The Noelex 22 Trailer Yacht
Specifications:

LOA: 6580 mm.  Displacement: 726 kg.
LWL.: 5588 mm.  Ballasted Plate 114 kg.
Beam: 2185 mm  Sail Area 190 sq feet
Draft [plate up:] 255 mm.  Draft [plate down:] 1220 mm

Designers Noel Honey and Alex Trethewey 1968
### TABLE OF CONTENTS

**Page 3 & 4**  
History

**Pages 5 to 12**  
Class Rules  
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1.0 Object</td>
<td>6</td>
<td>2.0 General.</td>
</tr>
<tr>
<td>6</td>
<td>3.0 Hull.</td>
<td>7</td>
<td>4.0 Cabin.</td>
</tr>
<tr>
<td>7</td>
<td>5.0 Cockpit</td>
<td>8</td>
<td>5.0 Cockpit.</td>
</tr>
<tr>
<td>8</td>
<td>6.0 Sails.</td>
<td>9</td>
<td>7.0 Spars.</td>
</tr>
<tr>
<td>10</td>
<td>8.0 Rigging.</td>
<td>11</td>
<td>9.0 Centreplate</td>
</tr>
<tr>
<td>12</td>
<td>11.0 Weight</td>
<td>12</td>
<td>12.0 Safety</td>
</tr>
<tr>
<td></td>
<td>13.0 Racing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pages 13 to 17**  
Constitution  
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>1. Name</td>
</tr>
<tr>
<td>14</td>
<td>2. Objects</td>
</tr>
<tr>
<td>15</td>
<td>3. Registration</td>
</tr>
<tr>
<td>16</td>
<td>4. Membership</td>
</tr>
<tr>
<td>17</td>
<td>4a Associated Membership</td>
</tr>
<tr>
<td>14</td>
<td>5. Resignation</td>
</tr>
<tr>
<td>15</td>
<td>6. Meetings</td>
</tr>
<tr>
<td>16</td>
<td>7. Election of Officers</td>
</tr>
<tr>
<td>16</td>
<td>8. Committee</td>
</tr>
<tr>
<td>17</td>
<td>9. Management</td>
</tr>
<tr>
<td>17</td>
<td>10. Common Seal</td>
</tr>
<tr>
<td></td>
<td>11. Dissolution</td>
</tr>
</tbody>
</table>

**Pages 18 to 25**  
Tuning Guide  
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Hull</td>
<td>19</td>
<td>Centreboard</td>
</tr>
<tr>
<td>19</td>
<td>Foils.</td>
<td>20</td>
<td>Rudder.</td>
</tr>
<tr>
<td>20</td>
<td>Centreboard</td>
<td>21</td>
<td>Mast.</td>
</tr>
<tr>
<td>21</td>
<td>Rudder.</td>
<td></td>
<td>Mast.</td>
</tr>
<tr>
<td></td>
<td>Spars</td>
<td></td>
<td>Spars</td>
</tr>
<tr>
<td></td>
<td>Main Boom</td>
<td></td>
<td>Main Boom</td>
</tr>
<tr>
<td></td>
<td>Spinnaker Boom</td>
<td></td>
<td>Spinnaker Boom</td>
</tr>
</tbody>
</table>

**Sail Control Systems**  
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>The Jib</td>
</tr>
<tr>
<td></td>
<td>Tack</td>
</tr>
<tr>
<td></td>
<td>Halyard</td>
</tr>
<tr>
<td></td>
<td>Track</td>
</tr>
<tr>
<td></td>
<td>The Main</td>
</tr>
<tr>
<td></td>
<td>Sheet</td>
</tr>
<tr>
<td></td>
<td>Traveller</td>
</tr>
<tr>
<td></td>
<td>Halyard Vang</td>
</tr>
<tr>
<td></td>
<td>Outhaul</td>
</tr>
<tr>
<td>23</td>
<td>The Spinnaker</td>
</tr>
<tr>
<td></td>
<td>Sheet</td>
</tr>
<tr>
<td></td>
<td>Halyard</td>
</tr>
<tr>
<td></td>
<td>Pole Launcher</td>
</tr>
<tr>
<td></td>
<td>Rope</td>
</tr>
<tr>
<td></td>
<td>Topping Lift</td>
</tr>
<tr>
<td></td>
<td>Downhaul</td>
</tr>
<tr>
<td></td>
<td>Trip Rope.</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
</tr>
<tr>
<td>24</td>
<td>Sails</td>
</tr>
<tr>
<td></td>
<td>Mainsail.</td>
</tr>
<tr>
<td>25</td>
<td>Jib</td>
</tr>
<tr>
<td></td>
<td>Spinnaker.</td>
</tr>
</tbody>
</table>

**Pages 26 to 29**  
Sailing Guide  
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Tacking in light to moderate conditions.</td>
</tr>
<tr>
<td>27</td>
<td>Flat running in light to moderate conditions.</td>
</tr>
<tr>
<td>28</td>
<td>Tight reaching in light to moderate conditions. Tacking in heavy conditions. Flat running in heavy conditions.</td>
</tr>
<tr>
<td>29</td>
<td>Reaching in heavy conditions.</td>
</tr>
</tbody>
</table>

**Pages 30 & 31**  
Daggerboard modifications
The Noelex 22 Trailer Yacht

[history]

The twenty-two foot Noelex trailer yacht evolved from an eighteen footer built to the ideas of Dr. Noel Honey. The design concept attracted Alex Trethewey and together they developed the original Noelex [Noel and Alex] and have continued to be involved in the growth of the design, from boats intended for their own purposes, into a class now sailed and enjoyed throughout the country.

The class soon established itself in Christchurch as particularly suited to Lyttelton conditions and from there it spread to the southern centres. It first made an impact on the national trailer yachting scene in the 1974 National Trailer Yachting Championships when a Noelex 22 took the Open Title against a number of established stock designs. By the 1975 championships the Noelex 22 class mustered the largest fleet of any single design and sailed for their own National Championship and Handicap trophies, the former being donated by co-designer Alex Trethewey and won by his original Noelex 22.

There are many features which account for the popularity of the class. Clearly, sailing ability has been established by their racing record against trailer yachts of similar size, but primarily the design is intended as a family day sailer and restricted cruiser. To this end, the sail and rigging plans are simple, being based on the “Flying Dutchman” with a light, easily raised mast and single side stays. The relatively small sail area allows the crew to handle the sheets without winches and its general simplicity permits the racing enthusiast to tune his boat without the expense of “go fast” gadgetry and expensive sail wardrobes. As might be expected from their development in southern waters and the flexible dinghy type rig, these boats stand up well to being driven hard under full sail in fresh conditions, showing particular windward ability in choppy seas. Roller reefing may be fitted but as the boats sail well on either the jib or main, sail reduction is usually effected by dropping the sail.

The light, easily driven hull is readily launched and retrieved from a simple trailer which does not require tandem wheels or brakes and the overall weight is well within the towing capabilities of the average six cylinder car. The ballasted centreplate and low centre of gravity makes the Noelex 22 very stable. Boats have recovered from a knockdown with the plat retracted and the absence of a stub keel allows the yachts to be beached without heeling.

Auxiliary power may be provided by a 4.5 hp or larger outboard motor and the outboard well is particularly practical in operation. The cockpit provides room for day sailing and two cabin options are available, the traditional stepped coachroof or a roomier “straight through” line. Interior layout is adapted by the owner to his own requirements.

One of the important features of this class is the choice of options open to the respective owner. Plans are available for home building in timber, a process which may be hastened by hiring existing moulds. Alternatively G.R.P. hull and deck mouldings are available in either cabin option to any stage of completion, allowing for a choice of building materials.
An owners association was formed as soon as the class became established and took over the administration of the class through the sale of plans, registration of boats and the setting up of class rules and restrictions. Initially, considerable latitude was allowed for individual adaptation of the design but it is now evident that if the boats are to keep the essence of simplicity, reasonable price limits, resale value and keen competition, then the controls must be tightened. To this end the Noelex 22 Trailer Yacht association has formalised its constitution, revised the rules and restrictions, and re-drafted and metricated the measurement drawings. Sets of official templates have been prepared.

For the protection of their own investment, owners of boats which comply with these regulations are urged to register with the Association, who will issue a numbered medallion to be affixed permanently to the yacht. The parent Association in Christchurch wishes to encourage the establishment of sub associations at other centres to provide better communications and to assist in fostering the interests of a design which they believe offers safety with outstanding value in terms of comparable established classes currently available in New Zealand.

Plans may be ordered from
The Secretary Registrar
Noelex 22 Trailer Yacht Association [Inc.]
P. O. Box 19 671
Woolston
Christchurch.

Current plan price is $112.50 inc. GST. This covers designers’ royalties, production costs and automatic membership to the Association. Note that this payment does not entitle one to membership of any other club, organisation or sail number. Upon completion of the boat, the owner may register it with the Association for a fee of $5.00 and a number and a plaque will be issued. Yachting New Zealand allocates sail numbers.
Noelex 22 Trailer Yacht Association [Inc]

CLASS RULES

1.0 OBJECT

1.1 The Object of these Rules is to establish and maintain the simplicity, appearance, lines and all matters that affect the basic performance of the Noelex 22 Trailer Yacht. They aim to enable family, novice or expert to enjoy the pleasures of sailing and to ensure that racing depends on the skill of the crew.

2.0 GENERAL

2.1 To promote the Object these Rules establish a class of boat which is one design in all matters which affect basic performance. The Rules shall be interpreted in this spirit.

2.2 Builders shall not attempt to get around the spirit or letter of these Rules to produce boats which are intended to be basically faster than those built originally of conventional laminated timber construction.

2.3 Tolerances are laid down in order to keep the class inexpensive and to allow for errors in building and changes in shape through age. The exploitation of these tolerances shall not be permitted.

2.4 Builders may use any type of acceptable materials providing that good building practice is used and the finished boat conforms to lines, plans and weight.

2.5 In general, it is intended that hulls should be measured under the Rules in force at the time they were built. This ruling is to be modified either if the boat has been altered or if the original rules were not clear or did not cover the case. In these cases, boats shall conform to the new Rules.

2.6 Since it is unlikely that these Rules can cover in detail every eventuality builders are strongly advised to clear doubtful points with the Noelex 22 Trailer Yacht Association Committee, Christchurch, before starting construction. This will avoid the possibility of boats subsequently being rejected.

2.7 These Rules are complementary to the plans and measurement diagram. Any interpretation shall be made by the Noelex 22 Trailer Yacht Association Committee, Christchurch.

2.8 It is the responsibility of the owner or builder to ensure that the boat conforms to the
measurements and Rules.

3.0 HULL

3.1 All boats to be built to hull lines as per plan except where added to, or varied by these Rules. All half sections shall carry half-stated tolerances.

3.2 Length Overall: 6580 mm (tolerance ± 40 mm) excluding deck overlap. The foremost position for overall length measurements shall be the forward edge of the stem 813 mm above the design water line.

3.3 Beam: 2185 mm (tolerance ± 24 mm).

3.4 Tolerances: The hull is to be controlled at stations 2, 4, 6, 8 and 10 by means of the official full width outside templates made 12 mm larger than the drawn sections. The hull may touch but shall not lie more than 24 mm inwards from the templates located on their proper stations (i.e. the tolerance is ± 12 mm of plan hull lines).

3.5 Sheer: To allow for rubbing strakes, the official templates have been cut 76 mm below the sheer as shown on the measurement diagram for the stepped cabin top version. The flush cabin top sheer line remains unaltered for stations 8 and 10 but is increased in height at other stations as follows:

<table>
<thead>
<tr>
<th>Station</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem</td>
<td>101 mm</td>
</tr>
<tr>
<td>No 2 Station</td>
<td>55 mm</td>
</tr>
<tr>
<td>No 4 Station</td>
<td>28 mm</td>
</tr>
<tr>
<td>No 6 Station</td>
<td>13 mm</td>
</tr>
</tbody>
</table>

The stepped cabin top sheer shall lie within 52 mm and 100 mm of the top edge of these templates and be approximately parallel to the relative position with respect to each template. The same conditions and tolerances shall apply to the flush cabin top. Size of the rubbing strakes may be to the owner’s requirements.

3.6 Skeg: The minimum thickness shall be 45 mm and the overall length tolerance of ± 12 mm as on the diagram. The angle formed by the base of the skeg and its trailing edge shall lie between 125° and 135°. The intersection of these two lines shall be 480 mm forward of Station 10. A maximum radius of 50 mm is permitted at the intersection.

3.7 Stem: The stem shall be controlled by an official template cut 12 mm larger than the stem profile. It shall be positioned at Station 1, which may be adjusted with regard to the overall length tolerance as measured from Station 6.

3.8 Transom: May be either straight across as per construction plan, or curved 75 mm to 100 mm as in measurement diagram.

3.9 Side Decks: The maximum width of side decks shall be 127 mm. The minimum
width of side decks shall be 40 mm. (These measurements do not include rubbing strakes which may be to owner's requirements. The minimum width is consistent with the mould plan which provides for adequate strength in that area.)

3.10 **Materials:** Any type of materials will be accepted, providing that they conform to line, weight and good building practice. In wooden boats the skin shall be of substantially uniform thickness and not less than 9 mm. Thickness of ply bulkheads, decks, coamings, stringers, etc. shall be substantially as per plan.

3.11 **Centre Plate Case:** The centre plate case shall be attached securely to the hull along its length and substantially supported laterally at the fore end to withstand all loads imposed by the centre plate pivot. The centre plate case shall also be provided with the necessary lateral rigidity at its aft end to withstand the external applied forces which could normally be expected. The weight of the metal components of the centre plate case shall not exceed 37 kg.

4.0 **CABIN**

4.1 The design shall be either one of two alternatives offered in the plans, with a tolerance of ± 40 mm for those areas not covered by specific tolerances.

4.2 **Bulkheads:** Bulkheads may be to plan or the aft cabin bulkhead may be extended as per the alternative cabin drawing to 310 mm aft of Station 6. Where this bulkhead is not required to be a structural member and construction is proved to be adequate (alternative strength provided) the lower portion of this bulkhead may be omitted. As the centre case slot will therefore be used as the datum from which to position other stations its aft end shall lie exactly 64 mm forward of Station 6.

4.3 **Cabin Height:** The cabin height at the after limit shall be 1355 mm from the centre point of the projected cabin top curvature measured vertically downward to the inside of the hull skin.

4.4 **Interior:** Layout may be to owner's choice but must contain permanent seating and sleeping area which must not be removed for racing.

5.0 **COCKPIT**

5.1 The general arrangement of decking and cockpit shall be substantially as per plan, with the exception of variations permitted within these Rules. The ends of the cockpit may be either straight across as per construction plan or faired into the side coamings as shown on the measurement diagram.

5.2 **Side Coamings:** The distance between side coamings and between built in seats shall not be wider than shown on the plan but may be decreased by 50 mm on each side (i.e. cockpit reduced to 610 mm).
5.3 **Fittings**: The position of the main traveller, cleats, pulleys, etc. may be to the
owner's choice.

5.4 Arrangements extending outboard to support helmsman or crew are forbidden. All
crew weight shall be within the confines of the cockpit or cabin during class racing
except for sail changes, or as allowed in Class Rule 5.5

5.5 (i) If four or more crew are carried whilst racing, only one crew member may sit
on the cockpit coaming.
(ii) If three, or less crew are carried whilst racing, the entire crew may sit on the
cockpit coaming or cabin top.

6.0 **SAILS**

6.1 Definitions and measuring methods not specifically mentioned shall be to the
requirements of the International Yacht Racing Union.

6.2 A yacht competing in a class championship series shall carry the same mainsail, jib
and spinnaker for each and every race of that series. No other sails shall be carried.
The mainsail, jib and spinnaker shall comply with the current Rules. The Officer of
the Day may approve the use of replacement sails in the case of sails, damaged
beyond reasonable effectiveness, which cannot be repaired prior to the start of any
race.

6.3 **Mainsail**: No part of the sail shall be used outside the inner edge of black bands,
6400 mm apart on the mast. Inner edges of boom black band to be 3050 mm taken
from the after edge of the mast track or the extended line of the track if cut away.
The distance from the head (highest point of the sail projected perpendicular to the
luff or its extension) to the extreme edge of the sail at the clew is not to exceed 6935
mm. The distance from head to mid foot is not to exceed 6750 mm.. The sail shall
have a top width limit of 100mm measured from the head point and shall not project
more than 90 degrees from the luff. The width of the sail at half height is to be
obtained by a simple head to tack, head to clew fold and is not to exceed 2020 mm.
The upper edge of the top batten pocket is not to be higher than 1677 mm from the
head measured down luff and 1601 mm from the head measured down leech.
Pocket length not to exceed 1220 mm. The bottom batten is not to be lower than
1143 mm from the clew and not to exceed 762 mm in length. Two other battens are
allowed, length not to exceed 762 mm.

6.4 **Jib**: The following measurements shall not be exceeded. Peak (highest point of the
sail projected perpendicular to the luff or its extension) to mid foot 4649 mm. Luff
4877 mm. Leech 4572 mm. Foot 2820 mm. Peak width 50 mm. Windows are
optional with no restriction on size, shape or position. Any substantial departure
from the plan dimensions, e.g. shortening of the luff to alter the clew position, will
not be accepted. A maximum of three reinforcing panels of any material sewn or
otherwise affixed to the leech of the jib are allowed. Each one to be no longer than
300 mm along the leech and to extend no further than 400 mm towards the luff of
the sail.

6.5 **Spinnaker:** The spinnaker shall be measured folded along its centre line with the leeches together. The length of the leeches shall be taken as the distance between the highest point of the sail at the head and the lowest point of the sail on the leech, measured around the edge of the sail. The half width of the foot shall be taken as the distance between the lowest points on the centre fold and leech, measured around the foot of the sail. The length of the centre fold shall be taken as the distance between the head and the mid point of the foot, measured around the fold of the sail. The half height, half width shall be taken as the distance between the points on the leech and the centre fold which are measured in a straight line, half the maximum permitted leech length from the head. The three quarter height half width shall be taken as the distance between points on the leech and the centre fold which are, measured in a straight line, one quarter of the maximum permitted leech length from the head. The following measurements shall not be exceeded. Length of leeches 5258 mm. Half width of foot 2007 mm. Length of centre fold 6071 mm. Half height, half width 1980 mm. Three quarter height, half width 1230 mm.

7.0 **SPARS**

7.1 **Mast and Fittings:** The mast must be constructed from aluminium alloy or wood and may be hollow. It must not revolve and may not be constructed with a permanent bend. The mast shall be stepped on the centre line but must not penetrate the cabin roof.

The weight of the mast with spreaders, standing rigging, halyards and fittings shall not be less than 11.8 kg. The centre of gravity shall not be less than 2740 mm above gunwale level. All rigging shall be lashed for the full length of the mast to take the centre of gravity measurement.

Below a point 5000 mm above the gunwale line, the fore and aft measurement of the mast including the groove from the mainsail luff rope but excluding any external track, shall not be less than 75 mm and below the same point the thwartship measurement shall not be less than 75 mm.

The fore side of the mast at cabin top shall not be more than 2360 mm or less than 2200 mm measured horizontally from the vertical projection of the stem. The rigging shall consist of one pair of spreaders, one pair of shrouds and one forestay which may be separate from the jib luff wire.

The line of the foresail luff shall cut the fore side of the mast not higher than 5500 mm above gunwale level. The shrouds at gunwale level shall be positioned not less than 584 mm on a horizontal line measured from the vertical projection of the heel of the forward face of the mast.

7.2 **Booms:** All booms shall be capable of being passed through a ring 120 mm internal diameter. Fittings for kicking strap and mainsheet may be excluded for this
purpose.

7.3 **Spinnaker Boom and Halyard:** The spinnaker boom shall not exceed 2440 mm in length measured along the boom from the mast to the sail attachment point, when the boom is set in its normal position. The spinnaker halyard sheave or block is to be placed on the mast in such a manner that the top of the sheave is not higher than 6000 mm above the gunwale level.

7.4 **Black Bands:** Black bands shall not be less than 20 mm wide and shall be painted at the following points of measurement.

**Mast:** The lower edge of the upper band shall not be more than 7510 mm above the gunwale level. The upper edge of the lower band shall be precisely 6400 mm below the lower edge of the upper band.

**Boom:** The forward edge of the band on the boom shall not be more than 3050 mm along the top of the boom to the after side of the mast, or if there is a groove in the mast for the sail, the measurement shall be to the after side of the groove or prolongation thereof.

8.0 **RIGGING**

8.1 Only the following rigging is permitted:

8.2 The mast shall be supported by a forestay and one shroud on each side of stainless steel wire not less than 4 mm in diameter.

8.3 A pair of rigid or swinging spreaders with their attachment systems.

8.4 An adjustable kicking strap attachment.

8.5 A centre mainsheet may be used together with the necessary track slides and athwartships adjustment system.

8.6 The tension of headsail and mainsail luffs may be controlled by a system of winches, pulleys, jamb cleats, etc.

8.7 Fixed or sliding jib sheet fairleads or pulleys.

8.8 A device for adjusting the mainsail clew.

8.9 A fixed or sliding gooseneck on the main boom.

8.10 Sheaves and tensioning system for the mainsail halyard which shall be brought back to the cockpit and made fast in such a manner that the mainsail may be lowered rapidly from the cockpit in the event of an emergency.
8.11 A spinnaker lift, downhaul, halyard and all necessary fittings.

8.12 A main reefing or jib furling system capable of being used while under way.

8.13 No additional rigging or fittings are permitted for the purpose of affecting the bend of the mast.

9.0 CENTRE PLATE

9.1 The centre plate shall be made of any material. It shall be sufficiently robust to resist distortion or fracture due to the high loading around the pivot area (i.e. in excess of 545 kg). The centre plate shall weigh not less than 150 kg and not more than 194 kg and shall provide a minimum righting figure of centre plate fully retracted 16 kg, centre plate fully lowered 34 kg. The method used to obtain these figures for the righting moment is shown in Appendix 1 of these Rules and Restrictions.

9.2. Shape: The centreboard shape shall be optional, the maximum extension of the centreboard below the hull is 1010 mm.

9.3 Lifting Systems: Optional centre plate lifting systems are permitted.

10.0 RUDDER

10.1 Measurement: The datum for measurement shall be the base of the transom. Measurements shall be with the water line level and the blade in the down position. The minimum blade depth measured vertically shall be 890 mm. The minimum blade width measured horizontally shall be 310 mm for a depth of 590 mm.

10.2 Construction: The rudder stock shall be of substantial construction.

10.3 Controls: A blade control line may be fitted and the tiller may have an extension with a suitable flexible joint.

11.0 WEIGHT

11.1. The weight of the boat shall not be less than 726 kg. This weight shall include hull, ballasted centre plate, spars, rudder-tiller assembly, sails, standing and running rigging, but shall not include seat squabs, floor boards, motor, fuel tank or any other loose gear. Any deficiency of weight shall be made up by internal ballast which shall be divided into two equal parts. One half of the total shall be fixed at Station 2 and the remainder fixed at a position 130 mm forward of Station 9.

12.0 SAFETY
12.1 The Yachting New Zealand Safety Regulations Part V Trailer Yachts in the current Yachting New Zealand Handbook shall apply.

12.2. An anchor, chain and warp to the following minimum specification shall be carried ready for use:

**Anchor**  Danforth 8S, or CQR 6.8 kg, or Fisherman 4.5 kg.
**Chain**  6.7 metres of 6mm. Short link galvanised.
**Warp**  40 metres of 1300 kg breaking load.

Anchors carried of patterns other than Danforth or CQR shall be of the equivalent holding power to that specified above. Warps shall include galvanised mild steel short link chain of the size specified above, and of a length not less than the overall length of the yacht. The total length of the warp [including the chain] shall be of a minimum of 46 metres [25 fathoms]. Rope warps shall have a minimum breaking load as specified above, shall be of non floating synthetic fibre, and attached to the yacht.

13.0 RACING

13.1 The name of each crew member of each yacht competing in a Class Championship series shall be registered prior to that series and all and only that registered crew shall sail on that yacht for each and every race of that series. The Officer of the Day may approve the replacement of a substitute crew person.

July 1998
CONSTITUTION OF THE NOELEX 22 TRAILER YACHT ASSOCIATION INC.

1. NAME:
The Association shall be called the “Noelex 22 Trailer Yacht Association Incorporated.”

2. OBJECTS:
The Objects of the Association are:
To establish and maintain the simplicity, appearance and lines of the Noelex 22 trailer yacht and to control matters affecting the yacht’s safety and basic performance.
To promote interest in the yacht as a Class, and control the affairs of that class in accordance with the wishes of the Association’s members.
To encourage cruising and racing, and to foster the fraternal spirit between members and the Association.
To affiliate directly or through an affiliated club to regional yachting associations and Yachting New Zealand, as soon as acceptable to those bodies and to acknowledge the overall jurisdiction of those bodies.

3. REGISTRATION:
[a] The owner of a Noelex 22 trailer yacht built in accordance with plans purchased by the owner from the Association may apply to The Association for the registration of his or her Noelex 22 trailer yacht.

[b] The owner of a Noelex 22 trailer yacht for which the required royalty has been paid to the Association may apply to the Association for the registration of his or her Noelex 22 trailer yacht.

[c] The Committee of the Association, on receipt of such application from the owner applying, and being satisfied that the Noelex 22 trailer yacht of the owner applying conforms to The Rules and Restrictions applicable, shall provide at the cost of the owner applying, a numbered registration plaque which shall be secured to the main cabin frame of the said Noelex 22 trailer yacht, or in any other location which shall be approved by the Committee. Such yacht shall be known as a registered Noelex 22 trailer yacht for as long as it meets the provision of the Rules and Restrictions for Noelex 22 trailer yachts.

4. MEMBERSHIP:
The owner of a registered Noelex 22 trailer yacht, on payment of an annual subscription set at the previous Annual General Meeting of the Association, and due by the last day of September succeeding that meeting, shall be deemed a member of the Noelex 22 Trailer Yacht Association Incorporated, provided that the owner is a financial member of a yacht club affiliated to Yachting New Zealand, and shall be so entitled to any service which the Association may provide.

4a. ASSOCIATED MEMBERSHIP:
A person interested in the Objects of The Association may apply to the Committee of The Association and on payment of a subscription set at the previous Annual General Meeting
may be admitted as an Associate Member of The Association for such period of time also set at the previous Annual General Meeting of The Association. Persons having sold a Nolex 22 trailer yacht will be granted one full year membership under this clause before becoming liable for payment of a subscription. Any person who has purchased plans or paid royalties for a Nolex 22 trailer yacht shall be deemed an Associate Member without payment of fees or subscription for a period not exceeding two years from the date of purchase. Any member or Associate Member who has completed a boat for which he or she has purchased plans or paid royalties shall notify the Registrar within one month of the completion date.

5. RESIGNATION:
[a] Upon sale of his or her registered Nolex 22 trailer yacht, the registered owner shall provide The Association with the date of sale of his or her yacht, the name and address of the new owner and this will be regarded as formal notice of his or her resignation from the Association to take effect one year following the date of sale. It is expected that the plans or royalties are old with the boat.

[b] Any Member or Associate Member may withdraw his or her membership by giving notice in writing to the Association and, provided that all financial obligations of that Member or Part Member to the Association have been fulfilled, such withdrawal will be accepted.

[c] Any person expelled, or ceasing to be a Member or Associate Member of the Association on any account whatsoever, shall forfeit all rights to or claims upon the Association, or to the property of the Association, and shall not be released from his or her pecuniary obligations to the Association.

[d] Any Associate Member failing to pay his or her subscription to The Association at due time shall, at the discretion of the Committee, be expelled from the Association.

6. MEETINGS:
[a] The Annual General Meeting of The Association shall be held in June each year at Christchurch and at such time and venue as the Committee of the Association shall determine. The purpose of this meeting shall be for the election of officers and Committee, to receive the annual report and financial statement and to transact general and special business of The Association.

[b] Notice in writing of the Annual General Meeting, together with an agenda including all items capable of being voted upon, shall be circulated to all members at least four weeks before the meeting. Any member wishing to include an item on the agenda must inform the Secretary in writing before the notice of meeting is dispatched. Proposed alterations to Constitution or Rules and Restrictions must be on this agenda. Only matters which have appeared on the agenda may be decided at the meeting. Items concerning changes to the Constitution or Class Rules and Restrictions can only be approved if two thirds of those full members voting, vote in favour of the change, and such items when properly approved shall be effective from the dates approved by the meeting. All other matters shall be by simple majority. A quorum shall be nine members.
[c] Associate Members have no voting rights on matters concerning changes in Constitution or Class Rules and Restrictions, and on such matters there shall be not more than one vote for each boat.

[d] Members or Associate Members are entitled to one vote.

[e] A Member or Associate Member may appoint a proxy to vote in his or her stead or may vote in writing on any item appearing on the agenda. The appointment of a proxy must be in writing and must be lodged with the Secretary before the commencement of the meeting.

[f] At all meetings voting [except where otherwise provided] shall be by show of hands or, if demanded, by ballot. The President or, in his absence, the Chairman shall have the casting vote when the voting is equal.

7. ELECTION OF OFFICERS:
All elections shall be by ballot. Two scrutineers shall be appointed by the meeting and the scrutineers shall examine the voting papers and hand to the Chairman the list of those elected.

[a] The Officers of the Association shall be the President, Chairman, Secretary/Registrar and Treasurer. The Chairman shall be the owner of a registered Nolex 22 trailer yacht. The honorarium to be paid to the Secretary/Registrar shall be decided at each Annual General Meeting.

[b] The Chairman may appoint in his stead one other Officer to act as Chairman.

[c] The Chairman shall have full control over Members, Associate Members and Committee Members at all meetings of the Association.

[d] The Secretary shall convene all meetings of the Association and shall keep an accurate and correct record of the proceedings of such meeting in a Minute Book which shall be produced at all such meetings.

[e] The Treasurer shall keep an accurate account of all moneys paid to the Association and all moneys shall be deposited in a bank account held in the name of the Association. trustees for such account shall be the Treasurer and one other officer. The Committee shall have control of and power to invest the funds of the Association to further the object set out in this Constitution.

[f] The Secretary Registrar shall keep a record of all Members and Associate Members of the Association.

[g] Payments made from the account held by the Association shall be approved by a meeting of the Committee of the Association.

[h] The Honorary Treasurer shall submit to the General Meeting to be held in June or July
of each and every year a statement of his or her accounts for the past season up to 30th April, which shall have been previously audited and certified as correct.

[j] One Honorary Auditor shall be elected at the Annual General Meeting who shall examine the Treasurer’s balance sheet and all accounts relating thereto and certify their correctness.

8. COMMITTEE
[a] The Committee of the Association shall be the President, Chairman, Secretary/Registrar and Treasurer, and four others. Two of the latter may be Associate Members.

[b] The Committee shall have power to make, amend, revoke, alter or rescind any part of the Rules and Restrictions but no rule made, amended, revoked, altered or rescinded shall become binding until approved at the Annual General Meeting of the Association.

[c] If any case occurs which is, or which in the opinion of the Committee is not provided for in the constitution or Rules and Restrictions, that case shall be determined by the Committee as they shall think fit until such case can be brought before the Annual General Meeting of the Association.

9. MANAGEMENT:
[a] The Management of the affairs and concerns of the Association shall be vested in and conducted by the Committee.

[b] The Committee of the Association shall retire annually and shall be eligible without notice for re-election by ballot at the Annual General Meeting of the Association.

[c] The Committee shall have power to appoint a Member or Associate Member to said Committee in the event of the resignation of a Committee Member during his or her term of office.

[d] No liability shall be incurred on behalf of the Association by any Member or Associate Member without the prior consent of the Committee of the Association.

10. COMMON SEAL:
A Common Seal shall be provided by the Association and such Seal shall not be affixed to any deed or document to which the Seal of the Association is required except by order of the Committee. The seal shall be affixed in the presence of the President or Chairman, the Secretary and one other Committee Member.
11. DISSOLUTION:
[a] The Association shall not be dissolved except by ‘Special Resolution’ passed at Special Meeting of the Association for that purpose. Notice of such special resolution shall be in accordance with Annual General Meeting procedures.

[b] Upon the winding up of the Association the assets shall, after the payment of liabilities, be disposed of in such a manner as the Association by special resolution determines.

July 1998
NOELEX 22 TUNING GUIDE
Compiled by Vince Williams
1 February 1999

This guide will consist of many facts applicable to tuning any boat, plus detailed information of particular significance to Noelex 22 owners. However do recognise that tuning in the ultimate form becomes personal. Where we choose to sit dictates the length of the tiller extension required, our local conditions may influence sail choice in a minor way, and more important settings such as mast rake may depend on sailing style. So please treat this as a guide, not a bible. The writer’s credentials are simply that he bought an old hull that was in need of a new deck, mast, rigging and sails, and eventually won a national championship with it.

THE HULL and FOILS

The underwater shape of the boat is the single most critical determinant of speed. Water has over 10x the friction of air. Once you are sailing you basically cannot make changes to the hull as you can to the trim, rig or sails therefore this fundamental tuning step is best done in the winter.
The hull should be as fair as possible. My boat was first sanded with long boards to the white undercoat, then painted with blue undercoat. This was then sanded again to determine high and low spots, filled then top coated. Extra coats of paint add unnecessary weight, so keep the number of coats (or more properly total thickness) to the paint manufacturers specification.
Many boats will have brass rubbing strips that are impossible to fair in to the hull. These strips also do not accept a durable paint finish. They may be removed and replaced with fibreglass, then the hull will be a lot fairer. If the trailer is in good repair then no damage will occur to the hull.
On a swing keel boat, there will be centreboard flaps to fair the hull around the board. These are best made out of sail pattern thickness (120 micron) Mylar that has had white stickyback sailcloth bonded to both sides. They may be fixed to the hull with metal or fibreglass plates that are screwed into positions that have been routered into the hull to make the entire assembly as fair as possible.
On Piracy we normally sail with the plate down, so we have cut a shape in the flaps. (which overlap 6-10 mm.), so that the board is very fair when fully down. We have a third piece of Mylar/sailcloth that accepts the rounded front edge of the centreboard when fully down. This is fixed over the top of the two main flaps and stops these flaps from opening up when the boat is going forward. If you sail without a lid on your centrecase, the crew will be able to see seaweed and may be able to reach down and pull it off the board without slowing the boat. However a lid on the centrecase is needed, when cruising, to recover from swamping.
THE CENTREBOARD:

There are very few rules governing the centreboard in a Noelx 22. Minimum weight is 150kg, maximum 194kg, and it must provide a minimum righting force of 16kg, when measured as per the rules. The maximum extension below the hull is 1010mm.

The biggest problem with most boats is the plate is not fair. It should have a good foil shape in cross section, both sides of the foil should be symmetrical and the trailing edge should be either sharp or squared with sharp edges. The trailing edge of the hull should be sharp also to give a clean exit to the water flow. A good centreboard should never touch anything solid!

I prefer the centreboard's leading edge to extend vertically, and do not normally rake it back. This gets weight as far forward as possible, and tends to produce more weather helm with less heel - a big advantage in light weather. Piracy has a second wire which acts as a limit stop to put the plate down to exactly the same position every time.

The pivot bearing should be solid. I have found that industrial grade nylon isn't strong enough to be slop-free for over a season, so have gone to sintered bronze bushes. When installing these, it is a very good idea to check that the centreboard, when lowered, is in the same vertical plane as the skeg, rudder and mast, and that the board lines up with the fore and aft centreline of the boat. An error here of 2 to 3 degrees will slow the boat markedly.

THE RUDDER

There are rules concerning the minimum length and width of the rudder that must be adhered to. Many people increase the size of the blade, believing it will reduce broaching. I believe the minimum size is all that is required, however the stiffness of the blade does have a big effect. If the blade is stiff, the boat may be heeled to over 25 degrees with the spinnaker up on a tight reach and, with only 300 - 400mm. of rudder in the water, the boat is still steerable.

To stiffen a blade, simply router two grooves, about 50mm. x 6mm. up and down both sides of the blade at the thickest part. Epoxy carbon fibre or glass into the grooves, fair and paint.

When a blade is constructed from kaikatea or cedar, any break in the paint film will allow water to soak into the blade and create an unfair shape - often developing marked lines where the blade is laminated. I dealt with this on my blade by epoxying a stainless steel pipe through the pivot point hole, and fixing nothing else to the blade. The blade is held down by a type of giant thumbscrew (the 15mm. pivot bolt has a 150mm. x 8mm. rod welded to the head,) and the nut has a similar rod welded to it. The blade never pops up while sailing, and will probably pop up if we grounded. To retrieve and stow the blade, the thumbscrew is released and I simply reach down, swing the floating blade up, and into a foam block, then retighten the screw.

The rudder blade should be able to be set with the leading edge vertical while sailing normally, and possibly 5 to 10 degrees aft in very light weather to induce more feel. The rudder gudgeons and pivot pin should also be vertical, so the blade only moves in one plane when the tiller is moved. Gudgeon bushes last a long time if made of sintered bronze. I also made a Teflon/stainless steel tiller extension pivot, to get the last remaining slop out of the entire system.

THE SPARS
THE MAST

Make sure the entire mast step - the part that is fitted to the boat and the part that is fitted to the spar - is tightly and solidly fitted. Check that the vang attachment fitting, gooseneck and spreader attachments are all sitting smoothly on the mast without creasing or corroding the mast. If corrosion is evident, remove the fitting; clean up both surfaces and refit with RTV between both surfaces to minimise galvanic effects.

The mast on a Nolex 22 is set up with 2 to 3 degrees of rake and with prebend to suit the mainsail - normally 60 - 80mm for a Leydon main. The rake is normally measured by suspending a plumb bob from the main halyard on a calm day and measuring the distance it points to on the deck back from the mast. 2 - 3 degrees equates to 200 - 250mm. Before this is done it is best to check a few things first: -

[a] Black bands - it is important to get the top black band as high as possible, which is 7510mm above the gunwale level.
[b] The jib luff must intersect the mast no higher than 5500mm above the gunwale - and best to be no lower!
[c] The spinnaker halyard is allowed to be up to 6000mm above the gunwale - any lower is slower!
[d] The mast should be perpendicular relative to the traveller and in the same plane as the rudder and centreboard.

Once the above measurements have been checked, then it is a relatively simple matter to tune the mast. First set the rake to about 230mm aft then measure prebend along the length of the luff track. If it is too straight then look at the spreaders. The spreaders should be strong - ideally made out of 10mm thick aluminium faired to look like a foil. The tip of the spreader should be pushing the shroud out of a straight line by about 20 to 30mm (put your eye up very close to the chainplate and look up) and it should be deflecting the shroud forward of the line it would normally take if the spreader wasn’t there by about 15 - 25mm. Check also the mast base. The front of the mast should be firmly on a wedge to so that it will deform slightly and stay in place to control bend lower down near the gooseneck.

Normally the spreaders that come with the boat need to be lengthened - best to do this with temporary 10 x 30mm alloy strips until the right length is determined. Sometimes there is no wedge - the front of the mast sits directly on the step. This may be OK, but if it isn’t, then either wedging the back of the mast or refitting the mast step at a more favourable angle is necessary. The wedge at the mast step controls lower bend, the spreaders control middle bend and the vang/mainsheet tension controls upper bend. The idea is to lock the lower/middle areas of the mast into the optimum bend for the mainsail - say 60mm for light weather - and get the remaining 20mm bend at the top of the mast from vang or mainsheet tension.

To set the mast up in this way requires good rig tension - about 1100psi on my gauge - certainly enough to keep both shrouds tight while beating. This ensures that the leeward spreader is keeping the jib slot open in fresh conditions and minimises forestay sag to maximise pointing and gust response.

Once the appropriate mast bend has been induced and locked into position with good rig tension, then recheck the rake. If it has changed lots then reset it to 230mm and recheck the spreaders, wedge and rig tension. Raking the mast effectively ‘shortens’ the spreaders, thus they may need to be lengthened.
Mast rake is nowhere near as important as mast bend, which must be matched to the mainsail. If you don’t know how much bend the main requires, then before sailing each day, induce a little more until with full mainsheet and vang you get a crease in the main running from the spreader attachment point to the end of the boom. This is a sign of overbending - the main is inverting. The prebend should be set so the main doesn’t quite invert under normal (0 to 20 knot wind) sailing conditions.

THE MAIN BOOM

Ideally the boom must be extremely light and stiff. The Noalex 22 boom is allowed to be up to 120mm in diameter. Theoretically the larger diameter boom will project more area when running, but I’ve not seen many this big. The mainouthaul and spinnaker pole retrieval shockcord should both be run inside the boom to minimise windage. The black band is put 3050mm from the aft side of the mast track.

THE SPINNAKER BOOM

The ideal spinnaker boom is light and stiff, though I’ve gone for one that is heavy and stiff, because if the crew lets it onto the forestay on a tight reach it will not break. Either an end-for-end pole system or a pole launcher/retrieval system may be used - both work well if the crew understands best practise for each. Both systems should be set up with control ropes - downhaul topping lift (andouthaul for a launcher system) - set as close to the ends of the pole as possible to keep it in column, and therefore minimise bending. A spinnaker pole that bends when a gust hits will rob the boat of acceleration, which may have otherwise induced surfing or even planing.

THE SAIL CONTROL SYSTEMS

THE JIB

JIB SHEETS: For good light weather performance the jib requires light sheets, so the most effective sheeting system I have found is to attach an 11.6 metre length of 6mm spectra to the clew with a clove hitch. This is light enough for all conditions, yet strong and with low enough stretch to be reproducible in heavy conditions. Wearing gloves I can operate the jib from my normal helming position, which I often do in variable winds, or after a tack to gradually bring the boat up to its highest pointing mode.

THE TACK: is best tied to the very front of the boat in such a manner as to keep the front of the sail touching the deck as much as possible. Piracy has 4mm spectra doubled up so there is some purchase to tighten it down to the forward cleat. This system, in conjunction with a 4mm spectra jib halyard, provides a back up should the forestay or bow chainplate - rig tensioner fail.

JIB HALYARD: can be used instead of a Cunningham - a system I favour because there is one less control and the jib’s leading edge is always fair from top to bottom. To do this effectively 4:1 purchase is required - we simply take a loop of the halyard once the jib is raised and put three or four turns around a hook to which the 4:1 purchase is attached, and tie it off with 2 half hitches. This system will let go easily if the jib has to be dropped quickly and is sufficiently strong to minimise forestay sag in 20 - 30 kn. breezes.
**JIB TRACK:** setting and car position controls the twist in the jib. Jib tracks on a Noelex 22 are optimally set at 14 degrees to the centreline, and must allow for the jib sheet to be moved forward in light weather, and back a long way when overpowered.

**THE MAIN MAINSHEET:** We use 6mm. Spectra with 5:1 purchase. A nice touch here is to use a wire hanger from the boom to the top of the purchase system to minimise windage. This hanger should be fitted with a strong swivel. The mainsheet cleats to the traveller car.

**TRAVELLER:** Use 2:1 purchase of 6mm. Spectra with the ends tied off to their respective attachment points. This requires about 3 metres of rope per side, but is worth it because it eliminates two ends that would otherwise tangle. The cleats are on the traveller car.

**HALYARD:** 4mm. Spectra is strong enough and is led to a 4:1 purchase system. After the mainsheet and traveller the halyard is the next most adjusted control on the sail.

**VANG:** A system that works well on Piracy is a primary wire vang from the mast base through a block attached to the boom. The length of the wire is critical to obtain enough play. A 6:1 spectra rope purchase is attached to this and each end goes to either side of the boat and has a pulley attached to it. The actual adjustment is performed with a 6mm. piece of spectra, which goes through the pulley tied to the 5mm. rope and back through the cleat effectively giving a 24:1 purchase. The end of this adjustment rope is tied to eliminate tangles. This vang will induce 30mm. of mast bend going to windward and must be let off when reaching or running to eliminate the risk of breaking the mast - a situation which most commonly happens when the mast is pushed out of column. The vang on a Noelex 22 is the best way of inducing mast bend to produce a flatter faster sail shape for beating.

**OUTHAUL:** Requires 6:1 purchase to facilitate adjustment at all times. 3mm. Spectra is best to make it easier for the sail to go full when theouthaul is released. In sloppy conditions, or from 0 to 12 knots, it is advantageous to have someone let off theouthaul during a tack, then slowly pull it on in conjunction with the jib and mainsheets to give dramatic acceleration to hull speed. This control should be led back to a central position.

**CUNNINGHAM:** Requires only 2:1 purchase and should never be used until the main halyard has been used to pull the head of the mainsail up to the bottom side of the upper black band on the mast. Lead the Cunningham to a central position.

**THE SPINNAKER**

**THE SPINNAKER SHEET:** is best endless (23metres long) to eliminate tangles. We use 6mm. Spectra usually, but change to 3.5mm. for light weather. The light weather sheets are actually two pieces of rope, but we tie the ends together when fitted. Both light and heavy sheets are fixed with bowls to the spinnaker clews - clips only create trouble and add weight. The sheets go through tweaking pulleys and then through a pulley at the back of the boat before being led centrally (forward of the traveller) to a ratchet block and cleat. Angle the cleat so the helmsman can cleat the sheet easily and the crew cannot. This stops accidental cleating when playing the sheet, and opens up options for the helmsman to cleat
the guy after the gybe. It also makes single handed sailing a lot easier. The tweaker lines lead back to a cleat situated forward of the spinnaker sheet. The ends of these lines can be tied to the ends of the traveller ropes to eliminate tangles.

The other four systems for spinnaker control are led centrally and should be grouped so that all the controls are together as follows:

**SPINNAKER Halyard**: is a length of 5mm. Spectra with a swivel clip to attach to the sail. I’ve heard that a marlin sized fishing swivel provides the lightest and most streamlined fitting but I haven’t tried it myself.

**THE POLE LAUNCHER ROPE**: is 6mm. Spectra and the retrieval system is 6mm. shock-cord which travels inside the main boom 3 times - i.e. there is an exit pulley to lead the shock cord into the main boom which then leads internally to a turning block located near the gooseneck, back to another turning block near the outhaul and finally tied off with a figure of eight knot through a hole near the gooseneck. This provides excellent retrieval performance without being excessively hard to launch.

**TOPPING LIFT**: is attached to the end of the spinnaker pole and cleated near the pole launcher rope and halyard cleat.

**DOWNHAUL**: is attached to the end of the pole underneath the topping lift attachment and cleated next to the topping lift - these are normally adjusted as a pair.

**TRIP ROPE**: goes from one end of the spinnaker pole to the other and is 4mm. Spectra to give a very positive control. By bringing the pole halfway in when gybing then tripping the parrot’s beak to release the guy the spinnaker may be easily gybed without collapsing and this with very little loss of speed.
SUMMARY
All of the systems described will provide better control of functions, and better gust response if constructed out of low stretch rope. The idea is that when a gust hits the boat there is nothing stretching, so that wind energy received can be most efficiently converted into faster forward motion. For ease of use, small or micro ball bearing blocks will give much better results than plain nylon sheaves on stainless pins. However for wire systems the brass sheave stainless pin type of block works well. However when all systems are working well do not forget that the sheets are still the primary sail controls!

SAILS

THE MAINSAIL
The mainsail, as the name suggests is the most important sail on the boat – a point to remember when all else goes wrong, that if the main is trimmed correctly then respectable boat speed can be maintained.
The mainsail must be tuned to get full potential out of the sail. Firstly examine the battens. The top batten should be shaped so that an airfoil is maintained. I’ve found the best way to shape the batten is to start with a plain length of white batten material, then epoxy ends to it, one end being bevelled to meet the luff without stress. Then with a grinder remove material evenly from both sides leaving about 150mm untouched at the luff and 300mm untouched at the leech end. The middle part is shaped so that when one puts the luff end on a set of scales and pushes on the leech so that it adopts a curve that approximates the sail shape, with a force of about 2.5kg. Most battens supplied with a sail will not do this. Additionally the maximum camber or draft should be 35 – 40% aft and the shape should be fair on each tack. Finish it with sandpaper.
The second batten is tapered so that the forward 200mm or so is very flexible so that it doesn’t put a hard spot in the curve of the sail. The aft end of the batten should be as stiff as the top batten.
The third batten is also tapered but need not have the same flexibility as the second batten in the forward end.
The bottom batten need not be tapered and indeed may be better made out of the stiffest material possible.
Once the battens are tuned then attach bright spinnaker sailcloth tapes to the sail, one each about 50mm below the aft end of each batten. Putting the telltale’s below the batten ends stops the batten turbulence effecting the telltale’s movement.
If there aren’t two horizontal stripes on the sail, one below the top batten and one below the second batten, then draw them on with a felt pen and put a mark 50% aft and 40% aft on these lines. Additionally put a mark called a ‘bis’ mark half way between the mast and the black mark on the boom.
Fit the sail to the boom, hoist it and go sailing. Either by eye or by photograph sight along the bis mark to the top of the mast. The maximum depth should be able to be varied between 40 – 50% aft by halyard and or Cunningham tension. The maximum camber in the vertical plane should be near the second batten level – i.e. the sail looks ‘fuller’ higher up and ‘flatter’ near the boom. If you cannot achieve this ideal state by altering halyard tension or mast bend then photograph the sail and take it with the photographs to a sailmaker.
Lastly the main should not flutter on the leech. If it does have it recut or pull on the leech cord, if fitted, until it stops. The mainsail should last for at least 5 years if it is made of good sailcloth.

**THE JIB**

The jib gets a lot of the blame from helmsman for poor upwind performance – but if the helmsman is also the owner then there is no excuse! The top two battens should be tapered like the second batten on the main; the bottom jib batten probably doesn’t need it. Fit telltales under the top two battens to help determine sheet tension and twist. The shape of the jib needs to be harmonious with the helmsman’s style. If you wish to point high then a fine entry, full jib is required. If you aim for good boat speed then a full entry flatter jib is better. I basically aim for speed so the jib has a fuller entry and the maximum draft point is about 35% aft, however this can be varied by halyard tension – more tension to pull the draft forward in heavy weather and less tension to allow the draft to drift aft for moderate, high pointing conditions. I also fit draft stripes to the jib and a couple of rows of woollies. The bottom row of 3 woollies has the usual two plus one further forward to give a warning of shifts and to fine tune the pointing angle. A second row is repeated further up to aid steering when the bottom row is stuck to the sail with spray. It is a good idea to put ‘windows’ where the woollies are fitted so that the leeward ones are visible when the sun is shining on the sail. These woollies are not used to set twist. Twist is set by sheet tension and jib track position by observing the leech woollies once the mainsail is set. I have cut a window in the main so the crew and I can see the jib leech woollies when we are in our normal seating position. The jib sheet needs adjusting almost as often as the mainsheet in light weather.

**THE SPINNAKER**

Thankfully the spinnaker needs no tuning at all. However when ordering a spinnaker make sure you get one that is made to maximum size – i.e. just within the class rules. The Noelex 22 spinnaker is just too small for excitement on a run in anything less than 25 knots wind and by good sail set can normally be held on a tight reach more easily than any other trailer yacht. So do not short change yourself with a smaller one.
Sailing The Noelex 22

Denny Holdt [Jaffa]

TACKING IN LIGHT TO MODERATE CONDITIONS

Crew Position: If sailing four up, two in cabin two in cockpit. Mainsheet hand hard up against cabin, and skipper right alongside. If three up one in cabin and two in cockpit. Keep as close together a possible as spreading your crew too far apart will result in a seesawing effect in sloppy seas

Sail Trim: I prefer to sail with plenty of twist in the mainsail. An easy way to check this is to sight up from the end of the boom to the top of the mast, the leech should be falling off to windward about 4 to 6 inches. Mark the mainsheet in this position with a felt pen or whatever. Remember, as the wind strength increases so does twist, so sheet needs to be tightened, or the opposite if the wind drops. Your wool off the top batten should flow, if not you will have too much hook in the leech.

Foot tension on the main should be firm in light airs with flat water, but put more bag in the main in moderate airs with sloppy seas. I don’t use any kicker at all up wind, but rely on mainsheet tension.

In light airs pull the traveller up to windward up to the cockpit seat. In moderate winds drop down to counter boat heel, the position will vary dependant on crew weight.

Drop the main halyard off so you have wrinkles running through the luff of the sail at right angles to the mast. As the wind increases so should your main halyard tension to bring the draft of the main forward.

The best starting point for jib lead position is to take your jib and measure 45% up the luff height from the tack, then run a string from the clew to this point. Put 3 or four marks on the jib along this string line. The extension of the jib sheet when the jib is pulled in should not sight above this line, if so adjust the jib leads back. I put a batten parallel to the jib sheet and sight up the batten to check. In light to moderate airs we sail with the sheet angled to line up with the 45% luff height, then ease the sheets so the foot is curling slightly and touching the deck for approximately two feet along the foot. The tack of the jib should be set at the right height to achieve this.

Luff tension on the jib for light airs should be just enough to take the wrinkles out of the luff. As wind increases so should luff tension. We do not run a cunningham on the jib so all alterations on the sail are done via halyard tension.

Boat Heel: When tacking this should be no more than 7 degrees. You may think you are going well with more heel and the boat feels better, but your speedo will tell you otherwise.
**Going About:** When going about in light airs we all keep well forward, the skipper leaving the main cleated and staying forward of the traveller, remembering to release the cleat holding the traveller to windward. When the tack is completed your traveller will have extended to the leeward side of the boat. You should be approximately 5 degrees low on the tack to gain speed and the jib eased about 2 inches. Pull the main up to windward on the traveller and then harden up the jib. It is important to get boat speed up before resuming proper course.

**FLAT RUNNING IN MODERATE CONDITIONS**

Taking the right line This is very easy if you have the correct wind pennant. To get the right angles simply line the windex vane as shown in the diagram and try to work the angles that take you on the most direct course to the bottom mark. Remember though that this can alter with wind shifts, so be prepared to gybe to take advantage of the new angle.

![Diagram of wind angle and course]

**Crew Position:** The same as tacking, but keep the boat flat [no heel]

**Kicker:** We keep just enough kicker on the main to stop the leech twisting.

**Jib:** Ease out as much as possible. Some prefer to drop it.

**Plate:** We pull the plate right up, but make sure before doing this that it is not prohibited in the sailing instructions.

**Spinnaker:** We tend to lift the pole slightly above horizontal and ease the sheet to get the spinnaker to lift. Try and keep the clews even.

**TIGHT REACHING IN LIGHT TO MODERATE CONDITIONS**

**Kicker:** Keep kicker in firmer than flat running and ease the mainsail outhaul to put more drive in the main. Carry the spinnaker pole well forward and ease the sheet as much as possible. Also lift the pole above horizontal. The more you can ease the sheet forward the faster you will go.
Jib: Ease of as much as possible.

Plate: Keep centreplate right down.

**TACKING IN HEAVY CONDITIONS**

**Crew Position:** Four up have two in cabin and two in cockpit. Three up have one in cabin and two in cockpit on rail. For better leverage with one in cabin rather than on cabin top. Once again keep as close together as possible.

**Mainsail:** Pullouthaul right out to black band. Luff tension right up to black band plus use cunningham on main if struggling to sail boat flat. Sheet main so sail is not twisting too much.

Jib: We adjust the jib back one hole on the track from the light weather setting. Lighter crews may have to come back two. Sheet the jib tight, it takes two crew to pull it in firm enough. Tighten halyard or cunningham on the jib luff the same as the main.

The main thing is to concentrate on sailing the boat as flat as possible. When you get hit by a gust don’t be frightened to let the boat head up into the wind more, even if it means the jib is breaking at the luff. It is better to do this and keep the boat flat. You can also drop the traveler down in puffs. In *Jaffa* we sail with the main cleated and the skipper works the traveler. Mainsheet is not touched at all other than to bear away to clear another boat. When luffing in gusts, don’t stay up too long as you don’t want to lose boat speed. A good way to practice this is to try it in moderate breezes while sitting the crew where the boat gets overpowered in puffs.

**Kicker:** We just have firm.

**Going About:** You can drop the traveler off when tacking if it is helping to keep the boat flat. We don’t normally, as the traveler is usually about four inches off the leeward seat. I wouldn’t recommend having it any lower than the seat as the main tends to back wind too much. Don’t take too much notice of the luff back winding on the main in heavy airs as you are driving on the back 2/3 of the sail and the main thrust is from the jib.

**FLAT RUNNING IN HEAVY CONDITIONS**

**Kicker:** Keep firm as any twist in the leech of the mainsail will result in rolling.

**Plate:** We bring right up

**Spinnaker:** We tend to keep the tweaker sweet. The main reason for this is if you are altering course to take advantage of waves to surf down, the spinnaker is less likely to collapse. In New Plymouth, a decent wave can be worth about 20 metres gain.

To catch a wave which you are usually sailing across at a slight angle, try bearing away when just on the top of the wave, to surf directly down, pump the spinnaker and main to promote planing and once you catch the wave sail across to stay on it as long as possible.

**Spinnaker Pole:** Once again slightly above horizontal.

**Crew Position:** Move back slightly and keep boat dead flat.
**Masinsail Outhaul:**  Keep out to black bands.

**REACHING IN HEAVY CONDITIONS**

**Kicker:**  Good firm kicker,

**Spinnaker Pole:**  Eased well forward and lifted above the horizontal. Most important is to ease the spinnaker sheet as much as possible. If you are struggling to hold the boat upright, ease the pole further forward to enable you to ease the sheet some more/

**Jib:**  Make sure the jib is eased as much as possible.

**Plate:**  Leave down.

**Crew Position:**  Move back a bit.
Daggerboard Modifications

Bob Jelley [Lady Penelope]

Perhaps I could let some of the Club's daggerboard Nolex 22 owners know some of the more major, adjustments we have had to make on Lady Penelope since I first bought her. She is a 1980 Nolex yacht and was built to weight, something I only found out some years after I purchased her. When we first got the boat my trailer yacht sailing skills were atrocious having come from owning a Paper Tiger. The committee boat used to follow us around the course picking up the last buoys as we rounded them. Very disconcerting but it certainly had the effect of making us determined to get better. After the first two years we finally caught the PCYC second last Nolex 22 and had improved our skills a little.

I then decided it was time to start looking a little closer at the technical side of the boat. We found out early on that the yacht would point like crazy on a starboard tack but we always seemed to get annihilated on a port tack. I had checked the mast for vertical, and jib tracks etc and had all adjusted to be equidistant but still the problem. At my work place I lifted the yacht up and lowered the keel then dropped a plumb bob from centre line of the bow and stern and drew a line on the floor. I then dropped a plumb bob from the keel centre line of the leading a trailing edge and connected these two points. The keel had approx. 2 degrees of set toward starboard at the leading edge, the reason for the good starboard performance. I dropped the keel out and ground the cast iron back in the upper peg area to allow installation of teflon packers to be shaped and screwed into the peg to centralise the leading edge in the centre case of my boat. Most of the fault was at the leading edge.

We removed the trailing edge stainless plate and manufactured a new item to ensure that the trailing edge was centre line when down. At the same time we made sure that the peg area that remained in the centre case was a nice slip fit with no excessive looseness especially when fully down. This was achieved by measurement and skimming excess off the teflon block material with a good sharp panel file. We had to counter bore the screw bores to ensure the heads were below the surface.

At the same time as the above we noticed that the keel leading edge had been rubbing against the glass work in the housing so we made a wedge shaped piece of teflon to suit the left over gap at the leading edge of the keel at the hull junction and screwed the piece into the hull for the keel leading edge to rub against. These two alterations made an instant difference to our performance. The keel no longer had the paint work on the leading edge being rubbed away and exposing a sharp edge of paint to the water flow around the keel.

Probably the next most noticeable improvement in performance was achieved by manufacturing a 7 ply removable bulkhead half, which we secured against the left hand side of the keel. On our boat the right hand side has a glassed in galley which forms a half bulkhead. Our bulkhead fits tight against the keel housing and has a sliding latch bolt which pegs into the left hand shelving along the gunwale line.

Along with the above we organised a block and tackle system which is located in the
anchor well and controlled at the cabin to allow us to get a lot more pre tension of the rig than was available with the original hyfield lever. The boat has a lot stiffer rig which prevents excessive forestay sag in the heavy. This prevents the boat from overpowering as badly as it used to.

Other things to look at are

1. Ensure the spinnaker sheave is as far up the mast as the Noelex 22 specifications allow.

2. Position the spinnaker sheet sheaves as far aft as possible, this will provide a greater projected area and more importantly a much better reaching performance

3. Make sure your traveller beam goes right across the cockpit. In light air we end up with the traveller right up to weather in some cases and the boom about 1" below centre line to try and get enough twist in the main. Remember the direction of airflow at water level verses the direction at the top of the mast is significant even on the small mast height of the N22. Twist the main as required but keep the boom just below centre line.

4. Ensure the outboard well cover is very fair when in place and does not leak any water.

5. Spend time setting the jib track sheaves correctly to ensure woollies stall together when the boat is slowly luffed up on port and starboard tacks.