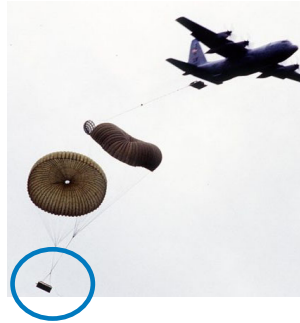


Benefits of Reusable Parts - **REAL & RUSB**



Dr. Daryoush Allaei, PE

Chief Technology Officer

QRDC, Inc.

E: dallaei@qrdc.com, Mobile: (612) 380-4433

Website for more information:

1) <https://www.qrdc.com/library/real-reusable-energy-absorbing-layer/>

2) <https://www.qrdc.com/>

January 22, 2026

Current Status

Summary - Why Using REAL & RUSB?

- **Financially**: Save cost of ownership
- RUSB and REAL have been successfully airdropped by Air Force Bases more than **1161** times.
- **Entire CDS lines @ 347th ADSB, Moody AFB, GA, and 193rd SOS, Middletown, PA are Reusable Equipment**
- No of CDS drops exceeded **35** at two AFBs.
 - 374 Logistics Readiness Squadron, Yokota AFB (44)**
 - 773 Joint Base Elmendorf-Richardson, AK (53)**
- We had **5** **incomplete parachute opening** -
No damage to RUSB or payload on CDS platform.
- **Sustainability**: REAL & RUSB are sustainable.
- **Readiness**: Improving Arm Forces readiness.
- **Weatherproof**: Resistance to moisture/rain/temperature.

Cost Saving for Aerial Delivery
Savings: \$238 per CDS airdrop

**Payback is less than 50 airdrops
(often less than 1 year)**

**Our estimated Savings
was validated by
Yokota AFB in Japan in May 2025.**

Current Status (continued -6)

Total Number of Airdrops by Current End-users at Air Force Bases

Current Status

Reusable Equipment Purchased (Q4-2024n to Q4-202

Base	Base Description	CDS	Skid Board RUSB	REAL Modules	Type of Modules			Belt
					06M12	04M06	23M126	
1	Little Rock, AR	8	8	128	72	8	48	8
2	Hurlburt Field, FL	10	10	160	90	10	60	10
3	AFB Ramstein-Mie, Germany	10	10	160	90	10	60	10
4	109th Airlift Squadron, MN	6	6	96	54	6	36	6
5	109th AW Base, Scotia, NY	4	4	0	0	0	0	0
6	374 Logistics Readiness Squadron, Yokota, Japan	3	3	48	27	3	18	3
7	773 Joint Base Elmendorf- Richardson, AK	10	10	160	90	10	60	10
8	97 th Logistics Readiness Sq, Altus AFB, OK	8	8	128	72	8	48	8
9	193 rd Special Ops Squadron, Middletown, PA	12	12	192	108	12	72	12
10	27 th SOLRS / LGRDAS, Cannon AFB, NM	1	1	16	9	1	6	1
11	347 OSS/OSK ADSB, Moody AFB, GA	15	15	240	135	15	90	15
Total		87	87	1328	747	83	498	83

Entire CDS line is
Reusable Equipment.

Current Status

Total Number of Airdrops (Oct 24 - Dec 25)

Base	Air Force Base	No of CDS	Airdrops for all CDSs	Average Drop per CDS
1	Little Rock, AR (June 2025)	8	62	8
2	Hurlburt Field, FL (Sept 2025)	10	151	15
3	AFB Ramstein-Mie, Germany (Nov 2025)	10	50	5
4	109th Airlift Squadron, MN (Dec 2025)	6	81	13
5	109th AW Base, Scotia, NY (black top DZ) (July 2025)	4	49	12
6	374 Logistics Readiness Squadron, Yokota, Japan (Dec 2025)	3	131	44
7	773 Joint Base Elmendorf-Richardson, AK (Jan 2026)	10	532	53
8	97 th Logistics Readiness Sq, Altus AFB, OK (Nov 2025)	8	34	4
9	193 rd Special Ops Squadron, Middletown, PA (Jan 2026)	12	55	5
10	27 th SOLRS / LGRDAS, Cannon AFB, NM (Oct 2025)	1	2	2
11	347 OSS/OSK ADSB, Moody AFB, GA (Dec 2025)	15	14	0.9
12	Training Center for Paratroopers, SOR, Belgium AFB (NATO)	Only REAL	No report yet	N/A
Total CDSs, Drops, and Drops/CDS		87	1161	13

Entire CDS line is Reusable Equipment.

Exceeded
35
Airdrops

Average drops for 87 CDSs in the field

RUSB and REAL CDSs have been airdropped over 1117 times.

Airdrops with Parachute Not properly opened REAL/RUSB CDS Airdrops

- * **Airdrop at AFB Ramstein-Mie, Germany – October 2024**
Mass of 4 CDS airdrops was captured.
REAL/RUSB CDS were not damage.
No Damage to Barrels.
- * **Airdrop at AFB Ramstein-Mie, Germany – June 2025**
2 CDS bundles get caught up with each other &
totally snagged for the first half of the drop.
Resulted in parachute damage.
RUSB bundle was fine (no damage).

Airdrops with Parachute Not properly opened REAL/RUSB CDS Airdrops

* 773 Joint Base Elmendorf-Richardson, Alaska AFB (May 2025)

First Mass of 4 was dropped with all parachute properly opened.
Second Mass of 4 had 2 incomplete parachute openings.
RUSB bundle was fine (no damage), see following images.

* 97th Logistics Readiness Squadron, Altus AFB, OK, USA

First Mass of 4 was dropped with all parachute properly opened.
Second Mass of 4 had 2 incomplete parachute openings.
RUSB bundle was fine (no damage), see following images.

* 193 Special Operations Squadron, Palatine, PA, USA

First Mass of 4 was dropped with all parachute properly opened.
Second Mass of 3 had 1 incomplete parachute openings.
RUSB bundle was fine (no damage), see following images.

Summary of Pull and Bent Tests

**Improvements:
29% - 194%**

Current Status
Air Force Bases
have been using
Reusable
REAL & RUSB since
Q4 2024

Current Status

Reusable in Use by:

1) Little Rock, Arkansas, USA

- (a) more than **62 Airdrop** as of end of April 2025
- (b) are very happy with REAL & RUSB
- (c) LR has 8 full RUSB & REAL packages
- (d) plan to changeover the entire line in 2025-26
- (e) quote was requested for **30 CDS** bundles

2) Hurlburt Field, Florida, USA

- (a) **151 airdrops** as of end of Sept 2025
- (b) are very happy with performance
- (c) plan to changeover the entire line
- (d) plan to remove their sustainability program for cardboard honeycomb and plywood
- (e) quote was requested for **10 CDS** bundles

Current Status (continued -2)

Reusable in Use by:

3) **AFB Ramstein-Mie, Germany**

50 airdrops (6 each of the CDS) as of end of Nov 2025

RUSB & REAL survived a free fall (parachute did not open)

A quote for spare REAL parts was requested

4) **109th Airlift Squadron, Minneapolis, MN, USA**

81 airdrops (6 each of the CDS) as of end of Dec 2025

8 CDS bundles are in use

Goal is to replace all CDS with reusables.

5) **109th AW Base, Scotia, NY, USA**

49 CDSs with RUSB have been successful airdropped

Each RUSB has been dropped 12 times (as of July 2025)

Current Status (continued -3)

Order Received and Delivered:

- 6) **374 Logistics Readiness Squadron, Yokota AFB, Japan**
Yokota AFB has 4 CDS package
CDSs were successfully airdropped 131 times as of Dec 2025.
- 7) **773 Joint Base Elmendorf-Richardson, AK, USA**
10 CDSs were successfully airdropped 500 times as of Dec 2025
After recovery, all they needed was tightening and placing
a new parachute on each CDS before they were loaded
for next airdrop.

Current Status (continued - 4)

- 8) 97th Logistics Readiness Squadron, Altus AFB, OK, USA**
8 Altus AFB purchased 8 CDS packages.
34 CDS airdropped as of Nov 2025.
One incomplete parachute opening – no damage.
- 9) 193 Special Operations Squadron, Palatine, PA, USA**
193 SOS has 12 CDS packages.
43 CDS airdropped as of Nov 2025.
One of the parachute did not completely open,
no damage was reported.
Entire CDS line is reusable equipment.

Current Status (continued - 4)

10) 27th SOLRS / LGRDAS, Cannon AFB, NM

Purchased the following in Sept 2025.

2 RUSB Skid Boards, 1 Base Board, 1 Top Board.

2 CDS airdrop as of Oct 2025.

11) 347 OSS/OSK ADSB, Moody AFB, GA

Purchased 15 CDS packages in Sept 2025.

14 airdrops as of Dec 2025.

Entire CDS line is reusable equipment.

Current Status (continued - 5)

Quotes have been sent:

- 1) 920th LRS, Aerial Delivery, Patrick SFB, FL, USA
- 2) 68th Rescue Squadron-AFB, AZ, USA
- 3) 106th ATF LRS/LGR, Westhampton Beach, NY, USA
- 4) 165th Airlift Wing, Savannah ANGB, GA, USA
- 5) 166th LRS/ATF DEX, New Castle, DE, USA
- 6) Joint Base Charleston, SC, USA
- 7) 41st Aerial Port Sq, Keesler AFB, MS, USA
- 8) 76 APS/Aerial Delivery, 910th AFRB, Youngstown, OH, USA
- 9) 647th Logistics Readiness Sq., Joint Base Pearl Har, HI, USA
- 10) Edwards Air Force Base, CA, USA
- 11) Kadena AFB, Okinawa, Japan
- 12) Yokota AFB, Tokyo, Japan
- 13) Training Center for Paratroopers, SOR, Belgium AFB (NATO)

NATO

Current Status (continued - 5)

Interested Parties at Army:

- 1) Chief Joshua D Gaither - WO1 USARMY 11 ABN DIV 2 BCT, Army Base in Alaska
- 2) Joshua Hollar, USASOC Parachute Rigger, Fort Bragg, NC
- 3) Jonathan C Dawson, SOCOM, Special Ops, Army
- 4) 2LT Judson Harmon, Army Base in Ramstein, Germany
Joshua Martinez, Army Base in Ramstein, Germany
Elijah Melendez-Eyster, Army Base in Ramstein, Germany
CW5 Anthony J Haiduk, Army Base (21 TSC) in Ramstein, Germany

Summary of Customers and Interested Bases

- ❖ **Air Force End Users / Customers in USA & Overseas**
- ❖ **12 Air Force End Users have requested quotes**
- ❖ **4 Army bases have expressed strong interest**
- ❖ **By the end of 2026, it is projected REAL and RUSB will be used in 10 additional AF bases**

Feedback

Feedback from Air Force Bases

Feedback

✓ Little Rock, Arkansas, USA

“Looks like we are at 14 drops with REAL/RUSB, it looks great still.”
“21 drops total, some minor scratches on the skid board, but everything is holding up very well.”
“23 and ready to go out again, no damage... all still looks good.”

[September 27, 2024](#)

✓ Hurlburt Field, Florida, USA

“We are at 12 drops and no further issues. We love it and I’m working the \$ to hopefully get the rest of ours converted.”

[September 12, 2024](#)

Feedback

✓ AFB Ramstein-Mie, Germany

During mass airdrop (4 CDS), the Parachute of the last CDS did not open, and still worked. This was a real-world test.

[April 29, 2025](#)

✓ 109th Airlift Squadron, Minneapolis, MN, USA

“Fantastic product, satisfied after 3/4 of a year of use. No deterioration in products besides normal wear/tear.

Only notes: Loading by ATF post drop has to be done more carefully than with disposable items. The forklift tines are more likely to do damage than anything else. And that reusable honeycomb should be tied together to prevent slippage.”

[April 29, 2025](#)

Feedback

✓ **109th Airlift Squadron, Minneapolis, MN, USA**

Question: How has your airdrops been? How is performance? How many drops?

Answer: “They have been great! I’ll have to get the numbers when I get back to work next week but no problems so far!”

June 19, 2025

Question: Do you have an update as of June 24?

Answer: “We have dropped every bindle about 10 times (range 8, 9, 9, 10, 11) with no incident. One chute opened very late, bundle hit hard, no damage.”

June 24, 2025

Feedback

✓ Kadena AFB, Japan

“We took the REAL out for exercise Balikatan and it has been a big help not worrying about brining a bunch of honeycomb and taking up space. Also, not having to worry about breaking down the CDS to keep replacing it and saving a lot of time.”

[April 30, 2025](#)

Feedback

✓ 374 Logistics Readiness Squadron, Yokota AFB, Japan

“Build 3 CDS with RUSB/REAL cost saving \$116k a year, no need to replace cardboard honeycomb or wooden skid board over 100 drops.”

[March 24, 2025](#)

“The new procedures of securing the REAL to the RUSB has work better and easier to reinspect once we reattach a parachute. Before the REAL would move a lot more and when the CDS landed on their side, the REAL would start to fall out without the weight of the cans on it’s.”

[April 29, 2025](#)

“Performing vert well, no issues.”

[June 9, 2025](#)

USAF Times Article on REAL & RUSB



Yokota AFB Conducted their own savings calculations in May 2025



NEWS



UNITED STATES AIR FORCE

36 AS, 374 LRS innovates airdrop process

Published May 15, 2025

By Airman Kayla Karelak

374th Airlift Wing Public Affairs

YOKOTA AIR BASE, Japan -- The 36th Airlift Squadron and 374th Logistics Readiness Squadron implemented a new, reusable system that increases efficiency and cuts overall cost for building container delivery system bundles at Yokota Air Base, Japan, April 10.

The 36 AS routinely conducts airdrop training with CDS bundles crafted by the 374 LRS to maintain readiness and the ability to swiftly deliver supplies across the Indo-Pacific region.

"CDS bundles are one of the most versatile tools in our air supply kit," said Master Sgt. Keith Dengel, 36 AS instructor loadmaster. "CDS drops can deliver a lot of material and equipment in a short period of time to keep the troops on the ground as effective as possible."

Previously, the 374 LRS crafted bundles using plywood and cardboard honeycomb as disposable platforms for airdrops. The new system replaces the disposable platforms with a reusable energy-absorbing layer and reusable, universal skid board - saving approximately \$116,000 per year.

"With the previous process, we have to recut the cardboard and rebuild from the ground up," said Tech. Sgt. Abel Moreno, 374 LRS combat mobility flight section chief. "The new system helps alleviate a lot of manpower and resource waste."

Additionally, bundles prepared with the new system were built in an average time of 20 minutes, saving Airmen over an hour of time per bundle the previous process.

Yokota is currently one of six aircrew training bases in the Air Force to use this system.

"We are ready for anything because we practice these skills on a daily basis," said Dengel. "Nothing happens without the time, effort and support of Team Yokota."

By reducing costs, conserving resources and streamlining manpower, the new platform allows the unit to allocate support to other mission-critical operations. As the Department of Defense logistics hub for the Indo-Pacific region, this collaboration between the 36 AS and 374 LRS highlights a commitment to excellence to the installation mission: sustaining and maneuvering forces at the speed of need.

USAF Times Article on REAL & RUSB

✓ 374 Logistics Readiness Squadron, Yokota AFB, Japan

May
15
2025

The 36 AS routinely conducts airdrop training with CDS bundles crafted by the 374 LRS to maintain readiness and the ability to swiftly deliver supplies across the Indo-Pacific region.

"CDS bundles are one of the most versatile tools in our air supply kit," said Master Sgt. Keith Dengel, 36 AS instructor loadmaster. "CDS drops can deliver a lot of material and equipment in a short period of time to keep the troops on the ground as

✓ Weekly CDS Airdrops: 10, 49 weeks/year

- Average Savings per Airdrop: \$237
- Our projected Savings per Airdrop: \$238

time per bundle the previous process.

Yokota is currently one of six aircrew training bases in the Air Force to use this system.

"We are ready for anything because we practice these skills on a daily basis," said Dengel. "Nothing happens without the time, effort and support of Team Yokota."

By reducing costs, conserving resources and streamlining manpower, the new platform allows the unit to allocate support to other mission-critical operations. As the Department of Defense logistics hub for the Indo-Pacific region, this collaboration between the 36 AS and 374 LRS highlights a commitment to excellence to the installation mission: sustaining and maneuvering forces at the speed of need.

Feedback

Ten (10) CDS airdrops at Alaska AFB (JBER):

Slide easier on shop and aircraft rollers

Save lots of money & labor

They came out of plane very well and easy

The process of rebuilding is faster

May 20, 2025

So far all is good on the performance end.

June 11, 2025

Feedback

✓ **97th Logistics Readiness Squadron, Altus AFB, OK**

“We have used the product once so far with excellent results.”

“The product was very easy to reconstitute and simple to train other personnel on.”

“I believe other bases would also benefit from this product.”

“A top board would be a valuable addition to our setup.”

July 29, 2025

Feedback

✓ **97th Logistics Readiness Squadron, Altus AFB, OK**

“....each one has dropped 32 times since you were here. So far, no problems. We are fast approaching the 35 drops per bundle. Hoping the extreme cold weather coming this winter will not affect the bottom boards.”

[Sept 2, 2025](#)