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DECISION



**THE COMPTROLLER GENERAL
OF THE UNITED STATES**
WASHINGTON, D. C. 20548

FILE: B-203652

DATE: April 20, 1983

MATTER OF: RMI, Inc.

DIGEST:

Protest is sustained where Navy did not evaluate proposal for air cushion landing craft design on common basis or in accord with stated requirements and evaluation criteria. In circumstances, decision to reject protester's proposal without discussions had no rational basis.

RMI, Inc., protests the Navy Sea Systems Command's decision to reject its proposal to furnish subsystem design and pilot production of an air cushion type landing craft (known in the Navy as a Landing Craft Air Cushion or LCAC). The Navy rejected the proposal without conducting written or oral discussions with RMI because the Navy found that RMI had no reasonable chance of receiving award. Our review of the proposals and evaluation documents indicates that proposals were not evaluated on a common basis or in accord with the Navy's stated requirements and evaluation criteria. We sustain the protest.

I. Background:

The LCAC is a seaborne vehicle capable of hovering on a cushion of air which is forced under the craft using internal fans. Such craft typically consist of a hard substructure which sits astride a lower flexible structure or "skirt." A seaborne air cushion vehicle can be operated in either of two modes: (1) in an "off-cushion" mode in which the craft floats in the water and (2) "on-cushion," using the lift fans to inflate the skirt and support the craft above the water. On-cushion, the craft can be propelled at relatively high speed over water or land. It is to operate from conventional amphibious assault support ships (LSDs and LPDs). Successful pilot production of LCACs is expected to lead to the award of a production contract at a total cost exceeding \$171,000,000.

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RMI's rejection and the subsequent award of a subsystem design and pilot production contract to Bell Aerospace Division of Textron, Inc. culminated a funded procurement process during which RMI and Bell were paid approximately \$4 million each to develop competing system designs and technical specifications for a LCAC suitable for use in amphibious assault operations. We refer to the system design and technical specification contracts (RMI's contract N00024-80-C-2204 and Bell's contract N00024-80-C-2065) as the "SD/S" or "prior" contract and to performance of that contract as the "SD/S phase" of the Navy's LCAC program. We refer to the subsystem design and pilot production contract awarded Bell as the "SSD&PP" or "follow-on" contract and to the work covered in it as the "SSD&PP" or "follow-on" phase of the LCAC program.

The prior contract statement of work provided that the contractors were to furnish four "major products":

- o An LCAC System Design Report and Technical Specification,
- o A Project Management Plan for the follow-on phase,
- o An LCAC Cost Estimate Report, and
- o A Cost Proposal for the follow-on phase.

The firms were required to submit a "minimum" craft design, and additionally, were permitted to submit an alternate "basic" craft design if the minimum design satisfied certain design-to-unit-cost constraints of the specification. Bell submitted two sets of documentation outlining both a minimum and a basic craft design; RMI submitted only the required minimum craft design.¹ These

¹ Throughout, we focus on RMI's and Bell's minimum craft designs, and on those alleged technical deficiencies which were material to RMI's rejection. The Board's findings identify a variety of deficiencies in the RMI and Bell proposals, which, however, appear to have been correctable through discussions and which are not shown in any event to have independent significance in determining the Navy's action. We limit our discussion with respect to Bell to features of its minimum craft design because, at the time the Source Selection Authority decided to reject RMI's proposal, he also accepted a recommendation to reject the Bell basic craft design. In this respect, the use of separate lift and propulsion systems in Bell's basic design was viewed as creating an unacceptably high risk that a subsystem failure under combat conditions would prevent its return from a mission.

reports constituted RMI's and Bell's proposals to perform the follow-on work.

Further, the prior contract contained a "statement of work" and an attachment known as the "Top Level Requirements" (TLR) and set out the basis on which proposals were to be evaluated. The statement of work defined how RMI and Bell were to approach LCAC design and what they were to include in each of the reports comprising their proposals. The TLR defined the performance requirements which the LCAC was to meet. It also included a description of possible enhancements which the Navy believed would increase the utility of an LCAC design. The LCAC design was to build on prior development experience which was summarized in a series of Navy documents known as "technical batons."

The Navy Source Selection Evaluation Board reviewed the competing system designs, production plans and cost proposals and concluded that Bell's proposed approach was markedly superior to RMI's. This conclusion depended, in large part, upon the evaluators' belief that RMI's proposed LCAC design contained serious performance and interface deficiencies that could not be corrected without major redesign of the RMI LCAC, posing increased program, cost and schedule risks when compared with Bell. The Board therefore recommended RMI's elimination from the competitive range and initiation of discussions with only Bell. The Council adopted this recommendation, and the Source Selection Authority approved award to Bell on this basis.

Once the Navy advised RMI of its decision, RMI requested a debriefing, which the Navy conducted. The Navy awarded Bell the follow-on contract the day after RMI's debriefing, and RMI promptly filed its protest with our Office.

II. Arguments:

RMI contends that its proposal conformed to both the statement of work and to the TLR. RMI seeks our review of the Navy's competitive range determination, arguing that the Navy never gave it a fair chance to compete for the follow-on contract. Specifically, RMI argues that if the Navy had conducted discussions with it, the deficiencies noted by the Navy could have been readily resolved through clarification or relatively minor revisions. RMI does not believe there is any serious deficiency which would have required major redesign of the LCAC it proposed.

RMI also argues that the competition was not conducted fairly, in that Bell was awarded a sole source contract for support of an earlier Navy prototype craft known as JEFF-(A) after the original manufacturer, Aerojet General Corporation, indicated that it no longer was interested in the work. Despite RMI's declared interest in the current procurement, RMI complains, the Navy noncompetitively awarded the JEFF-(A) support contract to Bell by modifying an existing Bell contract for support on a Bell-produced prototype (JEFF-(B)).

Along related lines, RMI asserts that it was not given the same opportunity as Bell to obtain data from the Navy's tests and experiments with the JEFF-(A) and (B) craft. RMI complains that it was belatedly allowed only one observer, while Bell, as the support contractor, had unlimited access to the Navy's testing. It contends that essential reports were delayed until they could not be used by RMI to prepare its proposal.

RMI also questions the Navy's good faith in making award to Bell the day following RMI's debriefing. RMI says the Navy stated at the debriefing that award would be made 2 weeks later. RMI argues that it was thus misled into believing that it need not protest immediately, prejudicing its chance of obtaining remedial relief because its protest was not filed prior to award.

In response, the Navy argues that its evaluation was thorough and that it fully conformed to the procedures established for the competition. In support of this conclusion, the Navy has furnished a copy of all source evaluation materials, ranging from individual evaluators' rating sheets to the ultimate decision of the Navy's designated Source Selection Authority. With respect to RMI's argument that the proposal deficiencies noted in the debriefing were readily correctable, the Navy contends that RMI's analysis of those deficiencies presents no substantive arguments that were not duly considered during the course of the evaluation.

As to the assertion that Bell obtained an unfair competitive advantage through the sole source award of the JEFF-(A) support contract and otherwise, the Navy contends that because RMI was fully aware of these matters throughout the competition, these issues are untimely. The Navy argues that the competition was conducted in an even-handed manner and that all meaningful test data from the JEFF craft operations were distributed in a timely manner.

Finally, the Navy advises that it had expected delay in obtaining all the necessary approvals for awarding Bell the follow-on contract. Although the award to Bell occurred the day after RMI's debriefing, the Navy says this had not been anticipated and occurred only because all officials in the approval chain happened to be available and passed on the matter expeditiously. There was no bad faith on the Navy's part, it insists.

III. Evaluation of Proposals:

In addressing the Navy's evaluation of RMI's and Bell's proposals, we first point out that, although RMI as a protester bears the burden of proof, the Navy has denied RMI access to most of the procurement record. Thus, RMI has not been able to specifically focus on the conduct of the evaluation, and we have, in accord with our standard practice in such situations, examined the record in camera to determine whether the evaluation had a reasonable basis. Alcoa Marine Corporation, B-196721, May 9, 1980, 80-1 CPD 335; Systems Consultants, Inc., B-197872, September 18, 1980, 80-2 CPD 203.

Our in camera review does not disclose evidence (rising to the level of well nigh irrefragable proof, see Kalvar Corporation v. United States, 543 F.2d 1298, 1301 (Ct. Cl. 1976)) of bad faith. However, the record does disclose that RMI's exclusion from the competitive range resulted from an improper evaluation of proposals. In view of this conclusion, it is not necessary to resolve all of the issues RMI raises; we focus on what the record shows occurred with respect to the Navy's evaluation of proposals.

In examining the reasonableness of the Navy's evaluation, we first point out that the Board's determination that the RMI craft as proposed could not meet the Navy's needs was based on the application of a standard of performance which was not a stated requirement. The standard in question concerned the ability of a craft to carry a 120,000 pound payload at high speed under what are called "sea state 3" conditions (basically, moderate waves with 16 knot winds). The TLR defines performance in sea state 3 as a goal. A goal is an objective which one strives to achieve, as distinguished from a requirement which must be met. Webster's Third New International Dictionary 972 (G.&C. Merriam Co. 1971).

Second, although the Board faulted RMI for what the Board believed was RMI's inability to carry 120,000 pounds under sea state 3 conditions, it relaxed the applicable TLR conditions in finding that Bell's minimum craft could satisfy its actual needs. Reflecting the fact that LCACs may require less power to sustain high speed operation than is needed to achieve such speeds, the TLR states that in determining whether a craft can operate at high speed in sea state 3, the power required may be permitted to exceed the maximum continuous power rating of a craft's engines only as necessary to initially achieve high speed performance. The evaluators found that the Bell minimum craft could not sustain high speed sea state 3 performance without exceeding the maximum continuous power restriction, but allowed the sea state 3 criteria to be relaxed in this respect. They justified their action on the basis that such operations would occur infrequently, approximately three percent of the time.

An evaluation does not have a reasonable basis unless it is founded on the RFP evaluation criteria which offerors were told would be used in evaluating their proposals. It is fundamental that offerors must be treated equally and are entitled to know of, and rely on, the evaluation criteria which are to be used in order to intelligently frame their proposals. Signatron, Inc., 54 Comp. Gen. 530 (1974), 74-2 CPD 386; Motorola Inc., Communications Group, B-200822, June 22, 1981, 81-1 CPD 514.

We believe that the emphasis placed by the Navy on the vendors' ability to meet the sea state 3 criterion and its relaxation of the power limitation in evaluating Bell's proposal were inconsistent with these principles. However, our concern with the evaluation of proposals in this case transcends these threshold considerations.

In evaluating expected performance, agencies must apply technical standards equally. Examination of the record in this case discloses that the linch pin of the Navy's evaluation of projected sea state 3 performance is an assumption that each vendor's projected air flow capacity had to be maintained. Where the Navy questioned craft design (both for RMI and Bell), it computed off-setting allowances to restore lift system airflow to these levels. It then calculated the power remaining to propel each craft, and compared its results to vendor predicted drag in sea state 3 to determine whether sufficient power was available to drive the craft at that speed. Rather than providing a common basis for comparison of the competing craft, this approach incorporated the mathematical models

which RMI and Bell used to establish their lift system air flow design criteria and to predict craft drag. These models differ significantly. RMI relied upon a model which tended to be more conservative than existing Navy models, while Bell rejected the traditional Navy model and instead, relied on a model of its own which was much more optimistic than the model which RMI used.

A detailed discussion of the differences between the RMI and Bell models is not necessary to our decision. We limit our discussion of them to the observation that the differences have to do with the theoretical basis of LCAC design such as the relationship between drag and the clearance maintained between the surface of the water and the craft skirt when the craft is hovering. The skirt clearance allowed determines the volume of air trapped under the craft which will escape and, thus, the volume flow demanded of the lift system fans.

By assuming that skirt clearance could be reduced without producing unacceptable drag characteristics, Bell was able to propose a reduced clearance and to make its craft appear to demand less lift system airflow and power than RMI designed its craft to provide. Bell's data shows that its craft has approximately 10 percent less drag than RMI's, although they are similar in size, notwithstanding that RMI's craft was designed to provide up to 60 percent more lift system air flow than Bell's. The Navy seems to have assumed that this difference in projected air flow was required by differences in the skirt design of the two craft, but it apparently performed no analysis of its own in this respect.

We recognize that skirt design may have some effect on drag. We find no basis in the record, however, for concluding that design differences in the RMI and Bell skirts (or the slightly higher -- 7 percent -- weight for the RMI craft) account for Bell's lower drag performance at such a reduced air flow level.

Instead, we believe the Navy's failure to analyze lift system air flow requirements using a common model undermined its performance predictions. Had a common model been employed, RMI's higher powered craft should have appeared as potentially capable of out-performing Bell's (using Bell's model), or Bell's craft would have been viewed as

incapable of carrying 120,000 pounds in sea state 3 even at maximum intermittent power (using RMI's model).²

We also find that the Navy erroneously downgraded RMI's performance claims.

As proposed by RMI, its fan system consisted of eight mixed-flow fans each of which discharged air into the skirt system through a diffuser. RMI included diffusers because the volume of airflow required by its model could be provided using proven equipment (thus meeting a Navy requirement for minimum technical risk) only by assuming that the air would exit the fans at high velocity. A diffuser consists of a duct whose cross-sectional area increases in the direction of flow, much like a horn. Diffusers are commonly used in turbomachinery to reduce the velocity of a fluid (in this instance air) by converting its kinetic energy into increased static pressure before discharging it.

The Navy evaluator who reviewed this portion of RMI's design disregarded the diffusers. His notes indicate he knew that RMI planned to use diffusers. However, he computed pressure losses as though the fans discharged air directly into the skirt system, because he concluded that flow would separate based on a drawing included in RMI's proposal, which showed a sharp angle between the fan (volute) outlet and the diffuser inlet. Separated flow would produce turbulence, he decided, minimizing the effectiveness of the diffusers. In his words:

"To obtain a loss of only 55.4% of the volute-discharge dynamic head, RMI have assumed a 30.4 psf static-pressure recovery from volute discharge to skirt bag. However, any recovery at all (let alone 30.4 psf) would be extremely unlikely in view of the potential for flow separation at the volute-duct junction, as illustrated in the attached figures * * * despite the diffuser angles shown in the side view * * *."

² In fact, the Navy confirms this in its calculation of the improvement which might be expected were the RMI craft redesigned. Among the alterations considered, the Navy evaluated craft performance by assuming a change in skirt design to incorporate the type of skirt proposed by Bell. Not having used its own analysis of skirt system performance, the Navy applied Bell's data which, of course, reflected Bell's more optimistic assumptions.

Diffusers are, as stated, a commonly employed component in turbomachinery design. Examination of the drawing on which the evaluator relied shows that it was merely a sketch. It does not purport to present a detailed duct system design.

The evaluator's conclusion, based solely on the sketch, that the RMI craft would not work due to duct system losses is unsupportable. The evaluator knew that diffusers were proposed. He knew what diffusers do and why RMI had included them. With nothing before him except the sketch, the most he could have concluded would have been that RMI did not provide sufficient detail regarding its proposed duct system to show that the design would perform as claimed.

We recognize that RMI's failure to include complete drawings was criticized by the evaluators and that where appropriate, proposals may be rejected if they contain informational deficiencies which are so serious as to preclude correction. PRC Computer Center, Inc., 55 Comp. Gen. 60 (1975), 75-2 CPD 35. However, whether this rule can be applied in a particular case depends upon a number of factors. Texas Medical Instruments, B-206405, August 10, 1982, 82-2 CPD 122.

We do not view the rule as applying here since the evaluator knew that RMI planned to use diffusers. The statement of work called for only a system design, not subsystem designs. Of necessity, the proposals submitted by RMI and Bell, although voluminous, did little more than summarize the work each had done to prepare its LCAC design. In the circumstances, we know of no way the Navy could have known whether RMI could satisfy these concerns regarding its diffuser design based on work already done (at Government expense) without first discussing the matter with it.

Moreover, we point out that the Navy's evaluation reflects several additional mistaken conclusions.

First, the Navy erroneously concluded that RMI's proposed design was wider than Bell's design when, in fact, the reverse was true.

The evaluators believed the RMI craft might have difficulty entering the mother ship and maneuvering after entry because of the limited clearance between the two.

The evaluators were also concerned that the upper portion of the RMI craft's superstructure might strike the side of the well deck if the craft were to roll within the well deck. Consequently, the width of the RMI craft was viewed as a serious design deficiency which was not readily correctable.

The Board, Council and Source Selection Authority overlooked the fact that the Bell craft actually had a broader effective hard structure beam than the RMI craft. In this respect Bell stated in its proposal that:

"To reduce the vulnerability [of the craft] to damage during [wet well] operations, a fendering system has been installed on the craft which provides a minimum effective beam of 46 ft, 2 in. forward * * * and 46 ft, 8 in. in the vicinity of the propeller ducts * * *."

It is not clear from the record why the Navy evaluators failed to recognize that Bell's proposed craft, not RMI's, had the wider hard structure beam, but Bell's drawings in many instances indicated only the width of the hull without showing the additional width of its projecting hard structure stand-offs, and that may have contributed to the Navy's error.

Whatever the reason for the Navy's factual error, the Navy repeatedly criticized RMI's design as posing a serious interface risk due to its width, and the increased risk of schedule slippage and cost overruns this might cause, without similar concern for Bell's wider design.

Second, although the largest part of the Navy's adjustment of RMI's lift system performance was due to its handling of the diffusers, it also erred in accounting for air intake pressure losses. The Navy assumed Bell had proposed intake pressure losses which were four times what it, in fact, allowed. Accordingly, the Navy adjusted RMI's lower figures, which actually were in accord with Bell's supporting data. In this respect, also, proposals were therefore not considered equally.

In addition, improper weight deductions were taken in computing load carrying capability of the RMI and Bell craft. These payload deductions fall into three classes: (1) deductions intended to reflect service life deterioration of the craft due to engine and propeller wear, (2) an increase in the weight margin of error specified in the

prior contract, (3) offsetting weight allowances to account for "nice-to-have" features which the evaluators believed should have been included and which they subtracted to "equalize" competition. We find no basis for these deductions.

First, we find no basis for calculating payload by deducting weight allowances to offset deterioration over the service life of the craft because, while Bell and RMI proposed designs which they believed would achieve sea state 3 performance in their as-delivered condition, there was no requirement in the TLR to guarantee sea state 3 performance, much less a requirement for sea state 3 performance after deterioration of the engines and propellers.

On the other hand, the SD/S contract did bind the offeror to produce a craft within its approved itemized weight limits plus a 2 percent margin to cover any weight increases caused by Government ordered changes. Payload is defined in the SD/S contract in terms of full load and lightship weights and equals the weight of a fully loaded craft less: (1) fuel and ammunition required for an assault mission and (2) the itemized weight of LCAC's parts plus a margin for error. Since Bell and RMI bore the risk of an overweight craft, and should have accounted for it in preparing their estimates, there would seem to be no justification in the prior contract evaluation scheme for the use of a 6 percent margin (in Bell's case) or for a 8 percent margin used to compute the weight carrying capacity of the RMI craft.

Likewise, since payload is determined from the weight of the craft's parts, it should have been based on the weight of the standard craft as proposed--not on some other basis by including the weight of optional features.

In conclusion, we believe that the errors made were prejudicial to RMI whose proposed design is admitted by the Navy to have been superior to Bell's in those areas concerning human engineering and maintainability. Its hull design was stronger than Bell's and was easier to fabricate. Disregarding the sea state 3 performance and interface problems, the Technical Category Report to the Source Selection Evaluation Board (SSER) concludes the offsetting strengths and weakness of RMI's and Bell's proposals were roughly balanced.

We are aware as the Navy contends that Bell also outscored RMI in the evaluation of management and cost aspects of its initial proposal. We point out, however, that the finding that sea state 3 performance could not be attained without extensive redesign was passed on to all of the evaluation teams who were instructed to take it into account. Belief that the RMI craft had to be redesigned clearly affected the evaluation of RMI's management proposal, the record shows. While the differences in the evaluation of cost proposals appear to have reflected Bell's advantage as an incumbent (due to many similarities with JEFF-(B), for which cost data exists), which RMI would have had difficulty overcoming, cost was the least important consideration in selecting the follow-on contractor.

Moreover, the belief that the RMI craft would have to be redesigned permeates the SSEB's findings, as reflected in its conclusion that:

"Program risk associated with the RMI LCAC design as offered is high. Substantial changes are foreseen by the Navy to make the craft acceptable and the associated cost and schedule risk and impacts are high."

Such views formed the basis of the Source Selection Advisory Council's conclusion, which the Source Selection Authority adopted, that the need for extensive redesign of the RMI craft eliminated any reasonable chance of its selection for award.

As stated earlier, successful pilot production is expected to lead to a production contract at a total cost exceeding \$171,000,000. The Navy spent several million dollars for RMI's proposal only to conclude without holding discussions with RMI that extensive redesign of the RMI craft was necessary. We find that this conclusion has no rational basis in the record before us. Therefore, the protest is sustained.

Ideally, we would recommend that the Navy reopen the procurement, conduct discussions, and make an appropriate selection. However, remedial action may be foreclosed at this time.

Consequently, we are remanding this matter to the Navy and requesting that it determine whether it is feasible at this time to reopen competition.

for Milton J. Fowler
Comptroller General
of the United States