This document has been archived.

**TECHNICAL SERVICES**

 **Purpose**

The purpose of the Technical Services Program is to enhance the scientific productivity of research programs that make use of major facilities, primarily research vessels. Effective use of such facilities is enhanced by providing institutional backing for technical support services available to all users of an institution's facilities. Technical support services provided by this Program assist with the interactions between the facility operator and scientific user. Services encompass maintenance, calibration, scheduling, logistical assistance, and at-sea supervision of the instrumentation and shared-use equipment that a ship operating institution makes available to users. To qualify for Technical Services support, the institution should have a concurrent Ship Operations award. Technical support considered by the Program must be directly attributable to NSF-sponsored use of the facilities.

**Scope**

The primary focus of the Technical Services Program is to provide technical support services aboard academic research vessels that receive operational funding from NSF. The program is limited to those technical support activities associated with general-use oceanographic facilities utilized by NSF-sponsored projects.

All institutions requesting Technical Services support are expected to provide minimum basic at-sea and ashore technical services as described below. An institution may propose to provide a level of basic services and scientific capabilities above the minimum level. The full extent of basic services considered for support will depend on the shared-use instruments made available, the scientific capabilities of the research vessel(s) that the institution operates and the management structure for the technical support activities.

Support for providing basic services to NSF-sponsored users may be requested from the Technical Services Program. Basic services include both shore support and sea-going support and should be provided to all ship users. Charges for this support should be based on the total operating days of each ship and should be assessed as a daily rate for each ship. Support for basic services requested from NSF should be proportional to the ship time used by NSF-funded investigators.

 **Basic Minimum Activities**

 The Technician Program has two components: Activities Ashore and Activities at Sea. All proposals for OCFS support must have both components. However, the institution may specify whether the at-sea services are optional or mandatory for each ship user.

**Technician Activities Ashore:**

A. *Communication and Coordination*

In advance of each cruise

1. Learn cruise objectives and what equipment and services will be required.

2. Inform users of ship lay-out, capabilities, and availability of shared-use equipment.

3. Coordinate logistics.

4. Advise users as to costs or fees for equipment and services not covered by basic services funding.

B. *Maintenance, Repair, Storage, and Calibration*

1. Perform routine maintenance procedures.

2. Coordinate non-routine and specialized maintenance and calibration tasks requiring services of others.

3. Assure proper storage of shared-use gear when not in service.

4. Maintain appropriate property control and utilization records.

C. *Staging and Preparation*

Accept, prepare and control project-specific gear for staging prior to cruises.

D. *Coordinate Loading and Unloading*

E. *Shipping*

Prepare shared-use equipment and project-specific gear for shipment to and from ports of call.

F. *Monitor Hardware and Software Developments*

Monitor scientific hardware and software developments and take appropriate steps to provide modern and effective common-use science capability.

**Technician Activities at Sea:**

 The principal activity at sea is to assist with the interactions between the facility operators and the research project personnel. Technicians funded by this Program have broad responsibilities for providing the coordination and assistance needed for the successful at-sea completion of research projects.

A. *Prior to departure*

Prior to departure and during initial phases of the cruise, technicians:

1. Assist in stowage of all scientific gear.

2. Assist in assignment of scientific personnel's lab and berthing spaces.

3. Assist in setting up laboratories and equipment giving special attention to safe and effective use at sea.

4. Assist in instructing or updating scientific personnel in proper and safe use of equipment and ensure that established safety and other appropriate ship's procedures are observed.

B. *While At Sea*

While at sea, technicians:

1. Assure that facility-provided science instrumentation and computer equipment is operating effectively.

2. Provide liaison between ship's crew and scientific personnel, especially with regard to over-the-side operations.

3. Assist with scientific operations and repair of all scientific gear as primary responsibilities permit.

C. *Post Cruise*

Continuing post cruise activities include:

1. Coordinate necessary off-loading and shipping activities upon completion of cruise.

2. Ensure data from cruise is available to scientists in a useable format.

3. Maintain adequate inventory of spare parts and supplies for shipboard scientific equipment and instrumentation.

4. Take appropriate measures to repair, service, and calibrate shared-use scientific gear.

**Technical support activities not included:**

 While acknowledging that variations in institutional management policies and practices exist and that individual research project requirements vary, the OCFS Technician Program is not intended to support:

A. Upkeep and operation of specific scientific equipment and instrumentation that is under development or maintained for individual research projects.

B. Routine scientific watch standing at the detriment of performing primary activities.

C. Data reduction, analysis and/or archiving.

 **Evaluation Criteria**

 The following equally weighted criteria will be used in the evaluation of proposals for Technician support:

 • The likely success of proposed technician activities to provide effective support for scientific research using institutional facilities.

 • The extent to which the scope of basic technical support services (as described above) match the facility, i.e. research vessel operating areas and schedule for the calendar year, size and capability of the vessel, and its scientific outfit and capability.

 • The extent of the institution's inventory of shared-use equipment requiring in-house up-keep, calibration, and upgrading.

 • The proportion of NSF-sponsored activities supported by the institutional facilities relative to total technical support activities and available funding.

 **Proposal Format**

All proposals submitted for Technician support must conform to the following prescribed format:

 • *Information about PDs*, NSF Form 1225. A single copy per proposal set.

 • *Cover Sheet*, NSF Form 1207 must be included. Use "Technicians" for the NSF ORGANIZATION UNIT and "NSF 94-XX" for PROGRAM ANNOUNCEMENT.

 • *Project Summary*, NSF Form 1358.

 • *Table of Contents*, NSF Form 1359.

 • *Section 1. Description of Management Structure*

 • *Section 2. Inventory of Shared-Use Instrumentation and Services Provided*

 • *Section 3. Current Year Program*

 Schedule

 Table 1.A.

 Table 2.A.

 Description of Services

 • *Section 4. Next Year Program*

 Schedule

 Table 1.B.

 Table 2.B.

 Description of Services

 • *Section 5. Summary 12 Month Budget*

 • *Section 6. Project Specific Activities* (optional)

 • *Section 7. User Fees*

 • *Summary Proposal Budget*, NSF Form 1030

 • *Biographical Sketch of PD and Co-PDs*, NSF Form 1362.

 • *Statement of Current and Pending Support*, NSF Form 1239

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 (New Page)

(Name of Institution)

 **Section 1**

 **DESCRIPTION OF MANAGEMENT STRUCTURE**

Provide a brief (2 pages or less) description and a chart of the institutional management structure of which the technician group is a part. This narrative should include information on patterns of supervision, organizational location(s) of the technician function, and any additional information that might be helpful in evaluating the proposal. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (New Page)

(Name of Institution)

 **Section 2**

 **INVENTORY OF SHARED-USE INSTRUMENTATION AND SERVICES PROVIDED**

List Institutional holdings of major shared-use instrumentation and equipment that are maintained and operated by the technical services group with funding requested in this proposal. If a fee is charged for use of these instruments, include a fee schedule. Describe activities, services or supplies supported by user fees. For example: "Coring fees support expendable materials and supplies such as core liners, etc." or "CTD fees support annual calibration costs"

 List basic services provided with funding requested in this proposal and services that incur a cost to the user. Include a fee schedule for these services.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(New Page)

(Name of Institution)

**Section 3**

**CURRENT YEAR PROGRAM**

*Provide current year schedule(s) in a format similar to the format used for electronic posting, but including a column listing technicians assigned to each cruise for basic technical support* (see EXAMPLE 1 on the next page). DO NOT list technicians covered by individual project support.

*Provide Table 1.A. Basic Technical Support Activities (for current calendar year)*. See format provided for Table 1. Projects and ship operating days listed in this table should be identical to those listed in the Ship Operations proposal Table 1.B. Include the daily rate for basic technical services under the name of each ship listed.

Give a brief description of basic technical support activities provided for each project listed, including the amount and type of technical services required. (For example: "This is a WOCE project and requires the services of two technicians for a total of 16 hours per day. Scientists have requested 20 casts per day of the 36-place rosette." or "This project consists of 20 one-day cruises, and shore-support will be provided. Equipment provided includes Seacat CTD and box-corer." ) Basic at-sea support is generally defined as providing one to two technicians per cruise.

Explain any differences between ship operating days and technical service days listed in Table 1.A. **Note:** Basic technical support services includes both shore-support and seagoing support, however daily rates for these services are based on ship operating days. For short cruises or smaller vessels, sea-going technical support is not always required; in these cases charges for technical support services should be divided by **ship operating days** regardless of whether or not a technician goes to sea. Technical support may or may not be provided during transits and extended port stops for larger vessels; division of costs may be based on the operating schedule excluding these days if no technical support is provided. Show amount of funding received from each agency or institution and any expected carry-forwards or deficits.

Describe any exchange of personnel with other institutions or personnel training programs scheduled during the year. Include details of these programs and list costs.

*Provide Table 2.A. Technician Activities in (current calendar year).* See format provided for Table 2. This table should include calendar months charged for all projects, contracts, etc. of all agencies and organizations listed in Table 1.A.

Explain formulas used to compute calendar months charges. For example: At-sea months may or may not include overtime, etc. Ashore time may or may not include sick leave, vacation and holiday pay, etc. Include specifics about how these benefits are accrued and distributed. Explain any unusual amounts of overtime or seapay. If less than 6 months of support is requested for any person or if a person spends less than one month at sea, provide a brief description of that person's duties and activities related to the basic technical support program.

EXAMPLE 1

*Please note: Each institution's normal format for ship schedules may be used with the addition of a column for technicians assigned to each cruise. The format presented here is an example only.*

**Cruise Schedule and Technical Services**

 **Cruise Area PI/Inst. Ports Technician**

 **Dates Purpose Proposal # Assigned**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 26 Mar NP5/Bering Sea Smith/G.U. Dutch Hbr. Elec. Tech

 17 Apr Otter Study OCE96-33333 Dutch Hbr.

 21 Apr. NP6/NP11 Hernandez/T.U. Dutch Hbr. Elec. Tech

 23 May Ocean Current OCE95-44444 Hawaii Mar. Tech

 30 May NP11 Espinell/B.U. Hawaii Comp.Tech.

 20 Jun Sidescan ONR Guam Elec. Tech.

 28 Jun NP11 Hernandez/T.U. Guam Elec. Tech.

 15 Jul Ocean Current OCE95-44444 Hawaii

 20 Jul SP 2/3 ONR Hawaii --------

 31 Jul Transit Pt. Arenas

(BASIC FORMAT FOR ALL TABLE 1'S AND TABLE 2'S)

(SEE SAMPLES ON NEXT PAGE)

(Name of Institution)

 **Section 3**

 **TABLE 1 (A, OR B)**

 **BASIC TECHNICAL SERVICES PER PROJECT CY 19\_ \_**

**Project Identification Ship Name Ship Name \* Tech Actual/Estimated**

 **(Tech Services (Tech Services Support Costs of Technical**

 **Daily Rate) Daily Rate) Days \*\* Support per Project**

**Projects performed using**

 **NSF-supported ship time:**

**NSF Projects:**

 Grant/contract No., PI's #(Operating #(Operating # of Days

 Name, PI's Institution Days) Days)

 Total NSF ..................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

Total NSF Award \*\*\* ....................... $\_\_\_\_\_\_\_\_\_\_

**Projects performed using**

 **(agency)-supported**

 **ship time** \*\*\*\*

 Total (agency) ................................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

Total Agency Award \*\*\* ................... $\_\_\_\_\_\_\_\_\_\_

**Summary Totals:**

**Technical services supported by:** #(Operating #(Operating # of Days

 Days) Days)

 NSF .......................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency A ................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency B ................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency C ................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 etc.\*\*\*\* ..................................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Total \*\*\*\*\* ................................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

Total Awards \*\*\* ............................ $\_\_\_\_\_\_\_\_\_\_

Expenditures (Estimated as of end of year) \*\*\* $\_\_\_\_\_\_\_\_\_\_

Carry-Forward or Deficit \*\*\* $\_\_\_\_\_\_\_\_\_\_

\*Additional column each ship.

\*\*This number may be equal to or less than operating days; Differences must be explained in text.

\*\*\*Required for current calendar year Table 1.A. only.

\*\*\*\*Repeat for each agency providing technical support: e.g. ONR, USGS, State Government, University, or private sources.

\*\*\*\*\*For Table 1.B. should equal Program Budget listed in Section 5: Summary 12 Month Budget for Basic Technical Services.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **TABLE 2 (A, OR B)**

 **CALENDAR MONTHS CHARGED TO BASIC TECHNICAL SERVICES PROGRAM**

**Technician Name Title Total Months At-Sea Months Ashore Months**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total Months Charged for

 Basic Technical Support #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_

SAMPLE DATA

Oceanic University

 **Section 3**

 **TABLE 1 B**

 **BASIC TECHNICAL SERVICES PER PROJECT CY 19\_ \_**

**Project Identification R/V MARS R/V JUPITER Tech Actual/Estimated**

 **Support Costs of Technical**

 **($700) ($1,200) Days Support per Project**

**Projects performed using**

 **NSF-supported ship time:**

 OCE90-14126 R.Smith ................ 10 10 $12,000

 OCE90-24695 F.Jones ................ 15 15 $10,500

 \*OCE90-04629 L.Cox ................. 21 21 $14,700

 OCE90-09648 J.James ............... 7 7 $4,900

 OCE90-19731 R.Thomas ............. 28 25 $30,000

 \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

 Total NSF .................................... 43 38 78 $72,100

**Projects performed using**

 **ONR-supported**

 **ship time**

 N0014-90-C-0073 R.Williams ...... 20 20 $14,000

 N0014-90-C-0124 T.Welch ......... 36 33 $39,600

 \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

Total ONR ...................................... 20 35 53 $53,600

**Projects performed using**

 **USGS-supported**

 **ship time**

 14-08-0001-13579 A.Brooks ........ 60 55 $66,000

 14-08-0001-26514 J.Foerster ....... 20 20 $14,000

 \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

Total USGS .................................... 20 60 75 $80,000

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Summary Totals:**

**Technical services supported by:**

 NSF ............................................ 43 38 78 $72,100

 ONR ........................................... 20 36 53 $53,600

 USGS .......................................... 20 60 75 $80,000

 \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

Total ............................................. 83 134 206 $205,700

\* Proposals for which final approval has not been received.

 **TABLE 2 B**

 **CALENDAR MONTHS CHARGED TO BASIC TECHNICAL SERVICES PROGRAM**

**Technician Name Title Total Months At-Sea Months Ashore Months**

T.Jones Marine Tech 10 4 6

J.Seurat Electronic Tech 9 3 6

S.Jatte Computer Tech 6 1 5

 \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

Total Charged for Basic Services.......... 25 8 17

(New Page)

(Name of Institution)

**Section 4**

**NEXT YEAR PROGRAM**

*Provide next year's schedule(s) in a format similar to the format used for electronic posting, but including a column listing technicians assigned to each cruise for basic technical support (see Example 1).* DO NOT list technicians covered by individual project support.

*Provide Table 1.B. Basic Technical Support Activities (for next calendar year)*. See format provided for Table 1. Projects and ship operating days listed in this table should be identical to those listed in the Ship Operations proposal Table 1.C. Include the daily rate for basic technical services under the name of each ship listed.

Give a brief description of basic technical support activities provided for each project listed, including the amount and type of technical services required. Basic at-sea support is generally defined as providing one to two technicians per cruise. If more than two technicians are proposed for a cruise in the next calendar year, complete justification must be given. Agencies may require that the additional technical services be funded through scientific project funds.

Explain any differences between ship operating days and technical service days listed in Table 1.B. General policies concerning basic technical support and calculation of the daily rate for technical services are listed in Section 3 and are applicable here.

Describe any exchange of personnel with other institutions or personnel training programs scheduled during the year. Include details of these programs and list costs.

*Provide Table 2.B. Technician Activities in (next calendar year).* See format provided for Table 2. This table should include calendar months charged for all projects, contracts, etc. of all agencies and organizations listed in Table 1.B.

Explain formulas used to compute calendar months charges if these formulas will be different from the current calendar year. If no changes are anticipated, refer reviewers to Section 3. Explain any unusual amounts of overtime or seapay anticipated.

If less than 6 months of support is requested for any person or if a person spends less than one month at sea, provide a brief description of that person's duties and activities related to the basic technical support program.

(New Page)

(Name of Institution)

**Section 5**

**Summary 12 Month Budget**

Provide a budget for the complete basic technical services program in the format provided. This budget should include costs for all grants, contracts, etc. for all agencies listed in Table 1.B. Allocation of costs to various agencies and organizations should be detailed in Part V and should be proportional to ship use as proposed in Table 1.B.

 (New Page)

(Name of Institution)

 **Section 5**

 **SUMMARY 12 MONTH BUDGET**

**I. Salaries and Wages**

 Name Title Months Charged Total Program

 to Basic Services Budget

 Total Salaries and Wages................................................................................ $

 Total Overtime ...........................................................................................

 Total Fringe Benefits ....................................................................................

 Total ........................................................................................................$

**II. Other Direct Costs**

 A. Travel

 1. Domestic (amount)

 2. Foreign (List origin & destination of each trip, number of people, and full cost(s)

 Example:

 Curacao-Providence and return (2@$364)...................................... $728

 Per diem: 8 Days (@$20)......................................................... $160

 Total Travel Cost ....................................................................................$

  **B, C, D, etc. As required for**

 repairs, calibrations, tools, parts, supplies,

 communication, shipping, rental etc. directly

 related to technician activities.

 ***Sufficient detail must be provided to evaluate requests***

 Total Other Direct Costs ............................................................................$

**III. Total Direct Cost (I. + II.)** ..........................................................................$

**IV. Indirect Costs** ( % of ) ......................................................$

 (The indirect cost rate to be used is the same as that for ship operations.)

**V. Total Program Budget** ................................................................................$

 **Less Funds from other Sources** (List by agency or organization).............................$

**VI. Total NSF Request** ....................................................................................$

(New Page)

(Name of Institution)

**Section 6**

**PROJECT SPECIFIC ACTIVITIES**

NSF will consider funding beyond the amount required for basic technical services for projects that will lead to major improvements in technical support of NSF-funded research aboard research vessels. General upgrades of instrumentation and computer hardware and software are considered part of the basic technical services program and should not be requested here.

*Provide a description of the proposed project and a project budget*. Project-specific funding should be requested for a limited time period. Personnel involved in projects may be outside the normally supported pool of technical support personnel. Subcontracts and limited requests for permanent equipment may be included if necessary. Sufficient detail must be included in the project description to evaluate the technical feasibility of the proposed work. The budget submitted should follow the budget format presented in Section 5 and should be submitted *in addition to* the total program budget submitted as Section 5.

Do not include amounts requested in the Section 6 budget in the total program budget submitted in Section 5. The NSF budget Form 1030 should equal the sum of the budgets submitted in Section 5 and Section 6.

(New Page)

(Name of Institution)

**Section 7**

**USER FEES**

*Provide a detailed list of user fees anticipated for the current year in Table 3.* An example of the required Table 3 format is provided below. User fees are defined as fees charged to the scientist or organization that is using the ship and equipment. These fees are above and beyond funding received for the basic technical services. Include any fees charged for use of any equipment operated as shared-use equipment and maintained by personnel with funding from the basic technical services program. All equipment purchased with funding from the NSF Oceanographic Instrumentation program should be included if user fees are charged. Examples of shared-use equipment for which user fees are often charged include, but are not limited to, CTD's, shipboard computers, ADCP's, coring equipment, airguns, MOCNESS, etc. This information is required to help managers and reviewers assess equipment maintenance needs and compare services offered by each institution.

Describe activities, services or supplies supported by user fees if these fees were not previously described in Section 2.

(BASIC FORMAT FOR TABLE 3)

(SEE SAMPLE ON NEXT PAGE)

(Name of Institution)

 **Section 7**

 **TABLE 3**

 **USER FEES PER PROJECT CY 19\_ \_**

**Project Identification Ship Name \* Equipment Number Rate for User Fees Assessed**

 **& # of Oper- Used of Days Use of**

 **ating Days Used Equipment**

**Projects performed using**

 **NSF-supported ship time:**

**NSF Projects:**

 Grant/contract No., PI's

 Name, PI's Institution #\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Total NSF ................. #\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

**Projects performed using**

 **(agency)-supported**

 **ship time** \*\* ............ #\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

Total (agency) .............. #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

**Summary Totals:**

**Technical services supported by:**

 NSF ....................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency A ................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency B ................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 Agency C ................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

 etc. \*\* .................... #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

Total ........................ #\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_\_ $\_\_\_\_\_\_\_\_\_\_

\* Add a separate column for each ship.

\*\*Repeat for each agency providing technical support: e.g. ONR, USGS, State Government, University, or private sources.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Oceanic University

 **Section 7**

 **TABLE 3**

 **USER FEES PER PROJECT CY 19\_\_**

**Project Identification R/V MARS Equipment Number Rate for User Fees Assessed**

 **Used of Days Use of**

 **Used Equipment**

**Projects performed using**

 **NSF-supported ship time:**

**NSF Projects:**

 OCE90-14126 R.Smith 10 Isotope Van 10 $1,000/Cruise $1,000

 Scin Counter 10 $75/Day $750

 OCE90-24695 F.Jones 15 CTD 10 $20/Day $200

 Total NSF ................. 25 $1.950

**Projects performed using**

 **ONR-supported**

 **ship time**

 N0014-90-0073 ..... 20 ADCP 20 $100/Day $2,000

Total ONR .................. 20 $2,000

**Summary Totals:**

**Technical services supported by:**

 NSF ....................... 25 $1,950

 ONR ...................... 20 $2,000

Total ........................ 45 $3,950

 **OCEANOGRAPHIC INSTRUMENTATION**

 **Purpose**

 The purpose of the Oceanographic Instrumentation Program is to enhance the scientific capabilities and productivity of seagoing research projects that make use of major facilities, primarily research vessels.

Proposals for shared-use oceanographic instrumentation may include items for the collection, processing and analysis of oceanographic data. Typical of items which might be requested are data loggers, Niskin bottles, coring equipment and autoanalyzers. Support should be requested only for instrumentation justifiable in terms of multi-project cooperative utilization. Support for instrumentation which is project-specific in nature, i.e. justifiable in terms of the requirements of a single project or principal investigator, should be requested from the appropriate sources of research support.

 Proposals for the acquisition or upgrading of major items of specialized multi-user instrumentation for laboratory-based research, e.g. mass spectrometers, department computer/analyses systems. etc., should be submitted to the Ocean Sciences Research Section (OSRS) as regular instrumentation proposals. Joint funding with OCFS may be considered for projects that include both shore-based and sea-going research capabilities.

 Proposals should contain sufficient detail to justify the requested acquisitions on the basis of (1) effective shared use (2) need for maintaining and/or updating present capabilities, (does request represent upgrade or replacement? How does it relate to present inventory?), and (3) increasing the capability of the institution to better support NSF ocean sciences research. Proposals that include the acquisition of major electronic and mechanical systems should demonstrate that a sufficient level of technical expertise is available to maintain and manage the system. Spare parts and expendable supplies should be obtained through user fees or cost centers and not proposed for acquisition here.

**Evaluation Criteria**

 Evaluation of proposals is based on the following equally weighted criteria:

 • Urgency of the instrumentation for the support of NSF sponsored seagoing research projects

 • Adequacy of the proposed instrumentation for shared-use

 • Appropriateness of the proposed instrumentation for the institution and the type of facility or facilities it operates

 • Demonstration of an effective and accountable shared-use plan and for maintenance of the requested instrumentation

 **Proposal Format**

 Proposals for acquisition of oceanographic instrumentation from most institutions are evaluated concurrently. Therefore, it is important that information from all applicants be similarly arranged and presented. If the following format is not followed, it may be necessary to return the proposal for resubmission in the required form.

• *Information about PDs*, NSF Form 1225. A single copy for each proposal set.

• *Cover Sheet*, NSF Form 1207. Use "Oceanographic Instrumentation" for the NSF ORGANIZATION UNIT and "NSF 94-XX" for PROGRAM ANNOUNCEMENT. The individual with direct, first order management responsibility for oversight of the proposed shared-use instrumentation should be named in the proposal as project director or co-project director.

• *Project Summary*, NSF Form 1358.

• *Table of Contents*, NSF Form 1359.

• *Outline of Instrumentation Requests.* An annotated list of instrumentation requested, presented in outline form, should be provided. The annotations serve to highlight the relative importance of the requested items and in no case will suffice as justification for NSF support. Exhibit I shows the outline format to be used, and Exhibit II provides a sample page in this outline form.

• *Background and Justification.* In the same sequence as in the outline, provide the following information for each item requested:

1. A technical description of the item and a general statement of how it will improve ocean research capabilities, stating the handicaps that exist in the absence of the item. The description should be sufficiently complete to permit technical evaluation by the reviewers. Reference should be made to any existing items of the type requested which are in current institutional shared-use inventories.

 All equipment items requested in the proposal that are designated by manufacturer's name and type should be identified in this manner only for the purpose of categorizing the particular item as to function, specifications and cost. A clear indication should be made that the requirement may be satisfied by an equivalent product.

2. Justification for NSF support should be stated in terms of requirements for multiple project utilization, possibilities for increased efficiency for ship operations and research projects, and/or expectations for advancing ocean science research capabilities through improved instrumentation and procedures. Provide a brief description of related research projects which would use the instrumentation, and the names of principal scientists involved to illustrate current demand, and discuss the bases for anticipating continuing need for the item.

3. A final summary page providing an overall ranking of the relative importance of the items requested.

• *Management Plan and Control of Inventory.*

 Plans for managing, maintaining, and assuring cooperative use of all instrumentation should be explained. Describe existing instrumentation pools at the institution and sources of spare parts and expendable supplies. Also, describe the inventory procedure applied to instrumentation provided by NSF and how this instrumentation is correlated with

that obtained through other sources. Names of responsible persons should be included in this section.

 If the overall management of any one item requested will significantly differ from that listed here, describe the relevant management plan in the individual item justifications above.

• *Budget*, see Exhibit III. List requested items under the seven main headings only (i.e., I, II, III, etc.). Shipping and handling charges should be shown as separate items when they exceed 5 percent of the purchase price, otherwise these charges may be included in the cost of purchase. Installation charges are an allowable cost associated with acquisitions. These charges, however, should always appear as separate items, Items costing more than $1,000 must be identified and priced separately.

• *Summary Proposal Budget*, NSF Form 1030

• *Biographical Sketch of PD and Co-PDs*

• *Statement of Current and Pending Support*, NSF Form 1239

• *Appendices* Certain materials are required as supporting information for proposals to reinforce justification statements, to provide technical data and specifications. The following types of supporting materials must be provided in this section, but the number of pages must be kept to the minimum essential for describing any given item.

a. Item descriptions. This may consist of pages reproduced from catalogs or brochures. Information on commonly used instruments need not be included.

b. Price quotations.

c. Any additional information required to document or justify the requests.

 **Exhibit I**

 **Oceanographic Instrumentation**

 I. Data management systems and components

 II. Sea water measurements, sampling and analysis

 III. Sea floor sampling and analysis

 IV. Acoustic signaling systems and components

 V. Instrument deployment, tracking and retrieval

 VI. Shore laboratory instrumentation

 VII. Other

(SAMPLE PAGE)

**Exhibit II**

**OUTLINE OF INSTRUMENTATION REQUESTS**

**Oceanographic Instrumentation**

I. Data management systems and components

 None \*

II. Sea water measurements, sampling and analysis

 A. Deep sea reversing thermometers. To add to current inventory for pooled use. $7,850

 B. Rosette system. To add water sampling capability to R/V SNOOPY $22,000

III. Sea floor sampling and analysis

 A. Piston corer modifications. To improve and standardize unit for

 use on R/V's SPOTLESS and PIT BULL $8,000

 Total $37,850

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\* NOTE: Include sub-item of the outline even if you are not requesting anything under them and indicate "None".

 (SAMPLE PAGE)

 **Exhibit III**

Inst. Kennel University

P.D. Erich E. Seadog

 **SUMMARY 12 MONTH BUDGET**

 **Oceanographic Instrumentation**

II. Sea water measurements, sampling and analysis

 Deep sea reversing thermometers for the R/V SNOOPY $7,850

 Rosette system 22,000

 \_\_\_\_\_\_

 Subtotal II $29,850

III. Sea floor sampling and analysis

 Piston corer modifications for the R/Vs SPOTLESS and PIT BULL $8,000

 Subtotal III $8,000

 \_\_\_\_\_\_\_

 Total Cost $37,850

 Less Funds from Other Sources \* -0-

 \_\_\_\_\_\_\_

 Total requested from NSF $37,850

\_\_\_\_\_\_\_\_\_\_\_\_

\* List amounts by source

 **SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT**

 **Purpose**

Requests for Shipboard Scientific Support Equipment may include permanent installations and equipment required to outfit a vessel so that it may conduct ocean science research. This may include such items as winches, cranes, and the entire range of navigation and communication equipment. Requests for both replacement and installation of new equipment will be considered.

 Support should be requested only for equipment justifiable in terms of multi-project cooperative utilization. Support for equipment which is project-specific in nature, i.e. required for a single project or principal investigator, should be requested from the appropriate sources of research support.

 Proposals should contain sufficient clear and substantive detail to justify the requested support. This should be based on needs for maintaining and updating present capabilities and acquiring additional capabilities consistent with UNOLS goals for fleet ships and the overall research requirements related to NSF support.

 **Evaluation Criteria**

 Evaluation of proposal is based on the following equally weighed criteria:

 • Urgency (e.g. safety, minimum standards, condition of existing equipment, science research requirements)

 • Purpose (e.g. potential for improving ship as oceanographic research platform, degree of multi-project use, relationship to NSF-sponsored research)

 • Justification (e.g. history and description of existing equipment, examination of alternatives, evidence of engineering studies, details of desired equipment, installation details, maintenance plans, appropriateness of NSF support, awareness of other ships' equipment)

 • Costs (e.g. reasonableness, degree of budget detail, vendor quotations)

 **Proposal Format**

 Proposals for support of Shipboard Scientific Support Equipment from most institutions are evaluated concurrently. Therefore, it is important that proposals from all applicants be similarly arranged and presented. If the following format is not adhered to, it may be necessary to return the proposal for resubmission in the required form.

• *Information about PDs*, NSF Form 1225. A single copy for each proposal set.

• *Cover Sheet*, NSF Form 1207. Use "Shipboard Scientific Support Equipment" for the NSF ORGANIZATION UNIT and "NSF 94-XX" for PROGRAM ANNOUNCEMENT. The individual with direct, first order management responsibility for the oversight of the proposed installations should be named in the proposal as project director or co-project director.

• *Project Summary*, NSF Form 1358.

• *Table of Contents*, NSF Form 1359.

• *Outline of Equipment Requests.* An annotated list of equipment or services requested, presented in outline form, should be provided. The annotations serve to highlight the relative importance of the requested items and in no case will suffice as justification for NSF support. Exhibit I shows the outline format to be used, and Exhibit II provides a sample page in this outline form.

• *Background and Justification*. In the same sequence as the outline, provide the following information for each item of equipment requested:

1. A technical description of the item and a general statement of how it will improve the operational or scientific mission of the ship, detailing the handicaps that exist in the absence of the proposed improvement. If the item is a component of a larger system or is dependent on inputs from other shipboard equipment, discuss the interrelationship and

compatibility of the item of equipment to the larger system. Possible advantages of the type of equipment requested with respect to commonality with equipment and/or spares on hand should be discussed, as well as any pool arrangements applicable to the handling or use of the equipment.

 All equipment items requested in the proposal that are designated by manufacturer's name and type should be identified in this manner only for the purpose of categorizing the particular items as to function, specifications, and cost. A clear indication should be made that the requirement may be satisfied by an equivalent product.

2. Justification for NSF support. This should be stated in terms of increased efficiency for ship operations and research projects, addressing both current and long-term needs. Identify requirements for NSF-sponsored research and inter-institutional use of the ship. Indicate funding in hand or being sought from other sources.

3. A summary page providing an overall ranking of the relative importance of the items requested.

• *Management Plan.*

 Plans for managing and maintaining the proposed equipment should be fully described, indicating anticipated sources of support. Names of individuals responsible for these functions should be included in this section.

• *Budget*, see Exhibit III. List requested items under the four main headings only (i.e., I, II, etc.). Shipping and handling charges should be shown as

separate items when they exceed five percent of the purchase price; otherwise they may be included in the costs of the purchase. Installation charges are allowable costs associated with equipment acquisitions but, should always appear as separate items. Items costing more than $1,000 must be identified and priced separately.

• *Summary Proposal Budget*, NSF Form 1030

• *Biographical Sketch of PD and Co-PDs*, NSF Form 1362

• *Statement of Current and Pending Support*, NSF Form 1239

• *Appendices* Certain materials must be submitted as supporting information for proposals to reinforce justification statements, to provide descriptions and price quotations, and in some cases to provide technical data and specifications.

 The following types of supporting materials must be provided in this section, but the number of pages must be kept to the minimum essential for describing any given item.

a. Item descriptions. This may consist of pages reproduced from catalogs or brochures.

b. Price quotations.

c. Any additional information required for justification

Appendix materials must be grouped together and placed in the same sequence as the outline.

 **Exhibit I**

 **Shipboard Scientific Support Equipment**

 I. Deck Equipment

 II. Navigation Equipment

 III. Communications Equipment

 IV. Other Equipment

(SAMPLE PAGE)

 **Exhibit II**

 **OUTLINE OF EQUIPMENT REQUESTS**

 **Shipboard Scientific Support Equipment**

I. Deck Equipment

 A. Modification of trawl winch tension assembly on R/V LASAGNA $7,500

 Necessary to meet UNOLS minimum standards.

II. Navigation Equipment

 A. Loran-C system for R/V PIZZA $10,500

 Present unit's reliability is less than desirable.

 B. Back-up Radar for R/V MEAT BALL $12,400

 Present unit is unreliable and beyond economical repair.

III. Communications Equipment

 None\*

IV. Other Equipment

 A. Inflatable boat for R/V CHIANTI $4,800

 To replace heavily used boat no longer suitable for use at sea.

 Total $35,200

\* Include sub-items of outline even if you are not requesting anything under them and indicate "None".

 (SAMPLE PAGE)

 **Exhibit III**

Inst. Pasta University

P.D. C. Columbus

 **SUMMARY 12 MONTH BUDGET**

**Shipboard Scientific Support Equipment**

I. Deck Equipment

 Modification of tension assembly on the R/V LASAGNA $7,500

 Subtotal I $7,500

II. Navigation Equipment

 Loran-C for the R/V PIZZA $10,500

 Radar for the R/V MEAT BALL $12,400

 Subtotal II $22,900

IV. Other Equipment

 Inflatable Boat for the R/V CHIANTI $4,800

 Subtotal IV $4,800

 Total Cost $35,200

 (Less funds from other sources \*) -0-

 Total requested from NSF $35,200

\* List amount by source

**SHIP CONSTRUCTION, CONVERSION OR UPGRADE**

 From time to time, OCFS makes awards for the design, construction, acquisition, upgrade, or conversion of research vessels. These are dependent upon the availability of funds appropriated for this purpose and are made only on strong evidence of scientific need for a new or reconditioned vessel. Most awards in recent years have been for the conversion or upgrade of ships already in service whose age, configuration, or operating costs have impaired their usefulness. Ship construction awards can be made to institutions not presently operating Federally supported research vessels. However, such institutions must demonstrate the existence of continuing scientific requirements that cannot be met through the use of existing Federally supported ships, and provide assurance of their logistic and managerial capability to operate a research ship.

 Ship construction or conversion proposals are evaluated principally in terms of the scientific need for the particular vessel in the academic ocean science community as a whole. Proposals which fulfill this basic requirement are then reviewed further as to the design, configuration, and cost of the ship itself, and the ability of the institution to operate it effectively.

**Nature and Duration of Awards**

 Ship construction or conversion awards are generally made in the form of contracts. Title to ships built or acquired with NSF funds will be retained by the Federal government. New vessels are assigned to operating institutions through five-year charter party agreements.

**Submission of Proposals**

 Proposals may be submitted at any time, but institutions must consult with OCFS in advance. There is no prescribed format for Construction or Conversion proposals. The NSF proposal format and requirements specified in the latest version of *Grant Proposal Guide* (NSF 94-2) must be met. Upgrade proposals should include a description of the proposed changes, urgency and rational (e.g., safety, minimum standards, existing conditions, science requirements,...), justification (e.g., examination of alternatives, engineering studies and designs, time schedule,...) and cost details.

 **MISCELLANEOUS ACTIVITIES**

 In addition to the major categories listed in the preceding sections, OCFS supports a number of specialized facility operations, workshops, and research and study projects related to facilities improvement, development, testing and utilization.

 Criteria for evaluation of proposals for this type of support will vary according to the project proposed but should involve shared-use facilities that are of use to the ocean science research community.

 Proposals may be submitted at any time. Because of the wide variety of activities included, no single format can be prescribed. The NSF proposal format and requirements specified in the latest version of *Grant Proposal Guide* (NSF 94-2) must be met. Before submitting proposals for miscellaneous activities, potential project directors should contact OCFS to determine the availability of funds for such activities and the type of documentation that should be provided.