A Systems Engineering Approach to Aviation Education

The Current Process of

Flight Training Industry

A Mantra of the Aviation Community

"With enough power you can get a barn door to fly"

The Mantra of the Traditional Flight School

AND

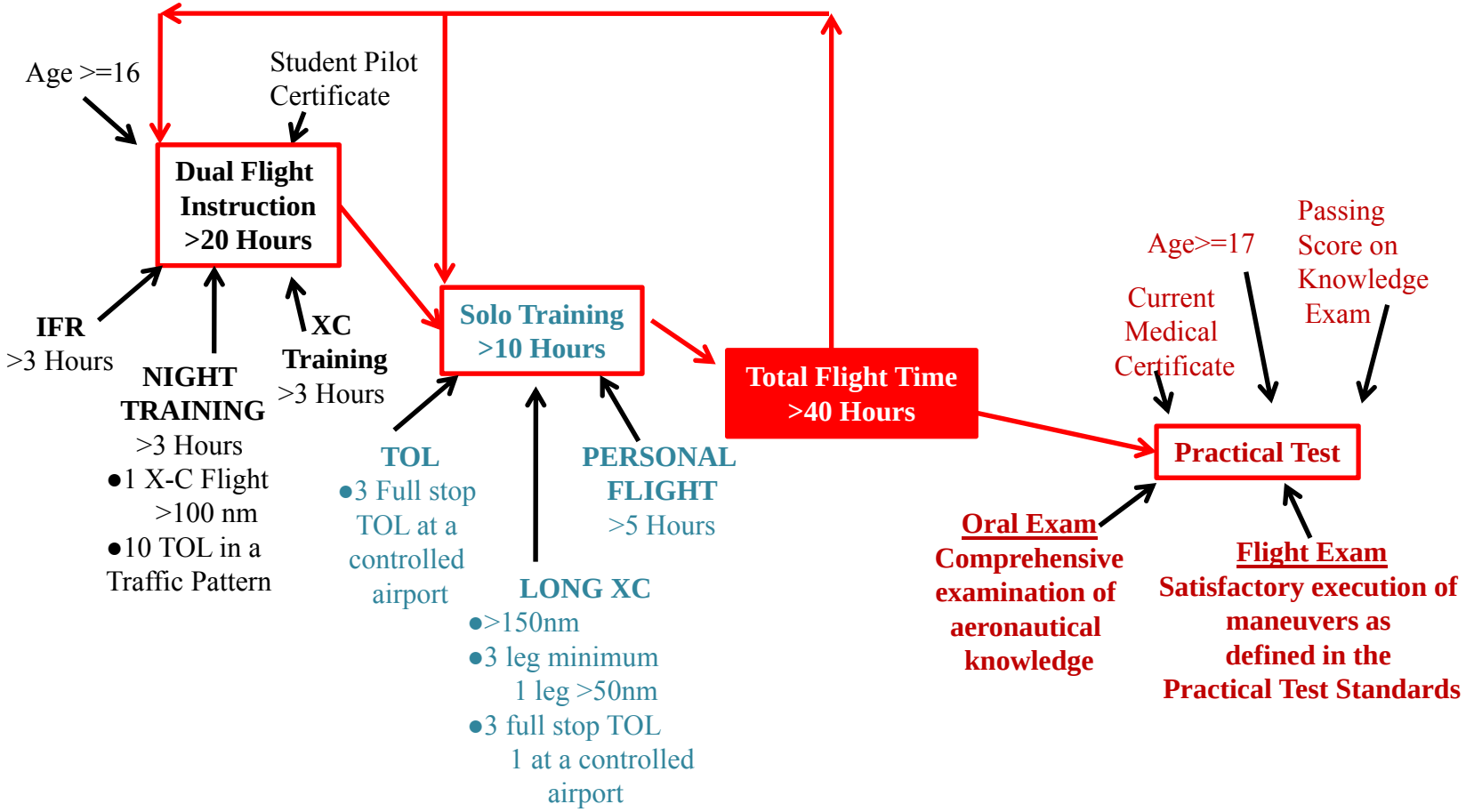
anyone can eventually learn how to fly

Path to earn a Private Pilot Certificate

- Requirements
- Time
- Cost
- Instruction Method/Style

Requirements for a Pivot Pilot License
Reference: FAR Part 61.109

The Aviation Education Industry Standard



Time for a Private Pilot Certificate

National Average for a student at a traditional flight school to earn a Private Pilot SEL Certificate……..

70 HOURS!!!!!!

Typical Aviation Tuition and Supply Costs

AIRPLANE RENTAL	$120/hr
INSTRUCTOR	$35/hr
FUEL	$4.29/gal
MEDICAL EXAM	$100
KNOWLEDGE EXAM	$110
GROUND SCHOOL	$350
BOOKS/SUPPLIES	$450

Least cost based on 70 Hour national Average:

Flight elements	Hourly rate 70	Line Item Costs
Airplane Rental	$120	$8,400
Instructor	$35	$7,350
Fuel	$4.29	$2,700
Medical Exam	$100	$100
Knowledge Exam	$110	$110
Ground School	$350	$350
Books and Supplies	$450	$450
Material Costs		$19,460

$18,000 – $22,000

INSTRUCTION METHOD UTILIZED

LECTURER

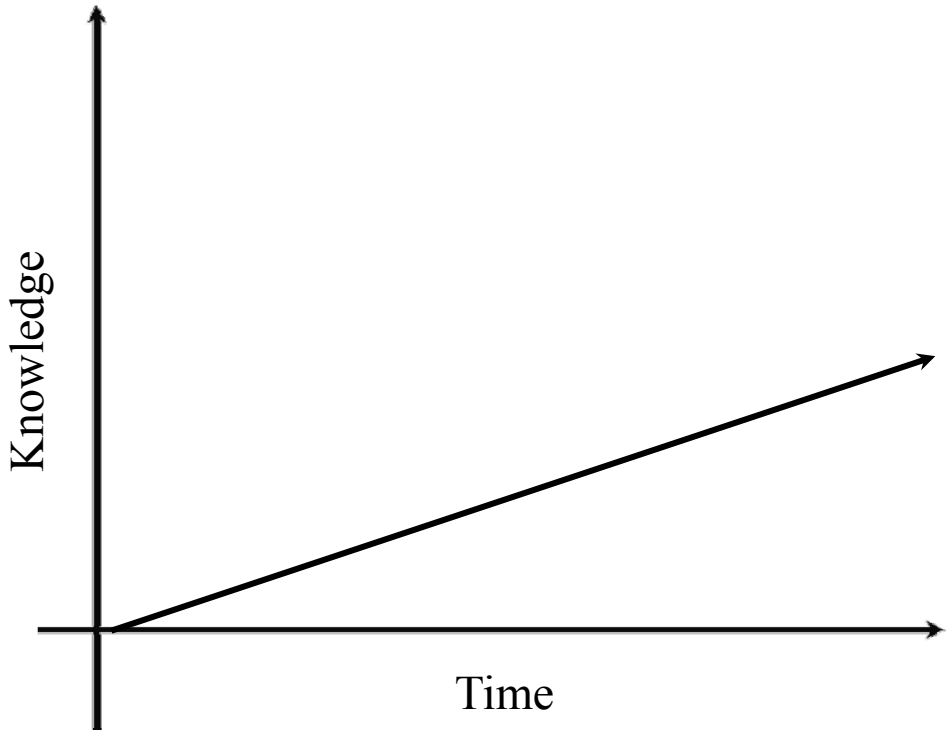
Osmotic Transfer
Information Vs. Knowledge
Rote VS. Understanding
Book Knowledge Oriented

SKILLS THE STUDENT ACQUIRES

PILOT

Responds to the aircraft
Addresses the current state of the flight
Does not perform lessons-learned evaluation
Cumulative hours – one at a time
Surprised By the Emergency
Safety Is A Result

The Traditional Learning Curve



WHAT IS THE TREND OF THE FLIGHT TRAINING INDUSTRY

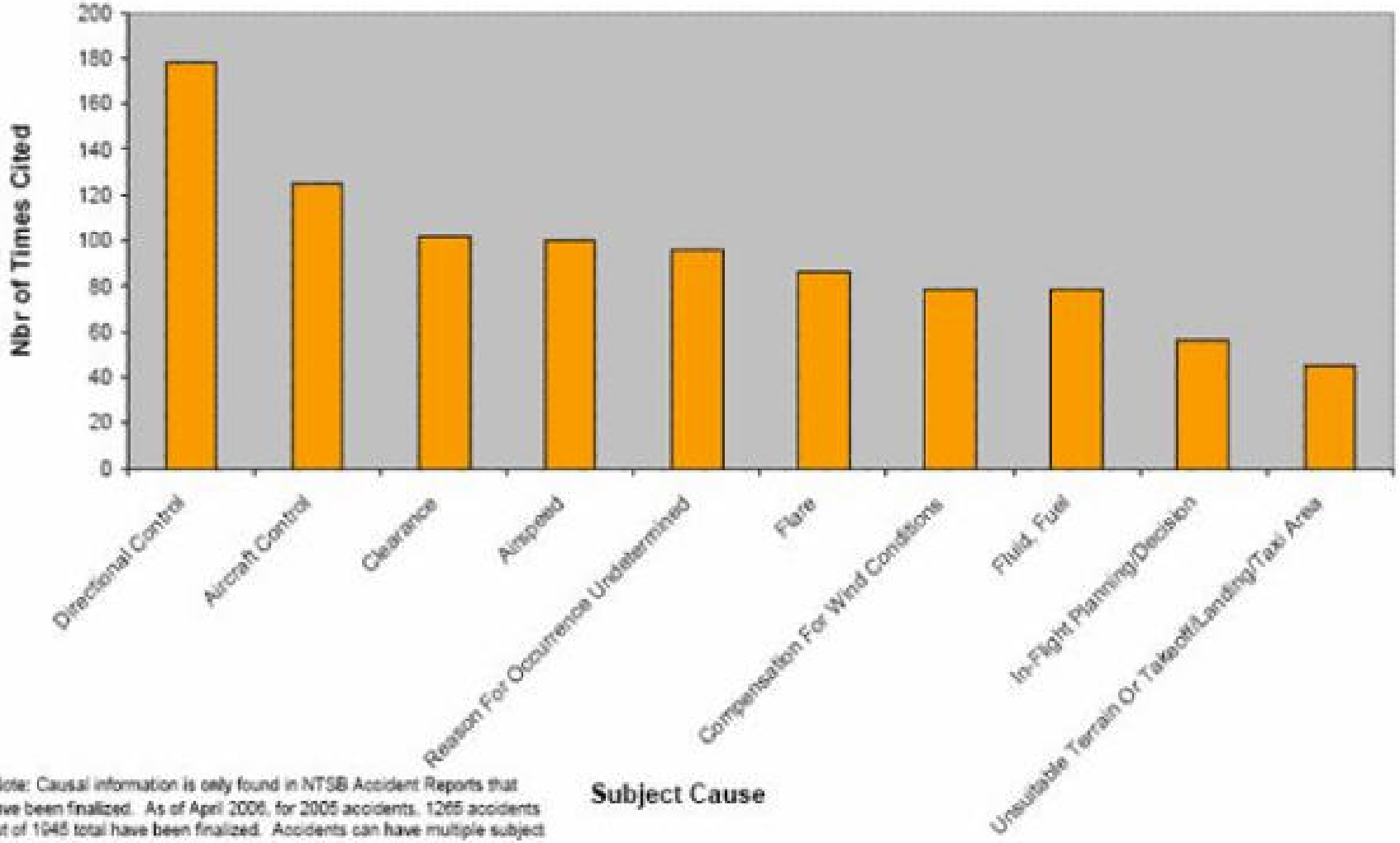
FORMAL GROUND SCHOOL

"Not Needed"

"They'll figure it out as they study for the written"

"What value does it add?"

FAASTeam Accidents Top Causes* - National Level
Jan 2005 through Dec 2005

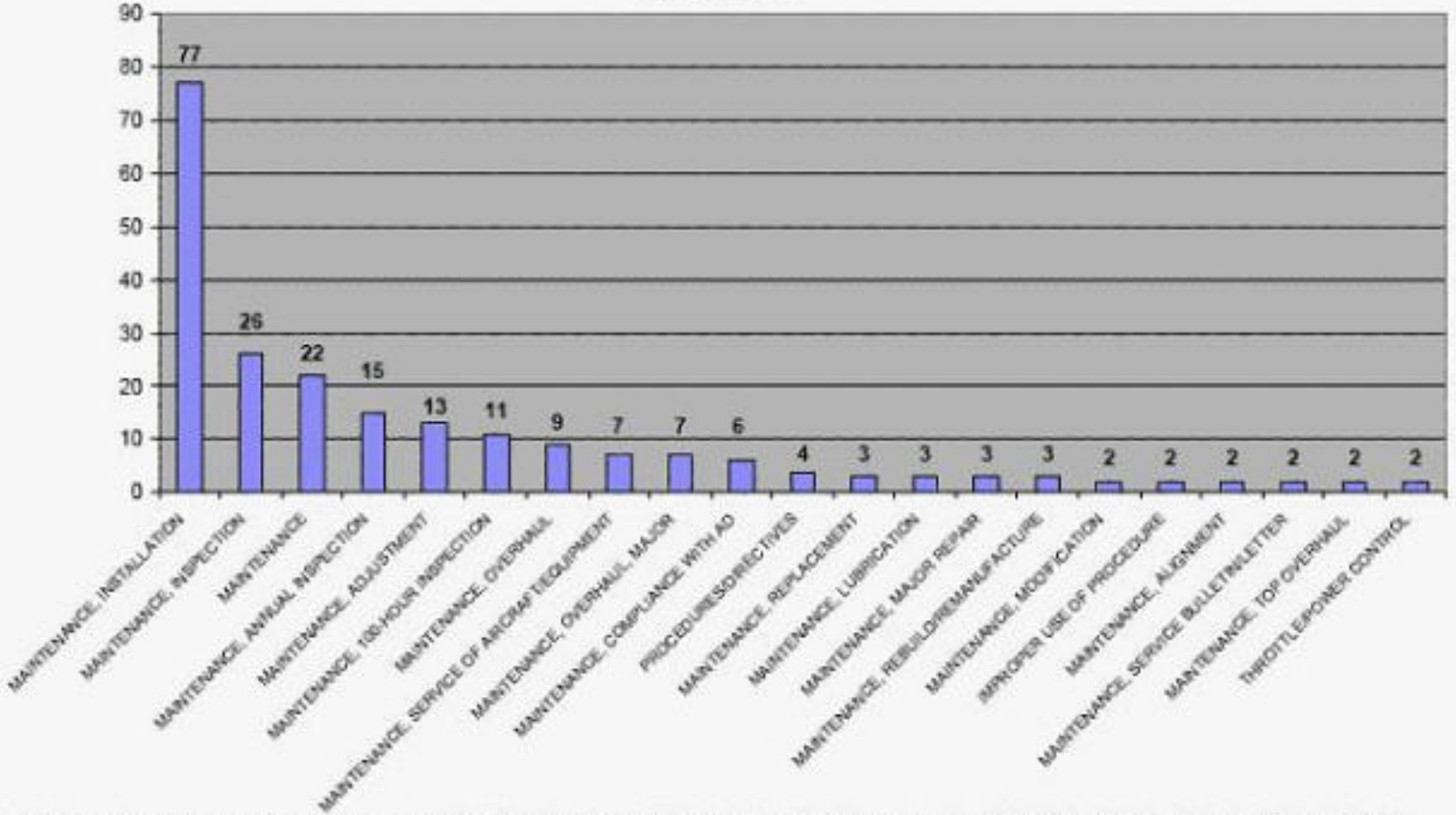


*Note: Causal information is only found in NTSB Accident Reports that have been finalized. As of April 2006, for 2005 accidents, 1265 accidents out of 1948 total have been finalized. Accidents can have multiple subject causes cited in the causal statement.

FAASTeam Accidents Expanded for Maintenance Causes*

National Level

2000-2004



* Subject codes with only one (1) occurrence include: AILERON, AIRCRAFT SERVICE, BRAKES (NORMAL) CIRCUIT BREAKER, CLEARANCE, COMMUNICATIONS, FUEL TANK SELECTOR POSITION, GEAR EXTENSION, IMPROPER USE OF EQUIPMENT/AIRCRAFT, MAINTENANCE (DESIGN CHANGE), MAINTENANCE (RECORDKEEPING), MATERIAL DEFECT (INADEQUATE QUALITY OF MATERIAL), MATERIAL INADEQUATE, MATERIAL INADEQUATE (IMPROPER), TAXISPEED, UNSAFE/HAZARDOUS CONDITION.

Applied
System Engineering Approach
to reduce the costs for
a Private Pilot License

Home of the Confident, Competent, SAFER Pilot

- Learn as you go where errors are reviewed and the ‘last’ scenario is repeated.
- Safety being on the ground where mistakes do not create panic
- Reduced cost
- Knowledgeable ‘Airplane Commander’

FORMAL GROUND SCHOOL

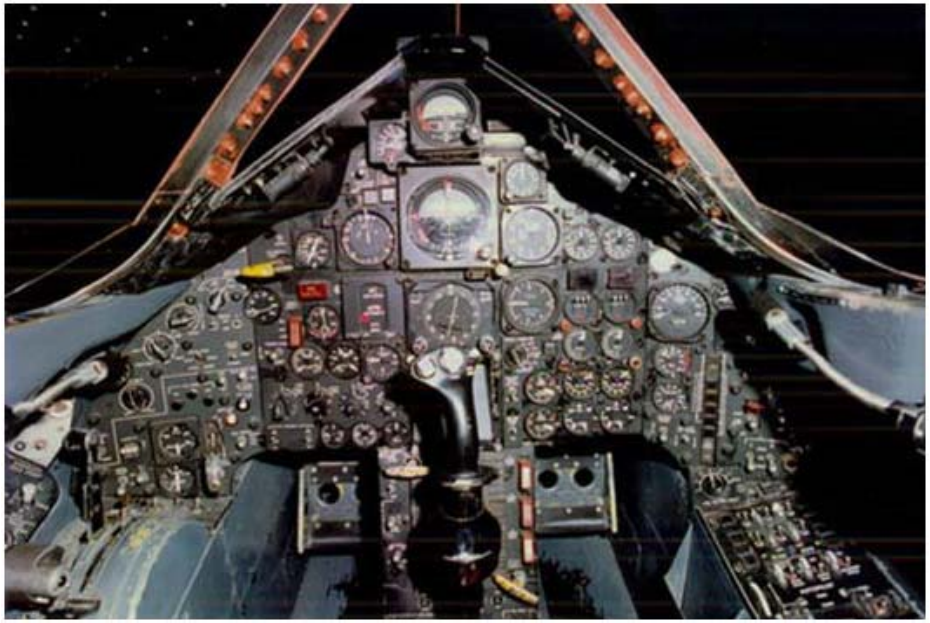
Know any Surgeons reading Appendectomy For Dummies?

Approaching a green cloud bank is not the time to learn about frontal weather

"I don't know" is not a best response during a Ramp Check.

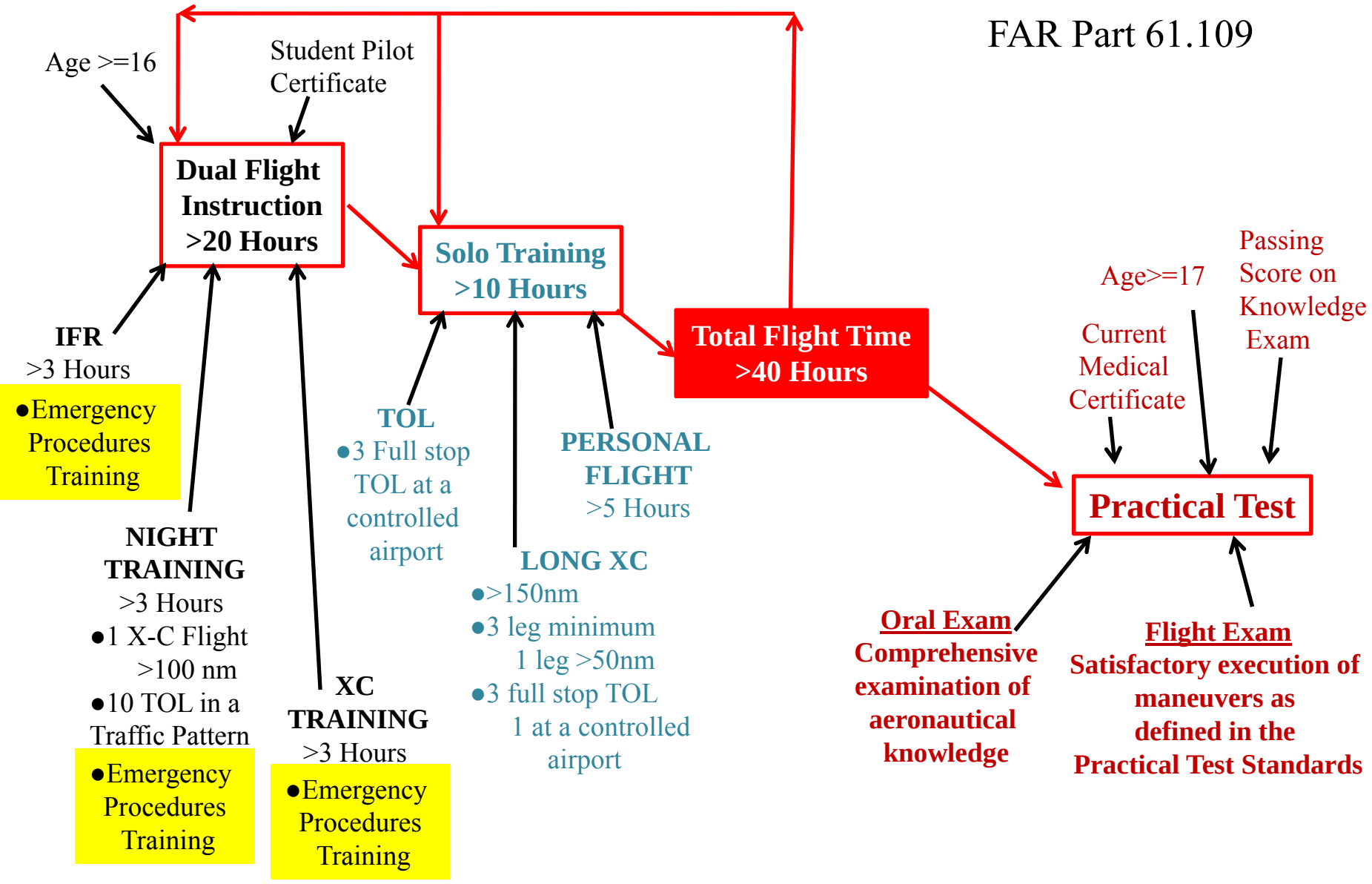
The Superior Aviation Approach

Develops:



"A confident, competent, and safer pilot is one who has assimilated correct principles of aviation and proven this knowledge with relevant experience"

The Superior Aviation Training Standard



Typical Emergency Skills

- Engine Failure @ <600 Feet
- Electrical Failure In Flight
- Sudden Weather Change

Time for a
Private Pilot Certificate

<50 HOURS!!!!!!

Cost for a Private Pilot
Certificate

< $15,000

INSTRUCTION METHOD UTILIZED

EDUCATOR

The Perpetual Kindergarten Teacher
Always Explaining the “WHY”
Principle Based
Lets the Student Teach the Educator

SKILLS THE STUDENT ACQUIRES

Aircraft Commander

Evaluates All Aspects of the Flight
Flies in the “5-Minute Ahead” Zone
Anticipates the Emergency
Cumulative Hours = Cumulative Experience
Safety Is Planned and Integrated

HOW DOES SUPERIOR AVIATION TRAINING ACCOMPLISH ITS MISSION

Superior Aviation Training Box

Real time Flight Profile Visual Display

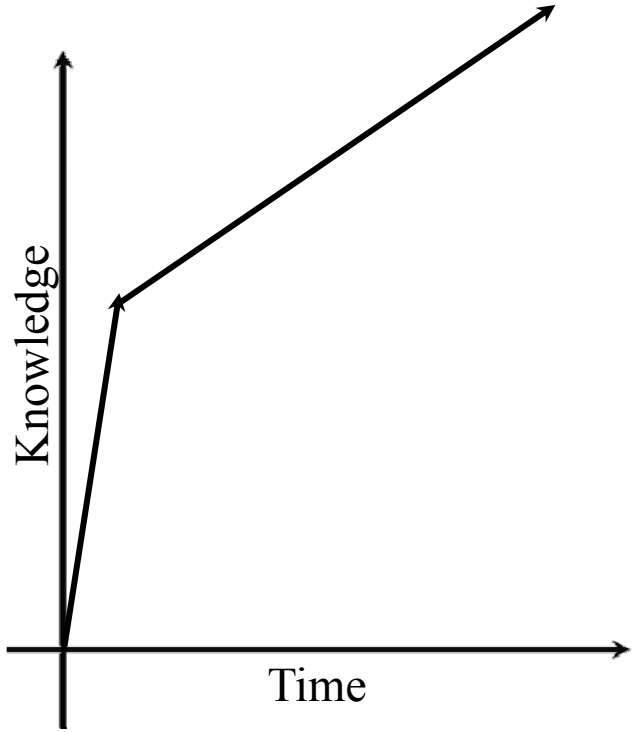
Practice Operations At Any Facility

At Any Time

In Any Condition

THE VALUE OF A SIMULATOR

THE SUPERIOR AVIATION TRAINING LEARNING CURVE



3 to 1

The knowledge a student will acquire during a 3 hour training session in an aircraft can be achieved in one hour in a simulator

SKILL ACQUISITION RATES

SKILL	AIRPLANE	SIMULATOR
TAKEOFF	6 Hours	.5 Hour
LANDING	15 Hours	6 Hours
EMERGENCIES	A Lot Of Talk	A Lot Of Sweat

EXPLORING THE “WHY”

TOPIC

Traditional Student	**Superior Aviation Training Student**
WHY CALCULATE GROUND SPEED	
Flight Time	Death
RUNWAY WIDTH	
3-Degrees	177-Degrees
POSITION HOLD	
Straight Ahead	45-Degree
HOW DO AIRPLANES DO WHAT THEY DO?	
Control Surface Manipulation	Pressure
BEST RATE OF CLIMB	
Vy	Vx

“IF YOU CAN’T BEAT THE BOX YOU DON’T KNOW HOW TO FLY”

-A placard attached to a NASA simulator

DC-10 Experiences A Catastrophic Failure At 37,000 Feet

285 Passengers Aboard

174 Survived

BECAUSE THE FLIGHTCREW POSSESSED A SYSTEMS ORIENTED KNOWLEDGE AND ACTED ACCORDINGLY

SUMMARY

TIME:	< 50-HOURS
COST	<$15,000
Skill	Confidence
COMPETENT	SAFER

Knowledgeable Aircraft Commander