished now, only about another week or so before it's finished.

Gary & I have been doing alot of diving lately, We tried to retrieve the Big Brass Bell off the Reef but its there to stay for awhile we think. But we did find the remains of another Brass buoy light.

and we gave it to the Club for a decoration.

We also went diving inside & outside the reef on the anchor that's on the reef near the Channel. Remember that's where the ship called the Bark Carlton sank in 1906. Well, we didn't find much outside the reef but we did find quite a few things inside the reef. I picked up a Brass chisel & some Brass Bearings mounted in teak-wood that was well preserved, & few other souvenirs.

Last week ~~to~~ me & a friend were fishing off the fuel pier in the middle of the day. And guess what I caught in 40' of water - (a turtle). He was hooked in the neck & untagged also. He got away alright, we sure were glad that he wasn't injured.

August 14, 1977

Dear George + Linda,

Everything here is fine everyone is busy. I finally finished my scuba course and Curt took me diving outside the reef its really beautiful out there. Also I got one address for you for patches. This is the one the station uses and then also Mac is trying to get one for you. The address is:

Box 491 N.M.C.R.C.
PEORIAN MEMARS RAD STA
A.P.O. San. Fran. 96271

Att:

Poz L.B. Rentrop
N.G.6.D. USAF. S-K

I guess you send him the patch design and lets you know cost ect.

If Mac comes through ~~then~~ with

another address I'll send it to you.

Still no turtle taggings lately and no sights that I've heard of.

Everyone is looking forward to your return. I did hear a rumor that a big turtle was seen at Naw Fac and that Gary Means is supposed to call you but I don't know any facts. Hope Linda had a good trip to the states. Let us know your plans.

Love
Candi
Jurt.



ET-1 & MRS ROGER L. SCHMELTZ
 Bx 14 U.S.N.S. Midway Island
 FPO San Francisco,
 California 96614

Caesar Rodney



U.S. Postage 9¢

George H. Balazs
 University of Hawaii at Manoa
 P.O. Box 1346 Coconut Is.
 Kaneohe Hawaii
 96744

948
 -8950

CYPRAEA LATIOR as identified
 from the Living Coarctates of the World
 by C.M. B. pages 1970. Approx 1/2"
 Found in 6ft of water - center of
 Midway Islands Lagoon under coral
 rubble. Lived for 5 days in my
 shell tank. Animal was put
 in formalin after cleaning - available
 for study if interested. Did take
 some pictures (over)

17 JUNE 77

Dear George

Thank you for contacting Allison for us. We are looking forward to her letter. The indications from your letter show we may have found something worth while.

Haven't seen or heard of any one catching a turtle since you left, but then I haven't been in the water either. My cold is about over - will get some diving in this weekend.

Thanks again
Roger

Ni Geo + wife! etc

For further info contact

ET-1 ROGER L. SCHMELTZ

Box 14 U.S.N.S

FPO SAN FRANCISCO, CA

96614

Small Turtle

Fish Hole Tag:

PL $15\frac{7}{8}$

straight L. $19\frac{3}{4}$

straight W. 16"

curved length $20\frac{3}{8}$

curved width: $19\frac{1}{4}$

Tail $3\frac{1}{2}$

head: $3\frac{1}{4}$

Left Tag: 2171

Right Tag: 2172

weight 43 lbs

straight length $20\frac{3}{8}$

width 16

curved length $22\frac{1}{8}$

" width $19\frac{1}{4}$

head $3\frac{1}{8}$

plastron L. $16\frac{3}{4}$

both calcifers!

weight: 43

tail $3\frac{3}{8}$

2173 R.

2174 L.

St. I 2nd cont
R hit at INJOV

~~OLD TAG~~
1482
1484

straight $22\frac{1}{2}$ len.

18 wid

curved $23\frac{5}{8}$ len

head $2\frac{1}{4}$ wid

$3\frac{1}{4}$

plastron $17\frac{3}{8}$ (deformed at posterior)

tail 5

weight 50

4th dorsal small
shell injury

2175 R

2176 L

2177 R

good

S- $16\frac{3}{8} \times 13\frac{1}{4}$

C- $17\frac{1}{2} \times 15\frac{1}{2}$

2110 RFL
2111 L

at th
7 may

PL- $13\frac{5}{8}$

Tail $2\frac{3}{8}$

Call name Ken
my book

Convol Length: 38"

" width 36 1/2"

straight Length 35 1/2"

" width

head width 4 3/4"

Plastron Length 27 7/8"

" width 28 5/8"

Left Tag 2167

Tail 2170

7 1/4"

Right Tag: 2168

" " 2169

CHRIS BREITHEIMER

NS MIDWAY IS.

Box 14

FPO SAN FRANCISCO CA

96614

2110-2122

2178-2200



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

March 14, 1983

Dr. Izadore Barrett, Center Director
Southwest Fisheries Center
National Marine Fisheries Service
P.O. Box 271
La Jolla, CA 92038

SUSUMU ONO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES
EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN
DIVISIONS:
AQUACULTURE DEVELOPMENT
PROGRAM
MARINE RESOURCES
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

HL

Handwritten signatures and initials

NAT'L MARINE FISHERIES
SERVICE

MAR 29 19 53 AM 1983

HONOLULU LABORATORY

Handwritten notes: Gil, Hemo, RL, File

Dear Dr. Barrett:

The Department of Land and Natural Resources, through the Division of Aquatic Resources, is conducting a study on establishing a tuna fishery support base on Midway Island and an assessment of the related infrastructural needs for an expanded fishing fleet in Hawaii. The study was authorized by the State Legislature in H.B. No. 3039-82 H.D. 1, for the 1982-1983 fiscal year.

The study will: 1) Examine the albacore tuna fishery resource of the central North Pacific Ocean to determine if the resource can sustain an expanded fishery, 2) Develop support base and tuna transshipment scenarios for Midway Island (a U.S. Naval Air Facility) and evaluate these scenarios for cost/benefit and feasibility, 3) Assess Hawaii's existing infrastructure (facilities, support, services) and address infrastructural needs to support an expanded fishing fleet, and 4) Evaluate the socio-economic impact of an expanded Midway tuna fishery on the fishing industry, the State, and the Nation. Consideration of the operations and the concerns of the Navy will be an important part of the study.

Our Department, through the Research Corporation of the University of Hawaii, has contracted Pacific Analysis Service Corporation to be the primary consultant on this study. The results of the study will help provide an agenda for developing a Midway albacore fishery.

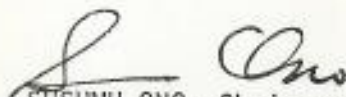
In view of your possible interest in topics that the study must address, we seek your cooperation and assistance in this effort on behalf of our consultant. Your help will ensure the timely completion of the study and

RECEIVED
MAR 23 1983
Southwest Fisheries Center
La Jolla, California

State's effort in expanding the fishing industry in Hawaii. Any assistance you can give Pacific Analysis Service Corporation concerning this study will be greatly appreciated.

Thank you very much.

Yours truly,

A handwritten signature in cursive script, appearing to read 'Susumu Ono', written in dark ink.

SUSUMU ONO, Chairman and Member
Board of Land and Natural Resources

RMC J.M. Bradley
Naboometa W.E. Holt,
Box 20
FPO San Fran.
Calif. 96680.

Start
West Cape,
Australia, file
1 Jan 1977

Dear George & Linda,

Happy 1977, we are now fairly settled in here at Exmouth, the temp in the 40's and ~~many~~ ^{many} flies. The children have settled well and has her own room and they are enjoying them.

We have been out in the beach already and I have seen 3 large turtles probably over 90 cm and then small abt 50 cm. One small was high in the mud flat at low tide working his way out to sea. Their track was dark and very much resembled those of hedgehog. Didn't have my tape measure sorry. Would like you to send some forms like those we used on highway so if the opportunity arises I can take data. From talks the nesting periods are Nov and Dec to about 15 Dec. They are still nesting here but not in the quantity as before. Will keep you advised. The sea temp at the point running about 25-26 C, and the thermometer in great! took a reading in an inner tidal area yesterday 28 in open sea and ~~at~~ ~~but~~ wasn't happy with reading. I also have set up with one of the meters here to get land temp from South north 2 or 3 times a week so things are going great.

We have run into a lot of interesting local life and will start working on the identification. Could of said for sure I saw some turstones but haven't confirmed it yet.

With all this Elaine has made the house very nice and we are all fine

We are the proud owner of a Land Rover
and we are enjoying it already and again Elaine
has made the back more for the children. We will
enjoy it.

Have seen several friends here that we knew
before. Elaine's old boss lives next door and a good
friend of mine is just across the street. So this
seems to be well for us.

I read your book and thought it was a
pretty good effort. Thanks for the copy.
We'll stop the ~~stupid~~ rambling and wish
all the best to you and Linda in this new year.

Best regards
for Elaine
& girls

UNIVERSITY OF HAWAII
Hawaii Institute of Marine Biology
Coconut Island • P. O. Box 1348 • Kaneohe, Hawaii 96744

September 13, 1976

Mr. Bob Robbins
c/o O. A. Robbins
Box 5
Seymour, Illinois 61875

Dear Mr. Robbins:

I am sure you will be interested to learn that in recent months two juvenile green sea turtles that you tagged at Midway have been recovered at distant locations.

The Koral Kings' records show that on January 4, 1976 you captured a 20 lb turtle at Midway Harbor which received tag numbers 1529 and 1530. On January 5th the same turtle was again captured by you at apparently the same location. After being released for the second time, this turtle did quite a lot of swimming. I have been informed by personnel on Wake Island that the turtle was captured in their harbor on July 12, 1976. After the tag numbers and inscribed address of our Institute were read, the turtle was released unharmed.

The second long distance recovery involved turtle number 1485 which you tagged on November 8, 1975 (weight - 26 lbs, but exact location not given). This turtle was caught in a fisherman's net in Hilo Bay (Island of Hawaii) on May 31, 1976. It was also released unharmed.

For the past four years I have been conducting life history studies of sea turtles which include taggings at French Frigate Shoals and, through cooperating individuals and organizations, at Midway and other select locations. Needless to say, I was extremely interested and pleased to learn of the recovery of the two turtles you tagged. This information will be very useful in our efforts to understand the animal's biology in the Hawaiian chain. In order to add further to this knowledge, there

Bob Robbins
Page Two
September 13, 1976

are several questions that have arisen during the course of reviewing the Koral Kings' tagging records. I would greatly appreciate it if you would provide me with whatever information you may recall concerning these questions.

1. What was turtle number 1529/1530 doing when first captured in the harbor at Midway? Was it sleeping on the bottom, floating on the surface, feeding, or what? What was it doing on the very next day when captured for the second time? Did it seem to be weak and therefore not difficult to capture? The records indicate "harbor." Does this refer to the inner harbor, or the cargo pier area?
2. The records show that on January 16, 1976 you captured a 74 lb turtle off the "skeet range." During my last trip to Midway (August 26 - September 4, 1976) I snorkeled along this shoreline out for a distance of 100 yards. I would be most interested to learn what this turtle was doing when captured. The bottom seems to be pretty barren in the area, lacking in coral heads or ledges suitable for sleeping. Also, I did not see much in the way of algae (seaweed) that could be used by a turtle for food. I am therefore curious to know what would attract a turtle to this area. Can you give me any clues?
3. Do you recall the location at Midway where you captured turtle 1485 on November 8, 1975? I have enclosed a xeroxed drawing of Midway that you can mark and return to me.
4. Is there any special location at Midway where you recall seeing the greatest numbers of turtles? Do you feel that more turtles are present or noticeable during a particular time of the year? If so, what months would this be?

Again, I want to thank you very much for all of your help. I am in the process of having a color booklet published which features Hawaiian seabirds, turtles and seals. I will send you a free copy as soon as it is available.

Sincerely,

George H. Balazs
Jr. Marine Biologist

mk

8 June 1977

Dr. John Bardach, Director
Hawaii Institute of Marine Biology
P. O. Box 1346
Kaneohe, Hawaii 96744

Dear Dr. Bardach:

This is in recognition of the outstanding workshops and conferences conducted by George H. Balazs during his recent stay on Midway Island.

On Friday, 27 May, an assembly was held for grades 5-12; that afternoon we had a faculty in-service on Eastern Island. On Tuesday, 31 May, two sessions were held with primary children. All of these events were extremely effective. George's professionalism and ability to adjust to wide differences in ages and backgrounds was remarkable. It was truly a fine educational experience for all concerned.

If there is any way that any of us can be of assistance to you or to George, don't hesitate to call on us.

Sincerely,

KENNETH F. RHEA, Ph.D.
Principal

KR:bs

cc: George Balazs ✓

George!

Certificate of Appreciation

The Federal, State and Provincial Conservation Agencies join with thousands of professional and amateur ornithologists throughout North America in expressing their sincere appreciation for the interest and cooperation shown by reporting the bird band number and recovery data noted below. A report containing these data will be forwarded to the ornithologist who banded the bird and these data will be permanently retained in the cooperative North American Bird Banding files maintained at the Bird Banding Laboratory, Office of Migratory Bird Management, Laurel, Maryland 20811, U.S.A.

It is only through the continued cooperation of interested conservationists such as yourself that these important data can continue to be compiled and made available to the scientists who study our wild bird populations.

Awarded To

GEORGE H BALAZS

BANDING DATA:

BAND NUMBER: 767-93035 KIND OF BIRD: BLACK FT ALBATROSS SEX: UNKNOWN

AGE OF BIRD: IT WAS TOO YOUNG TO FLY WHEN BANDED

BANDER: IT WAS BANDED BY C S ROBBINS 7900 BROOKLYN BRIDGE
ROAD LAUREL MARYLAND 20810

BANDING LOCATION: NEAR SAND ISLAND MIDWAY P OC DATE: 03/01/66

RECOVERY DATA:

FILE REF.: 21848

LOCATION: MIDWAY ISL POC

DATE: 06/02/77



CANADIAN WILDLIFE SERVICE



U. S. FISH AND WILDLIFE SERVICE

29 November 76.

Dear Linda + George.

How are you both doing in my favorite U.S. State? We are all fine - Jim has a new, much more interesting job, in charge of getting a new Satellite Communication System "on the air".

Apart from doing a course on the subject, this is all new to him, so he is very enthusiastic about the whole thing. It is coming along nicely & should be ready to go in a few weeks time.

After that we will be ready to go to, to Rockingham (a seaside resort about 30 miles south of Perth, where my parents have a house).

January is a good time to be away from Exmouth because it gets extremely hot then - even with an air-conditioned house, you still have to go out sometimes.

In his spare time Jim is continuing with a study he is doing on the Spotted Bower Bird. He's getting quite a book on it now! There is going to be a seminar on this particular bird at the CSIRO in April & he has been invited to attend so we will no doubt head south for a little holiday.

at that time. We are also going to drive down in January for about 3 weeks in Perth. It will be awfully hot here by then, so we have in mind to do most of the Northern driving at night & very early morning. It costs a fortune to fly anywhere in Australia.

Our next door neighbour just got back from a trip out to an island about 20 miles off the coast (uninhabited) & said there were tons of the big green sea turtles all over the beaches & waters around. Here, they are mating now, so soon we will take the children out to see if we can witness an egg laying. No one harms them here.

Jim does bring in a nice big lobster (or crayfish, as they are called here) every other week or so & they make a delicious couple of meals for us.

The girls are all bright & sparkling. They are all swimming a lot - Robyn & Ghodi take lessons in the town pool & are coming along well with it.

Write & give us the latest turtle news, George. Merry Christmas, Jim & Elaine.

HIBBY ISLANDS

T99	10JUL72	2.5	12.3	12.8	15.2	6.3	14.8	15.8	20	4	KOZMA
T100	25JUL72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97	4	KOZMA
T401	23JUL72	4.5	18.4	18.1	22.6	9.3	21.5	23.5	60	4	KOZMA
T402	23JUL72	5.0	18.2	18.7	23.2	9.2	23.0	24.6	60	4	BINA
T403	23JUL72	2.9	11.5	12.2	14.0	6.1	14.2	14.6	70	4	KOZMA
T404	23 JUL72	3.5	13.0	12.9	16.0	6.2	15.2	16.9	60	4	KOZMA
T405	23JUL72	4.5	17.8	17.4	22.3	9.4	21.5	23.9	63	4	KOZMA
T406	23JUL72	3.0	13.2	12.5	16.5	6.4	14.9	17.3	24	4	KOZMA
T407	23JUL72	4.8	17.3	17.6	21.7	8.6	21.5	22.8	55	4	KOZMA
T408	23JUL72	3.5	14.0	14.1	17.2	6.1	16.4	17.9	25	4	KOZMA
T409	29JUL72	2.5	12.9	12.9	15.7	6.3	15.0	16.4	19	4	KOZMA
T410	31JUL72	2.8	13.5	13.9	16.7	6.7	15.9	17.5	71	4	KOZMA*
T411	6AUG72	4.5	17.9	18.6	22.6	8.6	22.1	23.6	60	4	WARD **
T412	6AUG72	4.0	17.0	17.1	21.0	8.2	20.0	22.0	60	4	KOZMA
T413	20AUG72	4.2	16.3	16.1	20.2	8.2	19.5	21.4	42	4	KOZMA
T414	20AUG72	3.5	14.8	15.0	18.7	7.2	18.0	19.8	30	4	KOZMA
T415	20AUG72	6.0	18.8	18.2	22.5	9.4	22.5	24.0	62	4	KOZMA
T416	20AUG72	4.4	18.3	18.0	21.8	8.3	20.5	22.9	55	4	KOZMA
T417	20AUG72	4.0	15.4	14.8	19.0	7.0	17.4	19.8	33	4	KOZMA
T418	20AUG72	3.0	12.9	13.5	16.0	6.8	16.0	17.0	23	4	KOZMA
T419	20AUG72	3.3	13.0	12.8	15.3	6.1	15.0	16.3	18	4	KOZMA

* GREAT BIRD BOTTLE OF SMALL HESSING.

** HOLE OF GREAT BIRD BOTTLE BOTTLE OF.

RESEARCHERS

T89	23JUL72	2.0	11.0	11.0	13.2	5.5	13.9	14.0	15	4	KOJIMA
A609	23JUL72	4.0	13.4	12.6	16.3	7.1	15.4	17.0	27	4	DIRA
T88	20AUG72	3.3	12.5	13.3	15.3	6.1	15.8	16.3	21	4	KOJIMA
T409	20AUG72	2.5	12.9	12.9	15.7	6.3	15.0	16.4	19	4	KOJIMA
T410	20AUG72	4.0	13.5	14.0	16.7	5.9	15.9	17.5	20	4	KOJIMA
913	21AUG72	2.8	12.1	12.9	15.3	5.4	15.0	16.0	17	4	BOYBLOOMER

TURTLE 913 WAS FOUND ON HIS BACK, DEAD IN SIX FEET OF WATER, PROBABLY BECAUSE OF DEATH FROM UNDERWATER EXPLOSIONS FROM BLASTING IN CHANNEL DURING OPERATION.

KEEPERS

T100	6AUG72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97	4	KOJIMA
NO TAG	21AUG72	7.5	21.3	22.1	27.6	11.3	27.6	29.5	120	4	YONIZ

THIS TURTLE, CAUGHT ON THE SAME DAY AS 913, COULD ALSO HAVE BEEN DEEP FROM THE DEPTHS OF THE UNDERWATER EXPLOSIONS. TOWLS REPORTED THAT THE TURTLE GAVE VERY LITTLE RESISTANCE WHEN CAPTURED, AND WAS SPITTING BLOOD. HE WAS STILL SPITTING BLOOD THREE HOURS LATER WHEN I MEASURED HIM.

SUMMARY OF TAG RETURNS ON
MIDWAY GREEN TURTLES

By G.H. BALAZS

Tag No.	Date	CL X CW	SL	WT.
911	27 Sep 71	17 x 16 $\frac{1}{4}$	16	23
	7 May 72 (7)	17 $\frac{1}{4}$ x 17	16	24
T89	6 Jun 72	14 x 13	13 $\frac{1}{4}$	16
	23 July 72 (1)	14 x 13.9	13.2	15
A609	9 Mar 70	16 x 15	15 $\frac{1}{2}$	21
	23 Jul 72 (28)	17 x 15.4	16.3	27
	10 Oct 72 (3)	17 x 15 $\frac{1}{2}$	16.3	27
	12 Nov 72 (1)	16.9 x 15 $\frac{1}{2}$	16.4	24
T88	6 Jun 72	16 x 15	16	22
	20 Aug 72 (2)	16.3 x 15.8	15.3	21
T409	29 Jul 72	16.4 x 15	15.7	19
	20 Aug 72 (1)	16.4 x 15	15.7	19
T410	31 Jul 72	17.5 x 15.9	16.7	21
	20 Aug 72 (1)	17.5 x 15.9	16.7	20
913	2 Oct 71	16 x 15 $\frac{1}{4}$	15	20
	21 Aug 72 (10)	16 x 15	15.3	17
T92	21 Jun 72	18 x 16 $\frac{1}{2}$	16 $\frac{1}{2}$	26
	1 Sep 72 (2)	17.9 x 16.5	16.7	22
873	30 Jul 69	17 $\frac{1}{2}$ x 16	16 $\frac{1}{2}$	23
	5 Sep 72 (37)	18.4 x 16.5	17.1	28

Tag No.	Date	CL X CW	SL	WT.
T79	9 Apr 72	17 x 16	16 $\frac{1}{4}$	27
	11 Sep 72 (5) 4	17.5 x 16	16.5	23
A615	31 May 70	16 x 14	15	18
	15 Sep 72 (3) 27	16.2 x 14.8	15.3	20
T98	6 Jul 72	19.8 x 17.7	18.5	39
	18 Oct 72 (3)	19.5 x 18.0	18.6	34
T96	4 Jul 72	17 $\frac{1}{2}$ x 16	16	25
	18 Nov 72 (4)	17.2 x 15.9	16.8	23
T97	4 Jul 72	19 $\frac{1}{2}$ x 17	18.7	35
	21 Jan 73 (6)	19.5 x 17 3/4	18.5	36
T429	15 Sep 72	17.1 x 16.1	16.3	24
	21 Jan 73 (4)	17 $\frac{1}{4}$ x 16 $\frac{1}{4}$	16.3	27
T451	21 Jan 73	17 3/4 x 16 $\frac{1}{4}$	17.0	29
	18 Feb 73 (1)	17 3/4 x 16 $\frac{1}{4}$	17.0	29
X T407	23 Jul 72 28	21.8 x 21.5	21.7	55
	31 Nov 74 (16)	21 1/2 x 22 1/2	22 1/2	62
T472	3 Aug 74			

TURTLE TAGGING INFORMATION

NOTE: * = round measure with tape ruler. All other measurements taken with callipers.

TAG NO.	DATE	TAIL LENGTH	PLASTRON LENGTH	CARAPACE WIDTH	CARAPACE LENGTH	THICKNESS	CARAPACE WIDTH *	CARAPACE LENGTH *	WT.	No. of Orbits plates	Captured	
T-456	3-18-73	2 1/2	15"	15 1/2"	18"	8"	18 1/2"	19"	34	4		
T-457	3-26-73	1 1/2	14 1/2"	14 1/2"	17"	6-3/4"	16"	18"	28	4		
T-439	4-7-73	1 1/2	15"	15 1/2"	18"	6 1/2"	15"	18"	29	4		
T-458	4-21-73	1 1/2	11 1/2"	12"	14-3/4	5-3/4	11 1/2	12-1/8	21	4		
T-460	10-6-73	1 1/2	17-3/4	15"	15 1/2	7 1/2	34			7		
T-461	12-10-73	1 1/2	13	14"	15 1/2	6"	14 1/2	16	20	4		
T-459	2-12-74	1 1/2	16	11-3/4	14 1/2	6"	11 1/2	12-1/8	19	4		
T-462	4-20-74	1 1/2	15 1/2	14-3/4	18 1/2	7 1/2	17 1/2	19 1/2	36	4		
T-464	4-21-74	1 1/2	14 1/2	15	18 1/2	8 1/2	18 1/2	20	41	3		
T-466	4-21-74	1-3/4	16 1/2	15-3/4	20 1/2	8-3/4	18-3/4	21-3/4	47	4		
T-467	4/21-74	1	12 1/2	12 1/2	15-3/4	6 1/2	14 1/2	16 1/2	23	4		
T-404	4-21-74	1 1/2	13 1/2	12-3/4	16 1/2	6-3/4	15 1/2	17 1/2	26	4		
T-468	4-24-74	1 1/2	17 1/2	17 1/2	21	8-3/4	20-3/4	21	54	4		
T-469	4-24-74	1 1/2	18 1/2	18-3/4	22	8-3/4	22 1/2	23	57	4		
T-470	5/4/74	1	12-3/8	12 1/2	15 1/2	6-3/8	14	13 1/2	25	3		
T-471	5-18-74	1 1/2	13 1/2	13 1/2	16-3/4	6-3/4	15-7/8	17 1/2	28	4		
T-472	8/3/74	1 1/2	16	15 1/2	19 1/2	7 1/2	20-3/4	18 1/2	40	4		
T-227	10/6/74	1 1/2	15 1/2	17	19	7 1/2	19 1/2	21	36	3		
T-228	10/26/74	4 1/2	18-3/8	18	23-3/8	9	22-1/8	25	69	4		
T-229	10/26/74	3-3/4	18	19 1/2	23 1/2	8-7/8	23-3/4	24-3/4	67	4		
T-230	10/26/74	4	18-3/4	19-1/8	22-3/4	9-3/8	22-3/4	23-7/8	68	4		
T-231	11/2/74	1	15 1/2	15 1/2	18 1/2	7 1/2	18	19 1/2	35	3		
T-231	11/9/74	Returned at Frigate Point										

TURTLE TAGGING II. FORMATION

* Old tag unreadable X
 (--8 - replaced)

NOTE: * = round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	PLASTRON LENGTH	CARAPACE WIDTH	CARAPACE LENGTH	THICKNESS	CARAPACE WIDTH *	CARAPACE LENGTH *	WT.	No. of plates	Orbit
T-233	11/29/74	2"	14 1/2	15 1/8	17	6 1/2	14 1/2	17 1/2	26	4	
T-234	11/30/74	1"	13	14	15 1/2	6-3/4	14 1/2	16	20	4	
* T-235	11/31/74	3 1/2	14 1/2	14-3/4	17-5/8	7 1/2	17	18-3/4	34	4	
x T-407	11/31/74	4 1/2	18 1/2	18-3/4	22 1/2	8 1/2	22 1/2	24 1/2	62	5	
T-236	11/31/74	3 1/2	13-5/8	14	17 1/2	6-5/8	16-3/8	18	27	4	
T-472	2/10/75	3	16	15 1/2	15-3/4	7-3/4	16 1/2	16-3/4	40	4	
T-476	4-25-75	2.5	12.7	12.5	16	6.25	15	17	24	3	NAV-FAC
1528 ^{RF}	5-4-75	1 3/4	13	13 1/2	16 1/8	5 3/4	16	17 1/4	22 1/4	4	BALAZS 105
F1451/1452	5-4-75	2 1/8	13	12 1/4	15 1/2	5 3/4	14	16 1/2	18 1/2	4	HINES-211
1453/1454 ^F	5-4-75	2 1/2	12 1/4	12 3/4	15 1/4	6 1/4	15 1/8	16 1/4	19 1/4	4	HINES-211
1455 ^{RF} /1458	5-6-75	1	13 1/4	NT	NT	NT	16	17 3/4	NT	NT	BALAZS-211
1459 ^{RF} /1460	5-6-75	1	13 1/4	NT	NT	NT	15 3/4	17 1/8	NT	NT	BALAZS-211
1461 ^{RF} , 1462 ^{RF} , 1463	5-7-75	-	17	NT	NT	NT	19	2 1/4	NT	4	BALAZS 211
1464 ^{RF} , 1465	5-7-75	-	16 3/4	NT	NT	NT	17 3/4	20	NT	4	BALAZS 211
1466, 1467 ^{RF}	5-7-75	-	14 3/4	NT	NT	NT	17	18 1/2	NT	4	BALAZS 211
1527	5-7-95	-	NT	NT	NT	NT	16 1/2	17 3/4	NT	NT	Spearhead NAV/FAC - Released

TURTLE TAGGING INFORMATION

NOTE: * = round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	PLASTRON LENGTH	CARAPACE WIDTH	CARAPACE LENGTH	THICKNESS	CARAPACE WIDTH *	CARAPACE LENGTH *	WT. plates	No. of Captured
T-456	3-18-73	2 1/2	15"	15 1/2"	18"	8"	18 1/2"	19"	34	4
T-457	3-26-73	1 1/2	14 1/2"	14 1/2"	17"	6-3/4"	16"	18"	28	4
*T-439	4-7-73	1 1/2	15"	15 1/2"	18"	6 1/2"	15"	18"	29	4
T-458	4-21-73	1 1/2	11 1/2"	12"	14-3/4	5-3/4	11 1/2	12-1/8	21	4
T-460	10-6-73	1 1/2	17-3/4	15"	15 1/2	7 1/2	34			7
T-461	12-10-73	1 1/2	13	14"	15 1/2	6"	14 1/2	16	20	4
T-459	2-12-74	1 1/2	16	11-3/4	14 1/2	6"	11 1/2	12-1/8	19	4
T-462	4-20-74	1 1/2	15 1/2	14-3/4	18 1/2	7 1/2	17 1/2	19 1/2	36	4
T-464	4-21-74	1 1/2	14 1/2	15	18 1/2	8 1/2	18 1/2	20	41	3
T-466	4-21-74	1-3/4	16 1/2	15-3/4	20 1/2	8-3/4	18-3/4	21-3/4	47	4
T-467	4-21-74	1	12 1/2	12 1/2	15-3/4	6 1/2	14 1/2	16 1/2	23	4
*T-404	4-21-74	1 1/2	13 1/2	12-3/4	16 1/2	6-3/4	15 1/2	17 1/2	26	4
T-468	4-24-74	1 1/2	17 1/2	17 1/2	21	8-3/4	20-3/4	21	54	4
T-469	4-24-74	1 1/2	18 1/2	18-3/4	22	8-3/4	22 1/2	23	57	4
T-470	5-4-74	1	12-3/8	12 1/2	15 1/2	6-3/8	14	13 1/2	25	3
T-471	5-18-74	1 1/2	13 1/2	13 1/2	16-3/4	6-3/4	15-7/8	17 1/2	28	4
T-472	8-3-74	1 1/2	16	15 1/2	19 1/2	7 1/2	20-3/4	18 1/2	40	4
T-227	10-6-74	1 1/2	15 1/2	17	19	7 1/2	19 1/2	21	36	3
T-228	10-26-74	4 1/2	18-3/8	18	23-3/8	9	22-1/8	25	69	4
T-229	10-26-74	3-3/4	18	19 1/2	23 1/2	8-7/8	23-3/4	24-3/4	67	4
T-230	10-26-74	4	18-3/4	19-1/8	22-3/4	9-3/8	22-3/4	23-7/8	68	4
T-231	11-2-74	1	15 1/2	15 1/2	18 1/2	7 1/2	18	19 1/2	35	3
T-231	11-9-74	Returned at Frigate Point								

TURTLE TAGGING II. FORMATION

* Old tag unreadable X

(--8 - replaced)

NOTE: * = round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	PLASTRON LENGTH	CARPAPACE WIDTH	CARPAPACE LENGTH	THICKNESS	CARPAPACE WIDTH *	CARPAPACE LENGTH *	WT	No. of plates	Captured
T-233	11/29/74	2"	14 1/2	15 1/6	17	6 1/2	14 1/2	17 1/2	26	4	
T-234	11/30/74	1"	13	14	15 1/4	6-3/4	14 1/2	16	20	4	
* T-235	11/31/74	3 1/2	14 1/2	14-3/4	17-5/8	7 1/2	17	18-3/4	34	4	
* T-407	11/31/74	4 1/2	18 1/2	18-3/4	22 1/2	8 1/2	22 1/2	24 1/2	62	5	
T-236	11/31/74	3 1/2	13-5/8	14	17 1/2	6-5/8	16-3/8	18	27	4	
* T-472	2/10/75	3	16	15 1/2	15-3/4	7-3/4	16 1/2	16-3/4	40	4	
X T-476	4-25-75	2.5	12.7	12.5	16	6.25	15	17	24	3	NAV-FAC
X 1528 ^{RF}	5-4-75	1 3/4	13	13 1/2	16 1/8		16	17 1/4	20 1/4	4	BALAZS 105
X F1451/1452	5-4-75	2 1/8	13	12 1/4	15 1/2	5 3/4	14	16 1/2	18 1/2	4	Hines-211
X 1453/1454 ^F	5-4-75	2 1/2	12 1/4	12 3/4	15 1/4	6 1/4	15 1/8	16 1/4	9 3/4	4	Hines-211
X 1455 ^{RF} /1458	5-6-75	1	13 3/4	NT	NT	NT	16	17 3/4	NT	NT	BALAZS-211
X 1459/1460	5-6-75	1	13 1/4	NT	NT	NT	15 3/4	17 1/8	NT	NT	BALAZS-211
X 1461 ^{RF} /1462 ^{RF} /1463 ^{RF}	5-7-75	-	17	NT	NT	NT	19	2 1/4	NT	4	BALAZS 211
X 1464 ^{RF} /1465	5-7-75	-	16 3/4	NT	NT	NT	17 3/4	20	NT	4	BALAZS 211
X 1466, 1467 ^{RF}	5-7-75	-	14 3/4	NT	NT	NT	17	18 1/2	NT	4	BALAZS 211
X 1527	5-7-95	-	NT	NT	NT	NT	16 1/2	17 3/4	NT	NT	5 paired NAV-FAC - 211
X 1468/1469	5-24-75	2 1/2	13 1/2	14 1/2	16 3/4	7	15	15	30	3	Robbins Eastern
X 1470/1471	5-24-75	2 1/2	12	12	14 1/2	5 1/2	15	12 1/2	23	3	YARBER - Acta
X 1472/1473	5-24-75	2 1/2	12 1/2	12 3/4	15 3/4	6 1/8	15	12 1/2	23	4	PEKFLDER
X 1460	5-24-75		TOURNE 1460	RECAUGHT							MINER
X F1474/1475	6-1-75	2 3/8	16 1/8	15 1/4	19 3/8	7 3/8	18 3/8	21	31 1/2	4	HINES
X F1476/1477	6-15-75	2 3/4	14 1/4	14 1/8	17 3/8	7	17	18 3/4	28	4	MINER
X F1474/1475	8-17-75		RETAKE / 300 YARDS FROM PREVIOUS POINT OF CAPTURE								HINES
X 1480/1481	10-26-76	2 1/2	16 3/4	17	21	8 1/2	21	24	50	4	MINER
X 1485/1486	11-8-75	2 1/4	13 1/2	14 1/4	16	6 1/2	17 1/2	17 3/4	26	4	Robbins
X 1487/1484	11-1-75	2 1/2	22 1/2	18 1/2	18	9 3/4	18 1/2	25	60	4	Robbins

12/10/80

TURTLE TAGGING II. FORMATION

NOTE: * = round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	PLASTRON LENGTH	CARAPACE WIDTH	CARAPACE LENGTH	THICKNESS	CARAPACE WIDTH *	CARAPACE LENGTH *	WT.	No. of plates	Remarks
1487/1488	12-14-75	2 1/2	30 3/4	31	37	-	NA	NA	17	4	DUNNAY - MCKEE
1529, 1530	1-4-76	1	13	14	15 1/4	6 3/4	14 1/4	16	20	4	Robbins ^{Round}
1529, 1530	1-5-76	1	13	14	15 1/4	6 3/4	14 1/4	16	20	4	Robbins ^{Round}
x1491/1489	1-16-76	2 1/4	19 1/2	24 1/2	26	9 3/4	19 1/2	24	74	3	Sket ^{range}
x1479/1478	10-25-75	3	14 1/2	14	18	7 1/4	15	19 1/2	30	4	MINER
4480/4481	10-26-75								49		MINER
x1492/1493	1-31-76	1 1/4	15 3/4	15	18	6 1/2	15	18	37 1/8	4	YARBER
x1494/1495	2-1-76	1 1/2	13 3/4	14	17	6 1/2	14 1/2	16	27	4	YARBER
x1496/1497	2-7-76	1 1/2	13 3/4	15	18	6 1/2	15	18	27	4	YARBER
x1499/1498	2-14-76	4 1/2	17	17 1/4	21 1/2	7 1/4	19 3/4	22 3/4	50	4	VELASCO
x1500/1531	3-26-76	2 1/2	12 1/2	13	15 1/4	6 1/2	13 1/2	14 1/4	23	4	MOKE ?
1480/481	3-30-76	2 1/2	17 1/4	17	21	8 1/4	20	22	49	-	H. BROWN
x1551/1562	4-21-76	1 1/4	15	17 1/4	13 3/4	-	16	17	31	-	BRODLEY
x5248EL	8-30-76	-	-	-	-	-	16 3/4	18 3/4	-	-	DALRYMP
x1532/1533	9-4-76	2 3/8	12 3/4	13 1/2	16 1/4	-	17 1/4	16	29	-	MANGY - KEANS

Scopel

	TAIL LENGTH	WIDTH	LENGTH	THICK- NESS	WIDTH	LENGTH	WT	
RECOVERS								
T89	23JUL72	2.0	11.0	13.2	5.5	13.9	14.0	15 4 KOZMA
A609	23JUL72	4.0	13.4	16.3	7.1	15.4	17.0	27 4 HHA
T88	20AUG72	3.3	12.5	15.3	6.1	15.8	16.3	21 4 KOZMA
T409	20AUG72	2.5	12.9	15.7	6.3	15.0	16.4	19 4 KOZMA
T410	20AUG72	4.0	13.5	16.7	5.9	15.9	17.5	20 4 KOZMA
913	21AUG72	2.8	12.1	15.3	5.4	15.0	16.0	17 4 BOATHOUSE

TURTLE 913 WAS FOUND ON HIS BACK, DEAD IN SIX FEET OF WATER. PROBABLE CAUSE OF DEATH: UNDERWATER EXPLOSIONS FROM BLASTING INCREMENTAL WIDENING OPERATION.

KEEPERS

T100	6AUG72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97 4 KOZMA
NO TAG	21AUG72	7.5	21.3	22.1	27.6	11.3	27.6	29.5	120 4 TOMIA

THIS TURTLE, CAUGHT ON THE SAME DAY AS 913, COULD ALSO HAVE BEEN SUFFERING FROM THE EFFECTS OF THE UNDERWATER EXPLOSIONS. TOMIA REPORTED THAT THE TURTLE GAVE VERY LITTLE RESISTANCE WHEN CAPTURED, AND WAS SPITTING BLOOD. HE WAS STILL SPITTING BLOOD THREE HOURS LATER WHEN I MEASURED HIM.

UNITED STATES GOVERNMENT

T99	10JUL72	2.5	12.3	12.8	15.2	6.3	14.8	15.8	20	4	KOZMA
T100	23JUL72	6.0	20.7	21.8	26.1	10.3	26.3	27.3	97	4	KOZMA
T101	23JUL72	4.5	18.4	18.1	22.6	9.3	21.5	23.3	62	4	KOZMA
T102	23JUL72	5.0	18.2	18.7	23.2	9.2	23.0	24.6	68	4	ZILKA
T103	23JUL72	2.9	11.5	12.2	14.0	6.1	14.2	14.6	18	4	KOZMA
T104	23JUL72	3.5	13.0	12.9	16.0	6.2	15.2	16.9	22	4	KOZMA
T105	23JUL72	4.5	17.8	17.4	22.3	9.4	21.5	23.9	63	4	KOZMA
T106	23JUL72	3.0	13.2	12.5	16.3	6.4	14.9	17.3	24	4	KOZMA
T107	23JUL72	4.8	17.3	17.6	21.7	8.6	21.3	22.8	55	4	KOZMA
T108	23JUL72	3.5	14.0	14.1	17.2	6.1	16.4	17.9	23	4	KOZMA
T109	29JUL72	2.5	12.9	12.9	15.7	6.3	15.0	16.4	19	4	KOZMA
T110	31JUL72	2.8	13.5	13.9	16.7	6.7	15.9	17.3	21	4	KOZMA
T111	6AUG72	4.5	17.9	18.6	22.6	8.5	22.1	23.6	52	4	WARD **
T112	6AUG72	4.0	17.0	17.1	21.0	8.2	20.0	22.0	50	4	KOZMA
T113	20AUG72	4.2	16.3	16.1	20.2	8.2	19.5	21.4	42	4	KOZMA
T114	20AUG72	3.5	14.8	15.0	18.7	7.2	18.0	19.8	30	4	KOZMA
T115	20AUG72	6.0	18.8	18.2	22.5	9.4	22.5	24.0	62	4	KOZMA
T116	20AUG72	4.4	18.3	18.0	21.8	8.3	20.5	22.9	55	4	KOZMA
T117	20AUG72	4.0	15.4	14.8	19.0	7.0	17.4	19.8	33	4	KOZMA
T118	20AUG72	3.0	12.9	13.3	16.0	6.8	16.0	17.0	23	4	KOZMA
T119	20AUG72	3.3	13.0	12.8	15.3	6.1	15.0	16.3	18	4	KOZMA

* RIGHT REAR SECTION OF SHELL MISSING.

** HALF OF RIGHT FRONT FLIPPER BURNED OFF.

T	DATE	TAIL		PLAS.		WIDTH	LENGTH	THICKNESS	WIDTH	LENGTH	wt	Name
		LENGTH	WIDTH	LENGTH	WIDTH							
T76	31Mar72	4	16 1/2	16	20	8	20	8	20	21	45	Muck
T77	9Apr72	3	13 3/4	14	17 1/2	6 1/2	16 1/2	6 1/2	16 1/2	16 1/2	27	Simonguarr
T78	9Apr72	2	3/4 12 1/2	13	15 3/4	6 1/2	15	6 1/2	15	16 1/2	22	Simonguarr
T79	9Apr72	2	3/4 13	13	16 1/2	7	16	7	16	17	27	Simonguarr
T80	15Apr72	2	3/4 14 3/4	14 3/4	17 3/4	6	17	6	17	19	27	B. Johnson
T81	16Apr72	2 1/2	12 1/2	13 1/2	15 1/2	7 1/2	16 1/2	7 1/2	16 1/2	17	23	McFarland
T82	26Apr72	1 1/2	12 1/2	11 1/2	14 1/2	5	13	5	13	15	18	Kozma
T83	7May72	2	3/4 13	13	15	6	15	6	15	16	21	Wood
T84	27May72	2 1/2	12 1/2	13	15 1/2	6	15 1/2	6	15 1/2	16 3/4	20	Mc Farland
T85	6Jun72	3	14 1/2	14	17 1/2	6 1/2	17	6 1/2	17	18 1/2	30	Simonguarr
T86	6Jun72	2	3/4 14 1/2	14	17 1/2	7	16	7	16	18 1/2	30	Kozma **
T87	6Jun72	3	13 1/2	14	16 1/2	7	16	7	16	17 1/2	27	Kozma
T88	6Jun72	2 1/2	12 1/2	15 1/2	16	6	15	6	15	16	22	Kozma
T89	6Jun72	1 1/2	11	11	13 1/2	5 1/2	13	5 1/2	13	14	16	Kozma
T90	11Jun72	4	16 1/2	16 1/2	20 1/2	8 1/2	20	8 1/2	20	22	50	Stombaugh
T91	11Jun72	3 1/2	15	15 1/2	19 1/2	7 1/2	18 1/2	7 1/2	18 1/2	20	39	McFarland
T92	21Jun72	3	13	14	16 1/2	7	16 1/2	7	16 1/2	18	26	Kozma
T93	21Jun72	3 1/2	15 1/2	15	19	8 1/2	19	8 1/2	19	20	42	Kozma
T94	21Jun72	3	3/4 16	17	20 1/2	7 1/2	21	7 1/2	21	22 1/2	53	Kozma
T95	3Jul72	3	12	13	17	6	16	6	16	16	24	Kozma
T96	4Jul72	3	16.8	16.7	16	6.1	16	6.1	16	17 1/2	25	Kozma
T97	4Jul72	3	3/4 15	15.4	18.7	7.3	17	7.3	17	19 1/2	35	Kozma
T98	6Jul72	3 1/2	14.7	15.2	18.5	8	17.7	8	17.7	19.8	39	Kozma
Recoverers												
911	9Apr72	2	3/4 12 1/2	13	15 1/2	6	15 1/2	6	15 1/2	16	22	Simonguarr
	7May72	2 1/2	12 3/4	13 1/2	16	6	17	6	17	17 1/2	24	Simonguarr

31

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

NOTE: * Indicates round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	WIDTH FLIASTRON	LENGTH FLIASTRON	WIDTH CARAPACE*	LENGTH CARAPACE*	LENGTH CARAPACE*	THICKNESS	WT.	NUMBER OF ORBITAL PLATES
380	26 NOV 70	4	13 $\frac{1}{2}$	16	19	20	19	8	39	4
341	23 JAN 71	2 $\frac{1}{2}$	12	14	16	17 $\frac{1}{2}$	17	6 $\frac{1}{2}$	24	4
342	28 FEB 71	3	11 $\frac{1}{2}$	15	15 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	18	4
343	6 MAR 71	2 $\frac{1}{2}$	12	13	15	17	16	6	20	4
Killed	12 JUN 71	2 $\frac{1}{2}$	17	15 $\frac{1}{2}$	17	20 $\frac{1}{2}$	21 $\frac{1}{2}$	9	52	4
344	20 JUN 71	2 $\frac{1}{2}$	14 $\frac{1}{2}$	13 $\frac{1}{2}$	16	18	16 $\frac{1}{2}$	7	28	4
345	20 JUN 71	2	11	12 $\frac{1}{2}$	14 $\frac{1}{2}$	16	15 $\frac{1}{2}$	6	21	4
346	20 JUN 71	4	17 $\frac{1}{2}$	20	23 $\frac{1}{2}$	25	24	9 $\frac{1}{2}$	81	4
347	28 JUN 71	2	14	14 $\frac{1}{2}$	17	19	18	7 $\frac{1}{2}$	32	4
348	28 JUN 71	4	16	17	20	21	20	9	50	4
349	29 JUN 71	3	14	14	16	18	17	6 $\frac{1}{2}$	25	4
350	4 JUL 71	2 $\frac{1}{2}$	14	13	15 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	21	4
901	7 JUL 71	4	13 $\frac{1}{2}$	13 $\frac{1}{2}$	15 $\frac{1}{2}$	17	16 $\frac{1}{2}$	7	23	4
902	7 JUL 71	4	14 $\frac{1}{2}$	15	17 $\frac{1}{2}$	19 $\frac{1}{2}$	18 $\frac{1}{2}$	8	37	4
903	8 JUL 71	3	14	14	16 $\frac{1}{2}$	18 $\frac{1}{2}$	17 $\frac{1}{2}$	6 $\frac{1}{2}$	28	4
904	9 JUL 71	3	13 $\frac{1}{2}$	13 $\frac{1}{2}$	16	18	17	7	24	4
905	18 JUL 71	3	16 $\frac{1}{2}$	17 $\frac{1}{2}$	19	19 $\frac{1}{2}$	21	7 $\frac{1}{2}$	45	3
906	31 JUL 71	5	18 $\frac{1}{2}$	18 $\frac{1}{2}$	23	24	23	9	70	4
907	1 SEP 71	2 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	13 $\frac{1}{2}$	15 $\frac{1}{2}$	14 $\frac{1}{2}$	5 $\frac{1}{2}$	18	4
908	6 SEP 71	3	13	12 $\frac{1}{2}$	16	17	16	5 $\frac{1}{2}$	23	4
910	25 SEP 71	3 $\frac{1}{2}$	12 $\frac{1}{2}$	13	15 $\frac{1}{2}$	17	16	5 $\frac{1}{2}$	21	4
911	27 SEP 71	2 $\frac{1}{2}$	13 $\frac{1}{2}$	14	16 $\frac{1}{2}$	17 $\frac{1}{2}$	16 $\frac{1}{2}$	6	23	4
912	27 SEP 71	2 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	15 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	20	3
913	2 OCT 71	2 $\frac{1}{2}$	12	12 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	6	20	4
914	2 OCT 71	4	16	16 $\frac{1}{2}$	19 $\frac{1}{2}$	22	21	8	45	4
915	10 OCT 71	3 $\frac{1}{2}$	15 $\frac{1}{2}$	16	18 $\frac{1}{2}$	21 $\frac{1}{2}$	19 $\frac{1}{2}$	7	38	4
916	10 OCT 71	3	13 $\frac{1}{2}$	13	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16	6	25	4
917	31 OCT 71	4	16 $\frac{1}{2}$	16 $\frac{1}{2}$	20 $\frac{1}{2}$	21	19 $\frac{1}{2}$	8	39	4

Inventory of tags: 918-919-920-921-922-923.

909 was destroyed - tip breaks off.

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

(NOTE) * Indicates round measure with tape ruler. All other measurements taken with caliper.

TAG NO.	DATE	TAIL LENGTH	WIDTH		LENGTH	WIDTH		LENGTH	CARAPACE*	LENGTH	THICKNESS	WEIGHT	NUMBER
			PLASTRON	PLASTRON		PLASTRON*	CARAPACE						
620	1 JUL 70	2 $\frac{1}{2}$	12 $\frac{1}{2}$	13	14 $\frac{1}{2}$	16	15 $\frac{1}{2}$	5 $\frac{1}{2}$	17lb.				
621	1 JUL 70	3	13	13	14 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	5 $\frac{1}{2}$	18 lb.				
622	15 JUL 70	3	11 $\frac{1}{2}$	13	15 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	6 $\frac{1}{2}$	21 lb.				
623	21 AUG 70	3	12	14 $\frac{1}{2}$	16 $\frac{1}{2}$	19	14 $\frac{1}{2}$	6 $\frac{1}{2}$	27 lb.				
624	5 SEP 70	2 $\frac{1}{2}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$	14 $\frac{1}{2}$	16	15	5 $\frac{1}{2}$	15 lb.				
Keeper	3 OCT 70	4	20	19 $\frac{1}{2}$	23 $\frac{1}{2}$	25	24	9	67 lb.				
625	3 OCT 70	3 $\frac{1}{2}$	13 $\frac{1}{2}$	16	15 $\frac{1}{2}$	20 $\frac{1}{2}$	19 $\frac{1}{2}$	8	39 lbs				
322	3 OCT 70	3 $\frac{1}{2}$	14 $\frac{1}{2}$	16 $\frac{1}{2}$	18 $\frac{1}{2}$	20	18 $\frac{1}{2}$	8 $\frac{1}{2}$	40 lbs.				
333	3 OCT 70	3	13	14	17	19 $\frac{1}{2}$	18	8	40 lbs				
334	3 OCT 70	3 $\frac{1}{2}$	14	15 $\frac{1}{2}$	19 $\frac{1}{2}$	20	19	8 $\frac{1}{2}$	43 lbs				
335	3 OCT 70	4 $\frac{1}{2}$	13 $\frac{1}{2}$	15	19	20 $\frac{1}{2}$	19	7 $\frac{1}{2}$	37 lbs				
336	3 OCT 70	2	10 $\frac{1}{2}$	11 $\frac{1}{2}$	14 $\frac{1}{2}$	15 $\frac{1}{2}$	14 $\frac{1}{2}$	5 $\frac{1}{2}$	19 lbs				4
337	18 OCT 70	3	12	13 $\frac{1}{2}$	16	17 $\frac{1}{2}$	17	6 $\frac{1}{2}$	23 lbs				4
338	18 OCT 70	3 $\frac{1}{2}$	12 $\frac{1}{2}$	14 $\frac{1}{2}$	16	17 $\frac{1}{2}$	17	7	28 lbs				4
339	22 OCT 70	2 $\frac{1}{2}$	14	13	15	16 $\frac{1}{2}$	15	6	20 lbs				3

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

TAG NO.	DATE	TAIL LENGTH	WIDTH		LENGTH		LENGTH • CARAPACE	LENGTH • CARAPACE	LENGTH • CARAPACE	THICKNESS	WEIGHT
			PLASTRON	PLASTRON	PLASTRON	PLASTRON					
601	25 Nov 69	3½	1½	17	18	17	7½	17	7½	31 lb	
602	27 Nov 69	3½	1½	16	17	16	6	16	6	23 lb	
603	27 Dec 69	2½	11	13	14½	13½	4½	13½	4½	12 lb	
604	27 Dec 69	2½	12½	14½	16	15½	5¾	15½	5¾	18 lb	
605	9 Mar 70	4	14½	17	20	19	7½	19	7½	36 lb	
606	9 Mar 70	3½	14½	17	19½	18½	7	18½	7	31 lb	
607	9 Mar 70	3 3/4	14½	17½	19½	18½	7½	18½	7½	36 lb	
608	9 Mar 70	3	13	15½	18	17	6½	17	6½	24 lb	
609	9 Mar 70	3	12½	15	16	15½	6½	15½	6½	21 lb	
610	12 Mar 70	3	12	14	15½	14½	6	14½	6	18 lb	
611	9 May 70	3	14	15½	17½	16½	7	16½	7	26 lb	
612	9 May 70	2½	12½	14½	16	15½	6	15½	6	20 lb	
613	23 May 70	3	15	18	19½	19	7½	19	7½	33 lb	
614	31 May 70	3	13½	16	17½	17	6½	17	6½	27 lb	
615	31 May 70	2½	12½	14	16	15	5½	15	5½	18 lb	
616	31 May 70	3	10	15½	16½	15½	7	15½	7	27 lb	
617	31 May 70	4	15	17½	19½	18½	7½	18½	7½	34 lb	
618	31 May 70	3½	13	15½	17½	16½	6	16½	6	26 lb	
619	31 May 70	None	14½	16½	18½	17½	7	17½	7	30 lb	

* Indicates Round Measure taken with a tape ruler. All other measurements were taken with calipers.

TAG NO.	DATE	TAIL LENGTH	WIDTH FLATIRON	LENGTH FLATIRON	WIDTH CARAPACE	LENGTH CARAPACE	LENGTH CARAPACE	THICKNESS	WEIGHT
870	29 JUL 69	4 3/4"	15"	16 1/2"	17 1/2"	20"	16 1/2"	8"	37 LBS
871	29 JUL 69	4"	14"	15 1/2"	17"	19 1/2"	16 1/2"	6 1/2"	33 LBS
872	29 JUL 69	3 1/2"	14"	14"	16"	16"	17"	6 1/4"	25 LBS
873	30 JUL 69	2 1/2"	13 1/4"	13 1/4"	16"	17 1/2"	16 1/2"	6 1/2"	23 LBS
874	12 OCT 69	3"	13 1/2"	12 3/4"	15 1/2"	17"	15 1/2"	6"	20 LBS
875	12 OCT 69	3"	13 1/4"	13 3/4"	15 1/2"	17 1/2"	16 1/2"	7"	23 LBS

* Indicates ROUND MEASUREMENT taken with a tape ruler. All other measurements were taken with calipers.

pop 10/10/68

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

TAG NO.	DATE	TAIL LENGTH	FLASTON	WIDTH	LENGTH	WIDTH	CURVED		THICKNESS	WEIGHT
							CARAPACE	CARAPACE		
852	2 MAY 69	3"	13 1/2"	13"	15"	16 1/2"	15 3/4"	6"	23 LBS	
853	2 MAY 69	3"	14"	13 3/4"	13"	17 1/2"	16 1/2"	6 1/4"	25 LBS	
854	3 MAY 69	3 3/4"	15 3/4"	15 3/4"	17 1/4"	19 1/2"	18 1/2"	7 1/2"	33 LBS	
855	3 MAY 69	3"	15 1/2"	13 3/4"	17"	17 1/2"	16"	6 1/2"	25 LBS	
856	9 MAY 69	3 1/2"	15 1/2"	17"	17 1/2"	20"	18 1/2"	8 1/4"	41 LBS	
857	9 MAY 69	3"	14"	14"	16"	18"	17"	7"	26 LBS	
858	9 MAY 69	3 1/4"	16 1/4"	16"	16"	20 1/2"	19 1/2"	7 3/4"	36 LBS	
859	9 MAY 69	3 1/4"	14"	14 3/4"	16"	18"	17"	7"	29 LBS	
860	30 MAY 69	3 1/2"	14"	14 3/4"	16"	18 1/4"	17 1/4"	6 3/4"	28 LBS	
861	30 MAY 69	3 1/2"	16 1/2"	17"	18 1/2"	21"	19 1/2"	7 3/4"	67 LBS	
862	15 JUN 69	4"	13"	13 3/4"	15 3/4"	18"	17"	6 3/4"	27 LBS	
863	15 JUN 69	2 3/4"	11 3/4"	12 1/2"	14"	15 1/2"	15"	5 1/2"	16 LBS	
864	15 JUN 69	3"	13"	13 1/2"	15"	16 3/4"	16"	6 1/2"	23 LBS	
865	15 JUN 69	3"	12 3/4"	12 1/2"	14 1/2"	16 1/2"	15 1/2"	5 3/4"	20 LBS	
866	18 JUN 69	3"	13"	12 1/2"	15 1/2"	16"	15 1/2"	6"	19 LBS	
867	21 JUN 69	3 1/2"	14 1/2"	15 1/4"	17"	19"	18"	8"	36 LBS	
868	21 JUN 69	3 1/2"	15 1/2"	15 1/4"	18"	20"	19"	8"	35 LBS	
869	21 JUN 69	3 1/2"	13 1/2"	14"	16"	18"	17 1/2"	7"	29 LBS	

October 8, 1976

Koral Kings Dive Club
P.O. Box 300
U.S. Naval Station
Midway Island
FPO San Francisco 96614

Dear Koral Kings Dive Club Members:

Enclosed is a xeroxed portion of a letter which I received yesterday from Bob Robbins. Many of you may recall that Bob caught and tagged a 20 lb. turtle at Midway last January 4 and 5 which was subsequently reported to me as having been recovered on July 12 at Wake Island. A short article (by Jim Bradley) about this event appeared in the August 6 issue of THE ISLANDER. During my visit to Midway on August 26 - September 4, some of you will recall that I expressed concern over just how intentional this "migrational" actually was. My concern has turned out to be well founded, as it is apparent from Bob's letter that the turtle in question was in a considerably weakened condition. I think we can therefore safely assume that the turtle passively drifted to Wake by the action of winds and currents. Weather charts that I have seen tend to support this interpretation. Perhaps some Midway turtles do indeed travel intentionally to Wake Island. However, this particular case cannot be legitimately used to support the occurrence of such migrations. Although it is to some extent discouraging to learn that the movement was not intentional, it is nevertheless always best to learn the true facts of the matter rather than draw false conclusions.

On a more encouraging note, I want all of you to be fully aware of an amazing tag recovery that positively demonstrates an intentional migration. On November 8, 1975, Bob Robbins tagged a 26 lb. turtle at Midway. This individual was recovered in a fish net in Hilo Bay, Island of Hawaii, on May 31, 1976. The turtle was released unharmed after the tag number was recorded. The distance that this turtle traveled (about 1,400 miles) against prevailing winds and currents is truly remarkable. Do many Midway turtles undertake such extensive journeys? I certainly wish I knew the answer to that question. Only further time, and, of course, your continued fine tagging efforts, will provide the necessary answers.

Koral Kings Dive Club

-2-

October 8, 1976

I hope to return to Midway in the near future for one week of turtle surveys and tagging activities. If there are any questions concerning turtles that I can answer for you, please do not hesitate to write. All inquiries/letters will be answered.

Happy and safe diving to all of you.

Sincerely,

GEORGE H. BALAZS
Jr. Marine Biologist

GHB:ec

Enclosure

HAWAII INSTITUTE OF MARINE BIOLOGY
TELEPHONE MESSAGE

July
12th
caught
1976

Date 7/20/76

Time 1 P.M.

For S. Balanus

From _____

Return call at 262-8916

He will call again (any question)

Nature of call or message:

Turtle caught at Waialeale
Island Right 7.1529 tag
Left 7.1534 tag
Head to Tail 16 inches
across 14 1/2 inches
weight 17 lb - 20 lbs

Call taken by: Margaret

They let it go.

U
M
D
M
D
M
D

July 25th, 1976

Dear George and Linda,

Just thought I'd write and let you know that Elaine is delighted with the dates we discussed. She is somewhat disappointed though that you can't come for a longer time.

When I was in McDonalds on Friday night eating a Big Mac I was given McDonalds' Olympic Medal Game cards and, to my amazement, after following their instructions implicitly, I find that I have won. What I won I do not know. However, you have until 31 August to pick up my winnings. If it is in the order of a Big Mac, a Gigantic Coke or Popsicle, I would strongly suggest that either you or Linda, or possibly your dog, should consume that delectable treasure. The other two cards that I am enclosing should be scrutinized carefully and on the dates indicated you may determine whether or not a second prize is in order. I would be extremely pleased if you would advise me of the nature of the winnings so that we two may reflect on your good fortune.

Now for the unimportant news!

Turtle Tags 1529 and 1530 were placed on a turtle on January 4th, 1976 -

tail length	1"
plastron	13"
carapace width	14"
carapace length	15½"
thickness	6 3/8"
round measurement with tape measure	
carapace width	14½"
carapace length	16"

where at by who?

Weight was 20 lbs and there were 4 plates.

Trying to find out the information on Kojma (Fred) may be a little bit more difficult, however I should have something one way or the other in a couple of weeks.

Everything at home seems to be well and I am very pleased to be back with my family. I am getting reports that more and more turtles have been seen this summer, although very little catching and tagging has taken place.

Will write again in a couple of weeks and we are certainly looking forward to your visit, especially some tennis in the cool of the evenings.

Best regards,

Lin + Claire

UNIVERSITY OF HAWAII
Hawaii Institute of Marine Biology
P.O. Box 1215, Kaneohe, Hawaii 96741

September 13, 1976

Mr. Bob Robbins
c/o O. A. Robbins
Box 5
Seymour, Illinois 61875

Dear Mr. Robbins:

I am sure you will be interested to learn that in recent months two juvenile green sea turtles that you tagged at Midway have been recovered at distant locations.

The Koral Kings' records show that on January 4, 1976 you captured a 20 lb turtle at Midway Harbor which received tag numbers 1529 and 1530. On January 5th the same turtle was again captured by you at apparently the same location. After being released for the second time, this turtle did quite a lot of swimming. I have been informed by personnel on Wake Island that the turtle was captured in their harbor on July 12, 1976. After the tag numbers and inscribed address of our Institute were read, the turtle was released unharmed.

The second long distance recovery involved turtle number 1485 which you tagged on November 8, 1975 (weight - 26 lbs, but exact location not given). This turtle was caught in a fisherman's net in Hilo Bay (Island of Hawaii) on May 31, 1976. It was also released unharmed.

For the past four years I have been conducting life history studies of sea turtles which include taggings at French Frigate Shoals and, through cooperating individuals and organizations, at Midway and other select locations. Needless to say, I was extremely interested and pleased to learn of the recovery of the two turtles you tagged. This information will be very useful in our efforts to understand the animal's biology in the Hawaiian chain. In order to add further to this knowledge, there

Bob Robbins
Page Two
September 13, 1976

are several questions that have arisen during the course of reviewing the Koral Kings' tagging records. I would greatly appreciate it if you would provide me with whatever information you may recall concerning these questions.

1. What was turtle number 1529/1530 doing when first captured in the harbor at Midway? Was it sleeping on the bottom, floating on the surface, feeding, or what? What was it doing on the very next day when captured for the second time? Did it seem to be weak and therefore not difficult to capture? The records indicate "harbor." Does this refer to the inner harbor, or the cargo pier area?
2. The records show that on January 16, 1976 you captured a 74 lb turtle off the "skeet range." During my last trip to Midway (August 26 - September 4, 1976) I snorkeled along this shoreline out for a distance of 100 yards. I would be most interested to learn what this turtle was doing when captured. The bottom seems to be pretty barren in the area, lacking in coral heads or ledges suitable for sleeping. Also, I did not see much in the way of algae (seaweed) that could be used by a turtle for food. I am therefore curious to know what would attract a turtle to this area. Can you give me any clues?
3. Do you recall the location at Midway where you captured turtle 1485 on November 8, 1975? I have enclosed a xeroxed drawing of Midway that you can mark and return to me.
4. Is there any special location at Midway where you recall seeing the greatest numbers of turtles? Do you feel that more turtles are present or noticeable during a particular time of the year? If so, what months would this be?

Again, I want to thank you very much for all of your help. I am in the process of having a color booklet published which features Hawaiian seabirds, turtles and seals. I will send you a free copy as soon as it is available.

Sincerely,

George H. Balazs
Jr. Marine Biologist

mk

NOV 76

SEYMOUR, ILLINOIS
61875

George H. Balazs
Jr. Marine Biologist
University of Hawaii at Manoa
Box 1346 Coconut Island
Kaneohe, Hawaii 96744

Dear sir:

I received your letter inquiring about some turtles that I had caught and tagged on Midway, I will be happy to give you any information that I can.

The turtle No. 1529 & 1530 was caught on Jan. 4th & Jan. 5th. The turtle was along the seawall when I arrived there with Mac's diving class. When I saw it I put on my diving gear and went in after it. It was floating very still. When I jumped in it wasn't even scared of me. He seemed hurt and his shell was scarred. He couldn't get away from me. I gave the turtle to another diver, Bruce Yarber, who was topside and he went and tagged the turtle for me, in my name. I released it at the Koral King's ramp and it went with the waves, still floating, until it was out of sight.

When I went to Koral Kings the next morning, there it was. I knew it had to be the same turtle because of the way it was acting. It seemed very weak. I waded out and grabbed it by the shell and he did not put up any fight at all. He seemed happy that I had captured him. Right away I was afraid that he was too weak to survive the ocean but I filled out a paper in the turtle log that I had caught this same turtle the day before also. Then I let him go and he swam off with the waves on the surface till he was out of sight. The first day I caught him in the inner harbor. The next day I caught him in front of the Skeet Range.

Turtle No. 1485 was caught and tagged on Nov. 8, 1976.⁷⁵ The location where I caught him was under the cargo pier near the cement bags. He was on the bottom, partly buried in the sand and looking straight ahead. When I approached him he wasn't scared of me and he came right out very slow.

BOB ROBBINS
BOX 5
SEYMOUR, ILL.
61875

On Jan. 16, 1976 I did capture another large turtle in front of the Skeet Range. We were coming back from the channel and when we got in front of the skeet range I spotted the turtle so I slid in the water and grabbed it. I had to chase it down toward the bottom. Right of the barrels near the skeet range is a coral head near by. The turtle seemed to be just cruising around when I caught him. There was no seaweed in the area and no more coral heads for a distance. I'd say it was just coming up for air or else looking for a new location where other turtles might be. There is the chance that he was lost but I think it was headed toward the cargo piers or Well's Harbor. There is where I've seen the most turtles. Also at the back side of Eastern Island. When it is really rough out the Portuguese Man of Wars come in and get stuck along the sea wall and the small turtles come to the top and feed on the man of wars. In the summer months, May and June I'd say the water is warmer and there seems to be more turtles of all kinds for some reason.

I am 15 years old now and our family have moved away from Midway Island but I hope to go back some day and do some more diving.

If there is any other way I can help you please let me know. I am looking forward to reading the booklet that you are going to publish.

Sincerely,

Bob Robbins

Robert D. Robbins (BOB)
 Box 5
 Seymour, Illinois
 61875

e. Eastern Island Small Boat Area: This area may be used for water skiing exercising due caution for swimmers, divers, and shallow water. This is the area along the west shore of Eastern Island, extending out 500 yards from the shore.

f. Restricted Areas: (see illustration #1 below)

(1) All swimming areas are off limits to power boats. Swimming areas are marked by red buoys. They are the Officers, Enlisted, and Eastern Island swimming areas.

(2) The areas on and around Spit Islands are restricted.

(3) The areas south of Sand Island, from Frigate Point on the marine dump are restricted.

(4) The areas south (behind) Eastern Island to Sand Spit are restricted.

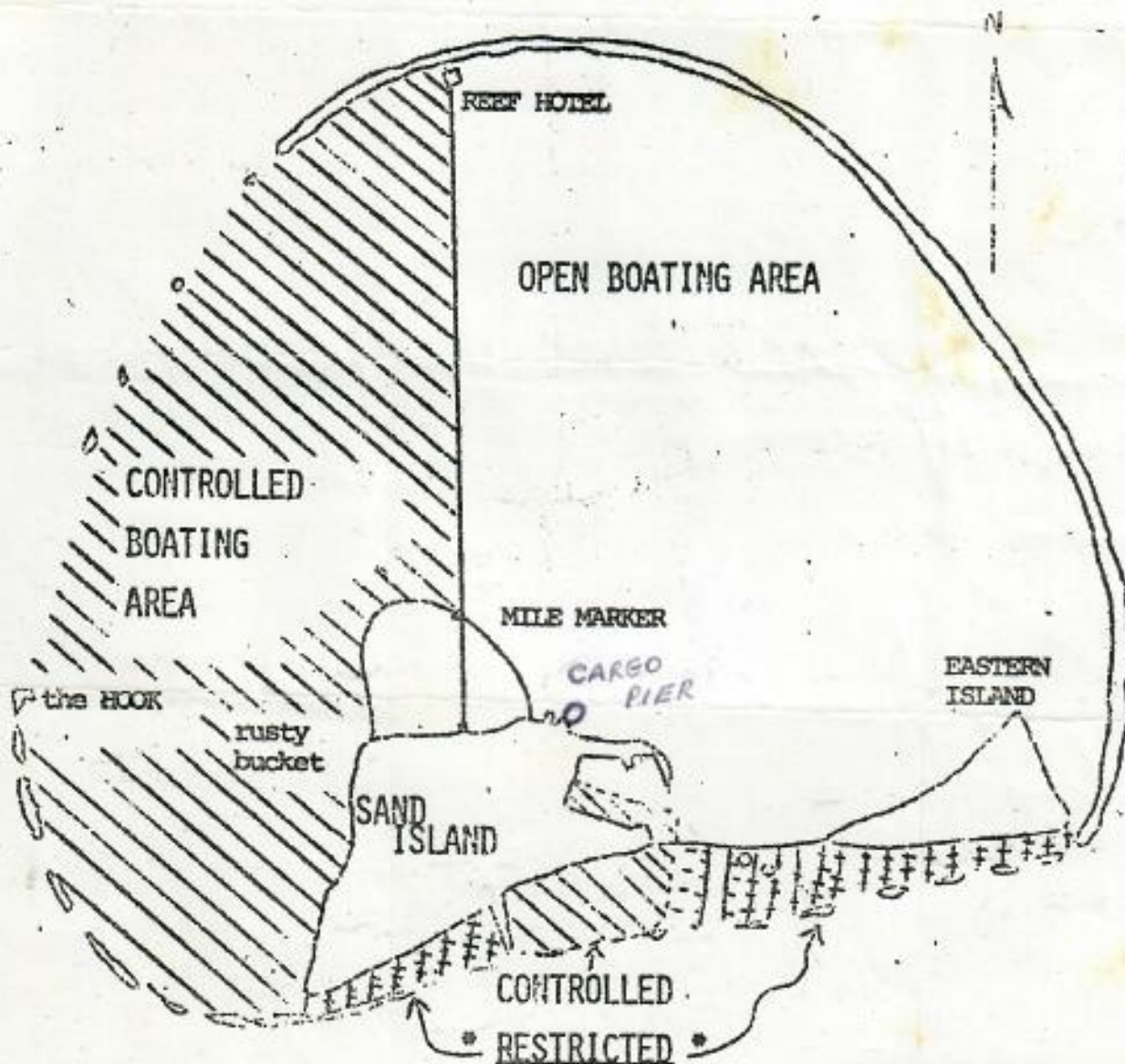


ILLUSTRATION #1

1-3

Enclosure (1)

pop in flux

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

TAG NO.	DATE	TAIL LENGTH	WIDTH FLASTON	LENGTH FLASTON	WIDTH CARAPACE	LENGTH CARAPACE	WIDTH CARAPACE	LENGTH CARAPACE	THICKNESS	WEIGHT
852	2 MAY 69	3"	13 1/2"	13"	15"	16 1/2"	15 3/4"	6"	23 LBS	
853	2 MAY 69	3"	14"	13 3/4"	15"	17 1/2"	16 1/2"	6 1/4"	25 LBS	
854	3 MAY 69	3 3/4"	15 3/4"	15 3/4"	17 1/4"	19 1/2"	18 1/2"	7 1/2"	33 LBS	
855	3 MAY 69	3"	15 1/2"	13 3/4"	17"	17 1/2"	16"	6 1/2"	25 LBS	
856	9 MAY 69	3 1/2"	15 1/2"	17"	17 1/2"	20"	18 1/2"	8 1/4"	41 LBS	
857	9 MAY 69	3"	14"	14"	16"	18"	17"	7"	26 LBS	
858	9 MAY 69	3 1/4"	16 1/4"	16"	18"	20 1/2"	19 1/2"	7 3/4"	36 LBS	
859	9 MAY 69	3 1/4"	14"	14 3/4"	16"	18"	17"	7"	29 LBS	
860	30 MAY 69	3 1/2"	14"	14 3/4"	16"	18 1/4"	17 1/4"	6 3/4"	28 LBS	
861	30 MAY 69	3 1/2"	16 1/2"	17"	18 1/2"	21"	19 1/2"	7 3/4"	47 LBS	
862	15 JUN 69	4"	13"	13 3/4"	15 3/4"	18"	17"	6 3/4"	27 LBS	
863	15 JUN 69	2 3/4"	11 3/4"	12 1/2"	14"	15 1/2"	15"	5 1/2"	16 LBS	
864	15 JUN 69	3"	13"	13 1/2"	15"	16 3/4"	16"	6 1/2"	23 LBS	
865	15 JUN 69	3"	12 3/4"	12 1/2"	14 1/2"	16 1/2"	15 1/2"	5 3/4"	20 LBS	
866	18 JUN 69	3"	13"	12 1/2"	15 1/2"	16"	15 1/2"	6"	19 LBS	
867	21 JUN 69	3 1/2"	14 1/2"	15 1/4"	17"	19"	18"	8"	36 LBS	
868	21 JUN 69	3 1/2"	15 1/2"	15 1/4"	18"	20"	19"	8"	35 LBS	
869	21 JUN 69	3 1/2"	13 1/2"	14"	16"	18"	17 1/2"	7"	29 LBS	

- ① Method/Capture
- ② recover⁰ (after 198, on list)
- ③ Tag D9-38?
- ④ orbit plates?
- ⑤ How ints. taken
- ⑥ outside lagoon vs inside
- ⑦ Algae inside? what?
- ⑧ Have tags?

curve fit? → length - wt
all on cards

Midway chart

Look AT Green in freezer

- ⑩ Intensity of Dive/capability to catch big turtle? (some big noted on list)
- ⑪ Tail length how?
- ⑫ Sea H₂O Temperature - Navy record?
- ⑬ condition of tags at recovery/animals (appear weak?)
- ⑭ Variation in weather conditions
- ⑮ stress on turtles?

	TAIL LENGTH	WIDTH	LENGTH	THICKNESS	WIDTH * LENGTH +	WT				
RECOVERIES										
T89	23JUL72	2.0	11.0	13.2	5.5	13.9	14.0	15	4	KOZMA
A609	23JUL72	4.0	13.4	16.3	7.1	15.4	17.0	27	4	KIBA
T88	20APR72	3.3	12.5	15.3	6.1	15.8	16.3	21	4	KOZMA
T409	20APR72	2.5	12.9	15.7	6.3	15.0	16.4	19	4	KOZMA
T410	20APR72	4.0	13.5	16.7	5.9	15.9	17.5	20	4	KOZMA
913	21APR72	2.8	12.1	15.3	5.4	15.0	16.0	17	4	BOATHOUSE

TURTLE 913 WAS FOUND ON HIS BACK, DEAD IN SIX FEET OF WATER. PROBABLE CAUSE OF DEATH: UNDERWATER EXPLOSIONS FROM BLASTING ISHMAEL WIDENING OPERATION.

KEEPERS	T100	NO T.G									
	6APR72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97	4	KOZMA
	21APR72	7.5	21.3	22.1	27.6	11.3	27.6	29.5	120	4	TOMLE

THIS TURTLE, CAPTURED ON THE SAME DAY AS 913, COULD ALSO HAVE BEEN SUFFERING FROM THE EFFECTS OF THE UNDERWATER EXPLOSIONS. TOMLE REPORTED THAT THE TURTLE GAVE VERY LITTLE RESISTANCE WHEN CAPTURED, AND WAS SPITTING BLOOD. HE WAS STILL SPITTING BLOOD THREE HOURS LATER WHEN I MEASURED HIM.

TABLE 661.0 1 NOV. 1972

10 JUL 72 20 15.8 14.8 6.3 15.2 12.8 12.3 2.5 10 JUL 72 20 15.8 14.8 6.3 15.2 12.8 12.3 2.5

23 JUL 72 97 27.3 26.3 10.3 26.1 21.8 20.7 6.0 23 JUL 72 97 27.3 26.3 10.3 26.1 21.8 20.7 6.0

23 JUL 72 62 23.5 21.5 9.3 22.6 18.1 18.4 4.5 23 JUL 72 62 23.5 21.5 9.3 22.6 18.1 18.4 4.5

23 JUL 72 68 24.6 23.0 9.2 23.2 18.7 18.2 5.0 23 JUL 72 68 24.6 23.0 9.2 23.2 18.7 18.2 5.0

23 JUL 72 18 14.6 14.2 6.1 14.0 12.2 11.5 2.9 23 JUL 72 18 14.6 14.2 6.1 14.0 12.2 11.5 2.9

23 JUL 72 22 16.9 15.2 6.2 16.0 12.9 13.0 3.5 23 JUL 72 22 16.9 15.2 6.2 16.0 12.9 13.0 3.5

23 JUL 72 63 23.9 21.5 9.4 22.3 17.4 17.8 4.5 23 JUL 72 63 23.9 21.5 9.4 22.3 17.4 17.8 4.5

23 JUL 72 24 17.3 14.9 6.4 16.5 12.5 13.2 3.0 23 JUL 72 24 17.3 14.9 6.4 16.5 12.5 13.2 3.0

23 JUL 72 55 22.8 21.5 8.6 21.7 17.6 17.3 4.8 23 JUL 72 55 22.8 21.5 8.6 21.7 17.6 17.3 4.8

23 JUL 72 25 17.9 16.4 6.1 17.2 14.1 14.0 3.5 23 JUL 72 25 17.9 16.4 6.1 17.2 14.1 14.0 3.5

23 JUL 72 19 16.4 15.0 6.3 15.7 12.9 12.9 2.5 23 JUL 72 19 16.4 15.0 6.3 15.7 12.9 12.9 2.5

23 JUL 72 21 17.3 15.9 6.7 16.7 13.9 13.5 2.8 23 JUL 72 21 17.3 15.9 6.7 16.7 13.9 13.5 2.8

6 AUG 72 52 23.6 22.1 8.6 22.6 18.6 17.9 4.5 6 AUG 72 52 23.6 22.1 8.6 22.6 18.6 17.9 4.5

6 AUG 72 50 22.0 20.0 8.2 21.0 17.1 17.0 4.0 6 AUG 72 50 22.0 20.0 8.2 21.0 17.1 17.0 4.0

20 AUG 72 42 21.4 19.3 8.2 20.2 16.1 16.3 4.2 20 AUG 72 42 21.4 19.3 8.2 20.2 16.1 16.3 4.2

20 AUG 72 30 19.8 18.0 7.2 18.7 15.0 14.8 3.5 20 AUG 72 30 19.8 18.0 7.2 18.7 15.0 14.8 3.5

20 AUG 72 62 24.0 22.5 9.4 22.5 18.2 18.8 6.0 20 AUG 72 62 24.0 22.5 9.4 22.5 18.2 18.8 6.0

20 AUG 72 55 22.9 20.3 8.3 21.8 18.0 18.3 4.4 20 AUG 72 55 22.9 20.3 8.3 21.8 18.0 18.3 4.4

20 AUG 72 33 19.8 17.4 7.0 19.0 14.8 15.4 4.0 20 AUG 72 33 19.8 17.4 7.0 19.0 14.8 15.4 4.0

20 AUG 72 23 17.0 16.0 6.8 16.0 13.5 12.9 3.0 20 AUG 72 23 17.0 16.0 6.8 16.0 13.5 12.9 3.0

20 AUG 72 18 16.3 15.0 6.1 15.3 12.8 13.0 3.3 20 AUG 72 18 16.3 15.0 6.1 15.3 12.8 13.0 3.3

* RIGHT NEAR SECTION OF SHELL MISSING.
** HALF OF RIGHT FRONT FLAPPER MISSING OFF.

T499	10 JUL 72	2.5	12.3	12.8	15.2	6.3	14.8	15.8	20	4	KOSMA
T100	23 JUL 72	6.0	20.7	21.8	26.1	10.3	26.3	27.3	97	4	KOSMA
T401	23 JUL 72	4.5	18.4	18.1	22.6	9.3	21.5	23.5	62	4	KOSMA
T402	23 JUL 72	5.0	18.2	18.7	23.2	9.2	23.0	24.6	68	4	KINA
T403	23 JUL 72	2.9	11.5	12.2	14.0	6.1	14.2	14.6	18	4	KOSMA
T404	23 JUL 72	3.5	13.0	12.9	16.0	6.2	15.2	16.9	22	4	KOSMA
T405	23 JUL 72	4.5	17.8	17.4	22.3	9.4	21.5	23.9	63	4	KOSMA
T406	23 JUL 72	3.0	13.2	12.5	16.5	6.4	14.9	17.3	24	4	KOSMA
T407	23 JUL 72	4.8	17.3	17.6	21.7	8.6	21.5	22.8	55	4	KOSMA
T408	23 JUL 72	3.5	14.0	14.1	17.2	6.1	16.4	17.9	25	4	KOSMA
T409	23 JUL 72	2.5	12.9	12.9	15.7	6.3	15.0	16.4	19	4	KOSMA
T410	23 JUL 72	2.8	13.5	13.9	16.7	6.7	15.9	17.3	21	4	NOBILA*
T411	6 AUG 72	4.5	17.9	18.6	22.6	8.6	22.1	23.6	52	4	VAPO**
T412	6 AUG 72	4.0	17.0	17.1	21.0	8.2	20.0	22.0	50	4	KOSMA
T413	20 AUG 72	4.2	16.3	16.1	20.2	8.2	19.3	21.4	42	4	KOSMA
T414	20 AUG 72	3.5	14.8	15.0	18.7	7.2	18.0	19.8	30	4	KOSMA
T415	20 AUG 72	6.0	18.8	18.2	22.5	9.4	22.5	24.0	62	4	KOSMA
T416	20 AUG 72	4.4	18.3	18.0	21.8	8.3	20.3	22.9	55	4	KOSMA
T417	20 AUG 72	4.0	15.4	14.8	19.0	7.0	17.4	19.8	33	4	KOSMA
T418	20 AUG 72	3.0	12.9	13.5	16.0	6.8	16.0	17.0	23	4	KOSMA
T419	20 AUG 72	3.3	13.0	12.8	15.3	6.1	15.0	16.3	18	4	NOBILA

	DATE	TAIL LENGTH	PLAS LENGTH	WIDTH	LENGTH	THICKNESS	WIDTH	LENGTH	wt	
T76	31Mar72	4	16 1/2	16	20	8	20	21	45	Muck
T77	9Apr72	3	13 3/4	14	17 1/2	6 1/2	16 1/2	16 1/2	27	Simonguarr
T78	9Apr72	2	3/4 12 1/2	13	15 3/4	6 1/2	15	16 1/2	22	Simonguarr
T79	9Apr72	2	3/4 13	13	16 1/2	7	16	17	27	Simonguarr
T80	15Apr72	2	3/4 14 3/4	14 3/4	17 3/4	6	17	19	27	B. Johnson
T81	16Apr72	2 1/2	12 1/2	13 1/2	15 1/2	7 1/2	16 1/2	17	23	McFarland
T82	26Apr72	1 1/2	12 1/2	11 1/2	14 1/2	5	13	15	18	Kozma
T83	7May72	2	3/4 13	13	15	6	15	16	21	Wood
T84	27May72	2 1/2	12 1/2	13	15 1/2	6	15 1/2	16 3/4	20	McFarland
T85	6Jun72	3	14 1/2	14	17 1/2	6 1/2	17	18 1/2	30	Simonguarr
T86	6Jun72	2	3/4 14 1/2	14	17 1/2	7	16	18 1/2	30	Kozma **
T87	6Jun72	3	13 1/2	14	16 1/2	7	16	17 1/2	27	Kozma
T88	6Jun72	2 1/2	12 1/2	15 1/2	16	6	15	16	22	Kozma
T89	6Jun72	1 1/2	11	11	13 1/2	5 1/2	13	14	16	Kozma
T90	11Jun72	4	16 1/2	16 1/2	20 1/2	8 1/2	20	22	50	Stombaugh
T91	11Jun72	3 1/2	15	15 1/2	19 1/2	7 1/2	18 1/2	20	39	McFarland
T92	21Jun72	3	13	14	16 1/2	7	16 1/2	18	26	Kozma
T93	21Jun72	3 1/2	15 1/2	15	19	8 1/2	21 19	22 20	42	Kozma
T94	21Jun72	3	3/4 16	17	20 1/2	21 9	22 21	22 1/2	53	Kozma
T95	3Jul72	3	12	13	17	6	16	16	24	Kozma
T96	4Jul72	3	16.8	16.7	16	6.1	16	17 1/2	25	Kozma
T97	4Jul72	3	3/4 15	15.4	18.7	7.3	17	19 1/2	35	Kozma
T98	6Jul72	3 1/2	14.7	15.2	18.5	8	17.7	19.8	39	Kozma
Recovery										
911	9Apr72	2	3/4 12 1/2	13	15 1/2	6	15 1/2	16	22	Simonguarr
	7May72	2 1/2	12 3/4	13 1/2	16	6	17	17 1/2	24	Simonguarr

3. →

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

NOTE: * Indicates round measure with tape ruler. All other measurements taken with calipers.

TAG NO.	DATE	TAIL LENGTH	WIDTH FLASTROM	LENGTH FLASTROM	WIDTH CARAPACE*	LENGTH CARAPACE*	LENGTH CARAPACE*	THICK-NESS	WT.	NUMBER OF ORBITAL FLAKES
380	26 NOV 70	4	13 $\frac{1}{2}$	16	19	20	19	8	39	4
381	23 JAN 71	2 $\frac{1}{2}$	12	14	16	17 $\frac{1}{2}$	17	6 $\frac{1}{2}$	24	4
382	28 FEB 71	3	11 $\frac{1}{2}$	15	15 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	18	4
383	6 MAR 71	2 $\frac{1}{2}$	12	13	15	17	16	6	20	4
Killed	12 JUN 71	2 $\frac{1}{2}$	17	15 $\frac{1}{2}$	17	20 $\frac{1}{2}$	21 $\frac{1}{2}$	9	52	4
384	20 JUN 71	2 $\frac{1}{2}$	14 $\frac{1}{2}$	13 $\frac{1}{2}$	16	18	16 $\frac{1}{2}$	7	28	4
385	20 JUN 71	2	11	12 $\frac{1}{2}$	14 $\frac{1}{2}$	16	15 $\frac{1}{2}$	6	21	4
386	20 JUN 71	4	17 $\frac{1}{2}$	20	23 $\frac{1}{2}$	25	24	9 $\frac{1}{2}$	81	4
387	28 JUN 71	2	14	14 $\frac{1}{2}$	17	19	18	7 $\frac{1}{2}$	32	4
388	28 JUN 71	4	16	17	20	21	20	9	50	4
389	29 JUN 71	3	14	14	16	18	17	6 $\frac{1}{2}$	25	4
350	4 JUL 71	2 $\frac{1}{2}$	14	13	15 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	21	4
901	7 JUL 71	4	13 $\frac{1}{2}$	13 $\frac{1}{2}$	15 $\frac{1}{2}$	17	16 $\frac{1}{2}$	7	23	4
902	7 JUL 71	4	14 $\frac{1}{2}$	15	17 $\frac{1}{2}$	19 $\frac{1}{2}$	18 $\frac{1}{2}$	8	37	4
903	8 JUL 71	3	14	14	16 $\frac{1}{2}$	18 $\frac{1}{2}$	17 $\frac{1}{2}$	6 $\frac{1}{2}$	28	4
904	9 JUL 71	3	13 $\frac{1}{2}$	13 $\frac{1}{2}$	16	18	17	7	26	4
905	18 JUL 71	3	16 $\frac{1}{2}$	17 $\frac{1}{2}$	19	19 $\frac{1}{2}$	21	7 $\frac{1}{2}$	45	3
906	31 JUL 71	5	18 $\frac{1}{2}$	18 $\frac{1}{2}$	23	24	23	9	70	4
907	1 SEP 71	2 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$	14 $\frac{1}{2}$	5 $\frac{1}{2}$	18	4
908	6 SEP 71	3	13	12 $\frac{1}{2}$	16	17	16	5 $\frac{1}{2}$	23	4
910	25 SEP 71	3 $\frac{1}{2}$	12 $\frac{1}{2}$	13	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16 $\frac{1}{2}$	6	21	4
911	27 SEP 71	2 $\frac{1}{2}$	13 $\frac{1}{2}$	14	16 $\frac{1}{2}$	17	16	6 $\frac{1}{2}$	23	3
912	27 SEP 71	2 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	6	20	4
913	2 OCT 71	2 $\frac{1}{2}$	12	12 $\frac{1}{2}$	15 $\frac{1}{2}$	16	15 $\frac{1}{2}$	6	20	4
914	2 OCT 71	4	16	16 $\frac{1}{2}$	19 $\frac{1}{2}$	22	21	8	45	4
915	10 OCT 71	3 $\frac{1}{2}$	15 $\frac{1}{2}$	16	18 $\frac{1}{2}$	21 $\frac{1}{2}$	19 $\frac{1}{2}$	7	38	4
916	10 OCT 71	3	13 $\frac{1}{2}$	13	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16	6	25	4
917	31 OCT 71	4	16 $\frac{1}{2}$	16 $\frac{1}{2}$	20 $\frac{1}{2}$	21	19 $\frac{1}{2}$	8	39	4

Inventory of tags: 918-919-920-921-922-923.

909 was destroyed - tip breaks off.

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

(NOTE) * Indicates round measure with tape ruler. All other measurements taken with calipe.

TAG NO.	DATE	TAIL LENGTH	WIDTH PLASTRON	LENGTH PLASTRON	WIDTH FLASTRON*	LENGTH CARAPACE*	LENGTH CARAPACE	THICKNESS	WEIGHT	NUMBER
620	1 JUL 70	2 1/4	12 1/4	13	1 1/4	16	15 1/2	5 1/4	17 1/2 lb.	
621	1 JUL 70	3	13	13	1 1/4	16 1/4	15 1/2	5 1/4	18 lb.	
622	15 JUL 70	3	11 1/4	13	1 1/4	16 1/2	15 1/2	6 1/2	21 lb.	
623	21 AUG 70	3	12	1 1/4	16 1/2	19	1 1/4	6 1/2	27 lb.	
624	5 SEP 70	2 1/4	11 1/4	12 1/4	1 1/4	16	15	5 1/2	15 lb.	
Keeper	3 OCT 70	4	20	19 1/2	2 3/4	25	24	9	67 lb.	
625	3 OCT 70	3 1/2	13 1/2	16	1 1/2	20 1/2	19 1/2	8	39 lbs	
322	3 OCT 70	3 1/2	14 1/2	16 1/2	1 1/2	20	18 1/2	8 1/2	40 lbs.	
333	3 OCT 70	3	13	14	17	19 1/2	18	8	40 lbs	
334	3 OCT 70	3 1/2	14	15 1/2	19 1/2	20	19	8 1/2	43 lbs	
335	3 OCT 70	4 1/2	13 1/2	15	19	20 1/2	19	7 1/2	37 lbs	
336	3 OCT 70	2	10 1/2	11 1/2	1 1/4	15 1/2	1 1/4	5 1/2	19 lbs	4
337	18 OCT 70	3	12	13 1/2	16	17 1/2	17	6 1/2	23 lbs	4
338	18 OCT 70	3 1/2	12 1/2	14 1/2	16	17 1/2	17	7	28 lbs	4
339	22 OCT 70	2 1/2	14	13	15	16 1/2	15	6	20 lbs	3

TURTLE TAGGING INFORMATION FROM MIDWAY ISLAND

TAG NO.	DATE	TAIL LENGTH	WIDTH PLASTRON	LENGTH PLASTRON	WIDTH CARAPACE	LENGTH CARAPACE	LENGTH CARAPACE	THICKNESS	WEIGHT
601	25 Nov 69	3 $\frac{3}{4}$	1 $\frac{4}{8}$	14	17	18	17	7 $\frac{1}{2}$	31 lb
602	27 Nov 69	3 $\frac{3}{4}$	1 $\frac{4}{8}$	16	16 $\frac{1}{2}$	17	16	6	23 lb
603	27 Dec 69	2 $\frac{3}{4}$	11	11	13	14 $\frac{1}{2}$	13 $\frac{1}{2}$	4 $\frac{1}{4}$	12 lb
604	27 Dec 69	2 $\frac{3}{4}$	12 $\frac{1}{2}$	13	14 $\frac{1}{2}$	16	15 $\frac{1}{2}$	5 $\frac{3}{4}$	18 lb
605	9 Mar 70	4	14 $\frac{1}{2}$	15 $\frac{1}{2}$	17	20	19	7 $\frac{1}{2}$	36 lb
606	9 Mar 70	3 $\frac{3}{4}$	14 $\frac{1}{2}$	15	17	19 $\frac{1}{2}$	18 $\frac{1}{2}$	7	31 lb
607	9 Mar 70	3 3/4	14 $\frac{1}{2}$	14 $\frac{1}{2}$	17 $\frac{1}{2}$	19 $\frac{1}{2}$	18 $\frac{1}{2}$	7 $\frac{1}{2}$	36 lb
608	9 Mar 70	3	13	13 $\frac{1}{2}$	15 $\frac{1}{2}$	18	17	6 $\frac{1}{2}$	24 lb
609	9 Mar 70	3	12 $\frac{1}{2}$	12 $\frac{1}{2}$	15	16	15 $\frac{1}{2}$	6 $\frac{1}{2}$	21 lb
610	12 Mar 70	3	12	12 $\frac{1}{2}$	14	15 $\frac{1}{2}$	14 $\frac{1}{2}$	6	18 lb
611	9 May 70	3	14	14	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16 $\frac{1}{2}$	7	26 lb
612	9 May 70	2 $\frac{3}{4}$	12 $\frac{1}{2}$	13	14 $\frac{1}{2}$	16	15 $\frac{1}{2}$	6	20 lb
613	23 May 70	3	15	15 $\frac{1}{2}$	18	19 $\frac{1}{2}$	19	7 $\frac{1}{2}$	33 lb
614	31 May 70	3	13 $\frac{1}{2}$	14	16	17 $\frac{1}{2}$	17	6 $\frac{1}{2}$	27 lb
615	31 May 70	2 $\frac{3}{4}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	14	16	15	5 $\frac{1}{2}$	18 lb
616	31 May 70	3	10	13 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	7	27 lb
617	31 May 70	4	15	16	17 $\frac{1}{2}$	19 $\frac{1}{2}$	18 $\frac{1}{2}$	7 $\frac{1}{2}$	34 lb
618	31 May 70	3 $\frac{3}{4}$	13	13 $\frac{1}{2}$	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16 $\frac{1}{2}$	6	26 lb
619	31 May 70	None	14 $\frac{1}{2}$	15	16 $\frac{1}{2}$	18 $\frac{1}{2}$	17 $\frac{1}{2}$	7	30 lb

* Indicates Round Measure taken with a tape ruler. All other measurements were taken with calipers.

TAG NO.	DATE	TAIL LENGTH	WIDTH FLATSKIN	LENGTH FLATSKIN	WIDTH CARAPACE	LENGTH CARAPACE	LENGTH CARAPACE	THICKNESS	WEIGHT
870	29 JUL 69	4 3/4"	15"	14 1/2"	17 1/2"	20"	18 1/2"	8"	37 LBS
871	29 JUL 69	4"	14"	15 1/2"	17"	19 1/2"	18 1/2"	6 1/2"	33 LBS
872	29 JUL 69	3 1/2"	14"	14"	16"	18"	17"	6 1/4"	25 LBS
873	30 JUL 69	2 1/2"	13 1/4"	13 1/4"	16"	17 1/2"	16 1/2"	6 1/2"	23 LBS
874	12 OCT 69	3"	13 1/2"	12 3/4"	15 1/2"	17"	15 1/2"	6"	20 LBS
875	12 OCT 69	3"	13 1/4"	13 3/4"	15 1/2"	17 1/2"	16 1/2"	7"	25 LBS

* Indicates ROUND MEASURE taken with a tape ruler. All other measurements were taken with calipers.

MILBY ISLANDS

TURTLE FLIPPING INFORMATION

NOTE: * = round measure with tape ruler. All other measurements taken with calipers.

NO.	DATE	FLIPPER LENGTH	FLIPPER WIDTH	CARAPACE LENGTH	CARAPACE WIDTH	HEAD LENGTH	HEAD WIDTH	SNOUT LENGTH	SNOUT WIDTH	FLIPPER AREA	FLIPPER PERIMETER	NO. OF FLIPPERS	LOCALITY
T99	10JUL72	2.5	12.3	12.8	15.2	6.3	14.8	15.8	20	4	KOZMA		
T100	23JUL72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97	4	KOZMA		
T401	23JUL72	4.5	18.4	18.1	22.6	9.3	21.5	23.5	62	4	KOZMA		
T402	23JUL72	5.0	18.2	18.7	23.2	9.2	23.0	24.6	60	4	HINA		
T403	23JUL72	2.9	11.5	12.2	14.0	6.1	14.2	14.6	19	4	KOZMA		
T404	23 JUL72	3.5	13.0	12.9	16.0	6.2	15.2	16.9	22	4	KOZMA		
T405	23JUL72	4.5	17.8	17.4	22.3	9.4	21.5	23.9	63	4	KOZMA		
T406	23JUL72	3.0	13.2	12.5	16.5	6.4	14.9	17.3	24	4	KOZMA		
T407	23JUL72	4.8	17.3	17.6	21.7	8.6	21.5	22.8	55	4	KOZMA		
T408	23JUL72	3.5	14.0	14.1	17.2	6.1	16.4	17.9	25	4	KOZMA		
T409	29JUL72	2.5	12.9	12.9	15.7	6.3	15.0	16.4	19	4	KOZMA		
T410	31JUL72	2.8	13.5	13.9	16.7	6.7	15.9	17.5	21	4	KOZMA		
T411	6AUG72	4.5	17.9	18.6	22.6	8.6	22.1	23.6	52	4	MARD **		
T412	6AUG72	4.0	17.0	17.1	21.0	8.2	20.0	22.0	50	4	KOZMA		
T413	20AUG72	4.2	16.3	16.1	20.2	8.2	19.5	21.4	42	4	KOZMA		
T414	20AUG72	3.5	14.8	15.0	18.7	7.2	18.0	19.8	30	4	KOZMA		
T415	20AUG72	6.0	18.8	18.2	22.5	9.4	22.5	24.0	62	4	KOZMA		
T416	20AUG72	4.4	18.3	18.0	21.8	8.3	20.5	22.9	55	4	KOZMA		
T417	20AUG72	4.0	15.4	14.8	19.0	7.0	17.4	19.8	33	4	KOZMA		
T418	20AUG72	3.0	12.9	13.5	16.0	6.8	16.0	17.0	23	4	KOZMA		
T419	20AUG72	3.3	13.0	12.8	15.3	6.1	15.0	16.3	18	4	MORGIA		

* RIGHT REAR SECTION OF SHELL MISSING.

** HALF OF RIGHT FRONT FLIPPER BITTEN OFF.

HOWAY ISLANDS

TURTLE TAG RECORD

NOTE: * - round measure with tape ruler. All other measurements taken with callipers.

TAG NO.	DATE	SNOUT LENGTH	SNOUT WIDTH	CARAPACE LENGTH	CARAPACE WIDTH	FLIPPER LENGTH	FLIPPER BREADTH	FLIPPER THICKNESS	CARPAL BONE LENGTH	FLIPPER BONE LENGTH	FLIPPER BONE WIDTH	FLIPPER BONE THICKNESS	FLIPPER BONE CURVATURE	FLIPPER BONE SHAPE
RECOVERERS														
T89	23JUL72	2.0	11.0	13.2	5.5	13.9	14.0	15	4	KOZMA				
A609	23JUL72	4.0	13.4	16.3	7.1	15.4	17.0	27	4	BINA				
T88	20AUG72	3.3	12.5	15.3	6.1	15.8	16.3	21	4	KOZMA				
T409	20AUG72	2.5	12.9	15.7	6.3	15.0	16.4	19	4	KOZMA				
T410	20AUG72	4.0	13.5	16.7	5.9	15.9	17.5	20	4	KOZMA				
913	21AUG72	2.8	12.1	15.3	5.4	15.0	16.0	17	4	BOATHOUSE				

TURTLE 913 WAS FOUND ON HIS BACK, DEAD IN SIX FEET OF WATER. PROBABLE CAUSE OF DEATH: UNDERWATER EXPLOSIONS FROM BLASTING INCREASED ALDERTON OF ERUPTION.

KEEPERS

T100	6AUG72	6.0	20.7	21.8	26.1	10.3	26.3	27.5	97	4	KOZMA
NO TAG	21AUG72	7.5	21.3	22.1	27.6	11.3	27.6	29.5	120	4	TOWLE

THIS TURTLE, CAUGHT ON THE SAME DAY AS 913, COULD ALSO HAVE BEEN SUFFERING FROM THE EFFECTS OF THE UNDERWATER EXPLOSIONS. TOWLE REPORTED THAT THE TURTLE GAVE VERY LITTLE RESISTANCE WHEN CAPTURED, AND WAS SPITTING BLOOD. HE WAS STILL SPITTING BLOOD THREE HOURS LATER WHEN I MEASURED HIM.

SUMMARY OF GREEN TURTLES CAPTURED AT MIDWAY

	Yearly Total												Recoveries	
	J	F	M	A	M	J	J	A	S	O	N	D		
1969	-	-	-	-	10	8	4	0	0	2	2	2	28	0
1970	0	0	6	0	9	0	3	1	1	10	1	0	31	0
1971	1	1	1	0	0	7	7	0	5	5	0	0	27	0
1972	0	0	1	7	3	10	18	15	16	8	9	0	87	15
1973	7	5	2	2	2	2	2	2	2	1	2	1	12	3
1974	0	1	0	7	2	0	0	1	0	4	6	0		
Total 1970-72	1	1	8	7	12	17	28	16	22	23	10	0		

Total tagged - 162



Vol. IX No. 16 U. S. Naval Station, Midway Island, April 16, 1976

Page 9

The Islander

April 16, 1976

THE HAWAIIAN MONK SEAL A VANISHING BREED

Midway Islanders are fortunate to be able to observe the abundant amount of unusual and interesting creatures that frequent our skies and waters. Among these animals is the rare Hawaiian monk seal. Although at one time the monk seal was hunted commercially for its fur, it is now protected as a "depleted" species under the provisions of the Marine Mammal Act of 1972.

During January of this year, marine biologists from the Marine Mammal Commission in Washington, D.C. came to Midway to study our seals. The results of that study revealed that the seal population is declining. The Commission's report to Congress recommended that the species be classified as an "endangered" species because of its possible extinction. The alarming trend in the seal's population can be traced to one single element: MAN.

The Hawaiian monk seal does NOT co-exist with man. Where man is, the seal is not. That is why the channel islands (Spit Island, etc.) are OFF LIMITS to all personnel. Each weekend, boaters go on the channel islands without authority. Personnel from the air traffic control tower spot them and they are reported. Unfortunately, by the time that a patrol boat can be dispatched, the trespassers are gone. In the future, a patrol boat will be in the water, ready to go, and you WILL be caught. Personnel found violating the off limits restriction will be dealt with by the full force of the law.

The greed for a few fishballs should not be so great that it causes a rare creature such as the Hawaiian monk seal to become extinct. Your very presence on those islands, whether you actually disturb the animals or not, is sufficient to interrupt their reproductive cycle.

There are only 1,000 of these rare and beautiful creatures left in the world. STAY OFF THE SPIT ISLANDS. Let these seals reproduce so they can be enjoyed by future generations as well.

Sept 13

1977

Dear George & Linda,

Received you letter today saying you did not get our note. Also we did try to call you when we came through Honolulu but you were not in your office and they tried you at home also.

The turtle news is that on the 10th of August a female turtle dug a neet and we think layed eggs on the Navfact beach. Some of the guys saw her on the beach that night and then Weddington saw her going back into the water early the next morning. She had no tags and he did not tag her as thought he might interfere with the process. Questions: How long till the eggs should hatch? Do you think she will try to lay another batch this season? We had the sight roped off for awhile. She dug 3 sights and only covered up one real well so assuming it is the one.

When are you comming out again? Hope you bring Linda at least once this year. You know you are welcome to stay with us. Will be the last year any ~~xxx~~ dependents are on the island so we will be leaving and looking for jobs.

They had a drought here all summer so we lost some plants but the yard and patio is looking prety good now.

You missed a huge party Friday night. All the British were here and all the teachers and etc. We made 35 gallons of scorpion punch -- and they drank up all our other booze also. Was Linda's birthday also. Everyone had a good time and did not leave until one thirty in the morning. Was supposed to be a happy hour that started at 4:30.

How are things in Honolulu? We will not get in until Christmas and have been thinking about going to Australia and New Zealand over the vacation.

George, congratulations on your new appointment. The British were very impressed with your book also.

We have been seeing quite a few large turtles recently. Some one saw a big male the other day and lots reporting large turtles but no details.

Hope to see you both soon. Send us your home address again also as that is where I sent the note and may not have had enough information on it.

Gary.



University of Hawaii at Manoa

Hawaii Institute of Marine Biology
P.O.Box 1348 • Coconut Island • Kaneohe, Hawaii 96744
Cable Address: UNIHAW

November 2, 1977

Koral Kings Dive Club
Midway Islands

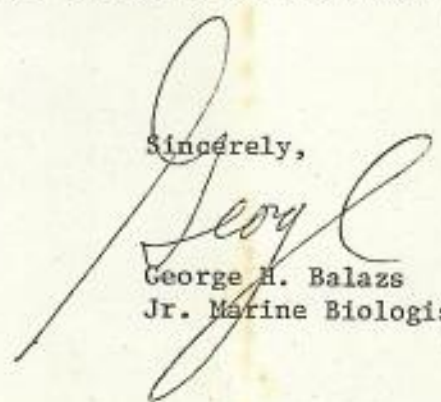
Dear Fellow Member:

Although I had hoped to get back to Midway by this time for more diving and work with turtles, events have unfortunately not worked out that way. Nevertheless, I do hope to make it out your way before the New Year. I will be taking delivery soon on a gasoline powered portable compressor. This will be very nice for diving work at Kure, French Frigate Shoals and other areas in the Leeward Hawaiian chain.

During August and September I had a very interesting trip on the vessel EASY RIDER out to Nihoa, Necker, Laysan and Gardner Pinnacles. I was lucky to be able to spend seven days on Necker studying the turtles. In the event that any of you would like greater details on this research, I have enclosed a news article from the Honolulu Star-Bulletin as well as a copy of my report on the trip. Pages 10 and 11 of the report discusses some of our work at Midway.

Best regards to everyone.

Sincerely,



George H. Balazs
Jr. Marine Biologist

mk
Enclosures

July 3

Dear George & Linda,

We have been visiting Linda's parents here in Reno for the past three weeks. Haven't done much gambling but have done lots of eating. We planted a lawn around the new house and built a fence.

Above the Permid Lake one day, the Indians and Dept of Interior control it. One of the islands in the lake has the largest nesting colonies of pelicans in the U.S. The Indians are trying to get permission to develop the area around the lake so there is a big fight since they want to cut down on the flow of water out of the lake.

We are leaving for Oregon on the 7th. Will have lots of work to do up there. House to paint, hay to ball etc, - lots of cooking for Linda to do.

We are mad at the government transportation people. We requested a port call for the 3 or 4 of Aug. so we would have some time in Honolulu. They gave us the 10th and have to go on to Midway the 11th. I tried to fight it but lost. They ~~and~~ will not let us have any lay over time this year.

We are real disappointed since we were planning on doing a lot in Honolulu on our way through.

We will give you a call at least.

How are things going at the lab? Did you get the French Frigate to count your turtles?

Your slides & copies turned out. Have to get them labeled now. Spent a couple days editing and splicing together all our movie film.

Hope both of you are having a good summer. Linda's parents and the lady we took your book to think it is just great.

Star Wars is a big hit here also. Been seeing a long time in Reno and everywhere.

Thanks again for dinner and all the good times.

Gary + Linda Means

NBC
Box 14 USAS
FPO San Francisco CA.
96614-5E

25 September 77

Hello George.

A million sincere thanks for sending out the book! I assumed it would cost as much if not more than it did. I'm anxious to hear some of the results of your turtle study. When will you be visiting our little island again?

Have taken a crazy job at the Exchange Warehouse - the things one will do for money - so my time has been limited. I'm still hoping for the librarian job at the beginning of next month. Am trying to keep up with the bird observations but really would like to do something substantial. What do you know about Bonin Petrels? All the adult sooty terns have left Eastern, does anyone know where they go? Saw two brown boobies two weeks ago - my first.

Need to make this short. Again, thank you for getting the book

28 September 77
to me so quickly. A money
order is enclosed for you.

Take care
Nancy's
it would cost as much of
more than in his. The
to her name of the
your trouble. When will you
the waiting for little island
find there a copy of the
Berkeley
well do for money - so my
has been limited. I'm still
Hoping for the
the beginning of next month.
but think to keep up with the
bid
late to do some thing
What do you
[Title?] in the
have left
I have
I have
just.

NBC
Box 14 USNS
FPO San Francisco, CA. 96614

Midway Atoll
31 August 77

Dear George,

Thank you for your letter of the 3rd of August. I especially appreciated receiving your phone numbers, in case a need arises for their use. I trust Gary Means contacted you about the turtle sighting on NAVFAC beach. First, I heard that a turtle had laid eggs there but then after seriously questioning found out that that was a supposition and that no one had actually seen her lay eggs. There's still the possibility. What do you think?

The photographs you sent are nicely displayed at Koral Kings. I talked to Candi and she said she sent along the address of another emblem company since she hadn't received word from Mac. This past Sunday (28 Aug.) two good-size turtles were seen off of the "O" beach. They were seen around 1430 swimming parallel to the beach inside the roped off swimming area - that was less than 200 yds off the beach. No sightings from the helicopters. Shortly after I wrote you I saw my first turtle. We were scuba diving off the cargo pier. It was already tagged. That much we could see. It was just swimming along and we made an attempt

to catch it, but futilely! All it had to do is flap its flippers effortlessly a few times and it was out of reach. I can easily understand why you like to catch them napping!

I have a favor to ask. I would like to purchase a copy of Fundamentals of Ornithology (2nd edition 1974) by Van Tyne & Berger. It's published by John Wiley & Sons. If you could check the University's bookstore and/or another bookstore in Hawaii, it would be greatly appreciated. When and if you can locate the book, let me know and I will promptly send out the money for it. Andrew Berger suggested it to me since I haven't had a formal course in ornithology. I imagine it would be a big help and an excellent reference to help accumulate some bird data. If you can find the book for me it would save a long wait since my only other alternative would be to write the publishers for it.

* Caulerpa serrulata the algae that grows under rocks here and looks rather like a cactus plant with small sections? (If you can understand that description!)

Take care & Keep well.

Nancy

Bookstore
- sent 9/11/77

ET-1 & MRS ROGER L. SCHMELTZ
Bx 14 U.S.N.S. Midway Island
FPO San Francisco,
California 96614

10 Sept 77

Hi George:

Spotting a couple of turtles today made us think of you.

We've sort of been expecting to see you out here.

We've been doing a lot of outside the reef diving and today was the first time I spotted a turtle out there. Haven't had a chance to catch one inside the reef mainly because I haven't been diving inside only outside the reef.

Still looking for shells.

Haven't received any inquiries from Allison about the Cypra Lation that we found.

We were really looking forward to hearing from her.

I've heard that another was found by a girl snorkeling on Kiri Island about a month ago but haven't seen it.

We received a nice thank you note from your wife, shortly after you left, thanking us for the tribbles. Thank her for the thank you note for us, and we would

Spotting a couple of turtles today made us think of you.

We're sort of bum expecting to see you out here.

We've been doing a lot of outside the reef diving and today was the first time I've spotted a turtle out there. Haven't had a chance to catch one inside the reef mainly because I haven't been diving inside only outside the reef.

Still looking for shells.

Haven't received any inquiries from Allison about the Cyprina Lation that we found.

We were really looking forward to hearing from her.

I've heard that another was found by a girl snorkeling on Kiri Island about a month ago but haven't seen it.

We received a nice thank you note from your wife, shortly after you left, thanking us for the tribble. Thank her for the thank you note for us, and we would like to meet her some day also.

Roger & Elaine

answer

Box 14 USNS
FPO San Francisco, CA. 96614

8/3/77 13 July 77

Hello George,

I'm finally getting around to sending back your copy of Elepaio and to answering your letter. Please excuse the handwriting. I couldn't get up the ambition to go down to the school to use a typewriter and I didn't think you would mind having to decipher my scatchings.

As you already know I did contact Dr. Pyle. He sent a very nice reply along with some information on birds & observations. I also contacted Edward Shallenberger at Sea Life Park. He's interested in observations on cetaceans but he wasn't much help with how I was suppose to obtain a way to make these observations. I'm also waiting for replies from A.S. Berger & Dennis Dewaney.

I've decided to forget about the game warden position. After talking with numerous people, I've found that they have their hands tied as to what they can realistically do. Besides, people don't like them and consequently, they find out very little information. I believe I can do more & find out more from people by not being one. You were "ecological nut". I've met a couple and they completely turn off people. I would be interested in finding out why Midway does not come under the state of Hawaii. Do you know? I don't think I like the idea of the Navy being exempt from laws protecting certain wildlife. Rumor has it that if the base closes down to a minimum crew that the Captain is going to take off the restrictions concerning taking lobsters due to pressures by the island people. That doesn't sound quite right to me. I've also found that the Captain could care less about the laws restricting helicopters to land

on certain places. The pilots can land if the tower gives them special permission wherever they want. All they have to say is they'll bring a fish ball back to the Captain. He's only interested in keeping the people here happy, regardless of federal wildlife laws.

I finally got checked out for scuba diving. Actually, I think I did it the hard way. I ended up having to do an emergency ascent, a rescue, & a ditch & don to satisfy Steve. Anyway, I've been happily diving for a while now. I haven't seen any turtles though. I must not be looking in the right places. I have seen a couple of sharks, some porpoises plus numerous others, etc.

Don't forget, if you need an extra crew member when you go on your cruise, I'm willing & available.

Keep in touch. I'd love some feedback on how to get midway under some control besides the Navy.

aloha -

Nancy

F.S. Just started reading So Excellent a Fish by Archie Carr. Thanks very much for sending us a copy of your book.



University of Hawaii at Manoa

Hawaii Institute of Marine Biology
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744
Cable Address: UNIHAW

SOME IMPORTANT POINTS ABOUT TURTLE TAGGING AT MIDWAY

1. In conjunction with ecological studies of green turtles being conducted throughout the Hawaiian chain, Koral Kings' members are capturing and tagging turtles at Midway. This is being carried for two main reasons:

- a) to determine the migrations of immature turtles; and
- b) to determine the natural growth rates of immature turtles.

The collection of information on both of these important and little-known aspects is entirely dependent upon the recovery of previously tagged turtles. It is therefore extremely valuable to capture a turtle that already has a tag.

2. Previously tagged turtles should be measured and weighed following the standard procedure, with all information being entered into the club's data log. If the tags on the turtle appear to be the least bit corroded or embedded into the flesh, please remove the tags and replace with new ones. Be sure that the new tags are fastened securely; if needed use a regular pair of pliers to lock the end. Record both the old and new numbers in the data log and save the old tags for my examination. If you are uncertain about any of the procedures, ask one of the more experienced club members for assistance.

3. The University of Hawaii tags numbered 2050 and greater which I am now supplying to Koral Kings are made of Inconel 625. This alloy consists mostly of nickel and cadmium and is supposed to be highly corrosion resistant in seawater. Earlier tags used (numbers under 2050) were made of Monel 400 series alloy and have shown varying levels of deterioration. I am hopeful that our new tags will solve all previous corrosion problems.

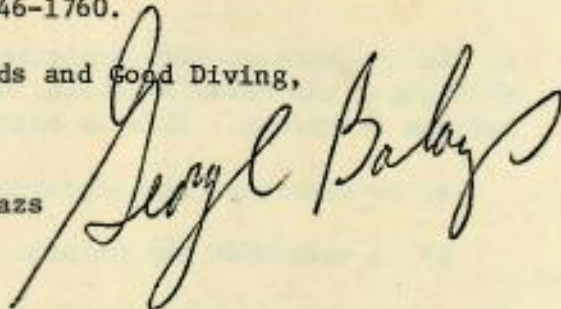
4. Sea turtles are air breathing reptiles that can be safely held out of water for moderate periods of time ranging up to four hours or longer. However, the turtle must be kept in a shaded, reasonably cool location and preferably moistened with water at periodic intervals. The turtle must not be held in the direct sunlight for long periods of time or under circumstances where it is continually struggling. If necessary, it is safe to lay the turtle on its back. All of these points are important to remember should you catch a turtle while out diving and not be able to return immediately to Koral Kings to record the measurement, weight and tag information. (OVER)

5. Please save, by freezing or preserving in formalin, any dead turtles or turtle parts which you may find. Such material can provide me with valuable information about the turtles at Midway.

6. Your assistance in this work is very much appreciated. I intend to visit Midway at least once every three months and I look forward to meeting and diving with you at these times. If you have any questions during the interim, please write to me here at the Hawaii Institute of Marine Biology or place a MARS call to (808) 247-6631 or 946-1760.

Best Regards and Good Diving,

George Balazs

A handwritten signature in cursive script that reads "George Balazs". The signature is written in dark ink and is positioned to the right of the typed name "George Balazs".

EQUIPMENT TO BRING: Pencil, clip board, field guide, insect net, insect jar, (Sociology) camera and film, tape recorder, pencil, field guide.

Also bring something to drink and a snack if you wish.

Your study group will need the following equipment from the lab: Thermometer, grids, Magsopuana soil collecting jars, vegetation sampling boards, hydrometer, metric tape, or other measuring device.

Procedure; ~~XXXXXXXXXX~~ You are required to sample areas A, C, and one other shown on this map. In the three areas you will fill out the quadrat data sheets and collect samples of the vegetation. Once you have a sample of the vegetation of one type you do not need to collect a second sample if found in another area. You will also need a soil sample from each area.

You should spend at least 30 minutes in each area and most likely longer. You will have lots of time to work on your insect collections and photographs after you complete the field studies.

Notice for each area you have the following to do: (Quadrat Data Sheet and Vegetation); Soil organisms in 1 M² of the Quadrat; Bird Population Data; Insect Population; Mammal Population; Reptile population; Other Animals; Animal Signs Data

After you have returned from the ~~XXXXXXXXXX~~ field study show the location of the vegetation types and major animal life on the map by using a color code and shading in with colored ~~XXXXXXXXXX~~ designs.

REMEMBER NO GOOFING AROUND: (SWIMMING, HARASSING OF BIRDS OR FOLLOW STUDENTS ETC)

BE AT THE DOCK AT ~~XXXX~~ 7:50 with your equipment.

YOUR ATTITUDE AND BEHAVIOR WILL HAVE AN EFFECT ON THE DECISION TO TAKE OR NOT TO TAKE FUTURE FIELD TRIPS.

DATE: 25 May 1977

FROM: SAFETY OFFICER--THROUGH--PRESIDENT, K.K. DIVE CLUB
TO: EXECUTIVE OFFICER, U. S. NAVAL STATION, MIDWAY ISLAND

SUBJ: OVERNIGHT NIGHT DIVE ON EASTERN ISLAND

RESPECTFULLY REQUEST PERMISSION TO CONDUCT AN OVERNIGHT NIGHT
DIVE ON EASTERN ISLAND ON 28 May 1977. ALL
REGULATIONS AND SAFETY PRECAUTIONS AS STATED IN THE KORAL KINGS
BY-LAWS WILL BE STRICTLY ADHERED TO.

DATE: 28 May 1977

REASON: Tag turtles/ research

HIGH TIDE: 0:158 SUN Morning TIME OF DIVE: Appr. 1800

LOW TIDE: 20:49

DURATION: Three hours

SUNSET: 2045

TRANSPORTATION REQUIRED: (YES) OR NO

MOON PHASE: Half

MIKE BOAT REQUIRED TO GO OVER AT
APPROX. 1800 AND RETURN AT 0800
ON 29 MAY 77

Raymond J. ...

KORAL KINGS SAFETY OFFICER

1. [Signature] Pres. KK

APPROVED

DISAPPROVED

2. [Signature]

APPROVED

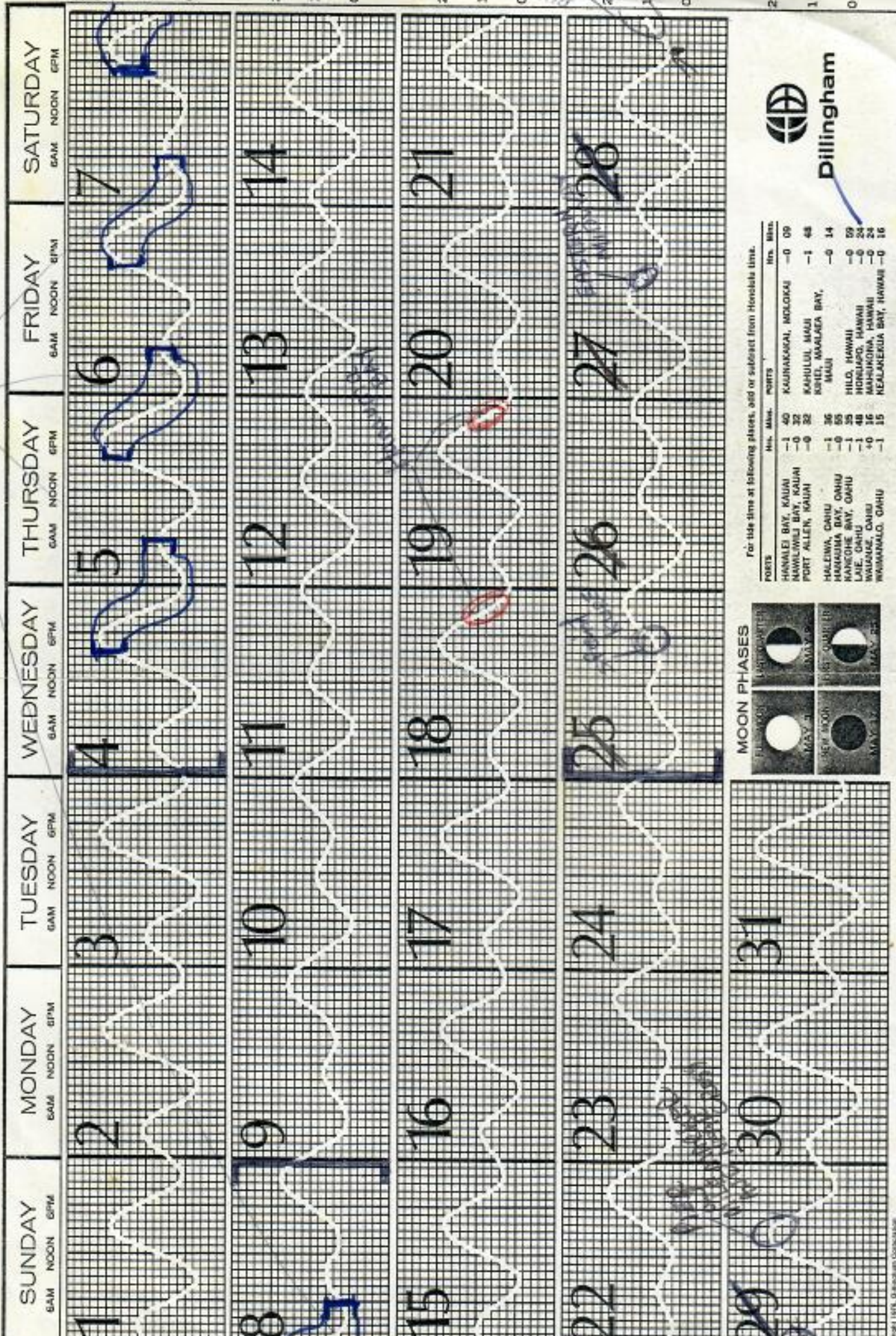
DISAPPROVED

Note; George Balaza will also be present.

NOTE. MUST BE 18 YEARS OF AGE OR HAVE A SPONSOR TO
PARTICIPATE.

MAY 1977 TIDE CHART

*ought on
upcoming (Koolau
and Puna) ?*



MOON PHASES



For tide time at following places, add or subtract from Honolulu time.

PORTS	Hrs. Min.	PORTS	Hrs. Min.
HONOLULU BAY, KAUAI	-1 40	KAUNAKAKAI, MOLOKAI	-0 09
MAWILIWI BAY, KAUAI	-0 32	KAHULUI MAUI	-1 48
PORT ALLEN, KAUAI	-0 52	KAIHI, MAUI	-0 14
HALEIWA, OAHU	-1 36	HILO, HAWAII	-0 09
HONOLULU BAY, OAHU	-0 55	HONOLULU, HAWAII	-0 24
LAIE, OAHU	-1 48	MAHUKONA, HAWAII	-0 24
WAIKOLE, OAHU	+0 16	KEALAKEUA BAY, HAWAII	-0 16
WAIMANALO, OAHU	-1 15		



Pillingham

*check tide difference
between Honolulu - Kure - m. away*





Sunday S-B/Adv. JAN 30, 1977

Midway's Feathered Folk

Most towns with any self-respect have some kind of statue in the middle of town, usually erected to honor some person or to commemorate an event. But on Midway Island, the town square is dominated by a 10-foot statue—of an albatross.

No, the albatross didn't sound an alarm and save the populace from a hurricane, nor did it scoop up a tiny child and rescue it from an oncoming car, thus earning the undying gratitude of the residents.

The people on Midway just happen to dig albatross, the soft, gentle birds that come to their islands, 250,000 strong, every November to mate and sit out the winter.

THE RESIDENTS sort of give up their islands to the albatrosses, and are very solicitous of their transitory friends, making sure their nests are not disturbed and even going so far as to construct shelters to keep rain off the nests. The nests are like small craters, which the birds make in the dirt — in public areas, backyards, frontyards — they're not picky.

According to Palmer Sekora, refuge manager

for Hawaiian and Pacific islands with the U.S. Fish and Wildlife Service, some of the Midway folks are like surrogate parents to the albatross and their fledglings.

The gooney birds, as the albatross are affectionately called, come to Midway from their homes in the Aleutians, Japan or the Mainland United States, several thousand miles away. The two species that winter on Midway are the blackfoot and Laysan albatross, and one lone short-tailed albatross, who is of a very rare species.

THE SHORT-TAILED albatross is one of only 60 known adults and 12 young that usually nest on Torishima Island off Japan. But the poor short-tailed fellow got his signals crossed somewhere along the way, and for the past five winters has winged his way to Midway.

Every year he tries to interact, in the parlance of bird people, with the blackfoot albatross. But every year they reject the short-tail, like he has a terminal case of body odor, and he must spend the winter in lonely solitude, his only friend the 10-foot statue.

Star-Bulletin Photos by Ron Edmonds

