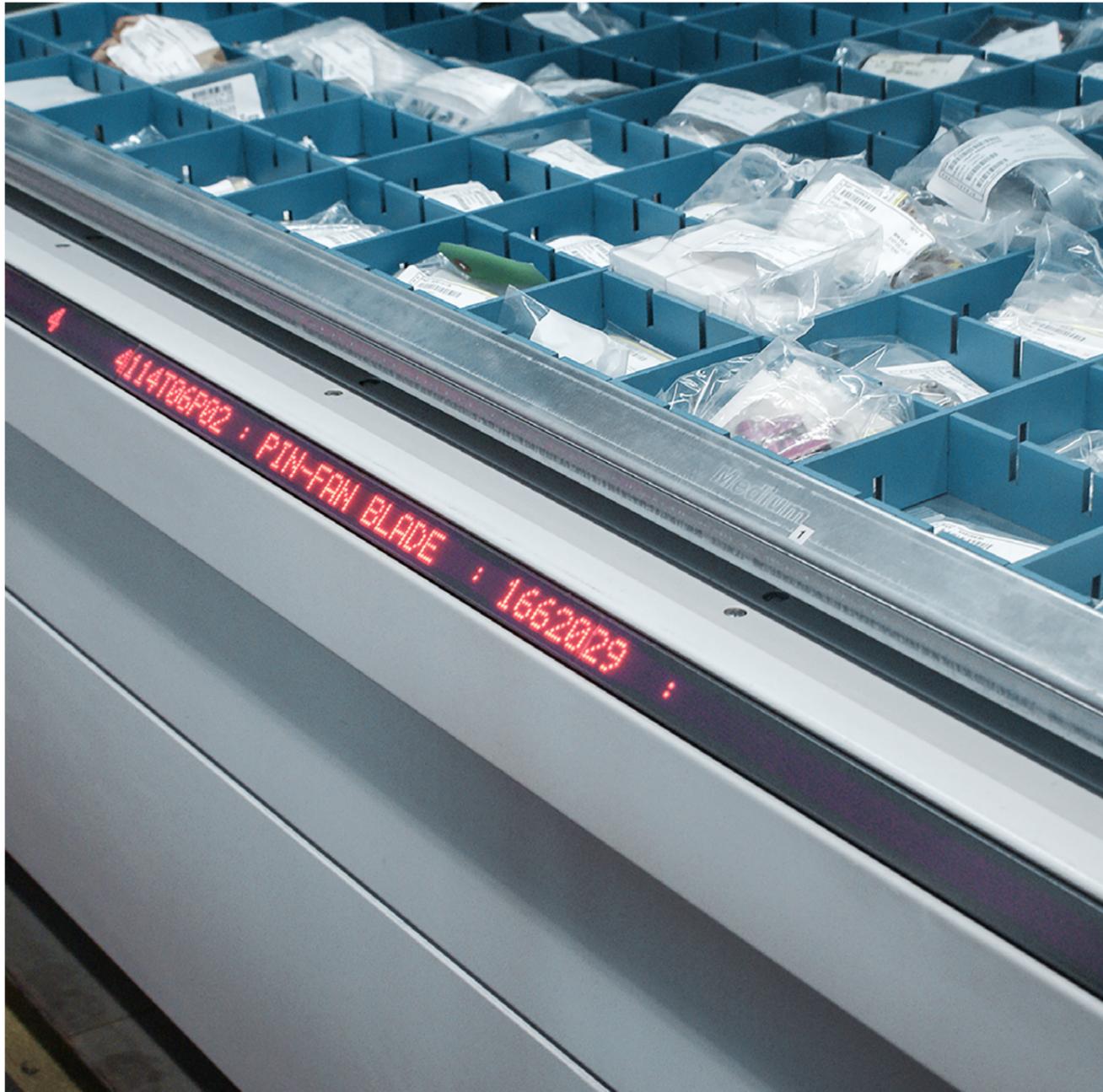


Benchmark Briefing

# Automated MRO Solution





# ASRS for critical MRO parts inventory

## Batch validation ensures high pick accuracy in MRO parts management

Jazz Aviation is a regional carrier travelling to and from approximately 80 destinations across Canada and the United States. Working under a commercial agreement with Air Canada, Jazz operates more flights and travels to more Canadian destinations than any other carrier.

The Jazz operational base in Toronto, Ontario is responsible for maintenance and repair operations for 125 airplanes, 24 hours a day, 7 days a week. The largest of six-line bases, the maintenance stockroom uses two Vertical Lift Module Kardex Shuttle with the Kardex Power Pick System inventory management software to supply maintenance and repair parts to technicians on site as well as the other five-line bases.

## At a glance

### Site

Jazz Aviation, Toronto, ON, Canada

### Application

Maintenance and repair operations for critical aviation parts

### Equipment

Two Kardex Shuttle with Kardex Frame Pick System inventory management software

**Increased**  
accuracy  
to 99%

**Increased**  
productivity  
by 77%

**Saved**  
71% floor space



# Compact & secure solution

Just over 10,000 SKUs previously stored on shelving were consolidated into two Kardex Shuttle to create a compact and secure MRO parts management area right in the hanger. Inventory in the two Kardex Shuttle is managed with the Kardex Frame Pick System inventory management software that is integrated with existing TRAX software. Further, alongside a four-position batch station, additional pick-to-light technology and label printers add inventory control and increased accuracy levels.



2 Kardex Shuttle



Kardex Frame Pick System inventory management software



4 position batch station

## Space squeeze

This 6,900 square foot (sq ft) facility was limited on space and needed a solution that wouldn't force them to relocate. "Space is a premium being next to an airport," said Mike Hauser, Stores System Manager, "It was a constant battle, we had no more room. We needed a full supply chain solution, not just a temporary fix."

Previously, all SKUs were stored on shelving and pickers would walk up and down aisles, using a pick cart for heavier items. There was one designated ladder stored at the end of each shelving aisle, which was needed to reach the top two rows of shelving. "Our employees often had to sort through 50 parts to find the correct batch number," said Mike Hauser, "It was a time consuming and labor-intensive process."

# Automation – benefits and processes

## Accuracy soars

With 20,000 SKUs in inventory, Jazz must keep a close eye on every part coming in and out of the stockroom. Every SKU received into inventory has a batch, or lot, number. The batch number must be traceable through the distribution channel. It is crucial to know what part number and batch number was used in each airplane.

Upon picking, the operator must pick a specific part and a specific batch number. This allows Jazz to trace what batch number is put into each order and used on each plane. To verify the pick based on the batch number, the operator scans the part before it goes into the order tote, this ensures they have picked not only the right part number, but the correct batch number as well. Due to the batch picking process and batch validation, accuracy has increased to nearly 99%.

## Productivity takes off

In the old shelving area, it took four to seven minutes per pick, producing about 15 picks per hour. Now in the automated MRO area, parts are delivered to the operator for picking, eliminating walk and search time. Further, the pick-to-light technology directs the operator to the exact pick specifying the location, the part number and the quantity to be picked. Using the Kardex Shuttle, pick time has improved to an average of one minute per pick, about 60 picks per hour, a productivity increase of 77%!

## Floor to ceiling space utilization

Roughly 1,196 sq ft of shelving was consolidated into two Kardex Shuttle occupying only 184 sq ft, a 71% savings in floor space. Jazz used the recovered 636 sq ft of floor space for storage of bulk inventory. "Part of the goal of this project was to get all of the bulk inventory being stored in the hanger, into the warehouse," said Hauser, "Now all inventory is securely stored in the stockroom providing increased inventory control."

## An upgraded process

The Kardex Shuttle MRO area fits seamlessly into the warehouse picking strategy. The maintenance department enters orders needed onsite into TRAX while base inventory transfers are created by supply chain.

When the operator is ready to fulfill an order, they scan the barcode on the TRAX pick list to populate the order in the Kardex Frame Pick System inventory management software. The Kardex Shuttle move to retrieve the first SKU required and deliver it to the operator. Using pick-to-light technology, located on the front of each access point, directs the operator to the exact location of the SKU and displays the quantity to be picked. The operator picks the quantity and scans each SKU's barcode to verify the batch number before distributing the SKUs among the four orders on the batch station.

While the operator is distributing the first SKU among the orders, the second Kardex Shuttle is positioning for the next pick, eliminating operator wait time. After the SKUs are distributed among the orders, the next pick is ready and waiting for the operator.

If the order requires the operator to "break pack", the operator can print a part label during picking and re-label the SKUs picked. Breaking a pack consists of opening a pack of 10 SKUs to pick two for an order. Using the additional label, the operator "bags and tags" the two SKUs required for the order, maintaining the integrity of the pick.

If an order requires inventory from both the Kardex Shuttle area and the shelving area, the Kardex Shuttle parts are picked first. Then the shelving parts are matched up with the order at the staging area where orders are held for pickup.

## Future growth

“We plan to add a third Kardex Shuttle to maintain growth and further increase our efficiencies,” says Hauser. With the success of the Jazz’s maintenance operation in Toronto, other Jazz maintenance locations are looking to automation to increase their efficiencies.