THE TIMES OF INDIA

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(Online)

DRDO's combat drone Rustom-2 flies for the first time

Bengaluru: After a considerable delay, Rustom-2, India's long endurance Unmanned Combat Air Vehicle (UCAV) finally completed its first flight early on Wednesday in Challakere, about 200km from Bengaluru. The UCAV, which is in the medium-altitude, long endurance (MALE) category of vehicles, sources in the Aeronautical Development Establishment (ADE) which developed the vehicle, said "met all the expectations" during the first flight.

First scheduled in late 2013, the three-year delay of the first flight had only added to the timeline, which is punctuated by other delays during development- even as the Indian armed forces are increasingly looking outside the country for combat drones with deals already struck with Israeli firms. Rustom-2, the developers, however, claim will be an aircraft unlike any other UAV in the ranks of our forces. It has a wingspan of more than 20m and an endurance of 24-30 hours.

Equipped with contemporary technology, it will need a runway to take-off and land unlike traditional UAVs, which makes it more trustworthy. Compared to Rustom-I, the advanced version will have enhanced aerodynamic configuration, digital flight control and navigation system. "Besides, it will also have automatic takeoff and landing capabilities, this version of Rustom is comparable to some of the best in the world," sources in ADE said. While the ADE hopes to bag orders from all the three wings of the armed forces— army, navy and the air force— its ability to stick to deadlines and also give a good quality platform will be key. The Indian army, which had inducted DRDO's earlier UAV Nishanth, had to face several crashes and is contemplating junking it with no fresh induction planned.

F. INDIA

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(Online)

DRDO's indigenous combat drone Rustom-2 takes first flight near Bengaluru

On Tuesday morning, Rustom-2, the unmanned aerial vehicle developed by the Aeronautical Development Establishment (ADE), completed its first flight in Challakere, about 200 km from Bengaluru. Rustom-2, India's long endurance Unmanned Combat Air Vehicle (UCAV) is in the medium-altitude, long endurance (MALE) category of vehicles. *The Times of India* cited ADE sources which developed the drone and said that the first flight "met all the expectations".

The UCAV was first scheduled to take flight in 2013, but it got delayed by three years, and so, Indian armed forces were trying to meet the demand for these combat drones from countries like Israel.

Rustom-2 is based on the Rustom-H model and scientists compare it to predator drones (drones which track people). Developers claim that the aircraft is unlike any other UAC in the ranks of Indian forces. It has a wingspan of 20m and an endurance of 24-30 hours, as opposed to Rustom-I which has an endurance of 12 hours and Rustom-H having an endurance of 24 hours. Citing ADE sources, *The Times of India* report said that the current version of Rustom is comparable to some of the best drones in the world. "Besides, it will also have automatic takeoff and landing capabilities, this version of Rustom is comparable to some of the best in the world," it said.

THE HINDU

Wed, 16 Nov, 2016

(Online)

Unmanned aerial vehicle successfully tested

Rustom-2, the indigenously developed unmanned aerial vehicle, was successfully flight tested on Wednesday morning. For the past few months, the drone in the MALE (medium altitude long endurance) category was undergoing tests at the DRDO's new campus at Challakere in Chitradurga, about 200 km from here, a source said.

DRDO Chairman S. Christopher reviewed the flights at the site on Monday with other officials. Rustom2 or R2 is being developed by the Aeronautical Development Establishment (ADE) here.

Wed, 16 Nov, 2016

(Online)

DRDO's UCAV Rustom-2 flies for the first time

Bengaluru: Rustom-2, the indigenously developed Unmanned Combat Air Vehicle (UCAV), completed its first flight at Challakere in Chitradurga, about 200 km from here, on Wednesday morning. The drone in the medium-altitude, long endurance (MALE) category was undergoing tests at the DRDO's new campus for the past few months.

DRDO chairman S Christopher had on Monday reviewed the flights at the site. *The Times of India* quoted sources in the Aeronautical Development Establishment (ADE), which developed the vehicle, as saying that Rustom-2 or R2 "met all the expectations" during the first flight. As per the developers, Rustom-2 has a wingspan of over 20m and an endurance of 24-30 hours.

Wed, 16 Nov, 2016

(Online)

DRDO successfully carries out maiden flight of indigenous UAV RUSTOM

By Manjeet Singh Negi

TAPAS 201 (RUSTOM â€“ II), a multi-mission UAV, is being developed to carry out the Intelligence, Surveillance and Reconnaissance (ISR) roles for the three Armed Forces with an endurance of 24 hours.

DRDO today successfully carried out the maiden test flight of TAPAS 201 (RUSTOM - II), a Medium Altitude Long Endurance (MALE) UAV. The test flight took place from Aeronautical Test Range (ATR), Chitradurga, 250 km from Bengaluru which is a newly developed flight test range for the testing of UAVs and manned aircraft. The flight accomplished the main objectives of proving the flying platform, such as take-off, bank, level flight and landing etc. TAPAS 201, a multi-mission UAV, is being developed to carry out the Intelligence, Surveillance and Reconnaissance (ISR) roles for the three Armed Forces with an endurance of 24

hours. It is capable of carrying different combinations of payloads like Medium Range Electro Optic (MREO), Long Range Electro Optic (LREO), Synthetic Aperture Radar (SAR), Electronic Intelligence (ELINT), Communication Intelligence (COMINT) and Situational Awareness Payloads (SAP) to perform missions during day and night.

TAPAS 201, the MALE UAV has been designed and developed by Aeronautical Development Establishment (ADE), the Bangalore-based premier lab of DRDO with HAL-BEL as the production partners. The UAV weighing two tonnes was put into the air by a dedicated team of young scientists of DRDO. It was piloted (external and internal) by the pilots from the Armed Forces. It is also the first R&D prototype UAV which has undergone certification and qualification for the first flight from the Center for Military Airworthiness and Certification (CEMILAC) and Directorate General of Aeronautical Quality Assurance (DGAQA).

It is noteworthy that the development of UAV immensely contributes towards the Make in India initiative as many critical systems such as air-frame, landing gear, flight control and avionics sub-systems are being developed in India with the collaboration of private industries. Defence Electronics Application Laboratory (DEAL) of DRDO has developed the data link for the UAV. Rustom II will undergo further trials for validating the design parameters, before going for User Validation Trials.

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(Online)

DRDO Conducts Successful Maiden Flight of Rustom-II UAV

The Defense Research and Development Organization (DRDO) on Wednesday successfully carried out the maiden flight of RUSTOM – II, a Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) UAV.

The test flight took place from Aeronautical Test Range (ATR), Chitradurga, 250 km from Bengaluru which is a newly developed flight test range for the testing of UAVs and manned aircraft.

The flight accomplished the main objectives of proving the flying platform, such as take-off, bank, level flight and landing.

The MALE UAV has been designed and developed by Aeronautical Development Establishment (ADE), the Bangalore-based premier lab of DRDO with HAL-BEL as the production partners. The UAV weighing two tonnes was put into air by a dedicated team of young scientists of DRDO. It was piloted (external and internal) by the pilots from the Armed Forces.

It is also the first R&D prototype UAV which has undergone certification and qualification for the first flight from the Center for Military Airworthiness & Certification (CEMILAC) and Directorate General of Aeronautical Quality Assurance (DGAQA).

This multi-mission UAV is being developed to carry out the Intelligence, Surveillance and Reconnaissance (ISR) roles for the three armed forces with an endurance of 24 hours.

It is capable of carrying different combinations of payloads like Medium Range Electro Optic (MREO), Long Range Electro Optic (LREO), Synthetic Aperture Radar (SAR), Electronic Intelligence (ELINT), Communication Intelligence (COMINT) and Situational Awareness Payloads (SAP) to perform missions during day and night.

It is noteworthy that many critical systems such as airframe, landing gear, flight control and avionics sub-systems have been developed in India with the collaboration of private industries. Defence Electronics Application Laboratory (DEAL) of DRDO have developed the data link for the UAV. Rustom-2 will undergo further trials for validating the design parameters, before going for User Validation Trials.

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(Online)

Rustom-II UAV successfully completes maiden test flight

Rustom-II, India's indigenously developed long-endurance combat-capable drone, today successfully completed its maiden-flight, giving a boost to India's development programme for Unmanned Aerial Vehicles (UAV). The DRDO successfully carried out the maiden-flight of TAPAS 201 (RUSTOM-II), a Medium Altitude Long Endurance (MALE) UAV. It has an endurance of 24 hours and can conduct surveillance and reconnaissance missions for the country's armed forces. The UAV can also be used as an unmanned armed combat vehicle on the lines of the US's Predator drone. The test flight took place from Aeronautical Test Range (ATR), Chitradurga, 250 km from Bangalore, which is a newly developed flight test range for the testing of UAVs and manned aircraft.

The flight accomplished the main objectives of proving the flying platform, such as take-off, bank, level flight and landing among others, a statement by the Defence Ministry said. TAPAS 201 has been designed and developed by Aeronautical Development Establishment (ADE), the Bangalore-based lab of DRDO with HAL-BEL as the production partners. The UAV weighing two tonnes was put into air by a dedicated team of young scientists of DRDO. It was piloted (external and internal) by the pilots from the armed forces. It is also the first R&D prototype UAV which has undergone certification and qualification for the first flight from the Center for Military Airworthiness & Certification (CEMILAC) and Directorate General of Aeronautical Quality Assurance (DGAQA).

TAPAS 201, a multi-mission UAV is being developed to carry out Intelligence, Surveillance and Reconnaissance (ISR) roles for the three armed forces with an endurance of 24 hours. It is capable to carry different combinations of payloads like Medium Range Electro Optic (MREO), Long Range Electro Optic (LREO), Synthetic Aperture Radar (SAR), Electronic Intelligence (ELINT), Communication Intelligence (COMINT) and Situational Awareness Payloads (SAP) to perform missions during day and night.

Many critical systems such as airframe, landing gear, flight control and avionics sub-systems are being developed in India with the collaboration of private industries. Rustom-II will undergo further trials for validating the design parameters, before going for User Validation Trials.*This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.*

Wed, 16 Nov, 2016

(Online)

India to Test Own Drone to Avoid US, Israeli Makes

India's state-owned defense research company is about to test a medium altitude long endurance drone. Its success could make the Indian military market for drones out of bounds for US and Israeli companies.

New Delhi (Sputnik) — The test flight of India's indigenous military drone named after a medieval Iranian king will determine whether the Indian market will still remain lucrative for companies from the US and Israel.

The Defence Research and Development Organization (DRDO) reviewed its preparations on Monday and is hopeful that "Rustom II" may make its maiden flight anytime by end of this month, said sources from India's Ministry of Defense. Israeli and US companies have been eyeing the space for medium altitude (up to 30,000

feet) long endurance drones (up to 48 hours) as New Delhi seeks to step up surveillance of its land and maritime borders. DRDO officials would like to put Rustom II in the category of Predator drones of US and the Israeli Heron drones.

"Rustom-II is being designed to operate up to 30,000 ft above mean sea level altitude (AMSL) with an endurance of 24-30 hours from take-off to landing with synthetic aperture radar and long range electro-optic payloads (up to 350 kg) at 20,000 ft. It is designed to perform intelligence, surveillance and reconnaissance mission for Indian armed forces," officials said.

India had floated a request for proposals from domestic manufacturers to supply such drones. This may be unnecessary if Rustom II performs up to expectations during its trials over the next four months.