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Tech Talk

Passenger Drones ©

by John McCarthy

Hi and once again a very warm welcome to TechTalk. During the course of the series, we've often spoken about the future of transport, and have already dedicated programmes to electric and hydrogen-powered cars, autonomous or driverless vehicles, exploring the stars on solar sails, the hyperloop – new technologies with the potential to make our transportation safer, greener and more efficient. Something that could truly revolutionise the way we commute is the passenger drone, which promises to reduce traffic congestion and perhaps bring an end to all the rush-hour coronaries and road rage which is the sad lot of most modern cities.

A Chinese model – the Ehang, unveiled at the CES in Las Vegas earlier this year – has just been cleared for testing in Nevada, and the drone will undergo a series of stringent trials before hopefully receiving regulatory approval and an airworthiness certificate. The Ehang uses a quadcopter design for a single-seat drone; it has a total of eight rotors, each powered by its own motor. This little model could well be responsible for kick-starting the autonomous aerial transportation industry.

Another passenger drone currently undergoing flight tests is the Volocopter, a much larger model with 18 separate rotors – built by e-volo, a company based in Germany. The makers claim it's more stable than a conventional helicopter. In fact, one day it might just completely replace the helicopter itself, as we know it. Unlike the latter, the Volocopter can be operated by using just one hand: twisting the joystick in the appropriate direction ensures left and right turns, pushing an "up" or "down" button makes the craft climb or descend. Another considerable advantage is that since it's easy to fly, fossil fuel free and relatively quiet, it could be used for flights over noise sensitive areas, where noise abatement procedures are enforced. This isn't just pie in the sky. If things go according to plan, e-volo hopes to start building large quantities of the Volocopter and enter the market in the next two years, offering taxi services or other forms of public transport and of course could prove extremely popular in recreational and sport aviation.

The attraction of drones as methods of transport is their ease of operation. They manoeuver by independently changing the speed of one or more of their rotors under computer control. This set-up doesn't require many or complex moving parts and thus it makes drones relatively simple and cheap to build and maintain, and potentially more reliable than any flying machine with an engine. Furthermore, the passenger drone would ideally be equipped with sensors, gyroscopes and accelerometers controlled by an on-board computer, thereby dispensing the need for a qualified pilot. The passenger/operator would provide only basic commands and leave the aircraft itself to take care of any necessary manoeuvers or emergency actions.

Because these drones are so heavily automated, persuading aviation authorities that they can be safely and reliably flown by your common man may be a little bit tricky, especially as news has just emerged of the first fatal accident involving a driverless Tesla in the US. It seems more realistic that passenger drones will be restricted, initially at any rate, to ambulance and rescue

services and perhaps to provide autonomous air-taxis. A bit like ringing for a cab, a pilotless drone could one day be summoned to whisk you away to the destination of your choice. Naturally, this raises many questions such as insurance, public liability, air corridor infrastructures; some believe these services may be many years away, but of all the ideas for the future of transport – the jetpack, flying cars, hoverbikes and countless others - the passenger drone has the most potential to be an outright winner. From highways to skyways, drone technology is pushing the future of personal travels to new heights, if you'll pardon the pun, and could well herald a new era in urban mobility.