

DEPARTMENT OF DEFENSE
CARB APPROVED AIR CARRIER



DHC-4A Turbo Caribou Capabilities

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The DHC-4A Turbo Caribou Aircraft Overview



- The DHC-4A Turbo Caribou (“Caribou”) is a highly capable, military developed platform with exceptional capabilities
- The superior reliability and capability of the Caribou is proven every day on our current LCLA contract
- Extremely versatile aircraft that can do multiple types of missions in austere operating areas
- Keep-it-simple design that is meant to be maintained in the field with readily available parts supply for inventory and AOG
- Although the Caribou debuted in 1958, this aircraft is not “old”
 - Delivered as an aircraft with zero time engines and airframe while being converted to PT-6A turbine engines

Actual Caribou Mission Data



Mission Critical Statistics	Performance (SEP 2011 to AUG 2014)
Mission Flight Hours	3,200+
Total missions flown	1,859
Passengers flown	887
Total Pax, Cargo and LCLA Weight	5.3M lbs.
Number of LCLA Bundles Delivered	8,214
Operational Readiness Rate	98.4%
Maintenance Down Days Utilized	107 of 222 allotted (48% of allotted days used = 115 more days for mission tasking)
Months exceeding 6 Maintenance Days	0 (zero)
Average Maintenance Down Days per Month (all maintenance)	2.6 days

The Most Versatile Platform

- The Caribou is a multi-use aircraft that can easily perform any or all of the following:
 - All-cargo operations
 - Combi operations (passengers and cargo)
 - Paradrop and aerial delivery mission capability (LCLA and more)
 - STOL takeoff and landings
 - Passenger transportation up to nine (9) DoD personnel under FAR 135
 - Passenger transportation up to thirty (30) DoD personnel under FAR 91
 - CASEVAC
 - Combat offload



All Cargo Operations

- Superior payload capability
 - 7,500 lbs. payload capacity (FAR 135)
 - 10,000 lbs. payload capacity (FAR 91 jumpers)
 - Can carry eight (8) 48" x 48" x 48" pallets
 - Max pallet size of 48"L x 48"W x 65"H
 - More than 2X the Casa 212 payload capacity (volume and weight)
- FlightWorks owns the STC that allows the Caribou to be placed on FAR 135 ops specs



Rear Ramp Capabilities

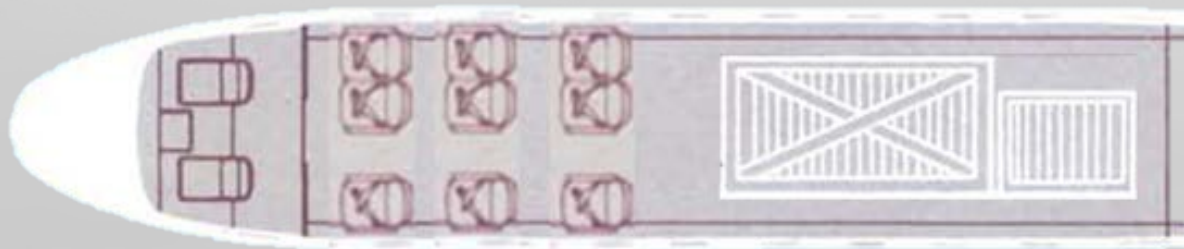


- The most flexible option for loading of cargo or paradrop personnel/materials
- Large rear cargo ramp: 73"W x 73.5"H
- FAA-approved roller installation
- Easily loaded by "K" loader, forklift, drive-up ramps or manual means
- Can fit a variety of jeep-type military vehicles
- Door sill height of 48" makes manual loading at austere locations an easy process



Combi Operations

- FAA-approved loading and weight and balance that allows for combi operations
- Fire containment covers (FCCs) easily supplied for safety when conducting combi operations
- Full conversion to/from passenger, cargo or combi configuration takes only minutes to complete



Paradrop & Aerial Delivery



- Low Cost Low Altitude (LCLA) aerial resupply
 - FlightWorks is the only air carrier in the world with FAA authority to conduct LCLA at a minimum of 150 ft. AGL
 - FAA approved LCLA operations and training procedures
 - Drops performed within the FOB and eliminates need for retrograde equipment
- Flexible altitude bundle drops (150' AGL and above)
- No limitation of type of cargo that can be dropped



Paradrop & Aerial Delivery (cont.)

- Military free fall or static line personnel drops
 - Can accommodate up to 30 personnel in side-facing seats
 - Live and troop training operations
 - HALO and static line jump capable



STOL Capabilities

- AFM approved for unimproved runway STOL operations
- Exceeds DoD definition* of STOL aircraft requirements
 - The ability of an aircraft to clear a 50-foot (15 meters) obstacle within 1,500 feet (450 meters) of commencing takeoff or in landing, to stop within 1,500 feet (450 meters) after passing over a 50-foot (15 meters) obstacle

Definition / Performance	Takeoff	Landing
DoD STOL Definition	1,500 ft.	1,500 ft.
Caribou STOL Performance	1,185 ft.	1,235 ft.
Performance Margin	+21%	+18%

*DoD Dictionary of Military and Associated Terms 15 SEP 2013

CASEVAC

- Cabin length of 29 feet allows for up to four (4) patients on ACLS litters with four (4) paramedics
- Full horizontal loading through rear ramp
- Aircraft can be equipped with en route critical care, including:
 - Basic Life Support (BLS)
 - Advanced Trauma Life Support (ATLS)
 - Advanced Cardiac Life Support (ACLS),
 - NREMT-P level paramedics

Combat Offload

- Expeditious offloading procedure at locations without k-loaders or forklifts or under enemy threat
- Minimizes time on the ground by offloading during taxi
- Total time on ground (landing to takeoff) in as little as five (5) minutes
- Example: delivery of HESCO barriers to destroyed FOBs



DHC-4A Turbo Caribou vs. CASA 212



- The Caribou's superior capabilities replaces two (2) Casa 212's to deliver the same mission capabilities

Scenario:		
Location: Afghanistan Standard Mission Location		
Condition: Standard Field and Weather Conditions		
Temperature: 14°C / 60°F		
Field Elevation: 4850 ft.		
Bundle Type: Water @ 600 lbs. each		
		
Specifications:	CASA 212-200	DHC-4 Turbo Caribou
Basic Operating Weight (BOW)	11,125 lbs.	19,500 lbs.
Fuel (round trip with reserves)	1,500 lbs.	2,000 lbs.
Max Allowable Takeoff Gross Weight (TOGW)	15,650 lbs.	26,350 lbs.
Aircraft & Fuel Weight	12,650 lbs.	21,500 lbs.
Useful Payloads for Bundles	3,000 lbs.	4,850 lbs.
Bundle Capacity @ 600 lbs. ea. w/ standard rollers	3	8

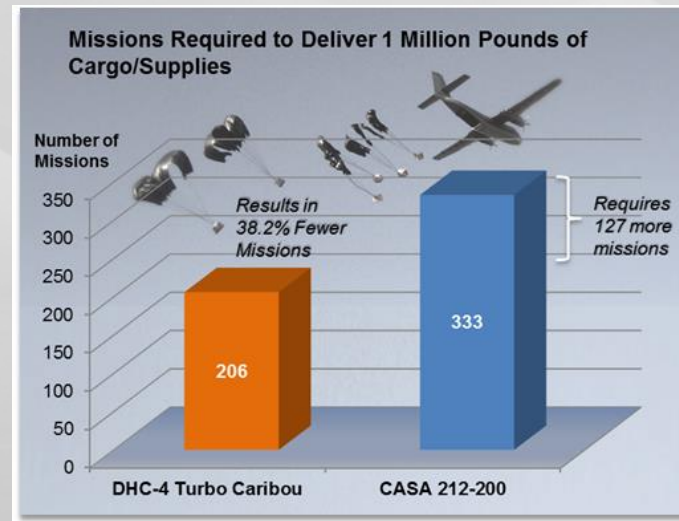
- Conclusion: One (1) Caribou can carry 8 bundles where two (2) Casa 212's can still carry only 6 bundles

Case Study: 1M Lbs. of Cargo

DHC-4A Turbo Caribou vs. CASA 212



- The Caribou
 - Delivers > 2X the bundles per mission than the CASA-212
 - Reduces the overall operational footprint requiring fewer aircraft, fuel, ramp space, billeting, and personnel support
 - Requires fewer flights to complete the same mission



Key Takeaway: The Caribou requires 38% fewer missions to deliver 1M pounds of cargo, increasing mission safety by reducing the level of exposure to high threat environments

Case Study: 1M Lbs. of Cargo DHC-4A Turbo Caribou vs. CASA 212



Case Study: Delivery of 1M lbs. of Personnel or Cargo			
Specification	CASA 212-200	DHC-4 Turbo Caribou	DHC-4A % Greater Performance
Bundles per Drop	3	8	+167%
Cabin Volume (cu. ft.)	650	1,150	+77%
Aircraft Required	2	1	50% fewer Caribous required
Minimum Personnel	10	5	50% less personnel
Missions to Deliver 1M lbs. of cargo	333	206	38% fewer missions to accomplish mission
Max Gross Weight (lbs.)	16,976	28,500	+68%
Cabin Length	19	28	+47%
Cabin Height	5.8	6.25	+8%
Cabin Width	6.8	7.25	+7%

Actual Military Tests and Reviews



- 24 OCT 2011 201st Brigade Support Battalion
 - All bundles landed between 10 and 65 meters from PI and were recovered within 20 minutes of delivery with zero damage
 - “Resounding success”
 - “This capability will greatly enhance the Brigade’s ability to resupply Duke Soldiers while in the mountainous terrain of Khowst Province where CDS is not a viable option”
- APR 2012 Air Force vs. FlightWorks “Fly-Off”
 - Caribou rated #1 over Casa 212, Casa 300 and M-28
 - Caribou reached remote areas / deliberate operations others could/would not

Actual Military Tests and Reviews


- 26 MAY 2012 Air Force vs. FlightWorks “Fly-Off”
 - Caribou ranked as #1 choice over CASA 212 and 235 as well as M-28
 - Caribou rated #1 over of all delivery methods tested with “high mission ready rate”



Technical Specifications

Technical Specification	DHC-4A Caribou
Day, Night IFR / IMC Operations	AFM approved
Flight in Known Icing	AFM approved
Passenger Capabilities	9 passengers (Part 135) or 30 jumpers (Part 91)
Passenger and Cargo Capabilities (combi)	AFM approved
STOL Capable	Exceeds DoD definition of STOL aircraft
Communication and Navigation	Navigation: GPS, VOR, ILS, ADF Comms: VHF, HF, FM, UHF, Satellite Safety features: Weather radar, TCAS, EGPWS, ELT
External Dimensions:	Length: 72 ft. 7 in, Height: 31 ft. 9 in, Wingspan: 95 ft. 7 in.
Rear Loading Ramp Capability	Capable, equipped with FAA-approved roller system
Cargo Ramp Door Dimensions	Width: 73.5 in , Height: 75 in
Side Door	Width: 30 in, Height: 55 in
Cabin Dimensions	29 ft. (L), 7.25 ft. (W), 6.25 ft. (H) with 1,150 cubic feet of area

Performance Specifications

A faint, light-colored silhouette of a DHC-4A Caribou aircraft is visible in the background of the slide, positioned behind the table.

Performance Specification	DHC-4A Caribou
STOL Takeoff Distance @ MGTOW	725 ft. Ground Run 1,185 ft. Total Distance over 50' Obstacle
STOL Landing Distance @ MGLW	670 ft. Ground Run 1,235 ft. Total Distance over 50' Obstacle
Service ceiling	25,000' MSL
Cruise speed	167 KIAS
Range with IFR reserves	850 nm
Maximum Range	1,210 nm

Customers and Partners



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SAM Registered

GSA Contract #: GSA-33F-0008U

CAMTS Accreditation: Pending

“When Performance Matters”, Trust FlightWorks

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