

CAERise

Training system

Overview

The aviation industry as a whole - civil, military, and business - faces the on-going challenge of producing sufficient highly-qualified pilots to meet demand. Initially developed for the Civil aviation market, CAE Rise is a data-driven training system improving training efficiency and effectiveness for pilots and instructors. CAE Rise has been employed in more than 50,000 unique training sessions by over 7,100 pilots across sixteen different aircraft types using more than 120 simulators deployed on a global scale.

Standardized Training and Objective Assessment

The CAE Rise system fosters student-centric learning, reduces subjectivity in pilot assessment and allows instructors to focus on interacting and instructing. It equips instructors to deliver standardized training and to objectively assess pilot competencies. Algorithms track and calculate deviations for specific, actionable and detailed feedback. Gaps and trends in individual and class performance can easily be identified; organizations can continuously adapt and improve the training program. Enhancing and Accelerating the Training Experience

CAE Rise can use pre-programmed grading criteria based on specific parameters identified for each maneuver to guide the pilot during the flying of the maneuver. Real-time data is captured for immediate evaluation and can be used post-session for objective insight analysis.

Enhancing and Accelerating the Training Experience

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- **In-Session: Pilots receive live feedback via the Rise Coaching Application.** The CAE synthetic Instructor Pilot (IP) provides verbal instructions and feedback using the same heuristics as an experienced human IP. Instructors can monitor performance during a training session in the Rise Training Event Viewer .
- **Post-Session: The CAE Rise system provides automated grading** based on pre-programmed grading criteria. Exceedances are highlighted and flagged as specific feedback within an interactive 3D environment showing flight path and assessment points. Pilots and instructors can view past maneuvers and other training tasks to better understand strengths, execution errors and weaknesses, guiding them to improve performance.
- **At Any Time: Students and instructors can review and track performance** over time in the Rise eGrading and Records Manager applications.



CAE Rise benefits all constituents of a pilot training program

Student pilots using CAE Rise receive:

- Real-time feedback via a virtual coach programmed to give instructions and corrections based on performance
- Clear identification of strengths/weaknesses
- Reduced subjectivity in scoring and grading
- Early intervention and correction enabling the training program to be tailored for the individual.
- CAE Rise captures students' biometric and eye tracking data for insights on progression and training effect analysis.

CAE Rise gives **instructors** a new approach to objectively assess pilot competencies.

- Facilitates focus on student interaction and guidance
- Improves feedback quality through objective data
- Reduces the administrative burden
- Centralizes management of classes, training plans, and plans of action.

- Data analytics provide insights to continuously adapt and improve **organizations'** training programs.
- Standardized evaluations across instructors
- Reduced instructor-to-student ratios
- Early identification of performance gaps, leading to modifications and adjustments for continuous improvement in training
- Improved throughput

Study Confirms CAE Rise Training Benefits

In early 2023, CAE conducted a study with the Japan Air Self-Defense Force (JASDF), to objectively verify the training benefits of CAE Rise synthetic coaching feedback and biometrics using a CAE Sprint Virtual Reality training device. The study exposed 30 pilot trainees to a 1-hour training event to practice takeoff or landing across 6 trials with coaching provided by verbal cues. Students were auto graded.

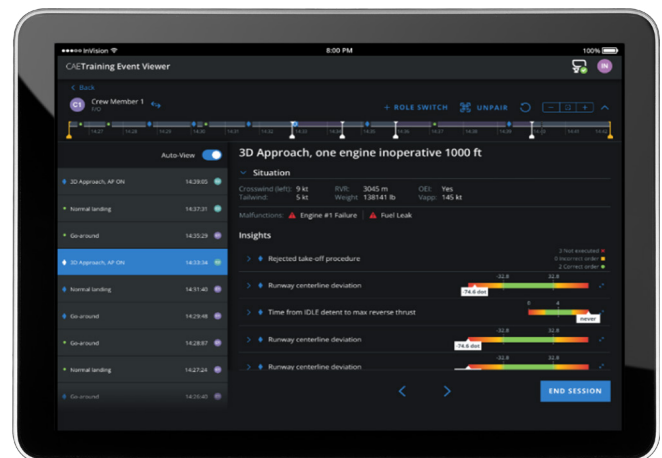
The results indicated the CAE-developed tools enabled the JASDF cadets to significantly improve their overall performance from fair to good between the first and last trial.

CAE Rise Employs

Biometrics for Effective Flight Training

Analyzing eye movements, heart rate and respiration provides insights into a pilot's level of stress, fatigue and engagement during training. This data helps tailor training to better suit individual students, ensuring each student receives the appropriate training and level of support.

Biometrics optimizes pilot performance by providing real-time feedback. Tracking eye movements and heart rate permits performance techniques to be assessed and reported, then adjusted or corrected. Student pilots can modify their behavior in real-time, resulting in more efficient and effective flight training.



CAE Rise offers real-time insights and standardized evaluations for a student-centric experience and continuous training improvement.