

EXERCISE PENGUIN ISLAND

NARRATIVE

1. You are the leader of a small group of civilians who have been landed on Penguin Island, Antarctica to monitor a suspected Russian nuclear bomb test. This test is in direct violation of the Non-Proliferation Treaty, the Atmospheric Atomic Bomb Test Ban Treaty and the Antarctic Scientific Preservation Treaty.

2. Your team is split into two parties, team A, which is currently at base camp A, and team B, which is currently at base camp B.

3. Team A consists of a radio operator, a dog sled driver, 2 snowcat drivers, a nuclear radiation expert and a trained first aider. The team is equipped with a dog sled and a snowcat. You are in team B together with a dog sled driver, a snowcat driver, a trained first aider and a nuclear radiation expert. Team B is also equipped with a dog sled and a snowcat. Both teams have long-range radios and you are acting as the radio operator for team B. Although certain members of the team are nominated as vehicle drivers, in an emergency anyone could drive the vehicles.

4. In addition you are being supported by the Ice Patrol Ship, HMS ENDURANCE, which is some 100 miles south east of Port Devon and 240 miles north east of Port Angelo. HMS ENDURANCE is currently operating one Wasp helicopter. The equipment performances and limitations are detailed:

a. **Snowcat:** Speed 25mph. Can carry snowcat driver plus two people, or a driver plus one injured man. The fuel is carried externally in containers. Up to a total of 25 gallons of fuel can be carried. Fuel consumption is 10mpg (i.e. the maximum snowcat range is 250 miles).

b. **Dog Sled:** Speed 10mph. It can be operated by any member of the team. Can carry 1 person in addition to the driver. Not suitable for carrying snowcat fuel containers. Dog sled can only be operated in daylight hours. (Currently 0600 – 2300hrs daily).

c. **HMS ENDURANCE:** Max speed 20knots. Able to steam any distance that you require of her. Can come alongside at Port Angelo and Port Devon but can only get within 10 miles of Port Duncan. Can operate and land her wasp at any time on her flight deck. ENDURANCE regularly comes alongside at Port Devon and Port Angelo and so its presence at either Port would not give any indication of your team's activity on the island. It can be assumed that there is unlimited snowcat fuel on HMS Endurance. (Assume that 1 knot = 1 mph)

d. **Wasp:** Max speed 90 knots. Can travel 270 miles without refuelling and carries 2 passengers. Can only be operated safely in daylight hours. The Wasp pilot is very inexperienced in Antarctic conditions and can only land his helicopter at Port Devon, Port Angelo and Port Duncan.

5. Just after 0100hrs on Monday, 3 members of your team set out on a routine 2 hour monitoring patrol. You remain behind with your snowcat driver and both vehicles. At 0700hrs the 3 men have not returned.

6. At 0700hrs you receive a message from ENDURANCE that the Wasp has developed mechanical problems and will not be available until 0600hrs on Tuesday. A short time later, your snowcat driver reports that an animal (possibly a walrus) has attacked team B's snowcat fuel store in the night. The driver has managed to salvage 25 gallons of fuel for Team B's snowcat. There are some 100 gallons of fuel available in team A's store, at base camp A.

7. At 0715 hrs you receive a message from ENDURANCE that the Russians have exploded a high yield nuclear weapon, and that heavy fallout will reach you in 24 hrs. London has ordered that you and your party evacuate Penguin Island as soon as possible.

8. At 0720hrs team A reports that an unknown illness has struck the team. The first aid expert thinks it possible that it may be Rigellian Fever. Although the whole party are fit to travel at the moment, Rigellian Fever means that they will have increasing difficulty in moving after 18 hours. The radio operator from team A goes on to say that he is fairly certain that ionospheric disturbance from the nuclear explosion will render the radios useless in about half an hour's time.

9. Five minutes after receiving this message the other 3 members of your team return. The nuclear radiation expert is unconscious and being carried on a make-shift stretcher. It seems that the injured man had fallen down a crevasse and has severe internal injuries. You are advised that he may die unless he can be got to HMS ENDURANCE's sick bay within 6 hours.

10. It is important that your presence on the Island is not compromised. You should, where possible, keep clear of the two known Russian bases; one near Port Devon and one somewhere on LAND PLAIN. The map shows the only tracks suitable for vehicles. Movement off tracks must be made on foot at an average speed of 1 mph. The River Pagwell crosses the track halfway between base camp B and Port Angelo. At this time of year the river can only be crossed by foot or by dog sled.

YOUR TASK

Consider the problem. What are you going to do?

Write down your thought process that leads you to a plan. Consider the following:

Aims

The options open to you – consider each possibility and draw conclusions.

Decide on the best option – give reasons

Outline your plan with timings.

Reasonable assumptions are acceptable provided you state them but in general only use the information provided.

Be prepared to present your plan verbally and to be able to justify it. You will be able to refer to the map and your notes.

PENGUIN ISLAND
DS SOLUTION

AIM: To safely evacuate all my men from Penguin Island 18 hours after 0720hrs on Monday (0120 hrs) and get my injured man to sick bay within 6 hours.

(Multiple aims which amount to the above are acceptable).

FACTORS:

1. **Medical:** 6 men have fever and will be of little use after 8 hours. One man is badly injured and must be evacuated within 6 hours. Heavy radio-active fallout will reach the island in 24 hours (0715hrs tomorrow) and is likely to be fatal.
2. **Fuel:** Team B has only enough fuel for 250 miles in their snowcat.
3. **Helicopter:** Not available until 0600hrs tomorrow therefore of no use to us.
4. **Transport:** A snowcat can carry 3 men or 2 if one is injured. A dog sled can carry 2 men.
5. **Russians:** There are Russian bases near Port Devon and on Land Plain. We should avoid these areas if possible.
6. **Timings:**

From	To	Distance (miles)	Dog Sled (speed 10mph)	Snowcat (speed 25 mph)	HMS ENDURANCE (speed 20mph)
Base Camp A	Port Devon	150	15 hrs	6 hrs	-
	Port Angelo	100	10 hrs	4 hrs	-
	Port Duncan	175	17 hrs 30	7 hrs	-
	Base Camp B	50	5 hrs	2 hrs	-
Base Camp B	Port Devon	125	12 hrs 30	5 hrs	-
	Port Angelo	125	12 hrs 30	5 hrs (6 hrs via A)	-
	Port Duncan	225	22 hrs 30	9 hrs	-
	Base Camp A	50	5 hrs	2 hrs	-
HMS E	Port Devon	100	-	-	5 hrs
	Port Angelo	240	-	-	12 hrs
	Port Duncan	340	-	-	17 hrs

7. Courses Open:

COURSE A: Evacuate the party from Port Duncan.

Advantages: Nil

Disadvantages: HMS ENDURANCE cannot dock there
Insufficient time for rescue of injured man.

COURSE B: Evacuate the party from Port Angelo

Advantages: Possible for majority of party to be evacuated on time.

Disadvantages: HMS ENDURANCE cannot get there in time to rescue injured man.

COURSE C: Evacuate the party from Port Devon

Advantages: HMS ENDURANCE able to get there quickly.

Disadvantages: Russian base close by but they are also likely to be evacuating.

Course Selected: Course C as this is the only option that fully meets the aim.

PLAN

1. Outline:

Endurance will be instructed to sail for Port Devon. The transport at both locations will make for Port Devon leaving one man behind at each location. The Snowcat will refuel at Port Devon and carry on to pick up remaining men. Team A's vehicle will go to Base Camp B and Team B's to Base camp A.

2. Groupings:

- | | | | |
|----|--------------------------------------|-----------|------------|
| a. | Team A – 6 men (infected with fever) | 1 Snowcat | 1 Dog Sled |
| b. | Team B – 5 men (one injured) | 1 Snowcat | 1 Dog Sled |

3. Times:

0725 Radio instructions to Team A and Endurance

0745 All transport leaves locations:

Team A Snowcat (3 men)	Port Devon at 1345
Team A Sled (2 men)	Port Devon at 2245

Team B Snowcat (2 men)	Port Devon at 1245
Team B Sled (2 men)	Port Devon at 2015

HMS Endurance	Port Devon at 1245
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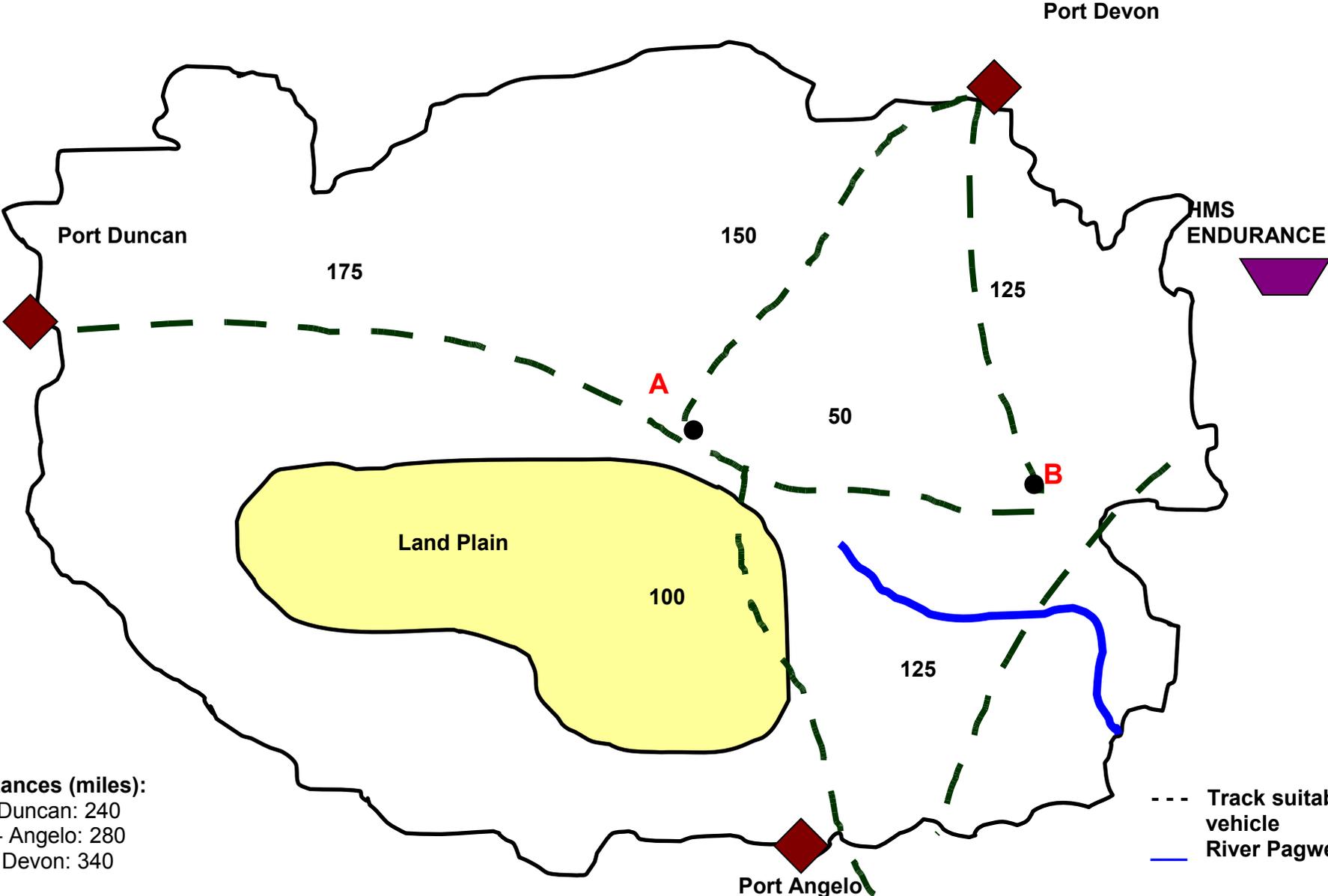
1300 Team B's Snowcat has refuelled and leaves for Base Camp A to pick up final man.

1400 Team A's Snowcat has refuelled and leaves for Base Camp B to pick up final man.

0000 Team A's Snowcat returns to port Devon

0100. Team B's Snowcat returns to Port Devon (17hrs 40 mins after 0720)

PENGUIN ISLAND



Sea Distances (miles):
Devon - Duncan: 240
Duncan - Angelo: 280
Angelo - Devon: 340

--- Track suitable for any vehicle
— River Pagwell