

**JOB PROGRESS REPORT
DEVELOPMENT PROJECT SEGMENT**

STATE: Territory of Guam

PROJECT NO: F-3-D
SEGMENT: 1

PROJECT TITLE: Maintenance and Redeployment of DAWR FADs and SWMs (2331)

PERIOD COVERED: October 1, 1996 to September 30, 1997

OBJECTIVES

1. To maintain, preserve and efficiently replace DAWR's fish aggregating devices.
2. To maintain, preserve and efficiently replace DAWR's shallow water moorings.

SUMMARY

FADs

Figure 1 lists the respective coordinates of the thirteen operational FADs and maps their approximate locations. Figure 2 diagrams the design and construction of the FAD system presently being used at each of the sites.

Five FADs came off station in FY97, the Number 4 site accounting for two of the losses. Three of the lost FADs were recovered shortly after they were reported missing. A fourth buoy was recovered by the Japanese Coast Guard on 8/29/97 approximately 840 miles north-northwest of Guam. This FAD is believed to be either the Umatac FAD lost in January, 1996, or the Number 4 FAD lost sometime around April, 1997. Neither of these FADs were deployed with a specific site decal affixed to the buoy.

Interestingly, all four recovered FADs broke off at a depth of between 250 and 575 feet. Considering that these breaks did not occur in either the upper- or lower-mooring hardware, or at any of the splices, the likely causes for failure are narrowed down to either fish-bite or hook and line damage. Plans are thus being made to provide some practical form of protection for the upper-mooring rope in the 100 to 750-foot depth range.

The average time on station for the FADs for FY97 was between 18 and 20 months; roughly a 5-month increase from the FY96 average of just over 13 months. The expansion of the FAD program from four to twelve sites between FY94 and FY95, and the fact that eight newly-deployed buoys were included in calculating the FY96 figure, best explains the previous year's shorter average time on station.

The average cost for the installation each 500-fathom FAD system in FY97 was \$7,802.41 (Table 1). A 1,000-fathom FAD system costs an extra \$1,770.00 due to the additional 3,000 feet of polypropylene rope necessary to complete the system. Table 2 provides a summary of recovery and buoy and light replacement activity requiring the use of an offshore vessel and the associated cost for services.

Table 1. FY97 Average Cost per 500-Fathom FAD System

<u>Item/Service</u>	<u>Cost</u>
Buoy	\$518.50
Buoy Preparation*	\$494.00
Anchor Block	\$368.96
Mooring System (500 fathoms)**	\$4,138.90
Navigation Light and Batteries	\$242.93
<u>Loading and Deployment</u>	<u>\$2,039.12</u>
Total:	\$7,802.41

* Includes sanding, painting, welding and moving services.

** Additional \$1,770.00 for 1000-fathom system

Table 2. FY97 Offshore Vessel Activity and Costs

<u>Activity</u>	<u>Date</u>	<u>Cost</u>
Recovery of Facpi FAD	11/28/96	\$852.00
Recovery of Fadian FAD	12/12/96	\$1,571.00
Replace lights: Nos. 1-4	03/17/97	\$1,290.00
Redeploy Facpi FAD; replace 9-mile and Umatac FAD lights	03/18/97	\$ 2,412.00
Redeploy No. 4 & No. 5 FADs; replace lights: Nos. 1-3	06/23/97	\$ 3,334.00
Recovery of No. 4 FAD	08/08/97	\$ 1,073.00
Redeploy Cocos and Fadian FADs; replace lights: Asiga, 9-mile, Umatac FADs	09/05/97	\$ 4,764.00
Redeploy No. 4 FAD; replace lights: Nos. 5-6	(scheduled)09/30/97	\$2,755.00

SHALLOW WATER MOORINGS (SWMS)

There was no maintenance or replacement activity recorded for the SWM project in FY97. Installation of SWMs is expected to begin sometime in mid-FY98.

RECOMMENDATIONS

The project to maintain and reinstall FADs and SWMs should be continued with the following recommendations for FY98:

1. Reestablish the open account to prepare FAD systems for deployment, conduct actual deployments, recover errant buoys, and perform on-site replacement of expired navigation lights and worn FAD buoys on an as-is-needed basis.
2. Identify and contract a private vendor to conduct SWM maintenance and reinstallation services on a short notice and as-is-needed basis similar to that of the FAD project.
3. Reorder buoys, concrete anchors, ropes, chains and other miscellaneous mooring hardware to establish an inventory sufficient to replace up to ten 500-fathom FAD systems and twenty 10-fathom SWM systems .
4. Repair the Division's existing work-boat to allow for some minor maintenance routines to be conducted until the arrival of the new work vessel.
5. Establish and maintain an inventory of other miscellaneous equipment, supplies and materials, such as navigation lights and batteries, necessary for both the FAD and SWM projects.

PROGRAM COST

The FY97 estimated cost for the project to continue maintenance and reinstallation of FADs and SWMs is \$85,941.

This report was prepared by Andrew A. Torres:

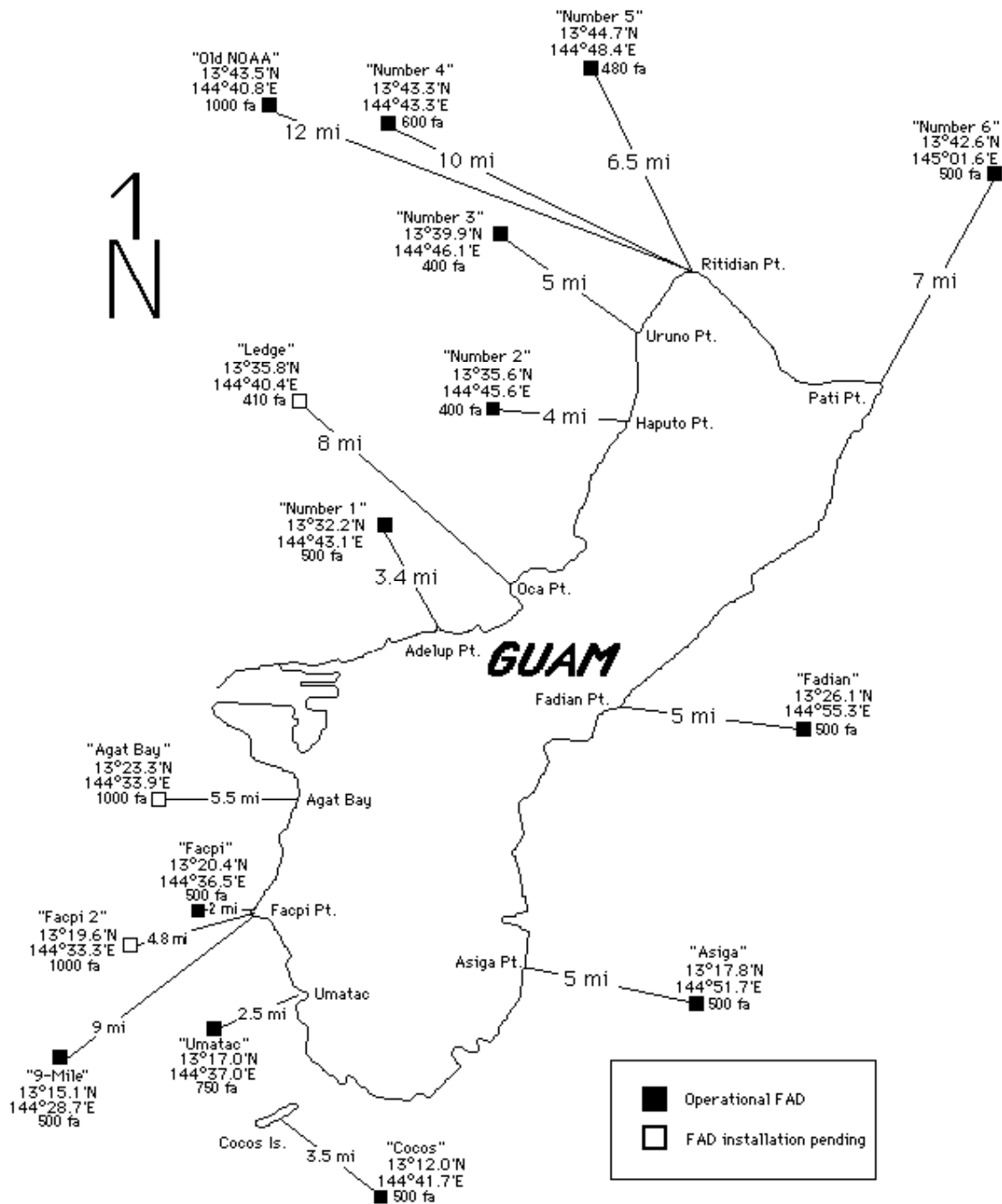


Figure 1. DAWR FAD Sites

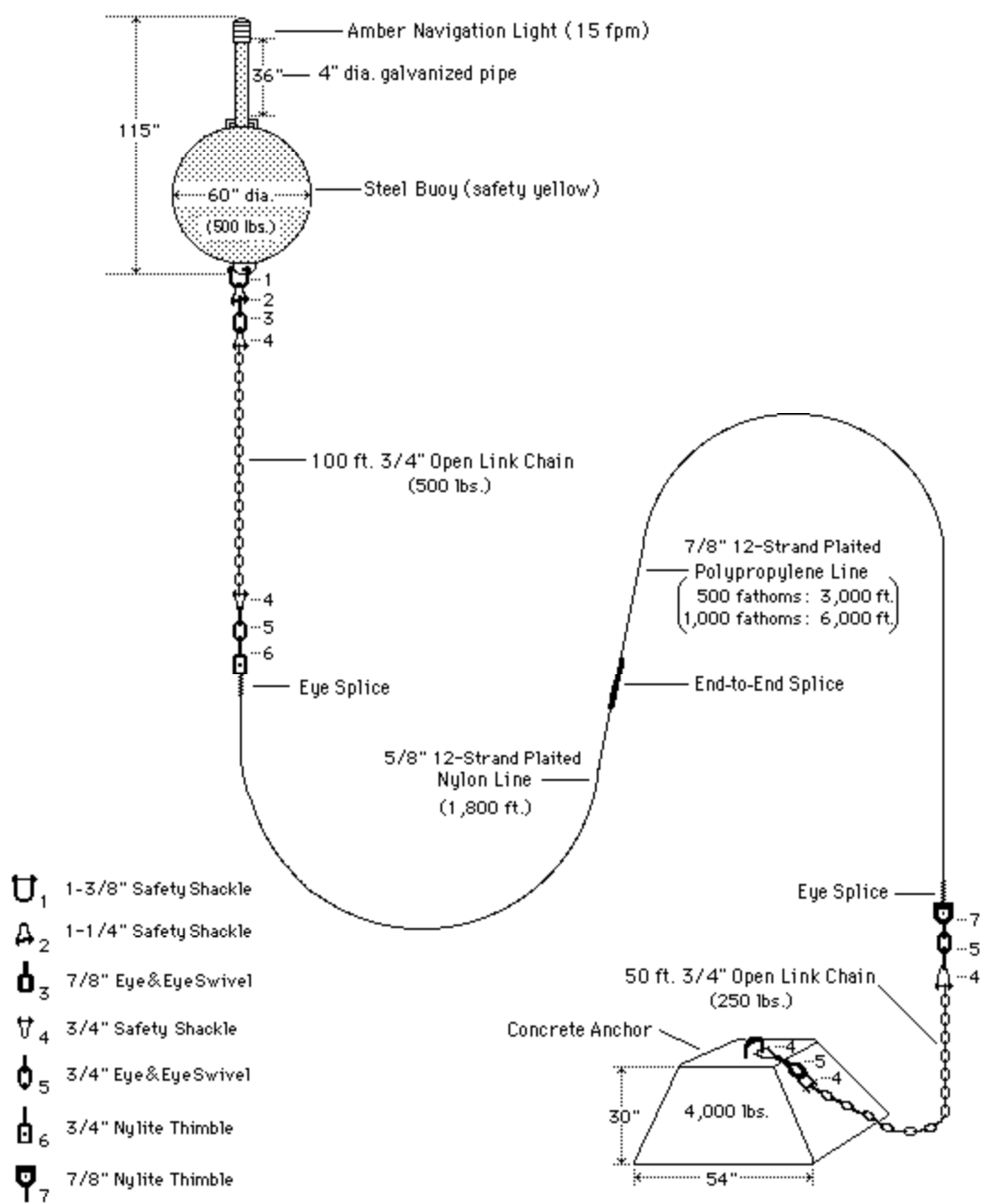


Figure 2. FAD with Spherical Steel Buoy