

CFI Bootcamp

Flight Instructor Training

Airplane Systems

Teaching Airplane Systems

Avoiding Overwhelming the Student

Today's Bootcamp+ Network Programming

What's on for Today's Show?

Live Show – 1st Hour

Open Mic – 2nd Hour onward

Monitor the Chat - Links/Info

Wings Credit for This Presentation



Today's Bootcamp+ Network Programming



What's on for Today's Show?

PH Rebroadcast – Weds 8 pm ET
Power Hour Podcasts – Full Shows
The Last of the Bundles
Step-by-Step Workshop –
Oct 8th (8-10 pm Eastern Time)

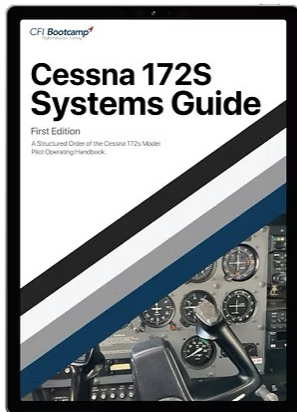
What We Will Cover

- Where we are - Rote-level knowledge
- What we need - Conceptual understanding of airplane systems
- How we get there - CFI's need to understand at more than rote
- Tools - Online courses



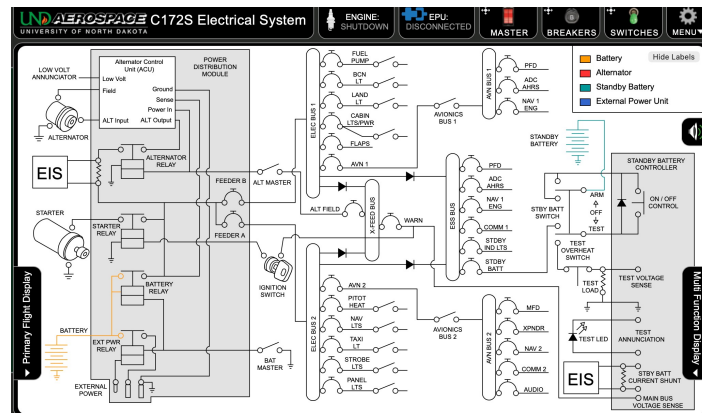
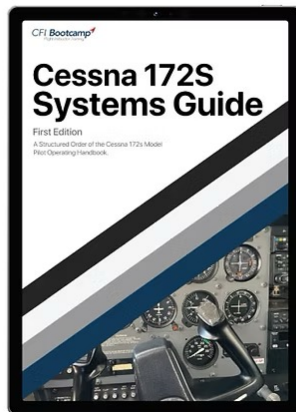
What We Will Cover

- ATPL prep from the UK on specific systems
- What is the goal of the systems knowledge?
- Teaching aircraft systems one at a time
- Using the emergency checklist while teaching aircraft systems



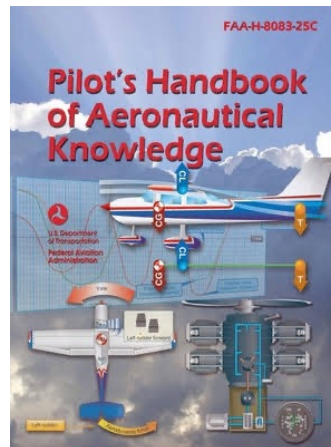
What We Will Cover

- [My Cessna 172 electrical system Guide](#)
- Use the electrical system app for 172 – Aircraft Training Aids, LLC
- [UND 172 Electrical System Simulator](#)



Where We Are

- Most pilots have a poor understanding of the airplane's systems
- People who aren't technical can have trouble getting past rote
- The POH doesn't cover certain systems very well
- The PHAK is thin on content



What We Need

- Enough understanding to be able to:
 - Understand what the system does
 - Know the normal indications
 - Know the sequences – what to look for while things are changing
 - What does abnormal look like and what will be affected
 - Do I have to do something now?
 - What will happen next or what other system will be affected

How Do We Get There?

- CFIs need to improve their knowledge
- Understand basic electricity (DC)
- Read the FAA source material (PHAK) and POH/AFM

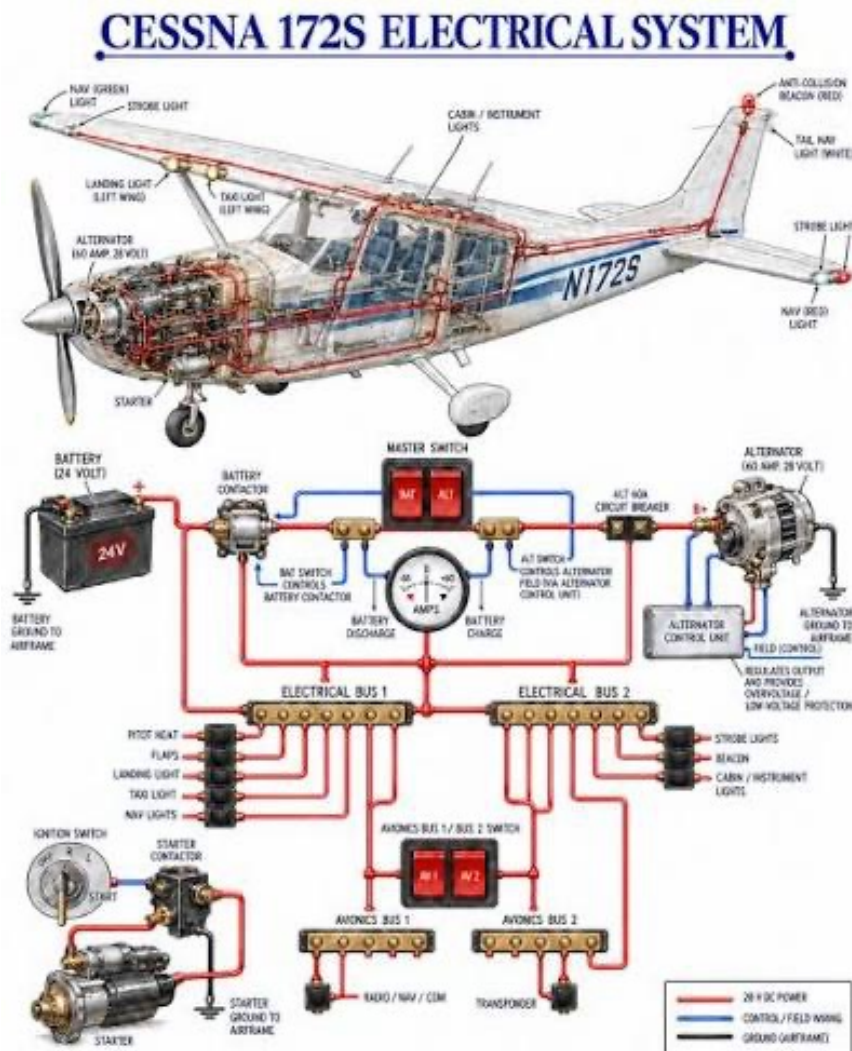


Tools

- [Aircraft training aids, LLC – C172 electrical system app](#)
- [UND's 172S Nav III Electrical System Simulator](#)
- [My Basic Electricity and C172 Electrical System Guide](#)



Tools



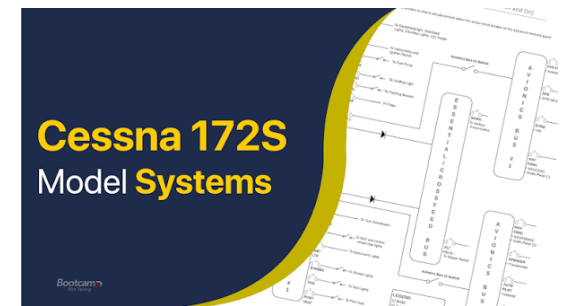
Training Handbooks From The US And UK

- [Bristol Ground School Courses](#)
- [In-Depth Manuals for Airplane Systems](#)
- [A Pilot's Guide to Aircraft and their systems - ASA](#)
- [CFI Bootcamp's Cessna 172 Systems Guide](#)



What is the Goal of Systems Knowledge

- To understand what a system is for
- What can I do with it?
- What does normal look like?
- What does abnormal look like? (Scenarios)
- How do I fix it?
- What happens if I can't?
- What will happen next?



Teaching Airplane Systems

- Teach the systems one at a time
- Assign reading from the PHAK and POH
- Use block diagrams to begin with



Use the Emergency Checklist

- Relate the emergency checklist actions to the airplane system
- Discuss what the action is actually doing

Emergency Procedures		Cessna 172R Checklist	
Challenge	Response	Challenge	Response
ENGINE FAILURE DURING TAKEOFF ROLL		ENGINE FIRE IN FLIGHT	
Throttle	IDLE	Mixture	IDLE CUT-OFF
Brakes	APPLY	Fuel Shutoff Valve	OFF / PULL OUT
Wing Flaps	RETRACT	Fuel Pump	OFF
Mixture	IDLE CUT-OFF	Vents Heat / Air	CLOSED
Fuel Shutoff Valve	PULL OFF	(except wing root vents)	
Magnetos	OFF	Airspeed	100 KIAS
Master Switch	OFF	(If fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture.)	
ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF		Forced Landing	EXECUTE
Airspeed	(flaps up) 65 KIAS	SEE ENGINE FAILURE IN FLIGHT: NO RESTART CHECKLIST	
Mixture	IDLE CUT-OFF	ELECTRICAL FIRE IN FLIGHT	
Fuel Shutoff Valve	PULL OFF	Master Switch	OFF
Magnetos	OFF	All Other Switches Except Ignition	OFF
Wing Flaps	AS REQUIRED	Vents Heat / Air	CLOSED
Master Switch	OFF	Fire Extinguisher	ACTIVATE
ENGINE FAILURE IN FLIGHT		WARNING: AFTER DISCHARGING FIRE EXTINGUISHER WITHIN CLOSED CABIN, VENTILATE CABIN	
Trim for Best Glide	65 KIAS	IF FIRE APPEARS OUT AND ELECTRICAL POWER IS NECESSARY FOR CONTINUANCE OF FLIGHT	
Pick Suitable Landing Site		Master Switch	ON
Fly Toward Landing Site		Circuit Breakers	check for faulty circuit, do not reset
Fuel Selector	BOTH	Radio / Electrical Switches	ON
Fuel Shutoff Valve	IN	(One at a time, with delay after each until short circuit is localized.)	
Mixture	AS REQUIRED	Vents Heat / Air	OPEN
Fuel Pump	ON		
Magnetos	ON / BOTH		
IF NOT CERTAIN OR AN AEE AIRPORT LANDING IS NECESSARY		(When it is ascertained that fire is noncombustible extinguished.)	

Special Announcement

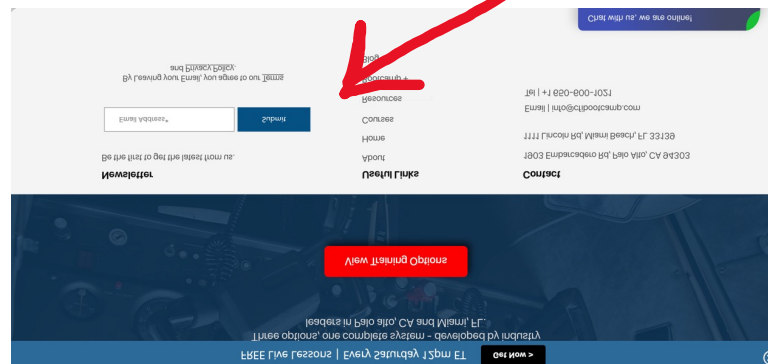
Initial CFI Airplane 7-Day Courses

- Oct 12 – 18 (11am – 6pm EDT – In person Opa-Locka, FL or Zoom)
- Nov 9 – 15 (11am – 6pm EST – Remote via Zoom)
- Dec 7 – 13 (11am – 6pm EST – In person Opa-Locka or Zoom)
- [Register Here](#)
- [Sample - Course Syllabus – Hour by Hour Here](#)



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- [Previous Newsletters Here](#)



Special Announcement

- CFII Instrument Instructor and Accelerated 3-Day Course
- **[Register Here](#)**
- [Sample - Course Syllabus – Hour by Hour Here](#)



Special Announcement!

Reminders!



CFI Study Group
on Facebook



Society of Aviation and
Flight Educators



National Association of
Flight Instructors

Join SAFE, NAFI and the CFI Study Group by Clicking on the Images Above