Bringing Digitalization to ULD Day-to-Day Operations.

Digitalization of air cargo operations is on everybody's mind these days, and it is not hard to see why. Even though we are in 2022, the industry remains mired in paper documentation, leading to inefficiency, inaccuracy and delays. And to make things worse, the ubiquitous ULD control receipt, which has been around since the 1970s, is used in various formats to record the transfer of the ULD between two parties.

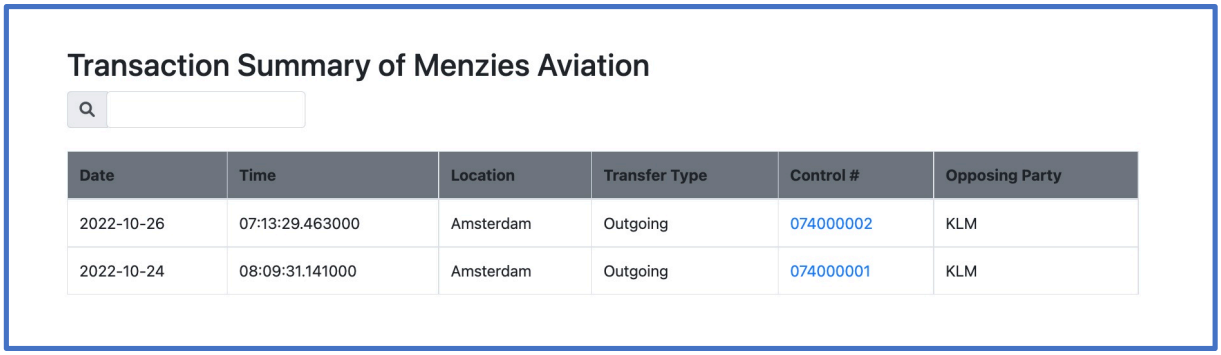
Now clearly nobody can question the need for some kind of signed acknowledgement of the transfer of an asset between two parties. That requirement will always be present. However, when it involves using a paper with three carbon copies, which requires distribution between different parties and data entry, there is clearly a need to transition to a new model.

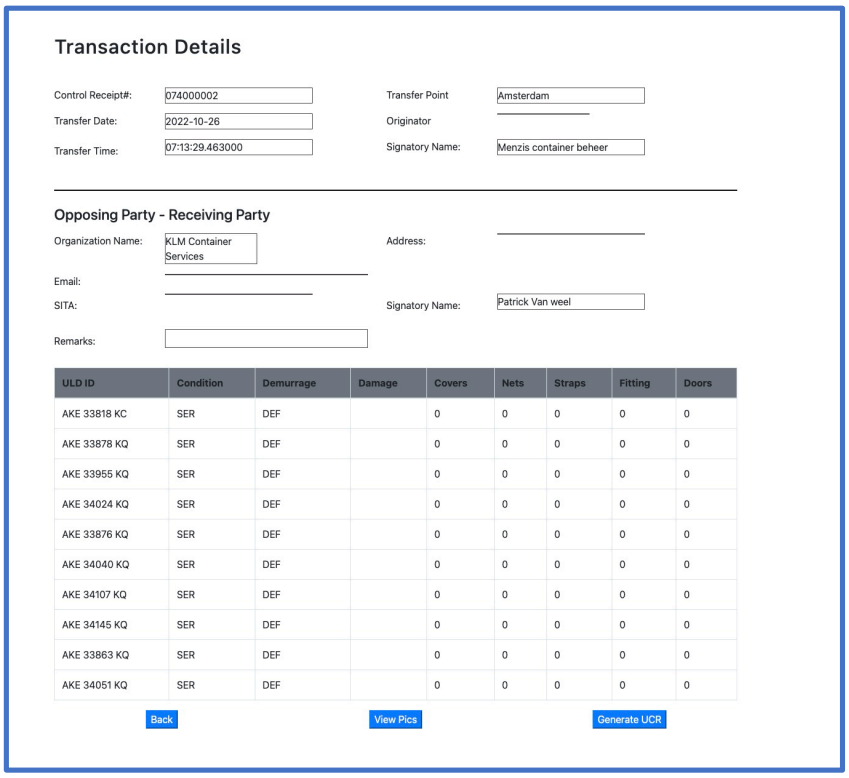
Enter the ULD CARE E-UCR app. This is a project we have been working on for a couple of years now, and the current version is definitely V2.0 or maybe even V2.5!
Although the UCR process is extremely straightforward and does not require a great deal of technical prowess to digitalize it, the devil is in the detail. Therefore, for an app to function properly, it requires considerable amount of back-office administrative capability in order to add new organizations, new locations, new users and also to be able to view the recorded transactions back at the office.

And we are delighted to say that we are well down this track, aided by a very willing "test pilot" over at KLM who have embraced the project and are putting the app to good use. They have also been providing the feedback we need to improve the basic functions and also think about new ones.

The app is not currently at its full production status and runs on a development platform so, we cannot handle a large number of transactions. But we will be inviting interested parties to try it out. We have therefore set up a support page under the ULD CARE Tools and Resources pages (https://uldcare.com/uld-tools-and-solutions/e-ucr-app/) with a full set of user instructions.

A key value proposition of the back office function is the transaction listing function. In these two screen shots, you can see first the summary of two UCR's for transfers between KLM and Menzies, as well as the unit listings and a digital image of the transaction details.





Transaction Details

Control Receipt#: 074000002
Transfer Date: 2022-10-26
Transfer Time: 07:13:29.463000
Transfer Point: Amsterdam
Originator:
Signatory Name: Menzis container beheer

Opposing Party - Receiving Party

Organization Name: KLM Container Services
Email:
SITA:
Address:
Signatory Name: Patrick Van weel
Remarks:

ULD ID	Condition	Demurrage	Damage	Covers	Nets	Straps	Fitting	Doors
AKE 33818 KC	SER	DEF		0	0	0	0	0
AKE 33878 KQ	SER	DEF		0	0	0	0	0
AKE 33955 KQ	SER	DEF		0	0	0	0	0
AKE 34024 KQ	SER	DEF		0	0	0	0	0
AKE 33876 KQ	SER	DEF		0	0	0	0	0
AKE 34040 KQ	SER	DEF		0	0	0	0	0
AKE 34107 KQ	SER	DEF		0	0	0	0	0
AKE 34145 KQ	SER	DEF		0	0	0	0	0
AKE 33863 KQ	SER	DEF		0	0	0	0	0
AKE 34051 KQ	SER	DEF		0	0	0	0	0

Back View Pics Generate UCR

Transaction Details

Control Receipt#: 074000002
Transfer Date: 2022-10-26
Tranfer Time: 07:13:29.463000
Signatory Name: Menzis container beheer
Signature:

Opposing Party - Receiving Party

Organization Name: KLM Container Services
Signatory Name: Patrick Van weel
Signature:

Remarks:

The app uses the device camera to capture the ULD ID. This therefore works well on a container, and even on a single (loaded) pallet. However, it does not work as well with a stack of pallets, where some ID codes are not as visible. At first, this seemed to be quite an obstacle although the ID codes can be entered manually. But then we started to look at RFID. Now those of us who have been around for a while will recall the many hours spent discussing this subject, during IATA meetings, with very little results due to technology, infrastructure and cost challenges. However, RFID has come a long way, opening up fresh opportunities for ULD.

We are also seeking a different result, earlier RFID efforts were aimed at a ULD “location” service, a kind of ramp scanning “radar,” a function that today is provided by systems such as BLE.

The result ULD CARE is seeking is to enable the accurate collection of the ULD ID, from a range of around half a meter, followed by the ID code's transfer into the app before being transmitted to the other party. Hand-held multipurpose scanners, reading bars and QR codes, OCR, BLE and RFID are readily available at affordable prices.

ULD CARE is well on track of developing a low-profile RFID tag that can be attached to the pallet edge rail. The key to RFID operation is the separation from a metallic surface. So, the tag needs a minimum height of 5 mm, while its length and width correspond to the typical dimensions of a PMC ID marking insert.

Of course, when people are shown this tag and see that it can easily be damaged, they wonder why not fit it in the seat track? The answer is that the RFID function cannot work from inside the seat track. The signal simply disappears, so the tag needs to be on top of the outer section of the edge rail.

This, of course, is a risk. The tags could get damaged or torn off, and of course, there are the cases when a pallet with a badly bent edge rail is loaded to the aircraft. This could then result in the tag coming into contact with a lock and possibly even being knocked off. We, at ULD CARE, therefore plan on carrying out a medium-scale test of these tags with a couple of airlines in the short term to test survivability. Cost is also obviously a concern and we expect to see a per pallet cost less than US $5.00 to have 2 tags per pallet.

In conclusion, there is no questioning the urgent need for the air cargo industry to improve efficiency through digitalization, and ULD operations are no exception. ULD CARE is taking initiatives to drive forward this ambition and we would expect a great deal of progress in the next 12 months.