



Every year, as the winter season approaches, various surfers do their damndest to prepare for the larger, longer surfs ahead. They build boards that they hope will go faster and perform better in the winter surf than the designs from previous years. There have been as many approaches to the speed board technique and theory as there are surfers who have even thought about it. The main problem is that most of these surfers abandon their speed trip when summer arrives with her slow and fat waves. The guns that were designed by most of these guys are either too stiff or too fast for summer surf. Thusly their speed trip is only a seasonal one.

Nearly every gun designed up until this year has been "a point in the right direction, and hang on for dear life and hope that it's going in the right direction" surfboard. This is the reason that, for many years, there has been a bad stigma attached to the speed board. This insensitivity is a thing of the past, unfortunately though many people cling to obsolete theories and this stops progress. A look into the new speed boards is a worthwhile endeavour at any rate. How many times have you missed a good wave because your board didn't have the floatation needed to pick up the wave? How many times have you fallen out of a wave because you couldn't get down it in time? This applies to small waves as well as large waves. Floatation and length are big factors in riding larger waves, because the above-mentioned bumpers are magnified tenfold in big surf. If your board doesn't float you too well, the only person you're kidding is yourself. Jeff Hackman and Jock Sutherland ride a slightly longer surfboard than many of the surfers in medium to large surfs. Jeff and Jock can and do ride more waves than anyone else. Who do you suppose has more fun than these guys? No one. You can only ride as many waves as you can catch, and when the surf is big the more waves you can ride the more you will enjoy the surf. The more ground you can cover on any given wave, the more manoeuvres you can perform and the more fun you can have with speed.

The first thing anyone notices about the speed boards or baby guns, or "spears" is their radical plan shapes. They are as different to the standard hot-dog board or donut plan shapes as night is to day. The guns usually run a bit longer than the conventional plan shapes. Six to seven feet as compared to the five or six foot length of the typical donut. This length may seem a trifle long to some, but the spear shapes are up to four inches narrower than the standard surfboard. This removes the bulk that is usually associated with a stick of this length. The average width of the new gun shapes is anywhere from seventeen to nineteen inches. This narrowness makes

the surfboards seem slightly thicker because the thickness must be brought out to the rail to facilitate floatation. A word of caution, though: many shapers bring this thickness out too far and this gives the board a fat and insensitive rail. The tail of the gun is much more pinched or pulled in than the conventional board. This reduces cavitation. The water that passes the tail is parted where the bottom of the surfboard first breaks the water, it will travel along the length of the board and eventually run off the tail. If the water leaves the tail, causing a disturbance of the water flow, the back of the surfboard will skate or become unstable. See FIG. 1. Skating is the worst aspect of the widetailed surfboard. Skating is where the tail of the surfboard rises to the top of the water and starts bouncing and squirrelling. The narrow tail doesn't skate and makes it possible to surf as hard at ten feet as one would at six feet. The straighter, longer lines give this design better throw and distance on turns and much better draw when it is needed. With the new glassing techniques and the new lighter blanks, these once insensitive plan shapes have reached maturity and come of age.

Along with the new advancements in materials and plan shape refinements, the rocker designs have changed also. The new rocker designs have made the new spears more manoeuvrable and probably the most advanced tool in surfing today. The latest in rocker designs is the continual rocker. Mike Hynson and Reynolds Yater have been working on this concept in their respective shops for well over a year now. This refinement in the gun type surfboard has been the greatest single factor in the improvement of performance as yet. The rocker plan reduces the wetted area when turning and eliminates the stiffness usually found on a narrower and straighter plan shape. The rocker also allows the rider to pick up waves earlier than before because the wave has a tendency to push the board along. This makes the gun a performer in large surf as well as a small surf. Along the trail to the development of the continual rocker, the advantage to tail rocker or tail lift was discovered. It works pretty much the same as the continual rocker except the transition from turning to planning or trimming is not smooth or instantaneous as the continual curve. This brings us to the straight back or no rocker type of setup. This is indisputably the fastest but also the stiffest. If there were no emphasis on performance this would be the ideal surfboard. This no rocker theory makes for late take-offs and a tracking characteristic that makes performance in any type of surf difficult. This is the original "point it and hope" surfboard. See FIG. *2. The rocker is essential for looseness, manoeuvrability and speed needed for fluid surfing. The guns aren't the straight line machines they used to be.

A factor many people overlook in their designs is the rails. The rails are as important as the plan shapes when it comes to going fast. There is never enough emphasis on properly done rails. The latest development is the long hard rail and the dead flat bottom. This is the fastest rail in existence. The reason for this is that the low rail makes it possible to bring the planning area out to the full width of the surfboard. This eliminates the round fat rail that sucks water and passes through the water rather than over it. A good example of this is a comparison between a sail boat and a catamaran. The sail boat has a heavy leaden keel and rides down in the water. The catamaran has no keel and rides up on top of the water. The cats are so much faster than the sail boats there is actually no comparison. In the Bi-annual Trans-Pacific race from Los Angeles to Honolulu the sail boats and the cats

leave at the same time. The cats reach their destination three to ten days ahead of the nearest sail boat. This is because the cats have no hull speeds. The same theory applies to the flat-bottom surfboard. The hard rails and the flat bottom give the new spears the potential of unequalled and unlimited acceleration. The hard rails also give much better distance when turning and hold in better when holding position in preparation to race a falling section. Once the rail is laid in on a turn it will run in the direction thrown for amazing distances. If the name of the game is speed, then low rails is a prerequisite.

To vee or not to vee? that is the question. The vee has been used and abused by nearly everyone. The ones who have abused it curse it, while those who have taken the time to refine it and make it useful, swear by it rather than at it. The vee allows the tail of the surfboard to be manipulated much more easily by the rider. It lets the tail roll up on the rails with much less effort, therefore the surfboard can be turned from rail to rail much easier. The vee also gives the board good and accurate directional control in steep wave situations. This is the slight vee behind the fin. It relieves the flow of water off the tail and reduces the pressures that make the board stiff and make it track. If the vee is properly done, it will enhance the performance of any surfboard. In the case of the spear-type board, the vee is essential. There are other types of vees, but their usefulness is questionable and they are usually the result of an inexperienced shaper. The vee is a good trip if it is done properly. You won't find it on a pop-out or a backyard job. It's way over their heads.

Last, but not least, there is the gun fin. As surely as there is a difference in the plan shapes there is a difference in the fin shapes. The standard surfboard has a wider tail than the spear. The width of the tail is the determining factor in the selection of fin size. Therefore, the spears have much smaller fins. With a smaller fin, the board will not be too stiff on turns and there will be less frontal drag to slow the board down. The difference in fin length can be felt even at paddling speeds and will slow down about 25% on a wave.

There is no flex in the gun fin as it is too short to have the leverage necessary to utilise any appreciable flex for fin drive. If the bottom plan is done properly with the vee and rocker, no fin drive is necessary. Fin foil is critical, however. If a fin is not foiled properly, it will cavitate and maybe hum. This will cause instability due to the disturbance under the tail of the surfboard. Fin rake is important for the same reason. The tip of the fin will cavitate. A word of caution on the fin shape. The base of the fin must be fairly broad in order to withstand the pressures exerted on ten-foot bottom turns. See FIG. *3. If the fin is too narrow it will not allow the rider to redirect his inertia from the drop back up into the pocket. The rider will feel a drifting sensation which will result in a crazing of his track and a very interesting position or a wipe-out. A surfboard that is designed properly is one that has the most attention paid to detail. The fin is the last detail to be worked on and is usually overlooked.

Surfing has reached a point of sophistication where a surfer is only as good as his equipment. The surfboard has been through a lot of changes in the last five years. The latest development has been the twin fin; it has yet to be proven in longer, larger waves and probably will never be useful in over ten-foot surf. The guns, on the other hand, have been an evolution of many years of refinements and improvements. It's a theory that has been proven in Hawaii and the Mainland United States. If the speed board is properly built, it can be ridden confidently and competently in three- to ten-foot surf. There is no excuse for the guns to be the skeletons in most surf shop closets. The "Avant Garde" surfboard manufacturers have seen the writing on the wall and have made the refinements necessary to make the Australian gun a very workable surfboard. They are being ridden here with great success. The guns are like driving a 911S Porsche. The acceleration and speed will put your surfing in another dimension that you didn't even know existed. Get ready for winter and tune in to high performance. Happiness is a warm gun.

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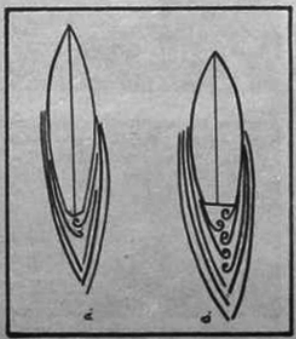


FIG. *1
Surfboard A is a gun plan shape. Surfboard B is a standard widetailed plan shape. The curl marks at the tail designate the turbulence caused by the water flow during forward movement. Note that the amount of turbulence or cavitation is greater behind the widetailed surfboard.