



Arab Academy
for Science Technology & Maritime Transport

The International Maritime
Transport and Logistics Conference

“Marlog 11”

Using Innovative UAVs To Support Maritime Emergency Operations

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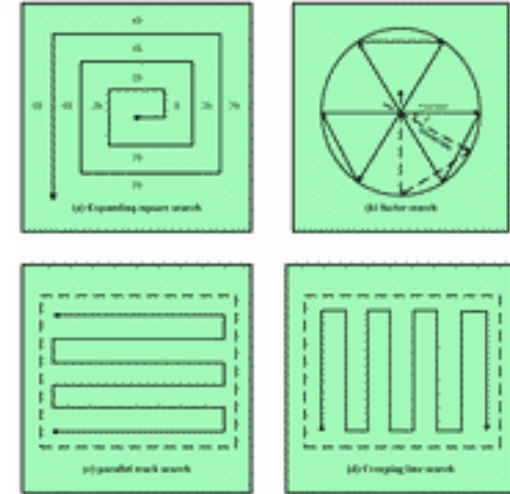
Means of rescue



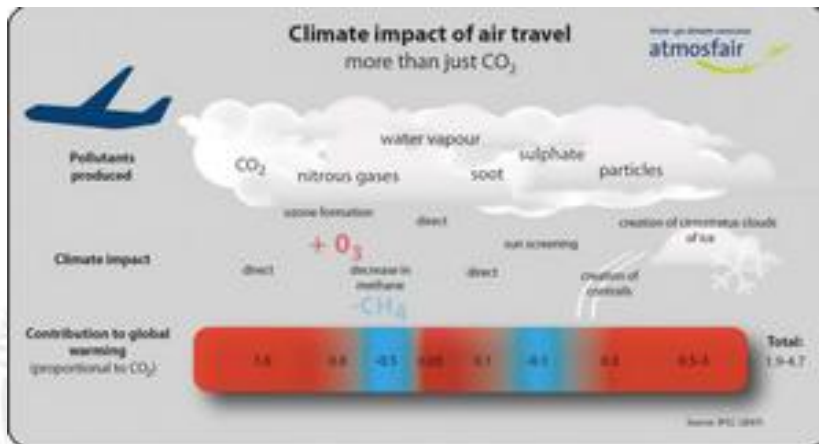
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- By boat people are able to
 - search for victims by following paths established by international organisations;
 - Delivery the necessary equipment by taking the shortest path



- Airplanes and helicopters
 - Require complex facilities, especially for delivery operations
 - Give off high emissions of pollutant agents
 - Wings create lift
 - Present critical issues both for rescue and delivery operations



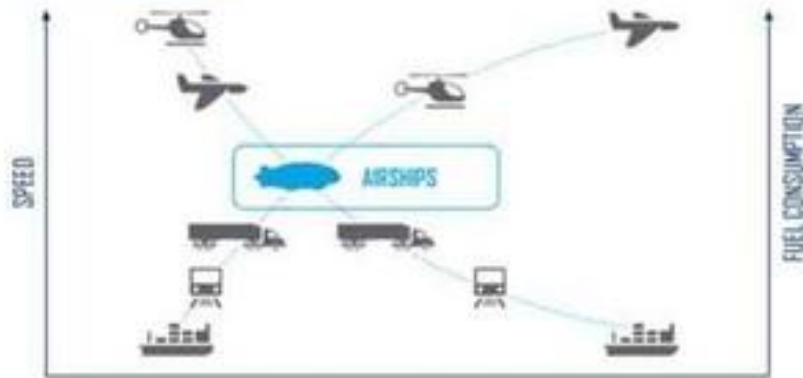
Airships



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Hybrid Advantage



- Airships
 - As sustainable means of transport given the possibility to employ hybrid or completely solar powered systems
 - Do not require big facilities for deployment
 - Do not require a big amount of personnel
 - Can comply with a big variety of tasks with a minimal environmental impact
 - Can be equipped with AI softwares for a smart and autonomous response to distress signals

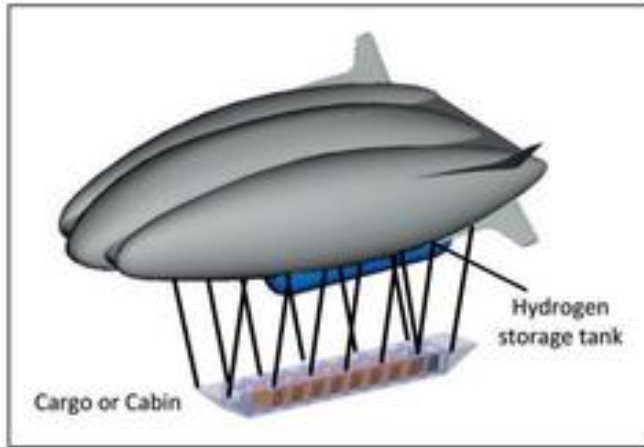


Practical applications



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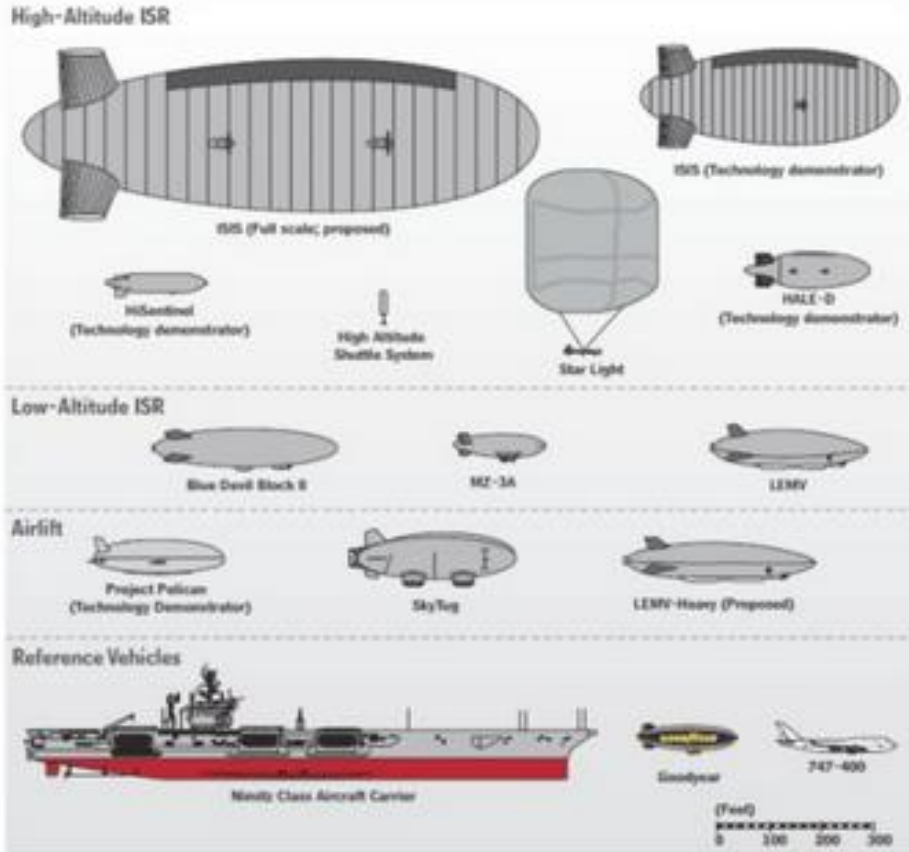


For people lost at sea, we are suggesting that airships would be able to deliver supply kits to the survivors. The supply kit would be designed to provide everything to the people for first aid and to be used also as a mean of localisation for further support by the personnel on the mainland.

When properly designed, an airship can transport very big tools with a very low impact on the environment by not contributing much to the CO₂ and other pollutant agents in the atmosphere.

Airships would be able to provide assistance by storing the cargo in the gondola of the airship.





In the design of our system, we considered that it would be more effective to have several different airships because parts can be heavy, bulky, and small, and it is much more convenient to have a whole fleet than just an airship running forward and backwards. Different configurations are needed because of the weight of the equipment and the means of holding such equipment to the airship



Advantages and disadvantages



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IN THE AIR



ON THE GROUND



Minimize Damage to Environmentally Sensitive Areas

- The weather conditions and the impact of atmospheric phenomena on the airship with risk of loss of cargo;
- Environmental issues ☾ the extreme convenience of employing a transport system which would not have a great impact on the environment compared with planes and helicopters;
- the structural integrity and the hardware related problems can be solved nowadays with more advanced technology.

Conclusions



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- With this article, we wanted to present the applicability of this technology. The relevant studies we described showed that this problem is urgent and will soon become an integral part of smart cities.
- The scenarios we described refer to Support Maritime Emergency Operations. Airships resulted in being an efficient technology which would bring a remarkable amount of advantages to the maritime industry in the framework of rescuing people lost at sea and delivering spare parts to oil platforms.
- By thinking the integration of airships with AI, we would be able to develop a technology that could be employed in many different scenarios, all with consistent results for society.

Thank YOU

“The Earth will not continue to offer its harvest, except with faithful stewardship. We cannot say we love the land and then take steps to destroy it for use by future generations.” —John Paul II



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