

In the United States Court of Federal Claims

No. 91-1032 C

(Filed: June 30, 2000)

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HUGHES COMMUNICATIONS GALAXY, INC.,

Plaintiff,

v.

UNITED STATES OF AMERICA,

Defendant.

* * * * *

Breach of Contract;
Best Efforts Contract;
Cost of Cover; Damages

Clarence T. Kipps, Jr., Lynda Troutman O'Sullivan, Peter B. Hutt II, Angela Barbee Styles,
and Benjamin D. M. Wood, Miller & Chevalier, Chartered, Washington, D.C., for plaintiff.

Geoffrey C. Cook, Janene M. Marasciullo, Tara A. Hurley, and Bernard Roan, United States
Department of Justice, Washington, D.C., for defendant.

OPINION

HODGES, Judge.

Hughes Communications Galaxy and the National Aeronautics and Space Administration executed a contract in December 1985 that required NASA to use its best efforts to launch ten Hughes 393 class satellites aboard the Space Shuttle. The contract was to remain in effect through September 1994. Following the Challenger disaster in 1986, the Government changed its policy of launching commercial payloads and did not launch any of the Hughes satellites before expiration of the agreement. This court held that the Government was liable for breach of the contract. The facts

of this case are described at length in four prior opinions. See Hughes Communications Galaxy, Inc. v. United States, 26 Cl. Ct. 123 (1992); Hughes Communications Galaxy, Inc. v. United States, 998 F.2d 953 (Fed. Cir. 1993); Hughes Communications Galaxy, Inc. v. United States, 34 Fed. Cl. 623 (1995); Hughes Communications Galaxy, Inc. v. United States, 38 Fed. Cl. 578 (1997). This opinion is limited to a determination of damages.

BACKGROUND

NASA decided to develop a capacity to launch commercial satellites in the early 1980's. The policy established by the Government through NASA was that domestic commercial payloads would be treated equally with foreign payloads with regard to priority and scheduling. President Reagan noted that NASA would “use its best effort to meet the scheduling commitments” once a commercial payload were scheduled for launch.

The Space Shuttle fleet launched twenty-four commercial satellites from 1981 to 1986. Hughes Communication Galaxy contracted with NASA in 1985. The contract known as a Launch Services Agreement, called upon NASA to use its best efforts to launch ten Hughes 393 class spacecraft aboard the Space Shuttle. NASA's obligations remained in effect until September 30, 1994 or until all ten satellites were launched, whichever came first. The LSA provided launch dates for all ten of Hughes Galaxy's satellites. The three scheduled launches had planned launch dates of December 1987 for HC-9, May 1988 for HC-11, and November 1988 for HC-10. The other seven were standby launches with planned launch dates as well, with the final launch scheduled for

November 1991.¹

The Shuttle Challenger exploded shortly after take-off in January 1986 before any of Hughes' satellites could be launched. The NASA shuttle fleet was reduced from four shuttles to three. At the time of the Challenger accident Hughes' satellites filled ten slots on the commercial payload listing.² The manifest listed payloads in order of their planned or firm launch dates.

NASA assured commercial customers after the accident that it would "endeavor to provide flight assignments to our commercial and foreign customers as close to the previously planned launch dates as feasible." This was consistent with its obligations under the 1982 priorities. However, President Reagan announced in August 1986 that "NASA will no longer be in the business of launching private satellites."

The issue remaining for NASA was what to do with the forty-four commercial satellites that NASA had contracted to launch before the Challenger accident. Ten of these payloads belonged to Hughes. A series of government studies established categories of priority launches to address the forty-four satellites that were under contract in January 1986. The priorities for shuttle launch were: shuttle-unique, national security and foreign policy, costly to retrofit, and remainder.³

¹ Standby launches were more flexible than scheduled launches but intended to occur within one year following its "respective planned launch date." Launches that were not standby launches should have occurred within 90 days of the planned launch date.

² NASA had contracts to launch forty-four commercial payloads at the time of the Challenger accident.

³ Shuttle-unique included eight payloads which required launch on a manned vehicle rather than an unmanned expendable launch vehicle. There were seventeen national security payloads, five of which were considered shuttle-unique as well. Eleven payloads fell into the third category. These payloads were designed for the Shuttle but could be retrofitted for launch aboard an ELV. The remaining thirteen payloads fell into the remainder category. See Hughes, 34 Fed. Cl. at 628.

Shuttle operations began again in 1988, but Hughes' satellites never were launched by NASA. Hughes arranged to launch its satellites by other means and pursued a breach of contract claim in this court for NASA's failure to use its best efforts to launch plaintiff's payloads within the time periods specified by the contract.

The law of this case is that NASA breached plaintiff's contract. Hughes, 34 Fed. Cl. at 631. Our responsibility is to determine damages for that breach. We do not address Fifth Amendment takings theory or any other substantive liability issues.⁴

DISCUSSION

I.

The purpose of contract damages is to place the injured party in the same position as if the contract had been fully performed. Hughes, 38 Fed. Cl. at 580 (citing Wells Fargo Bank, N.A. v. U.S., 88 F.3d 1012, 1021 (Fed. Cir. 1996)). The Launch Services Agreement between the United States and Hughes Galaxy was a best efforts contract. Under a best efforts contract, the contractor is required "to use its best efforts to provide the goods or services at the stated price." General Dynamics Corp. v. United States, 671 F.2d 474, 480 (Ct. Cl.1982).

Obligations imposed under a best efforts contract are different from contracts that guarantee performance. "If, despite its best efforts, the contractor cannot meet the contractual requirements, the [other party] has obtained precisely what it bargained for, namely, the contractor's best efforts." Id. at 481. The "'best efforts' standard has been held to be equivalent to that of good faith." Triple-

⁴ Plaintiff's post-trial brief requests damages for a Fifth Amendment taking, but it did not present evidence on that theory at trial. The issues at trial were limited to damages for breach of contract.

A Baseball Club Associates v. Northeastern Baseball, Inc., 832 F.2d 214, 225 (1st Cir. 1987). Such a standard “cannot be defined in terms of a fixed formula; it varies with the facts and the field of law involved.” Id.

Thus, a best efforts contract requires the promisor to perform the contract to the best of its abilities. NASA was required to use its best efforts to launch ten Hughes satellites, so Hughes “should receive the benefit of the bargain it struck with the government.” Hughes, 38 Fed. Cl. at 580. That is, “the difference between the contract price and the cost of cover.” Id.

The issues that we addressed at trial included (1) the type of satellite that Hughes would have launched on the Shuttle, (2) the number of satellites that Hughes would have launched under the contract, (3) the number of satellites that NASA should have launched under the best efforts contract, and (4) plaintiff’s cost of cover. Plaintiff has the burden of establishing its damages with reasonable certainty. “A party cannot recover damages for breach of a contract for loss beyond the amount that the evidence permits to be established with reasonable certainty.” RESTATEMENT SECOND OF CONTRACTS § 352 cmt. a. “Courts have traditionally required greater certainty in the proof of damages for breach of a contract than in the proof of damages for a tort.” Id. In cases where the responsibility for damage is clear however, “it is enough if the evidence adduced is sufficient to enable a court or jury to make a fair and reasonable approximation.” S.W. Electronics & Manufacturing Corp. v. United States, 655 F.2d 1078, 1088 (Ct. Cl. 1981) (quoting Electronic & Missile Facilities, Inc. v. United States, 189 Ct. Cl. 237, 257, 416 F.2d 1345, 1358 (1969)).

Hughes proposed two methods of determining damages at trial—the Ten 393 Method and the Primary Method. According to Hughes, NASA’s breach made it impossible to determine which satellites would have been launched on the Shuttle. Therefore, it was necessary to provide damage

models that would attempt to replicate what could have happened in absence of the breach. Both methods calculate the difference between the cost of launching ten satellites on the Space Shuttle and ten satellites on Expendable Launch Vehicles.⁵

The Ten 393 Method takes into account the average costs associated with the launch of ten HS 393 satellites. The Primary Method uses surrogates for the ten satellites that would have been launched under the LSA. The surrogates are three HS 393 model satellites, six HS 601 model satellites, and one HS 376 model satellite. The surrogates were selected from a pool of satellites that Hughes Galaxy actually launched on ELV's after the breach. The three HS 393's were scheduled for launch on the Shuttle. According to Hughes, the HS 601's were most comparable to the HS 393's in length and weight and would have been deployed in the same manner as the HS 393's on the Shuttle. The HS 601's were put into service in 1992, five years after the breach. They were direct replacements of the HS 393 product line because the Shuttle no longer was available and the HS 393's were optimized for the Shuttle, according to Hughes.

II.

The first inquiry is what type of satellite Hughes contracted to launch under the LSA. Plaintiff argued at trial that the LSA provided Hughes with the flexibility to launch whatever kind of satellite it wanted, including the HS 601 and the HS 376. Defendant contends that the LSA provided for launch of HS 393 only.

Contract interpretation begins with the language of the agreement. Northrop Grumman Corp.

⁵ Expendable Launch Vehicles are referred to as ELV's. ELV's are not manned vehicles.

v. Goldin, 136 F.3d 1479, 1483 (Fed. Cir. 1998). The preamble to the LSA states that it:

sets forth the terms and conditions under which NASA will furnish Launch and Associated Services to the Customer, at the request of the Customer, for launching of Hughes 393 class spacecraft, HC-9 through HC-18 . . . into Earth orbits.

Mr. Card was a Customer Service Representative in the Office of Space Flight at NASA, whose responsibilities included negotiating the LSA with Hughes. He testified that the LSA was drafted with the HS 393 satellite in mind. Only the preamble of the contract refers to HS 393 spacecraft, but he testified that “we used the term ‘Spacecraft’ to refer to whatever the shuttle payload was being designated as in the preamble.”

The HS 393 satellite was designed for the Shuttle. Plaintiff would have launched ten or more HS 393's had the Government not repudiated its contract. NASA and Hughes Galaxy contemplated launching HS 393's when the LSA was executed.

III.

Hughes Galaxy contracted for ten launches on the Shuttle. None of Hughes satellites had been launched at the time of the breach in 1986. Mr. Farrell was president of Hughes Galaxy. He testified that Hughes would have launched ten satellites had the Shuttle been available. “There’s no question we would have used them,” he stated.

The Government pointed out that only three HS 393's were built and launched on ELV's after the breach. Thereafter, Hughes began using the HS 601 satellite. Defendant contended that because Hughes did not continue its production of the HS 393 it cannot recover damages under a cover analysis. According to the Government, Hughes had independent business reasons for discontinuing

its production and launching of the HS 393 satellite. It switched to the HS 601 not because of the breach, but because the HS 601 had greater power and was more marketable. Credible evidence did not support this argument however.

Between 1985 and 1994, plaintiff launched numerous satellites on various launch devices. Three of these satellites were HS 393's. The remaining spacecraft were HS 601's and HS 376's. Hughes executives testified that they would not have built the HS 601 had the Shuttle been available. Mr. Iorillo, President of Hughes Space and Communication was asked whether Hughes Space and Communication would have developed the HS 601 had the Shuttle remained available. He testified, “[n]ot in my tenure.” He added,

we had plenty of growth capability within our spin stabilize family to handle the bulk of the business and I don't think we would have had, even if we would have had motivation, to spend that \$200 million and then some with the businesses I projected. And I know for sure that the 393 would have been plenty sufficient to handle all of our Galaxy needs So there was so much flexibility on the shuttle that I can say with reasonable certainty that in my tenure we would not have . . . spent that money.

Dr. Wittman, a chief technologist at Hughes, testified that from a capability point of view, the HS 393 could be used in place of an HS 601. The HS 393 could be designed to accommodate the additional power associated with the HS 601. Thus, the HS 393 could have been used in place of the HS 601 for satellites such as the Galaxy 4, Galaxy 7, DBS -1, 2, and 3.⁶ When asked whether Hughes Space and Communication would have continued to build the HS 393 had the Shuttle remained available, he testified unequivocally “Yes.”

Mr. Koehler, a former executive until 1995 testified that “there was a mid range of power

⁶ These are names of specific Hughes satellites.

requirements for the payload, and weight carrying capability for the payload for which the HS 393 was well suited. And we continued to sell satellites in that power and weight class, and I assume are still selling -- Hughes is still selling satellites in that power and weight class today.”

Hughes Galaxy had planned to launch ten HS 393 satellites on the Shuttle. The Shuttle provided the best deal for Hughes with respect to quantity discounts. The HS 393 was designed for the Shuttle and once the Shuttle no longer was available, Hughes had to develop a more cost-effective satellite to launch on other vehicles. This gave rise to the HS 601 satellite. Absent the breach, Hughes would have built and launched ten HS 393's for the Shuttle.

IV.

Plaintiff would have launched all ten HS 393's if it could have, but the next issue is how many of the HS 393's should NASA have launched using its best efforts. NASA's Shuttle fleet was reduced to three after the Challenger disaster. Shortly thereafter, President Reagan announced that NASA no longer would be in the business of launching commercial spacecraft. He established new priorities to handle the forty-four commercial payloads that NASA had contracted to launch. This caused the breach of Hughes' contract. Hughes, 34 Fed. Cl. at 631. NASA was on stand-down for over two-and-a-half years after the Challenger accident. None of Hughes' satellites was launched on the Shuttle prior to expiration of its contract in 1994.

To ascertain whether NASA could have launched ten Hughes satellites under a best efforts contract we rely on the 1982 priorities NASA was obligated to follow. The number of satellites that could have been launched determine Hughes' recovery in this case.

A.

The Federal Circuit held that Article IV of the contract controlled NASA's obligation to provide launch services. Hughes, 998 F.2d at 956. Article IV provided in relevant part,

With respect to launch priority and scheduling, NASA will provide Launch and Associated Services in accordance with the United States policy governing launch assistance approved by the President of the United States on August 6, 1982. Consistent with this policy, NASA will generally treat all comparable payloads on the same basis.

The policy issued by President Reagan in 1982 was entitled "Space Assistance and Cooperation Policy." It provided:

With respect to the priority and scheduling for launching foreign payloads at U.S. launch sites, such launchings will be dealt with on the same basis as U.S. launchings. Each launching will be treated in terms of its own requirements and as an individual case. Once a payload is scheduled for launch, the launching agency will use its best effort to meet the scheduling commitments. Should events arise which require rescheduling, the U.S. will consult with all affected users in an attempt to meet the needs of users in an equitable manner.

The 1982 policy did not give commercial satellites priority over NASA research and development payloads or any other category of payload, or vice versa. It did not address the issue of commercial satellites' standing vis-a-vis NASA's own at all. The LSA stated that "NASA will generally treat all comparable payloads on the same basis." No other priorities were contained in the LSA.

Plaintiff argues that priorities established in 1984 control. Specifically, plaintiff contends that NASA established priorities that "gave reimbursable payloads priority over NASA R&D payloads in case of a conflict over a particular launch slot." Plaintiff's expert report concluded that of forty missions flown during the contract period, at least nineteen "payload opportunities" occurred. That is, NASA could have launched all ten of plaintiff's HS 393 satellites based on 1984

priorities.

The priorities referred to by plaintiff were provided to Congress in 1984 by Lt. General James Abrahamson.⁷ When asked the order of launches in the event that a conflict were to arise in utilization of the Shuttle, General Abrahamson listed the following priorities: (1) Missions with national security implications; (2) missions with specific launch window requirements; (3) reimbursable missions including other U.S. Government, foreign, and U.S. commercial payloads; (4) NASA research and development missions; and (5) standby and ancillary payloads.

Plaintiff argues that these priorities were publicly announced and widely publicized to attract commercial satellite customers; the Government was bound to honor them. However, the 1984 priorities were not incorporated into the contract that was signed by the parties in 1985. The August 1982 priorities were the only priorities incorporated into the LSA at the time of the breach. The Federal Circuit has stated that the policy approved by the President in 1982 remains controlling “with respect to launch priority and scheduling.” Hughes, 998 F.2d at 959.

B.

Prior to the Challenger disaster NASA projected that it might launch as many as 24 missions per year. It had hoped to be competitive in the satellite launch industry. After Challenger, NASA was concerned with new safety precautions. When it began launching shuttles again in 1988, NASA did so at a lower rate—on average five or six flights per year during the remainder of the contract

⁷ Lt. General Abrahamson was the Associate Administrator for the Office of Space Flight in 1984.

period.⁸ It flew only 40 Shuttle missions through the end of Hughes' contract.

After the Challenger accident but before the breach in July 1986, NASA still was acting pursuant to the 1982 priorities established by President Reagan and incorporated into the LSA. NASA issued a planning manifest that took into account the loss of one Shuttle, the post-Challenger stand-down, and reduced flight rates.

The technical processes of launching a shuttle are very complex. NASA scheduled payloads for various missions based on many factors, including limited launch windows, projected orbit, compatibility of different sized satellite buses, the number of mission specialists assigned to work on various payloads, and national security concerns. Various divisions of NASA reviewed preliminary manifests for technical considerations. They established specifications to ensure that payloads were balanced properly within the cargo bay. Payloads that did not fit together in the shuttle cargo bay were rescheduled.

Other concerns affected NASA's scheduling of payloads for launch. NASA was constrained by weather-related problems and other technical failures such as a hydrogen leak in 1990 that resulted in a six-month stand-down. NASA took each of these factors into account in scheduling shuttle mission launches. Additional factors were the two-and-a-half year stand-down, the loss of a shuttle, new safety precautions required of each mission, and other external and internal pressures mentioned above. NASA had an obligation to consider the interests of other commercial contractors

⁸ NASA launched the Space Shuttle at the following rate:

[Launch Year:]	1988	1989	1990	1991	1992	1993	1994
Flights Predicted	1	5	9	9	8	8	9
Flights Achieved:	1	4	5	8	7	7	8

as well as its own interests.

The July 1986 manifest is the best evidence of NASA's intent to launch commercial payloads post-Challenger. This manifest was developed before the change in priorities established by President Reagan, and it takes into account the reduced Shuttle fleet due to the Challenger accident. According to NASA's records, eight of Hughes' payloads appeared on that prior manifest. Had the Challenger Shuttle been available, Hughes may have received all ten launches. But once NASA's fleet was reduced to three and safety became a major concern, NASA had to make adjustments to prior manifests. No one could have predicted the Challenger accident. We do not consider the Challenger disaster or the subsequent stand-down to be a breach of the Government's best efforts contract with Hughes. NASA made a determination based on the 1982 priorities that it could launch eight Hughes satellites.

Plaintiff argued that after the Challenger disaster NASA could have flown more Shuttle flights per year. This would make up for time lost due to the stand-down. It also would have provided sufficient capacity for all ten Hughes satellites.

NASA undertook an extensive investigation to determine the cause of the Challenger disaster and to re-certify the Shuttle system to prevent a recurrence. This process was necessary and appropriate. Mr. Adamson, a former astronaut and NASA Flight Controller testified that NASA could not have launched more shuttle flights between 1988 and 1994. He testified that NASA had many technical problems including hydrogen leaks, engines shutting down on the launch pads, and weather delays that "caused us not to be able to make the manifest that we had planned." NASA wanted to launch more flights as evidenced by the July 1986 manifest, but events overtook this ambitious program. NASA was using its best efforts when it issued the July 10, 1986 manifest.

The projected flights under the July 1986 manifest was 103 flights. NASA launched only 40 of those flights. A government expert pointed out that “the fact that [NASA] only got forty percent of those actual flights would lead me to believe that Hughes would get something less than the eight that were predicted”⁹ However, Mr. Kiraly’s analysis was less than conclusive. He testified that “based upon what was planned, versus what they actually achieved . . . it’s reasonable to assume that Hughes would have gotten between one and six launches of their payloads.”

NASA used an entirely different set of priorities beginning in the fall of 1986. The flight rate was lower than planned, but of the flights that did go up, NASA chose to launch its own satellites before Hughes’. NASA’s best efforts obligation did not give it that right. Once the 1986 priorities were established, NASA did not use its best efforts in launching Hughes’ satellites.

Eight Hughes satellites would have been launched based on the July 1986 manifest. The new flight rate and the delays reduced that number, however. An expert report prepared by the Barrington Consulting Group gave scenarios in which NASA might have launched five or six of the Hughes 393 satellites before expiration of the contract. The Barrington report concluded that five of the Hughes 393 satellites would have been launched within the contract period based on the July 1986 manifest. This report takes into account the average actual launch delay of the Shuttle.

While the Barrington report reduces the number of satellites based on a reduced flight rate after the breach, we see no need to make additional adjustments. The Government was not following the 1982 priorities after the breach. NASA favored its own satellites over those of its commercial customers. There were not enough flights to accommodate everyone. When NASA chose to give

⁹ Mr. Kiraly is a Consultant with the Barrington Consulting Group. During his career, his primary focus has been consulting work on aerospace and defense contracts.

itself priority over commercial customers, it stopped using best efforts to launch Hughes satellites.

The Government argues that the number of satellites for which Hughes can recover should be reduced because Hughes canceled the HC-9 payload prior to launch. In October 1986 NASA sent a letter informing Hughes that it would not receive launch services under the contract. This letter was sent after the President had released the new priorities. The letter stated in part:

Unfortunately, within the priorities from which we have developed this manifest, it has not been possible to schedule the Hughes HC-9 through HC-18 series payloads.

It appears almost certain you will not be provided launch services either prior to or after your current contract expires. At the very least, it can be said with absolute certainty that your payloads will be delayed far in excess of the nine-month period described in . . . [the] Launch Services Agreement (LSA). Thus, should you wish to terminate your LSA prior to its expiration . . . you may do so based on these delays. Upon termination, your payments to NASA will be refunded in accordance with the terms of the LSA.

Based on this letter, Hughes terminated the HC-9 launch in January 1987. This letter is evidence of NASA's failure to use its best efforts to launch Hughes satellites. NASA was concerned with following the priorities established by the White House. It did not intend to launch Hughes satellites then, or in the future. Hughes agreed to cancel the launch.¹⁰

Hughes terminated the HC-9 launch because NASA did not intend to launch its payloads. Thus, Hughes may recover damages for this launch in addition to the other four.

V.

¹⁰ This court has pointed out that "it is apparent that NASA was trying to avoid formally terminating [Hughes' contract]." Hughes, 34 Fed. Cl. at 633.

Damages for breach of contract must be clearly ascertainable. However, where the fact of damage has been established, the precise amount of the damage need not be calculated with absolute certainty. “When confronted with the clear liability of defendant and the plaintiff’s efforts to present all available evidence on damages, the [court] was under a heavy obligation to provide compensation. While there was ‘uncertainty as to the extent of damage, . . . there was none as to the fact of damage.’” S.W. Electronics, 655 F.2d at 1088 (quoting Joseph Pickard’s Sons Co. v. United States, 532 F.2d 739, 743 (Ct. Cl. 1976)).

Plaintiff is entitled to cover for five satellites. We determined damages based on the expert report of Mr. Hammer. He concluded that the costs of launching the three HS 393's on the Shuttle would have been \$35,024,007 for JCSAT 1, \$36,028,891 for JCSAT 2, and \$32,195,689 for SBS 6.¹¹ The actual ELV costs for those same satellites were \$46,586,540, \$57,551,966 and \$51,000,000, respectively. Mr. Hammer’s calculations were derived from Hughes Galaxy’s books and records.

To determine the costs of launching the fourth and fifth satellites on the shuttle we used the average of the actual shuttle costs referenced in Hammer’s expert report. The average for the three satellites was \$34,416,195.¹² To arrive at the average cost for launching on an ELV, Hammer used the actual costs of launch, then escalated the costs based on their “respective launch dates to July 1992, the midpoint between March 1989 and December 1995” His report concluded that “in order to estimate the launch vehicle costs . . . the actual launch vehicle costs for the three satellites

¹¹ JCSAT 1, JCSAT 2, and SBS 6 are the names of the three Hughes 393 satellites that were scheduled for launch on the Shuttle.

¹² Mr. Hammer determined the average cost of the fourth and fifth satellite based on the assumption that ten satellites would be launched. We based the average on the three HS 393's that were actually built and launched.

actually launched in the earlier time period needed to be escalated.”¹³

While we agree with Mr. Hammer’s methodology, we chose to use a midpoint that reflected the actual contract period. Therefore, the average cost for launching the fourth and fifth satellite on an ELV was \$56,969,948. The evidence presented was sufficient for this court “to make a fair and reasonable approximation.” S.W. Electronics, 655 F.2d at 1088.

The cost of launching five satellites on the Shuttle would have been \$172,080,977. The costs of launching on an ELV are \$269,078,402. The difference of \$96,997,425 is Hughes’ cost of cover.

VI.

A.

Plaintiff argues that it is entitled to prejudgment interest on its claim because the Government “cast off the cloak of sovereignty and assumed the status of a private commercial enterprise,” citing Standard Oil Co. vs. United States, 267 U.S. 76 (1925). Plaintiff points out that NASA established a marketing organization with a goal of reaching up to 80% penetration, and it quotes one of the witnesses as stating that it had reached 50% by the time of the breach. These assertions are in evidence. However, plaintiff also states that “launch prices charged to the commercial customers were set at levels that more than covered the marginal costs of launching commercial satellites. For example, the launch prices for Hughes Galaxy satellites averaged about \$38 million per satellite and two of its satellites plus another primary payload could be flown on each shuttle flight.”

Generally, the issue of whether NASA was engaged in a commercial enterprise was not a

¹³ Mr. Hammer calculates this escalation by using NASA’s Billing, Accounting and Collection System Escalation Indexes and Factors.

focus of this case at trial. Defendant argues that the shuttle program was “heavily subsidized by the Government.” It cites witnesses who testified that NASA was not making a profit on its commercial launches and that the Government had invested a large sum of money in the shuttle. Even if we recognized a principle that requires the United States to cast off its cloak of sovereignty when dealing in commerce, we do not have sufficient evidence in this case to make such conclusions. For example, we do not know the extent of NASA’s independence from congressional appropriations. NASA’s profitability and its commercial intent were not issues in this case. Thus, we cannot award prejudgment interest on that basis.

B.

We do not necessarily agree with the Government that all insurance costs incurred by Hughes on ELV’s are “consequential” and therefore barred by the Launch Services Agreement. Any benefits included in the Shuttle contract that Hughes had to obtain on the open market at a higher cost is an element of cover and Hughes would be entitled to such damages. Insurance costs that resulted from independent business decisions by Hughes to obtain special coverage for a particular purpose would not be covered as a direct damage.

The reflight guarantee offered by NASA is an example of the former; the added launch and in-orbit insurance costs represent the latter. Put another way, if Hughes were not required contractually or otherwise to purchase insurance for the shuttle launches, we cannot reimburse it for costs incurred in purchasing the same protection on ELVs. Protections or services that were included in Hughes’ contract with NASA at no extra cost, but which Hughes was required to purchase on ELVs after the breach should be reimbursed if they are comparable and can be quantified.

The Launch Services Agreement required only third-party liability insurance. Evidence in the record regarding replacement costs for third-party liability insurance was limited to JCSAT 1. That amount, \$133,000, was included in plaintiff's cost of launching the satellite. We could find no third-party liability costs for the other satellites. We assume that these costs, if any, are included in plaintiff's cost of launching JCSAT 1. Therefore, no additional damages are warranted.

C.

The Launch Services Agreement included a limited reflight guarantee. If a shuttle failed, NASA would launch another Hughes satellite for free. This was a one-time option and other restrictions applied. The guarantee was a part of the package deal, but its value was not clearly established at trial.

Plaintiff attempts to quantify the Reflight Guarantee Clause in the contract by arguing that it had to cover the value of that benefit by purchasing additional insurance. Hughes' witnesses testified under cross-examination that ELV providers offered reflight guarantee options, yet Hughes did not elect to purchase these options. William R. Heathcote, was the space risk manager for Hughes. Mr. Heathcote testified that ELV providers offered reflight guarantees to Hughes Galaxy as options.

Q: Compare the shuttle reflight launch clause in the LSA to the reflight guarantee options offered by ELV providers.

A: The primary difference in the two was that the shuttle reflight option was offered at no cost as an option on the LSA, whereas the expendable-launch-vehicle manufacturers typically provided the launch reflight or launch refund options in their contracts at a price; and my recollection is that Ariane would provide this capability at 10 percent for a reflight, at 12 percent for a refund at one point, and, I believe, Titan was offering it at 14 percent for a refund.

* * *

- Q: Mr. Heathcote, . . . did Hughes ever purchase the reflight guarantee option in those contracts?
- A: To my knowledge, we purchased reflight guarantees on both JCSAT [1] and JCSAT [2].
- Q: Now those actually were cash refunds, were they not?
- A: I believe they were, yes. I believe both were cash refunds
- Q: So you never actually selected a reflight in any of the ELV contracts.
- A: I don't believe we did.

(emphasis added). The second witness was the author of the plaintiff's expert report, Brian M. Hammer. He testified as follows:

- Q: [I]s it true that the LSA provided only for a reflight, and did not give Hughes a cash refund?
- A: That's correct.
- Q: And, in the case of JCSAT 1 and 2, isn't it true that Hughes paid a premium—a higher premium—in order to have the cash refund instead of a reflight guarantee?
- A: Yeah, . . . I believe that's the case. I believe, there was a rate differential between getting a cash refund, and a reflight guarantee.

Plaintiff had the option of paying lower premiums for a reflight guarantee or higher premiums for refunds. Hughes purchased a refund guarantee option for both JCSAT 1 and 2. Hughes did not elect to purchase a reflight guarantee for any of the HS 393 replacement launches.

The Reflight Guarantee Clause in the shuttle contract was so limited that its value was questionable. Moreover, it is unclear whether replacement reflight guarantee clauses on ELV's would have been comparable had Hughes elected to purchase them. The evidence did not establish that the options Hughes chose were comparable to what they would have received under the LSA.

D.

Plaintiff also contends that it should recover increased in-orbit insurances costs. In-orbit insurance was neither contemplated nor required by the contract, so Hughes is not entitled to these costs.

E.

Hughes claims \$5,283,200 in reconfiguration costs to make the JCSAT 2 satellite capable of being launched on an ELV. JCSAT 2 is an HS 393 satellite that was scheduled to be launched on the Shuttle. Plaintiff contracted with Hughes Space and Communication Group to perform the reconfiguration. Defendant contends that plaintiff “has not provided any documentation showing that this work was performed or that these costs were incurred.” Defendant’s expert conceded however, that “it is likely that Hughes incurred some reconfiguration costs”

Hughes requested a price quote from Hughes Space and Communication Group for modifying the JCSAT 2 spacecraft so that it would be ELV compatible. Hughes Space and Communication sent plaintiff a letter in March 1997 providing a “firm-fixed price proposal” of \$5,203,200. Mr. Rhoads, Vice President of Contracts at Hughes Galaxy sent Hughes Space and Communication a response in May 1987 stating:

You are hereby authorized to proceed to modify the JCSAT CF-2 spacecraft to be compatible with the Titan III launch vehicle. Based on your proposal . . . the firm fixed price for this work is \$5,203,200.

Plaintiff’s expert, Mr. Hammer testified that while he was not able to find documentation for the payment from Hughes Galaxy to Hughes Space and Communication, he “had discussions with the

Controller, and others that assured us that that amount was paid.”¹⁴

There is no dispute that Hughes incurred costs in reconfiguring JCSAT 2. These costs are documented in the correspondence and records of Hughes Galaxy. We have no reason to doubt the integrity of these records. Hughes would not have incurred these costs absent the breach. Plaintiff is entitled to \$5,283,200 in reconfiguration costs.¹⁵

F.

Hughes Galaxy paid \$400,000 to NASA for launch reservation deposits for four satellites that were to be launched on the Shuttle. Mr. Hammer testified that the \$400,000 was not refunded to plaintiff. We do not know why the deposits were not refunded, but defendant does not dispute this fact or amount.

CONCLUSION

Defendant’s breach of plaintiff’s contract occurred when NASA issued new priorities in

¹⁴ The \$5,283,200 includes \$80,000 for a Titan Conversion Study and a JCSAT 2 model. The purpose of the study was to “determine factors affecting the conversion of JCSAT 2 to a configuration suitable for a Titan Launch Vehicle.” The model was used “in support of a coupled loads analysis to be performed by Martin Marietta.” This work was authorized and necessary, so defendant is liable for these costs as well.

¹⁵ Defendant argues that the reconfiguration costs were overstated because they include intercompany profit. Hughes Space and Communication is a sister corporation of Hughes Galaxy and according to defendant “profit was normally added and that it could be as high as 20%.” Mr. Hammer testified that a profit was proposed but “whether Space and Comm actually received profit on the work I do not know.” We have no evidence that a profit was included in plaintiff’s damage figures, or what difference that would make if it did. Defendant emphasized often during the trial that Hughes Galaxy and Hughes Space and Communication were separate and distinct legal entities.

1986. See Hughes, 998 F.2d 953. That is, when NASA changed the 1982 contract priorities and replaced them with guidelines that allowed NASA to prefer itself and certain national security interests over commercial payloads. The 1982 policy was intended to guarantee equal treatment among all comparable payloads, foreign and domestic; not to provide a priority schedule vis-a-vis NASA's own needs.

The Challenger disaster occurred less than two months after Hughes and NASA executed their contract. On the day of the Challenger accident, Hughes had ten launches on the shuttle manifest, and NASA reassured Hughes thereafter that while there could be some slip in the planned launch dates, Hughes could assume that its launches would be maintained. Only a few months later, NASA sent Hughes a letter essentially repudiating its obligation to use best efforts through the remainder of the contract: "It appears almost certain you will not be provided launch services either prior to or after your current contract expires." NASA had the room and the resources to launch some of Hughes' satellites, but it chose to favor itself and other government and commercial users over Hughes. By this letter NASA announced to Hughes that rather than using its best efforts, it would use no effort to meet its obligation to launch ten satellites.

Hughes would have launched as many HS 393's on the Shuttle as NASA would provide. NASA reasonably should have launched five Hughes satellites using its best efforts, taking into consideration the disastrous events that occurred during the contract period.

Hughes' cost of cover was its costs of launching HS 393's on commercial ELVs. Because it launched only three HS 393's, we took an average of those to determine the cost of the five satellites that Hughes would have launched through NASA's program in absence of the breach.

Hughes' cost of ELV launches for five satellites was \$269,078,402. The comparable cost

on NASA's shuttle including applicable discounts would have been \$172,080,977. The difference is \$96,997,425. Plaintiff is also entitled to \$5,283,200 in reconfiguration costs for the JCSAT 2 satellite, and a refund of \$400,000 for launch reservation deposits.

The Clerk will enter judgment for Hughes Communications Galaxy in the amount of \$102,680,625. No costs.

Robert H. Hodges, Jr.
Judge