

NEVADA DEPARTMENT OF WILDLIFE GOES HOT AND HIGH WITH “AMAZING” EAGLE 407HP

Honeywell HTS900 engine delivers game changing performance while reducing costs

Customer success story

**GREG SMITH,
CHIEF PILOT, NEVADA
DEPARTMENT OF WILDLIFE**

“The numbers are phenomenal, the workmanship is amazing, the performance is top of the shelf.”



Honeywell



**EAGLE
407^{HP}**

OVERVIEW

Nevada Department of Wildlife (NDOW) was looking to replace an aging helicopter with a new aircraft that would enable it to expand its mission profiles. The organization selected the Eagle 407HP helicopter, powered by the Honeywell HTS900 turboshaft engine.

The HTS900 provides a 22 percent increase in shaft horsepower (shp), an additional 500lbs of payload and 17 percent lower fuel burn over the standard Bell 407. Chief pilot Greg Smith, who has been flying for 28 years, says of the Eagle 407HP: “The numbers are phenomenal, the workmanship is amazing, the performance is top of the shelf.”

BACKGROUND

NDOW is the state agency responsible for the restoration and management of fish and wildlife resources, as well as the promotion of boating safety on Nevada’s waters.

The organization has seven divisions – law enforcement, game, fisheries, conservation and education, habitat, wildlife diversity and operations – that develop programs and projects and is split into three regions.

In total these cover 109,894 square miles of land, 667 square miles of water and 529 streams that flow 2,750 miles. NDOW’s 11 state-owned wildlife management areas provide approximately 117,000 acres of wildlife habitat.

Among Nevada’s big game are mule deer, pronghorn, bighorn sheep, Rocky Mountain bighorns, California bighorn sheep, Rocky Mountain Elk, Rocky Mountain goats and mountain lions.

Included within the fleet are Astar AS350, Bell 205, Bell 206 JetRanger and LongRanger, Bell 212, Bell 407, Bell 427 and Eagle 407HP helicopters.



QUICK FACTS

Honeywell Solution

- HTS900 turboshaft helicopter engine

Customer Results

- Expansion of mission profiles in hot and high conditions
- Reduced fuel and maintenance costs
- Increased power helps from both an operational and safety perspective

Why NDOW chose Honeywell

- Organization had positive experience operating another Bell helicopter
- Engine performance and workmanship
- Partnership between Bell, Eagle Copters and Honeywell

Customer

- Name: Nevada Department of Wildlife
- Location: Nevada, USA
- Industry: Government
- Website: www.ndow.org

BUSINESS NEED

NDOW takes to the sky to support its mission of protecting, preserving, managing and restoring wildlife and its habitat for aesthetic, scientific, educational, recreational and economic benefits.

“Most of what we’re doing is working with biologists who count game,” said NDOW’s chief pilot, Greg Smith. “We’ll do game surveys, checking on the numbers and the health of herds at different locations around the state.

“The biologist would be in the front seat, there will be another observer in the back and I’ll be flying. We physically go out and count all the animals. That’s how they check on the herds and manage the wildlife for the people of Nevada.

Until recently, NDOW operated a Bell 206B3 Jet Ranger but the agency wanted to replace it with a modern aircraft and technology that would

enable it to expand its mission profile, while remaining within the Bell Helicopter family of products.

The new helicopter would need to be able to perform well in Nevada’s hot and high conditions, which has towering mountain ranges that exceed 10,000 feet above sea level and summer temperatures that often top 100 degrees Fahrenheit.

SOLUTION

After evaluating the options, NDOW selected the Eagle 407HP, developed by Calgary-based Eagle Copters and powered by Honeywell’s ground-breaking HTS900 engine.

The HTS900, the result of years of combined effort in conjunction with Bell and Eagle Copters, is the newest addition to Honeywell’s family of helicopter engines and incorporates a next-generation dual-centrifugal compressor architecture.

This technology increases power output, reduces fuel consumption and allows for future engine growth with the same compressor architecture. The engine utilizes a dual-channel full authority digital engine control (FADEC) system to ease pilot workload and to facilitate engine maintenance planning and troubleshooting.

The HTS900 engine’s lightweight, performance, low-specific fuel consumption (SFC) and on-condition maintenance philosophy combine to reduce helicopter operating costs, increase performance and increase revenue potential.

The Eagle Copters version of the original Bell 407 takes the best of the rock solid airframe and replaces the original Rolls-Royce turboshaft engine with the more muscular Honeywell HTS900 power plant.

Honeywell’s HTS900 delivers game-changing performance and substantial operational efficiency improvements.





BENEFITS

Honeywell's 1,020 shaft horsepower (shp) HTS900 turboshaft was developed as a replacement for the 813-shp Rolls-Royce 250-C47 that was originally fitted to the Bell 407.

Honeywell based the HTS900 engine on a new dual-centrifugal compressor architecture, which allows for higher power output with lower fuel consumption. It delivers up to 22 percent more takeoff power and significantly improved hot-and-high performance, as well as improved payload, speed and operating costs. The Eagle 407HP can lift 800 pounds more than the standard Bell 407.

The new engine provides an improved hover ceiling, with a 19 percent increase in gross weight capability at 10,000 feet and a 40 percent increase in payload at 12,000 feet.

Fuel burn is reduced by up to 17 percent, while direct maintenance costs are around 12 percent less than those for the original Bell 407 model, saving on average \$18,000 each year.

Maintenance requirements have been significantly eased by reducing the number of mechanical parts.

For instance, the use of a ported shroud avoids the need for a surge valve.

The use of cooled single-crystal blades means that operators can get 15,000 cycles from this part.

"The numbers are phenomenal, the workmanship is amazing, the performance is top of the shelf and we're really looking forward to using it," said Smith. "I can't wait to take it into the mountains."

"We are fortunate that the director of Wildlife and Nevada Board of Wildlife Commissioners have placed such a high priority on the safety and performance of our flight crew and staff."

"Honeywell has built a wonderful engine for a wonderful helicopter and we'd like to take it hot and high and see what we can do with it. We'd like to thank Honeywell and Eagle Copters for putting together a great product for us."

"The Eagle 407HP is a valuable resource to our department and would not have been made possible without the public and private organizations that have shown their support."

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