EXERCISE 21
HULL DETAILS

QUESTIONS

The type of hull on a vessel determines the use of that boat. Use your textbook index to find hulls and answer the questions below.

1. Draw diagrams in your notebook to show you know the meaning of the following terms. (Use Figure 21.1 as a guide.)

   - Round bilge hull
   - Hard chine hull
   - Free board
   - Transom
   - Draught
   - Length overall
   - Length at waterline
   - Displacement hull
   - Planing hull
   - Semi-displacement hull

2. The way a boat is built is reflected in the planking. Use your textbook to make detailed drawings in your notebook identifying the following boating terms.

   - Soft chine hull
   - Multichine hull
   - Hard chine
   - Chine
   - Gusset
   - Seat
   - Deck
   - Knee
   - Rubbing strip
   - Clinker planking
   - Keelson
   - Keel
   - Garboard plank
   - Sheer plank
   - Rib
   - Carvel planking

3. Identify the boat hulls shown as in A and B in Figure 21.1

4. Look at the illustrations in Figure 21.2 and identify the parts labelled C – I in your notebook.

5. Use your textbook to complete the table shown in Figure 21.3.
<table>
<thead>
<tr>
<th>Design</th>
<th>Name of hull</th>
<th>Advantage of hull design</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>![Image]</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 21.3** Table for question 5. Students may make one copy of this page so that they can attach their answers before handing in for marking. Teachers do not have permission to make class sets of this page for inclusion in a booklet.
Exercise 19  Glossary of sailing terms

See answers on Pages 31 - 32 of lab manual

Exercise 20  Materials used in boats

Answers depend on prac results

Exercise 21  Hull details

1. See diagrams to right
2. See diagrams to right
3. a. planing hull
   b. displacement hull
4. C round bilge
   D freeboard
   E draught
   F hard chine
   G freeboard
   H length overall
   I length at waterline
5. a. flat bottom - high stability, high load capacity, high buoyancy
   b. v bottom - soft ride, fairly stable
   c. deep v bottom - good directional stability, soft ride
   d. cathedral - very stable, good directional stability
   e. catamaran - as above
   f. trimaran - as above
   g. keel - stability

Exercise 22  At the dock

1. the boat should have a bow line tied to the post allowing enough rope to move with the tide, and a long stern line tied to the bollard. Person A could catch the bow line thrown by Person B and fix it to the post while the Skipper manoeuvred the boat alongside the jetty, then attach the stern line to the bollard.
2. As described
3. the jetty could be designed so that it floats on the water and therefore moves up and down with the tides