

# CargoLifter Rescue System AirKules™



Quantum leap in disaster relief of earthquakes and major flooding

Many countries are periodically hit by major flooding and earthquakes. Due to global warming, weather phenomena are getting more frequent and devastating, all over the world. Thousands of people have to be rescued and evacuated or supplied with water, food and medical care. Based on proven Lighter-Than-Air (LTA) technology, CargoLifter has developed a modular rescue system for multiple use:

## AirKules™



*Graphic showing various modules of AirKules in action, scenario after earthquake*

It supports first response search- and rescue operations related to disaster relief – night and day, 24/7 – until heavy equipment can advance to the site of operation. AirKules™ is a combination of a robust gas balloon, portable winches for positioning or ultra-light electric engines for propulsion. The modular configuration leads to four systems, combined underneath one balloon:

### AirHook™

to position equipment in the air, stationary and long time, for observation, telecommunication and illumination of disaster areas at night

### AirCrane™

for removing debris or rescue of people directly from above, without vibrations

### AirBridge™

to bridge impassable terrain and gaps or unload equipment directly from ship to shore

### AirRescue™

to rescue people from flooding or transport stuff and equipment into disaster areas

# AirKules™ AirHook | AirCrane

As **AirHook™**, it can be positioned in the sky, up to 200 m high. For hours and days, it can hold equipment for telecommunication, cameras for surveillance or floodlights for bright illumination of disaster areas without shadows. Thus, it enables rescue operations to continue throughout the night.



*AirCrane working on instable ground*

The system can be set up as a portable **AirCrane™** in its most basic function. An AirCrane is able to work from top, positioned via three portable winches. Therefore, debris can be removed without any disturbance of the layers below! Equipped with working headlights, it can be deployed at night and day.

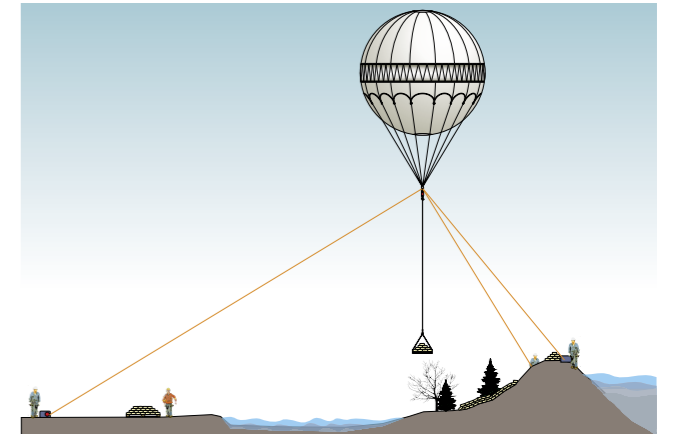


*Illumination of disaster areas at night by AirHook*

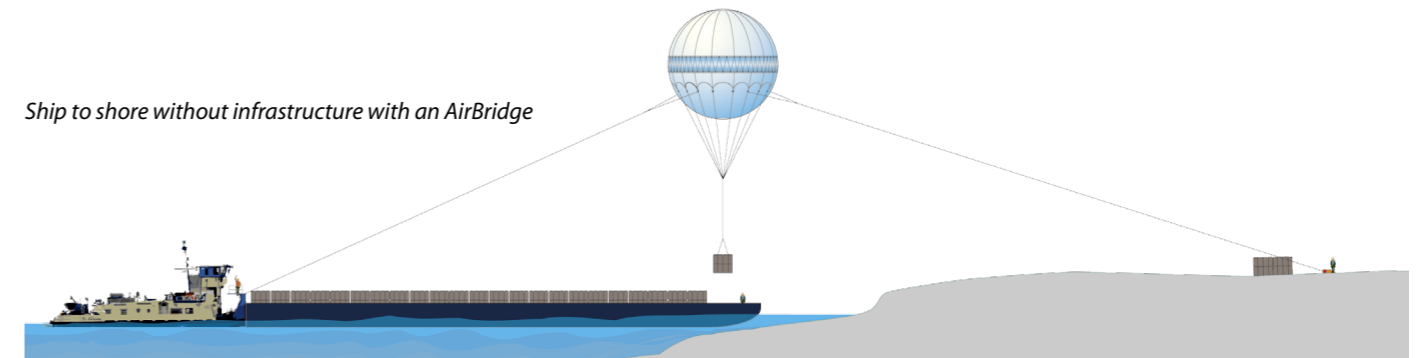
# AirKules™ AirBridge | AirRescue

Additionally, it can be configured as an **AirBridge™** to overcome distances of hundreds of metres, towed by the winches. Thus, otherwise impassable grounds or gaps can be bridged for short-term supply.

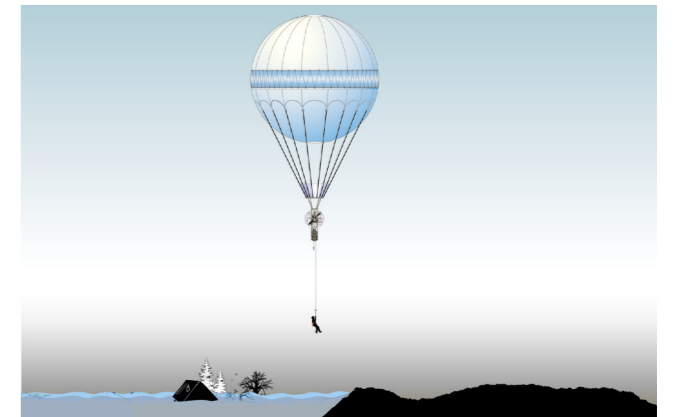
Such function serves e.g. for defending levees, or to transport material in- and rescued people out of the area of disaster. Furthermore, it can load and unload rescue-equipment and -material straight from ship-to-shore, without any harbour and infrastructure necessary!



*Ship to shore without infrastructure with an AirBridge*



Equipped with powerful electric engines for propulsion and control, AirKules becomes **AirRescue™**. Able to fly, hover and manoeuvre precisely in the air, it can be used to rescue people from small areas, roofs or trees, with a range of several kilometers.

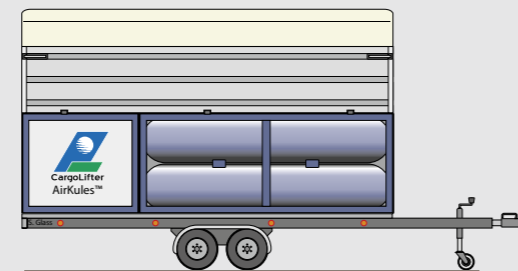


*Rescuing people from isolated spots*

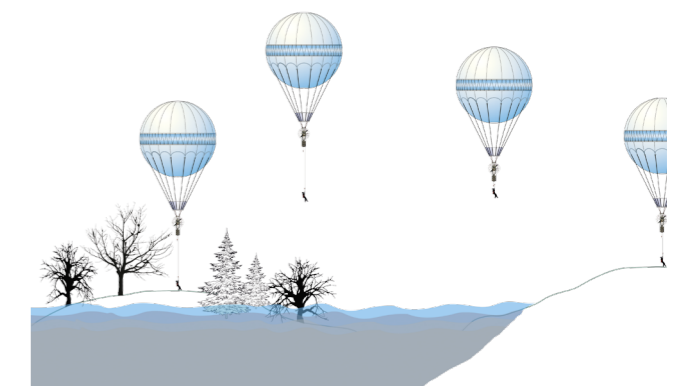
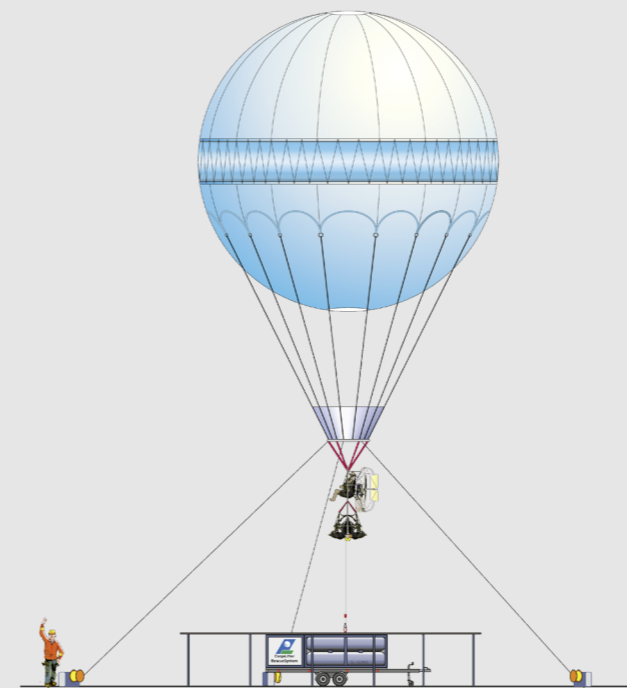


## Full autonomy and mobility - Integrated platform for rapid setup and safe landing

AirKules is easy to deploy as it comes on a fully equipped trailer, including lifting gas supply of Helium or Hydrogen, weighing a total of less than 2.5 tons, due to composite pressure vessels. Setting up the system takes less than one hour and a crew of three.



AirKules™ lifts up to 350 kg, a larger version with max. payload of 1,000 kg is available for application in disaster, too. The lifting gas can either be hydrogen or helium. Since there are operational limits, e.g. transport of lifting gas, time for set up, weight of winches, etc. 1,000 kg are the maximum payload for such first response/ immediate rescue systems.



*For short range flights upto 20km*

AirRescue can be operated for hours or even days – only with changing and recharging of the batteries. E.g. a firefighter with additional balloon training can pilot the system. He is assisted by a first-aid attendant, to bring in medical equipment, food, water etc. and fly back up to two persons each trip.



Graphic showing various actions of AirRescue -seek, rescue and evacuate-, scenario after flooding



Flying its modules into isolated disaster area working nonstop in various functions, to save lives

Cost of operation are small, costs for maintenance negligible! Thus, for the price of one helicopter, get a fleet of AirKules! Imagine the efficiency of several such systems, working day and night.

CL CargoLifter GmbH & Co. KG a.A., Gierkezeile 12, 10585 Berlin, GERMANY

Phone +49(0)30 - 89 56 42 60 | Fax +49(0)30 - 89 56 42 57 | Email [info@cargolifter.com](mailto:info@cargolifter.com) | [www.cargolifter.com](http://www.cargolifter.com)