EMBRAER SERVICES & SUPPORT

SERVICES PORTFOLIO
Through the nine service areas of our robust global Services and Support network, we help our customers succeed by putting our aircraft to the highest and best use. Getting the most out of your investment — the highest levels of safety, efficiency, and profitability — is a process that welcomes a vast array of resources for the transfer of operations-enhancing knowledge. Here, in this Solutions Portfolio, we have outlined the broad range of customer-oriented resources that are at your disposal. We invite your direct inquiry (visit www.flyembraer.com) about any of these specific offerings. Or about any further information we can provide to enhance your experience with our aircraft.

Note: All services listed in this document are subject to availability at the time of the request.
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EMBRAER 170/190 General Familiarization (T4) Theoretical Elements
Theoretical, in-classroom, instructor-led training providing general knowledge regarding all ATA Chapters/Airplane Systems, aiming at Level I of ATA Spec 104 and EASA Part 66. Duration: 5 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. OEM certificate or certificate issuance under EASA regulation.

EMBRAER 170/190 Line and Base Mechanics (T1) Theoretical Elements
Provides general knowledge regarding all ATA Chapters/Airplane Systems, aiming at level III for Airframe, Power Plant and Electrical Systems and level I and/or II for Avionics of ATA Spec 104 and EASA Part 66. Course includes information about general aircraft data, component location, system description and operation, as well as maintenance tasks, procedures, and services designed to prepare technicians for line and base daily maintenance and troubleshooting. Curriculum includes theoretical training and applied methodology combining computer-based and instructor-led training. Duration (EASA): 25 days. Duration (FAA): 15 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. OEM certificate or certificate issuance under EASA regulation.

EMBRAER 170/190 Line and Base Avionics (T2) Theoretical Elements
Provides general knowledge regarding all ATA Chapters/Airplane Systems, aiming at level III for Avionics and Electrical Systems and level I and/or II for Airframe and Power Plant of the ATA Spec 104 and EASA Part 66. Course includes information about general aircraft data, component location, system description and operation, as well as maintenance tasks, procedures, and services designed to prepare technicians for line and base daily maintenance and troubleshooting. Curriculum includes theoretical training and applied methodology combining computer-based and instructor-led training. Duration: 18 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. OEM certificate or certificate issuance under EASA regulation.

EMBRAER 170/190 Line and Base Mechanics and Avionics (T1+T2) Theoretical Elements
Provides general knowledge regarding all ATA Chapters/Airplane Systems, aiming at Level III ATA Spec 104 and EASA Part 66. Course includes information about general aircraft data, component location, system description and operation, as well as maintenance tasks, procedures and services designed to prepare technicians for line and base daily maintenance and troubleshooting. Curriculum includes theoretical training and applied methodology combining computer-based and instructor-led training. Duration: 27 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. OEM certificate or certificate issuance under EASA regulation.
**Technical Training, continued**

**EMBRAER 170/190 ME Cat II Line and Base Theoretical and Practical Elements**
Provides general knowledge regarding all ATA Chapters/Airplane Systems, aiming at level III for Airframe and Power Plant and Electrical Systems and level I and/or II for Avionics of ATA Spec 104 and EASA Part 66. Content complies with CCAR-66 requirements and includes information about general aircraft data, component location, system description and operation, as well as maintenance tasks, procedures and services designed to prepare technicians for line and base daily maintenance and troubleshooting. Curriculum includes theoretical and practical training and applied methodology combining computer-based and instructor-led training. Duration: 25 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. Certificate issuance under CAAC regulation.

**EMBRAER 170/190 AV Cat II Line and Base Theoretical and Practical Elements**
Provides general knowledge regarding all ATA Chapters/Airplane Systems, aiming at level III for Airframe and Power Plant and Electrical Systems and level I and/or II for Avionics of ATA Spec 104 and EASA Part 66. Content complies with CCAR-66 requirements and includes information about general aircraft data, component location, system description and operation, as well as maintenance tasks, procedures and services designed to prepare technicians for line and base daily maintenance and troubleshooting. Curriculum includes theoretical and practical training and applied methodology combining computer-based and instructor-led training. Duration: 27 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Min. 6, Max. 12. Certificate issuance under CAAC regulation.

**EMBRAER 170/190 Flight Controls Backlash**
Provides knowledge on how to perform an effective functional check to measure the backlash of the aileron, rudder, elevator, servo tabs, and spring tabs surfaces using Control Surface Backlash Calculation Software (GSE 378). Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 15. Attendance certification issued by the OEM.

**EMBRAER 170/190 Fuel System Troubleshooting and Best Practices**
Provides an overview of system components, architecture, operation, logics, and troubleshooting. Also covers recommended maintenance practices concerning bleed ducts and joints installation. Duration: 1 day. Location: At the Customer Site. Number of Trainees: Max. 15. Attendance certification issued by the OEM.

**EMBRAER 170/190 Flight Controls Backlash**
Provides an overview of backlash procedures for aileron, rudder, elevator, and horizontal stabilizer. Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 5 (for 2 days). Max. 10 (for 3 days). Max. 15 (for 4 days). Attendance certification issued by the OEM.

**EMBRAER 170/190 Flight Controls Rigging**
Provides an overview of rigging procedures for all flight control surfaces, including flap, slat, rudder, aileron, and elevator. Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 5 (for 2 days). Max. 10 (for 3 days). Max. 15 (for 4 days). Attendance certification issued by the OEM.

**EMBRAER 170/190 Flight Dispatcners Course (FDC)**
Provides training on performance-related matters to assist licensed flight dispatchers in the performance of their duties and to improve flight safety. Topics include: airplane familiarization, takeoff, landing, flight planning, drift/ downdraft, emergency descent, weight and balance, and dispatch manuals. Focuses on how to use Embraer flight operations publications in daily flight operations. Duration: 4 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Max. 10. Attendance certification issued by the OEM.
Technical Training, continued

EMBRAER 170/190 Flight Operations Engineering Course (FOEC)
Provides basic knowledge on airplane performance designed to assist airlines in optimizing flight operations and improving flight safety. Topics include: takeoff, landing, flight planning, driftdown, emergency descent, and weight and balance. Also provides a general overview of airplane systems, limitations, flight operations publications, and performance software. Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 10. Attendance certification issued by the OEM.

ERJ 145 Gust Lock System Maintenance and Troubleshooting
Provides knowledge of the system, maintenance procedures, MEL procedures, and troubleshooting procedures in order to prevent No Fault Founds (NFFs), thereby improving maintenance efficiency and economy. Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 6 (for 2 days). Max. 12 (for 3 days). Max. 20 (for 4 days). Attendance certification issued by the OEM.

Human Factors Training and Implementation Support
Provides awareness of Human Factors in aviation maintenance, with emphasis on safety enhancement, performance improvement, errors reduction, and the resulting savings in maintenance costs. Embraer personnel also provide support for human factors program implementation.

ERJ 145 and EMBRAER 170/190 Lean Maintenance
Provides two days of theoretical knowledge followed by three days of practical application using real cases. Lean techniques aim to identify opportunities for improvement based on process efficiency, leading to an Initial Action Plan. Course emphasizes effective implementation of Kaizen Team strategies for continuous improvement. Duration: 5 days. Location: At the Customer Site. Number of Trainees: Max. 15. Attendance certification issued by the OEM.

Maintenance Program Evolution and Optimization
Presents concepts for developing an internal process for the ongoing evolution and optimization of an airline’s Aircraft Maintenance Program. Topics include: CASS, MSG-3 Analysis, and Reliability Analysis.

ERJ 145 Nose Wheel Steering System
Provides instruction in the Nose Wheel Steering System to make maintenance faster and easier. Duration: 1 day. Location: At the Customer Site. Number of Trainees: Max. 15. Attendance certification issued by the OEM.

ERJ 145 Overhaul Set-up
Provides knowledge on how to prepare documentation of the parts to be overhauled and fleet SBs to be addressed, thereby enhancing overhaul TAT. Duration: 1 day. Location: At the Customer Site. Number of Trainees: Max. 10. Attendance certification issued by the OEM.

Performance Software Course (PSC)
A specialized hands-on package that makes software users capable of analyzing weight and balance data as well as E-Jets aircraft performance in takeoffs, in-flight and landings. Duration: 5 days. Location: São José dos Campos. Number of Trainees: Max. 10. Attendance certification issued by the OEM.

Technical Training, continued

ERJ 145 and EMBRAER 170/190 Reliability
Provides instruction in the concept of reliability and the role of statistics in reliability analysis. Technicians learn to identify opportunities to improve fleet performance, to comply with aviation industry standards, and to follow best practices in reliability management. Duration: 3 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Max. 12. Attendance certification issued by the OEM.

ERJ 145 and EMBRAER 170/190 Spare Parts and Logistics
Provides an overview of material and logistics areas, processes, and products. Duration: 4 days. Location: São José dos Campos. Number of Trainees: Max. 15. Attendance certification issued by the OEM.

ERJ 145 and EMBRAER 170/190 Structural Repair Theory
Provides an overview of metallic and composite structural repair procedures. Duration: 3 days. Location: São José dos Campos or at the Customer Site. Number of Trainees: Max. 10. Attendance certification issued by the OEM.

ERJ 145 Thrust Reverser Troubleshooting System and Rigging
Provides instruction for troubleshooting the system under the Scenario of Failures concept. Duration: 2, 3, or 4 days. Location: At the Customer Site. Number of Trainees: Max. 6 (for 2 days). Max. 12 (for 3 days). Max. 20 (for 4 days 4 days). Attendance certification issued by the OEM.

Flight Simulator Training

Initial Pilot
Pilot familiarization program includes ground familiarization regarding aircraft systems, weight and balance, performance and normal/emergency procedures. EASA instruction consists of eight simulator sessions of four hours each, totaling 32 simulator hours per trainee, half in the right seat and half in the left seat. FAA instruction consists of seven simulator sessions of four hours each, totaling 28 simulator hours per trainee, half in the right seat and half in the left seat. Training administered by FlightSafety International.

Recurrent Pilot
Pilot training includes one week of ground school training and one simulator session of four hours. Training administered by FlightSafety International.

Initial Flight Attendant
Familiarization program consists of two days of classroom instruction providing a general description of aircraft safety procedures and flight attendant control panels. Training administered by FlightSafety International.

Cockpit Procedures Trainer (CPT) — Dry Hour and Wet Hour
Available “dry,” without an instructor, or “wet,” with an instructor, the CPT allows pilots to learn by doing. Training administered by FlightSafety International.

Full Flight Simulator (FFS)
State-of-the-art Full Flight Simulators are available by the hour with or without an instructor. Training administered by FlightSafety International.
eSolutions

AHEAD PRO
Displays the health of an aircraft’s components and systems graphically online and indicates maintenance actions requiring operator evaluation and decisions. The program improves both preventive and corrective maintenance to help reduce costs and increase E-Jet fleet availability. Available at FlyEmbraer.

ePerfBook
For airlines that seek a paperless cockpit solution, the ePerfBook is a tablet application that reduces operational costs and workload. Its calculation methods result in improved aircraft performance calculations when compared to printed performance books. The ePerfBook is suitable for use by pilots in the cockpit for takeoff data calculation and operational landing assessment, allowing for the replacement of paper performance books. Available at App Store for iPad®.

eSRM
Tracks and evaluates structural damages, finds the applicable fly-by disposition/repair, and generates all necessary related reports as a web-based application based on SRM-approved data and the use of 3D lightweight models. Available at FlyEmbraer.

eTechPubs
Provides convenient online access to Embraer technical publications on a 24-hour basis. This environmentally friendly system is a paperless solution designed to reduce both the time to find and retrieve technical information and the cost to maintain it. Also available through tablet application, multimedia, and hardcopies. Available at FlyEmbraer.

Note: operators with access to FlyEmbraer are provided automatic access to all acquired publications.
## Flight Operations Publications

<table>
<thead>
<tr>
<th>Manual Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Airplane Flight Manual (AFM)</strong></td>
<td>Establishes and defines the aircraft’s limitations, normal procedures, emergency and abnormal procedures, performance, and supplements. This certified manual is the main document governing flight operations in the context of certification.</td>
</tr>
<tr>
<td><strong>Dispatch Deviation Procedures Manual (DDPM)</strong></td>
<td>Provides illustrations depicting maintenance and operational procedures to secure or adjust inoperative items of equipment in order to proceed with the dispatch process.</td>
</tr>
<tr>
<td><strong>Flight Attendant Manual (FAM)</strong></td>
<td>Presents illustrations and outlines procedures that ensure proper operation of aircraft systems and equipment associated specifically with Flight Attendant responsibilities in facilitating a pleasant and safe flight for passengers.</td>
</tr>
<tr>
<td><strong>Master Minimum Equipment List (MMEL)</strong></td>
<td>Enhances dispatch rates and inhibits unnecessary cancellations and delays by establishing dispatch parameters at times when certain aircraft equipment or systems are inoperative.</td>
</tr>
<tr>
<td><strong>Operational Bulletins (OB)</strong></td>
<td>Produced when the need arises to quickly transmit technical and operational information to the appropriate response personnel.</td>
</tr>
<tr>
<td><strong>Airplane Operations Manual (AOM)</strong></td>
<td>Defines what is necessary to comply with operational regulations and serves as a day-to-day reference source for understanding aircraft operations and systems. Contains detailed normal/abnormal procedures, performance data for planning and dispatching, and systems descriptions. Employing pilot phraseology, the information is tailored to suit specific initial/recurrent training needs.</td>
</tr>
<tr>
<td><strong>Quick Reference Handbook (QRH)</strong></td>
<td>Contains performance and procedural information in a pilot’s checklist format used in a silent read-and-do fashion or in a challenge-response situation.</td>
</tr>
<tr>
<td><strong>Standard Operating Procedures Manual (SOPM)</strong></td>
<td>Aids in setting up procedures, techniques, philosophies and policies while reducing crew workload and maintaining the highest possible level of safety. Covers procedures that serve as common ground for all crewmembers for the sake of a well-standardized operation.</td>
</tr>
</tbody>
</table>
Flight Operations Publications, continued

Supplementary Performance Manual (SPM)
Provides supplementary performance data in tabulated format for providing flight planning purposes, ranging from long range cruise to maximum speed cruise. Data is presented by phase of flight and enables the determination of fuel, time and airspeed for prevailing ambient conditions.

Weight and Balance Manual (WBM)
Provides useful information as a certified document on how to manage cabin occupation and cargo loads for safe operation.

General Publication (GP)
Covers information of general interest, such as specific performance data for turn analysis, fuel conservation, etc.

Maintenance Publications

CD_SSM
System Schematic Manual

CD_IPC
Aircraft Illustrated Parts Catalog

CD_AMM (I)
Aircraft Maintenance Manual - Part I.

DVD_AMM (II)
Aircraft Maintenance Manual - Part II

CD_WM/FIM
Wiring Manual/Fault Isolation Manual

CD-CMM-170/175/190/195
Embraer Components Maintenance Manual

CD_SWPM

TCS
Task Card System

DVD-SB/SNL/PIL
Service Bulletin Set

Additional Miscellaneous Maintenance Publications

API — Aircraft Publications Index
APM — Airport Planning Manual
APUBM — Auxiliary Power Unit Build-Up Manual
ARM — Aircraft Recovery Manual
CAFF — Configuration of Aircraft for Ferry Flight
CPM — Corrosion Prevention Manual
ESC — Embraer Standard Catalog
FIM — Fault Isolation Manual
IGFER — Instructions for Ground Fire Extinguish and Rescue
ITEM — Illustrated Tool & Equipment Manual
MFEP — Maintenance Facility & Equipment Planning
MRB — Maintenance Review Board
MPP — Maintenance Planning Guide
NDi — Nondestructive Inspection Manual
PPBM — Power Plant Build-Up Manual
RMM — Ramp Maintenance Manual
SRM Part I — Structural Repair Manual
SRM Part II — Structural Repair Manual
SMRD — Scheduled Maintenance Requirements Document
TCM — Task Card Manual
TP — Technical Publication

All-Inclusive CD:
CPC — Consumable Product Catalog
ITEM — Illustrated Tool & Equipment Manual
SM — Standards Manual

Note: publications are valid for a one-year period.
POOL
Embraer’s flight-hour program, POOL, is the most cost-effective solution available in the market to reduce investment and risk associated with both scheduled and unscheduled maintenance. Gain access to economy of scale through sharing a pool of parts and thereby minimizing upfront investment in expensive repairable inventories and resources. The POOL Program allows customers access to a huge and reliable stock, with Embraer managing the repair process.

Key Benefits:
- Parts availability
- Minimized risk of surplus
- Predictable and relieved cash flow
- Savings of up to 45% of the investment when compared with standard operation (RSPL) over a 10-year period
- Increased fleet service, including access to tooling, handling of components by GSEs (optional), and placement of components advanced stock at Customer’s location (optional).

Parts Consignment Program
A solution that keeps necessary parts on hand and helps customers reduce costs and improve cash flow while maintaining aircraft availability. Embraer inventory is stored at the Customer’s facility, eliminating parts procurement labor cost, parts obsolescence loss, freight costs, and downtime.

Key Benefits:
- High spares availability
- Lower inventory cost of ownership
- Elimination of parts obsolescence losses
- Risk of surplus completely eliminated
- Lower per-unit cost of freight

ECIP (Embraer Collaborative Inventory Planning)
Involving almost 45% of initial provisioning components, ECIP is a supply chain solution that helps customers keep proper stock levels of high-turn components.

Key Benefits:
- 7 days lead time
- Inventory reduction
- Freed-up warehouse space
- Spare parts price competitiveness and stability
- Reduction in transportation costs
- Optimized supply chain with collaborative planning
Materials Programs, continued

Rental
Available for GSEs and Insurance Items, the program offers the benefit of using high-cost/low-utilization items at the very best prices, thereby avoiding high investments and long-term obligations. Rental is also a suitable solution for situations of low-frequency scheduled maintenance and accidental damages, allowing customers to secure what is needed to support those situations, with very little up-front cash.

EPEP (Embraer Parts Exchange Program)
Designed to offer repairable parts on an exchange basis, the EPEP provides part availability in far less time than usual, avoiding AOG situations and delays due to lack of specific parts. Customers enjoy access to a huge and reliable stock inventory, with Embraer managing the repair process. Serviceable parts are made available to the Customer prior to receipt of the defective ones, providing a rapid even exchange that benefits the overall spares inventory while reducing costs.

CSO (Customer Stock Optimization)
A new Material Support concept with the main objective of helping customers achieve optimized stock levels by using real parameters from their operation.
Key Benefits:
- Improved customer service levels
- Reduced inventory
- Reduced carrying cost
- Reduced operating cost

Repair Management
With this service, Customer can take advantage of Embraer’s highly specialized components repair network, reducing risks and guaranteeing competitive prices and TATs.
Key Benefits:
- Predictable and relieved cash flow
- Reduced risk
- Improved process efficiency, reducing administrative costs

Warranty Repair Management
Solution for repair management during in-warranty period. Embraer will act on behalf of Customer, processing all claims within the contractual components scope.
Key Benefits:
- Reduced risk
- Improved process efficiency, reducing administrative costs
Maintenance and Engineering

Aircraft Maintenance

Complete Painting
Complete removal of old paint, new paint layout preparation, and complete painting according to Customer layout specifications.

Component Repairs
A comprehensive and increasing capability list of components (Electrical/Electronic/Hydraulic/Mechanic) that can be repaired/overhauled/inspected/modified on a short turn around time and competitive costs.

Engine Services
- Engine repair and overhaul (Overhaul R&R AE3007)
- Inspections (Borescope, NDT and others)
- Parts repair
- Engine accessories — inspection, repair and overhaul, testing
- Engineering support service

Fleet Management
Fleet Maintenance planning, configuration analysis and airworthiness management.

Interior Refurbishment
According to Customer requirements.

Landing Gear Overhaul
Full landing gear overhaul and repair support for ERJ and E-Jets customers seeking minimal downtime. At the Customer’s discretion, the service may include the overhaul plus an advanced exchange to keep the airplane in service.

Lease Transition Support
A comprehensive service package to the aircraft leasing transition, which may include physical and documental receiving inspection, reconfiguration planning and execution, re-certification and assets/spare parts repositioning.

Line & Base Maintenance
Short TAT (Turn Around Time), high quality standards, and integrated maintenance offering full range of Line, Basic or Heavy inspections on all Embraer aircraft types.

Mobile Team for AOG support / Customer on site support
Provision of highly qualified Technical crew/material resources for supporting the Customer according Customer requested location/needs.
Maintenance Programs

**Aircraft Maintenance Program (AMP)**
Preparation of the Aircraft Maintenance Program, based on the MRBR/MPD, local regulations, and additional tasks defined by customers. Service includes a bridging program and approval support for second-hand aircraft.

**Fleet Maintenance Management**
Defines the optimum schedule and aircraft maintenance procedures in order to optimize fleet availability and costs.

**Maintenance Check Assessment**
Assesses the following aspects of the maintenance check process: work scope, staff sizing, maintenance workflow, material flow (planning and usage assessment), and execution difficulties.

**Maintenance Checks Planning**
Assesses the following in order to facilitate planning for a maintenance checks program: staff sizing, tasks sequencing, material forecast; manpower requirements (routine, non-routine, and overtime).

**Maintenance Cost Assessment and Consulting**
Provides a detailed breakdown and analysis of a Customer’s maintenance costs, both direct (DMC) and indirect (IMC).

**Maintenance Cost Monitoring**
Defines procedures for maintenance cost management in areas such as budgeting, supplier contracts negotiation, and warranties in order to provide visibility and achieve significant cost reductions.

**Maintenance Data Analysis for Stand-Alone Tasks Optimization**
Provides field technical evaluation to optimize task intervals.

**Maintenance Plan Bridging Program (MPBP)**
Defines work scope necessary to change from one maintenance program to another.

**Maintenance Plan Customization (MPC)**
Proposes optimum scenarios based on the Customer’s operational profile and structure.

**Maintenance Program Evolution and Optimization**
Presents concepts for developing an internal process for the ongoing evolution and optimization of an airline’s Aircraft Maintenance Program. Topics include: CASS, MSG-3 Analysis, and Reliability Analysis.

**MSG-3/MRB Process**
Provides an overview of the MSG-3 Methodology and MRB process for operators and authorities. This training is required for MRB activities.

**Staff Sizing**
Analyzes staff structure necessary to support a Customer’s maintenance program.

**Technical Analysis and Dispositions for Maintenance Program Issues**
Evaluates maintenance program issues and provides technical support for effective solutions.

**Audit Program**
Assesses a Customer’s MRO, evaluating processes, quality standards, and commercial policy on maintenance services.
Technical Support Consultancy

Customized consultation based on the Customer’s operational profile and climatic conditions in order to bring the fleet to the highest levels of operational efficiency and performance.
Aircraft Modification

Cabin Modifications
Providing modernization solutions — with turnkey installation and integration such as passenger seating and re-pitch, passenger class conversion, class divider installations, interior finishes, in-flight entertainment system installations and upgrades, and new features development.

Aircraft System Modifications
Implementation of modifications incorporated through officially recognized Service Bulletins, which contain the engineering procedure and parts required for implementation, all needed interface with approval authorities during the certification process, associated kits, and updates to relevant technical publications.

Lease Return Management Service
A comprehensive service package to transfer aircraft between lessee and lessors, including documentation, painting, CAMO, reconfiguration, and re-certification. Customers choose from a list of services to match their needs.
### Flight Operations

<table>
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<th>Service</th>
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<tbody>
<tr>
<td><strong>Acceptance Flight Pilots</strong></td>
<td>Embraer pilots with extensive operational and maintenance experience assess airplane systems during flight to help ensure the aircraft is airworthy.</td>
</tr>
<tr>
<td><strong>Enroute Supervision</strong></td>
<td>Provides qualified pilots to monitor customers’ pilots during routine procedures of aircraft operation (not intended as a form of training).</td>
</tr>
<tr>
<td><strong>EST Flight Pilots</strong></td>
<td>Flight test pilots check the airworthiness of the aircraft through inspection, flight testing, and evaluations of flight performance, engine operation, and flight characteristics of modified production aircraft. Specific maneuvers are flown, allowing the results to be measured and the design to be evaluated.</td>
</tr>
<tr>
<td><strong>Examiner Pilots (TRE)</strong></td>
<td>These technically qualified pilots are authorized to conduct flight and/or simulator checks on behalf of the civil authorities.</td>
</tr>
<tr>
<td><strong>Ferry Flight Pilots</strong></td>
<td>Provided for returning an aircraft to base, delivering an aircraft from one location to another, such as to and from a maintenance base.</td>
</tr>
<tr>
<td><strong>Flight Attendant Instructors</strong></td>
<td>Provided for safety and emergency procedures training for cabin crew members. Embraer is committed to ensuring that customers maintain the safety of the aircraft while being prepared to handle standard procedures and any unforeseen circumstances.</td>
</tr>
<tr>
<td><strong>Flight Attendant Services</strong></td>
<td>Flight attendants provide passengers with highest standards of customer care while exceeding the rigorous safety standards required of today’s airline cabin crew members.</td>
</tr>
<tr>
<td><strong>Line Pilot Instructors (TRI)</strong></td>
<td>Provided to support a Customer’s flight operations worldwide while interacting with Embraer Engineering, Publications, and Flight Testing. These highly skilled flight deck instructors are available for operational start-up, local, and line training worldwide.</td>
</tr>
<tr>
<td><strong>Pilot Leasing</strong></td>
<td>Provides experienced pilots for the purpose of acting as the Customer’s pilot-in-command during revenue flights, from and to the Customer’s operation base.</td>
</tr>
</tbody>
</table>
**Flight Operations, continued**

**Simulator Pilot Instructors**
Provide flight simulator training for initial, transition, upgrade, and recurrent under rules of the appropriate national civil aviation regulatory authority. Embraer simulator instructors are qualified to conduct special training such as Low Visibility Training (LVTO, CAT II, CAT IIIA/B), Steep Approach, LOFT, etc., as well as proficiency checks.

**Flight Operations Consultancy**

**Flight Operations Onsite Support**
Qualified and experienced Flight Operations Engineer provides onsite customer support, taking into account the airline’s specific needs and policies.

**Flight Operations Publications Customization**
Development of customized Flight Operations Publications pertaining only to airplane models and optional items specific to a given airline. (Note: not available for EMB 120)

**Special Performance Studies**
Provides research regarding a particular type of operation such as economic cruise speeds, emergency descent and driftdown analysis.

**Takeoff Turn Analysis**
Defines takeoff turn procedures for optimizing payload in a specific operational environment.

**Tailored Performance Data**
Support for development of custom operational and performance standards such as optimum cruise speeds within a certain range of temperatures. Collected data made available in airline performance manuals and checklists.

**Weight and Balance Loadsheet**
Development of tailored airline Balance Charts taking into account envelope curtailments. Charts can be used for primary weight and balance calculation as an alternative to electronic systems.

**Weight and Balance Solutions**
Provides complete solutions regarding weight and balance issues, accurate W&B system configuration, and assistance in producing the airline’s own related publications.

**Flight Operations Multimedia**

**E-Jets Operational Video Collection**
Flight crew operational videos staged in real aircraft scenarios range from complete training visual aids to procedures briefings covering issues such as flight safety, piloting skills, and crew awareness. Approximately 30 titles available.
Flight Operations Performance Software

**Airplane Performance Monitoring (APM)**
Tracks long-term performance deviation trends through analysis of flight recorder data and ACARS APM reports, including assessment of fuel flow, engine N1, and specific range.

**Climbout**
Provides useful information for climbout studies, such as evaluation of all-engine takeoff flight path, evaluation of engine failure after V1, compliance analysis with SID procedures, and compliance analysis with terrain clearance avoidance procedures.

**Driftdown Analysis Software**
Ascertains — quickly and precisely — whether terrain clearance and obstacles in an intended route can be cleared during the one-engine-inoperative drift to a new altitude.

**Embraer Cost Index Tool (ECIT)**
Used in flight to determine the most economical speed and flight level for a given cost index. Designed for EFB format and is usable on laptops.

**Emergency Descent Software**
Provides an emergency descent analysis to ascertain whether terrain clearance and obstacles in an intended route can be cleared during descent to a new altitude due to loss of pressurization.

**Embraer Portable Operational Package (EPOP)**
EFB-based software supports a paperless cockpit by providing readily accessible, aircraft-specific data, including optimized takeoff and landing calculations, weight and balance figures, and miscellaneous flight operations publications.

**Inflight Performance Software**
Generates inflight performance data useful in a flight planning system that considers such variables as speed schedule, configuration, temperature and altitude in various phases of flight: climb, cruise, descent, and holding.

**Route Analysis Software**
Provides calculations of estimated time and required fuel for a given route at an optimized cruise altitude. Windows-based user-friendly interface supports building a customized route database that can be printed in a standard operational flight plan format.

**Runway Analysis Software**
Provides precise airport-specific takeoff and landing data for safe aircraft operation, including maximum takeoff weight analysis in conformance with regulations and based on considerations such as obstacles, ambient conditions, and available runway distances.

**SCAP Module**
Computational program allows customers to calculate takeoff and landing performance using their own Fortran calling program based on Standard Computerized Airplane Performance from the factory. Available for Windows and Unix platforms.

**Weight and Balance Software**
Delivers precise weight and balance calculations as a pre-departure task. IATA-format load manifest is filled out instantly, ready for distribution and record keeping. Default data for user-defined values minimizes data entry for catering weights, passenger weight, and constrained CG envelope. The system constantly checks for baggage, cargo, fuel and passenger overload that prevents exceeding structural or CG limits.

**ePerfBook**
Takeoff and landing performance for tablets, as described in the eSolutions section.
**TSP (Total Support Package)**
Based on a flight-hour concept, this is a comprehensive and integrated solution focused on material support, maintenance activities, and logistics & engineering services.

**Key Benefits:**
- One-stop shop
- Improved fleet service level
- Guaranteed maintenance cost and predictable budgets
- Guaranteed availability of parts
- Guaranteed turn-around-time
- Reduced investment in spares and improved cost control

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