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KNOWLEDGE ABOVE ALL

F35, A BEAST IN ITSELF

BY SHREEYESH S.

Refuelling under cover of darkness, a massive formation of U.S. Air Force, Royal Air Force, and Australian Air Force aircraft prepared for combat.

Soon, cockpit displays in each aircraft began to light up and alarms sounded, indicating that the formation was being painted by multiple radar arrays tied to surface-to-air missiles and inbound fighters. Enemy fighters sporting the colour schemes of Russian Su-30s began to close in.

The aircraft we know today as the F-35 was built to meet the demands of multiple fighting forces with a single, highly capable aircraft.

Designed from the ground up to prioritize low-observability, the F-35 may be the stealthiest fighter in operation today. It uses a single F135 engine that produces 40,000 lbs. of thrust with the afterburner engaged, capable of pushing the sleek but husky fighter to speeds as high as Mach 1.6. The aircraft can carry four weapons internally while flying in contested airspace or can be outfitted with six additional weapons mounted on external hardpoints when flying in low-risk environments. The F-35A also comes equipped with an internal 4-barrel 25mm rotary cannon hidden behind a small door to minimize radar returns.

"The aeroplane that took that first flight back in 2006 may have looked identical on the outside, but it was a very different aircraft than the one we're flying today," Wilson says. "And the F-35 flying ten years from now is going to be very different from the one that we're flying today."

The F-35 will also serve as a testbed for technologies that will become commonplace in the next generation of jets. Flying in coordination with AI-enabled drones will become a staple of any sixth-generation fighter, and those new fighter tricks will likely first arrive in the form of the F-35.

"I look at the most capable, most connected, most survivable aircraft on the face of the planet and what we're able to achieve with it today," Wilson says. "I can only imagine what tomorrow's F-35 is going to be capable of."

Today, over 500 F-35 Lightning IIs have been delivered to nine nations and are operating out of 23 air bases around the world. That's more than Russia's fleet of fifth-generation Su-57s and China's fleet of J-20s combined. With literally thousands more on order, the F-35 promises to be the backbone of U.S. air power.



ISRO IN THE NEWS

SUNNY MORE,
STUDENT

Indian Space Research Organisation (ISRO) organises 'DTDI-Technology-Conclave-2021', from November, 22 to 26, 2021, a futuristic and disruptive technology summit to unlock the potential technologies for the space sector through. DTDI is a Directorate of Technology Development and Innovation, a futuristic and innovative technology development wing of ISRO, based at ISRO HQ.

This innovative technology conclave has been inaugurated by Hon'ble Minister of State (Space) Dr. Jitendra Singh, in the presence of Prof. K. VijayRaghavan, Principal Scientific Advisor (PSA) to the Government of India, Dr. K. Sivan, Chairman, ISRO / Secretary, Department of Space (DoS), and Shri Umamaheswaran R, Scientific Secretary, ISRO. Hon'ble Minister of State also released the proceedings compendium of the technology conclave during the inauguration of the conclave. Hon'ble Minister of State (Space), during his inaugural lecture, congratulated ISRO for its futuristic technology endeavour. He further mentioned that these technologies will take India's space capabilities to the next higher level, in line with the 'Atmanirbhar Bharat' vision of Hon'ble Prime Minister of India, and the space sector reforms. He also appreciated ISRO's role to synergise the scientific and technological expertise of ISRO / DOS laboratories, academia, industries, and international experts.



INNOVATION IN INDIA

SWASTIK THAKUR
STUDENT

In a Foundation for Innovation and Research in Science and Technology (FIRST-IITK), IIT-Kanpur has developed a portable soil testing device that can detect soil health in just 90 seconds through an embedded mobile application. The device will assist farmers for obtaining soil health parameters with recommended dose of fertilizers. The technology titled Portable Soil Testing Device - 'Bhu Parikshak' has been transferred to an agritech company named AgroNxt Services private limited.

The invention has been developed by a team of inventors at IIT-K, consisting of Prof Jayant Kumar Singh from chemical engineering department, Pallav Prince, Ashar Ahmad, Yashasvi Khemani and Mohd Aamir Khan. IIT-K claimed that the first-of-its-kind novel invention is based on Near Infrared Spectroscopy technology that provides real time soil analysis report on smart phones with an embedded mobile application named Bhu Parikshak available on Google Play Store.

The device can detect six important soil parameters namely -Nitrogen, Phosphorus, Potassium, Organic Carbon, Clay contents and Cation Exchange Capacity. It also recommends the required dose of fertilizers for the field and crops. The mobile application has been made user friendly through the user interface which is available in local languages. The device can test upto one lakh soil test samples, the highest testing capability of a device.

The technology has been transferred to Agronxt with an objective of manufacturing the device through bulk production to benefit farmers. The technology licensing agreement was formally signed between IIT-K and AgroNxt Services in the presence of director IIT-K Prof Abhay Karandikar and director AgroNxt Services Rajat Vardhan on December 11. Prof Amitabha Bandyopadhyay, Prof A R Harish and Ravi Pandey from the institute were also present on the occasion.



EXCITING TIMES

PAURAS RAUT
STUDENT

Shark Tank India is an Indian Hindi-language business reality television series that airs on Sony Entertainment Television. The show is the Indian franchise of the American show Shark Tank. It shows entrepreneurs making business presentations to a panel of investors or sharks, who decide whether to invest in their company. The first season of Shark Tank India premiered on 20 December 2021

The show features a panel of potential investors, termed as "Sharks", who listen to entrepreneurs pitch ideas for a business or product they wish to develop. These self-made multi-millionaires judge the business concepts and products pitched and then decide whether to invest their own money to help market and mentor each contestant. The host of this show is Rannvijay Singha. The show received 62,000 aspirants from India, out of which 198 businesses were selected to pitch their ideas to the "sharks". Out of 198 investment pitches at the reality TV show, 67 businesses got deals this season.

Maybe it's also because the timing of the show is just right. It started airing after two waves of a deadly pandemic had crippled the country. Over the last two years, all of us have seen several small and big businesses wither away. From the neighbourhood grocer to Westland Publications, no one was left untouched. After all that gloom, it felt cathartic to see some young, small business owners pitch their cause and strive for something big. The message of hope amid doom has resonated with many.

But like all ideas, Shark Tank India does not owe its success to any set formula. It's hard to decipher what worked to what degree in making this show the hit it has become. And if anybody claims to have unlocked the code as to why it worked, I'd call their bluff. If you think it's that easy, please go ahead and recreate it. Otherwise, to borrow a famous 'Ashneerism', all claims, yeh sab dogalapana hai!

