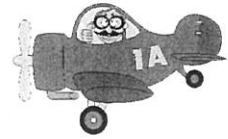




+100m

The Submalloon is a cross between a hot air balloon and a submarine.
It is capable of flying in the sky or travelling beneath the seas.
It can only travel in a vertical direction.



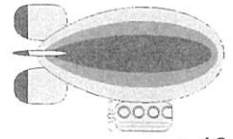
+80m

- 1). The Submalloon is hovering over the sea at a height of 45 metres.
It descends 30 metres. At what height is it now?

- 2). The Submalloon is at **-84** metres (below the sea surface).
It is looking out for marine life, and at what depth it lives.

- a). 20 metres above it are some sharks, at what depth are they?
- b). 23 metres below it are some whales, at what depth are they?
- c). 37 metres above it are some squid, at what depth are they?
- d). 49 metres below it are some flounder, at what depth are they?
- e). It goes to -32 metres to observe a dolphin. How far has it risen?

+60m



+40m

- 3). The Submalloon is being used to drop equipment in depth capsules to divers working in the sea. The Submalloon is hovering at **19** metres above sea level.

- a). Work out how far the depth capsules have to fall before opening for each of the divers working at these levels

- | | | |
|-----------------|-----------------|------------------|
| i). -12 metres | ii). -34 metres | iii). -68 metres |
| iv). -83 metres | v). -120 metres | vi). -171 metres |

- b). The depth capsules fall these distances from the Submalloon. Find the depth that each diver is working at).

- | | | |
|----------------|----------------|-----------------|
| i). 30 metres | ii). 65 metres | iii). 74 metres |
| iv). 89 metres | v). 108 metres | vi). 157 metres |

+20m



0

- 4). The Submalloon is being used to inspect oil pipe lines going vertically down from an oil rig to the sea bed.

- a). It is at **-63** metres and can spot the following 6 oil leaks at these depths.
How far below or above the Submalloon is each leak?

- | | | |
|------------|------------|-------------|
| i). -9 m | ii). -38 m | iii). -69 m |
| iv). -81 m | v). -109 m | vi). -153 m |

-20m

- b). It is at **-45** metres and spots another 6 oil leaks these distances away. At what depths are each of the leaks.

- | | | |
|-----------------|-----------------|-----------------|
| i). Up 18 m | ii). Below 26 m | iii). Up 28 m |
| iv). Below 49 m | v). Up 39 m | vi). Below 78m? |



- c). The top of the oil rig stands 35 metres above the surface of the sea and can track the position of the submalloon. At what position is the submalloon from sea level if it is these distances from the top of the oil rig.

- | | | |
|------------------|-----------------|------------------|
| i). Up 38 m | ii). Below 56 m | iii). Below 98 m |
| iv). Below 129 m | v). Below 231 m | vi). Up 145 m? |

-40m



-60m

Page 6. The Submalloon.

1). 15m 2). a). -64 b). -107 c). -47 d). -133 e). 52 3). a). i). 31
ii). 53 iii). 87 iv). 102 v). 139 vi). 190 b). i). -11 ii). -46 iii). -55
iv). -70 v). -89 vi). -138 4). a). i). up 54 ii). up 25 iii). down 6
iv). down 18 v). down 46 vi). down 90 b). i). -27 ii). -71 iii). -17

iv). -94 v). -36 vi). -123 c). i). 73 ii). -21 iii). -63 iv). -94 v). -196
vi). 180