

# Anticipate the unexpected

/ WIND SHEAR AND AIRPORT SAFETY



# VAISALA

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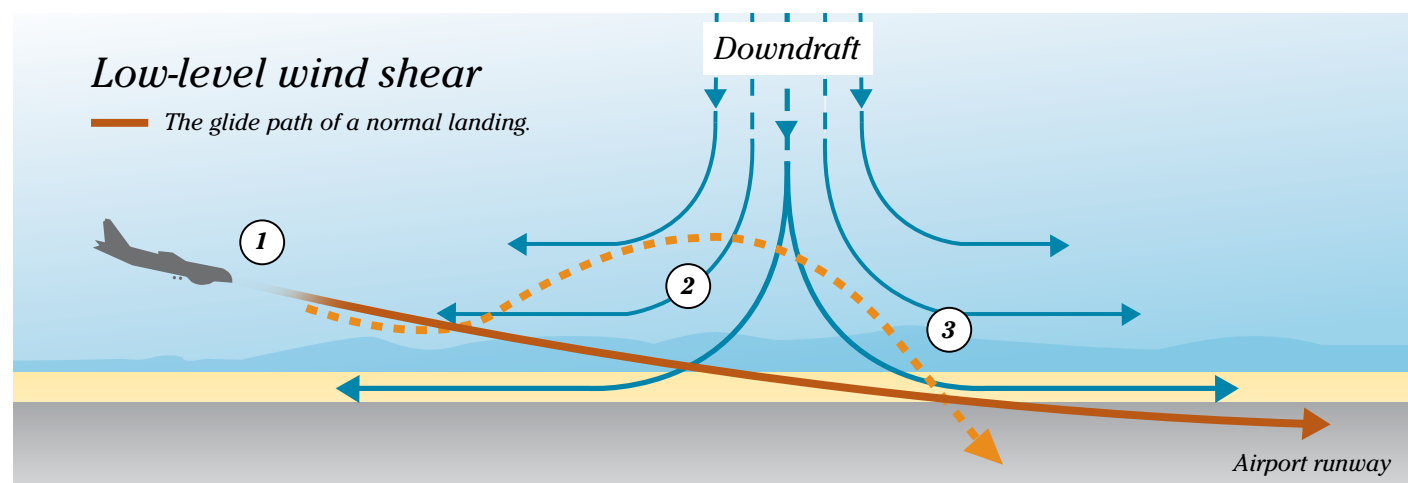
For more information, visit  
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# Weather means risks. Your job is to deal with them.

Airplanes are particularly vulnerable during take-off and landing. In fact, it is when most accidents happen. And a fifth of these accidents are directly related to weather, especially hazardous winds such as wind shear. Accurately detecting suddenly changing winds and quickly communicating relevant warnings is vital to managing flight safety.



**1.** A headwind slows and lifts the aircraft above its normal flight path. | **2.** While the pilot compensates for the headwind by dipping the nose, the aircraft enters a downdraft. | **3.** A tailwind dangerously reduces the aircraft's speed.

## Wind shear – a challenging variable

Wind shear is most commonly caused by microburst-generated downdrafts hitting the ground and rapidly spreading in all directions. These unpredictable changes in wind speed and direction make it difficult to control the aircraft, with headwinds, tailwinds and up and down drafts all in quick succession. At worst, it can cause a sudden and dramatic loss in altitude resulting in a serious accident.

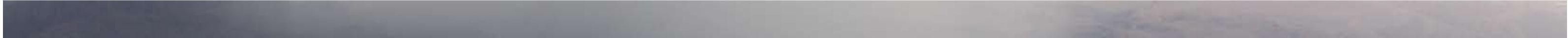
## Safe enough is not enough

Operational safety is of paramount importance to everyone who flies – as well as to every professional working in the air transportation industry. An investment that ensures safe flight operations brings peace of mind and signals a raised level of professional commitment to traveler safety. Our wind shear solution provides your airport with comprehensive protection, allowing the complex daily business of air travel to proceed safely and efficiently.

## A comprehensive approach to wind shear

Air traffic controllers usually have no means to directly detect a low-level wind shear hazard and therefore are not capable of warning pilots during take-off or landing. Airports prone to strong winds need accurate and concrete advance warnings on hazardous wind conditions to enhance passenger safety and comfort during take-off and landing. With a wind shear warning solution in place they get accurate and real-time information on when and where wind shear occurs.





### There is no “one size fits all” solution

Your airport faces unique challenges related to its surroundings and prevailing weather conditions. We ensure our solution is customized to your specific needs to maximize the payback of your investment.

### Focus on your business challenges

Our expertise lies in aligning your airport’s operational challenges, organizational structure, and needs with our decades of experience in providing reliable weather information to support your business challenges.

### Safety is not optional

35 years of experience in aviation weather have taught us that safety is a continuous effort. Accurate and reliable measurements form the foundation for critical decision support solutions such as our wind shear warning solutions. Vaisala sensors and system are designed according to the recommendations and regulations of the ICAO, WMO and FAA.

# The comprehensive solution to your wind shear challenge

### Comprehensive project management – delivered

We have successfully delivered more than 1,500 projects in more than 90 countries worldwide, which means we understand prevailing local conditions and challenges such as climate, infrastructure and culture.

### Adapting to your changing needs

Whether you are planning a new airport or airport expansion, or are modifying your existing weather observation solutions, our wind shear solutions can easily adapt and scale to your particular needs.

### Lifetime partnership and support

Wherever you are located, we will be there to take care of your specific needs. Our primary objective is to ensure that your wind shear solution functions in a safe and efficient manner, always delivering the performance you require.





# Crucial information – at crucial moments



Airports prone to horizontal low-level wind shear require accurate and timely warnings to ensure passenger safety and comfort during take-off and landing. Vaisala’s wind shear warning solution delivers this crucial information in a timely and consistent manner. The Vaisala solution also decreases the burden on air traffic controllers by informing them immediately when and where wind shear occurs and when the threat is over. This further increases their decision-making confidence as decisions are based on facts, allowing them to issue timely and reliable advance warnings to pilots.



*The Vaisala solution is built on the Phase-3 LLWAS algorithm developed by the National Center for Atmospheric Research (NCAR).*

## Vaisala – right at the heart of it

*Curiosity, the desire to meet challenges and an extraordinary ability for innovation are at the heart of the company – both past and present. Through the years our expertise has grown to include three business areas:*

**Controlled Environments** serving industrial customers whose primary interests are in operational quality, productivity and energy savings.

**Meteorology** serving national meteorological and hydrological institutes whose primary interests are the safety and well being of people and the safeguarding of property.

**Weather Critical Operations** serving operators and authorities whose primary interest is the safety and effectiveness of operations under all weather conditions.

Curious? Learn more about Vaisala at [vaisala.com](https://vaisala.com)



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