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A vertical takeoff and landing (VTOL) aircraft is a vehicle that can depart, hover and land vertically. VTOL aircraft have the ability to take off and land vertically as well as hover, fly slowly and land in small spaces. Modern UAVs have their own limitations in terms of flight range and maneuverability, with traditional fixed-wing UAVs requiring runways or wide-open spaces for take-off and landing, while multirotor UAVs are extremely manoeuvrable but cannot be used for long-distance flights. Early UAVs were divided into two types, Fixed Wing UAV (FWUAV) and Rotorcraft UAV (RUAV). EVTOL is a hybrid Vertical-Take-Off-Landing (VTOL) aircraft that can bridge the performance gap between RUAVs and FWUAVs. It has multiple motors to maximize efficiency and safety, and is being fine-tuned to bring alive the concept of UAM. The tilt-rotor mechanism is only one of the concepts that have been proven for successful VTOL flights, and other concepts are being explored to incorporate into similar hybrid VTOL aircraft's. VTOL machinery is a key element to ensure the VTOL capability of the four motors with rotary blade stability to lift the load.

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