

WHITMORE ENTERPRISES

DESIGNING AND MANUFACTURING

BLOOD PRESSURE MONITORING & RECORDING DEVICES • HYPOBARIC & HYPERBARIC CHAMBER CONTROLS
RESEARCH TREADMILLS, ERGOMETERS, & HUMAN BODY VOLUMETERS
AND SPECIALIZED MEDICAL & AEROSPACE RESEARCH DEVICES

RT. 5 BOX 369

SAN ANTONIO, TEXAS 78211

Henry B. Whitmore
(512) 624 - 2121
or 532 - 3344

VOLUME II

Cost Proposal

for

EXHIBIT "A"

LOWER BODY NEGATIVE PRESSURE SUIT

#9-RF6-32-2-056P

EXHIBIT "A"

LOWER BODY NEGATIVE PRESSURE SUIT

#9-BB6-32-2-056P

We propose to develop a system that will have the capability of applying negative pressure to the lower extremities of the human body. This system should have capability of providing this negative pressure in a series of steps divided by pressure seals between steps. The pressure in each step will be controlled by individual vacuum regulating valves, capable of maintaining the desired pressure differential between these steps or segments.

This system should have the capability of with standing ambient pressure and still have some mobility.

We will provide ports to monitor pressure in each individual segment.

This system when completed will be incorporated into one leg unit enclosing the foot all the way up to the groin level.

TASK I:

Will be spent developing a seal that will have a reasonable leak rate while maintaining comfort and having the capability of fitting a reasonable size variation. We hope to accomplish this by using a sealed cell foam material similar to the type used in the access ports in full body respirators (iron lungs).

If this type is not satisfactory we may use the type used in neck seals on partial pressure suits, but this would mean giving up some comfort, so I prefer the first approach.

TASK II:

This time will be used developing a small but sensitive negative pressure regulator valves to maintain the pressure differential between segments, to accomplish this we hope to develop a valve similar to the ones used in the exhalation valves on pressure breathing oxygen masks, this type would be mounted outside of the suit segments and connected through port or pressure taps.

TASK III:

This time will be spent developing a segment of a garment capable of withstanding ambient pressure without collapsing inward against the lower extremities. I believe this can best be accomplished by incorporating a series of small inflatable tubes running from the groin area to the ankle encircling the extremities, this system would resemble an air mattress but with much smaller diameter tubes. This type construction is very similar to the system I used in the Boyls Law Pressure Suit and it has greater mobility than the type incorporating circular ring that we also tried but discarded because of poor mobility.

TASK IV:

This final phase will integrate the systems developed in TASK I, II and III into fabricating a leg segment of a suit to demonstrate how the suit could be fabricated and to test the performances of this leg segment. A shoulder harness will be provided if found to be necessary.

A negative pressure pump will be provided to demonstrate this system.

We suggest the unit be tested and accepted in plant at Whitmore Enterprises location so that we can assist further test and development of final or complete suit.

PROFESSIONAL BACKGROUND OF OFFEROR:

The engineering and construction program will be completely under the supervision and technical experience of Mr. Henry B. Whitmore who has more than 10 years experience in Flight Pressure Suit development and testing, and have several United States Patents in pressure suits, and completed more than 10 years in development and construction of physical fitness exercisers and evaluators and monitoring equipment for training air crews in altitude chambers, as well as many other simulated flights facilities. Plus development of Prototype No. 1 and Prototype No. 2 for NASA and the Flight Prototype Treadmill which was of such Quality that it was Space Qualified and has made two (2) successful Space Shuttle Flights and is now scheduled to make a third (3) Flight. I also designed and fabricated the Hand Centrifuge used to separate Hydrogen Gas from Water. This has also been used on the Space Shuttle. We also designed and fabricated an ergometer for a space chamber requirement.

PROFESSIONAL BACKGROUND OF OFFEROR - Page 2:

I am now furnishing a number of the components that will be used on the next Shuttle Flight in some of the Visual and Vistibular experiments. I am doing this work for NASA through Technology Incorporated.

As you can see we have the full capability and the reputation in handling difficult Research and Development Projects, we only fall short in the Technical Writing and Documentation end which in NO WAY effects the final outcome of the afore mentioned Tasks.

Mr. Whitmore presently holds over 17 Inventions, and related Patents in the field of physiological test equipment. A complete list and more detailed explanation of patents and inventions will be furnished upon request.

WORK, DELIVERY AND PAYMENT SCHEDULE

Our Schedule for WORK PERFORMANCE IS:

1) We would like to have three (3) calendar months to complete this project.

2) TASK I - On approximately 15 days after receipt of contract award, this total effort breaks down to:

- a) Design and engineering - 15 hours
- b) Construction - 30 hours
- c) Test and modification - 15 hours
- d) Task I, Man Hour Total - 60 hours

3) TASK II - On approximately 25 days after receipt of contract this total effort breaks down to:

- a) Design and engineering - 10 hours
- b) Construction - 20 hours
- c) Test and modification - 10 hours
- d) TASK II, Man Hour Total - 40 hours

4) TASK III - On approximately 70 days after receipt of contract award, this total effort breaks down to:

- a) Design and engineering - 25 hours
- b) Construction - 55 hours
- c) Test and modification - 40 hours
- d) TASK III, Man Hour Total - 120 hours

5) TASK IV, On approximately 90 days after receipt of contract award, this total effort breaks down to:

- a) Design and engineering - 30 hours
- b) Construction - 60 hours
- c) Test and modification - 65 hours
- d) TASK IV, Man Hour Total - 155 hours

Our Schedule for DELIVERY is:

We will deliver Exhibit "A" Lower Body Negative Pressure Suit, but we suggest the unit be tested and accepted in plant at Whitmore Enterprises location so that we can assist further test and development of final or complete suit.

WORK, DELIVERY AND PAYMENT SCHEDULE - Page 2

Our Schedule for PAYMENT is:

- 1) We are submitting a Fixed Bid Proposal because we feel it would be the best interest of the Government and Contractor since our overhead is at a minimum and for us to set-up the mechanism and staff to handle a Cost Reimbursement/R&D Contract would more than double the cost of the contract and delay the completion of the contract.
- 2) With the Contract Award we request $1/3 = \$6,233.33$
- 3) 10 days after Mid-contract Progress Report we request $1/3 = \$6,233.33$
- 4) 10 days after acceptance of Final Report we request $1/3 = \$6,233.33$.

**DEPARTMENT OF DEFENSE
CONTRACT PRICING PROPOSAL
(RESEARCH AND DEVELOPMENT)**

Form Approved
Budget Bureau No. 22-R100

This form is for use when (i) submission of cost or pricing data (see NASA PR 3.807-3) is required and (ii) substitution for the DD Form 633 is authorized by the contracting officer.

PAGE NO.
1

NO. OF PAGES
2

NAME OF OFFEROR
WHITMORE ENTERPRISES, INC.

HOME OFFICE ADDRESS (Include ZIP Code)

RT 5 Box 369
SAN ANTONIO, TX 78211

SUPPLIES AND/OR SERVICES TO BE FURNISHED

Design, Engineering,
Construction and Testing

DIVISION(S) AND LOCATION(S) WHERE WORK IS TO BE PERFORMED
Whitmore Enterprises, Inc., San Antonio, Tx

TOTAL AMOUNT OF PROPOSAL
\$ 18,700.00

GOVT SOLICITATION NO.
9-BB6-32-2-056P

DETAIL DESCRIPTION OF COST ELEMENTS

1. DIRECT MATERIAL (Itemize on Exhibit A)	EST COST (\$)	TOTAL EST COST ¹	REFER- ² ENCE
a. PURCHASED PARTS	1,000.00		
b. SUBCONTRACTED ITEMS			
c. OTHER - (1) RAW MATERIAL	1,000.00		
(2) YOUR STANDARD COMMERCIAL ITEMS			
(3) INTERDIVISIONAL TRANSFERS (At other than cost)			
TOTAL DIRECT MATERIAL		2,000.00	
2. MATERIAL OVERHEAD ³ (Rate % X \$ base =)			
3. DIRECT LABOR (Specify)	ESTIMATED HOURS	RATE/ HOUR	EST COST (\$)
Design and Engineering	100	35.00	3,500.00
Construction	250	35.00	8,750.00
Testing	25	35.00	875.00
TOTAL DIRECT LABOR			13,125.00
4. LABOR OVERHEAD (Specify department or cost center) ³	O.H. RATE	X BASE =	EST COST (\$)
NA	\$5.00	\$35.00	\$40.00
TOTAL LABOR OVERHEAD			1,875.00
5. SPECIAL TESTING (Including field work at Government Installations)	EST COST (\$)		
NA			
TOTAL SPECIAL TESTING			-
6. SPECIAL EQUIPMENT (If direct charge) (Itemize on Exhibit A)	NA		
7. TRAVEL (If direct charge) (Give details on attached Schedule)	NA	EST COST (\$)	
a. TRANSPORTATION	NA		
b. PER DIEM OR SUBSISTENCE	NA		
TOTAL TRAVEL			-
8. CONSULTANTS (Identify - purpose - rate)	NA	EST COST (\$)	
TOTAL CONSULTANTS			-
9. OTHER DIRECT COSTS (Itemize on Exhibit A)	NA		
10. TOTAL DIRECT COST AND OVERHEAD			17,000.00
11. GENERAL AND ADMINISTRATIVE EXPENSE (Rate % of cost element Nos.) ³	NA		
12. ROYALTIES ⁴	NA		
13. TOTAL ESTIMATED COST			
14. FEE OR PROFIT	10%		1,700.00
15. TOTAL ESTIMATED COST AND FEE OR PROFIT			18,700.00

This proposal is submitted for use in connection with and in response to (Describe RFP, etc.)

9-BB6-32-2-056P LOWER BODY NEGATIVE PRESSURE SUIT

and reflects our best estimates as of this date, in accordance with the instructions to offerors and the footnotes which follow.

TYPED NAME AND TITLE

HENRY B. WHITMORE, President

SIGNATURE

Henry B. Whitmore

NAME OF FIRM

WHITMORE ENTERPRISES, Inc., Rt 5 Box 369, San Antonio, Tx 78211

DATE OF SUBMISSION

10/2/82

EXHIBIT A - SUPPORTING SCHEDULE (*Specify. If more space is needed, use blank sheets.*)

[illegible]

1. HAVE THE DEPARTMENT OF DEFENSE, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, OR THE ATOMIC ENERGY COMMISSION PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY OTHER GOVERNMENT PRIME CONTRACT OR SUBCONTRACT WITHIN THE PAST TWELVE MONTHS?

☐ YES ☒ NO If yes, identify below.

NAME AND ADDRESS OF REVIEWING OFFICE (Include ZIP Code)

NA

TELEPHONE NUMBER/EXTENSION

II. WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS PROPOSED CONTRACT?

☐ YES ☒ NO If yes, identify on a separate page.

III. DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT?

☐ YES ☐ NO If yes, identify: ☒ ADVANCE PAYMENTS ☒ PROGRESS PAYMENTS OR ☐ GUARANTEED LOANS

IV. DO YOU NOW HOLD ANY CONTRACT (or, do you have any independently financed (IR & D) projects) FOR THE SAME OR SIMILAR WORK CALLED FOR BY THIS PROPOSED CONTRACT?

☐ YES ☒ NO *If yes, identify*

V. DOES THIS COST SUMMARY CONFORM WITH THE COST PRINCIPLES SET FORTH IN NASA PR, PART 15 (see 3.807-2(c)(2))?

☐ YES ☐ NO *If no, explain on a separate page.*

INSTRUCTIONS TO OFFERORS

1. The purpose of this form is to provide a standard format by which the offeror submits to the Government a summary of incurred and estimated cost (and attached supporting information) suitable for detailed review and analysis. Prior to the award of a contract resulting from this proposal the offeror shall, under the conditions stated in NASA PR 3.807-3, be required to submit a Certificate of Current Cost or Pricing Data (see NASA PR 3.807-3(e) and 3.807-4).

2. As part of the specific information required by this form, the offeror must submit with this form, and clearly identify as such, cost or pricing data (that is, data which is verifiable and factual and otherwise as defined in NASA PR 3.807-3(e)). In addition, he must submit with this form any information reasonably required to explain the offeror's estimating process, including:

a. the judgmental factors applied and the mathematical or other methods used in the estimate including those used in projecting from known data, and

b. the contingencies used by offeror in his proposed price.

3. When attachment of supporting cost or pricing data to this form is impracticable, the data will be specifically identified and described (with schedules as appropriate), and made available to the contracting officer or his representative upon request.

4. The format for the "Cost Elements" is not intended as rigid requirements. These may be presented in different format with the prior approval of the contracting officer if required for more effective and efficient presentation. In all other respects this form will be completed and submitted without change.

5. By submission of this proposal, offeror, if selected for negotiation, grants to the contracting officer, or his authorized representative, the right to examine, for the purpose of verifying the cost or pricing data submitted, those books, records, documents and other supporting data which will permit adequate evaluation of such cost or pricing data, along with the computations and projections used therein. This right may be exercised in connection with any negotiations prior to contract award.

FOOTNOTES

1 Enter in this column those necessary and reasonable costs which in the judgment of the offeror will properly be incurred in the efficient performance of the contract. When any of the costs in this column have already been incurred (e.g., on a letter contract or change order), describe them on an attached supporting schedule. Identify all sales and transfers between your plants, divisions, or organizations under a common control, which are included at other than the lower of cost to the original transferor or current market price.

2 When space in addition to that available in Exhibit A is required, attach separate pages as necessary and identify in this "Reference" column the attachment in which information supporting the specific cost element may be found. No standard format is prescribed; however, the cost or pricing data must be accurate, complete and current, and the judgment factors used in projecting from the data to the estimates must be stated in sufficient detail to enable the contracting officer to evaluate the proposal. For example, provide the basis used for pricing materials such as by vendor quotations, shop estimates, or invoice prices; the reason for use of overhead rates which depart significantly from experienced rates (reduced volume, a planned major rearrangement, etc.); or justification for an increase in labor rates (anticipated wage and salary increases, etc.). Identify and explain any contingencies which are included in the proposed price, such as anticipated costs of rejects and defective work, or anticipated technical difficulties.

3 Indicate the rates used and provide an appropriate explanation. Where agreement has been reached with Government representatives on the use of forward pricing rates, describe the nature of the agreement. Provide the method of computation and application of your overhead expense, including cost breakdown and showing trends and budgetary data as necessary to provide a basis for evaluation of the reasonableness of proposed rates

4 If the total royalty cost entered here is in excess of \$250 provide on a separate page (or on DD Form 783, Royalty Report) the following information on each separate item of royalty or license fee: name and address of licensor; date of license agreement; patent numbers, patent application serial numbers, or other basis on which the royalty is payable; brief description, including any part or model numbers of each contract item or component on which the royalty is payable; percentage or dollar rate of royalty per unit; unit price of contract item; number of units; and total dollar amount of royalties. In addition, if specifically requested by the contracting officer, a copy of the current license agreement and identification of applicable claims of specific patents shall be provided.

5 Provide a list of principal items within each category indicating known or anticipated source, quantity, unit price, competition obtained, and basis of establishing source and reasonableness of cost.

MAN-MONTHS BY

Days TIME
↓
FROM CONTRACT
60-4440

2 TASK

DES & ENG.

CONSTRUCT

TEST & MOD

NOTE: This form is furnished as a guideline for submitting required information to the MSC Procurement and Contracts Division. Number of months (first 4 columns) should include time through completion of contracts. (Only

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SAN ANTONIO, TEXAS 78211

Henry B. Whitmore
(512) 624 - 2121

Whitmore Enterprises is a research and development corporation specializing in equipment design and development. We have complete design and manufacturing capacity. We welcome the opportunity to assist your company in this phase of your operation.

The following are some of our achievements and accomplishments:

Weight Control

Development and manufacture of the New Improved Volumeter, which is used to determine percent of body fat in weight control programs. The Volumeter is now accepted as the most accurate equipment to perform this task by hospitals, clinics and fitness centers.

NASA Space Program

Developed and built Treadmill for the NASA Space Program. This lightweight treadmill weighs only 38 pounds and can be disassembled for storage and reassembled without tools in less than 5 minutes, thus allowing the Astronauts in space to exercise by walking, jogging and running.

Cancer Research

Designed and built Patient Immobilization and Positioning System, now being used by the Cancer Research Center at Los Alamos, New Mexico. Use of this unit has cut the time required for properly positioning each patient for radiation treatment from 45 minutes to less than 5 minutes. This allows treatment of five times the number of patients in the same facility without using additional radiation accelerators, thus saving millions of dollars.

Packaging Industry

We have developed two types of Automatic Orienting Machines used in packaging in the Candy Industry. The efficiency of these systems greatly reduce labor costs by increased production.

Association For the Blind

We have recently developed two types of equipment for use by the blind or otherwise handicapped in the manufacture of automatic pens and pencils. Additional machinery is currently being developed for this industry.

Solar-Wind Energy

Currently we are involved in a wind electricity generation system for household use. We would welcome an opportunity to work with qualified companies in a joint effort.

WHITMORE ENTERPRISES IS EQUIPPED WITH A MORE THAN SUFFICIENT NUMBER AND VARIETY OF MODERN MACHINERY AND EQUIPMENT FULLY CAPABLE OF IN-HOUSE DEVELOPMENT.