



NOTAM



NOTICE TO AIR MANAGERS

“Intellectuals are not born, but are made. I believe the aim of education is the knowledge not of facts but of values. I strongly believe in the capabilities of student’s community and ensure everything best to reach them for their promising growth.

- Sri Ch. Malla Reddy (Chairman, MRGI)



Dr. V.S.K. Reddy
Principal, MRCET

A thought beyond horizons of success committed for educational excellence. “Wishing all the aeronautical Engineering students all the success in future endeavors”.



Swetha Bala M.N.V.S
HOD, Dept. of AE

It is a very happy moment to start a newsletter especially for Aeronautical Engineering students. I whole heartedly wish the students a grand success in carrying out this Herculean task. I express my deep sense of gratitude to all the faculty members and students for helping me in bringing out this newsletter. I personally wish that this Newsletter in the long run will and should cater all the career oriented needs of an Aeronautical student and help them in a better way.



Prof. T.B.S. Rao
(Wg. Cdr.) (Director, AE)

*A creative and innovative thought given by the aeronautical engineering students which will propel future generation towards their goals as an aeronautical engineer. This News letter helps all the aero students in research /project works during their final year semester and career prospection and future planning after completion of assigned coursework successfully
I convey my best regards to all the students who participated in making this bulletin and the deep concern*

What’s Inside:

- What makes the NOTAM worthwhile?
- Fly-By-Wire Technology.
- Industry Oriented Mini Project guidelines.



What makes the NOTAM worthwhile?

20 over cricket matches may be the new fan favourite, but any new cricket enthusiast will never rate it over the class of the conventional test cricket which made it a gentleman's sport. Similarly, no matter how far the technological advancements stretch, no matter how much one brags about the rapid growth of the electronic media and how it places the world in front of you with the click of a mouse, or about its ability to break news at lightening speeds, it won't be wrong to say there will never be a time where print media is no longer valued. In fact, any purist would say that print media holds the edge through its content quality, and of course, the turn of a page feels much more fulfilling than the click of a mouse.

While this explains the reason behind us choosing the NOTAM as the medium to help you make the transition from being a boy with swag to being a professional with a good work ethic more fruitful, you might wonder how exactly we plan on doing this. We'll explain.

Through the NOTAM, you get exposed to exactly the kind of things you've been needing to motivate yourself, or give you that starting push that you've been waiting for for so long. The articles hand-picked and written by our columnists might be the dawn of your next project; The NOTAM can be the 'Internshala' that exposes you to internships that are tailor-made for you. It can be the news magazine which is smart enough to know what you are looking for. It can be your counsel when it comes to preparing you for various exams, interview processes, and what not?

To be putting it in simple, it can be the birthplace for new thoughts, or it can give wings to your ideas and draft a path for your future endeavors. This will be your go-to place for contemplating, authentic, and exquisite information.

- Rohan Tammina
(AE 3rd Year)

Fly-by-Wire...The boon to the Aviation Industry.

As the term implies, fly by wire (FBW) replaces conventional mechanical flight controls with an electronic interface. The pilot's movements of the flight controls are converted to electrical signals, which are interpreted by the flight control computers. They, in turn, determine how to move the actuators at each control surface to make the airplane do what the pilot commands. FBW offers a variety of benefits, the most obvious being a marked reduction in mechanical complexity, as aircraft designers are no longer forced to route control cables through pulleys and cranks to the control surfaces way out on the wing or tail.

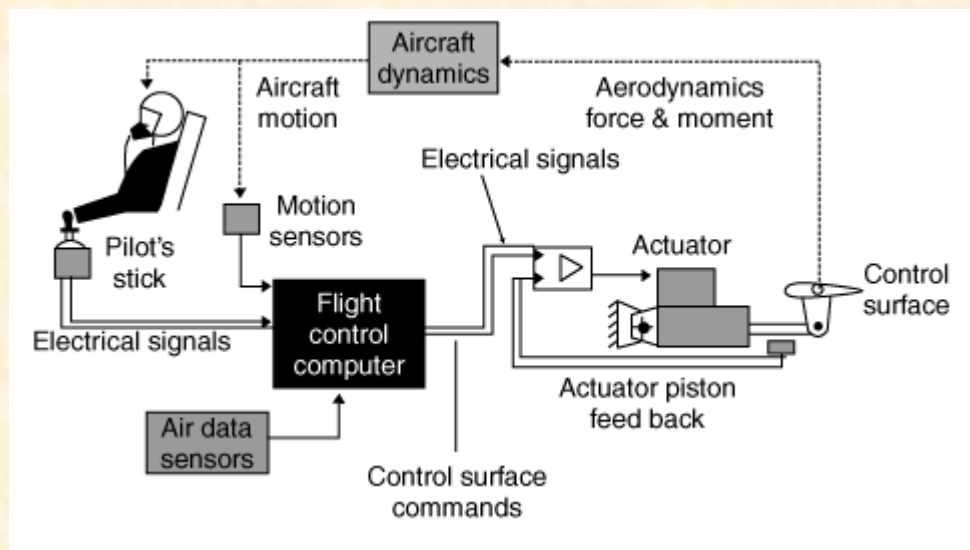
The trade-off, of course, is that they must instead devise another, incredibly complicated system that uses computer software to achieve the same results with no mechanical links. Given the difficulty, is it all worth it?

Man vs. Machine

Before you make up your mind, let's ask a different question. Which do you think would make the better pilot — an exceptionally talented human (say, Bob Hoover in his prime) or, on the other side of the argument, a fully digital fly-by-wire flight control system linked through dozens of hydraulic servo actuators and lightning-fast flight computers to every available flight control surface? It's a tough call. After all, most of us would be hard-pressed to bet against Bob Hoover in a flying showdown against a computer.

Let's start by looking at the human pilot — in this case one of the best in the business. Sean Tucker can make his red-and-white Oracle Challenger III biplane do things that seem to defy physics. His is the only aerobatic airplane in the world with four individual ailerons on each wing. It's covered with fabric, in part, because Tucker says he can tactilely feel the air as it washes over the wings and fuselage as he's tumbling through the sky. Seated in the tight confines of the Challenger III's cockpit, Tucker's arms and legs become a veritable extension of the control surfaces as he dances a violent aerial pasodoble to the delight of airshow crowds.

Technology Dissected



Digging down into the nitty-gritty underpinnings of the Dassault digital flight control system, the Falcon 7X has three main flight control computers, each of which talks to one another and can “vote” on which is supplying correct data if the software crashes for any reason. In the unlikely event that all three of these computers fail, there are three backup computers — all built in separate factories and using a different software code, by the way. To fly a Falcon 7X in what's called “degraded mode,” five of the six computers could fail and the pilots really wouldn't be able to tell that anything was amiss. If all six computers fail, there is a final seventh backup computer that allows the pilots to continue flying pretty much like in a conventionally controlled airplane, with stall and over speed warnings but no envelope protection. Gulfstream and Embraer have built in similar redundancies. The chance of a complete FBW system failure in a Gulfstream G650, for example, is designed to be 1 in 100 billion.

Industry Oriented Mini Project

In this mini project, student can take up any Industry oriented application in his/her field of interest in their respective field/branch. Firstly, one has to submit an Abstract of the project of their concerned department head (HOD) and once he/she approves it, he will assign a project guide to the individual/batch, after which the project work is to be started. Generally, a batch for a mini project may have 1 to 3 members in it.

Note:- The Industry Oriented mini Project is subjected to be done in the Summer break only.

List of Companies offering mini projects for Aeronautical Students:

- **HAL (Hindustan Aeronautics Limited) :- Hyderabad :** Maintenance of any aircraft structural component, to study their working principles, principle component materials used for manufacture; **Bangalore :** Project simulation, Computational structural analysis of component, to study the behavior under various conditions.
- **ADA (Aeronautical Development Agency) :-** Simulations (Low speed wind tunnel), Project on MAT Lab coding can be performed to study aero development.
- **KCTI (Kalyani Centre for Technology and Innovation) :-** (Bharat Force Limited) Project on structural analysis.
- **NAL (National Aerospace Laboratories) :-** Flight Mechanics and Control, Propulsion, Structural technologies.
- **BDL :-** Project on Missile Technology and experience on different missiles.
- **DRDL (Defense Research and Development Laboratory) :-** Design and Development house for Missile based weapon system required for tactical applications from multiple platforms.
- **DMRL (Defense Metallurgical Research Laboratory) :-** Materials for Aerospace applications, Armor and Ammunition, Naval applications.

Guidelines for the documentation of a Mini Project:

1. The report should be submitted in A4 size paper.
2. Entire report left margin: 1.25
Right margin: 1
Top margin: 1
Bottom margin: 1
3. Font size for running matter: 12
Font size for subtitle: 14, BOLD
Font size for main title: 16, BOLD, CENTER
Font style: Times New Roman.
4. One tab space at the beginning of each paragraph.
5. 1 1/2 line spacing between line to line and paragraph to paragraph, alignment justify.
6. No.of books (copies): 4 no.'s
1 copy: department
1 copy: internal guide
1 copy library
7. Each page should contain footer as Dept. of ANE, MRCET on the left side and page no. on the right side.
8. Minimum number of pages in thesis: 80 and max: 120.
9. Figures and graphs should have numbers.
10. Figure and name should be written at the bottom with center alignment.
11. Table number and name should be written on the top of the table.
12. Numbering for every topic has to be given like 1, 2, 3....etc., and subtopic 1.1, 1.2, etc.
13. No chapter should start with a Block diagram.
14. The source code of project should be mentioned in the appendix only.
15. Binding cover must be in black colour, with gold colour letter printing.
16. Side of the book should contain the title of the project and year of submission.

<u>Chief Patron</u>	<u>Patron</u>	<u>Chief Editor</u>	<u>Editorial Board</u>	
Sri Ch. Malla Reddy	Dr. V.S.K. Reddy	Wg. Cdr. T.B.S. Rao	Swetha Bala M.N.V.S (HOD, AE),	Prof. Ravi,
Chairman	Principal	Director, AE	Prof. A. K. Rai,	Prof. Sarwade

Content writing and Editing: Rohan Tammina; **Design and Layout:** V. Vinai Tej