PILOT RELIABILITY CERTIFICATION

Course Catalog

Course descriptions, sequence and prerequisites for online version of Pilot Reliability Certification program

Launch Date of Program: January, 2007

Offered by

CONVERGENT PERFORMANCE

Pilot Reliability Certification

Course Catalog

The Pilot Reliability Certification program is a comprehensive human factors curriculum designed to provide individual aviators a world class understanding of human error causes and countermeasures in support of reliable mission accomplishment. The program was publicly released on 1 January 2007 with the initial course offering titled "Flight Discipline: The Anchor Point of Professional Airmanship." All courses are available online and can be taken at the students own pace.

Instructional Design: The essence of this PRC lies in three pillars of instructional design – deep content, sequencing of information and rigorous evaluation. Over 175 sources were used in creating this curriculum, and individual courses will be updated on a regular basis as new research emerges and feedback from PRC alumni is obtained and analyzed. PRC courses were created and designed for aviators in a sequence that – for the first time – allows a carefully crafted systems approach to the complexity of human performance in aviation. Finally, each module of learning is imbedded with knowledge checks throughout and an end of course examination insures that the learner has achieved the necessary competencies to apply the error reduction knowledge, skills and abilities and is ready to move to the next level.

Linked and Sequenced Courses: To the best of our knowledge, this is the only systemic and linked human factors curriculum designed to reduce individual error anywhere in the world. Five of the six courses are built upon knowledge mastered in previous lessons and therefore, must be taken in sequence. PRC 101: Flight Discipline is the cornerstone course for the entire program of study and the logic for this sequencing follows, with each course title followed by a one sentence purpose statement:

PRC 101: Flight Discipline: The Anchor Point of Professional Airmanship:
Establish a common professional ethos and restores the integrity of existing policy, procedures and regulatory guidance.

PRC 102: Mind-Body Link: Physiology and Psychology of Human Error:
Creates physiological and psychological readiness upon which personal performance improvement can take place.

PRC 103: Essential Foundations of Crew Resource Management (CRM)*: Applies new error awareness and reduction skills with refined team skills to dramatically reduce error in the team environment.

PRC 104: The Many Faces of Error in Aviation (Personal Error Awareness and Reduction): This course makes the error reduction effort personal by teaching each learner how to first identify common error producing conditions (EPC), followed by a demonstration of how they can analyze their own individual error patterns to assist them in controlling personal error.

PRC 105: Foundations of Safety Management: Armed with a deeper understanding of hazard identification and control measures with regards to individual and team error causes and countermeasures, operational risk management (ORM*) increases its reach and effectiveness at the individual and organizational levels. PRC 105 also introduces learners to principles of safety management systems (SMS) as well as the role of ORM within a functional SMS.

PRC 106: Automation Airmanship: Comprehend and counter automation induced error and fully leverage the benefits of automation to enhance mission performance and further reduce individual and team error.

* Dr. Kern argues that one of the most potent and important impacts of the PRC curriculum will be to act as a "force multiplier" for existing CRM and ORM training programs, reinvigorating the impacts of both programs, which have hit "performance improvement plateaus" in many organizations in recent years.

Individual Course Content Design. Each PRC course was carefully designed using *Bloom's Taxonomy of Educational Objectives* – a tried and true approach that sequences information from basic knowledge and comprehension to applied operational use, finally building towards analysis and evaluation levels of competence.

The deep content and structured design of this program insures that each graduate leaves the program with adequate knowledge to apply personal error reduction in both their professional and personal lives. Each graduate of the program will receive a Pilot Reliability Program Certification diploma and card which verifies they have achieved mastery levels of learning in each of these critical areas and satisfactorily completed all error reduction program requirements.

Level of Effort: All on line courses are designed to be completed in between 2.5 to 5 hours of actual contact time for an average learner. Additional course resources, such as case studies and mission scenario analysis, may require additional reading time. Additionally, outside reading and study is recommended (though not required) to maximize the impact of course materials.

Although key areas receive appropriate emphasis, the course is not “spoon fed” to pass the end of course quiz. The learner must engage with and master the content of each course in order to satisfactorily pass the end of course examination. This is not a “pay your fee and get your B” program. We want everyone to succeed, but if you are not serious about personal improvement through error control – do not enroll in this program.

Advanced Training and Products: For many professionals, achieving their PRC certification will only whet their appetite for greater improvement and be the first step in a lifelong improvement effort. For these high achievers, advanced training resources, products and links will be available at www.convergentperformance.com.

PRC 101: Flight Discipline: The Anchor Point of Professional Airmanship

Pre-requisites: None

Brief Synopsis: This course establishes an anchor point of understanding and compliance to act as a cornerstone for follow on professional development.

Course Topics: Professional ethics, violation producing conditions, normalization of deviance, peer pressure, hazardous attitudes, personality impacts on flight discipline, rogue aviators

Course Benefits: Professionals who complete this course will be better prepared to apply the following knowledge and skill sets for greater mission accomplishment

- Comprehend the personal and professional advantages of rigorous compliance with established policy and regulatory guidance
- Recognize and counter violation producing conditions before they result in a noncompliance event
- Recognize and respond aggressively to hazardous attitudes before they hijack decision making and judgment
- Recognize and respond to the individual and organizational normalization of deviance sequences
- Maintain personal integrity and professional compliance in the presence of peer pressure to do otherwise
- Recognize the traits of rogue aviators in themselves and others

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% competency.

PRC 102: Mind-Body Link: Physiology and Psychology of Human Error (MBL)

Pre-requisites: PRC 101

Brief Synopsis: This course provides vital background information on physiological and psychological readiness that underpins peak mental function in tightly coupled, error intolerant environments.

Course Topics: Physiological basics of mental functions; impacts and countermeasures of fatigue, stress, nutrition, and hydration on decision making; time compressed decision making; limits of multi-tasking; kinesthetic learning (muscle memory)

Course Benefits: Professionals who complete this course will be better prepared to apply the following knowledge and skill sets for greater mission accomplishment

- Comprehend how “things of the body impact things of the mind”
- Develop a personal readiness routine to maximize physical and cognitive performance
- Manage chronic and daily fatigue levels for peak performance
- Recognize and respond appropriately to physiological red flags
- Limit multi-tasking to appropriate levels and flight regimes
- Apply effective time management & decision scheduling in time constrained environments

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% competency.

PRC 103: Essential Foundations of Crew Resource Management (CRM)*

Pre-requisites: PRC 101; PRC 102

Brief Synopsis: This course provides the knowledge components of the traditional Cockpit/Crew Resource Management curriculum. Since CRM is, by definition, applied in a team environment, the course is limited to addressing key individual skill components as they apply to mission optimizing and error reduction in the team environment.

Course Topics: Small group dynamics; Assertiveness; Real time communications; Team induced error; Error reduction in the team environment; Situational awareness; Mission change management; CRM skills and tools (i.e. conservative response rule; two-challenge rule, etc.)

Course Benefits: Professionals who complete this course will be better prepared to apply the following knowledge and skill sets for greater mission accomplishment

- Avoid team induced error traps such as groupthink and power of the first idea
- Use appropriate levels of assertiveness to heighten SA in the team environment
- Identify and leverage available and mission appropriate resources in time constrained environments
- Manage stress and conflict to reduce errors and optimize performance
- Key tools and skill sets (i.e., conservative response rule; two-challenge rule, assertiveness statement, etc,)
- Develop the ability to deliver “bad news” with skill and confidence in the team environment

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% level

PRC 104: Taking Charge: Personal Error Awareness and Reduction (PER)

Pre-requisites: PRC 101; PRC 102; PRC 103

Brief Synopsis: This course makes the error reduction effort personal by teaching each learner how to first identify common error producing conditions (EPC), followed by a guided analysis of their own individual error patterns to laser target key error reduction centers of gravity.(ERCG).

Course Topics: Top ten error producing conditions and countermeasures; accuracy vs. precision; basic error types and common causes; personal error pattern tracking and analysis; habit pattern development – breaking bad ones, forming good ones

Course Benefits: Professionals who complete this course will be better prepared to apply the following knowledge and skill sets for greater mission accomplishment

- Recognize and counter the top ten error producing conditions (EPC)
- Decouple error producing conditions to avoid cumulative effects
- Apply systemic error reduction techniques to achieve better precision and accuracy in your operational environment
- Apply personal error tracking tools to identify and counter individual error tendencies
- Comprehend and apply precise habit formation techniques for error reduction

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% level.

PRC 105: Foundations of Safety Management

Pre-requisites: PRC 101; PRC 102; PRC 103; PRC 104

Brief Synopsis: This course teaches the foundational elements of the Operational Risk Management (ORM) process and how it relates to personal error awareness and control as well as principles of Safety Management Systems (SMS) and the role of ORM in a functional SMS.

Course Topics: Four principles of ORM; ORM process model; ORM integration into personal error control; Systematic risk management; ORM steps; Hazard identification tools; Assessing risk; Analyzing and selecting control measures; Implementing risk controls; SMS regulatory requirements; Components of an SMS; SMS implementation techniques

Course Benefits: Professionals who complete this course will be better prepared to apply the following knowledge and skill sets for greater mission accomplishment through error control

- Systematically identify 50-75% more hazards in daily environments
- Understand and apply the six-step ORM model to enhance personal error control measures in work and home environments
- Better assessment of risk-reward equation in all situations
- Integrate ORM process into personal error patterns recognition and response
- Link ORM principles to comprehensive individual and team error control processes
- Understand the link between ORM and a highly functional Safety Management System
- Implement SMS components in your organization

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% level.

PRC 106: Automation Airmanship (AA)

Pre-requisites: PRC 101; PRC 102; PRC 103; PRC 104; PRC 105

Brief Synopsis: This course focuses on tools and skills for transition to advanced technology systems. The learner will use the 12 Automation Airmanship Skills to apply to their own technology and operational environment, "driving down" the time required to adjust to advanced cockpit systems and optimizing performance in experienced crews..

Course Topics: Automation induced error; Automation philosophy; Standard operating policy and procedures; Man-machine interface; Mode awareness; Alerts and warning systems; Data entry, retrieval and interpretation

Course Benefits:

- Optimized utilization of automation for mission accomplishment and error control
- Clear and focused automation briefings
- Enhanced primary and backup monitoring skills
- Alerts and warning management
- Proactive Mode Awareness (MA) for enhanced Situational Awareness (SA)

Assessment: End of course on line examination. Minimum passing score is 80%. Mastery level learning is achieved through examination review to 100% level.