



GENERAL SERVICES AGENCY
(Aghensian Setbision Hinirat)

Government of Guam

148 Route 1 Marine Drive, Piti Guam 96915

Tel: 475-1713 * Telefax: 472-4217; 475-1716; 475-1727

Accountability	*	Impartiality	*	Competence	*	Openness	*	Value
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INVITATION FOR BID NO. : GSA-092-14

DESCRIPTION:

DEPLOYMENT OF (FAD) SYSTEM, AND
ERRANT FAD SYSTEM RECOVERY

SPECIAL REMINDER TO PROSPECTIVE BIDDERS

Bidders are reminded to read the Sealed Bid Solicitation and Instructions, and General Terms and Conditions attached to the IFB to ascertain that all of the following requirements checked below are submitted in the bid envelope, in duplicate, at the date and time for bid opening.

(X) **BID GUARANTEE (15% of Bid Amount) May be in the form of;
Reference #11 on the General Terms and Conditions**

- a. Cashier's Check or Certified Check
- b. Letter of Credit
- c. Surety Bond – Valid only if accompanied by:

- 1. Current Certificate of Authority issued by the Insurance Commissioner;
- 2. Power of Attorney issued by the Surety to the Resident General Agent;
- 3. Power of Attorney issued by two (2) major officers of the Surety to whoever is signing on their behalf.

(X) **BROCHURES/DESCRIPTIVE LITERATURE;**

(X) **AFFIDAVIT DISCLOSING OWNERSHIP and COMMISSION**

- a. Date of signature of the person authorized to sign the bid and the notary date must be the same.

(X) **OTHER REQUIREMENTS:**

Non-Collusion Affidavit, D.O.L. Wage Determination Affidavit, Restriction against Sexual Offenders Affidavit, No Kickbacks or Gratuities Affidavit and Ethical Standards Affidavit, and Affidavit re Contingent Fees

This reminder must be signed and returned in the bid envelope together with the bid. Failure to comply with the above requirements may be cause for disqualification and rejection of the bid.

On this _____ day of _____, 2014, I, _____,

authorized representative of _____ acknowledge receipt of this special reminder to prospective bidders with the above referenced IFB.

Bidder Representative's Signature

Invitation for Bid: GSA-092-14

DEPLOYMENT OF (FAD) SYSTEM, AND
ERRANT FAD SYSTEM RECOVERY

ACKNOWLEDGEMENT RECEIPT FORM

Please be advised that to be considered a prospective bidder you must fill out this Acknowledgement receipt form. Please submit via facsimile to 475-1727.

Acknowledgement Receipt Form must be submitted no later than three (3) days from issued date.

Name _____

Signature _____

Date _____

Time _____

Contact Number _____

Fax Number _____

Contact Person regarding IFB _____

Title _____

E-Mail Address _____

Company/Firm _____

Address _____

GSA will not be liable for failure to provide notice to any party who did not register contact information.

All questions and concerns must be submitted via facsimile by 8-11-14 before the close of business.

INVITATION FOR BID

ISSUING OFFICE:

GENERAL SERVICES AGENCY
GOVERNMENT OF GUAM
148 ROUTE 1, MARINE DRIVE
PITI, GUAM 96915

DA N V 7/2/14
CLAUDIA S. ACFALLE
Chief Procurement Officer

DATE ISSUED: 8-4-14

BID INVITATION NO: GSA-092-14

BID FOR: DEPLOYMENT OF FAD SYSTEM & ERRANT FAD SYSTEM RECOVERY

SPECIFICATION: See Attached

DESTINATION: DEPARTMENT OF AGRICULTURE

REQUIRED DELIVERY DATE: 45 Days Upon Receipt of a Purchase Order. For a period of one (1) year on an as needed basis upon availability of funds. (This is an indefinite quantity bid)

INSTRUCTION TO BIDDERS:

INDICATE WHETHER: INDIVIDUAL PARTNERSHIP CORPORATION

INCORPORATED IN: _____

This bid shall be submitted in duplicate and sealed to the issuing office above no later than (Time) 11:00am, Date: 8-19-14 and shall be publicly opened. Bid submitted after the time and date specified above shall be rejected. See attached General Terms and Conditions, and Sealed Bid Solicitation for details.

The undersigned offers and agrees to furnish within the time specified, the articles and services at the price stated opposite the respective items listed on the schedule provided, unless otherwise specified by the bidder. In consideration to the expense of the Government in opening, tabulating, and evaluating this and other bids, and other considerations, the undersigned agrees that this bid remain firm and irrevocable within 60 calendar days from the date opening to supply any or all the items which prices are quoted.

NAME AND ADDRESS OF BIDDER: _____

SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS BID: _____

AWARD: CONTRACT NO.: _____ AMOUNT: _____ DATE: _____

ITEM NO(S). AWARDED: _____

CONTRACTING OFFICER:

CLAUDIA S. ACFALLE
Chief Procurement Officer

NAME AND ADDRESS OF CONTRACTOR: _____

SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS CONTRACT: _____

SPECIAL PROVISIONS

This is an "Indefinite Quantity Bid" pursuant to Section 3119(i)(2) of the 2GAR Procurement Regulations. The quantities reflected are estimated requirements projected within a twelve (12) month period. These amounts may increase during the term of this bid. However, regardless of the fluctuation of quantities, this bid shall be subject to the availability of funds.

Delivery:

45 Days upon receipt of purchase order. Schedule time and quantity will be coordinated between the successful bidder and the requesting department on an as needed basis.

Contract Period:

The term of this contract is for a period of one (1) year on an as needed basis upon availability of funds

Additional Requirement:

In the event that other agencies within the Government of Guam, having the same requirements, upon notifications and acceptance of the additional requirements, the effective price of said bid, shall be used as a confirm price. This additional requirement shall not exceed the term of this bid.

AFFIDAVIT re NO GRATUITIES or KICKBACKS

TERRITORY OF GUAM)
) ss.
HAGATNA, GUAM)

_____ [state name of affiant signing below], being first duly sworn, deposes and says that:

1. The name of the offering firm or individual is [state name of offeror company] _____ [state one of the following: the offeror, a partner of the offeror, an officer of the offeror] making the foregoing identified bid or proposal. Affiant is _____.
2. To the best of affiant's knowledge, neither affiant, nor any of the offerors officers, representatives, agents, subcontractors, or employees have violated, are violating the prohibition against gratuities and kickbacks set forth in 2 GAR Division 4 § 11107(e). Further, affiant promises, on behalf of offeror, not to violate the prohibition against gratuities and kickbacks as set forth in 2 GAR Division 4 § 11107(e).
3. To the best of affiant's knowledge, neither affiant, nor any of the offerors officers, representatives, agents, subcontractors, or employees have offered, given or agreed to give, any government of Guam employee or former government employee, any payment, gift, kickback, gratuity or offer of employment in connection with the offerors proposal.
4. I make these statements on behalf of myself as a representative of the offeror, and on behalf of the offerors officers, representatives, agents, subcontractors, and employees.

Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me
this ____ day of _____, 201__.

NOTARY PUBLIC
My commission expires _____.

Eddie Baza Calvo

Governor



Benita Manglona

Director, Dept. of Admin.

GENERAL SERVICES AGENCY

Government of Guam
148 Route 1 Marine Drive Corp
Piti, Guam 96915

Ray Tenorio

Lt. Governor

Anthony C. Blaz

Deputy Director

Special Provisions

Restriction against Sex Offenders Employed by service providers to Government of Guam from working on Government Property.

If a contract for services is awarded to the bidder or offeror, then the service provider must warranty that no person in its employment who has been convicted of a sex offense under the provisions of chapter 25 of Title 9 of Guam code Annotated or of an offense defined in Article 2 of chapter 28 of Title 9 of the Guam Code annotated, or who has been convicted in any other jurisdiction of an offense with the same elements as heretofore defined, or who is listed on the Sex Offender Registry, shall provide services on behalf of the service provider while on government of Guam property, with the exception of public highways. If any employee of a service provider is providing services on government property and is convicted subsequent to an award of a contract, then the service provider warrants that it will notify the Government of the conviction within twenty-four (24) hours of the conviction, and will immediately remove such convicted person from providing services on government property. If the service provider is found to be in violation of any of the provisions of this paragraph, then the government will give notice to the service provider to take corrective action. The service provider shall take corrective action within twenty-four (24) hours of notice from the Government, and the service provider shall notify the Government when action has been taken. If the service providers fail to take corrective steps within twenty-four (24) hours of notice from the Government, then the Government in its sole discretion may suspend temporarily and contract for services until corrective action has been taken.

Signature of Bidder
Proposer, if an individual;
Partner, if a partnership;
Officer, if a corporation.

Date

Subscribed and sworn before me this _____ day of _____, 2014

Notary Public

Eddie Baza Calvo
Governor

GENERAL SERVICES AGENCY
Government of Guam
148 Route 1 Marine Drive Corp
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Ray Tenorio
Lt. Governor



Benita Manglona
Director, Dept. of Admin.

Anthony C. Blaz
Deputy Director

FORM E
DECLARATION RE COMPLIANCE WITH U.S. D.O.L. WAGE DETERMINATION

Procurement No: _____
DEPLOYMENT OF FAD SYSTEM AND ERRANT FAD SYSTEM RECOVERY

Name of Offeror Company: _____ hereby certifies under penalty of perjury:

- (1) That I am _____ (the offeror, a partner of the offeror, an officer of the offeror) making the bid or proposal in the foregoing identified procurement;
- (2) That I have read and understand the provisions of 5 GCA § 5801 and § 5802 which read:

§ 5801. Wage Determination Established.

In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation ("contractor") for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.

The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.

§ 5802. Benefits.

In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.

- (3) That the offeror is in full compliance with 5 GCA § 5801 and § 5802, as may be applicable to the procurement referenced herein;
- (4) That I have attached the most recent wage determination applicable to Guam issued by the U.S. Department of Labor. [INSTRUCTIONS – Please attach!]

Signature

Date

REGISTER OF WAGE DETERMINATIONS UNDER U.S. DEPARTMENT OF LABOR
 THE SERVICE CONTRACT ACT EMPLOYMENT STANDARDS ADMINISTRATION
 By direction of the Secretary of Labor WAGE AND HOUR DIVISION
 WASHINGTON D.C. 20210

Diane C. Koplewski Division of Wage Determination No.: 2005-2148
 Director Wage Determinations Revision No.: 17
 Date Of Revision: 06/19/2013

States: Guam, Northern Marianas, Wake Island

Area: Guam Statewide
 Northern Marianas Statewide
 Wake Island Statewide

Fringe Benefits Required Follow the Occupational Listing		FOOTNOTE	RATE
OCCUPATION CODE - TITLE			
01000 - Administrative Support And Clerical Occupations			
01011 - Accounting Clerk I			12.50
01012 - Accounting Clerk II			13.53
01013 - Accounting Clerk III			15.59
01020 - Administrative Assistant			17.67
01040 - Court Reporter			15.38
01051 - Data Entry Operator I			10.48
01052 - Data Entry Operator II			11.99
01060 - Dispatcher, Motor Vehicle			13.06
01070 - Document Preparation Clerk			12.25
01090 - Duplicating Machine Operator			12.25
01111 - General Clerk I			10.29
01112 - General Clerk II			11.28
01113 - General Clerk III			12.32
01120 - Housing Referral Assistant			17.15
01141 - Messenger Courier			10.12
01191 - Order Clerk I			11.23
01192 - Order Clerk II			12.25
01261 - Personnel Assistant (Employment) I			14.33
01262 - Personnel Assistant (Employment) II			14.90
01263 - Personnel Assistant (Employment) III			16.48
01270 - Production Control Clerk			18.34
01280 - Receptionist			9.67
01290 - Rental Clerk			11.10
01300 - Scheduler, Maintenance			13.75
01311 - Secretary I			13.75
01312 - Secretary II			15.38
01313 - Secretary III			17.15
01320 - Service Order Dispatcher			11.57
01410 - Supply Technician			17.67
01420 - Survey Worker			15.26
01531 - Travel Clerk I			11.61
01532 - Travel Clerk II			12.57
01533 - Travel Clerk III			13.44
01611 - Word Processor I			12.25
01612 - Word Processor II			13.75
01613 - Word Processor III			15.38
05000 - Automotive Service Occupations			
05005 - Automobile Body Repairer, Fiberglass			13.34
05010 - Automotive Electrician			13.06
05040 - Automotive Glass Installer			12.10
05070 - Automotive Worker			12.10
05110 - Mobile Equipment Servicer			8.59
05130 - Motor Equipment Metal Mechanic			13.06
05160 - Motor Equipment Metal Worker			12.10
05190 - Motor Vehicle Mechanic			13.06
05220 - Motor Vehicle Mechanic Helper			10.12
05250 - Motor Vehicle Upholstery Worker			12.10
05280 - Motor Vehicle Wrecker			12.10
05310 - Painter, Automotive			12.37
05340 - Radiator Repair Specialist			12.10
05370 - Tire Repairer			7.81
05400 - Transmission Repair Specialist			12.10

07000 - Food Preparation And Service Occupations	
07010 - Baker	10.47
07041 - Cook I	9.54
07042 - Cook II	11.78
07070 - Dishwasher	7.25
07130 - Food Service Worker	7.78
07210 - Meat Cutter	11.86
07260 - Waiter/Waitress	7.59
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	14.38
09040 - Furniture Handler	8.85
09080 - Furniture Refinisher	14.38
09090 - Furniture Refinisher Helper	10.66
09110 - Furniture Repairer, Minor	12.51
09130 - Upholsterer	14.38
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	8.23
11060 - Elevator Operator	8.23
11090 - Gardener	10.99
11122 - Housekeeping Aide	8.33
11150 - Janitor	8.23
11210 - Laborer, Grounds Maintenance	9.14
11240 - Maid or Houseman	7.25
11260 - Pruner	8.23
11270 - Tractor Operator	10.33
11330 - Trail Maintenance Worker	9.14
11360 - Window Cleaner	9.14
12000 - Health Occupations	
12010 - Ambulance Driver	15.81
12011 - Breath Alcohol Technician	15.81
12012 - Certified Occupational Therapist Assistant	21.70
12015 - Certified Physical Therapist Assistant	21.70
12020 - Dental Assistant	13.20
12025 - Dental Hygienist	29.85
12030 - EKG Technician	23.96
12035 - Electroneurodiagnostic Technologist	23.96
12040 - Emergency Medical Technician	15.81
12071 - Licensed Practical Nurse I	14.14
12072 - Licensed Practical Nurse II	15.81
12073 - Licensed Practical Nurse III	17.63
12100 - Medical Assistant	11.54
12130 - Medical Laboratory Technician	14.14
12160 - Medical Record Clerk	11.82
12190 - Medical Record Technician	13.59
12195 - Medical Transcriptionist	14.14
12210 - Nuclear Medicine Technologist	34.75
12221 - Nursing Assistant I	10.03
12222 - Nursing Assistant II	11.30
12223 - Nursing Assistant III	12.31
12224 - Nursing Assistant IV	13.84
12235 - Optical Dispenser	15.81
12236 - Optical Technician	14.14
12250 - Pharmacy Technician	13.41
12280 - Phlebotomist	13.84
12305 - Radiologic Technologist	22.64
12311 - Registered Nurse I	20.70
12312 - Registered Nurse II	25.32
12313 - Registered Nurse II, Specialist	25.32
12314 - Registered Nurse III	30.64
12315 - Registered Nurse III, Anesthetist	30.64
12316 - Registered Nurse IV	36.72
12317 - Scheduler (Drug and Alcohol Testing)	19.59
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	15.06
13012 - Exhibits Specialist II	18.66
13013 - Exhibits Specialist III	22.83
13041 - Illustrator I	15.06
13042 - Illustrator II	18.66
13043 - Illustrator III	22.83
13047 - Librarian	20.66
13050 - Library Aide/Clerk	12.00
13054 - Library Information Technology Systems Administrator	18.66
13058 - Library Technician	15.06
13061 - Media Specialist I	13.46
13062 - Media Specialist II	15.06
13063 - Media Specialist III	16.80

13071 - Photographer I	12.82
13072 - Photographer II	14.32
13073 - Photographer III	17.75
13074 - Photographer IV	21.73
13075 - Photographer V	26.30
13110 - Video Teleconference Technician	12.91
14000 - Information Technology Occupations	
14041 - Computer Operator I	13.65
14042 - Computer Operator II	15.76
14043 - Computer Operator III	17.56
14044 - Computer Operator IV	19.50
14045 - Computer Operator V	21.81
14071 - Computer Programmer I	15.73
14072 - Computer Programmer II	19.50
14073 - Computer Programmer III	23.84
14074 - Computer Programmer IV	
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	(see 1)
14160 - Personal Computer Support Technician	(see 1)
15000 - Instructional Occupations	24.23
15010 - Aircrew Training Devices Instructor (Non-Rated)	13.65
15020 - Aircrew Training Devices Instructor (Rated)	19.50
15030 - Air Crew Training Devices Instructor (Pilot)	24.23
15050 - Computer Based Training Specialist / Instructor	22.82
15060 - Educational Technologist	33.30
15070 - Flight Instructor (Pilot)	20.47
15080 - Graphic Artist	17.65
15090 - Technical Instructor	21.58
15110 - Test Proctor	13.87
15120 - Tutor	13.87
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations	
16010 - Assembler	8.08
16030 - Counter Attendant	8.08
16040 - Dry Cleaner	9.34
16070 - Finisher, Flatwork, Machine	8.08
16090 - Presser, Hand	8.08
16110 - Presser, Machine, Dry-Cleaning	8.08
16130 - Presser, Machine, Shirts	8.08
16160 - Presser, Machine, Wearing Apparel, Laundry	8.08
16190 - Sewing Machine Operator	9.86
16220 - Tailor	10.33
16250 - Washer, Machine	8.46
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	14.49
19040 - Tool And Die Maker	18.20
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	12.49
21030 - Material Coordinator	18.34
21040 - Material Expediter	18.34
21050 - Material Handling Laborer	10.65
21071 - Order Filler	9.66
21080 - Production Line Worker (Food Processing)	12.49
21110 - Shipping Packer	13.33
21130 - Shipping/Receiving Clerk	13.33
21140 - Store Worker I	13.23
21150 - Stock Clerk	18.58
21210 - Tools And Parts Attendant	12.49
21410 - Warehouse Specialist	12.49
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	20.69
23021 - Aircraft Mechanic I	19.70
23022 - Aircraft Mechanic II	20.69
23023 - Aircraft Mechanic III	21.74
23040 - Aircraft Mechanic Helper	13.70
23050 - Aircraft, Painter	18.50
23060 - Aircraft Servicer	16.09
23080 - Aircraft Worker	17.38
23110 - Appliance Mechanic	14.49
23120 - Bicycle Repairer	9.74
23125 - Cable Splicer	15.43
23130 - Carpenter, Maintenance	13.00
23140 - Carpet Layer	13.55

23160 - Electrician, Maintenance	14.99
23181 - Electronics Technician Maintenance I	14.72
23182 - Electronics Technician Maintenance II	15.05
23183 - Electronics Technician Maintenance III	18.31
23260 - Fabric Worker	12.60
23290 - Fire Alarm System Mechanic	15.43
23310 - Fire Extinguisher Repairer	11.67
23311 - Fuel Distribution System Mechanic	15.43
23312 - Fuel Distribution System Operator	13.01
23370 - General Maintenance Worker	11.95
23380 - Ground Support Equipment Mechanic	19.70
23381 - Ground Support Equipment Servicer	16.09
23382 - Ground Support Equipment Worker	17.38
23391 - Gunsmith I	11.67
23392 - Gunsmith II	13.55
23393 - Gunsmith III	15.43
23410 - Heating, Ventilation And Air-Conditioning Mechanic	15.76
23411 - Heating, Ventilation And Air Conditioning Mechanic (Research Facility)	16.55
23430 - Heavy Equipment Mechanic	15.15
23440 - Heavy Equipment Operator	13.73
23460 - Instrument Mechanic	15.43
23465 - Laboratory/Shelter Mechanic	14.49
23470 - Laborer	10.65
23510 - Locksmith	14.49
23530 - Machinery Maintenance Mechanic	17.38
23550 - Machinist, Maintenance	15.43
23580 - Maintenance Trades Helper	9.92
23591 - Metrology Technician I	15.43
23592 - Metrology Technician II	16.41
23593 - Metrology Technician III	17.37
23640 - Millwright	15.43
23710 - Office Appliance Repairer	14.38
23760 - Painter, Maintenance	13.55
23790 - Pipefitter, Maintenance	15.32
23810 - Plumber, Maintenance	14.38
23820 - Pneudraulic Systems Mechanic	15.43
23850 - Rigger	15.43
23870 - Scale Mechanic	13.55
23890 - Sheet-Metal Worker, Maintenance	15.21
23910 - Small Engine Mechanic	13.55
23931 - Telecommunications Mechanic I	19.01
23932 - Telecommunications Mechanic II	19.76
23950 - Telephone Lineman	18.24
23960 - Welder, Combination, Maintenance	14.66
23965 - Well Driller	15.43
23970 - Woodcraft Worker	15.43
23980 - Woodworker	11.67
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	10.09
24580 - Child Care Center Clerk	12.58
24610 - Chore Aide	12.43
24620 - Family Readiness And Support Services Coordinator	12.44
24630 - Homemaker	16.12
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	15.43
25040 - Sewage Plant Operator	14.49
25070 - Stationary Engineer	15.43
25190 - Ventilation Equipment Tender	10.73
25210 - Water Treatment Plant Operator	14.49
27000 - Protective Service Occupations	
27004 - Alarm Monitor	10.90
27007 - Baggage Inspector	7.35
27008 - Corrections Officer	12.05
27010 - Court Security Officer	12.05
27030 - Detection Dog Handler	10.90
27040 - Detention Officer	12.05
27070 - Firefighter	12.05
27101 - Guard I	7.37
27102 - Guard II	10.90
27131 - Police Officer I	12.05
27132 - Police Officer II	13.40

28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	9.53
28042 - Carnival Equipment Repairer	10.08
28043 - Carnival Equipment Worker	7.78
28210 - Gate Attendant/Gate Tender	13.18
28310 - Lifeguard	11.01
28350 - Park Attendant (Aide)	14.74
28510 - Recreation Aide/Health Facility Attendant	10.76
28515 - Recreation Specialist	18.26
28630 - Sports Official	11.74
28690 - Swimming Pool Operator	17.71
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	15.20
29020 - Hatch Tender	15.20
29030 - Line Handler	15.20
29041 - Stevedore I	14.22
29042 - Stevedore II	16.25
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO)	35.77
30011 - Air Traffic Control Specialist, Station (HFO)	24.66
30012 - Air Traffic Control Specialist, Terminal (HFO)	27.16
30021 - Archeological Technician I	17.49
30022 - Archeological Technician II	19.56
30023 - Archeological Technician III	24.21
30030 - Cartographic Technician	23.18
30040 - Civil Engineering Technician	21.93
30061 - Drafter/CAD Operator I	17.49
30062 - Drafter/CAD Operator II	19.56
30063 - Drafter/CAD Operator III	20.74
30064 - Drafter/CAD Operator IV	24.21
30081 - Engineering Technician I	14.62
30082 - Engineering Technician II	16.41
30083 - Engineering Technician III	18.36
30084 - Engineering Technician IV	22.34
30085 - Engineering Technician V	27.83
30086 - Engineering Technician VI	33.66
30090 - Environmental Technician	21.10
30210 - Laboratory Technician	20.74
30240 - Mathematical Technician	23.34
30361 - Paralegal/Legal Assistant I	19.06
30362 - Paralegal/Legal Assistant II	21.53
30363 - Paralegal/Legal Assistant III	26.35
30364 - Paralegal/Legal Assistant IV	30.80
30390 - Photo-Optics Technician	21.93
30461 - Technical Writer I	22.17
30462 - Technical Writer II	27.10
30463 - Technical Writer III	32.79
30491 - Unexploded Ordnance (UXO) Technician I	22.74
30492 - Unexploded Ordnance (UXO) Technician II	27.51
30493 - Unexploded Ordnance (UXO) Technician III	32.97
30494 - Unexploded (UXO) Safety Escort	22.74
30495 - Unexploded (UXO) Sweep Personnel	22.74
30620 - Weather Observer, Combined Upper Air Or	20.74
Surface Programs	
30621 - Weather Observer, Senior	23.00
31000 - Transportation/Mobile Equipment Operation Occupations	
31020 - Bus Aide	8.15
31030 - Bus Driver	9.69
31043 - Driver Courier	8.97
31260 - Parking and Lot Attendant	7.25
31290 - Shuttle Bus Driver	9.99
31310 - Taxi Driver	8.21
31361 - Truck-driver, Light	8.97
31362 - Truck-driver, Medium	11.61
31363 - Truck-driver, Heavy	12.48
31364 - Truck-driver, Tractor-Trailer	12.48
99000 - Miscellaneous Occupations	
99030 - Cashier	7.46
99050 - Desk Clerk	9.70
99095 - Embalmer	22.74
99251 - Laboratory Animal Caretaker I	16.24
99252 - Laboratory Animal Caretaker II	17.04
99310 - Mortician	22.74
99410 - Pest Controller	13.28

99510 - Photofinishing Worker	11.95
99710 - Recycling Laborer	10.76
99711 - Recycling Specialist	16.27
99730 - Refuse Collector	10.24
99810 - Sales Clerk	8.95
99820 - School Crossing Guard	15.03
99830 - Survey Party Chief	20.30
99831 - Surveying Aide	11.54
99832 - Surveying Technician	15.00
99840 - Vending Machine Attendant	20.19
99841 - Vending Machine Repairer	23.57
99842 - Vending Machine Repairer Helper	20.19

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans. Minimum employer contributions costing an average of \$3.81 per hour computed on the basis of all hours worked by service employees employed on the contract.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; and 4 weeks after 3 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESSES RECEIVE THE FOLLOWING:

1) **COMPUTER EMPLOYEES:** Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

- (1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;
- (2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;
- (3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or
- (4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) **AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY:** If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am.

If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials.

This includes work such as screening, blending, dyeing, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A link to the Directory may be found on the WHD home page at <http://www.dol.gov/esa/whd/> or through the Wage Determinations On-Line (WDOL) Web site at <http://wdol.gov/>.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination.

Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C) (vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
 - 2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
 - 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
 - 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
 - 5) The contracting officer transmits the Wage and Hour decision to the contractor.
 - 6) The contractor informs the affected employees.
- Information required by the Regulations must be submitted on SF 1444 or bond paper.
- When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

AFFIDAVIT DISCLOSING OWNERSHIP and COMMISSION

TERRITORY OF GUAM)
) SS:
 HAGATNA, GUAM)

- A. I, the undersigned, being first duly sworn, depose and say that I am an authorized representative of the offeror and that [please check only one]:
- [] The offeror is an individual or sole proprietor and owns the entire (100%) interest in the offering business.
- [] The offeror is a corporation, partnership, joint venture, or association known as _____ [please state name of offeror company], and the persons, companies, partners, or joint venturers who have held more than 10% of the shares of interest in the offering business during the 365 days immediately preceding the submission date of the proposal are as follows [if none, please so state]

Name	Address	% of Interest
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- B. Further, I say that the persons who have received or are entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid or proposal for which this affidavit is submitted are as follows [if none, please so state]:
- | Name | Address | Compensation |
|-------|---------|--------------|
| _____ | _____ | _____ |
- C. If the ownership of the offering business should change between the time this affidavit is made and the time an award is made or a contract is entered into, then I promise personally to update the disclosure required by 5 GCA §5233 by delivering another affidavit to the government.

Signature of one of the following:
 Offeror, if the offeror is an individual;
 Partner, if the offeror is a partnership;
 Officer, if the offeror is a corporation.

Subscribed and sworn to before me
 this ____ day of _____, 201__.

NOTARY PUBLIC
 My commission expires _____

GOVERNMENT OF GUAM

GENERAL SERVICES AGENCY
148 Route 1, Marine Corp. Drive
Piti, Guam 96915

BID BOND
NO. _____

KNOW ALL MEN BY THESE PRESENTS that _____, as Principal hereinafter called the Principal, and (Bonding Company), _____, as A duly admitted insurer under the laws of the Territory of Guam, as Surety, hereinafter called the Surety are Held firmly bound unto the Territory of Guam for the sum of _____ Dollars (\$ _____), for Payment of which sum will and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for (identify project by number and brief description) _____

NOW, THEREFORE, if the Territory of Guam shall accept the bid of the Principal and the Principal shall enter into a Contract with the Territory of Guam in accordance with the terms of such bid, and give such bond or bonds as may be specified in bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Territory of Guam the difference not to exceed the penalty hereof between the amounts specified in said bid and such larger amount for which the Territory of Guam may in good faith contract with another party to perform work covered by said bid or an appropriate liquidated amount as specified in the Invitation for Bids then this obligation shall be null and void, otherwise to remain full force and effect.

Signed and sealed this _____ day of _____ 2014

(SEAL)

(PRINCIPAL)

(WITNESS)

(TITLE)

(MAJOR OFFICER OF SURETY)

(MAJOR OFFICER OF SURETY)

(TITLE)

(TITLE)

(RESIDENT GENERAL AGENT)

INSTRUCTION TO PROVIDERS:

NOTICE to all Insurance and Bonding Institutions:

The Bond requires the signatures of the Vendor, two (2) major Officers of the Surety and Resident General Agent, if the Surety is a foreign or alien surety.

When the form is submitted to General Services Agency, it should be accompanied with copies of The following:

1. Current Certificate of Authority to do business on Guam issued by the Department of Revenue and Taxation.
2. Power of Attorney issued by the Surety to the Resident General Agent.
3. Power of Attorney issued by two (2) major officers of the Surety to whoever is signing on their behalf.

Bonds, submitted as Bid Guarantee, without signatures and supporting documents are invalid and Bids will be rejected.

**GOVERNMENT OF GUAM
GENERAL TERMS AND CONDITIONS**

SEALED BID SOLICITATION AND AWARD

Only those Boxes checked below are applicable to this bid.

1. **AUTHORITY:** This solicitation is issued subject to all the provision of the Guam Procurement Act (5GCA, Chapter 5) and the Guam Procurement Regulations (copies of both are available at the Office of the Comptroller of Laws, Department of Law, copies available for inspection at General Services Agency). It requires all parties involved in the Preparation, negotiation, performance, or administration of contracts to act in good faith.
2. **GENERAL INTENTION:** Unless otherwise specified, it is the declared and acknowledged intention and meaning of these General Terms and conditions for the bidder to provide the Government of Guam (Government) with specified services or with materials, supplies or equipment completely assembled and ready for use.
3. **TAXES:** Bidders are cautioned that they are subject to Guam Income Taxes as well as all other taxes on Guam Transactions. Specific information on taxes may be obtained from the Director of Revenue and Taxation.
4. **LICENSING:** Bidders are cautioned that the Government will not consider for award any offer submitted by a bidder who has not complied with the Guam Licensing Law. Specific information on licenses may be obtained from the Director of Revenue and Taxation.
5. **LOCAL PROCUREMENT PREFERENCE:** All procurement of supplies and services where possible, will be made from among businesses licensed to do business on Guam in accordance with section 5008 of the Guam Procurement Act (5GCA, Chapter 5) and Section 1-104 of the Guam Procurement Regulations.
6. **COMPLIANCE WITH SPECIFICATIONS AND OTHER SOLICITATION REQUIREMENTS:**
Bidders shall comply with all specifications and other requirements of the Solicitation.
7. **“ALL OR NONE” BIDS:** NOTE: By checking this item, the Government is requesting all of the bid items to be bided or none at all. The Government will not award on an itemized basis.
8. **INDEPENDENT PRICE DETERMINATION:** The bidder, upon signing the Invitation for Bid, certifies that the prices in his bid were derived at without collusion, and acknowledge that collusion and anti-competitive practices are prohibited by law. Violations will be subject to the provision of Section 5651 of that of the Guam Procurement Act. Other existing civil, criminal or administrative remedies are not impaired and may be in addition to the remedies in Section 5651 of the Government code.
9. **BIDDER’S PRICE:** The Government will consider not more than two (2) (Basic and Alternate) item prices and the bidder shall explain fully each price if supplies, materials, equipment, and/or specified services offered comply with specifications and the products origin. Where basic or alternate bid meets the minimum required specification, cost and other factors will be considered. Failure to explain this requirement will result in rejection of the bid.
10. **BID ENVELOPE:** Envelope shall be sealed and marked with the bidder’s name, Bid number, time, date and place of Bid Opening.
11. **BID GUARANTEE REQUIREMENT:** Bidder is required to submit a Bid Guarantee Bond or standby irrevocable Letter of Credit or Certified Check or Cashier’s Check in the same bid envelope to be held by the Government pending award. The Bid Guarantee Bond, Letter of Credit, Certified Check or Cashier’s Check must be issued by any local surety or banking institution licensed to do business on Guam and made payable to the Treasury of Guam in the amount of fifteen percent (15%) of his highest total bid offer. The Bid Bond must be submitted on Government Standard Form BB-1 (copy enclosed). Personal Checks will not be accepted as Bid Guarantee. If a successful Bidder (contractor) withdraws from the bid or fails to enter into contract within the prescribed time, such Bid guarantee will be forfeited to the Government of Guam. Bids will be disqualified if not accompanied by Bid Bond, Letter of Credit, Certified Check or Cashier’s check. Bidder must include in his/her bid, valid copies of a Power of Attorney from the Surety and a Certificate of Authority from the Government of Guam to show proof that the surety company named on the bond instrument is authorized by the Government of Guam and qualified to do business on Guam. For detailed information on bonding matters, contact the Department of Revenue and Taxation. Failure to submit a valid Power of Attorney and Certificate of Authority on the surety is cause for rejection of bid. Pursuant to 5 GCA § 5212, all competitive sealed bidding for the procurement of supplies or services exceeding \$25,000.00 a 15% Bid Security of the total bid price must accompany the bid package. The bid bond, Letter of Credit, Certified Check or Cashier’s Check will serve as Bid Security for this procurement.
12. **PERFORMANCE GUARANTEE:** Bidders who are awarded a contract under this solicitation, guarantee that goods will be delivered or required services performed within the time specified. Failure to perform the contract in a satisfactory manner may be cause for suspension or debarment from doing business with the Government of Guam. In addition, the Government will hold the Vendor liable and will enforce the requirements as set forth in Section 40 of these General Terms and Conditions.
13. **SURETY BONDS:** Bid and Bid Bonds coverage must be signed or countersigned in Guam by a foreign or alien surety’s resident general agent. The surety must be an Insurance Company, authorized by the government of Guam and qualified to do business in Guam. Bids will be disqualified if the Surety Company does not have a valid Certificate of Authority from the Government of Guam to conduct business in Guam.
14. **COMPETENCY OF BIDDERS:** Bids will be considered only from the such bidders who, in the opinion of the Government, can show evidence of their ability, experience, equipment, and facilities to render satisfactory service.
15. **DETERMINATION OF RESPONSIBILITY OF BIDDERS:** The Chief Procurement Officer reserves the right for securing from bidders information to determine whether or not they are responsible and to inspect plant site, place of business; and supplies and services as necessary to determine their responsibility in accordance with Section 15 of these General Terms and Conditions. (2 GAR, Div. 4 § 3116)

[X] 16. **STANDARD FOR DETERMINATION OF LOWEST RESPONSIBLE BIDDER:**

In determining the lowest responsible offer, the Chief Procurement Officer shall be guided by the following:

- a) Price of items offered.
- b) The ability, capacity, and skill of the Bidder to perform.
- c) Whether the Bidder can perform promptly or within the specified time.
- d) The quality of performance of the Bidder with regards to awards previously made to him.
- e) The previous and existing compliance by the Bidder with laws and regulations relative to procurement.
- f) The sufficiency of the financial resources and ability of the Bidder to perform.
- g) The ability of the bidder to provide future maintenance and services for the subject of the award.
- h) The compliance with all of the conditions to the Solicitation.

[X] 17. **TIE BIDS:** If the bids are for the same unit price or total amount in the whole or in part, the Chief Procurement Officer will determine award based on 2 GAR, Div. 4, § 3109(o) (2) or to reject all such bids.

[X] 18. **BRAND NAMES:** Any reference in the Solicitation to manufacturer's Brand Names and number is due to lack of a satisfactory specification of commodity description. Such preference is intended to be descriptive, but not restrictive and for the sole purpose of indicating prospective bidders a description of the article or services that will be satisfactory. Bids on comparable items will be considered provided the bidder clearly states in his bid the exact articles he is offering and how it differs from the original specification.

[X] 19. **DESCRIPTIVE LITERATURE:** Descriptive literature(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The literature furnished must clearly identify the item(s) in the Bid. The descriptive literature is required to establish, for the purpose of evaluation and award, details of the product(s) the bidder proposes to furnish including design, materials, components, performance characteristics, methods of manufacture, construction, assembly or other characteristics which are considered appropriate. Rejection of the Bid will be required if the descriptive literature(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the descriptive literature(s) by the time specified in the Solicitation will require rejection of the bid.

[] 20. **SAMPLES:** Sample(s) of item(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The sample(s) should represent exactly what the bidder proposes to furnish and will be used to determine if the item(s) offered complies with the specifications. Rejection of the Bid will be required if the sample(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the sample(s) by the time specified in the Solicitation will require rejection of the Bid.

[] 21. **LABORATORY TEST:** Successful bidder is required to accompany delivery of his goods with a Laboratory Test Report indicating that the product he is furnishing the Government meets with the specifications. This report is on the bidder's account and must be from a certified Testing Association.

[X] 22. **AWARD, CANCELLATION, & REJECTION:** Award shall be made to the lowest responsible and responsive bidder, whose bid is determined to be the most advantageous to the Government, taking into consideration the evaluation factors set forth in this solicitation. No other factors or criteria shall be used in the evaluation. The right is reserved as the interest of the Government may require to waive any minor irregularity in bid received. The Chief Procurement Officer shall have the authority to award, cancel, or reject bids, in whole or in part for any one or more items if he determines it is in the public interest. Award issued to the lowest responsible bidder within the specified time for acceptance as indicated in the solicitation, results in a bidding contract without further action by either party. In case of an error in the extension of prices, unit price will govern. It is the policy of the Government to award contracts to qualified local bidders. The Government reserves the right to increase or decrease the quantity of the items for award and make additional awards for the same type items and the vendor agrees to such modifications and additional awards based on the bid prices for a period of one (1) year on an as needed basis upon the availability of funds after original award. No award shall be made under this solicitation which shall require advance payment or irrevocable letter of credit from the government (2 GAR, Div.4 §1103).

[] 23. **MARKING:** Each outside container shall be marked with the Purchase Order number, item number, brief item description and quantity. Letter marking shall not be less than 3/4" in height.

[X] 24. **SCHEDULE FOR DELIVERY:** Successful bidder shall notify the General Services Agency, Telephone Nos. 475-1707 or 475-713, at least twenty-four (24) hours before delivery of any item under this solicitation.

[] 25. **BILL OF SALE:** Successful supplier shall render Bills of Sale for each item delivered under this contract. Failure to comply with this requirement will result in rejection of delivery. The Bill of Sale must accompany the items delivered but will not be considered as an invoice for payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.

[] 26. **MANUFACTURER'S CERTIFICATE:** Successful bidder is required, upon delivery of any item under this contract, to furnish a certificate from the manufacturer indicating that the goods meet the specifications. Failure to comply with this request will result in rejection of delivery payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.

[X] 27. **INSPECTION:** All supplies, materials, equipment, or services delivered under this contract shall be subject to the inspection and/or test conducted by the Government at destination. If in any case the supplies, materials, equipment, or services are found to be defective in material, workmanship, performance, or otherwise do not conform with the specifications, the Government shall have the right to reject the items or require that they be corrected. The number of days required for correction will be determined by the Government.

[] 28. **MOTOR VEHICLE SAFETY REQUIREMENTS:** The Government will only consider Bids on motor vehicles which comply with the requirements of the National Traffic and Motor Vehicle safety Act of 1966 (Public Law 89-563) and Clean Air Act as amended (Public Law 88-206), that are applicable to Guam. Bidders shall state if the equipment offered comply with these aforementioned Federal Laws.

[] 29. **SAFETY INSPECTION:** All motor vehicles delivered under this contract must pass the Government of Guam Vehicle Inspection before delivery at destination.

[X] 30. **GUARANTEE:**

a) **Guarantee of Vehicle Type of Equipment:**

The successful bidder shall guarantee vehicular type of equipment offered against defective parts, workmanship, and performance, for a period of not less than one (1) year after date of receipt of equipment. Bidder shall also provide service to the equipment for at least one (1) year. Service to be provided shall include, but will not be limited to tune ups (change of spark plugs, contact points and condensers) and lubrication (change of engine and transmission oil). All parts and labor shall be at the expense of the bidder. All parts found defective and not caused by misuse, negligence or accident within the guarantee period shall be repaired, replaced, or adjusted within six (6) working days after notice from the Government and without cost to the Government. Vehicular type of equipment as used in this context shall include equipment used for transportation as differentiated from tractors, backhoes, etc.

b) **Guarantee of Other Type of Equipment:**

The successful bidder shall guarantee all other types of equipment offered, except those mentioned in 30a, above, against defective parts, workmanship, and performance for a period of not less than three (3) months after date of receipt of equipment. Bidder shall also provide service to the equipment for at least three (3) months. All parts found defective within that period shall be repaired or replaced by the Contractor without cost to the Government. Repairs, adjustments or replacements of defective parts shall be completed by the contractor within six (6) working days after notice from the Government.

(c) **Compliance with this Section is a condition of this Bid.**

[X] 31. **REPRESENTATION REGARDING ETHICS IN PUBLIC PROCUREMENT:** The bidder or contractor represents that it has not knowingly influenced and promises that it will not knowingly influence a Government employee to breach any of the ethical standards and represents that it has not violated, is not violating, and promises that it will not violate the prohibition against gratuities and kickbacks set forth on Chapter 11 (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.

[X] 32. **REPRESENTATION REGARDING CONTINGENT FEES:** The contractor represents that it has not retained a person to solicit or secure a Government contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business (2 GAR, Div.4 § 11-4.6.)

[X] 33. **EQUAL EMPLOYMENT OPPORTUNITY:** Contractors shall not discriminate against any employee or applicant of employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that employees are treated equally during employment without regards to their race, color, religion, sex, or national origin.

[X] 34. **COMPLIANCE WITH LAWS:** Bidders awarded a contract under this Solicitation shall comply with the applicable standard, provisions, and stipulations of all pertinent Federal and/or local laws, rules, and regulations relative to the performance of this contract and the furnishing of goods.

[] 35. **CHANGE ORDER:** Any order issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR, Div. 4 § 6101(3)(a) of the Guam Procurement Regulations.

[X] 36. **STOP WORK ORDER:** Any stop work order issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR, Div.4 § 6101(4)(a) of the Guam Procurement Regulations.

[X] 37. **TERMINATION FOR CONVENIENCE:** Any termination order for the convenience of the Government issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR, Div.4 § 6101(10) of the Government Procurement Regulations.

[X] 38. **TIME FOR COMPLETION:** It is hereby understood and mutually agreed by and between the contractor and the Government that the time for delivery to final destination or the timely performance of certain services is an essential condition of this contract. If the contractor refuses or fails to perform any of the provisions of this contract within the time specified in the Purchase Order (from the date Purchase Order is acknowledged by vendor), then the contractor is in default. Defaults will be treated subject to and in accordance with the provisions of 2 GAR, Div. 4 § 6101(8)

[X] 39. **JUSTIFICATION OF DELAY:** Bidders who are awarded contracts under this Solicitation, guarantee that the goods will be delivered to their destination or required services rendered within the time specified. If the bidder is not able to meet the specified delivery date, he is required to notify the Chief Procurement Officer of such delay. Notification shall be in writing and shall be received by the Chief Procurement Officer at least twenty-four (24) hours before the specified delivery date. Notification of delay shall include an explanation of the causes and reasons for the delay including statement(s) from supplier or shipping company causing the delay. The Government reserves the right to reject delay justification if, in the opinion of the Chief Procurement Officer, such justification is not adequate.

[X] 40. **LIQUIDATED DAMAGES:** When the contractor is given notice of delay or nonperformance as specified in Paragraph 1 (Default) of the Termination for Default Clause of this contract and fails to cure in the time specified, the contractor shall be liable for damages for delay in the amount of one-fourth of one percent (1%) of outstanding order per calendar day from date set for cure until either the territory reasonable obtains similar supplies or services if the contractor is terminated for default, or until the contractor provides the supplies or services if the contractor is not terminated for default. To the extent that the contractor's delay or nonperformance is excused under Paragraph 40 (Excuse for Nonperformance or Delayed Performance) of the Termination for Default Clause of this contract, liquidated damages shall not be due the territory. The contractor remains liable for damages caused other than by delay. 2 GAR, Div. 4 § 6101(d).

[X] 41. **PHYSICAL LIABILITY:** If it becomes necessary for the Vendor, either as principal, agent or employee, to enter upon the premises or property of the Government of Guam in order to construct, erect, inspect, make delivery or remove property hereunder, the Vendor hereby covenants and agrees to take, use, provide and make all proper, necessary and sufficient precautions, safeguards and protections against the occurrence of any accidents, injuries or damages to any person or property during the progress of the work herein covered, and to be responsible for, and to indemnify and save harmless the Government of Guam from the payment of all sums of money by reason of all or any such accidents, injuries or damages that may occur upon or about such work, and fines, penalties and loss incurred for or by reasons of the violations of any territorial ordinance, regulations, or the laws of Guam or the United States, while the work is in progress. Contractor will carry insurance to indemnify the Government of Guam against any claim for loss, damage or injury to property or persons arising out of the performance of the Contractor or his employees and agents of the services covered by the contract and the use, misuse or failure of any equipment used by the contractor or his employees or agents, and shall provide certificates of such insurance to the Government of Guam when required.

[X] 42. Contract will be cancelled if funds not appropriated or insufficient, and that government will timely inform contractor. 2 GAR, Div.4 § 3121(e) (1) (C) and 2 GAR, Div.4 § 3121(e)(1)(D).

[] 43. If cancelled, contractor will be reimbursed unamortized reasonably incurred non-recurring costs.
2 GAR, Div.4 § 3121(e) (1) (G).

[X] 44. **CONTACT FOR CONTRACT ADMINISTRATION:** If your firm receives a contract as a result of this Solicitation, please designate a person whom we may contact for prompt administration.

Name: _____

Title: _____

Address: _____

Telephone: _____

GOVERNMENT OF GUAM

SEALED BID SOLICITATION INSTRUCTIONS

1. **BID FORMS:** Each bidder shall be provided with two (2) sets of Solicitation forms. Additional copies may be provided upon request. Bidders requesting additional copies of said forms will be charged per page in accordance with 5 GCA § 10203 of the Government Code of Guam. All payments for this purpose shall be by cash, certified check or money order and shall be made payable to the General Services Agency (EO 86-24).
2. **PREPARATIONS OF BIDS:**
 - a) Bidders are required to examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at bidder's risk.
 - b) Each bidder shall furnish the information required by the Solicitation. The bidder shall sign the solicitation and print or type his name on the Schedule. Erasures or other changes must be initiated by the person signing the bid. Bids signed by an agent are to be accompanied by evidence of this authority unless such evidence has been previously furnished to the issuing office.
 - c) Unit price for each unit offered shall be shown and such price shall include packing unless otherwise specified. A total shall be entered in the amount column of the Schedule for each item offered. In case of discrepancies between a unit price and extended price, the unit price will be presumed to be correct.
 - d) Bids for supplies or services other than those specified will not be considered. Time, if stated as a number of days, means calendar days and will include Saturdays, Sundays, and holidays beginning the day after the issuance of a Notice to Proceed. Time stated ending on a Saturday, Sunday or Government of Guam legal holiday will end at the close of the next business day.
3. **EXPLANATION TO BIDDERS:** Any explanation desired by a bidder regarding the meaning or interpretation of the Solicitation, drawings, specifications, etc., must be submitted in writing and with sufficient time allowed for a written reply to reach all bidders before the submission of their bids. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective bidder concerning a Solicitation will be furnished to all prospective bidders in writing as an amendment to the Solicitation if such information would be prejudicial to uninformed bidders.
4. **ACKNOWLEDGEMENT OF AMENDMENTS TO SOLICITATIONS:** Receipt of an amendment to a Solicitation by a bidder must be acknowledged by signing an acknowledgement of receipt of the amendment. Such acknowledgement must be received prior to the hour and date specified for receipt of bids.
5. **SUBMISSION OF BIDS:**
 - a) Bids and modifications thereof shall be enclosed in sealed envelopes and addressed to the office specified in the Solicitation. The bidder shall show the hour and date specified in the Solicitation for receipt, the Solicitation number, and the name and address of the bidder on the face of the envelope.
 - b) Telegraphic bids will not be considered unless authorized by the Solicitation. However, bids may be modified or withdrawn by written or telegraphic notice, provided such notice is received prior to the hour and date specified for receipt (see paragraph 6 of these instructions).
 - c) Samples of items, when required, must be submitted within the time specified, unless otherwise specified by the Government, at no expense to the Government. If not destroyed by testing, samples will be returned at bidder's request and expense, unless otherwise specified by the Solicitation.
 - d) Samples or descriptive literature should not be submitted unless it is required on this solicitation. Regardless of any attempt by a bidder to condition the bid, unsolicited samples or descriptive literature will not be examined or tested at the bidder's risk, and will not be deemed to vary any of the provisions of this Solicitation.
6. **FAILURE TO SUBMIT BID:** If no bid is to be submitted, do not return the solicitation unless otherwise specified. A letter or postcard shall be sent to the issuing office advising whether future Solicitations for the type of supplies or services covered by this Solicitation are desired.
7. **LATE BID, LATE WITHDRAWALS, AND LATE MODIFICATIONS:**
 - a) Definition: Any bid received after the time and date set for receipt of bids is late. Any withdrawal or modification of a bid received after the time and date set for opening of bids at the place designated for opening is late (Guam Procurement Regulations 2 GAR, Div.4 §3109(k)).
 - b) Treatment: No late bid, late modification, or late withdrawal will be considered unless received before contract award, and the bid, modification, or withdrawal would have been timely but for the action or inaction of territorial personnel directly serving the procurement activity.

8. DISCOUNTS:

- a) Notwithstanding the fact that prompt payment discounts may be offered, such offer will not be considered in evaluating bids for award unless otherwise specified in the Solicitation. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.
- b) In connection with any discount offered, time will be computed from date of delivery and acceptance of the supplies to the destination as indicated in the purchase order or contract. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the Government check.

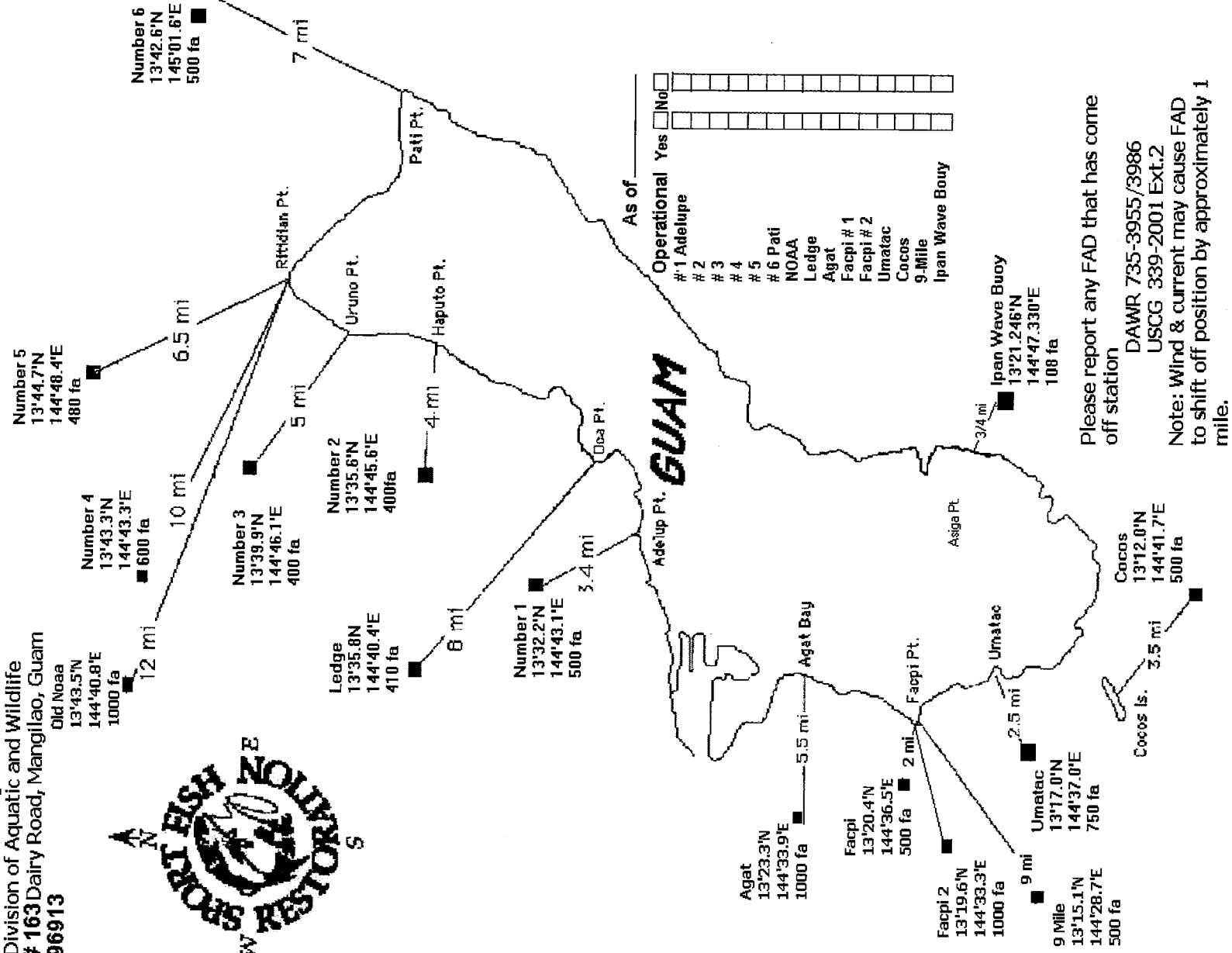
9. GOVERNMENT FURNISHED PROPERTY: No material, labor or facilities will be furnished by the Government unless otherwise provided for in the Solicitation.

10. SELLER' INVOICES: Invoices shall be prepared and submitted in quadruplicate (one copy shall be marked "original") unless otherwise specified. Invoices shall be "certified true and correct" and shall contain the following information: Contract and order number (if any), item numbers, description of supplies or services, sizes, quantities, unit prices, and extended total. Bill of lading number and weight of shipment will be shown for shipments made on Government bills of lading.

11. RECEIPT, OPENING AND RECORDING OF BIDS: Bids and modifications shall be publicly opened in the presence of one or more witnesses, at the time, date, and place designated in the Invitation for Bids. The name of each bidder, the bid price, and such other information as is deemed appropriate by the Procurement Officer, shall be read aloud and recorded, or otherwise made available. The names and addresses of required witnesses shall be recorded at the opening. The opened bids shall be available for public inspection except to the extent the bidder designates trade secrets or other proprietary data to be confidential as set forth in accordance with Section 12, below. Material so designated shall accompany the bid and shall be readily separable from the bid in order to facilitate public inspection of the non-confidential portion of the bid. Prices, makes and models or catalogue numbers of the items offered, deliveries, and terms of payment shall be publicly available at the time of bid opening regardless of any designation to the contrary (Guam Procurement Regulations 2 GAR, Div.4 §3109(k)).

12. CONFIDENTIAL DATA: The Procurement Officer shall examine the bids to determine the validity of any requests for nondisclosure of trade secrets and other proprietary data.

Department of Agriculture
 Division of Aquatic and Wildlife
 # 163 Dairy Road, Mangilao, Guam
 96913



As of _____

Operational	Yes	No
# 1 Adelup	<input type="checkbox"/>	<input type="checkbox"/>
# 2	<input type="checkbox"/>	<input type="checkbox"/>
# 3	<input type="checkbox"/>	<input type="checkbox"/>
# 4	<input type="checkbox"/>	<input type="checkbox"/>
# 5	<input type="checkbox"/>	<input type="checkbox"/>
# 6 Pati	<input type="checkbox"/>	<input type="checkbox"/>
NOAA	<input type="checkbox"/>	<input type="checkbox"/>
Ledge	<input type="checkbox"/>	<input type="checkbox"/>
Agat	<input type="checkbox"/>	<input type="checkbox"/>
Fagpi # 1	<input type="checkbox"/>	<input type="checkbox"/>
Fagpi # 2	<input type="checkbox"/>	<input type="checkbox"/>
Umatac	<input type="checkbox"/>	<input type="checkbox"/>
Cocos	<input type="checkbox"/>	<input type="checkbox"/>
9 Mile	<input type="checkbox"/>	<input type="checkbox"/>
Ipan Wave Buoy	<input type="checkbox"/>	<input type="checkbox"/>

Please report any FAD that has come off station

DAWR 735-3955/3986

USCG 339-2001 Ext.2

Note: Wind & current may cause FAD to shift off position by approximately 1 mile.

DO NOT TIE TO FAD BUOY

CHAPTER 2

DEPLOYMENT

- A. FAD DESIGN CHARACTERISTICS
- B. BASIC DEPLOYMENT TECHNIQUES
- C. FACTORS AFFECTING ANCHOR PLACEMENT
- D. CALCULATING BUOY DRIFT
- E. MODIFICATIONS TO THE DEPLOYMENT TECHNIQUE
- F. DEPLOYMENT VESSEL AND LAYOUT
- G. PREPARING FAD COMPONENTS
- H. DEPLOYMENT PROCEDURE

INTRODUCTION

This chapter describes the factors that affect FAD deployment procedures and describes recommended deployment methods. Information on loading the FAD onto the deployment vessel and proper deployment preparation is also given.

SECTION 2A: FAD DESIGN CHARACTERISTICS

Based on extensive regional experience and study, SPC has made a number of recommendations regarding the design of FADs for use in the Pacific Islands region. These are discussed in detail in Volume II of the SPC FAD Manual, but are summarised very briefly below.

Anchors

It is recommended that a single rectangular block of concrete weighing at least 900 kg be used to anchor the FAD. The anchor should be as low and flat as possible to maximise ground-holding power. The common practice of using concrete-filled oil drums is discouraged as these can roll on the sea floor and drag the FAD into deep water.

Bottom chain and hardware

15 m of 19 mm dia. hot-dip galvanised long-link, proof-coil, low-carbon steel chain is used to connect the anchor to the mooring rope. Connections are made using an appropriate combination of safety shackles, swivels and rope-protector thimbles as shown in the diagram opposite.

Rope

The recommended mooring rope consists of two parts: a lower section made of 22 mm dia. 8 or 12-strand plaited polypropylene (which floats); and an upper section made of 19 mm dia. 8- or 12-strand plaited nylon (which sinks). The floating lower section has enough buoyancy to lift the end of the bottom chain off the sea floor, thus preventing abrasion of the end of the rope, while the sinking upper section hangs down out of the way of possible damage or interference at the surface. Where the two ropes are joined by splicing, a gentle 'catenary' curve is formed which acts to absorb slack line during calm weather and releases it when conditions are rough.

Three-strand twisted rope is never recommended for moorings because of its inherent tendency to twist, kink, and hockle. Plaited ropes are torque-balanced and cannot hockle.

Rope-length calculations

Volume II of the SPC FAD Manual contains a table showing the total length of mooring rope needed for various water depths, as well as the correct lengths of the nylon and polypropylene parts (calculated to provide the right amount of buoyancy) when the SPC-recommended ropes are used. In all cases the total length of the rope is 25 per cent greater than the site depth. This provides a safety margin in case the anchor lands in a depth slightly greater than expected, and gives enough scope so that the raft does not pull vertically on the anchor when weather conditions are extreme.

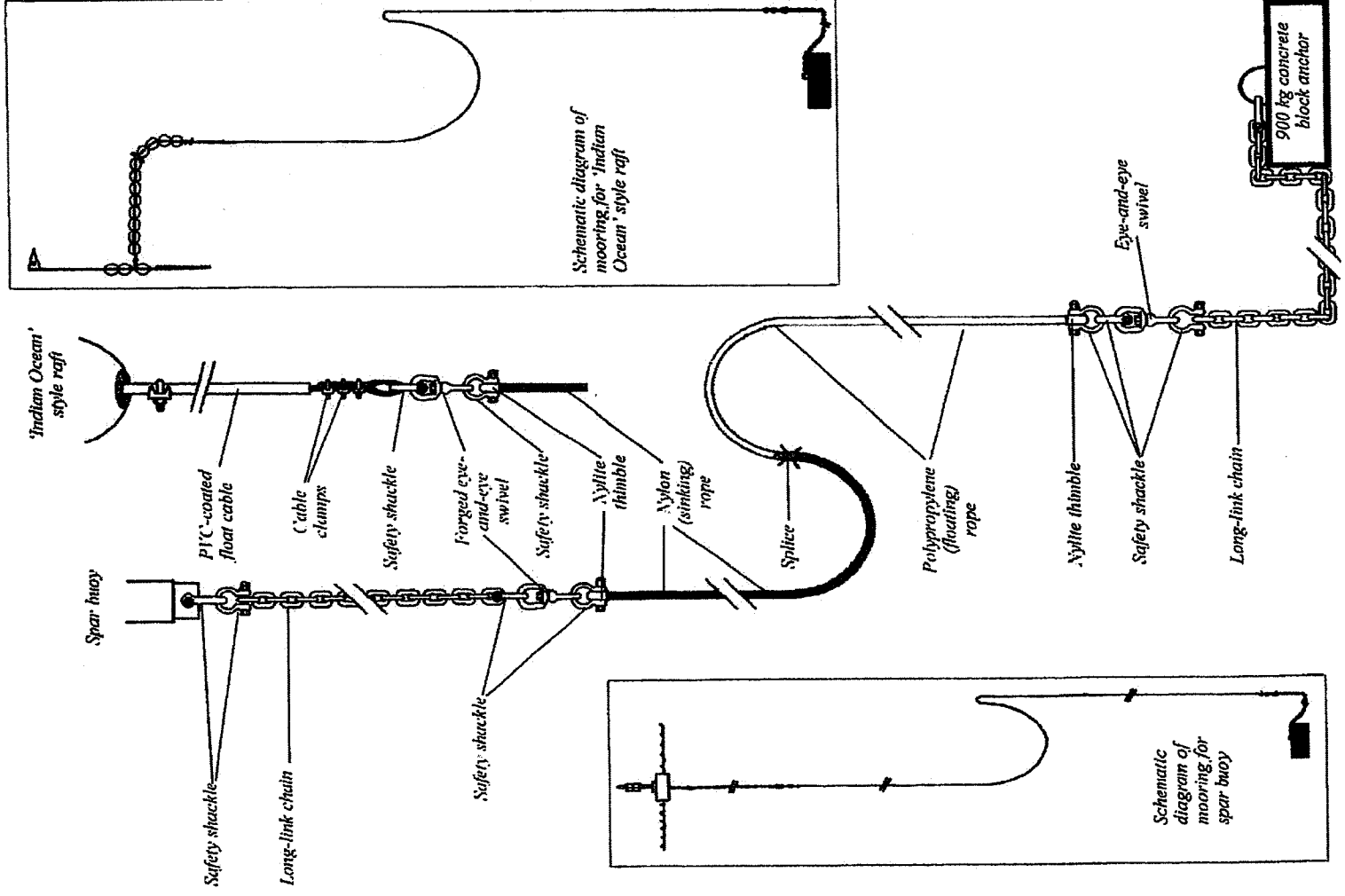
Rafts and upper hardware

SPC recommends either of two different raft types:

- A 'spar' buoy constructed of welded 5 mm thick steel plate. The circular body of the raft is 150 cm in diameter and 60 cm high, and is fitted with a galvanised pipe mast which extends 180 cm above the body and 105 cm below it. The raft is fitted with a battery-operated, solar-activated flashing light, as well as a radar reflector. Because of its form this raft must have a 15 m length of chain attached to the bottom of the mast extension to prevent it capsizing.
- The 'Indian Ocean' style raft is made from a string of floats with holes through them, threaded onto a length of wire rope. The SPC-recommended design uses 50 Casamar model C6000 purse-seine floats. These are threaded on a 30 m length of 16 mm dia. steel wire rope sheathed with PVC to bring the total diameter to 32 mm. The raft just has a simple flagpole, with no lights or radar reflector. The raft cannot capsize, and the mooring end of the steel wire rope hangs vertically down well below the sea surface, so there is no need for chain at the upper end.

Recommended design

The recommended FAD mooring and raft designs are illustrated on the opposite page. The descriptions of deployment given in the rest of this manual generally assume that this mooring, fitted with a steel spar buoy as described above, is the design being used.



SECTION 2B: BASIC DEPLOYMENT TECHNIQUES

FAD deployments involve a coordinated sequence of events. Some variation may exist in the details or timing of these events, depending on the layout of the deployment vessel, the amount of open deck space available, the method used to deploy the anchor, and, in some cases, sea conditions and travel distance to the deployment site. Nonetheless the basic sequence of events is essentially universal, and is dictated by considerations of crew and vessel safety as well as of efficient, trouble-free deployment of the FAD.

There are two principal deployment methods: the anchor-first and anchor-last techniques.

Anchor-first deployments

In anchor-first deployments the anchor is heaved overboard first. The mooring rope, faked (laid out for free running) bottom-end up, is pulled overboard by the weight of the anchor and pays out as fast as the anchor drops toward the seabed. Once the anchor settles on the bottom any remaining mooring line still on board the vessel, followed by the upper chain and buoy, are deployed.

The anchor-first method has sometimes been used in situations where the water depth is not known. In this case the upper chain and buoy are not attached to the mooring line until the anchor is on the bottom. Once the anchor lands, the mooring rope is drawn tight, a measured amount of slack is paid out, and the end of the line is connected to the upper chain and the buoy, which are then deployed.

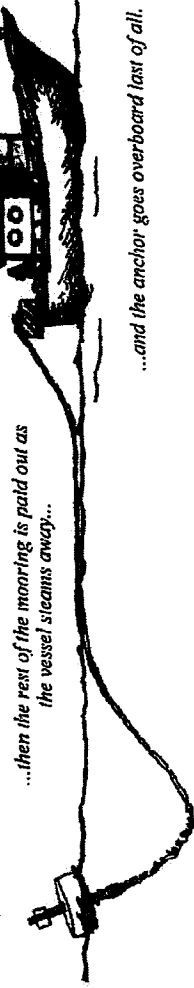
The anchor-first deployment allows relatively accurate positioning of the FAD anchor at the deployment site, but much can go wrong once the anchor is let go. The anchor falls quickly, and few vessels that deploy FADs are equipped with gear that can slow or stop an anchor once it starts its descent. If someone gets caught in the rope, or the rope becomes tangled, or a hook-up occurs, there is little chance of being able to do anything about it.

Anchor-first deployments are dangerous for small vessels and SPC recommends against them. Apart from this brief description, the anchor-first technique will not be discussed any further in this manual.

Anchor-last deployments

In anchor-last deployments the FAD raft is deployed first and the mooring paid out as the vessel steams away from it. Wherever possible the line of deployment should follow the depth contour in which the FAD is to be deployed. For instance, if the intended FAD site is 1,000 m deep, then the vessel should try to steam along the 1,000 m contour line, as long as other circumstances permit. Once all the mooring line is in the water the anchor is deployed at the position which confers the greatest probability of it landing at the desired depth and location.

In anchor-last deployments the buoy is deployed first...



...then the rest of the mooring is paid out as the vessel steams away...

...and the anchor goes overboard last of all.

Anchor-last deployments are much safer than anchor-first methods and permit adjustments during the deployment process. If problems arise with gear, or if sea conditions become unfavourable during the deployment it can be aborted, with mooring and buoy being hauled back aboard the vessel. Anchor-last deployment is the technique recommended by SPC.

In anchor-first deployments the anchor pulls the mooring rope overboard.



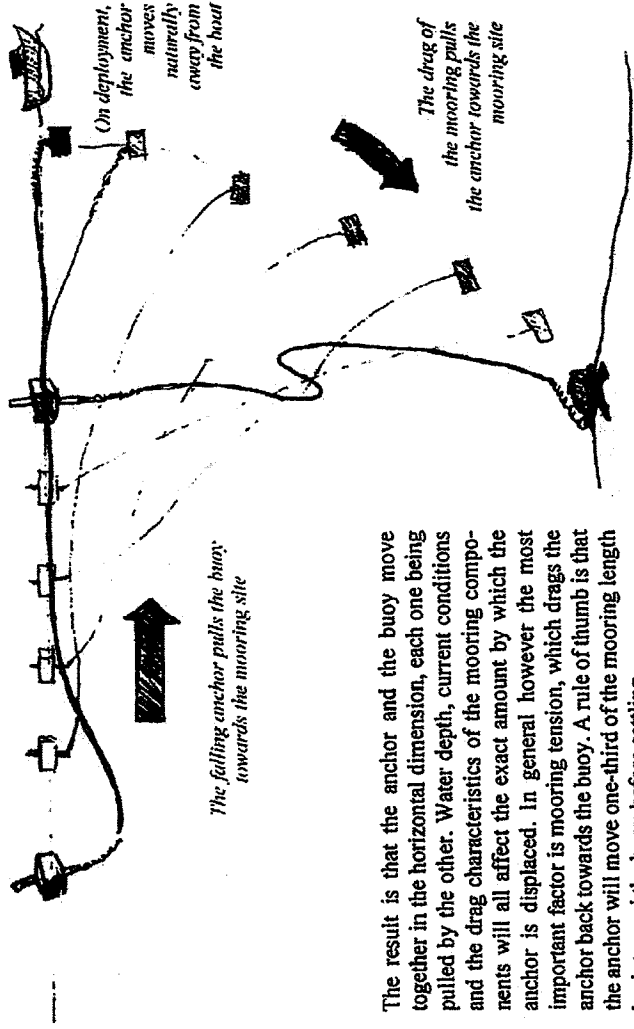
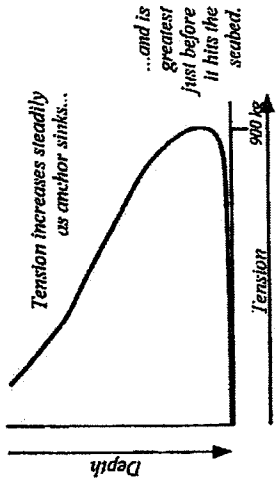
-Anchor-first deployments are dangerous, and not recommended from small craft

SECTION 2C: FACTORS AFFECTING ANCHOR PLACEMENT

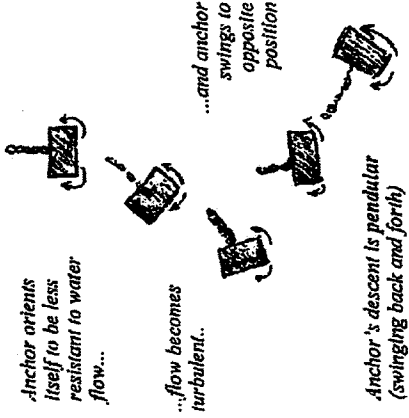
There are several important factors which affect the way in which anchor-last FAD deployments are carried out, and the place where the anchor will come to rest on the seabed.

Mooring tension

As the anchor sinks after being deployed, the drag caused by the mooring rope increases dramatically. Engineering studies have shown that, once the anchor is let go, tension on the mooring increases steadily as the anchor descends and reaches its highest point just before the moment of impact, when it is about equal to the static weight of the anchor.



The result is that the anchor and the buoy move together in the horizontal dimension, each one being pulled by the other. Water depth, current conditions and the drag characteristics of the mooring components will all affect the exact amount by which the anchor is displaced. In general however the most important factor is mooring tension, which drags the anchor back towards the buoy. A rule of thumb is that the anchor will move one-third of the mooring length back toward the buoy before setting.



Anchor motion

When the anchor is heaved over the side it does not sink to the bottom in a straight vertical path. The descent is governed by hydrodynamic principles, the anchor's shape, the surface area of the base, and the flow of water around it. Water resistance tends to shift the orientation of the anchor block so that it poses less resistance to the water flowing past. The motion continues until water flow on one side of the anchor becomes turbulent. Then the same forces swing the anchor to the other side. This repeating cycle causes the anchor to swing with a pendulum-like motion during its descent, which in deep water may take more than 15 minutes.

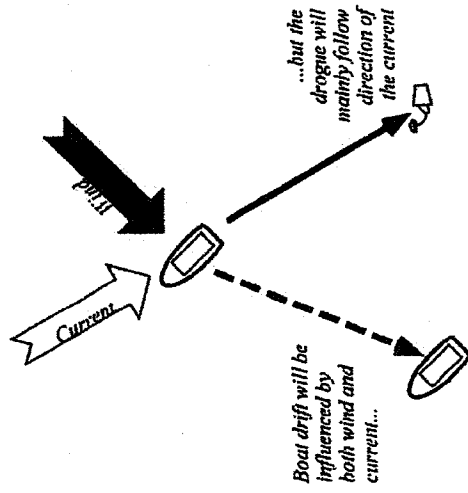
SECTION 2D: CALCULATING BUOY DRIFT

Unless there is absolutely no wind or surface current, the FAD buoy and mooring will begin to drift as soon as deployment commences. The direction of drift depends on the strength and direction of wind and current, but will be influenced more strongly by the current. This is because a large proportion of the buoy's surface area is under water, and because as soon as the deployment starts the rope and chain will add to the current drag. Unless the wind is very strong—which is unlikely, since FAD deployment would not normally be done in such conditions—then it can be assumed that the direction of drift of the buoy will be the same as that of the surface current.

It is easy to estimate the surface current by tracking the movement of a plastic bucket attached to a small float using a metre or so of light cord. As long as the float is small and has little exposure to the wind, the bucket will drift mainly under the influence of the current and will give a good indication of both its direction and its strength.



An easily-improvised current drogue

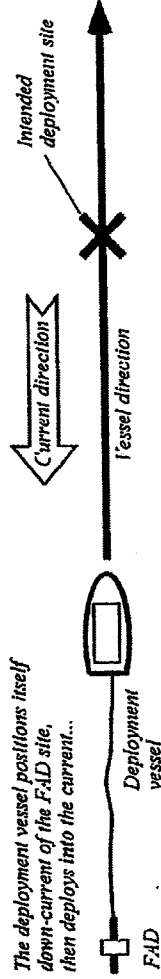


The procedure for estimating surface current is as follows.

- put the vessel into neutral and allow it to come to a stop somewhere close to the FAD deployment site;
- fix the position of the vessel with the GPS;
- immediately release the bucket/ float assembly;
- after a set period of time—say ten minutes—run the vessel over to the bucket and, before recovering it, record its new position and the time it has been drifting;
- estimate the direction of the current by plotting the bucket's start and finish positions on a chart and then taking the relative bearing between them;
- estimate the speed of the current by measuring the distance between the bucket's start and finish points and dividing this by the time the bucket drifted.

The method above only estimates the surface current. In most places there are several sub-surface current layers, which may flow in different, or even opposing directions. The deeper the site, the more current layers are likely to be encountered. There are no practical ways to predict the directions of sub-surface currents, but under normal circumstances they will be less important for the placement of the FAD than the surface current. This is because the FAD spends more time in the surface current layer during the deployment of the mooring, while the period of influence of sub-surface currents is limited to the time the anchor spends sinking.

In a standard anchor-last deployment the vessel positions itself down-current of the FAD site, releases the buoy, and then steams up-current towards the FAD site, while the buoy drifts down-current and away from the vessel. The rest of the mooring is deployed along a track that will pass directly over the designated mooring site and to the anchor-drop position.



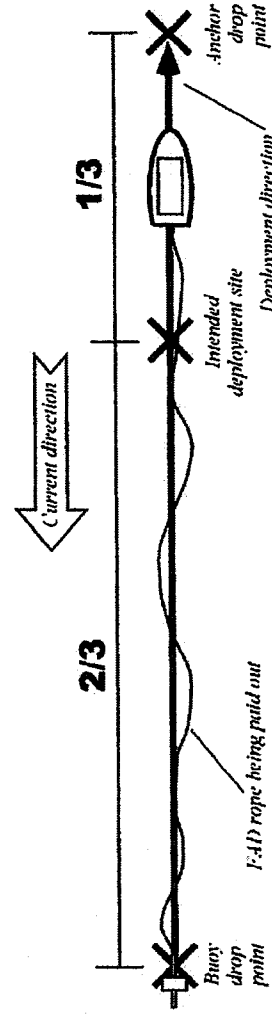
The exact direction of the deployment line will depend to some degree on the bottom topography. It is desirable to follow the lines of bottom contour wherever possible, so a compromise between current direction and contour orientation may have to be made if these are not aligned with each other.

SECTION 2E: MODIFICATIONS TO THE DEPLOYMENT TECHNIQUE

Mooring tension, anchor swing and current drag must be taken into account during the deployment procedure. The result is that, during a FAD deployment, neither the buoy nor the anchor is actually released at the intended FAD site—although of course this is where the FAD is meant to end up after the various factors have played their parts.

Deployment actually takes place in a straight line running opposite to the direction of expected buoy drift. The buoy is deployed down-current of the intended FAD site at a distance equal to two-thirds of the mooring length. The deployment vessel then heads up-current, freely paying out the mooring rope so that there is little or no drag, and taking care not to tow the buoy along behind it.

While paying out the mooring rope the deployment vessel passes over the intended FAD site, but keeps on going until all the rope has been paid out. At this point, if the calculations have been done correctly, the vessel will be up-current of the FAD site at a distance of one-third of the mooring length. This is the anchor drop point, where the bottom chain and then, finally, the anchor, are deployed.



Since the length of the mooring is already known, working out the correct positions of the buoy-drop and anchor-drop spots is not complicated once the direction of buoy drift has been determined. When the positions have been calculated they can be entered into the GPS, with the buoy drop position serving as the start point, the FAD site as a waypoint, and the anchor drop position as the final destination. The GPS will then guide the vessel along the correct path and indicate the drop points for the buoy and anchor.

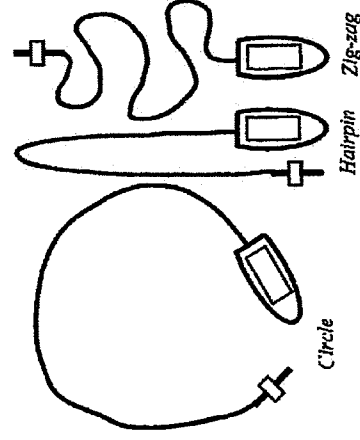
Non-linear deployments

The straight-line deployment method is most suitable when FAD sites are broad and flat, since in these cases the unavoidable inaccuracy in anchor placement is not critical. In narrow, steeply sloping sites, or very deep sites the straight-line technique may involve too great a risk of having the FAD end up in excessively deep water, or being lost altogether. A number of variations have therefore been developed to try to reduce the risk of the anchor landing deeper than planned. These generally involve deploying the FAD in a non-linear path, so that the mooring line is paid out over waters shallower than the intended FAD site. The deployment path may be a circle, a hairpin, a zig-zag line or some other configuration.

Non-linear deployments are intended to shorten the overall distance between buoy and anchor, and to use the force of mooring tension to drag the anchor into shallower waters. In theory the net result is that any error in anchor placement tends to be towards shallow waters, thus avoiding loss of the FAD. However there continues to be disagreement among people who have deployed FADs about the real usefulness of such techniques.

Non-linear deployments increase the chance of the mooring line fouling or tangling on the deployment vessel, so in general they should be used as a second choice to straight-line deployments.

Alternative deployment paths

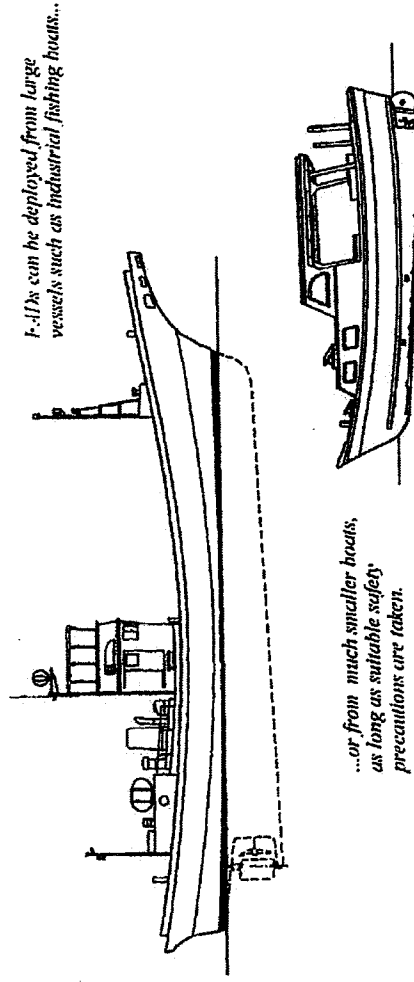


SECTION 2F: DEPLOYMENT VESSEL AND LAYOUT

FAD deployment requires thorough planning and a coordinated effort by the deployment team. The FAD must be arranged and securely stowed while the vessel is at the dock so that the deployment operation will proceed smoothly and safely. Time should be taken to double-check the layout of the FAD, on-board equipment, and mooring connections. Safety of the crew and vessel and operational efficiency are the main concerns during deployment operations. Poor preparation and layout arrangements can lead to accidents or premature loss of the FAD.

Suitable vessel types

A variety of vessels can be used for FAD deployments. Although larger vessels and their on-board equipment, such as winches and derricks, make handling of heavy components easier, FADs can also be deployed from smaller vessels. The essential requirements are that the boat should be capable of transporting the anchor, buoy and the bulky chain and rope, which together may weigh almost two tonnes, safely and with enough working space to allow deployment of all this gear overboard without danger to the crew. Even very small vessels can sometimes be used for FAD deployment if they use a towing bridle to tow the buoy to the site, as shown in section 2G, rather than stowing it on board. Towed barges can also be practical deployment platforms due to their stability, large deck space, and ease of overboard access.



General guidelines

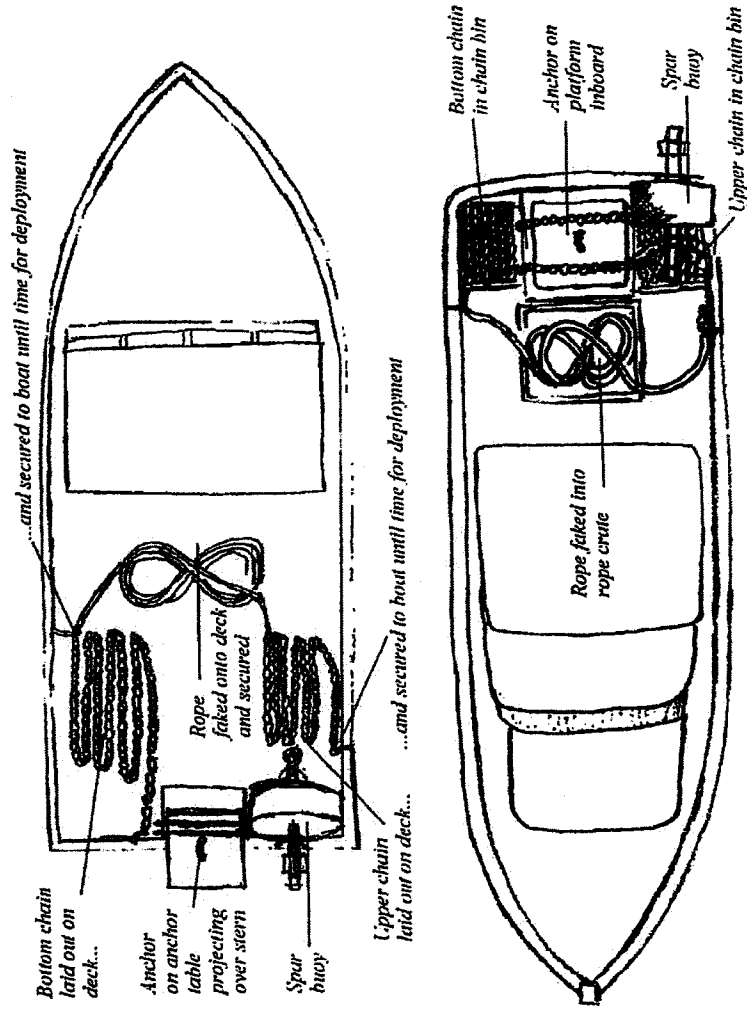
The actual on-board arrangement of the FAD depends on the deck layout of the deployment vessel. Nonetheless, some general guidelines exist irrespective of the vessel's particulars:

- FAD layout should flow in a logical pattern so that the buoy is the first item to go overboard, followed by the upper chain, the mooring line, the bottom chain and, finally, the anchor;
- the entire mooring should pay out along an unobstructed path;
- any extraneous gear should be removed from the FAD layout area, and the deck in general should be kept as clear as possible;
- care should be taken to ensure that the mooring rope will not pass over any sharp edges which could cut or nick it during deployment;
- the anchor should be placed and prepared so it will deploy cleanly, where it will not cause damage to the vessel or hook-up on anything;
- the FAD should be arranged so that during the deployment no-one ever has to position himself between the FAD components and the point where they are going over the side.

Each of the measures listed above is very important for safe, efficient FAD deployments. A clear, unobstructed deployment area, and a carefully thought-out FAD arrangement will prevent damage to the mooring and will not jeopardise the safety of the crew.

Vessel layout

The diagrams below illustrate possible FAD arrangements for two deployment vessels of different sizes and with different deck layouts. The FAD arrangement follows a logical sequence from buoy to anchor, the same order in which the FAD will be deployed.



General sequence of events

The FAD is loaded onto the deployment vessel. Chain and rope are generally deployed either directly from the deck or from crates or boxes placed strategically on the vessel for this purpose, and need to be faked so that they will run out freely during deployment. If necessary the chain or rope is secured so that it will not shift when the vessel is running. The anchor and then the buoy are loaded, positioned, and also secured for running.

If a small vessel is being used, all connections between FAD hardware components are made before or just after loading, while the vessel is still at the dock, so that welding equipment can be used to seal all the safety shackle pins. If a larger vessel with on-board power and welding equipment is to be used then the assembly of hardware components can take place at sea immediately prior to deployment. This may make the loading and stowage of FAD components easier, especially if multiple deployments are to be made.

Once the vessel is close to the deployment site the FAD components are prepared for deployment. Any unfinished assembly work is completed and tie-downs or securing ropes are removed so that the deployment procedure can begin, as described in section 2H.

Hook-ups

If a part of the mooring, whether it be rope or a hardware component, were to get caught on some part of the boat during deployment it would almost certainly damage the mooring and cause a potentially dangerous situation. FAD layout arrangements should try to minimise the potential for such hook-ups, and must take into account the safety of any individual who might have to free them. Carefully conceived FAD layouts will go a long way in preventing such incidents from occurring.

SECTION 2G: PREPARING FAD COMPONENTS

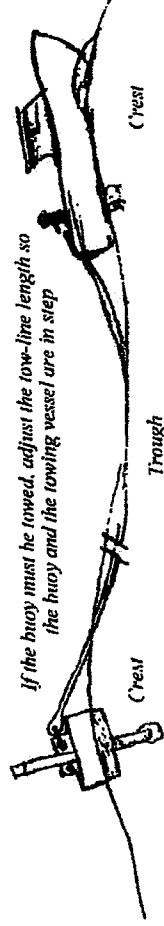
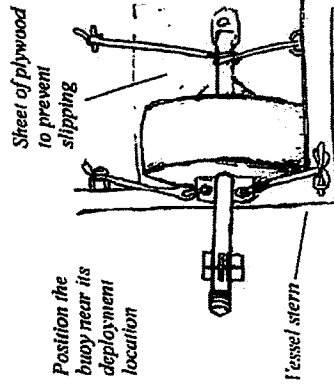
The following paragraphs describe specific aspects of the handling and storage of FAD components on board the deployment vessel.

The FAD buoy

The buoy should be stowed close to its deployment location, so that only minimal manoeuvring is required during deployment. On many vessels the port or starboard quarter is a logical location. The buoy should be secured in place using heavy rope or strapping. A sheet of scrap plywood between the buoy and the deck may reduce friction damage to both, especially if they are made from steel.

If the deployment vessel is small the buoy may have to be towed to the deployment site. In that case a towing bridle made from heavy rope or cable should be used. The bridle should be attached to several points on and around the buoy to avoid putting too much stress on any one point, including the lifting eyes.

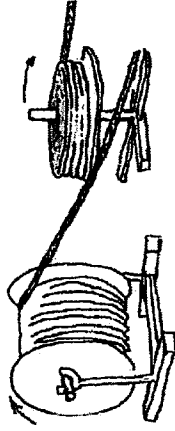
When leaving port, or passing through areas where the vessel must manoeuvre, the buoy should be towed close (no more than 10 m away) to the stern of the deployment vessel, which should proceed slowly. Once out to sea the tow rope should be lengthened to match the length of the waves so that the buoy and vessel remain in step, riding over crests and troughs at the same time. If the buoy is in a trough while the ship is on a crest, the tow line will repeatedly slacken and then suddenly jerk taut, exerting stress on the tow line and the buoy.



Chain and rope

The most usual way of storing chain and rope is to fake them straight onto the deployment vessel's deck, where they are tied down during transport. On arrival at the FAD site they are untied and deployed straight from the deck. Alternatively, if deck space is limited or if there is a danger of them going over the side, they can be deployed from chain and rope bins set up specially for the purpose. Chain bins can be shallow, sturdy wooden boxes, or can be improvised from the cut ends of robust plastic barrels or 200-litre oil drums. The rope bin can be a built-in fish hold, a specially fabricated box, or some other large container.

Use a spool or turntable to remove rope from coils



Rope should be properly uncoiled or unspooled and faked onto the vessel in large (2 metre) loops or bends. If the rope is on a spool a pipe can be inserted through the spool's centre so that the rope can be pulled off. If the rope is in a coil, a makeshift turntable should be improvised so that the rope can be unwound from the outside without putting twists into it. (A wooden fishing handreel turned on its side can be used as a turntable for small coils).

If braided rope is not available and three-strand rope is being used then it should be laid out in figure-of-eight fakes, which will prevent putting any twists into the rope. Making a figure-of-eight fake involves alternating clockwise and anti-clockwise turns in the rope.

Normally the most logical position for the rope is on the after deck, since the rope will usually be deployed from this area.



Figure-8 fake will not introduce twists... and is best for 3-strand rope.

Chain quick-releases

At several points during the deployment there is the possibility that part of a chain section could get pulled over the side and start feeding into the water before it should, causing a troublesome and potentially dangerous situation. For this reason quick-release attachments should be used to secure the chain to strong points on the vessel at critical places along the chain's length.

Hardware items such as snap shackles or pelican hooks can be used as quick-releases, but a length of rope passed through a chain link and then attached to a strong point so that it can be quickly united or cut off will do just as well. The main requirements are that the release be strong enough to hold the weight of a section of the chain to prevent it deploying ahead of schedule, and that it can be quickly let go when needed.

Normally a quick-release should be attached on the upper chain, about 8 or 10 m below the buoy connection, and at the point where the lower end of the FAD rope is connected to the bottom chain. Other quick-releases may also be desirable depending on the specific features of the deployment vessel and procedure.



Various types of snap shackle which can be used as quick-releases

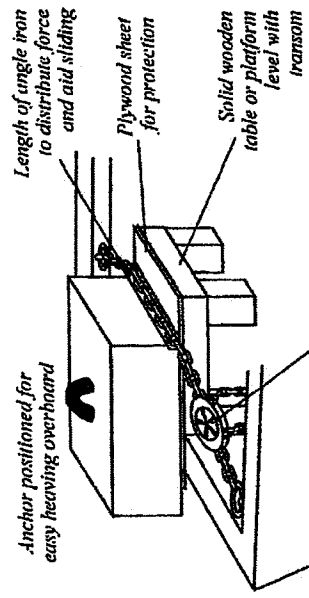
Anchor

Unless the deployment vessel is equipped with its own gear capable of lifting a tonne or more, the anchor should be set ready for deployment while the vessel is at the dockside, and attached firmly in place using ropes and chains. Anchors are most likely to move from side to side as the vessel rolls on the way to the deployment site, so special attention should be paid to securing the anchor to prevent movement in this direction.

On most boats the logical and stable placement for the anchor is amidships along the stern, either directly on deck or supported slightly above the transom. However on many vessels the rudder protrudes past the stern and the anchor cannot simply be dropped over the back without causing damage. In such cases anchors can be deployed from any number of spots around the vessel, so long as sufficient clear deck area exists and the placement of the anchor does not affect the vessel's stability.

On a large vessel with lifting gear the anchor can be hoisted on the vessel's crane or derrick, swung over the side, and let free. In most cases, however, FADs are deployed from vessels without such equipment, so special preparations need to be made to allow the controlled release of the anchor without injury, damage or other mishap.

The simplest method is to construct a solid wooden stand or table at the stern of the vessel. This should be just a little higher than the transom and should extend over it so that when the anchor is deployed it does not do any damage. The table should be fixed firmly in place with appropriate attachments and tie-downs. The top of the table can be given a slight (15° or so) slope to the stern, to make anchor deployment easier. The anchor is placed on the table at the dockside using a loading crane, and is secured firmly in place before departure.



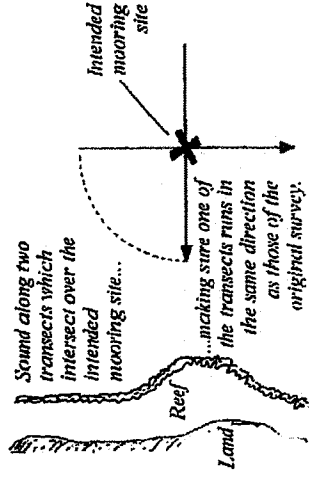
Chain block-and-tackle set so that tightening up will force the anchor over the stern

If possible the anchor's centre of gravity should be close to the stern of the vessel or even slightly outboard so that when it is freed it can be easily pulled overboard by the weight of the deployed bottom chain, helped by the crew using crowbars or strong pipes for leverage. However if for safety or other reasons the anchor cannot be positioned hanging over the stern, then extra force may be needed to deploy it. This can be provided by a chain block-and-tackle rigged up between the stern cleats, with the chain lying behind the anchor so that when tightened up it pushes the anchor over the stern. A length of angle-iron placed between the chain and the anchor will help the chain to slide, and protect the deployment table and anchor corners from damage.

SECTION 2H: DEPLOYMENT PROCEDURE

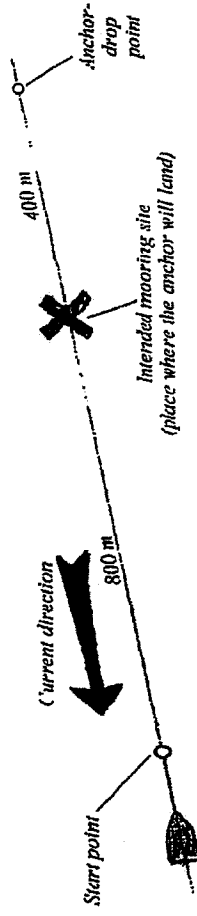
Once all the preparations have been made as described in the preceding sections of chapter 2, the actual FAD deployment takes place as follows:

The vessel makes way to the designated FAD mooring site, to verify the site and determine the direction of buoy drift. A check of the depth at the designated site is made first, using the echo-sounder. Ideally two short crossing transects should be run at right angles, one of them oriented in the same direction as the original site survey transects, with the designated mooring site located where the transects intersect. The depth readings should correspond to those obtained during the site survey process. If they don't, then the vessel may not be at the right site.



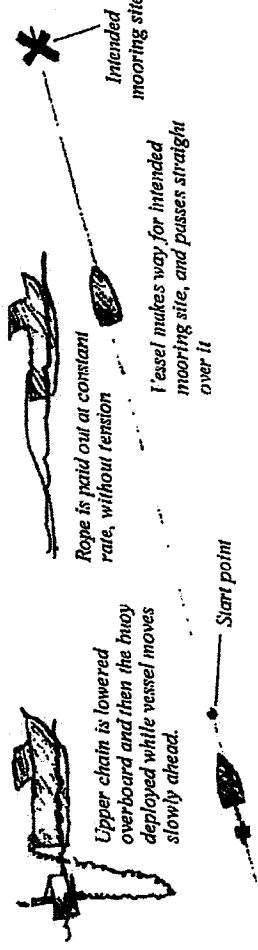
Once the site has been verified, the vessel is positioned at the designated FAD mooring site and the GPS is used to determine the likely direction of buoy drift, as described in section 2D. The estimated direction of drift is recorded and plotted on the navigational chart.

Next, the point at which the vessel will start deploying the FAD (by releasing the buoy) is determined. This is a point directly down-current of the FAD site, along the line of buoy drift, and at a distance of two-thirds the total length of the mooring. For instance in the case of a FAD mooring that is 1,200 m long, the start point would be 800 m straight down-current of the designated FAD site.



The anchor-drop position is also determined, up-current from the designated FAD site at a distance of one-third the mooring length. In the case of a 1,200 m mooring, the anchor-drop site will be 400 m up-current of the intended FAD site.

The drop positions are programmed into the GPS unit. The vessel then makes way to the start position, and begins the process of deploying the FAD. The first step is to unite the FAD buoy and free the upper mooring chain. Once this has been done the upper chain and a corresponding length of rope are lowered into the water while the vessel moves very slowly forward. The buoy is deployed overboard, and the vessel sets off on an up-current heading for the designated mooring site and anchor-drop site.

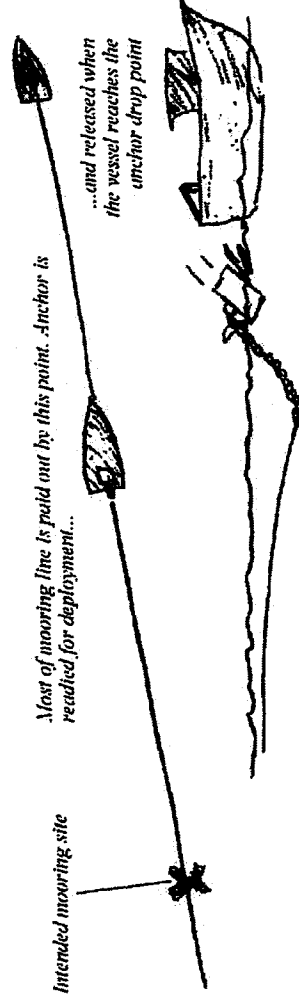


The vessel makes way along the up-current heading, maintaining a constant slow rate of speed while the rest of the mooring rope is paid out. The vessel's rate of speed must allow the mooring rope to deploy naturally, and without significant tension. Care must be taken not to tow the buoy along behind the boat while the mooring is paying out, since this will cause the vessel to arrive at the anchor-drop site with rope still on-board. In addition, if 3-strand rope is being used, the stretching of the rope caused by towing can introduce twists which may cause tangles later on.

The vessel passes directly over the designated mooring site as it makes its way toward the anchor-drop position. By the time the vessel nears this point the last part of the mooring rope should be going over the side. If the rope runs out too soon it may be necessary to tow the mooring a short distance until the anchor-drop point is reached. If towing has to be done, it should be done very slowly to minimise tension on the mooring rope.

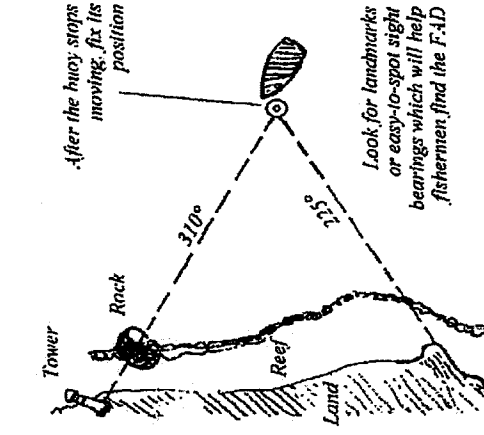
At this point the vessel is slowed down while the bottom chain and anchor are prepared for deployment as quickly as possible. This is the most dangerous part of the deployment and the one where there is most potential for things to go wrong, so great caution must be used throughout the process.

The securing ropes or ties are released so that the anchor is ready for deployment, while the vessel continues to motor slowly ahead against the current. This will gradually increase the tension on the rope, which should now all be in the water. As this happens the leading end of the anchor chain is fed over the side, after which the rest will rapidly follow. At this point the skipper may increase the speed of the vessel a little. As the tension increases the rope and chain will exert pressure on the anchor and try to pull it overboard. If the anchor is positioned with its centre of gravity somewhat outboard, this may be all the force needed to tip it over the edge. Otherwise it may be necessary to apply extra force to get the anchor into the water, as described in section 2C.



The anchor will quickly sink and as it does so will be progressively pulled away from the deployment vessel as the drag of the mooring pulls it towards the buoy and the designated mooring site (see section 2C).

After deploying the anchor the vessel should clear the area and stay clear until the anchor has hit bottom, the mooring has recoiled, and the buoy has stopped moving. This process generally takes 10 to 15 minutes, but to be sure, a half-hour period should be allowed. Once the buoy is on-station, the vessel should be motored over to the FAD and an inspection made of the buoy and upper mooring (see section 3B) to ensure there has been no damage or tangling of the mooring line.



The last job is to make a depth check on the FAD and fix the buoy's position using both shipboard electronics and a hand-bearing compass. Accurate position fixes and bearings on prominent landmarks will be needed by fishermen and other users of the FAD (who may not be equipped with GPS) as well as by the personnel who will inspect and maintain it. It is helpful for fishermen to be given the distance and bearing of the FAD from key features such as wharves or reef passages. Visual bearings, where conspicuous landmarks are directly in line with each other, should also be taken so that fishermen without compasses can locate the FAD.

Sight bearings, compass bearings, FAD depth and the distance of the FAD from the shore or nearby fishing ports should be published in local newspapers, on the radio, and in other appropriate forms. The information will not only help fishermen locate the FAD, but will also make other ship traffic aware of its presence.