

<News Release>

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Kanden Engineering Corporation

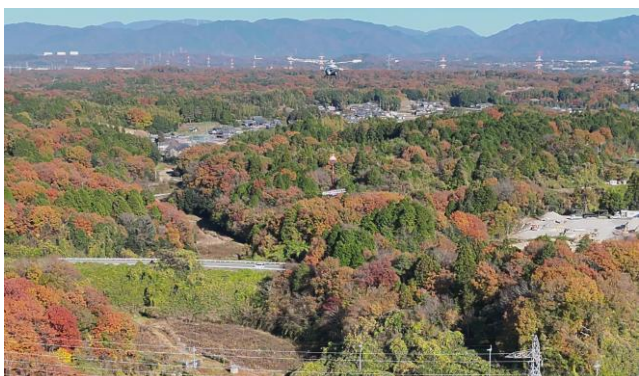
Aero Toyota Corporation

Kawasaki Heavy Industries, Ltd.

Successful Demonstration of Cargo Transport Service for Transmission Towers Using Unmanned Helicopter "K-RACER"

Kawasaki Heavy Industries, Ltd. (hereinafter "Kawasaki"), Kanden Engineering Corporation (hereinafter "Kanden Engineering"), and Aero Toyota Corporation (hereinafter "Aero Toyota") are working together to realize a cargo transport service for transmission towers utilizing the unmanned helicopter "K-RACER" developed by Kawasaki, based on the "Agreement on Collaboration for Cargo Transport to Transmission Towers Using the Unmanned Helicopter "K-RACER" (concluded on March 13, 2025).

The three companies conducted a demonstration test assuming cargo transport to transmission tower using K-RACER at the Koka Training Center of Kansai Electric Power Transmission and Distribution, Inc. (Koka City, Shiga Prefecture), successfully completing a series of flights from loading to unloading near the transmission tower.



Automated flight transporting cargo



Unloading near power transmission tower

Achieving Cargo Transport to Transmission Towers in Mountainous Areas

In this demonstration test, assuming cargo transport to the vicinity of transmission towers installed in mountainous areas, we verified that cargo (one-gallon cans, suspension insulators, construction ladders, etc.) can be transported in an environment with obstacles such as power lines.

Cargo transport was conducted via automatic flight, with the unloading point set at a position beyond visual line of sight from the takeoff point. We confirmed that fine adjustments of the aircraft position and unloading could be performed through remote operation using a tablet device.

Addressing Challenge in Cargo Transport to Transmission Towers

Currently, cargo necessary for periodic replacement, equipment renewal, and maintenance of transmission towers are transported by manned helicopters, monorails, cableways, and manual carrying. Particularly with manual carrying, the shortage of workers has become serious due to a decreasing labor population associated with a declining birthrate and an aging society.

On the other hand, demand for replacement, renewal, and maintenance of transmission towers is

high, and with the labor population continuing to decline further, the risk of difficulty in maintaining cargo transport for transmission towers will materialize. To address this challenge, K-RACER aims to reduce the burden on workers and reducing man-hours by enabling remote-controlled cargo loading and unloading using an auto-loc system. Additionally, it eliminates the need for hook operations directly beneath the hovering aircraft, contributing to improved safety.

Initiatives Toward Commercialization and Future Outlook

Kawasaki, Kanden Engineering, and Aero Toyota—aim to establish a new cargo transport scheme for transmission towers utilizing K-RACER. This scheme features versatility and scalability that enables horizontal deployment to domestic electric power companies and electrical construction companies. We will also continue to work on institutional development supporting the safe and stable operation of unmanned helicopters (unmanned aircraft), and steadily advance toward realizing the safe and stable supply of electric power, which is social infrastructure.

Basic Specifications of “K-RACER” (Demonstration Aircraft “K-RACER-X2”)



Main rotor diameter: 7m
Maximum payload: 200 kg
Drive system: Reciprocating engine
Fuel type: High-octane gasoline
Range: 100km or more
Continuous operation time: 1 hour or more

Reference Links

- Kawasaki Heavy Industries “Group Vision 2030 Unmanned Helicopter K-RACER”
<https://global.kawasaki.com/en/groupvision2030/K-RACER.html>
- Kawasaki Heavy Industries: K-RACER-X2, the latest prototype for unmanned VTOL aircraft
<https://www.youtube.com/watch?v=1Gu8Yr3MWck>
- Kawasaki: Unmanned Helicopter “K-RACER” Demonstrates Cargo Transport without Human Intervention
https://www.youtube.com/watch?v=3zRKw4NuR_g

Related Press Releases (Kawasaki Heavy Industries)

- Unmanned Helicopter “K-RACER” Demonstrates Automated Cargo Transport without Human Intervention at “Nankai Rescue 2024” (January 14, 2025)
https://global.kawasaki.com/news_250114-1e.pdf
- K-RACER-X2 Unmanned Helicopter Demonstrates Top Useful Load Capacity of 200kg (January 12, 2024)
https://global.kawasaki.com/en/corp/newsroom/news/detail/?f=20240112_4742

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