

# HONEYWELL RDR-7000 WEATHER RADAR MAKES FALCON 900EX PILOT A BELIEVER

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Case Study

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## **STEVEN SKOOG, PILOT**

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**Honeywell**

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Conventional onboard weather radar systems never impressed pilot Steven Skoog very much. Then Honeywell introduced him to the game-changing IntuVue RDR-7000 weather radar system.

## BACKGROUND

Safety and comfort are paramount for Captain Skoog, who flies a Dassault Falcon 900EX for a privately held company in the Pacific Northwest. In a typical year, Skoog puts 250-300 hours on the airplane, flying the firm's principal, employees and other passengers between various destinations in the U.S. and overseas.

"Occasionally, we fly passengers that are a little fearful of flying near stormy weather," he said. "Frankly, they don't care what kind of radar we have on the airplane. They just want a smooth, comfortable and uneventful flight, and it's my job to make sure that they get it."

A graduate of the Spartan College of Aeronautics and Technology in Tulsa, Oklahoma, Skoog has close to 20 years of flying experience under his belt. Before taking his current job in 2018, he worked for an air ambulance company, which gave him countless hours of experience flying in all kinds of weather.

"To be honest, I always thought onboard weather radar was pretty useless until you were flying within 40 miles of a thunderstorm," Skoog said. "I've flown directly over active storms without the radar showing anything.



That's why I started flying with internet weather on my iPad and using ADS-B (Automatic Dependent Surveillance – Broadcast) weather information to supplement the onboard radar."

For example, in the days before ADS-B and internet weather, he remembers flying a kidney from Seattle to Iowa City, in the middle of the night, for an urgent transplant operation. "About two hours into the three-hour flight, air traffic control let me know there was severe weather in the area. The onboard weather radar was painting light green as far as I could see, even though the storm was close enough for me to see lightning out the window," he said.

"Fortunately, and no thanks to the radar, I was able to fly over the top of the storm and avoid any serious problems, but it was a pretty stressful flight for a while."

"Flying the RDR-7000 during the testing phase was a real treat and I can't wait to take it on our next major coast-to-coast or transoceanic trip."

– STEVEN SKOOG, PILOT

## QUICK FACTS

### Customer

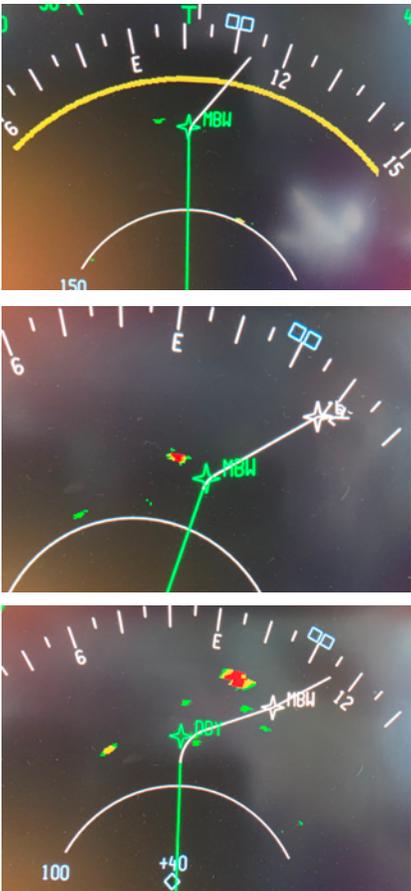
- Name: Steven Skoog
- Aircraft: Falcon 900EX
- Location: Pacific Northwest, U.S.
- Industry: Transportation

### Benefits

- Provides pilots clear and timely information to make faster, safer, more-informed decisions
- RDR-7000 scans ground to 60,000 feet and as far as 320 nautical miles ahead
- 3D volumetric scanning analyzes any storm clouds, lightning, hail, turbulence or windshear
- Improves safety, comfort and confidence for passengers – even those who are fearful of flying

### Why Choose Honeywell

- Sixty-plus years of severe weather detection and avoidance expertise
- Evolved from proven technology, RDR-7000 represents a game-changing technology breakthrough
- Developed with input from business jet pilots with experience flying in all types of weather
- Lightweight, single-unit design available to fit more business aircraft platforms



A series of photos capture the pilot's view of the multi-function display (MFD) during one of Captain Skoog's storm-chaser flights shows the RDR-7000 radar first detecting a weather cell in Wyoming. The radar picked up the storm at about 300 miles (top photo). At approximately 200 miles (middle photo), the pilot had a clear view of multiple cells in the same storm system, with the radar showing different intensity levels before he changed course to test the radar. The bottom photo shows the cell at a distance of less than 200 miles during a test of the radar's ability to paint the system.

## SOLUTION

Honeywell certification partner AeroTEC approached Skoog's flight department, in May 2020, to talk about installing the Honeywell RDR-7000 radar in the firm's aircraft for a series of flight tests leading up to a Falcon 900EX supplemental type certificate (STC). The FAA issued Technical Standard Order (TSO) approval for the RDR-7000 radar in July 2020, and Honeywell is seeking STCs on 15 aircraft types.

The capabilities of the RDR-7000 became obvious to Skoog the first time he flew his airplane with the new radar system installed. "In all, we flew the radar about 20 hours in two series of tests and the results were impressive," Skoog said.

As part of the test regime, the certification team actually went out and looked for thunderstorms so team members could experience firsthand the RDR-7000's performance under real-world operating conditions.

"For me, those storm-chaser flights were the real clincher because they demonstrated, in the most dramatic way, the difference between this new-generation radar system and conventional onboard weather radar," Skoog said. "Flying the RDR-7000 during the testing phase was a real treat and I can't wait to take it on our next major coast-to-coast or transoceanic trip."

"It's mind-boggling to me that the RDR-7000 can paint weather 320 miles out and 60,000 feet up, and even show me if there's another storm system behind the first cell," he added. "The system is extremely intuitive and easy to fly because it's fully automatic, which dramatically reduces pilot workload. The pilot has excellent situational awareness and doesn't have to worry about manually operating the radar. The RDR-7000 takes the guesswork out of flying near storms that exists with conventional radar, which means I can focus on flying the safest, most comfortable path through rough weather."

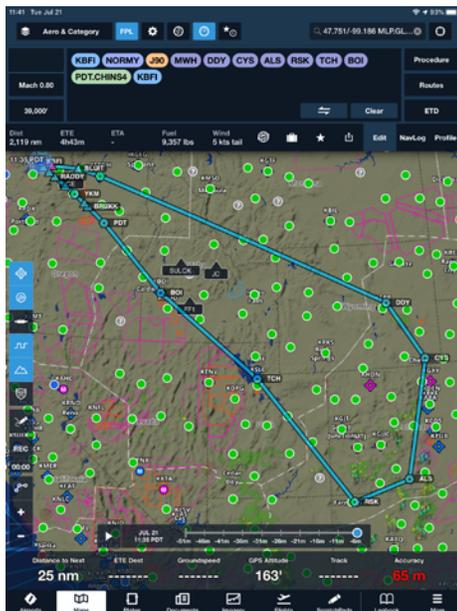
## BENEFITS

Weather radar technology has come a long way in the last decade and the Honeywell RDR-7000 weather radar represents the state of the art for business aircraft and helicopters. Unlike conventional radars that scan only a portion of the sky, the RDR-7000 scans from the ground to 60,000 feet and as far as 320 nautical miles ahead.

The system uses 3D volumetric scanning to analyze any storm clouds the radar detects and to look for conditions that might produce lightning, hail, turbulence or windshear, and display them for the flight crew. The RDR-7000 is the first radar that provides a complete vertical view of weather.

“The firm’s principal is a pilot himself and a major advocate of aviation, so he’s very interested in the equipment we have on the airplane,” Skoog said. “He’s excited about the RDR-7000 for several reasons. He knows it will improve safety, comfort and confidence for passengers – even the passengers who are fearful of flying. Operationally, we’ll be able to avoid weather-related flight delays, cancellations and airframe damage that can occur when you encounter severe weather. Finally, a weather radar system like this adds value to the airplane in the event he decides to sell or trade it sometime in the future.”

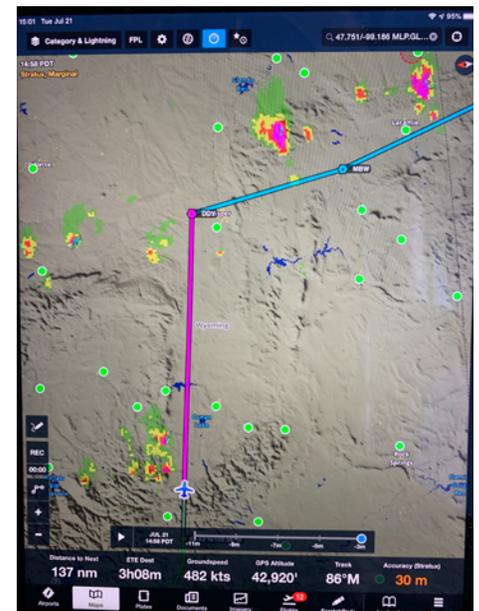
Skoog acknowledges that the Pacific Northwest is famous for its rainy weather. “But we don’t encounter many thunderstorms here on the West Coast,” he said. “Not like when we fly over the Midwest on our way to places like New York, Florida or Europe,” Skoog said. “That’s when the RDR-7000 radar will really earn its keep.”



During the final storm-chaser flight, Captain Skoog originally planned flight routing using internet-based weather data.



To test the radar’s accuracy, an ADS-B weather image was used to compare a known weather source to the RDR-7000 radar image.



The RDR-7000 weather image was extremely accurate throughout the storm-chaser series of flights in Captain Skoog’s Falcon 900EX.

## For more information

[aerospace.honeywell.com](http://aerospace.honeywell.com)

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