

## 1.17 Equipment Analysis

### WEIGH IT ALL:

To make sense of the weight of a fully loaded fishing kayak, the designer analysed all equipment weights and volumes. This process highlighted equipment that was heavier than first expected, and allowed for a real understanding of volumes and proportions that the design would need to cater for. The weight of equipment were grouped together to visualize and make comparisons, and identify areas where compromises could be made to lessen weight carried.

### ROOM FOR IMPROVEMENT:

This exercise highlighted that some equipment could be improved to contribute to the lightness of the overall product. Key areas of weight reduction up for investigation include the trolley, battery and motor, cooling and storage areas for fish, rod holders and moulded plastic equipment, and the main seat. There also needs to be a better distribution of weight to help centre the balance on the kayak. Sourcing of appropriate alternate lightweight materials or redesign of the item itself are ways to address this issue.

#### ◀ 0.5-1.0kgs

0.5 Drift Shute (incl rope)  
0.5 Food & Snacks  
0.5 Wallet, Keys & Phone  
0.5 Clothing  
0.6 Bait Board  
0.6 Scotty Rod Holders (2)  
0.7 Anchor Rope Spool  
0.7 Enviro-Net  
0.9 PFD  
5.5 Total Weight

#### ▶ 2.0-3.6kgs

2.0 Crate and rod holders  
2.0 2L Bag Ice  
2.3 X-Wing Sliding Console  
2.5 12V 7.2 AH Battery  
8.8 Total Weight

▶ 23.0kgs  
23.0 Malibu Stealth 9 Kayak



Author's own image

SOME ITEMS  
WERE MUCH  
HEAVIER  
THAN I  
INITIAL  
THOUGHT

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TASK CLARIFICATION | Equipment Hierarchy

### MAPPING EQUIPMENT IMPORTANCE AND USAGE:

The equipment used on the designer's fishing kayak was examined and organised by mapping the equipment based on two categories; importance in relation to safety and functional requirements, and how frequently each piece of equipment is used. Tasks were mapped out two categories, and assisted in developing an equipment hierarchy. The equipment was then grouped into storage tiers which helped package these two hierarchies to develop an initial storage solution which aimed to maximise efficiency and provide sound ergonomics while on board.

## 1.18 Equipment Hierarchy



Authors own images

Further analysis of the **equipment weights** and **heirarchy of use** on-board allowed a better understanding of the package and areas of focus for design