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5 EDITORIAL DISCOUNT BUYING

Edoardo Napodano

10 ENCOUNTERS THE ART OF YACHTING

Edoardo Napodano

12 MARKET WORK IS ENNOBLING AND STIMULATES CREATIVITY!

Valentina Solera

16 TECHNOLOGY ENERGY METERING THROUGH THE SHORE POWER SYSTEM

Laura Neuwirth Lazzerini

20 DESIGN THE FULLY-PARAMETRIC PROJECT, THE OPEN ROAD

Daniele Bruno

23 DESIGN DESIGNING FOR SPEED

Francesco Fiorentino

26 CLOSE-UP VERDE COME LA VELA

Pietro Angelini

30 MEGA YACHT KINESIS: THE POWER TO HARNESS THE WAVES

Laura Neuwirth Lazzerini

35 COVER STORY LEADING PLAYER IN YACHT WINDLASSES

Giovanni Albertario

40 MATARAN MK3, A GREAT LITTLE RACER BY FELCI YACHTS

Giuliano Luzzatto

43 IN THE YARDS COMANCHE GOES ON THE WARPATH

Martyn Drayton

46 CREW 30 YEARS AT SEA AND NOT FEELING THEM

Beppe Vellutini

48 FOCUS ITALCRAFT: THE INNOVATION FACTORY

Francesco Fiorentino

51 DESIGN LYFE - LIVING THE SEA

Paolo Ferrari

52 SAFETY ATMOSPHERIC POLLUTION: THE HARDEST PROBLEM

Massimiliano Vita

56 PORTS&MARINAS A PORT FOR ALL FRONTIERS FEDERICA AMEGLIO



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Gli abbonamenti decorrono dal mese successivo al ricevimento del pagamento.

58 TOYS WINGS FOR FLYING

Paolo Ferrari

62 NEW PRODUCTS

By the association

66 YACHTING & TAX PROOF OF GOODS EXITING STATE TERRITORY

Ezio Vannucci - Giada Fruzzetti

67 UCINA DESIGN DRIVES DEVELOPMENT

By the Promotion Area

68 TRAINING THE MILAN POLYTECHNIC WEARS JEANS

Arianna Bionda - Andrea Ratti

69 CNA COLUMNS EMERGING YACHTING MARKETS SOUTH KOREA

70 ATENA THE VALUE OF AN ASSOCIATION

72 ATENA AND THE EVOLUTION OF ITALIAN MARINE INDUSTRY SCENARIOS

Silvia Chiarito

76 GYROSCOPIC STABILISERS: DEVICES FOR IMPROVING COMFORT AND STABILITY

Silvia Chiarito

Wings for flying

Hurricane's motorbike style dashboard

Until today the water scooter sector has evolved both in terms of design, with increasingly attractive and seaworthy models, and in terms of engineering, with powerful engines and high performance

Paolo Ferrari

The Latin term “Exocoetus Volitans”, apart from being the name of the very famous planing sailing boat designed by Renato Sonny Levi, is first of all the scientific name of the flying fish, an aquatic creature able to glide for surprising distances above the water thanks to its long pectoral fins that function as wings. Observing this fish we can understand the basic concept that gave rise to “Hurricane”, an innovative “winged” vessel that had its world premiere at the Cannes Yacht Festival in September. The company that produces this aquatic “quad” is Sea Warriors, a company formed in 2012 on the inspiration of Milanese entrepreneur Walter Do, with the aim of satisfying those who want to have new and exciting experiences on the sea, above and below the water. Hurricane was designed by NavalHEAD, a design studio with great technological know-how, directed by naval engineer Andrea Agrusta, whose main aim is to produce vessels with great energy efficiency and low environmental impact.

The concept

The first request from Walter Do to Agrusta was to imagine a fast, versatile and fun craft, like a water scooter, but at the same time as “dry” and safe as a boat. In addition, Hurricane needed to be able to navigate rough seas smoothly and safely. A compact craft, that could



transport up to three, that could easily exceed 40 kn and manoeuvre like a jet ski. In fact the proportions, the three seats one in front of the other, the motorbike type handlebars and hydrojet propulsion would make you think of a water scooter. Hurricane seems to be much more: it's designed to respect the strict ISO-CE regulations for boats, since it's been configured as a class C craft, and can safely tackle waves of up to 2 m. This is possible thanks to the enveloping sides that protect the passengers and, above all, to the complex and innovative deep V hull that allows Hurricane to ride the waves with an agility typical of much larger craft and with seaworthiness quite unlike that of a traditional flat bottomed water scooter. The two side wings, which give the craft a unique and attractive look, do not have a purely aesthetic function: they have been designed to guarantee high dynamic stability in yawing, so as to permit tight turns even at high speed without compromising in any way the safety of passengers and without the wings going underwater. The wings are also extremely handy for disembarking and at the same time ensure greater static stability when heeling hove to or under way.



The stern has typical elements of car design



Hurricane planing

A question of viewpoint

At first sight it could be difficult to put Hurricane in a specific category: in fact it seems to be a perfect mix between a highly safe and manoeuvrable boat, an extremely enjoyable water scooter and a jet ski that is smooth on the water, comfortable and fun to drive. A hybrid between a boat and a scooter, comparable to a “quad” on dry land. In fact the external lines, by the talented yacht designer Alberto Mancini, are very similar to automotive lines, thanks to the engine air intakes and the various chromed details, like the small rollbar behind the headrest. In addition, the graphics of the bow recall the lighting units typical of modern car design.

Hull

The hull of Hurricane, designed using the most advanced techniques of computational CFD fluid dynamics, is a deep V hull with variable dihedral, both transversally and longitudinally, of the “rocker” type, with the keel line that tends to rise towards the stern. The choice of the rocker type stems from the desire to plane with trim angles that are not too small so as to ensure the angle of attack of the wings remains correct, when turning or on waves. The hull, with a main skid and two spray rails on each side, has a flat pad in the centre to maximise the flow into the tunnel of the hydrojet. The hydrojet is integrated directly into the hull geometry so as to eliminate the risk of cavitation and maximise the efficiency of the drive. The wings have ogive type sections with pointed tips that can guarantee a suitable increase in lift if they hit a wave; they are also slightly raked both in the XZ and in the YZ plane, to allow the wing to lie softly and progressively on the water in turns. Worthy of note are also the bow sections of the forward topsides, again of the ogive type but with a rounded edge which not only make the profile of Hurricane look like a bullet, but also ensure a gentle impact in the case of a bow dive caused by pilot error. The structure of Hurricane is extremely light and highly technological: the entire hull is in fact made in fibreglass and expanded PVC sandwich and the supporting ribs are also in light material.

Engine

Hurricane is powered by the innovative and powerful Weber 850 MPE, in a marine version of 120 or 155 hp. This very modern unit,

TECHNICAL SPECIFICATIONS

LENGTH OVER ALL:	3,95M
MAXIMUM BEAM:	2,14M
MAXIMUM HEIGHT:	1,24M
DRY WEIGHT:	550KG
CAPACITY:	3 PASSENGERS
ENGINE:	1X WEBER 850 MPE + HYDROJET 120HP OR HYDROJET 155HP (RS VERSION)
MAXIMUM SPEED:	41KN
FUEL TANK:	120L
RANGE:	4H @32KN

presented for the first time at the 2013 METS, is extremely compact and light and has low fuel consumption and low pollution exhaust. Power is delivered smoothly, but also brutally, thanks to the variable geometry turbine that allows the small two cylinder engine of just 850 cc to unleash 155 hp at 7300 rpm. Top revs and capacity comparable, and it's no accident, to those of a road motorbike.

Instrumentation and driving position

The instrument panel, with four circular analogue instruments and a large display in the centre, recalls that of the car. Turning the key in the centre of the tunnel also switches on the beautiful 7 inch display by Raymarine, supplied as an optional, with full cartography. Another quarter of a turn starts the Weber engine, with its typical soft grumbling. To starboard is the gearshift, whose positions are those typical of a motor yacht: first, neutral, reverse. The exaggerated is positioned directly on the handlebar, in true motorbike style. Just attach is enough to increase engine revs and transform the initial grumbling into the typical howl of turbocompressed engines. Also on the central tunnel is the buttons that control services such as nav lights, horn and bilge pump. On the tunnel, as a further optional, a Blaupunkt stereo system with USB slot can be installed. The saddle, under which is the fuel tank, can easily seat three astride; the rear part of the seat has a backrest and a can holder. In conclusion, Hurricane has earned a place among the most innovative C craft produced in the past decade and will certainly be part of the collection of tenders and toys of many yacht owners travelling the seas of the world.