

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --)
)
Defense Systems Corporation) ASBCA Nos. 44131R 44835R 50562
) 50563 50997 50998
Under Contract Nos. N00104-88-C-A024)
N00164-88-C-0181)

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OPINION BY ADMINISTRATIVE JUDGE FREEMAN

These appeals arise under two contracts for the production of chaff-dispensing cartridges for the U.S. Navy. Both contracts were terminated for default. The contractor, Defense Systems Corporation (DSC), appealed the terminations and submitted claims for equitable price adjustments under both contracts. The equitable adjustment claims were denied by the respective contracting officers, appealed by DSC, and consolidated for hearing on entitlement with the default termination appeals. In our decision of 24 May 1995, we sustained the appeals on the default terminations, dismissed without prejudice the appeals on the equitable adjustment claims, and instructed the parties to consider those claims in the convenience termination settlements. *Defense Systems Corporation and Hi-Shear Technology Corporation*, ASBCA Nos. 42939 *et al.*, 95-2 BCA ¶ 27,721 at 138,158-60.

On 31 January 1996, DSC submitted termination settlement claims on both contracts. It appealed their deemed denial one year later. (ASBCA Nos. 50562, 50563) Since the amount of the termination settlements is limited by the contract prices, we reinstated the appeals on the equitable adjustment claims (ASBCA Nos. 44131R, 44835R) for decision with the appeals on the termination settlement claims. Also before us are two appeals on the deemed denials of DSC's claims under each contract for the costs of shutting down its business. (ASBCA Nos. 50997, 50998)

FINDINGS OF FACT

1. The MK 214 contract was awarded to Hi-Shear Technology Corporation (HSTC) on 18 November 1987. (ASBCA 42940, E-R4, tab 1)* The MK 216 contract was awarded to HSTC effective 5 July 1988. (ASBCA 44131R, E-R4, tab 2) DSC replaced HSTC as the contractor under both contracts by novation agreement effective 1 June 1989. (ASBCA 42940, E-R4, tab 2, Modification A00021) Both HSTC and DSC were subsidiaries of Hi-Shear Industries (HSI). (Q-Tr. 1/94; Q-Ex. A-17)

2. Both contracts included the FAR 52.243-1 CHANGES-FIXED PRICE (APR 1984)" clause, the FAR 52.212-15 GOVERNMENT DELAY OF WORK (APR 1984) clause, the FAR 52.245-2 GOVERNMENT PROPERTY (FIXED PRICE CONTRACTS) (APR 1984), (ALTERNATE 1) (APR 1984) clause, the FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED PRICE) (APR 1984) clause, and the FAR 52.209-4 FIRST ARTICLE APPROVAL - GOVERNMENT TESTING (APR 1984) clause. (ASBCA 42940, E-R4, tab 1 at 40, 41, 43, 48; ASBCA 44131R, E-R4, tab 2 at 15-16, 45, 47) The MK 214 contract included the FAR 52.232-16 PROGRESS PAYMENTS (APR 1984) clause. (ASBCA 42940, E-R4, tab 1 at 42) The MK 216 contract included the DFAR 52.232-7007 PROGRESS PAYMENTS (OCT 1986) clause. (ASBCA 44131R, E-R4, tab 2 at 39)

3. On 26 August 1991, DSC submitted a certified consolidated claim for equitable adjustment on the MK 214 contract in the total amount of \$6,600,700. (E-App. supp. R4, tab B-1 at 2; E-Ex. A-76 at 2) On 12 September 1991, DSC submitted a certified consolidated claim for equitable adjustment on the MK 216 contract in the total amount of \$8,184,570. (E-App. supp. R4, tab B-47 at 2, tab B-48 at 3) Following our decision on the default termination appeals, DSC increased the amounts of its equitable adjustment claims to \$10,274,429 on the MK 214 contract, and \$10,272,540 on the MK 216 contract. (Q-Exs. A-6, -7) Pursuant to our pre-hearing order of 29 April 1998 regarding the quantum hearing, no equitable adjustment claim item is allowed in more than the amount stated in DSC's 14 May 1998 response to that order.

* Citations to evidence and findings in the entitlement hearing are prefaced by the letter "E". Citations to evidence in the quantum hearing are prefaced by the letter "Q".

The MK 214 Equitable Adjustment Claims

4. Claim 214-1: The contract specifications and drawings for the 3.5 second delay detonator were defective in that detonators built to the specified design could not consistently meet the specified delay time requirement. (E-Findings 40 through 42) On 28 September 1988, HSTC proposed substituting a proprietary design for the specified design, and stopped work on the specified design. (E-App. supp. R4, tab B-3 at Ex.1.17, tab B-29 at 1, ¶ 3.3) HSTC's proposal was accepted by the Government and incorporated into the contract by bilateral Modification No. P00008. Modification No. P00008 provided that HSTC "will assume full liability in the function, test and manufacture of the 3.5 Second Delay Detonator designed by Hi-Shear." (ASBCA 42940, E-R4, tab 2) HSTC incurred total costs of \$414,946 working on the specified design from award of the contract through 28 September 1988. (E-App. supp. R4, tab B-3 at 8-12; Q-App. supp. R4, tab 1374 at 41998-42003, tab 1469 at 45045) The claimed costs incurred thereafter (\$1,036,031) were incurred for work on the proprietary design for which HSTC expressly assumed liability in Modification No. P00008.

5. Claim 214-2: The propulsion assembly specification was defective in that it required epoxy in nozzle holes which caused muzzle velocity failures at first article test (FAT). (E-Finding 63; ASBCA 42940, E-R4, tab 12) These failures caused total additional costs of \$234,406, and delayed FAT approval by 63 days. (E-App. supp. R4, tab B-12; E-Ex. A-76 at 16-17; Q-App. supp. R4, tab 1374 at 42010-42024, tab 1469 at 45046) The balance of the costs claimed by DSC for this defect (\$121,799) were incurred before FAT. (E-Ex. A-76 at 17) There is no credible evidence that the defect at issue caused any additional work or material cost before FAT.

6. Claim 214-3: DSC alleges that the "pusher" specification was defective in specifying dimensions that were beyond the state of the art for mass production. However, when non-compliant pushers were discovered during FAT, the vendor's report of cause and corrective action stated: "Mold size too short, to allow for removal of flash. . . . Will increase mold size by .010 and add machining operation." (Q-App. supp. R4, tab 1374 at 42158) Neither the vendor's corrective action report, nor a contemporaneous DSC request for waiver (RFW), alleged that the specified dimensions were beyond the state of the art. (E-App. supp. R4, tab B-17 at Ex. 3.2) DSC and some other MK 214 manufacturers were allowed to deviate from the specified pusher dimensions. (E-App. supp. R4, tab B-17 at Ex. 3.6; Q-App. supp. R4, tab 1374 at 42177) But at least one other manufacturer delivered MK 214 cartridges without such waivers or deviations. (E-Tr. 13/33-34) On this record, DSC has failed to prove that the specified pusher dimensions were beyond the state of the art for mass production.

7. Claim 214-4: Contract drawing 6133133 specified an incorrect vendor part number for the "primacord." (E-App. supp. R4, tab B-20; ASBCA 44835, Complaint

and Answer ¶¶ 23) The error was discovered in February 1988, and was corrected by bilateral Modification No. A00001, effective 5 April 1988. (ASBCA 42940, E-R4, tab 2; E-R4, tab 1364) The total cost incurred by DSC on account of this error was \$1,561. (E-App. supp. R4, tab B-20; E-Ex. A-76 at 25-27; Q-App. supp. R4, tab 1374 at 42191-42200, tab 1469 at 45048)

8. Claim 214-6: Contract drawing 6133179 gave an incorrect vendor part number for the V Retainer Assembly. The vendor informed DSC of the error when it received the order, and supplied the correct part. (E-App. supp. R4, tab B-21) The correct part number was incorporated into the contract by bilateral Modification No. A00039, effective 1 March 1991. (ASBCA 42940, E-R4, tab 2) DSC claims that 65 direct labor hours were incurred as a result of this error, but it has failed to explain why this error cost three times more direct labor hours than the similar error on the primacord drawing. (E-Ex. A-76 at 27, 30-32) The only extra work caused by this error was “interfacing” with the vendor to resolve the problem, and processing a formal request for waiver of the erroneous part member on the drawing. Using as a guide the 17 direct labor hours incurred for the incorrect primacord part number, we find that DSC reasonably incurred a total cost of \$1,830 as a result of the incorrect V retainer assembly part number. (E-App. supp. R4, tab B-21; E-Ex. A-76 at 30-32; Q-App. supp. R4, tab 1374 at 42202-42211, tab 1469 at 45049)

9. Claim 214-7: Contract drawing SA2888031, Revision A, specified an erroneous calibration procedure for the firing coil tester. (E-App. supp. R4, tab B-22 at 1; ASBCA 44835, Complaint and Answer ¶¶ 25) The error was discovered in July 1989 and was corrected in September 1989. (E-App. supp. R4, tab B-22 at Ex. 7.1; ASBCA 42940, E-R4, tab 2, Modification A00013; E-R4, tabs 1739, 1741, 1749) DSC incurred a total cost of \$31,167 as a result of this error. (E-App. supp. R4, tab B-22; E-Ex. A-76 at 35-37; Q-App. supp. R4, tab 1374 at 42218-42235, tab 1469 at 7)

10. Claim 214-8: DSC alleges that the specification for the aluminized E-glass was defective in that the specified substrate diameter could not be mass produced by either of the two domestic suppliers having an approved slip coating process. Both the original supplier selected by HSTC and a second supplier selected by DSC required deviations allowing a larger diameter. (E-App. supp. R4, tab B-24 at Exs. 8.1 through 8.4) There was at least one foreign source, however, that subsequently produced aluminized E-glass with the specified substrate diameter and with an approved slip coating process. (E-Tr. 13/71-72, 14/56-71) The contract did not limit procurement to suppliers with an already approved slip-coating process, or otherwise to the two domestic sources. (E-Ex. G-3 at WS 23245B at ¶ 3.1.3.2(c)) On this record, DSC has failed to prove that the E-glass specification was impossible or commercially impracticable to perform, or was otherwise defective.

11. Claim 214-9: In August 1990, DSC received 912.4 grams of Government-furnished propellant which did not meet specification requirements (pellets were “cracked, pinched, closed off and deformed”). (E-App. supp. R4, tab B-26 at Ex. 9.2) The Government did not dispute that the propellant was defective, and authorized its disposal. (E-App. supp. R4, tab B-26 at Ex. 9.4) DSC incurred a total cost of \$27,284 for disposal of the defective propellant. (E-App. supp. R4, tab B-26; E-Ex. A-76 at 45-47; Q-App. supp. R4, tab 1374 at 42267-42280, tab 1469 at 45052)

12. Claim 214-11: DSC claims unabsorbed fixed indirect (Eichleay) costs for an alleged 836 days of extended performance caused by the Government. The claimed extended performance is measured from the date the first production lot was to have been delivered under the original contract schedule (13 December 1988) through the date DSC stopped work (29 March 1991). (Q-Ex. A-51 at 6, 8) Eichleay costs, however, are incurred only for an extension of the overall contract performance period, which for the MK 214 contract was the 536 days from 9 October 1989 (the original contract completion date) to 29 March 1991 when DSC stopped work. (ASBCA 42940, E-R4, tab 2 at Modification P00001) The defective delay detonator specification extended the FAT submission date, and the overall performance of the contract by 390 days. (ASBCA 42940, E-R4, tab 2 at Modification P00008) The further delays in overall contract performance were caused by problems with the proprietary detonator for which HSTC assumed “full liability” in Modification No. P00008, and by other concurrent Government-responsible and contractor-responsible causes following FAT submission up to the time DSC stopped work. Defective specifications were responsible for a delay in FAT approval, and for the practical impossibility of the completed production lots passing the lot acceptance tests. (*See Findings 13 and 15 below.*) DSC, however, started production in March 1990, before FAT approval, and production thereafter until DSC stopped work was concurrently delayed by low production rates for the detonators, output cups and chaff for which no Government responsibility is proven. (E-R4, tab 1235 at HS8616, tab 1236 at HS8706-08, tab 1239 at HS8823, HS8826, tab 1244 at HT0060, tab 1245 at HT0095, tab 1246 at HT0131-HT0132, tab 1247 at HT0169, tab 1248 at HT0197) The daily fixed indirect cost rate for the MK 214 contract for the contract performance period was \$2,637. (Q-Ex. A-51 at Schedule A.1) Adjusting for the fixed indirect cost recovered in the amounts allowed herein for the additional work claims, the unabsorbed fixed indirect cost for the 390 days of extended performance time for which Government responsibility is proven was \$889,044.

13. Claim 214-14: Contract drawing 6133060 specified an inadequate locking compound and torque for the mating threads which attached various components of the cartridge to each other. (E-Findings 74-76) This problem first manifested itself when a part came loose during the FAT teardown. The solution at that time was to increase curing time of the locking compound before attaching the parts. (E-App. supp. R4, tab B-33 at Ex. 14.1 at 3) Increasing the curing time, however, did not solve the problem.

At the lot acceptance test (LAT) of the first production lot, the propulsion assembly of one of the sample units separated from the safe and arm assembly under vibration testing. This failure caused rejection of the lot. (E-App. supp. R4, tab B-33 at Ex. 14.2) As a result, DSC was required to prepare a failure analysis and corrective action plan, to rework production lots 1 and 2, and resubmit lot 1 for LAT. (E-App. supp. R4, tab B-33 at Exs. 14.5, 14.6, 14.7, 14.8) DSC's claimed total costs included a back-charge of \$8,065 by the Government for conducting the failed LAT. We do not allow this item in DSC's claim in the absence of evidence that it was in fact paid or was the basis for a reduction of the contract price. Deleting the back-charge, DSC's proven incurred total costs for the defective installation specification were \$69,532. (E-App. supp. R4, tab B-33; E-Ex. A-76 at 63-65; Q-App. supp. R4, tab 1374 at 42346-42362, tab 1469 at 45053)

14. Claim 214-15: On 5 January 1991, DSC's first production lot failed its second LAT when one fin cup worked loose under vibration testing, and a second fin cup had loose screws. The Government rejected the lot for these failures and directed DSC to rework the lot a second time and submit new samples for a third LAT. (E-App. supp. R4, tab B-36 at Ex. 15.2) DSC alleges that the fin cup worked loose because inadequate torque was specified for the mounting screws in Note 8 of contract drawing 6133060. This allegation, however, is inconsistent with the fact that there were no fin cup mounting screw failures during vibration testing on the first LAT of the second production lot conducted five days later on 10 January 1991. The allegation is also inconsistent with DSC's contemporaneous failure analysis report dated 29 January 1991 which recommended that on rework, the screws on production Lot 1 be torqued to the same 22-26 inch pounds specified in the drawing. (ASBCA 42940, E-R4, tab 40 at 2, 4; E-Ex. G -4) On this evidence, the allegation of a defective fin cup assembly installation specification is not proven.

15. Claim 214-16: Contract drawing 6133060, Note 3, specified an epoxy bond joint between the S&A assembly and the chaff unit outer case. In our decision of 24 May 1995, we found that a good epoxy seal could not be made in the bond joint as designed. (E-Findings 65-69) Lack of epoxy in the bond joint was noted at the FAT, and was one of the "problems" DSC was directed to correct before the Government would authorize full production. (E-App. supp. R4, tab B-40 at Exs. 16.3, 16.4) Lack of epoxy in the bond joint was also noted at the first LAT of production Lot 1, and production Lot 2 was rejected at its first LAT for two bond joint failures during vibration testing. (ASBCA 42940, E-R4, tab 38; E-App. supp. R4, tab B-40 at Exs. 16.17, 16.18, 16.19, 16.20) DSC incurred total costs of \$250,404 as a result of the defective bond joint specification. (E-App. supp. R4, tab B-40; E-Ex. A-76 at 73-75; Q-App. supp. R4, tab 1374 at 42414-42421, 42427-42446, tab 1469 at 45055)

16. Claim 214-17: DSC claims that it incurred \$1,388,371 in direct labor costs for labor inefficiency caused by the Government. (Q-Ex. A-51 at Schedule D-1) The claimed amount is derived by subtracting from the total direct labor cost charged to the contract (i) the direct labor cost included in the defective specification and other claims, and (ii) the alleged “planned direct labor” for the work performed up to the time DSC stopped work. The planned direct labor cost in this calculation is based on a “budget” prepared by DSC management in November 1988. (Q-Ex. A-51 at 9 and Schedule D-1; Q-Tr. 9/99-100) The direct labor amount in that budget, however, was not based on a bottom-up labor estimate. It was a top-down management allocation of the dollars “available” for direct labor after subtracting from the contract price the amounts required for materials, overhead, G&A, and “whatever profit” management wanted to include. (Q-Tr. 9/48-49) The record does not include bid estimate documents or any other credible evidence supporting the objective realism of the bid price and the labor costs included therein when bid. The testimony and report of DSC’s expert on this issue assumed the objective realism of the bid price. (Q-Ex. A-57 at 2-5) The labor inefficiency claim fails for lack of proof that the claimed costs were the result of the defective specifications or other Government-responsible cause.

17. Claim 214-18: DSC claims that it incurred total costs of \$33,645 for scrapping nine material items whose shelf-life expired before they could be used in production. (E-App. supp. R4, tab B-46; Q-App. supp. R4, tab 1469 at 45056) Under the contract schedule at award, production was to begin in August 1988. (MK 214, E-R4, tab 2 at 2) It did not in fact begin until March 1990. (E-R4, tab 1240 at HS8874) The Government was responsible for that part of the delay in the start of production up to 11 September 1989, the FAT approval date set by Modification No. P00008. (*See Findings 4, 12 above.*) Only one of the four claimed items expiring in DSC’s fiscal year (FY) 1990, and none of the claimed items expiring in FY 1991 expired before that date. (E-App. supp. R4, tab B-46) Since the claimed costs are not broken down by item, we find that DSC incurred one-quarter (\$1,155) of the claimed FY 1990 costs for scrapping expired shelf life items as a result of Government-responsible delay.

18. Profit: In its initial claim dated 26 August 1991, DSC included a profit of 11 percent on claimed performance costs. (E-Ex. A-76 at 2) At the quantum hearing and in its post hearing brief, DSC claimed a profit of 20 percent on performance costs. (Q-Ex. A-6; Q-App. br., Vol. II at 221) DSC’s bid estimate papers are not in evidence, and the bid profit rate has not been disclosed. The earliest post-award “budget” for the MK 214 contract is dated February 1988 (three months after award). It allocated \$95,800 to profit on costs of \$8,551,700, or 1.1 percent of cost. (E-R4, tab 1201 at HT1010) There is no evidence of DSC’s historic profit rate or the historic profit rates of other business entities on similar work at the claimed 20 percent level. In 10 U.S.C. § 2306(d), profit is limited to 15 percent of estimated cost in forward pricing of “experimental, developmental or research work.” The pricing of the equitable adjustments in this case

is retroactive and involves none of the risks of forward pricing. Absent better evidence, we look to the three quantified factors in the 1991 DFAR (48 CFR) 215.971 weighted guidelines for determining profit. Applying the maximums in the standard ranges for the performance risk and contract-type risk factors, we find that a reasonable profit on the costs subject to equitable adjustment in the circumstances here present is ten percent. The record is insufficient to apply the third factor in the guidelines for facilities capital employed.

The MK 216 Equitable Adjustment Claims

19. Claims 216-2 and 216-53: Contract drawing 6537898 specified a potting compound and curing temperature range for the installation of capacitors. Use of the specified compound and curing within the specified range, however, damaged the capacitors and caused three cartridges to fail to achieve payload burst at FAT. (E-Finding 35; ASBCA 44131R, Complaint and Answer ¶¶ 17; E-R4, tab 979 at 5-6) DSC incurred total additional costs of \$119,331 in producing the FAT units as a result of this drawing defect. (E-App. supp. R4, tab B-49; Q-App. supp. R4, tab 1375 at 42542-42558, tab 1471 at 45059) DSC also claims the cost of scrapping production units that were built with the specified process before the defect in the process was discovered during FAT. (E-App. supp. R4, tab B-114) This claim (216-53), however, is barred by paragraph (h) of the FAR 52.209-4 “FIRST ARTICLE APPROVAL - GOVERNMENT TESTING (APR 1984)” clause of the contract. Paragraph (h) states in relevant part: “Before first article approval, the acquisition of materials or components for, or the commencement of production of, the balance of the contract quantity is at the sole risk of the Contractor.” (ASBCA 44131R, E-R4, tab 2 at 21-22)

20. Claim 216-3: Contract specification WS 13709 contained four errors in the software coding for the microcontroller. DSC notified the Government of the errors on 17 November 1989. (E-App. supp. R4, tab B-52 at Ex. 3.2) Corrections were initially provided by the Government on 4 December 1989. (E-App. supp. R4, tab B-52 at Ex. 3.3) Corrections to the corrections were provided on 21 February 1990, and a final correction to one line of code was provided on 6 March 1990. (E-App. supp. R4, tab B-52 at Exs. 3.5, 3.6) DSC incurred total costs of \$32,701 as a result of these errors and corrections. (E-App. supp. R4, tab B-52; E-Ex. A-77 at 19; Q-App. supp. R4, tab 1375 at 42559-42564, tab 1471 at 45060)

21. Claim 216-5: Contract drawing 6348308 had a dimensional tolerance error and called out an obsolete passivation specification for the fin spring assembly. (E-R4, tab 760; ASBCA 44131R, Complaint and Answer ¶¶ 19; Q-App. supp. R4, tab B-54 at 5, Ex. 5.18) The dimensional tolerance error was discovered in May 1990 and was corrected by the Government in October 1990. (E-App. supp. R4, tab B-54 at 2, 4, and Exs. 5.1, 5.15, 5.19) The obsolete specification call-out was corrected by a waiver

which was requested in October 1990 and approved in November 1990. (E-App. supp. R4, tab B-54 at Exs. 5.18, 5.20) DSC incurred total costs of \$32,088 as a result of the erroneous tolerance and obsolete specification call-out on the drawing. (E-App. supp. R4, tab B-54; E-Ex. A-77 at 23-24; Q-App. supp. R4, tab 1375 at 42565-42567, tab 1471 at 45061)

22. Claim 216-6: Contract drawing SA2888031, Revision B, specified an erroneous calibration procedure for the firing coil tester. The error was similar, but not identical, to the error in the procedure on the Revision A drawing applicable to the MK 214 contract. (*See* Finding 9 above.) (E-App. supp. R4, tab B-56; ASBCA 44131R, Complaint and Answer ¶¶ 20) DSC incurred total costs of \$32,039 as a result of this error. (E-App. supp. R4, tab B-56; E-Ex. A-77 at 29; Q-App. supp. R4, tab 1375 at 42568-42581, tab 1471 at 45062)

23. Claim 216-7: Contract drawing 6218001 was defective in that the specified rivets at maximum tolerance were too long for the specified holes at minimum tolerance. (E-App. supp. R4, tab B-58; ASBCA 44131R, Complaint and Answer ¶¶ 21) The error was discovered during assembly of the FAT units in November 1990. (E-Tr. 18/65-66) A waiver for use of shorter rivets was approved and incorporated into the contract for the FAT units in November 1990. (E-App. supp. R4, tab B-58 at Ex. 7.4; ASBCA 44131R, E-R4, tab 53) A deviation request for use of the shorter rivets on the production units was pending when DSC stopped work on 29 March 1991. (E-R4, tab 954 at 9) DSC incurred total costs of \$14,969 as a result of the payload rivet length error. (E-App. supp. R4, tab B-58; E-Ex. A-77 at 34; Q-App. supp. R4, tab 1375 at 42582-42584, tab 1471 at 45063)

24. Claim 216-13: Section H of the contract required the Government to furnish “artwork” for the fuse connector and microcontroller printed circuit boards (PCBs) by 15 July 1988. (ASBCA 44131R, E-R4, tab 2 at 47-48) This artwork, however, was not provided until 27 October 1988. (E-App. supp. R4, tab B-59 at Ex. 13.5) Moreover, the artwork for the microcontroller contained an error. On 23 January 1989, HSTC was directed to suspend procurement of the microcontroller until the error was corrected. (E-App. supp. R4, tab B-59 at Ex. 13.8) In addition, the drill and dimensions drawing for the microcontroller specified an obsolete material that was no longer available. (E-App. supp. R4, tab B-59 at Ex. 13.6) A substitute for the obsolete material was agreed upon by the parties in December 1988, but the artwork error was not resolved until 17 February 1989. (ASBCA 44131R, E-R4, tab 3 at Modification P00005; E-App. supp. R4, tab B-59 at Ex. 13.11) DSC incurred total costs of \$39,211 as a result of the late delivery and errors in the artwork. (E-App. supp. R4, tab B-59; E-Ex. A-77 at 38-39; Q-App. supp. R4, tab 1375 at 42587-42589, tab 1471 at 45064)

25. Claim 216-18: Section H of the contract required the Government to provide pallets on 60 days notice for shipping the completed MK 216 cartridges. (ASBCA 44131R, E-R4, tab 2 at 47-48) DSC requested the pallets by letter dated 15 December 1989, and a full complement was on hand in August 1990. The late delivery of the pallets caused no delay in performance of the contract, but a number of pallets were delivered in unsuitable condition. (E-R4, tabs 564, 835, 870 at 3-4) By letter dated 20 September 1990, DSC was directed to use pallets in “Condition Codes A or B” and to request additional pallets if necessary. (E-R4, tab 865) DSC incurred total costs of \$1,407 as a result of the unsuitable pallets furnished by the Government. (E-App. supp. R4, tab B-61; E-Ex. A-77 at 44; Q-App. supp. R4, tab 1375 at 42590-42592, tab 1471 at 45065)

26. Claim 216-19: Contract drawing 6218001, Revision A, Note 3.7 contained an “advisory” rework procedure for removing damaged rivets. (E-Ex. G-2) During final assembly of one of the FAT units in November 1990, a front payload assembly was damaged as a result of a defect in the specified procedure. (E-App. supp. R4, tab B-62 at 2) A waiver for the damaged unit (to be used for the FAT drop test) and a deviation for all future rework, eliminating the defective procedure, were agreed upon by the parties and incorporated into the contract. (E-App. supp. R4, tab B-62 at Exs. 19.2, 19.4; ASBCA 42939, E-R4, tab 53) DSC incurred total costs of \$12,925 as a result of the defective rework procedure. (E-App. supp. R4, tab B-62; E-Ex. A-77 at 49; Q-App. supp. R4, tab 1375 at 42593-42595, tab 1471 at 45066)

27. Claim 216-20: Contract drawing 6537900 was defective in that it specified a timing tolerance that was too small to be met consistently in production, and omitted “jumper selections” for frequencies below nominal. (E-R4, tab 394) These deficiencies were corrected by a Revision B to the drawing, but that revision was never made a part of DSC’s contract. DSC tested the microcontrollers for the FAT units to the specified tolerance and experienced an excessive failure rate. At the time it stopped work, DSC had a pending request for deviation for use of the Revision B drawing for the production units. DSC incurred total costs of \$161,754 as a result of the defective timing tolerance on the specified drawing. (E-App. supp. R4, tab B-64; E-Ex. A-77 at 53-54; Q-App. supp. R4, tab 1375 at 42596-42602, tab 1471 at 45067)

28. Claim 216-21: Contract drawing 6218147 specified an improper soldering method for the explosive bellows assembly. (ASBCA 44131R, Complaint and Answer ¶¶ 26) A deviation to use a proper method was requested, approved and incorporated into the contract by bilateral Modification No. P00017, effective 12 April 1990. (E-App. supp. R4, tab B-66; ASBCA 44131R, E-R4, tab 3) DSC incurred total costs of \$13,239 as a result of this error in the drawing. (E-App. supp. R4, tab B-66; E-Ex. A-77 at 59; Q-App. supp. R4, tab 1375 at 42604-42609, tab 1471 at 45068)

29. Claim 216-22: Contract drawing 6218002 was defective in that it specified tolerances for installation of tape around the circumference of the propulsion motor case which could cause the case to fail the chamber gage test. The Government admits that the installed tape “might snag on a conforming chamber gage.” (ASBCA 44131R, Answer ¶ 27) This deficiency was discovered during assembly of the FAT units. (E-Tr. 3/55-56) DSC incurred total costs of \$11,572 as a result of this drawing error. (E-App. supp. R4, tab B-67; E-Ex. A-77 at 64; Q-App. supp. R4, tab 1375 at 42610-42615, tab 1471 at 45069)

30. Claim 216-23: Contract Drawing 6537898 was defective in that it specified a transistor with a lower current rating than the specified maximum current to be applied. This resulted in the failure of five fuse boards in testing in November 1990. (E-Tr. 9/158-62) DSC incurred total costs of \$13,242 for replacement of the transistors and re-testing the fuse boards. (E-App. supp. R4, tab B-68; E-Ex. A-77 at 68-69; Q-App. supp. R4, tab 1375 at 42619-42620, tab 1471 at 45070)

31. Claim 216-24: Contract Drawing 6218031 was defective in that it omitted two tolerances required to perform the work. DSC proposed tolerances and the Government approved the proposal. DSC incurred total costs of \$8,124 as a result of the omitted tolerances. (E-App. supp. R4, tab B-69; E-Ex. A-77 at 74; Q-App. supp. R4, tab 1375 at 42621-42626, tab 1471 at 45071)

32. Claim 216-25: Contract drawing 6537898 was defective in that it specified a screw that was too small for the application. (E-App. supp. R4, tab B-70; ASBCA 44131R, Complaint and Answer ¶¶ 30) DSC incurred total costs of \$14,981 as a result of this error. (E-Ex. A-77 at 83-84; Q-App. supp. R4, tab 1375 at 42627-42633, tab 1471 at 45072)

33. Claims 216-26, 27, 28 and 29: The contract drawings specified incorrect vendor part numbers for the primacord, components of the forward and aft cable assemblies, and the fuse connector board. (E-App. supp. R4, tabs B-71 through -74; ASBCA 44131R, Complaint and Answer ¶¶ 31-34) DSC incurred total costs of \$13,175 as a result of these errors. (E-Ex. A-77 at 89, 93, 98, 103; Q-App. supp. R4, tab 1375 at 42634-42659, tab 1471 at 45073-45076)

34. Claim 216-30: Contract drawing 6218074 specified an incorrect internal pressure tolerance for testing the bellows holder assembly. (E-App. supp. R4, tab B-75; ASBCA 44131R, Complaint and Answer ¶¶ 35) DSC incurred total costs of \$3,766 as a result of this error. (E-App. supp. R4, tab B-75; E-Ex. A-77 at 109; Q-App. supp. R4, tab 1375 at 42660-42664, tab 1471 at 45077)

35. Claim 216-31: Contract drawing 6218136 specified the physical properties for a required plastic adhesive along with a “suggested” vendor and vendor’s part number. The drawing did not label the specified properties “typical or “nominal” nor did it specify tolerances for the properties. When the suggested vendor would not certify that its material met the specified properties without the qualification “typical” or “nominal,” a deviation to that effect was incorporated into the contract by bilateral Modification No. P00022. (E-App. supp. R4, tab B-76; ASBCA 44131R, E-R4, tab 3) The Government admits that the drawing “should have described the adhesive’s properties as typical, but did not.” (ASBCA 44131R, Answer ¶ 36) DSC incurred total costs of \$11,772 as a result of this drawing error. (E-App. supp. R4, tab B-76; E-Ex. A-77 at 114; Q-App. supp. R4, tab 1375 at 42666-42671, tab 1471 at 45078)

36. Claim 216-32: Contract drawing 6348314 for the cartridge assembly closure was defective in that the assembled length of all components built within the specified tolerances could be less than the overall length specified for the assembly. As a result of this tolerance “stack-up,” DSC produced 45 cartridge assembly closures which were less than the specified minimum length. (E-R4, tab 829; E-App. supp. R4, tab B-77) The Government admits that “because of the tolerances specified, it was possible for the assembled length of conforming components to be less than the minimum length specified for the assembly.” (ASBCA 44131R, Answer ¶ 37) DSC incurred total costs of \$20,737 as a result of this drawing error. (E-App. supp. R4, tab B-77; E-Ex. A-77 at 119; Q-App. supp. R4, tab 1375 at 46672-46676, tab 1471 at 45079)

37. Claims 216-33 and 34: Contract drawing 6218105 specified a “controlled” military specification for the parachute bag material. Contract drawing 6218102 specified an obsolete military specification for electrical insulating tape. Neither specification was obtainable. Upon being so informed by HSTC, the Government specified substitute specifications and required HSTC to request deviations for their use. HSTC incurred total costs of \$27,574 as a result of the unobtainable military specifications on the two drawings. (E-App. supp. R4, tabs B-78, -79; E-Ex. A-77 at 123-24, 128-29; Q-App. supp. R4, tab 1375 at 42679-42685, 42688-42694, tab 1471 at 45080-45081)

38. Claim 216-35: Contract drawing 6218076 was defective in that it required a destructive pressure test of the rupture disc without specifying the test sample size. The deficiency was resolved by an exchange of correspondence. DSC incurred total costs of \$2,622 as a result of this deficiency. (E-App. supp. R4, tab B-81; E-Ex. A-77 at 133; Q-App. supp. R4, tab 1375 at 42696-42700, tab 1471 at 45082)

39. Claim 216-36: Contract drawing 6348310 was defective in that it erroneously specified a soldering method standard for a penetrant inspection standard. The deficiency was resolved by an exchange of correspondence. DSC incurred total costs of \$2,633 as a

result of this error. (E-App. supp. R4, tab B-82; E-Ex. A-77 at 78-79; Q-App. supp. R4, tab 1375 at 42701-42705, tab 1471 at 45083)

40. Claim 216-37: Contract drawing 6348320 stated that the shipping container foam nose support “may be” constructed by thermal bonding. (E-Ex. G-2) However, by letter dated 1 February 1990, the contracting officer told DSC that “only thermal bonding is allowed.” (E-App. supp. R4, tab B-83 at Ex. 37.4) By letter dated 27 August 1990, this direction was rescinded. (E-App. supp. R4, tab B-83 at Ex. 37.7) The Government admits that the direction to use only thermal bonding was a mistake. (ASBCA 44131R, Answer ¶ 42) DSC incurred total costs of \$2,612 between 1 February 1990 and 27 August 1990 as a result of the mistaken direction. (E-App. supp. R4, tab B-83; E-Ex. A-77 at 139; Q-App. supp. R4, tab 1375 at 42706-42712, tab 1471 at 45084)

41. Claim 216-38: Contract drawings 6133122, 6133123 and 6133124 were defective in that they specified conflicting solder diameters for chaff products. (E-App. supp. R4, tab B-84; ASBCA 44131R, Complaint and Answer ¶¶ 43) The deficiency was overcome by a contracting officer’s letter directing DSC to follow the material specification. DSC incurred total costs of \$3,741 as a result of this conflict in the drawings. (E-App. supp. R4, tab B-84; E-Ex. A-77 at 144; Q-App. supp. R4, tab 1375 at 42753-42757, tab 1471 at 45085)

42. Claim 216-39: DSC alleges that the omission of detailed truck loading requirements in the MK 216 contract was a defect in the contract specifications and drawings. (E-App. supp. R4, tab B-85) While the contract did not include a detailed loading specification, it did specify that shipments be loaded “as required by carrier rules and regulations.” (ASBCA 44131R, E-R4, tab 2 at 36) Since the contract specified the carrier’s rules and regulations, we find no defect in the omission of a detailed loading specification.

43. Claim 216-40: Contract drawing 6348302 was defective in that it included an abrasion requirement which damaged the assembly case. (E-App. supp. R4, tab B-86; ASBCA 44131R, Complaint and Answer ¶¶ 45) A deviation eliminating the requirement was agreed to by the parties, but only after substantial experimental work by DSC to find an abrasive material and process that would not damage the case. DSC incurred total costs of \$139,105 as a result of the abrasion requirement. (E-App. supp. R4, tab B-86; E-Ex. A-77 at 154; Q-App. supp. R4, tab 1375 at 42764-42769, tab 1471 at 45087)

44. Claim 216-41: Contract drawing 6348302 at Note 3.6 specified an adhesive cure time of “16” without specifying the time unit of measure. (E-Ex. G-2) The drawing, however, also called out specification WS 26949, which stated at paragraph 3.1.4.1 that the cure time shall be 16 to 24 hours. (E-Ex. G-1) Reading the drawing in conjunction

with the referenced specification, there is no ambiguity or other defect with respect to the adhesive cure time.

45. Claim 216-42: Contract drawings 6218001 and 6218049 specified conflicting squib resistance requirements. The conflict was resolved by a deviation applying the requirement on drawing 6218049. (E-App. supp. R4, tab B-90) DSC incurred total costs of \$8,931 as a result of the conflict. (E-App. supp. R4, tab B-90; E-Ex. A-77 at 164; Q-App. supp. R4, tab 1375 at 42776-42778, tab 1471 at 45089)

46. Claim 216-43: Contract drawing 6218126 was defective in that the functional delay time and column weight requirements for the detonators could be met only at the extreme lower end of the tolerance specified for the delay composition. This condition was incompatible with the mass production required by the contract. A deviation was agreed to by the parties expanding the specified composition tolerance. DSC incurred total costs of \$34,462 as a result of this drawing defect. (E-App. supp. R4, tab B-91; E-Ex. A-77 at 169; Q-App. supp. R4, tab 1375 at 42780-42782, tab 1471 at 45090)

47. Claim 216-44: Contract drawings 6133162, 6218153, and 6218151 were defective in that they specified a drying tolerance that was too narrow for a mass production contract. (E-App. supp. R4, tab B-92; ASBCA 44131R, Complaint and Answer ¶¶ 49) Three deviations were agreed to by the parties expanding the specified drying tolerance. DSC incurred total costs of \$10,454 as a result of this deficiency. (E-App. supp. R4, tab B-92; E-Ex. A-77 at 174; Q-App. supp. R4, tab 1375 at 42784-42786, tab 1471 at 45091)

48. Claim 216-45: Contract drawing 6218147 was defective in that it specified identification markings for the explosive bellows driver assembly that would not fit in the specified space. (E-App. supp. R4, tab B-94; ASBCA 44131R, Complaint and Answer ¶¶ 50) A deviation was agreed to by the parties. DSC incurred total costs of \$4,439 as a result of this defect in the drawing. (E-App. supp. R4, tab B-94; E-Ex. A-77 at 179; Q-App. supp. R4, tab 1375 at 42788-42790, tab 1471 at 45092)

49. Claims 216-46, 47, 48 and 55: In our decision of 24 May 1995, we found that the contract specifications and drawings for the 2.5 second and 3.0 second delay detonators were defective in that components built to those specifications and drawings did not provide reliably the required bursts within the specified times. (E-Findings 77 through 79, 83) Purchase orders for the delay detonators were initially issued by HSTC to Kilgore Corporation in May 1989. The timing problem first surfaced in December 1989 during the detonator FAT. (E-App. supp. R4, tab B-95 at Ex. 46.4) During the first eight months of 1990, Kilgore attempted to improve the performance of the detonators. (E-App. supp. R4, tab B-95) Kilgore's problems caused DSC to develop Cartridge Activated Devices, Inc. (CAD) as a second source. CAD, however, had problems similar to those

of Kilgore in building the detonators to the contract specifications and drawings. (E-App. supp. R4, tab B-117) Kilgore delivered detonators and leads for the FAT units in September 1990. (R4, tab 307 at 23) Seven of the 18 units fired at FAT failed to deploy all payloads due to detonator failures. (E-App. supp. R4, tab B-99 at Ex. 47.96) DSC incurred total costs of \$638,307 as a result of the defective delay detonator specifications and drawings. (E-App. supp. R4, tabs B-96, -99, -103, -117; E-Ex. A-77 at 183-84, 188-89, 193-94, 217; Q-App. supp. R4, tab 1375 at 42714-42752, 42792-42837, 42838-42901, 42981-42994, tab 1471 at 45093-45095, 45098)

50. Claim 216-50: DSC claims that it incurred total costs of \$46,950 for scrapping 32 items whose shelf-life expired before the item could be used in production. (E-App. supp. R4, tab B-112; Q-App. supp. R4, tab 1471 at 45096) Under the contract schedule at award, production was to have begun in March 1989, but it did not in fact begin until August 1990. (ASBCA 44131R, E-R4, tab 2 at 32-33; E-R4, tab 1243 at HT0022) The Government, however, was responsible only for that part of the delay from December 1989 through August 1990 when the defective specifications for the detonators, rocket motor casing insulation, and fin spring were the causes of the delay on the critical path to the start of production. (*See* Findings 21 and 49 above, and 59 below; E-R4, tab 307 at Reports 6-7, 9, 10-11, tab 1219 at HS7560, tab 1220 at HS7697-98, tab 1221 at HS7841, tab 1241 at HS8923) The shelf-lives of 14 of the 32 claimed items (44 percent) expired during that period. (E-App. supp. R4, tab B-112) Since the claimed costs are not broken down by item, we find that 44 percent (\$20,658) of the claimed costs were incurred as a result of the Government-responsible part of the delay in the start of production. (Q-App. supp. R4, tab 1471 at 45096)

51. Claim 216-51: DSC claims unabsorbed fixed indirect (“Eichleay”) costs for 754 days of alleged extended performance of the MK 216 contract caused by the Government. The claimed extended performance is measured from the date FAT approval was to have been given under the original contract schedule (1 March 1989) through the date it was actually given (26 March 1991). (Q-Ex. A-51 at 6, 8) Eichleay costs, however, are incurred only for an extension of the overall contract performance period. Eichleay costs are not incurred for extensions of particular segments of performance within the overall performance period contemplated at award. The MK 216 contract schedule at award provided for an overall contract performance period ending 1 September 1991. (ASBCA 44131R, E-R4, tab 2 at 32-33) DSC stopped work on 29 March 1991. No Eichleay costs were incurred.

52. Claim 216-58: The MK 216 contract specified the same aluminized E-glass substrate diameter as the MK 214 contract, and the same two vendors produced the E-glass for both contracts. Neither vendor could meet the substrate diameter specification. DSC claims that the specification was impossible or commercially impracticable to perform. (E-App. supp. R4, tab B-120) The dispositive facts are set

forth in Finding 10 above. They fail to show that the substrate diameter specification was impossible or commercially impracticable to perform.

53. Claim 216-59: Contract drawing 6348302 was defective in that it specified an incorrect insulation material for the intended application. On inquiry by DSC, the Government changed the specified insulation. DSC incurred total costs of \$39,236 as a result of this drawing defect. (E-App. supp. R4, tab B-122; E-Ex. A-77 at 227; Q-App. supp. R4, tab 1375 at 43002-43004, tab 1471 at 45100)

54. Claim 216-60: Contract specification WS 13704 was defective in that it specified maximum allowable moisture contents for the propellant “submix” and “premix” that were less than the sums of the specified allowable maximum for each component of the mixes. DSC’s propellant submix and premix for the FAT units substantially exceeded both the specified allowable maximums for the mixes, and the sums of the specified allowable maximum for each component. DSC received a waiver of these specifications for the FAT units, but was denied a deviation for the production units. DSC claims the costs of reducing the moisture content of the mixes “to levels that were as close as possible to the specification requirements.” (E-App. supp. R4, tab B-124 at 4) Those levels, however, were still in excess of the sums of the specified allowable maximums for the components. There is no substantial evidence that it was objectively impossible or commercially impracticable to meet the specified maximum allowable water content for each component of the mixes. The discrepancy between the mix and the component specifications regarding maximum water content had no effect on DSC’s costs. DSC never got to the point of having to reduce the water content of the components below their specified allowable maximums in order to meet the specified allowable maximums for the mixes.

55. Claim 216-61: Contract specification WS 13704 was also defective in specifying a moisture test method for the propellant mixes that was inapplicable to one of the ingredients being tested. An alternative test method was ultimately agreed to by the parties for that ingredient. DSC incurred total costs of \$71,126 as a result of this defect in the specification. (E-App. supp. R4, tab B-126; E-Ex. A-77 at 237; Q-App. supp. R4, tab 1375 at 43010-43012, tab 1471 at 45102)

56. Claim 216-62: Contract drawing 6218002 was defective in that it specified excessive air pressure values for a leak pressurization test that would have damaged the material being tested. DSC incurred total costs of \$45,601 as a result of this drawing defect. (E-App. supp. R4, tab 128; ASBCA 44131R, Complaint and Answer ¶¶ 63; E-Ex. A-77 at 242; Q-App. supp. R4, tab 1375 at 43014-43015, tab 1471 at 45103)

57. Claim 216-63: Contract drawing 6218002 was defective in that it specified an inadequate method of sealing the igniter port of the decoy propulsion assembly for

environmental testing. The specified method was a “dust proof seal” which would not prevent moisture damage to the interior of the assembly during testing. DSC incurred total costs of \$4,519 as a result of this drawing defect. (E-App. supp. R4, tab B-131; E-Ex. A-77 at 247; Q-App. supp. R4, tab 1375 at 43016-43018, tab 1471 at 45104)

58. Claim 216-66: Contract specification WS 26949 was defective in that it specified an uncured adhesive density that was impossible to achieve with the specified components. (E-App. supp. R4, tab B-133; ASBCA 44131R, Complaint and Answer ¶¶ 65) DSC incurred total costs of \$18,421 as a result of this specification defect. (E-App. supp. R4, tab B-133; E-Ex. A-77 at 252; Q-App. supp. R4, tab 1375 at 43019-43023, tab 1471 at 45105)

59. Claim 216-70: Contract drawing 6348302 and contract specification WS 26948 were defective in that the drawing specified cured insulation thicknesses for the interior of the rocket motor casing that could not be achieved in mass production with the uncured insulation viscosity required by the specification. In addition the specification required a “dispersion mill” process which introduced air voids in the insulation immediately before its application. DSC incurred total costs of \$680,124 as a result of these specification and drawing defects. (E-App. supp. R4, tab B-134; E-Ex. A-77 at 256-57; Q-App. supp. R4, tab 1375 at 43026-43036, tab 1471 at 45106)

60. Claim 216-73: Contract drawing 6218006 was defective in that it mislocated a “timing” mark on which the proper assembly of various other components was dependent. DSC incurred total costs of \$11,671 as a result of this drawing defect. (E-App. supp. R4, tab B-137; E-Ex. A-77 at 262; Q-App. supp. R4, tab 1375 at 43037-43039, tab 1471 at 45107)

61. Claim 216-74: DSC claims that it incurred \$1,149,491 in direct labor costs for labor inefficiency caused by the Government. (Q-Ex. A-51 at 6 and Schedule D.2) The claim is derived in the same manner as the labor inefficiency claim on the MK 214 contract, and fails for the same reasons. (*See* Finding 16 above.) The “planned direct labor” is based on a November 1988 management “forecast” allocating the bid price to cost categories. There is no evidence of the bid estimate or other credible evidence supporting the objective realism of the bid price and the labor costs included therein. There is no credible evidence otherwise showing that the defective specifications and other Government-responsible causes of increased cost caused the claimed amount of labor inefficiency. (Q-Exs. A-29, -51 at Schedule D.2, ex. A-57 at 5-8; Q-Tr. 9/48-49, 99-100)

62. Profit: In its initial equitable adjustment claim dated 12 September 1991, DSC included a profit of 11 percent on claimed performance costs. (E-Ex. A-77 at 2) At the quantum hearing and in its post-hearing brief, DSC claimed a profit of 20 percent on

performance costs. (Q-Ex. A-7; Q-App. br., Vol. II at 221) DSC's bid estimate papers are not in evidence, and the bid profit rate has not been disclosed. There is no substantial evidence of DSC's historic profit rate or the historic profit rates of other business entities on similar work at the claimed 20 percent level. In 10 U.S.C. § 2306(d), profit is limited to 15 percent of estimated cost in forward pricing of "experimental, developmental or research work." The pricing of the equitable adjustments in this case is retroactive and involves none of the risks of forward pricing. For the same reasons stated in Finding 18 above, we find that a reasonable profit on the MK 216 costs subject to equitable adjustment is ten percent.

The Termination Settlement Claims

63. On 31 January 1996, the contracting officers received DSC's termination settlement claims for the contracts. (Q-App. supp. R4, tabs 257, 263) The claims were certified in the form required by the Contract Disputes Act of 1978 (CDA). (Q-App. supp. R4, tab 242 at 03988, tab 243 at 04128) The contracting officers treated these submissions as disputed CDA claims from the time they were received. On 27 March and 1 April 1996, they issued the notices required for CDA claims stating the date (1 December 1996) by which they would issue decisions on the claims. (MK 214 Q-R4, tab 2; MK 216 Q-R4, tab 2) Both claims were submitted and accepted on the total cost basis. The MK 214 claim requested a net payment of \$30,876,708. The MK 216 claim requested a net payment of \$31,992,820. (Q-App. supp. R4, tab 242 at 03990, tab 243 at 04143)

64. The claims were audited by the Defense Contract Audit Agency (DCAA) starting in February 1996. (Q-Tr. 2/18) On 11 February 1997, while the audits were still in progress, DSC appealed a deemed denial of the claims on the grounds that contracting officers' decisions had not been issued by 1 December 1996. (ASBCA 50562, 50563) On 29 May 1997 the audit reports were issued. (Q-App. supp. R4, tabs 618, 619) The reports were limited to expressing an opinion on whether the claimed costs were in fact incurred and properly allocable to the stated cost objectives. The reports did not assess DSC's entitlement to recover any of the claimed amounts. While stating that DSC's accounting system was "inadequate" and control risk was "high," both reports also stated that most of the proposed costs were supported by source documentation, and that the "proposals" were "an acceptable basis for negotiation of a fair and reasonable price." (Q-App. supp. R4, tab 618 at 19217-19220, tab 619 at 19311-19314)

65. Costs of Performance and Subcontract Termination Settlements: DSC in its post hearing brief claims \$19,754,686 on the MK 214 contract, and \$18,915,260 on the MK 216 contract, for costs of performance (material, labor, indirect factory expense and G&A), and subcontractor termination settlements. (Q-App. br., Attachments 4, 5) The auditor found \$19,357,209 incurred on the MK 214 contract, and \$8,294,261 incurred

on the MK 216 contract, for costs of performance and subcontract settlements. (Q-App. supp. R4, tab 618 at 19220, 19225, tab 619 at 19314, 19317) For purposes of this decision, we need not resolve the differences between the claimed and audit-allowed amounts except with respect to the auditor's disallowance of \$10,072,288 for direct material (and allocable G&A) for production units on the MK 216 contract. (App. supp. R4, tab 619 at 19314-19315, 19329)

66. MK 216 Production Unit Material Costs: These costs were disallowed by the auditor on the incorrect advice that the contracting officer had not approved the first articles as of the time DSC stopped work. (Q-App. supp. R4, tab 619 at 19315) Under the second sentence of paragraph (h) of the FAR 52.209-4 "FIRST ARTICLE APPROVAL - GOVERNMENT TESTING" clause of the contract, the production unit material costs were not allocable to the contract until the first article was approved. The contracting officer, however, had in fact granted conditional approval for the MK 216 first article, and authorized the start of production, by letter dated 25 March 1991. Three of the four conditions in the approval letter were technical conditions to be met in production. The fourth condition was that DSC provide within ten days a written assurance of "your continued performance of the contract." (ASBCA 42939, E-R4, tab 3) This fourth condition had no relationship to the compliance of the first article with the technical requirements of the contract, and was not a proper condition for first article approval. We find that first article approval for purposes of the second sentence of paragraph (h) of the FIRST ARTICLE APPROVAL - GOVERNMENT TESTING clause, was given on 25 March 1991. The auditor did not otherwise question that the claimed material costs were incurred and allocable to the contract. Since the amount claimed in DSC's post-hearing brief is lower than the audit-approved amount plus the production material costs, we find that the total incurred cost of performance and subcontract settlement cost for the MK 216 contract was \$18,915,260, the amount claimed in the brief.

67. The Paragraph (e) Ceiling: Paragraph (e) of the TERMINATION clause in both contracts states that recovery of costs of performance, profit, and subcontract termination settlement payments may not exceed the total contract price less payments previously made. (FAR 52.249-2) The contract prices at termination were \$9,829,145 for the MK 214 contract, and \$14,438,932 for the MK 216 contract. (ASBCA 42940, E-R4, tab 2 at Modification P00018; ASBCA 44131R, E-R4, tab 3 at Modification P00033) The price adjustments to which DSC is entitled on its equitable adjustment claims are \$2,113,461 on the MK 214 contract, and \$2,555,596 on the MK 216 contract. (See Findings 4-62 above.) The unliquidated progress payments were \$6,220,559 on the MK 214 contract, and \$4,699,807 on the MK 216 contract. (Q-App. supp. R4, tab 618 at 19220, tab 619 at 19314) Accordingly, the paragraph (e) ceilings on recovery of costs of performance, profit, and subcontract termination settlements under the TERMINATION clauses of the contracts are \$5,722,047 for the MK 214 contract, and \$12,294,721 for the MK 216 contract.

68. Facilities Capital Cost of Money (FCCOM): DSC included \$1,322,232 in the MK 214 termination settlement claim, and \$1,092,610 in the MK 216 termination settlement claim, for FCCOM as a cost of performance. (Q-App. supp. R4, tab 242 at 03991, tab 243 at 04144) The auditor questioned the entire amount in both claims for lack of evidence that DSC “bid cost of money in its proposal for the initial contract,” or that it requested FCCOM on any progress payment requests. (Q-App. supp. R4, tab 618 at 19234, tab 619 at 19327) At the quantum hearing and in its post-hearing brief, DSC included FCCOM as a business shutdown cost. (Q-App. br., Attachments 4, 5) The claimed FCCOM amounts, computed in accordance with FAR 31.205-10, are an “imputed” cost of performance, and are subject to the paragraph (e) ceilings.

69. Termination Settlement Expenses - DSC Labor: DSC initially claimed \$578,593 under the MK 214 contract, and \$642,418 under the MK 216 contract, for DSC labor preparing the termination settlement claims and supporting the audits of those claims. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145, tab 574 at 17759) The auditor allowed \$530,587 of the claimed amount for the MK 214 contract, and \$530,582 of the claimed amount for the MK 216 contract. (Q-App. supp. R4, tab 574 at 17759-60, tab 618 at 19238, tab 619 at 19331) In its post hearing brief, DSC claims an additional amount of \$28,027, over and above the amount presented to the auditor, as a cost incurred for the MK 214 settlement claim after the audit. (Q-App. br., Attachment 4) Given the inadequacy of DSC’s accounting system and the high control risk assessed by the auditor (*see* Finding 64 above), we find the claimed additional cost unproven without audit. DSC’s claims for subcontract termination settlements included \$2,377 on each contract for “DSC labor.” (Q-App. supp. R4, tab 618 at 19225, tab 619 at 19317) These amounts may be included properly in the termination settlement expenses which are not subject to the paragraph (e) ceilings. With these additions, the proven cost of DSC labor for support of the termination settlement claims and audits is \$532,964 for the MK 214 contract and \$532,959 for the MK 216 contract.

70. Termination Settlement Expenses - Parent Company Support: DSC initially claimed \$590,533 under each contract for parent company (HSI) support of the termination settlement activities. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145, tab 574 at 17759) The auditor disallowed the entire amount on both contracts. (Q-App. supp. R4, tab 574 at 17759-17760, tab 618 at 19238, tab 619 at 19331) In its post hearing brief, DSC increased the claim to \$660,030 for each contract. (Q-App. br., Attachments 4, 5) The claimed costs are based on a management estimate that HSI’s executives and other personnel spent 25 percent of their time from June 1994 through February 1996, and 75 percent of their time thereafter through January 1997, on DSC termination activities. (Q-Tr. 1/118-20, 147, 7/236-40) The claimed costs are significant, but no work order or separate cost account was established by HSI to identify and

accumulate these costs as required by FAR 31.205-42(g)(2). (Q-Tr. 7/237) The claimed costs are not proven as to either reasonableness or allocability.

71. Termination Settlement Expenses - Liberty Street Office: DSC initially claimed \$61,699 under each contract for the costs of its Liberty Street office where the termination settlement claims were prepared and audited. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145; Q-Tr. 2/18, 20) The auditor allowed the claimed costs on both contracts. (Q-App. supp. R4, tab 618 at 19238, tab 619 at 19331) At the quantum hearing and in its post-hearing brief, DSC claimed an additional \$36,294 under each contract for Liberty Street costs. (Q-App. br., Attachments 4, 5) Given the inadequacy of DSC's accounting system and the high control risk assessed by the auditor, we find the added costs unproven without audit. The proven Liberty Street office costs allocable to the termination settlement expenses are \$61,699 on each contract.

72. Termination Settlement Expenses - Accounting and Consulting: DSC initially claimed \$104,000 for accounting and other consulting support for the termination settlement claims on each contract. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145, tab 574 at 17759) The auditor allowed \$88,176. (Q-App. supp. R4, tab 574 at 17759) At the quantum hearing and in its post hearing brief, DSC reduced the claim to \$67,866. (Q-App. br., Attachments 4, 5) Since the current claimed amount is less than the amount allowed by the auditor, we find the proven cost to be \$67,866 on each contract.

73. Termination Settlement Expenses - Legal Support: DSC initially claimed \$240,121 on the MK 214 contract and \$240,084 on the MK 216 contract for legal fees and expenses in support of the termination settlement claims through June 1996. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145, tab 574 at 17759) The auditor allowed \$215,121 on the MK 214 contract and \$215,084 on the MK 216 contract. (Q-App. supp. R4, tab 574 at 17759, tab 618 at 19238, tab 619 at 19331) At the quantum hearing and in its post hearing brief, DSC increased these claims to \$266,042 on the MK 214 contract and \$266,005 on the MK 216 contract. (Q-App. br., Attachments 4, 5; Q-Exs. A-21 at 8, A-22 at 7) The claimed amounts, over and above the amounts allowed by the auditor, are for costs incurred from 1 July 1996 through 31 January 1997, and are supported by invoices which on their face show their reasonableness and allocability as termination settlement expenses. (Q-App. supp. R4, tab 1458 at 44897-45005) DSC's proven legal costs fees and expenses for the termination settlements are \$266,042 for the MK 214 contract and \$266,005 for the MK 216 contract.

74. Termination Settlement Expenses - Termination Inventory: DSC initially claimed \$392,889 on the MK 214 contract and \$412,675 on the MK 216 contract for termination inventory handling and storage. (Q-App. supp. R4, tab 242 at 03992, tab 243 at 04145) The auditor allowed \$367,868 on the MK 214 contract, and \$387,654 on the

MK 216 contract. (Q-App. supp. R4, tab 618 at 19238-19239, tab 619 at 19331) At the quantum hearing and in its post-hearing brief, DSC reduced these claims to \$330,168 on the MK 214 contract, and \$334,247 on the MK 216 contract. (Q-App. br., Attachments 4, 5) Since the present claimed amounts are less than the amounts allowed by the auditor, we find the present claimed amounts proven.

75. Disposition of Inventory - Transfers to the Government: DSC disposed of the contract inventories while it was in a default status (*i.e.* before our decision of 24 May 1995 converted the default terminations to convenience terminations). During this period, it offered to the Government all contract inventory, and transferred to the Government those items which the Government directed it to transfer. (Q-App. supp. R4, tabs 1032, 1034, 1035, 1042, 1046, 1047, 1050, 1055, 1059, 1116, 1117) Prices for the transferred inventory (to be applied in reduction of the unliquidated progress payments) were agreed to by the parties in bilateral Modification No. P00020 to the MK 214 contract, and bilateral Modification Nos. P00035 and P00037 to the MK 216 contract. (ASBCA 42939 *et al.*; E-R4, tab 154; ASBCA 44131R, E-R4, tab 3) There is no substantial evidence that DSC refused to transfer any inventory directed to be transferred by the Government.

76. Disposition of Inventory - Sales to Third Parties: With respect to the sales to third parties of the contract inventory which the Government did not wish to acquire for itself, DSC took the position that the lien under the Progress Payment clauses applied only to that part of the inventory paid for by progress payments. (Q-App. supp. R4, tabs 1019, 1069, 1082, 1116, 1117) The Government disputed this position, and attempted to require DSC to make the Government a party to all third party inventory sales as a way of securing the sales revenue for the Government. But no contracting officer's decision was issued on this dispute. (Q-App. supp. R4, tab 1066 at 32598, tabs 1067, 1071) Ultimately, the dispute was mooted by our decision converting the default terminations to convenience terminations, and by DSC's termination settlement claims. These claims credited the Government with all revenue from the contract inventory sales in the amounts of \$1,876,080 on the MK 214 contract, and \$251,789 on the MK 216 contract. (Q-App. supp. R4, tab 242 at 03997, tab 243 at 04145; Q-Tr. 11/39) The auditor accepted both amounts after validating on a sample basis a consumption analysis accounting for all material on both contracts from purchase through disposition. (Q-App. supp. R4, tab 618 at 19240-19241, tab 619 at 19333-19334) At hearing and in its post hearing brief, DSC reduced the proposed credits allegedly to reflect amounts actually received from the purchasers. (Q-Tr. 11/32-39; Q-Ex. A-15) Absent audit, the reduced amounts are not proven.

Business Shutdown Claims

77. When it stopped work on both contracts on 29 March 1991, DSC also shut down its entire business. In its termination claims, DSC included business shutdown costs for “waste disposal,” “Reno operations shutdown,” and “property, plant & equipment” in the aggregate amount of \$8,818,107 as part of the “other costs” of the terminations (Q-App. supp. R4, tab 242 at 03991, tab 243 at 04144) The auditor found \$6,158,231 incurred for these business shutdown costs. (Q-App. supp. R4, tab 618 at 19225, tab 619 at 19317) At hearing, DSC claimed an aggregate amount of \$11,957,508 for business shutdown. (Q-Ex. A-8)

78. There is no substantial evidence that, at the time of award, the shutdown of the contractor’s business was the reasonably foreseeable result of the defective specifications and drawings in the contracts, or the practicable impossibility of performing in strict accordance with those specifications and drawings. As noted in our prior decision, substantially the same specifications and drawings had been issued to other contractors prior to the contracts at issue. While other contractors were able to perform only with deviations and waivers, there is no evidence that, at the time of the awards to HSTC, any of the prior contractors had been forced to shut down their business as a result of the defective data packages for the MK 214 and 216 contracts. (E-Findings 40 through 60) The impact of a defective data package on a contractor’s ability to continue in business depends on the particular financial circumstances of the contractor. There is also no evidence of any actual or constructive notice to the Government at the time of award of the MK 214 and 216 contracts to HSTC that the defective data packages would cause it, or any successor in interest, to go out of business. Nor is there any substantial evidence that the Government awarded the contracts with the intent of inflicting financial losses on the contractor that would force it out of business.

DECISION

DSC has proven that equitable adjustments of \$2,113,461 on the MK 214 contract, and \$2,555,596 on the MK 216 contract, are due under the CHANGES, GOVERNMENT DELAY OF WORK, and GOVERNMENT PROPERTY clauses of the contracts. (See Findings 4 through 62, 67 above.) DSC argues that it is entitled, as a result of our decision overturning the default terminations, to equitable adjustments covering all costs incurred in performing the contracts in excess of the contract prices, without showing that those excess costs were caused by the defective specifications or other causes for which the Government was responsible. DSC cites our decision in *D.E.W. & D.E. Wurzbach, A Joint Venture*, ASBCA No. 50796, 98-1 BCA ¶ 29,385, as authority for this proposition. (Q-App. br., Vol. I at 13) We disagree.

Wurzbach holds that paragraph (e) of the TERMINATION clause does not exclude equitable adjustments that are otherwise due. The decision states: “to the extent appellant has not been paid for performing changed work, it is entitled to an equitable adjustment for the costs . . . even if those costs exceed the contract price.” 98-1 BCA at 146,058. Moreover, it is clear from the discussion of the possible applicability of loss adjustment that the increased cost caused by the impossibility of performance is not necessarily equal to the total cost incurred over and above the contract price. 98-1 BCA at 146,059. Within the contract price ceiling, as adjusted for the increased cost caused by the impossibility of performance, the contractor may recover all costs of performance that are otherwise allowable in a convenience termination settlement. Nothing in *Wurzbach*, however, allows the contractor to recover costs over and above the adjusted contract price for which no Government-responsible causation is shown.

DSC also has failed to meet three of the requirements for a total cost recovery set forth in *Servidone Construction Corporation v. United States*, 931 F.2d 860, 861 (Fed. Cir. 1991). First, it has failed to prove the reasonableness of its bid prices. Our findings in the decision on the default terminations that the MK 214 contract was “bid for profit” and that HSTC “hoped to make a profit” on the MK 216 contract, refer to the subjective expectations of the HSTC and HSI executives who testified at the hearing. (E-Tr. 3/132, 179) The fact that the HSTC and HSI executives did not deliberately “buy in” does not establish the reasonableness of the prices bid. Cost estimates prepared at the time of bidding to support the bid prices are not in evidence. The post-award “budget” for the MK 214 contract and the post-award “forecast” for the MK 216 contract were not based on bottom-up estimates of the labor and material required for the jobs. They were top-down allocations of the money available in the bid price. (*See* Findings 16 and 61 above.) On this evidence, the reasonableness of the bid prices has not been shown.

DSC has also failed to show the impracticability of proving directly the increased costs caused by the Government. To the contrary, DSC has provided for the most part credible estimates of the direct labor and material caused by the defective specifications and other Government-responsible causes of increased cost. The fact that those proven costs with allocable indirect costs do not add up to the total costs incurred over and above the contract prices does not show an impracticability of proof, but rather the absence of a causal relationship between the Government-responsible causes and the total incurred costs. Moreover, in the case of the MK 214 contract, a substantial amount of the total excess cost was incurred in development of the proprietary detonator for which HSTC expressly assumed responsibility in Modification No. P00008. (*See* Finding 4 above.) To the extent our decision on the default terminations found that all costs in excess of the contract prices were caused by the Government, the quantum evidence on the equitable adjustment claims, which was not at issue in the prior hearing on entitlement, is to the contrary. To that extent, we modify our prior decision to avoid clear error and manifest

injustice in determining the termination settlement amounts. *See Christianson v. Colt Industries*, 486 U.S. 800, 817 (1988).

Since the costs incurred in performance of the two contracts exceeded the contract prices as adjusted by the equitable adjustments found due in this decision, paragraph (e) of the TERMINATION clauses is applicable. (*See Finding 67* above.) Accordingly, the net termination settlements due DSC are as follows:

	<u>MK 214</u>	<u>MK 216</u>
(i) Allowable Costs of Performance, Profit & Subcontract Settlements Per Paragraph (e) (Finding 67)	\$ 5,722,047	\$ 12,294,721
(ii) Termination Expenses (Findings 69-74)	1,258,739	1,262,776
(iii) Disposition & Other Credits (Finding 76)	1,876,080	251,789
(vii) Net Settlement (Items (i)+(ii)-(iii))	\$ 5,104,706	\$13,305,708

DSC's business shutdown claims are without merit as a matter of law. The claimed costs are not recoverable under the TERMINATION clauses because they are neither costs of performing the contracts nor termination settlement expenses. Nor are they recoverable as breach damages. When the contracts were entered into, a business shutdown was not a reasonably foreseeable result of the defective specifications or of the increased costs for which we have found the Government responsible. *See Finding 78* above, and *William Green Construction Company, Inc. v. United States*, 477 F.2d 930, 936 (Ct. Cl. 1973).

We have carefully considered the various Government arguments against any recovery, and find them without merit. The inventory basis for termination settlement was inapplicable because no priced line items were accepted by the Government under either contract, and the contracting officers made no objection to DSC's submission of its claims on the total cost basis. Loss adjustments under paragraph (f)(2)(iii) of the TERMINATION clauses are inapplicable. Since it was commercially impracticable to complete the contracts due to the zero defect LAT criteria, reasonable estimates to complete cannot be computed. DSC's failure to maintain an adequate accounting system does not, in light of the audit findings, bar its claims. The Government's own auditors found that, while the accounting system was inadequate and control risk high, "most" of the proposed costs were supported by source documentation. The auditors further stated that the "proposals" (*i.e.* claims) were an acceptable basis for negotiation of a fair and reasonable price." (*See Finding 64* above.)

With respect to the termination inventories, paragraph (d)(3) of the Progress Payment clauses provided that the disposition of those inventories would be governed by the DEFAULT clauses while DSC was in a default status. Accordingly, the paragraph (d)(5) requirement for Government approval of sales to third parties was inapplicable. DSC transferred to the Government all termination inventory items that it was directed to transfer in accordance with the DEFAULT clauses. The DEFAULT clauses included no requirement for Government approval of sales of the remaining inventories to third parties. The dispute over the disposition of the revenue from those sales was mooted by the conversion of the default terminations to convenience terminations, and by DSC crediting the Government with the revenue from all sales in its termination settlement claims. (*See* Finding 76 above.)

The appeals in ASBCA Nos. 44835R and 50562 are sustained in the net amount of \$5,104,706 with interest pursuant to 41 U.S.C. § 611 on the equitable adjustment portion of that amount (\$2,113,461) from 26 August 1991, and on the balance (\$2,991,245) from 31 January 1996. The appeals in ASBCA Nos. 44131R and 50563 are sustained in the net amount of \$13,305,708 with interest pursuant to 41 U.S.C § 611 on the equitable adjustment portion of that amount (\$2,555,596) from 12 September 1991, and on the balance (\$10,750,112) from 31 January 1996. The appeals in ASBCA Nos. 50997 and 50998 for the business shutdown costs are denied.

Dated: 16 March 2000

MONROE E. FREEMAN, JR.
Administrative Judge
Armed Services Board
of Contract Appeals

(Signatures continued)

I concur

I concur

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

ALEXANDER YOUNGER
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 Nos. 44131R, 44835R, 50562, 50563, 50997 & 50998, Appeals of Defense Systems Corp., rendered in conformance with the Board's Charter.

Dated:

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