

SUPER TEST: FOUR ANCHORS IN COMPARISON, WHO WINS AND LOOSES

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# **IL GOMMONE**

**E LA NAUTICA PER TUTTI**

289

## **OUR TESTS**

HONDA 4XC H8  
MARLIN BOAT 23' TOP  
NAUTICA LED GS 27 EFB  
MARINER 640 SHOGUN

## **OUTBOARD**

SECRETS OF THE TRIM  
NAVIGATE AT MOST  
WITH LESS GASOLINE

## **GOMMOREPORTER**

CROATIA AND SURROUNDINGS  
NAUTICAL CAMPING ALONG DALMATIA COASTS

## **TECHNIQUE**

GETTING THE FULL LOAD OF ENERGY  
POWER OUTLETS FOR RECHARGING ON DOCK

## **DIDACTICS**

LAUNCHING AND HAULING  
HOW TO MANOEUVRE ON THE SLIDE

## **ACTUALITY**

GOVERNMENTAL INCENTIVES  
VANISHED JUST IN TWO DAYS



**GUIDA  
AL MERCATO**  
TUTTI I PREZZI AGGIORNATI  
DEL NUOVO E DELL'USATO  
DI GOMMONE, MOTORI  
E CABELLI



**DIDACTICS**

# ANCHOR YOU

The second appointment on anchorages.

This time we carried out a comparative test between three models- from the most traditional to the stylistic level.

Dandorf, Ultra Anchor, Brake and Rocna anchors were compared in terms of their holding power effectiveness and anchor dropping, facility 'to be settled' and behaviour in case of change in wind direction. We availed digital measurement instruments and a scuba diver who monitored the 'anchors' under water. Here are the results.

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*by niccolò volpati*

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Are all anchors the same? Not really. In recent years, due to the fact that some patents were ceased, some 'clones' of the famous models and very "strange-shaped anchors" appeared on the market. Designers and manufacturers gave a free course to their imagination to search for the ideal anchor. After having compared (see Il Gommone no. 288) a small umbrella-shaped anchor with a real anchor as Danforth, we wanted to test three new models: These are Rocna, Ultra Anchor and Brake which are imported and distributed in Italy. There are



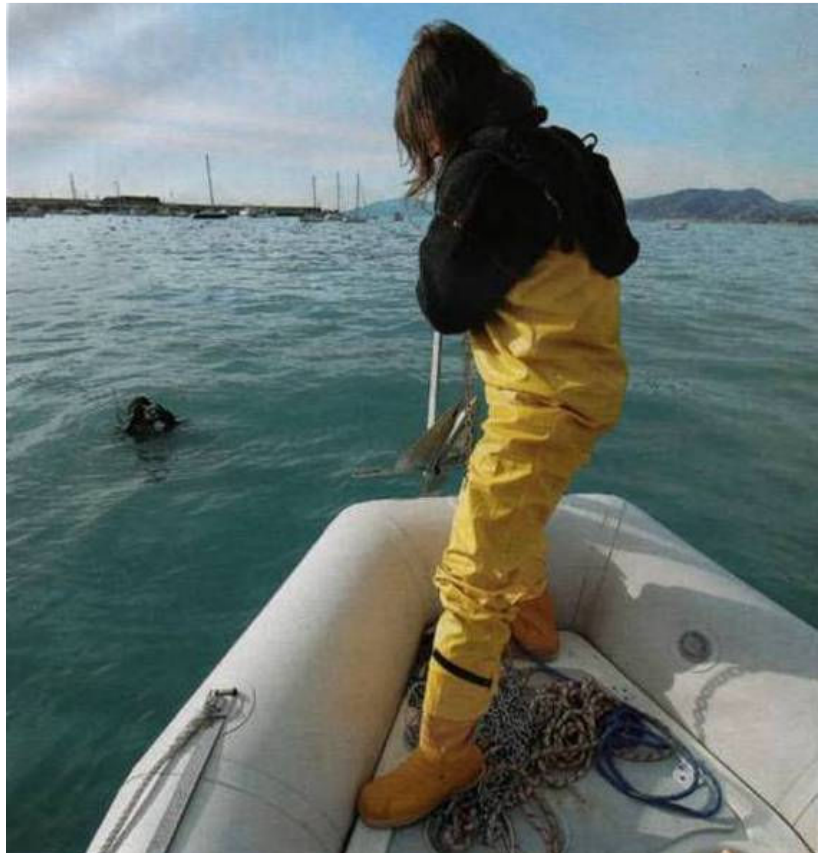


many others, such as anchors of Spade, Sarca, XYZ or Supreme. Probably, these are interesting equipments and they deserve attention, however we believe that for a leisure-boater it's difficult to buy them on-line and to get them by mail: anchor is heavy and shipping may cost more than the product! Therefore, let's remain at home and concentrate ourselves on those available on our market.

Marine Propeller has Brake, Indemar-Rocna, and F&B Yachting- Ultra Anchor in its catalogue. With those three, we put beside Danforth original that we know, just because we tested that it is an optimal anchor, particularly on the sand. The latter is imported and distributed by Osculati.

Testing these anchors is not an easy job. Then why struggling with this kind of test? Have you ever read that an anchor holds less and has the difficulty to catch?

**To verify the anchors' behaviour in 'normal' conditions, we utilized an inflatable boat of Zodiac Medline Sundream which is 5 m long and weights approx. 400 kg, with an outboard of 60 hp.**



## DANFORTH: THE GUARANTY OF THE TRADITION

*Anchor of Danforth was selected just because it offers optimum holding guaranty on sand. It represents a family of products that are extensively tested; therefore we took it a bit as a reference. Among its advantages, there is the facility to be stowed: the hoes in fact, are fixed with a spindled pin, so it becomes flat and it is easily stored in a peak. During the test, notwithstanding numerous "launches" it fell always correctly and it grabbed in 30 cm of space. However, because of its shape you may make a mistake. This model requires that you moor correctly; while it's anchoring, if you spin scope of the cable too much and too fast, the anchor remains just subsided on the bottom. If there is no wind, the weight alone may be sufficient to remain anchored. However, once the wind intensity increases, you risk that the anchor ploughs. So it's better to make it "settled" and grab. For this reason, it's necessary to drop the anchor when the*

*Inflatable boat stands still, to start the reverse gear in idle mode only when the anchor reached to the sand and subsequently block the crown onto the bitt to let it grab. Thanks to very suitable shape of the hoes, the holding capability is excellent. The dynamometer registered 128 kg of traction without that equipment ploughed and surceased. We couldn't go further because 60 hp of outboard didn't allow us to track more. However, we are talking about a value corresponding to 30 knots of wind. At 360° - to verify that the holding capability in case of wind direction change - at 180° Danforth went through a crisis. When it was pulled from opposite direction with respect to the grabbed one, it started to plough. Shortly after, it started to get settled again. At 270° instead, It surceased without being able to moor across any more. It is distributed by Osculati Forniture Nautiche, Segrate (MI). [www.osculati.it](http://www.osculati.it)*





## BRAKE: WHAT BIG HOES YOU HAVE!

*Also this model gave an optimum result for holding capability: 122 kg. Brake, as Danforth and Ultra Anchor, didn't pop out from the sand, we namely arrived to the limit point of traction which the motor was performing without being able to make it surcease. It's optimal also in anchor dropping since it fell always in correct position. As soon as the mooring line was passing in traction, the anchor was tending to hit itself slightly on one side. However, when increasing the traction, it was repositioning itself correctly. The points where it dropped and where the anchor was grabbing were not more distant than 30 cm. While the power was increasing gradually, the hoes were sinking further and at the end of our test, only the spindle was emerging from the depth, all the rest of the "anchor" was under the sand. The surface of the hoes, in fact, is pretty large and this promotes the holding capability even in case of strong tractions*

*The shape of this anchor may remind the classical ploughshare-models, as earlier CQR or the newest Delta. Both of these models never gave good results of holding on the sand. Ploughshare-anchors seem like a sort of "plough", it's easier that they dig a furrow in the sand than they anchor. Furthermore, particularly CQR is not easily manageable: it is an anchor that needs a great deal of scope of cable before grabbing, otherwise it risks to not being settled properly. None of these all holds for Brake: it has optimal holding capacity, good behaviour in water and is easily manageable. The only limit it showed in test of wind direction change: It held up to 250° from the point where it was "settled". At 2/3 of full rotation, however, it started to plough and did not grab back again. It's imported in Italy by Marine Propeller, [www.jprop.it](http://www.jprop.it)*

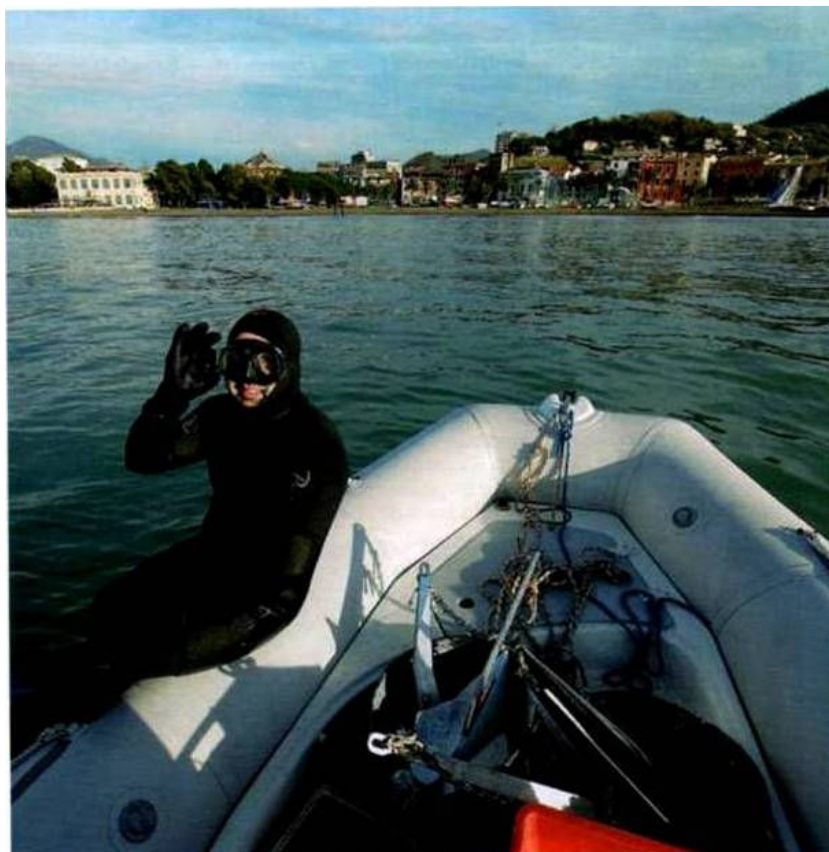


***We performed an "up to standard" mooring in a depth of 4 m with 16 m scope of cable (crown and 5 m chain of 6 mm); the anchors were "settled" then we increased the velocity to simulate the wind. The operations were repeated several times.***

No, certainly. The magazines often limit themselves to mention about this, accepting in a positively the press releases by the manufacturers. And obviously, all are good and they hold fifteen times more than others... We satisfied our "whim" to test really, in water, how they behave and how much they hold.

### TEST CRITERIA

First of all, we had to recreate an ideal situation, more similar to mooring in a port which a boat driver performs, without distinction of models from each other. We utilized an inflatable boat of Zodiac Medline Sundream which is 5 m in length and 2.2 m in width. The outboard was a 60 hp. All was provided kindly by Pietro Giuffardi from "Gommoni&Fuoribordo" of Lavagna. We voluntarily choose a not excessively large boat which is driven by a not very powerful motor. In fact, we wanted to test the anchors in normal and not extreme conditions to understand if they go through a crisis easily or they guaranty at least a minimum holding. We were not interested in finding whether the tested models could bear 60 knots of wind, but it was sufficient for us to verify that they guaranty 25/30 knots. With a stronger wind, in fact,

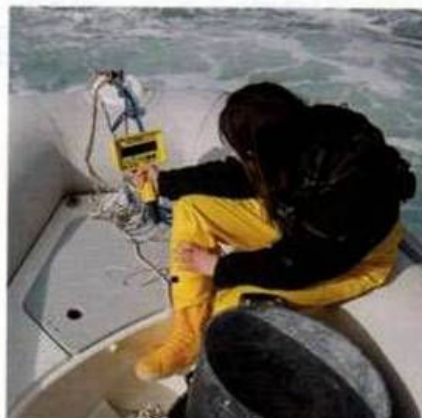




**On the board, we registered the traction values with a digital dynamometer, while a scuba diver was controlling closely the "anchors" behaviour.**

TELL ME THE WIND DIRECTION AND I WILL TELL YOU HOW MUCH YOU `HAVE`

Width of the inflatable boat	Wind speed and applied traction		
	15 knots	30 knots	42 knots
2.6 m	40 kg	162 kg	324 kg
2.9 m	56 kg	220 kg	441 kg
3.6 m	78 kg	315 kg	630 kg
4.2 m	101 kg	405 kg	810 kg
4.6 m	135 kg	540 kg	1080 kg



it's probably suggested to look for a refuge in a port or even not to release the moorings in morning, if the meteorological conditions foreseen storms that risk to glide the inflatable boat although the motor was stopped.

The depth chosen for the test is the bay of Sestri Levante, in Genova province. The sand is very compact which guaranties an optimum holding. No other type of depth (algae, mud, gravel) is capable to bear a higher traction. We know that the best mooring line is that of the heaviest. An oversized anchor and lengthy meters of chain certainly guaranty a higher holding. The problem is, the whole chain is difficultly stored in a peak: too much weight in the prow may have negative impact on the trimming of a navigating boat.

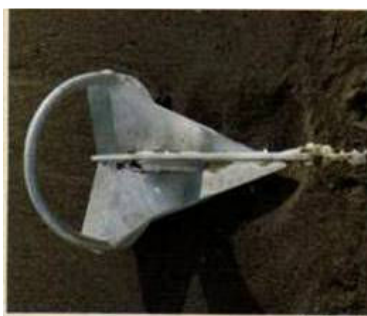
## ROCNA: THE ORIGINALITY OF THE SHAPES

The behaviour in the water gave positive results. During repeated "launches", the anchor fell always in proper position, it moored across in few centimetres and easily "settled". It has an original shape different from all other tested models. On the hoes, there is a sort of roll-bar: While dropping the anchor, the Rocna, thanks to this feature was positioned always in vertical. As soon as the reverse run started, the spindle was laying horizontally with respect to the bottom and thus it was still able to moor across and work properly. Although the shape seems helpful for behaving in the water, as much it appears to be a restriction for holding. The Rocna, in fact, is the only anchor that we could surcease. 71 kg of traction was sufficient to pop it out from the sand. In its defence, we must say that the model used in our test weights 6 kg, two kg less than Brake and Ultra Anchor. However, it was the indicated size for the inflatable boat that we used for the test and it was about the same as the weight of Danforth (6.3 kg) that, on the contrary, didn't surcease and arrived up to 128 kg of traction. It's a matter of size: The subsequent model weights 10 kg and it becomes suitable for greater boats than the one we used.

Why did it bear up only to 71 kg? The sub-diver collaborator who was observing under water gave us the explanation.

Till the traction on mooring line was not excessive, the hoes of Rocna were penetrating into the ground and were performing their function. However, with increasing the force, they were tending to penetrate in deeper as the other anchors. The roll-bar, however, was an obstacle, de facto, at 90° with respect to the "blades" which had to grab. Thus, the anchor was not penetrating further into the sand (as it was supposed to) and it was stopping at the level of roll-bar that, obviously, was remaining out of the depth. With accelerating and increasing the traction, the anchor was ceasing.

Rocna is a model produced in New Zeland and it's not the only one having this particular shape with roll-bar on the crown. Also Supreme, of the same country, and Sarca, Australian, have a similar structure. It seems that the roll-bar on the anchor is a fashion which contaminated all the Oceania. We, however, remained perplexed because although the structure allows falling always in proper position, it limits the efficiency in case of strong traction. Neither in the test of wind direction change Rocna showed excellent performances: when the traction arrived from 90° with respect to the point where it was "settled", the anchor started to plough and it didn't grab back again. Imported by Indemar of Busalla (GE), [www.indemar.it](http://www.indemar.it)



wanted to perform a test in similar conditions with those happen daily at the sea. The scope of cable, therefore, was consisted of a piece of 5 m-chain and the rest was the crown.

Also at the depth on which we dropped the anchor was “standard”. In the bay, we chose a point which is 4 m in depth and we spun 16 m of the scope of cable. Four times the depth represents a good compromise. The manuals suggest spinning the chain for five times the depth where the anchor is dropped: the problem is that the ports, which are often crowded in the summer, don’t always allow to do this; if the wind direction changes, in fact, the boat starts to rotate and, thus, too much scope of cable may cause the inflatable boat touching other boats. 16 meters of scope of the cable with 4 depths, in brief, is an acceptable size: it allows the anchor to work properly even when the wind traction is quite strong.

#### HOW MUCH THE WIND TRACTION IS?

To make this calculation, there the tables elaborated by American Boat Yacht Council (ABYC): we have already spoken about them in the previous issue, however, we give them again, also for the benefit of whom doesn’t have them beside. These are, however, theoretical calculations of traction on mooring line of a boat in relation to wind velocity and, thus, they are subjected to many variables. Often the length of the boat is taken under consideration, instead, the hull counts for more.

Displacement and the surface exposed to the wind are also important. Each company that produces and sells anchors will tell you which “size” is suitable to your boat. Often, this information can be found on the internet sites of the importers. However, to have an idea, we would suggest you to consult those of ABYC.

Unfortunately there are tables for sailing boats, *open and fly bridge* motor boats but nobody has considered pneumatic boats yet. We chose to compare with that related to *open* boats because certainly which having the most similar characteristics with an inflatable boat had to be considered. A pneumatic boat, however, would have also high amount of exposed area that can produce “veil effect”, as tubulars or prow commonly high above the water. Against this, its weight is definitely lighter than a motor boat. The smaller displacement determines that at equal wind intensity, the traction on the mooring line of an inflatable boat would be lower than that of a heavy speedboat. This means that the values on the table elaborated by ABYC are certainly excessive. In practice, with 30 knots of wind most likely there would be 162 kg traction on a 2.6 m wide motor boat, but if an inflatable boat would be 2.6 m wide, it is likely that 30 knots of wind produce a smaller traction.

The weight of the anchor, for who sails with inflatable boat, can be a good dilemma. Some companies, in fact, have very small sized anchors at their disposal.





There are many new conception anchors but we wanted to test those that are imported and distributed in Italy, more the traditional Danforth which is most commonly used on the watercrafts.

If the boat is a maxi-rib there is no problem, if you have a “normal” dimensioned boat instead, you have to content yourself by buying the smallest anchor in the catalogue. In any case, it is always suggested not to save on the weight, because to work properly, an anchor needs some kilograms. For a long time, there are aluminium models, but they have never had a great success; they are practical and easily stored,



they may seem fascinating and make a good impression on the fronts of the boats exhibited in nautical halls, but they hold nothing. For our test we had at our disposal two models about 6 kg (Danforth and Rocna) and two of 8 kg (Brake and Ultra Anchor): all were sufficient or more than sufficient for the boat that we had.

### TEST IN PRACTICE

As we told, the objective was to test how much the anchors hold and how they behave.

Exception made for the Danforth (selected just because among the “old” models it is the one that guaranties a very high holding capability in the sand), the three new rivals present innovations also in the shape. The ultimate generations of “anchors”, on the paper, offer higher performances with respect to those more traditional; for the test, then, we put the mooring line under traction on a depth of 4 meters with 16 meters of scope of cable composed of crown and 5 meters of 6 mm-chain. We performed a mooring as required, the anchors became “settled” and progressively and very slowly

### HERE ARE THE RESULTS OF THE REALITY TEST

Type of the test	Brake	Danforth	Rocna	Ultra Anchor
Holding capability	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓	⚓	⚓⚓⚓⚓⚓
Anchor dropping	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓
Facility to settle	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓	⚓⚓⚓⚓⚓
Wind direction change	⚓⚓⚓⚓⚓	⚓⚓	⚓	⚓⚓⚓⚓⚓
Legend	⚓⚓⚓⚓⚓ optimum	⚓⚓⚓ good	⚓⚓ sufficient	⚓ poor

### ULTRA ANCHOR: NOBODY CAN REMOVE IT FROM THE BOTTOM

We believe that, this is the anchor which “came out the best” from the two-day test. Its holding capability was optimal. The dynamometer reached to 117 kg, practically in line with Brake and Danforth. Notwithstanding the repeated attempts, we could never make it surcease. When increasing the traction, It was still disappearing under the sand and just the spindle was remaining out of the bottom. To throw it into crisis, we throw it even overturned, or with the chain above. Nothing to do, at the minimum traction the “anchor” was positioning and mooring across. What made us astonished was the behaviour in the test of wind direction change. To any direction we tracked, we couldn't make it surcease, but not either plough. Ultra Anchor held at all 360°, whether when (by simulating a wind that is ceasing and a new one is entering) –we changed the direction or when we

completed a 360° cycle in reverse run by stepping on the throttle, It stayed always grabbed, without any hesitation. The scuba diver told us that the hoes were changing their direction but they were always remaining under the sand. Therefore, the inflatable boat was remaining moored at its place without moving even a few centimetres. This behaviour is the result of efficacious constructive choices. The curve-shaped claw allows penetrating easily to the ground, but above all the cable spindle, that is not full, and the structure of the hoes in lead, let anchor's weight to concentrate downwards. In this way, it always guaranties to get positioned properly, to penetrate easily into the ground and to bear a high traction.

Imported by F&B Yachting of Lavagna (GE),  
www.fbyyachting.it



We increased the wind speed to simulate what the wind does. A digital dynamometer was registering the traction value. All was monitored by a scuba driver.

All mooring operations were repeated to control how the anchor fell when it was dropped, in how much space it was mooring across and whether it was getting “settled” easily. They were dropping always to the same point which we were finding again thanks to the scuba inflatable ball, which allowed us to return exactly to the same position all the times that we repeated the operations and with all the four anchors of the test. Moreover, we verified the holding capability in case of wind direction change. Also in this circumstance, to simulate the real condition as possible, we pulled from a direction first and then to the opposite one: it is not infrequent that, during a mooring in a port, the wind gets calm, and then enters from another direction. It happens usually during the summer, when classical thermal breezes are substituted by a prevalent wind coming from another direction. The objective was to understand if the anchor, once it moored across and grabbed, was capable to support a traction also from a different angle or not.

Without intending to anticipate the test results, which we mention in detail in each anchor’s card, we can tell that the behaviours were excellent. All falls good and gets “settled” easily. None of them fell twisted or in a wrong position.

From where they touch the bottom to where they held there is maximum 30 cm: it’s really a limited space, which means that they get settled easily. They behave certainly better than other “old” models which were often tilting over one side and then once going through the traction due to effect of the wind, coming from another direction, were not working as they should (they were ploughing and ceasing).

We tried also to make an incorrect mooring, to simulate so called “beginner’s mooring”, by reproducing one of the most frequent cases: dropping the anchor by spinning the scope of cable very quickly. It happens when the “anchor” was thrown from the prow, without accompanying the crown while going downward. In this case, large clew-like chain piles are created around and above the anchor; then the wind arrives and the mooring line goes into traction, but the anchor is not “settled” and it starts ploughing. Also this test, however, was passed successfully by all four rivals.

Concerning the holding capability instead, Danforth, Ultra Anchor and Brake passed the test, while Rocna ceased very quickly. In the test of wind rotation at 360°, the best was undoubtedly Ultra Anchor: from any direction that traction arrived it never ceased, notwithstanding we tried many and many times, even with abrupt accelerations.

*We thank to Pietro Ciuffardi from “Gommoni&Fuoribordo” of Lavagna for this kind collaboration.*