UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

AEROS AERONAUTICAL SYSTEMS CORP., Plaintiff, v. UNITED STATES OF AMERICA, Defendant.	CASE NO. CV 15-1712-PJW FINDINGS OF FACT AND CONCLUSIONS OF LAW

I.

INTRODUCTION

This is a Federal Tort Claims Act ("FTCA") case in which Plaintiff Aeros Aeronautical Systems Corporation is suing the United States for damages for the loss of a unique, blimp-like aircraft known as the RAVB (pictured below). Aeros was housing the RAVB in a government hangar in Tustin, California, when the roof collapsed. The Court has already determined that the government was negligent in maintaining the hangar and is, therefore, liable for the loss. The issue that remains is damages. Plaintiff claims that the RAVB was a state-of-the-art, one-of-a-kind airship and seeks damages in the amount of $65 million dollars. The government contends that the aircraft was worthless at the time of the roof collapse and that, as a

result, Aeros is not entitled to any damages. For the reasons set forth below, the Court concludes that Aeros is entitled to $6,882,918 for the loss of the aircraft and the consequential damages that flowed from the loss.

A picture of the RAVB during flight testing in August 2013.

II.

FINDINGS OF FACT

1. Plaintiff Aeros is incorporated under the laws of the state of California and has its principal place of business in Montebello, California.

2. Defendant is the United States government, acting through the Department of the Navy and its employees, officers, and agents.

Development of the RAVB

3. In 2008, the government sought to determine the feasability of a rigid-aeroshell, variable-buoyancy aircraft to carry troops and equipment around the world. Exh. 565 at 1-2. The goal of the project was to design, construct, and test Aeros's proprietary Control of Static Heaviness or "COSH" system. Exh. 565 at 4. The COSH system allows a heavier-than-air aircraft, similar to a blimp, to become buoyant by releasing compressed helium (stored in canisters inside the aircraft) into bladders inside the aircraft until the aircraft becomes buoyant. The aircraft can then be flown to the intended destination and descend to the landing site by compressing a sufficient amount of helium to make the aircraft heavier than air. After unloading people and/or equipment, the crew can then release the helium back into the aircraft, causing it to become lighter than air again, allowing it to be flown away. Reporter's Transcript ("RT") 4/11/17 a.m. at 39:8-21.[1]

4. In 2008, the government and Aeros began negotiations for the development of an aircraft to test the COSH system. RT 4/11/17 a.m. at 43:10-44:20, 132:14-23. The government was not interested in having Aeros develop a working prototype. It was, instead, interested in having Aeros build a demonstrator model so that the COSH system could be tested inside a hangar to see if it would work. The proposed contract did not require nor did it contemplate that the RAVB would be flown outside the hangar.[2] RT 4/14/17 a.m. at 14:12-16.

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[1] The trial transcript begins at page one for each session of each day of trial, i.e., April 12, 2017 a.m. and April 12, 2017 p.m.

[2] At some point, Aeros decided that it would design and construct the RAVB to actually fly outside the hangar and use it as a springboard for its anticipated commercial development of a larger

5. NASA was selected as the contracting agency for the government. Exh. 565 at 1. It was tasked with providing technical and project assistance to Aeros as well as contract management. RT 4/14/17 a.m. at 6:2-4.

6. During negotiations, Aeros offered to perform the contract for $50.9 million. RT 4/12/17 p.m. at 67:25-68:24; Exh. 548; Joint Stipulated Facts (Doc. No. 195-1) ("JSF") ¶ 2. NASA rejected this offer. JSF ¶ 3.

7. Through a series of negotiations, Aeros and the government ultimately agreed to a firm, fixed-price contract of $38.2 million dollars to build and test the RAVB. RT 4/12/17 p.m. at 72:3-25. The evidence established that during the negotiations the government and Aeros recognized that it would cost Aeros slightly more than $43 million to build the RAVB and perform the tests anticipated under the contract, about $5 million more than the government was willing to pay. RT 4/12/17 p.m. at 70:12-71:24. Further, that $5 million shortfall was premised on Aeros performing the contract for the estimated price. Were the costs to exceed the estimates, under the contract, Aeros would have to absorb those costs. The contract also provided, however, that the government was limited in how it could use the data developed by Aeros and, importantly, that Aeros could keep the RAVB at the end of the contract. RT 4/14/17 a.m. at 16:6-20, 12:10-18; RT 4/12/17 p.m. at 70:12-15; Exh. 38 at 7.

8. Over the next four years, there were a total of 39 modifications to the contract for various changes and additional

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RAVB.

testing. Exh. 575; JSF ¶ 1. Ultimately, the contract price swelled to $54.5 million.

9. Aeros leased a hangar from the Navy at the former Marine Corps Air Station in Tustin, California to construct the RAVB.

10. Aeros developed and built the RAVB using a rapid prototyping process called "Iterative – Prototyping Development." This was not the way the government normally developed aircraft. Typically, the government would come up with engineering requirements, create a design, analyze the feasibility of such an aircraft, and build a prototype to verify and validate the design. RT 4/14/17 p.m. at 5:6-17, 17:11-20; Exh. 155 at 24. The build-out of the RAVB, however, was accomplished through trial and error. As one NASA engineer observed, Aeros's philosophy was to build and test, and, if it failed, to redesign, rebuild, and retest. RT 4/14/17 p.m. at 15:6-13. This trial and error process resulted in considerable inefficiencies. For example, Aeros used several different materials for the skin of the RAVB, trying one, abandoning it, and then trying another. RT 4/14/17 p.m. at 13:15–14:14.

11. Because the RAVB was a demonstrator model, not a production-line aircraft, Aeros did not have in place policies and procedures necessary to develop any of the specialized engineering plans or drawings which would allow for the recreation of the RAVB. RT 4/11/17 a.m. at 70:16-18. In fact, no production drawings or work instructions were created for the RAVB. RT 4/11/17 a.m. at 70:21-71:7, 106:15-20, 108:8-10, 108:16-109:4. Aeros possessed conceptual designs for the RAVB but the adjustments made during the actual construction, such as altering the placement or type of a bolt

used, were not marked in production drawings because no such drawings were made. RT 4/11/17 a.m. at 72:2-4, 108:8-109:4.

12. The RAVB was built by hand. RT 4/11/17 a.m. at 54:5-8. It had a three-dimensional frame composed of trusses. The trusses were made of aluminum and carbon or carbon with aluminum ends. RT 4/11/17 a.m. at 53:16-23. Aeros built the internal frame system like a "house of cards" from the bottom up. RT 4/11/17 a.m. at 54:1-8.

13. Aeros did document changes to the conceptual design learned from the in-process testing and construction it carried out on what it called "red line" or "red pen" drawings. RT 4/11/17 a.m. at 72:15-21; RT 4/12/17 p.m. at 12:3-13. Engineers made notes on drawings of the structure which were hung up on the wall at the hangar. RT 4/12/17 p.m. at 12:19-13:7. Those drawings were lost after the roof collapsed.

14. As part of the contract, the government made NASA engineers available to Aeros for consultation on design, engineering, and construction. NASA assigned the Systems Analysis Group to work with Aeros on the NASA Contract. Dr. John Melton served as the technical liaison between Aeros and NASA. Dr. Melton was a senior aerodynamic engineer in the Systems Analysis Group and had been an engineer with NASA since 1985. RT 4/14/17 a.m. at 47:2-19. Michael Ospring was another NASA engineer who provided technical assistance to Aeros for the RAVB project. RT 4/14/17 p.m. at 5:15–9:1. He worked for NASA for 41 years. RT 4/14/17 p.m. at 6:5–9.

15. Aeros had its own engineers working on the project as well. Ultimately, Timothy Kenny became the lead engineer and later the director of engineering at Aeros. RT 4/12/17 a.m. at 35-36. In 2007, he earned his undergraduate degree in engineering. RT 4/12/17 a.m. at

62:25-63:1. In 2009, he started working for Aeros. RT 4/12/17 a.m. at 35. He had no training in aerodynamics and had never worked on an aircraft before coming to Aeros. RT 4/12/17 a.m. at 64:3-66:23. The NASA engineers found the Aeros engineers young, inexperienced, and overwhelmed. RT 4/14/17 p.m. at 17:24–18:5.

16. The NASA engineers were deeply troubled by Aeros's design, engineering, and construction practices. They regularly questioned Aeros's methods in developing and constructing the RAVB. During the course of the project, the structural design of the RAVB changed continually. RT 4/14/17 p.m. at 13:15-14:12. The engineering approach taken by Aeros in the design and construction of the RAVB was a significant contributor to the constant changes to the RAVB.

17. As part of the contract, Aeros performed a number of tests. JSF ¶ 18. The most significant test was a test of the COSH system and of the RAVB's ability to remain heavier than air and become lighter than air while carrying a weighted load. This test occurred in January 2013 inside the Tustin hangar with the hangar doors closed. RT 4/14/17 p.m. at 35:20-37:8; Exh. 486 at 5-6. Five hundred pounds of lead shot were loaded into the cockpit of the RAVB. RT 4/14/17 p.m. at 36:3-24. Helium was released from canisters inside the RAVB into bladders inside the RAVB and the RAVB floated off the Tustin hangar floor to a height of approximately 10 feet. RT 4/14/17 p.m. at 36:3-24. The COSH system was then engaged, compressing the helium and the RAVB descended to the hangar floor. The lead shot was then unloaded and the RAVB remained on the ground, proving that it was heavier than air. RT 4/14/17 p.m. at 36:3-24. Helium was then released back into the RAVB and the RAVB became lighter than air. RT

4/14/17 p.m. at 36:3-24. The helium was then compressed again and the RAVB descended to the hangar floor. RT 4/14/17 p.m. at 36:3-24.

18. Four trusses of the RAVB suffered near-catastrophic failure during this test as a result of the force acting on the RAVB from lifting off the ground and floating to a height of ten feet. RT 4/14/17 p.m. at 37:1-17. Those trusses had broken cores and experienced local buckling. RT 4/14/17 p.m. at 37:1-17. NASA engineers found that multiple end fittings had failed and several bolts holding the end fittings together were bent. RT 4/14/17 p.m. at 37:1-17. They also observed that several bays inside the trusses had buckled and that several of the cords on a number of trusses had broken. RT 4/14/17 p.m. at 38:4-38:10. In short, as a result of the in-hangar static hover test the RAVB suffered "significant structural damage inside the internal air frame."[3] RT 4/14/17 p.m. at 37:6-8.

19. In response to the structural failures from the January 2013 test, Aeros undertook repairs that NASA engineers believed were less than ideal and which were completed without conducting an analysis of the reasons for the failures. RT 4/14/17 p.m. at 38:13-39:9. NASA engineers wanted to determine the root cause of the failures but Aeros did not want to do so. RT 4/14/17 p.m. at 38:13-39:9. Instead, Aeros repaired or replaced the broken structural components with the same materials that had failed in the hangar test. RT 4/12/17 a.m. at 68:13-19; RT 4/14/17 p.m. at 38:13-39:9. In several locations, Aeros simply taped the structures together. RT 4/14/17 p.m. at 38:13-39:1.

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[3] Aeros's lead engineer Mr. Kenny contends that these failures were due to overinflation of the helium bladders inside the RAVB. Mr. Ospring rejected that explanation and the Court accepts his testimony over Mr. Kenny's. RT 4/14/17 p.m. at 37:1–39:1.

None of these repairs allayed NASA's concerns about the structural defects of the RAVB.

20. Aeros subsequently decided that it had to take the RAVB almost completely (70%) apart and rebuild it, a process that took four months at a cost of $5.5 million. RT 4/12/17 a.m. at 37:3-14; RT 4/17/17 a.m. at 88:14-90:8. The aircraft was "disassembled down to its bare structure" and it was reassembled. RT 4/12/17 a.m. at 37:3-21.

21. Additional in-hangar testing, including a repeat of the January 2013 test, was conducted during the summer of 2013. This was the final test for the RAVB under the contract and the test was successful. JSF ¶ 18.

22. In the spring of 2013, NASA learned that Aeros was planning to conduct an outdoor flight test of the RAVB. RT 4/14/17 p.m. at 39:13-17. Upon learning this, NASA engineers working on the project became very concerned. RT 4/14/17 p.m. at 39:18-40:21. They knew that an outdoor flight test would subject the RAVB to considerably more load than the in-hangar tests and they were worried that the RAVB's structure could not handle the load. RT 4/14/17 p.m. at 40:21-24.

23. Accordingly, NASA engineers performed a computer analysis to determine the structural integrity of the RAVB under a rational set of outdoor loads, using a modest forward flight speed and modest wind speeds. RT 4/14/17 p.m. at 41:2-5. NASA also asked two computational fluid dynamics experts, one from NASA and one from outside NASA, to devise a series of pressure distributions based on loads for the RAVB. RT 4/14/17 p.m. at 41:5-9. That load case assumed a 30-knot forward speed and a 20-knot gust of wind. RT 4/14/17 p.m. at 41:10-14. These

experts determined that, under those conditions, there was a strong possibility of structural failure throughout the RAVB. It was only when the forward speed was reduced to 10 knots and the wind speed reduced to 10 knots that failure could be avoided and then only barely. RT 4/14/17 p.m. at 41:17-23, 42:8-24; Exh. 497 at 4-5. Ultimately, the engineers concluded that "unless they flew [the RAVB] at very, very low speeds and encountered, really, no gust loads," the RAVB structure would likely be damaged. RT 4/14/17 p.m. at 42:19-24.

24. This analysis caused NASA engineers grave concern. RT 4/14/17 p.m. at 42:19-24. In May 2013, they drafted a report for NASA management, warning that an outdoor flight of the RAVB demonstrator could be catastrophic. Exh. 497. In an August 2013 report, they described the RAVB and Aeros's engineering approach and presented the results of the analysis, concluding: "[f]rom a structural perspective, the lack of design requirements, loads and load cases, verification approach, complete engineering analysis and overall configuration management resulted in a RAVB structure that is thought by NASA to have been at the very limit of its structural ability in rising, in a level altitude, in still air." Exh. 486 at 17; RT 4/14/17 p.m. at 69:20-70:17. They concluded that the RAVB, "as currently designed, cannot sustain any combination of buoyancy, forward speed, rational gust speed, intertial force and nominal angle of attack without inducing negative margins in structural elements." Exh. 497 at 5. In response to the warnings, NASA management attempted to persuade Aeros not to conduct an outdoor flight. RT 4/14/17 p.m. at 44:16-25.

25. Aeros disagreed with the government's analysis and elected to go forward with flight tests outside the hangar. It obtained a 60-day Experimental Research & Development Airworthiness Certificate from

the FAA. Exh. 512 at 7. The FAA safety inspector who was involved in certifying the RAVB for outdoor flight testing did not know that NASA had advised Aeros not to fly the RAVB outside when he approved the flight testing. RT 4/14/17 p.m. at 144:16-18. Nevertheless, he limited Aeros to altitudes of 50, then 100, feet. Exh. 512 at 7-8.

26. On August 30, 2013, the RAVB was flown outside the hangar for the first time. Ex. 736 at 3. Over the next 12 days it was flown outside four more times. Exh. 736.

27. A History Channel crew was on site at the Tustin hangar for three months in the summer of 2013, videotaping many aspects of the flight testing, including the outdoor flight tests. RT 4/12/17 a.m. at 16:16-17:1. The final flight of the RAVB was broadcast as part of a television program on the History Channel. Exh. 107.

28. The NASA engineers who had worked on the RAVB suspected that it had suffered structural damage during these test flights. They asked Aeros for an opportunity to inspect the RAVB after the flights but Aeros denied their requests. RT 4/14/17 p.m. at 45:17-46:11.

29. Aeros had hoped to springboard from the RAVB to a fleet of commercial Aeroscraft-type vehicles. Exh. 171 at 5, 10; Exh. 174 at 13; Exh. 653 at 2; RT 4/11/17 a.m. at 58:2-21, 59:10-60:5, 74:7-20. In May 2013, Aeros articulated its plan for an initial fleet in a presentation entitled “Initial Fleet Revenue Generation Secured Clients” (hereinafter “Fleet Presentation”). Exh. 196. In the Fleet Presentation, Aeros’s proposed a production schedule that included 22 Aeroscrafts--four 66-ton models and 18 250-ton models--by 2020. Exh. 196 at 4.

30. Aeros planned to have the Aeroscraft design receive FAA type certification and sought to utilize the RAVB as a stepping stone to

the 66-ton version. Exh. 167 at 22, 27; Exh. 200 at 1 and 3; RT 4/11/17 a.m. at 58:2-21, 59:10-60:5, 65:3-7, 74:7-20, 93:14-18, 94:13-95:6, 95:19-96:2, 98:23-99:8. Aeros had utilized this strategy for type certification on other airship designs before, building its 40A airship first and then building the larger 40B version for which it pursued and received FAA type certification. RT 4/11/17 a.m. at 33:2-14; RT 4/14/17 p.m. at 154:25-157:13; Exh. 200 at 11.

31. In late September and early October 2013, Aeros employees working inside the Tustin hangar noticed that small pieces of wood had fallen from the hangar roof to the floor. On Thursday, October 3, 2013, they found a three-foot piece of wood from one of the roof trusses on the floor. On Monday, October 7, 2013, a large section of the hangar roof collapsed, falling onto the RAVB. Immediately thereafter, the government allowed Aeros personnel to go into the hangar briefly to view the damage but otherwise prevented Aeros from entering the hangar. On October 10, 2013, Aeros was again allowed inside the hangar for a brief period. Between October 2013 and June 2014, Aeros requested permission to return to the hangar but its requests were denied. During this period, the government continually told Aeros that it would be allowed to re-enter the hangar by a given date but repeatedly changed that date. Though it appears that the RAVB may not have been immediately destroyed as a result of the roof collapse, by the time Aeros was allowed back into the hangar in July 2014, the RAVB had been rendered worthless.

B. Plaintiff's Damages Claims

32. On April 3, 2014, Aeros submitted an administrative claim in the amount of $1,800,000 for costs incurred in moving its equipment out of the hangar. Exh. 619; RT 4/12/17 p.m. at 105:6-19; JSF ¶ 40.

33. On June 12, 2014, Aeros submitted an amended claim in the amount of $58,700,000 for compensation for the loss of the RAVB. Exh. 437; RT 4/12/17 p.m. at 105:20-106:6; JSF ¶ 41.

C. Damages for Disassembling the RAVB

34. Starting at the end of July 2014, Aeros employees took the RAVB apart and disposed of the pieces. Aeros seeks $3,538,160 in damages for the costs incurred in taking it apart. There are several disputes centered on the disassembly of the RAVB. The first dispute is how long it took to complete the process. Aeros's accountant and vice president, Carrie Cass, testified that it took until March 2015. RT 4/13/17 at 61:10-13. The government contends that it took significantly less time, as evidenced by an email Ms. Cass sent to the Navy on November 13, 2014, explaining that Aeros had removed everything from the hangar except a lift and some parts. RT 4/13/17 a.m. at 36:5-37:25. The Court finds that the disassembly of the RAVB in the hangar was completed by November 13, 2014, and rejects Ms. Cass's testimony that it took until March 2015.

35. A second dispute concerns the number of workers involved in taking the RAVB apart. Ms. Cass testified that as many as 50 were involved, RT 4/12/17 p.m. at 102:21–25, though she also testified it might have been closer to 35. RT 4/13/17 a.m. at 60:21-61:13. The most credible evidence regarding the number of employees that were involved in taking apart the RAVB between July 2014 and November 2014 came from Aeros's former employee Adrian Ramos. He was the hangar supervisor during this period and was at the hangar every day. RT 4/13/17 a.m. at 5:14-16, 29:7-10. According to Mr. Ramos, 15 employees took the RAVB apart during that period. RT 4/13/17 a.m. at 29:7-14. And, though Ms. Cass testified that some of the work took

place in Aeros's Montebello facility, Mr. Ramos contradicted that testimony. RT 4/13/17 a.m. at 31:24-32:19. Mr. Ramos also undermined Ms. Cass's claim that parts of the RAVB were moved to a different hangar at the Tustin facility during this period and taken apart there. RT 4/13/17 a.m. at 32:12-15. The Court accepts Mr. Ramos's testimony and rejects Ms. Cass's testimony on these issues.[4]

36. A third dispute regarding damages for taking apart and disposing of the RAVB is whether the government should be liable for it at all. The government argues that Aeros was responsible for the deconstruction and removal expenses of the RAVB regardless of the roof collapse. It notes that Aeros recognized this and planned to take the RAVB apart about the time the roof collapsed, as set forth in Aeros's own documents, and that it is simply raising this claim now to pad its damages claim. Aeros responds that, though it did plan to take the RAVB apart and dispose of it, it planned to do so at a much later date. It also contends that taking it apart became more complicated and, therefore, more expensive after it was damaged by the hangar roof collapse. Finally, it points out that the line item for the disassembly and removal of the RAVB in a January 2013 proposed contract modification did not make it into the final contract amendment. RT 4/17/17 a.m. at 172:3-14.

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[4] Aeros points out that Mr. Ramos also testified that the removal of the RAVB was completed in the spring of 2015 and argues that if the Court accepts Mr. Ramos's testimony as to the number of employees working to disassemble the RAVB it should also accept Mr. Ramos's testimony that it took until the spring of 2015 to complete the process. Though Mr. Ramos initially agreed with the Court in response to a question posed by the Court that it took until the spring of 2015 to remove the RAVB from the hangar, RT 4/13/17 a.m. at 29:15-17, he later explained that he really did not remember when the removal was complete. RT 4/13/17 a.m. at 32:25-33:3.

37. The Court sides with the government here. There is no dispute that Aeros was responsible for removing the RAVB from the Tustin hangar and, ultimately, taking it apart and disposing of it at its own expense. Those costs, whenever incurred, were to be borne solely by Aeros. The evidence shows that, in January 2013, Aeros's President, Igor Pasternak, contemplated taking it apart in July 2013, in eleven days, at a cost of $1.2 million. Exh. 91 at 2; Exh. 176 at 4, 52; RT 4/17/17 a.m. at 56:21-60:19. It appears that during the spring and summer of 2013, Mr. Pasternak had a change of heart and decided to delay the disassembly until further flight tests could be conducted, but that does not change the basic fact that Aeros was responsible for the removal and disposal of the RAVB.

38. Aeros contends that the roof collapse made the process of taking the RAVB apart more difficult and expensive. This contention defies common sense. In the summer of 2014, Aeros recognized that the RAVB was totaled. Thus, from that point forward, it was primarily interested in taking it apart and disposing of it. Though Aeros hoped to salvage some parts, the vast majority of the material was the frame and the skin, which were rendered unusable as a result of the roof collapse. Presumably, Aeros could have simply cut the RAVB into pieces and hauled it away. Aeros never provided any convincing testimony to explain how the process was made more expensive by the collapse of the hangar roof and the destruction of the RAVB. Aeros's testimony that it cost $3 million to disassemble and remove the RAVB was also undermined by its exaggeration of how long it took it to do so and how many people were involved. It was further undermined by the fact that, in January 2013, its principal, Mr. Pasternak, planned to do it in July 2013 in 11 days at a cost of $1.2 million. In fact,

using Aeros's own cost figures for the removal of the RAVB, it clearly cost considerably less than Aeros claims.[5]

D. Damages for the RAVB

39. Plaintiff seeks to be compensated for the loss of the RAVB. It relies mainly on two measures of valuation: the "market" approach, which it claims yields a value of $54.5 million, and the "replacement cost" approach, yielding a value of $50.6 million. RT 4/17/17 a.m. at 179:14-22. Plaintiff also proposed a third approach based on a concept known as the "peculiar value," which Plaintiff claims yields a value of $50+ million. Final Pretrial Conference Order at 10-11, 17.

40. Both sides called valuation experts at trial. Plaintiff's expert, Michael Wallace, testified that, using the market approach, he determined the value of the RAVB to be $54.5 million. He relied on two sales--the Lockheed Martin P791 and the Northrup HAV/LEMV--which he conceded during his direct examination were not really comparable. RT 4/13/17 a.m. at 91:18-95-7, 95:22-96:4. Mr. Pasternak also testified that the RAVB was not comparable to these aircraft. RT 4/11/17 a.m. at 114:10-116:18. So did the government's valuation expert, David Nolte. RT 4/17/17 a.m. at 43:5-48:9. The Court does not find them to be comparable, either. The P791 was not a demonstrator, it was a production aircraft and it was capable of lifting and carrying cargo. The RAVB was not a production aircraft and it could not carry cargo. The HAV/LEMV was an unmanned, floating spy ship that was never intended to carry cargo, the ultimate plan for

[5] Assuming an average weekly salary and overhead rate of $1,368.39 per employee, *see* Exh. 76 at 44-53, for a period of 15 weeks for 15 employees, the labor and overhead costs to dismantle and remove the RAVB was $307,887.75, less than one-tenth the amount it is now claiming.

the RAVB. The RAVB was an experimental demonstrator with considerable shortcomings in design and construction that even Aeros would concede was not marketable at all. Further, even were the Court to overlook the fact that the "comparable" sales were not comparable, two sales of two fairly unique aircraft are not enough to make a "market" to value this equally unique aircraft.

41. Acknowledging the shortcomings of these sales, Mr. Wallace took into account a blimp that Goodyear purchased for $21 million as a "reference point" for grounding his market approach. RT 4/13/17 a.m. at 95:8-19. The Court does not agree that the sale of a working blimp to a company that owns a fleet of them establishes a baseline value for an experimental aircraft like the RAVB that all agree had no commercial purpose.

42. Mr. Wallace also took into consideration the NASA contract with Aeros, which he considered akin to the government "purchasing" the RAVB for $54.5 million. RT 4/13/17 p.m. at 9:2-12. The Court does not find this testimony the least bit persuasive. The government never purchased the RAVB from Aeros nor did it value it at $54 million. It contracted to have Aeros design an aircraft that could perform various tests to prove the feasibility of the COSH system. Had it believed the RAVB was going to be worth $54 million when it was manufactured, it could have contracted to have Aeros deliver the craft to the government at the end of the contract and obtained a very valuable asset that it could have used or sold.

43. Conscious that the market approach did not work in this case, both side's experts also considered the cost approach. The cost approach seeks to value property based on the cost to replace it. Using as a starting point Aeros's costs to build the RAVB the first

time, Plaintiff's expert Mr. Wallace concluded that it would cost $48.7 million to build it a second time over a two-year span and $50.6 million to build it over a five-year span. RT 4/13/17 p.m. at 33:3-15. The government's expert, Mr. Nolte, testified that the cost approach should not be used in this case for many reasons, including the fact that Aeros never intended to reproduce the RAVB, the RAVB was already obsolete as designed and constructed when it was destroyed in 2013, and Aeros's financial records, which formed the basis of Aeros's cost approach, were unreliable. RT 4/17/17 a.m. at 50:6-53:2, 128:25-129:14,

44. There are significant problems with the cost approach. Most significant is the fact that it is dependent on Aeros's accounting to establish how much it cost to build the RAVB the first time in order to estimate how much it would cost to build it a second time. The evidence from Aeros regarding its costs was simply not persuasive at all. This evidence came primarily from Aeros's Vice President of Finance and Administration, Carrie Cass, C.P.A. Her testimony was the least compelling testimony at trial. It established without doubt that her accounting system was messy, confused, and unreliable. For example, she kept three different versions of electronic records on three different computers and/or transfer drives to keep track of the accounting. RT 4/13/17 a.m. at 52:21-53:2. She used a 2007 version of QuickBooks for Aeros, a 2010 version for Worldwide (a related company), and 2013 and 2016 versions for payroll for the two companies. RT 4/12/17 p.m. at 77:11-18. Apparently, these software programs were not compatible with each other. Mr. Nolte, the government's valuation expert who is also a CPA, testified that no competent accountant would keep records the way Ms. Cass did. RT

4/17/17 a.m. at 73:25-75:6. To compound matters, Aeros's principal, Mr. Pasternak, and his wife used corporate credit cards to pay for personal expenses. It was left to Ms. Cass to try to sort out what were legitimate business expenses and what were personal expenses long after the fact when she was preparing the company's tax returns. Ms. Cass attempted to keep track of these expenses in hand-written ledgers, RT 4/12/17 p.m. at 117:18-121:10; Exh. 840, but acknowledged that they were incomplete. RT 4/12/17 p.m. at 128:24-129:2. Her explanation as to how she reconciled these charges engendered serious doubt about the reliability of her process. RT 4/12/17 p.m. at 119:9-12.

45. The evidence also established that there was no rhyme or reason to Ms. Cass's accounting system. For example, Mr. Pasternak rented an office in Washington, D.C., in a building owned by his wife, for $5,000 per month beginning in August 2013. The $120,000 rent for two years (2013-15) was included by Ms. Cass in Aeros's damages calculation but Aeros never explained what the office in Washington, D.C. had to do with the RAVB or the damages sustained by Aeros as a result of the loss of the RAVB. It appeared to the Court that Aeros's default position was that any money spent during the relevant period was a cost of building the RAVB or damages suffered as a result of the loss of the RAVB regardless of what the money was spent on.

46. Further complicating the accounting problems was the fact that there were two companies, Aeros and Worldwide, working sometimes interchangeably and sometimes not. Ms. Cass was responsible for attempting to sort out what revenues and costs should be applied to which company's books. The Court is convinced that no one at Aeros,

particularly Ms. Cass, understood why many of the costs and expenses were charged to the Aeros account as opposed to the Worldwide account.

47. Discovery in this case brought to light additional accounting problems at Aeros. In 2016, Ms. Cass was asked to assemble the accounting records from Aeros to respond to discovery. When she compared hard copies of the records with the electronic QuickBooks files, she recognized that they did not match, RT 4/12/17 p.m. at 85:5-13, 88:1-7, so she altered 161 transactions in an effort to make them match. RT 4/13/17 p.m. at 52:17-53:19. These 161 alterations had the net effect of adding $1,355,986 to the expense accounts of Aeros's general ledger for the relevant time period (FY 2008 through FY 2016). After altering the QuickBooks file in 2016, Ms. Cass ran a "clean-up" function on the file and then deleted the backup copy that had been automatically created by the software program. RT 4/13/17 a.m. at 42:12-44:2. Ms. Cass realized in the process that she had inadvertently deleted the wrong set of QuickBooks files in 2014, when she had adjusted the books after an audit. RT 4/12/17 p.m. at 87:23-88:16. Her explanations for how and why she made these changes/corrections/deletions left the Court bewildered.

48. In 2016, after producing a copy of Worldwide's electronic QuickBooks file to the United States, Ms. Cass altered 28 more transactions in the file. RT 4/13/17 p.m. at 62:4-10. These 28 alterations had the net effect of adding $1,157,275 to the expense accounts of Worldwide's general ledger for the period October 7, 2013 through April 30, 2016. RT 4/13/17 p.m. at 62:4-25.

49. Ms. Cass began altering the Worldwide QuickBooks file in February of 2016 and continued to do so through April of 2016 after

she had already produced the records to the government. RT 4/13/17 a.m. at 44:3-21.

50. Ms. Cass's 2016 alterations to the Aeros and Worldwide QuickBooks files increased Aeros's calculation of the cost to construct the RAVB by approximately $1.6 million. RT 4/13/17 p.m. at 64:1-65:3.

51. Ms. Cass's 2016 alterations to the Aeros and Worldwide QuickBooks files increased Aeros's claims for consequential damages by approximately $300,000. RT 4/13/17 p.m. at 65:4-65:19.

52. In July 2015, Ms. Cass modified Aeros's 2013 payroll records in QuickBooks long after quarterly and annual tax returns had been filed. RT 4/17/17 a.m. at 72:1-73:21; Exh. 1104. According to the government's expert, modifying payroll entries after the tax returns have been filed violates generally accepted accounting principles. RT 4/12/17 p.m. at 119:7-9; RT 4/17/17 a.m. at 72:1-73:21.

53. Perhaps as a result of the irregularities in the accounting system, Aeros was unable to obtain timely audited financial statements in 2014. In order to avoid potential liability for certifying Aeros's records, the auditors issued their audit opinion more than one year after the dates covered by the audit so that the audit would not be characterized as relating to a going concern and the auditors could not be held liable for the audit. RT 4/17/17 a.m. at 114:21-116:25.

54. Aeros does not believe that anything Ms. Cass did or said was enough to undermine the reliability of her records or the cost approach that was based on them. It argues further that there was certainly enough evidence to support a cost in excess of $50 million since that is what the government paid Aeros to build the RAVB and no one disputes that Aeros spent all the money it had during the years it

was constructing the RAVB. The Court disagrees. To begin with, the government did not pay Aeros $50+ million dollars to build the RAVB. It paid Aeros $50+ million to demonstrate the feasibility of the COSH system in a rigid-shelled aircraft. From the government's perspective, the purpose of the contract was to determine if the COSH system would work. In fact, the government never contemplated owning the RAVB and elected to allow Aeros to keep it at the end of the contract. One could argue that that in and of itself was an indication that the government believed that the RAVB would have little or no value at the end of the contract. Further, though Aeros touted the RAVB throughout the trial as a state-of-the-art, one-of-a-kind aircraft, the Court does not agree with that characterization. Though it would agree that the COSH system within the RAVB was ingenious, the Court would not agree that the RAVB was state-of-the-art. The NASA engineers who worked with Aeros during the design and construction of the RAVB testified that the engineering and construction were substandard. They pointed out, for example, that the RAVB suffered major structural damage when it lifted up 10 feet off the ground in a closed hangar with 500 pounds on board. The Court accepts the NASA engineers' testimony that the RAVB was poorly designed and constructed and was vulnerable to significant structural failure when subjected to even moderate loads, which it had been during testing and flying. In doing so, the Court rejects the testimony of Aeros's employees to the contrary.

55. Plaintiff notes that, even accepting the fact that Ms. Cass made errors in accounting, the errors that the government identified amounted to only a small fraction of the costs to design and construct the RAVB and that these errors were not enough to undermine the entire

cost approach. Again, the Court disagrees. Though it is true that the government focused on only a small percentage of the total costs included in Aeros's claim, this focus went a long way towards undermining all of the accounting evidence. The Court is convinced that Ms. Cass's accounting system at Aeros was flawed and unreliable. To make matters worse, in some instances, it appeared that Ms. Cass was not being candid. For example, when the government pointed out to Ms. Cass during cross-examination that a fake invoice had been created and saved on her computer under an audit file soon after an auditing firm had asked her to provide receipts to justify certain expenditures, Ms. Cass testified with confidence that the invoice was created at her direction by a job applicant, Megan Baumgartner, during a job interview. RT 4/13/17 a.m. at 72:4-16. Ms. Cass explained that she was interested in learning during the interview if Ms. Baumgartner was comfortable with international invoices and Ms. Baumgartner created the invoice on Ms. Cass's computer to show that she was. According to Ms. Cass, unbeknownst to her, Ms. Baumgartner then apparently saved the fake invoice in a file destined for the auditors. This effectively shut down the government's cross-examination of Ms. Cass on this line of questioning.

56. Post trial, the government established that, in fact, Ms. Cass's testimony that Ms. Baumgartner had created the fake invoice and saved it on Ms. Cass's computer was not true. Conceding this point, Aeros notes that the fake invoice was created before the roof collapse and that there is no evidence that it was ever forwarded to the auditors. Though the Court would agree, it finds that fact irrelevant. The significance of the fake invoice is not its impact on the bottom line. It is the fact that it was in an audit file on the

CFO's computer and when she was confronted with it at trial she concocted a story to avoid explaining it. The fake invoice epitomizes the unorthodox, chaotic accounting system that Ms. Cass used at Aeros. To circumvent another line of questioning, Ms. Cass testified that charges at a scuba diving company on Catalina Island were related to the RAVB because they were for breathing equipment for the RAVB. RT 4/12/17 p.m. at 124:23-125:12. There was no evidence proffered to support that testimony and the Court remains skeptical of it as the RAVB was only authorized to fly to an altitude of 100 feet and, obviously, no breathing equipment was necessary for a flight at that altitude. Ms. Cass's efforts to evade these questions is consistent with her going back and changing payroll records that were years old and reconciling printed versions of accounting records on computer versions then intentionally deleting the former versions. Aeros's attempt to convince the Court that its accounting systems were normal or that they should not matter for the cost approach is unavailing.[6]

57. Even accepting some of the figures bandied about by Aeros during the trial, it still failed to provide convincing evidence as to the actual cost of the construction of the RAVB. In lieu of evidence, Aeros defaulted to the total spending on its general ledgers from August 2008 to October 2013 and made adjustments. But, clearly, that

[6] Aeros complains that the Court stated more than once during the trial and after that it was not finding that Ms. Cass was lying. The Court had a change of heart as it read the transcripts several times and pored through the thousands of pages of exhibits that were introduced in connection with this case. At some point, Ms. Cass's explanations for these missteps--for which the Court had been willing to give her the benefit of the doubt during trial--proved to be too much for the Court to conclude that they were simply the result of sloppiness.

was not the true measure of the cost of construction, nor did it fairly establish the cost to rebuild. Notably, some of the costs associated with the project were for written reports and testing that the government required. Aeros never made clear how much these costs were and if and how they were subtracted from the cost calculation.

58. Another significant flaw in Mr. Wallace's cost approach was his decision not to adjust his valuation for "nonrecurring costs" in a hypothetical rebuild. Nonrecurring costs are those costs that would not have to be repeated when building a second RAVB as a result of what was learned during construction of the first RAVB. Mr. Wallace chose not to include nonrecurring costs because Ms. Cass and Mr. Pasternak told him not to, representing to him that there would be none. RT 4/13/17 p.m. at 81:21-85:24. The evidence was to the contrary. The nonrecurring costs were obviously extremely high with the RAVB due to the trial and error method Aeros used to design and construct it. For example, Aeros changed the type of skin it was using on the RAVB several times. 4/14/17 p.m. at 13:15-13:24. Mr. Wallace's cost approach did not include any adjustment for the time, effort, and materials Aeros expended finding the first skin, buying it, putting it on the RAVB, testing it, finding out it did not work, removing it, finding a new skin, buying it, putting it on the RAVB, testing it, etc. Aeros used the same trial and error method with the trusses, the landing gear, the engines, and more but Mr. Wallace did not make any adjustments to account for this.

59. As has already been discussed, four-and-one-half years into the production of the RAVB, the RAVB suffered critical structural failures during a January 2013 hangar test. Aeros subsequently took the RAVB apart (70% of it) and, over the next several months, rebuilt

it at a cost of $5.5 million. RT 4/12/17 a.m. at 37:3-14; RT 4/17/17 a.m. at 88:14-90:8. Thus, the second time around, Aeros was able to reduce the time of construction by 90%. But, in evaluating how much it would cost to build a second RAVB, Mr. Wallace assumed, based on Mr. Pasternak's and Ms. Cass's instructions, that the second time around Aeros would spend years building it improperly then taking it apart and rebuilding it again. This, too, defies common sense and undermines Mr. Wallace's cost approach.[7]

60. Aeros argues that, even if the Court rejects Mr. Wallace's cost approach, it should adopt Mr. Nolte's cost approach and value the RAVB at $31 million on the date it was destroyed. The evidence does not support this argument. Mr. Nolte did not conclude that the cost approach would yield a value of $31 million. He testified that if he relied on Aeros's financial records and made numerous adjustments to account for certain obvious errors he could arrive at a $31 million cost figure. But he spent considerable time explaining why Aeros's numbers were unreliable and why they should not be used to establish an estimated cost to build. RT 4/17/17 a.m. at 71:1-92:7. He explained further that "he would never use the cost approach" in this case but if he was forced to he would value the RAVB at no more than $3.5 million using the cost approach. RT 4/17/17 a.m. at 127:1-22. Aeros argues, it seems, that the Court should simply conclude that, under the cost approach, the RAVB should be valued as the sum of all

[7] Only after the Court repeatedly pushed Aeros during trial to explain why there were no nonrecurring costs did Aeros provide testimony in its rebuttal case from Mr. Pasternak and Ms. Cass that there would be a savings of $760,000, less than 2% of the purported cost of construction. RT 4/17/17 a.m. at 11:5-15:4. That testimony was not persuasive. Further, Mr. Wallace never testified as to how this would affect his cost analysis.

its parts, which Aeros contends is north of $50 million. That analysis is particularly inapt here because it is impossible to determine what the costs actually were to build the final product and because the final product was so poorly constructed as to be of minimal value.

61. The third generally accepted method of valuation is the "income" approach. Under this approach, property is valued based on how much income it can produce. Both sides agree that this approach cannot be used here because the RAVB was not capable of generating income.

62. Thus, the Court concludes that the traditional methods of valuation--the market approach, the cost approach, and the income approach--do not work. Where, as here, the traditional methods of valuation do not apply, the Court is required to value the property using some other rational way from such sources as are available.[8]

63. On the day it was destroyed, the RAVB had no commercial value as it was not capable of carrying cargo or passengers to speak of and was not intended for that purpose. It was a demonstrator model with serious flaws in its design and construction and it was expensive to maintain and house. (The rent for the hangar Aeros planned to move it to was more than $400,000 a year.) Despite these problems, Aeros hoped to use the RAVB to entice investors to buy into future

[8] In its tentative, the Court relied on a "peculiar value" valuation method, *see* Cal. Civ. Code § 3355, a method Aeros had proposed in its pretrial brief. But, as Aeros points out, and the Court agrees, absent a market value, the peculiar value approach is not appropriate. *Willard v. Valley Gas & Fuel Co.*, 171 Cal. 9, 15-16 (1915).

production models and to allow Aeros's pilots to practice flying. Thus, it had some value, if only to Aeros.

64. At the outset of the project, when the parties agreed to the contract price, the government and Aeros recognized that Aeros would spend about $5 million more to complete the contract than the government was willing to pay, but, in return, Aeros would get to keep the RAVB when the contract was completed. RT 4/14/17 a.m. at 11:17-12:18, 44:18-45:1; Exh. 38 at 7; RT 4/17/17 a.m. at 49:5-50:3, 107:20-108:18. Mr. Pasternak and Ms. Cass considered that a significant aspect of the contract. RT 4/17/17 a.m. at 15:10-17:2 and 25:6-13. The government's valuation expert testified that an inference could be drawn that at the outset of the contract Aeros and the government had essentially placed a residual value on the RAVB at $5 million. RT 4/17/17 a.m. at 49:5-50:3. The Court agrees and finds that under these very unusual circumstances where none of the conventional standards of valuation applies this is the most rational approximation of the value of the RAVB as of October 7, 2013. As such, the Court finds that Aeros is entitled to $5 million for the loss of the RAVB.

65. Aeros does not agree with this figure and points out that, though it was agreeing to perform the contract for $5 million less than it thought it would cost to design, construct, and test, it believed that that shortfall would be made up through contract modifications, which it hoped would follow the initial contract. The Court recognizes that the parties contemplated that the government would likely require modifications to the scope of work and that Aeros would be paid more money as a result of those modifications, but the evidence did not establish that the parties also contemplated that

Aeros would be compensated for the initial shortfall through these modifications. And the evidence did not establish that, in fact, the government was compensating Aeros for the shortfall in the subsequent modifications. The Court assumes that the price for the contract modifications matched the costs for the additional testing and reports that were performed under the modifications. RT 4/12/17 p.m. at 73:12-74:14.

66. Aeros argues that the $5 million figure should be the floor of the valuation not the ceiling. There is some merit to this argument. Had Aeros built a state-of-the-art aircraft the Court might be inclined to adjust this number upward. But it did not. It built an aircraft that the NASA engineers, with decades of experience at the highest level, determined was so poorly designed and constructed that flying it could result in a catastrophe. As such, the $5 million dollar figure the Court has arrived at is reasonable and rational based on the evidence.

67. The government contends that there were other inherent benefits that Aeros gained as a result of the contract and that not all of the $5 million the Court has attributed to the residual value of the RAVB could or should be attributed solely to the RAVB. RT 4/12/17 a.m. at 16:16-17:1; RT 4/17/17 a.m. at 54:22-55:13, 56:8-19; Exh. 107. Surely, there is some merit to this argument. Aeros was awarded more than $50 million to build and test its experimental system in an experimental aircraft. Further, Aeros had the benefit of having some of the country's most talented engineers consult on the project for free. And, clearly, Aeros learned a lot at the government's expense while building the RAVB. The Court concludes, however, that teasing out those benefits is difficult if not

impossible to do. And, assuming that this had been a conventional contract, i.e., where the government paid Aeros to build and deliver the RAVB, Aeros would have gained that insight as well, though it would not have owned the RAVB when the contract was complete.

E. Consequential Damages

68. Aeros seeks $13,010,199 in consequential damages from October 7, 2013 to April 30, 2016.

69. For the period October 7, 2013, when the roof collapsed, until July 24, 2014, when Aeros was allowed to enter the hangar and begin taking apart the RAVB, Aeros seeks $5,318,361, primarily for labor and overhead. Aeros bases this amount on the testimony of its financial expert Mr. Wallace who relied on Ms. Cass's accounting records from Aeros and Worldwide as well as other information she provided to him. For the reasons explained above, the Court finds that Ms. Cass's records are not reliable and do not establish with reasonable certainty that these sums were attributable to the loss of the RAVB. Further, though Aeros was clearly working on other projects during this period, Mr. Wallace attributed 90% of all of Aeros's costs to the RAVB project and 10% of the costs to everything else the company was working on following the roof collapse. The evidence supporting such a split was based on Ms. Cass's testimony and the financial records she created at Aeros and the Court does not find them persuasive. RT 4/12/17 p.m. at 76:25-77:3.

70. Aeros's costs also included $2.6 million incurred by Aeros's sister company Worldwide and costs for the Washington, D.C. office used by Mr. Pasternak and others that seemingly had no connection to the RAVB.

71. Aeros never established with any precision what its employees were doing after the roof collapsed and why 90% of all of their time should be charged to the government. *See* RT 4/12/17 p.m. at 102:21-25 (testifying that "somewhere around 50" employees were retained for the deconstruction effort); RT 4/13/17 a.m. at 61:10-13 (testifying that "most of" the approximately 35 employees were engaged in deconstructing the RAVB). Aeros was unable or unwilling to establish what the workers were doing during this period. Were they working on other projects? Were they working on maintenance at the Montebello facility? Were they sitting on their hands in a conference room waiting for the government to let them into the Tustin hangar? The Court was left with the firm impression that Aeros wanted these facts to remain vague so that its witnesses could not be pinned down during trial.

72. The Court does recognize, however, that Aeros did have a workforce in place when the roof collapsed and maintained some portion of it while it was waiting for the government to allow it to re-enter the hangar and work on the RAVB. Clearly, there was some uncertainty during this period as to how Aeros would move forward, which was exacerbated by the fact that the government continually changed the date for Aeros to re-enter the hangar. The government's argument that Aeros knew by December 2013 that the RAVB was a total loss is rejected. The evidence establishes that, despite Aeros's efforts to obtain insurance proceeds for the RAVB during this period, Aeros still did not know for certain until July 2014 that the RAVB was totaled.

73. The Court finds that Aeros is entitled to consequential damages in the amount of $1,882,918 for the period October 7, 2013 to August 1, 2014, based on the following calculations:

Aeros had 64 employees in October 2013 when the roof collapsed (including Mr. Pasternak and Ms. Cass). Exh. 769 at 44-49. According to Aeros, the average salary for its employees (working on the RAVB) was $23.53 per hour, plus overhead of 45.4% (or $10.68), totaling $34.21. Multiplying 64 employees x $34.21 x 40 hours per week x 43 weeks = $3,765,836.80 ÷ 2 = $1,882,918 (rounded).

The reason the Court has reduced the number by 50% is because the evidence and the inferences that can be drawn from it suggest that most of the employees were performing other work during this period. RT 4/12/17 a.m. at 74:24-77:12; RT 4/13/17 a.m. at 30:1-31:15; RT 4/17/17 a.m. at 117:2-22; Exh. 121. For example, Mr. Kenny, one of the few employees who testified at trial, explained that, after the roof collapsed, he came to work every day and worked on various projects, including the planned 66-ton RAVB. RT 4/12/17 a.m. at 75:4-25. He also traveled to Ukraine to work on a surveillance system Aeros was creating for the Ukranian government. RT 4/12/17 a.m. at 76:1-12. Aeros is not entitled to a windfall nor is the government required to pay damages for those times when the employees were working on other projects for Aeros.

74. As far as the other consequential damages for this time period, Aeros failed to prove that they were caused by the loss of the RAVB. The facilities were being used before and after the construction of the RAVB. Aeros did not make clear why it was charging 90% of the costs of these facilities to the government after the RAVB was destroyed. It appears that the only facility Aeros added for the RAVB project was the Tustin hangar, which it was renting in October 2013 and stopped paying for when the roof collapsed.

75. Aeros seeks consequential damages of $3,538,160 for the period from July 24, 2014, to March 4, 2015, during which time it claims it was removing the RAVB from the hangar. As set out above, the costs for disposing of the RAVB were Aeros's responsibility and, therefore, it is not entitled to be reimbursed for those costs. As to the other costs during this period, Aeros failed to convince the Court with reasonable certainty how much the other costs were and how they were related to the loss of the RAVB. As such, Aeros's request for these damages is denied.

76. Aeros seeks $4,153,678 for "standby costs" for the period March 5, 2015 to April 30, 2016, to compensate it for labor and other expenses incurred as a result of the October 7, 2013, roof collapse. Aeros claims that it had retained employees on the payroll during this period--18-30 months after the roof collapsed--so that it could spring into action and start producing the larger versions of the RAVB when it obtained capital financing. In Aeros's view, the destruction of the RAVB prevented it from advancing its business plan to commercialize the Aeroscraft.

77. Here, again, Aeros has fallen far short of establishing that the destruction of the RAVB caused millions of dollars in damages years later or that, but for the loss of the RAVB, Aeros would have obtained funding and developed the Aeroscraft into a commercial enterprise. To begin with, as set forth above, Aeros never explained how many employees it retained for the purpose of springing into action when the capital financing campaign began to bear fruit and what these employees were doing during this waiting period. Further, as explained below, it failed to establish that the capital financing project was going to be successful but for the destruction of the

RAVB. Certainly, Aeros proved that Mr. Pasternak hoped to gain this financing. But Aeros failed to show that it was reasonably certain that his hopes were realistic and that, but for the loss of the RAVB, they would have been realized. For these reasons, this claim is also denied.

78. Aeros seeks $1,604,005 for its Capital Financing Campaign that it began in May 2013, months before the RAVB was destroyed. This campaign was intended to raise over $3 billion to develop and produce a fleet of Aeroscraft-type vehicles. Aeros points out that representatives from Deutsche Bank and Citibank were scheduled to come to the hangar and view the RAVB on the day the roof collapsed. According to Aeros, Deutsche Bank subsequently told Aeros that it would not invest in the project because Aeros did not have a working prototype. Obviously, there are hundreds if not thousands of banks and ten times that many private investors and investment funds that regularly invest in projects like the RAVB. The fact that Deutsche Bank required a prototype does not mean that all investors would have, nor did Aeros argue that that was the case. Aeros never proved that the capital financing project failed because the RAVB was destroyed. In fact, the evidence supported the opposite conclusion. Mr. William Feely, who was retained by Aeros in May 2013 to run the capital financing campaign, recognized in October 2013 in the wake of the collapse that Aeros was fortunate that it had "completed the flight testing necessary to demonstrate" the technology prior to the roof collapse, suggesting that the loss of the RAVB would not impact the capital financing campaign at all. RT 4/12/17 p.m. at 47:8-15. In lieu of a working prototype, Aeros had a History Channel documentary of the RAVB in flight and other video footage to show potential investors. Exh.

107. Dr. Anthony Tether, who worked for Aeros on the capital financing project, testified that the reason the investors chose not to invest was because "they didn't have enough definitive data." RT 4/11/17 a.m. at 149-151. Aeros's valuation expert testified that he could not say whether or not the campaign would have been successful in the absence of the hangar roof collapse. *See* RT 4/13/17 p.m. at 89:7-90:13. The government's expert was certain that the loss of the RAVB was not the cause of the failure of the financing campaign. The evidence further established that Aeros recognized in an SEC filing at the time of the capital financing campaign that there were numerous risks for investors, including the fact that Aeros had never built a 66- or 250-ton version of the RAVB and had no operating history, which limited Aeros's ability to forecast costs. Aeros also recognized that the potential success of the larger RAVBs was dependent on a number of external factors that Aeros did not control, like FAA certification and the supply and demand of helium. RT 4/12/17 p.m. at 58:3-60-25. Here, again, Aeros has not convinced the Court to a reasonable degree of certainty that the destruction of the RAVB caused the capital financing campaign to fail or that those costs will now have to be repeated because the RAVB has been destroyed.

III.

CONCLUSIONS OF LAW

1. Jurisdiction is vested in this court pursuant to the FTCA, 28 U.S.C. §§ 1346(b) and 2671-2680.

2. Venue is proper because Aeros is incorporated under the laws of the State of California and has its principal place of business in Montebello (which is in Los Angeles County) within the Central District of California. 28 U.S.C. §§ 84(c) and 1402(b). In addition,

the roof collapse giving rise to this lawsuit occurred in Tustin, California (in Orange County), which is also within the Central District of California.

3. Under the FTCA, the Court applies California law in analyzing Aeros's claims and the government's defenses. 28 U.S.C. §§ 1346(b)(1) and 2674.

4. The Court has already determined that the government is liable for the hangar collapse. The issue that remains is damages.[9]

5. Under California tort law, the measure of damages is the amount that will compensate the plaintiff for all the detriment proximately caused by the defendant's negligence, whether it could have been anticipated or not. Cal. Civ. Code § 3333; *Metz v. Soares*, 142 Cal. App. 4th 1250, 1255 (2006).

6. Aeros bears the burden of proving, with reasonable certainty: (1) its damages were proximately caused by the hangar roof collapse, and (2) the amount of its damages. *Chaparkas v. Webb*, 178 Cal. App. 2d 257, 259-60 (1960) ("[T]he plaintiff has the burden of proving, with reasonable certainty, the damages actually sustained by him as a result of the defendant's wrongful act, and the extent of such damages must be proved as a fact."); *Veasley v. United States*,

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[9] The government argues that Aeros's negligence contributed to its loss because it failed to act quickly when pieces of the roof began falling to the floor the week before the roof collapsed. This argument is rejected. The interval between the time when the wood began to fall from the roof trusses and the collapse of the roof was a matter of days. At the time, the landing gear had been removed, making it difficult if not impossible to move the RAVB. Further, there is no comparison between the government's negligence here--it was told 16 years earlier that the roof had to be repaired soon or it would collapse, information the government never shared with Aeros--and Aeros's alleged negligence in not immediately removing the RAVB from the hangar when wood pieces began to fall.

201 F. Supp. 3d 1190, 1212 (S.D. Cal. 2016). Although Aeros is not required to prove its damages with mathematical precision, it must present sufficient facts so that the Court can arrive at an intelligent estimate without speculation or conjecture. *Sedie v. United States*, 2010 WL 1644252, at *15 (N.D. Cal. Apr. 21, 2010) (quoting *Harmsen v. Smith*, 693 F.2d 932, 945 (9th Cir. 1982)).

7. Generally, the measure of damages for the loss of personal property like an aircraft is the fair market value of the property on the date it was destroyed. *Hand Elecs., Inc. v. Snowline Joint Unified Sch. Dist.*, 21 Cal. App. 4th 862, 870 (1994); *Pelletier v. Eisenberg*, 177 Cal. App. 3d 558, 567 (1986); *Robinson v. United States*, 175 F. Supp. 2d 1215, 1230 (E.D. Cal. 2001) (noting "general rule is the value of property lost or destroyed is determined by its market value at the time and place of the tort."). "Fair market value" is the highest price that a willing buyer would pay a willing seller on the date of the loss, assuming that there is no pressure on either to buy or sell and that the buyer and seller are fully informed of the condition and quality of the property. *See Summers v. State Farm Gen. Ins. Co.*, 2012 WL 12781, at *4 n.3 (Cal. Ct. App. Jan. 4, 2012) (unpublished) (citing Judicial Council of California Civil Jury Instruction 3903J).

8. An alternative valuation method is the cost approach. The cost approach is based on the economic principle of substitution. *Dreyer's Grand Ice Cream, Inc. v. County of Kern*, 218 Cal.App.4th 828, 839 (2013). It assumes that a rational person will pay no more for property than it would cost to acquire a satisfactory substitute. *Id.*

9. A third method of valuation seeks to value property that is unique and has some special or peculiar value to the plaintiff. Cal.

Civ. Code § 3355; *McMahon v. Craig*, 176 Cal. App. 4th 1502, 1518-19 (2009), *as modified on denial of reh'g* (Aug. 31, 2009). Plaintiff has the burden of proving that the property has a peculiar value, *SCI Cal. Funeral Servs., Inc. v. Five Bridges Found.*, 203 Cal. App. 4th 549, 573 (2012), and that the defendant either had notice of the value before it was damaged or acted willfully in destroying it. *Robinson*, 175 F. Supp. 2d at 1230. For the peculiar value method to be used, however, there must be a showing that the property has a market value. *Willard v. Valley Gas & Fuel Co.*, 171 Cal. 9, 15 (1915).

10. Where traditional methods of valuation cannot be applied, the Court is required to value the property using some other rational way from such sources as are available. *Id.* 15-16.

IV.

CONCLUSION

For these reasons, the Court concludes that Plaintiff is entitled to damages in the amount of $6,882,918.

IT IS SO ORDERED.

DATED: November 20, 2017

Patrick J. Walsh

PATRICK J. WALSH
UNITED STATES MAGISTRATE JUDGE