



THE EXPLORER 16 HANDBOOK

Explorer 16 Association Inc.

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FOREWORD

For some time there had been suggestions that we should have some sort of guide for new (and existing) Explorer 16 owners on the best ways to set up their boat, sail it, and care for it, based on the experiences of Explorer owners. There have been many articles written over the years on these subjects, and it is from these that we have made selections and combined them with articles from other sources. This handbook does not set out to cover general seamanship, navigation, weather, safety equipment and regulations, radio operating, race rules, and other aspects that are more than adequately covered in other publications - what we have intended to cover are those subjects that are especially applicable to Explorer 16s.

The basis for this handbook was a booklet prepared by Andrew Jeffs in 1989 when he was a youngster crewing for his father, Philip, on 'Resolute' (Number 59). This was prepared as a school project, and as well as his own authorship he drew on articles that had been written by well-known Explorer sailors and published in the Association's 'Newsletter' and its successor 'Discovery'. In addition, I sourced a number of articles also published in 'Discovery' and selected what I felt had been the best contributions on each aspect, performed some minor editing, picked up ideas from other sources, added some of my own writings, and then put the whole lot together.

A background of the authors may be of interest when reading their respective contributions:

Max Ross was one of the founding members of the Association and is considered the greatest Explorer sailor we have seen. Not only did he win the Explorer 16 Association Championship for the first six years of its existence but also performed with great credit in open trailable yacht events for many years. After selling his Explorer 'Shelley Marie' (Number 29), he purchased a Cole 19 named 'Nicole' that he cruised in. His racing urges were then taken care of by crewing on keelboats at Sandringham YC.

Bob Couper sailed for many years at Black Rock YC where he competed in club and open trailable yacht events with very creditable results. He won the Explorer 16 Championship in 1987 in 'Kalang' (Number 78), before selling her. He later bought her back again and won the 1992 and 1993 Championships. He then sailed a Farr 7500, cruised all available Victorian waterways, and wrote books on cruising and also many articles published in sailing magazines.

Philip Jeffs and his son Andrew joined the Association in 1981, won the Championships in 1986, and also sailed in other events before selling their boat in 1989 and taking up top-level racing with an Etchells for a number of years. Andrew now lives in WA where he works in the shipping industry. Philip lives in Tasmania and as well as owning an Etchells, a motor-sailer, and a vintage motorboat, has maintained his interest in the Association and has contributed articles to 'Discovery'.

Gordon and Lois Horner were members of Nillahcootie SC and won the Championship in 1985 and 1989 sailing 'Ichiban' (Number 41). From their experience at sailing on lakes they were expert light-air sailors but also competed successfully in all winds.

Alec Campbell (and his crew Rob Dun), may seem to have been relative newcomers to the Explorer scene, but Alec actually took to Explorer sailing after 'Beagle' (Number 146, and the last Explorer made), was built in 1990. They then became very successful in Association and open events, including winning the Championships in 2000, 2001, and 2002.

Peter Moglia cruised extensively in his Explorer 21 'Stormbird', and went ocean-racing on a keelboat, but became best known for his work over twenty-three years in writing for, and editing, the Association Newsletter 'Discovery'. It was through his guidance and advice to me that I have been able to bring this book closer to the standards he achieved with that publication.

My experience of Explorers began in 1979 with Number 95 that we named 'Gonzo' and which was our family cruising boat, although we also competed in all Championships for the next fifteen years. My son Peter sailed with me to Championship wins in 1990 and 1991. I also raced dinghys for many years and have owned several small power craft and currently a 5.4m Kingfisher cruiser.

Brian Adeney

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"Gonzo, 1989 Championships, Lake Nillahcootie

1 - THE EXPLORER 16

FEATURES

(From our promotional literature)

Fibreglass Construction

The Explorer has an attractive appearance with its seaworthy clinker-style hull and effective cabin with two hatches. The single piece hull and upper moulded sections combine to give effectively a unitary construction, providing strength, and eliminating leaks. This reduces maintenance to regular washdowns after usage, a touch-up for the varnished woodwork each year, and a polish every couple of years.

Easily Handled Sails

The working rig consists of a mainsail (max. area 9.6 m²), fitted with either two-stage slab-reefing points or roller reefing, genoa (max. area 6.28 m²) or working jib. Roller furling of the headsail makes it quick and easy to furl or unfurl either whilst moored or when sailing.

Fitting the optional spinnaker (max. area 15.79 m²) makes for exciting reaches and runs.

Economical Rigging

The standard straight extruded aluminium mast and boom coupled with simple stainless-steel standing rigging means easy maintenance and reduces costs. Optional diamond stays may be fitted for additional mast control.

Easy to Launch and Retrieve

Tailored-to-fit trailers and the moderate weight of an Explorer 16 (568 kg) make launching and retrieving from practically any ramp an easy operation. The swing-down rudder-blade and centreplate (operated by a winch in the cockpit) make for easy departing and returning from shallow beaches. An Explorer 16 will float in 230 mm of water.

Easy to Rig

The simple rig of two shrouds and a forestay make it easy to raise the mast, pivoting on the fixed mast-base on the cabin-top. All it needs then is to secure the forestay link and the mast is ready to fit the boom and hoist the sails. The total operation from starting until ready to sail takes about twenty minutes.

Easy to Tow

The modest dimensions of an Explorer 16 (5.0 m long and 2.13 m wide) ensure that it sits well on a single-axle trailer, and with an all-up weight of about 780 kg, can be towed by practically all popular cars with engines of 2.0 litres or more.

Economical Auxiliary Power

The Explorer 16 is suited to an outboard auxiliary motor of 5 or 6 hp, which mounts on the standard self-draining mounting well on the transom, and with a fuel tank under the wide cockpit seats makes very little intrusion into the ample cockpit space.

Comfortable Sailing

A spacious cockpit that can seat up to four persons whilst sailing or six persons when moored, together with a comfortable cabin and cushioned 1.9 m bunks for two persons, means that the Explorer 16 can satisfy the needs of family sailing. Ample storage space is provided in cabin shelves and bins and under the cockpit seats. The cabin can also be fitted with a small toilet and spirit stove. If sailing with small children, they can rest out of the weather in the cabin whilst still keeping in touch with the surroundings through the ample hatchway and perspex cabin windows on each side. When leaving the boat, the cabin may be padlocked.

Many owners add a boom tent and with a few camping extras undertake extended cruises on lakes and rivers.

Safety and Stability

The broad beam for its length of an Explorer 16 not only provides comfortable accommodation, but a hull that has inherent stability on its sailing lines. The cast-iron centreplate (98 kg in the Mk. 2 version), provides additional stability when the wind increases. The non-skid surface on all walkable areas of the deck and cabin-top provides secure footing when moving about. With its sealed under-cockpit and under-bunk buoyancy tanks, the Explorer 16 is also unsinkable, so that if the worst happens and the hull is swamped, it will still float and provide shelter for the crew.

Value for Money With all the above features, and being designed and built in Melbourne by well-known boat-builders, J. Botterill & Sons, the Explorer 16 offers extremely good value. Also, being a one-design yacht with class rules controlling the changes that can be made, all Explorer 16s are very similar, and second-hand boats maintain their value well.

THE EXPLORER 16 ASSOCIATION

(From our promotional literature)

A flourishing Class Association of Explorer 16 owners and enthusiasts, welcomes all owners of Explorer 16s to join them and to obtain the best information and advice available on all aspects of Explorer sailing. There is also the opportunity of participating in the races, group cruises, and social activities that are arranged for Association members.

The sailing events may be of a day duration or, as in the case of our traditional Easter cruise, extend over four or five days. For the keen sailor there is an annual Championship series of races held, and trophies for both outright and handicap placegetters. An active committee arranges for an event to be usually held every month, and with a family-oriented membership of persons with similar ideas, this is the ideal group for all Explorer 16 sailors to join.

In addition, for those people considering the purchase of an Explorer 16, members of the Association can make time available to assist and advise. If you already own an Explorer 16 and feel you need assistance or advice on setting-up, launching, or sailing your yacht, help can also be provided.

If you do not own an Explorer 16, but own another boat and would like to join the Association, provision exists for persons to join in the Affiliate Members category, and to take part in all the activities except the annual championship races.

The Association was founded at a meeting of twenty-three persons on 29 July 1977 (not long after the production of Explorer 16s commenced) and was incorporated under the Associations Incorporation Act on 11 January 1988.

The original Newsletter was first published in August 1977 (the month following the founding of the Association) and continued until issue number 58 in 1986. The editorship was then taken on by Peter Moglia who named it 'Discovery' and continued as editor for 23 years until the final issue, number 151, in June 2009. An e-mailed Newsletter is now sent to all members.

All enquiries in the first instance should be to:

The Secretary, Explorer 16 Association Inc.
(For current contact details please refer to the Association's publications or weblog or else Yachting Victoria, 03 9597 0066, www.vic.yachting.org.au, email: sailing@yachtingvictoria.com.au).

2 - SAILING

YOUR SAFETY FIRST

by Andrew Jeffs

The most important thing to you when you go out sailing, either cruising or racing, should be returning safely and without incident. To ensure you do return safely there are a number of precautions you should take. Before setting off ask yourself these questions:

Are the boat, equipment, and crew capable of handling the present conditions?

Are conditions likely to change? (Check the weather forecast, weather maps, the Coast Guard, and most importantly make your own observations.)

If so, what effect will they have, and will you still be able to handle them?

Does someone know where you are going and when you'll be back?

When you are out on the water, always keep an eye on the weather. Changes occur rapidly and if you are not prepared they can cause problems. Ensure that all members of the crew know where the safety equipment is and how to use it. I believe that lifejackets or buoyancy vests (Personal Flotation Devices) should be worn by all the crew except in the very lightest conditions, and they are required at all times when racing. Even if you are a good swimmer, a flotation device is necessary because there is always the chance of being rendered unconscious, in which case a lifejacket will keep you floating face up. Buoyancy vests will keep you afloat but not necessarily face-up, but they are more comfortable and easier to sail in. Ultimately the choice will be yours between comfort and safety.

Always sail with the motor on the stern. Having it in the cabin is dangerous and against the class rules when racing. When you most need it is when it is rough and blowing a gale, and you will have almost no chance of putting it on the stern. Also make sure the engine is in good working condition before each sail and carry more fuel than you think you'll need.

You and your crew must also be able to carry out the basic procedures that can save lives. Things like anchoring, reefing, dropping the sails, and a man-overboard drill must be carried out quickly, efficiently and safely. The time to learn and practise how to do these things is when you want to, not when you have to.

The Explorer is not a keelboat, it is more like an oversized dinghy, and as such must be sailed like one. That means you should always be ready to let the main off and you must be able to do it quickly and easily. Someone should have the mainsheet in hand at all times, even in moderate breezes, and it must be free to run when you become overpowered. If this is not done a capsize can result. All your sail controls should work smoothly and efficiently.

When working on deck remember: One hand for the boat, one hand for you.

If you take the appropriate measures like reefing before you become overpowered, there is no reason why your sailing shouldn't be both fun and safe.

A short word or capsizes. Explorers can and do capsize. This is usually the result of a combination of some or all of the factors in this equation (learn it and you will have a better chance of avoidance):

INEXPERIENCED CREW + CLEATED SAILS + UNEXPECTED GUST + CREW OUT OF POSITION = CAPSIZE.

LAYOUT

by Andrew Jeffs

[The setting-up of a boat for racing is done with the object of achieving maximum efficiency in operating the systems and controls. Whilst this may not be seen as necessary for those not intending to race seriously, the systems used can assist in more effective, easier, and safer sailing at all times].

When setting up your own boat it is always helpful to be able to look at how a successful boat is set up. However, it is not always possible to get the time or opportunity to go out and carefully study a good boat. Well here's your chance to study, in the comfort of your own home, the layout of Explorer Number 59, 'Resolute', as it was when it won the Victorian Championships in 1986.

Spinnaker Basket

The easiest way to launch and drop the spinnaker is by using a spinnaker basket. Ours was a household kitchen tidy converted for the needs of sailing. A piece of wood was attached to the back of the basket. This wood was the same height as the pulpit and the basket was attached flush with the top. At the base of the wood was a saddle with a shackle through it. This shackle went onto the bow fitting where the forestay attaches, and at the top a plastic clip was clipped onto the pulpit. The basket was also tied for extra security. Inside the basket was a cam cleat into which the halyard was clipped thus preventing the spinnaker coming out.

Spinnaker Pole

We used an aluminium section with the spinnaker pole being of maximum length under the class rules. The beaks faced upwards for easier gybing. The uphaul (topping lift) was attached to a wire bridle with a ring in the centre and had a 1:1 purchase. The downhaul was 2:1 because that was the way it came. The block was connected by a swivel to a snap clip that attached to a ring on the underside of the pole.

Genoa Halyard

We found that our headsails were very sensitive to halyard tension, so we discarded the usual method of tying off at a horn cleat and replaced it with a cam cleat for easier adjustment.

Sidedeck Hook

This was used basically as a crude spinnaker tweaker, the brace being placed under it to keep pressure on the pole and spinnaker luff. If I were setting the boat up now I would use a proper tweaker.

Stormboards

The wooden stormboards were replaced with clear perspex ones of the same dimensions. These had two advantages: for racing, maps and courses could be attached to the inside and read from the outside without them getting wet, and they allowed more light into the cabin when cruising.

Fairleads

We extended our fairlead tracks as far forward as they would go inside the coaming so we could have more control over the genoa fairlead position. This also allowed us to bring the spinnaker leads further forward so that they could be trimmed more easily by the crew. Our jib sheets were single purchase but did have blocks at the fairlead for better trimming. Spinnaker sheets were continuous and blocks were right at the stern for the optimum sheeting angle.

Fuel Tank

The fuel tank for the outboard was placed as far forward on the port side as we could get it (under the seats of course). The idea behind this was to keep the weight out of the stern where it was just slowing us down, and to counteract the weight of the outboard itself.

Halyards

The main and spinnaker halyards as well as the topping lift, downhaul, boom vang, and Cunningham eye, were all led to the back edge of the cabin so they could be adjusted from the cockpit. A plastic box for the tails kept the cockpit tidy and avoided foul-ups.

Rudder and Tiller

The rudder was held down while sailing using the normal dinghy system (most good sailing books should have it). We had a varnished wooden rudder that we sanded back, faired and then revarnished once in eight years. A tiller extension is almost mandatory for racing as it allows you to keep your weight outboard as well as providing better feel.

Traveller

Our traveller was raised up to the level of the seats and attached to a large piece of oregon to prevent it from flexing. The track itself was made just shorter than the distance between the seats and had holes drilled through the sides near the ends. The track slotted into rudder gudgeons (on their sides) which were attached to the seats. A pin could then be passed through the track and gudgeons, holding the traveller in place. The oregon was cut so that it extended under the seats through the ports in the side of the seats, providing extra resistance to the upwards pressure exerted by the mainsheet. The advantage of this over the original floor-mounted traveller was that it was easier to trim and could be removed for cruising. The traveller

control lines were tied off at each end, passed through the blocks on the traveller car and back to a raised and angled cam-cleat for easier trimming.

Boom

The mainsheet was 4:1 and was quite adequate, but the boom vang that had the same amount of purchase was, in hindsight, nowhere near powerful enough to produce any real leech tension off the wind. On our new boat (not an Explorer) we have 6:1 rope and 2:1 wire giving total purchase of 12:1. On an Explorer if you want a vang that will work as it should you will probably need at least 6:1. We carried our spinnaker pole on the boom with PVC pipe at the aft end and plastic clips at the gooseneck. The large diameter pipe was cut into shortish lengths and had the corners cut diagonally with the larger side being attached to the boom. The outhaul was led forward along the boom to about the midpoint so it could be adjusted easily.

Diamond Stays

Our diamonds were as per class specification and were put on after we saw the mast flexing badly from side to side in strong winds. The diamonds help to stop this from occurring.

Wind Indicator

The wind indicator is essential for correct trim especially off the wind. We used a Windex arrow type that is probably the most popular, and it proved to be good in all conditions except in very light winds when it would tend to spin. In these conditions telltales on your shrouds are the best bet.

IDEAS TO MAKE SAILING EASIER

by Brian Adeney

1. Use a wind indicator mounted on a stainless steel rod, not aluminium, so it can be straightened when it meets with an accident.
2. Furling the headsail often results in the forestay wire becoming caught up in the sail rolls and bringing the whole process to a halt. There are a number of things that can be done to avoid this happening to you:

The headsail luff wire should be set up tight and the forestay loose (this helps sailing to windward also). Then use a piece of shock cord and a small hook to keep the slack forestay pulled forward away from the headsail.

Do not pull the furling line unless you are heading fairly close to the wind and it is blowing the sail away from the forestay. Keeping a light tension on the jib sheet whilst furling also helps to keep the sail away.

Fit the forestay termination point further up the mast as now permitted under the Class Specification.

As an alternative, make up a spacer to fit at the top of the forestay to keep it away from the headsail, e.g., a disk cut from aluminium sheet about 80-100 mm diameter, mounted on a piece of tubing and then threaded on the forestay, or a rod 40-50 mm long with a loop at each end will do the job.

3. Rig a permanent topping lift to hold up the end of the boom, and only use the boom crutch when packed up to trail. The advantages of this are that it:

- holds the boom when hoisting and lowering the mainsail, especially if single-handed,
- relieves the load on the mainsail when putting in or taking out reefs,
- keeps the boom up out of the way when motoring, and
- raises the boom for rigging up a boom tent for overnight camping.

All you need is a small cheek block on one side at the top of the mast, plenty of length of light cord (I used VB cord), a saddle at the aft end of the boom, a small plastic hook on the end of the cord, and a cleat on the cabin top to hold the other end. Always remember to ease off after hoisting the sail.

4. If you sail in strong winds and reach with the boom vang on, you may notice the mast can bend somewhat alarmingly. The remedy is to fit a set of the optional diamond rigging stays (as set out in the class Specification). Note that these only need to be light rigging (to save weight aloft) and should not be set up tightly (to allow the mast head to lay off when beating in strong winds).

5. Reefing lines for both the tack and the leech of the mainsail are best led to cleats on the cabin top as they can require a good pull to tighten, and this is best done from this position - even putting a foot on the bulkhead. If the halyard is also at the same position this can be adjusted by one hand whilst the other pulls in or releases the reef line.

6. The rudder blade should be pulled down by a dinghy-style downhaul line and secured by a readily accessible cleat on the tiller. This line and the holding power of the cleat should not be too strong, as if you hit something hard it is best to have a breakage here rather than lose a rudder blade. It is not necessary to have an uphaul line as the blade will float up when the wing nut is loosened, and you should not trust a line to keep your rudder blade up when launching or retrieving. It is safer to not fit the rudder unless you are afloat. The rudder blade wing nut should be secured so it cannot be lost by drilling a hole at the outer end of the bolt and inserting a split ring.

7. When the boat is on the trailer always slacken off the centreplate winch cable so that it is not under tension, and the plate is resting on the keel rollers. This way the cable is not subjected to constant shock loadings whilst travelling on the road. Remember to take up the weight again before launching.

8. If you have a cleat fitted on the last block of the mainsheet system, make sure that the sheet cannot cleat itself accidentally - you must be sure that when you ease or release the sheet it will run out immediately. You can adjust the cleat so that it requires a positive action to be taken by the crew to cleat the sheet.

9. A boarding ladder is a necessity not only for climbing aboard after a swim, but also to assist in retrieving anyone who goes accidentally overboard. Preferably it is light and folds up out of the way, is not too large but is of sufficient length to enable easy boarding from the water. Have a look at what other boats have got fitted before deciding what to buy if you do not already have one. Do not get the folding plastic type - they are useless on an Explorer.

CHECK LISTS

by Brian Adeney

The following check lists are suggested as a means of saving time and assisting your safety when going sailing at any time. For those engaged in racing the second listing also applies.

Minimum Safety Requirements for Motor Vessels (all equipment in good working order and accessible)

PFD for each person on board
 Bailer or other bilge pumping arrangement
 Approved fire extinguisher
 Waterproof torch
 Anchor with 50 m rope
 Flares: 2 red and 2 orange smoke

Before Leaving Home - you have packed or attended to:

Trailer tow ball secured and chains fitted
 Trailer lights fitted and checked
 Boat tie-downs fitted
 Centreplate winch cable eased off
 Mast and boom
 Rudder and tiller
 All sails
 Battens
 Slickers and PFDs
 Sunburn cream
 Gloves and runners
 Spare clothing
 Drinks and rations
 Drain plugs
 Spinnaker pole
 Charts and pencil
 Tide times
 Weather forecast

Before Launching - check over these:

Wind indicator fitted
 Shrouds rigged correctly and mast raised
 Jib hoisted and furled
 Jib halyard tensioned and secured
 Jib sheet leads adjusted and secured
 Forestay slack checked
 Topping lift rigged
 Mainsail fitted and secured

Battens fitted correctly
Mainsheet fitted and clear of the cleat
Reefing lines rigged
Boom vang rigged
Spinnaker halyard rigged and cleated
Spinnaker sheets and cleats ready
Pole uphaul and downhaul rigged
Centreplate raised and winch locked
Drain plugs fitted
Outside of hull clear
Bow line attached and ready
Stern line attached if necessary
Tie-downs removed
Fuel tank secured and connected to motor
Motor secured in raised position

Before Leaving Shore - check over these:

Rudder and tiller fitted and secured
Centreplate lowered and winch locked
Main foot and luff tensions set
Jib sheet leads adjusted and set

RACE CONTESTANTS will also need to look at:

Before Leaving Home:

Sailing Instructions
Race Rules book
Protest flag

Before leaving Shore:

Race Notice Board
Weather Forecast
Sign on

Before Start:

Time to go
Direction to first mark
Course to sail
Start line marks and direction to wind
Tidal effects
Sail tensions
Rudder and centreplate clean and locked down
Wind direction - check every 5 minutes

After finishing:

Sign off
Check last time for lodging protest

CREWING

by Andrew Jeffs

The Explorer is an ideal boat for family sailing: stable, easy to control, smallish rig, not physically demanding, and reasonably forgiving. All in all, it is very safe. There is no reason for this to change when you race. The boat is still the same and if your family can crew when you cruise then there is no reason for this to change when you race. You do not need any goliaths just because you're racing, just someone who can pull in the headsail; and you don't need a monkey to clamber around on the foredeck because everything can be done without having to let go the boat.

Your family is a ready-made crew, just add a boat, some water, and a pinch of enthusiasm! They will nearly always be available when you want to go sailing, and if you want to talk about something, you can do it at home. What's more, family crews have a great record in Championships. If your family is willing and dedicated they are probably the ideal crew for racing. Explorer sailing has always been a family-oriented activity, so there is no reason for this to change if you get out on the race course.

There are no age or sex barriers either. Explorers are suited to crews from eight to eighty, male or female. I started sailing with my Dad when I was only eight years old. At the same time my grandfather was sailing with us, making us a three-generation boat. That just goes to show what a great little family sailer the Explorer is, and how much scope there can be for crew. By 1986, when we won the Championships at Mokoan, it was just Dad and me sailing together. I was thirteen by then - only a small thirteen - but we had no problems in any strength of breeze. The Explorer does not demand a great deal of strength or crew weight, just enthusiasm and practice, which was, I felt, the key to success.

Husband and wife teams have also been extremely competitive, just as good as anyone else and better than many. There truly are no reasons why your family will not make a good crew as long as they are enthusiastic and dedicated. It may take a few years to build up the experience to be a champion team, but it is possible for anyone to succeed so long as the time and effort are put in.

Sailing is essentially a team sport in that skipper and crew must work together to get the best from the boat. Therefore they must work together as a team. To do this efficiently, there must be good communication between skipper and crew. That does not mean that they should abuse each other when things go wrong, which is often what happens.

All you'll get out of that is perhaps a little satisfaction but a whole lot of tension that tends to kill communication, so more mistakes are made, and you begin a downwards spiral. What should happen is that the crew should feed the skipper with important and relevant information. Important decisions should be made through discussion but it is inevitable, and only right, that the skipper should have the final say. It is essential that the skipper tells the crew clearly what he is planning to do. That may sound very basic, but it is amazing how many times the crew thinks one thing is going to happen but the skipper does something totally different. Any problems that do occur should be discussed calmly and rationally, there is no need for shouting, so that they can be rectified the next time.

Above all else, skipper and crew should recognise the important part the other plays and must respect them for it. They must believe in each other's ability and always encourage each other to try that little bit harder. Once skipper and crew can work together as a well-oiled machine, improvements can be made faster and faster. Remember, TEAMWORK, COMMUNICATION and RESPECT are the keys to a happy, safe, and successful crew.

Eric Twiname, in his book 'Start to Win', gives his idea of the ideal crew. Here it is: The IDEAL CREW should:

give unquestioning obedience,
 not mind getting wet, cold and bored,
 not bruise easily,
 not complain when bruised,
 be strong, silent and agile,
 enjoy being blamed for things that aren't their fault,
 be an impeccable timekeeper and recorder of courses,
 have a bent towards telepathy,
 have naturally good eyesight for spotting distant buoys,
 (desirable magnification on ordinary eyes, 4 x 30),
 like winning, but give all credit to skipper,
 be a good loser, and accept all blame,
 prefer hobbies like sewing, woodwork and swimming.

SOUNDS FAMILIAR DOESN'T IT CREWS?

CHOOSING SAILS

by Andrew Jeffs

The sails are the engine of your Explorer, and when you begin to race you will probably find that your old sails lack some horsepower, no matter how well you have them trimmed. It will be then that you'll be tempted to go out and buy some new ones.

A quick glance at the page of your favourite sailing magazine will tell you that there are a great number of sailmakers to choose from and a dazzling array of new sailcloths that have been developed over the last decade or so. When choosing your sailmaker you will have to examine a number of factors, and it is important that you take the time to talk to as many as you can so that you can find out what they really have to offer you.

Factors to be considered include: cost, quality, type of material, reputation, success in Explorer or similar classes, after-sales service, proximity to your home or place of work, and what information or advice they can give you. You should also ask around to see what the better Explorers are using and what advice they have.

Once you have chosen your sailmaker it will then come to a choice of materials. He will probably be the best person to advise you on the relevant advantages and disadvantages of each, but here is a quick comparison of the main materials:

Dacron - the 'normal' white sailcloth. There are varying qualities so make sure you don't buy inferior quality. In general, Dacron will lose its shape more readily than exotic cloth, meaning it will either need to be recut or another sail bought. Good yarn-tempered Dacron is nearly as good as Mylar as far as stretch is concerned but so is the price.

Mylar - a lightweight (for the same strength) plastic film that is sometimes laminated to Dacron to help prevent stretch. This means the sail will keep its designed shape longer. Disadvantages include the cost (although the price difference between it and Dacron is smaller than it used to be), and the laminate can break down if the sails are not cared for properly. Mylar can be used on its own in low-stress areas such as the luff of the mainsail and in light weather headsails, which will fill and draw much earlier than conventional sails. This type of sail is more prone to tearing.

Kevlar - brown in colour, this material is very strong for its weight and basically will not stretch. It is used in high-stress areas such as mainsail leeches and sometimes as tapes along loadlines in mylar headsails. Disadvantages include the high cost, a tendency to

break down with flogging, and it puts great stress on fittings such as masts, stays, and sheets.

Spectra - blue or green in colour, similar to Kevlar in properties. Less prone to ultraviolet degradation than Kevlar (but still more than Dacron). Similar strength-to-weight ratio but more susceptible to creep (stretch under constant load).

As far as Explorers are concerned, exotic materials such as Mylar, Kevlar, and Spectra have only ever been used in headsails (as far as I know) and then it was only Mylar. The reason for this is most likely that Kevlar and Spectra are basically used to stop stretch and the amount of stretch you get in a small rig like an Explorer's is negligible when compared to the high cost of these materials. Mylar, on the other hand, has a light weight that can make a difference in light winds. On 'Resolute', we had a heavy genoa that was a Mylar laminate and also a lightweight headsail that was pure Mylar film. The heavier headsail we bought cheap from someone who didn't like it, and was basically an experiment to begin with. We found that it was very critical especially to luff tension, but when it was set right it was quite successful. It also held its shape well. The lightweight genoa we only had for a few races before we sold the boat. It, too, seemed critical but it also was a definite advantage over the other in light winds and improved speed noticeably. It is in this area that I feel exotic sails can be an advantage because the Explorer is basically under-rigged, so it does lack light-air speed. If you live in an area that is dominated by light winds, a lightweight genoa might be a good investment.

I think spinnakers are probably the hardest sails to make properly because they are not fixed in any way. Your sailmaker is going to have a difficult time getting your spinnaker just right because he will probably have never made one for an Explorer before, giving him little to base the shape on. In the end you are unlikely to get as good a spinnaker as you would like. One way around this problem is to buy a spinnaker from a class where there has been more research done into shapes. You will have to make sure that the spinnaker measures within the Explorer class rules but even if you get a slightly smaller kite it will probably be a far better shape. If you find a class that has a spinnaker of similar area, it would be worth contacting their Association to see if there are any kites for sale second-hand. Many of the dinghy classes will have sails for sale. If it is too big you can get it cut down to size and still cost less than a new one, and you'll get a better sail! You may also find one that can be useful as a second (smaller) kite.

BUYING NEW SAILS

by Bob Couper

At some stage every skipper dreams about buying a new set of sails for his beloved Explorer. When you shop around you can become very confused by the many alternatives available. Different sail cloths, shapes, size combinations, and adjustments. The main problem is to decide which features are absolutely necessary, which ones you would like, and which ones are luxuries.

The first point to realize is that there is no one set of sails that will fit all of your needs. Features necessary on good racing sails may be luxuries or even disadvantages on cruising sails. Sails cut for maximum performance in light winds may be hopeless if the wind springs up. No matter what you end up with, it will be a compromise.

The second point is that you only get what you pay for. Sail-making is a highly labour-intensive operation. It pays to go for quality in the long run, the extra expense will be worth it. Note that the word is quality, not reputation or gadgetry. Quality of cloth, quality of workmanship, quality of reinforcement.

The first step is to decide whether you want the sails for racing or cruising. Since most people buy for racing and keep the old ones for cruising, I'll concentrate on the racing aspect. Racing sails must be capable of adjustment for maximum power over a wide range of wind strengths. The adjustments must be quickly and easily made while sailing. The best arrangement appears to be a medium to full-cut main with a foot and luff adjustment to flatten it as required. A shock-cord foot with a 4:1 outhaul is excellent. For the luff, a Cunningham eye is essential. Once again, a 4:1 adjustment is best. The main must also be fitted with at least two sets of reefing points. My own main was fitted with a flattening reef as well, because it was full-cut to maximum size. This is a half-reef point on the outhaul end only. Putting this on takes out the belly in the foot to flatten the main, useful when I get overpowered before reefing is necessary. Once the wind strengthens it is more important to be able to shed power rather than develop it.

Although you only need one good main, for serious racing you need two foresails - a working jib and a genoa. If you can afford only one, go for the genoa. It should be cut to match the main and have a wire luff. If long-distance races are your scene, a leech line can be an advantage but it is not a necessity.

A lot of the decision-making can be made easy by picking the right sailmaker. This is probably the hardest decision of all. When I chose mine I looked at two things. To start with I decided that the Explorer rig was essentially a 'low tech' one fitted to a displacement hull. I looked at other classes with similar characteristics. I looked at the quality produced by the various sailmakers used by those classes. In the end I picked an 'old fashioned' sailmaker who had learned the secrets of making sails for uncomplicated rigs and who had a good racing record. We did a lot of talking, and a little bit of experimentation before we came up with the final arrangement. For quality, I paid nearly 30% more than the cheapest junk I could find and 10% more than other makers. But I expect to be paid over and over for this in the next five or ten years. So far I haven't been disappointed.

SAILING AN EXPLORER

by Max Ross

Trim

One of the most important requirements when racing is to have control over the trim of the boat and to make continuous adjustments to ensure that your boat has the appropriate trim.

'Trim' covers two dimensions, Fore-and-aft and Inclination. Both adjustments are made by positioning the skipper and crew.

These are the likely results of incorrect trim:

Weight too far forward - the bow digs in and waves stop the boat. In a slop, weight forward can be helpful as it reduces the waterline length of the boat. On most other occasions, it inhibits boat speed.

Weight too far back - the transom digs in and causes excessive drag. Waterline length is reduced, restricting maximum speed.

Too little or too much inclination - the angle of attack of the sails is varied by the inclination of the boat. The direction over which the wind travels varies according to the degree of inclination. The waterline length is also altered.

So make trim work for you. Check to see that you have your boat balanced correctly fore-and-aft and check the angle of heel. It makes more difference than you think.

The Wind Indicator

A wind indicator is not a flag or a means of telling where the wind is coming from. To a moving yacht, it is an indication of the apparent wind (a combination of wind direction affected by the speed of the yacht).

It is impossible to do without a wind indicator when the winds are light and fickle such as on inland waters or other places. It is very helpful when running before the wind to indicate the correct angle to gybe. There are other ways, but the wind indicator is the most accurate.

If you have a wind indicator, make sure that you have a responsive one - one that will change direction and respond to the smallest puff. Flag-types tend to be unresponsive and usually only record with any accuracy above certain wind speeds, and then only after the wind has changed for some time. The indicator should be unaffected by the trim of the boat, so it should be balanced carefully.

Forestay Tension and Forestay Sag

One of the common questions asked when boat tuning is being considered is 'How much tension should I have on my forestay?' It is not possible to give a direct answer without first asking: Does your headsail have a wire luff or is it hanked onto the forestay? If it has a wire luff, then this becomes the new forestay and should have much more tension than the fixed forestay. If the sail has a rope luff, then the answer is 'twang tight'.

Regardless of the tension in the forestay, the leeward shroud will be slack in moderate breezes and over. Tightening the forestay will not remove this problem.

The tension on the mainsheet influences the tension in the forestay. Vang tension does not influence forestay tension.

Forestays can be slacker in light breezes and tighter in stronger breezes.

Forestay sag in itself is not always detrimental; in fact it is helpful in light breezes. Forestay sag means a fuller headsail with the draft further back and with a greater wind-entry angle. This means more speed and less pointing ability.

In the gusts, when we release the main to keep the boat upright, we also ease the tension on the forestay and make the headsail more powerful at a time when we need less power and a flatter sail. So it is better to ease the traveller rather than the mainsheet so that both sails retain their tension and shape.

Forestay sag can also affect the jib sheeting position. Use forestay sag for more power in light weather and for de-powering in heavy weather.

New Sails

When we buy new sails, we must also learn how to use them. Don't make the mistake of doing what you were doing previously and expect to produce a better result. Different is different.

Different sails - different technique.

Experiment until you get better results. Flat sails point better but lack power. Full sails have power but do not point as well. Full headsails affect the mainsail much more and probably require a different setting for the main.

The wind changes direction and velocity constantly. To get the most from your sails (wind converters), you must change settings almost constantly. It's called constant trim - trim until you get it right.

Different days require different combinations. What was great yesterday is not always great today. There will never be 'automatic transmission' in sailing. You must choose the right gear yourself.

Sheeting Tension

One of the most common problems with skippers who buy new sails is that their first impression of their new sails is that the sails are no better than their old ones. Some even say that they perform a lot worse. The fault is not with the sails but how we use them.

Our first attempt with the new sails is to extract as much power as possible from them. That usually means that we haul the sheets on tightly and the result is greater side pressures and less speed.

Treat your new sails like a new girlfriend - nice and easy at first, increase the tension gradually, know when to back off, and never forget how important the shape is.

The headsail gets first use of the breeze so it is the sail that generates the most power and forward motion. The shape must be regulated to extract power to bash through waves or control speed across the waves, usually by a flatter shape. Your boat could be set up differently on one tack to the other. It may be a course with a 'power' tack into the waves and a 'speed' tack across the waves to windward.

The mainsail will give your boat balance and additional power and speed. Its efficiency is restricted by the wind deviation caused by the headsail and the mast. Flatter mainsails tend to be more efficient and suffer less interference from the headsails.

If either sail is too tightly tensioned the leech will become too tight and restrict the airflow. This leads to more heeling and control problems, and less forward speed. Twist is induced by moving the slides back further (increasing the foot tension) and easing the control sheet - quite helpful under certain conditions because the airflow at the top of the mast is at a greater angle than lower down. Twist is most helpful in light and heavy breezes.

The Explorer is a relatively heavy boat in comparison to the sail area, so know when power is needed (tacking, big seas), or when speed is required (flat water, when the boat is near its maximum speed). It's better to sail free and fast even if the boat does not point well, rather than haul on the sheets too tightly and go nowhere.

Remember:

- pointing ability will come with boat speed
- don't over-tension your sheets

- twist off when the conditions are right
- experiment until you have the right combination for the conditions.

Weather Helm

Have you ever driven a car that had its front wheels out of alignment? Or with one of the front tyres flat? If this condition existed you would very soon have the car fixed, because you would consider it to be unsafe and too demanding on concentration and manual effort to keep it on course.

If you apply this principle to your Explorer, you may find that your boat is not in tune. It may have too much weather helm or too much lee helm. Both are like driving your defective car.

Your Explorer will be much easier to handle and more predictable in its habits if it is tuned to have very little weather helm in a breeze of around ten knots. In a breeze like this, your boat should head up slowly into the wind if you take your hand off the tiller. Lee helm (a condition where the boat turns off the wind rather than into it) is really dangerous if you drop your concentration.

Your boat will be much easier to sail if you adjust your mast rake either backwards or forwards until you have the right amount of weather helm.

The rule is BACK for more, FORWARD for less. So don't sail your boat with a flat tyre. Tune it until it is well balanced. It will be safer to sail.

Oversheeting increases side pressures and will give similar conditions to an out-of-balance boat. Do your tuning with the sails trimmed correctly - undertrimmed rather than overtrimmed.

If your boat is balanced correctly, you should feel like a passenger with the boat taking you for a ride. The alternative is a continuous fight to get the boat to go to windward.

Don't just 'stick-it-up and sail', adjust and experiment.

Spinnakers

If you want to talk about a spinnaker you must first ask yourself what job you want it to do. Spinnakers are like women - they come in all sizes and shapes and given the right conditions, they are capable of performing efficiently.

The big balloon-type spinnaker is ideal for running. The flat-cut type is ideal for reaching. Smaller spinnakers are good value when the wind speed increases. It is not only important to have the right type

of spinnaker for an Explorer but also one of the right size.

Spinnakers are made of lightweight material and are easily distorted in shape as the wind increases or as the boat is headed closer to the wind. The more panels that the spinnaker has the less likely it is to suffer from distortion. Hence the popular tri-radial, radial head, or star-cut spinnakers are more versatile than the balloon or crosscut ones - but they are also more expensive. In the Explorer it is better value to have a relatively flat-cut spinnaker that can be carried quite shy. A choice of more than one size helps because it makes your boat more competitive as the wind speed increases. As well, biggest isn't always best.

You have some control over the shape of the spinnaker under pressure by varying the height of the spinnaker pole and the angle of the pole to the wind. The tension on the sheet can also determine the sail's shape under reaching conditions. It is critical that the sail is set at the correct angle to the wind and it will require constant trim to keep it in the optimum position. If the spinnaker does not look as though it is almost ready to collapse, the odds are that your pole angle is incorrect or your sheet tension is too tight.

In heavy winds keep your spinnaker pole as low as possible to restrict the sail from becoming too full toward the top, thus making your boat unstable. In light conditions it often pays to float the sail up high by raising the height of your spinnaker pole.

Keep in mind that a spinnaker is just like any other sail. It must be set at the correct angle to the wind, it must have a specific shape, and the wind must travel across it and be exhausted cleanly. It is not an area of material to block the wind so that the boat will be blown along.

The spinnaker can cause control problems because it is set right at the front of the boat, and out of balance with the mast and other sails. Consequently, it will often need the balance and support of the other sails to be used to its best advantage. All the sails must complement and not interfere with one another.

The Explorer Class Specification gives skippers a range of sizes in spinnakers, headsails, and mainsails (by reefing), so it is left to the skipper to decide what sails to use. Use the options open to you. It is important that you choose the right sails for the prevailing conditions.

Do not set and forget. Use every combination until you have found the right combination and your boat feels like it is sailing in a responsive manner.

The Square Run

Most skippers spend a lot of time and effort to extract the ultimate from their boat upwind. They devote much of their tactics and thoughts to achieve the best result by the windward mark.

How many of us think much about the off-the-wind legs? To most, it is a time to sit back and recover after the tiresome windward leg. To others, it is the time to press home any advantage gained or to continue to seek an improvement in position. Those who watched the 1983 America's Cup will know that it was on the square run that 'Australia II' passed 'Liberty'. The reason: 'Australia II' attacked by seeking more wind and optimising the angle of attack, and 'Liberty' did not respond and headed directly to the leeward mark.

There are decisions to be made at the windward mark. The kite has to be set quickly in clear air, opponents have to be covered if necessary, those in front should have their breezes interrupted and the ideal course should be decided.

The shortest distance to the leeward mark is directly to it, but this may not be the quickest. In addition, it may mean a gybe before lowering the kite to round this mark. It may be better to broad reach downwind, gybe, and then head for the leeward mark on another broad reach. This may give you starboard tack right-of-way and may allow you to carry your kite right up to the mark before rounding. You will certainly cover more distance and you will most likely be travelling more quickly. The deviation should not exceed 15 degrees. This should enable you to use the waves and wind to best advantage. So don't sit there and reach for the stubby. Racing is from start to finish and there is always a way to improve your position.

The Explorer is able to plane under certain conditions, mainly with the help of rolling waves. To gain maximum speed and the chance to plane, zigzag along the waves, constantly adjusting the kite for changes in direction. Along the top of the waves and down the face usually produces the maximum speed. The apparent wind angle also changes, so the kite will have to be adjusted to compensate for the change in wind direction.

On a square run, waterline length should be kept to a minimum. No dragging stern or dipping bow.

On a reach, waterline length is important and weight should be moved aft slightly in light breezes and as far back as possible under

full power. Sailing is a sport in which the competitors should never give up. There is always a chance until the gun goes off. The rule is to treat each leg with the same intensity. Every available means should be used to improve your position. It is the time to capitalise on your opponents' mistakes to gain those few yards that he will have to recover. As well, a few yards may eventually mean a better tactical position and it may be very difficult for your opponent to recover. Aggression downwind pays.

Mainsail Tuning

Do you know your mainsail?

How many of us haul up the mainsail on sailing days without giving much consideration to the adjustments that we have built into this sail? To get the most from our mainsail we must adjust it according to the conditions, and the direction we are sailing in relation to the wind direction. Just to refresh your memory, here is a brief description of the adjustments that can be made to this sail.

The Cunningham Eye

Located in the luff of the sail above the tack, it is used to remove the loose material in the sail when the draft of the sail moves back due to an increase in wind velocity. It effectively moves the draft of the sail forward again, and makes the boat less likely to heel due to the wind catching in the leech of the sail. It is possible to locate the maximum draft or depth of the sail in the position best suited to the conditions. Generally, little or no downward pressure in light conditions and maximum pressure in strong winds is required. If your sail has no Cunningham eye, pushing downward on the slide adjustment for the boom has a similar effect.

If your boat is difficult to sit flat in a breeze of 15 knots or more, or if it develops excessive weather helm as the wind increases, try increasing the pressure on the Cunningham eye, or adjusting the boom on the track on the mast.

The Outhaul

The outhaul is used to adjust the draft in the lower half of the sail. Its effect does not reach much higher in the sail than the one-third to one-half height position. Generally, the outhaul is moved out towards the boom-end when the boat is beating and released when the boat is reaching or running before the wind.

It has the effect of reducing the fullness of the sail in the lower section, allowing the wind to travel over the sail and to be released more freely via the leech of the sail.

The Roach

Few skippers who sail boats with a roach in the mainsail understand

the principles of the roach and how to adjust the sail to gain the maximum efficiency from it. If used properly, the sail can be used to its maximum area whilst the boat is reaching, running, and beating to windward in light to moderate breezes. By hauling in on the mainsheet very hard until the sail is very flat and straight between the clew (outhaul) and the peak of the sail (top), the roach section of the sail becomes very flat and generally lays off to leeward, effectively reducing the workable size of the sail.

So be careful not to oversheet the mainsail in light to moderate conditions or you will lose effective area of the sail. In strong winds when you want less sail, sheeting in hard will usually reduce the effective size of the sail yet retain a flat and reasonably efficient sail area in the remainder of the sail.

Battens

Correct adjustment of the battens of the sail is important, especially the top two battens. Have light pressure on the batten adjustment in heavy winds and much more pressure in lighter winds. Predetermine the sail shape in the top half of the sail by the shape that you have in the battens.

The bottom two battens are usually set by your sailmaker to match the sail, but the battens should be reasonably stiff and not allow the leech of the sail to hook.

The Mainsheet (without traveller)

The mainsheet serves a dual purpose in a boat without a traveller. It determines the shape of the sail (flat or full) and the angle that the sail is set to the wind. Unfortunately, when the mainsheet is pulled in to centre the boom, it also flattens the sail. When the mainsheet is eased in strong winds to keep the boat upright, it also allows the sail to become more full in shape. You can see that these two actions directly oppose one another.

When we want the boom in the centre of the boat in light weather, we also should have a more powerful sail. When we want the boom at a greater angle away from the centreline of the boat in stronger winds, the sail should be flatter.

This really means that boats without a traveller can be made to perform in moderate winds but are at a disadvantage in light or strong winds.

The Mainsheet (with traveller)

If a traveller is fitted to the boat, the mainsheet and the traveller have separate functions and each function is not related to the other. The mainsheet determines the shape of the sail (flatter or fuller) and the traveller determines the angle that the boom is set to the wind.

So now it is possible to have a full sail with the boom in the centreline of the boat and a flatter sail with the boom away from the centreline of the boat.

The boom vang can also be used to a limited extent to replace the function of the traveller, but only when a flatter sail is required and the angle of the boom is set away from the centreline. It cannot be used effectively to create a full sail with the boom in the centreline of the boat. So its use is limited, but it can be used effectively if your boat does not have a traveller.

Mainsail Twist

What is sail twist? How do you get it? What is it used for?

When you tighten the mainsail leech by hauling in on the mainsheet, it would be reasonable to expect that the leech would have the same tension at any point on its length but this is not so. The mainsail is basically a triangle, 2.8 m wide at the bottom and tapering up to 130 mm at the top. It is pegged at the top and the bottom and this affects its shape. It would be reasonable to expect that wind would always travel in a straight line and hit the sail at the same angle. This also is not so.

You can prove this by watching your sail tufts. It is very difficult to get all tufts streaming at the same time. In most breezes, it is not possible without some degree of sail twist. Mainsheet tension applied in conjunction with the mainsheet traveller and with the correct ratio between tension and wind speed will induce the mainsail to twist off in the top one-third of the sail. In light to medium winds, this is desirable as the apparent wind, unaffected by the water and the hull, strikes the sail at a greater angle and tends to rise upwards as it passes over the sail.

Consequently, twist means more efficient use of the sail area and is reflected in more boat speed. More boat speed means less heeling, less weather helm (usually), and makes the boat easier to steer and control.

Pointing

What is pointing? How do I make my boat point?

I could be wrong but I believe that power comes from the headsail and pointing comes from the mainsail. The centre-of-effort is usually located within the area of the mainsail, so the effect of the mainsail is likely to affect the balance of the boat and in turn the boat's ability to point into the wind.

Pointing is also directly related to the apparent wind, so too much boat speed inhibits pointing ability (fast catamarans, 14-footers, and

skiffs cannot point too well because of their high speed). So a compromise must be reached between speed and direction.

So trim that mainsail so that it has the most efficient shape, with the draft between one-third and one-half the distance from the mast. Don't hesitate to alter the shape of the sail to suit the conditions. Use all the adjustments available to you. Adjust until you have the right combination.

Sail your boat by mainsail alone. You will be surprised how well it will sail. It is a more controllable sail as it is firmly fixed on two sides, unlike the genoa, which has three flexible sides and all vary in shape according to the strength of the wind.

The Boom Vang

The boom vang is used to limit the extent that the boom can be raised vertically. It is effective, if not essential, when the boat is being sailed on a broad reach or on a downwind run. It almost eliminates the tendency for the boom to gybe unintentionally. It does this by keeping the boom down and the mainsail flat and square to the wind.

It is regarded as being unsafe to run before the wind in strong breezes without a boom vang hard on, although there are exceptions to this rule. Without a boom vang on a reach, much of the power of the mainsail is lost by the air escaping too quickly from the mainsail and the twisted and inefficient shape of the mainsail.

Headsails

The efficiency of a yacht's headsail usually determines the yacht's overall speed. It is this sail that has first use of the breeze and influences the direction of the breeze after it has passed the headsail. Too often we haul up the headsail with the same adjustments week after week, not taking into consideration the strength of the breeze or the state of the water. Then we wonder why our boat seems to go quite well at times and not too well at other times.

In relation to your headsail you must consider the following:

How stable is the sail cloth?

Will it alter shape as the strength of the breeze increases or decreases?

How much power do I want from this sail?

Do I need real power to smash through the waves or less power and more boat speed if the waves are quite small?

Where should the maximum draft in the sail be (forward for strong breezes and in the middle for medium - light)?

What adjustments do I have to get the maximum result from this sail?

Does this sail affect the performance of the mainsail or spinnaker?

Does the sail look OK - or more importantly, does the boat feel as if it is moving through the water quickly? (Don't be fooled by a sail that looks OK but does not seem to go OK.) Remember that a trailer-sailer is a beamy boat and requires a lot of power to punch it through the waves. (Feel is important - more important than what you see.)

The headsail of a yacht is really a triangular piece of sail cloth into which your sailmaker has built some basic shape or draft. This draft usually comes in two main sizes - too much and too little. The sailmaker determines the amount and location of the draft and, on most occasions, he will elect for a flatter sail rather than a full-cut sail because he thinks that your boat will point better, and be easier to hold up when the breeze strengthens. He may be right - it is probably the safest path for him to follow.

Regardless of this, there are a number of critical adjustments that you can make. This triangular piece of material has no rigid sides like the mast and boom of the mainsail, so it can be easily distorted or varied in shape. This sail should be set up differently each time you sail your boat. Conditions should indicate the desired shape and adjustments necessary.

The two main adjustments that you have are:

(1) Halyard tension. There are two main types of luffs in Explorer headsails. Wire and rope. Wire-luffed headsails should have high tension as the wire luff replaces the forestay in the boat once the luff tension exceeds the tension on the forestay. This is essential in almost all occasions.

Rope-luffed headsails retain the use of the forestay and the rope luff is used to vary the draft in the sail by varying the tension on the halyard which acts in the same way as a Cunningham eye in your mainsail. Use lots of tension in heavy weather and little or none in light to moderate strength breezes.

(2) The leech and foot tensions are determined by the positioning of the sheet-slide on the track. The choice is yours as to whether you have even tensioning for both foot and leech, or less tension of the

leech to induce twist into the top of your headsail. The foot tension should not normally be less than the leech tension, nor should the leech tension be so loose that air escapes too quickly from the headsail. This is usually indicated by a fluttering leech. In general, if the top telltale 'breaks' first, the slide should be moved forward and vice-versa.

Conclusion

When I first sailed a trailer-sailer, I always used the technique that I learnt in small boats - if it looked good it would perform well. I could never get my boat to perform consistently while I followed this rule. There is a lot of difference between a light responsive dinghy and a relatively heavy and beamy trailer-sailer. That which looks good does not always perform well because there are many times when more power is needed to propel the boat through the water.

So - rule of thumb - does the boat FEEL as if it is lively and has sufficient power to smash through the waves? If it doesn't, don't sit there and watch the rest of the fleet sail by, experiment until you get a better response from your sails. Try to remember your settings for moderate breezes and vary these settings as the breeze drops or strengthens. There is the right combination for your set of sails.

Constant trim is essential because sea conditions and breeze strength and direction vary every few minutes or less. Don't be too concerned if your headsail backwinds the front of your mainsail down low. An overlapping headsail combined with a beamy boat makes it difficult to eradicate this problem at all times.

HANDLING UNDER MOTOR

by Brian Adeney

Travelling under motor involves steering with both the motor and the rudder. When going long stretches under motor it is much easier and more controllable if the swivel friction on the motor has been adjusted to just tight enough so the motor will hold a position. You can then set the motor so there is little or no pressure on the rudder when you are going straight ahead and you can steer with the rudder - standing with the tiller between your knees lets you see comfortably over the cabin top.

When reversing under motor remember that the boat will follow the motor. You point the motor in the direction you want to go and it will pull the boat in that direction.

Hold on to the tiller when going astern because the wash of the water against the rudder will push it to one side with considerable force, and you could end up with the well-known holes carved in your rudder blade. Hold the tiller amidships or point the rudder in the same direction as the motor.

When manoeuvring under motor, and especially in confined waters, it is essential to lower the centreplate about one-third (four turns on the winch) as the flat bottom on the Explorer will let it skid sideways with the plate up. Therefore it is a good idea to lower the plate as soon as the boat is launched and in deep enough water, and to keep it down until retrieving. If you need to execute sharp turns it is better to use the motor for steering, or even better use both the motor and rudder together - push or pull both tillers in the same direction.

When approaching a solid object, be it a jetty, the beach, or another boat, move as slowly as possible without losing steerage. Putting the motor into neutral will let you carry way and keeps the motor running and available if it is needed again. Using the rudder will ensure you have the most effective steering, as the motor mainly steers with the propellor wash over the skeg and at slow speed has very little steering effect.

Observe nearby moored or anchored craft to ascertain preferred direction if there are tide or wind effects, and approach in the same direction as the boats are lying. It is always best to approach at an angle as this will give you extra control - if the approach is too fast, steer away from the object, and if too slow steer towards the object. Your crew should be warned to never put a hand or foot between the boat and any solid object.

If you are planning to use reverse gear to stop the boat, make sure that the reverse lock-down is engaged before attempting this. Never aim at a solid object when using the motor to stop the boat - if the gear fails to engage or the motor stops there may be a crash. Aim the boat to one side so you have room to turn away if you are not stopping as planned.

HEAVY WEATHER SAILING

by Brian Adeney

[This article was inspired by a number I came across whilst going through back copies of 'Explorer 16 Newsletters,' as they were titled up to Number 58 of April 1986. Some of this article is based on those early ones, and the remainder comes from my own experiences].

The first principle to be followed is to be prepared for heavy weather - you should never be in a position where you are caught unprepared.

There are many things you can do to prepare:

- Make sure you have followed the checking and maintenance hints in publications,

- Check weather forecasts the day before and again on the morning before you go sailing,

- Let someone know where you are going and when you expect to be back,

- Set up your mast and rigging unhurriedly and check everything before leaving shore,

- Rig your mainsail reefing gear at least for the first reef,

- Insist that everyone wears PFDs, and

- Watch for warning weather signs such as approaching dark patches on the water, rain, threatening clouds, wind effects on other yachts, etc.

When you are out on the water and heavy weather conditions are threatening you should also:

- Make sure the rudder blade is fully down and the wing-nut tight,

- Lower the centreplate to fully down, insert the holding pin and put a locking pin through the end,

- Ensure the forward hatch is bolted shut (this should always be done at any time whilst sailing, or when motoring in any waves),

- Put in both stormboards, close the main hatch and secure it shut with a locking pin,

- Prepare your sails, either by taking up the flattening controls, reefing, or reducing to a smaller size, depending on conditions, and,

Make sure that all hands are suitably clothed and prepared.

Mainsail reefs should be put in for winds from about fifteen knots upwards. The usual situation is that the first reef reduces sail area by about 10% and the second reef by about a further 20%, so that you end up with about 2/3rds of the original area. At the same time you can also consider changing the genoa for the working jib. It is not recommended to change the genoa before reefing the main as this will give you a greater proportion of sail area in the after part and induce more weather helm than your Explorer has already! On the other hand, particularly when you are sailing in large waves and need power to go through them, it is better to reef the main early for balance and keep the genoa for power until you have to reduce the total sail further.

A full-size spinnaker can usually be carried up to about fourteen knots when reaching and perhaps a bit further when running, but at this time a change to a smaller spinnaker makes life much easier and it can then be carried for about six knots more wind speed. If no spinnaker is carried, the genoa or jib should be poled out on the opposite side to the main when running downwind as this will balance the boat and make handling easier. Needless to say, the crew should all be balancing the yacht to keep it as level as possible, with weight forward when going to windward but moving more aft when running. This is especially helpful when running down large waves to stop the bow being buried in the back of the next wave. Try to avoid running dead downwind in strong winds and heavy seas as this can put you in danger of an unexpected gybe or broach. A wind indicator of some kind at the masthead is essential for downwind sailing. Running under mainsail only will induce rolling from side to side and this will be difficult to handle. It is much safer to bear off to a broad reach than to sail downwind.

If it happens that you are caught out in severe conditions, head for shelter if it is nearby and you can still sail. If not, start the motor, then keep the head to wind and get the sails down as quickly as possible - if the foresail is securely furled leave it there and get the main down and secured. If there is not time to get it into the cabin, then fold and lash it to the boom and secure the boom on the starboard side (to keep the hatch clear). If it is a sudden blow don't panic but get things under control quickly - it will be five or ten minutes before the waves really build up. If you cannot sail or motor, then be prepared to anchor, especially if you are in danger of being blown onto a lee shore (in an onshore wind) or blown further out (in an offshore wind).

The sudden frontal changes often experienced on Port Phillip Bay usually drop in strength after about fifteen minutes, and if you can ride out the wind until then, you can often resume your course. This will also happen where a sudden blow is followed by rain, the rain will flatten the wind and waves quite quickly. On the other hand, strong winds will continue when rain is followed by an increasing wind.

Sailing is a great sport but there are dangers for the unprepared. Sailors who race will probably take more risks with the weather, but they usually have some rescue boats nearby. Cruisers, especially those on their own, have to be fully prepared to look after themselves. Everyone should be prepared to pull out if in doubt - there will be another day when you can enjoy your sailing.

EMERGENCY SITUATIONS

by Bob Couper

Preparations that will help you avoid one:

When reefed, put your stormboards in, close the hatch, and put a clip in the hasp-and-staple to keep it secure. Tie the clip to a lanyard fixed nearby.

Have an enclosed spot for personal items such as your wallet and boat papers so that they cannot float away. Mount a clip inside the cabin for your car keys and keep all your safety gear and valuable items like binoculars in a large gasket-sealed screw-top waterproof container such as a canoe drum. Press-to-close lids come off.

Secure your battery, petrol tank, anchor, and other heavy items so that they cannot come loose if the boat turns over. Tie-down straps with buckles, or common knots like reef knots can come apart when submerged. Put a pin in the centreplate hold-down pin to stop it falling out if you do go on your side.

Mark all loose boat gear and safety clothing with your boat name and number.

There are very few handholds on an upturned Explorer. Consider fitting some rope loops to the gunwales.

Leave a change of dry clothes in your car before you go out.

Make a list of all the equipment and gear you have in your boat. It is easier to make insurance claims if you know exactly what you had.

What to do if it happens and the boat capsizes:

Check that all crew members are present and holding on to something attached to the boat. Check that the petrol tank is secure and not spilling fuel.

If the keel has swung in, manoeuvre the hull across the wind so that it runs parallel to the wave crests. Wind and wave action will tend to rotate the boat onto its side.

Don't assume that rescue boat crews will know what to do. It might be their first time too. Try to communicate before anyone does anything. Make certain they know what you expect from them. Tell them to watch out for flotsam and to keep clear of rigging.

Get the rescue crew to lift the mast tip if they can, to help get the keel down. If the boat is upside down, pass a rope over the hull and around the mast step, and get the rescue boat to motor slowly into the wind.

As soon as you can, get into either the towed boat or the rescue boat. Don't let them tow you through the water, you will lose too much body heat and you will become exhausted from holding on.

Lastly, don't forget a letter of appreciation to the rescue crews when it is all over. No matter what may have gone wrong, you may be sure that they did their best.

3 - RACING

RACING

By Andrew Jeffs

Few sports give as much pleasure, competition, and relaxation as sailing does to those who participate, and few offer the chance for men and women, young and old, to compete against each other on equal terms. It is a timeless sport - one does not become less competitive as one grows older. In many cases, it is the reverse. Skills learnt years ago can be built upon until a high degree of skill is achieved.

Racing will help you develop these skills more rapidly, because in a race situation, you may be forced in the quest for that extra little performance, to do something that you would never have dreamed of doing if you were just sailing about. Racing will teach you to sail better, and thus get more enjoyment and satisfaction from all your sailing. It will improve your skills, and make you a more competent and confident boat-handler, which in turn will make your sailing safer.

When racing, you are trying to sail around a defined course in the shortest possible time. When cruising, you are more flexible about your destination and when you will get there, and you do not have the pressure to be there first. It is therefore unlikely that you will try all the sail and boat trim adjustments and techniques that are used when racing. On the other hand, you will find that if you get the racing bug, you will not be content to sit back, you'll want to trim the sails to get the telltales streaming, and when you go in the 'easy' directions you'll be looking forward to the chance to set, trim, and gybe the kite, whereas previously you'd have dreaded the thought.

Give racing a try, it can provide your sailing with a whole new dimension. Don't be put off by images of Dennis Conner types tearing around with fire in their eyes, Explorer sailors are not like that, they are just ordinary people out to enjoy their sailing. If you never give racing a chance, you'll never know what you're missing. It's not winning that is important, it's participating that counts. Give racing a try - you'll never know if you don't have a go!

Once you've made the decision to give racing a try, you will be faced with the quite daunting question of how to get started. There are a number of courses of action open to you. You could go down to your local yacht club and race with them or you could check with the Association to see when and where there is Explorer racing.

Alternatively, you could find out if any Explorers race at other clubs in your area, or contact another Explorer owner and ask them to come and race with or against you. This would be particularly good if you wanted to see how competitive you are, or if you are a little apprehensive about racing and want someone who has a common interest to provide moral support. It would be a good idea, before doing any of this, to familiarise yourself with the basic racing rules and procedures.

Once you are out on the water you should try to match your speed with another Explorer or a boat of similar speed (CBH ratings are a good indicator). If you find you are being left behind, as is likely, it may be a good idea to cut a corner off the course and sail with the same boat again until you can match its speed. Look at how the other boat is trimmed and try to produce something similar. Keep experimenting until you can match the other boat. Never give up! Once you have managed to obtain similar speed, it could pay to mark your sheets and other lines, so you have a reference point for the future.

After you have finished your first race it is time to start reading books like this and trying to find ways in which you can improve, remembering them, and trying them out one by one the next time you go sailing. It is no use making lots of changes at once because you won't know how each individual change affected your speed. If you keep experimenting you will slowly but surely improve, one day you might even win the Championships!

Remember, success is 10% inspiration and 90% perspiration.

SAILING TO WINDWARD IN HEAVY WEATHER

by Alec Campbell

These are general principles that work well with our sails and our (lightweight) crew. They would be a good starting point for most Explorers.

To go fast to windward you need:

- enough sail pressure to need the mainsheet traveller set halfway from the centreline to the leeward stop - in the average of the wind,
- the mainsail nice and flat - especially at the top,
- the jib luff nice and tight with the standing forestay not under tension. The jib should be sheeted in to just touch the leeward shroud (on a Mk2) unless it's very rough,
- the crew out as far as possible, and
- sail with the sails full - don't keep luffing up.

So how do we achieve this?

The Explorer 16 is basically rigged like a yacht with one vital difference. It has a standing forestay, but there is no backstay. This means that the tension of the jib luff is created by the downward pull of the four-part mainsheet, but this won't happen if the standing forestay is shorter than the jib luff.

So when you set up the boat on the beach don't over tighten the standing forestay, and make sure that the mainsheet is slacked off when tightening the jib halyard. Haul up the jib halyard until the standing forestay is real floppy. We have a shock-cord thing and a rigging screw on the forestay that acts as a good indicator when the rigging screw flops back. It's surprising how much slack you need in the forestay - obviously the jib luff stretches and the mast compresses when the mainsheet is really hauled on.

A problem arises in a race when the wind comes up after you have been sailing in light winds with a slackened jib halyard. To retension the jib luff while on the wind, the main sheet must be freed at the instant of hauling up the halyard. You may also have to free the jib sheets, or luff up. Our boat has a 5:1 jib-halyard system, which helps.

Accurate sheeting of the genoa or jib is essential. We sheet the genoa with the sheet travellers right aft. We still use the standard Explorer 2:1 jib-sheet purchase system. Although it is a fag hauling in that rope, it gives you enough power to adjust the jib without

having to luff up.

To flatten the main and keep the fullness midway or toward the mast, the luff of the main has to be kept tight. Again, when hoisting the sail - probably at sea - make sure that the main sheet is slackened well off, and that the vang is slackened. If you don't, the leech will go tight first, and you will end up with the luff slack and a baggy sail. The outhaul should be hauled out reasonably tightly. As the wind rises, keep hauling down on the mainsheet and let traveller down to cope. This automatically keeps the jib luff tight and it bends the mast back, which flattens the main. If you pull down really hard it will particularly flatten the top of the main and let the leech curve away, which can help a lot.

Obviously, if you have to free the main right off - to avoid capsize - then all this stops happening. The main flogs, the jib luff sags, and the sail becomes full, all of which prevents the boat from pointing. Our boat has a 3:1 main-halyard system.

Another evil that arises from a slack jib-luff on a strong day is backwinding of the mainsail. The luff sags to leeward in the middle of the jib, thus increasing its angle to the wind, and the luff also moves back causing greater camber because the leech is unaltered. The combined effect deflects the wind into the lee side of the main. This slows the boat and tends to give a lee helm effect.

To Reef or Not?

Try to be afloat early enough to allow reefing before the start if required. If you can't control the boat with the traveller about halfway down then you have too much sail up, and you won't even be able to use it on a reach.

When the mainsail is reefed - especially double-reefed - there is less bending of the mast as you haul on the main sheet. This becomes a problem if the middle of the mast ends up bending back into the sail making it too full. If your boat has a topping lift you can haul this on a bit, and this will lever the top of the mast back, just like a fully hoisted main. This does need some judgement - too much topping-lift tension will let the main twist and have a floppy leech.

Sailing Technique

Obviously, you have to cope with stronger gusts from time to time. Remember that when the wind speed goes up, initially the boat speed does not, it basically stays constant. This means that the apparent wind on the boat moves more towards the beam. So let the boat round up a bit while easing the traveller down to maintain balance. This way you make up ground to windward. The Explorer 16 is very good at this. In big seas try to get into a rhythm for best

speed and pointing. As the boat rises to a sea it slows down slows down and the mast rocks back, both of which change the apparent wind towards the beam. There are also short-time movements of water as the wave passes. The opposite happens as the boat plunges down the back of the wave. So sometimes you can point up as you rise and pull away as you descend. I admit that it has to be an instinctive thing, but at times it works wonders.

Don't overlay the windward mark. As the wind speed rises relative to boat speed you can theoretically point higher. This really does happen provided that you don't have other troubles as you go!

Tactics

Heavy weather is not the time for smart, sea-lawyer, close manoeuvres at buoys or at the starting line.

Boats can broach and even go about when out of control. Try to find some open space and get settled down. I would prefer to be last over the line on port tack than in the middle of a pack of fast-moving boats on starboard.

Good luck.

SPINNAKER TALK

by Andrew Jeffs

Poling-out the genoa can nearly be as fast as flying a kite in some conditions, but it isn't half the fun. Getting the most out of a spinnaker is an art. Of all the sails on an Explorer, the spinnaker is the one that needs the most fiddling. Strangely enough, most skippers tend to do the reverse, continually fiddling with everything else, but leaving the spinnaker to hang out unattended like wet washing on the clothes line. If you're one of the latter, keep reading.

Most skippers just pull the spinnaker up hard against the mast pulley and leave it at that. However if you're on the run, in smooth water and it's not blowing a gale, letting the halyard off about half a metre can make the spinnaker more efficient by getting it out from the wind shadow of the main and the mast. But if it's whisper quiet, blowing a gale, or the seas are lumpy, up against the mast will keep it steadier and more stable.

The pole position is critical to get optimum drive. Start off with a pole height that puts the tack and clew at the same height above the deck. The aim is to get the luff and the leech with the same amount of twist. This should make the two halves of the spinnaker the same shape. Raising or lowering the pole moves the drive in the sail backward or forward respectively. Moving the drive forward helps reduce the heeling forces when reaching. The pole position needs constant attention as the boat is borne away or headed up or if the wind shifts or if your boat speed changes.

The spinnaker sheet requires virtually constant attention over all other controls except the tiller. Adjust it so the luff (front edge) continually wants to collapse (like the crew). When in doubt, ease the sheet.

When reaching, you need to get the spinnaker as flat as you can. I've even known skippers to put the sheet purposely over the end of the boom to keep a wide sheeting angle. If you do this, be careful it does not get caught there. The one thing that does pay off though, is constantly letting out the sheet to see if the luff will collapse. As the boat picks up speed, pull it in and as the speed drops off let it back out again. But most of all, keep adjusting it.

Next time you race, have your coffee or tinnies on the beat. When the offwind leg comes up, start fiddling like Nero to make the kite really work. Success won't come easily as it takes practice to predict the movements. The better you do this, the better it will all go together. It's a great feeling when it happens.

SPINNAKER WORK

by Andrew Jeffs

If it is done properly, setting the spinnaker is really quite an easy task to accomplish. It is only when it is not done properly that the 'fun' starts, and people get into trouble. Hopefully this article will give you some ideas that will improve your spinnaker handling.

On our Explorer 'Resolute' (number 59), we used a dinghy-style system, employing a spinnaker basket on the bow and a boom-carried spinnaker pole. Carrying the pole on the boom really makes setting the kite very quick, efficient, and dead easy. The topping lift and downhaul remain connected at all times eliminating the fussing around caused when the pole is carried in the cabin. We felt that we had a real advantage over many other boats because of our spinnaker-handling ability, which often allowed us to gain large amounts of time over the majority of the fleet.

To set the kite, I would first go to the bow and unclip the halyard from the basket, trying to be quick to keep weight off the bow as much as possible. I would then go back to the cabin top, grab the brace, and put it in the front beak of the pole. This was done as soon as we knew we could lay the windward mark. The skipper would then pull the topping lift from where he was helming, thus raising the pole so that I could simply guide it onto the mast fitting.

As we rounded the windward mark, the skipper would bear away onto the new course, letting out the main at the same time as I let the genoa off. I would then start hauling on the halyard as the skipper pulled the brace back. Both brace and halyard were marked, so we knew when we had them in approximately the right position. The brace was always put under a hook on the sidedeck just forward of the cockpit coaming, to keep downwards pressure on the pole as well as the luff of the kite. It was then just a matter of pulling in the sheet to set the kite. This was all accomplished in about fifteen seconds maximum. A point to note: it is always wise to ensure the spinnaker is not tangled up in the basket and that the sheet is free to run when you're setting otherwise the spinnaker will fill before the halyard and brace are on, making the task all the more difficult. If you should get into this situation, the best idea is to luff up into the wind until the kite starts to flog, taking most of the pressure off the sail.

We would normally reach with the headsail up unless it was very light and we were having trouble keeping the kite drawing. When it was blowing hard, keeping it up allowed us to luff up with the kite flogging if the reach was very tight, the wind very strong in gusts, or

if we were trying to prevent another boat going over the top of us.

When gybing, we used the normal end-for-end gybe, there being no other suitable way in an Explorer. Before beginning the gybe we'd take the brace out of the side hook so it would be free for the next leg, and if conditions allowed we'd put the old sheet/new brace under the hook on the other side. It was then a case of getting up to the mast, taking the pole off and transferring it to the new brace before flicking the old brace out and putting the pole on the mast. Note: the beaks on the pole should face upwards, making it easier to get the old brace out. As I was doing this, the skipper would be squaring the boat up, allowing the new brace to come within my reach as well as controlling both sheet and brace. We used continuous sheets that made this easier. Once I was back in the cockpit we'd gybe the main over and I would begin trimming the spinnaker again. With a bit of luck, the kite would remain full throughout the procedure.

We then come to the spinnaker drop. We had an unfortunate experience at one Championship series where we were leading by quite a margin when a problem at the spinnaker drop lost us about ten places. That shows the importance of a good drop! What happened was that we were about to drop the kite and I was on the bow ready to pull it in. However, I couldn't quite get a good enough grip on the kite to pull it down which caused us to go straight past the leeward mark.

This caused some discussion about our spinnaker drops, I can assure you! What we came up with was a retrieval line as used on many dinghy classes with spinnaker launchers. This was just a long thin line attached to the spinnaker basket at one end, and to the centre of the kite at the other. We made sure there was plenty of slack so that we didn't rip the kite in half or the basket off the pulpit. Using this it was a simple matter of just pulling on the line as the halyard was released, making the kite collapse in the centre. Then the kite was simply stuffed into the basket, leaving the clews and head uppermost ready for the next set and the halyard cleated off in the basket, and the pole was then put back on the boom after freeing the brace. It was then off to the windward mark where the whole process started again.

Setting, gybing, and dropping the spinnaker are really not as difficult as you may think. They just take lots of practice and a sound, well-rehearsed system. I hope this article has given you some ideas about your spinnaker work, now it's time to get out on the water and try them.

RACING TACTICS

by Bob Couper

In any after-race discussion, you will always hear from those who did not figure in the results 'I didn't get a very good start'. It's hard to give hints on improving your starting technique because everyone can make a good or a bad start. But there are a number of things that skippers must keep foremost in their mind and a number of decisions that must be made prior to the starting time.

Before the Gun:

Decide whereabouts on the line you are going to start and on what tack.

Decide on a strategy and keep to it.

Keep your eye on your major competitors and the aggressive starters in the fleet.

Main Objectives:

To cross the starting line within a few seconds of the start gun.

To cross the start line with reasonable boat speed.

To have space to leeward to use to gain boat speed.

Not to be dictated to by windward skippers.

Not to be jammed against the start boat.

The Start:

Pick a spot from where you will begin your run to the line.

From this spot know how long it will take you to reach the start line.

Do not get too far from the start line - if you're not there, you won't start on time.

Force the windward boats onto-the-wind to create room to leeward.

Force the leeward boats to windward before the skipper gets an overlap.

Do something about the 'bargers' in the fleet - every fleet has them.

On the Course:

With boat-speed and clear air, you can then concentrate on sailing the correct course to the first mark. Point as high you can without losing boat speed so that those behind will have to slow their boat in your disturbed air, or ease off the wind to gain boat speed and cleaner air.

Covering is out - there are too many boats to worry about in the early part of the race.

Try to get to the favourable side of the course - if there is none, tack up the rhumb-line on the shifts. If you have reasonable boat speed, you won't be far from the lead at the first mark.

Plan your rounding tactics well in advance. Tack well before the layline, keeping away from other boats as much as possible, especially the procession on starboard tack laying the mark.

Do as much preparatory work as you can to organise the spinnaker hoist. Clean air and full power off the wind will create a break on your nearest opponent.

It all begins with a good start. Be aggressive - be there on time - hit the line with as much speed as possible, and try to dictate the terms on the windward leg.

HOW TO IMPROVE YOUR BOAT SPEED

by Bob Couper

(Presented at the Explorer 16 Tuning Clinic, May 1992)

Winning Races

Winning races is mostly a result of getting the right combination of boat speed, handling, and tactics working for you.

In general, I estimate their individual contributions as:

Boat Speed	Handling	Tactics
10%	30%	60%

Good boat speed and handling allow you to take advantage of the opportunities provided by your tactical plan. Boat speed is a combination of rig power, losses for drag, the weight of the boat (power/weight ratio), and your sailing ability.

Boat Speed

These notes should help you get your boat speed up by making the best use of the power available in your rig.

The first step in the process is to get your boat weight down as low as possible to optimise the power/weight ratio. Strip everything out of the cabin and lockers and only put back essential items. This action commonly results in a considerable weight reduction and a subsequent increase in the power/weight ratio.

To increase it further, you now need to tune the rig by following these steps:

- (a) Centre the mast.
- (b) Set the mast rake.
- (c) Adjust the genoa halyard tension.
- (d) Check the genoa sheeting position
- (e) Adjust the main position.

(a) Centering the Mast.

With the boat on the trailer, use supports (jacks) at three points on the trailer to get the boat level. Check by using a spirit-level along the top of the centre-case for fore-and-aft, and a plank across the cockpit coamings for athwartships. Raise the mast. While the mast is vertical, check that it is straight and adjust by using the diamonds (if fitted).

Next, centre the mast from side to side by measuring with the main

halyard to the gunwhale at each of the side-stay chain plates and adjust the turnbuckles as necessary. Check the mast for vertical (as viewed from the bow or stern of the boat) by using a spirit level on the side of mast.

(b) Setting The Mast Rake.

When the mast is centred, the correct fore-and-aft rake is obtained as follows:

Attach a string line to the main halyard.

Pull the string to the top of the mast and attach a plumb bob at the other end of the string a few inches above the deck.

Adjust the forestay tension until the required amount of rake is obtained. Measure the distance from the string to the aft edge of the mast step. Use this as your reference point. Adjust the tension in the rigging wires until they are tight and the rake is right.

The final desirable rake depends on the sail shape and cut which will affect the helm balance. This will have to be obtained by experience on the water.

When pointing to windward in five to eight knots of breeze, with smooth water and with the boat balanced and the sails trimmed correctly, the force in the tiller extension should be almost neutral (extension should lie in the hand without you having to pull or push it to keep the boat pointing to windward).

If you have weather helm (you have to pull on the extension to stop the boat veering to windward), reduce the mast rake. If you have lee helm (you have to push the extension to keep the boat from falling off the pointing angle), increase the rake.

Keep notes on any changes you make to the rake measurements.

(c) Adjusting the Genoa Halyard Tension.

The correct shape is indicated by all telltales breaking simultaneously.

Luff tension. The forestay should be tightened first. Then tension the genoa halyard until the genoa luff is firm. Do not over tighten. When the correct tension is applied, the forestay will sag a little as the gusts hit, and you will power up the sail and quickly increase the boat speed at the expense of a small amount of pointing ability.

Excessive sag will result in poor pointing, good speed, excessive draught with the drive too far forward, and leech hook that chokes the slot. To correct, increase luff tension.

Excessive luff tension will result in poor speed - high pointing, shallow draft, flat entry with drive too far aft, and the slot too open because the leech falls away. To correct, decrease luff tension.

The optimum is somewhere between the two alternatives.

(d) Checking the Genoa Sheeting Position.

Too far aft results in excessive twist with the top stalled to windward, the bottom stalled to leeward, and the slot too open at the top. Correct by moving the sheeting position forward, increase the sheet tension, decrease the mast rake, i.e., reduce the twist.

Too far forward results in the top stalled to leeward, the bottom stalled to windward, the slot choked at the top, excessive backwinding of mainsail, and poor acceleration. To correct, move the sheeting position aft, decrease the sheet tension, and increase the mast rake, i.e., increase the twist.

Too far inboard results in severe backwinding of the main in fresh breezes (slot too narrow), poor boat speed, high pointing, and the inability to match flows over main and genoa. To correct, move the sheeting track outboard.

Too far outboard (picked up by the inability to back-wind the main no matter how hard you pull on the genoa sheet or move sheeting position forward to close the slot) results in a high boat-speed and poor pointing ability. Correct by moving the sheeting track inboard.

In general, close the slot between the genoa and the main as the wind strength decreases (move the sheeting position forward), open the slot as the wind strength increases (move sheeting point aft). Backwinding of a correctly set main indicates that the slot is too narrow. Adjust the slot to backwind the main, then open it till minimum backwinding occurs with all telltales flowing. Number the sheeting track adjustment-holes so that you can repeat the settings.

(e) Adjusting the Main Position.

The position of the gooseneck on the mast track should be adjusted so the sail peak is at the black band at the top of the mast. In strong winds it may pay to lower it as well as reefing the main to get the centre of effort as low as possible.

Sail Trim

Converting potential power into actual power requires getting your sail trim right. It pays to know your sail trims for three conditions:

- pointing high,
- normal, and
- maximum speed/power.

When racing, set the boat up for 'maximum speed' at the start and then adjust for 'normal' set after about three minutes. The 'pointing high' set is used to point higher in a luffing match or to pinch to get around a buoy.

In light airs and lumpy water, set the rig up for 'maximum power'. Set the genoa leads so the genoa telltales break evenly with those on the main when the sheet leads are around two finger-thicknesses from the side stay. Set the genoa halyard to give a soft luff to generate as much power as possible without losing pointing ability. Ease the foot of the main until it just crinkles along the foot. Let off the Cunningham until the main crinkles up the luff.

In these conditions, the mainsheet is not sheeted on hard (just inside the leeward quarter) and the vang is released. As the wind strength increases, increase the tensions along the foot and luff of the main to flatten the main and move the genoa sheeting position aft to open the slot between the main and the genoa (normal set).

We concentrate on getting clean flow off the main by keeping the leech tufts streaming. If backwinding occurs, we reduce power in the main (flatten it) by increasing the foot and luff tensions. In general, we set up the genoa first and then adjust the main to suit for maximum power.

For occasions where we have to point high, we flatten the main by pulling foot and luff tight, and increase the genoa sheeting tension. In smooth water, increase vang tension to reduce the twist in the main.

Sail Controls

It is important in a race that you don't spend all your time fiddling with the sail settings. The gain in speed is seldom enough to pick up what you lose by not concentrating on keeping the boat sailing as fast as you can (boat handling) and what's happening around you (tactics).

To reduce fiddle time to a minimum, place all the sail-shape controls in a position where they can be easily and quickly adjusted. In general, this means leading them all back to the cockpit at the cabin roof. Fit the cleats serving the control lines with guides except for the spinnaker halyard which is left open for 'quick dumping' purposes. Mark the control ropes for easy setting at their normal position.

Drag Losses

Now it's no use having all this power working for you if you lose most of it through drag. Drag losses can occur above or below the waterline.

The first thing to do is clean down the hull and make sure it's as smooth as possible below the waterline. Particular attention should be paid to the first metre of surface from the bow and the last metre before the stern. All the good books tell you that a matt surface has less drag than a polished surface. So think twice before you start applying silicone polish. It's better to apply a bottom wax like 'Easy On', which gives you a matt-type finish and prevents marine growths from fouling the surfaces if your boat is in the water for any extended period.

Next look at the centreplate and rudder blade. Clean the centreplate and paint it to prevent rust nodules from disturbing the streamline flow over its surface. Streamline flow can induce lift, so it's worth chasing.

Check the rudder blade for straightness. If it's twisted, get a new one. If it's OK, rub it down with wet-and-dry, fill up any depressions with filler (like where the outboard prop hit it last year), and give it many coats and many rubdowns with wet-and-dry treatment. Finish off with fine wet-and-dry to get a matt finish.

The keel slot is a major source of drag when the centreplate is down. That's why the hot dinghies fit strips of material along the slot to close it up. However, on a trailer-sailer they can be more trouble than they are worth.

Other sources of hydro-drag include:

- ropes dragging in the water,
- centreplate cable (should it be tight or loose?),
- sea weed, plastic bags, etc., catching on centreplate, centreplate cable, or rudder blade, and
- outboard not clear of the water.

To keep air drag to a minimum, keep your mast rigging as clean and simple as possible and sit close together when going to windward (preferably shielded by the cabin).

Going Further

After all of this, it is time to improve your boat handling and tactics, because this is where the real gains can be achieved by the average weekend sailor. Good luck!

RACING IN LIGHT AIR

from Bob Coate with help from US sailmaker Greg Fisher

Light-air racing gives plenty of frustrating moments but it also gives more than the usual number of chances to get ahead of the fleet. A well-sailed boat can develop a great speed advantage, at times it can go up to twice as fast as other competitors, so it is not unusual to see the largest race-winning leads developed in the lightest of conditions.

Preparation

Drop some of the purchases out of the mainsheet, 2 or 3 to 1 should be ample for light air, in fact if the race is definitely all in calm conditions, even 1 to 1 will do! Reducing the amount and weight of rope in the sheets makes sail adjustments easier and allows the sails to set better. Good wind-direction indicators are essential. Apart from vanes mounted at the masthead, wool tufts on the shrouds or, in drifters, even incense sticks taped to the shrouds could all be needed. You will need telltales on the sails, a minimum of one on the genoa one third up the luff and about 600 mm aft. Similar on the main but about 20 to 30% aft of the luff plus at least two streamers at the leech at about the 1/3 and 2/3 positions. Use pure wool, not cassette tape, as this will stick to the sail with static electricity.

Upwind

While you might think that a very full sail would be needed to give the boat the power it needs, in most cases a flatter sail will perform better. The theory is that a full sail needs more wind-bending, that is, the air has to curve around the sail more than it does on a flatter sail, which gives the airflow more of a chance to break up and detach itself from the leeward surface of the sail. A flatter shape allows the airflow to remain attached, so keep the mainsail foot tensioned out fairly well, and put some bend in the mast to flatten the upper half of the sail. Using the Cunningham eye downhaul will also help move the draft in the sail aft a little and open the leech. You may need to experiment with this as sometimes the Cunningham can be both a help and a hindrance in light air as it also puts more 'round' in the luff area where it is not wanted.

The slot between the jib and the main is vital in light air. No way do we want backwinding of the main, and because the main is also set further out to leeward than normal, the slot needs to be opened out a little, not closed up. The leech exit from the jib needs to be not only open, but also fairly flat. By having a fairly flat mainsail the luff area is pulled in away from the jib leech thus assisting in keeping the slot open.

Keep the jib halyard tension fairly 'easy', too much tension will make the luff entry too round, which produces a disrupting effect on the airflow right where it first reaches the boat. (Note the comments above on the use of the Cunningham - a similar situation.)

The mainsail is normally trimmed for moderate winds so the upper batten is parallel to the boom when sighted from underneath. In light airs this is virtually impossible, due to the weight of the boom and sheet hanging on the leech and causing it to hook up to windward. Although this hooking looks bad, it can benefit by giving the mainsail shape a bit more round in the after sections, which in turn will induce a little weather helm and helps to get optimum pointing ability. In light conditions, the upper batten should be set parallel to the centreline of the boat. Often it will be necessary to sheet the boom out one-half to one metre from the centreline (to leeward) to achieve this. Don't be afraid to try it, it works on many boats so why not on yours? Similarly, the use of the traveller plays a part. This should set up to windward of the centreline, giving a partly horizontal rather than a vertical pull on the boom. This allows the boom to lift easily with each puff and so allow the main to produce maximum drive. Of course, as soon as the breeze picks up, you need to revert to traveller settings to leeward, and upper batten trim to parallel to the boom.

How do you know what is 'light air', and 'when the wind picks up'? Well, that's a tough question, each boat will have a different sensitivity to winds of low velocity. Different factors such as sails (weight, cut full or flat, large or small seams, batten tension and flexibility), windage caused by rigging, hull/cabin configuration, crew positioning, and the design of the foils - the keel and rudder - all play a part. Generally though, I'm talking about 'light airs' as from catspaws up to around four knots, and 'when the breeze picks up' as to about five or six knots and beyond. Remember we are only discussing light-air sailing. I think that once the breeze is fairly steady at eight to ten knots we have fairly predictable conditions where more normal techniques apply.

Downwind

Again, you might think that a spinnaker would be an advantage in light air but it is not always so. At any point, such as reaching, where the spinnaker should be developing airflow across it, its full and baggy shape will actually slow the boat down. Of course, in a dead run any increase in sail area will help, but often this is the only point of downwind sailing in light airs where a spinnaker is helpful.

The mainsail shape should be changed back to a fuller configuration: ease off the foot, take out the mast bend, and ease any other

tensions used upwind. For a dead run, make the main as baggy and full as possible, and have a crew member take the weight off the leech of both main and jib if possible.

Boat Handling

Good teamwork is just as important as sail trim. Since the boat moves slowly in light air, any crew movements must be made slowly and deliberately to avoid any motion likely to disturb the precious flow of air over the sails. Boat heel can be critical in steering, by careful adjustment of heel you can avoid using the rudder (almost!) which acts as a brake. Upwind and down, heeling to leeward will produce a tendency to point up to windward and, conversely, heeling to windward, particularly when running, will point the boat to leeward. Try it sometimes in light air.

Your conventional thoughts on pointing upwind should also be put aside for the light stuff. Don't fall for the trap that because there are no waves you can point high, or higher than when in waves, it doesn't work that way! What happens is that although it may seem that you are pointing high, the foils are stalled and the boat is going sideways. The answer is to bear off - at least more than you think you should and then add five degrees to build up enough forward motion to get those foils working underwater for you. Although it will seem that you are giving up distance to boats pointing higher than you are, the speed that you gain through the water will put you ahead.

Tactics

Boat speed in light airs is the all-important thing. If possible, avoid close encounters and tactical battles with other boats, go for clear air and search for those elusive patches of stronger breeze. At the start, it is absolutely vital to have maximum boat speed and clear air. Even a start at the leeward or less favoured end of the line is preferable to getting mixed up with disturbed air and unwanted course alterations amongst the other boats at the favoured end. Because of the importance of clear air and top speed, avoid the middle of the course and the dirty air that boats ahead and to weather may provide. Look up the course, search for new wind, and sail towards it. If you have identified it as true 'new' wind, you will gain even more speed over the others once you reach it. As soon as the breeze builds a little and the boat speed increases, it should point closer to the wind. Tacking angles are not always changed by shifts in the wind direction, but can be affected by wind velocity. Increased velocity (even two or three knots more) can bring the apparent wind further aft and this combined with more lift generated by the foils as the boat goes faster, can result in the sensation of a lifting wind shift. The converse is also true. When wind velocity drops, it appears as if you have

struck a header. The temptation to tack on this false header should be resisted, as the same effect will be found on the other tack, all due to a drop in the wind velocity.

Finally

Don't let light-air racing fool you. It is a real test of skill, and opportunities abound to pull out a big winning margin. Be smooth, but be aggressive; keep the right mental attitude and go for optimum boat speed and clear air. Try tuning up with another boat in really light conditions, and see how you can improve your sail settings and boat speed. You may be surprised!

THE CHAMPIONSHIPS

by Andrew Jeffs

One of the highlights of the Explorer sailing calendar is the annual Victorian Championships - not only do they offer a great opportunity for some close and exciting racing but also the chance to meet new people and visit and enjoy new places.

The championships are normally held at different locations from time to time so there is always something different to experience. One year you may be sailing in the tricky tides and shoals of Sorrento, the next you may be enjoying the challenge of lake sailing and the sunshine of inland Victoria. There is always something new, but one thing that does not change no matter where the championships are held, is the atmosphere, it is always great. Most crews camp with each other near the club which makes for a very friendly atmosphere. The racing, although always competitive, is not cut-throat, and at the end of the day everyone is willing to sit down and discuss the day's events. Everyone is made to feel welcome and if someone has a problem there will be no shortage of help or advice.

The racing is competitive for everyone and is always carried out in a sportsmanlike manner. All levels of skill are represented and it is not unusual to see closer racing at the rear of the fleet than amongst the leaders. If you're not in the running for the overall prize, there are also handicap prizes from which the overall place-getters are excluded, so there are a total of six prizes to be won. The handicaps are based on past experience and race performance and are revised after each race, so everyone has a chance.

Above all, the championships are a great place to learn, as with a number of races held on different days, you will not only pick up ideas from others, but you can put them into practice in the next race. Over the series you will improve your sailing skills, share many experiences with others, and make a heap of new friends. If you haven't participated before, why not come along to the next one? Maybe you're not really into racing but you can still come and sail around the course. It's not winning that really matters, it's competing.

WINNING WAYS

HOW WE WON by Gordon and Lois Horner

Being fortunate to win the Victorian Championships this year (1985), I believe I should make a contribution to the Association by trying to explain what we must have done right.

Although the local boats performed well, I do not believe local knowledge was a significant factor. The winds were mainly ten or more knots and in these conditions, the wind direction remains comparatively constant, that is for inland waters. If the wind had been light, say up to five knots, then it could have affected the results. But if you look at the results of Heat 4, this did not happen. There goes another one of my theories out with the wind.

Probably the most important factor was that we have good class racing each week. When you are competing against four or five boats of the same class, you quickly learn you cannot afford to make mistakes. When I started sailing, I was told it is not what you do right that wins races, but what you do wrong that loses them. I have never forgotten that advice.

'Ichiban' is a basic boat with no go-fast gear such as travellers, etc. My wife Lois, who crews, said we did not need any extra bits because from past experiences on my single-handers, she said I spent more time fiddling instead of sailing. I hate to admit it but she could be right, but it is not much fun now walking out of a yacht shop empty handed.

During the series, we used the large jib and applied plenty of tension on the luff, so much so that the forestay was always loose. The sail was trimmed till all the tufts flowed, then the main set to suit. The jib cleats were right forward and were never adjusted mainly because I did not seem to get time.

I was tempted to use the spinnaker but the only way I could get Lois to crew, when I hinted I was going to buy an Explorer, was that it was not to be used for the first season.

We were novices at sailing an Explorer, and having put it on the water in October, our aim in the series was to try to finish in the first half. When we won the first heat, we were surprised and extremely happy, and would have enjoyed the rest of the heats irrespective of our placings. To win the series far exceeded our expectations.

I have sailed in numerous titles both on the bay and on inland waters. Usually there is a win-at-all-costs attitude which, to me,

takes a lot of pleasure out of the racing. At Nillahcootie, the keenness and competition was there to achieve the best result possible, but not the aggression. As newcomers to the Association we enjoyed the series, but more importantly the manner in which members competed.

TITLES TIPS by Bob Couper

A common question I was asked after the Victorian Championships at Sorrento (1984) was how we managed to come second without a spinnaker? Personally, I'm still trying to work that out! It would be good for the ego if I could honestly say it was through superior sailing, etc. but the truth is, we made many mistakes. The difference was we made less than the others.

Firstly, few skippers seemed to have prepared their boats by removing all the unnecessary items an Explorer seems to collect with the passage of time. We took out around 20 kg of odd things and we could have removed even more. Take the water-sodden carpets in the cockpit for instance. We were also carrying far too much fuel (over the regulation quantity) and when we drained the hull at the end we were horrified to find around ten litres of water in the hull which up to then hadn't leaked before.

We didn't have any go-fast gear other than a boom vang, which we were still trying to work out what we should do with on the beat, so we didn't waste time fiddling during a race. Others with all the goodies spent far too much time fiddling instead of sailing. But by far our biggest weapon was local knowledge about the strongest tide flows, and the local wind patterns, which meant that we didn't make mistakes by being where we shouldn't have been.

We anchored twice during the first race when we detected that the boat was moving backwards, even though we appeared to be going forward from the stern wake. Boats around put up spinnakers and we still pulled away from them! Going backwards caused the apparent wind to swing behind them and fill their spinnakers. By the time the wind came in again, we had a handy lead.

The tide effects were particularly strong at some of the marks. We made up many places repeatedly at one mark because we know that the tide effects cause most people to overstand it.

Because of the wind directions, strengths, and courses we weren't seriously disadvantaged by not having a spinnaker. In the strong winds most people chickened out from flying them anyway.

In those conditions, poling out the genoa meant that we lost little on the top boats and we left the others for dead when they had spinnaker trouble.

One thing we did change before the series was the headsail sheets. They were double purchase and we changed them to single. This made an enormous difference to our tacking speed. As a result, we sailed the boat like a dinghy by tacking on shifts. Anybody who didn't was a dead duck. This particularly applied to inshore legs where the wind switched around everywhere.

Sailing in the Championships allowed us to see how others trimmed sails and sailed their boats. It gave us an excellent chance to fiddle with our sails and see what happened. We learnt that it definitely paid us to set up the genoa and then adjust the main till we got rid of weather helm. Normally, in medium to light winds this meant little luffing of the main. In heavy winds though, the main was seriously back winded even if we opened up the slot. But despite its looks, the boat went to windward better. This taught us to go by feel rather than looks.

Lastly, I can't believe the low standard of starts. Admittedly there were some questionable start-boat signals but people just weren't around when the gun went. If you give away huge leads (in one race the fourth boat over the start line was six minutes late) you don't give yourself a chance! Boat speed means little under these circumstances.

THE BEAGLE SPEAKS by Alec Campbell

A few tips on how we won the Championships in 1994.

The Boat

We try to keep weight out of the boat, but she is not stripped out. We always sail with a set of heavy storm-sails on board and a gallon of water and a battery for lights, etc. We do use a small 11-litre fuel tank. We are very careful to avoid excessive weight at the stern. The fuel tank is stored under the cockpit seat right forward.

The Rig

The sails are all by Douglas of 'cruising' cloth. The spinnaker is deliberately cut flatter than most - it's a reaching spinnaker. There is a 5:1 pulley purchase on the jib halyard, to make it easier to pull it up hard in strong winds when changing to a smaller jib, etc. The bottom of the standing forestay is secured by a rope 4:1 handy-billy. A shock cord and hook embrace this handy-billy to stop the forestay flapping around when the jib is hauled up.

The Centreplate

This is always fully down, with a special longer locking pin that is secured with a wire safety-pin on the other side of the case. The hatch is always shut and pinned when racing. (This encourages more courageous use of the spinnaker!)

Spinnakers

On a proud run there is very little difference between the speed of an Explorer with a poled-out jib and one with a spinnaker - unless the wind is very light or very strong. But on a reach, with a flattish spinnaker, an Explorer will plane in winds around fourteen knots or greater, and race away from boats under main and jib. To achieve this happy state of affairs requires the crew to swing out hard, with their feet in the toe straps. It is also essential to move your weight right aft to get the boat on its best planing lines. The spinnaker should be sheeted well aft, with pole on the forestay. We normally furl the jib when the spinnaker is set as it improves the skipper's view and makes it easier to gybe the spinnaker. Under these conditions the boat is actually quite easy to sail - there is very little weather helm - but the crew must be very quick to free the spinnaker sheet in a gust, and you are often sailing with the main free at the end of the traveller.

On a light day this type of spinnaker can be set with the apparent wind well forward of the beam by lifting the end of the pole up, which flattens the sail even more.

We hoist and lower the spinnaker directly into the cockpit, into a big bag with a loop in the top. This lets the crew back each other up and keeps their weight to windward. There are usually four reaches and only one run in a race, and that is why we use a reaching spinnaker. A full spinnaker is useless on a tight reach.

Beating to Windward

The Explorer has no back stay and so the jib luff is kept tight by the downward force of the mainsheet, but this won't happen if the standing forestay is tighter than the jib luff/halyard. So, on a hard day, pull up the jib halyard until you feel the standing forestay flopping loose. As the wind blows harder, drop the traveller down to leeward and pull the mainsheet on harder and harder. This tightens the jib luff and lets the boat point well, reduces the overturning load, and greatly reduces weather helm. We also find on a hard day that the main halyard should be up really tight (to produce a crease along the luff until the sail fills) and so should the outhaul. In these conditions we sheet the jib in till it touches the shrouds.

On a light day the opposite applies. The jib halyard is slackened until it sags about 100 mm sideways from the standing forestay. If it is

sloppy, ease the jib sheet till the sail is 25 to 40 mm outside the shroud. The main halyard and outhaul are slack, and the traveller is right up to windward, with the mainsheet slacked off to keep the boom just to leeward of the centreline. This achieves the correct twist in the main (telltales streaming) and avoids flattening the jib.

When beating always keep your weight as far forward as possible, especially in light weather.

Wild Reaching under Main and Genoa

Shift the jib sheet fairlead fully forward. Drop the main sheet traveller right down to leeward. Move the crew right aft to get the bow up. Swing over the side as far as you can. This gets the boat planing, and keeps the weather helm under control, provided that you keep the boat flat.

ALL THE WINNERS

CHAMPIONSHIP OUTRIGHT PLACINGS

This is a listing of the Championship Outright Placings since the championships commenced, prepared from past issues of our Association's Newsletters. However, as with anything compiled from old records, it is possible that some errors may have occurred. We would be happy to hear from anyone if you believe this has happened.

Year	Location		Entries	
	First		Second	Third
1979	Lake Learmonth		15	
	Max Ross		Graham Woodrow	John Garner
1980	Sorrento		21	
	Max Ross		John Garner	Bert Macauley
1981	Indented Head		17	
	Max Ross		John Garner	Brian Adeney
1982	Rye		19	
	Max Ross		John Garner	Tom Robinson
1983	Carrum		14	
	Max Ross		Tom Robinson	Bob Frecheville
1984	Sorrento		16	
	Max Ross		Bob Couper	Bert Macauley
1985	Lake Nillahcootie		20	
	Gordon Horner		Kevin Bock	Bert Macauley
1986	Lake Mokoan		13	
	Philip Jeffs		Bob Couper	Gordon Horner
1987	Balnarring		12	
	Bob Couper		Tom Robinson	Philip Jeffs
1988	Lake Eppalock		11	
	Kevin Bock		Gordon Horner	Philip Jeffs

Year	Location	Entries		
	First	Second	Third	
1989	Lake Nillahcootie	14		
	Gordon Horner	Kevin Bock	Brian Mallinder	
1990	Paynesville	11		
	Brian Adeney	Lou Sommer	K. Bock/D. Shaw	
1991	Colac	12		
	Brian Adeney	Andrew Burbidge	Lou Sommer	
1992	Rye	15		
	Bob Couper	Brian Adeney	Alec Campbell	
1993	Lake Eppalock	16		
	Bob Couper	Mark Daly	Alec Campbell	
1994	Lake Learmonth/Williamstown		15	
	Alec Campbell	Mark Daly	Brian Adeney	
1995	Waranga Basin/Indented Head		10	
	Alec Campbell	Peter Mart	Andrew Burbidge	
1996	Lake Nillahcootie	11		
	Frank Strickland	Brooke Killen	John Kirkbride	
1997	Hazelwood/Rye	13		
	Brooke Killen	Frank Strickland	Alec Campbell	
1998	Lake Eppalock	9		
	Brooke Killen	John Kirkbride	Frank Strickland	
1999	Lake Colac	10		
	Brooke Killen	John Kirkbride	Alec Campbell	
2000	Indented Head	9		
	Alec Campbell	John Kirkbride	Frank Strickland	
2001	Waranga Basin	7		
	Alec Campbell	Peter Mart	Lou Sommer	
2002	Safety Beach	8		
	Alec Campbell	Ron Short	Frank Strickland	

Year	Location	Entries		
	First	Second	Third	
2003	Loch Sport	10		
	Lou Sommer	Ron Short	Andrew Burbidge	
2004	Indented Head	6		
	Alec Campbell	Ron Short	Frank Strickland	
2005	Waranga Basin	9		
	Mike Short	Ron Short	Frank Strickland	
2006	Williamstown	9		
	Mike Short	Andrew Burbidge	Peter Wright	
2007	Hazelwood Pondage	7		
	Mike Short	Peter Wright	Frank Strickland	
2008	Merricks YC	9		
	Mike Short	Peter Mart	Alec Campbell	
2009	Waranga Basin	6		
	Mike Short	Frank Strickland	Peter Mart	
2010	various	9		
	Mike Short	Peter Wright	Michael Baker	
2011	Waranga Basin	6		
	Mike Short	Frank Strickland	n/a	
2012	Williamstown	6		
	Peter Wright	Frank Strickland	n/a	
2013	Waranga Basin	9		
	Mike Short	Peter Wright	Frank Strickland	
2014	Merricks YC	8		
	Mike Short	Sue Burke	Alec Campbell	
2015	Waranga Basin	6		
	Sue Burke	Frank Strickland	Ron Short	

Year	Location	Entries		
	First	Second	Third	
2016	Williamstown SC	8		
	Mike Short	Sue Burke	Jonathan Wilson	
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				

HANDICAP TROPHY WINNERS

In the first year of the Association, 1977-78, there was no Championship series, but a prize was awarded to Bob Frecheville in Coolaroo for first place on handicap in the aggregate for the season.

The original Sam Cohen Memorial Shield was awarded to the Outright Winner of the Explorer 16 Championships, and was presented to Max Ross to keep after he had won it for 6 consecutive years. The winners of the handicap series in those years were:

1979	Alan Collins	Great Escape
1980	Noel Danne	Skkadan
1981	Tom Robinson	Safari II
1982	Cliff Heine	TinkerII
1983	John Lawrence	Maid Marian
1984	Kevin Thiele	Come Saturday

From 1985 onwards the present larger Sam Cohen Memorial Shield has been awarded annually to the first-place winner of the Handicap series of the Explorer 16 Championships

1985	John Armstrong	Silk Jeep
1986	Brian Adeney	Gonzo
1987	Stuart Strachan	Tinker 11
1988	Brian Adeney	Gonzo
1989	Bob Frecheville	Coolaroo
1990	Colin Martin	Kasara
1991	David Shaw	Baragoola
1992	Ralph Humphries	Paladin
1993	Bob Frecheville	Coolaroo
1994	Jim Tabbiner	OL'44
1995	Ralph Humphries	Paladin
1996	Bob Frecheville	Coolaroo
1997	Peter Mart	Meander
1998	Peter Mart	Meander
1999	Ron Short	Eyre

2000	Peter Mart	Meander
2001	Ron Short	Eyre
2002	Peter Mart	Meander
2003	Eduardo Vorano	Merlin
2004	Colin Clark	Almost
2005	Eduardo Vorano	Merlin
2006	Alec Campbell	Beagle
2007	Frank Strickland	Emily
2008	Anthony Brand	Vasco Pyjama
2009	Peter Mart	Meander
2010	Frank Strickland	Rachel
2011	Alec Campbell	Beagle
2012	Sue Burke	Swallow
2013	Sue Burke	Swallow
2014	Frank Strickland	Emily
2015	Peter Mart	Meander
2016	George Giuliani	Kalang
2017		
2018		
2019		
2020		
2021		
2022		
2023		
2024		
2025		

4 - CRUISING

ORGANISED LOAFING

by Bob Couper and Peter Moglia

A survey carried out in Australia many years ago found that over 80% of those who were looking for a trailer-sailer saw cruising as the main attraction in their decision to get a TS. Five years later, less than 10% of the same survey group had spent a night in their boat. As they say 'dreams are made of what you're gunna do - not what you dun'.

For the addicts, however, cruising is just plain 'organised loafing'. But beware, your enjoyment will depend to a large degree on that word 'organised'. No matter how much you read, or how carefully you discuss your plans with experienced skippers, your first time out is sure to find you wanting somewhere.

One area that can lead to real trouble is anchoring. Talk to anyone who has been cruising a lot and they will all have suffered problems with anchors. For cruising different waters, one needs a large 'Danforth' with at least 5 metres of chain and an old-fashioned 'fisherman's' for the weed beds. When approaching a strange beach, keep the centreplate about 1/3rd down and use it as a depth sounder. The noise it makes when it touches bottom can even tell you whether the bottom is mud, rock, sand, or shingle.

If you tie up to a tree for the night, it's generally best to moor with your stern to the bank and your main anchor out front. If waves start up during the night at least you're the right way around to ride them. But don't forget to allow for the tide going out or you might find yourself on a sloping bed if you end up on the bottom. Nights were not made for moving anchors.

Condensation and mosquitoes are usually the next problems. You can reduce condensation with plenty of ventilation and a boom tent. The tent should preferably cover the cabin area from the front hatch to the bulkhead. For protected outdoor living it should cover most of the cockpit as well. Keep the tent clear of the cabin roof to stop cabin condensation and rain noise.

To keep the mossies at bay use duct tape to fix a piece of mosquito netting across the forward hatch. A lightweight stormboard made out of masonite or plywood with its centre cut out and covered with netting can provide lots of ventilation while keeping the enemy outside. The thin board will stow under a bunk cushion when not in use.

A light woollen blanket over the vinyl cushion covering makes a better surface to sleep on.

For toilet facilities, the Porta-Pottie system is best, but failing this a small bucket (with a plastic liner) that sits inside a large nappy bucket with a close-fitting lid is a good idea. Whichever system is chosen, make sure it is sealed and firmly secured so it does not become displaced in a seaway. Disposal facilities are now provided at a number of cruising localities.

Keep your water supply in numerous small bottles (large fruit juice size is ideal) rather than in one big container. They are easier to stow, and if you do have an accident, you only lose some of your supply.

For swimming, a boarding step is a must. A rope ladder might be all right for the athletic types, but a firm under-the-water step is required by most people. One simple solution is to use the boom crutch also as a step-holder below the waterline by fixing a cleat step to the top of the boom crutch and two rudder pintle fittings further down the crutch (on the opposite side to the existing pintle). You then turn it upside-down to fit to the existing transom rudder fittings.

Ice-cream containers provide a handy means to stow all sorts of things from tools, fittings, spares, and food.

Apart from freeze-dried food, there's a massive array of canned food that can provide a varied diet when topped off with fruit. But most of all, don't forget the soup. It can do wonders on days when the weather is unkind. If you catch fish to bolster your food supply, make certain it's safe to eat. An upset stomach, or worse, isn't worth the risk. In the fresh food line, bacon, onions, potatoes, eggs, and carrots will keep for a long time even under hot conditions.

CRUISING NOTES

by Brian Adeney

Explorer group cruises are conducted under the guidance of a leader, who will offer suggestions as to possible courses of action and heed the wishes of the majority, but everyone is free to do what they want when they want. On the other hand, if you travel with the group you can enjoy the benefits of being together - the company, the feeling of being a little more ready to face whatever may occur, the enhanced safety of being in view by others, and the guidance that is available to those who are new to cruising or who are strangers to the area. The ability to obtain some help when it is needed, whether a loan of a spanner or some supplies that may be short, can be reassuring.

Two pieces of equipment that are definitely needed on cruises, and which may not occur to sailors who normally engage in club races or day sailing, are adequate lengths of rope and several fenders. The rope is easy - you need two lengths of at least twenty metres (preferably one of thirty metres) in addition to the normal ropes you carry. These are to tie up to shore when you pull in for the night. A suitable rope is 10 mm polyethylene 'silver' - it is not too hard, it floats, and is reasonably priced. If lying stern-in to a beach (which gives easier access to the cockpit), a simple and effective way of mooring is to run a line from the bow on each side to a convenient shore object. When tensioned these will hold the boat securely against all winds and currents

Fenders carried aboard are invariably hard and cylindrical in shape because that is what most shops sell you - these are next to useless on their own because they hang vertically and roll when you want to fend off a vertical jetty pile. However, if ropes are attached to both ends they can be used in a horizontal position that is often better. The other remedy is to carry a length of plank (not always easy on an Explorer) to which you attach a rope at each end, and hang it horizontally outside two of your cylindrical fenders - this is far the best way to fend off any pile. The final remedy is to buy what you should have bought in the first place - flat fenders or soft round fenders - because of their shape they do not move about so much. At all times, do not secure the boat tightly against the wharf or jetty and, where possible when mooring, use the wind or tide to hold the boat off. If leaving the boat for a period of time do not forget to allow for possible wind or tide changes.

Approaching a beach has its own problems, in particular when it is full with other boats all having an anchor out to sea. The safest way is to go in bow first.

Prepare the anchor for dropping over the side opposite to the outboard motor, and then drop gently about forty metres from the beach in the spot you want to moor. Letting the anchor rode run freely, slowly continue forward, raising the centreplate first, until you run aground on the beach. Take a stern line ashore, secure it or ask someone to hold, then pull the boat out again, reversing under motor if necessary, or pulling along the anchor line from the cockpit. When clear of the other moored boats pull the anchor line from the bow, and pull the stern line, which is still attached to the beach, from the stern. This way the boat will turn around on the spot.

Now secure the anchor line and run the motor in reverse to set the anchor and check its holding. If OK, raise the motor and rudder and pull her back onto the beach stern first. This will enable the crew to access the boat in the least depth of water, and by adjusting the bow and stern line enable the boat to be held safely where required.

An alternative method, where the wind is onshore, is to drop the anchor in the same position, let the boat swing to it and then reverse to the beach using wind and waves or motor.

Another way is to run bow first to the beach, dropping a stern anchor in the same position. You can then moor in this position or transfer the stern anchor rode to the bow and use this to rotate the boat and lie to the anchor. However because it is invariably a lighter anchor, a stern anchor will usually not be as secure as your main anchor.

5 - MAINTENANCE

OUTBOARD MOTOR MAINTENANCE

by Brian Adeney

If you did not do your outboard motor maintenance during the winter layup, you should do the following checks and maintenance before you put your boat in the water and hope that everything is OK. If you have a manual for the motor, read it first.

After any use in salt water, the cooling system should be flushed out by running the motor with the drive leg submerged in fresh water, with the level over the anti-cavitation plate or until the inlets are covered. It is worthwhile adding some detergent to the water, both to ensure better flushing and to discourage oily marks on the exterior. If your motor accepts an earmuff hose-attachment or a screw plug water-inlet then you can use this instead of a drum of water (but it will be a lot noisier).

Use outboard motor (or marine) grease and a grease-gun on the four or five grease nipples on your outboard where advised by your manual. If in doubt, try all you can see, particularly those on the swivel, tilt, and steering arm. The most common problem with an outboard left standing is seized steering.

Check the gearbox oil for colour and condition. This is done by firstly noting the positions of the gearbox upper (fill) hole and the lower (drain) hole. Remove the upper plug and check the appearance of the oil - you may need a small dipstick to do this. You will probably find one of the following:

Dark brown/black oil - OK - fill to top plug level if required.

Sludgy black oil - you will need to drain and refill.

Milky or light-chocolate oil - indicates that water has got in through the propeller-shaft seal (often caused by fishing-line wound around the shaft and working its way in). You can drain the old oil out and refill as a temporary measure, but if you check again and find the oil discoloured, then the motor should be taken to a dealer for replacement of the seal.

Water in the bottom of the gearbox - the gearbox needs major attention and should be taken to a service dealer promptly. As a temporary measure you could drain water out, then top-up with oil.

To drain the oil, put a plastic bowl or similar underneath and remove both plugs. To refill, fit the lower plug and then slowly feed fresh oil

in the upper hole. This can be a slow and messy operation which can be much faster if you have a means of pressure-feeding the oil through the lower hole until it runs out the top hole. Marine shops may be able to sell you a small plastic pump for this purpose - well worth the cost if you are going to do this job several times. This way also ensures 100% filling with no air locks.

Remove the propeller. Clean and grease the shaft and refit the prop, after tapping out and filing any small nicks or bends. If damage has been considerable, get it repaired - this costs considerably less than a new replacement. There are several repair shops listed in the Yellow Pages. (If you have to get a replacement, a 'pusher' type fine-pitch prop will be much more effective than the standard prop, and the motor will operate in a better rev. range). Make sure the split-pin, locking tab or retainer is doing its job of securing the nut holding the propeller on the shaft. Used split-pins should be replaced with new.

Remove the engine hood and spray the engine all over with de-watering fluid such as WD40, RP7, CRC or similar.

Grease lightly all linkages, cable ends, sliders, etc.

Remove the spark plugs and check their condition - they should be a light chocolate brown. If the electrodes are eroded badly - replace the plugs. Otherwise bend the side electrode to adjust to the correct gap. If continually black and oily, it is probably because you are only running the motor under light load at low revs, just going to and from the ramp - in this case it is recommended to replace the plugs with a set rated one stage hotter. Dealers will not do this as they think you are running the motor at high speed on a runabout (which is what the recommended plugs are suited for) and they do not realise you are operating the motor at low speed for short intervals as an auxiliary.

Disconnect the fuel line from the motor and empty any old fuel from the tank. This can be used in your motor mower provided you add the required amount of extra oil to bring it up to the correct proportion (2-stroke outboards usually run on 100:1 oil mix and mowers on 25:1). If the fuel is left standing too long it 'goes off' and produces a pungent smell - in this case it will not lubricate properly and could damage your outboard.

If you feel really confident about your mechanical ability or have someone to advise you, it is worthwhile to carefully remove the lower leg completely, then clean and grease the drive shaft where it fits into the engine - if this is neglected it can corrode and freeze up and is a major job to fix. Refitting the leg can be difficult the first

time, so be cautious and ensure that everything goes back where it came from, especially the cooling-water tube.

If you have done this maintenance you will justifiably feel a lot more confident in going on the water. Remember that these jobs should really be done before you put the motor away for the winter - it will be much better for it. Also, about every three years, take the motor to a dealer for a service - they will check and find things beyond the regular maintenance described above.

Caution - this article is written from the viewpoint of 2-stroke motor user. If you are using a 4-stroke, apart from references to fuel / oil lubrication, the rest also applies. However, you must refer to the maker's instructions for your specific 4-stroke motor's lubrication and servicing requirements.

TRAILER SETUP AND MAINTENANCE

by Brian Adeney

Chassis

A thorough overall inspection for any cracking or bending is worthwhile on all trailers as these can lead to major problems if ignored. If the trailer is galvanised, rust spots can be easily seen. These need to be removed and then sprayed with Galmet or similar. A painted trailer needs a more careful overall inspection as rust may be present under the paint film - a check of any doubtful spots with a screwdriver or small hammer can reveal if corrosion is present. If so, then careful removal and treatment with an appropriate paint system is necessary. It should be noted that external rust can also be an indicator of possible internal rust that may be in an unreachable position. In the worst cases it may be necessary to have rusted sections cut out and new metal welded in.

Ensure that the tilt mechanism is sound and that the lockdown is positive and will not release accidentally. Note that the winch post must be attached to the trailer drawbar, not the tilting bed.

Suspension

Axles should be inspected for bending or other signs of overloading. Remove any rust, then paint with a zinc primer and bitumen-based chassis paint (hard setting paints such as enamels can be chipped by stones).

Springs (if not galvanised) can be cleaned by wire brushing, and are best protected by using Fish Oil spray (don't take any notice of the name - it works well).

During the season it is a good idea to periodically jack up the axle and check that the wheels rotate smoothly with no looseness. You do have a trailer jack that will fit under the axle when a tyre is deflated don't you? And a brace that will fit the wheel nuts?

Boat Supports

Any damaged or out-of-round rollers should be replaced - for Explorer keel rollers the best shape is cotton-reel (with a flat centre), rather than the double-taper rollers originally fitted to some trailers.

Equalize the load carried on each roller by setting their height correctly. The easiest way to do this is as follows. Make sure that the trailer is sitting normally on its springs, on a level surface, and that the boat is in its normal position on the trailer. Apply some Penetrene or similar to the roller mounting bolts a day before, then using a small jack under each mounting post to take the load, adjust the rollers until you can feel an equal resistance to turning on each

one. When you have finished, confirm the correctness of your settings by sighting along the keel line of the boat to see that it follows an even curve, and therefore that no roller is carrying an excessive load.

You should also ensure that whenever the boat is sitting on the trailer, the weight of the centreplate is supported on the keel rollers, and not held only by the winch cable. This greatly reduces the time the cable is under tension, and saves the winch and cable from shock-loadings whilst travelling on the road. Remember to raise it again before launching.

The two extra side rollers at the rear of the trailer are there only to steady the boat when retrieving and must not carry a load at any time as the hull is very soft in this area. The steadying pads on each side should not be carrying the load (this is the job of the keel rollers) but should be adjusted so that there is a small gap at the rear (so that the boat will slide on and off readily), and be just touching at the front to steady the boat. You should be able to rock the boat slightly when the pads are correctly adjusted.

Boats have often suffered damage when being retrieved in choppy water as a result of the bow missing the rear roller and striking the rear end of the trailer. Pad the trailer in this area, or better still, add a wooden frame either side of the rear roller and sloping inwards so that the bow is guided on to the roller if it misses.

Trailer Equipment

Safety chains between the trailer and the tow vehicle are compulsory, but you should also have a chain to secure the boat to the trailer so that the winch and cable are not the only means of attachment. This must be welded or bolted to the winch post and clipped or shackled to the bow eye. It is important that this safety chain remains attached while the trailer is on the boat ramp.

A walkway on the trailer bed is a useful and safer way to access the boat when retrieving at the ramp. A rough-sawn treated pine plank is the simplest, but expanded metal or a similar non-slip surface is also suitable.

Mudguards are often used as a step up to the boat when on the trailer. These are much safer when the upper surface is also rendered non-slip. If you have flexible mud-flaps these can not only ensure compliance with the regulations, but provide an extra protection for the hull from stone damage.

Tie-downs at the rear to hold the boat on the rollers are necessary, particularly if travelling over roads where there are humps or bumps, which could cause the hull to jump.

Lubrication

Bearings are probably the most important item needing attention as lack of care can lead to bearings either seizing up - very hard on tyres - or falling apart with the loss of the whole wheel with even more expensive results. The only way to be sure of their condition is to pull the whole hub assembly apart, clean and check all components, and replace them where there is any doubt. The inner seal should be replaced at this time with a proper boat-trailer seal. After adjusting the axle nut so that the wheel turns freely, it must be secured with a new split pin. It is recommended that the entire hub be filled with a marine wheel-bearing grease, and then maintained by fitting Bearing Buddy caps that are periodically topped up with a grease gun.

All the roller axles should be lubricated at least twice a season, which is easiest with an oilcan when the boat is off. Ordinary motor oil is best - avoid grease as it hardens in saltwater. A drop of oil on the wheel nuts will ensure these can be undone when required. While you are at it, attention to the tilt mechanisms and the winch bearings and gears is worthwhile, as is a spray lubricant on the cable. A winch cable should be easy to pull out to the end of the trailer when correctly maintained.

Brakes will also need attention, depending on the mechanism chosen. Override hydraulics are probably used most, but the hydraulic cylinders can corrode and a water repellent spray to the outside of the cylinders is a good preventative. The operating plunger at the coupling should be greased at the same time as the rest of the trailer. Mechanical brakes need to be adjusted from time to time also.

Winch

If, after checking the boat supports as above, you still find retrieving difficult, check that the load (often specified as a boat length) is within the winch manufacturer's limits where this can be determined, and has a suitable gearing ratio (about 5:1 gearing and a handle of reasonable length). If not, instead of replacing the winch with a lower-geared model you could consider using a longer cable and a heavy-duty wire block at the hook to double the purchase. Cables should be checked each year anyway to verify that they are free from rust and in good condition - they are relatively cheap and should be replaced if in doubt. You could then carry the old one as a spare.

Electrics

A test and careful inspection can often indicate potential problem areas that should be dealt with. It is common for Explorers to use a

removable light-board that carries the number plate and rear lights, but this may often be a problem to mount and dismount each time the trailer is used. An alternative is to use permanently mounted wiring and waterproof trailer lights that work quite reliably - in seven years I have had no problem except a blown globe. Completely sealed lights are much preferable to the earlier systems, and probably the best of all are the LED systems now available.

Trailer Loading

From several references, it appears that an Explorer 16 on its trailer, loaded with all rigging, motor, fuel, and normal supplies can have a total mass of 800 kg or more. When this is compared to some trailer specifications it is obvious that some items need to be addressed.

Tyres

A total load of 800 kg or more (less the weight on the towbar) can be within the carrying limits of 13" car wheels and tyres that have a capacity of about 450 kg each (load index of 80 or above) but NOT the original wheels and tyres fitted to many Dunbier trailers supplied for Explorers. These were 4-stud 10" Mini-Minor wheels with a maximum tyre size of 5.95, which at the maximum recommended pressure of 32 psi could carry a load of 331 kg each.

On my Explorer trailer I fitted new Holden-type 5-stud hubs and galvanised steel boat-trailer wheels that carried 6.00 x 9 trailer tyres. This size was effectively the same diameter as the original tyres, whereas if I had opted for 13" car wheels and tyres, these would not have fitted within the existing mudguard space. At a maximum recommended pressure of 60 psi the 6.00 x 9 tyres can carry a load of 508 kg each at 100 km/h. In practice it was only necessary to run these at 45-50 psi which gave a softer ride. With these fitted I had no worries at all about loading, but there may be other solutions that could do just as well.

Legal Restraints

Now that all States have agreed on a common set of rules for trailer load and speed limits, the situation is much simpler than it was before 1999. The maximum towing limits are now the maximum towing mass recommended by the vehicle manufacturer. If not specified, then for braked trailers it is 1.5 times the unladen vehicle mass, or for unbraked trailers it is equal to the unladen vehicle mass. (New trailers over 750 kg gross must be fitted with brakes.) Speed restrictions in all States (except WA and Tas. where 90 km/h applies) are now as posted for the roads.

Trailers manufactured from 1989 carry a manufacturer's plate specifying the maximum loading. You should note that maximum

load capacities are also set by tyre and towbar makers and you should ensure that you are within these limits as well. If involved in an accident and it is found that you were exceeding any load limits, you could not only lose your insurance cover but may also be held responsible for contributing to the cause of the accident.

Construction Requirements

Trailers built before July 1991 are required to comply with the standards specified in the Road Safety (Vehicles) (Vehicles Standards) Regulations 1999.

Trailers built on or after 1 July 1991 must comply in full with the applicable Australian Design Rules. A summary of these requirements is contained in the relevant edition of Vehicle Standards Bulletin Number 1 produced by the Federal Office of Road Safety, copies of which are available from VicRoads Registration offices. These specifications apply to trailers being presented for registration, and may not have been applicable when your trailer was registered. However, it is a good idea to ensure that your trailer follows these rules as they are intended for the safety of you and other road users.

Under State road rules, all boat trailers must be registered and a person must not drive if the total mass, dimensions or load could prevent the driver of the vehicle from safely controlling the vehicle and trailer.

BOAT MAINTENANCE

by Brian Adeney and Peter Moglia

Maintenance of an Explorer 16 is usually not a major task, but is one that is often put off until another day. However, for the sake of your boat, and your investment in it, it is worthwhile considering maintenance as a normal part of your sailing activity.

The first and most important thing is to ensure that the whole of the boat (and motor and trailer) is given a good wash-down with fresh water after it has been in salt water. This is also a good opportunity to give the boat an overall inspection to see if anything needs immediate attention.

Apart from the after-sailing routine, a regular maintenance program should be followed to avoid the possibility of your boat letting you down, because at the least this would be inconvenient, and possibly worse. How often you should do this maintenance will depend on the amount of use, and the boat's exposure to weather. A boat raced every week, and left on the sea-front in between, will probably need a thorough inspection every month, others perhaps once a year.

Hull

Being of fibreglass (more correctly described as GRP) construction, the Explorer 16 hull needs very little maintenance compared to timber hulls, but that does not mean that maintenance can be ignored. This would normally include the following as a minimum.

Inspect the hull carefully, particularly underneath, for cracks, scratches or gouges through which moisture could seep into the construction layers. If this happens, it can lead to delamination and possible structural breakdown. If you find any of these defects, clean them out, fill them with polyester resin in the appropriate colour, and then sand down with fine wet-and-dry paper until level with the surface.

If the hull surface has faded or looks chalky, go over it with a good quality fibreglass boat-polish. Generally, a normal fine polish is adequate, but like a car, if the surface is in poor condition it may need cleaning with a cutting polish first.

Woodwork is usually varnished, and this needs an annual rubdown with wet-and-dry paper and refinishing with marine varnish. I find that a single-pack polyurethane is easy to apply and gives an excellent finish. The small timber parts, such as handrails and hatchway surround strips, are much easier to deal with if removed from the boat first. They were originally all secured with brass

bolts, which may have corroded, and will need to be removed carefully to avoid breakage. If they are corroded, it is worthwhile replacing them with stainless steel bolts of the same size. With the timber parts that received the most wear on my boat (such as gunwhale rubbing strips) I got tired of having to sand these down to bare wood and apply multiple coats of varnish. It was easier to strip off the varnish altogether, remove any dark wood-stains with an oxalic-acid-based preparation (following the maker's instructions carefully), and to then apply an oil finish such as Deks Olje. This is easily touched-up at any time by simply applying more oil.

Mast and Boom

A careful inspection is the first step, but there is not much that can go wrong with them. The most likely cause of any defects (apart from accidental damage) is corrosion between dissimilar metals, such as between the stainless steel fittings and the aluminium spar.

If this is happening, the only cure is to remove the fittings, clean off the corrosion material, and refit after ensuring that the metals are separated by an insulating layer. The best (but quite expensive) is a product called Duralac, which comes in a tube and can be painted on. Failing this, a good layer of marine silicone can work. I have also used a thin piece of PVC cut to size and inserted between the components, and silicone on the fastenings.

Running Rigging

Cordage will usually deteriorate over time due to either exposure to ultraviolet light or from physical wear due to abrasion. If it has been overloaded beyond its breaking point you will know about it, but lesser loads can over-stress the material. This may be seen by an inspection, and looking for an unusual appearance. If it is worn at one end only, you can often extend its life by turning it end-for-end. However, if it looks like it is reaching the end of its life, replace it now.

Wire running-rigging must be of the flexible type, and when it is reaching the end of its life broken strands will stick out, or if it is of poor quality material, by indications of rust. The only remedy is to replace it.

Standing Rigging

Being made from non-flexible wire, standing rigging can suffer from excessive flexing leading to broken strands in the wires. These will often appear adjacent to end fittings that have not been able to move as they should, and consequently the wires have had to absorb all the movement. Once this happens the only remedy is to fix the cause and replace the damaged wires.

Sails

Rinsing sails with fresh water helps to prevent deterioration from excessive salt build-up between the fibres. Careful folding after use, in the correct manner appropriate to the sail type, will also help to lengthen their useful life. Any damage to stitching or the sail material requires a prompt visit to a sailmaker for repairs. You will also find that the elastic loops in the inner ends of the batten pockets lose their stretch over time and need to be replaced.

Winch and Centreplate

Because it is out of sight and not easy to get at, a component of the Explorer 16 that is often neglected is the centreplate and winch assembly. It is difficult to wash down, and therefore some rusting can be expected. The winch itself is accessible as it can be removed from its casing after taking off the handle. The original model (Howard No. 7) seems to have disappeared from the market and finding a replacement to fit may be difficult, so it is worthwhile repairing the winch where possible. This will almost certainly involve removing all rust and then applying an effective rust-proofing preparation. The winch cable and the shackle that attaches it to the centreplate are much more difficult to reach. However, they should not be ignored as you will soon realise if you have to retrieve your boat at a busy launching ramp with the keel hanging free. Explorer 16 trailers have a line of rollers along the keel, so it is necessary to get the boat off the trailer to lower the centreplate and attend to the cable connection. It should be inspected regularly, although once every three years or so is probably enough. It is a good idea to replace the shackle even if it looks good, and don't hesitate to replace the cable at the first signs of distress. If the centreplate is removed, the opportunity should be taken to clean and resurface this also. Some owners have been able to take their boat off the trailer and attend to these jobs themselves, but if you do not have the facilities you will need to use professional services.

Lights

Most Explorer 16 sailing is done in daylight hours, so we do not have to use our navigation lights very often. Nevertheless, they must be kept in working order and should be checked at least before the start of every season. The masthead light is the one that gives the most trouble (because it tends to get knocked about during rigging and de-rigging) and is the one that is the least accessible when on the water. Clean all the contacts and lightly spray with a dewatering lubricant such as RP7. You do carry spare globes and fuses. Of course.

Radio

It is not uncommon for marine radios to be 'not working too well' when they are needed on our cruises. They should be included on your maintenance program. Clean all the electrical connections. Check the microphone plug and socket. If the active aerial is of the screw-on type clean the contacts where it attaches. Salt water can cause corrosion and high resistance at the contact points. Radios usually have a separate fuse at the power input, so you will need to ensure you have a spare one.

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EXPLORER 16 PRODUCTION INFORMATION

History

The Explorer 16, a small trailable yacht of 5.05m (16 feet) overall length, was designed by the boat-building family of Jack, Robert and John Botterill in the late-1960's. The Association has a copy of the original plans from which a timber prototype was built in 1964. This was sailed for evaluation purposes, and some changes to the design were made before a plug and moulds were made and the fibreglass model commenced production in 1968. The original prototype "Thalassa" is now owned by Peter Spence who is restoring it after he acquired it from Bob Graham who had owned and sailed it for many years.

We believe 145 of the cabin model were produced , as well as 11 of an open day-sailer version and possibly 10 of a 21 foot model designed on the same principles. Sales have almost exclusively been confined to Victoria, although some boats were built for owners in Tasmania, NSW, ACT and other states. Over the years some of the Victorian boats have also moved to owners in other states.

With the closure of the J. Botterill & Sons business in December 2005, and the presumed loss of the original moulds, it is not expected that any further boats will be built. However, the Association did obtain the tooling for the smaller GRP mouldings (icebox, hatches and winch housing) so these could be made for replacements where required.

Mark I and Mark II

There are two hull types, although the differences are slight. Mark 1 (sail number prior to 49) and Mark 2 boat differences do not have much effect on value or on performance.

A summary of the structural differences is:

	<u>Mark I</u>	<u>Mark II</u>
Mast step support	Internal cruciform	Kingpost
Shroud chainplates position	Gunwhale	Cabin top
Centreplate winch position	Cabin	Cockpit
Centreplate design mass	70.8 kg	98.0 kg
Buoyancy compartments	Air or foam	Foam
Cabin windows per side	Two	One or two

There are also differences in the internal cabin layout and storage facilities.

For club racing the CBH (0.580) does not distinguish between Mark 1 and Mark 2, whereas for Association racing the handicaps indicate the Mark 1 is 2-3% faster (probably due to slightly lower weight).

Boat Numbers

Explorer boat numbers were not allocated by J. Botterill & Sons, but by Douglas Sailmakers of Sorrento (now retired), and were continuous from 1 to 146, except for 13. Some of the original numbers were modified by the addition of yacht club prefixes e.g. BR for Black Rock YC and SM for Sandringham YC (who sometimes also added other numerals so the sail number did not clash with a boat already on their register) . For example "Baragoola" Explorer number 101 carried the sail number SM1011. Where the present owners are not members of those yacht clubs, they should remove the club additions to the original Explorer number from their sails.

The approximate build dates of the Explorer 16 cabin model were as follows:

Numbers	1-28	before 1972
	29-79	1972-1974
	80-119	1975-1976
	120-141	1977-1978
	142-145	1979-1985
	146	1990

Day sailers numbers 1-11 were built from 1977-1986 but an extra one may have been made in 1993.

The main sources of information on boat numbers have been:

- A copy of the Douglas Sails record of numbers issued when sails were made.

- Members database kept by Bob Frecheville from 1987-2001 and since then by Peter Mart and Peter Wright.

- Research project by Alec Campbell in 1995-1996 in which he circularised every Victorian yacht club who sponsored trailer sailers, asking for information on Explorers.

It is from these records and subsequent information from any other source available that the current Boat Register database has been compiled. This records for each boat, where known, its description, registration number, present and past owners names, and changes in the boat name.

Some statistics from the Boat Register are:

	<u>Explorer 16</u>	<u>Explorer 21</u>	<u>Day Sailer</u>
Some information recorded	118	5	3
No information available	27	5 ?	8
Last sail number issued	146	10 ?	11

Any member who is interested in obtaining a record of their boat's history can obtain this by contacting the Secretary. Anyone who can assist by supplying information which will add to this record of boats and their history, such as sightings of non-members boats, would be greatly appreciated.

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