Optimising ULD Storage for efficiency, safety & sustainable growth

WHITEPAPER

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Picture: source IATA

Picture: source Viking Airport Equipment

Introduction

In the high-stakes world of air transport operations, speed, reliability and efficiency are essential. Airports, ground handlers, cargo operators and freight forwarders are under constant pressure to manage increasing volumes while maintaining strict safety standards and operational reliability.

Yet across the sector, visibility over critical assets such as Unit Load Devices (ULDs) remains a persistent challenge.

The rapid growth of off-airport build-up and breakdown operations has only intensified this problem, creating operational challenges that impact both performance and sustainability.

This whitepaper explores the challenges behind ULD storage, outlines proven solutions and highlights how modular, optimised storage systems can unlock efficiency, reduce costs, and support compliance with evolving regulations.

The Challenge: ULD Storage under pressure

Airports, handlers, and cargo operators must store ULDs safely. However, rising passenger and cargo volumes, limited available space, and sector growth have placed existing storage methods under strain.

Key challenges include:

- Location issues: Location issues make tracking and retrieval more difficult.
- Space constraints: With limited land availability, operators struggle to allocate sufficient storage areas.
- Operational challenges: build-up and breakdown can slow turnaround times and increase handling complexity.
- Asset damage: Improper storage—such as stacking on floors or exposure to weather—leads to higher damage rates and shortened ULD lifespans.

The result is a costly cycle of inefficiency: delayed operations, increased replacement costs, and reduced sustainability.

Regulatory Influence: EASA Draft (EU) Ground Handling Regulation

The European Union Aviation Safety Agency (EASA) has introduced a draft regulation aimed at standardising ground handling services across Europe. The EASA Draft (EU) Ground Handling Regulation, specifically GH.OPS.610, outlines strict requirements for ULD handling and storage:

- ULDs must be serviceable and compliant with dangerous goods segregation requirements.
- Proper securing of ULDs is mandated to prevent movement during transport.
- Storage conditions must prevent damage or deterioration, and storage on the ground is strictly prohibited.
- Special attention must be given to securing ULDs during high winds.

This regulation is set to be published in 2025, with a three-year transition period making compliance mandatory by 2028. Although these regulations won't directly apply in the UK post-Brexit, the UK Civil Aviation Authority (CAA) may adopt similar standards, influencing the industry's operational landscape.

NOTE: The EASA document 'Annex IV – GH.OPS Operational Requirements' is currently a draft and therefore not legally binding. Once formally adopted through a European regulation, the requirements will become mandatory and will be supported by guidance material (AMC & GM) to aid compliance.

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Picture: source Viking Airport Equipment

The Solution: Optimised Storage Systems

Efficient ULD storage is crucial for reducing damage, extending life expectancy, and ensuring operational efficiency. This can be achieved by:

- **Implementing Modular Storage Solutions:** From simple single-level racking to automated multi-storey systems, modular storage solutions can be tailored to optimise space and improve organisation.
- **Collaborative Space Management:** Working with airport authorities, cargo operators and freight forwarders to secure sufficient and suitable storage areas helps overcome space limitations.

Benefits of Improved ULD Handling and Storage

1. Improved Operations: Faster access reduces turnaround times and ULD damage.
2. Cost Efficiency: Less manual handling and longer ULD lifespan save costs.
3. Space Optimisation: Vertical stacking maximises available space.
4. Safety: Robust systems prevent stack collapse and protect cargo.
5. Enhanced Brand Image: Organised and efficient ULD storage enhances the service provider's reputation and operational reliability.

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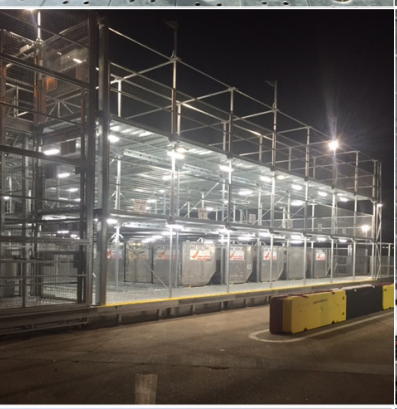

Pictures: source Viking Airport Equipment - recent projects

Viking ULD Storage Solutions

Viking Airport Equipment specialises in bespoke ULD storage solutions, offering design, manufacturing and installation services worldwide.

Our industry-leading rack and deck systems are built to excel in all weather conditions, featuring robust steel structures with options such as roller decks and integrated truck docks.

Recent projects include a multi-storey ULD storage system for DHL at London Heathrow Airport, a mezzanine floor at FedEx Manchester, and FedEx H4 in Paris, demonstrating our expertise in delivering scalable, high-performance solutions.
Every project is underpinned by precision engineering and detailed logistical planning, ensuring reliable and efficient storage systems that meet the operational demands of airports and handlers worldwide.

Our solutions are modular, single or multi-storey, and can be tailored to fit almost any space—large or small. Built with strong, weather-resistant steel structures, they ensure safe ULD storage even in high winds and are fast and easy to install.

Key Features

- Single or multi-level options
- Roller decks or multi-directional caster decks
- Optional roofing, cladding, and lighting
- Integrated truck docks available
- Solid base footings for optimal stability
- Laden ULDs stored at ground level for safety
- Designed for installation close to handling facilities

Are you ready to enhance your ULD handling and storage operations?

Connect with us today to learn how our industry-leading solutions can help you achieve safety, efficiency, and regulatory compliance.

Roadmap to Success

1. Collaborate for Space Optimisation: Work with airport authorities and freight forwarders to establish dedicated ULD storage areas.

2. Implement Modular Storage Solutions: Choose adaptable storage systems suitable for varying space constraints and operational requirements.

3. Train Workforce and Update Procedures: Educate staff on new storage standards and digital systems to maximise efficiency.

4. Monitor and Review: Continuously monitor ULD inventory and storage conditions to ensure optimal performance and compliance.

Conclusion

Efficient handling and storage of ULDs are vital to maintaining safety, reducing costs, and ensuring uninterrupted operations across the air cargo sector. As cargo volumes grow and airport space becomes increasingly scarce, the need for **smart, scalable solutions** has never been greater.

By investing in optimised, modular storage systems and establishing clear standards for ULD management — both on and off-airport — businesses can significantly reduce risk, protect valuable assets, and improve operational flow. While evolving regulations such as the EASA Draft (EU) Ground Handling Regulation provide useful guidance, it is proactive space planning and industry collaboration that will truly move the needle.

Through smart investment, space optimisation, and ongoing monitoring, ULDs can transform from challenges into enablers of efficiency, resilience, and sustainable growth across the global air cargo supply chain.

Together, we are shaping a sustainable future.

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