



Safety, Health and Behavior Rules at the MAGIC Site

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Abstract:

This document describes the safety and health procedures and the behaviour rules at the MAGIC telescopes site. You must read and understand it completely, receive a guided safety tour by the Site Manager or the La Palma Postdocs, sign a printed copy of the checklist found at the end of the document and give it to the Site Manager or the Postdocs at La Palma before you start any activity at the MAGIC site. Rules are written in bold and numbered. Failure to comply with them may result in a safety penalty.

If you find any omission, wrong or outdated information in this document, or you simply want to comment or make suggestions, please write to the Safety Committee.

If you are a visitor of the MAGIC site read the dedicated *Safety, Health and Behaviour Rules for Visitors at the MAGIC Site* document.

The latest version of the safety documents is available at:

<http://www.magic.iac.es/site/safety/>

EMERGENCY PHONE NUMBERS

Public Emergency Telephone Number: (0) 112

Residencia Reception (day time): (0) +34 922 405 500 (internal: 2500)

Residencia Night Porter (night time): (0) +34 609 554 576

IMPORTANT NOTES

The emergency line operators speak Spanish, English, French and German.

The people working at the Residencia speak Spanish and English.

To reach phone numbers outside the IAC phone network you have to dial a 0 first.

Additional contacts details of MAGIC experts and coordinators are available at:

<http://www.magic.iac.es/contacts/>

USAGE OF THIS MANUAL

Rules (R): You are obliged to follow it to avoid putting yourself, other persons at the site, or the telescopes at risk. You will incur a safety penalty if you do not follow a rule.

Guidelines or Recommendations (G): You should always follow guidelines unless you have a really good reason not to do so.

Suggestions (S): If you follow them your work at the site will be more efficient and easier.

LIST OF ABBREVIATIONS

SC: Safety Coordinator

TC: Technical Coordinator

SM: Site Manager

LPP: La Palma Postdocs

GLIMOS: Group Leader In Matters Of Safety

SL: Shift Leader

DSL: Deputy Shift Leader

CE: Chief of Emergency

CI: Chief of Intervention

ORM: Observatorio del Roque de los Muchachos

DOM: Data-Taking Operation Manual

TOM: Technical Operations Manual

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1. Introduction

The Deputy Spokesperson has the final responsibility for safety and health at the MAGIC site. S/he gets the support of a Safety Coordinator to set up procedures which guarantee the safety and health of operators and technical experts at the MAGIC site in La Palma. The SC appoints a Deputy SC to replace him/her when s/he is absent or to delegate functions. The Deputy Spokesperson and the SC appoint a Committee for Safety and Health. This committee assists the SC on safety procedures and discusses all reported incidents. Any MAGIC member is advised to send an email to magic_safety@mpp.mpg.de if they have any question regarding safety or health at the MAGIC site, or want to report any safety concern.

Current composition of the Safety Committee (as of May 2020):

- Oscar Blanch, blanch@ifae.es
- David Paneque, dpaneque@mppmu.mpg.de
- Michele Doro, michele.doro@pd.infn.it
- Ana Babić, ana.babic@fer.hr
- Javier Herrera, jaherllo@ifae.es
- Razmik Mirzoyan, razmik.mirzoyan@mpp.mpg.de
- Adrian Biland, biland@phys.ethz.ch
- Eduardo Colombo, ehcolombo@gmail.com
- Martin Will, mwill@mpp.mpg.de
- Juan Cortina, cortina@ifae.es
- Markus Garczarczyk, garcz@mpp.mpg.de
- Jürgen Besenrieder, jhose@mpp.mpg.de
- Daniel Mazin, mazin@icrr.u-tokyo.ac.jp
- Riccardo Paoletti, riccardo.paoletti@pi.infn.it
- Dijana Dominis Prester, dijana@phy.uniri.hr
- Victor Acciari, vacciari@ifae.es
- Antonio Stamerra, antonio.stamerra@inaf.it
- Diana Werner, dwerner@mpp.mpg.de

1.1. Safety Status of Individuals

When working at the MAGIC site, either as data taking or technical shifter, you need to have an Individual Safety Status defined. This status is defined by your experience and job profile before going to the MAGIC site. At the end of your shift, your status can be updated by the SC. In addition, the role of GLIMOS, as the responsible for the safety and operation at any given time at the MAGIC site is defined.

1.1.1. GLIMOS

The Group Leader In Matters Of Safety represents the Deputy Spokesperson and the SC in matters of safety at the MAGIC site. The GLIMOS is the most important person for the safety at the site and has complete authority over personnel and equipment in all matters that concern safety, independently to which institute the personnel or equipment belong.

R1. The GLIMOS must have a deep knowledge of this document and should be committed to enforce the Safety Regulations and be ready to act as Chief of Emergency and Chief of Intervention.

The GLIMOS is a role that is assigned dynamically to a single person at the MAGIC site depending on who is effectively working at the site. In general, during the day, the GLIMOS would be the SM or one of the LPPs. During the night the data taking Shift Leader is typically the GLIMOS. In other situations, the following states an order of priority to act as GLIMOS:

1. Site Manager
2. La Palma Postdocs
3. Shift Leader¹
4. Deputy Shift Leader
5. Deputy Spokesperson
6. Safety Coordinator
7. Technical Coordinator
8. Deputy Safety Coordinator
9. Deputy Technical Coordinator

If none of the above is at the MAGIC site and somebody intends to work there, s/he must contact one of the people in the above list in that order and request for a GLIMOS to be appointed. This means that if you plan any activity at the MAGIC site, and there is no GLIMOS around, you are either requested to be appointed as GLIMOS and comply with R1, have somebody from your work crew prepared to act as GLIMOS, or cancel your activity.

R2. You are not allowed to work at the MAGIC site without a GLIMOS.

If you intend to work at the site, make sure that a GLIMOS will be around. Get in contact with the GLIMOS every day when you arrive at the MAGIC site and inform him/her what you intend to do.

G1. If you have any concerns or doubts about safety rules and their enforcement during your stay at the MAGIC site, contact GLIMOS immediately.

For controversies, the following list defines the chain of command:

1. Deputy Spokesperson
2. Safety Coordinator

¹ If two SLs are on site: the one who has stayed longer in La Palma for the current period.

3. Technical Coordinator
4. Deputy Safety Coordinator
5. Deputy Technical Coordinator
6. Site Manager
7. La Palma Postdocs
8. Shift Leader
9. Deputy Shift Leader

1.1.2. Job Profiles

You must have a job profile when you access the MAGIC site. It is important that you know which job profile applies to you before reading this document, because some rules apply only to certain job profiles.

There are currently four job profiles:

1. **Visitors.** Individuals who do not belong to the MAGIC Collaboration or to a group of the MAGIC Collaboration. If you are a visitor you must read the dedicated visitor Safety, Health Regulation document available on the LP web server.
2. **Non-experts.** Individuals that have little experience at the MAGIC site and/or on the technical details of the hardware they will need to work on or with. By default, the first time you go to La Palma and you are not a Visitor, you are defined as non-expert.
3. **Experts.** Individuals who have both expertise at the MAGIC site, with the telescopes operations, and with the hardware they may need to work on or with.
4. **External Experts.** Individuals who are at the MAGIC site for duties of an external collaboration that has an agreement with MAGIC (FACT, LST, etc.)

R3. Visitors cannot be eligible as GLIMOS and they do not have access to the restricted areas. They need a host that can act as GLIMOS all the time.

R4. Non-experts cannot be eligible as GLIMOS and they do not have access to the restricted areas, unless instructed by an expert.

R5. Experts can be eligible as GLIMOS and have full access to the restricted areas.

R6. External experts cannot be eligible as GLIMOS and do not have access to the restricted areas. They are not under the responsibility of the GLIMOS, unless they are in the MAGIC Counting House.

The above job profiles are hereafter discussed in more detail.

1. **Visitors.** Individuals who do not belong to the MAGIC collaboration or to a group of the MAGIC Collaboration or to an external collaboration that has an agreement with MAGIC, may only access the site as visitors. Visitors are allowed at the site only in the company of a MAGIC member or supporting technician. A GLIMOS must be around at the site during the

visit and look after the guests. In case no GLIMOS is around, the accompanying MAGIC member is the GLIMOS and must know the responsibilities and be prepared for emergencies. Visitors do NOT need to be acquainted with this document.

R7. Visitors shall not interfere during MAGIC data taking or technical operations.

2. **Non-Experts.** They are individuals that have little experience at the MAGIC site or visit the MAGIC site for the first time. It does not mean that they are not experts in their field, but that they need to get acquainted with the safety and operation rules at the MAGIC site.

There are two kinds of non-experts:

- a) **Data-Taking Operators.** They must never access the restricted areas without the supervision of an expert, or instructed by an expert. In the event of a technical failure in a system which is in a restricted area, operators must contact the GLIMOS and the subsystem or general experts, and stop data-taking until the problem is solved.
- b) **Technicians.** Individuals that are doing technical work on site under the personal supervision of a subsystem or general expert, and can only access restricted areas under their supervision or after being properly instructed.

3. **Experts.** They are responsible for data-taking or technical maintenance and upgrades. Experts can access all restricted areas. Experts must have a deep knowledge of the safety and operation rules while in the MAGIC site. There are three groups of experts:

- a) **Data-Taking Experts.** They are experts in taking data with the MAGIC telescopes and know how to operate the data taking and telescope software, namely the Shift Leader and the Deputy Shift Leader. They must know the Data-Taking Operation Manual as well as have a reasonable knowledge of the Technical Operation Manuals, in order to be able to correctly and rapidly react to any emergency or technical failure. They are not expected and not allowed to fix technical problems inside restricted areas. In case of problems they need to be able to understand what is wrong and contact the corresponding subsystem experts. They may help experts with technical work, but only under the personal supervision of a subsystem or a general expert. Most of the time when the SL is on site s/he is the GLIMOS. The DSL represents the SL when s/he is not on site. The DSL can become SL after a minimum of one full data-taking shift, and only after the approval by the SC. The DSL is introduced by the SL to the technical and data-taking details of the telescope during the first days of the shift.
- b) **Subsystem Experts.** They are individuals that come to the site to maintain or upgrade telescope subsystems during so-called *technical shifts*. They must know the Technical Operating Manual of all subsystems they are working on. They must inform the Technical Coordinator and the Technical Board about their plans to go to the site, they must report any technical news and they must log their activities. If applicable, they must update their corresponding section of the TOM before they leave the island and inform the collaboration of the update.
- c) **General Experts.** This profile only applies to the Site Manager and the La Palma Postdocs, as they are both data taking and subsystem experts for all subsystems. They must know the DOM and have a good knowledge of all TOMs. Their main task

is to guarantee smooth data taking, and NOT to help experts coming for regular technical accesses or to maintain the technical systems unless they explicitly agree to. One of them must always be on call and ready to drive to the site immediately in case of problems which affect the safety of the individuals on site or the integrity of the telescope and need quick intervention (e. g. lids do not close, telescope does not move, power cut, medical emergencies, fire, flood, etc).

4. External Experts. There are external collaborations that have signed special agreements with the MAGIC Collaboration, that allows them to stay in the MAGIC site and use some or its facilities. Currently, those are the FACT and the LST Collaborations, and many members of those collaborations are also members of MAGIC, but not all. External experts have a special role, they are to be considered as visitors at the MAGIC site, however, they do not require a GLIMOS to work at their respective sites, and therefore any emergency should be handled by them. However, because of proximity, they are allowed to stay in certain rooms of the Counting House and occasionally use our equipment in the workshops, depending on the conditions of the particular agreement. In such cases they do need a GLIMOS at the site. They are strongly advised to read this document.

SL, DSL and operators are commonly referred to as data taking shifters or simply **shifters**.

The job profiles are maintained by the SC. After your stay at the MAGIC site, your job profile may be updated by the SC for the next travel to La Palma. For example, data-taking operators are usually promoted to DSL, the DSL to SL, and so on. If you want to know your job profile, ask the SC or check it in your personal information at the official MAGIC website: <https://magic.mpp.mpg.de/>

1.2 Preparation of the Travel

If you plan to go to the MAGIC site for a data-taking shift or a technical shift, you need to take some actions **well in advance**:

1. Check your subscription to the *magic_online@mpp.mpg.de* mailing list. The weather alerts, the runbooks of the data-taking night, all communications regarding operations, go through this mailing list. Technicians are usually not requested to be included in this mailing list. Contact the SC to be included.

2. If you plan to take a shift, you must inform the Travel Committee through the mailing list *magic_travel@mpp.mpg.de*. This mailing list includes the SC, the SM and the LPPs. If the shift is technical, also send the information to the Technical Board *magic_tb@mpp.mpg.de*. Include the following information (bold items are mandatory):

- a) **Purpose of your travel**
- b) **Travel dates and details** (arrival and departure time, flight number, etc.)
- c) **If you have a driving license valid in Spain** (shifters only)
- d) Mobile phone number, contact at home for emergencies and skype account.

The last item can be maintained by each individual in his/her personal information at the official MAGIC website.

3. Ask your institute responsible to register your travel with the Spanish authorities, as described in the next section.

4. Every individual working at the site needs a guided safety tour by the SM or LPP before they start any work. Make sure you organize this tour with them as soon as you know your arrival date. Be aware of this when planning your trip to the site, if you arrive too late in the day you may not be able to receive the tour and are not allowed to work at the site that night. If possible organize a common safety tour for every member of your team or with the other shifters arriving the same day as you. The safety tour is valid for a period of 1 year.

R8. You are not allowed to work at the MAGIC site without having received a guided safety tour by the SM or LPP and having signed the Safety Checklist at the end of this document. The tour is valid for 1 year.

5. A few days before your travel to La Palma, please confirm the exact dates of your travel with the SA, the LPP, and (if needed) the rest of your team, mentioning if you are staying in a hotel at sea level before your arrival at the MAGIC site, and if you have a car or need a ride to the Roque. The local staff might be able to help you get up and/or down.

Important numbers to take with you when travelling to La Palma (all English speaking):

- Site Manager
- La Palma Postdocs
- Residencia at ORM
- Public Emergency Telephone Number (112)

Find the numbers on the La Palma MAGIC website. Print that page and take it with you:

<http://www.magic.iac.es/contacts>

1.3. Registration for Working at La Palma

The Spanish law requires that people from abroad working in Spain for a period longer than 8 working days need to notify the Spanish authorities. In general:

- a) Every person coming to work at the MAGIC site for a period longer than 8 days needs to be registered (includes shifts and technical travels). It is however recommended to register also for shorter trips.
- b) The registration needs to be filled out by an institute representative in a given form (details below) and sent before the travel via fax.
- c) The registration form is only valid for institutes in countries that are part of the European Union. If you are a non-EU national working for a non-EU organization you have to apply for a special visa allowing you to work during a limited period of time for your organization in Spain. For that purpose you can ask for invitation letters signed by the deputy Spokesperson and/or by the IAC director and present it to the Spanish consular authorities in your country. Please consider that the visa process may take several months, so ask for this letter as soon as possible.
- d) It is only a notification, no feedback will follow from the Spanish authorities.

- e) Institutes from Spain do not need this bureaucratic work.
- f) Penalty payments of several thousand Euro may rise if one does not follow the law.

The form can be found at the La Palma MAGIC website and at the official MAGIC website:

<http://www.magic.iac.es/introduction/index.html>

<https://magic.mpp.mpg.de/members/operations/>

1.4. Medical Check and Insurance

You must pass a medical check before you go to La Palma. Read also the health section, where absolute and relative contraindications to go to the MAGIC site are described. The medical check should be done in agreement with the type of job you will do in La Palma and with the legislation of your institute or your country. Such checks usually include:

- a) Medical consultation with physical examination, lung function testing (spirometry, auscultation), blood pressure check at rest, auditive and sight tests, basic biometrics.
- b) Blood samples for extensive laboratory testing (cholesterol, blood sugar, kidney and liver functions)
- c) Electrocardiogram
- d) **Covid-19 update:** Vulnerable groups for Covid-19 are defined as people with diabetes, cardiovascular disease, including hypertension, chronic lung disease, immunodeficiency, cancer under active treatment, pregnancy and age over 60 years. Persons belonging to these groups are advised not to travel to La Palma until the Covid-19 pandemic ends. However, according to classification of exposure to SARS-cov-2 in the workplace, there is a low probability of exposure at the MAGIC site. That means that you are not forbidden to come, but your home institution will need to confirm that the health assessment has been carried out, and your mission is compatible with the safety and health regulations at destination.
- e) **Covid-19 update:** Starting from November 2020 Canary Islands tourist accommodations require a test excluding a current SARS-cov-2 infection, not older than 72 hours at arrival.

R9. You must have passed a medical check some time in the 12 months before travelling to La Palma.

You do not need to bring the medical certificate with the conclusions of the medical check. We just expect you to sign at the end of this document that you have passed such a test.

Covid-19 update: If you belong in the 'vulnerable groups' for Covid-19, you will need to bring a document described above.

G2. If you have any relevant particularity about your health or safety, do not hesitate to inform the other members of your shift and/or the local staff in La Palma.

R10. It is mandatory to have personal insurance that covers medical and emergency expenses, when travelling to La Palma for data-taking or technical activities, either provided by the institute or by the individual.

1.5. First-Aid Course

You must have received a first-aid course in the last 5 years. No first-aid instructions are provided here. You are expected to follow the course before you come to La Palma in your home country, it is hard to get such courses in a language other than Spanish in La Palma.

A basic first-aid course like the one offered by Red Cross all over Europe is enough:

<http://www.redcross.org.uk/What-we-do/First-aid/First-aid-training>

It provides a basic understanding of emergency care as well as a basic grasp of related clinical theories. You must be taught basic abilities like:

- a) How to respond to the needs of unconscious casualties, including placing an unconscious person in the recovery position.
- b) How to perform the cardiopulmonary resuscitation maneuver: how to lift the chin to open the airway, give effective rescue breaths and perform chest compressions (with the opportunity to practice their skills on a resuscitation manikin.)
- c) How to deal with mild and severe choking for adults.
- d) How to respond to the needs of casualties with major injuries: shock, burns and scalds, blood loss, muscular and skeletal injury.

R11. You must have received a first-aid course some time in the 5 years before going to La Palma.

You are not expected to bring any certificate for this course, but only to sign at the end of the document that you have passed it. You are advised to refresh your course with a first-aid booklet before travelling to La Palma. There are booklets and posters at the MAGIC site.

1.6. Penalties

The GLIMOS, SC, TC and their corresponding deputies will give you a warning if you fail to comply with any of the rules in this document. The warning will also be reported to your Group Leader and to the mailing list of the Safety Committee.

If you fail to comply again with a rule after receiving a warning, you will be instructed to leave the MAGIC site immediately. For the following 6 months you will not be allowed to access the site, to use MAGIC data and you will not sign any MAGIC publication.

If you are not a member of the MAGIC collaboration (e. g. technician), you will be reported to the Group Leader at your institute.

If a visitor breaks a safety rule, the accompanying person will receive the penalty.

2. General Safety Rules

This chapter describes the most important safety rules to be followed when working at the site, **read this section carefully!**

2.1. Driving to and from the ORM

There are two roads to the Roque de Los Muchachos: one from Santa Cruz (close to the airport) and one from Garafía. Information about their status is sent daily to magic_online. Both roads wind up through hundreds of bends, many of them hairpin turns, with a difference in altitude of more than 2000 m. They are to be considered as dangerous roads, follow the instructions below and drive carefully.

In case you have no car, you can contact the MAGIC members at the site for a ride to the ORM. The shifters, the SM and LPP use 4x4 vehicles belonging to the MAGIC collaboration:

- Shifter Car: Toyota RAV4, plate: 1677-GNH.
- Site Manager Car: temporary rental.
- La Palma Postdocs Car: Red Ford Ranger, plate: 1922 JXV

All three cars are equipped with the following, or you should bring them with you:

- A first aid medical box.
- A fire extinguisher.
- A fully charged flashlight.
- A VHF radio transmitter.
- A fully charged cell phone.

If you drive with a different car, you are advised to have it equipped it with at least:

- A fully charged flashlight.
- A fully charged cell phone.

R12. Before driving up or down, inform the GLIMOS on site about your driving plans. Tell them the time when you are leaving and the time when you expect to arrive at your destination. Let them know when you arrive.

R13. You should always start the trip with the gas tank at least 1/4h full.

R14. (Covid-19 update) Maximum number of people allowed in each car is four. If in the car there is more than one person who do not live together, masks must be worn during the ride, the same seats must be used in each direction, hands must be disinfected prior to entering the car, maximum possible distance in the car must be maintained (e.g. not occupying the middle seat in case of 4 people). If there is a person who is particularly vulnerable to Covid-19, FFP2 class mask must be used.

G3. If possible, do not drive alone and do not allow your co-driver to fall asleep. Your co-driver must help to pay maximum attention to the road.

Covid-19 update: If there are cars available and you prefer to drive alone, you could organize to drive in a convoy.

G4. Be aware that there are tourists driving up the mountain and entering the ORM between early morning and late afternoon. Be patient and take caution with them as they may stop at any time or make unexpected maneuvers.

G5. Be also aware of the possible transit of busses and trucks. In case you don't have visual after a curve, sound the car horn.

G6. Take extreme care when the road is wet, covered with pine needles or rocks.

S1. If you find any obstruction on the road, e. g. a large rock or ice, inform the Residencia and other drivers over the radio. It is also good practice to stop the car and remove any impediments in the road, if the operation can be done without risk.

These rules apply to any job profiles that are driving to or from the MAGIC site.

G7. MAGIC collaborators are advised to instruct visitors or subcontractors on these rules.

If the ORM is in pre-alert or alert weather condition, as reported in the daily communication to the magic_online mailing list, you must comply also with these **exceptional rules for adverse driving conditions**. You are strongly advised not to drive to/from the MAGIC site in adverse weather conditions unless it is strictly necessary or you are ordered to evacuate by the ORM responsible.

R15. Just before driving up down from the Roque, contact the GLIMOS at the MAGIC site if present and/or the reception of the ORM Residencia. Discuss the status of the roads and communicate about your travel plans.

R16. Never drive alone in adverse weather situations. You can either drive with somebody else in your car, or in a convoy.

R17. You must use a 4x4 vehicle (all wheel drive) in adverse weather conditions.

R18. Once you reach your destination, communicate to the GLIMOS and/or the ORM Residencia your safe arrival and update them on the status of the road.

G8. In some cases, it is possible to join a convoy of other vehicles driving up and down the ORM. Contact the Residencia of the ORM for such information.

2.2. The MAGIC Site

The MAGIC site is shown in Figure 1. Referring to the figure, on the top there are the two roads that go down (right to Santa Cruz and the airport, left to Garafia). Shown is also the entrance of the ORM. At this point you find a gate which is closed at night. It marks the entrance of the ORM protected areas. Special driving rules apply in this area. On the top-left are the apartments and the Residencia. On the bottom right, the MAGIC site starts from the main road and encompasses the areas of the two telescopes, MAGIC-I and MAGIC-II. Highlighted is a helipad and the walking path from there to the Counting House.



Figure 1: Map of the MAGIC site at the ORM.

The MAGIC Counting House is distributed as follows (see Figure 3):

- On the first floor you have the Control Room, Room for the Readout Electronics, Room for the Computing System, a small kitchen and toilet, two garages with a mechanical workshop.
- On the second floor you have the electronics workshop, a meeting/relax room, and access to the external terrace with atmospheric instruments, and to the LIDAR tower.

R19. No alcohol may be drunk in the time period from 3 hours before you enter the MAGIC site and until you leave the site. Person who is 'on-call' is still considered to be on site, even if they are in the apartments or residencia.

R20. Within the observatory, drive using only the dipped headlights.

R21. Never drive your car to the MAGIC site at night during data taking. In case you are going to the telescopes, advance slowly to the helipad. Park your car at the helipad and walk to the Counting House on the walking path.

2.3. Safety Equipment

Certain activities at the MAGIC site demand the use of special equipment for your personal protection. All necessary equipment for personal protection is provided for the data-taking shifters, except for safety shoes. For technical visits the safety equipment should be provided by the corresponding institution.

G9. Contact the SM or LPP well in advance of your trip to the MAGIC site to confirm the presence of all necessary equipment for personal protection.

Covid-19 update: All equipment (e.g. helmet, walkie-talkie, flashlight, etc) you plan to use during the night must be sanitized at the beginning of the night. Keep this equipment in a designated space on your desk so that it cannot be mixed up with other equipment. At the end of the night, sanitize all the equipment and return it to its place.

1. **Safety Helmets.** You must use a helmet whenever you enter the telescope areas, inside the fences (as marked by the corresponding sign), and the LIDAR tower dome. Helmets protect you from falling objects and protect your head from colliding with a tube of the structure. Helmets for general use can be found in garage #2 of the Counting House. Helmets for shifters are located in the safety equipment shelf in the Control Room. If you take one of those helmets, place it back after you are done. Always use proper helmets certified for working places, sports or climbing helmets are not allowed.

R22. Always secure the helmet with the chin strap, do not keep it loose.

G10. The production date is written in each helmet. They should not be used longer than 10 years. Ask the GLIMOS or the SM or LPP if you cannot find the production date.

2. **Foot Protection.** At the MAGIC site you should always wear proper boots, i. e. safety boots or hiking boots. You must always wear proper boots when you enter the restricted areas or the fences surrounding the telescopes. A typical safety shoe is shown in Figure 2.



Figure 2: A possible type of safety shoe to be used at the MAGIC site. Hiking shoes are also accepted.

G11. Technical experts are advised to wear safety boots with steel caps and sole plate to protect against falling objects and punctures from below.

G12. In case you have to climb in the telescope structure, the use of sports or hiking shoes (which are stiff enough to stay on the tubes and junction balls and have a non-slipping rubber sole) is preferred to that of safety boots.

3. **Gloves.** There are several pairs of gloves at the safety equipment shelves in the Control Room and in the garage #2. Use them to protect against cold during night and winter times, or when performing mechanical tasks with a risk of cuts or abrasions. If you take a general use glove, store it back into the boxes or shelves when you have finished your work.

Covid-19 update: Wear disposable gloves underneath the gloves for mechanical tasks. In this way, there is no need to sanitize the gloves, or to keep them in the designated space on your desk. Follow general hygiene rules and do not touch your face with gloves.

4. **Flashlights.** There are several flashlights at the Counting House, they can be found in the safety equipment shelves in the Control Room. Some of them are labelled, and those are restricted for the data taking shifters. If a flashlight breaks or is dead, report it to the SM or LPP. You may use your own flashlight at the site but make sure that it is as reliable as the general use flashlights. The big flashlights should always be charging when not in use.

Covid-19 update: Consider if this can be arranged while keeping the flashlight in the designated area on your desk. If not, temporary hygiene measures have priority.

5. **Walkie Talkies.** There are three walkie talkies for general use in the safety equipment shelves in the Control Room. A fourth walkie is placed in the living room of the apartment #6 at the Residencia. The walkie talkie allows only local communication within the MAGIC site. The range covers the outside areas around KVA telescope, the Roque, and the Residencia. Always use the communication channel #2. The battery of the walkie lasts more than 24 hours in standby. Switch off the device and return it to a charging station after finishing your tasks, making sure that the device is properly placed.

6. **Radio Stations.** The ORM has a VHF radio channel for internal communications and emergencies. All telescopes at the ORM have a terminal in their facilities and their cars, and it is also connected to the Residencia building, to the IAC offices at sea-level and to the Observatorio del Teide in Tenerife. For MAGIC there is one radio terminal in the Control Room, and every car of the collaboration is equipped with the same radio model. Always

keep the terminals on when working in the MAGIC site, or when driving to and from the ORM. It should be used only for important messages and in case of emergencies.

2.2.1. Safety Equipment for Shifters

All the safety equipment required by the data-taking shifters, except for the safety shoes, is located in a dedicated cupboard in the control room:

- 1st shelf: 3 helmets reserved for the SM and LPP.
- 2nd shelf: SL and DSL helmets with head light, small and big flashlights.
- 3rd shelf: Operator helmets with headlights, gloves.
- 4th shelf: Charger for helmet batteries, walkie talkies, VHF radio station.
- Lower cabinet: first-aid kit, defibrillator, medicine, batteries, office supplies, sunscreen, thermometers, disposable masks and gloves, cleaning supplies.

G13. All these items have predefined places, the flashlights and walkie talkies have charging stations in their corresponding shelf. Always plug them in.

G14. Check at the beginning of the night that your equipment is at its place and report to the GLIMOS if something is missing or not functioning.

S2. Use gloves when removing the azimuth and elevation bolts, especially in winter.
Covid-19 update: Wear disposable gloves underneath the mechanical work gloves. If possible, use the same mechanical work gloves throughout your shift.

1. **Shifter Car.** The shifters have access to a car (Toyota RAV4). This car can be driven by any shifter with a driving license that is valid in Spain. If none of the shifters have a (valid) driving license, the car will not be used during the shift. The car is fully insured (full coverage, no penalty) if you are older than 24 or you have more than 2 years driving experience. If neither applies to you, or you do not have a valid driving license, contact the SC well ahead of time before travelling to La Palma.

The SL is the person responsible for deciding the use of the car, no matter who drives it. Of course, the driver and not the SL is responsible for any type of accident or similar incident with the car. Therefore, it is strongly suggested that only the SL drives the car. The SL is also responsible for the cleanliness and the completeness of the equipment in the car.

The shifter car should be used to fulfill the needs of the entire shift crew. This includes driving to and from the airport or a hotel before and after the shift and grocery shopping, but not for leisure. In those cases you should rent a car. It is the duty of the shifters to keep the car clean. The interior of the car can be cleaned with the vacuum cleaner located in the CH. The exterior of the car can be cleaned at any gas station.

R23. Fill the logbook inside the glove compartment of the Shifters Car when you use it. Write down your name, date and time.

R24. Report any kind of accident, incident or problem with the SL car to the SM or LPP and the SC as soon as possible.

G15. In case the car is low on fuel, fill it during one of your travels down. The bill for the fuel of the SL car is refunded by the MAGIC collaboration. Give your bills to the SM or the LPP.

G16. If any of the safety equipment is missing from the car, the SM or LPPs need to be informed immediately.

G17. Always keep the car VHF radio on. It can be used to call someone in case of emergency. In addition, you have to be reachable while you are driving.

2. **Mobile Phones.** The shifters are provided with two Spanish cell phones. One is for the SL and/or DSL, and should always stay with the data-taking shifters at the ORM. The number of this cell phone is **+34 699 832 524**. This telephone should be kept on all the time, including during sleep time, by the SL or the DSL. It is meant for extremely urgent communications to the SL or the DSL. This telephone is labeled as *SL phone*. The second mobile is instead meant for internal communication among the shifters. The number of this second telephone is **+34 660 038 167**. It is labelled as *Shifter phone*. It should be used when some members of the data-taking shift crew leave the ORM, e.g. for grocery shopping. The PIN for both phones is 1234.

The cell phone coverage on the Roque is quite good, but typically there is no coverage on the road to the Roque. The Public Emergency Telephone Number (112) has better coverage than regular numbers, so you may be able to call for help even if you are in a remote location. You can always call the emergency number, even if there is no credit left.

Because most of the shifters will travel with cell phones of their own that can operate in Spain, it is allowed to use those as your main contact phone number during the shift. If that is the case, make sure that the whole shift crew have all the emergency phone numbers, as well as the crew ones, stored at the start of the shift.

R25. Do not use any of the shifter phones for private calls. Only emergency calls are allowed, and calls concerning telescope operations if no fixed line is available.

G18. The SL is responsible for the correct use of the two mobile phones. S/He has to make sure whoever uses the phones uses it responsibly, that the pre-paid card of the phones still has enough credit on it, and that the phone is in working order at all times including at the end of the shift. If the cell phone breaks or it runs out of money, immediately request a replacement or a recharge from the SM or LPP.

G19. The SL has to be reachable all the time, even on off days, in case there is a serious problem. If the SL does not have a working cell phone they should use the *SL phone*.

2.2.2. Safety Equipment for Experts

1. **Safety Harnesses.** To work at height or when using the cherry picker, experts must have been introduced to the use of harnesses. If you have not used a harness in more than 6 months, an expert has to check your harness and that you put it on correctly. Most of the experts will be provided with their own harnesses by their institutes. Harnesses for general use can be found in the shelves of garage #2. If you take a general use harness, store it back into the boxes and shelves when you have finished your work. Harnesses located in the containers of the telescopes are for emergency use only and should not be used for regular work. See page 21 for more safety rules concerning working at height.

2. Drilling/milling, lathe and grinding machines.

R26. You are only allowed to use the drilling/milling, lathe or grinding machines in the mechanical workshop if you have passed a course to use this type of machine.

R27. Every time you are using one of these machines you must:

- Wear eye protection goggles located on the wall close to the drill or grinder.
- Keep your jacket closed and take care that the sleeves of your clothing can not be caught by spinning tools, by fixing them tight or rolling them up.
- Cover your hair completely under a cap if they can get in the way.

2.3. Working at the MAGIC Site

2.3.1. Restricted Areas

At the MAGIC site there are three restricted areas:

1. The circular areas marked by white lines around the frames of M1 and M2.
2. The areas limited by white line bricks around the camera access towers of M1 and M2.
3. The dome in the upper floor of the LIDAR tower.

R28. Restricted areas 1 and 2 are only accessed by a minimum of two persons. No individual access is allowed at any time. Try to keep visual contact all the time.

R29. Only experts are allowed inside the restricted areas. Non-experts can only access the restricted areas if they are accompanied or instructed by an expert.

R30. Report to the GLIMOS before starting any work in the restricted areas.

2.3.3. Working in the Telescopes Areas

Working in the telescope areas (enclosed with fences) should always be considered a risky activity that has to be performed with maximum attention not to harm oneself, others, or the instruments. Following general rules and recommendations is extremely important.

R31. You are not allowed to work in the telescope area:

- If the wind speed is above 50 km/h.
- If it is raining or during thunderstorms, snow, drizzle, dew or fog.
- After a major storm, snow, or ice forming on the telescopes until they have been inspected by the La Palma crew.

R32. When accessing the telescopes areas you must carry a walkie-talkie and a cell phone. Another person must be in communication with a walkie-talkie and with a cell phone available in the Control Room and/or the Residencia apartments. Make sure the walkie-talkie is on channel #2 and test it before going to the telescopes area.

R33. Always wear a helmet and proper shoes when in the telescope areas.

R34. At the MAGIC site there is a cherry picker and forklift. Only persons with a valid license can use the cherry picker and forklift. Forklift also needs permission from MPI.

R35. When leaving the telescope area, always lock the fence and return the keys to their proper place.

R36. At night or twilight, always carry a flashlight. If your helmet has a flashlight keep it switched on all the time.

R37. Every time you enter the inner area of the telescope (e. g. for working in the telescope structure, cable carousel, etc) or the platform of the elevation drive, you have to use the installed stairs to pass over the azimuth rail.

R38. Pick up tools or material which has fallen down while you were working in or close to the telescope structure or the camera access tower immediately.

R39. Tie your tools to the harness to prevent them from falling down and use e. g. a small backpack to transport material up in the telescope.

2.3.3. Working at the Counting House

The Counting House is a common place of work that may host several people at once.

Covid-19 updates:

- The maximum number of people that can continuously be present in the Control Room is 2. A 3rd person can be allowed only for short periods and in exceptional circumstances. If the 3rd person enters the Control Room, masks should be worn by everyone.
- If there is a need for prolonged discussion of 3 or more people, it should be conducted outside.
- Each of the two people should designate a part of the large desk as an area to keep equipment and personal items during the night.
- The two people in the Control Room need not wear a mask if they can maintain a 2 meter distance. Some combinations of sitting arrangements and their approximate distances are indicated in Figure 4.
- Rules for distance or mask also apply for using the common area of the Counting House (coffee machine, fridge, electronics room), but only one person is expected to be present there at a time.
- If people need to work together (e.g. in the electronics room), they should minimize the time and wear masks.
- Equipment, keyboards, desks, armrests should be sanitized at the beginning and the end of the night's work. They should not be shared during the night among people. If they need to be shared, sanitize them before using them.
- The air conditioner should be set to increased intake of fresh air, while still maintaining a comfortable temperature.

R40. Keep instrumentation, equipment, personal possessions and food or drink in the proper places. Do not abuse spaces.

R41. Make proper use of cables and plugs in the CH in case of personal use.

R42. Do not store any flammables (fuel, chemicals, etc) anywhere in the Counting House. Ask the SM or LPP well in advance where to store such items.

R43. Do not use the control room as a workshop, use the designated areas.

R44. Do not use the control room as a storage room. There are proper storage rooms (both garages and the storage room below the LIDAR tower) in the CH.

R45. No alcoholic drinks are allowed at the Counting House. The GLIMOS must discard any alcoholic drink found inside the Counting House.

R46. Smoking is not allowed inside the CH. If you smoke outside, do not throw cigarettes or ashes on the floor or the bushes. This is an extreme fire risk at the ORM! Always use a small container.

R47. Clean the workshop, the working areas upstairs, and any area you worked at after you are done.

R48. Always wear a helmet and proper shoes in the dome of the upper floor of the LIDAR tower, day and night.

R49. The last person leaving the CH must switch off the light and lock the entrance.

G20. If you have a working cell phone at the site you need to write down the number on the whiteboard next to your room number. Keep the phone on always for emergencies.

G21. Report any safety issue regarding the CH as soon as possible to the SC.

2.3.4. Working in the Garages

The CH has two garages. In garage #1 one can find some equipment for personal protection, especially for technical activities, as well as some workshop machines for experts. In garage #2 one can find additional material, a cabinet with chemicals, and the UPS system.

R50. Do not enter the garages unless necessary.

Covid-19 updates: Follow the usual 2 m safety distance rules, or wear masks.

R51. Place back all equipment in the garages that was used.

R52. Do not use the machines unless you are an expert with specific certificates.

R53. You are not allowed to work alone on electrical equipment which is powered by a 400V/3-phase line or a 240V/1-phase line under power. This includes all equipment connected to power and switched on.

2.3.5. Working at Height

By law you are working at height if you are working on any structure higher than 2 m from the lowest level. You will work at height when you access any of the two camera access towers or any of the two telescope structures, when at the Counting House terrace, the LIDAR tower dome, or when using the cherry picker.

When you work at height, you must take specific precautionary measures and become familiar with the corresponding safety equipment. You are advised to follow a course about safety at height and to practice with the equipment at your home institute before coming to La Palma. When you are in La Palma, you may also ask the SM or LPP for instructions about the safety equipment.

R54. If you intend to work at height at MAGIC, you need to have passed a specific medical check in the last year.

R55. Before climbing you must read the document Working at Height available on the La Palma website safety page together with this document.

R56. Always inform the GLIMOS when you intend to work at height, so that he can alert all relevant people on site. Ask, well in advance, for authorization from the SC and the TC if you intend to do this work during night time, and strictly follow their specific instructions.

R57. It is forbidden to stay under or close to the telescope structure or the camera access tower when somebody is working there.

R58. You must use a safety harness every time you are climbing in the telescope structure, working on the camera access tower bridge, or in the cherry picker:

- Only use full body harnesses with fall arrest.
- Only use a harness equipped with two hooks.

Never use a harness which is not complete, is damaged or is labeled DO NOT USE!

R59. You always must be hooked in while climbing in the telescope structure, working on the camera access tower bridge, or in the cherry picker.

2.3.6. Use of Tools and Equipment

Do not use any tool if you are in doubt how to use it. Ask the GLIMOS or SM or LPP for help.

R60. Data-taking shifters cannot make use of the workshop machines located in the garages and in the electronics workshop of the second floor of the Counting House, unless previously instructed and supervised by Subsystem or General experts.

G22. When you finish your work, clean the machines and put all tools you have used back to their proper place, even if you have found them in a different place.

Covid-19 update: Remember to disinfect keypads, hand tools, etc.

G23. If tools get lost or broken, immediately send a note to the SM or LPP.

G24. If you see somebody from MAGIC misusing tools or somebody not from MAGIC using the tools without permission, report to the SM or LPP and the current GLIMOS.

3. Emergencies

An emergency may be internal or external. An internal emergency takes place within the MAGIC site, i. e. the area around the telescopes or the Counting House, limited by the road. An external emergency takes place outside the MAGIC area (e. g. forest fire, storms, fire in a nearby installation, car accident). We have separate emergency plans for each of the two.

1. Emergency Telephone Numbers. All emergency phone numbers can be found in the Counting House, on the whiteboard close to the kitchen. In case you need external help, the current emergency protocols at ORM requires that:

- a) The first number to call is the Residencia at ORM. It is the first call because they are the closest resource in case of an emergency. They speak Spanish and English, and they are trained in first-aid and emergencies. You can call them with the regular phones, a cell phone or with the radio emitter.
- b) The second number to call is the Public Emergency Telephone Number (112). They speak Spanish, English, French and German. It can be called from any cell phone practically everywhere, even if you don't have normal coverage. They will tell you what to do and will get in contact with the medical service, firemen, local authorities, or whoever is necessary. They will stay in contact with you until the emergency is finished.
- c) Not included in the ORM protocol, but strongly encouraged, is to call the SM or LPP.

The relevant phone numbers are:

- Public Emergency Telephone Number: (0) 112
- Residencia Reception (day time): (0) +34 922 405 500 (internal: 2500)
- Residencia Night Porter (night time): (0) +34 609 554 576

When calling any of those numbers for an emergency remember to state: who you are, where you are, the nature of the emergency, the actions you have taken so far, and (if you have the knowledge) the specific help that you will need.

2. Emergency Responsible and Intervention Team. The Chief of Emergency and Chief of Intervention in an installation are in general different persons. But due to our limited personnel at the MAGIC site we need to merge them into one single Chief of Emergency and Intervention. This Chief of Emergency and Intervention is the GLIMOS:

- a) S/He is the highest authority in an emergency.
- b) S/He manages the intervention team and calls for any help from the control center.
- c) S/He decides when it is necessary to evacuate the MAGIC site.
- d) S/He yields his authority to the external intervention teams when they reach the area and collaborates with them if necessary.
- e) S/He later takes care to investigate the reasons for the incident.

The intervention and evacuation team consists of at least the GLIMOS and the second most experienced expert/operator on site (e. g. SL, DSL, most experienced technical expert, most experienced operator). This team may be reinforced with any other MAGIC collaborators on site if the GLIMOS decides so.

3. Control Center. The emergency control center of the MAGIC site is the Control Room in the Counting House. The room is equipped with two telephone lines and the VHF radio transmitter. From the control center, the GLIMOS should take these actions in this order:

- a) Gathers all possible information about the incident from the control center.
- b) Calls for external help.
- c) Contacts the ORM authorities.
- d) Decides on an intervention to the site of the incident.
- e) Evacuates injured persons.
- f) Evacuates the MAGIC site.

4. Meeting point. The meeting point of the MAGIC site is the area in front of the garages of the Counting House. It is marked with a sign. If this site is compromised, the secondary meeting point is the helipad closest to the MAGIC site.

3.1. General Principles in Case of Emergency

Please read this carefully. It is important to know these procedures at heart in order to correctly proceed in case of emergencies. You may not have time to read this document again during an emergency.

The reaction in case of any emergency is based on the Protect - Alert - Help methodology. Follow the actions required in this order:

1. Keep calm. You must react fast to an emergency, but you can not act without deep concentration. Rather spend some seconds considering the situation than rush to take action and perhaps make everything worse and even put your life in danger.

2. **Evaluate the Situation.** Make a first but not too exhaustive evaluation of the situation. Make sure that you are not yourself in danger! If you are, take the proper actions to make yourself and other rescuers safe. Try to gather the basic details about the emergency: why the emergency happened, where exactly it has happened and how many people are involved. This will be essential for the emergency teams to decide on what actions to take.

3. **Mark the Site.** If possible or necessary (e. g. for traffic accidents) mark the site properly to avoid further incidents and for the emergency teams to find it easily.

4. **Raise an Alarm.** Alert first the GLIMOS at the MAGIC site and let him/her know that there is an emergency and that there is danger in the area. He will contact further persons at the site. You may use a fixed or cell phone, use the walkie talkies or use the radio transmitter. In case you can not communicate by those means, walk to the control center or to anyone who can alert the rest. The GLIMOS shall call for external help and contact the ORM authorities. The GLIMOS also informs the SM and/or LPP and the SC about the situation.

5. **Analyze the Situation.** Once you have alerted the GLIMOS, remain at the site until help arrives. While you wait, examine the emergency again in detail, the state of any victims and look for any dangers. If it takes time for help to arrive, you will need to act and you need to know if your own life may be in danger or if your actions may endanger any victims.

6. **Provide Help.** If your life is not in danger and you know well what to do, you may now act, for instance, to give first-aid or to use the fire extinguishers.

3.2. Internal Emergencies

Possible internal emergencies are fire inside the MAGIC areas, medical emergencies, or an internal evacuation of the MAGIC site.

3.2.1. Fire at the MAGIC Areas

Follow these **specific rules for fire** in addition to the general emergency rules described above:

- If there is plenty of smoke, crawl low out of the area: the air is cleaner close to the floor.
- Cover your nose and mouth with clothes, if possible wet ones.
- If your clothes catch on fire, lie on the floor and roll around.
- Switch off electrical power if you can.
- When leaving the area, close all doors to prevent fire from spreading.
- If the fire has grown too large, do not try to put it out by yourself.
- Go to the nearest exit or to a safe place.
- If you are trapped in a room, keep the door closed and put wet clothes at the bottom of the door.
- If you are at the ground floor of the Control House and you are trapped in a room with windows, exit through them.

- If you are in the upper floor of the Control House, exit to the terrace and call somebody's attention. There are ladders that can be used to climb down.

The GLIMOS, acting as Chief of Emergency and Intervention, must make sure that:

- Everybody at the MAGIC site has been alerted about the fire and goes to the meeting point.
- The intervention team is defined.
- Anybody who is not in the intervention team evacuates the site and goes to the Residencia and stays on call at the Reception.

The GLIMOS with the help of the intervention team should try to **extinguish the fire** using the CO2 extinguishers, the fire blanket or water. In all rooms and corridors in the Counting House, in both containers at the telescopes and outside the telescope structure you can find at least one fire extinguisher close to the doors. The fire blanket can be found outside the Computer Room close to the key boxes and the fire extinguisher. The map of the fire extinguishers and first aid-kits is also shown in Figure 3.

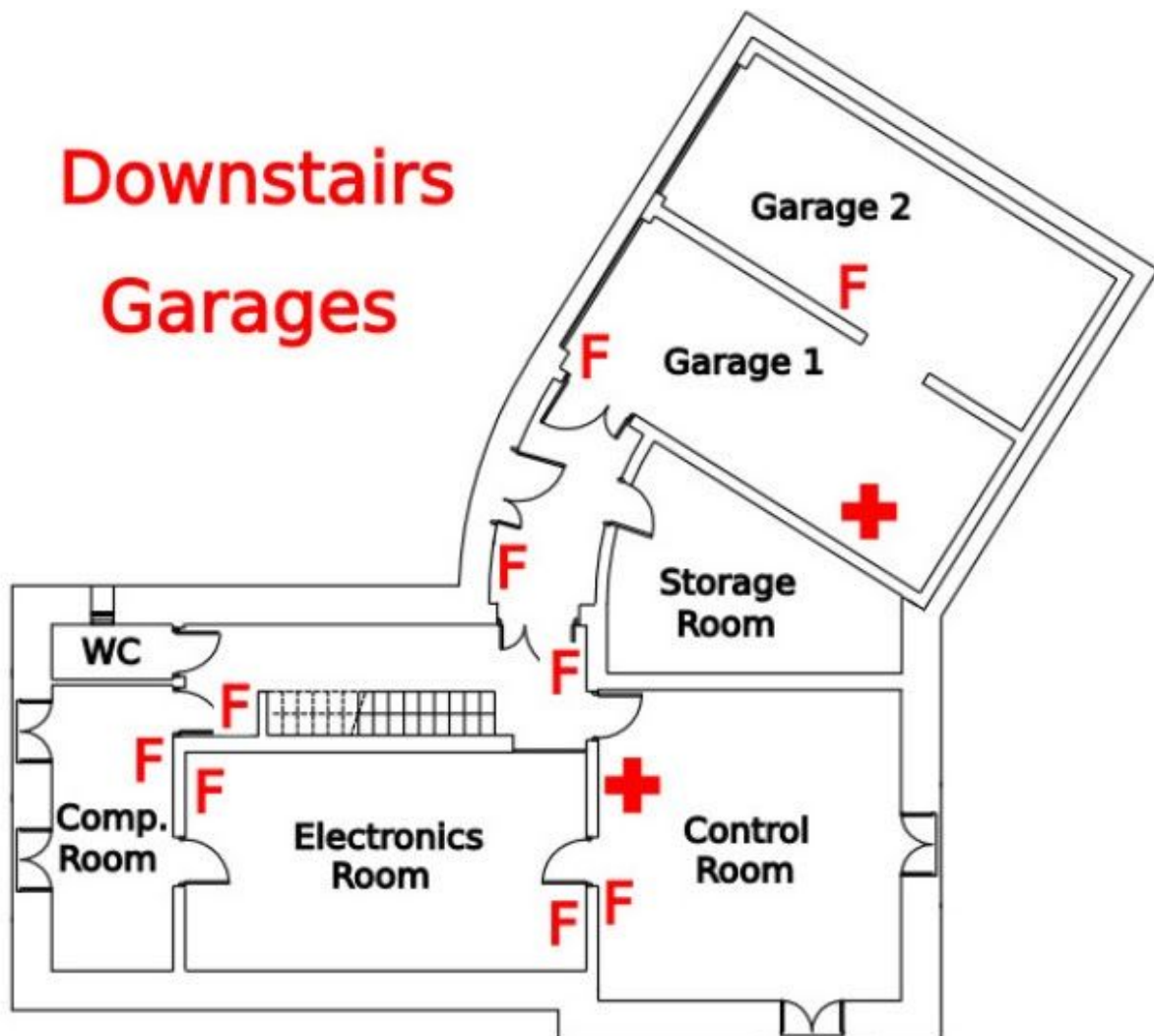


Figure 3: Map of the Control House ground floor and location of the fire extinguisher units and first aid kits

Use the **fire extinguishers** in the following way:

- Find out what material is burning: solid, liquid, gas, special metals. We have CO2 extinguishers which can be used only for solid and liquid materials, but not for gas or special metals.
- Pull the pin at the top of the extinguisher. The pin releases a locking mechanism and will allow you to discharge the extinguisher.
- Hold the extinguisher by the handle with one hand and use the same hand to press the lever. Use the other hand to point the extinguisher nozzle and direct the extinguishing agent. Be careful if holding the bottle, as it will get cold.
- Aim at the base of the fire, not the flames. This is important – in order to put out the fire, you must extinguish the fuel source of oxygen.
- Squeeze the lever slowly. This will release the extinguishing agent. If the handle is released, the discharge will stop.
- Sweep from side to side. Using a sweeping motion, move the fire extinguisher back and forth until the fire is completely out. Operate the extinguisher from a safe distance, a few meters away, and then move towards the fire once it starts to diminish.
- If the burning material is solid, spread the embers once it is extinguished and spray them again.
- If the burning material is liquid, do not point the extinguisher directly at it but rather at its surface to prevent the liquid from spreading around.
- A typical fire extinguisher contains 10 seconds of extinguishing agent. This could be less if it has already been partially discharged. Shoot the extinguisher in a series of short discharges,
- It is highly recommended to read the instructions that come with the fire extinguisher beforehand and become familiarized with its parts. It is also recommended that you get hands-on training before operating a fire extinguisher. Most local fire departments offer this service.
- Once the fire is out, do not walk away! Watch the area for a few minutes in case it re-ignites.
- Make sure the extinguisher is recharged immediately after use. Inform the SM or LPP which extinguisher was used.

Some actions can be taken for **prevention of fires** or to help act in case of fires:

- All exits must be left free of obstacles.
- Maintain all equipment regularly.
- Keep the ambient temperature in the working areas under 25°C.
- Keep humidity, water spills and leakages under control: they may provoke electrical shortcuts.
- Do not bring flammable or combustible objects close to a source of heat.
- Do not overload electrical power lines.
- Do not smoke close to an area with high risk of fire (e. g. garages, workshop). Smoking is not allowed inside the Counting House.
- Do not use tools in a bad state which may create sparks.

3.2.2. Medical Emergencies

There are 4 First Aid kits in the Control House. The First Aid kits can be found:

- In the Control Room in the bottom cabinet of the shelf with the safety equipment for the shifters.
- In the upstairs electronic workshop.
- In the mechanical workshop (garage #2) located above the fire extinguisher and the large waste bin.
- In the Würzburg containers of M1 on the shelf.
- In the container of M2 on the table close to the door.

If the person who suffers the accident is not seriously injured, he can be taken care of locally at the Counting House or at the first-aid room at the Residencia (near the Reception). If necessary he may be taken down to a doctor or to the hospital in a car. The only hospital on the island is in Breña Alta, not far from Santa Cruz or the airport. Follow the road from Santa Cruz to Los Llanos and you will drive past it.

If a person is severely injured, you should get external help. Phone the Residencia and request support from the ORM first intervention team and the necessary medical equipment. After that, call the Public Emergency Telephone Number (112), and maintain the contact with them until the emergency is solved. If possible, inform also the SM and/or LPP and SC.

In case a person needs special assistance, an external ambulance with a medical team and more expert equipment will be sent to ORM, but this ambulance will take 30 to 45 min. If you need faster assistance, at daytime a helicopter may be sent depending on the weather.

3.2.3. Internal Evacuation

The GLIMOS decides if the MAGIC site must be evacuated. The intervention team must make sure that everybody at the site is properly informed, including visitors. The accompanying person of visitors is responsible for their evacuation. Everybody on site must walk to the meeting point. The GLIMOS will instruct everybody to leave the site (by default to the Residencia). S/He will evacuate last.

The **specific rules in an evacuation** are:

- Unplug all tools.
- Switch off the electronics and computers only if there is enough time (weather conditions get foreseeable worse etc).
- If you find a visitor on their own, a tourist or an external worker (cleaning personnel, etc), escort them to the meeting point.
- Evacuate the site fast, but do not run. Follow the instructions of the GLIMOS.
- If there is plenty of smoke, crawl out of the house.
- Do not return back.
- Do not carry any bulky stuff with you.
- Help handicapped people.
- Close doors after you exit through them.

3.3. External Emergencies

If an emergency affects the whole ORM, the highest authority is the Chief of Emergency of the ORM or, in his absence, the Chief of Intervention of the ORM. The CE is the ORM Administrator. The CI is the ORM Chief of Maintenance. They are both in charge of starting and coordinating an evacuation. They will instruct the GLIMOS, who in turn instructs everybody at the MAGIC site. The ORM CE may ask the GLIMOS for help to coordinate the actions at the ORM.

Any MAGIC member may be asked to help with emergencies at other telescope installations (e. g., major fires, collapse of buildings, numerous injured persons) according to their training in emergencies. The GLIMOS, together with the ORM CE, organizes the MAGIC team helping in the emergency and the delivery of any necessary equipment. He must make sure that there are enough human resources left at the MAGIC site for emergencies.

Possible external emergencies are wildfires, traffic accidents or adverse weather conditions.

3.3.1. Wildfires

If the fire takes place close to the MAGIC site and their installations are in danger:

- Alert the GLIMOS.
- Alert the reception of the Residencia.
- Alert 112.
- The ORM CE or CI takes the highest control.
- The GLIMOS keeps control over the MAGIC site.
- External help will arrive, i. e. firemen.
- They may need extra help from:
 - Intervention Team of ORM.
 - Intervention Team of MAGIC: extinguishers.

If a fire threatens the ORM or some other installation at the Roque de los Muchachos, the GLIMOS may be asked to provide help to the Intervention Team of the ORM. S/He, along with the Intervention Team, will act under the instructions of the ORM CE.

If the ORM CE or CI orders the evacuation of the ORM, follow their instructions. The evacuation of the MAGIC site would be coordinated by the GLIMOS: follow the standard procedure for internal evacuations.

If the fire prevents a general evacuation from the ORM, take shelter in a safe place inside the MAGIC installations or, in extreme cases, drive up to the highest section of the ORM (the Roque de los Muchachos itself). There is hardly any vegetation and you may use paths to walk out of the area.

3.3.2. Traffic Accidents

If you are informed by the ORM of a traffic accident at the ORM road, alert the GLIMOS and everybody at the MAGIC site, so that nobody leaves the area. This prevents any further accidents and facilitates the works of the external assistance team.

If the ORM or the external authorities (Guardia Civil, Local Police, Civil Defense, etc.) ask for assistance, grant it always under the coordination of the GLIMOS.

If you witness a traffic accident close to the MAGIC site, proceed as follows:

- Help mark it properly at the road (emergency lights, 2 triangles: 50 m in front and 50 m behind the car).
- Inform the GLIMOS.
- Inform the reception of the Residencia.
- Alert 112.
- Give first aid.
- Wait for the intervention team of the ORM.
- If the accident involves a member of MAGIC inform the SM and/or LPP and the SC.

3.3.3. Adverse Weather Conditions

The ORM suffers from a variety of adverse weather conditions: thunderstorms, strong winds, snowfall and ice, rain and thick fog. The weather forecast for the next few days is available at the Residencia reception. This weather forecast is of great help to decide on an eventual evacuation. The ORM also distributes a report with the weather alert condition (no alarm, pre-alert or stand-by, alert) every day through the magic_online mailing list. This report specifies the areas of the ORM which will particularly suffer from the bad weather.

1. If you have to **drive in adverse weather conditions** read the general and adverse weather driving rules. If you are already at the ORM:

- In case of a pre-alert: stay at the ORM, inside a building and get in contact with the reception of the Residencia periodically to get an update of the situation.
- In case of an alert: If the weather conditions become severe, GLIMOS decides if all MAGIC personnel need to evacuate after discussion with everybody on site. Follow the internal evacuation procedure. Secure the telescopes. Evacuate always in 4x4 drive vehicles. If there is a general evacuation of the ORM, follow the instructions of the ORM CE.

2. In case of **lightning and thunderstorms**:

- Do not leave the buildings (Control House, containers, apartments).
- Do not use an umbrella.
- Do not touch any wet surfaces.
- Do not get close to any metallic structure.
- Do not touch metallic objects (window frame, radio transmitter, PC screen, TV set, etc.)
- Avoid the use of fixed (wired) phones.
- If you are inside a car, do not leave it. Switch off the radio and close doors and windows.
- If you are outside, find an indoor shelter.

- If you are nowhere near an indoor shelter, stay away from hilltops, tall trees, metal wires, fences etc. Find a lower spot compared to the surroundings, and squat keeping your heels touching and your head close to your knees.

3. In case of **strong wind** at wind speeds above 70 km/h:

- Do not leave the buildings (Counting House, containers, apartments).
- If you have to go outside for any emergency, use warm clothes, gloves and proper shoes.
- If you are outside, look for shelter. Get away from areas where you may expect landslides.
- When you are inside a building, stay away from glass windows.

4. For **snow and ice** events:

- Do not leave the buildings (Counting House, containers, apartments).
- If you have to go outside for any emergency, use warm clothes, gloves and proper shoes.
- When you are outside, watch out for ledges: ice chunks may fall off. Pay special attention when opening the doors of the apartments.
- If somebody suffers from hypothermia:
 - Warm them up slowly.
 - Slowly massage the affected areas except if there is evidence of freezing.
 - Do not let them drink alcohol, give them something warm to drink (tea, chamomile).
- After a major storm, snow, or ice forming on the telescopes do not enter the telescope areas. Wait until they have been inspected or you have been instructed to do so by the La Palma crew.

5. In case of **heavy rain and thick fog**:

- Suspend all outside work at the site unless they are essential or in case of emergency.

4. General Health Considerations

4.1. Working at Night

Working at night is demanding and calls for special precautions. Expect your performance to significantly degrade during the night because the human body does not work efficiently after it gets dark. The worst hours are between 3:00 and 6:00. You may feel confused, depressed or irritated. Be aware that psychological factors also play a role: when working at night and at a remote place like the ORM you have less interaction with your family or friends.

The amount of time that you are allowed by legislation to work at night is limited and it also requires the corresponding rest time. The legal framework for working at night in isolation conditions, if you work for a period less than 28 days, sets the following limits:

1. A maximum of 8 working hours per day in a 15 days average.
2. A maximum of 40 hours per week in a 14 days average, but it can be exceeded if they are compensated with rest days immediately after the period.
3. A minimum of 12 hours rest between the working day and the next one.
4. A minimum of 1½ uninterrupted rest day per week on a 28 days average.

Timesheets

At the start of your shift, LPP or SM will give you a timesheet to fill each night with times of start and end of your work, and hours of break taken. Time when you are 'on-call' is not counted as working hours, unless you are called to the Control Room.

At the end of your shift, the timesheet will help you determine how many days of rest you must take within the 4 months following your shift. If you need assistance with this, contact the SC. The timesheets will be kept for 4 years and available to you on request.

It is the SL that organizes the rests of the shift crew. Depending on the size of the crew and the period of the year three rotation schemes that fulfill the legal framework are:

	Day 1	Day 2	Day 3	Day 4
SL	Full night	1st half	Off	2nd half
DSL	Off	2nd half	Full night	1st half
Operator	1st half	Off	2nd half	Full night
Operator	2nd half	Full night	1st half	Off

Table 1. Rotation scheme for the periods with 4 shifters.

	Day 1	Day 2	Day 3	Day 4
SL	Full night	Full night	Off	Full night
DSL	Off	Full night	Full night	Off

Operator	Full night	Off	Full night	Full night
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Table 2. Rotation scheme for the periods with 3 shifters.

Full night means that the shifter stays from the preparation of the telescope until the end of the night. **2nd half** means (s)he will be taking the shift in the second half of the night. In the first part of the night you must be on call. This means that you need to be awake and available to move immediately to the Counting House. The **1st half** is symmetrical to 2nd, but you have to stay on call in the second part of the night. **Off** means that you can relax in the apartments, without need to go up to the Counting House to work. Anyhow, in case of an emergency, the operator that is off can be called to join the intervention team.

The **third scheme**, with only 2 shifters, is done in collaboration with the LST-1 crew. There are 2 MAGIC shifters at the site (a SL and an Operator) and 2 shifters at LST-1 site. MAGIC and LST-1 crews assist each other during the startup and shutdown. Shifters are expected to work for 4-6 nights continuously, and then take 2 days off, during which they are not required to be at the site. Moon time observations are shortened sufficiently to allow for a maximum of 9 hours of work per night, including the startup and shutdown (but excluding a break during the night).

R62. During startup and shutdown operations at least two shifters must be present at the Counting House to go to the telescopes and proceed with the un-parking or parking operations. The same rule applies for any inspection that requires to enter in the fenced area during night time. A third operator should stay in communication with the others by walkie talkie and with a mobile or fixed phone available, either in the Control Room or in the Residencia.

R63. People on shift must stay up on the Roque de los Muchachos and have a room either in the apartments or the Residencia.

R64. The working limits detailed above are valid for anyone staying less than 4 weeks on site. If you stay longer than 4 weeks you should stick to 8 hours per day and 2 days off every week.

S3. You are not recommended to sleep when you are off duty, because that may break your sleeping habits. Just relax and do not plan for other work.

S4. Plan the working nights/hours at least one week in advance.

S5. Remember to eat and drink while at the Control Room. Always drink bottled water.

S6. Eat something light before going to sleep.

S7. Make frequent short breaks (e. g. 5 minutes every hour). They help to reduce the workload and keep your concentration.

S8. Plan for some physical exercise.

S9. People suffering from epilepsy or another sickness which is made more acute by sleep deprivation should not work at night. Epileptic strokes are more frequent with little sleep or fatigue

S10. Since working at night generally affects eating habits, take special care if you suffer from a digestive illness (especially diabetes).

4.2. Sickness

Hereafter, an absolute contraindication means that there are no reasonable circumstances under which a person should come to the MAGIC site for a long period of time or even at all. A relative contraindication means that the person is at higher risk of complications.

4.2.1. Altitude Sickness

Altitude sickness is a pathological condition that is caused by acute exposure to low air pressure (usually outdoors at high altitudes). It commonly occurs above 2 400 meters and affects especially persons who live at or close to sea level. About 20% of the people suffer from mild altitude sickness at altitudes between 2 000 and 3 000 meters. Acute altitude sickness is much rarer at these altitudes (1–2% at 3 000 meters).

Acute altitude sickness can progress to pulmonary or cerebral edema. In pulmonary edema fluid accumulates in the lungs, resulting in severe shortness of breath and low levels of oxygen in the blood. In cerebral edema, fluid accumulates in the brain, resulting in mental confusion, coma and eventually death. In case of edema, the patient must immediately be taken down to sea level. If you or someone else show symptoms of acute altitude sickness immediately contact Residencia and the Public Emergency Phone Number (112).

Experts should check if newly arrived collaborators show any of the following symptoms, particularly during their first visit to the MAGIC site.

Mild altitude sickness symptoms:

- Headache (primary symptom).
- Lack of appetite, nausea or vomiting.
- Fatigue or weakness.
- Dizziness.
- Insomnia.

- Shortness of breath upon exertion.
- Persistent rapid pulse.

The treatment for mild altitude sickness:

- Fast descent.
- Rest.
- Diet rich in carbohydrates (e. g. marmalade, fruit).
- For headaches: aspirin or paracetamol

Acute altitude sickness symptoms:

- Gradual loss of consciousness, confusion.
- Headache that does not respond to analgesics.
- Coughing fits, cough with blood.
- Shortness of breath even when resting.
- Pectoral congestion or rigidity.
- Blue skin color.
- Inability to walk in a straight line or to walk at all.
- Pale or gray face color (cerebral edema).

Acute altitude sickness treatment:

- Fast descent.
- Pulmonary edema: oxygen.

4.2.2. Coronary and Respiratory Sickness

Coronary illness: Even if it is not an absolute contraindication, it requires a good acclimation and proper adjustment of the antianginal treatment. A recent angina pectoris or heart attack (4-12 weeks) are absolute contraindications.

Respiratory illnesses:

- [Covid-19 update](#): For rules related to Covid-19 please see the Appendix on that topic.
- Asthma: no contraindication. Cold and physical exercise may provoke an attack, but high altitude can actually decrease the frequency of such attacks because there are fewer allergens in the air.
- Emphysema: Relative contraindication, consult a doctor. May result in a pneumothorax (collapsed lung).
- Pneumonectomy: It is an absolute contraindication unless the surgery took place when very young and the respiratory function is fully recovered. Consult a doctor.
- Recurrent spontaneous pneumothorax: Relative contraindication, consult a doctor

Blood diseases (Thalassemia, Sickle-cell disease), thromboembolic diseases, or a medical record of pulmonary or cerebral edema are absolute contraindications.

4.2.3. Sun Overexposure

The intensity of sunlight and especially UV radiation increases with altitude. You are advised to use a total protection sun cream for your skin (e. g. Heliocare 90 gel) or your lips (e. g.

Helioderm 32). Persons sensitive to lip (labial) herpes should apply the cream frequently. Use sunglasses with at least protection index 3.

The exposure to sunlight without proper protection or sensitive persons may result in conjunctivitis (red eyes). You will feel eye burn, a feeling of sand inside the eyes, photophobia and you may cry constantly. If your eyes get dry, use artificial teardrops.

4.2.4. Cold

It can always get cold at night at the MAGIC site, even in the middle of summer. Pay special attention to freezing when working outside. You will feel no pain and may not realize that you are freezing until it is too late. There is always a higher risk of freezing at the site due to the following factors:

- Humidity and wind add up to the low temperature.
- The blood has a higher density of red blood cells because the oxygen pressure is lower.
- Dehydration also increases the density of red blood cells.

Bring a coat to La Palma, even in summer. Choose your clothes carefully in advance of your trip. Wear gloves in winter.

4.2.5. Dryness

The atmosphere at the ORM is extremely dry. You can suffer from skin dryness and throat dryness. Use abundant skin cream or sun protection. For the night, you can either lend a humidifier at the Residencia, if necessary, or place wet tissues on top of the heating units

4.2.6. Other Considerations

- Age: It is not recommended to go higher than 1800 m before the age of 18 months or 3000 m before the age of 12 years.
- Pregnancy: Take special care during the first 3 months.
- Contraceptive pill: It can produce fluid retention, so it is not recommended.

4.3 Healthcare at La Palma

The public Healthcare system covers all Spain nationals and, partially, EU state member nationals. To obtain health assistance you have to bring with the Health Card (Tarjeta Sanitaria) if you are a Spanish national or resident, or the European Health Insurance Card (EHIC, formerly the E111 form) if you are an EU national. If you are not EU national the personal insurance covering medical treatments should take care of such contingency. Remember that, in any case, the personal insurance is mandatory for all individuals travelling to La Palma. Please check the regulation and limitations regarding the EHIC at your home Healthcare agency: i.e. you may have to partially or fully pay for medical treatment in La Palma, and claim these costs back in your country. Same applies for any travel insurance you arrange.

If you need to have a regular visit with a doctor for a health problem, you have to ask for an appointment at the nearest Healthcare centre. There they will appoint you a doctor for a short term, typically 3 months, and a day for the visit, which may take from none to 2-3 days. In case your problem requires an urgent visit, you can directly go to the Healthcare centre and ask for it. This is possible 24 hours a day, all week long.

The main Healthcare centre in La Palma are:

Centro de Salud de Santa Cruz de la Palma
Calle Pérez Galdós, 5
38700, Santa Cruz de la Palma
P: +34 922 41 80 27

Centro de Salud de Los Llanos de Aridane
Calle Angélica Luis Acosta, 2
38760 Los Llanos de Aridane
P: +34 922 40 31 92

Only in the case that you have an emergency, and you can not wait for the emergency services to assist you, you may directly go to the Hospital at La Palma. The address of the hospital is:

Hospital General de La Palma
C/ Buenavista de Arriba, s/n
38713 Breña Alta
P: +34 922 18 50 00

It is recommended to call 112 and wait for assistance before driving to the hospital. If your condition is not severe, you may be forwarded to the urgent service at the nearest health centre. The doctors and personnel in the Health Care centres may only speak Spanish. Contact the La Palma local crew if you need assistance with the language.

[Covid-19 update](#): For instructions on what to do if there is a suspicion of Covid-19 illness, please see the Appendix.

5. Behavior in Common Areas

5.1. Behavior in the Counting House

The Counting House is a common place of work that hosts the Control Room, the Electronics Room, the Computer Room, and the Meeting/Relax Room. On some occasions, the Counting House can be crowded with persons, both during the day and at night. It is therefore important to respect common rules of behavior besides the standard safety rules.

The cleaning service comes on Mondays and Thursdays and will empty the trash cans.

R65. The couch in the relax room is for short rest and not for continuous use.

Covid-19 update: Owing to the difficulty in maintaining the necessary level of hygiene, the usage of the couch is not recommended.

G25. Do not leave food after you leave the area on the desks and in the shelves as well as open drink containers (coke, water, juice, etc) close to computers, keyboards or other electrical equipment!

G26. Collect all no longer used tools and store them at the workshops where they belong.

G27. Clean up the Control Room of the Counting House every day after your duties.

G28. Put the scrap paper in the paper recycling box, throw away trash in the trash can. If you need to empty the trash can before that use the large barrel in the garage #2. There is also a smaller bucket for metal waste.

G29. Check that the door of the fridge is closed.

R66. Clean the fridge at the end of your stay. Throw away all perishable food!

5.2 Apartments and Residencia

In the Residencia annexes, MAGIC has reserved two apartments, #5 and #6. Both have three individual rooms, and in apartment #6 a kitchen with dishwasher and washing machine, and a living room for common use. These apartments are used constantly by data taking shifters that sleep in the day. It is important to maintain absolute silence during the day.

Covid-19 update: The Apartment 6 kitchen and the common room may be used, but there are special rules set by ORM on the maximum number of persons allowed and on the cleaning. Follow the ORM rules.

We had several episodes of problems with mice in the apartments. Keep the apartment clean during your entire stay. The cleaning service of the Residencia is not responsible to wash dishes, throw away rotten food, clean the table after eating, or throw away leftovers. This is your responsibility.

R67. Follow the [IAC rules](#) in the apartments #5 and #6.

R68. Respect the silence during the day at apartments #5 and #6. Pay attention to careful closing of the doors.

G30. Do not leave used dishes in the sink, kitchen or living room. Use the dishwasher.

G31. Clean up apartment #5 and #6 before you leave.

R69. Clean the fridge and the storage room. Throw all perishable food in the trash before you leave. Do not leave perishable food for the next shifters coming to La Palma unless they ask you explicitly to leave it.

G32. If you stay overnight at the Roque, you must do the check in and check out at the Residencia reception desk.

G33. It is not allowed to pass the room key to another person.

G34. Room changes must be authorized by the reception.

G35. Avoid taking cutlery and/or dishes etc from the Residencia down to the apartments or at least carry back "loaned" cutlery and dishes as soon as possible.

G36. Use the bottled water in the CH at your discretion, but do not take water bottles from the CH to the apartments. The water in the CH is provided by the MAGIC Common Fund, the water used in the apartment is the responsibility of the inhabitants.

G37. Do not park in front of the apartments during the day. Otherwise large vehicles cannot turn around. Park at the annex parking lot or the parking lot of the Residencia.

G38. At the end of your stay, the ORM asks you to fill a short questionnaire, please fill it carefully, this will improve the conditions of the shifters.

S12. Turn the sign at your room door to the green side "Please Clean the Room" to indicate that this room should be cleaned.

Safety and Health Checklist

(Version 6.04)

Fill this page, sign it, and hand it to the Site Manager or La Palma Postdocs.

Date: _____

Job profile² (non-expert / expert): _____

- I have read and understood this document, and will follow the safety rules.
- I have passed a medical check in the past 12 months.
- I have passed a First Aid course in the past 5 years.
- I have received a guided tour of the MAGIC site and have been shown the areas which are restricted to experts.
- I am equipped with safety shoes.

- Shifters: I have been shown the safety equipment.
- Shifters: I have read and understood the DOM.

- Shift Leader and Deputy Shift Leader: I am familiar with the TOM.
- Shift Leader: I have been given the Shift Leader cell phone.
- Shift Leader: I have been given the Shifter Car. I acknowledge it runs on diesel.

Name and Institute:

Signature:

Received by:

² If you are only a visitor at the MAGIC site, please fill-in the dedicated page in the visitor document.

Appendix — Safety in time of Covid-19 epidemic

Here you will find a summary of information related to Covid-19.

With respect to the risk scenarios for exposure to the SARS-CoV-2 coronavirus in the workplace, the MAGIC site is considered as a place of **Low chance of exposure**. That implies that workers do not need to wear Personal Protective Equipment (PPE) in usual working conditions provided that 2 m distance to other people can be maintained.

However, it is foreseen that in certain situations (for example, but not limited to, lack of cooperation of a symptomatic person) you might need to use:

- respiratory protection (mask which conforms to UNE 0064-1 specification is recommended),
- protective gloves, which are available at the site.

Basic hygiene measures

- You must maintain a physical distance of 2 meters.
- You must practice personal hygiene measures in all work areas. There will be signs to remind you of that.
 - Hand hygiene is one of the two important measures of prevention and infection control, and it should be periodically performed.
 - There are soap, warm water and paper towels in the bathroom. In the Control Room there is alcohol-based hand sanitizer.
 - You must adopt the following respiratory hygiene measures:
 - When coughing or sneezing, cover your mouth and nose with a tissue and discard it in a trash can with a lid operated by foot. If tissues are not available, use the inside of the elbow so as not to contaminate the hands.
 - Avoid touching your eyes, nose or mouth.
 - After coughing or sneezing, and before touching your mouth, nose, or eyes, wash your hands carefully with soap and water for at least 20 seconds. If there is no soap and water, use disinfectant solutions with alcohol to clean them.

Cleaning and disinfection

- Each person should keep all equipment (helmets, flashlights, walkie-talkies) on a designated space on a desk during the night to ensure no mixing of equipment. The same applies to personal items such as water bottles.
- Sanitize the equipment you will use at the start and the end of your work each night.
- Sanitize also keyboards, desks, armrests at the beginning and the end of the night.

- Keyboards, desks, chairs should not be shared during the night among people. If they need to be shared, sanitize them (armrests on chairs) before using them.
- Gloves for mechanical work can be worn over disposable gloves, so there is no need to sanitize or keep them on the desk. If possible, try to use the same mechanical work gloves during your shift.

Ventilation

- You should open windows during the startup and shutdown. The total time they are open should be longer than 5 minutes every day.
- If there is time you should open the door of the garage and the door on top of the second floor. Please use doorstops to avoid doors slamming in the wind.
- Make a checklist you will use during your shift (whiteboard is sufficient) so you do not forget to close doors and windows outside the Control Room.
- The settings of the air conditioner should be adjusted (ask LPP or SM for help) to minimize air recirculation and increase the intake of fresh air, as long as a comfortable temperature of the room can be maintained.

Workspace organization and safety distance

- You should maintain a distance of 2 meters to other persons on premises intended for work activity. In your case, this applies to the Control Room of the Counting House.
- You should find only 4 chairs in the Control Room to reflect the arrangement of working spaces (see Figure 4.).
- The maximum number of people that can continuously be present in the Control Room is two.
- A 3rd person can be allowed only for short periods and in exceptional circumstances.
- If there is a need for prolonged discussion of 3 or more people, it should be conducted outside.
- If people need to work together (e.g. in the electronics room), they should minimize the time and wear masks.
- Each of the two people should designate a part of the large desk as an area to keep equipment and personal items during the night to ensure there is no mixing.

Common spaces

- Rules for maintaining the distance or wearing a mask also apply for using the common areas of the Counting House (kitchenette, break room, electronics room), but only one person is expected to be present in any of those rooms at a time.
- Remember to maintain hand hygiene after touching any frequently used surfaces, e.g. coffee machine, fridge, light switches, door handles.

Accommodation

- As usual, it is possible to stay in the Residencia or in Apartments 5 or 6, but the maximum number of allowed occupants in both places is reduced.
- ORM has special rules regarding the use of the common areas (kitchen and the living room) in apartment 6, as follows.
- The maximum number of people present in the kitchen is 2 and in the living room it is 4.
- The users of the kitchen **must** carry out daily cleaning and keep the record of the cleaning (persons, dates etc).
- The common areas will be closed for cleaning by ORM staff during the moon break.
- You may also organize your meals with the Residencia.

Cars

- The maximum number of people allowed in each car is four.
- If there is more than one person in the car, masks must be worn during the ride and maximum possible distance maintained (e.g. not occupying the middle seat with 4 people).
- If there is more than one car available and you prefer to drive alone, you could organize to drive in a convoy.
- Cars should be cleaned/sanitized after each use (daily) -- gear lever, steering wheel, door handles, window handles or switches, switches (lights, turn signals, windshield wipers, air conditioning switches, radio, etc.).

Training and information

- You are expected to be familiar with all information written in this document, including the Covid-19 information.
- During the safety tour you will be shown where the basic protective equipment can be found and advised how you can organize your desks and work areas to respect the safety distance and hygiene rules.
- If you have any further questions contact SC.

Access to ORM and MAGIC site

- Currently, there are no restrictions for people from Canary islands accessing ORM.
- By Canary Islands government law, starting from November 2020, all tourists arriving in accommodation on Canary islands need to present proof of a test excluding an active Covid-19 infection, not older than 72 hours. They also need to install Radar Covid application on their smartphone and keep it active 14 days after leaving the islands.

- Do NOT assume that there is no risk of transmission because everybody at the site has been negative on a PCR test before their travel.
- During your stay at ORM and MAGIC site, you are required to daily monitor and log your health status: body temperature (the contactless thermometer is available at the site) and presence of any symptoms related to respiratory illness (cough, shortness of breath). The log should be personal, but available if requested by medical personnel.

Particularly sensitive group status

- Vulnerable groups for Covid-19 are defined as people with diabetes, cardiovascular disease, including hypertension, chronic lung disease, immunodeficiency, cancer under active treatment, pregnancy, and age over 60 years.
- Persons belonging to these groups are advised not to travel to La Palma until the Covid-19 pandemic ends.
- However, according to the classification of exposure to SARS-cov-2 in the workplace, there is a low probability of exposure at the MAGIC site. That means that you are not forbidden to come, but your home institution will need to confirm that the health assessment has been carried and your mission is compatible with safety and health regulations at the destination.

Suspicion of a possible Covid-19 case

- In case of temperature higher than 37.7°C or presence of symptoms (fever, cough, or respiratory difficulty) this will be treated as a "suspicion or activation of a possible case".
- If you notice any of the symptoms (fever, cough, or respiratory difficulty), but not severe as in a medical emergency, report it to GLIMOS and if possible stay in your room.
- If there are other people around, wear a mask.
- If there is an accompanying person, they must also wear a mask.
- Once the above measures have been adopted, contact the Canarias Comunidad Autonoma health authority through 112/061 / Covid-19 telephone: **900 112 061**
- GLIMOS is responsible for organizing the next steps.
- First, inform magic_safety of the activation of a possible case, and steps taken so far.
- Once the person suspected of being infected has been evacuated, the work area you are working in, especially the work surfaces and the tools, utensils, or devices with which you were working on that moment need to be sanitized.
- Identification of contacts:
 - "Close contact" of possible, probable or confirmed cases means anyone who has provided care while the case had symptoms, or cohabitants, relatives and people who have been in the same place as a case while the case had symptoms at a distance less than 2 meters for a time of at least 15 minutes.
 - "Casual contacts" are other contacts. In normal working conditions at the MAGIC site, all contacts of a possible case would be casual contacts.

- Once informed, GLIMOS must collect information on which people may have been in contact with the person who has presented symptoms and notify the Health Authority.
- Management of contacts:
 - *Casual contact* with a possible, probable, or confirmed case of Covid-19. They will continue with normal work activity and passive surveillance of the appearance of symptoms.
 - *Close contact* with a possible, probable, or confirmed case of Covid-19. The worker must be removed from the workplace and self-isolate for 14 days with active monitoring of symptoms. This is determined in coordination with the health authority.
- Follow-up and control measures:
 - The health authority, after analyzing the information on the incidence, will determine the performance measures in each case.

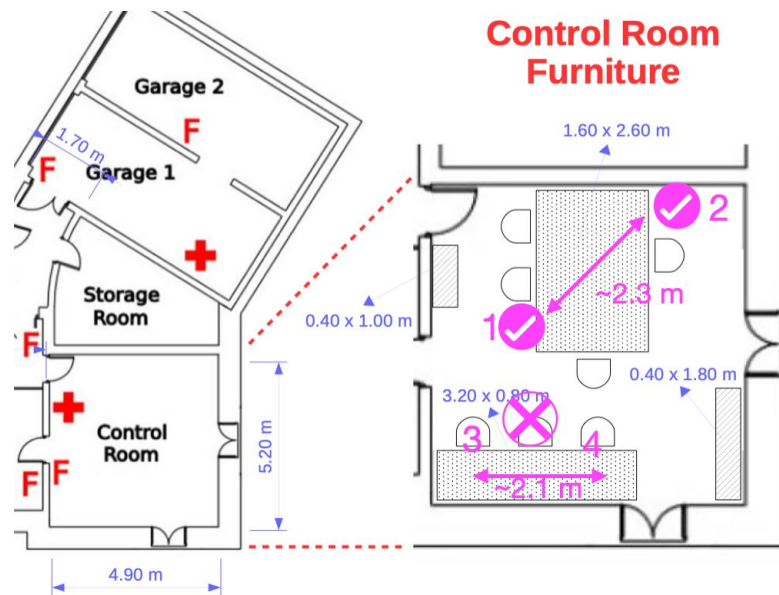


Figure 4: Proposed arrangement of Control Room work places.