



FOCA GM/INFO

Guidance Material / Information

Use of Helicopters to Trigger Avalanches



Source: pixabay

Scope	Requirements for the use of HEL to trigger avalanches artificially
Applies to	FOCA issued permit to use HEL to trigger avalanches artificially
Valid from	01 August 2019
Purpose	Reduce the risks of personal injury and damage to property

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Log of Revision (LoR)

Date	Issue	Revision	Content
01.08.2019	1	0	New format transferred from Flight OPS Directive O-005D into this GM/INFO with minor adjustments.

List of Effective Chapters

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List of Abbreviations

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The following abbreviations and definitions are used in this GM/INFO:

Abbreviation	Definition	Abbreviation	Definition
EASA	European Aviation Safety Agency	ICAO	International Civil Aviation Authority
Explosive	Blasting agent	OM	Operations Manual
Explosive charge	Combination of blasting agent and primer	PIC	Pilot In Command
FOCA	Federal Office of Civil Aviation	SPO	Specialised Operations
GM/INFO	Guidance Material/ Information	SOP	Standard Operating Procedures

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0 Introduction

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All Guidance Material/Information (GM/INFO) documents are intended to assist the organisation/operator in administrative matters. The administrative requirements and processes will facilitate liaising with the Federal Office of Civil Aviation (FOCA). The documents are to be considered tools for the organisation/operator in order to ease processes of obtaining the required and defined approvals and authorisations issued by the Federal Office of Civil Aviation FOCA. Using the GM/INFO will be conducive to establishing compliance with FOCA requirements and will guide the user through the respective certification or variation process with regard to administrative tasks.

0.1 Legal References

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- Commission Regulation (EU) No 965/2012 on air operations
- SERA – Standardised European Rules of the Air, Commission Implementation Regulation (EU) 923/2012
- Luftfahrtgesetz; LFG, SR 748.0 (Civil Aviation Act)
- Luftfahrtverordnung; LFG, SR 748.01 (Air Navigation Ordinance)
- Verordnung über den Lufttransport; LTrV, SR 748.411 (Air Transport Ordinance)
- Verordnung über die Verkehrsregeln für Luftfahrzeuge; VRV-L, SR 748.121.11 (Traffic Rules for Aircraft Ordinance)
- Sprengstoffgesetz; SprstG, SR 941.41 (Explosives Act)
- Sprengstoffverordnung; SprstV, SR 941.411 (Explosives Ordinance)
- State Secretariat for Education, Research and Innovation SERI – Instructions for the use of explosives, training in artificial avalanche triggering (avalanche dispersion) available in German only as *Wegleitung Sprengwesen, Ausbildung künstliche Auslösung von Lawinen, (Lawinensprengungen)*
- ICAO Annex 18, safe transport of dangerous goods by air
- ICAO Doc 9284, technical instructions for the safe transport of dangerous goods by air

0.2 Purpose of this GM/INFO

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This GM/INFO sets out the requirements for the use of helicopters to trigger avalanches artificially. Its objective is to reduce the risks of personal injury and damage to property.

0.3 Scope

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This GM/INFO applies to the:

- carriage of explosives to trigger avalanches artificially;
- artificial triggering of avalanches by throwing or lowering explosive charges from a helicopter.

The following are excluded from the scope of this GM/INFO:

The carriage of explosives or oxygen/gas mixtures using special devices, as external loads (e.g. the 'Wyssen', 'Daisy Bell' and 'O'Bellx' systems).

0.4 Terms and Conditions

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When used throughout the GM/INFO, the following terms have the following meanings:

Term	Meaning	Reference
<i>shall, must, will</i>	These terms express an obligation, a positive command.	EC English Style Guide: Ch. 7.19
<i>may</i>	This term expresses a positive permission.	EC English Style Guide: Ch. 7.21
<i>shall not, will not</i>	These terms express an obligation, a negative command.	EC English Style Guide: Ch. 7.20
<i>may not, must not</i>	These terms express a prohibition.	EC English Style Guide: Ch. 7.20
<i>need not</i>	This term expresses a negative permission.	EC English Style Guide: Ch. 7.22
<i>should</i>	This term expresses an obligation when an acceptable means of compliance should be applied .	EASA Acceptable Means of Compliance publications FOCA policies and requirements
<i>could</i>	This term expresses a possibility.	http://oxforddictionaries.com/definition/english/could
<i>ideally</i>	This term expresses a best possible means of compliance and/or best experienced industry practice.	FOCA recommendation

Note: To highlight information or an editorial note a specific note box is used.

- The use of the male gender should be understood to include male and female persons.

0.5 Organisation / Operator Responsibilities

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The following administrative requirements must be met:

1. *The operation is laid down by the operator in its standard operating procedures (SOP) which have been approved by the FOCA according to Commission Regulation (EU) No 965/2012, Part SPO.OP.230.*
2. *The SOP describe the following additional elements (national requirements):*
 - a) *Written confirmation from the customer concerning the safety precautions, specially blocking off the danger zone, and the exclusion of liability;*
 - b) *Task specialists, authorisations and the means and procedures to secure all persons on board;*
 - c) *The maximum permitted flying speed during the drop (max. 30 kt GS);*
 - d) *Practice, training and reconnaissance flights;*
 - e) *Preparation, handover and carriage of the explosives;*
 - f) *Description of the primers or detonators;*
 - g) *Calculation of the length of safety fuses;*
 - h) *Ignition of the safety fuse;*
 - i) *Throwing or lowering-process;*
 - j) *Return transport of unused explosives;*
 - k) *Handling procedures for unexploded devices (duds);*
 - l) *Conduct in the event of an accident with explosives.*

1 Aircraft and Fittings

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1.1 Aircraft

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The helicopter must be suitable for use in triggering avalanches artificially. This applies in particular to its engine power, cabin dimensions, and the arrangement of doors and seats. The helicopter's cabin and fittings must permit the explosive charges to be thrown or lowered unhindered. It must be possible to remove objects which might impede the throwing or lowering of the explosive charges, and/or which are not required to conduct the operation or to maintain the airworthiness of the aircraft (e.g. ski cages).

1.2 Cabin Equipment

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The cabin must be equipped so that:

- a) the crew members can be carried on the same seat;
- b) the crew members can wear seat belts and possibly also be secured additionally against falling out;
- c) The explosives container can be secured.

1.3 Cabin Dimensions

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The cabin dimensions must:

- a) permit the explosives container to be loaded, carried and emptied;
- b) offer an opening or doorway that is large enough to ignite, throw or lower the explosives unhindered, and thus ensure the success of the operation;
- c) offer an opening or doorway that is large enough to ensure that the explosives container can be emptied and/or removed quickly in the event of an emergency.

1.4 Fittings

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The chosen container must be durable and suitable for the transportation of explosives. The system that is chosen to secure the explosives container must permit it to be removed quickly without the use of any tools.

2 Operation Conditions, Preparation and Conduct

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2.1 Preparation and Conduct of Flights

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The PIC must have the flight experience that is defined by the operator, and is appropriate for the operation: knowledge of the field and its conditions in terms of flight procedures, topography, obstacles (e.g. cables), and particular meteorological conditions.

The PIC ensures that they have all of the information and documentation that they require to conduct the operation, in accordance with the OM/SOP (specifically including the exclusion of liability declaration).

The PIC decides what measures (e.g. briefing, practice flight, reconnaissance flight, procedures as laid down in the SOP) are required to conduct the flight safely.

Flights with ready-made explosive charges (shell and safety fuse) on board are permitted only if they are escorted by at least one crew member who is properly familiar with the material used for blasting, or who has received the corresponding instruction from an explosives officer.

2.2 Conducting Blasting Operations

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Operations are conducted under the supervision of an explosives officer in accordance with the SOP and the legal foundations listed above.

3 Exceptions

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Deviations from the requirements set out in this guidance must be approved by the FOCA.