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## India conducts flight trials of Micro, Mini Air Vehicles

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BANGALORE: Flight trials of Micro and Mini Air Vehicles designed and developed to meet many requirements including countering low intensity terrorism and for rescue operations during natural calamities, were conducted at Hoskote near here, DRDO said on Wednesday.

These small vehicles are capable of flying in full autonomous mode and transmitting live day and night video to the portable Ground Control Station in [Defence Research and Development Organisation](#) said in a statement.

Aeronautical Development Establishment, a laboratory under the aegis of DRDO, conducted the flight trials on Monday. These products are developed by ADE and [National Aerospace Laboratories](#) and supported by private vendors.

Three [Micro Air Vehicles](#) named Black kite, Golden Hawk and Pushpak with varying sizes ranging from 300 to 450 mm with a maximum weight of 300 gms were flight demonstrated.

These vehicles have an endurance of 30 minutes and carry a miniature daylight video camera as payload that relays the imagery of the gaming area during its flight. The video and telemetry range is about two kms.

Two mini UAVs called Imperial Eagle and Sly Bird, which are categorised under two kg class vehicles and having an endurance of one hour, were also demonstrated. These vehicles carry either a daylight camera or thermal, night vision camera (one at a time) as payload and thus has the capability of night surveillance, it said.

Flying at an altitude of one km above ground level, they are hand launched and recovered through soft landing from sea level to 14000 feet and have an altitude of 15000 feet.

These vehicles are fully autonomous with 'programmed way point navigation' and the way points can also be changed through tele-command during its flight, a statement said. The video and telemetry range is about 10 km and with a ground tracker system is capable of providing continuous imagery of the target area irrespective of the attitude of the aircraft.

"The logistics support and skills required for operating these vehicles are very minimal and one or two persons can easily deploy them. This can also be done from a Soldier's back pack", the statement said.

The USP of these projects is the involvement of private Industry from the development phase. The Autopilots developed indigenously by Idea Forge, Hyderabad, have been integrated with both mini and Micro Air vehicles. It also took responsibility of integrating the 'gimbal mounted thermal camera.'

[Aurora Integrated Systems](#) was also associated in the development of Auto pilot and production of MAVs. It also integrated its auto pilot with ADE's single axis tracker developed by Badave Engineers, Pune.

Seagull Technologies, Bangalore, was involved in the fabrication of carbon composites based airframes.

V S Chandra Shekar, Programme Director, National Programme on Micro Air vehicles (NP-MICAV) said a number of activities/projects have been initiated under the programme across various R & D labs and the academic institutions.

He reiterated that it is possible, in due course, to demonstrate cooperative missions using multiple heterogeneous air vehicles and possibly acting as a force multiplier. The flight demonstrations were witnessed by Subhananda Rao, Chief Controller, R& D (Aero) and P S Krishnan, Director ADE.

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