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*Smart yacht owners avoid costly remodels
by designing helidecks and onboard hangars
specifically to fit their favorite helicopters.*



Like most aviation consultants, James Wakeford tells lots of stories about things that have gone wrong. He recalls a certain yacht crew that never properly flushed the onboard helicopter's engines of corrosive salt water during three months at sea, something they should have been doing daily: "We had to tell the captain that they had basically invalidated the warranty of a multimillion-dollar aircraft."

He also tells a story—without using names—of a yacht owner who insisted on buying a tiny single-engine Robinson R44, even though this gentleman weighed close to 300 pounds. "We had to say to him, 'If you're ever going to fly with luggage, you're going to need something bigger.'"

Wakeford is a pilot and one of the directors of

Aeronautic Consultancy, a French firm that helps yacht owners find and purchase helicopters for their vessels. The cautionary tale he tells more than any other involves a yacht designer who calls only after completing his plans and asks Wakeford to find a specific helicopter for a vessel that, as it turns out, is too small to carry it, or that

Contrary to appearances, maritime helicopters require quite a bit of space in which to maneuver.

has such a poorly placed helipad that no pilot could land on it. "We're constantly getting calls from designers wanting a helicopter when the design itself won't work," Wakeford says. "I say to the owner, 'Let me draw you something to scale. Have your designer work around this.'"

Rule number one for yacht owners who plan to fly helicopters to and from their vessels is that the specialist who will be selecting and purchasing the helicopter must be involved in the ship's design. "If they call us early enough, we save these yacht designers a fortune and make sure they deliver what the owner wants," says Kev Mathieson, a director of Helidecks Training Solutions in Cornwall, England.

"The really good designers always want to talk to a helicopter consultant right away because they know we can help them avoid mistakes."

The other reason to include a helicopter specialist in the design process is to ensure that the plans conform to standards mandated by the U.K.'s Maritime and Coast Guard Agency. Known as the LY2 standards, these rules apply to ships registered in the United Kingdom, the Cayman Islands, the Isle of Man, Bermuda, and Gibraltar—but only for those used in charter operations. Although these regulations do not apply to private vessels, they are the highest standards of safety with regard to ship design and the design and

TOP CHOPPERS



THERE ARE MANY excellent helicopters that operate successfully from the decks of yachts. Yet there are a select few models that experts recommend over all others, in part because the companies that make them have long histories of working with ship builders in both commercial and military environments, and because the models are easy to fly and maintain. These companies provide maintenance support worldwide, can supply technical specs and advice to yacht designers, and have extensive experience designing for maritime environments.

EUROCOPTER EC135

This light, twin-engine helicopter has a short overall length, which makes it perfect for helidecks lacking extra room. Despite its size, it can carry six people in comfort. The \$4.2 million EC135 also has style. "It's a more modern, prettier aircraft than most, and it's got a

nice cabin," says Kev Mathieson of Helidecks. In terms of performance, very little separates the helicopter from the AgustaWestland 109 (see page 96) other than its shorter range. The EC135 is a fairly low-maintenance aircraft, which accounts for its popularity among corporate owners. *Eurocopter, www.eurocopter.com*

ROBINSON R44 CLIPPER II

This compact aircraft (\$380,000 to \$420,000) is a perfect fit for smaller yachts and for owner-pilots. It seats four, including the pilot. As a light, single-engine helicopter, the R44 Clipper II works best on short trips in clear skies and light winds. Still, the aircraft has a

Eurocopter's sleek EC135 packs the right combination of size and power for use on yachts.

Bird Nests

inspection of helipads on ships, also known as helidecks. "I have an owner who doesn't want to use his boat for charter, but he's still building to the LY2 standard. If he wants to sell it someday, he can enhance its resale value if it fits this code," Wakeford explains.

Finally, a yacht owner who selects a specific helicopter prior to designing and building a vessel has a better chance of securing a delivery position that coincides with the yacht's completion date. The helicopter market is going the way of the fixed-wing market: There are currently many more buyers than there are new helicopters for sale. The best manufacturers have waiting lists of up to three years. Putting down a deposit to secure the future delivery of a helicopter is a prudent investment for anyone who wants an aircraft sitting on the deck on launch day.

WHILE HELICOPTERS MAY seem capable of landing on a postage stamp, in reality they require quite a bit of room in which to maneuver. The smallest helicopter that works well

in a maritime environment, the Robinson R44, is 38 feet, 3 inches long; one of the largest, a Sikorsky S-76, measures 52 feet, 6 inches. To accommodate these and other rotary aircraft, a helideck must have a diameter equal to the length of the helicopter. In addition, crew members must be able to walk around the helicopter easily to tie it down and to perform onboard maintenance. Refueling tanks and fueling equipment must be aboard. There must also be extra fire-fighting equipment and special lighting and navigational aids, all of which take up considerable space.

Many helidecks can be used as sundecks, but only if the vessel has an onboard hangar for storage. An owner who does not relish lounging in the sun next to a multiton rotary aircraft will want such a space.

"A hangar, especially during a transatlantic cruise, is a fantastic luxury," says James Freaan, director of the Fort Lauderdale, Fla., office of HeliRiviera, a consulting firm that advises yacht owners on helicopter purchases. Onboard hangars not only free up deck space, but also protect the helicopter from



low center of gravity, which makes landing it on a ship easy. While some aviation consultants may be hesitant to recommend single-engine aircraft for maritime use, the R44 Clipper II can be equipped with utility floats that inflate just prior to an emergency landing on the water. These floats will retain their shape for several days before they need to be deflated and repacked. *Robinson Helicopter*, www.robinsonheli.com

SIKORSKY S-76

The large Sikorsky S-76 (\$10 million to \$12 million) has a range of about 400 miles and seats up to 12 people and two pilots comfortably. It is sturdy enough to take off and land in weather that would prevent smaller aircraft from flying. "People who use their helicopter for purposes other than just landing on a yacht often chose this model," says James Freaan of HeliRiviera. Its potential drawback, however,

is its length: 52 feet, 6 inches. A yacht would need to be 100 meters or longer to accommodate a chopper of this size.

"A helicopter like this tends to rearrange your thinking," says Vaughan Askue, a senior technical support manager at Sikorsky. "You're not just using it to hop over traffic and fly to the horse races while your boat is parked off the beach on the Riviera. Now you can go to a friend's villa in Italy for dinner, or to a

The nimble, space-efficient Robinson R44 Clipper II (left) and the roomy, nicely appointed Sikorsky S-76 (right).

Bird Nests

corrosive salt air. Mathieson notes, however, that hangars take up a tremendous amount of room. "A hangar would crowd the inside of any yacht smaller than 300 feet," he says.

HOW A YACHT OWNER plans to use a helicopter influences his or her choice of aircraft. For example, certain people just want to do some island-hopping or sightseeing on pleasant days. For these individuals, a smaller, lighter helicopter with a shorter range will suffice. Others may need to fly more than 150 miles in varying weather conditions, day or night, to attend impromptu meetings. This will require a harder model of aircraft, with the right navigational aids and a more experienced pilot.

Where power is concerned, European owners typically prefer twin engines, while U.S. owners often rely upon single-engine aircraft. The European perspective is simple: If an engine goes out over the ocean, a single-engine aircraft must crash, while a twin-engine generally can limp back to land. Yet Americans put their faith more readily in technology, as

Frean notes. "A well-maintained helicopter is very reliable," he says. "If something goes wrong, it's usually pilot error and not a mechanical breakdown." He and many other European consultants, however, argue in favor of flexibility and practicality. "An owner might come to us and want a single engine, and we tell him that for a million dollars more, you can get a twin engine," Frean says. "There are many weather and wind conditions in which a single engine cannot take off. After paying all this money for a yacht with a helideck, you don't want to be stuck on board."

If he cannot persuade these hesitant individuals, he advises them to at least design their helidecks to accommodate twin-engine aircraft, whether they buy them or not. "When you find out they are not happy with [the smaller helicopter]," he tells them, "you can upgrade to a heavier, larger, twin-engine model without modifying the yacht." ☐

Aeronautic Consultancy, www.aeronautic.eu.com; HeliRiviera, www.heliriviera.com; Helidecks Training Solutions, www.helidecks.co.uk



helicopter, leased it to him, and then when his helicopter came in, we took it back and unmodified it." *Sikorsky Aircraft, www.sikorsky.com*

AGUSTAWESTLAND 109 POWER ELITE

Several years ago, the U.S. Coast Guard asked AgustaWestland to modify the 109 for offshore use. Since meeting that request, the company has gained considerable expertise in keeping helicopters functional in rough and corrosive marine environments. The AgustaWestland 109 Power Elite (\$6 million to \$8 million)—a civilian version of its military cousin—cruises at 155 mph and has a range of more than 575 miles. The aircraft has retractable landing gear and lands on wheels instead of skids, which makes shipboard landing easier.

"With skids, you have to pick up the helicopter to move it and that's a bit of a problem," says Helidecks' Mathieson. A slightly bigger model than those typically used on yachts, it seats six to eight people. Although this is an older model than many of its current competitors, it has a distinctive look, one that many owners like. Says HeliRiviera's Frean, "It's a beautiful helicopter—quick and powerful." *AgustaWestland, www.agustawestland.com*

—M.S.

world-class medical facility that's 300 miles away, in an emergency."

Sikorsky has more than 50 years' experience working in a maritime environment. In the 1990s, Japan's coast guard approached the company with the idea of modifying the S-76 to enable it to land on ships. In response, the company has developed folding rotors and special tie-downs that keep the aircraft

stable while hangared, even in rough seas.

Many owners who already own an S-76 want it modified to land on a new yacht, which is relatively easy to do. "You can make the blade modifications in a weekend," Askue says. In fact, he tells of one customer who wanted a new S-76 for his yacht. The company could not deliver it as quickly as he wanted, though. "We modified an existing

AgustaWestland's 109 Power Elite was designed with corrosive marine environments in mind.