



ORGANIZZAZIONE INTERNAZIONALE TRASPORTI A FUNE
INTERNATIONALE ORGANISATION FÜR DAS SEILBAHNWESEN
ORGANISATION INTERNATIONALE DES TRANSPORTS A CABLES
INTERNATIONAL ORGANIZATION FOR TRANSPORTATION BY ROPE
ORGANISACION INTERNACIONAL DES TRANSPORTES POR CABLE

Technical recommendations in effect

BOOK N. 26
(June 2010)

GUIDELINE

FOR THE EVACUATION

FROM ROPEWAYS



ROMA 1957
PARIS 1963
LUZERN 1969
WIEN 1975
MÜNCHEN 1981
GRENOBLE 1987
BARCELONA 1993
SAN FRANCISCO 1999
INNSBRUCK 2005

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O. I. T. A. F.

O.I.T.A.F.

GUIDELINE

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Book no. 26

June 2010

Preamble

The board of directors of the O.I.T.A.F. has unanimously approved the text of the "Guideline for the evacuation from ropeways" in the meeting held on April 20, 2010 in Grenoble.
The study committee no. VI: "Optimization of the ropeway" has compiled the document during the years 2006 until 2009 under the presidency of Dr. Ing. Mauro Joyeusz.

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THE GUIDELINE

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Introduction

The ropeway company is responsible for the safety of the passengers transported. Hence, the ropeway company must also provide that, in case of a prolonged standstill of an

installation, the passengers can be returned to a safe location. Thus, the organisational prerequisites for safe execution of the evacuation of the passengers must be provided.

1. Objectives

This document shall instruct ropeway companies to deal with the evacuation on their installations in the course of creating an evacuation plan. At that, the following steps shall be addressed consecutively:

- Concept of the evacuation plan
- Execution of an evacuation
- Optimization on the basis of systematic assessment of rescue drills and real evacuations

2. Definition of Terms

Evacuation:	All procedures by means of which the passengers can be returned to a safe location in case of standstill of an installation.
Evacuation plan:	Documentation of all procedures in a special document (see item 4.4.) with the description of the means and devices required for the execution of an evacuation of passengers from a specific ropeway.
Evacuation time:	Duration from the decision to evacuate until the arrival of the last passenger at the safe location.
Head of operations:	Person who, within the company, has the subject-specific knowledge and the required authorisations for the conduct of the evacuation.
Evacuation team:	Team that is committed for the evacuation of passengers in a specific section of the line; in principle, a team consists of two persons - one working on the rope and one on the ground. If the installation has special features, the team can be reinforced.
Rope span:	Section of the line between two consecutive rope supports.
Evacuation section:	Section of the line that is assigned to an evacuation team as place of operation. An evacuation section can cover one or several rope spans.

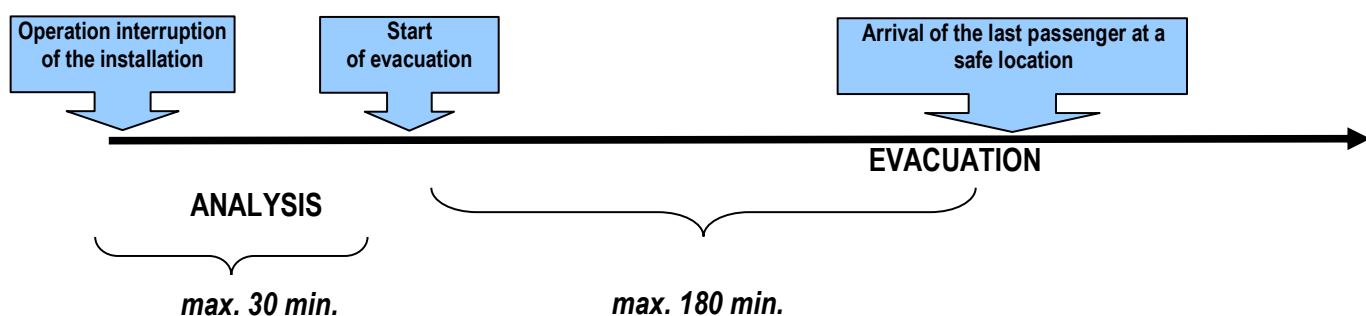
3. General

In the case of an unexpected standstill of a ropeway (aerial ropeway and funicular ropeway) as well as in the case of detecting that a re-start or return of the carriers according to the emergency operation and emergency drive modes is impossible, an evacuation must be initiated. The evacuation must enable safe transportation of the passengers to a safe location which they can leave by themselves.

The safety of the passengers and the evacuation personnel is top priority in an evacuation.

Evacuation shall start within the first 30 minutes after the interruption of operation of the installation. The estimated duration of all evacuation processes which is to be determined in the evacuation plan must be assessed in such way as to not endanger the passengers neither physically nor psychologically.

The duration of the evacuation must not exceed a period of 3 hours.



The existing local and national regulations must be observed, i.e. regarding the times, procedures and functions, etc.

4. Concept of the Evacuation Plan

4.1. Selection of the Evacuation Method

On ropeways, the following methods can be used for the evacuation of passengers:

- Vertical evacuation (e.g. by abseiling, with ladders, with platform for lifting persons)
- Evacuation along the rope (e.g. evacuation carriers)
- Evacuation through paths along the line (especially for funicular ropeways)

In good weather conditions, a helicopter can be used as an alternative. For this case, a special procedure must be agreed on between the ropeway and the helicopter company. This could be based on the standard EN 1909, art. 9.6.3.

Different evacuation methods can be applied in the individual sections of an installation.

When selecting the evacuation method to be used, the following aspects must be observed:

4.1.1. Topography of the terrain (below the line up to a safe location)

- Longitudinal and cross inclination
- Cliffs
- Standing or running waters, ski slopes, roads
- Composition of the ground (rock, ice, snow, vegetation)
- Vegetation
- Pathways and slopes that are existing or must be laid out
- Height above sea level of the installation
- Hydrogeology, snow and avalanches

4.1.2. Characteristics of the ropeway

- Type of installation (reversible aerial ropeway, gondola, chairlift, etc.)
- Length and vertical rise
- Number and length of rope spans
- Ground clearance of carriers
- Type of towers and their access equipment
- Passage over obstacles (buildings, other ropeways, roads, etc.)

4.1.3. Characteristics of the carriers

- Number of carriers
- Carriers attended/unattended
- Size of the carriers (number of seats)
- Type of carriers (open/closed, floor or other openings, bubbles, etc.)
- Carrier spacing
- Availability of communication devices (radio or intercom systems in the cabins)

4.1.4. Operating conditions

- Weather conditions
- Season of the years (load cases, equipment of passengers, etc.)
- Lighting conditions

4.1.5. Type of passengers

- The different prerequisites of the passengers to be transported must be observed (pedestrians, skiers, children, persons with limited mobility, etc.).

4.2. Means and Devices

Upon establishment of the evacuation method, the resources (means and devices) for the execution must be determined.

Finally, the method for the procedure of the individual steps of the evacuation must be established.

4.2.1. Infrastructure and carriers

For the execution and facilitation of the evacuation, especially returning the passengers to a safe location, the following measures may be required:

- Guards against avalanches or landslides
- Construction of evacuation paths and safeguarding difficult passages for the passengers (ropes, ladders, platforms, etc.)
- Additional equipment of the towers (winches, platforms, PPE catches, etc.)
- Additional equipment of the carriers (winches, PPE catches, ladders, platforms, roof or floor openings, etc.)
- Lighting and public address system of the line
- Special storage places for the evacuation devices (close to the place of operation)

4.2.2. Equipment, devices, other means

4.2.2.1. Means and devices for reaching the place of assembly and/or the place of operation

- Other ropeway installations
- Motor vehicles (snow grooming machines, snow mobiles, off-road vehicles, etc.)
- Gliding devices
- Helicopters

4.2.2.2. Means and devices for reaching the carriers

- Personal protective equipment (PPE): against fall, safety helmet, gloves, protective clothing, devices for self evacuation, etc.)
- Evacuation carriers
- Rope travel device
- Aerial work platform
- Winches
- Ladders
- Climbing device on fixed ropes
- Ropes (length according to carrier and ground clearance)
- Helicopters

4.2.2.3. Means and devices for evacuating from the carriers

- Personal safety equipment
- Ropes and abseil devices
- Rescue cloths
- Rope to secure the waiting passengers
- Aerial work platform
- Ladders
- Helicopters

4.2.2.4. Additional devices

- Portable lights
- Portable radio sets for the staff
- Communication systems for informing the passengers

4.2.2.5. Means and devices for support of the passengers

- Food
- Blankets
- Vehicles
- Medication and dressing material

4.3. Personnel Resources

In order to execute an evacuation applying the determined methods, means and devices, the following establishments must be made regarding the personnel:

4.3.1. Organisation

When organising the evacuation, the following aspects must be observed:

4.3.1.1. Determination of the tasks/functions

- | | |
|---------------------------------|---|
| • Decision to evacuate | → operations manager |
| • Conduct of the evacuation | → head of operations |
| • Execution of the evacuation | → evacuation teams on the rope |
| | → evacuation teams on the ground |
| | → machine operator of the evacuation ropeway |
| • Attendance and assistance | → drivers (motor vehicle) and pilots (helicopter) |
| | → first aid personnel |
| | → auxiliary personnel (volunteers, suppliers) |
| • Organisation of communication | → information flow towards the inside |
| | → information flow towards the outside |

4.3.1.2. Organisation of the evacuation teams

- Dividing the line into evacuation sections for one evacuation team each
- Establishment of the number of evacuation teams and the number of persons per team (depending on the max. load of the installation, the average operating time, max. load period, the amount of work, the individual abilities, etc.)

Chapter 4.4 describes the procedure for the establishment of the number and the place of operation of the evacuation teams.

The head of operations supplements the evacuation teams with auxiliary personnel as required by the prerequisites of the installation and the moment of time of the evacuation.

4.3.1.3. Checking the availability of the persons

- Employment of own staff, if applicable staff of other ropeway installations, in due consideration of rest periods, sickness, vacation, substitutes, seasonal work
- Employment of external staff (contractual agreements with external organisations and associations)

4.3.1.4. Determination of the accompanying measures

- Closing of installations and routes (slopes, streets, etc.) in terms of closure plans and priorities

- Potential evacuation of locations crossed (buildings and building parts, parking areas, etc.)
- Securing the areas affected by the evacuation process (release of avalanches, cleaning of hand rails, etc.)

4.3.2. Personnel management

4.3.2.1. General information

All persons involved in the evacuation must be familiar with the evacuation plan in its entirety.

For this purpose, they are instructed on the general proceedings of the evacuation works following regular intervals.

4.3.2.2. Training

For each individual task that is to be performed during the evacuation, special training measures must be arranged (see item 4.3.1.1.) The assessment of the abilities and knowledge required can be performed according to the indications in Enclosure D.

4.3.2.3. Continuous improvement process

For all persons involved in the evacuation a continuous improvement process must be provided (e.g. one course of training per year). In this, each individual is trained with regard to their special task in the evacuation in order to uphold their abilities and knowledge in the long run.

4.4. Determination of the Number and the Place of Operation of the Evacuation Teams

Important: The procedure for determining the number of evacuation teams and their place of operation described below only applies for standard evacuation situations by means of abseiling which constitute the majority of the known evacuation scenarios.

4.4.1. Determination of the structure of the evacuation teams

The number of persons in the individual evacuation teams results particularly from:

- the type of evacuation process
- the difficulties of access to the carriers
- the difficulties of the evacuation on the ground

4.4.2. Calculation of the max. number of carriers per evacuation team

For each team, the following specifications must be observed:

$$t_1 + n_{veh} \times t_2 + t_3 + t_4 \leq T$$

Thereby applies

- $T = \text{evacuation time}$

In general, the evacuation time is stipulated in the national regulations and, thus, changes from country to country. A safety margin with respect to the stipulated evacuation time is admissible in order to take into account the different factors that may complicate the evacuation further.

- $n_{veh} = \text{number of carriers which can be evacuated per evacuation team}$

- t_1 = *the time until arriving at the place of operation (transition from the workplace to a place of operation).*

Here, the following must be observed:

- the type of access
(example: skis, snow grooming machine)
 - the difficulty of access to the tower
(e.g. area exposed to avalanches, rocky or stony area)
 - the difficulty of access to the first carrier from which passengers are to be evacuated
(e.g. for a height of 50 m winches are required)
 - the point of departure
(e.g. nearby station at the base of the slope, other side or the location)
- t_2 = *average time required for the evacuation of a fully loaded carrier and the transfer to the next carrier*

Here, the following must be observed:

- the type of evacuation devices used
- the equipment for the transfer from one to the next carrier
(e.g. Rollgliss or rope travel device)
- the type of carrier
(e.g. chair or cabin)
- the ground clearance of the carrier
(e.g. different handling of abseiling at a ground clearance of 80 m compared to 15 m)
- the number of passengers on/in each carrier

The equipment of the passengers (skis, mountain bikes, etc.) must also be observed.

- t_3 = *time for the transport of the evacuation team from one rope span to the next and access to the first carrier on the next rope span*
- t_4 = *average time for the route of the evacuated passengers to the safe location upon reaching the ground*

Here, the following must be observed:

- the observed rope span(s)
- the type of transportation (by foot, by ski, on a snow grooming machine)
- the difficulty to reach the safe location (example: area exposed to avalanches, steep or rocky area)

- the point of time of termination of the evacuation (example: return in the dark)

In most cases, the operator provides support teams on the ground with the order to take the passengers to a safe location. This procedure generally is parallel.

However, the most adverse case is the one of the last passenger to be evacuated by the evacuation team of the respective rope span. For him, the time t_4 must be observed when determining the overall evacuation time T .

The times t_1 - t_4 are given by the operator on the basis of his experience (from evacuation drills under real conditions or real evacuation cases) and his/her local knowledge.

Furthermore, the work load and the resulting fatigue must also be observed, especially for the evacuation staff working on the rope (see item 4.3.1.2.).

Thus results:

$$n_{veh} \leq \frac{[T - t_1 - t_3 - t_4]}{t_2}$$

4.4.3. Calculation of the number of evacuation teams for the performance of the evacuation along the entire line

The number of rescue teams for the performance of the evacuation along the entire line corresponds to the number of carriers on the line considering the admissible load (uphill and downhill operation) divided by the max number of carriers that can be evacuated by a team according to item 4.4.2.

Thus results:

$$N_{equipes} \geq \frac{N_{veh}}{n_{veh}}$$

Thereby applies

- $N_{equipes}$: number of the required evacuation teams for the performance of the evacuation along the entire line
- N_{veh} : number of the theoretically loaded carriers on the line
- n_{veh} : number of carriers that can be evacuated per evacuation team

4.4.4 Determination of the place of operation of the evacuation teams on the line

Upon establishing the theoretical number of evacuation teams, each team is assigned a line section (evacuation section) as place of operation which consists of one or more rope spans.

The place of operation is established considering the number of carriers every team can evacuate and the general experience that only one team is appointed per rope span.

This may cause an increase of the number of evacuation teams compared to the stipulations according to item 4.4.3.

As a consequence, it must be checked for each evacuation team if the evacuation times for each rope span can be kept to considering the real evacuation times in the rope spans. If this is not the case, the division of the evacuation teams along the line and maybe the number of teams must be changed.

On the O.I.T.A.F. homepage, members are offered an excel sheet with which the number and the place of operation of the evacuation teams and thus the adherence to the evacuation time can be checked easily. However, it is pointed out that the excel file is only a decision aid and does not relieve the operator of his responsibility for a detailed and critical investigation of the occurring evacuation case.

4.5. Writing the Evacuation Plan

Upon establishing the evacuation concept, a written evacuation plan must be composed by the operator and enclosed to the operating instructions.

The evacuation plan must contain all aforementioned items and also make reference to the real proceedings of an evacuation as described in chapter 5.

The evacuation plan must be complemented by:

- a list with the names of the authorities and persons co-operating in the evacuation;
- a list with all data of the contractually bound relief organisations and authorities that must be informed in case of evacuation;
- a list of the devices required for each evacuation team.

In Enclosure E of this document, examples for such listings are given.

5. Progress of the Evacuation

In the case of an unexpected standstill of a ropeway installation, the following procedures or measures may result:

5.1. Interruption of operation and deciding to evacuate

- a. Standstill of the installation
- b. Attempt to re-start the installation
- c. Finding that the installation cannot be restarted, not even for returning the carriers
- d. Decision to carry out the evacuation

SF: During the evacuation works, the preparation works for the return of the carriers can be continued provided that the safety of the passengers is not affected. The evacuation can be

interrupted as soon as a return becomes possible. It is also possible to revoke the decision to evacuate if the return of the carriers is ensured.

5.2. Preliminary Measures and Starting the Evacuation

- a. Information (see Enclosure A)
 - of the passengers on the line
 - of the authorities and other institutions
 - of other persons within the surroundings of the installation
- b. Establishment of the conditions on the installation (location and occupancy of the carriers)
- c. Analysis of the situation (weather, accessibility, walk-on stability of the terrain)
- d. Information of the persons that shall be employed in the evacuation
- e. If required, closing of installations and/or connecting paths
- f. Provision of the evacuation equipment and of the other means and devices (means of transport, communication, etc.)
- g. Assembly and build-up of the evacuation teams (allocation of tasks and handing out the equipment)
- h. Instruction of the evacuation teams
- i. Establishment of the ways back and their design for the return of the passengers
- j. Securing the installation against movement (permanently close the brakes, secure the carriers, etc.)
- k. Transport of the evacuation teams and the equipment to the place of operation (towers, station) with suitable vehicles (snow grooming machine, snow mobile, boats), by foot or sports equipment
- l. Equipping the evacuation staff with personal protective equipment (PPE against fall, helmet, gloves, weather-proof clothing, device for self-evacuation)

5.3. Evacuation of the Passengers from the Carriers

- a. Periodical information of the passengers regarding the progress of the evacuation
- b. Access to the towers and/or stations of the evacuation teams
- c. Preparation of the means of access to the carriers (rope travel device, ladder, rescue carriers, etc.)
- d. Reaching the carriers
- e. Attaching the evacuation equipment at/on the carriers
- f. Access to the passengers
- g. information and reassurance of the passengers before their evacuation
- h. If applicable, putting the evacuation equipment on the passenger
- i. Evacuation of the passengers and their equipment (ski, mountain bike, etc.)
- j. Reception of the evacuated passengers on the ground or in the station
- k. If applicable, access to the next carrier
- l. If applicable, replacement of the evacuation staff dependent on the state of the evacuation works under the supervision of the head of operation

5.4. Return to a Safe Place and Termination of the Evacuation

- a. Registration of all passengers evacuated
- b. Accompaniment to a safe place/assembly place
- c. Final check by the head of operations if all passengers were evacuated

5.5. Care and Organisational Follow-up

- a. First aid, individual care, psychological support

- b. After the evacuation of all passengers, return of the evacuation teams and returning the equipment
- c. Support of the evacuation staff
- d. Announcement to the outside world (see Enclosure A)
- e. Repair of the evacuation equipment for further use
- f. Collection and evaluation of the suggestions and complaints of the passengers

6. Regular Evacuation Drills

Besides the training measures described in article 4.3.2.1. for the preservation of the abilities of the individual salver, it is recommended to perform periodical evacuation drills. For this, the standstill of a ropeway shall be simulated and one or several evacuation methods are to be applied in practice.

By performing these drills, the following points can be checked particularly:

- Before the evacuation:
 - the alerting of the evacuation teams
 - the possibilities to inform the passengers in the standing carriers
 - the distances and time the evacuations teams need to reach the installation due to their starting and destination point (it shall be especially checked how familiar the staff is with the place of handing out of the devices and the operation of the teams in the individual evacuation sections)
- During the evacuation:
 - the applicability of the devices handed out
 - the correct application of the devices
 - the adherence to times and methods
- After the evacuation:
 - the paths for the return of the passengers to a safe location
 - the ability of the evacuation staff to make difficult terrain accessible (possibly by attaching hand rails, securing measured on the ground, etc.)
 - the time required for returning the passengers to a safe location upon evacuating them from the carriers

It is also recommended to consider certain complicating circumstances during in those evacuation drills, such as incident darkness, bad weather, evacuation of persons with limited mobility or children, etc., so that the assessments offer real improvement possibilities for such hard to manage cases.

Finally, it is also recommended to perform periodical evacuation drills on special installations (this does not only means installations with special ropeway technology, but also installations with difficult access, increased ground clearances, special evacuation procedures like the so-called "Tyrolienne" or approaching the carrier not with the rope travel devices, operation of ambulances, etc.), in order to instruct the evacuation staff regarding the special conditions.

7. Continuous Improvement Process of the Evacuation Plan

7.1. Assessment of the Evacuation Plan and its Execution

As the evacuation from a ropeway is a rather uncommon procedure in practice, it is recommended to assess every evacuation drill. While doing this, it is possible to capture only individual aspects (e.g. drills to check the alarm times, drills to check the evacuation pathways, etc.).

The assessment is realized by the operations manager or the head of operation respectively on the basis of questioning all persons who took part in the evacuation (in the first place, the operating personnel, but also partners and possibly passengers).

Several persons, particularly also external experts, can be charged with the assessment. In the case of team work, an increased potential for improvement results from the occurring group dynamics. In individual cases, co-operation with the staff of other areas can have an advantageous effect. This also helps relieve tensions resulting from being criticized by colleagues.

During evacuation drills or training, it is an advantage to take videos or photos for support. After the drills or training courses, questionnaires can also be used to facilitate the assessment (see Enclosure E).

Each assessment shall be documented in detail with the objective:

- to improve the configuration of the evacuation plan;
- to question the means designated in the evacuation plan;
- to perform improvements on the installation if applicable and to facilitate the execution of the evacuation plan.

7.2. Updating the Documents

If the installation or its operation, the surroundings (topography, material, etc.) and the organisation change and the assessment of an evacuation drill or a real evacuation show errors or possibilities for improvement, the evacuation plan shall be updated.

For this, the following documents must be checked and modified if applicable:

- closing plan of the other installations and connecting paths
- contracts with external authorities and associations
- list and all data of external organisations and authorities to be notified as well as of the persons employed in the evacuation.

The improvement of the evacuation plan is a continuous process. In the planned updates, other and new methods to shorten the evacuation time and to increase the safety of the passengers and the evacuation staff can be included.

7.3. Maintenance of the Equipment

The means and devices listed under item 4.2.1. must be maintained in impeccable condition at any point of time of the operation; for the evacuation devices, the maximum service life according to the manufacturer's indications must be adhered to in particular.

The ropeway company appoints a person in charge of the evacuation devices who is responsible for the maintenance and inspection, replacement, storage and handing out of the devices to the evacuation staff.

7.4. Preservation of Knowledge and Abilities

Newly employed staff must be trained and a continuous improvement process must be provided for all persons involved in the evacuation.

In this, it must not be forgotten that

- the conditions for a real evacuation are always more adverse than during an evacuation drill;
- it is always worked as a team, even if individual exercises are carried out during the evacuation drills;
- the composition of the evacuation teams can change for each operation.

Enclosure A to item 4.3.1.1. of the guideline
Communication towards the outside

Who	To whom	Before the evacuation	During the evacuation	After the evacuation
Operations manager	Passengers Supervisory authority	Information that the installation might stand still for a couple of minutes -	- Notice that an evacuation was initiated	- Detailed reporting on the procedure of the evacuation
Head of operation	Passengers to be evacuated	Notice that an evacuation will take place	Notice regarding the progress of the evacuation	-
Person in charge of the slopes (for installation in ski areas)	Other users within the surroundings of the installation	Information by means of the standard signage (general signs, signs on slopes, on the installation) regarding the closure of the installation in standstill, and other installations and affected slopes, if applicable	-	-
Head of the communication office	Other users within the surroundings of the installation	-	Upon request, information regarding the events	-
	Other authorities and offices civil protection, mayor, etc.)	Indication of the possibility of evacuation (pre-alarm)	Announcement of the initiation of the evacuation to receive personnel support	-
	Media (television, radio, press)	-	Press report	Scheduling for a press conference for detailed information of the media Registration of the personnel data for lawsuits or letters of apology/gifts,

	Evacuated passengers	-	-	complaints and suggestions
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**Enclosure B to item 4.3.1.1. of the guideline
Communication towards the inside**

B 1: Communication with reference to the proceeding of the evacuation works

Who	To whom	What	Feedback
Machine operator	Operations manager	No possibility to re-start the installation	Have really all possibilities to re-start the installation been exhausted? Check
Operations manager	Head of operation Machine operator Maintenance team	Check the personnel availability Decision to evacuate Information on the state of the installation, <u>weather, passengers, surroundings, 5.2.c.</u> Securing the installation for the evacuation <u>Provision of the evacuation equipment</u> Assumptions regarding the cause of the malfunction	Installation secured! Evacuation equipment ready! Attempt to repair and, if applicable, re-start the installation
Head of operation	Personnel acc. to 4.3.1.1. (evacuation teams and auxiliary personnel)	Alarm Proceeding to the assembly place Gathering the equipment as planned Heading for the planned or indicated place of operation	
Evacuation teams and auxiliary personnel	Head of operation	Progress of the evacuation works, problems and requirements	Instructions carried out
Evacuation teams	Head of operation	Termination of the evacuation tasks assigned	Return to the starting point or assignment of new tasks
Head of operation	<u>Operations manager</u> Person in charge of the <u>communication office</u> Personnel acc. to	Termination of the evacuation	

	4.3.1.1)		
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Continuity

page 2: **Enclosure to item 4.3.1.1. of the guideline: Communication towards the inside**

B 2: Communication for the co-ordination within the operational surroundings

<u>Who</u>	<u>To whom</u>	<u>What</u>	<u>Feedback</u>
Operations manager	Persons responsible of the communication office	Decision to evacuate, closing the installation and passageways	Message received
Operations manager	Person in charge of the slopes (for installation in ski areas) Machine operators	Need to close the slopes that exclusively lead to the installation from which <u>passengers are to be evacuated</u> Closing of further installations in order to limit the access to certain area or to release personnel for the evacuation	Slopes closed! Installations closed!
Operations manager	Person in charge of the slopes	Termination of the evacuation works	

Enclosure C: Abilities and knowledge to be assessed in an evacuation team

The below list gives examples of the abilities and knowledge that are subject to the assessment of a standard evacuation team:

- Knowledge of the devices and their application
- Knowledge of hazards
- Knowledge of the operating instructions and safety procedures that are to be applied
- Sociableness for the communication with the passengers
- Physical and mental aptness
- Knowledge of the special features of the individual installations, especially spots that may possibly prove to be problematic
- Knowledge of the surroundings of the installation

Enclosure D:

Questionnaire for the assessment of an evacuation case

For the assessment of the evacuation or evacuation drill the individual steps of the evacuation method as determined in item 5) of this document must be checked. For example, the following points may be questioned:

a) Evaluation of step 5.1.: Attempt to re-start the installation – decision to include the operations manager

Has the machine operator carried out the correct measures and applied the correct procedures during his attempt to re-start the installation?

If "NO", why not?

Does he not command the procedure?

Has he taken care of other aspects (assistance of the passengers, panic)?

Has the machine operator taken less time to inform the operations manager than planned?

If "NO", why not?

Defective communication devices?

Operations manager not reachable?

Lack of knowledge of the procedures?

Has the operations manager made the decisions within the time planned?

If "NO", why not?

Wrong or insufficient information?

Wrong assessment of the fault of the installation?

b): Evaluation of step 5.2.a. Information

Have the passengers in/on the installation been informed?

Have the persons in the ski area been informed?

If "NO", why not?

Wrong or insufficient information?

Fault in the workflow?

c) Evaluation of step 5.2.e.): Closing the installation on which the personnel required for the evacuation works

Have the passengers who were on or in the shut-down installation suffered any adverse consequences (missed connection, etc.)?

Have the passengers who were on their way to the shut-down installation suffered any adverse consequences (blockage in the bottom station, etc.)?

Did the operations manager have a list of the installations to be shut down in order to release personnel for the evacuation?

d) Evaluation of step 5.2.d., h., k.): Transfer of the evacuation teams to the place of operation and mobilising the other persons affected

Were the mobilised personnel at the right spot immediately?

If "NO", why not?

Has the personnel been alarmed?

Was the place of operation indicated clearly?

Was the access impossible?

Were the other persons assigned for this operation (other operators nearby, slope and first aid staff) informed and mobilised effectively?

If "NO", why not?

Were the operators nearby not able to take time off?

Were they informed?

Was the approach impossible?

Were all other persons affected (outsiders) informed and mobilised effectively?

If "NO", why not?

Were they not able to take time off?

Were they informed?

Was the approach impossible?

e) Evaluation of step 5.2.f.): Preparation of the evacuation equipment

Could the evacuation teams gather the correct devices at the correct point?

If "NO", why not?

Were the evacuation devices stored in a location easily accessible for the personnel?

Were there no evacuation devices?

Were the existing devices in a bad condition?

Were the devices not available in a sufficient number?

f) Evaluation of step 5.2.g.): Assembly and organisation of the evacuation teams

Were the evacuation teams complete?

Was the transport of the teams problematic?

Was it possible to carry out the transport within the scheduled time?

If "NO", why not?

Vacation

No notification

Not at the designated location

Failure of the means of transport

g) Evaluation of step 5.3.i.) Evacuation of the passengers from the carriers

Has every evacuation team been able to fulfil the tasks it was assigned within the scheduled time?

If "NO", why not?

Behaviour of the passengers (refusal to leave the carrier, etc.)

Disabled passengers

Overworked evacuation staff

Carriers not sufficiently equipped to facilitate the performance of the evacuation for the staff (supports, steps, attachment devices, etc.)

Evacuation devices defective, not suitable or not sufficient

Difficulties during the passage from one carrier to another or while performing the evacuation (lack of training)

Were the passengers on the line informed on time and periodically?

If "NO", why not?

Language problems

Means of communication

Weather conditions

g) Evaluation of steps 5.4. and 5.5.: Return of the passengers to a safe location

Were the criteria for establishing the sequence of the evacuation determined correctly?

If "NO", why not?

Single persons with problems

Children

Sick persons

Disabled persons

Was a return to a safe location of the passengers possible without problems after the evacuation?

If "NO", why not?

- Poor maintenance of the designated evacuation paths
- Problems with the means of transport
- Problems with the lighting
- Problems with the communication

Could the passengers suggest any improvements for the evacuation methods (distinct and achievable in operation)?

Was the handling of the complaints and emotional problems of the passengers organised?
Was this aspect assessed?

(step 5.4.b.) Were all evacuation pathways secured?

If "NO", why not?

- Ice
- Avalanches
- Rock fall

i) Evaluation of step 5.5.b.: Self-evacuation of the personnel and returning the evacuation equipment

Was the evacuation staff able to self-evacuate without outside help?

If "NO", why not?

- Wrong equipment (too-short rope)

Could all evacuation devices be returned?

j) Evaluation of step 5.5.e.: Repair of the evacuation equipment for further availability before the next start-up of the installation

Could all evacuation devices be repaired before the next start-up or were there devices that had to be replaced?

ENCLOSURE E

List of the Persons and Authorities Contributing to the Evacuation

Own staff

Name and surname	Task	Telephone	Remarks

Other ropeway companies

Name	Contact	Telephone	Remarks

External organisations

Name	Contact	Telephone	Remarks

ENCLOSURE F

List of the External Organisations and Authorities Which Must be Notified in Case of Evacuation

Authorities

Name	Contact	Telephone	Remarks

Organisations

Name	Contact	Telephone	Remarks

ENCLOSURE G

Basic equipment per evacuation team

[illegible]