



EMBRAER

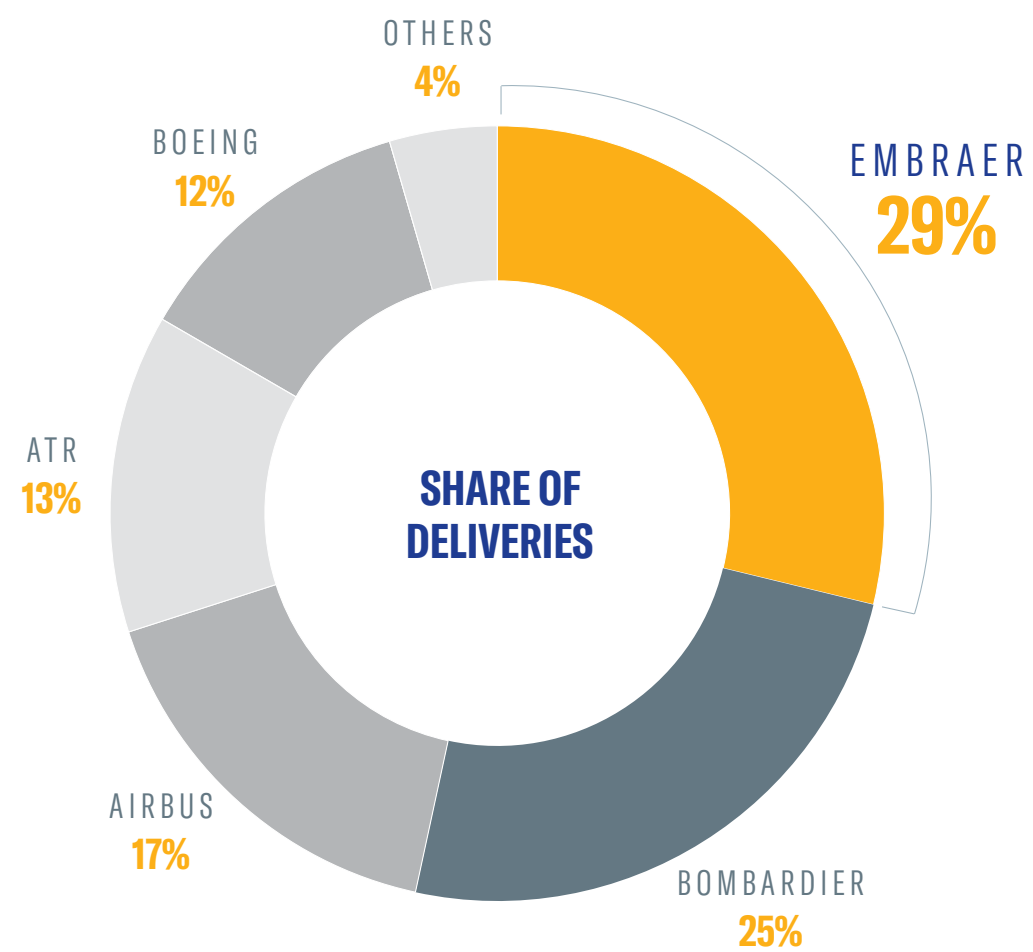
THE RIGHT SIZE
FOR LATIN AMERICA ➤

MARKET LEADERSHIP

UP TO 150-SEAT
AIRCRAFT

COMMERCIAL
AVIATION
CUSTOMERS

111 Airlines
60 Countries
1,700+ in Service





Dear fellow colleague,

If you, like me, have been part of Latin America aviation over the last decade, you have seen many changes. Important consolidations, such as LAN and TAM joining forces to become the biggest airline in Latin America, the rise of LCCs, and Avianca's acquisition of small airlines to increase its footprint in the region are some examples of how much has changed.

Ten years ago, TAM and GOL shared more than 90% of Brazil's domestic market. And then Azul was born, flying E-Jets to secondary cities that the two incumbents could not fly with their narrow bodies. Today, Azul serves twice as many cities as its main rivals. Similarly, Austral opened more than 50 routes in Argentina between 2007 and 2017. Copa and Aeromexico, with their mixed fleets, were able to open and sustain service for a broad range of markets, increase frequency and connectivity, and feed their hubs.

Network capillarity suffers when airlines have only big airplanes. But carriers with more versatile fleets can offer more destinations to everyone. Truly, the competitive environment has changed in many ways.

Despite this, old issues persist - the lack of investment in infrastructure, high taxes and airport fees, volatile economies, and fluctuating market demand. These things challenge airline capacity management, especially for carriers that do not have adaptable fleets to better respond to swings in demand. Sometimes, airlines are even held hostage by their own inflexible business models.

More than 70% of Brazil's commercial air transport market is comprised of low/mid-density city pairs (up to 400 PAX/day) served mostly by just one daily flight. We can expect this percentage to increase since the number of these mid-density markets is increasing every year. For us, it is clear - right-sized aircraft are the best way to improve service for both consumers and airlines.

Latin America has many of the essential elements to build a better future: modern and efficient airlines, great demographics and geographical characteristics, and a growing middle class. When you combine these with the right balance of infrastructure, modern regulation, and right-sized fleets, airlines can unleash the huge potential of the region, allowing it to be better served and more profitable for airlines.

I am sure we will meet soon!

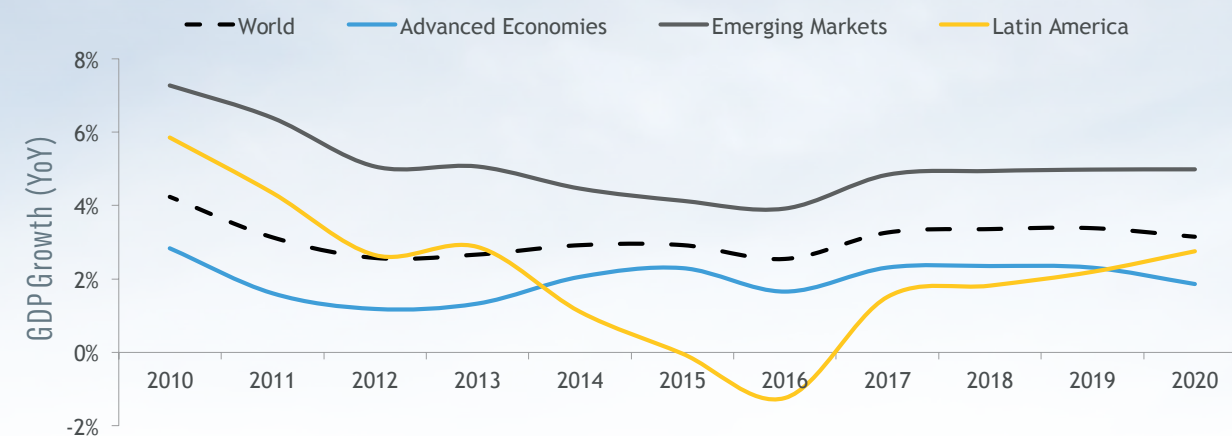


**REINALDO
KRUGNER**

Vice President Sales & Marketing
Embraer Commercial Aviation
Latin America & Caribbean

LATIN AMERICA MACROECONOMIC SCENARIO SNAPSHOT

Air travel demand is directly related to GDP growth. Here is how GDP has evolved, and its future trend for the region:



Source: IHS Markit

LATIN AMERICA GDP TO GROW ~ 2% FROM 2017

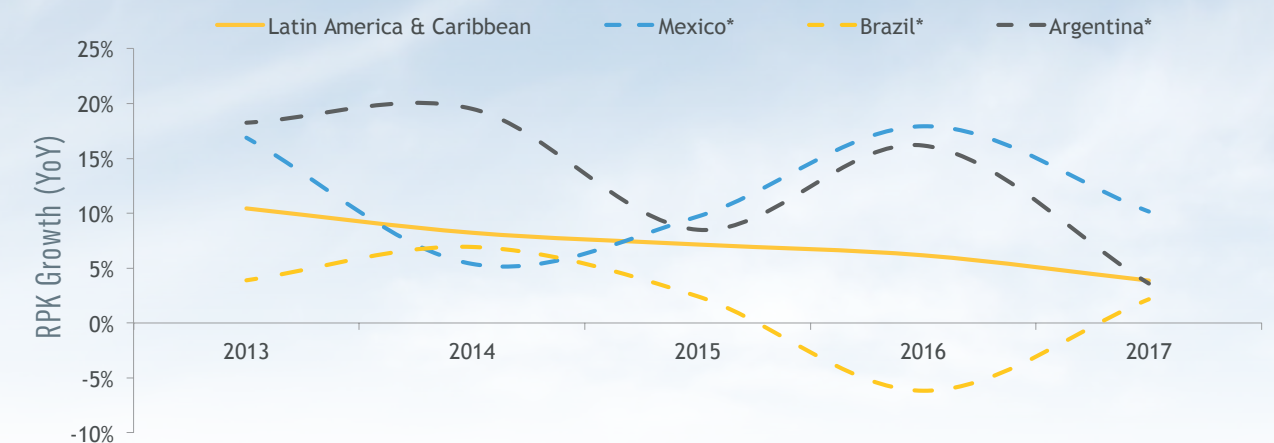
At the beginning of the decade, notice the robust GDP growth for Latin America. It gradually declined until it started recovering after the 2015-16 recession. The decline was particularly severe in Brazil and Argentina. Economies in the region have recovered slightly since 2017 with 2% average GDP growth. In the near-term, forecasts indicate that recovery will continue. However, GDP growth will still be below the world average, and be about half of the average of other emerging markets. Moreover, there are several risks associated with this growth forecast: the presidential election in Brazil, how Argentina will recover from its severe currency depreciation, and more importantly, the

impact of U.S. protectionist policies on the region's economies.

As we see it, there are some uncertainties in the forecast. Airlines need to have sufficient flexibility in their fleets to prepare for different demand growth scenarios right from the start. We have seen airlines bravely fight to adjust capacity and, as a consequence, incur high costs associated with aircraft return conditions, early lease contract terminations, postponement of new aircraft deliveries, and worse, reducing flight frequencies or withdrawing from markets. That leaves the door wide open for competitors to fill the void.

HETEROGENEOUS DEMAND GROWTH

We evaluated how air travel demand (measured in RPKs) evolved in the region's top three domestic markets. There are different growth patterns:



Source: Sabre MI

* Domestic traffic, only

LATIN AMERICA RPK GREW ~ 4% IN 2017

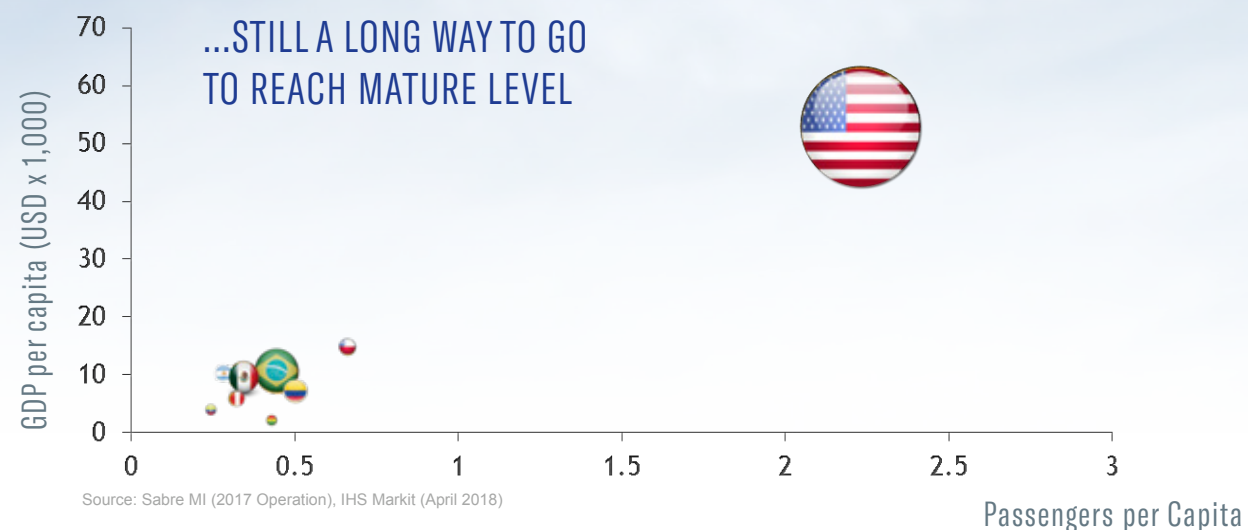
In Mexico and Argentina, growth has been consistent and driven by LCCs that have stimulated the market on the one hand, and severely reduced yields on the other. In Argentina, new aviation policies that authorized new routes and new airlines also contributed to demand growth. In Brazil, the deepening economic crisis severely impacted demand for air travel - domestic RPKs fell 5% in 2016. Even with the slight

improvement in 2017, traffic in the country is only at 2014 levels. Brazil "lost" almost 4 years of demand.

When we compare the average in the region, traffic is still growing (intra-region RPKs grew around 4% in 2017), but at a much slower pace than the beginning of the decade. Therefore, upgauging aircraft size may not be the best solution for every airline.

POOR PENETRATION: AN OPPORTUNITY FOR GROWTH AND MARKET DIVERSIFICATION

Here is a graphic representation of demand for air travel and market penetration for the region's main domestic markets. The size of each bubble indicates the number of 2017 domestic passengers in each country. Brazil is the biggest market in the region. Other domestic markets have different penetration levels. Chile has the greatest per capita GDP and people there have a higher propensity to travel. Accordingly, Chile has more air travel passengers per capita than any other Latin American country.



It is easy to see that the propensity to travel by air in all of the countries is still in its infancy compared to the USA. There is, naturally, tremendous opportunity for growth. On the other hand, there are several barriers that restrict the full potential of the region. Some of these are:

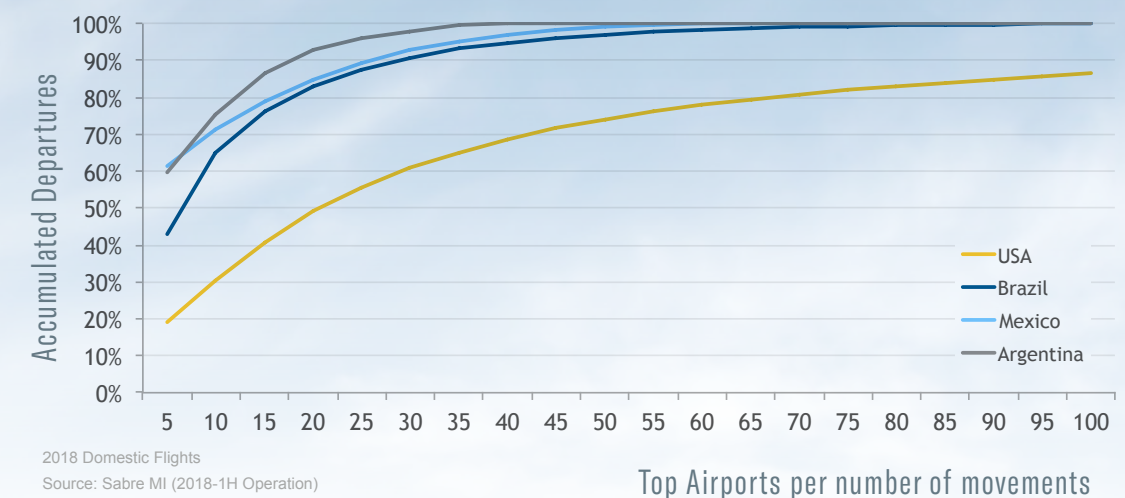
Lack of Infrastructure Investment: ALTA estimates that if market demand continues to grow at the current rate, there will be a gap of around USD 53 bi in aviation infrastructure to cope with passenger demand. Even today, some of the most important airports are reaching their capacity limit. Mexico City is the most critical, but Bogota and some of the main airports in Brazil have similar problems.

Fuel: The cost in Latin America is among the highest in the world. New-generation aircraft are important to help keep fuel costs under control. Embraer's fuel-efficient E2 family addresses this issue very effectively.

Route Concentration: Airlines operate mainly on trunk routes. They compete against each other for market share on core city pairs. This impacts everyone's bottom line. In many countries, especially in Brazil, medium-sized cities are developing faster, both in terms of population and economic growth. Airlines are not exploring these opportunities, often because they do not have the right aircraft capacity. Rightsizing is the answer to this.

OPPORTUNITY FOR CONNECTIVITY ON HIGH-YIELD ROUTES

This graph compares domestic traffic concentration (measured in RPKs) of the biggest Latin America markets and the USA.



The Brazilian domestic market is twice as concentrated as the USA domestic market. When we compare market sizes (table below), the USA has almost **8 times more passengers than Brazil yet the aircraft of Brazilian airlines have, on average, 36 more seats.** With such big airplanes, domestic airlines are not able to serve mid-density, high yield routes. Regional aviation in the USA is highly developed. In Latin America, there is a lot of room for improvement since traffic is highly concentrated in just a handful of airports. This is a typical characteristic of many countries in Latin America.

	USA	BRAZIL	MEXICO	ARGENTINA
PASSENGERS (MILLIONS)	726,4	92,1	44,0	12,5
AIRCRAFT SIZE (SEATS)	111	147	126	130

One outcome of Latin America's poor investment in infrastructure and large aircraft size is that only 40 new intra-regional routes were opened in the region in the last 4 years. In Brazil, 45 domestic markets were canceled between 2013 and 2017 due to a national fleet that was not able to accommodate variations in demand. Most of the traffic growth was simply on the same routes.

Embraer's E-Jets right-sized capacity and the E2's lower operating costs will allow Latin American airlines to explore opportunities on high-yield, mid-density routes. These aircraft will also give them the flexibility to better manage capacity to cyclical variations in demand.

The E2 will start flying in Latin America in 2019. We are sure to see the positive impact the new airplane will have, especially on airline bottom-line results.



MARKET OPPORTUNITIES

MOST EFFICIENT CHOICE

- ✓ To replace A319/B737-700
- ✓ As the LCC route opener

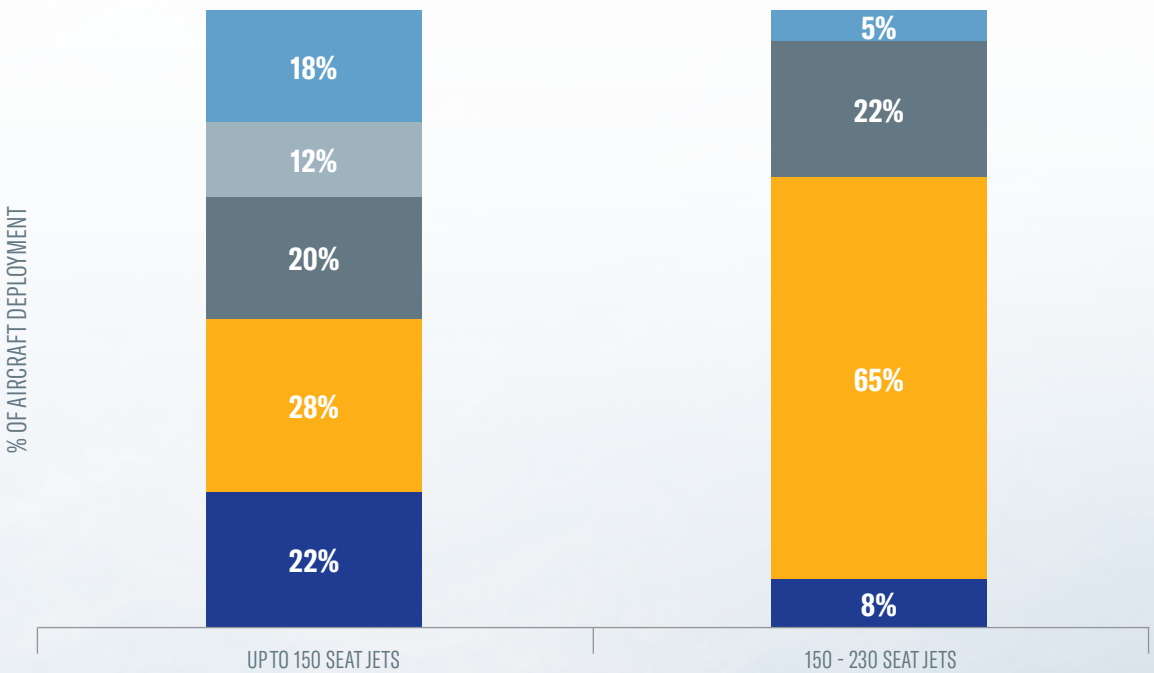


NATURAL CHOICE

- ✓ For current E-Jets operators
- ✓ To bridge the gap between Regional Jets and Narrow Bodies
- ✓ For the emerging markets



E2 FLEXIBILITY



Source: Innovata, Embraer



RIGHT-SIZING



TP REPLACEMENT



SMALLER JETS REPLACEMENT



ORGANIC GROWTH



NEW MARKETS



A NEW DESIGN ON A PROVEN PLATFORM

UPGRADED AVIONICS

E-Jets E2 have the same Pilot Type Rating as the E-Jets E1

New horizontal displays with 45% more area

New Flight Management System FMS and Central Maintenance Computer CMC

NEW LANDING GEAR

Fully enclosed wheel fairing improves aerodynamics, and reduces fuel burn

New trailing link design reduces landing peak loads, and improves ground handling & balance

Easier to maintain and less prone to oil or gas leakages

EFFICIENCY IMPROVEMENTS ACROSS THE BOARD, 17.3% FUEL BURN REDUCTION:

11% from New Engines,
4.8% from New Wings and Aerodynamic cleaning,
1.5% from 4th Generation Fly-By-Wire

NEW WING

A bespoke wing design optimized for each family member, E175-E2, E190-E2, E195-E2

Highest aspect ratio of all single aisle aircraft, optimizing performance and fuel burn

Much improved high lift device systems (slats & flaps)

NEW INTERIOR

Each passenger can bring one carry-on luggage

All passengers enjoy Embraer's award winning 4-abreast fuselage

All passengers have their own individual PSU (Passenger Service Unit)

4th GEN FULL FLY-BY-WIRE

Delivers performance improvements with better safety margins

Decreases fuel burn by reducing drag from trims

Allows reduction in structural weight all over the aircraft

UPDATED FUSELAGE

Aerodynamic cleaning

Smarter use of new materials

Quietest Cabin

NEW STABILIZER

Less wet area, less skin drag, less fuel burn

Reduced weight, thanks to 4th Gen FBW integration

NEW ENGINE

Double digit fuel burn reduction

Lower noise and lower emissions

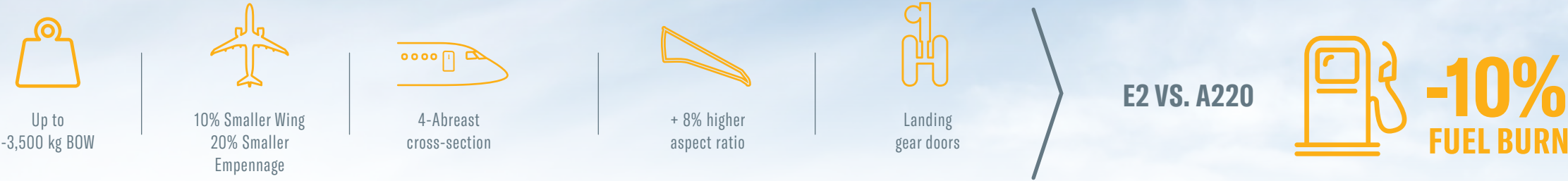
SETTING NEW STANDARDS FOR THE FUTURE

E2 - THE PROFIT HUNTER



THE MOST FUEL EFFICIENT

E-JETS E2 ADVANTAGES VS. A220
Assumption: 600 nm



THE MOST EFFICIENT MAINTENANCE

	E-JETS E2	A220	Δ E-JETS E2 / A220
INTERMEDIATE CHECK	1,000 FH	850 FH	+18%
BASIC CHECK	10,000 FH	8,500 FH or 36 MO	+18%
STRUCTURAL INSPECTION	20,000 FC / 40,000 FC	15,000 FC / 30,000 FC	+33%
CPCP INSPECTION	8 and 16 years	6 and 12 years	+33%



HIGHEST AIRCRAFT AVAILABILITY

HANGAR VISITS IN 10 YEARS SCENARIO
2,500FH/year

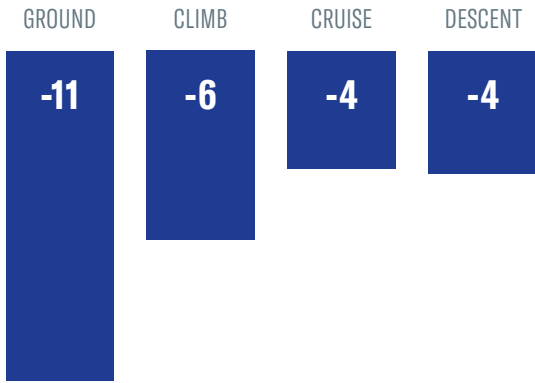


One less hangar visit means -\$200k on basic check costs and \$1M of extra revenue from the 15 days the E2 is available for flying.

QUIETEST NEW GENERATION SINGLE AISLE AIRCRAFT

CABIN NOISE LEVEL
More comfort to passengers in all flight phases

E2 vs A220 Cabin Noise:





EMBRAER IN LATIN AMERICA & CARIBBEAN



11 COUNTRIES

15 OPERATORS

231 AIRCRAFT

ONE EMBRAER JET TAKES OFF EVERY TWO MINUTES

E195-E2



E195-E2 DUAL CLASS CONFIGURATION

120 SEATS - 12 AT 52" / 108 AT 31"

Business class with staggered seats



E195-E2 SINGLE CLASS CONFIGURATION

132 SEATS AT 31"



E195-E2 SINGLE CLASS CONFIGURATION

146 SEATS AT 28"



PERFORMANCE	
Max Cruise Speed	M 0.82
Takeoff Field Length	1,915 m
MTOW, ISA, SL - standard engine	6,283 ft
Landing Field Length	1,375 m
MLW, ISA, SL	4,512 ft
Takeoff Field Length	1,430 m
TOW for 500nm, full PAX*, ISA, SL, standard engine	4,692 ft
Service Ceiling	41,000 ft
Range	2,600 nm
Full PAX*, LRC, Typical Reserves, 100 nm alternate	4,815 km

* Single class seating, Pax weight = 100 kg = 220 lb

WEIGHTS			
Maximun Takeoff Weight	61,500 kg	135,585 lb	
Maximum Lading Weight	54,000 kg	119,050 lb	
Maximum Payload	16,150 kg	35,605 lb	
Maximum Usable Fuel*	13,690 kg	30,181 lb	

* Fuel Density = 0.803 kg/l

FULL PAX
PASSENGER AT 100KG
CRUISE AT LRC SPEED
85% ANNUAL TEMPERATURE
85% ANNUAL EN ROUTE WINDS
ISA+10° C EN ROUTE TEMPERATURE
150NM ALTERNATE
FAR INTERNATIONAL RESERVES
2% AIRWAYS ALLOWANCE

E195-E2 RANGE

PW1923G - 132 SEATS



E190-E2



E190-E2 DUAL CLASS CONFIGURATION

96 SEATS - 12 AT 52" / 84 AT 31"

Business class with staggered seats



E190-E2 SINGLE CLASS CONFIGURATION

106 SEATS AT 31"



E190-E2 SINGLE CLASS CONFIGURATION

114 SEATS - 114 AT 29"



E190-E2 RANGE

PW1922G - 106 SEATS



PERFORMANCE	
Max Cruise Speed	M 0.82
Takeoff Field Length	1,615 m
MTOW, ISA, SL - standard engine	5,299 ft
Landing Field Length	1,215 m
MLW, ISA, SL	3,987 ft
Takeoff Field Length	1,165 m
TOW for 500nm, full PAX*, ISA, SL, standard engine	3,823 ft
Service Ceiling	41,000 ft
Range	2,850 nm
Full PAX*, LRC, Typical Reserves, 100 nm alternate	5,278 km

* Single class seating, Pax weight = 100 kg = 220 lb

WEIGHTS			
Maximun Takeoff Weight	56,400 kg	124,341 lb	
Maximum Lading Weight	49,050 kg	108,137 lb	
Maximum Payload	13,500 kg	29,762 lb	
Maximum Usable Fuel*	13,690 kg	30,181 lb	

* Fuel Density = 0.803 kg/l

FULL PAX
PASSENGER AT 100KG
CRUISE AT LRC SPEED
85% ANNUAL TEMPERATURE
85% ANNUAL EN ROUTE WINDS
ISA+10° C EN ROUTE TEMPERATURE
150NM ALTERNATE
FAR INTERNATIONAL RESERVES
2% AIRWAYS ALLOWANCE

E175-E2



E175-E2 THREE CLASSES CONFIGURATION

80 SEATS - 8 AT 52" / 60 AT 31" / 12 AT 30"

Business class with staggered seats



E175-E2 SINGLE CLASS CONFIGURATION

88 SEATS AT 31"



E175-E2 SINGLE CLASS CONFIGURATION

90 SEATS - 50 AT 30"/ 40 AT 29



PERFORMANCE	
Max Cruise Speed	M 0.82
Takeoff Field Length	1,745 m
MTOW, ISA, SL - standard engine	5,726 ft
Landing Field Length	1,345 m
MLW, ISA, SL	4,413 ft
Takeoff Field Length	1,370 m
TOW for 500nm, full PAX*, ISA, SL, standard engine	4,495 ft
Service Ceiling	41,000 ft
Range	2,000 nm
Full PAX*, LRC, Typical Reserves, 100 nm alternate	3,704 km

* Single class seating, Pax weight = 100 kg = 220 lb

WEIGHTS		
Maximum Takeoff Weight	44,800 kg	98,767 lb
Maximum Lading Weight	40,000 kg	88,185 lb
Maximum Payload	10,600 kg	23,369 lb
Maximum Usable Fuel*	8,522 kg	18,788 lb

* Fuel Density = 0.803 kg/l

FULL PAX
PASSENGER AT 100KG
CRUISE AT LRC SPEED
85% ANNUAL TEMPERATURE
85% ANNUAL EN ROUTE WINDS
ISA+10° C EN ROUTE TEMPERATURE
150NM ALTERNATE
FAR INTERNATIONAL RESERVES
2% AIRWAYS ALLOWANCE

E175-E2 RANGE

PW1700 HIGH THRUST - 88 SEATS





E-JETS E2: THE BEST SINGLE-AISLE AIRCRAFT





LATIN AMERICA: EMBRAER'S HOME

SERVICE AND SUPPORT THAT IS CLOSE TO YOU

**EMBRAER OFFERS A WHOLE SUITE OF SERVICES
AND SUPPORT TO ENSURE YOUR OPERATIONS
RUN SMOOTHLY AND WORRY-FREE.**

GLOBAL, REGIONAL AND LOCAL SUPPORT NETWORK

Our Customer Care Center (CCC) in Brazil is manned around-the-clock, vigilantly supporting airlines with specialized technical support, return-to-service and spare parts assistance. Our parts warehouse is manned 24/7 and is ready to respond quickly to material requirements from our customers in the region. There are two authorized MROs for Embraer E-Jets - one in Brazil and one in Argentina. There are also three independent service centers - in El Salvador, Costa Rica and Mexico.

TOTAL SUPPORT PROGRAM

Embraer's Total Support Program (TSP) is designed to provide airlines with a portfolio of aircraft base maintenance, material, and technical services for a simple flight hour rate. Enrollment in TSP gives airlines access to the spare parts pool program, which can reduce initial parts investment by up to 80%. TSP also includes an assured slot at one of Embraer's authorized service centers in the region, based on projected aircraft utilization. The program also includes access to AHEAD Pro - Embraer's Data Analytics Program - to keep your fleet performing its best.

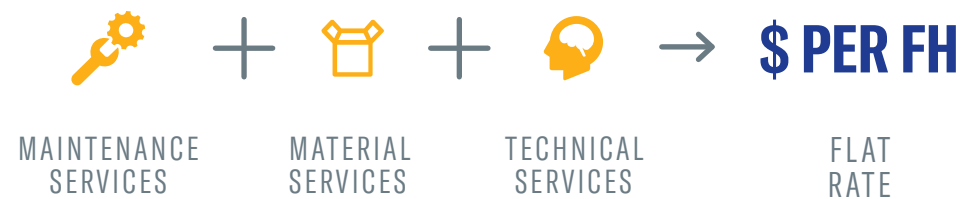


EMBRAER OFFERS AN ESTABLISHED SUPPORT NETWORK IN THE REGION



*FFS in USA. Independent Providers in Argentina, Brazil and Mexico.

EMBRAER TOTAL SUPPORT PROGRAM





CHALLENGE.
CREATE.
OUTPERFORM.

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