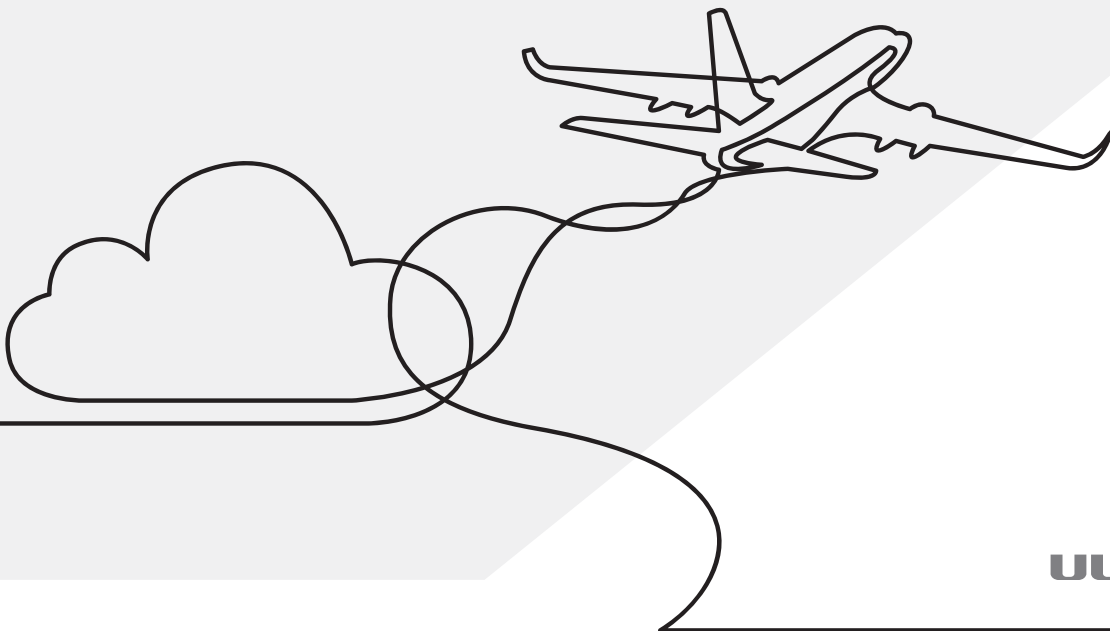


White Paper on Demurrage Charges for ULD Equipment in Air Cargo

**Increasing operational efficiency
by deterring the late return of ULD**



Executive Summary



Speed and efficiency form the backbone of air cargo operations. With a significant number of shippers now building up and breaking down of Unit Load Devices (ULDs) off-airport, there is one factor that dramatically reduces the ability of air cargo to deliver – the lack of a deterrent for the late return of empty ULDs back to its owner.

Today's logistics operations rely on releasing unitization equipment, such as shipping containers, rail cars and road transport equipment, to shippers, consignees and freight forwarders. ULDs enable this function in air cargo.

There is near universal use of late charges in other segments of the logistics industry. These charges are an incentive to return equipment on time within a defined "free-days" time frame, also called 'demurrage or detention.' However, when it comes to ULDs, nearly all airlines allow third-parties to return equipment at their leisure with no penalty.

This practice runs contrary to the International Air Transport Association's (IATA) documentation that sets the industry standards for aviation. IATA's Air Cargo Tariff and Rules Manual (TACT) under Section 4.8 - Unit Load Device Charges states: "Demurrage charges may be levied, subject to provisions in applicable tariffs of the airline or ULD owner, against a party that retains a ULD for an excessive period of time. The charge is designed to encourage prompt return of ULDs rather than generate revenue."

"This practice runs contrary to the IATA documentation"



In spite of this statement, there remains an industry practice of not charging non-airline, off-airport third parties demurrage fees. This practice is even in contrast with other segments of the air cargo industry:

- A.** Cargo terminals charge demurrage for the late pick up of import cargo;
- B.** Providers of special purpose ULDs, such as temperature-controlled or animal transport, charge demurrage for late returns; and
- C.** When airlines exchange their ULDs with another airline in the course of interlining, they charge each other demurrage for late returns through the Interline ULD User Group IT system (IULDUG).

As the representative of most of the world's ULD owning airlines and operator of the IULDUG system for over 50 years, ULD CARE has now carried out research into this industry anomaly.

We asked those involved in the ULD management process why not charging demurrage for off-airport build-up and breakdown is acceptable. The responses indicated that there were several prevailing points of view, which included: airlines' fears of losing their customer to someone who doesn't levy such charges; a lack of an efficient system to track the transfers and times, and therefore fees; and a questionable legal justification for charging demurrage.

details of these and other reasons given by respondents in research carried out in Q4 2021 by ULD CARE can be found in [Appendix 3 - Why are airlines reluctant to charge demurrage for their ULD?](#)



This white paper describes how the practice of off-airport buildup and break down has evolved, compares these practices with those of other logistics industries, and proposes a road map to rectify the situation, to ensure that ULD are returned in the specified time frame.

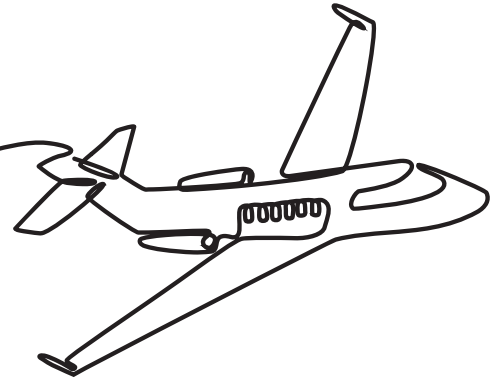
Anecdotal evidence notes that up to **10% of an airline's ULD inventory may not be available for day to day flight operations** due to the equipment being off-airport. In spite of the fact that the IATA's TACT and ULD Control Receipt (UCR) both contain wording regarding the obligation to pay demurrage for overdue return, the practice still does not occur in the vast majority of late ULD transfers.

The pandemic has highlighted how important our supply chains are – those supply chains include the equipment necessary to deliver goods from one part of the world to another. ULDs are critical to ensuring a smooth and efficient flow of air cargo and the goods carried. The inefficiency and lack of consequences associated with the late return of ULD can no longer be ignored.



Demurrage and Why Is It Important

Demurrage is the term used to describe the late-charge or levy placed by the owner of a piece of cargo equipment when the user fails to return it on or before the agreed date. The term also applies to vacating cargo from terminals on time, but for the purposes of this paper, it will refer to the previous definition.



The early days of air cargo did not involve containerization - all cargo was handled in bulk. ULDs were introduced with the advent of wide-bodied aircraft in the early 1970s. Since then, ULD have become indispensable to the efficient movement of air cargo and baggage around the world with a current estimated global fleet of 900,000 units¹.

As ULD usage grew, it quickly became apparent that transferring these assets between airlines was inevitable. At that time, a number of airlines formed a special interest group under IATA to develop a set of rules for the exchange of ULDs in the course of cargo interlining. This group put together a set of rules, the "ULD Control Manual," and subsequently created the necessary IT system running on the IATA mainframe in Montréal. This system provided the airline industry with a way to record interline transfers and calculate the demurrage when units were returned beyond the five-day free period. It is called the Interline Unit Load Device User Group (IULDUG).

The practice of airlines providing ULDs to freight forwarders and even shippers to build up or break down cargo consignments (known variously by terms such as a pre-pack, shipper pack, shipper loaded, etc.) has gained popularity over the past 50 years. While in certain countries this activity is restricted due to customs and security regulations, in many other locations this practice is widespread with large numbers of ULD being moved off airport to shipper facilities. In some locations, a ULD may travel hundreds of kilometers before reaching a final breakdown location. While there are established practices for charging demurrage in the transfer and return of ULDs between airlines (interline), late pick-up of import cargo at terminals, or with specialty temperature-controlled equipment, demurrage charges did not follow the retention of standard ULDs off-airport.

¹ https://en.wikipedia.org/wiki/Unit_load_device

There has always existed a means of tracking and transferring ULD between parties, which is the IATA ULD Control Receipt (Recommended Practice RP1654). This standard document contains the wording :

"Receiving Party shall be liable for demurrage if the ULD is held in excess of the time specified in the applicable tariff."



In fact, IATA's Air Cargo Tariff and Rules Manual (TACT) under Section 4.8 - Unit Load Device Charges states:

"Demurrage charges may be levied, subject to provisions in applicable tariffs of the airline or ULD owner, against a party that retains a ULD for an excessive period of time. The charge is designed to encourage prompt return of ULDs rather than generate revenue."

In spite of the inclusion of this wording multiple IATA documents and manuals, the airline industry as a whole never set in place the practice of charging non-airline parties. There have been a small number of individual airline initiatives to introduce such a discipline. Unfortunately, without industry-wide endorsement, it will always be an uphill battle both to achieve internal management support and to establish a fair and efficient system to manage the process.

The transport of goods by any method will likely require the use of cargo handling or storage facilities at some point, or the use of a “unitization” device, e.g. 20-ft and 40-ft sea containers, rail cars, and aircraft ULDs. The release of these types of equipment to external parties, such as forwarders and shippers, for loading and unloading, significantly facilitates modern and efficient freight operations. This factor also greatly increases the risk to the owner that large numbers of equipment may be unavailable for other customers if the equipment isn’t returned on time.

Demurrage and detention are commonplace in the ocean freight and rail industries. The practice has been endorsed by the US Federal Maritime Commission (FMC)², the International Federation of Freight Forwarder Associations³ (FIATA) and the US Surface Transportation Board (STB)⁴.

The FMC and the STB have taken an active interest in the issue. Figures published by the STB show annual demurrage charges by the eight largest US rail operators amount to over US\$500 million⁵. *(Extracts from various industry publications in this regard can be found in [Appendix 5 - Excerpts from various industry materials on the subject of demurrage.](#))*

There are no such published figures for the maritime industry at present, although anecdotal evidence points to these charges being in the order of 5% of total turnover for the shipping lines.

These US regulatory bodies have never questioned the need for demurrage and detention charges for the maritime and rail industries. For the past decade or more, the FMC’s and STB’s direct involvement demonstrates the importance and magnitude of demurrage and detention to the efficient operations of these two industries.

In this context, air cargo ULDs are the only assets currently not being charged demurrage when it is standard practice in other transport modes, even though many shippers handle both sea and air equipment.



² https://www2.fmc.gov/readingroom/docs/FF%20No.%2028/FF-28_FR.pdf/

³ https://fiata.org/fileadmin/user_upload/documents/recent_views/MTI/FIATA_World_Congress_2018_-_Presentation_New_Working_Group_Sea_Best_Practice_Guide_on_demurrage_and_detention.pdf

⁴ <https://www.stb.gov/reports-data/demurrage-accessorial-charges/>

⁵ <https://www.stb.gov/reports-data/demurrage-accessorial-charges/>

The Business Impact of Demurrage

As pointed out earlier in this paper, the use of demurrage is essential if freight assets are to be released back to their owner in a prompt manner and maximize utilization for the asset owner. The reality is that an airline cannot operate an efficient air cargo operation when 5 to 10% of their freight equipment assets are not available at any given point in time. Those assets must be returned on time or the entity delaying the return must repay the lost utilization through demurrage.

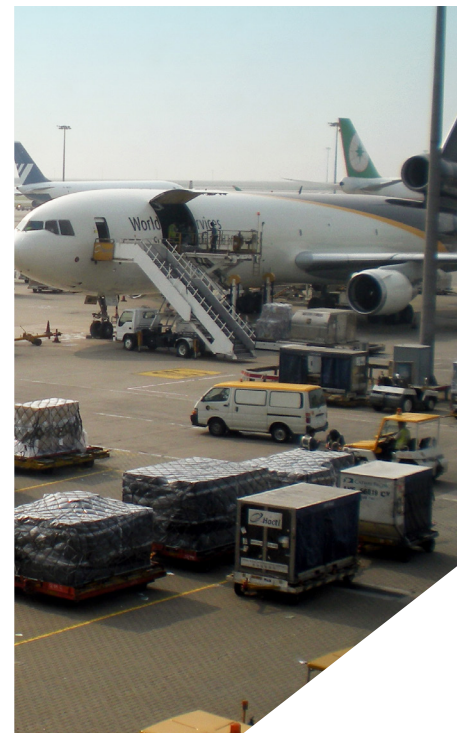
Looking at the US Railroad industry, again, the STB has been clear:⁶

The rail industry, and the United States Congress, have long recognized demurrage as a necessary mechanism to ensure a fluid rail network. Demurrage is a charge for extended use or detention of rail cars or containers on our lines beyond a specified amount of time generally referred to as free time. Demurrage applies to both railroads supplied and privately owned cars.

Demurrage compensates rail carriers and incentivize the prompt return of rail cars into the transportation network.

The charges have a long history within the rail industry and you'll see them in other transportation sectors as well including trucking companies for terminals and steamship lines. In all cases the purpose is to further the efficient management of assets and promote a fluid transportation pipeline.⁷

Most, if not all, other industries engaged in freight transportation operate a system of penalties for the late return of equipment. The airline industry appears to be the only exception.



⁶ Submission to the STB by Canadian Pacific, Feb 4 2019

⁷ CSX Corp. Jan. 16, 2019

Value of demurrage to the air cargo industry

Across the different logistics industries, there are multiple endorsements of demurrage as a necessary tool to ensure availability of freight equipment, although an actual dollar value calculation is virtually impossible.



Indeed, utilization of ULDs is far greater than, for example, an 40-foot ocean freight container. Figures from sample airlines indicate that a single PMC pallet the most common type of ULD and the workhorse of the air cargo industry will move about 7 times a month, or close to 100 trips a year. Each of these trips generates revenue for its owner airline, the amounts varying according to the actual sectors flown.

Another metric of the value of demurrage to the air cargo industry is the number of shipsets an airline will provision for each load position on the aircraft. While numbers vary between airlines, they appear to range between 7-11 sets of pallets per pallet position. There are of course a number of factors driving this figure, but penalty-free retention of the equipment by third-parties is contributing to this inefficiency.

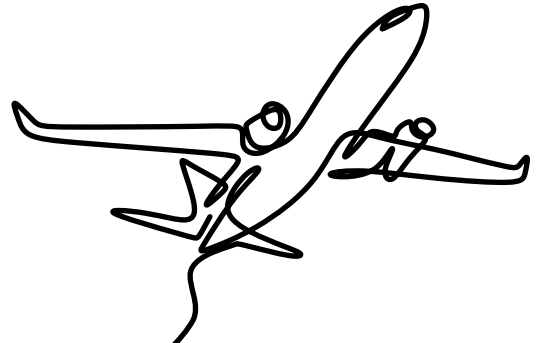


Compare this to ocean freight equipment, on which demurrage is universally charged, where a typical container makes around 5 trips per year.

Comparing the revenue generating capacity of each of these pieces of equipment, it is clear that the air cargo pallet is a far more productive item and therefore more deserving of demurrage, not less.

There is nothing unique about air cargo operations that somehow renders it ineligible for such charges. It is ULD CARE's aspiration that in a perfect world no demurrage charges need to be applied however, late fees must be paid if the party holds the equipment longer than the agreed-upon free period.

Background and Role of ULD CARE and IULDUG



The origins of ULD CARE go back to the 1970s with the arrival of wide-bodied aircraft and the containerization of cargo into Unit Load Devices, which lead to the formation of the ULD user group within IATA.

Over the years, membership of this group expanded to reach about 50 airlines. In 2009, the IULDUG was moved off the IATA mainframe onto a web server-based platform where it continues to operate today. At that same time, ULD CARE was formed to increase the participation of airlines in this group, as well as open membership to include other industry stakeholders. ULD CARE now represents approximately 50 airlines and a further 20-30 organizations having an interest in ULD activity, such as manufacturing, repair, rental or tracking solutions.

The software system processes interlining transactions from ULD CARE's member airlines on a daily basis and provides the members with the visibility of interlined units and the trusted calculations of demurrage receivable and payable, with airlines settling these amounts through the IATA clearing house.

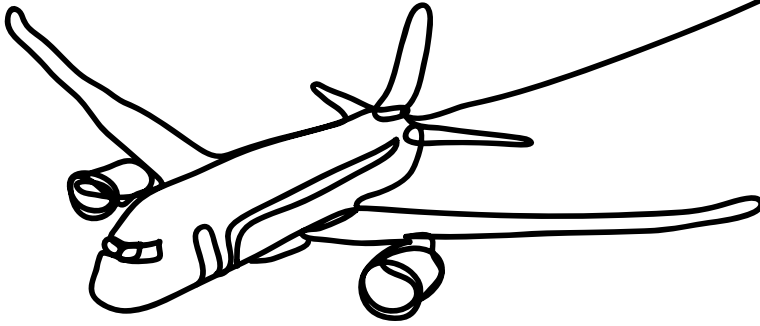
Through the operation of the IULDUG system, ULD CARE has processed many millions of dollars of inter-airline demurrage charges. In years prior to COVID-19, the typical accumulated demurrage between all airline members of the IULDUG would be in the order of US\$1.25 million per year.

ULD CARE has some of the greatest expertise in the establishment and operation of an effective system for managing the transfer of freight equipment assets as a result of the 50-years of experience running the IULDUG system.

About 10 years ago, ULD CARE recognized that the industry had changed dramatically since the introduction of ULD. A far greater number of ULD transfers now took place between airlines and third-party off airport operators, such as freight forwarders. Taking the initiative, ULD CARE launched a study into how to adapt to this new operational reality and made a number of recommendations to the IATA ULD Board, which led to the establishment of the XML version of the standard IATA LUC and MUC⁸ message formats. However, nothing was implemented for the industry from this initiative and the status quo remains.



⁸ LUC and MUC are acronyms for EDI messages relating to transfers of ULD between parties



ULD and Technology

For decades, ULD operations seemed to miss out on technological advancements. However, recent advances in technology are making tracking air cargo equipment more possible and easier. There are number of new developments showing the potential to automate tracking and hand-off of air cargo assets.

- Bluetooth Low Energy (BLE) tags – allows asset owners to see ‘Where is my ULD’ in real-time with an increasing degree of accuracy.
- Internet of Things (IoT) - Performs the same function as BLE but using a different technology. IoT systems use the existing mobile phone networks to transmit data from tagged ULD to a central processor
- Smart Phone Apps - Replacing the paper based ULD Control Receipt with an app-based data capture is now technically achievable. Replacing the 50-year-old paper based process with a digital capture and sign off greatly improves accuracy and timeliness.

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Example of an app generated ULD Control Receipt

- Blockchain has shown great promise in many industries, including cargo and shipping. ULD CARE collaborated with SITA recently to build a proof-of-concept blockchain-based platform that would replicate the functions of the IULDUG system, while expanding its capability to handle transactions involving non airline entities, such as freight forwarders. This proof-of-concept met all expectations, producing reports that mirrored the same transactions on the current IULDUG system.
- Application Program Interfaces (APIs) enable easy and instantaneous transfer of data between systems, allowing the potential integration of a demurrage platform into third parties IT systems.



Technology and Demurrage

These new developments in technology are making the possibility of an automated tracking and transfer platform more realistic. However, the elements fundamental to an effective demurrage system in air cargo have always existed. The application of that system is where the industry has fallen short and, at this point, technology may not solve the issue if the asset owners do not enforce demurrage rules.



Any technological solution also comes with some important considerations:

- The cost to develop and implement the technology must be feasible
- The technology must be easily integrated into existing industry practices

Nobody likes to pay a fine or a penalty, but this can be made far less painful with the intelligent application of technology. For airlines to enjoy these benefits requires that:

- ▀ There be an industry level acceptance that demurrage for ULD be a standard practise.
- ▀ That a single common platform be established to process ULD transfer transactions, avoiding a multiplicity of airline-by-airline approaches, offering transparency to shippers and delivering a pain-free process for all involved.

The Role of Trade Associations



Trade associations, particularly IATA, play an integral role in balancing the requirements of industry-wide changes to key operating practices.

As such, any solution for the air cargo industry will require the support of IATA, and potentially other trade associations representing key areas of the broader cargo industry.

As noted, reference to demurrage is noted in multiple IATA documents, including in the small print at the bottom of the ULD Control Receipt (UCR), which contains the wording, *"In particular the Receiving Party shall be liable for demurrage if the ULD is held in excess of the time specified in the applicable tariff."*⁹

LIABILITY FOR LOSS OR DAMAGE.

Parties shall ensure that the unit load device (ULD) be handled in accordance with IATA ULD Regulations (ULDR)/ carrier's instructions/ owner's instructions. The use of a ULD is subject to provisions in applicable tariffs in effect as of the date hereof including provisions which are filed in accordance with the law. In particular, the Receiving Party shall be liable for demurrage if the ULD is held in excess of the time specified in the applicable tariff, the Receiving Party shall be liable for damage sustained by a ULD while in the use and possession of the Receiving Party; the Receiving Party shall be liable for a non-return penalty as specified in the applicable tariff.

THE PARTY IN POSSESSION OF THE ULD SHALL ASSUME FULL RESPONSIBILITY TO THE ULD OWNER FOR THE AIRWORTHINESS OF THE ULD.

21

⁹ ULD Control Receipt

Furthermore Section 4.8 of the IATA TACT manual contains the following wording:

4.8. Unit Load Devices (ULD) Charges

(For carrier deviating/additional rules see section 8.3.)

ULDs represent considerable capital and operating costs to airlines, although they also bring improved handling efficiencies. In the normal course of events ULDs move relatively seamlessly through the air-cargo supply chain, but there are scenarios where charges could be levied for the use or misuse of ULDs. These would typically vary from one airline to another and the following are examples of some of the possible ULD related charges that might be levied:

Demurrage

Demurrage charges may be levied, subject to provisions in applicable tariffs of the airline/ ULD owner, against a party that retains a ULD for an excessive period of time. The charge is designed to encourage prompt return of ULDs rather than generate revenue.



This content in the IATA TACT manual is very specific in regards to the various ULD related reasons airlines might reasonably charge other parties. *Full text is contained in Appendix 1 - Industry Documentation.*

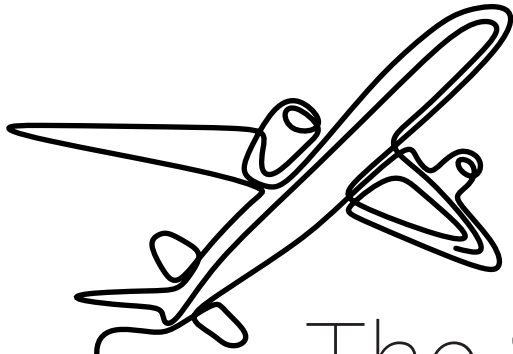
In the case of interline transfers, this tariff is defined as 5 days. There is an opportunity for IATA to assist member airlines to initiate and support an industry wide adoption of demurrage to ULD.

Other key trade associations that could assist in making the practice work across the industry include:

FIATA – the International Federation of Freight Forwarders has published a considerable amount of material on the subject of demurrage for container shipping¹⁰. It provides unambiguous clarification that the shipping lines have every right to charge demurrage for late return of freight assets. FIATA's position is not that demurrage should not be charged, but rather that such charges must be levied in a fair and transparent manner.

TIACA – The International Air Cargo Association. TIACA's position on demurrage is not clear at this time.

¹⁰ https://fiata.com/fileadmin/user_upload/documents/recent_views/MTI/FIATA_World_Congress_2018_-_Presentation_New_Working_Group_Sea_Best_Practice_Guide_on_demurrage_and_detention-.pdf



The Solution

There is evidence that airlines who have tried, on an individual basis, to introduce demurrage fees for third-party, off-airport stakeholders have found this to be difficult to achieve. Based on ULD CARE's research into this issue, the most commonly cited concern among airline representatives was the fear of creating an uncompetitive position in a highly-competitive industry. The challenge of setting up the necessary infrastructure to operate such a system within a single airline was also cited as problematic.

This almost universal failure of airlines to collect demurrage for late return of ULD equipment from non-airline stakeholders is an industry-wide issue that requires an industry-wide solution.

"An industry-wide
issue that requires an
industry-wide solution"



ULD CARE is recommending the following steps to resolve the lack of demurrage fees in the air cargo industry and the resulting damage to asset owners:

- Acknowledgement of the necessity of charging demurrage fees by key industry associations by endorsing this report to align with demurrage positions in other industries.
- Airline industry-wide acceptance and endorsement that ULD demurrage fees for non-airline, off airport stakeholders is a justifiable practise that has benefits for all parties in the air cargo supply chain.
- Develop the next stage IULDUG system to deliver a transparent, efficient system for tracking ULD transfers, and calculating and charging demurrage.



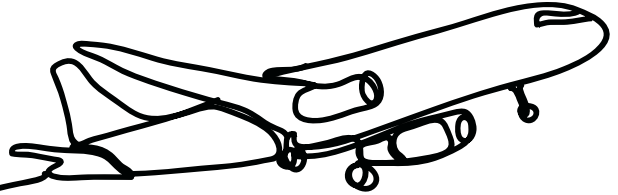
ULD CARE is taking the initiative to propose the necessary solutions to rectify this long-standing situation. But the association can't do it alone.

Airlines are the ones suffering loss in the current situation, with no leverage over the return of their assets. Given that a universal approach is needed, the optimal solution will be for IATA to provide support for the universal adoption of demurrage, thereby removing any arguments about competitive advantage.

FIATA, as the representative body of the freight forwarders, has already created considerable material regarding the application of demurrage in ocean freight. The association rightfully advocates for the fair and transparent application of these fees. With that in mind, applying fair and transparent demurrage fees to air cargo should be consistent with FIATA's current views.



Conclusion



The long-standing practice under which ULDs are released off-airport for build-up or breakdown works effectively from a physical perspective. But in the absence of any kind of penalty for overdue return of the equipment to its rightful owner, airlines suffer significant operational disruption and lost efficiency as a result of ULD shortages.

While in the short term this situation may seem to benefit shippers, it often results in widespread ULD shortages, which will impact every aspect of air cargo operations. These shortages create inefficiencies for both airlines and their customers.

Owners of ULD need unrestricted access to their assets. They may choose to issue these assets to third parties, but this does not mean they relinquish all rights to have the assets back for their further use. Certainly, demurrage is a blunt tool, but its widespread use across much of the global logistics chains is evidence of its effectiveness in controlling excess detention of freight assets.

The absence of demurrage charges for ULD is an outlier in the wider transport and logistics industry. No other comparable industry allows their freight equipment to be taken by third parties without the application of a demurrage charge for late return. It is in the interests of all parties to rectify the situation as increased utilization may very well result in greater efficiency and lower cost for shipping.

As a first step ULD CARE is looking to the relevant industry associations to support demurrage in off-airport transfers. The associations need to make it clear that the charging of demurrage for ULD equipment is as justifiable for air cargo as it is for any other freight equipment assets, such as shipping containers and rail cars.



With decades of experience in running a demurrage system (IULDUG) for its member airlines, combined with its extensive subject matter knowhow, ULD CARE can present this document with a great deal of confidence.

At the same time ULD CARE seeks the active engagement of the three major industry trade associations to support the acceptance of the practice of demurrage across the entire air cargo industry, and will seek to actively engage with these bodies to achieve this end.

The time is past for off airport ULD operations to be an exception within global logistics. ULD are simply too important to the fast and efficient movement of goods around the world for the current practise to continue. Airlines need to recover control of their ULD assets.

[For more information, click here for the Appendices.](#)