COELUM

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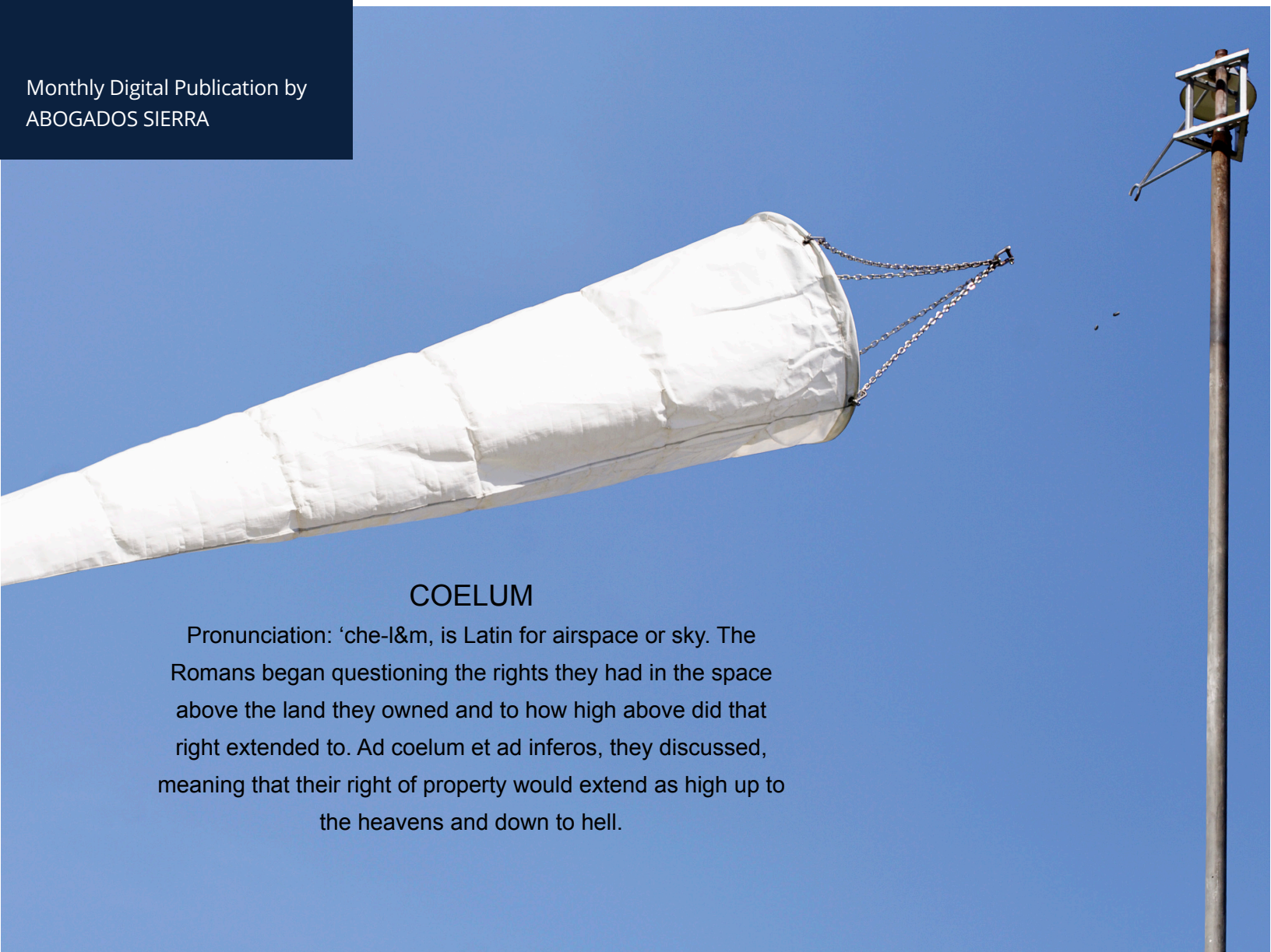

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Pronunciation: ‘che-l&m, is Latin for airspace or sky. The Romans began questioning the rights they had in the space above the land they owned and to how high above did that right extended to. Ad coelum et ad inferos, they discussed, meaning that their right of property would extend as high up to the heavens and down to hell.

Mexican Regulation of UAS: A slow development in a rapid and demanding industry.

by Andres Angulo.

After almost a year of having published its set of rules ("CO AV-23/10 R2") regarding Unmanned Aircraft Systems ("UAS") also known as Remotely Piloted Aircraft Systems ("RPAS") or *Vehículos Aéreos No Tripulados* (VANT'S), the Mexican Directorate for Civil Aeronautics ("DGAC") apart from single case by case authorizations, has not yet issued resolutions approving regular operations nor registration or assignment of national registration marks for UAS. These UAS which perform both recreational activities and commercial activities, raise the question of whether both the proceedings and legal framework set forth by said rules applicable to UAS, are non-effective or simply establish requirements which UAS's owners cannot comply with.

"While China remains the leading manufacturer and distributer of UAS, contrary to the slow development in terms of regulations, their application and enforcement by the DGAC, Mexico has become a central destination for UAS manufacturers and sellers to come and place their products in the Mexican aircraft market, or even promote development and use of UAS for scientific, archeological or research purposes."

This situation has resulted in various inconveniences for manufacturers, operators and insurance companies, all which seem to find themselves with too many unsolved questions on how to proceed when faced with potential buyers, customers, or commercial activities being requested.

While China remains the leading manufacturer and distributer of UAS, contrary to the slow development in terms of regulations, their application and enforcement by the DGAC, Mexico has become a central destination for UAS manufacturers and sellers to come and place their products in the Mexican aircraft market, or even promote development and use of UAS for scientific, archeological or research purposes.

However, strong demand for UAS in Mexico still remains in the commercial sector, and it is becoming more and more evident. Just recently (December, 2015), Mexico held a massive commercial fair sponsored by the company named: *Sr Pago* and organized by: DMx, with the purpose of allowing the general public to become familiarized with UAS, as well as promoting networking among professionals and manufacturers. Unfortunately DGAC's absence in this event broadens the vacuum that exists between the intense demand for commercial development and operation of UAS, and their regulation, which is paramount for the safety of Mexican civil aviation.

Given this information, it seems DGAC has reached a breaking point where as the authority in civil aviation matters, it should consider revising its current rules applicable to operation of UAS with the purpose of, among other aspects,: (i) acknowledging the growth of UAS and their demand for operation authorizations; (ii) single out cases which require less intervention by DGAC; and (iii) come up with a more effective set of rules and requirements which reflect the current international trends in UAS regulation. In so doing DGAC will act in accordance to its main purpose which is ensuring the safety of both aircraft and airspace activities within its territory.

Indeed DGAC's responsibility to ensure a substantially more efficient way of regulating and administrating operations of UAS may seem like a significantly complicated task, especially taking into account the amount

of work it has to deal with in a daily basis. However the work done in this matter by the Federal Aviation Administration ("FAA"), can serve as crucial example of a potential path to be followed in terms of a pragmatic yet safety-oriented approach to administering UAS operation and registration.

As it is today, the CO AV-23/10 R2 has divided UAS into three main categories: Micro (2kg (-)), Light *(Ligeros 2-25 kg)* and Heavy *(Pesados* (+) 25kg). Furthermore, these rules have classified applicable requirements based on both the category where the UAS is located and the type of activity they perform, as well as general requirements applicable to all UAS regardless. One of the two main sets of *requirements,* apart from the 5 general ones (1. limits on operating areas; 2. operation limited to daylight; 3. restriction of operation in close proximity to airports; 4. restriction on releasing objects that may cause harm to property or people and 5. reference to operator's obligations derived from applicable civil and criminal regulations), will apply as specified by the CO AV-23/10 R2, depending on whether the UAS will be used for recreational or commercial purposes.

> *"Although compliance with all of the abovementioned requirements seems plausible, DGAC has not yet granted a single Operation Authorization nor assigned a registration number or Registration Marks to micro, light or heavy UAS destined for commercial activities. Yet, as it is known to the general public, UAS are currently operating in Mexico, which allows users from the civil aviation industry and people in general to question whether an effective accountability could be guaranteed in case of normal operation inconveniences or even illegal use of UAS, as well as accidents caused by their seemingly uncontrolled operation."*

When acquiring a micro UAS for recreational purposes, in accordance with CO AV-23/10 R2, apart from specific operating requirements, one will not need to get any sort of approval from DGAC nor registration by the Mexican Aircraft Registry. Therefore one can assume said type of UAS may not represent a substantial harm, or cause any potential interference with operations carried out within Mexican airspace. However, in such a case your micro UAS was to be used for commercial activities, a civil responsibility insurance for third party harm *must* be acquired.

On the other hand, both light and heavy UAS used for recreational purposes can only be operated inside Aeromodelling Clubs, although there is not an official list of said clubs duly authorized by DGAC, thus leaving potential operators with the uncertainty of whether or not the operation of their UAS would be in accordance to CO AV-23/10 R2. Additionally, just as micro UAS, both light and heavy UAS used for recreational purposes, *do not need a registration assigned by the Mexican Aircraft Registry.*

Now, when it comes to light UAS that are to be utilized for commercial activities, DGAC has established the need for the operator to obtain a registration number by the Mexican Aircraft Registry, bear an identification plate, limit its operation to certain requirements, fulfill the obligation to acquire a civil responsibility insurance in case of harm to third parties, and most importantly obtain an Operating Authorization. This authorization obligates the operator to: hold a Pilot's License issued by DGAC, present an operating manual in terms of the COAV-23/10R2 (3CD) and an aeronautical study of security and risk management, as well as show proof of an approval of the insurance policy and issuance of registration number by respective entities within DGAC, among many other things.

In the case of heavy UAS destined for commercial activities, DGAC in addition to all the requirements for light UAS, requests that operators: obtain both a Type Certificate Approval (similar to those that must be presented

for normal aircraft), assignment of Mexican Registration Marks (XB), and limit UAS's operation to the terms established in the Operation Authorization.

Although compliance with all of the abovementioned requirements seems plausible, DGAC has not yet granted a single Operation Authorization nor assigned a registration number or Registration Marks to micro, light or heavy UAS destined for commercial activities. Yet, as it is known to the general public, UAS are currently operating in Mexico, which allows users from the civil aviation industry and people in general to question whether an effective accountability could be guaranteed in case of normal operation inconveniences or even illegal use of UAS, as well as accidents caused by their seemingly uncontrolled operation.

Contrary to DGAC's regulation mechanism the FAA has come up with a significantly more effective way of administrating both operations and registrations of UAS. Their approval is subject to an exemption proceeding pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA), where the operator of a UAS bears the burden of proof to demonstrate that their operation can be singled out from the issuance of a Special Airworthiness Certificate (SAC), rather than a compliance with complicated requirements framework as in the case of DGAC. As a result, as of 12/30/2015, the FAA has granted 2,799 petitions for exemption of a SAC in terms of Section 333 of FMRA, which clearly demonstrates FAA compliance with its obligation to preserve and guarantee the safety of aircraft and operations in the airspace within its territory.

Moreover, as opposed to DGAC, FAA has promoted a close relationship with manufacturers, insurance companies, users, commercial operators and members of the aeronautical industry in general, in order to ensure the proper devolvement and evolution of UAS regulation.

Bearing in mind the rapid growth and constant evolution of technological advances surrounding UAS, DGAC cannot consider their only set of rules in this matter (CO AV-23/10 R2) as a way of effectively managing the implications of this evolution in civil aviation practices. As it has been shown, a thorough revision of their rules and practices must be undertaken in order to provide substantial evidence that UAS and their operation are being effectively controlled and the integrity of civil aviation safety in Mexico remains uncompromised and to the level of the international standards set forth by the International Aviation Organization ("ICAO").

As experts in airspace and aviation law have considered, UAS regulation should be directed towards manufacturers rather than users themselves. This in fact may be one of the most relevant aspects DGAC could consider when evaluating the need of modifying its current regulation of UAS.

Without a doubt, the CO AV-23/10 R2 has provided some guidelines on how UAS may start to be regulated, but its lack of effectiveness is a result of: (i) a broad scope of application; and (ii) excessive and complicated requirements for users to comply with; especially when UAS manufacturers remain completely unaware of all that DGAC is requesting an owner of a UAS must file in order for them to be able to obtain an Operating Authorization or a Type Certificate Approval. Thus making its provisions impossible to enforce towards it addresses.

Therefore, notwithstanding what was previously pointed out, an updated version of the CO AV-23/10 R2 could be directed to manufacturers. By doing that, DGAC would come up with a more effective regulation that guarantees the safety of aircrafts and the Mexican airspace, regulates UAS operation even before they are purchased by its final user, as well as ensuring that the owners of UAS will be able to obtain all necessary documents for their operation.

ANA (All Nippon Airlines) will buy three Airbus A380 superjumbo jets.

ANA Holdings Inc. is planning to buy three A380 superjumbo jets from Airbus S.A.S., becoming the first Japanese airline to introduce the aircraft, sources said Friday. Based on the market price, the three A380 jets will cost ¥150 billion ($1.24 billion). The double-decker aircraft is the world's largest passenger jet and can accommodate more than 500 passengers. ANA will likely put the superjumbo jets to use in flights to and from Hawaii, which have seen brisk demand. By lowering transportation costs with the introduction of the new aircraft, the airline aims to challenge domestic rival Japan Airlines Co., the sources said. *japantimes.co.jp December 01, 2015.*

Passenger jet lands on blue ice runway in Antarctica for the first time.

Last week, a monumental moment in aviation history occurred in one of the furthest corners of the globe. Antarctica, though serviced by the occasional military or cargo plane, is one of the few places that has long remained off limits to many commercial pilots around the world. But a Loftleidir Icelandic crew changed all that when they became the first to land a Boeing 757 passenger jet on a blue ice runway on the earth's southernmost continent - bringing it closer to tourists than ever before. The plane landed on Union Glacier, which has a blue ice runway that forms when snow falls onto the glacier, gets compacted and recrystallizes. *dailymail.co.uk December 01, 2015.*

Boeing Readies 737 MAX For First Flight.

Boeing is set to begin preflight tests of the first 737 MAX, following a Dec. 8 unveiling event for employees at its Renton, Washington, facility. The 737 MAX makes its debut just as its arch rival, the Airbus A320neo, nears service entry with launch airline Qatar Airways. *http://aviationweek.com/commercial-aviation/boeing-readies-737-max-first-flight December 08, 2015.*

New Corporate Aircraft in the Market.

Honda Aircraft has been developing the corporate jet in a sleek manufacturing plant at the Piedmont Triad International Airport. The company is expected to produce 80 to 100 jets per year and, if successful, could release additional models. Honda Aircraft Co., the Greensboro-based developer of a $4.5 million lightweight jet, has received final approval for the aircraft this week from the Federal Aviation Administration, thus a new corporate jet is set, approved and ready to participate in the market, as the company states it already has more than 100 orders for the plane. *http://www.bizjournals.com/triad/news/2015/12/09/hondajet-expected-to-receive-final-faa.html December 09, 2015.*

Airport cross-border bridge for Tijuana International Airport.

The first cross-border airport bridge between Mexico and the USA has opened at Tijuana International airport, sparking what officials hope will be a surge in traffic. There's a huge opportunity for those U.S. nationals to travel within Mexico," "This is something that the Tijuana airport is not exploiting a lot", said Enrique Valle, chief executive of Otay Tijuana Ventures, builder and operator of the future Cross Border Xpress. Of some 4.7 million passengers using the Tijuana airport last year, about 60 percent were traveling to or from southern California. The idea is that by paying the toll to use the bridge, travelers could save time and avoid congestion at the nearby Otay Mesa and San Ysidro ports of entry. *https://www.flightglobal.com/news/articles/analysis-first-cross-border-bridge-opens-at-tijuana-420035/ December 14, 2015.*

In this month extract was prepared by Vera García, Miguel Ruelas, Andres Remis and Carla Estrada.

FAA regulations and UAV registration announced.

FAA has announced and published new rules requiring most drone owners to register their UAVs in a national database and pay a $5 fee every three years. The new regulation foresees fines of up to $27,500 for flying an unregistered drone, rule that applies to any remotely piloted aircraft weighing between half a pound and 55 pounds, a weight that includes anything attached to the drone such as a camera. The FAA tested UAVs in order to demonstrate that weight conditions are not arbitrary as according to their research UAVs heavier than a half pound could have lethal kinetic energy. The FAA has introduced the website for registration at faa.gov/uas/registration on December 21, 2015. Registering will be free for the first 30 days. After that period, the fee for each individual drone user will be $5 for a three-year certificate of registration, which applies to multiple aircraft. *http://www.flyingmag.com/faa-releases-drone-registration-rules December 15, 2015.*

FAA Small Unmanned Aircraft registration begins Dec. 21.

The FAA's Small Unmanned Aircraft System (UAS) registry has gone live online. In preparation for registering online, each owner must provide his or her name, home address and email address. Upon completion of registration, the web application will generate a Certificate of Aircraft Registration/Proof of Ownership that will include a unique identification number for the UAS owner, which must be marked on the aircraft. By statute, all aircraft weighing more than 0.55 pounds (250 grams) and less than 55 pounds (approximately 25 kilograms), including payloads such as on-board cameras, must be registered. *http://generalaviationnews.com/2015/12/21/faa-small-unmanned-aircraft-registration-begins-dec-21/#more-98753 December 21, 2015.*

Congress passes FAA funding.

The U.S. Congress has passed an omnibus measure that includes key funding for general aviation manufacturers in safety, certification, and alternative fuels for piston-engine aircraft. The measure provides $1.25 billion for aviation safety, including full funding for the FAA's certification activities. *http://generalaviationnews.com/2015/12/22/congress-passes-faa-funding/ December 22, 2015.*

Airline currency problems for Latin America.

Airlines across Latin America have seen ballooning expenses offset lower fuel prices as local currencies depreciated in the region in the past year, and there is little sign of relief going into 2016. The sharp depreciation in most Latin American countries' currencies has proved a major headwind for airlines based in the region. Revenues are collected in local currency, but a significant portion of their costs including fuel and lease payments are set in dollars, resulting in a severe disadvantage as Latin American currencies strongly depreciate. *http://aviationweek.com/commercial-aviation/airlines-latin-america-facing-recessions-currency-issues December 24, 2015.*

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