
	<b>RPAS/DRONE use and operation protocol at LCO</b>	Código: PROTLCO-23
		Versión: 01
		06/09/2024

## RPAS/DRONE use and operation protocol at LCO V01

LAS CAMPANAS OBSERVATORY

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APPROVED BY	L. INFANTE	08/09/2024

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## 1. OBJECTIVE

Establish guidelines for the use and operation of RPAS/DRONE at LCO, both for workers, contractors and visitors, in accordance with current regulations and internal restrictions of the Observatory.

## 2. WHO IS AFFECTED

Applicable to all internal staff, contractors and visitors who wish to use and operate a drone on LCO premises.

## 3. DEVELOPMENT

### 3.1. Regulation of the use of drones in Chile.

In Chile, the use and operations of drones is regulated by the Dirección General de Aeronáutica Civil (DGAC). The aeronautical regulation DAN 91<sup>1</sup> provides requirements and guidelines for the operation of drones over unpopulated areas.

### 3.2 Drone and operator requirements based on DGAC guidelines.

The requirements established by the DGAC are differentiated based on the objective and/or purpose of the flight and the interests for which the RPAS/DRONE will be flown, being these interests public or private.

#### 3.2.1 Requirements<sup>2</sup> to fly RPAS/DRONE for recreational or private purposes.

- It must be made of expanded polyethylene.
- The weight must not exceed 750 grams.
- It must not operate at a height of more than 50 meters.
- The operator must be liable for any damage caused.

If these requirements are met, it does not require authorization from the DGAC, otherwise it must comply with the following section 3.2.2.

#### 3.2.2. Requirements<sup>3</sup> for entities or persons performing aerial works with RPAS/DRONE for commercial and public interest purposes over populated areas according to DAN 151 regulations.


<sup>1</sup> <https://www.dgac.gob.cl/wp-content/uploads/2022/03/DAN-91.pdf>

<sup>2</sup>

<https://www.dgac.gob.cl/actualizacion-sobre-el-registro-de-nuevos-rpa-y-la-regularizacion-de-los-registros-provisorio-de-rpas-o-drones/>

<sup>3</sup>

<https://www.dgac.gob.cl/actualizacion-sobre-el-registro-de-nuevos-rpa-y-la-regularizacion-de-los-registros-provisorio-de-rpas-o-drones/>

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- Hold an Air Operator Certificate (AOC).
- The pilot must have RPAS/DRONE credential, issued by DGAC.
- RPAS/DRONE must be duly registered with the DGAC.
- Possess insurance for damages to third parties.
- Possess "Operations Manual", authorized by DGAC.
- Be authorized to perform aerial work by the DGAC.
- Possess permission to operate by the DGAC's Operations Subdepartment.

### 3.3 Requirements and/or restrictions for the use of RPAS/DRONE in LCO.

- RPAS/DRONE may not fly over telescope domes. It should preferably maintain a distance of 30 meters from the telescopes.
- The operator may not fly an RPAS/DRONE without authorization from the Directorate.
- Not to fly at an altitude higher than 50 meters according to the requirements established by the DGAC for recreational or private flights.
- The pilot may not fly the RPAS/DRON when the wind speed exceeds 30 km/h measured on the ground (established by LCO) or the maximum speed established by the equipment<sup>4</sup> manufacturer.

### 3.4 Internal application procedure to fly RPAS/DRON in LCO.

To fly an RPAS/DRONE at LCO the following steps must be followed:


#### For recreational or private purpose:

- The pilot must send an email to the Director, Leopoldo Infante at [linfante@carnegiescience.edu](mailto:linfante@carnegiescience.edu), requesting the flight permit, indicating:
  - Objective of the flight
  - Fulfillment of the requirements established in section 3.2.1.
  - Place
  - Date
  - Schedule
- The Director will reply to the email approving or rejecting the flight permit.
- If the flight is approved, the pilot must inform the Mountain Manager and Duty Officer on duty of the authorization given, indicating again the points established in paragraph 1.
- If the flight is rejected, the request is concluded.

#### For commercial and public interest purposes:

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<sup>4</sup> It depends on the RPAS/DRONE owned.

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- The entity or pilot must send an email to the Director, Leopoldo Infante at [linfante@carnegiescience.edu](mailto:linfante@carnegiescience.edu), requesting the flight permit, indicating:  
Objective of the flight  
Fulfillment of the requirements established in section 3.2.2.  
Place  
Date  
Schedule
- The Director will respond to the email Approving or Rejecting the flight permit.
- If the flight is approved, the entity or pilot must inform the coordinator in LCO, in first instance to the Mountain Manager M. Rodriguez to the mail [mrodriguez@carnegiescience.edu](mailto:mrodriguez@carnegiescience.edu) or Duty officer on duty (see annex 5.2) of the authorization delivered, indicating again the points established in section 1.
- If the flight is rejected, the request is concluded.

### 3.5


In the case of both purposes, recreational-private or commercial-public interest, the person in charge of the drone must send to the LCO Communications area, in charge of Carol Rojas, a copy of the images and/or videos obtained (all or part of the material) to be used by the Observatory in printed material, social networks or website ([lco.cl](http://lco.cl) or [carnegiescience.edu](http://carnegiescience.edu)). The use will be made indicating the corresponding authorship and, under no circumstances, will be charged for the material generated, which will be provided free of charge in outreach activities and communications. The material will be provided free of charge for dissemination and communication activities. The material must be sent to the e-mail address [crojas@carnegiescience.edu](mailto:crojas@carnegiescience.edu) within two weeks after the drone flight.


## 4. CHANGE CONTROL

Versión	Fecha	Modificaciones	Tipo de Revisión / Revisor
01	06/09/2024	Creación del documento	J. Escobar

## 5 APPENDICES

### 5.1. Image of DGAC requirements for RPAS/DRONE

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# VOLANDO UN RPAS/DRON EN CHILE

Si quiero volar un RPAS/DRONE, en forma recreacional o privada, no se requiere autorización de la DGAC, siempre que se den las siguientes condiciones:

- El RPAS esté fabricado con polietileno expandido.
- Peso hasta 750 gramos.
- Con la autorización del propietario, solo en lugares privados.
- Que no opere a más de 50 metros de altura.
- El operador debe responder ante cualquier daño a tercero que cause.


Todas las entidades o personas que realicen trabajos aéreos con drones/RPAS con fines comerciales, deben cumplir con:

- Obtener su Certificado de Operador Aéreo (AOC), conforme a lo señalado en la Norma Aeronáutica DAN 119 "Norma para la Obtención de un Certificado de Operador Aéreo", Cap. "D".
- Contemplar los Tipos "Trabajos Aéreos": señalados en la DAN 137.
- El piloto debe tener Credencial de RPAS/Drones, emitida por DGAC.
- RPAS/DRONES debidamente inscrito en la DGAC.
- Debe contar con Seguros por daños a terceros, aprobado por la JAC.
- Tener "Manual de Operaciones" debidamente autorizado por la DGAC.
- Estar autorizado para realizar el trabajo aéreo por la DGAC.
- Solicitar al Subdepartamento de Operaciones de la DGAC permiso para operar.

Para operaciones de RPAS definidas como Interés Público y a desarrollar en áreas pobladas, dar cumplimiento a Norma Aeronáutica DAN 151.

Las operaciones de interés público definidas en la normativa son las siguientes:

- a. Obtención de imágenes o información sobre hechos de connotación pública con la finalidad de difundirlas a través de medios de comunicación.
- b. Ejecución de actividades de apoyo en relación con desastres o emergencias provocadas por la naturaleza o por la acción del ser humano.
- c. Cumplimiento de las funciones legales de algún organismo de la Administración del Estado.
- d. Otras situaciones de similar naturaleza en cuanto al interés público involucrado, que la DGAC califique sobre la base de la seguridad de la operación.

RECUERDE, ANTES DE ELEVAR UN RPAS /DRON DEBE CUMPLIR CON LO DISPUESTO EN EL CÓDIGO AERONÁUTICO Y EN LA NORMATIVA AERONÁUTICA. EL INCUMPLIMIENTO DE LO ESTABLECIDO DARÁ MOTIVO PARA QUE LA DGAC APLIQUE LO DISPUESTO EN EL DAR 51, REGLAMENTO DE PROCEDIMIENTOS INFRAACCIONAL AERONÁUTICO Y ADICIONALMENTE, SE PRESENTEN LOS ANTECEDENTES AL MINISTERIO PÚBLICO CUANDO EL CASO CONSTITUYA DELITO.

## 5.2. Mountain contact table

Nombre	Cargo	Correo electrónico	Número de contacto o anexo
Marcelo Rodríguez	Mountain Manager	<a href="mailto:mrodriguez@carnegiescience.edu">mrodriguez@carnegiescience.edu</a>	51-2203 660 / 9 9221 8015
Emilio Cerda	Duty Officer	<a href="mailto:ecerda@carnegiescience.edu">ecerda@carnegiescience.edu</a>	51-2203 646 / 9 4431 9594
Juan Espoz N.	Duty Officer	<a href="mailto:jespozn@carnegiescience.edu">jespozn@carnegiescience.edu</a>	51-2203 615 / 9 8501 1615