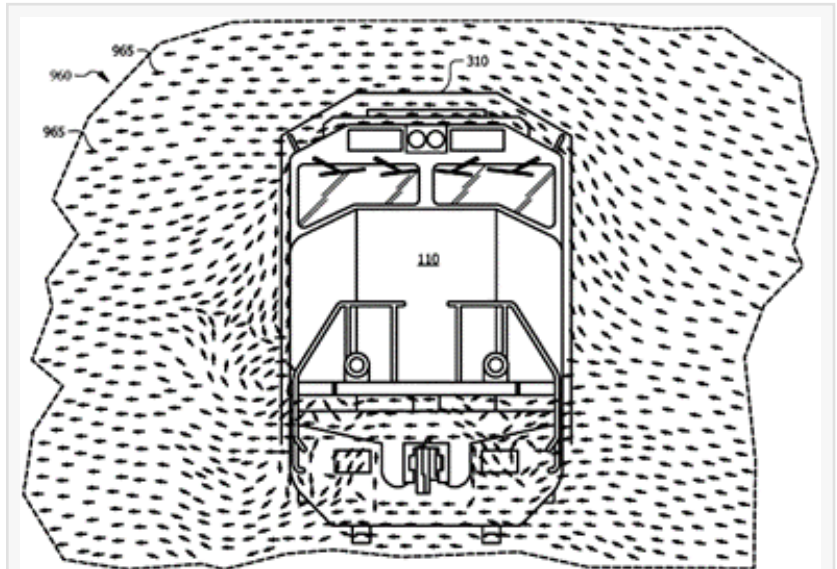


Airflow Sciences Develops New Technology for Preventing Train Derailment

LIVONIA, MICHIGAN, UNITED STATES, November 3, 2021 /EINPresswire.com/ -- [Airflow Sciences Corporation](#), a fluid dynamics engineering company, has been awarded three new patents by the United States Patent and Trademark Office (USPTO). The patents further increase the company's existing portfolio of innovative product designs and test systems.

On February 16, 2021, the USPTO issued U.S. Patent Nos. 10,921,343 and 10,921,344 entitled "Systems and Methods for Converting Wind Pressure to Wind Velocity" and "Pressure Sensing Probe." On March 2, 2021 the USPTO issued U.S. Patent No. 10,935,564 entitled "Systems and Methods for Determining Wind Velocity." The patents were developed for use by a Class I North American Railroad and provide intellectual property protection for the wind velocity test probes and their associated methodology.



Airflow's new patented technology includes probes that are mounted to a locomotive that continuously measure wind velocity. The probes measure both headwinds and crosswinds accurately, and communicate to the operator when tip-over is imminent.

The patents were developed and co-authored by Airflow's Technical Director Brian Dumont, P.E.

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Brian Dumont, P.E.

and feature a system of probes that measure and communicate wind data to train operators. "I'm excited to announce the approval of these patents because they represent the hard work of our whole team," Brian says. "Together, the patents allow for real-time measurement of local wind speed from a moving or stationary locomotive, which traditionally has been difficult. This is a step forward

in reducing wind-induced tip-overs of rail vehicles."

Train vehicles are susceptible to derailment under certain wind speeds and directions. This risk can often be lowered by an appropriate reduction in train speed, when wind conditions are known. However, previous methods for detecting wind speed and direction based on weather data are insufficient for making these safety decisions. Other on-vehicle probes measuring wind speed are either too large for operational use or they fail to accurately determine wind direction, an important factor in tip-over events. As a result, train tip-overs still occur or operators may slow train speeds unnecessarily because of inadequate wind data.

Airflow's new patented technology includes probes that are mounted to a locomotive that continuously measure wind velocity. The probes measure both headwinds and crosswinds accurately, and communicate to the operator when tip-over is imminent. Using this system, operators can adjust train speed in real time to both maintain safety and avoid unwarranted slowdowns.

This technology has applications outside of the rail industry and could be installed on road trucks to reduce tip-over and on wind turbines to improve power generating efficiency.

About Airflow Sciences

Airflow Sciences Corporation specializes in the design and optimization of equipment and processes involving flow, heat transfer, combustion, and mass transfer. Airflow performs testing and simulation of air, gas, liquid, or particulate flows and manufactures standard and custom test equipment. The company also produces [Azore®](#), a practical, affordable software for computational fluid dynamics (CFD) modeling.

For more information about Airflow Sciences Corporation, visit www.airflowsciences.com.

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