COLUMBIA HELICOPTERS
A HISTORY OF EXCELLENCE

Columbia Helicopters was founded by Wes Lematta in 1957. Over a half-century later, we are proud of the reputation we have built as a global leader in Aviation Services and Aviation Solutions.

Wes recognized early on that helicopters were capable of more than just moving people. He took flying lessons in 1954 and three years later, purchased his first helicopter — a used Hiller 12B, thus establishing Columbia Helicopters, and later, the entire heavy-lift helicopter industry.

Growing an Industry

Over the next several decades, Wes and his newly founded company completed missions never before attempted. He engineered industry-shaping innovations and assembled a fleet of the most versatile helicopters in operation, thereby keeping Columbia Helicopters in the forefront of the industry.

The heritage that Wes set in place when he founded Columbia Helicopters continues today. The company remains an innovator and leader in the aviation industry.

Columbia Helicopters Today

Today, Columbia Helicopters owns and operates the largest fleet of heavy-lift tandem rotor helicopters in the world. Columbia Helicopters has diversified operations in the aerial firefighting, oil and gas support, forestry and stream restoration, infrastructure, and charter services markets.

Columbia’s FAA approved Part 145 Repair Station, also authorized by EASA, focuses on supporting Columbia’s rotorcraft in the field. Columbia’s Maintenance, Repair, and Overhaul (MRO) capabilities provide aviation solutions on the CH-47 and CH-46 class helicopters for external civil and military aviation customers. Columbia provides total logistics support for the GE T58 and CT58 series engine and is a Honeywell approved service center for the T55 and AL5512 series engine.

Columbia is AS9100 Rev D, AS9110 Rev C and AR-95-20 certified. Columbia holds the FAA Type Certificates and Production Certificates for the Columbia Model 107-II Vertol and the Columbia Model 234 Chinook, and has an FAA Restricted Category Type Certificate for its Columbia CH-47D Chinook airframes.
AVIATION SERVICES
LIFT SERVICES

Aerial Firefighting
Columbia Helicopters has over 50 years of aerial firefighting experience with its fleet of heavy-lift helicopters. Columbia’s fleet can deploy to fires with the SEI Powerfill Torrentula Bambi Bucket System or the Simplex Fire Attack System (FAS) internal tank. Columbia’s pilots are highly skilled and experienced, with an average of 15 plus years of experience at Columbia. They can drop suppressants and retardants in a variety of ways to best meet the needs of the ground fire fighters.

Oil and Gas Support
Columbia has supported oil and gas operations for more than 40 years on four continents and has moved hundreds of rigs. Columbia offers an unrivaled Load Management Program that will coordinate every aspect of your project from start to finish. We take safety very seriously while providing the best in class service.

Forestry and Stream Restoration
Columbia is a pioneer in helicopter forestry operations. Each aircraft is suited for a variety of missions in support of logging and stream restoration. Our fleet of heavy-lift helicopters support stakeholders in land management practices through logging, habitat enhancements, and stream restorations projects. Most of Columbia’s project managers are degreed professionals with over 20 plus years in forestry applications.

Infrastructure
From power lines and pipelines to ski lifts and communication towers — Columbia’s fleet can safely carry the supplies you need to make your project a success. Columbia’s pilots are the best in the industry, with an average of over 7,000 flight hours of heavy-lift external load experience each. This combination will provide you with the best success for your project. Our helicopters’ capabilities, coupled with our experienced crew, will see that your project meets timelines and within budget.

CHARTER SERVICES

From troop and cargo transport to disaster relief, customers call on Columbia Helicopters to establish, augment or expand their heavy-lift capabilities. Our fleet flies from daylight to dark, seven days a week, moving tons of cargo, mail and passengers, hauling external loads and building telecom towers and antennas. Supported by on-site mechanics, cabin crews, and pilots, our commitment to our customers’ success is our most important mission.
AERIAL FIREFIGHTING

Columbia Helicopters is a leader in aerial firefighting and has been providing this service globally since 1967. Columbia’s fleet of heavy-lift helicopters are the Columbia Model 234 Chinook, the Columbia CH-47D Chinook, and the Columbia Model 107-II Vertol. Each aircraft is suited for a variety of missions in support of aerial firefighting. Columbia's fleet of helicopters deploys to fires equipped with the SEI Powerfill Torrentula Bambi Bucket or the Simplex Fire Attack System (FAS) internal tank. Aircraft and fire suppression and retardant methods are determined by customer requirements, terrain and environmental conditions. Columbia will work with the customer to determine the best combination of aircraft and equipment for the customer's mission.

**Internal Tank**

Our Simplex Fire Attack System is available for the Columbia CH-47D Chinook helicopters. This system is designed with a 2,800 gallon (10,599 liters) water or retardant tank and a 139.7 gallon (529 liters) foam tank. The pilot can drop a full load of water or retardant in four seconds, or combination of settings as required by the customer. The Fire Attack System is also equipped with a Telemetry Unit that provides real time information on dip site location, drop site location and amount of suppressant or retardant delivered. The tank can be filled at a tanker base through 3 inch (7.62 cm) lines or the tank can be filled while hovering over a water source or dip tank through a snorkel/hover pump. The hover pump can fill the tank to capacity at suppressant/retardant sites with as little as 18 inches (45.72 cm) in depth.

**Bambi Buckets**

Columbia's fleet can deploy to fires with the SEI Powerfill Torrentula Bambi Bucket with a capacity of 2,600 gallons (9,842 liters) with our Columbia Model 234 Chinook. We also operate the smaller Bambi Bucket with a capacity 1,300 gallons (4,921 liters) with our Columbia Model 107-II Vertol. Each Bambi Bucket contains four high-speed pumps that can fill the bucket in less than 90 seconds from sources as shallow as 18 inches (45.72 cm). In addition to filling from traditional water sources such as lakes, ponds, rivers and oceans, these versatile water buckets can be filled from shallow streams and ponds, as well as dip tanks. Buckets are typically suspended 200 feet (61 meters) below the helicopter, allowing Columbia's pilots to access tree-lined streams and ponds, or other access-restricted water sources.
AERIAL FIREFIGHTING

SPECIALIZED MISSION EQUIPMENT
SEI Powerfill Torrentula
Bambi Bucket
Simplex FAS internal tank
Cargo hook and rigging
Specialized rigging

FIREFIGHTING CAPABILITIES
CH-47D helicopters are 24% faster and 40% more fuel efficient than other helicopters in its class
Higher cruise speed and better fuel efficiency translates into delivering greater payloads
Fire tank and bucket can accommodate foam, gel and retardant in addition to water

QUICK FACTS
CH-47D Fire tank capacity: 2,800 gallons (10,599 liters)
Fire tank can be filled in 60 seconds and emptied in 4 seconds
6 water drop settings
8 coverage drop selections
234/CH-47D Bucket capacity: 2,600 gallons (9,842 liters)
107-II Bucket capacity: 1,300 gallons (4,921 liters)

Positioning Water Drops Effectively
Once the aircraft is over the fire, Columbia's pilots are able to drop suppressants and retardants in a variety of ways to best meet the needs of the ground fire fighters. The pilots can create a massive fire line by partially opening the bucket/tank while in forward flight. They can open and close the gate to dispense a series of spot drops, or they can hit stubborn hotspots with a precise, massive spot drop.

Bubble windows on both the pilot’s and co-pilot’s sides facilitate quick pick up and provide a full view of the drop area to ensure obstacle clearance and enhance safe load delivery. Once over the location, the load is placed precisely over the designated target and the pilot electrically opens the bucket/tank’s gate.
OIL AND GAS SUPPORT

Columbia Helicopters has supported oil and gas activities for more than 40 years with our first rig move in 1971. Columbia has provided oil and gas support on four continents and has moved hundreds of rigs. Columbia has successfully carried out complicated rig moves, including an 80 nautical mile (148 km) one-way move and multiple moves at or above 9,000 feet (2,743 meters). Columbia continues to meet or exceed industry standards. Whether it is a long term project or a short rig move, Columbia’s support network is the best in the industry. On-site maintenance, a robust parts supply and a drive for excellence have led to a daily availability rate of over 95%.

The tandem rotor and twin-engine design of the Columbia Model 234 Chinook and the Columbia Model 107-II Vertol are more efficient than single main rotor designs as it allows all available power to support higher internal and external payloads. This also provides increased stability in crosswinds, allowing the pilots to place loads more precisely at a new rig site, which can also cut down on reassembly time of the rig and components. Each aircraft is suited for a variety of missions in support of oil and gas exploration and production.

Columbia provides general delivery and precision placement services. Large side bubble windows allow the pilots a clear view of the external load operation and, thereby increasing safety in construction lifts.

Columbia’s extensive experience in support of oil and gas operations has established a Load Management Program that is the best in class. This program coordinates all external load logistics from complete rig teardown, movement, and transportation. Columbia provides on-site logistic coordinators who will work with all parties to ensure loads are packaged and moved as efficiently as possible. Columbia’s project managers are available to assist with your projects. These highly skilled professionals will create solutions that meet your exploration and production project goals, timelines, and budgetary requirements.
OIL AND GAS SUPPORT SERVICES

- Rig moves
- Equipment transport and placement
- Material transport
- Logistical support
- Cargo hook and rigging
- Specialized rigging
- Various cargo delivery options

QUICK FACTS

- Tandem rotor helicopters are more efficient than single rotor helicopters
- The Columbia Model 234 UT has the largest gross weight allowance for any helicopter in its class at 51,000 pounds (23,133 kilograms)
- On-site maintenance and a robust parts supply maintain an availability rate of over 95%
- Operate to Lowler, ASM, and Dogman certification standards

Our load management personnel are trained in every aspect of external load transportation, rigging and movement procedures, as well as operate to Lowler, ASM, and Dogman certification standards.

Rigging equipment and procedures meet Lowler, ASM, and Dogman specifications for continued service. Columbia also provides load management for hazmat and dangerous goods. A variety of end users and on-site sub-contractors use our Load Management Program services.

Columbia takes pride in our safety, personnel, performance and reliability, while providing best in class service. We regard safety as the most important aspect of aviation and has the most extensive SMS program in the world. Our pilots and mechanics meet and exceed OGP requirements.
FORESTRY AND STREAM RESTORATION

Columbia Helicopters has supported forestry operations for more than 50 years. Across the Pacific Northwest, fish and stream biologists are using our helicopters to place boulders, logs and root wads into streams and creeks, thereby helping to restore habitat and spawning grounds for native fish runs.

Columbia’s heavy-lift fleet consists of the Columbia Model 107-II Vertol, Columbia Model 234 Chinook, and Columbia CH-47D Chinook helicopters. The tandem rotor and twin-engine design of these helicopters is more efficient than single main rotor design as it allows all available power to support higher internal and external payloads. This also provides increased stability in crosswinds, allowing the pilots to place loads more precisely at sites. Each aircraft is suited for a variety of missions in support of forestry and stream restoration.

Columbia’s foresters support stakeholders in land management practices through logging and habitat enhancements and stream restorations. Columbia’s helicopters provide flexibility to log, place or deliver logs of all sizes. Columbia’s project managers have more than 30 years’ experience in the industry and are knowledgeable on all forestry applications to assist you in your project.

FORESTRY AND STREAM RESTORATION SERVICES

- Helicopter logging
- Land management support
- Placement of large trees and debris
- Habitat improvement and restoration
- Stream improvement and restoration
Columbia Helicopters has supported infrastructure projects for more than three decades. Columbia’s tandem rotor helicopters are more efficient and have better crosswind hover capability when compared to single main rotor helicopter designs. This capability is uniquely suited to support projects requiring the movement of large structures and placing them in remote locations with precision.

Columbia provides general delivery and precision placement services with all its tandem rotor helicopters. Large side bubble windows allow the pilots a clear view of the external load operation, thereby increasing safety and at the same time, allowing the pilots to place loads more precisely.

**Full-Service Helicopter Operations**

When you choose to work with Columbia, an experienced project manager will work with you to outline the objectives and challenges of your project. The project manager will coordinate with our highly skilled load coordinators and pilots to see tasks through to completion quickly and safely. A team of trained mechanics accompanies every assignment to ensure that each helicopter is ready to complete your project safely. Columbia takes pride in the safety of our personnel, performance and reliability, while providing best in class service.
From passenger and cargo transport to disaster relief support, customers call on Columbia Helicopters to establish, augment or expand their heavy-lift and super-heavy lift capabilities. The proven design and supportability of the tandem rotor and twin-engine Columbia Model 107-II Vertol and Columbia Model 234 Chinook helicopters makes them the most versatile platforms capable to operate in extreme conditions and austere environments. Columbia continues to build capabilities with the largest fleet of commercial heavy-lift and super-heavy helicopters configured to various mission profiles in support of government and commercial organizations worldwide.

Active in Afghanistan

Columbia is proud to continue to support the US Department of Defense in Afghanistan. Supported by pilots, mechanics, and cabin crew, our fleet transport cargo, mail, and passengers, including VIPs. Force protection work has included placing 6,000 pounds (2,722 kgs) barricades to block access roads and protect military personnel from Vehicle Borne Improvised Explosive Devices (VBIEDs).

Our ability to deliver supplies and cargo to outlying FOBs using our L2P2 (Long Line Precision Placement) technique is extremely valued by military units. This capability allows us to resupply ground personnel in areas that other helicopters may find difficult or impossible to access due to terrain and or lack of this capability.

Accreditations

Columbia holds an FAA 14 CFR part 135 operating certificate and is a Commercial Airlift Review Board (CARB) certified airlift provider to the US Department of Defense (DoD).
**Columbia Model 234 Chinook**

The Columbia Model 234 Chinook helicopter is a tandem rotor, twin engine turbine powered, transport category helicopter originally FAA type certificated by Boeing in 1981. The type certificate was transferred from Boeing to Columbia Helicopters in 2006. This aircraft is the commercial model of the military variant, CH-47 Chinook.

**Columbia CH-47D Chinook**

The Columbia CH-47D Chinook helicopter is a tandem rotor, twin engine turbine powered restricted category helicopter acquired as surplus from the US Army. Columbia Helicopters received type certification of the CH-47D from the FAA in 2014.

**Columbia Model 107-II Vertol**

The Columbia Model 107-II Vertol helicopter is a tandem rotor, twin engine turbine powered, transport category helicopter originally FAA type certificated by Boeing Vertol in 1962. The type certificate was transferred from Boeing to Columbia Helicopters in 2006.
The Columbia Model 234 Chinook helicopter is a tandem rotor, twin engine turbine powered, transport category helicopter originally FAA type certificated by Boeing in 1981. The type certificate was transferred from Boeing to Columbia Helicopters in 2006. This aircraft is the commercial variant of the military CH-47 Chinook.

The Columbia Model 234 Chinook has the ability to be configured for multiple uses, which include commercial passenger transportation, internal and external cargo transportation, aerial firefighting operations, charter support operations, helicopter logging operations, oil and gas exploration, and infrastructure support.

The Columbia Model 234 Chinook has a maximum gross weight of 51,000 lbs (23,133 kgs). A large ramp area allows cargo and personnel to be loaded efficiently. With no tail rotor obstruction, loads as large as 6 x 9 x 30 ft (1.83 x 2.74 x 9.14 m) can be loaded into the rear of the aircraft. The maximum range of the Columbia Model 234 Chinook in its Long Range (LR) configuration is 560 nautical miles and 410 nautical miles with auxiliary tanks in its Utility (UT) configuration. The Columbia Model 234 Chinook is equipped with two Honeywell AL5512 engines with a maximum speed of 150 knots and a cruising speed of 120 knots.
The Columbia Model 234 Chinook is available in two configurations: Long Range (LR) and Utility (UT).

### PERFORMANCE SPECS

<table>
<thead>
<tr>
<th></th>
<th>LONG RANGE (Imperial)</th>
<th>Metric</th>
<th>UTILITY (Imperial)</th>
<th>Metric</th>
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<tbody>
<tr>
<td>Maximum Gross Weight</td>
<td>51,000 lbs</td>
<td>23,133 kgs</td>
<td>51,000 lbs</td>
<td>23,133 kgs</td>
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<tr>
<td>Range (Max Fuel)</td>
<td>560 nm</td>
<td>1,037 km</td>
<td>260 nm</td>
<td>482 km</td>
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<tr>
<td>Range (Max Fuel &amp; Aux Tanks)</td>
<td>560 nm</td>
<td>1,037 km</td>
<td>410 nm</td>
<td>759 km</td>
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<td>Fuel Capacity</td>
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<td>Fuel Capacity (w/ Aux Tanks)</td>
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<td>Fuel Consumption</td>
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<tr>
<td>Maximum Speed</td>
<td>150 knots</td>
<td>278 km/hr</td>
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<td>278 km/hr</td>
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<td>Cruise Speed</td>
<td>120 knots</td>
<td>222 km/hr</td>
<td>120 knots</td>
<td>222 km/hr</td>
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<td>Service Ceiling</td>
<td>15,000 feet</td>
<td>4,572 m</td>
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### DIMENSIONS

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<th>UTILITY (Imperial)</th>
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<tr>
<td>Rotor Diameter</td>
<td>52 x 84 feet</td>
<td>15.9 x 25.6 m</td>
<td>52 x 84 feet</td>
<td>15.9 x 25.6 m</td>
<td></td>
</tr>
<tr>
<td>Length with Rotors Operating</td>
<td>60 x 99 feet</td>
<td>18.3 x 30.2 m</td>
<td>60 x 99 feet</td>
<td>18.3 x 30.2 m</td>
<td></td>
</tr>
<tr>
<td>Fuselage Length x Width</td>
<td>52 x 16 feet</td>
<td>16 x 5 m</td>
<td>52 x 16 feet</td>
<td>16 x 5 m</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>19 feet</td>
<td>6 m</td>
<td>19 feet</td>
<td>6 m</td>
<td></td>
</tr>
<tr>
<td>Internal Cabin Length x Width</td>
<td>30.2 x 8.3 feet</td>
<td>9.19 x 2.5 m</td>
<td>30.2 x 8.3 feet</td>
<td>9.19 x 2.5 m</td>
<td></td>
</tr>
<tr>
<td>Internal Cabin Height</td>
<td>6.5 feet</td>
<td>1.9 m</td>
<td>6.5 feet</td>
<td>1.9 m</td>
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<tr>
<td>Seating Capacity</td>
<td>19 pax</td>
<td>19 pax</td>
<td>19 pax</td>
<td>19 pax</td>
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### ENGINES 2 X HONEYWELL AL5512

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<tr>
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<th>LONG RANGE</th>
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<tbody>
<tr>
<td>Maximum Continuous Dual</td>
<td>2,975 shp</td>
<td>2,975 shp</td>
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<tr>
<td>Emergency Power Single Engine</td>
<td>4,335 shp</td>
<td>4,335 shp</td>
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</table>

Columbia Model 234 LR External Load Gross Weight

OPERATING WEIGHT: 27,000 lbs (12,247 kgs)

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>SEA LEVEL</th>
<th>3,000 FT (914 M)</th>
<th>5,000 FT (1,524 M)</th>
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<tbody>
<tr>
<td>0°C</td>
<td>24,000 lbs (10,886 kgs)</td>
<td>21,900 lbs (9,934 kgs)</td>
<td>20,800 lbs (9,435 kgs)</td>
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<tr>
<td>15°C</td>
<td>22,700 lbs (10,297 kgs)</td>
<td>21,100 lbs (9,571 kgs)</td>
<td>19,800 lbs (8,982 kgs)</td>
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<tr>
<td>30°C</td>
<td>22,000 lbs (9,979 kgs)</td>
<td>19,500 lbs (8,845 kgs)</td>
<td>16,300 lbs (7,394 kgs)</td>
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</tbody>
</table>

Columbia Model 234 UT External Load Gross Weight

OPERATING WEIGHT: 24,700 lbs (11,204 kgs)

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>SEA LEVEL</th>
<th>3,000 FT (914 M)</th>
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<tr>
<td>0°C</td>
<td>26,300 lbs (11,929 kgs)</td>
<td>26,300 lbs (11,929 kgs)</td>
<td>25,300 lbs (11,476 kgs)</td>
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<td>15°C</td>
<td>26,300 lbs (11,929 kgs)</td>
<td>25,700 lbs (11,657 kgs)</td>
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<tr>
<td>30°C</td>
<td>26,300 lbs (11,929 kgs)</td>
<td>24,000 lbs (10,886 kgs)</td>
<td>20,600 lbs (9,344 kgs)</td>
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Utility
The Columbia CH-47D Chinook helicopter is a tandem rotor, twin engine turbine powered restricted category helicopter acquired as surplus from the US Army. Columbia Helicopters received type certification of the CH-47D from the FAA in 2014.

As a restricted category aircraft, the Columbia CH-47D Chinook is limited to external load operations. The Columbia CH-47D Chinook has the ability to be configured for external (slung load) cargo transportation, aerial firefighting operations with external water bucket, aerial firefighting operations with internal tank, and infrastructure support.

The Columbia CH-47D Chinook has a maximum gross weight of 50,000 pounds (22,680 kgs). The maximum range of the Columbia CH-47D Chinook is 556 nautical miles with auxiliary tanks. The Columbia CH-47D Chinook is equipped with two Honeywell T55-GA-714A engines with a maximum speed of 170 knots and a cruising speed of 130 knots.
COLUMBIA CH-47D CHINOOK

PERFORMANCE SPECS

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<tr>
<td>Maximum Gross Weight</td>
<td>50,000 lbs</td>
<td>22,680 kgs</td>
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<tr>
<td>Range (Max Fuel)</td>
<td>360 nm</td>
<td>667 km</td>
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<td>Range (Max Fuel &amp; Aux Tanks)</td>
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<td>Fuel Capacity</td>
<td>1,028 gal</td>
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<td>1,528 gal</td>
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<td>Fuel Consumption</td>
<td>329 gal/hr</td>
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<tr>
<td>Maximum Speed</td>
<td>170 knots</td>
<td>315 km/hr</td>
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<tr>
<td>Cruise Speed</td>
<td>130 knots</td>
<td>241 km/hr</td>
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<tr>
<td>Service Ceiling</td>
<td>19,000 feet</td>
<td>5,791 m</td>
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ENGINES 2 X HONEYWELL T55-GA-714A

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>Maximum Continuous Dual</td>
<td>4,867 shp</td>
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<tr>
<td>Emergency Power Single Engine</td>
<td>5,069 shp</td>
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Columbia CH-47D Chinook External Load Gross Weight

OPERATING WEIGHT: 24,825 lbs (11,260 kgs)
Aircraft empty weight with 30 minutes fuel, pilots, and rigging

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>SEA LEVEL</th>
<th>3,000 FT (914 M)</th>
<th>5,000 FT (1,524 M)</th>
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<tbody>
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<td>25,200 lbs (11,431 kgs)</td>
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<tr>
<td>15°C</td>
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Simplex Fire Attack System Internal Water Tank
The Columbia Model 107-II Vertol helicopter is a tandem rotor, twin engine turbine powered, transport category helicopter originally FAA type certificated by Boeing Vertol in 1962. The type certificate was transferred from Boeing to Columbia Helicopters in 2006.

This aircraft is the commercial model of the military variant, CH-46 Sea Knight. The Columbia Model 107-II Vertol has the ability to be configured for multiple uses, including commercial passenger transportation, internal and external cargo transportation, aerial firefighting operations, charter support operations, helicopter logging operations, oil and gas exploration, and infrastructure support.

The Columbia Model 107-II Vertol has a maximum gross weight of 22,000 lbs (9,979 kgs). A large ramp area allows cargo and personnel to be loaded efficiently. With no tail rotor obstruction, fork lifts can pull up to the back of a running helicopter and load cargo as large as 6 x 6 x 20 ft (1.82 x 1.82 x 6.1 m). The maximum range of the Columbia Model 107-II Vertol is 358 nautical miles with auxiliary tanks.

The Columbia Model 107-II Vertol is equipped with two General Electric CT58-140-2 engines with a maximum speed of 148 knots and a cruising speed of 120 knots.
**LIFT SERVICES**

**COLUMBIA MODEL 107-II VERTOL**

**PERFORMANCE SPECS**

<table>
<thead>
<tr>
<th></th>
<th>Imperial</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Gross Weight</td>
<td>22,000 lbs</td>
<td>9,979 kgs</td>
</tr>
<tr>
<td>Range (Max Fuel)</td>
<td>250 nm</td>
<td>463 km</td>
</tr>
<tr>
<td>Range (Max Fuel &amp; Aux Tanks)</td>
<td>358 nm</td>
<td>663 km</td>
</tr>
<tr>
<td>Fuel Capacity</td>
<td>350 gal</td>
<td>1,325 liters</td>
</tr>
<tr>
<td>Fuel Capacity (w/ Aux Tanks)</td>
<td>548 gal</td>
<td>2,074 liters</td>
</tr>
<tr>
<td>Fuel Consumption</td>
<td>165 gal/hr</td>
<td>624.5 liters/hr</td>
</tr>
<tr>
<td>Maximum Speed</td>
<td>148 knots</td>
<td>274 km/hr</td>
</tr>
<tr>
<td>Cruise Speed</td>
<td>120 knots</td>
<td>222 km/hr</td>
</tr>
<tr>
<td>Service Ceiling</td>
<td>13,000 feet</td>
<td>3,962 m</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

<table>
<thead>
<tr>
<th></th>
<th>Imperial</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor Diameter</td>
<td>43 x 71 feet</td>
<td>14.3 x 23.7 m</td>
</tr>
<tr>
<td>Length with Rotors Operating</td>
<td>50 x 83 feet</td>
<td>15.2 x 25.3 m</td>
</tr>
<tr>
<td>Fuselage Length x Width</td>
<td>44 x 14 feet</td>
<td>13 x 4 m</td>
</tr>
<tr>
<td>Height</td>
<td>17 feet</td>
<td>5 m</td>
</tr>
<tr>
<td>Internal Cabin Length x Width</td>
<td>20.7 x 6 feet</td>
<td>6.3 x 1.8 m</td>
</tr>
<tr>
<td>Internal Cabin Height</td>
<td>6 feet</td>
<td>1.8 m</td>
</tr>
<tr>
<td>Seating Capacity</td>
<td>17 pax</td>
<td>17 pax</td>
</tr>
</tbody>
</table>

**ENGINES 2 X GENERAL ELECTRIC CT58 140-11**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Continuous Dual</td>
<td>1,400 shp</td>
<td></td>
</tr>
<tr>
<td>Emergency Power Single Engine</td>
<td>1,500 shp</td>
<td></td>
</tr>
</tbody>
</table>

**Columbia Model 107-II External Load Gross Weight**

OPERATING WEIGHT: 12,315 lbs (5,585 kgs)

Aircraft empty weight with 30 minutes fuel, pilots, and rigging

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>SEA LEVEL</th>
<th>3,000 FT (914 M)</th>
<th>5,000 FT (1,524 M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C</td>
<td>9,700 lbs (4,400 kgs)</td>
<td>9,700 lbs (4,400 kgs)</td>
<td>9,400 lbs (4,264 kgs)</td>
</tr>
<tr>
<td>15°C</td>
<td>9,700 lbs (4,400 kgs)</td>
<td>9,300 lbs (4,218 kgs)</td>
<td>8,200 lbs (3,719 kgs)</td>
</tr>
<tr>
<td>30°C</td>
<td>9,700 lbs (4,400 kgs)</td>
<td>7,800 lbs (3,538 kgs)</td>
<td>6,200 lbs (2,812 kgs)</td>
</tr>
</tbody>
</table>

**Passenger Configuration**

![Passenger Configuration Image]
**AVIATION SOLUTIONS**

**Backed by Over 50 Years of Knowledge and Experience**

Columbia Helicopters has over 50 years of experience in maintenance and repair of our own fleet of helicopters. This extensive knowledge and experience is applied to providing maintenance services to civilian and military customers that operate the CH-47 and CH-46 class helicopters.

Columbia’s maintenance headquarters is located in Aurora, Oregon. The overhaul and support facilities are housed in four buildings totaling 170,000 square feet (15,794 square meters), located on 28 acres (11.33 hectares). Columbia’s parts department carries over 60,000 line items of inventory in stock to support internal and external customers worldwide. Columbia is also AS9100 Rev D, AS9110 Rev C and AR-95-20 certified.

**Military Approvals**

Military approvals include maintenance capabilities on the T55 series engines and the T58-GE-16/016A. Columbia completed the US Army Product Verification Audit, thereby qualifying Columbia to repair or overhaul the forward, engine, aft, and combined transmissions of the CH-47 helicopters. In addition to the transmissions, Columbia was also qualified by the US Army to provide maintenance services on the forward and aft rotor heads, all drive shafts, adapters, engine drive shafts, and vertical shafts.

**Honeywell and GE Correlated Testing**

With two engine test cells on-site, Columbia is capable of providing engine maintenance services to numerous engines and APUs. Columbia is a factory-authorized service center for the Honeywell T55-714 series engine and maintains a Honeywell correlated test cell capable of operating up to 6,000 shaft horsepower. Columbia is the GE approved Total Logistics Support Center for the GE T58 and CT58 series engines and NAVAIR approved for the T58 series engine. Columbia’s test cell provides baseline data for all T58 test cells currently in use. With more than one million flight hours on the GE CT58 engine, Columbia proudly offers full, on-site capabilities in testing, repair and overhaul of GE T58 and CT58 engines.

**Type and Production Certificates**

Columbia holds Type and Production Certificates for the Columbia Model 234 Chinook and the Columbia Model 107-II Vertol. Columbia is also the GE Licensed OEM Parts Manufacturer for the GE T58 and CT58 series engines. Columbia’s campus is a factory-authorized service center for Honeywell, GE, and a NAVAIR-approved MRO facility.
Columbia Helicopters is a factory-authorized service center for the Honeywell T55-714 series engine. The facility also maintains a Honeywell certified test cell capable of operating up to 6,000 shaft horsepower. In addition, Columbia is the GE approved Total Logistics Support Center for the GE CT58 and T58 series engine.

Columbia’s test cell provides baseline data for all T58 test cells currently in use. With more than one million flight hours on the GE CT58, Columbia proudly offers full, on-site capabilities in testing, repair and overhaul of GE T58 and CT58 engines. Complete in-house overhaul capabilities and an extensive parts inventory allow Columbia to provide a one-stop shop for their customers’ needs.

### ADDITIONAL REPAIRS AND OVERHAULS
- Fuel Controls, Pumps, Manifolds
- Centrifugal Purifiers
- Flow Dividers
- Lube Pumps
- Stator Vane Actuators (SVA)
- Anti-ice Valves
- Pilot Valves
- T5 Harnesses
- Oil Coolers
- Over Speed Controls
- Accessory Drive Gearboxes
- Front Frame Accessory Drives
- Power Turbine Accessory Drives
- Right Angle Drives
- Oil Jets, Combustion Liners
- Bypass and Relief Valves
- Solenoid and Bleed Valves
Columbia Helicopters is uniquely qualified to provide airframe services, ranging from minor modifications to major structural repairs at its facility and with rapid on-site field repair teams. Our in-house support shops allows us to meet demanding timelines while maintaining the highest quality standards. Columbia has invested heavily in an extensive inventory of stands, tooling, test equipment, and other resources which enables us to offer complete airframe solutions.

**CAPABILITIES**
- Complete reset and modernization
- Major airframe modifications: structural, avionics and mission equipment
- Major airframe repairs: battle damage and normal breakage
- Fiberglass and composite repair
- Tail section repair
- Engine mount replacement
- Depot level maintenance
- Corrosion inspection and reports
- Painting and corrosion protection
COMPONENTS

Columbia Helicopters’ technicians are highly skilled and fully equipped with the latest tools, technologies and facilities in component repair and overhaul. Columbia is proud to offer US Army approved (CH-47), NAVAIR approved (CH-46) and OEM qualified (234 and 107) services.

A full lineup of balancing, repair and overhaul capabilities are available on the following:

**ROTOR HEADS**
- Forward and Aft Rotor Heads
- Swashplates
- Tail Rotor Drive Shafts
- Vertical Shafts
- Flight Control Assemblies
- Synchronization Shafts and Adapter Assemblies

**TRANSMISSIONS**
- Forward, Aft, Combining And Engine Transmission
- Bearing Liner Replacement
- Mixbox
- Lube Pump
- Full run stand capability for all CH-47 and CH-46E transmissions

**ADDITIONAL**
- Drive Shaft Assemblies
- Engine Compressors
- Turbine Wheels
- Cooling Fans
Columbia Helicopters is committed to providing the best in-class design and maintenance engineering services to support the best in-class flight operations. Columbia specializes in the design, manufacturing support, and maintenance support for the Model 107-II (civil variant of the CH-46), Model 234 (civil variant of the CH-47), and CH-47D tandem rotor helicopters.

Columbia understands the complexity and beauty of the design of these aircraft, as well as the functional and industry requirements. Columbia’s Engineering offers unparalleled engineering capabilities and flexibility to meet your rotorcraft’s operational, maintenance, and certification needs.

Columbia’s highly-skilled engineering professionals use advanced tools to tackle the most complex projects and turn them into safe, reliable, efficient, and cost-effective solutions. Whether you have a mission specific new product development project or supporting current aircraft operations, Columbia offers engineering services tailored to meet your needs.
ADDITIONAL CAPABILITIES

Avionics
Dedicated on-site Avionics and Electric shops offer inspection, testing, repair, overhaul, modification and installation of the following types of systems:

- Flight Control Systems
- Monitoring
- Collision Avoidance Systems
- Management Systems
- Flight Recorders
- Radars
- Communication Systems
- Electrical Accessories
- Wire Harnesses

Hydraulics
Full service Hydraulic Repair shop is capable of repairing and overhauling both military and commercial components. Platform capabilities include but not limited to CH-47, CH-46, CH-54, S-64, H-3, S-61, Bell 206, Bell 205, Bell 212 and AS 350.

- Landing Gear, Wheels and Brake Assemblies
- Power Control Units
- Pumps and Motors
- Accumulators
- Rotor Brakes
- Reservoirs
- Manifolds
- Actuators
- Dampers
- Valves
- Filters

Rotor Blades
The Rotor Blade shop is capable of repairing and overhauling both metal and composite rotor blades for a variety of aircraft. Services offered include:

- Trim tab and honeycomb replacement
- Nickel cap and trailing edge wedge repairs
- Fairing, leading edge and erosion strip repairs
- Painting and sealing
- Balancing
**Finishing**

Columbia Helicopters’ on-site paint booth is designed to handle helicopters of various sizes, including the CH-47D Chinook helicopters. Whether you need a completely new paint job or a small paint repair, Columbia’s experienced crew can match any paint color and scheme.

Services offered include the following:

- Media blast stripping of components
- Chemical stripping of aircraft and aircraft components
- Chemical conversion coatings
- Finish coatings of aircraft components
- Durable, custom paint coatings
- Application of non-skid coatings

**Parts**

- Extensive on-site inventory provides fast turnaround service

**Services**

- Inspection
- Machining
- Welding
- Balancing
- Engineering
- Level 3 Non-Destructive Testing
- Logistics
- Flight test
- Training and more
Columbia Helicopters is the GE approved Total Logistics Support Center for the GE T58 and CT58 series engines. Columbia provides access to a full support network for your GE T58 and CT58 engines and accessories through our authorized Customer Service Centers, complete engine and accessories MRO, comprehensive parts inventory, GE Licensed OEM Parts Manufacturing, technical publications, and full engineering capabilities. Columbia maintains and manufactures inventory for full availability and supply of parts to meet demand from all commercial and military customers and authorized Customer Service Centers for the life of the product.

Authorized Customer Service Centers
Columbia supports a network of authorized Customer Service Centers, with agreements that provide them full access to Parts, Technical Publications, Engineering Services and Test Cell approvals. This network of highly qualified and experienced authorized Customer Service Centers assures that customers have access to a full range of options to ensure that their operational and logistical needs remains fully supported.

Parts and Logistical Support Services
Columbia maintains and replenishes an extensive parts inventory, designed to fully meet the requirements of operators and our authorized Customer Service Centers network. With an extensive network of vendors, including GE as well as many vendors transferred from GE, Columbia manufactures GE OEM parts under a Parts License Approval and Columbia’s FAA Production Certificate.

Engineering Services
Columbia provides a full range of engineering services to operators and authorized Customer Service Centers of the T58 and CT58 series engines. With the complete data package for all models of the engines at their disposal, Columbia has the full range of service and capabilities to respond to your every requirement.

Engine Overhaul and Repair Capabilities
Columbia Helicopters has been an operator and a Certified MRO Repair Station for the T58 and CT58 series engines for over 50 years. Columbia has full MRO capability for all variants of the T58 and CT58, including all fuel accessories and fuel control units. Columbia maintains a full GE T58 and CT58 master test cell capability, including correlation engines and custom correlation plans.

Technical Publications
Columbia manages the distribution of all GE T58 and CT58 Technical Publications for all operators and authorized Customer Service Centers. Through a custom service provision, Columbia provides licensed on-line access to qualified users for the T58 and CT58 publications.
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