



Topic: De-Fib mount		Full Portfolio	
General Description		Centre Mark	Mod Mark
<p>The candidate produced a portfolio of 69 pages, generally well presented and explored the requirements of pre-hospital ambulance care eventually! The candidate could have made the work much more succinct and reduced the page count somewhat. The final outcome is an articulated De-Fib mount. It appears at first inspection to be a mid-level performance.</p>			
<p>Grid 1 Investigation</p> <p>Evidence</p>	<p>In this section we are expecting to see the candidates exploring a range of pertinent design possibilities that grow out of a clear conversation with a real client or a proven narrative with a target market that has a level of reality therefore mimicking commercial activity. Alongside the client/user groups they need to decide on the potential design possibility that they will be working towards and produce a preliminary design brief. This should lead to a perceptive and relevant selection of research sources.</p> <p>In slide 2 the candidate tries to explore, in a mind mapping exercise with limited merit. They then, in slide 3 summarise this but they are already falling into the trap of exploring disparate scenarios without client input. Scenario 3 is discounted but the candidate still pursues the other two.</p> <p>In fact, the candidate in this case has identified an area of work with real potential, they potentially draw on the experience of expert users and produce a design that could make a real difference. It is a pity that in the first instance they chose to examine some diverse opportunities. They went on to explore two, they would have been better to stay with the theme of prehospital care, indeed within that particular field there would be a range of possibilities, and so they did waste time examining other issues such as field craft. Slides 10, 11, and 12.</p> <p>The candidate does identify some clients and stakeholders, and they do look at possibilities within the realm of prehospital care it is a pity that the client input isn't used to focus the candidate thinking on the needs wants and values.</p> <p>This was a missed opportunity.</p> <p>Here we have to make a decision are slides 4,5, identifying needs or are they descriptive, therefore lacking justification. In this case again there is limited merit.</p> <p>Whereas the possible problems slides, 6,7,8,9 all identify relevant possibilities, but the client conversation is somewhat limited and has elements of research. Here we need to balance, in an iterative process, where the candidate may benefit from 'banking' some research to support the</p>	Level 3	Level 2

	<p>Grid two award. This is a high level two submission. Evidence on. Slides 2 to 12</p>		
<p>Grid 2 Analysis/Research</p> <div data-bbox="174 272 383 333" style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">Evidence</div>	<p>In this section, candidates should be identifying clear opportunities for research. In the best cases, this should be led by the client; and the client/relevant stakeholders should be offering opinions and suggestions at key points. At this level, would expect candidates to have clearly identified focused research that it pertinent to their specific design problem that offers clarification or refinement of the needs. This type of research would then focus on the needs and lead into firm technical and measurable specification points.</p> <p>We see some research elements in the grid one section of the portfolio (see commentary), this would be credited here in this grid. Evidence from slides 6, 7and 8.</p> <p>The research has some levels of reality especially in terms of examination of the lifepak unit and indeed the examination of the ambulance, however it is often too descriptive perhaps missing opportunities to explore pivots locking mechanisms and materials and processes. Some useful research is after the specification which is perfectly acceptable and also enhances the performance in this grid slides 27, 28, and 29.</p> <p>Where they do this, it again is rather descriptive that said the measurements of the lifepak unit is relevant and should be hopefully seen affecting the specification. The research on mounts and pivoting is useful slide 19 but the commentary lacks analysis. For example, on slide 19 in the section on mounts the candidate states “presumably using longer aftermarket screws” this should be a matter of research and is a missed opportunity.</p> <p>The materials research is rather simplistic slide 27, simply descriptive with little relation to the product.</p> <p>This is a high level 2 submission. Evidence on. Slides 6,7,8 and slides 13 to 21. The work in slides 27,28 and 29 also contributes in this section.</p>	Level 3	Level 2
<p>Grid 3 Specification</p> <div data-bbox="174 1267 383 1327" style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">Evidence</div>	<p>In this section we are expecting to see evidence of technical and measurable specification points that are a product of the focussed research undertaken. This should also be a product of a refining/renegotiation narrative with the client or a realistic target market/user group This narrative is imperative if the candidate is to fully justify the performance requirements. The candidates should submit a re-worked Design Brief that reflects the research and the stakeholder/client requirements.</p> <p>We do see a re-working of the brief slide 22 this does have some justification, but it is limited and not perceptive. The specification has some measurable elements but omits important sizes especially in terms of the life pack unit the candidate also uses generic material terms such as</p>	Level 3	Level 2

	<p>metal. Slides 23, 24, 25 and 26. The candidate could have redefined the specification after further research, and this would have been credited.</p> <p>This is a mid-level 2 performance.</p> <p>Evidence on. Slides 22 to 26</p>		
<p>Grid 4 Design ideas</p> <p>Evidence</p>	<p>This section should be characterised by candidates using a range of design strategies to produce a range of design ideas that are realistic, workable and address the criteria in the specification criteria from the previous section. Candidates should be thinking like a commercial designer and apply their knowledge of technical skills and materials and back it up with the research they have carried out previously and indeed any additional research that may be required. They must try to be imaginative and draw inspiration for many areas such as nature, industry, design movements and new technology.</p> <p>Here it should be noted that on slide 29 we see relevant calculations this should be ‘banked’ and credited in grid 6.</p> <p>The ideas begin on slide 30 to 33, there is some descriptive supporting annotation. Overall, the candidate does produce some good sub assembly design work, looking at some details for example wall mount pivots, however it is difficult to see the overall design of the product and the relationship between the parts. The design idea analysis does help somewhat but the sketching is a little lacking in terms of technical annotation. The client has become rather anonymous thus the iterative process is lacking. The specification review does help a little in terms of an appreciation of specification parameters. Slide 34 to 38.</p> <p>This is level two.</p> <p>NB</p> <p>It should be noted here that some credit may be given for review statements in grid 7 especially slide 39</p> <p>Evidence on. Slides 30 to 33</p>	<p>Level 3</p>	<p>Level 2</p>
<p>Grid 5 Development</p> <p>Evidence</p>	<p>This section should show that the candidates are drawing on their research, and indeed, in the best cases completing further relevant research in response to the client/end user. This should be evidenced in the annotation that supports the design work. Candidates should use modelling to good effect to test out aspects of the design possibilities which, as a result of the modelling allow the candidates, in conjunction with the interested stakeholders, to develop the prototype further. This of course again would allow the candidates to evidence further iterations of potential solutions.</p>	<p>Level 3</p>	<p>Level 3</p>

	<p>The development is a little better it does begin to show the relationship between the parts (slides 40 to 50) it is a pity the candidate didn't look at the difficulties of aluminium welding in the research section as a method of joining metals. This would have better illustrated the perceptive use of the research as outlined in the assessment criteria.</p> <p>We do see lots of good sub assembly design work with some sizes and exploded views as a product of a CAD package. It could also be argued that the candidate is developing their skills in terms of the welding practise and thinking about how the bearing might be held captive. We do also see on numerous slides thinking and developing taking place as parts are developed and adjusted, the annotation is helpful here for example on slide 48 discussing the bolted base plate.</p> <p>The client input is rather limited.</p> <p>This is a low level 3.</p> <p>Evidence on. Slides 40 to 50</p>		
<p>Grid 6 Final Design</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Evidence</div>	<p>In this section we are looking for the candidates to be making some final refinements and then present a detailed final design solution that enabled third party manufacture to take place. The candidates should produce a manufacturing specification that details the technical information needed for manufacture. This is often well completed if the candidates produce cutting lists, parts drawings or a tabulated illustration of the operations that need to be undertaken on each part including tools processes etc. In the best cases calculations are included such as strength or avoidance of waste.</p> <p>It should be remembered that we saw some calculations earlier in the portfolio and they can be credited here (Slide 29)</p> <p>It is a pity here that we don't have more formal working drawings however, there is some detail and some sizes but it is a little difficult to see overall how the product fits together, that said the exploded views do help but it does need some more detail in terms of third party manufacture. The candidate would have benefited from the submission of a manufacturing specification detailing the operational procedures that would enable manufacture by a third party. Evidence is on slides 51, 52 and 53.</p> <p>Evidence on. Slide 29 and then slides 51 to 53.</p>	<p>Level 3</p>	<p>Level 2</p>
<p>Grid 7 Review</p>	<p>This section is where the candidates must undertake an intellectual analysis of the work they have undertaken so far, the commentary must be analytical and evaluative it must not be simply</p>	<p>Level 3</p>	<p>Level 2</p>

<p style="text-align: center;">Evidence</p>	<p>descriptive. In the best cases there should be strength and weakness analysis that provides balance and should consider all factors such as materials, processes, techniques and have reference to feedback. Client/target market narrative again is important as this may trigger further iterations of the proposal. The evaluative element must be balanced and ensure that any conclusions undertaken can be supported.</p> <p>The candidate did undertake some reviews earlier in the portfolio and some credit can be given. Slide 39.</p> <p>There are some review statements in the main body of the portfolio but they're often too descriptive. The client again is largely anonymous and there is little in terms of balance. The candidate does not produce a developed analysis that considers the needs wants and values of the client this is therefore a level 2 award.</p> <p>Evidence on. Slides 40 to 50 But also the work on slide 39</p>		
<p style="text-align: center;">Grid 8 Communication</p>	<p>The candidates should:</p> <p>Demonstrate a perceptive selection and accomplished use of traditional/manual graphical techniques to communicate design proposals.</p> <p>Demonstrate a perceptive selection and accomplished use of computer-aided design (CAD) techniques to communicate design proposals.</p> <p>Demonstrate a perceptive selection and accomplished use of written techniques to communicate design proposals.</p> <p>All of these strands need to be evidenced and be effective but also perceptive, if for instance the best communication method is a sectional view, and the candidate recognizes this, that is perceptive.</p> <p>The communication is reasonable, but the sketch work is too naive, and the overall final design is lacking in detail especially in terms of the operations required to manufacture each part. The centre award is accurate. Evidence across the portfolio.</p>	Level 3	Level 3
<p style="text-align: center;">Grid 9 Tools and equipment</p> <p style="text-align: center;">Evidence</p>	<p>In this section the candidates are expected to demonstrate an accomplished and sophisticated selection and use of tools and equipment which shows and in depth understanding of the materials being used and a justification of their use. The selection of the processes will ensure that the manufacture of the prototype is sound, and the outcome is dimensionally accurate. Photographs on slides 54 to 64.</p> <p>The candidates work has some complexity and has demand in terms of the use of tools and equipment it is a little bit reliant on some simple fabrication techniques such as bolting and pop riveting. However, the welding is difficult especially on the thin sheet material. The choice of tools and equipment is appropriate, and the product appears to be geometrically accurate.</p>	Level 4	Level 4

	<p>Photographs slide 68.</p> <p>Evidence on. Slides 54 to 63</p>		
<p>Grid 10 Quality and Accuracy</p> <p>Evidence</p>	<p>This section should be characterised by demonstrating high level making skills that evidence accuracy leading to a quality artefact that is fully functioning prototype that meets the end user needs identified in the specification. We should also see candidates not being afraid to consult with the interested parties and amend the design during the manufacturing as a result of this consultation or indeed in response to issues during the manufacturing process, if necessary, therefore evidencing an iterative approach during the process of manufacture.</p> <p>The candidate's submission has a range of pivots and fabrication techniques, along with differing fixings. The welding although a little scruffy in places has some quality and demand and the applied finish appears to be accurate. This is a complex device, and it seems to be effective.</p> <p>The candidate has produced a well manufactured and well finished product which is fit for purpose and has some skillful A level demand, it is a pity that the client again is rather anonymous during this process.</p> <p>This s a good example of a succinct manufacture that has A level demand, the lack of client input is a missed opportunity.</p> <p>Evidence on. Slides 54 to 63</p>	Level 4	Level 4
<p>Grid 11 Test and Evaluate</p> <p>Evidence</p>	<p>In this section we are looking for the candidate's ability to discern the difference between testing and evaluating. The notion of testing implies putting the product into service and considering its success, especially in terms of the specification and the clients' needs wants and values, whereas in the evaluation phase we are looking for a critical review including strengths and weaknesses which will then give a balanced conclusion supported by all of the analysis undertaken. This could lead to further suggested modifications therefore illustrating a post manufacture iterative approach.</p> <p>The candidate appears to put the product into service with some limited testing and evaluative commentary. It is rather descriptive and the feedback from colleagues is simply a matter of praise, the work lacks evaluative detailed commentary, and the modifications are limited along with the product life cycle. The specification performance analysis is naive, but the product does appear to be effective. Photograph slide 68. The work is a mid-box performance.</p> <p>Evidence on. Slides 64 to 69</p>	Level 2	Level 2
Total		A Grade	B Grade

