



S J C INSTITUTE OF TECHNOLOGY

PB NO.20, BB Rd, CHIKKABALLAPUR, KARNATAKA-562101

DEPARTMENT OF AERONAUTICAL ENGINEERING

Report on AVION 7.0

2025-2026

"Wings of Celebrations" The Annual Technical and Cultural fest of the Aeronautical Department

Date : 21/11/2025

Venue : AERO BLOCK



VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI-590018

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ACKNOWLEDGMENT

The satisfaction and fulfillment that come with the successful completion of any event would be incomplete without acknowledging the support and contributions of the individuals who made it possible. Their hard work, guidance, perseverance, and constant encouragement have been invaluable in achieving this milestone.

We offer our humble *pranams* to His Holiness **Byravaikya Sri Sri Sri Dr. Balangadharanatha Maha Swamiji** and to **Sri Sri Sri Dr. Nirmalanandanatha Maha Swamiji** for their divine blessings.

We express our sincere gratitude to **Dr. G. T. Raju, Principal**, for his continuous support and guidance throughout our academic journey.

We extend our heartfelt thanks to **Dr. Deepa M. S., Professor & Head, Department of Aeronautical Engineering**, and **Dr. Madhu K. S., Associate Professor, Department of Aeronautical Engineering**, for their valuable guidance and support in the successful organization and completion of the event.

We also thank the **Department of Aeronautical Engineering** for their coordination and assistance throughout the program.

Our sincere appreciation goes to all the faculty members of the department for giving us the opportunity to conduct the event under their supervision. Their support, motivation, and technical guidance played a vital role in the successful execution of this work.

We are deeply grateful to our parents and family members for their continuous moral support, love, and encouragement, which motivated us throughout this journey.

Finally, we thank all individuals and well-wishers who directly or indirectly contributed to the successful completion of the event.

ABSTRACT

The Department of Aeronautical Engineering at S J C Institute of Technology (SJCIT), Chikballapur, successfully hosted its seventh annual departmental technical and cultural festival, **AVION 7.0**. This flagship event was conceptualized as a critical platform to accelerate the development of practical skills, competitive ingenuity, and academic excellence among future aeronautical professionals, thereby directly supporting the department's mission of preparing competent engineers ready to serve societal and industrial needs. AVION 7.0 was strategically structured to provide essential experiential learning, effectively integrating theoretical foundations with practical challenges through a balanced mix of technical and non-technical competitions. Core technical events, meticulously designed under expert faculty guidance, included the highly anticipated **Hydro Rocket competition**. This event mandated the rigorous, hands-on application of advanced principles from propulsion, fluid dynamics, and aerodynamic stability in a competitive design-and-launch challenge, directly fostering proficiency in rapid prototyping, iterative design methodologies, and performance optimization. Furthermore, the **Black Box Quiz** served as the intellectual cornerstone, rigorously testing theoretical knowledge across all major aeronautical domains, encompassing specialized areas such as flight mechanics, advanced avionics systems, non-destructive testing of composite materials, and strict aircraft maintenance protocols. Crucially and the **Aircraft Sketching Competition**, which fostered essential design visualization, technical accuracy, and creative interpretation of complex aircraft structures. The non-technical dimension, featuring a competitive **Cricket tournament**, promoted the cultivation of essential soft skills, including leadership development, strategic planning, effective communication, and stress management, reinforcing the importance of holistic physical and mental engagement. The festival achieved its overarching objective of successfully bridging the knowledge-to-application gap, encouraging innovation aligned with industry best practices, and actively preparing a workforce ready for the dynamic and demanding global aerospace and defense sectors, evidenced by significant student engagement, valuable inter-departmental collaboration, and overall professional readiness.

About Department Club-PRAVEGA

Department Club-PRAVEGA, was set up in the year 2017 with a motto

- To improve the practical awareness of the students which include design and building of working models and operating them.
- To encourage and guide the students to participate in various competitions held in our college and other colleges.
- To guide students in their final year project and present paper.



The above objectives of the club, took shape during the lister College Technical Fest AVION 7.0, Department of Aeronautical Engineering. And was decided to organize on 21 November.

A team of enthusiastic students willing to work as volunteers-coordinators was formed under the supervision of Head of Department and Faculty coordinator Dr. K S Madhu and Mr Siva J. Events conducted was discussed among student co-ordinators, faculty co-coordinator and Head of the Department. The finalized list consists of 8 events classified as Technical and Non-Technical Events with Inauguration.

Technical Events: -

- Hydro Rocket
- BlackBox Quiz
- Aircraft Sketching

Non-Technical Events: -

- Cricket

Event Poster:



|| Jai Sri Gurudev ||

Sri Adichunchanagiri Shikshana Trust(R.)

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DEPARTMENT OF AERONAUTICAL ENGINEERING

organizing

AVION 7.0



"Wings of Celebrations"

2K25



21st November 2025



AERO BLOCK

ORGANIZING COMMITTEE

SCAN TO REGISTER

Faculty Coordinators

Dr. Madhu K S

Associate Prof., Dept. of AE, SJCIT

Prof. Siva J

Assistant Prof., Dept. of AE, SJCIT

Student Coordinators

Ramya M, Contact No: 6362350566

Shravan Chidroop B A, Contact No: 7829371457

Convener

Dr. Deepa M S

Prof. & Head
Dept. of AE, SJCIT

Organizing Chair

Dr. Manjunath Kumar B H

Dean Academics, SJCIT

Finance Chair

Mr. Rangaswamy G R

Administrative office,
SJCIT

Program Chair

Dr. G T Raju

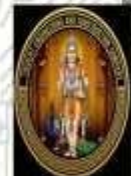
Principal,
SJCIT

All are Cordially Invited...

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INTRODUCTION

The Aeronautical Engineering Department proudly presented **AVION 7.0**, its premier annual technical and cultural festival. This event is proudly hosted by the **Sri Jagadguru Chandrashekharanatha Swamiji Institute of Technology (SJCIT)**, which was established in 1986 with the objective of developing a standard institution offering engineering courses aimed at producing abled engineers for the nation and the world.

SJCIT operates under the guidance of the **Sri Adichunchanagiri Shikshana Trust (R)**, founded in 1974 under the divine leadership of his Holiness Byravaikya Sri Sri Sri Dr. Bala Gangadharanatha Maha Swamiji. The Mahasamsthana Mutt, with its roots firmly embedded in 1500 years of history on a rocky hill west of Bengaluru, has been continuously working towards the betterment of human life and society.

Reflecting this deep-rooted commitment to quality, SJCIT is affiliated with the Visvesvarya Technological University and is accredited by NAAC (A+), NBA, and is ISO certified. The college is strategically situated on the Bangalore-Hyderabad National Highway NH7, 45 kms from Bangalore city, and draws inspiration from its location, being about 5 kms from Muddenahalli, the birthplace of Sir M Visvesvaraya. Building upon this legacy of excellence, AVION 7.0 was conceived as a platform to bridge the gap between theoretical knowledge and real-world engineering challenges. The core objective was to inspire the next generation of aerospace professionals by providing them with opportunities to demonstrate their technical prowess, engage with industry experts, and cultivate essential soft skills through key competitions. This report details the planning, execution, and outcomes of the festival, highlighting the major successes and areas for improvement based on the three main events.

Event Structure and Schedule

The festival focused on three main competitive events. The entire schedule was meticulously planned to maximize student engagement while ensuring smooth logistics across all venues.

DATE: 21/11/2025

SL NO	VENUE	TIME	EVENT
1	AERO BLOCK	9:30 AM	INAUGURATION CEREMONY
2	BGS AUDITORIUM STADIUM	10:00 AM	CRICKET
3	BGS AUDITORIUM STADIUM	10:00AM	HYDROROCKET
4	F-08,AERO BLOCK	12:00PM	BLACKBOX QUIZ
5	G-07,AERO BLOCK	1:30PM	AIRCRAFT SKETCHING
6	AERO BLOCK AUDITORIUM	4:00PM	VALEDICTORY FUNCTION

Inauguration Lighting the Lamp



Fig 1: Lighting the lamp

The ceremonial start to AVION 7.0, invoking auspicious beginnings.

Group Photo at BGS Amphitheater



Fig 2: Group photo of aeronautical department

Captures the massive scale of participation and the departmental Community spirit.

Water Rocket Launch Demonstration

Faculty and students observing the high-pressure launch of a water rocket, demonstrating principles of propulsion and trajectory. Showcases the hands-on, practical component of the technical fest.



Fig 3: Demonstration of hydro rocket to the principal



Fig 4: Involvement of principal in the launch

EDUCATIONAL OUTREACH

School Students Engagement

The event extended its outreach to the community by inviting students from BGS School to participate, fostering early exposure to engineering concepts. This engagement was highlighted by a special demonstration by **Mr. J Siva**, who showcased the construction and explained the core principles and importance of **hydro rockets** adding immense educational value for all participants. Complementing these technical and artistic pursuits, the inclusion of the Cricket tournament promoted holistic development and teamwork. AVI ON 7.0 successfully mobilized students to innovate, compete, and engage, reinforcing the skills necessary for a successful career in the global aerospace industry.



Fig 5: Demonstration of hydro rocket to the school students



Fig 6: Engaging and reinforcing knowledge of aeronautics

Technical Exhibition and Institutional Review

Project Category	Core concepts explained	Significance
Drones & UAVs	Aerodynamic stability, flight control systems, and potential applications in agriculture/logistics.	Showcased practical knowledge of modern remote-sensing technology.



Fig 7: Brief explanation on drones and UAVs

Project Category	Core concepts explained	Significance
Subsonic wind tunnel	Principles of boundary layer control, flow visualization, and aerodynamic testing of small models at low speeds (Bernoulli's principle demonstration).	Demonstrated practical knowledge of experimental aerodynamics and flow manipulation.



Fig 8: Brief explanation on Subsonic wind tunnel

Project Category	Core concepts explained	Significance
Aircraft Materials	Comparison of composite materials vs. traditional aluminum alloys, focusing on strength-to-weight ratio and corrosion resistance.	Highlighted awareness of current industry trends in aircraft construction.



Fig 9 : Brief explanation on Aircraft materials

Project Category	Core concepts explained	Significance
Wing Structures	Detailed explanation of primary wing components: ribs, spars (often called longerons in some contexts), and stringers and how they bear flight loads.	Affirmed core knowledge of aircraft structural mechanics and load distribution.



Fig 10 : Brief explanation on Wing structures

Project Category	Core concepts explained	Significance
Simple Aerodynamics (Paper Models)	Demonstrated principles of lift, drag, and stability using various paper plane models (e.g., Dart, Glider, Canard), showing the impact of wing sweep and center of gravity on flight performance.	Served as a simplified, hands-on tool to illustrate complex aerodynamic concepts .



Fig 11 : Brief explanation on Simple aerodynamic paper models

Detailed Event Outcomes

Technical Competitions

1. Hydorocket

This section details the primary hands-on technical event, focusing on practical application of propulsion and fluid dynamics principles.

Directives:

1. Maximum of 3 participants in a team.
2. Only plastic bottles of 2 litres should be used for the construction of rockets.
3. The use of ready-made rockets is not entertained and the launcher will be provided.
4. Pure water should be used as propellant and the use of shampoo, or soap is prohibited.
5. Judgment will be based upon ENDURANCE, RANGE and Bullseye covered by the rocket.
6. Final judgment will be done by the Judges

EVENT	OBJECTIVE	CONCEPT HIGHLIGHT
Hydorocket Competition	Design, build, and launch a water-propelled rocket to achieve maximum altitude and flight stability, demonstrating applied knowledge of nozzle design and pressure dynamics.	The winning team achieved the highest altitude by optimizing their nozzle design for maximum thrust-to-weight ratio, showcasing superior physics comprehension.
NO OF TEAMS(OF 3)		
11		

FACULTY COORDINATORS:

Dr. Nagesh D
Dr. Madhu K S

STUDENT COORDINATORS:

Kanchana B S
Kushal Gowda N S
Likith



Fig 12 : Ongoing Hydrorocket competition



Fig 13: Ongoing hydrorocket competition

2.Blackbox Quiz

This section focuses on the main intellectual challenge event, testing knowledge and rapid problem-solving skills.

Directives:

- 1.Each team must consist of 2 members from the same or different branches.
- 2.Use of mobile phones, internet, or external materials is strictly prohibited unless stated otherwise
- 3.Participants must report 10 minutes before their scheduled time.
- 4.Judges’ decision will be final and binding.
- 5.In case of a tie, the team with the shortest completion time will be preferred.
- 6.Any form of malpractice will lead to immediate disqualification.
- 7.Maintain discipline and decorum throughout the event.
- 8.The event organizers reserve the right to modify the rules if required.

Rounds:

Round 1: “Decode the Box” Teams will be given clues, riddles, or aero-themed puzzles related to flight principles, aircraft parts, or black box concepts. Time limit: 20–30 minutes. Top scoring teams move to Round 2.

Round 2: “Crash Case Investigation” Teams receive a mock aircraft incident scenario (e.g., flight data, cockpit voice logs, or system readings). They must analyze clues and identify the possible cause of failure within the time limit. Creative and technically sound reasoning earns extra points

FACULTY COORDINATORS:

Prof.Siva J
Dr.Debasree Das

STUDENT COORDINATORS:

Bindushree S
Lankesh S
Gagana

EVENT	OBJECTIVE	CONCEPT HIGHLIGHT
Blackbox Quiz	A multi-stage quiz testing rapid-fire general knowledge, core aeronautical principles, and logical deduction skills to "solve" a hypothetical "blackbox" scenario.	The winner demonstrated a comprehensive grasp of both aviation history and complex fluid mechanics, quickly solving the final deductive challenge based on minimal data inputs.
NO OF TEAMS(OF 2)		
18		



Fig 14 : Ongoing Blackbox competition



Fig 15: Ongoing Blackbox competition

Aircraft Sketching

This section focuses on the main intellectual and creative challenges, testing knowledge, deduction, and visual design skills.

Directives:

1. Individual registration and participation.
2. The sketch must be according to the competition theme.
3. A drawing sheet will be provided (A3 size paper). Pencil, eraser and sharpener are to be brought by the participants.
4. The participants should explain the sketch based on the theme to the judges.
5. The decision of the judges will be final and cannot be Changed.

EVENT	OBJECTIVES	ATMOSPHERE
AIRCRAFT SKETCHING	Visually represent a specific aircraft (e.g., a jet Fighter or concept transport) from multiple perspectives, focusing on technical accuracy, proportion, and artistic representation of aerodynamic surfaces.	The top entry was praised for its masterful handling of 3D perspective and the accurate depiction of complex wing geometries and engine placements.
NO OF PARTICIPANTS		
24		

FACULTY COORDINATORS:
Prof.Srinivasa GM

STUDENT COORDINATORS:
Nikitha G
Shashank H V
Chaithanya



Fig 16: Aircraft sketching competition



Fig 17: Aircraft sketching competition

Sports -Cricket

This section covers the primary cultural and sports activity designed to promote team spirit and departmental cohesion.

Directives:

- 1.7 Players in Teams.
- 2.4 Overs per Innings.
- 3.1 over power play.
4. One bowler can bowl Max 2 overs(2,1,1).
5. Only College Students are allowed & should bring college ID card(Any college/degree).
6. Knock out Matches.
7. Umpire Decision is final.
8. Throw Bowling is allowed.
9. Ball-Tennis ball (Sixit)

EVENT	WINNER HIGHLIGHTS	ATMOSPHERE
CRICKET TOURNAMENT	The final match was highly competitive, with the winning team securing the trophy in the last over. This event strongly promoted inter-batch interaction and sportsmanship.	Very engaging; fostered departmental camaraderie and collaboration among junior and senior students, emphasizing teamwork outside the classroom.
NO OF TEAMS(OFF 7)		
20		

FACULTY COORDINATORS:

Dr. Natraju S N
Prof. Sayed

STUDENT COORDINATORS:

Chandan P S
Prajwal G
Riyaz



Fig 18: Ongoing Cricket tournament



Fig 19 : Ongoing Cricket tournament

Valedictory Function

The festival formally concluded with the Valedictory Function and Prize Distribution ceremony, held on November 21st, 2025, at 4:00 PM in the College Auditorium, attended by over 200 participants and faculty. Dignitaries: The function was graced by the Department Head, Dr. Deepa M. S., and the Organizing Chair, Dr. Manjunath Kumar R H. Addresses: Dr. Deepa M. S. delivered a summary of the two-day event, highlighting the spirit of innovation and participation. The Chief Guest addressed the gathering, emphasizing the importance of practical application in engineering education, particularly commending the technical depth shown in the project exhibition. Recognition: Trophies, medals, and certificates of merit were distributed to the winners and runners-up of all four core competitive events: Hydorocket, Blackbox Quiz, Aircraft Sketching Challenge, and the Cricket Tournament. Special thanks were awarded to the core student organizing team members and volunteers for their exceptional dedication and flawless execution of the event logistics. Formal Closing: The ceremony concluded with the official Vote of Thanks delivered by the Student Coordinator, expressing gratitude to the management, faculty, sponsors, and participants for contributing to the immense success of AVION 7.0.

Following the invocation, the Head of the Department, Dr. DEEPA MS, delivered an inspirational address, focusing on the future challenges and opportunities in the aerospace sector, encouraging students to leverage the technical skills demonstrated during the fest.

PRIZE DISTRIBUTION

Hydrorocket launch

Position	Names	Cash Prize	College/University
Winners 1 st	Hemanth Karthik Shivakumar	Prize-Rs 1000	SJCIT



Fig 20 : Prize distribution to the winners

Position	Names	Cash Prize	College/University
2nd	Likith Chethan Ramnaresh	Rs 500	VTU Mudhenhalli



Fig:21 : Prize distribution to the runners

Black Box

Position	Names	Cash Prize	College/University
Winners 1st	Md Aleem & Immanuel	Prize-Rs 1000	East West College of Engineering



Fig 22 : Prize distribution to the winners

Position	Names	Cash Prize	College/University
2nd	Tarun & Nithin	Rs 500	SJCIT



Fig 23 : Prize distribution to the runners

Aircraft Sketching

Position	Names	Cash Prize	College/University
Winner 1 st	Mehak Taj	Prize-Rs 1000	SJCIT



Fig 24 : Prize distribution to the winner

Position	Names	Cash Prize	College/University
2nd	Nignesh Shripathi Bhatt	Rs 500	VTU Mudhenhalli



Fig 25 : Prize distribution to the runners

Cricket

Position	Names	Cash Prize	College/University
Winners 1 st	<ul style="list-style-type: none">•Manoj kumar•Salman•Tejas•Madan•Varun•Darshan•Ullas	Prize-Rs 2000	SJCIT



Fig 26 : Prize distribution to the winners

Position	Names	Cash Prize	College/University
2nd	<ul style="list-style-type: none">•Bhargav KB•Lakshmi Narasimha•Nikhil Reddy BV•Revanth Gowda S•Punith•Gagan D•Mithun Minhas	Rs 1000	SJCIT



Fig 27 : Prize distribution to the runners

CONCLUSION

In summary, AVION 7.0, under the overarching theme "Wings of Celebrations," successfully met its core objectives of integrating rigorous technical competition, intellectual challenge, and valuable community engagement. The two-day festival showcased the high technical aptitude of the Aeronautical Engineering students and affirmed the department's commitment to hands-on, practical learning, particularly evidenced by the success of the Hydorocket Competition and the insights provided during the Principal's Exhibition. The exceptional coordination by the organizing committee, led by **Dr. Deepa M. S. (HOD)**, ensured a seamlessly executed festival that has set a high standard for future departmental events.

Key Achievements

High-Quality Technical Demonstration: Successfully executed the hands-on competitive events, attracting teams from different institutions and validating theoretical propulsion principles.

Elevated Institutional Recognition: Achieved a successful and productive **Technical Exhibition** reviewed by the Principal, directly leading to secured future resource support for student projects.

Community Impact: Conducted a successful educational outreach program, engaging students from BGS School and fostering early interest in aerospace engineering principles.

Increased Outreach and Participation: Noted a significant increase in external college participation by approximately 25% compared to the previous iteration, AVION 6.0, broadening the fest's regional influence.

Glimpses of AVION 7.0





