Flight and Maintenance Training

Resilience, competence, confidence, and connection — aligned with Boeing standards.

BACKGROUND

Overview

Boeing Flight Training programs develop pilot competence, not simply by requiring a set number of hours but by emphasizing the mastery of essential knowledge, skills, and attitudes. This foundation builds confidence and fosters connection through collaborative relationships between pilots, instructors, and digital tools that promote continuous learning and teamwork.

Business aviation enables organizations, governments, and private owners to move quickly across the globe, connecting people and opportunities without the limitations of commercial airline schedules. From executive travel and diplomatic missions to humanitarian operations and specialized transport, business jets serve missions that demand flexibility, efficiency, and reliability.

Boeing Business Jet (BBJ) crews operate in dynamic, high-visibility environments where operational flexibility, discretion, precision, and executive expectations intersect. Routes change rapidly. Destinations vary. Airport environments may be unfamiliar. Passenger expectations are uncompromising. Operating a Boeing Business Jet demands more than procedural proficiency. It requires disciplined decision-making, refined leadership, technical mastery, and the resilience to perform under pressure.

Operational complexity in business aviation

High-performance airplane

Business jets operate at high speeds and altitudes, often flying intercontinental routes that demand advanced operational planning and energy management.

Pilots must understand complex aircraft systems, high-altitude aerodynamics, and advanced avionics while maintaining strong manual flying skills and situational awareness.

Global operations

Unlike many airline routes that follow predictable schedules, business aviation operations are highly dynamic. Crews must be prepared to operate across multiple regions, each with different procedures, regulatory frameworks, and environmental conditions.

Operations may include:

- Long-range international flights
- Oceanic and remote operations
- Diverse navigation requirements
- Rapid mission changes

Pilots must be prepared to adapt quickly to new operational environments while maintaining safety and efficiency.

> Operating a Boeing Business Jet is not conventional airline flying.

Diverse airports and operational environments

Business jets frequently operate into airports that may present unique challenges such as shorter runways, terrain constraints, or limited operational infrastructure.

These environments require pilots to have a deep understanding of aircraft performance, approach procedures, and risk management to ensure safe operations in demanding conditions.

Advanced flight deck technology

Modern business jets incorporate advanced flight deck technology including integrated avionics systems, sophisticated flight management systems, and digital flight controls.

While these systems enhance capability and efficiency, they also increase the importance of automation management and system knowledge. Effective training ensures pilots understand both the benefits and limitations of advanced aircraft technology.

As the original equipment manufacturer, **Boeing delivers BBJ Full Type Rating and Recurrent Training programs aligned with the airplanes' design, operational philosophy, and performance data.**

Our courses are built on the **Competency-Based Training and Assessment (CBTA)** framework, integrating technical knowledge, human factors, and non-technical behaviors to prepare BBJ pilots for the demands of real-world operations.

What is Competence-Based Training and Assessment (CBTA)?

From task-based to competency-based training

ICAO defines **competency** as a dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviors that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

In other words, an individual's competency to perform proficiently on the job is demonstrated through **observable behaviors**. These behaviors rely on relevant **Knowledge, Skills, and Attitudes (KSA)** and can be used to predict future performance.

Traditional pilot training has historically followed a **task-based approach**, focusing on completing predefined maneuvers and procedures. While effective in structured environments, this approach has limitations in preparing pilots for the dynamic and unpredictable nature of real-world operations.

At Boeing, training has evolved toward a **competency-based approach**, shifting focus from individual tasks to developing and assessing a defined set of pilot competencies. These competencies integrate knowledge, skills, and behaviors required to manage operational scenarios safely and effectively.

CBTA reflects the growing complexity of modern aviation and the need for pilots to demonstrate **adaptability, judgment, and resilience**—not just procedural compliance.

Limitations of task-based training

- Each maneuver is trained and assessed individually
- Training success is measured by task completion
- Emphasis is placed on repetition of predefined scenarios

However, in complex and evolving operational environments:

- Not all real-world situations can be predefined or trained as isolated tasks
- Pilots must continuously adapt to changing conditions
- Effective performance requires integration of multiple skills simultaneously

Typical task-based training events:

- Engine failure scenarios
- Rejected takeoffs
- Instrument approaches (e.g., low visibility)
- System malfunctions

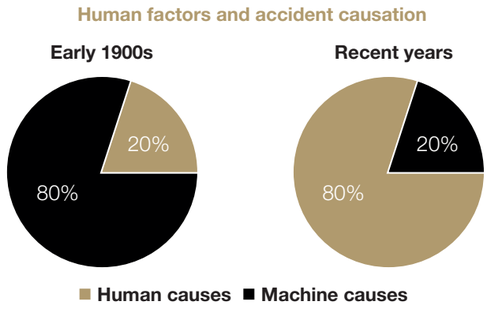
While these tasks remain important, they do not fully represent the complex decision-making environment pilots face in line operations.

Why CBTA matters in BBJ

Shift toward human factors in CBTA

As aviation technology has advanced, the main cause of accidents has shifted from machine failures to human error. In response, CBTA focuses on developing critical human competencies like communication, decision making, and situational awareness.

This human-centered approach prepares pilots for today's complex operational environments, where soft skills are key to enhancing safety



Full CBTA principles course coverage – integrating critical training elements in one course

While other traditional full Type Rating courses require additional training elements such as Upset Prevention and Recovery (UPRT) Training, our Type Rating and Recurrent Courses with CBTA principles integrate these elements throughout the curriculum, ultimately enhancing flight safety, efficiency, and convenience.

Integrated training excellence

No add-ons. No fragmentation. One cohesive program.

Traditional Type Rating courses often bolt on regulatory modules such as UPRT or LOS as separate requirements. Boeing integrates them seamlessly.

Included within your Type Rating and Recurrent Training with CBTA principles

UPRT/EET

Upset Prevention and Recovery Training

This course offers crews valuable exposure to unusual attitudes and undesired aircraft states (UAS), combined with structured recovery techniques. Pilots gain hands-on experience practicing recovery maneuvers, enhancing their ability to safely manage and prevent upsets.

LOS

Line Operational Scenarios

This new lesson day features realistic, dynamic scenarios designed to induce genuine startle and surprise, helping crews build resilience. Pilots synthesize their training by responding to unexpected events in authentic operational environments, strengthening their decision-making and adaptability.

TEM

Threat and Error Management

Proactively identify, manage, and recover from risks to prevent incidents and enhance flight safety.

Included within your Recurrent Training courses with CBTA principles

Recurrent UPRT/EET

Upset Prevention and Recovery Training

This course offers crews valuable exposure to unusual attitudes and undesired aircraft states (UAS), combined with structured recovery techniques. Pilots gain hands-on experience practicing recovery maneuvers, enhancing their ability to safely manage and prevent upsets.

LOFT

Line Oriented Flight Scenarios

Realistic, dynamic scenarios inducing startle and surprise to strengthen resilience.

TEM

Threat and Error Management

Proactively identify, manage, and recover from risks to prevent incidents and enhance flight safety.

> Integrating the additional training elements to enhance safety, resilience, efficiency and training continuity.

LOFT benefits in Recurrent Training

One of the main reasons CBTA Recurrent Training programs needs more investment is the deliberate inclusion of Line-Oriented Flight Training (LOFT). Rather than focusing solely on procedural tasks and maneuvers (RT1 and RT2), CBTA-aligned training places greater emphasis on realistic operational scenarios, and competency reinforcement and enhancement. LOFT is recommended as part of Recurrent Training programs and is designed to assess all nine competencies and threat and error management in a realistic operational context. This requires additional time, but it delivers significantly greater training value by allowing crews and instructors to identify training needs and improvement areas before going to the next sessions.

CBTA principles

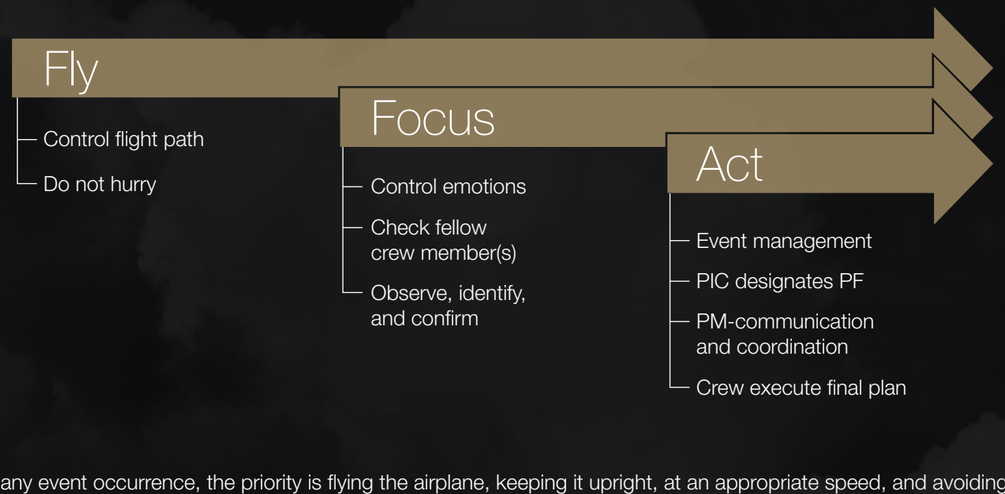
Competence-Based Training and Assessment (CBTA) and Evidence-Based Training (EBT)

Pilot Competency Framework (PCF)

The Full Type Rating and Recurrent Training courses are designed based on training and assessment of core competencies identified in the PCF. These competencies include the knowledge, skills and attitudes that resilient pilots demonstrate to ensure safe in-flight operations. Observable and measurable behaviors are mapped and integrated into training events. Competency development progresses so that each session builds upon the previous one in a methodical manner:

Fly. Focus. Act (FFA)

Boeing courses with CBTA principles train the competencies of Problem Solving and Decision Making, Situation Awareness, and Leadership and Teamwork through flexible thinking and startle management strategies. Risk anticipation is an essential strategy to build resilience. If pilots anticipate events, then events can be less of a surprise, and a startle reaction may be less intense.



Fly

- With any event occurrence, the priority is flying the airplane, keeping it upright, at an appropriate speed, and avoiding terrain. It is important that one pilot devotes most of their attention to this task.
- Most pilots are familiar with the effects of “time compression” and the unintentional and undesired result of pilots rushing flows, procedures, checklists, and duties. Rushing is almost never required or desired. The model reminds the crew to do not hurry so that they can calmly accomplish safe flight operations.

Focus

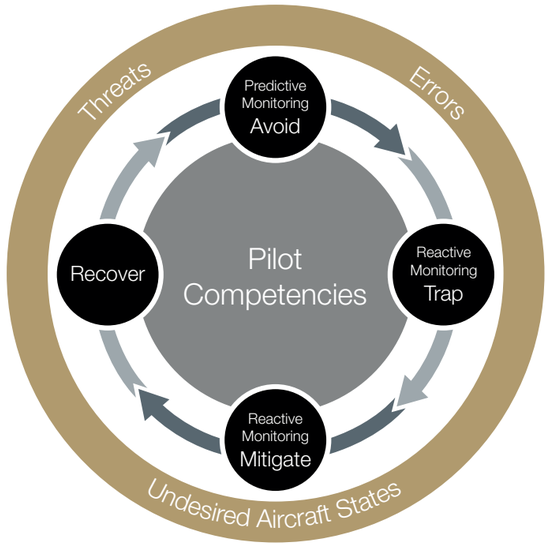
- This process component reminds the crew to take a deep breath awareness assessment of the overall state and a cognitive functional assessment of themselves and their fellow pilot. They take time to observe a situation, correctly identify the conditions, and confirm that they have the correct conditions and correct checklists, and are ready to manage the event.

In line operations, the first two process components, Fly and Focus may occur quite expeditiously, without rushing, and the crew’s main efforts will be in the third component, Act.

Act

- The crew executes an event management protocol. They reassess the situation and the captain makes a deliberate and intentional assignment of who is the Pilot Flying (PF), and later who lands the airplane.
- The Pilot Monitoring (PM) accomplishes checklists, non-ATC communications, resource coordination, and crew management as required. Together the crew devises a recovery strategy and an operational plan and then executes their plan.

CBTA principles (cont.)



Threat and Error Management (TEM)

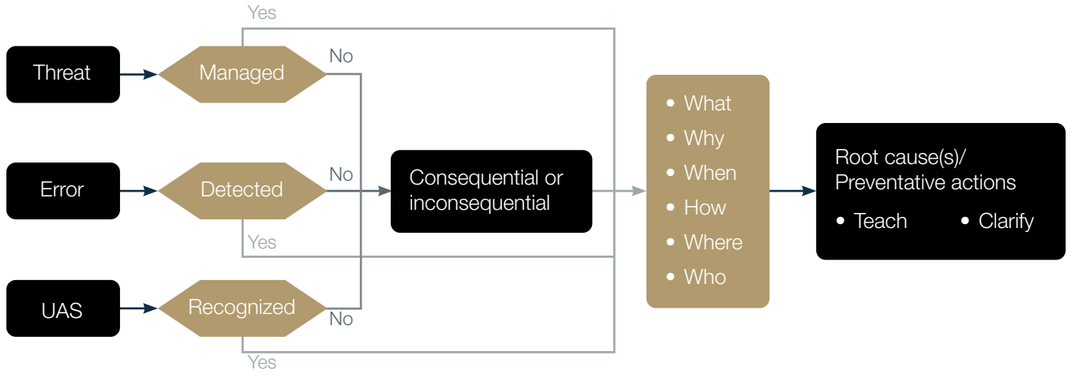
At the heart of CBTA is the integration of Threat and Error Management (TEM) a proactive framework for preventing incidents by preparing pilots to recognize, manage and recover from operational risks. In this model, pilot competencies are applied to effectively identify, mitigate, and respond to external threats, internal errors and undesired aircraft states.

Through predictive and reactive monitoring, pilots are trained to anticipate and avoid threats, trap errors, mitigate consequences and recover when necessary. TEM is not just a concept but a core element of CBTA, reinforcing a safety culture that prioritizes preparedness, communication and sound decision making throughout every stage of flight

Root cause analysis

Besides assessing competency objectives, instructors also use root-cause analysis of performance deficiency to identify underlying competencies in need of development. The following flowchart is utilized during the debrief after each practical lesson.

Determining casual factors



CBTA principles and traditional training

The Benefits of CBTA

	Traditional Training	CBTA
Curriculum	Three primary technical training elements: handling skills, automation management and application of procedures	Nine Pilot Competencies and TEM (Threat and Error Management) framework
Goal	Check against a task list, with hours driven training and test-based learning objectives	Develop competent and resilient pilots, with broad scope of human factors and non-technical development areas
Instructor	Instructor-centered	Trainee-centered, using facilitation techniques to support pilot competency and confidence
Assessment	Event-based, measurement determined by fixed, predetermined criteria of numeric flight path deviation and tolerances	Enhanced measurement of standards: pilot performance determined by objective, observable criteria
Licensing	Requirements based on negative outcomes - incidents/accidents	Relevant licensing system based on factors that contribute to successful safe operations
Metrics/data	Limited metrics, with no prescribed framework and limited data integration	Comprehensive metrics based on evidence, sustaining monitoring/enhancement of training systems with actionable SMS (Safety Management System)

> Effective training goes beyond compliance—CBTA enables airlines to develop pilots who are prepared, resilient, and performance-ready.

DETAILS

Course highlights, methodology and requirements

Boeing 737NG and 737 MAX — Full Type Rating with CBTA Principles

This course prepares pilots for the Boeing 737NG and 737 MAX Type Rating through a structured CBTA approach. Training includes theoretical knowledge, practical simulator sessions, and competency assessments designed to develop technical skills and human factors such as communication, decision-making, and workload management.

Course highlights

- Comprehensive full Type Rating training for Boeing 737NG and 737 MAX.
- Competency-Based Training and Assessment (CBTA) framework emphasizing both technical and human factor competencies.
- Includes Distance Learning, Orientation, Simulator Training, and Theoretical Knowledge Examination.
- Focus on pilot core competencies, threat and error management, and resilience building.
- Approved by EASA and FAA with regulatory compliance.

Delivery and methodology

- Distance Learning (~49-54 hours)
- Two-day Orientation covering CBTA, TEM, and flight manuals
- Flight Training Device (FTD) sessions (32 hours)
- Full Flight Simulator (FFS) sessions (52 hours)
- Academic Review and Theoretical Knowledge Exam
- Final Skill Test or License Skills Test
- Instructor-led practical training with competency mapping and assessments

Prerequisites

- Current EASA or FAA ATPL or CPL license
- Completion of UPRT training as per regulatory requirements
- Minimum 70 hours pilot-in-command experience
- Valid medical certificate (EASA Class 1 or FAA Second Class)
- English proficiency Level 4 or higher
- Identification documents (passport, national ID, or license)

Course details

- Total duration: Approximately 233-238 hours (including distance learning and on-campus training)
- Duration on campus: 27 days
- Training phases: Analysis, Design, Development, Implementation, and Evaluation
- Regulatory submissions and approvals included
- Emphasis on non-normal procedures, upset prevention and recovery training (UPRT), and black swan event preparedness

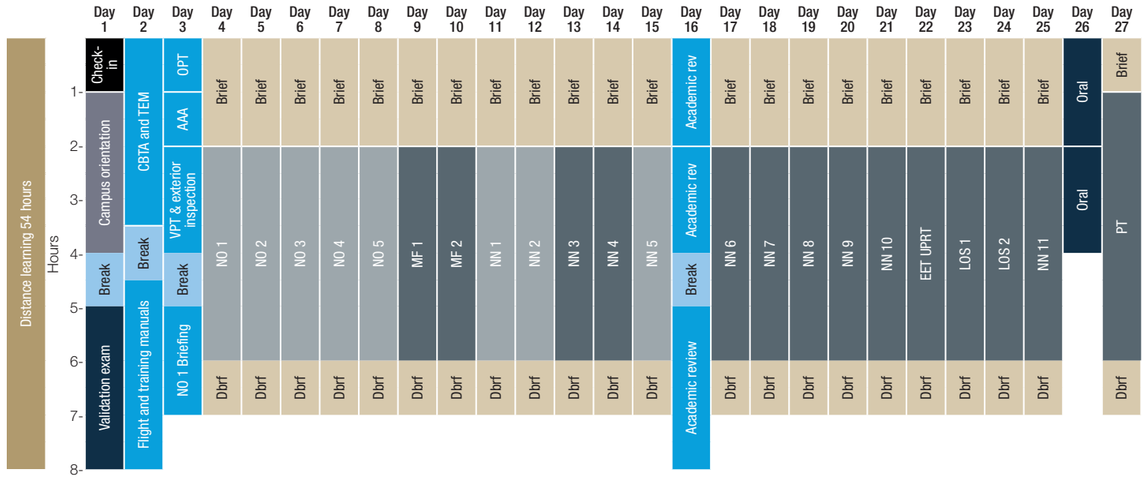
Learning outcomes

Upon successful completion, pilots will be able to:

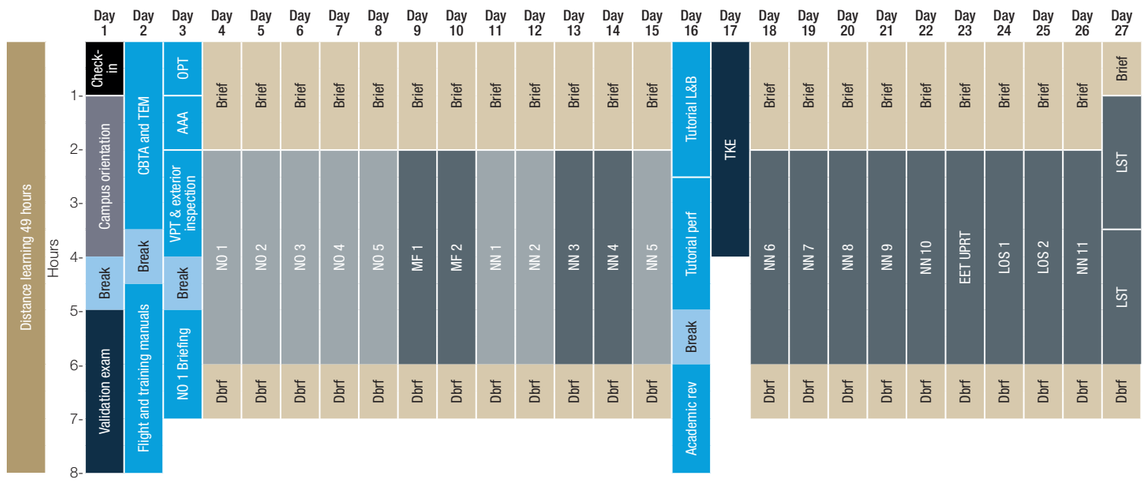
- Demonstrate proficiency in normal, non-normal, and emergency procedures.
- Apply CBTA competencies including knowledge application, communication, leadership, and decision-making.
- Manage threats, errors, and undesired aircraft states effectively using Boeing's TEM framework.
- Perform manual and automated flight path management.
- Pass regulatory theoretical and practical exams for Type Rating certification.

737 MAX flight training footprint

FAA



EASA

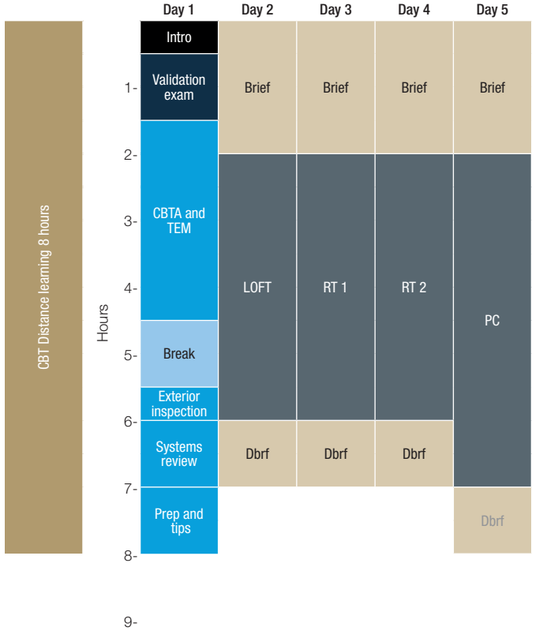


Computer-based | Tour | Briefing tool | Classroom | Break | FTD | FFS | Brief/Debrief | Exam

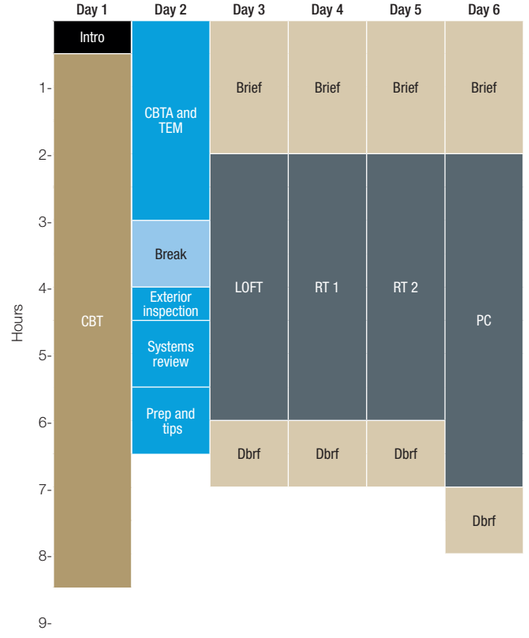
CBTA	Competency-Based Training and Assessment	MF	Manual Flight
TEM	Threat and Error Management	NN	Non-Normal Operations
OPT	Onboard Performance Tool	EET/UPRT	Extended Envelope Training/Upset Prevention and Recovery Training
AAA	Airplane Airworthiness Assessment	LOS	Line Operational Simulation
NO	Normal Operations	PT	Practical Test

737 MAX flight training footprint (FAA)

CBT as distance learning



CBT on campus



Computer-based	Introduction	Exam	Classroom	FFS	Brief/Debrief

CBTA	Competency-Based Training and Assessment	RT	Recurrent training
LOFT	Line-oriented flight training	TEM	Threat and error management
PC	Proficiency check		

> Three days of full flight simulator training deliver critical hands-on experience, enhancing readiness, reducing variability, and supporting safe, consistent operations.

Boeing 737NG and 737 MAX — Recurrent Training with CBTA Principles

This Recurrent Training course ensures pilots remain current and competent in operating the Boeing 737NG and 737 MAX. The program refreshes knowledge and skills through CBTA principles, combining theoretical and practical training aligned with FAA and EASA regulations.

Three days of full flight simulator training deliver critical hands-on experience, enhancing readiness, reducing variability, and supporting safe, consistent operations.

Delivery and methodology

- Recurrent training designed to maintain and enhance pilot competencies for Boeing 737NG and 737 MAX.
- CBTA framework focusing on both technical skills and human factors.
- Includes computer-based training, validation exams, orientation, and simulator sessions.
- Emphasizes threat and error management, resilience, and operational safety.

What's included

- Computer-Based Training (CBT) on systems (8 hours).
- CBTA Validation Exam and Orientation (1 day).
- Full Flight Simulator (FFS) training including LOFT and recurrent scenarios (3 days).
- Practical lessons focusing on normal, non-normal, and emergency procedures.
- Assessment using competency-based grading rubrics.

Prerequisites

- Current FAA or EASA ATPL or CPL license with Boeing 737 Type Rating.
- Valid medical certificate.
- English proficiency Level 4 or higher.
- Compliance with regulatory Recurrent Training intervals.

Learning outcomes

Upon successful completion, pilots will be able to:

- Maintain proficiency in normal and non-normal operations.
- Apply CBTA competencies to manage operational risks effectively.
- Demonstrate effective communication, leadership, and teamwork.
- Successfully complete FAA/EASA Recurrent Training requirements.
- Pass validation exams and simulator checks to remain qualified for Boeing 737NG and MAX operations.

BENEFITS

The most advanced Type Rating and Recurrent Training program for Boeing BBJ airplanes

Why choose Boeing?

Because you have the opportunity to train with the organization that designed, built and tested the airplane you are flying.

Boeing OEM expertise

Every procedure, system, and simulator scenario is designed and validated by our engineers and operational experts, ensuring alignment with the flight deck philosophy.

Regulatory compliance

Training Approved by EASA and FAA with regulatory compliance.

Flexible seat support

Options for Boeing seat support or customer seat support to fit your operational preferences.

Comprehensive curriculum

Full Type Rating and Recurrent Training courses including Competency-Based Training and Assessment (CBTA) principles and Distance Learning (DL) options.

Global reach

Training available worldwide with expert instructors and state-of-the-art simulators.

> Train with the organization that designed, built, and tested the airplane.

Instructor expertise

Boeing instructors are airline veterans, test pilots, and training specialists who combine operational experience with CBTA coaching techniques.

Each instructor is OEM-qualified and undergoes continuous standardization to ensure **global consistency in evaluation and delivery.**

Boeing instructors pedigree

Boeing instructors are former airline pilots, military aviators, and aviation experts, bringing real-world experience into the classroom.

Aviation experience:

~15,000+ hours

Director of Flight Operations, Chief Pilots, Line Training Captains, Line Check Captains, Tech Pilots, Type Rating Examiners / Simulator Instructors

Primary role:

- Facilitator
- Integrator/Mentor
- Human Factors
- Threat Error Management
- Safety Management Systems
- Competency-based Training

Goal:

Build resilient pilots who can recognize, absorb, and adapt to disruptions

Training centers

All Boeing campuses operate under unified standards for curriculum, instructor calibration, and assessment, ensuring consistent training outcomes across our global fleets.

Flight training campus locations

	**Miami***	Courses designed with CBTA principles, supported by 20 FFS and 5 FTD models.	737NG/MAX, 747, 767, 777, 777X, 787
	**London-Gatwick***	Courses designed with CBTA principles, supported by 10 FFS and 7 FTD models.	737NG/MAX, 777, 777X, 787
	**Singapore***	Courses designed with CBTA principles, supported by FFS and FTD models.	737NG/MAX, 777, 787
	**Shanghai***	Courses designed with CBTA principles, supported by FFS and FTD models.	737NG/MAX, 787
	**Seattle**	Courses focused on maintenance training	
	**Istanbul**	Courses designed with CBTA principles, supported by FFS and FTD models.	737 MAX
	**Delhi**	Courses designed with CBTA principles	737 MAX

*Primary training centers

Continuous learning integration

Boeing BBJ Type Rating and recurrent programs connect seamlessly to your broader pilot development ecosystem through:

Computer-Based Flight Training

Specialized operational courses on a variety of modules, such as Short Field Performance, UPRT/EET, Low Visibility Operations, Windshear, and more.

Virtual Airplane

Procedural training in a digital environment. Available on 737 MAX and coming soon on 737NG, 787, and 777-9.

Customer success stories

"Boeing's CBTA approach transformed how we train — pilots engage more deeply, retain more, and perform better."

Captain Mark Ryglas
Southwest Airlines

"The people that sign up now are going to be at the forefront of the CBTA development process. The people who don't sign up now will inevitably be involved because that's the way the regulatory guidelines are going."

Captain Jamie Chubb
DHL Aviation

Boeing Business Jets maintenance courses

Ensuring technical excellence and operational readiness

Boeing Business Jet (BBJ) Maintenance and Specialty Courses are designed to equip maintenance professionals with the knowledge and skills required to support safe, reliable, and efficient BBJ operations. Built on Boeing's original equipment manufacturer (OEM) expertise, these programs provide structured training that connects aircraft systems knowledge with real-world maintenance application.

BBJ maintenance training supports technicians across all key disciplines, ensuring they are prepared to operate, maintain, and troubleshoot complex aircraft systems with confidence and precision.

Key capabilities include:

- **OEM-Driven Expertise:** Direct access to Boeing engineering knowledge, ensuring the most accurate and up-to-date training aligned with aircraft design and performance.
- **System-Level Understanding:** Comprehensive coverage of BBJ systems to enhance troubleshooting accuracy and reduce maintenance downtime.
- **Practical Application:** Realistic training scenarios that mirror operational challenges, improving technician readiness and decision-making in live environments.
- **Standardized, High-Quality Instruction:** Consistent training delivery that supports global maintenance teams and aligns with regulatory expectations.
- **Specialty Course Offerings:** Targeted training on advanced systems, modifications, and BBJ-specific configurations to address unique operational requirements.

By combining technical depth with operational relevance, BBJ Maintenance Training enables organizations to improve aircraft availability, reduce risk, and maintain the highest standards of safety and performance.

Maintenance Training Courses

Boeing offers a comprehensive portfolio of BBJ maintenance training programs covering both initial qualification and ongoing skill development.

Core courses include:

101 Course – BBJ (737NG or 737 MAX) General Familiarization
High level introduction to airplane systems

303 Course – BBJ 737 MAX Avionics/Airframe/Power Plant/Electrical Initial with RVSM
Prepares the BBJ maintainer to operate, maintain, and repair all avionics, airframe, power plant, and electrical systems

304 - BBJ 737NG Airframe and Powerplant Initial
Provides foundational knowledge and hands-on skills for initial airframe and powerplant maintenance qualification

305 Course – BBJ 737NG Electrical and Avionics Initial with RVSM
Prepares the BBJ avionics technician to operate, maintain, and repair all electrical and avionics systems

306 Course – BBJ 737NG Maintenance Update with RVSM
Provides airplane systems update/review for BBJ experienced technicians

412 Course – BBJ (737NG or 737 MAX) Engine Run-up Accelerated
Provides knowledge needed to safely prepare aircraft systems for engine operation

414 Course – BBJ 737 (NG or MAX) Taxi Procedures
Provides knowledge and skills required to safely taxi the airplane

These programs ensure maintenance teams maintain a strong technical foundation while adapting to BBJ-specific operational requirements.

Specialty Courses

Boeing also provides a range of specialty courses designed to enhance operational awareness and performance across diverse flight environments.

Specialty offerings include:

- Reduced Vertical Separation Minimal (RVSM)
- Upset Recovery Training / Extended Envelope Training (UPRT/EET)
- Performance-Based Navigation (PBN)
- Low Visibility Operations
- Global Navigation Satellite System (GNSS)
- Controller Pilot Data Link Communications (CPDLC)
- Short Field Performance
- Cold Weather Operations
- GPS Landing System Approach for 737 and 787
- Handling and Carriage of Dangerous Goods
- High Altitude
- Hot Weather Operations
- Flight Deck Philosophy
- Electronic Flight Bag
- Stabilized Approaches
- Windshear

These courses are often offered as part of training packages, with additional access and incentives to support continuous learning and operational readiness

Registration

Ready to advance your career with Boeing training?

Visit our website or contact your local Boeing training representative for more information and enrollment details.

services.boeing.com/training-solutions/flight-training

Email: trainingservices@boeing.com

The transition to CBTA/EBT is not just a regulatory requirement—it is a strategic opportunity to reshape pilot training around safety, performance, and operational relevance. These methodologies are more than instructional tools; they are enablers of a broader cultural transformation that values continuous improvement, evidence-based decision making and resilient performance under pressure.

Airlines that successfully implement CBTA/EBT will be better positioned to manage operational risk, foster crew collaboration, and ensure consistent instructional quality across their networks. As Boeing continues to support this evolution through structured deployment programs, instructor development, and data-integrated tools, the path forward becomes clear: deliver training that is not only compliant but also agile, tailored and deeply aligned with the realities of flight.

> The future and the present of pilot training is here—and it is competency-based, evidence-informed and safety-driven.

BOEING BUSINESS JETS

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