ANTHARIKSH

The Space...

DEPARTMENT OF AEROSPACE ENGINEERING

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

MYLAVARAM, ANDHRA PRADESH, INDIA.

Vision of the Department:

To achieve academic excellence and produce highly competent professionals in the field of Aerospace Engineering

Mission of the Department:

DM1: To impart high quality education in Aerospace Technology through class room teaching and laboratory practice.
DM2: To develop indigenous Aerospace Technology by carrying out research in collaboration with industry and research organizations.
DM3: To train and inspire the student community to possess effective communication and leadership skills with ethical values.
DM4: To harness the technological development by being consistently aware of societal needs and challenges.

Program Educational Objectives (PEOs)
PEO1: To provide students with sound mathematical, engineering and multidisciplinary knowledge to solve Aerospace and Allied Engineering problems.
PEO2: To prepare students to excel in higher education programs and to succeed in industry/academia profession.
PEO3: To inculcate ethical attitude, leadership qualities, problem solving abilities and life-long learning for a successful professional career.

PROGRAM OUTCOMES (POs)

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design / Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project Management and Finance: Demonstrate knowledge and understanding of the ring and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: To apply the knowledge of Aerodynamics, Propulsion, Aircraft structures and Flight Dynamics in the Aerospace vehicle design.
PSO2: To prepare the students to work effectively in Aerospace and Allied Engineering organizations.

FOCUS AND SCOPE

A department magazine bridges the gap between students and faculty. Typically, a department magazine consists of Technical articles, ideas, project outcomes, language skills, literary articles, technical updates, success stories, career tips, academic advice, the latest events and happenings related to campus. Cover-stories have to be written in an engaging format. We can also include interviews of former students who have achieved success through dedication and hard work.

PUBLICATION FREQUENCY:

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Send your articles to the following mail ID.

E-Mail: anthariksh.lbrce@gmail.com

Disclaimer

Some of the contents published in this magazine are from open sources. The contents of this magazine are for information purposes only, enabling the faculty and students to have easy and quick access to information and do not have any legal sanctity. This magazine is intended for circulation among students of the Department of Aerospace Engineering of LBRCE only.

FROM HOD's DESK

Be Flexible

There's a key difference between knowing your destination and knowing the path you will take to get there. A typical commercial airplane is off 90% of the time, yet it almost always arrives at its destination because it knows exactly where it's going and makes constant corrections along the way. You cannot know the exact path to your goal in advance. I believe that the real purpose of planning is simply so that you remain convinced that a possible path exists. We've all heard the statistic that 80% of new businesses fail in their first five years, but a far more interesting statistic is that nearly all of the businesses that succeeded did not do so in the original way they had intended. If you look at successful businesses that started with business plans, you will commonly find that their original plans failed miserably and that they only succeeded by trying something else. It is said that no business plan survives contact with the marketplace. I like to generalize this to say that no plan survives contact with the real world.

Dr. P. Lovaraju

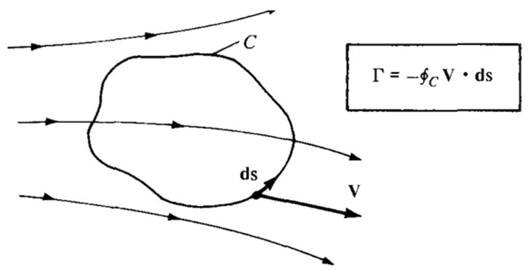
AERODYNAMICS

Circulation on an Air foil: The Hidden Science Behind Lift

S. PHANITEJA
24761A5657

Introduction

The ability of an aircraft to fly is one of the most remarkable achievements of engineering. At the heart of this phenomenon lies a fundamental aerodynamic concept known as circulation. Although air may appear to flow smoothly around a wing, the generation of lift is closely connected to the rota



$$\Gamma = \oint_C \mathbf{V} \cdot ds$$

tional motion of air within a flow field. Understanding circulation helps explain why an air foil can produce lift and sustain flight.

Mathematical Foundation of Circulation

In fluid mechanics, circulation is defined as the line integral of velocity around a closed curve. It represents the total rotational tendency of the fluid enclosed within a boundary. Mathematically, circulation is expressed as:

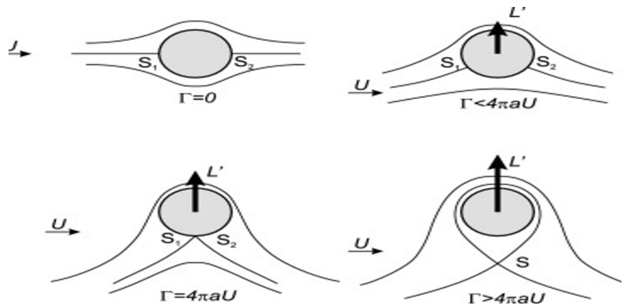
where **V** is the velocity vector and ds is an infinitesimal element along the closed path. This equation measures the cumulative effect of fluid motion around a loop and provides a quantitative measure of the strength of rotational flow.

Potential Flow and Flow Warping

Potential flow theory offers a simplified model for studying fluid motion around bodies. Consider a stationary cylinder placed in an ideal, non-viscous flow. In this situation, the airflow remains perfectly symmetrical, resulting in equal pressures above and below the cylinder. Consequently, no lift is generated.

The introduction of circulation dramatically changes this picture. Circulation alters the flow pattern by warping the streamlines around the body. As circulation increases, the stagnation points shift downward, causing streamlines above the cylinder to crowd together while those below spread apart. Since closely spaced streamlines indicate higher velocity, the pressure above the body decreases, creating the conditions necessary for lift generation.

The Kutta–Joukowski Connection



The relationship between circulation and lift is formally established by the Kutta–Joukowski theorem, which states that lift per unit span is directly proportional to circulation:

$$L' = \rho_\infty V_\infty \Gamma$$

This theorem demonstrates that circulation is not merely a mathematical concept but the primary mechanism responsible for aerodynamic lift. Greater circulation around an airfoil results in greater lift production.

The Magnus Effect and Real-World Circulation

A familiar example of circulation is the Magnus Effect, observed when a spinning ball curves through the air. The rotation of the ball drags the surrounding air, creating circulation and producing a pressure difference that generates lift.

However, an aircraft wing does not rotate like a ball. This raises an important question: how does a stationary airfoil create circulation? The answer lies in the interaction between air viscosity, boundary layer behavior, and airfoil geometry.

Role of Curl and Vorticity

In vector calculus, local fluid rotation is measured by a quantity known as curl. A non-zero curl indi-

-cates that fluid particles possess rotational motion or vorticity. According to Stokes' Theorem, the circulation around a closed curve equals the sum of all local rotational effects within the enclosed area.

This principle provides the mathematical bridge between microscopic fluid rotations and the overall circulation generated around an airfoil.

Viscosity and Boundary Layer Effects

In real fluids, viscosity plays a crucial role. As air flows over an airfoil, a thin region called the boundary layer develops near the surface. Due to the no-slip condition, air molecules in contact with the wing have nearly zero velocity, while those farther away move at free-stream speed.

This velocity difference creates strong velocity gradients that generate countless microscopic rotations within the boundary layer. Although each rotation is extremely small, their combined effect produces significant circulation around the airfoil.

Formation of Lift

The airfoil geometry, particularly the trailing edge, ensures that the airflow leaves the wing smoothly. This establishes a stable circulatory flow field around the airfoil. The circulation increases airflow velocity over the upper surface and decreases it below the wing.

According to Bernoulli's Principle, higher velocity corresponds to lower pressure, while lower velocity corresponds to higher pressure. The resulting pressure difference creates a net upward force known as lift.

Conclusion

Lift generation is the result of a complex interaction between circulation, viscosity, boundary-layer behaviour, and airfoil geometry. Through countless microscopic rotations within the airflow, a stationary wing creates a stable circulation pattern that accelerates air over its upper surface and reduces pressure. This pressure difference produces the upward force that enables aircraft to fly. Thus, circulation serves as the crucial link between fluid motion and the remarkable phenomenon of powered flight.

BEYOND THE TAIL ROTOR

How Advanced Tailless Helicopters Are Transforming the Future of Vertical Flight

Mr. G V Surya Narayana
Sr. Asst. Professor

For decades, the image of a helicopter has been incomplete without its spinning tail rotor. That small rotor mounted at the rear has always played a crucial role in balancing the torque generated by the main rotor and keeping the helicopter stable in flight. Yet, despite its importance, the tail rotor has long been considered one of the weakest and most vulnerable parts of rotary-wing aircraft. It consumes engine power, increases noise, adds maintenance complexity, and is highly exposed to accidental damage. In response to these limitations, aerospace engineers have begun developing a new generation of rotorcraft known as advanced tailless helicopters—machines designed to fly without the traditional tail rotor while delivering greater efficiency, safety, and manoeuvrability.

The concept of a tailless helicopter is not simply about removing one component; it is about redesigning the helicopter's entire anti-torque and control philosophy. One of the earliest successful breakthroughs in this field was the NOTAR system, which stands for "No Tail Rotor." Instead of using an exposed spinning rotor at the tail, this system employs an internal fan housed inside the tail boom. The fan pushes a controlled stream of air through slots along the boom, generating side force through aerodynamic circulation and balancing the main rotor torque. Additional directional control is achieved through a jet thruster at the tail end. The result is a helicopter that is significantly quieter, safer near ground crews, and less prone to tail strike accidents. NOTAR technology demonstrated that anti-torque control could be achieved without the traditional rotor, opening a completely new direction in helicopter engineering.

While NOTAR eliminated the tail rotor using airflow, another advanced approach removes the need for a tail rotor altogether by using coaxial main rotors. In this configuration, two main rotors are mounted one above the other on the same axis and rotate in opposite directions. Because the torque produced by one rotor is automatically cancelled by the torque of the other, there is no requirement for a tail-mounted anti-torque rotor. This design not only shortens the helicopter's overall length but also converts the power that would normally be wasted on the tail rotor into useful lift and propulsion. Modern coaxial helicopters are therefore more compact, more powerful in hover, and capable of improved manoeuvring in confined environments. Research shows that advanced coaxial rotorcraft can significantly improve lift efficiency and reduce power loss compared with conventional single-rotor helicopters.

The latest evolution of this idea is the coaxial compound helicopter, a remarkable fusion of helicopter and airplane technology. These rotorcraft use rigid coaxial rotors for vertical lift while an additional pusher propeller at the rear provides forward thrust. Because the rotors are no longer responsible for full propulsion during cruise, drag is reduced and the helicopter can fly at much higher speeds than ordinary rotorcraft. Studies indicate that this compound configuration can lower power consumption in forward flight while greatly improving manoeuvrability and range. Advanced prototypes in this category are being viewed as the future of military reconnaissance, emergency response, and high-speed civilian transport.

Beyond performance, tailless helicopters are also benefiting from major structural innovations. Researchers are now developing swashplate less coaxial systems, simplified hub mechanisms, and electric anti-torque control methods that reduce vibration, mechanical complexity, and maintenance requirements. Some experimental designs use fly-by-wire controls and intelligent actuators to vary rotor speed automatically based on flight condition. Others are integrating hybrid-electric propulsion to make tailless rotorcraft more environmentally sustainable. This means the future helicopter may not only be faster and safer, but also quieter, cleaner, and easier to operate than anything seen before.

One of the greatest advantages of advanced tailless helicopters lies in safety. Conventional tail rotors are involved in a significant number of ground handling and obstacle collision accidents because they are difficult to see and rotate at extremely high speed. Eliminating this exposed rotor immediately reduces risk to crew, passengers, and maintenance personnel. In military applications, the reduced acoustic signature of tailless systems offers another major benefit, making them harder to detect. Compact dimensions also allow these helicopters to land in urban zones, ship decks, forests, and mountainous terrain with better clearance than conventional designs.

The shift toward tailless helicopters reflects a broader truth in aerospace engineering: future aircraft must do more with less. They must use energy more intelligently, occupy less space, generate less noise, and deliver greater mission flexibility. By replacing the fragile spinning tail rotor with aerodynamic control, coaxial balance, and smart propulsion systems, engineers are rewriting the textbook definition of helicopter design.

Advanced tailless helicopters therefore represent more than a technological upgrade—they symbolize the next chapter of vertical flight. They are proof that the helicopters of tomorrow will not merely resemble the machines of yesterday. Instead, they will be sleeker, smarter, and more efficient flying systems built to meet the demands of a rapidly changing aviation world.

The Future of Interplanetary Transportation Systems

Dr. A Revanth Reddy
Associate Professor

Humanity has always been fascinated by the idea of exploring worlds beyond Earth. From ancient observations of the stars to modern space missions, the desire to travel deeper into space has driven scientific discovery and technological innovation. In recent decades, major advancements in aerospace engineering have transformed interplanetary travel from a distant dream into a realistic possibility. Interplanetary transportation systems refer to the technologies and infrastructure used to transport humans, spacecraft, cargo, and equipment between planets and other celestial bodies within the solar system. The future of these systems is expected to revolutionize space exploration, scientific research, commercial activities, and even human civilization itself.

The development of interplanetary transportation systems began during the twentieth century with the rise of rocket technology. Early space missions focused mainly on reaching Earth orbit and the Moon. However, missions to Mars, Venus, Jupiter, and other planets demonstrated the capability of spacecraft to travel vast distances across space. Although robotic missions have achieved remarkable success, transporting humans safely between planets remains one of the greatest challenges in aerospace engineering.

One of the most important factors shaping the future of interplanetary transportation is the advancement of reusable rocket technology. Traditionally, rockets were used only once, making space missions extremely expensive and inefficient. Modern aerospace companies such as SpaceX are developing fully reusable launch systems capable of carrying heavy payloads into space multiple times. Reusable spacecraft reduce launch costs significantly and make frequent missions more economically feasible. This innovation is expected to play a central role in future interplanetary travel by enabling large-scale transportation of cargo, fuel, and passengers.

The future of interplanetary transportation also depends heavily on improvements in propulsion systems. Conventional chemical rockets are powerful enough to escape Earth's gravity, but they are relatively slow for long-distance interplanetary travel. Missions to Mars using current propulsion methods may take six to nine months, exposing astronauts to radiation, isolation, and microgravity-related health problems. Scientists are therefore researching advanced propulsion technologies capable of reducing travel time and improving efficiency.

One promising technology is nuclear thermal propulsion. In this system, a nuclear reactor heats propellant to extremely high temperatures, producing greater thrust and efficiency than chemical rockets. Nuclear propulsion could significantly shorten travel times to Mars and other planets. Another advanced concept is ion propulsion, which uses electrically charged particles to generate continuous thrust over long durations. Ion engines are already being used in some robotic spacecraft because of their high fuel efficiency. Future interplanetary spacecraft may combine multiple propulsion technologies to optimize performance for different mission phases.

Research is also being conducted on futuristic propulsion concepts such as fusion propulsion, antimatter engines, and solar sails. Fusion propulsion aims to harness the same energy process that powers the Sun, potentially enabling extremely fast space travel. Solar sails use radiation pressure from sunlight to propel spacecraft without traditional fuel. Although many of these technologies are still experimental, they could transform interplanetary transportation in the coming decades.

Another major development in future transportation systems is the establishment of space infrastructure beyond Earth. Instead of launching all resources directly from Earth, scientists envision a network of orbital stations, lunar bases, fuel depots, and planetary habitats supporting deep-space missions. The Moon may serve as an important staging area for missions to Mars and beyond because of its lower gravity and potential natural resources. Water ice discovered on the Moon could be converted into hydrogen and oxygen fuel for spacecraft, reducing the need to transport fuel from Earth.

Mars is considered one of the primary targets for future human colonization. Developing reliable transportation systems to Mars will require spacecraft capable of carrying large crews, life-support systems, food supplies, scientific equipment, and construction materials. Future interplanetary vehicles may function like mobile space habitats, providing astronauts with artificial gravity, radiation protection, and sustainable living environments during long journeys.

Artificial intelligence and automation are expected to play a major role in future interplanetary transportation systems. AI-powered spacecraft could navigate autonomously, optimize fuel consumption, monitor spacecraft health, and respond to emergencies without direct human intervention. Autonomous cargo missions may deliver supplies to planetary bases before human arrival. Robotics will also assist in spacecraft maintenance, planetary exploration, and habitat construction.

Another exciting possibility is the development of commercial interplanetary travel. Private aerospace companies are increasingly investing in deep-space transportation technologies. Space tourism may eventually extend beyond Earth orbit, allowing civilians to travel to the Moon or even Mars. Although such journeys will initially be extremely expensive, continued technological progress could gradually make interplanetary travel more accessible. Commercial participation may also accelerate innovation by increasing competition and investment within the aerospace industry.

Despite these exciting possibilities, future interplanetary transportation systems face several major challenges. One of the biggest obstacles is human survival during long-duration space missions. Exposure to cosmic radiation poses serious health risks, including increased chances of cancer and damage to the nervous system. Spacecraft traveling beyond Earth's protective magnetic field must therefore include advanced radiation shielding technologies. Scientists are studying materials, magnetic shielding systems, and underground habitats to protect astronauts from harmful radiation.

The psychological challenges of deep-space travel are equally important. Astronauts on interplanetary missions may spend months or years in confined environments far from Earth. Isolation, stress, and communication delays can affect mental health and team performance. Developing effective support systems, training methods, and habitat designs will be essential for maintaining crew well-being during long missions.

Energy generation is another critical issue for future interplanetary transportation. Spacecraft operating far from the Sun may not receive enough solar energy to power onboard systems. Advanced nuclear power systems and highly efficient energy storage technologies may therefore become necessary for deep-space missions. Reliable power generation will support propulsion, communication, life-support systems, and scientific operations.

The cost of developing interplanetary transportation systems is also extremely high. Building advanced spacecraft, launch infrastructure, planetary habitats, and support systems requires enormous financial investment. International cooperation among governments, space agencies, research institutions, and private companies will likely be essential for sharing resources and expertise. Collaborative missions can re-

reduce costs and accelerate technological progress while promoting peaceful exploration of space.

Environmental concerns related to space exploration must also be considered. Increased rocket launches may contribute to atmospheric pollution and space debris accumulation. Sustainable aerospace technologies and responsible mission planning will therefore become increasingly important. Scientists are researching environmentally friendly propellants and debris mitigation strategies to minimize the impact of space activities.

The future of interplanetary transportation systems may eventually lead to the establishment of permanent human settlements beyond Earth. Colonies on Mars or lunar bases could support scientific research, resource extraction, manufacturing, and long-term human survival. Some scientists believe that becoming a multi-planetary species could help protect humanity from global disasters such as climate change, asteroid impacts, or pandemics. Interplanetary transportation systems will serve as the foundation for this new phase of human civilization. In conclusion, the future of interplanetary transportation systems represents one of the most ambitious and transformative goals in aerospace engineering. Advancements in reusable rockets, advanced propulsion technologies, artificial intelligence, and space infrastructure are gradually making deep-space travel more achievable. Although significant challenges related to radiation, human health, energy, cost, and sustainability remain, ongoing research and innovation continue to push the boundaries of space exploration. Interplanetary transportation systems will not only expand scientific knowledge but may also reshape the future of humanity by enabling exploration, settlement, and economic activity across the solar system. As technology continues to evolve, traveling between planets may one day become a routine part of human existence, opening a new era of discovery and progress beyond Earth.

WINGS OF THE FUTURE

How Advanced Composite Materials Are Redefining Modern Aircraft Design

The aviation industry has always been driven by one simple goal: to build aircraft that are lighter, stronger, safer, and more efficient. From the early wooden airplanes to the aluminum-bodied jets of the twentieth century, every generation of aircraft has reflected the best materials available at that time. Today, the aerospace world is experiencing another major transformation, and at the center of this change are advanced composite materials. These modern materials are not just replacing metals in aircraft structures; they are redefining the way aircraft are designed, manufactured, and operated.

Advanced composite materials are specially engineered combinations of high-strength fibers and binding resins. Unlike ordinary metals, these materials offer an exceptional balance between low weight and high strength. Carbon fiber reinforced polymer, commonly known as carbon composite, is the most widely used among them. It is extremely light, yet capable of withstanding heavy aerodynamic loads, repeated stress, and harsh environmental conditions. This unique property makes composites ideal for aircraft wings, fuselage panels, tail sections, rotor blades, and even interior structural components. Modern aircraft manufacturers now prefer these materials because every kilogram of weight reduced means lower fuel consumption, greater flight range, and reduced operating cost.

What makes advanced composites truly fascinating is not only the material itself but also the sophisticated techniques used to shape it. Traditional aircraft manufacturing relied heavily on cutting, riveting, and joining metallic sheets. In contrast, composite structures are built layer by layer with scientific precision. One of the most advanced methods used today is Automated Fiber Placement. In this robotic process, thin strips of carbon fiber are laid carefully over a mold in the exact direction where strength is needed. This allows engineers to create parts that are both lighter and structurally superior. Large aircraft sections such as fuselage barrels and wing skins are now produced using this technology because it reduces human error and ensures consistency. Aerospace companies are increasingly investing in such automated systems as they aim for faster and smarter production lines.

Another important manufacturing technique is Resin Transfer Molding, where dry fibers are arranged inside a closed mold and liquid resin is injected under pressure. Once cured, the part becomes a rigid and seamless structural member.

This process is especially useful for producing curved and complex components with excellent surface finish. Along with this, Out-of-Autoclave processing has become a practical advancement in recent years. Earlier, composite parts required expensive autoclaves—large pressure ovens—for curing. But with new resin systems, manufacturers can now cure large aircraft structures under vacuum conditions, saving both time and energy. These improvements are making advanced composites more affordable and suitable for mass aircraft production.

The newest trend, however, goes beyond simple lightweight construction. Aerospace engineers are now developing thermoplastic composites, which can be reheated, reshaped, and even welded together. This means aircraft assembly can become faster, repairs can be easier, and damaged sections may be replaced with less effort. Thermoplastic materials also support recycling, which is increasingly important as the aviation industry faces environmental pressure to become greener. At the same time, researchers are adding nanomaterials such as graphene and carbon nanotubes into composite laminates to improve toughness, electrical conductivity, and lightning strike protection. These nano-enhanced composites represent the next step toward stronger and smarter aircraft structures.

Perhaps the most exciting development is the rise of intelligent or smart composites. Scientists are embedding tiny sensors within aircraft materials so that the structure itself can monitor stress, vibration, and hidden damage during flight. Instead of waiting for visible cracks or scheduled inspections, the aircraft can almost communicate its health condition in real time. This concept of self-monitoring structures is expected to greatly improve flight safety and reduce maintenance downtime. Researchers are also experimenting with structural battery composites that can carry mechanical loads while storing electrical energy, a breakthrough that may support the future of electric and hybrid aircraft.

The growing use of advanced composites clearly shows that aviation is moving toward a future where materials are no longer passive elements but active contributors to performance, safety, and sustainability. Aircraft are becoming lighter without becoming weaker, smarter without becoming more complicated, and more efficient without sacrificing reliability. What once seemed like a futuristic idea has now become an industrial necessity.

In many ways, advanced composite materials represent the lightweight revolution of modern aviation. They have changed the traditional image of aircraft from metal machines to intelligent engineered systems built for the demands of the future. As technology continues to evolve, these materials will not only help aircraft fly farther and consume less fuel, but they will also open the door to a new era of environmentally responsible and highly advanced air transportation.

LIFELONG LEARNING: THE KEY TO SUCCESS BEYOND "ENGINEERING EDUCATION"

Engineering education provides a strong technical foundation, but true success comes from continuous learning throughout life. Technology evolves rapidly, making it essential for engineers to update their knowledge and skills regularly. Lifelong learning enables professionals to adapt to emerging technologies, industry trends, and global challenges. It enhances problem-solving abilities, critical thinking, creativity, and innovation. Engineers who continuously learn remain competitive in their careers and are better prepared for leadership roles. Learning can take place through higher education, professional certifications, online courses, workshops, research, and industrial training. It also includes developing soft skills such as communication, teamwork, leadership, and ethical decision-making. Lifelong learning encourages curiosity, self-improvement, and confidence in facing new challenges. It promotes adaptability in a dynamic work environment and supports career growth. Engineers who embrace continuous learning contribute more effectively to society through sustainable and innovative solutions. In addition, lifelong learning fosters entrepreneurship and interdisciplinary collaboration. It helps professionals stay relevant in the era of digital transformation, artificial intelligence, and automation. Ultimately, lifelong learning is not just a career requirement but a lifelong commitment to personal and professional excellence, empowering engineers to create a meaningful impact on the world.

PHOTO GALLERY

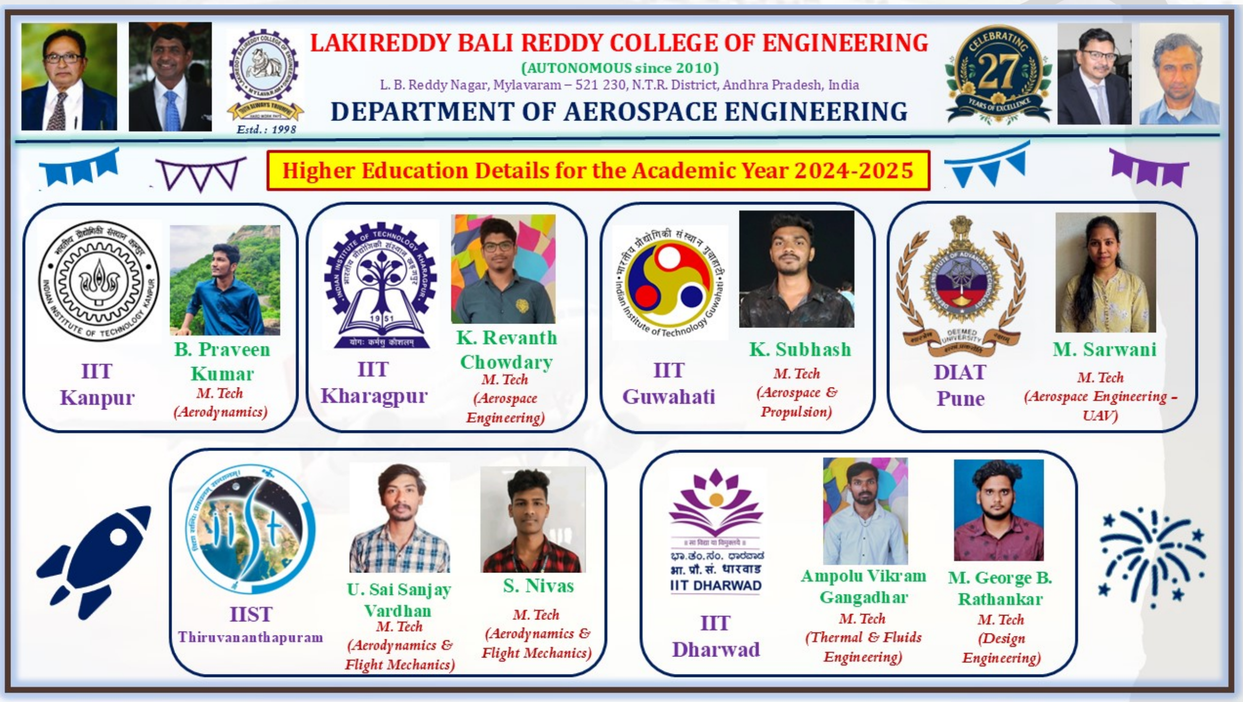
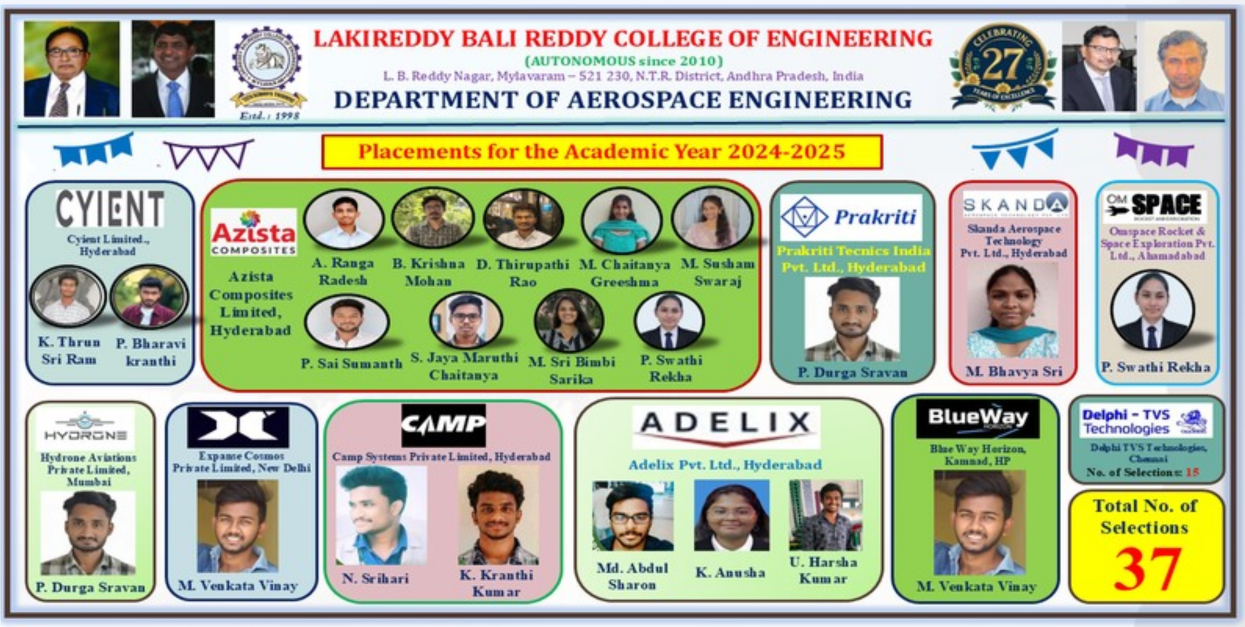
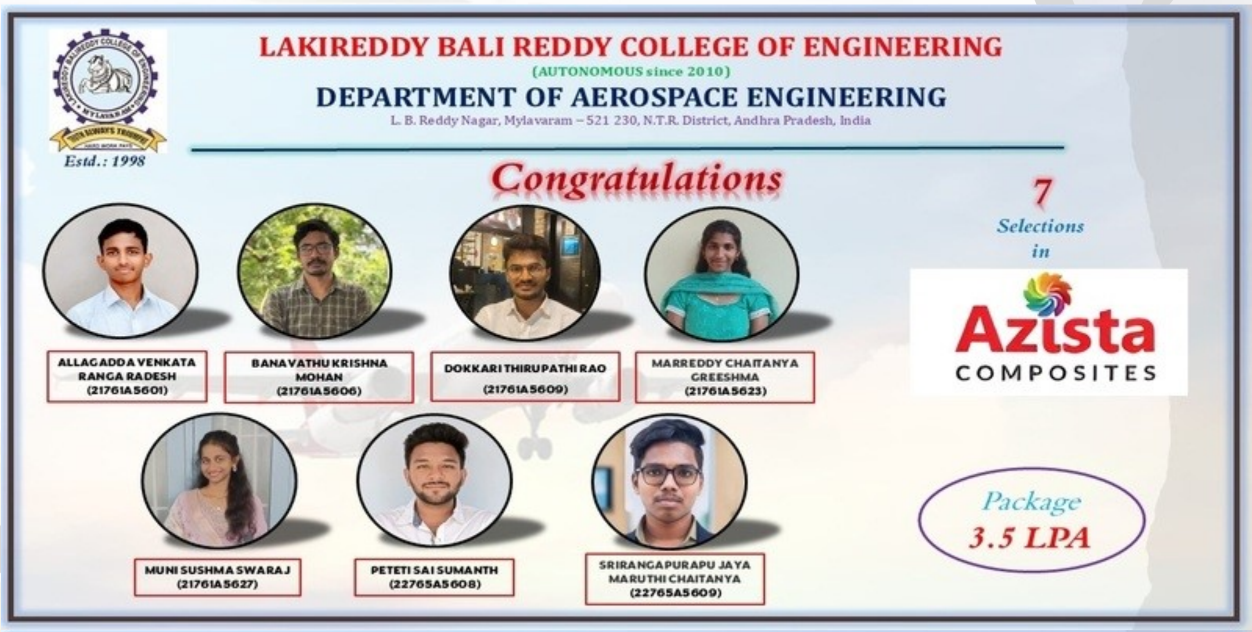


PHOTO GALLERY

Placements (2024-25)





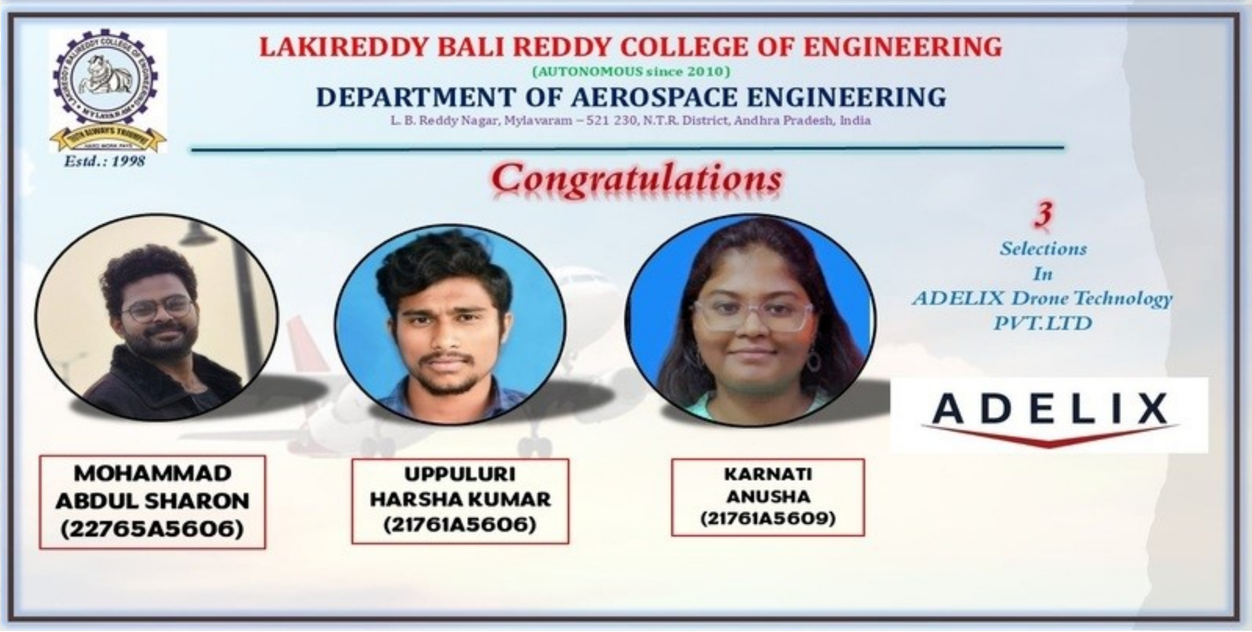
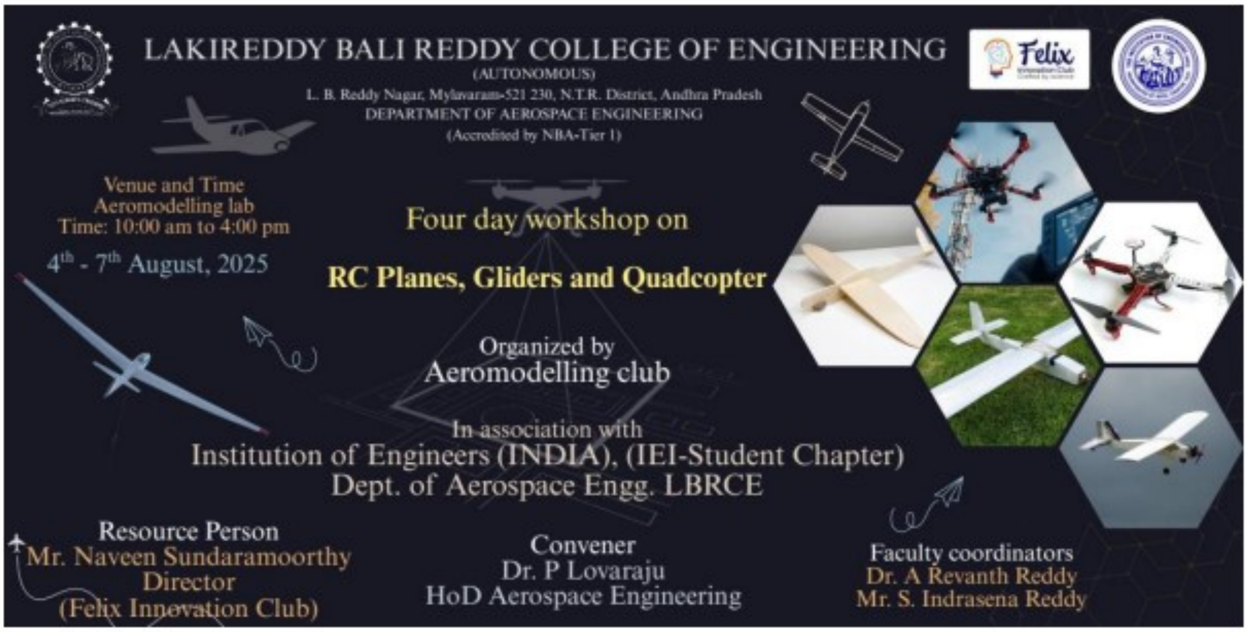


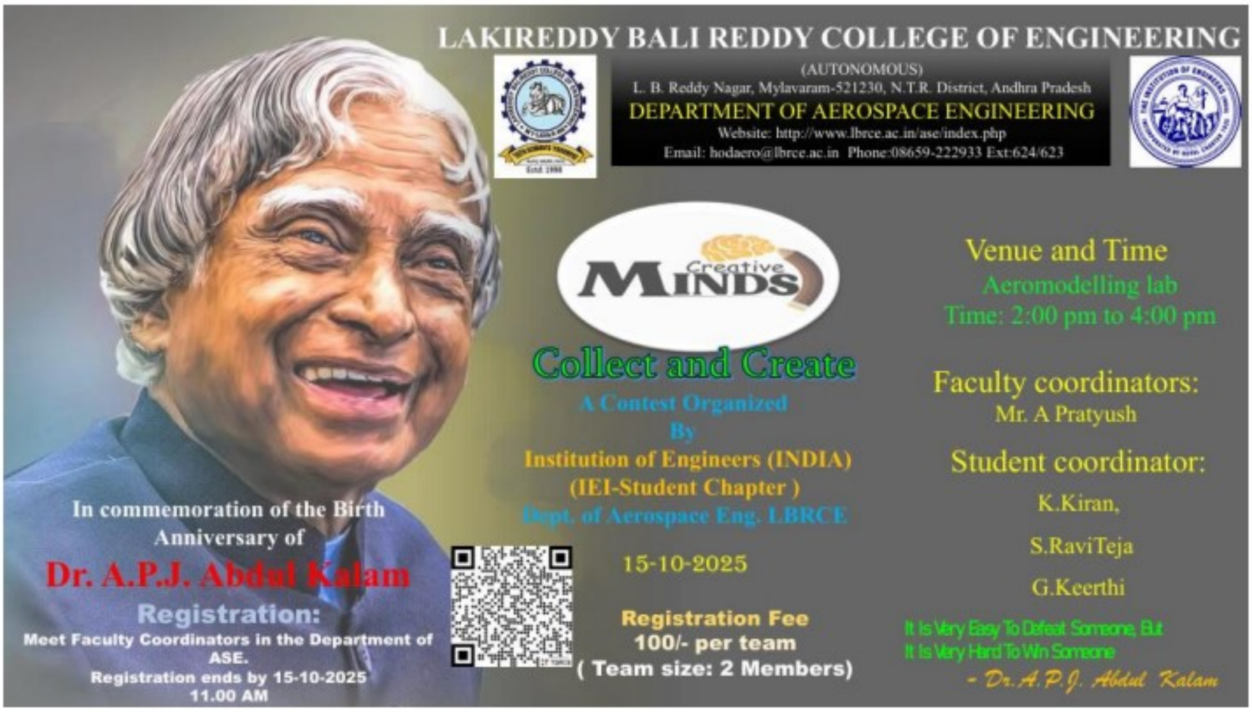
PHOTO GALLERY

Placements (2024-25)

PHOTO GALLERY

Events Organized for Students (2024-25)





DEPARTMENT ACHIEVEMENTS

Industrial Visit

NSS Activities

Alumni Meet 2025

DEPARTMENT ACHIEVEMENTS

Department Activities:


IEI Program


Student Workshop & Competitions


Farewell Day


Industrial Visit


SHAR Visit


Awards form JNTUK


EAP Program


Scholarship to Students

Industrial Visit to SDSC-SHAR


Facilitation to Deputy Director, CITD-Vijayawada


Anthriksha Ratha Yathra Day


Student Winners in Lakshya 2K25

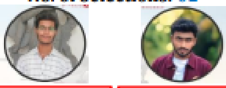

Alumni Meet 2025


Airship - Student Project


NSS Activities

PLACEMENTS & HIGHER STUDIES DETAILS FOR THE ACADEMIC YEAR 2024-2025

Cyient Limited, Hyderabad.
No. of Selections: 02


K. Tharun Sri Ram
P. Bharavikranthi

CAMP Systems Pvt. Ltd., Hyderabad. No. of Selections: 02


N. Srihari
K. Karanthi Kumar

Adelix Pvt. Ltd., Hyderabad.
No. of Selections: 03

MD. Abdul Sharon, K. Anusha, U. Harsha

Skandha Aerospace Technology Pvt. Ltd., Hyderabad.
No. of Selections: 01


M. Bhavya

Hydrodrone Aviation Pvt. Ltd., Hyderabad
No. of Selections: 01


P. Durga Sravan

Azista Composites Limited., Hyderabad.
No. of Selections: 09


Allagadda Venkata Ranga Radesh
Banavathu Krishna Mohan
Dokkari Thirupathi Rao
Mareddy Chaitanya Greeshma
Muni Sushma Swaraj
Peteti Sai Sumanth
S. Jaya Maruthi Chaitanya
Mopidevi Sri Bimbi Sarika
Pala Swathi Rekha

Expanse Cosmos Pvt. Ltd.,
No. of Selections: 01


M. Venkata Vinay

Omspace Rocket & Space Exploration Pvt. Ltd., Ahamadabad
No. of Selections: 01


Pala Swathi Rekha

Blueway Horizon Ltd., H.P.
No. of Selections: 01


M. Venkata Vinay

Prakriti Tecnics India Pvt. Ltd., Hyderabad
No. of Selections: 01


P. Durga Sravan

Delphi TVS Technologies Private Limited, Chennai
No. of Selections: 15

Total Number of Placements
37

Institutes into which 2021-2025 Batch Students Admitted into Higher Education

- Indian Institute of Technology Kanpur, Kanpur, India.
- Indian Institute of Technology Kharagpur, Kharagpur, India.
- Indian Institute of Technology Guwahati, Guwahati, India.
- Indian Institute of Technology Dharwad, Dharwad, India.
- Indian Institute of Space Technology, Thiruvananthapuram, India
- Defence Institute of Advanced Technology, Pune, India
- USA and UK Universities.

Premier Institute/Organizations where our students undergone Internships

- Indian Institute of Technology Hyderabad, Hyderabad, India.
- Indian Institute of Technology Tirupathi, Tirupathi, India.
- SDSC-SHAR (ISRO Unit), Sriharikota, Andhra Pradesh.
- Gas Turbine Research Establishment (GTRE), Bengaluru.
- Airport Authority of India, Vijayawada
- Indian Institute of Technology Kharagpur, Kharagpur, India.
- Raghuvamsi Aerospace Private Limited, Hyderabad
- SIEMENS Centre of Excellence, NIT Warangal.
- Central Institute of Tool Design (CITD), Vijayawada.

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Head of the Department
Mobile: +91-87900 85194
Email: hodaero@lbrce.ac.in, aero.lbrce@gmail.com

DEPARTMENT ACHIEVEMENTS

Remarkable Achievements:

GATE – 2025 RANKS


K. Revanth Chowdary
AIR 526


M. Sarwani
AIR 609


S. Nivas
AIR 609


U. Sanjay Vardhan
AIR 747


K. P. S. S. V. Balaji
AIR 867


A. Vikram Gangadhar
AIR 867


K. Subash
AIR 1183


M. George B. Rathnakar
AIR 1647


A. Sushanth Joel
AIR 1837

GATE – 2024 RANKS


K. Ruby
AIR 160


S. Nivas
AIR 526


P. Dharani
AIR 640


K. Revanth Chowdary
AIR 640


A. Vikram Gangadhar
AIR 898


N. Ramanjaneyulu
AIR 936


B. Praveen Kumar
AIR 1188

Partial List of Companies where our Alumni are Working

Airbus, Honeywell, GE, Mercedes-Benz, Indian Navy, Azista Composites, Capgemini, Safran, Wipro, Siemens, Cyient, Skanda Aerospace Technology Pvt. Ltd, GMR Aero Technic, GKN Aerospace, Satven (Satyam-Venture Engineering Services Pvt Ltd), Genpact, AeroTech Inspection NDT, Tech Mahindra, Sonovision Aetos, Air India, Umlaut, CAMP, Astromeda, Adelix

Partial List of Universities where our Alumni Pursuing /Pursued Higher Education

United States of America (USA)

Embry-Riddle Aeronautical University, San José State University, Ohio University, University of North Texas, Purdue University, University of Central Missouri, Kent State University

United Kingdom (UK)

Sheffield Hallam University, University of Hertfordshire, University College Birmingham, University of South Wales, Northumbria University Newcastle

Germany (Europe)

Technische Hochschule Ingolstadt, Universität Duisburg Essen, Hochschule Kaiserslautern, Wildau Institute of Technology, Hochschule Emden-Leer, Technische Universität Kaiserslautern, LiU

Partial List of Indian Universities where our Alumni Pursuing/Pursued Higher Education (IIT's, IIST etc.)

IIT Dharwad

ANTHARIKSH

THE SPACE...

DEPARTMENT OF AEROSPACE ENGINEERING
LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
MYLAVARAM, ANDHRA PRADESH, INDIA.

antharikshlbrce@gmail.com