Sparky’s Airmanship and Professionalism Framework

ASU Aviation

decision-making

situational awareness

pills of knowledge

flight’s purpose & plan
environment & terrain
aircraft systems
leadership & teamwork
weather
risk assessments
self: capabilities/limitations

communication

skill & proficiency

flight discipline

professionalism

framework adapted from Kern’s Airmanship Model, 1997

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Aimpoint – Airspeed: An Approach to Airmanship & Professionalism

in Undergraduate Aviation Education

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This initiative creates the foundation for airmanship and professionalism in the undergraduate aviation student. Given the projected numbers of pilots required in the next decade, safety education and professionalism must begin immediately in the development of future commercial pilots. The aviation industry needs pilots to maintain the highest levels of professional conduct in and out of the cockpit. The Airmanship Model is used as the basis of the framework and engages students and instructors in discussions and performance evaluations. Professionalism is the foundation, stressing individual accountability and ownership. Embedded within professionalism are flight discipline, skill and proficiency, and communication. Seven personal knowledge pillars then link the foundation with the framework’s outcomes, situational awareness and decision making. This model helps to develop airmanship and professionalism, acting as both a process and product and is the individual structure that crew resource management builds upon.
AIMPOINT - AIRSPEED

Approach to Airmanship & Professionalism in Undergraduate Aviation Education

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- Weather
  Wind & snow
- Fatigue
  Multiple -leg day
- Decision-making
  Runway landing calculations
  Policy
Create airmanship and professionalism in undergraduate aviation students
CONTEXT

College students are in a unique phase of life
- Maturity
- Frontal lobe
- Social distractions
- Engagement & effort
- Financial issues
- Prioritization of responsibilities
Concerned with level of professionalism of their air crew
1. Professionalism
2. Safety Culture
3. Airmanship
4. Light Business Plane safety
5. Talent Pipeline 😊
6. Impact of Technology
7. Public Policy
8. Airport Safety
9. Fatigue
10. Task Saturation

NBAA TOP 10 SAFETY FOCUS AREAS

Gibb 2014 Aimpoint-Airspeed Presentation

NBAA Safety Committee Top 10 Safety Focus Areas | NBAA - National Business Aviation Association;
http://www.nbaa.org/ops/safety/top-10/
Capt. Dave McKenney (United), ALPA's director of Pilot Training Programs, kicked off a lively discussion of “airmanship,” which can mean different things to different people. He warned, “The aviation industry has not fully defined the knowledge, skills, and behaviors associated with ‘airmanship’ for current operations. As a result, operators have not fully modified pilot training nor developed the mentoring required to develop airmanship skills needed to adjust to the changes required by today’s highly automated aircraft, or the experience of entry-level pilots.”

McKenney offered his own draft definition: “Airmanship is a measure of a pilot’s awareness of the aircraft and its flight environment and of her or his own capabilities and behavioral characteristics, flying skills, combined with good judgment, wise decision-making, attention to detail, and a high sense of self-discipline.”
The largest untapped resource in the aviation world today is the difference between the levels at which we are currently operating and the levels we are capable of.

The gap is not closed by meeting minimum regulatory requirements; it is closed through enhancing professionalism.

Tony Kern, Bombardier Safety standdown, Brazil, Aug 2013
Sparky's Airmanship and Professionalism Framework

Decision-making

Situational awareness

- Flight purpose & plan
- Environment & terrain
- Aircraft systems
- Leadership & teamwork
- Weather
- Risk assessments
- Self-capabilities/limitations

Pillars of Knowledge

- Communication
- Skill & proficiency
- Flight discipline
- Professionalism

Framework adapted from Ken's Airmanship Model, 1997

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Create a framework for discussions, perspective, and assessment in ASU classrooms and ATP aircraft on aviation safety and airmanship regarding what it means to be a professional aviator.
The experiential manner in which pilots progress through each foundation, pillar, and capstone to learn, develop, demonstrate, practice, and discover airmanship and professionalism.
PRODUCT

Safe & Successful Flying
Mediocrity can become an accomplice toward unsafe practices not because of any one intentional act but allowing one’s level of professionalism to erode over time, thus cracking the airmanship foundation.
Accidents do not occur because people gamble and lose, they occur because people do not believe that the accident about to occur is at all possible.

Wagenaar & Groeneweg, 1987, p. 596
Airmanship is...

• the individual structure upon which CRM builds
• the process a pilot makes toward safe flight; and following that process time after time is the making of a professional pilot
Aerodynamics
Meteorology
Power Plants
Instrument Navigation
Air Traffic Control
Aviation Law
Airfield Operations
Weekly Safety Mtgs
Each Flight
Human Factors
COMMON THREAD: INDIVIDUAL

- Normal accidents  Perrow
- Active & latent errors  Reason
- Normalization of deviance  Vaughan
- Drift into failure  Dekker
  1. Banality
  2. Incrementalism
  3. Competing resources
- Borrow from safety  Dekker
- Blizzard of small judgments…lots of bad little choices  Langewiesche
  1. Make money
  2. Be safe (safety is never first)
Professionalism must begin on Day-1 of a college student’s journey toward becoming a commercial airline pilot.
Professionalism and the next generation of commercial airline pilots

College → Compliance

College → Continuous Improvement

‘Normalization of Excellence’
Greater prudence is needed rather than greater skill

Wilbur Wright, 1901
What would you do?

Learning scenario based on a 2007 regional airline incident involving

- **Weather**
  - Wind & snow

- **Fatigue**
  - Multiple -leg day

- **Decision-making**
  - Runway landing calculations
  - Policy
What would you do?
Learning scenario based on a 1999 accident involving

- Fatigue
- Situational stress
- Decision making
- Un-stabilized approach
- Flight Discipline
- Procedures
- Communication
- CRM
- Weather