



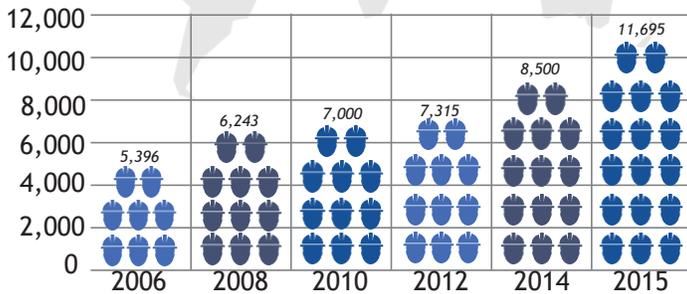
THE ROUTE TO HIGH PROFITS: THE TIJUANA AEROSPACE AND DEFENSE INDUSTRY

TIJUANA: MEXICO'S AEROSPACE & DEFENSE HUB

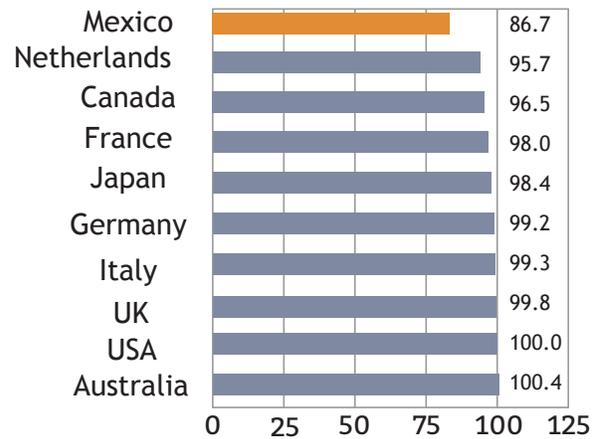
WHY MEXICO AND WHY TIJUANA? THE EXPERTS AGREE...

Within Mexico's aerospace sector, **Tijuana** is the **leading aerospace hub** with the highest concentration A & D manufacturing operations.

Tijuana Aerospace and Defense Employment



KPMG Competitive Alternatives 2014 Cost Index for Aerospace Industry



A large base of **37 existing aerospace companies** within Tijuana itself and even more in the State of Baja California.

A "next door", **nearshore location** with quick logistical access to the West Coast of the U.S.



Savings: "Mexico is less expensive than China" according to the new Boston Consulting Group 2014 Cost-Competitiveness Index.

An experienced, **quality-conscious** and highly **bilingual workforce** in a low-union, business friendly environment.

40 years of experience in Aerospace and Defense manufacturing

ACCESS TO CUSTOMERS AND SUPPLIERS



Great access isn't just about outbound shipping. It's also about inbound **components** and **materials**.





TIJUANA

MEXICO'S AEROSPACE HUB

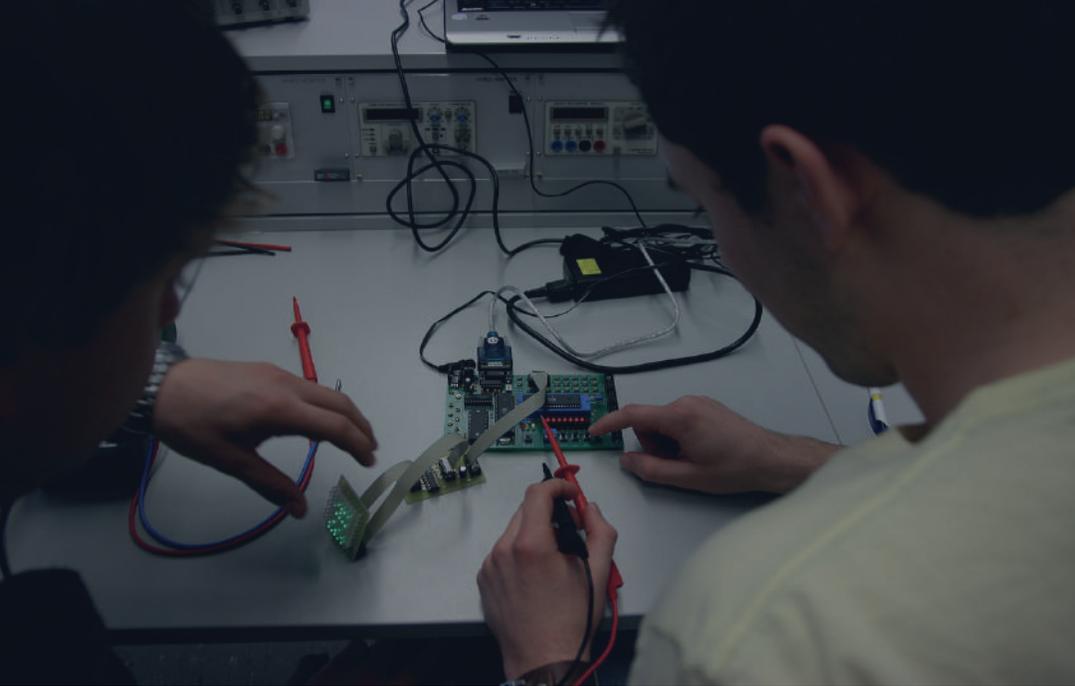
Long considered one of the primary economic drivers of the southwestern United States and, more recently, a key growth industry in Europe, Brazil and Asia, aerospace and defense manufacturing is emerging as an important sector in Mexico's economy as well. Within Mexico's aerospace sector, **Tijuana is the leading aerospace hub with the highest concentration A&D manufacturing operations.**

Baja California stands as Mexico's top aerospace cluster, with more than 76 aerospace companies operating within the state. The city of Tijuana alone is home to the **largest concentration of operating aerospace firms in the country (37)** and has been developing a specialized aerospace and defense manufacturing ecosystem for the last 40 years.

Mexico's Top Aerospace Clusters
(Promexico, Aerospace Roadmap, 2013 and Baja Aerospace Cluster).



Tijuana's numbers are continuing to gain altitude. Between 2006 and 2015, the city's aerospace firms have shown an average annual employment growth of 10% by virtue of the city's talented pool of young engineers, advanced manufacturing platforms, and unparalleled geographic location. Just minutes from downtown San Diego, the second-largest city on the West Coast of North America, Tijuana is also an easy-access, nearshore location to the global aerospace and defense industry.



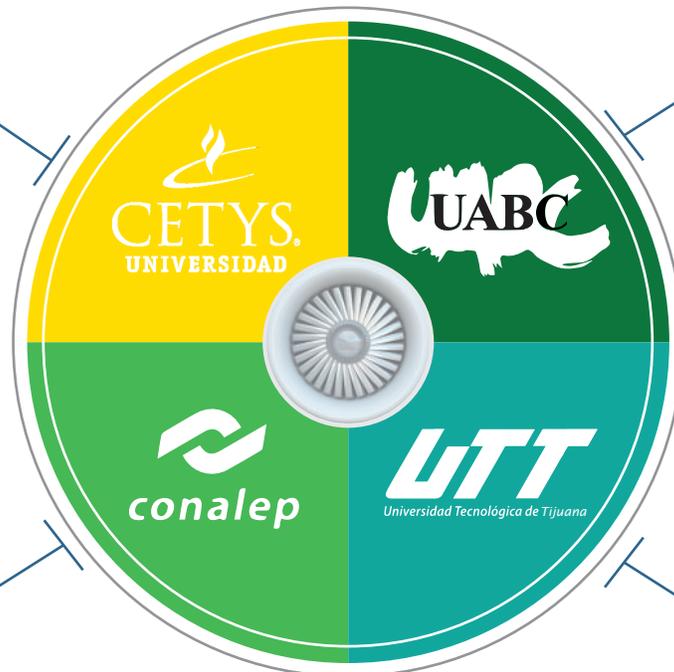
More than *12,200 students* enrolled in undergraduate *engineering, technological careers* and graduate studies in 2014.

THE AEROSPACE TALENT OF TIJUANA-SAN DIEGO

The aerospace industry's growth in Tijuana has created increased demand for specialized talent and Tijuana's universities have throttled up to meet it with a growing number of aerospace programs. Currently, 4 universities in the city offer aerospace educational programs tailored to the industry's requirements:

CETYS University is WASC certified and offers both a Bachelor's degree in Mechanical Engineering with a minor in Aerospace Design as well as a Master's degree program in Aerospace Engineering.

Centro de Asistencia y Servicios Tec. opened the Aerospace Precision Machining Center (CADTE) in 2013 to train technicians in all aspects of manufacturing precision parts to meet strict quality standards.



UABC State University of Baja California launched the Center for Aerospace and Engineering Technology six years ago

Universidad Tec. de Tijuana offers specialized programs in Mechatronic Engineering and Aerospace Harness Manufacturing.



WHY MEXICO AND WHY TIJUANA? THE EXPERTS AGREE.

COMPETING IN A
GLOBAL ENVIRONMENT
ISN'T JUST A GOAL, IT'S
A *REQUIREMENT* FOR
TODAY'S AEROSPACE
COMPANIES WHO FACE
INCREASING
COMPETITION AND
INCREASING COSTS
AROUND THE WORLD.

"Cubic considers Tijuana as, not only a strategic place to manufacture, but also a sage and innovative environment for our executives and operations."

-Reiny Giesecke (Director of Business Development Cubic Defense Applications)

The globalization of the aerospace industry is, in fact, the reason the U.S. FAA finalized a *Bilateral Aviation Safety Agreement (BASA)* with Mexico in 2007 to grant *nearshore* manufacturing of aerospace components while complying with strict quality and safety standards.



As more options come into play for offshore and nearshore manufacturing, it is useful to note that *Mexico was ranked No. 1 as the lowest-cost, and 3rd highest after-tax-profit* country among ten countries analyzed by KPMG in their 2014 Competitive Alternatives study. The findings, show Mexico was determined to provide aerospace manufacturers with an *18.7% cost advantage compared to the U.S.* as well as significant cost advantages compared to other global locations. KPMG's tax report found that Mexico-based operations result in nearly half the total tax costs (corporate income taxes, property, capital, and sales taxes as well as statutory labor costs) compared to the U.S.

ACCESS TO CUSTOMERS & SUPPLIERS

Just-in-time production isn't just a concept for Tijuana's aerospace companies. It is a real cost-saving logistical benefit that allows many of the city's manufacturers to not only reduce or avoid inventories, but also to ship finished product into the U.S. market in as little as a few hours.



Export: Tijuana is geographically located just 15 minutes from downtown San Diego, California.

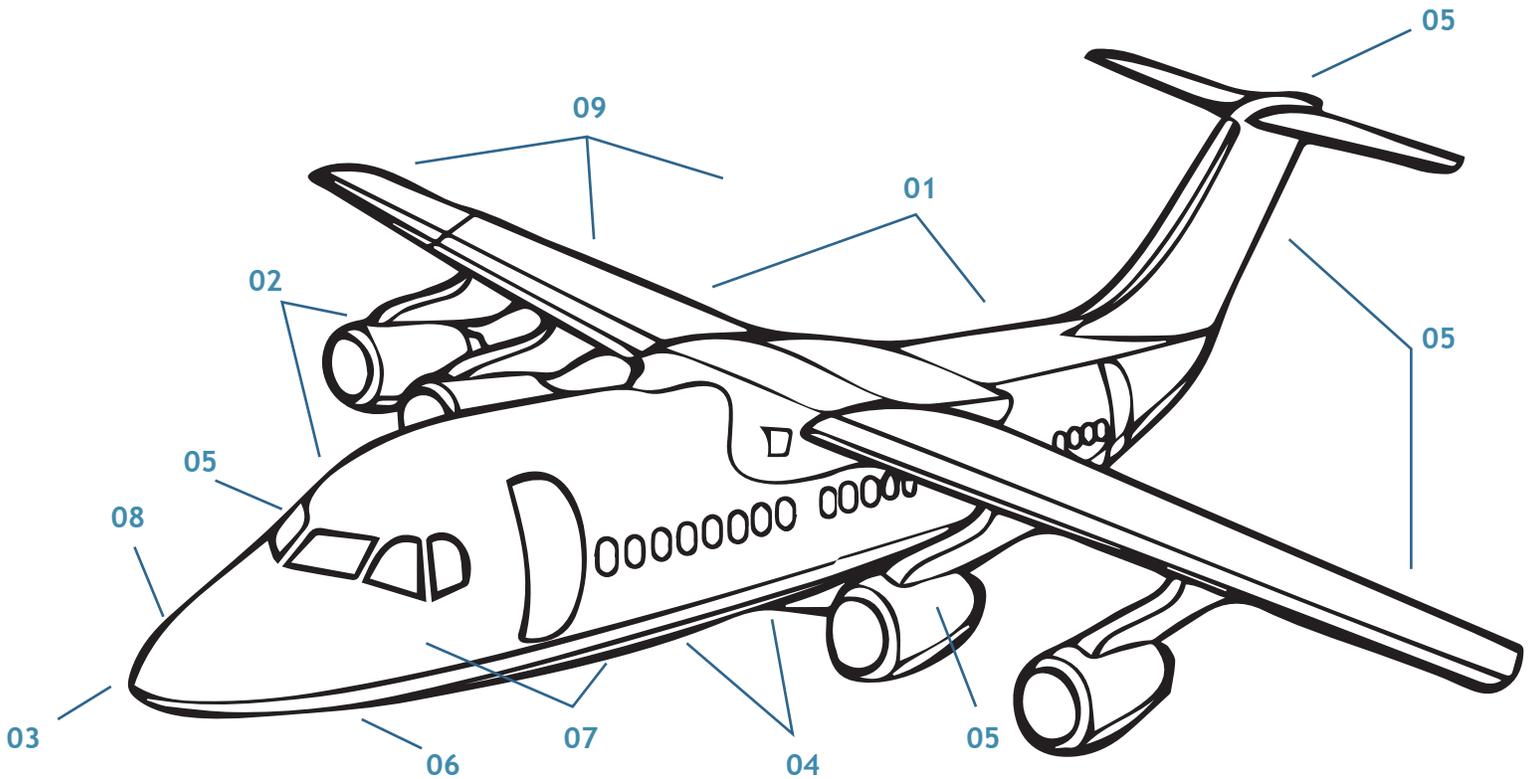
Companies operating in Tijuana are easily accessible for better management, communications and control. They also have direct access to a robust transportation infrastructure so finished aerospace products can be trucked and delivered to anywhere in the U.S. within one to five days or shipped within hours from San Diego, Long Beach and Ensenada seaports. Time-sensitive products can fly to customers from SAN, LAX, TIJ and other cargo airports in a matter of hours.



Import: Great access isn't just about outbound shipping. It's also about inbound components and materials.

Tijuana's existing aerospace companies already take advantage of a well-developed network of suppliers - importing nearly \$1.5 billion (U.S. dollars) in products and materials each year. And, as seen in the map above, major suppliers of aerospace OEMs are located within 150 miles of Tijuana in Southern California and less than 300 miles away in Arizona.

CAPABILITIES OF THE BAJA CALIFORNIA AEROSPACE AND DEFENSE SECTOR



Cortesía de Business Conexion

01 Airframe assembly, subassemblies, subsystems and sales



02 Propulsion systems, on-board avionic systems, airframe structures, subassemblies and subsystems



03 Electronic and electrical components and parts



04 Engines and components



05 Fuselages and structures, interior cabin systems and components, enviromental control systems. Fuel systems, landing gear systems and hydraulic systems.



06 Electronic systems and subsystems.



07 Engine accesories.



08 Starting systems and electrical power sources.



09 Components and part supplies.



TIJUANA'S AEROSPACE FIRMS



▶ These are just a few of the world-class aerospace companies established in Tijuana. Overall, more than 90% of all manufacturing firms in the city with 250+ employees are certified under world quality standards like ISO 13485, ISO 9000, and in the case of Aerospace industry under AS9100, NADCAP or ITAR.

DEFENSE MANUFACTURING ACHIEVEMENTS

APPROXIMATELY 45% OF THE *AEROSPACE FIRMS* IN TIJUANA ARE CURRENTLY MANUFACTURING FOR DEFENSE-RELATED APPLICATIONS.

The city's experienced manufacturing environment centers around avoiding pitfalls in terms of technological transfer, intellectual property and quality assurance.

U.S. defense firms operating in Mexico are allowed, by U.S. and Mexican regulations, to manufacture products requiring *ITAR registration*.

To guarantee acceptance in this category, firms have developed documented systems for required tracking and control of ITAR items and data. Certainly, some import/export restrictions may apply (e.g. end-use limitations and product classification) however, it is perfectly feasible to have a defense-manufacturing operation in Mexico abide by U.S. Department of Defense regulations.



In January 2012, *Mexico* became the 41st country to enter the *Wassenaar Arrangement* on export controls for conventional arms and dual-use goods and technologies, giving defense and aerospace manufacturing companies established in Tijuana a more efficient regulatory framework for export controls and documentation.



TIJUANA MANUFACTURING CAPABILITIES FOR UAVS



Industrial Sector
Electronics

Experience

Assembly of components, PC boards, and harnesses with either, manual and automated processes.

Capabilities

12 firms with complete product integration. Electronic assembly, PCBA application of specialized coatings, reflow ovens, wave soldering, CTKtesters and battery pack assembly capabilities.



Industrial Sector
Metalworking

Experience

Wide range of well-equipped firms for the development of structural, precision components, complex assembles and finishes to metal parts.

Capabilities

16 facilities with capabilities for CNC machining, specialized coatings and finishes, metal stamping, punch press, metal shear and slit, welding fasteners, sheet metal fabrication, deburring and mechanical design.



Industrial Sector
Plastics

Experience

Extensive experience in both, standard and advanced engineering materials for industrial and commercial applications.

Capabilities

14 facilities with plastics processing capabilities including injection, compression and blow molding, parts assembly, plastic welding processes, CNC machining, extrusion, heat staking, UV bonding, pad and silk printing, mold maintenance, thermoforming, finishes and coatings.

According to the Association for Unmanned Vehicle Systems International (AUVSI), unmanned aircraft systems (Drones) will become a larger contributor to the U.S. by 2025, generating an economic impact of more than \$13.6 billion in the first three years and over 34,000 new manufacturing jobs just in this country.



While California is considered as the birthplace of the aeronautics industry, as well as to several innovative technologies clusters, Tijuana has become the leading export manufacturing city in Mexico, providing significant competitive advantages to large multinational firms, as well as to small and mid size companies via Contract Manufacturing.

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**TIJUANA
EDC**

Is a private non-profit organization dedicated to facilitating the soft landing of manufacturing operations in Tijuana, Mexico and the CaliBaja Mega-Region.

TIJUANA EDC SERVICES



Advisory Services



Site Selection



Business Services
One-Stop-Shop



Government
Liaison



Initial Recruiting



**TIJUANA
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