About These Cherubs

John Spencer's twelve is really booming

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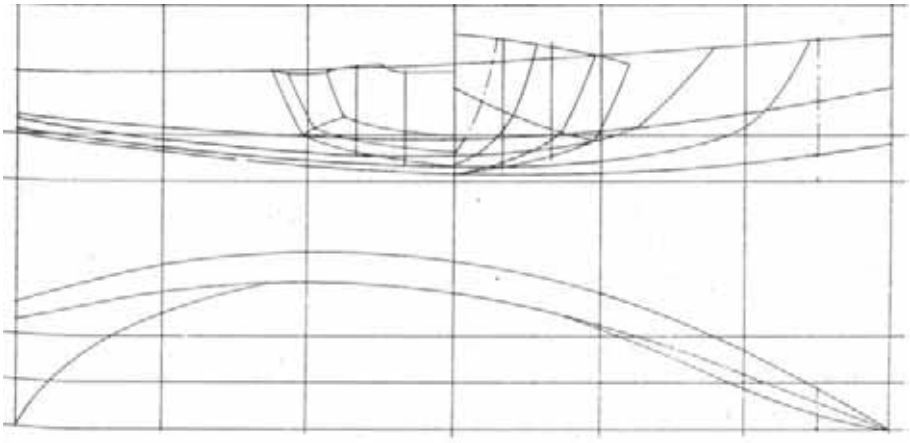
A typical Cherub

IN 1952 a boat appeared from the drawing board of New Zealand's leading small-boat designer, John Spencer. At the time it was just another design for the then very popular Pennant Class. However, as soon as this new boat began to race, its inherent superiority was immediately manifested by a string of convincing victories over all existing designs in this 12-foot class.

This superiority was so marked that a number of people commenced building to the same design. With the nucleus of a class already in existence, the owners of these first boats tailed a meeting, adopted a set of restrictions for the controlling of measurements, a constitution was formulated and the name of the class was taken from that of the prototype boat Cherub.

This meeting was historic from the point of view of New Zealand Yachting administration, for it was the scene of the formation of the first Class Owners' Association in the country. Prior to this all classes had been controlled under the club sponsorship system, by which a particular club guided the destiny of a class for the whole of the country. This breakaway movement gave the owners the chance to run the class the way they wished. At the original meeting the owners most wisely decided that a One-Design Class would almost certainly run into measuring difficulties with each owner building his own boat, experience with other classes underlines this point, and so a fairly closely restricted class was finally settled upon.

The restrictions were framed in such a way that developments and improvements have taken place continually since the inception of the class, yet boats which are a few years old, if well looked after and having sound and effective gear, are capable of more than holding their own against the latest arrivals. This happy framing of class rules permits individuals to experiment with gadgets, cockpit layouts and any other, ideas to his heart's content, and it is by this means that the Cherub Class has developed today into the most popular and most hotly contested class in New Zealand centreboard racing,



John Spencer's purpose in designing the original Cherub dinghy was for the experimental development of certain theories in hard chine design in conjunction with the then comparatively new materials of marine plywood. He had found that many overseas hard chine dinghies had a hardness in the development of lines in the bow sections; this had

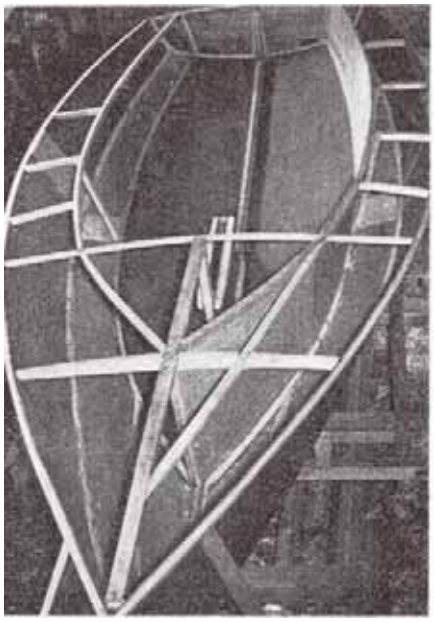
been partially overcome by the use of a small forward transom, and a fairly large false stem in conjunction with a certain amount of stressing of the plywood, giving a profile with distinct leanings towards the conventional entry of a round bilge dinghy.

In John's opinion this overseas method of using a false stem to achieve a satisfactory entry did not give the degree of fineness forward desirable for windward work, a failing of many hard chine designs which negates to a large extent the phenomenal downwind speeds offered by the hard chine boat. He eliminated this fault by developing the lines of the Cherub to a rounded forefoot, giving the amount of fineness considered desirable to the forward sections. From here it was a simple matter of slotting the plywood to marry these sections into a typical round-bilged dinghy's stem. This is a perfectly simple operation, and 400 boats built subsequently, chiefly by amateurs, has given no cause to contradict this statement.

Refinements in hull construction over the past years have led to the acceptance of such features as double bottoms in the cockpit. This idea was again pioneered by John Spencer. Two layers of 3/16 ply are glued together, giving a bottom which is virtually inflexible. This will naturally support the crew better and helps to relieve some of the strain imposed on the keel and chines; but probably the most important point of this development is that it led the way to a much superior buoyancy system.

In the early days of the class all boats were framed, which meant that only a small watertight bulkhead could be built up at the bow and two small side tanks installed from the transom to the first frame, while this met the original 3 cu. ft. buoyancy rule it means that boats could not recover from a capsize and continue racing.

Ian Pryde's Carousel design was the first major improvement to meet with universal approval. Here frameless construction was attempted with side tanks running as far forward as the front bulkhead with the ply sheets angled in from the side decks to meet the chine. Under this system the buoyancy in the boat was taken far above the minimum of 3 cu. ft., and by leading the plywood onto the chine any possibility of leaks occurring through the flexing of the floor was eliminated. While this was undoubtedly a great step forward, and gained many adherents, it was by no means perfect. One notable fault on righting a boat after a capsize was that water was trapped in the cockpit because of the angle of rake in the walls of the side tanks. Furthermore the greatest amount of effective buoyancy was to be found near deck-level and not near the chines; thus a boat had to be fully swamped before the benefits of the tanks could be appreciated. This meant that usually after a -serious capsize, with the mainsail getting under the water, a boat would be so full that any prospects of recovering lost ground and finishing a race with the leaders were more or less doomed. However, the boat could be sailed back to the shore independently.



A close-up shows the simplicity of construction

With the appearance of the double bottom mentioned previously a new layout of buoyancy was developed which largely eliminated these faults. Under this layout the walls of the side tanks are landed about four inches in from the chine at the junction of the two sheets of plywood forming the double bottom (only the outer skin is fastened to the chine). This inflexible bottom prevents any leaks at the jointing of the bottom and walls of the tanks. By moving the bottom of the tanks inboard from the chine the bottom of each tank becomes further inboard than the inwale of the side decking, consequently this favourable slope helps to expel water while righting the boat. It has also been found that by extending the side decking to 11 inches in width from amidships forward to the junction with the foredeck a boat even when capsized with the weight of the two crew members depressing the hull will ship only enough water to fill a line 4 inches above the keel line, a trifling amount.

Aft of amidships the side decking tapers back to 6 inches, the minimum amount permitted by the rules. While all this development with the side tanks was going on it was also appreciated that the forward bulkhead could play a greater part in the efficiency of the buoyancy system. This bulkhead thus tended to move back some distance from its traditional position on the first frame; usually it was brought to a position approximately 9ft. 3 inches from the transom, allowing comfortable stowage for the spinnaker boom, which has a maximum length of 9 feet.

In some cases the forward bulkhead has moved even further aft, thus necessitating a telescopic spinnaker boom, but this has never found general approval. Recently the buoyancy rule has been amended and now insists for all new boats

measured after the 31st July, 1961, that all boats must have a minimum of 6 cu. foot of buoyancy in the form of watertight compartments distributed in such a way that when the boat is completely flooded, with scuppers open and fully rigged, it will support the crew in their normal sailing positions with the gunwales of the boat floating clear all round. The latest developments that I have just described will adequately meet this requirement.

It may be thought that I have placed unusual emphasis on the buoyancy characteristics of the Cherub dinghy, but it has been the object of the Owners' Association throughout the history of the class to foster a safe racing boat, one that can race in any conditions, which is good for the novice as well as the expert to race, and to give a class that does not have to rely on the club patrol boat to get the boats that come to grief back to the beach. We feel that club patrol boats are overworked enough as it is.

Efficient buoyancy also means that a capsize, which will happen to the best of us, does not necessarily mean sacrificing a winning position, indeed the experts frequently recover from a knock down without losing a single position in the race. It is just another avenue for skill in the field of dinghy racing.

John Spencer while drawing up the lines of the Cherub and considering the radical departures of the boat from accepted techniques in New Zealand at the time, decided on a high aspect ratio sail plan for the new boat. He has always been strongly in favour of the theories of Manfred Curry and others for the efficiency of high aspect ratios. John's actual leanings were to a plan similar to that of the English Merlin Rocket Class. However a study of photographs revealed that the extremity of this plan led to a number of badly setting sails through excessive stretching of the leech.

Eventually a sail plan similar to that of the English National l2ft. Class was adopted, but with the advantage for setting purposes of 6 full-length battens. A subsequent rule passed by the owners permitted three battens in the foresail, which have to be spaced evenly along the leech of that sail. This rule was introduced because in the early days foresails were continually having their leeches stretched out of shape after a few races and at no stage could a really satisfactory set be achieved.

The spinnaker started out life as the usual "Australasian" single luff sail with a wire luff and taped leech. The rules of the class imposed a maximum measurement of 14 x 14 x 9, and these are still in force today. A phase for a season or so saw the introduction of parachute and balloon spinnakers, but these were soon discarded when it was found that close reaching and the consequent high-speed thrills were beyond the capacity of this type of sail. From there development saw the marrying of the principles of cutting in the single luff and parachute-resulting in the "double luff flat cut" sail. This spinnaker is now in predominant use throughout the class. It has the virtues of the flat cut sail for close reaching, while the double luff lends itself to the quick gybing techniques of the parachute and balloon spinnakers.

A great variety of marine hardware can be found on Cherub dinghies because naturally individual owners have vastly different ideas on what constitutes good gear. A number of imported proprietary fittings are in popular demand, e.g., Tufnol jamb cleats, fairleads, cast alloy rudder pintles and gudgeons, gooseneck and boom-end fittings. Rigging of masts shows a wide variety of arrangements, but the most popular at the moment is one shroud each side with a set of diamond stays. Other masts are built in very large "pole" sections and are sufficiently robust to stand with only shrouds. The latest system of a bendy mast borrowed and adapted for use in the Cherub Class from the Flying Dutchmen and other Continental classes, uses a set of shrouds with a set of swinging crosstrees. The length of those cross trees are of an average length of 18 inches for each arm.

These swinging cross trees have been evolved to complement the swivelling masts which are now a standard in the Cherub Class. With a bendy mast it is essential to have the shrouds staying in an athwartship position, even when the mast itself is rotating; otherwise sufficient thrust cannot be transmitted through the crosstrees to cause the mast to bend. I think that most people will be aware by now of the advantages of a bendy mast, i.e., a full cut sail can be flattened out efficiently for windward work in heavy weather, yet giving the advantages of fullness for downwind performances. A final point in mast rigging. A forestay is never used; the luff wire of the foresail is much preferred because it completely eliminates sagging in the luff of that sail, and the wire itself is sufficiently strong enough to do the job.

For shrouds and stays, drawn steel wire is normally used, but the stainless 19-strand wire rope is coming into favour, no doubt because of the Talurit splicing system. Trapezes are carried by all those boats that are keen on getting to the front of the fleet. These are permitted in the Class rules, but sliding seats are not. Suction bailers and draining ports are allowed and most boats have one or the other. Halyard winches, internal spinnaker halyards, spinnaker boom topping lifts and downhauls are in popular use. Centreboards and rudders vary in shapes and sizes. There is one restriction on the former-a maximum length of 5ft. 9in.; there is no restriction on the latter. Knock-up centreplates have been tried but discarded in favour of the dagger plate.

The mainsheet system is divided principally between two schools of thought. First the "English" school with a system identical to that found in National 12's, the other school prefers the traditional "Australasian" system as found in the Australian skiff classes. In conjunction with the mainsheet arrangement general use is made of a horse with adjustable

stops. A further necessary item is a kicking strap on the mainboom to eliminate twist from the head of the mainsail. Sails are now all made from synthetic materials and the latest cutting techniques are employed, the most recent adaptation being the use of radial cutting. Battens play a very important part in the setting of the mainsail, and most skippers spend a lot of time in shaping battens to throw the fullness of the sail in exactly the area where they think that it will do the most good.

To sum up, then, the Cherub dinghy is a lightweight, high-performance racing dinghy. It is easily handled, has adequate buoyancy, so that even a newcomer can feel at home while learning all about the sport. Thrills come easily from this boat, and yet there is no drudgery involved in rigging or unrigging. It is easily transported along the beach, and will trail effortlessly behind even an 8-h.p. car.

LENGTH:	Maximum length 12 feet.
BEAM:	Minimum beam at mid-length 4' 6"; maximum beam at mid-length 5' 0".
DEPTH:	At the stem shall be not less than 18" measured from the sheer to the underside of the keel batten.
DEPTH:	Amidships shall be not less than 18" measured from the sheer to the underside of the keel batten.
DEPTH:	At the transom shall be not less than 10" measured from the sheer to the underside of the keel batten.
	Decking is compulsory from the stem to the after side of the mast, and aft of this point a minimum of 6" in side decking is compulsory. Further decking is optional.
	Minimum weight of hull stripped of all movable fittings is 110 pound.
MAST:	The mast has a maximum length of 20' 0" overall and a minimum weight of 13lb. stripped of all fittings.
SAIL MEASUREMENTS:	
Mainsail:	Maximum luff 18' 0", maximum leech 19' 0", maximum foot 6' 9".
Foresail:	Maximum luff 12' 0", maximum leech 10' 9", maximum foot 4' 9",
Spinnaker:	May not exceed 14 feet on the luff or leech, nor exceed 9 feet on the foot. Only one spinnaker may be carried in the boat during the race.
Battens:	A maximum of 6 battens may be used in the mainsail and can be arranged to the owner's own liking. three battens to be spaced equidistant on the leech of the foresail are optional.
CLASS IDENTIFICATION MARKING	: A black heart which must be contained in a 12"-diameter circle.