



NATIONAL ASSOCIATION OF FLIGHT INSTRUCTORS

MENTOR

LIVE

Stop Teaching About Safety



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Are you a safe pilot?
What does that mean?



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Stop Teaching About Safety...

- Negative portrayal of the actual record
- Suggests what *not* to do, instead of what to do
- *Limits* instead of *encourages* and *empowers*

Stop Teaching About Safety...

*Everybody **THINKS** they
are a safe pilot.*

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...instead, we should teach about

Mastery

and

Command

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Mastery

More than *proficiency*, **mastery** is “comprehensive knowledge and display of great skill in a subject or accomplishment.”

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Command

“To exercise direct authority” or “to dominate as if from an elevated place.”

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Mastery and Command

- Retaining and constantly *improving* your flying skills
- Proficiency is only the first step: striving for *mastery* of all tasks and *command* of your aircraft
- *Proactively enhances* your flying experience
- Master and Command the airplane and you will be “safe”

Safety is not a
strategy, it is an
outcome.

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You've earned your wings...

...now earn your stripes

Your wings
(checkride passed):
Only the first step



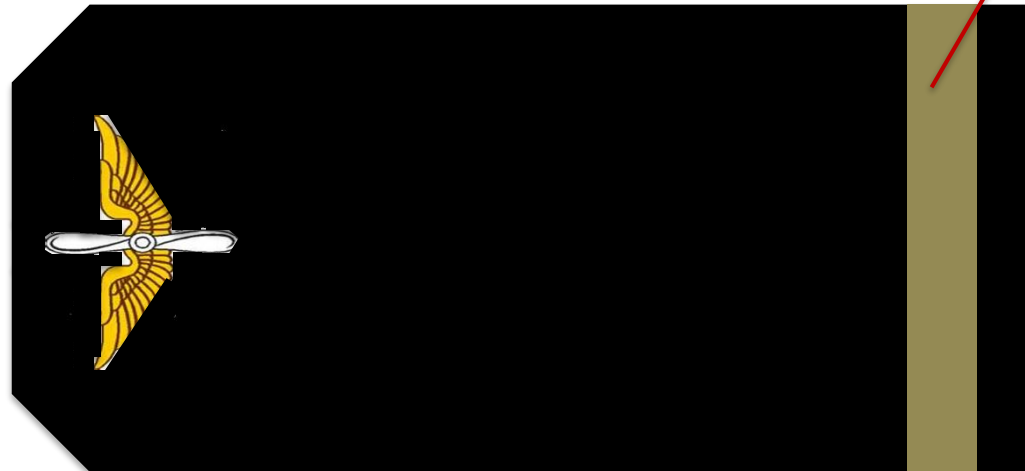
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You've earned your wings...

...now earn your stripes

Your **first** stripe:

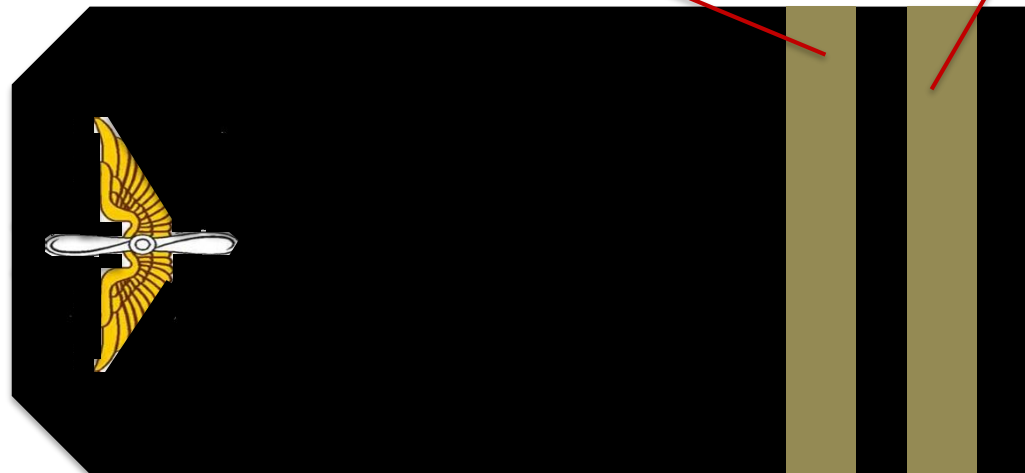
Mastering the **airplane** and its **technology**



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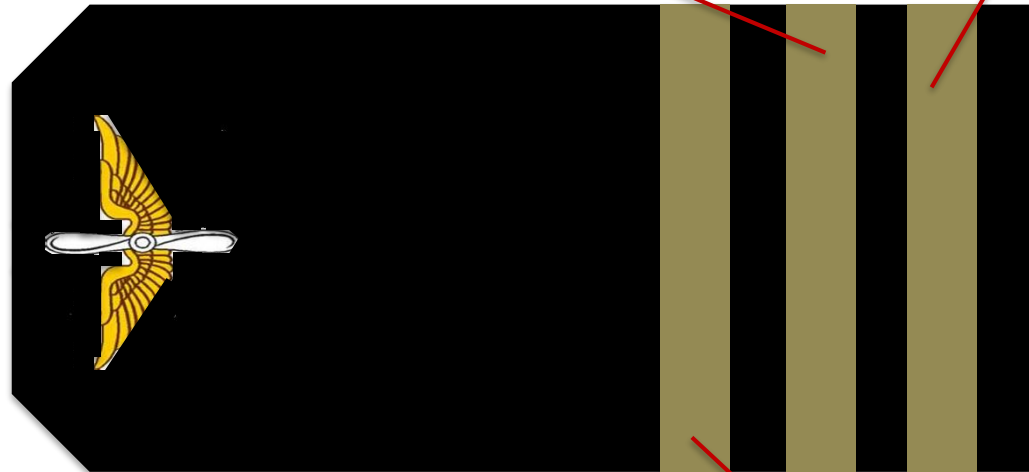
Your **second** stripe:
Mastering the **environment** and **weather**

Your **first** stripe:
Mastering the **airplane** and its **technology**



Your **second** stripe:
Mastering the **environment** and **weather**

Your **first** stripe:
Mastering the **airplane** and its **technology**



Your **third** stripe:
Mastering **human factors** and
situational awareness

Your **second** stripe:
Mastering the **environment** and **weather**

Your **first** stripe:
Mastering the **airplane** and its **technology**

Be
Captain of
your
aircraft



Your **fourth** stripe:
Mastering **responsibility** and **command**

Your **third** stripe:
Mastering **human factors** and
situational awareness

Teaching Tip #1

Teach pilots to know their limitations



Teach what the airplane is...and what it isn't

It may be *equipped* like an airliner, but it is **not** an airliner

- Not certificated to the same level
- Does not have the performance or redundancy of an airliner
- Recreational/business tool



Teach what the airplane is...and what it isn't



Flown within their limits, light airplanes can be *very* safe and very capable.

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Teach pilots to continually learn about weather

- Weather is by far the most common reason for airline delays
- Light airplanes are not as capable of handling weather as turbines and transport aircraft
- It's not *if*, it's *when* pilots have to delay, re-route or cancel flights because of weather hazards

Teach pilots to continually learn about weather

A light airplane is parked on a runway. A large, semi-transparent yellow arrow points from the right side of the frame towards the airplane. The background shows a clear sky and some distant structures.

Flown within their limits, light airplanes
are *very* safe and very capable.

Teach pilots what they are... and what they are not

- Probably not an airline or military pilot
- Even if they are, that experience does not fully prepare them for single-pilot operations in light airplanes
- Not the same level of initial and recurrent training
- Not as young as you used to be



Stay within your limitations

- The FARs and POH/AFM are a *minimum* standard
- “No” in the rules “means no”

Fulfill *all* your roles

Captain of your aircraft means you are:

- Pilot-in-Command
- Dispatcher
- Director of Maintenance
- Aviation Medical Examiner
- Scheduler
- Chief Financial Officer
- Risk manager

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Airplanes can be very safe and very capable...*if* the pilot flies within limits.

Flying is a profession even if you are not being paid to fly.

Flying requires time, study, expertise and commitment. Learning to fly is like taking a second job—one you enjoy, with great benefits.

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The Cycle of Training

Stick and Rudder

Flight Automation



Aeronautical Decision-Making

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Put time into training and practice

The Flight Review requirement alone is not sufficient. For modern airmanship you must master *all three*:

- Stick-and-Rudder Flying
- Aeronautical Decision-Making
- Automation

Teaching Tip #2: Make Every Flight a Training Flight

Flying Point A to Point B leaves out what *might* happen but did not.

Experience comes from what happens to you

Training is learning from the experiences of others

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Make Every Flight a Training Flight

Training does not have to be dual instruction...

Make every flight a training flight.



Take the

Second Stripe Challenge



It's fun, and it
makes you a better pilot

Challenge yourself *every time* you fly

Normal and crosswind landing tolerances
from the U.S. FAA ACS/PTS

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Take the
Second Stripe Challenge



200 feet

*Retain
and
sharpen
your skills!*

It's fun, and it
makes you a better pilot

Challenge yourself *every time* you fly

Normal and crosswind landing tolerances
from the U.S. FAA ACS/PTS

Take the
Second Stripe Challenge



Private/Recreational/
Sport Pilot Standard
- 0 feet / + 400 feet

*Retain
and
sharpen
your skills!*

It's fun, and it
makes you a better pilot

Do not touch down before this point
(beginning of the second runway stripe)

Challenge yourself *every time* you fly

Normal and crosswind landing tolerances
from the U.S. FAA ACS/PTS

Take the
Second Stripe Challenge



Retain and sharpen your skills!

It's fun, and it makes you a better pilot

Private/Recreational/
Sport Pilot Standard
- 0 feet / + 400 feet

Commercial Pilot Standard
- 0 feet / + 200 feet

Do not touch down before this point
(beginning of the second runway stripe)

Challenge yourself *every time* you fly

Normal and crosswind landing tolerances from the U.S. FAA ACS/PTS

Take the **Second Stripe Challenge**



Retain and sharpen your skills!

It's fun, and it makes you a better pilot

Private/Recreational/
Sport Pilot Standard
- 0 feet / + 400 feet

Commercial Pilot Standard
- 0 feet / + 200 feet

Challenge Touchdown Zone

Do not touch down before this point
(beginning of the second runway stripe)

Challenge yourself *every time* you fly

Normal and crosswind landing tolerances from the U.S. FAA ACS/PTS

Teaching Tip #3: Hand-fly the airplane...a lot

- Fatal crashes often result from a pilot's inability to hand-fly the airplane in the event of an autopilot issue
- Pilots often lose control almost immediately upon a trim runaway or an autopilot disconnect
- Don't let an autopilot take you anywhere you can't immediately take over and hand-fly

Hand-fly the level-off

Speed

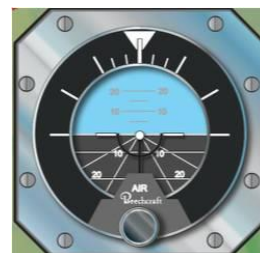
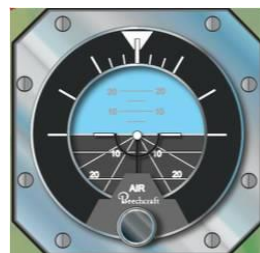
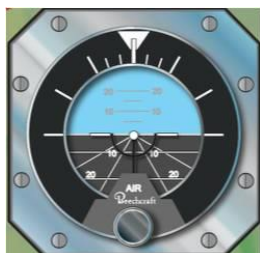
Speed

Speed

Trim

Trim

Trim



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Teaching Tip #3: Teach mode awareness

- Being **fluent** in automation operation
- Knowing what the avionics are doing, and what they will do next
- Actively crosschecking and monitoring
- *This is the “new way” to crash an airplane.*



“At least 50% of the Instrument Practical Test failures I see result from inability to understand and operate the avionics.”



Jason Blair
Designated Pilot Examiner (DPE)
Past Executive Director, NAFI

Teaching Tip #4: Make and Follow a Fuel Plan



- **How Many Ways...
Fuel load before flight?**

- Visually check the fuel level
- External sight gauges
- Amount known to be in the tanks plus amount added
- Cockpit fuel gauges
- Fuel totalizer amount
- Fuel receipt from the FBO



How Many Ways... Fuel required for flight?

- Methodical calculations
- Conservative estimates
- *Time not distance*



How Many Ways... Monitor fuel in flight?

- Compare actual to expected indications
- Fuel totalizer
- Cockpit fuel gauges
- ETA and fuel remaining at waypoints calculated before flight, compared to actual
- Scan behind filler caps and along wing trailing edge



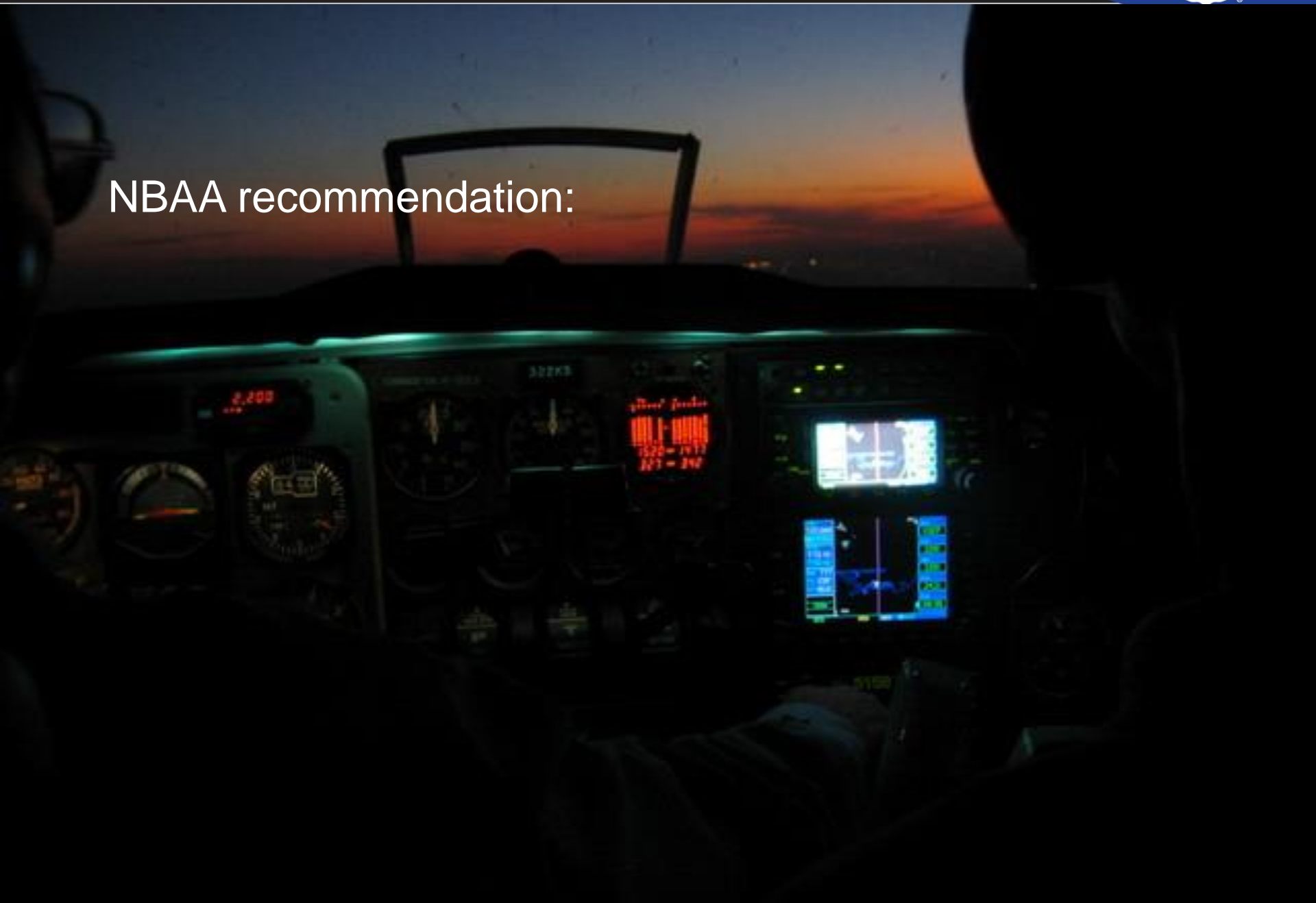
Teaching Tip #5:

Get real about fatigue

- One of the great unknowns in general aviation crashes
- Morning person/night person
- Siesta time
- Friday departures after work
- Sunday afternoon departures heading home
- Evaluate not only how you feel now, but how you'll likely feel flying an approach and landing *at the end* of your trip

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NBAA recommendation:



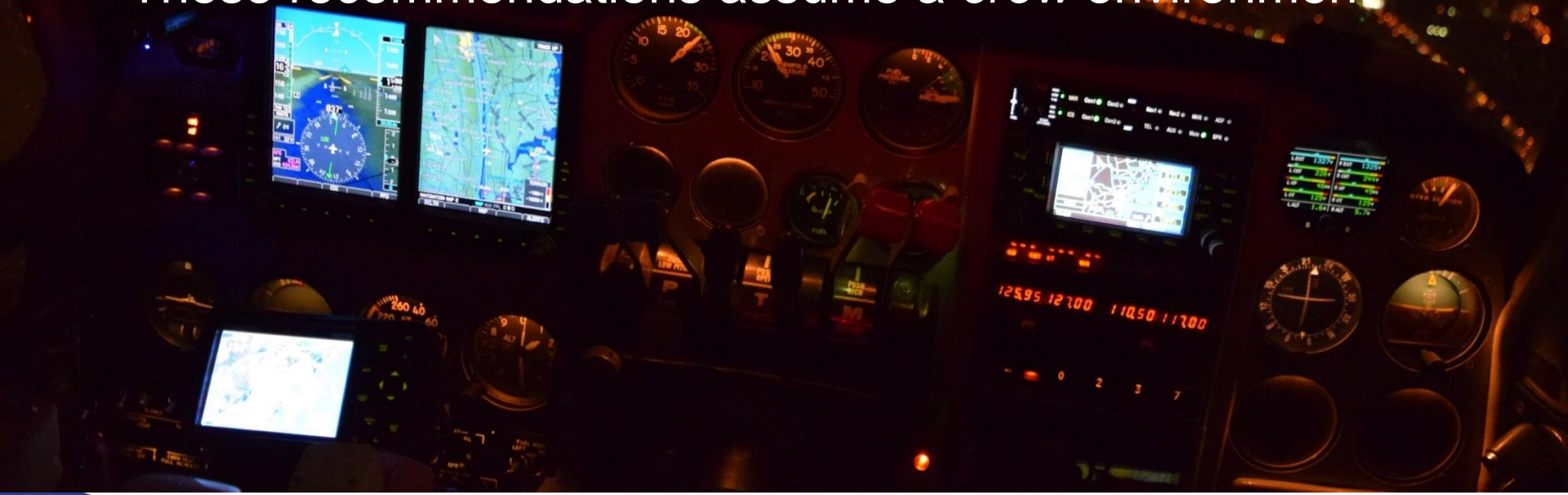
Get real about fatigue

NBAA recommendation:

10 hours maximum flying per day

14 hour duty day: alarm clock to engine shutdown

These recommendations assume a *crew environment*



Teaching Tip #6: Involve family and passengers



- Guide their expectations
- Involve them in go/no-go decisions

- Often it's family pressure that prompt a pilot to take unacceptable risks
- If they understand the risk factors they are less like to pressure you



Teaching Tip #7: Teach Real-World Airworthiness

What most people call “maintenance” is really three *different* things:

- Inspection
- Maintenance
- Repair



Inspect your airplane

Inspection

- Confirming airworthiness
- Confirming conformity
- Detecting minor squawks



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Maintain your airplane

Maintenance

- Preventing damage
- Preserving conformity



Repair your airplane

Repair

- Restoring airworthiness
- Returning to conformity
- Fixing what's broken



Airworthiness

The purpose of maintenance is to **prevent** the need for repair.

The purpose of inspection is to **assure** your efforts at maintenance have been effective.

If you have not maintained the airplane you will eventually require **repair**...perhaps at the worst possible time.

Airworthiness

You must **continually inspect**.

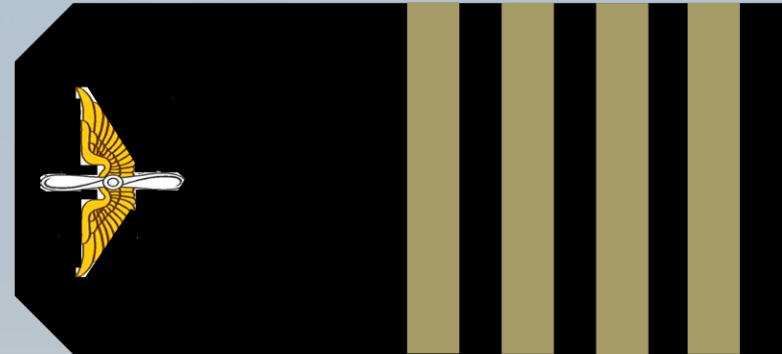
You may **defer some (but not all) maintenance**.

You cannot defer repairs.

Stop teaching about *safety*...



...and start focusing on
mastery and *command*



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