Stricken Polish Boeing Made Flawless Landing

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BRUSSELS (AP) — It was the end of a long-haul passenger flight from Newark, New Jersey, and the Polish LOT Airlines Boeing 767 was about to land in Warsaw.

But the pilots had a problem: The plane's hydraulic system had failed a half-hour into the flight. Now the landing gear would not deploy. None of it — not the nose gear nor the wheel assemblies under the wings.

With 231 people aboard a wheel-less aircraft weighing nearly 90 tons what's a pilot to do?

The answer: Do everything exactly as you would if you were landing with the gear down — only make sure you execute to perfection.

That is just what Tadeusz Wrona, the captain of the LOT aircraft appears to have done Tuesday, according to pilots who have flown this type of plane.

Not only did Wrona prevent any injuries to passengers and crew, but he landed the aircraft on its belly so smoothly that many on board thought it had landed on its wheels. The plane apparently suffered no structural damage.

And Wrona became an instant hero. "Fly like an eagle, land like a crow," his newfound Facebook fans said — punning on the pilot's name, which means crow in Polish.

"This was a testament to the crew's training, professionalism and preparedness (but) from a pilot's perspective, for most intents and purposes you're making a normal landing until the plane actually touches the runway," said Patrick Smith, a Boston-based airline pilot who flies a Boeing 767-300, the same type involved in Tuesday's incident.

A failure to deploy of all three sections of the undercarriage — the nose gear and the two main underwing gears — is rare but not unheard of in civil aviation.

There have been several incidents in the past decade where one of the assemblies could not be lowered. But in 2008, a Boeing 737 executed a belly landing at Kaliningrad airport in Russia after it suffered a total undercarriage failure. There were no casualties among the 144 passengers and crew, but in that case the aircraft sustained serious damage.

On the 767 in Tuesday's incident, the main hydraulic system handles the retraction and extension of the undercarriage, while electric motors control the opening and closing of the gear doors. For the main and nose gears to have failed to lower, either or both may have malfunctioned, in addition to a manual backup system that

relies on gravity.

Normally when only one of the gears fails to deploy, the pilots will try to keep the plane balanced on the other two after touching down, while waiting for the speed to fall off. This allows them to keep directional control until almost the very end of the landing roll. But that was not an option for Wrona, meaning he would be incapable of affecting the plane's direction after it set down on the tarmac.

LOT said the plane suffered "a central hydraulic system failure" about half an hour after leaving Newark. The decision was made to continue to Warsaw's Frederic Chopin airport, apparently in order to use up the heavy fuel load supplied for the trans-Atlantic flight. The 767 can only dump fuel from its central tank with no such possibility for the wing tanks; the pilots would likely have been concerned about a possible fire breaking out if they landed with too much fuel still on board.

Rare as total undercarriage failure is, pilots regularly train on simulators to execute this emergency procedure.

Air traffic control services also prepare for such landings, giving absolute priority to the flight, dispatching the fire brigade and medical services and foaming the runway to prevent a fire. Those procedures are universal, and set by the UN civil aviation organization.

"Landing gear failures make for great TV, but from a pilot's perspective they're pretty far down the list of things that can result in a disaster," said Smith.

Still, Wrona had to maneuver within constraints on both his final approach, determined by the glide path set by the airport's instrument landing system, and the aircraft's exact speed, which depends on the its weight but is normally around 150 miles (240 kilometers)per hour.

He succeeded in keeping the wings perfectly horizontal, touching down gingerly with the tail skid and gradually setting the jet's low-hanging engines onto the runway, which had been soaked with flame retardant to lower the fire risk.

Had one of the wingtips dropped at touchdown as sometimes happens in a strong crosswind, there was a risk that the landing would have ended in disaster rather than an uneventful slide down the runway.

"The crew did a fantastic job, they kept the wings level for a very smooth touchdown," said Kevin Hiatt, a former international chief pilot for Delta Air Lines who is now executive vice president of the Flight Safety Foundation.

"They thus avoided having one of the engines hitting the ground before the other and possibly getting the plane to go into a cartwheel situation which could have resulted in a fireball," said Hiatt, who flew 767s for seven years.

Polish President Bronislaw Komorowski thanked the crew and emergency workers "in the name of Poland," and said the government would decorate them for the feat.

And more than 40,000 people congratulated Wrona on newly created Facebook fan pages, calling him Poland's "superhero."

Wrona has also been compared to Capt. Chesley "Sully" Sullenberger, who landed a crippled US Airways Airbus A320 in the Hudson River in 2009, saving saved 155 lives.

But Hiatt noted that Wrona's feat could not be compared with the "Miracle on the Hudson."

Wrona landed a fully operational plane at an international airport where fire and rescue services were waiting. In contrast, Sullenberger had no power after a flock of geese disabled the engine, was forced to ditch in the Hudson, then waited for local boats to rescue passengers and crew from the wings.

"The Polish pilots had control over their descent and touchdown, while Sully had essentially a glider on his hands," Hiatt said.