

Freight Transport by Autonomous Heavy Carrying Dirigibles

Jean-Charles POUTCHY-TIXIER – Conseil National des Transports, France

Several European States invite to develop new transport technologies to satisfy industry demands concerning heavy pieces transportation, to unblock road and rail networks close to asphyxiation, to find air transport means alternative to planes allowing to clear air terminals, to preserve environment by decreasing nuisances, to transport freight without requiring expensive infrastructures detrimental to communities and environment, to satisfy the increasing needs of public safety and security and to comply with ratified principles on sustainable development.

New types of autonomous dirigibles, using the last aerospace technologies, allow to face this challenge and to consider a relevant answer for watch (traffic, fires, coastlines, etc.) and for freight transport in keeping with a prospect of reliable, clean, safe, relevant and sustainable intermodal transport. They can actually meet transport needs:

- Intercontinental freight transport, with an average speed of 160 km/h and an excellent cost-time ratio between the plane and the ship.
- Long distance continental freight transport, without transshipment due to borders or to disparities in land transport infrastructures.
- International freight transport requiring to cross by land many borders with difficult customs and administrative procedures.
- Long distance transport of cars and other vehicles, retailing and distribution industry, loose materials, raw materials in bulk, containers.
- Freight and equipment transport towards enclosed countries or countries without safe land transport infrastructures.
- Short distance crossings, to bypass or jump over obstacles: mountains, marshy deltas, ices (Finland, Botnia gulfs,...), networks blocked by snow, rains, fires, landslides, congested areas or bottlenecks.
- Transport of heavy pieces, not transportable by road or rail (aeronautics, aerospace, railway equipments, energy, heavy industry).
- Transport of equipments for civil defence, emergency assistance, humanitarian aid, in case of natural disasters (earthquakes, tidal waves, eruptions, floods, etc.).
- Equipments and materials transport for reconstruction after conflicts or disasters.
- Transport to areas inaccessible by any other transport means except helicopter.

Current technologies allow to solve problems which lead to the death of the big dirigibles of inter-war years. Helium blown up, modern anti-lightning textile wrapped, compressed air ballasted like submarines, detachable nacelles equipped, these new dirigibles allow carrying capacity of 250 t at 160 km/h, with a flight autonomy between 6 000 et 10 000 km, at a flight altitude of 2 000 m, and mooring practically in any place in any circumstances. The current projects should be operational for tests in 2005 – 2006, and brought into commercial service for small 50 t dirigibles for watch and tourism around 2006 and 250 t heavy carrying dirigible for freight around 2010. They interest particularly enclosed countries with huge areas with a low density of land infrastructures, for they allow an other planning of infrastructure needs, by giving priority to road links between logistics terminals and goods production and marketing places.