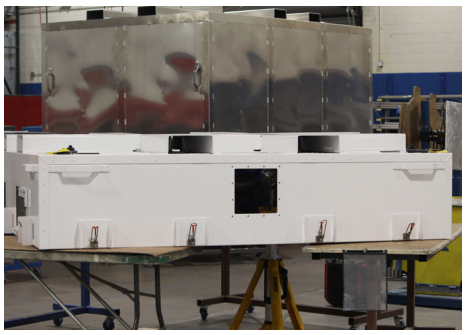
Americase®

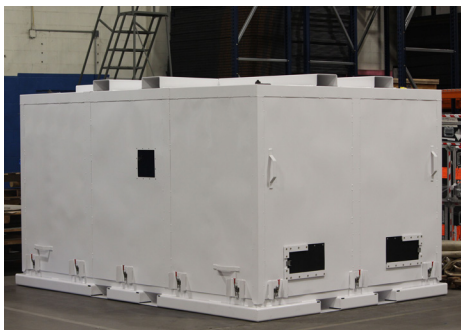
CASE STUDY

ENGINEERING MISSION-CRITICAL PROTECTIVE CASES FOR THE FINAL FRONTIER

OVERVIEW

When a leading private space and exploration company set out to upgrade how it stores and transports critical rocket components, they needed more than a container—they needed a partner who understood the mission. In 2018, Americase was approached to solve serious challenges the company faced with their legacy packaging. Their wooden crates were no match for the demanding conditions of aerospace logistics. With mission safety and equipment integrity on the line, the company needed a rugged, weather-resistant, and cost-effective solution. Americase delivered a custom-engineered aluminum case that not only overcame key technical hurdles but also helped establish trust after an unsuccessful trial with another vendor. Today, Americase remains a strategic supplier for the private space and exploration leader, supporting the safe handling of both dome and heat shield components.





THE PROBLEM

The space and exploration company's reliance on traditional wooden crates presented multiple issues:

- **Structural Failures in Transit**: Crates broke down during shipping, endangering high-value components.
- **Water Intrusion**: Exposure to outdoor environments led to water intrusion and warping, compromising crate integrity.
- **Limited Durability**: Crates couldn't endure repeated handling or long-term use, requiring frequent repairs or replacements.
- **Safety Concerns**: Structural instability posed risks to both equipment and personnel.
- **Space Efficiency**: Existing solutions didn't optimize for constrained storage or transport environments.
- **Costly Experimentation**: Compounding the issue, an attempt to switch vendors introduced new problems: poor weld quality, leaks, and inadequate support for the critical payload.

With mission-critical parts like dome and heat shield components at stake, the space and exploration company needed a trusted, long-term solution that delivered uncompromising performance and safety.

THE SOLUTION

Americase leveraged its decades of experience and expertise in high-value and hazardous materials packaging to engineer a high-performance aluminum container that addressed both structural integrity and weather resistance. ▶

- **Tailored Engineering**: Americase designed a 15x15x5 ft aluminum crate with optimized internal space and a 90-degree lift lid.
- **Weatherproof Lid Design**: New design and sealing eliminated water intrusion while maintaining structural strength.
- **Rigorous Testing**: Passed rain tests and weld integrity checks to meet demanding quality standards.
- **Cost-Balanced Design**: Achieved optimal performance without over-engineering, such as replacing full-length welds with strategic spot welds and corner reinforcements.
- **Collaborative Engineering**: Worked closely with the space and exploration company's engineering and finance teams to balance innovation with practicality.
- **Lift System Integration**: Initially featuring a fully automated actuator, the design evolved to balance functionality and cost-efficiency.

RESULTS

Americase's solution delivered immediate and lasting value:

- **Asset Protection**: Prevented damage to high-value dome and heat shield components—a critical part of survivability during reentry.
- **Risk Mitigation**: Eliminated common failures such as cracked welds and water damage.
- **Operational Confidence**: Allowed the space and exploration company teams to focus on assembly and launches without packaging concerns.
- **Cost Efficiency**: Outperformed alternative vendors while maintaining budget-conscious manufacturing.
- **Reinforced Trust**: After experiencing failures with an alternative supplier, the company returned to Americase, reaffirming its reputation as a reliable, engineering-first partner.

CONCLUSION

This partnership underscores the value of thoughtful engineering and customer-focused problem-solving. Americase not only replaced an outdated solution but became a long-term partner by deeply understanding the leading space and exploration company's challenges and goals. By aligning technical excellence with budgetary needs, Americase delivered a container system that safeguards some of the most critical components in modern space exploration. The success of this project continues to fuel collaboration between the two companies, with Americase now supporting both dome and heat shield packaging needs for the space and exploration leader's future missions.

Engineering Collaboration: Turning Skepticism into Success

When the space and exploration company's engineers first reviewed Americase's container concept, they were skeptical that an outside partner could meet their high standards. But instead of derailing the project, this challenge sparked collaboration.

Americase welcomed scrutiny—offering weld tests, live demos, and design reviews. They didn't just follow specs; they questioned impractical ideas and suggested better solutions grounded in real-world performance and cost.

That honesty built trust. So when another supplier fell short, the space and exploration company quickly turned back to Americase—confident in a partner who delivered more than a product: they delivered reliability.