

CABIN CREW / FLIGHT ATTENDANT

SURVIVAL, SEARCH AND RESCUE

SEARCH AND RESCUE PROCEDURES

By international agreement, Rescue Coordination Centers (RCCs) link up with Air Traffic Control Centers to provide world-wide coverage of land, air and sea. To monitor the progress of all commercial flights, a signal is sent each time an aircraft departs or arrives at an airport. On departure, the signal sent is the actual time of departure (ATD) together with the estimated time of arrival (ETA) at the intended destination. On arrival, the actual time of arrival (ATA) is sent.

Before a flight can depart a flight plan is produced and this lists the intended planned route or track of a flight. The flight plan also states elapsed flying time between specified points along the route.

If a flight fails to report at any one of the specified points, a procedure will be followed to try to trace the whereabouts of the aircraft. This will finally mean that the search and rescue services will be dispatched.

There are three phases of the search and rescue procedure:

Uncertainty Phase

This starts from 30 minutes after an aircraft has failed to report at a scheduled point or time.

Alert Phase

This starts from one hour after a point or position report is not received.

Distress Phase

This runs from the time when an aircraft is believed to be in imminent danger. A search will commence after the ETA has passed or when a 'Mayday' is received.

When alerted the RCC has at its disposal a wide range of military and civilian aircraft as well as other professional and voluntary rescue services. Helicopters, amphibian aircraft, mountain rescue, boats, ships, etc. will then carry out the rescue as required, depending on the location and survival circumstances.

BASIC PRINCIPLES OF SURVIVAL

Successful survival depends on the presence of two basic factors:

The will to survive - this is not automatic and some people will have more than others; discomfort, despair and deprivation may cause some people to give up more easily than others

Knowledge of the correct use of survival aids and the understanding of the procedures used by Search and Rescue Services

The essence of survival in difficult terrain is adaptability. Survivors should not go against the environment but use it to advantage. Although the surroundings may be hostile, they are also capable of keeping people alive. It is necessary to remain highly motivated, try and keep rested and fit. Remember that tiredness can lead to mistakes.

PRIORITIES OF SURVIVAL

In a survival situation, the priorities of survival are as follows:

1. Protection
2. Location
3. Water
4. Food

Protection

In order to function, the body must be protected against the environment, especially in adverse weather conditions. One of the first priorities is to be warm and dry. Body heat is rapidly lost once a person becomes wet. Use the contents and furnishings of the aircraft as much as possible to achieve this.

Location

Activate the ELT.

Having ensured that everyone is protected from the elements as much as possible, it is important that search and rescue can locate the landing or ditching site. Before making the emergency landing the Captain will make the necessary distress calls if time permits. They will land as near as possible to the route or track of the aircraft because they know this will form the basis of the search.

To assist search and rescue, there are certain shapes/letters into which a ground to air signal can be made. These are internationally recognised. These can be made from aircraft furnishings or whatever materials are available.

International Civil Aviation Organisation's (ICAO) recommended signals are:

MESSAGE	CODE / SYMBOL
Require Assistance	V
Require Medical Assistance	X
No or Negative	N
Yes or Affirmative	Y
Proceeding in this direction	↑

The signals should be at least 2.5m (8 ft) long and be as visible as possible. The signal may be formed from any material, e.g. pieces of wood, stones or staining with oil, etc.

An aircraft will acknowledge that the ground signal have been understood by:

During daylight hours - rocking its wings.

During hours of darkness - flashing its landing or navigation lights ON and OFF twice.

Absence of the above signals from the aircraft indicates that the ground signal have not been understood.

Water

Humans can survive in temperatures between 50°F to 70°F for eight-ten days without water. However, when doing light work he cannot maintain a water balance on less than about three pints per day. Therefore, workers should have rations of about three pints per day if possible. Crew should be aware of the signs of dehydration setting in. These include headaches, nausea and dark yellow urine. Sweating will also speed up the process of dehydration.

Food

It is possible to survive many weeks without food and provided that water is available, going without food for two to three weeks should have no long lasting ill effects. Food should not be issued for the first 24 hours. When food is issued the injured should be given priority.

WATER SURVIVAL

The greatest threat in water survival is from hypothermia as it is difficult to stay warm and dry. It is also difficult to locate individuals in the sea from the air and survivors should, therefore, stay together by linking arms together to maintain body heat and form a circle. Survivors should also be encouraged to further maintain body heat by adopting the fetal position.

Crew members should be positioned in the middle of the circle so that they can assess the situation throughout the emergency. In water survival, the greatest threat to survival is that of hypothermia as it

is not possible to remain warm and dry. Movement in the water should be kept to a minimum to conserve body heat and energy, if possible keep in the fetal position as

WINTER SURVIVAL

The principles of winter/polar survival must be applied in any region where low temperatures, high winds and a covering of snow prevail at various times. The terrain can range from bare ice cap to coniferous forests with some form of tundra in between.

In the event of making an emergency landing in an area of extreme cold conditions, one of the main causes of freezing to death is being overheated in the first place. Perspiration will condense and, in extreme cases, freeze.

This has two effects; moisture will reduce the insulation of the underclothing and, being a good conductor of heat, will draw heat from the body. It is important, therefore, to regulate the amount of clothing worn thus reducing the chances of becoming too hot and perspiring. Clothing should be opened up at the neck to allow for ventilation. When necessary, layers of clothing should be removed to keep the person cool but should be replaced as soon as the person has cooled off.

Consider the following in a polar survival situation:

- Make use of snow to produce shelter
- Make use of snow to get water
- Stay close together to keep body heat up
- Stay in the shelter as much as possible
- Be aware of and monitor loss of vital signs and hypothermia

DESERT SURVIVAL

Deserts are large, dry barren areas where temperatures vary tremendously from intensely hot during the day to very cold at night.

As well as the preceding information consideration should be given to the following:

- There is likely to be little or no shade from the sun
- Water will be scarce (condensation can be collected at night)
- Keep shelters safe from snakes, scorpions, spiders, etc.
- Activate a radio beacon as soon as possible
- Survival time in the desert can be less than in other hostile areas
- Beware of sunburn and sunstroke - ensure everyone is covered up as much as possible and stay in the shade
- Roads usually lead to water
- Campfire ashes, animal droppings and general disturbed surfaces usually indicate that water is not far away.

JUNGLE SURVIVAL

The terrain can range from large trees up to 200 ft in height, growing closely together with relatively little undergrowth (this is known as primary jungle) to trees varying in height with dense undergrowth and creepers (this is known as secondary jungle).

In both types of jungle, there are clearings, shrubs and rivers of varying sizes. There is a multitude of animal and insect life, but most of the animals are so timid, that, although you may be heard, it may be several days before they can be seen. Insects can vary from being a nuisance to those that are a health hazard.

In the event of an emergency landing, the Captain will try to land in a clearing or on a river or lake. Landing on to trees will result in large loss of life and multiple injuries, as the aircraft is likely to break into several pieces.

Consider the following in a jungle survival situation:

- Wood is plentiful for making shelters
- Vegetation can be good food
- Elevate the ELT and make a clearing for signaling
- Vegetation increases the danger of getting lost and losing people

When traveling in a jungle mark the route so the way back can be found if needed. Follow rivers or game tracks for guidance.

SURVIVAL FIRST AID AND HYGIENE

Establish whether any of the passengers has any medical training and utilize these people to assist with the injured. Many people will be suffering from shock and this in itself can be life threatening. This should be monitored as well as dealing with obvious injuries. Use able-bodied passengers to assist with injured passengers and get them to encourage them to remain still.

- **Frostbite**

Symptoms

This can be recognized by white or creamy patches on the skin, which will feel hard to the touch. Frostbite particularly affects exposed parts of the body and regions which are farthest from the heart and have the least blood circulation, i.e. face, nose, ears, hands and feet.

Treatment

To treat do not apply direct heat but place the affected area in a warm place, such as under the armpits or between someone else's hands to assist in thawing the area out. Do not burst any blisters that may form if the frostbite is severe, but cover them with a dressing. Do not rub a frostbitten area. Hot drinks can be given, if available.

- **Hypothermia**

Symptoms

This occurs when the core body temperature drops and is cooled by exposure. Extreme cases can lead to unconsciousness, heart failure and death. Typical early signs are a feeling of cold, tiredness, shivering and a difficulty in responding to questions.

Treatment

The casualty must be moved to a protected area away from the elements. Insulate with more clothing and offer hot sweet drinks if the casualty is conscious and these are available. If sleeping bags or similar are available, shared body warmth is very effective. Monitor the casualty even if they seem to recover, as it will take time for the core temperature to return to normal.

- **Sunstroke (Heat-Stroke)**

Symptoms

This is caused by over-exposure to the sun and can lead to serious results. Symptoms are dizziness, headaches, flushed face or feverish. The temperature rises and the pulse rate becomes fast and strong - unconsciousness may follow.

Treatment

To treat get the casualty to the shade with the head and shoulders raised slightly. Remove outer clothing and cool the body by wetting the underclothing with water if available and by fanning. Make a sun shade, leaving space for ventilation. As soon as consciousness returns give water and salt if available.

- **Sunburn**

Most people will have had sunburn at sometime but in excess this can be dangerous. Keeping out of the sun is the best advice.

- **Insect Bites**

Most insect bites can be treated with anti-histamine cream if available. The juice of a lemon rubbed into the area may also aid relief. The casualty should be monitored in case of an allergic reaction.

- **Hygiene**

Personal hygiene is most important in any survival situation as the surroundings will become unsanitary very quickly. Hygiene is essential to prevent disease and infection. Survivors should keep wounds clean and minimise exposure to unsanitary conditions.

TASK 1

Decide if the following statements are True, False or Not Given based on the text.

	T	F	-
1. A flight plan is created after a plane has departed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Search and rescue services are always dispatched immediately when a plane fails to report its position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The Alert Phase starts 30 minutes after a scheduled report is missed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Amphibian aircraft can be used in rescue operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Moisture in clothing reduces insulation and draws heat from the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. It is impossible to survive without food for more than a week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Desert survival time is shorter than in other hostile environments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. In water survival, it is essential to keep moving to maintain body heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Frostbite mainly affects areas of the body with poor blood circulation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Hypothermia only occurs in extremely cold environments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Sunstroke can lead to unconsciousness if untreated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Insect bites should always be treated with hot water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TASK 2

Choose the correct answer.

13. What information is sent upon the departure of a flight?
A. ATA and ETA
B. ATD and ETA
C. Planned flight route
D. Flying time between points

14. What is the key principle of survival in difficult terrain?
A. Avoiding the environment
B. Using survival aids incorrectly
C. Adapting to the environment
D. Remaining in one place

15. What is the first priority in a survival situation?
A. Food
B. Protection
C. Water
D. Location

16. How should survivors maintain body heat in the water?
A. Swim towards the nearest object.
B. Form a circle and stay in the fetal position.

C. Move constantly to generate heat.
D. Tread water individually.

17. Which of the following is NOT recommended for polar survival?
A. Using snow to produce shelter.
B. Wearing heavy layers without ventilation.
C. Removing layers to avoid overheating.
D. Staying in the shelter as much as possible.

18. What is the first step in treating hypothermia?
A. Apply direct heat to the body.
B. Move the casualty to a protected area and insulate them.
C. Give them hot drinks immediately.
D. Monitor their breathing and pulse.

19. How should frostbite blisters be treated?
A. Cover them with a dressing and avoid rubbing the area.
B. Pop the blisters and apply ointment.
C. Place the frostbitten area in hot water.
D. Apply direct heat to thaw the frostbitten area.

20. What can be used to relieve insect bites according to the text?
A. Warm water and soap.
B. Anti-histamine cream or lemon juice.
C. Saltwater and vinegar.
D. Ice packs and bandages.

TASK 3

Match the phases, the survival environments and the symptoms with their descriptions.

21. Uncertainty Phase _____

22. Alert Phase _____

23. Distress Phase _____

24. Desert Survival _____

25. Polar Survival _____

26. Jungle Survival _____

27. Frostbite _____

28. Hypothermia _____

29. Sunstroke _____

- A. Begins 30 minutes after a flight fails to report.
- B. Condensation of sweat leading to freezing.
- C. Dense vegetation increasing the risk of getting lost.
- D. Fast pulse and flushed face.
- E. Involves imminent danger and often a Mayday call.
- F. Risk of sunburn and dehydration.
- G. Shivering and difficulty responding to questions.
- H. Starts one hour after a position report is not received.
- I. White, hard patches on the skin.

TASK 4

Explain the meaning of the following words from the text in your own words, using no more than ten words from the passage.

- 30. Rescue Coordination Centers (RCCs)
- 31. Amphibian
- 32. Adaptability
- 33. Hostile
- 34. Hypothermia
- 35. ELT
- 36. Ventilation
- 37. Insulate
- 38. Unconsciousness
- 39. Casualty

TASK 5

Use words from the text to complete the sentences.

40. A _____ is required before any flight can take off.

41. Survivors need to be highly _____ to avoid making mistakes due to tiredness.

42. The RCC uses _____ and _____ services for rescue missions.

43. In the jungle, the Captain should try to land in a _____ or on a _____.

44. To conserve body heat in water, survivors should link arms and form a _____.

45. In deserts, _____ can be collected at night to supplement water supplies.

46. In polar conditions, layers of clothing should be _____ if a person overheats.

47. To treat sunstroke, ensure the _____ is raised slightly and wet the underclothing.

48. _____ cream or lemon juice can relieve insect bites.

49. Early signs of _____ include shivering and difficulty answering questions.

50. Frostbite symptoms include _____ or creamy patches on the skin.

TASK 6

Answer the questions using no more than ten words from the passage.

51. Why is the will to survive not considered automatic?
52. How do RCCs ensure worldwide coverage for search and rescue operations?
53. Why is adaptability important in survival situations?
54. Why is regulating clothing important in polar survival?
55. Why is survival time in the desert shorter than in other hostile areas?
56. What should be done to prevent getting lost in the jungle?
57. Why should frostbitten areas not be rubbed?
58. What are the two most effective methods to treat hypothermia?
59. Why is it important to monitor someone after they recover from hypothermia?

TASK 7

60. Search and rescue services are dispatched.
 RCCs are alerted

- The Alert Phase begins.
- The Uncertainty Phase begins.

Put the following survival steps in the correct order.

61.

- Mark your route when traveling in the jungle.
- Activate the ELT and signal for rescue.
- Use wood to make a shelter.
- Follow rivers or game tracks for guidance.

Put the following steps for treating hypothermia in the correct order.

62.

- Monitor the casualty even after recovery.
- Insulate the casualty with clothing or a sleeping bag.
- Move the casualty to a protected area.
- Offer hot, sweet drinks if the casualty is conscious.

TASK 8

Imagine you are lost in a remote environment. Based on the principles in the text, explain how you would adapt and survive until help arrives.

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TASK 9

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TASK 10



TASK 11

Summarise the three phases of the search and rescue procedure in no more than 50 words.



TASK 12

Summarise the key principles of water survival in no more than 40 words.



TASK 13

Imagine you are a flight operator and need to alert an RCC about a missing flight. Write an email, including the necessary details (e.g., flight number, last known position, time of last report).



TASK 14

Write a 5-steps survival guide for polar survival, including tips on managing clothing, staying warm and producing shelter.



1. _____
2. _____
3. _____
4. _____
5. _____

TASK 15

Write a short paragraph in no more than 40 words explaining how to maintain hygiene in a survival situation and why it is important.

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