

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeal of --)
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Litton Systems, Inc.,)
Applied Technology Division) ASBCA No. 49787
)
Under Contract No. F09603-84-C-4436)

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OPINION BY ADMINISTRATIVE JUDGE PARK-CONROY

This is a quantum appeal arising from our decision in *Litton Systems, Inc., Applied Technology Division*, ASBCA No. 36976, 93-2 BCA ¶ 25,705. We concluded there that appellant was entitled to the cost of additional work it performed as an offset to the \$2,009,056 deduction to the contract price taken by the Government for deleted work when it unilaterally definitized a letter contract. We have cited findings from that decision as necessary to an understanding of the issues in this appeal. For the reasons stated, we sustain the appeal, in part.

FINDINGS OF FACT

Background

Letter Contract No. F09603-84-C-4436 (the 4436 Contract) for the production of 183 ALR-74 radar warning receiver (RWR) systems was awarded to appellant Litton Systems, Inc., Applied Technology Division (ATD) at the not-to-exceed (NTE) price ceiling of \$131,734,780 by Warner Robins Air Logistics Center, Robins Air Force Base, Georgia on 3 December 1984. The RWR systems were to be installed in aircraft to provide radar warnings of enemy air and ground threats to pilots. (ASBCA No. 36976, 93-2 BCA at 127,874)

By April 1985, ATD had learned, among other things, that the Air Force was considering sensitivity improvements to the ALR-74 system to increase its ability to receive radio frequency (RF) threat signals (ex. A-7; tr. 1/79-82). An internal ATD memorandum dated 30 May 1985 addressed several potential receiver sensitivity improvements and included a preliminary description of a new approach which involved adding amplifiers to the wide band crystal video receiver path and was expected to be very costly (ex. A-11; tr. 1/106-08).

Critical Design Review (CDR) for the 4436 Contract was held on 11-13 June 1985 at ATD's facility (ex. A-13; tr. 1/112). Attending the CDR for the Air Force were representatives from both Warner Robins and the F-16 Special Projects Office (SPO), Aeronautical Systems Division (ASD), Wright-Patterson Air Force Base, Ohio (tr. 1/122). Improvement of the ALR-74's sensitivity was among the subjects discussed. ATD presented the alternative of improving the wide band crystal video receiver path but, due to cost and schedule ramifications, it recommended using the intermediate instantaneous frequency measurement (IFM) bandwidths to receive special signals and increase the gain of the dual output amplifier. (Exs. A-11, -13, -14; tr. 1/113-18, 2/34, 147-48)

In July 1985, senior Air Force officials decided that the RWR program would become a competitive development program between ATD and the Loral Corporation and that the 4436 Contract should be restructured into a contract limited to 12 pre-production systems and two laboratory models. It was anticipated that the focus of the RWR competitive development program would be the installation of RWR systems in F-16 production aircraft, followed by a retrofit of the existing F-16 and F-4 aircraft. (Ex. A-17) The overwhelming weight of the evidence established that personnel at all levels of the Air Force considered the F-16 specification to be dominant and communicated this view to ATD during the discussions which led to the restructuring of the 4436 Contract and performance of the restructured contract. The evidence similarly established that, beginning with these discussions and continuing throughout performance of the restructured contract, the parties used the terms "sensitivity improvement," "sensitivity enhancement," "improved sensitivity," and "enhanced sensitivity" interchangeably (tr. 1/65-66).

As had been expected, the requirements for the restructured 4436 Contract included revisions to the Warner Robins Configuration Item Development Specification (Document 40601), and the Warner Robins Statement of Work (SOW) (Document 40610) that had been written for the 4436 Contract, and a new F-16 installed system performance specification that was being drafted by ASD (ASBCA No. 36976, 93-2 BCA at 127,874-75). ATD received the first draft of the new F-16 specification on 20 August 1985 (ex. A-26; tr. 1/135). By then, the RWR competitive development

program was residing with the ASD SPO and was focused upon the new F-16 system specification (exs. A-20, -22, -25, -30, -34; tr. 1/131-32, 167-68).

The Order of Precedence clause contained in the Warner Robins SOW, at paragraph 2.3, provided in relevant part:

In the event of conflict between the contract, this statement of work, and documents referenced herein the following shall apply.

1. The contract shall have precedence over this statement of work and all documents referenced herein.
2. This statement of work shall have precedence over all documents referenced herein.
3. Among the documents referenced herein the following shall apply
 - A. The [F-16 specification] shall have precedence over the [Warner Robins] documents

(R4, tab 1)

Paragraph 3.4 of the SOW required the ALR-74 RWR pre-production systems to meet all of the requirements of the Warner Robins documents, with four exceptions set forth at subparagraphs a. through d. Of relevance to some of the issues raised by the parties in this appeal are subparagraph 3.4.a., which required ATD to incorporate “[t]he intermediate IFM bandwidth capability” into “all previously delivered systems and laboratory systems,” and subparagraph 3.4.b., which provided that “[t]he enhanced sensitivity capability shall be incorporated in two of the systems delivered.” (*Id.*)

Excerpts of the testimony of Mr. George Thomson, ATD’s project manager on the 4436 Contract, given at the entitlement hearing and in a deposition in the present appeal were admitted into the record as quantum hearing exhibits. With regard to the RWR system sensitivity improvements required for the restructured 4436 Contract, Mr. Thomson described the differences between the sensitivity requirements contained in the Warner Robins 40601 specification and the “Minimum Operational Sensitivity” (MOS) requirements of the F-16 specification. (Ex. G-49 at 1/160, 205-06, 2/18, 25-26, 33-35, 37, 67, 3/6-8, exs. A-112-A at 1/108-09, A-112-K at 1/172, A-112-M at 2/23, A-112-N at 7/160-161) These differences were described in considerably more detail by other witnesses at the quantum hearing, including Mr. Leo Wisneski, who was ATD’s

chief project engineer for the ALR-74 RWR program until ATD lost the RWR program competition to Loral in late 1988.

Paragraph 3.2.1.3. of the Warner Robins 40601 specification, System Sensitivity, required input power signal levels for “system sensitivity . . . as shown in Table II-A through Table II-E” and paragraph 3.2.1.3.4., Enhanced System Sensitivity, required “an enhanced sensitivity as detailed in table II-F through II-K” but only for “those systems identified by the [SOW]” (ex. G-43). The specification thus defined sensitivity by the specified input power levels required at the front of the receiver that were identified in the tables and was a “B level,” or workbench, specification (ex. G-43; tr. 2/12-13, 3/218-19, 232, 5/9-10).

The enhanced sensitivity tables were intended to meet the parameters of the threats described on the Warner Robins 40613 threat list (tr. 6/98). Warner Robins coordinated with, and sought input from, ATD when it was determining the power input signal levels for the sensitivities prescribed in these tables (tr. 4/81-82, 152-53). Although Warner Robins did not have access to all of the F-16 data when it was preparing these sensitivity tables, it did try to anticipate what the F-16 specification sensitivity requirements would be (tr. 4/165-66). The Air Force bore the risk that the sensitivities it ultimately had specified in the Warner Robins 40601 tables might not be sufficient to meet its needs (tr. 2/228-29).

In contrast, the draft F-16 specification being written by ASD was an aircraft installed system specification, an “A level” performance specification (ex. A-17; tr. 1/128-30, 176-78, 2/12-13, 3/219-20). Paragraph 3.2.1. described the required system performance characteristics. Unlike the Warner Robins 40601 specification, the F-16 specification did not provide tables of specific sensitivity levels that were to be met (tr. 2/166-67, 3/149-50). Instead, paragraph 3.2.1.2. of the F-16 specification used the term MOS to denote the sensitivity performance levels the system was required to achieve and defined MOS as the “minimum signal strength required for the RWR to detect, identify, and display threats” when installed in an operational aircraft (Govt proposed finding of fact 44). ATD was required to design hardware that met the MOS performance levels (tr. 1/178-79, 2/139-40, 3/171, 176, 4/164).

The MOS levels could only be determined after analysis and testing (tr. 2/178-79, 225-27, 3/150-51, 4/119). The MOS analysis required a threat list, threat data, and antenna pattern data, all of which were to be provided by the Government and none of which was required to perform the Warner Robins 40601 specification (tr. 1/64, 2/14-20, 136, 4/119-21). The major difference between the bench and installed systems involves RF signal losses in the antennas and transmission cables (tr. 2/131-32, 4/105-06, 145-47). ATD bore the risk of achieving the MOS performance levels, and a failure to meet the sensitivity required for even one of the threats would result in a failure to pass the Design

Verification Test Procedure (DVTP) (tr. 1/177-78, 3/141-42, 5/63-64, 216-17, 6/215-17). Additionally, paragraph 3.2.1.4. of the F-16 specification required direction finding accuracy, which was dependent upon installed aircraft antenna patterns (ex. A-109, Section I).

Modification No. P00006

ATD's initial proposal to restructure the 4436 Contract is dated 30 August 1985 (R4, tab 12a). At the time, ATD did not equate the enhanced system sensitivity requirements of the Warner Robins 40601 specification with the MOS requirements of the ASD F-16 system specification and did not believe that the sensitivities required by the Warner Robins 40601 specification would be sufficient to meet the MOS requirements of the F-16 specification (tr. 1/179-80, 2/12-14, 176-80, 207-08, 236, 5/107). Thus, given the priorities directed by the Order of Precedence clause and the dominance given to the F-16 specification by Air Force personnel, ATD interpreted the reference in 3.4.b. of the SOW to "enhanced sensitivity capability" to require system performance to the MOS requirements of paragraph 3.2.1.2. of the F-16 specification (tr. 2/10-14, 127-28, 199-200).

ATD's 30 August 1985 proposal noted that CDR had "finalized the current system configuration" and suggested two alternatives. The first alternative was that ATD would perform the contract in accordance with the Warner Robins SOW and 40601 specification for \$59.522 million based upon the "existing system configuration as established at the CDR" and that any changes resulting from the evolving F-16 system specification would be considered to be additional work. (R4, tab 12a; tr. 1/131-32, 2/221-22) The second alternative was that ATD would accept unknown liability through 30 November 1985, at a NTE price ceiling of \$65.7 million, thus reflecting "the unknown liability to ATD in complying with the evolving F-16 Specification." ATD confirmed its understanding that the F-16 system specification "shall take precedence" over the Warner Robins specification, but noted that, while the F-16 specification imposed "no current conflict," it understood that the F-16 specification was in a "stage of evolution" and might impact the system configuration established at CDR. (ASBCA No. 36976, 93-2 BCA at 127,875; R4, tab 12a)

On 10 September 1985, ATD revised its proposal to restructure the 4436 Contract, offering to perform the work identified by the Warner Robins documents and the 6 September 1985 version of the F-16 specification for a NTE price ceiling of \$59.522 million (ASBCA No. 36976, 93-2 BCA at 127,875-76). This proposal recognized that the Order of Precedence clause contained at paragraph 2.3 of the Warner Robins SOW would govern conflicts between the requirements of the documents incorporated by reference and that the F-16 specification would be "the dominant specification for completion of the SOW requirements." (R4, tab 12b at 2)

The price break-out provided in this first revision was the same as that contained in the first alternative of the 30 August 1985 proposal and was based upon a number of specific assumptions and conditions. With regard to the F-16 specification, the proposal reflected ATD's understanding that it was to use the Warner Robins 40613 threat list and that additional data necessary "to ascertain system requirements for detection, ambiguity analysis, response time, and test criteria" would be supplied by the Government by 30 September 1985. It also promised to provide an assessment by emitter of installed sensitivity when full threat data was available and a detailed analysis of the angle of arrival accuracy (AOA) when antenna pattern and other data was available. (R4, tab 12b at 7)

Among the matters discussed by representatives of the Air Force and ATD in connection with the revisions to the proposal were paragraphs 3.2.1.2. and 3.2.1.4. of the F-16 specification (ASBCA No. 36976, 93-2 BCA at 127,876). Thereafter, ATD submitted a second revision, dated 18 September 1985, to its proposal which referenced both its 30 August and its 10 September 1985 submissions and continued to propose a NTE price ceiling of \$59.522 million. Except for Item 0001, which had been further sub-divided into Item 00001AA, while retaining the same total dollar value of \$35,274,000 the cost break-down was exactly the same as it had been in both the first alternative in the 30 August 1985 proposal and in the 10 September 1985 revision to it. The price was again based upon specific assumptions and conditions. With regard to paragraph 3.2.1.2. of the F-16 specification, ATD again promised to provide "an assessment (by Emitter) of installed sensitivity when full threat data is available." With regard to paragraph 3.2.1.4., it again promised to provide an assessment of the AOA when necessary data was available. The proposal then stated that the \$59.522 million NTE price ceiling "exclude[d] completion" of these items. (R4, tab 12c at 4) The cost of this work was excluded from the NTE price ceiling because the Government still had not provided ATD with enough information to accurately assess the impact of the requirements (tr. 2/99, 135-36, 178-79, 225-26, 4/162-63, 6/223). (ASBCA No. 36976, 93-2 BCA at 127,877)

Mr. Wisneski credibly explained that the \$59.522 million NTE price ceiling for the final proposal was the same price that ATD had proposed as its first alternative on 30 August 1985 and that both prices were based upon the system configuration finalized at CDR, which did not include sensitivity enhancement/improvement (tr. 1/147-49, 151). He further explained that the \$59.522 million price did not include any costs for either the "Enhanced System Sensitivity" work specified by paragraph 3.2.1.3.4. of the Warner Robins 40601 specification (tr. 2/140), or for the work associated with the installed MOS performance levels specified by paragraph 3.2.1.2. of the F-16 specification (tr. 1/150).

The Air Force accepted ATD's second revised proposal and bilateral Modification No. P00006 to the 4436 Contract was executed on 27 September 1985. Modification No. P00006 terminated portions of the 4436 Contract for the convenience of the Government and reduced the NTE price ceiling of the contract to \$59.522 million. The new NTE price ceiling included ATD's termination costs as well as the restructured work specified by Modification No. P00006. (ASBCA No. 36976, 93-2 at 127,876)

Under Section C-507 of Modification No. P00006, ATD was required to perform both the Warner Robins 40601 specification, Rev. C, and the ASD F-16 system specification, dated 6 September 1985. ATD was required to use the Warner Robins 40613 threat list to perform the work specified by paragraphs 3.2.1.2. and 3.2.1.4. of the F-16 specification (ASBCA No. 36976, 93-2 BCA at 127,893). The list contained some 101 threats (tr. 5/166).

Section G-504 of Modification No. P00006 stated: "Requirements of paragraphs 3.2.1.2. and 3.2.1.4. [of the F-16 system specification] dated 85 Sep 06, are excluded from the price ceiling of \$59,522,000." (R4, tab 1 at 43)

Work Performed by ADT Relating to Sensitivity Improvement

ATD presented its design approach to improving the ALR-74 system's sensitivity at technical coordination meeting (TCM) #1, held 19-21 November 1985. The presentation slides reference the need to reassess the system's design configuration because it was targeted to the Warner Robins specifications and needed to be updated to address the F-16 specification requirements. The proposed hardware design added amplifiers to the frequency converter for the wide band crystal video receiver path. (Ex. A-45; tr. 2/32-34) Although ATD had not recommended this method at CDR in June 1985, it ultimately was the improvement implemented because it turned out to be the most feasible way to increase the receiver's sensitivity and meet the response time requirements (tr. 2/147-49, 4/94, 139-43).

ATD successfully implemented this design in performing the restructured 4436 Contract. It enlarged the frequency converter assembly and made necessary changes to the amplifier detector. Associated adjustments were made to the system's software. (Tr. 2/32-34) Additionally, the power measurement tables were modified so that the system would measure signals with lower power levels and other changes were made to permit it to process more signals at a faster pace to satisfy the response time requirements (tr. 2/17-18, 34-35, 147).

ATD also performed the MOS analysis. The evidence established that it analyzed the emitter signal levels received through the aircraft antennas and transmission cables for each threat to determine the installed MOS performance levels required to detect, identify

and display the threats. This analysis involved determining the nature of the threats, their detailed characteristics, such as the pulse repetition rates and the types of modulation, and required a full understanding of the modes, parameters and characteristics of the emitters. (Tr. 2/14-20, 5/12-13, 23-24) ATD also resolved ambiguities between the threat emitters, and developed threat priority tables and an ambiguity matrix to resolve the overlapping between the individual threats (tr. 2/18-19, 226-27).

The threat data needed to perform the F-16 MOS analysis was not provided to ATD by the Air Force by 30 November 1985 as required by the 4436 Contract, and in March 1986 ATD obtained approval to use the Electronic Warfare Intelligence (EWIR) threat data it had been given for other contracts (ASBCA No. 36976, 93-2 BCA at 127,879). The EWIR data was incomplete, sometimes containing erroneous information, or lacking essential information, or even failing to include any information whatsoever about some of the threats (ex. A-77; tr. 2/19-20, 29-30, 5/25-29). Monthly updates to the EWIR data continued through February 1987 (tr. 2/29, 5/25, 62), and ATD re-evaluated each of the threats affected by each of these updates, making associated revisions to its tables and the ambiguity matrix as it resolved problems created by missing and conflicting data (tr. 2/18-19, 5/28-29, 62-63, 109-10).

Government witnesses expressed their disagreement with ATD's method of performing the MOS analysis. Mr. Gary W. Halliday was the lead Government engineer for the RWR competitive development program. He had a "lot of familiarity with the F-16 aircraft" and had provided comments about the F-16 specification when it was in draft form. He was qualified as an expert on "installed system sensitivity of RWRs on F-16 aircraft." (Tr. 5/233, 238, 246-52) Mr. John W. Louth, another Government engineer, had substantial experience with the Warner Robins specification and the ALR-74 RWR system (tr. 4/75-80).

Both Mr. Halliday and Mr. Louth explained that "only a half dozen or so threats," but "not more than ten," actually drove the sensitivity improvements required for the ALR-74 system (tr. 3/174, 232-33, 4/104). They thought that it should have been relatively easy for ATD to identify the driver threats which set the limits for the enhanced sensitivity performance requirements. They expressed the view that, once the drivers had been identified, ATD should simply have performed calculations of the signal losses from the antennas and transmission cables for the installed aircraft systems and applied them to the sensitivity values contained in the Warner Robins 40601 tables to establish the MOS performance levels required by the F-16 specification. (Tr. 3/196-97, 4/103-04, 144-47, 182-83, 6/10-13)

According to an internal ATD memorandum dated 14 April 1986 and entitled "ALR-74 Program Plan," about which speculative testimony was given by Mr. Louth, by April of 1986, ATD had preliminarily determined that the enhanced sensitivity

configuration of the ALR-74 system could detect 124 of 125 emitters from the F-16, Rev. B threat list (ex. A-69; tr. 5/151-52). In the end, there were only minor differences between the enhanced sensitivity levels required by the Warner Robins 40601 tables and the F-16 MOS performance levels: only three threats on the Warner Robins 40613 threat list could not be detected, identified and displayed by the modified ALR-74 system when the Warner Robins sensitivity levels were used (tr. 1/179-81, 2/135, 175-79, 225-26, 3/215-16, 5/45-46, 63-64, 100-03). Nevertheless, as Mr. Louth conceded, the ALR-74 system would not have met the contract requirements if it had been built only to the Warner Robins 40601 specifications (tr. 5/216). Moreover, it would have failed DVTP testing (tr. 5/63-64).

As confirmed by Mr. Louth, the Acceptance Test Procedure (ATP) prepared by ATD for the improved ALR-74 system referenced and tested the MOS performance requirements of paragraph 3.2.1.2. of the F-16 specification (exs. A-100, -102; tr. 5/188-90, 6/79-80). Mr. Halliday, however, thought that most of the effort ATD had expended was associated with the enhanced sensitivity requirement of the Warner Robins 40601 specification (tr. 3/181, 209-10, 5/258-60). It was his opinion that the Warner Robins 40601 requirements for enhanced system sensitivity would also have satisfied the F-16 MOS performance requirements (tr. 3/140). Further, notwithstanding the Board's prior finding that ATD was required to perform the work associated with paragraph 3.2.1.2. of the F-16 specification (ASBCA No. 36976, 93-2 BCA at 127,877), he did not think that there was any contract requirement for ATD to meet the F-16 MOS performance levels (tr. 3/151-54).

Definitization of the 4436 Contract and ASBCA No. 36976

On 25 April 1986, ASD issued a request to ATD for a quotation for a letter contract (F33657-86-C-2183) which would further upgrade and flight test the ALR-74 pre-production RWR systems that were to be delivered under the 4436 Contract. ATD was asked to submit a plan recommending changes to realign the two contracts. It did so and computed the cost of the work tasks to be deleted from the 4436 Contract to be \$2,038,709. This amount was reduced by the Government to \$2,009,056. (ASBCA No. 36976, 93-2 BCA at 127,881-82)

Meanwhile, on 14 March 1986, ATD had submitted a total cost proposal, which it supplemented on 31 October 1986, to definitize the 4436 Contract. These proposals included all of ATD's incurred costs together with its estimates to complete the contract work. (Tr. 3/58-59) The Air Force conducted fact-finding discussions beginning on 23 March and concluding on 1 April 1987. The evidence established that ATD's costs for the 4436 Contract were in excess of \$67 million. During fact finding, the cost of system sensitivity improvement/enhancement for the ALR-74 was identified as additional work and discussed as an offset to the Government's proposed \$2,009,056 deduction to

the contract price. The contracting officer, however, mistakenly thought that ATD had not performed the work specified by paragraphs 3.2.1.2. and 3.2.1.4. of the F-16 specification and that threat and antenna pattern data had been timely delivered. She also was not aware that ATD had been directed to incorporate the F-16 specification into the Computer Program Development Specification (CPDS). (ASBCA No. 36976, 93-2 BCA at 127,882-85) Therefore, when agreement was not reached, on 26 June 1987, she issued unilateral Modification No. PZ0010 which reduced the 4436 Contract NTE price ceiling by \$2,009,056, to \$57,512,944.

In a claim submitted to the contracting officer on 5 January 1988, ATD challenged the definitization and asserted entitlement to the full \$59.522 million NTE price. The claim was denied by the contracting officer and a timely appeal was docketed as ASBCA No. 36976. (ASBCA No. 36976, 93-2 BCA at 127,886) The Government moved to dismiss ATD's allegations of additional work for lack of jurisdiction because no claim had been submitted to the contracting officer. We found that ATD's allegations of additional work were raised only as a defense to the Government's unilateral definitization of the 4436 Contract and were sufficiently intertwined with the Government's claim for a reduction of the contract price to fall within the scope of our jurisdiction. We further found, however, that ATD's recovery, if any, for additional work was limited to the Government's \$2,009,056 reduction of the NTE price. (ASBCA No. 36976, 93-2 BCA at 127,891-92)

Following a seven-day hearing and full briefing by the parties, we concluded that:

The Government was entitled to a reduction of the NTE ceiling price for the work that was deleted from P00006 and properly considered appellant's termination settlement costs to be subject to the new NTE ceiling price when issuing Modification PZ0010.

Nevertheless, the definitization of Contract 4436 was improper because the contracting officer did not consider the work appellant performed in connection with paragraphs 3.2.1.2 and 3.2.1.4 of the F-16 specification (to the extent it was performed using the Warner Robins 40613 threat list) and the impact resulting from late delivery of the installed antenna pattern data, and also did not consider the additional work appellant performed on the CPDS Part I resulting from ASD's direction to incorporate the F-16, Rev. B specification into the CPDS Part I.

We sustained the appeal as indicated and directed the parties to negotiate quantum in an amount which was not to exceed the Government's \$2,009,056 deduction. (ASBCA No. 36976, 93-2 BCA at 127,895)

On 15 September 1993, ATD submitted to the Air Force its quantum proposal as a certified claim under the Contract Disputes Act (CDA) in the amount of \$3,713,660, plus CDA interest running from 5 January 1988 (R4, tab 4). The claimed costs include profit (exs. A-109, -111). ATD stated that it recognized "that the recovery for out of scope work is limited to \$2,009,056, plus interest" (R4, tab 4).

The technical aspects of the claim were reviewed by Mr. Halliday and the claimed costs were evaluated by Mr. William D. Carlton, the Government's price analyst who testified as an expert on contract pricing. Mr. Carlton relied upon Mr. Halliday's technical conclusions when he prepared Preliminary and Final Determination Price Negotiation Memoranda quantifying the costs to which he thought ATD was entitled. (R4, tabs 5, 10; tr. 6/53-65, 125, 134-37, 158-59)

In a final decision issued on 4 March 1996, the contracting officer awarded appellant \$284,925, plus CDA interest from 15 September 1993, for a limited MOS threat analysis, late delivery of the antenna pattern data and the costs of incorporating the F-16 Rev. B specification into the CPDS. The contracting officer's final decision adopted Mr. Halliday's technical determinations (principally that ATD's claim was seeking payment for work associated with the enhanced system sensitivity requirements of the Warner Robins 40601 specification) as quantified by Mr. Carlton. (R4, tabs 5, 10, 11; tr. 5/260, 6/133-39) The award included profit calculated at a rate of 10 percent. The final decision stated that "[a]ll rates and factors used to determine the allowable costs are the same as those proposed. This was done with the concurrence [of the Defense Contract Audit Agency] DCAA" (R4, tab 11) An audit was not performed because the Air Force had no doubt that the costs claimed by ATD had been incurred (tr. 6/151-52, 184-85).

A timely appeal from the contracting officer's 4 March 1996 decision was docketed as ASBCA No. 49787. The primary issue in this appeal is the quantum of the offset to the Government's \$2,009,056 deduction due ATD for work performed under paragraph 3.2.1.2. of the F-16 specification. Recovery for profit and the period for which interest should run are also at issue.

Appellant's Statement of Costs

Appellant's Statement of Costs, prepared pursuant to the Board's Order entered after this appeal was docketed, is based upon its 15 September 1993 quantum claim and contains the same back-up documentation (R4, tab 4; tr. 1/54). Both were prepared

under the direction of Mr. Wisneski, who, as ATD's chief project engineer, was responsible for "bringing all of the resources of the company together to meet the technical requirements of the project." (Tr. 1/36, 44-48) According to Mr. Wisneski, the quantum claim is based upon "the additional work in the form of a crystal video receiver path that was added after [CDR]" to meet the MOS performance requirements of the F-16 specification (tr. 2/38-40, 218). The total costs incurred (after adjustments to overhead rates) according to the Statement of Costs are \$3,744,940, plus CDA interest running from 5 January 1988 (exs. A-109, -111; tr. 2/37, 3/61, 79-81). ATD's quantum claim includes costs that were also contained in its 14 March 1986 total cost definitization proposal, as supplemented on 31 October 1986 (R4, tab 4; exs. A-109, -111; tr. 2/85-86, 6/138-39, 154-57). Mr. Carlton did not think that costs now claimed by ATD should be disallowed simply because they were also included in ATD's definitization proposals (tr. 6/183-84).

Generally, upon contract award, ATD assigns a Customer Sales Order (CSO) to the project and Task Authorizations are prepared for all major project events. Work Orders are then assigned to collect/report costs for the Task Authorizations. (Ex. A-109) The ATD cost accounting system tracks costs on the basis of the SOW, not by particular specification provisions and requirements (tr. 2/65-68, 83-84, 3/103-07). Although it was apparently possible to do so (tr. 2/71-72), ATD did not establish a separate account to capture the costs of the work it performed for paragraph 3.2.1.2. of the F-16 specification (tr. 2/91). Thus, in preparing ATD's claim, Mr. Wisneski utilized other contemporaneous records routinely collected and stored in its cost accounting system, including the CSO for the 4436 Contract, the associated Task Authorizations and the Work Order Master List, together with detailed labor reports (tr. 1/46, 2/98-99, 209-20, 3/107-09, 117-19, 129-30). Of relevance are eight Task Authorizations (exs. G-44a through 44h). The Government unsuccessfully attempted to demonstrate that the hours claimed by ATD were similar to the original predictions contained in the Task Authorizations (tr. 2/96-97, 6/144-59, 190-93, 6/204-06, 211).

Despite having made a careful and thorough search, which was described in some detail by ATD personnel, the actual Work Order forms could not be located. However, the Task Authorizations and the Work Order Master List data base contain much of the same information that is found on the Work Order forms. (Tr. 1/50-51, 2/100, 214-15, 3/105-11, 117-19, 129-30) While Mr. Wisneski thought that the Work Order forms would have been helpful in preparing the claim, he explained that the forms do not always contain work descriptions and ordinarily do not identify particular contract specification provisions (tr. 2/103-04, 215, 3/106-07). Where necessary, he interviewed ATD employees to confirm that specific work was properly included in the claim (tr. 1/52-53, 2/212-13). If the work was also associated with other paragraphs of the contract specifications, such as software and testing, he included only the cost of work which

he considered to be directly related to paragraph 3.2.1.2. of the F-16 specification (tr. 2/38-40, 45, 51-54, 218).

The costs sought for hardware changes required to meet paragraph 3.2.1.2. of the F-16 specification for system sensitivity are collected in tabs 2-11 and 19 of Section II of the Statement of Costs as part of Task 16525-15, Sensitivity Improvement, and Task 16525-03, Material and Other Costs (R4, tab 4; exs. A-109, -111; tr. 2/37-54). The total amount claimed for tabs 2-11 and 19 is \$2,228,178 (exs. A-109, -111). Task 16525-15 was opened in June 1985, shortly after ATD learned that the Air Force wanted the sensitivity of the ALR-74 improved, and collected the costs of performing the work associated with this improvement, including exploration of the various options to improve sensitivity (tr. 1/124-28). ATD's description of the Sensitivity Improvement Task states that the hardware impacts of paragraph 3.2.1.2. of the F-16 specification included redesign and repackaging of the amplifier detector line replaceable units (LRUs) (four per system), including the microwave integrated circuit (MIC) engineering which involved the frequency converter, amplifier filter, and dual local oscillator assemblies, and a new detector log video assembly, with peripheral changes to the signal processor input/output (IOU) and the low band receiver control logic assemblies (ex. A-109).

Tab 2 reflects \$600,505 in costs associated with redesign of the amplifier detector resulting from the addition of the frequency converter amplifiers (ex. A-109, Section II, tab 2; tr. 2/37-44); tab 3 shows \$592 in costs required to modify the four amplifier detector chassis to accommodate the new assembly (tr. 2/44-45); tab 4 documents \$994 in costs for building the four amplifier detector control logic boards (tr. 2/45); tab 5 reflects \$2,010 in costs required to build one IOU circuit card assembly for the signal processor (tr. 2/46); tab 6 shows \$580 as the cost of building and installing one control logic assembly for the low band receiver (tr. 2/46); tab 7 contains \$16,556 in costs required to build four amplifier detectors (tr. 2/46); tab 8 documents \$1,684 in costs required to build the wire harnesses for the redesigned assemblies (tr. 2/46-47); tab 9 reflects \$1,179,930 in costs associated with MIC engineering, which included the design and building of the frequency converter assemblies and the redesign and fabrication of the amplifier filter and dual local oscillator assemblies (tr. 2/47-48); tab 10 shows \$74,433 as the cost of preparing the documentation for the new design and test procedures (tr. 2/48); tab 11 reflects \$60,873 as the cost of designing and developing a detector log video amplifier assembly to improve acceptance recovery time and handle signal density (tr. 2/48); and tab 19 contains a total of \$290,021 in actual costs associated with materials and other direct costs incurred under Tasks 16525-15 and 16525-03 relating to the hardware changes (tr. 2/54). (Exs. A-109, -111)

The contracting officer denied ATD's claim for all of the costs associated with Task 16525-15 on the general grounds the work was proposed as "Sensitivity Improvement" required by paragraphs 3.4.a. and 3.4.b. of the Warner Robins SOW in

ATD's 31 October 1986 supplement to its definitization proposal and had been performed and paid for within the 4436 Contract NTE price ceiling (R4, tab 11). Mr. Wisneski credibly testified that he had been conservative when preparing ATD's claim and that he excluded all of the work associated with paragraph 3.4.a. and the IFM bandwidth sensitivity (ex. A-19; tr. 1/125, 2/70, 208-09, 218-19). He also explained that the claim does not include any costs for any work performed to achieve the Warner Robins 40601 enhanced sensitivity requirements (tr. 2/218).

The remaining costs sought by ATD are documented in tabs 12 through 18 of Section II of the Statement of Costs. The four Task Orders originally combined in tab 14 of ATD's quantum claim were segregated and separately tabbed as 14, 15, 16, and 17 in the Statement of Costs. Tab 15 of the claim is now tab 18 of the Statement of Costs. (R4, tab 4; ex. A-109) The contracting officer denied all of the costs claimed in tabs 12, 14, 15, 16, and 17 on the general grounds that the work was required by other provisions of the contract and that the costs claimed had been included in ATD's proposals to definitize the contract and paid for under Modification No. PZ0010 (R4, tab 11).

The costs associated with the software changes required to address the hardware changes are assembled in tab 12 as part of Task 16525-27, Phase II Software. Mr. Wisneski estimated that one-third, or \$642,879, of the total software costs documented in Task 16525-27 was attributable to these software changes. (Exs. A-109, -111; tr. 2/48-49) Tabs 14, 15, 16 and 17 all relate to test updates. Tab 14 shows the costs associated with Task 16525-42, Test Software Update, which involved changes to the test procedures for the new hardware. Mr. Wisneski testified that he "made a conservative judgment" here and estimated that 50 percent, or \$64,897, of the test software update costs was related to sensitivity improvement. (Tr. 2/51-52) Tab 15 contains the costs associated with Task 16525-44, Test Equipment Modification. This includes modifications to the engineering test support equipment (ETSE) required to test the new hardware. Mr. Wisneski again estimated that 50 percent, or \$22,970, of the test equipment modification costs was related to the sensitivity improvement. (Tr. 2/52) Tab 16 contains the costs associated with Task 16525-46, DVTP/ATP Update. Included are the costs of changes to these test procedures resulting from the sensitivity improvements. Again, Mr. Wisneski estimated that 50 percent, or \$106,548, of the DVTP/ATP costs was associated with sensitivity improvements. (Tr. 2/53) Tab 17 contains the costs associated with Task 16528-30, System Integration, which includes the system level testing and integration work required to integrate the new hardware and software changes and the changes in the test procedures. Mr. Wisneski estimated that 25 percent, or \$30,660, of the total costs of System Integration was associated with sensitivity improvement. (Tr. 2/53-54) (Exs. A-109, -111) The Government did not challenge the estimates applied by Mr. Wisneski.

In addition to the general grounds for denial discussed above, the contracting officer also commented that all of the costs claimed in tabs 14 through 17 had been incurred after March 1986, and, therefore, should be denied because, by that time, ATD allegedly “was working against the F-16 Rev B specification and the Rev B threat list, not the Warner Robins threat list” (R4, tab 11).

The contracting officer awarded ATD a total of \$284,925, including \$25,258 in profit, for the costs claimed in tabs 13 and 18 and ATD was paid this amount by unilateral Modification No. P00011 (R4, tabs 10, 11). Tab 13 contains the costs associated with Task 16525-14, Systems Engineering, and includes the threat analysis performed to determine the MOS performance requirements for paragraph 3.2.1.2., and the antenna pattern modeling analysis undertaken for paragraph 3.2.1.4. of the F-16 specification. Mr. Wisneski estimated that 50 percent, or \$546,997, of the systems engineering costs documented in Task 16525-14 were attributable to the MOS analysis and redundant antenna pattern and angle of arrival accuracy models. (Exs. A-109, -111; tr. 2/49-50) Based in part upon the 31 October 1986 supplement to ATD’s definitization proposal, the contracting officer concluded ATD was due a total of \$217,495 for tab 13: (a) \$37,650 “for late antenna pattern data delivery and sensitivity analysis accomplished to determine sensitivity requirements for the 101 threats;” (b) \$177,056 for systems modeling associated with late delivery of the antenna pattern data beginning 30 November 1985, the data due date; and (c) \$2,789 for antenna studies (R4, tab 11). The costs claimed for the work undertaken for paragraph 3.2.1.4. (antenna pattern modeling analysis) are not at issue in this appeal (app. reply br. at 1).

Tab 18 contains costs associated with Task 16526-49, Computer Program Development Specification (CPDS), for which ATD claimed \$81,191 (exs. A-109, -111). The contracting officer allowed \$67,430 (R4, tab 11). The costs claimed in tab 18 also are not at issue in this appeal (tr. 2/54). (App. br. at 19)

The contracting officer’s award of \$25,258 for profit on the amounts allowed was based upon Mr. Carlton’s Final Determination Price Negotiation Memorandum (R4, tabs 10, 11). At the hearing, Mr. Carlton backed away from his prior determination that profit should be allowed because he thought that ATD was in a loss position on the contract (tr. 6/159). On cross examination, however, he admitted that he did not know whether a contractor should be paid profit on costs that were excluded from the NTE price ceiling (tr. 6/196).

Preliminary Evidentiary Matter

The Government asks us to draw an adverse inference from ATD’s inability to produce the original Work Order forms. ATD responds that it presented sufficient

evidence of its inability to locate the original Work Order forms when it was preparing its claim, despite having made a careful and thorough search.

An adverse inference may be drawn from a party's failure or refusal to produce a relevant document, or the destruction of it, if there is evidence tending to show that the document actually was destroyed or withheld by a party with notice that the documents were relevant. *See Dalmo Victor Division of General Instrument Corp.*, ASBCA No. 39718, 92-3 BCA ¶ 25,176 at 125,466. Here, ATD presented credible evidence of its search for the missing forms and its inability to locate them at the time it prepared its quantum claim. There was no evidence that the Work Orders had been destroyed because of this litigation or intentionally withheld from production to the Government. Moreover, the Government has not demonstrated how the Work Orders would aid its case, other than to assert that, without them, ATD has "no contemporaneous cost records." As we found, ATD used information which was obtained from the CSO, Task Orders and the Work Order Master Index, together with detailed labor reports and employee interviews, when preparing its quantum claim. These records contained much of the same kind of contemporaneous cost information that was included on the Work Order forms. We are satisfied that the information ATD used in the preparation of the claim was appropriately reliable, particularly since Mr. Wisneski, the person primarily responsible for its preparation, was the ATD's chief project engineer for the ALR-74 RWR program during the time period in question.

DISCUSSION

The issues in this appeal relating to paragraph 3.2.1.2. of the F-16 specification are the result of the Government's melding of the Warner Robins 40601 specification and the new F-16 specification written by ASD to permit competitive development of RWR systems and to obtain improved sensitivity.

The competition was implemented for ATD by Modification No. P00006, which restructured the 4436 Contract and required ATD to develop and produce RWR systems in accordance with both the Warner Robins 40601 specification (Rev. C) and the F-16 specification, dated 6 September 1985. To that end, Section C-507 of Modification No. P00006 specifically incorporated both specifications into the restructured 4436 Contract. The SOW, at paragraph 2.2, likewise incorporated both.

Paragraph 3.2.1.3.4. of the Warner Robins specification provided tables of the enhanced sensitivity levels that ATD was required to meet. Paragraph 3.2.1.2. of the F-16 specification, on the other hand, used the term MOS to denote the improved sensitivity performance levels the RWR system was required to achieve and defined MOS as "the minimum signal strength required for the RWR to detect, identify and display threats" when installed in an operational aircraft.

The Order of Precedence Clause, found at paragraph 2.3 of the SOW, gives the contract precedence over the SOW, and, as between the two specifications, gives the F-16 specification precedence over the Warner Robins 40601 specification.

Consistent with Section C-507 of Modification No. P00006 and the Order of Precedence clause, the parties stipulated, and we found in our entitlement decision, that ATD was required to perform the work specified by paragraph 3.2.1.2 of the F-16 specification. We also found in our entitlement decision that, following proposal submissions and negotiations, the parties agreed in Section G-504 of Modification No. P00006 that the cost of the work required by paragraph 3.2.1.2. of the F-16 specification would be excluded from the \$59.522 million NTE price ceiling because the Government had not provided ATD with enough information to accurately assess the impact of the requirements. (ASBCA No. 36976, 93-2 at 127,877) We concluded that ATD was entitled to the cost of this additional work as an offset to the Government's \$2,009,056 deduction (*id.* at 127,895). The legal and factual determinations made in the entitlement phase of the litigation are binding in this, the quantum, phase as the law of the case and there are no exceptional circumstances present which require us to depart from them. *See American Asphalt, Inc.*, ASBCA No. 44160, 95-2 BCA ¶ 27,614.

The evidence in the present quantum appeal established that ATD successfully performed the work required by paragraph 3.2.1.2. of the F-16 specification. In doing so, it undertook a complete analysis of each of the threats on the Warner Robins threat list to determine the F-16 MOS and then designed, developed and implemented hardware and software modifications to the existing ALR-74 system, in particular to the wide band crystal video receiver path, to achieve the sensitivity performance levels it had defined. The Government's contention that ATD built and tested the ALR-74 RWR to the Warner Robins 40601 specification, and did not perform any MOS work under the F-16 specification, lacks any credible factual basis. Indeed, the hearing record established that ATD not only performed to the MOS requirements of paragraph 3.2.1.2. of the F-16 specification, but also that its ATP was based upon that specification.

Causation Issues

The Government has raised a number of duplicative, and sometimes inconsistent and factually unsupported, causation arguments which seek to avoid liability completely, or at least to reduce substantially the quantum of ATD's recovery.

The Government's primary causation contention is that the work specified by paragraph 3.2.1.2. of the F-16 specification was otherwise required by the Warner Robins specification and that the cost of this work was subject to the NTE price ceiling as definitized by Modification No. PZ0010. The contention raises questions about the

interpretation of Section G-504 of Modification No. P00006. Under established rules of contract interpretation, we are to begin with the plain language, *Foley Company v. United States*, 11 F.3d 1032, 1034 (Fed. Cir. 1993), give reasonable meaning to the provisions in question within the context of the contract as a whole, *Hol-Gar Manufacturing Corporation. v. United States*, 351 F.2d 972, 979 (Ct. Cl. 1965), and construe the agreement in a manner that effectuates its spirit and purpose. *Gould, Inc. v. United States*, 935 F.2d 1271, 1274 (Fed. Cir. 1991), quoting *Arizona v. United States*, 575 F.2d 855, 863 (Ct. Cl. 1978). Application of these rules of contract interpretation leads us to reject the Government's contention for a number of reasons.

First, the Government's current contention raises the same contract interpretation issues we previously decided in our decision on entitlement. Specifically, we found there that ATD was required to perform the work specified by paragraph 3.2.1.2. of the F-16, that the cost of this work was excluded from the NTE price ceiling by Section G-504 of Modification No. P00006, and that ATD was entitled to its costs as an offset to the Government's improper reduction of the contract price. This is the law of the case. *American Asphalt, supra*.

Second, the contention ignores the plain language of Section G-504, which states that the "[r]equirements of paragraph[] 3.2.1.2. . . . [of the F-16 specification] dated 85 Sep 06, are excluded from the price ceiling of \$59,522,000." The evidence established that Warner Robins tried to anticipate what the F-16 MOS sensitivity levels would be when it coordinated with ATD and prepared the sensitivity tables contained in the revised Warner Robins 40601 specification. The Government, therefore, was aware that there would be some overlapping between the sensitivity requirements of the two specifications. Nevertheless, Section G-504 does not say that the requirements of paragraph 3.2.1.2. of the F-16 specification are excluded from the NTE price ceiling, except to the extent they may duplicate or overlap with the requirements of the Warner Robins specification. Moreover, while performance of the F-16 specification also satisfied the Warner Robins requirements and ATD, therefore, met the contract requirements, the reverse would not have been true if ATD had only performed to the Warner Robins specification.

Third, the evidence established that, consistent with the view of Air Force personnel and the provisions of the Order of Precedence clause, ATD had determined that the F-16 specification was to have precedence and was the dominant specification for completion of the contract requirements. The testimony of Mr. Wisneski and the proposals themselves further established that ATD had based its final cost proposal to restructure the 4436 Contract upon the system configuration finalized at CDR and that the proposal did not contain any amount for enhanced sensitivity, irrespective of whether it was performed under the Warner Robins or F-16 specifications. Thus, when the cost of performing the work required by paragraph 3.2.1.2. of the F-16 specification was

excluded from the NTE price ceiling by Section G-504 of Modification No. P00006, there was nothing in the NTE contract price ceiling to cover the cost of the enhanced sensitivity work.

The Government asserts that evidence of the dominance of the F-16 specification and the prices ATD proposed is barred by the parole evidence rule. The Government's position as to the dominance of the F-16 specification is mistaken; the evidence it seeks to exclude does not contradict the provisions of the Order of Precedence clause. Its position as to the prices ATD proposed is curious inasmuch as the proposals were Government exhibits. In any event, we may consider evidence of the acts and statements of the parties prior to and at the time of the execution of the contract for purposes of interpreting and giving meaning to the contract. *See Gibbs v. United States*, 358 F.2d 972, 979 (Ct. Cl. 1966). In this case, the evidence of the proposed prices is relevant to the correct interpretation of Sections C-507 and G-504 of Modification No. P00006.

Finally, the Government's contention renders Section G-504 meaningless. If the work was otherwise required by the Warner Robins specification, there would have been no reason to require ATD to perform paragraph 3.2.1.2. of the F-16 specification, no reason to exclude the costs of that work from the NTE price ceiling and, therefore, no reason to include Section G-504 in Modification No. P00006.

Accordingly, we conclude that the Government's contention is without merit because it is based upon an unreasonable interpretation of Section G-504 of Modification No. P00006. Our conclusion also dispenses with the various other contract interpretation questions associated with the sensitivity requirements (principally in connection with paragraph 3.4.b. of the SOW), that were raised and addressed at length by the parties by rendering them irrelevant and moot.

In another, somewhat related, vein, the Government contends that the costs claimed by ATD in the areas of threat detection, identification and display, ambiguity analysis and response time, and in particular, software changes and testing, involved work that was required by other provisions of the Warner Robins 40601 and F-16 specifications. ATD agrees that some of this work was otherwise required by other provisions of the two specifications. It strenuously asserts, however, that Mr. Wisneski included only the costs of the additional work relating to the crystal video receiver path in ATD's quantum claim and that he proportioned costs for several of the claim items so as to include only the costs which related directly to paragraph 3.2.1.2. (App. reply br. at 4)

The record presented by the Government on this issue consists largely of a recitation of specification technical provisions and other documents about which virtually no reliable testimony was elicited. It offered no specific evidence of any cost, or proportional cost, that was improperly claimed in the areas identified. ATD, on the other

hand, through the credible testimony of Mr. Wisneski, established that the quantum claim included only the cost of work directly related to the requirements of paragraph 3.2.1.2. of the F-16 specification. He testified that he not only took a conservative approach in preparing the claim, but that he also applied proportional percentages when claiming costs collected in several of the Tasks, including software, testing and system integration. On this evidence, we are satisfied that ATD is not claiming the cost of work in the areas identified that was otherwise required by the two sets of specifications.

The Government further argues that paragraph 3.2.1.2. of the F-16 specification simply defined MOS and that the only work excluded from the NTE price ceiling was ATD's analysis of the threat data. Consistent with our conclusions regarding Section G-504 of Modification No. P00006, we again find no merit to the Government's position. Moreover, the argument makes no sense: If paragraph 3.2.1.2. only defined MOS, there would have been no reason to include Section G-504 in Modification No. P00006.

In any event, the remainder of the Government's argument apparently is derived from language contained in ATD's 10 and 18 September 1985 revised proposals to restructure the 4436 Contract which indicate that ATD would provide an assessment by emitter of installed sensitivity when full threat data was available. Mr. Wisneski disagreed with the reasonableness of the Government's reading of the proposals, credibly testifying, as we found above, that none of the costs of improving the ALR-74's sensitivity were included in the proposed \$59.522 million NTE price and that the MOS performance levels had to be determined before ATD could make changes to the hardware and software required for an installed system to detect, identify and display threats. At the time ATD submitted its proposals to restructure the 4436 Contract, however, the Government had not supplied ATD with sufficient information to assess the impact of the MOS performance requirements. Thus, it was consistent for ATD to exclude not only the cost of the MOS evaluation, but also the subsequent (and more costly) design changes to the ALR-74 system that were necessary to achieve the MOS performance levels established by that evaluation.

Nor are we persuaded that ATD was required to perform the MOS analysis in the manner suggested by the Government. Specifically, in the Government's view, ATD should have evaluated the threat list to determine the "half-dozen or so threats," but "not more than ten," that were the drivers and then performed a series of calculations to determine whether the F-16 MOS performance levels could be met by the sensitivity levels specified by the tables contained in Warner Robins 40601 specification. In short, the Government has advanced what it considers to be an easier and more cost effective method of performing the MOS analysis. This apparently is the method employed by Mr. Halliday, who performed the technical analysis, and Mr. Carlton, who provided cost data, to determine the amount to which they thought ATD was entitled for performing the MOS threat analysis, a determination that was adopted by the contracting officer in the

final decision issued on 4 March 1996. The difficulty with the Government's view is that paragraph 3.2.1.2. of the F-16 specification was a performance specification. ATD, therefore, was free to choose any reasonable method of performance; it also bore the risk of failing to meet those requirements. *See, e.g., J.L. Simmons Co. v. United States*, 412 F.2d 1360, 1362 (Ct. Cl. 1969).

The evidence established that ATD reasonably undertook a complete analysis of all of the threats to determine the F-16 MOS performance levels. We are satisfied that this was not a simple assessment of the threat emitters. Rather, the analysis required a detailed study of each threat, an evaluation of the response time, resolution of ambiguities between the threat emitters, development of threat priority tables, and the preparation of an ambiguity matrix. This work was complicated by the need to use the ever-changing threat/EWIR data. ATD should not be precluded from recovering the appropriate costs for the work it actually performed when evaluating the threats simply because the Government has now decided there might have been a less costly way to perform it.

Cost Issues

The costs claimed by ATD are set forth in the Statement of Costs it prepared pursuant to the Board's Order. The costs associated with the antenna pattern modeling analysis undertaken for paragraph 3.2.1.4. of the F-16 specification (collected as part of tab 13) and the costs associated with the CPDS (collected in tab 18) are not at issue in this appeal.

No audit of ATD's quantum claim was performed because the Government had no doubt that the claimed costs had been incurred and DCAA had concurred with the contracting officer's use of ATD's proposed rates. Nevertheless, in addition to the causation issues discussed above, the Government has presented four separate cost issues which again seek either to avoid liability completely, or to limit ATD's recovery.

The Government seeks to avoid liability completely by asserting that ATD previously must have considered the costs it now claims to be within the NTE price ceiling because it did not segregate the cost of the F-16 MOS work and because most of the costs were included in its March and October 1986 proposals to definitize the 4436 Contract. ATD strongly disagrees. It points out that, under its cost accounting system, its costs are tied to the SOW, not to particular specification provisions. It further argues that the fact that it submitted total cost proposals to definitize the contract does not preclude recovery of the costs of the work associated with performance of F-16 specification paragraph 3.2.1.2. It reminds us that it raised the issue of this additional work as a setoff during the definitization process. Finally, it asserts that the fallacy in the Government's contention is evident from the fact that, as part of Modification No. P00011, the

Government has already recognized, and paid for, costs associated with additional work (e.g., the CPDS work) that were previously included in its definitization proposals.

The Government's arguments fail for three reasons. First, the record reflects that, in accordance with its established cost accounting system, ATD's costs have consistently been identified and accumulated on the basis of the SOW, not particular specification paragraphs. Second, even Mr. Carlton, the Government's pricing expert, acknowledged that the costs claimed by ATD should not be disallowed simply because they were also included in its definitization proposals. And, third, we found in our prior entitlement decision that ATD had submitted total cost definitization proposals, that the issue of additional work, including sensitivity enhancement, was discussed and that ATD proposed an offset of the cost of this work against the deduction taken by the Government for work deleted from the 4436 Contract. (ASBCA No. 36976, 93-2 BCA at 127,882-84) This, again, is the law of the case. *See American Asphalt, supra*.

The Government also attempts to limit ATD's recovery to the time period beginning in September 1985, when Modification No. P00006 was executed, and ending in April 1986, after ATD allegedly began working to the F-16 threat list instead of the Warner Robins 40613 threat list. As to the costs incurred prior to the execution of Modification No. P00006, the evidence established that ATD opened Task 16525-15 in June 1985 and began to collect costs associated with sensitivity improvements at that time. The Government has failed to advance any valid reason why these costs should be excluded from ATD's recovery. As to the costs incurred after April 1986, we found in ASBCA No. 36976 that ATD was required to use the Warner Robins 40613 threat list (93-2 BCA at 127,894). The evidence offered by the Government to rebut ATD's evidence that it was using the Warner Robins 40613 threat list after April 1986 consists of a single statement taken from an internal ATD memorandum dated 14 April 1986, about which only speculative testimony was given, and what is more, by a Government witness. The Government's argument fails for lack of proof.

The Government's next contention relates to profit. It asserts that, if the work specified by paragraphs 3.2.1.2. and 3.2.1.4. of the F-16 specification was required by the contract, then ATD is not entitled to profit because it was in a loss position. It relies upon *Nager Electric Company v. United States*, 442 F.2d 936, 946 (Ct. Cl. 1971) and *K E C O Industries v. United States*, 364 F.2d 838, 848-50 (Ct. Cl. 1966), *cert. denied*, 386 U.S. 958 (1967), both of which involved deductive contract price adjustments. It also seeks a refund of the \$25,258 in profit, plus interest, it alleges it mistakenly paid to ATD under Modification No. P00011. ATD challenges the Government's choice of authority, and characterizes the factual circumstances in this case as being more analogous to an equitable adjustment under the Changes clause, where the cost of required work is not included in the contract price. Its position is correct. *See Stewart & Stevenson Services, Inc.*, ASBCA No. 43631, 97-2 BCA ¶ 29,252 at 145,523.

The Government's final argument is that CDA interest should run from 15 September 1993, the date upon which ATD submitted its certified quantum claim to the contracting officer. The Government's asserts that, on 5 January 1988, when ATD challenged the contracting officer's unilateral definitization of the 4436 Contract, its allegations of additional work were raised as an affirmative defense, and not a CDA claim. ATD contends that the "crux of this issue comes down to whether or not ATD's January 1988 claim, which specifically sought recovery of the \$2,009,056 the Government had unilaterally deleted from the NTE, is a 'claim' under the [CDA]" (app. reply br. at 68). Our previous conclusion that ATD did not assert an affirmative CDA claim for the separate costs of the various items of additional work it alleged it performed is, yet again, the law of the case. *American Asphalt, supra*. CDA interest due ATD runs from the date upon which the contracting officer received the 15 September 1993 certified quantum claim.

CONCLUSION

The appeal is sustained, in part. ATD has demonstrated that it performed the work required by paragraph 3.2.1.2. of the F-16 specification and that its costs were reasonably incurred. These costs should be offset against the contracting officer's \$2,009,056 reduction to the 4436 Contract NTE price ceiling. Although its costs exceed the reduction, ATD's recovery, including the amounts found due by the contracting officer's 4 March 1996 final decision, is limited to \$2,009,056. CDA interest on \$2,009,056 shall run from the date upon which the contracting officer received ATD's 15 September 1993 quantum claim. In all other respects, the appeal is denied.

Dated: 28 April 2000

CAROL N. PARK-CONORY
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

I concur

MARK N. STEMLER
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

EUNICE W. THOMAS
Administrative Judge
Acting Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA No. 49787, Appeal of Litton Systems, Inc., Applied Technology Division , rendered in conformance with the Board's Charter.

Dated:

EDWARD S. ADAMKEWICZ
Recorder, Armed Services
Board of Contract Appeals

Front Office

ARMED SERVICES BOARD OF CONTRACT APPEALS
Skyline Six - Seventh Floor
5109 Leesburg Pike
Falls Church, Virginia - 22041

CONCURRENCES IN DRAFT DECISION

_____ LST spell checked	_____ Date	_____ Author/Judge Reviewed
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Appeal of --)	
)	
Litton Systems, Inc.,)	
Applied Technology Division)	ASBCA No. 49787
)	
Under Contract No. F09603-84-C-4436)	

The first undersigned member of Division 3 hereby tenders the attached draft decision in the above-referenced appeal(s) for action by the other members of this division, a Vice Chairman and the Chairman.

_____ I	_____ Member	_____ Date
_____ I	_____ Member	_____ Date
_____ I	_____ Member	_____ Date
_____ I	_____ Vice Chairman	_____ Date
_____ I	_____ Acting Chairman	_____ Date