

**South Georgia Habitat Restoration
Project: Phase 1**

Search and Rescue Plan



South Georgia Heritage Trust

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1 INTRODUCTION

Search and Rescue (SAR) is the search for and provision of aid to people who are in distress or imminent danger using available resources. The key and overriding principle governing any emergency response is to safeguard human life. Emergencies can be maritime, aviation or land-based.

South Georgia presents a number of challenges for SAR due to its remoteness, the difficult nature of the terrain and the harsh and changeable weather conditions. Also, detailed high resolution mapping is not available for all areas.

Helicopters are generally used for SAR in difficult and mountainous terrain. There will be two helicopters in use during the South Georgia Habitat Restoration (SGHR) project.

Where the activities of the SGHR Project overlap those of BAS staff on South Georgia, the procedures described herein closely follow those of BAS. Issues relating to helicopter use follow those employed in other similar operations internationally.

1.1 Aim and Scope of the SAR Plan

This SAR Plan has been prepared to establish responsibility, authority and SAR procedures in the event of one or more members of the SGHR Project going missing on South Georgia during Phase 1 of the project. The end point of a SAR mission in the context of the SGHR Project, Phase 1 is to return all personnel to King Edward Point. The SAR Plan will be extended and updated for Phase 2.

1.2 Responsibility

The Project Director (PD) for the SGHR project has the authority and responsibility for SAR relating to SGHR project activities and staff within the operational areas. This includes the responsibility to ensure the availability of resources to carry out SAR and preparedness for SAR.

Delegated responsibility for elements of SAR will be assigned to a member of the SGHR team with SAR or mountain rescue experience. This person will be responsible for SAR equipment and will ensure that SAR team members are aware of their responsibilities. All members of the SGHR project team will need to be prepared to be involved with SAR activities. A briefing on SAR will be given to all project staff at the beginning of the season, including a SAR exercise in order to ensure that all staff are aware of the procedures.

The Project Director will liaise with GSGSSI and BAS before SAR is undertaken.

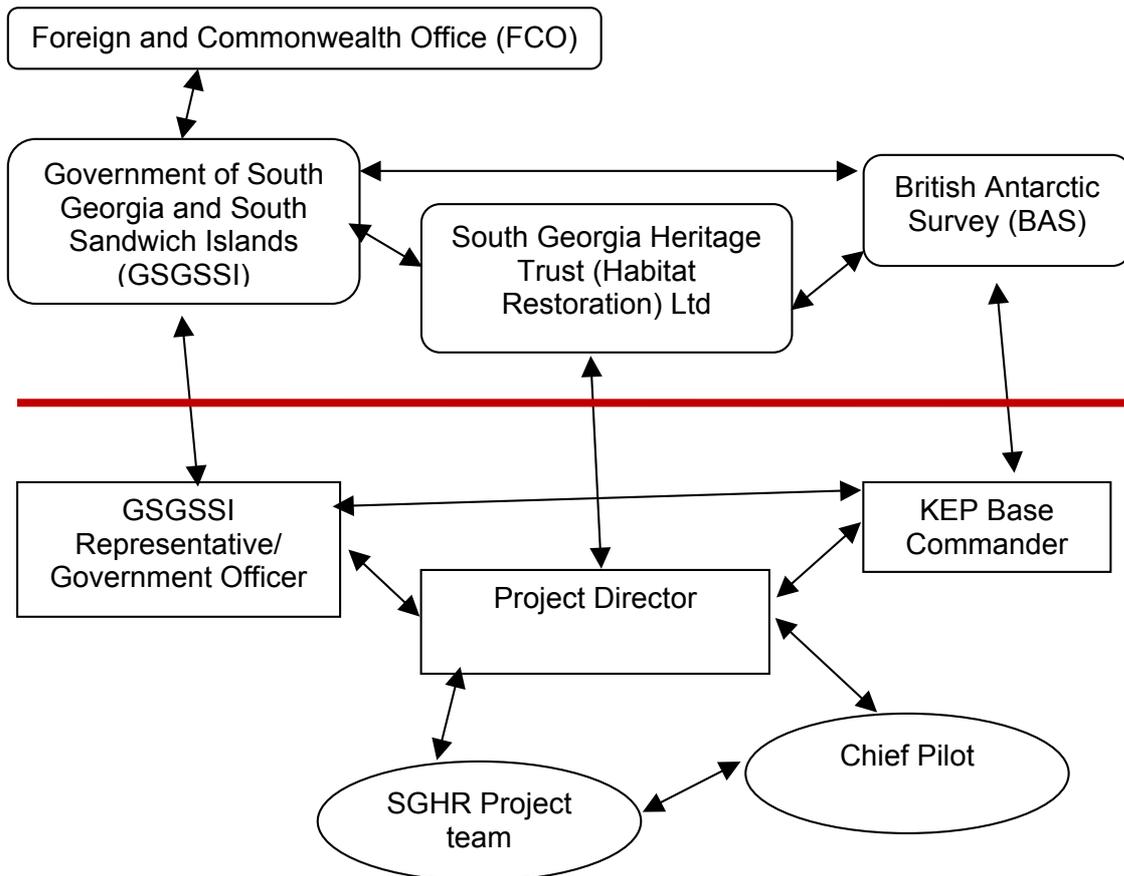
The decision to initiate a SAR operation will normally be taken by the Project Director, in consultation with the APD, Chief Pilot (or second pilot in his absence) and Team Doctor. However, in the event that the PD cannot be contacted rapidly or is missing, the APD, Chief pilot or Team Doctor will be delegated to make this decision. Thereafter, the PD or APD will coordinate the response in consultation with all relevant parties.

1.3 Communication

Communication during any SAR event relating to the SGHR project will be via the Project Director. There will be a two tier structure, based on those persons on South Georgia at the time of the incident (SGHR project staff and GSGSSI staff, BAS staff) and the

managerial staff who are not on the island (SGHT, GSGSSI, BAS). This is represented in the diagram below, the horizontal line divides the two tiers. A contact list will be available in the site office, and one will be held by the SGHT Home Agent on call. The Home Agent (UK based) will act as the hub for all emergency communications outwith South Georgia, and will be the first person to be contacted off the island in the event of a SAR mission being initiated.

Communication with the media and next of kin will be coordinated by the Project Director via the SGHT, in consultation with GSGSSI (and BAS where applicable).



1.4 GSGSSI policy on SAR and pertinent international treaties

Search and Rescue responsibilities are governed by the worldwide standards and recommended practices contained in:

- Annex 12 to the *Convention on International Civil Aviation 1944* (also known as the Chicago Convention) - which established the International Civil Aviation Organisation (ICAO);
- Annex to the *International Convention on Maritime Search and Rescue 1979* (SAR);
- *International Convention for the Safety of Life at Sea 1974* (SOLAS); and
- Article 98 ("Duty to render assistance") of the *United Nations Convention on the Law of the Sea 1982* (UNCLOS).

1.5 Prevention

The need for SAR should be minimised through:

- developing good risk management practices
- developing sound and clear operating procedures
- using the correct equipment
- maintaining good safety margins
- use of reliable weather forecasting
- training of staff
- clear work plans and briefings
- good communication and set radio schedules
- clear rules for staff relating to “adventure activities”
- staff carrying personal first aid and survival equipment when appropriate

1.6 Potential SAR scenarios for SGHR Project

Requirement for SAR is triggered when a person or persons do not return to a known location within a reasonable margin of the time when they were expected, or do not report for an arranged radio/phone communications schedule.

SAR during the SGHR project is likely to result from two main types of activities:

1. Helicopter related activities: ie. helicopter and crew go missing
2. Ground based activities: ie. hand baiting or monitoring work, adventure activities such as walking, running, skiing or boating. BAS travel limits and travel rules will be followed for recreational activities.

Both of these types of activity have the potential to involve an accident or incident, although they will hopefully not do so.

1.7 When is SAR required?

When personnel are working away from the main operational base, they will be required to maintain radio contact with the base. This will be at agreed schedule times depending on the activity. Aircraft will also be tracked continually by GPS. When SGHR staff members undertake any recreational activities they will be required to sign out in a signing out book and give an estimated time of return. The requirement to undertake SAR will require judgement depending on the situation.

The response checklist in Appendix 1 should be followed as soon as project staff are late for a schedule or have not returned to base.

Reporting forms should be completed once SAR has been initiated and these are given in Appendix 2.

Appendix 3 is a set of documents for Helicopter Emergency Plan, which deals with specific issues relating to helicopter emergencies.

1.8 Person(s) found and emergency response required

Time is a critical factor in responding to an emergency situation. Immediate positive action is necessary and delay may affect someone’s survival.

Once on the scene, priorities are:

1. Preserve life
2. Secure the area
3. Do whatever is necessary stabilise injured persons
4. Utilize PPE and protective devices if any hazards are present
5. Do not exceed personal physical limitations.

Wreckage and cargo or any other equipment should not be removed or disturbed. If it is necessary to disturb wreckage or cargo the scene should be recorded with photographs or video before anything is disturbed. Witness information should be documented as this may be used to establish the cause of the incident.

1.9 SAR methodology

The form of the SAR response will be dependent on the circumstances. The response is likely to involve at least one helicopter (both, if available), and possibly ground and/or boat-based teams. The resources deployed will be dependent on weather, and on when the emergency is declared. The helicopters cannot fly at night, for example, and the harbour launches can only operate locally to KEP during hours of darkness, but ground-based teams can operate 24 hrs a day.

The SGHR team has its own doctor, who will be the 'field medic'. The BAS doctor may be involved in treating any injured personnel, but would not normally be expected to leave the KEP base.

If the harbour launches are deployed in SAR, they would be skippered by BAS personnel by arrangement with BAS and GSGSSI, but probably with at least some of the SGHT team on board.

Once located, all missing personnel will be returned to King Edward Point as rapidly as possible. Injuries that prevent people walking will be examined in the field and treated as necessary to stabilise the patient. Injured parties will then be returned to the KEP surgery by the most suitable means, with assistance from other SGHR Project team members as required. Equipment such as stretchers, oxygen, bandages, splints etc will be taken from stocks held at the KEP surgery by arrangement with the KEP doctor, BAS and GSGSSI, and all consumables replaced rapidly.

Coordination of teams, vessels and aircraft will be carried out by radio from the BAS comms room at KEP. On declaration of a SAR operation, non-essential radio and satellite communications will be postponed to allow best use of the available bandwidth.

Overdue aircraft procedures are shown in Appendix 3.

2 EXTERNAL ASSISTANCE

If external assistance is required, this should be coordinated with the GSGSSI Government Officer in accordance with the GSGSSI Major Incident Plan. Sources of external assistance may include the following:

2.1 IAATO

International Association of Antarctica Tour Operators (IAATO) - tour vessels may be able and willing to provide support.

2.2 Military

Military vessels may be present during project and depending on their location could be requested to provide assistance.

2.3 Fisheries vessels

If SAR at sea, any ships in area to be notified by GSGSSI Government Officer and request assistance as appropriate.

3 REPORTING

A report should be prepared by the Project Director following a SAR event and submitted to the SGHT, GSGSSI and BAS. In the event of a helicopter crash, information such as photographs and witness statements should be collected to facilitate air accident investigation (see Appendix 3, SGH08).

4 ABBREVIATIONS AND ACRONYMS

BAS British Antarctic Survey

BC Base Commander

EPIRB Emergency Position Indicating Radio Beacon

GSGSSI Government of South Georgia and the South Sandwich Islands

IAATO International Association of Antarctic Tour Operators

ICAO International Civil Aviation Organisation

IMO International Maritime Organisation

KEP King Edward Point

PPE Personal Protective Equipment

SAR Search and Rescue

SGHT South Georgia Heritage Trust

SGHR South Georgia Habitat Restoration

SOLAS International Convention for the Safety of Life at Sea (1974)

APPENDIX 1. RESPONSE CHECKLIST

Time from expected contact	Action
10 minutes	<p>Try to establish radio contact on operating frequency. If possible check location using tracking device</p> <p>Contact Project Director</p> <p>Notify GSGSSI Representative/ Government Officer</p> <p>Notify BAS BC and request rescue boat on standby Helicopter on standby if available</p> <p>Alert SAR team to standby</p>
15 minutes	Establish incident response room
20 minutes	Establish last known sighting of person(s), number of persons missing and as many details as possible (verify what emergency equipment and clothing carried, competence of person(s), local knowledge, likely situation and risks, suspected medical problems, weather conditions)
25 minutes	Establish what emergency and safety equipment is available to missing person (s)
30 minutes	<p>Dispatch SAR team to last known sighting</p> <p>Notify SGHT, GSGSSI, BAS as necessary</p>
ongoing	<p>Maintain contact with SAR team and continue to try and contact missing person (s)</p> <p>Set up second SAR team to relieve first team if this is likely to be necessary</p> <p>Update SGHT, GSGSSI, BAS as necessary</p>

APPENDIX 2. SAR REPORTING CHECKLIST

Times should be local South Georgia time (GMT -2)

		Details
1.	Date and time (local)	
2.	Number of missing persons and names	
3.	Last known location	
4.	Time of last contact and means of contact (radio, in person)	
5.	Weather conditions and forecast	
6.	Equipment carried	
7.	Time of deployment of SAR team	
8.	Names of SAR team members	
9.	Time of contact: GSGSSI SGHT BAS (if necessary)	
10.	Time person(s) located and location	
11.	Injuries to person(s)	
12.	Follow up actions required	
13.	Time of updates to GSGSSI, SGHT, BAS etc.	
14.	Time of close of incident response	



APPENDIX 3. HELICOPTER EMERGENCY SITUATION PLAN (ELEMENTS OF)

SOUTH GEORGIA HERITAGE TRUST

EMERGENCY PLAN

This folder is designed to as a quick reference guide to help staff faced with an operational emergency.

As a quick reference, it is not intended to replace the full documentation required to be recorded in cases of accident, incident or occurrence but to help staff deal with an emergency in a prompt and appropriate manner.

Page	Procedure	Record No.
1 & 2	Aircraft overdue	SGH 07
3 & 4	Aircraft accident	SGH 08
5 & 6	Incident involving ground staff	SGH 011
7 & 8	Survival pack contents	SGH 06
9 & 10	Emergency equipment carried	SGH 09
11 & 12	Hazard report	SGH10
13 - 15	Emergency contact details	
16	Dealing with the Media	
17 & 18	Accident checklist	



OVERDUE AIRCRAFT PROCEDURES

The duration of each baiting flight may vary depending on the length of the runs, the distance away that the block is located in relating to the loading site and it may take a number of loads to establish what the average load time will be but, in most cases, it should be no more than 30 minutes.

The following procedures outline what needs to be considered when an aircraft becomes overdue;

- 1 10 minutes over normal load time (5 minutes where a component of the flight is over water); a) Try to establish radio contact with the aircraft on operating frequency. b) check flight following track on computer.
- 2 15 minutes overdue; a) Contact BAS and have rescue boat on standby. b) contact Project Manager & APD
- 3 20 minutes overdue; a) Alert SAR team to standby. b) Establish last known location of aircraft (GPS and/or EPIRB).
- 4 25 minutes overdue; Establish what emergency and safety equipment is on board the aircraft
- 5 30 minutes overdue; Dispatch SAR team to last known location



OVERDUE AIRCRAFT PROCEDURE SGH 07

Over water operations start calling every 5 minutes

1.	10 Minutes Late	Call on last known Frequency Check Satellite Tracking data	VHF / HF / FM
2.	20 Minutes Late	Continue to call on radio frequencies Advise BAS radio operator of aircraft overdue; Start to enter details Have boat on standby	Radio channel 6
3.	30 Minutes Late	Contact Project Director advise of situation wait instructions Prepare to dispatch SAR team	Phone call or sent someone to get him
4.	Flight following	By Satellite Tracking and direct radio	
5.	Date of incident		
6.	Time Aircraft departed		
7.	Time Due at destination		
8.	Last Contact Time & Position		Record last position fix
9.	Name of Pilot in Command		
10.	Aircraft Reg;		
11.	Total Number of Persons on board		Including the Pilot
12.	Current weather at the time		Cloud, Rain, Wind, Fine Overcast etc.
13.	Planned flight Route		Form SGH 012
14.	Time handed over to Management		Actual Time
15.	Other Operators Notified		Local Operators assisting with Search
16.	Time Accident verified		As close to actual time
17.	From 30 minutes	Carry out Accident Response check List Activate Search and Rescue	SGH 008

SURVIVAL PACK CONTENTS (CARRIED IN EACH AIRCRAFT) SGH06

Date checked

Aircraft Reg:

Qty	Description	Initial
1	Alpine Survival Kit Red PVC Bag	
7	Packets of freeze dried food	
1	Torch and Batteries	
7	Drinking Mugs	
10	Aluminium Blankets	



2	Rolls of Toilet Paper	
7	Survival Suits	
1	Fuel container	
3	Packets sugar sweets	
2	Packets of Raisins	
7	Packets of Nut / Raisin Mix	
2	Packets Soup mix	
2	Packets of Milo	
2	Packets of coffee	
2	Packets Tea Bags	
2	Packets of sugar	
2	Boxes of matches	
1	BIC Lighter	
4	Candles	
10	Spoons	
1	Billy / Container	
1	Table Spoon	
1	Knife	
1	Flat blade Screw Driver	
1	Phillips Screw Driver	
1	8 " Crescent wrench	
1	Pliers	
1	Priming Paste	
1	Multi Stove	
	Alpine Supplement	
7	Snow Goggles	
7	Chapstick Protection	
7	Snow cream	
1	Snow Shovel	
7	Balacalavas	
7	Mittens	
7	Socks	
1	Water Container 2 litre	
1	VHF transceiver, Marine Band & spare battery	
1	Satellite phone & spare battery	



EMERGENCY EQUIPMENT INFORMATION

SGH 09

Date

Aircraft Reg;

	Equipment	Description	Check
1.	Life Jackets	Yellow	
2.	Life Raft x 8 Person	Yellow	
3.			
4.	Alpine Survival Kit Carried	For contents see SGH 06 Red Bag	
5.	Flares (Red) A/c	1 / 2 / 3 / 4 / 5 / 6	
	Flares (Red) Survival Kit	1 / 2 / 3 / 4 / 5 / 6	
6.			
7.	Personal E.L.T (E.P.I.R.B)	121.5 MHz	
8.	Marine E.L.T Water proof Type	406 MHz	
9.	A/c Colour	White with Black and Green Stripe	
10.	Number of seats at the time	1 / 2 / 3 / 4 / 5 / 6 / 7	
11.	Radio Frequencies carried - A/c	HF VHF FM Mobile Phone/s	
12.	A/c E.L.B.A	121.5, 243, 406 MHz	
13.	Axe / Fire Extinguisher / First Aid Kit		
14.	Radio Frequencies Carried - Mobile Handheld Radio	VHF/FM - Marine Channel 66 HF-SSB 3915 KHz - (SWH) HF/SSB 4417 KHz - (Marine) VHF - All aircraft Other - Police and D.O.C	
15.	Survival Suits	Orange	

EMERGENCY CONTACT DETAILS

To be completed

DEALING WITH THE MEDIA



All requests for information from the media for whatever reason must be referred to the **Project Director**. Under no circumstances should staff make unapproved comments to any member of the media.

ACCIDENT DETAILS

SGH 08

The information below should be collected and used for accident reporting and subsequent air accident investigation (if required).

		Details
1.	Date	
2.	Time of Accident (local South Georgia time; GMT -2)	
3.	Nature of Accident	
	A/c type and model	
4.	A/c Registration	
5.	A/c Owner	
6.	A/c Operator	
7.	Last known position	
8.	Commander of aircraft	
9.	Type of work	C.T.O External Load Bucket Ops
10.	Weather at the time	
11.	No. of persons on board	
12.	Crew or Pax killed	
13.	Crew or Pax. Seriously injured	
14.	Details of damage	



	to A/c	
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