



THE BIG BOAT BIBLE

THE DEFINITIVE RESOURCE FOR SUPERYACHT OWNERS, BUYERS, SELLERS AND CAPTAINS



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SECURITY IS NOT A COMPETITION

Al V. Corbi

You only need to pick up a newspaper or turn on the evening news to understand that the likelihood of a family being torn apart by a single random, violent act is greater today than at any time in history. And, despite the allure of peace, tranquility and privacy...when you are on your yacht...you are on your own. Let me say that again, *“When you are on your yacht, you are on your own!”*

It is important to understand that in today’s world, the safety of one’s family is no longer an assurance but rather a proactive pursuit that can only be attained through careful planning. The most important concept to be learned about security is: *YOU are responsible for your own safety and security and that of your family.* Tragedy strikes in an instant. There will be no one there to help you. If you haven’t planned prior to the event, it will be too late.

Your safety and that of your loved ones and crew may well depend upon the pre-planning that you have put in place to insure Control and Isolation during an unfortunate event...either natural or man-made.

Security is not a competition, nor should it be a contact sport. You don’t want to have an opponent. Should you have one, you certainly don’t want to face him directly. But face him or not, you have to win!

Why then are conventional security systems based on confrontation?

Many of the security solutions that were developed ages ago to protect the earliest crews and vessels have endured with little if any change since the first ships set sail.

The problem for today’s yachtsman is that those early vessels were intended for exploration and trade, often welcoming conflict as a source of provisions and a way to increase their bounty. Early ships were rarely, if ever, intended to “Carry the King.”

The advent of pleasure yachts forced change. Significant advancements had to be made in styling and creature comforts to attract the affluent buyer, while security remained stranded in the 1st century...until recently.

Technological advances have changed the way security can be provided, and raised the effectiveness of a proper plan to almost foolproof.

However, new technologies are tools...not systems. An effective security system requires intelligent integration of diverse yet synergistic technologies and procedures to provide real-time information and both defensive and offensive capabilities.

Today's technologies can overcome many of the Sea's most daunting challenges such as water depth, submerged or floating obstructions and providing situational awareness in zero visibility...miles in the distance. And while these emerging technologies hold great promise in their isolated areas of concern none, individually, are encompassing enough to provide a comprehensive security solution.

There are essentially two types of threats to a yacht and its passengers – natural and man-made. Both require the gathering of information, or situational awareness, to evaluate the threat and formulate an appropriate response.

Properly integrated, current technologies can be transformed from today's helm-clutter of disjointed products to an effective, intuitive and interactive security solution that can protect the yacht, its owner and crew from both natural and man-made threats and, if necessary, neutralize many of those threats.

Vessel Protection

Protecting Vessels has always meant keeping them out of harm's way. Whether the threat is natural or man-made, avoiding hazards usually requires being able to see ahead - both under and above the surface of the water - in order to avoid or outrun the danger. Prior to the last 20 years this called for experience, strong nerves and luck... with no guarantee of success.

Times have changed. Recent technological advancements in multi-beam sonar, data processing and DGPS positioning now provide a complete high-resolution picture of the seafloor that can be used for marine navigation.

Other advancements have replaced much of the human factor with highly sophisticated technologies capable of identifying the yacht's continued global position and movements, calling for help, seeing twelve miles into the horizon and locating a person overboard regardless of conditions. Today's vessels can be extremely intuitive, capable of detecting and responding to threats and, depending upon the systems' level of sophistication, neutralize them as well.

An effective Situational Awareness & Control System (SACS) should be included in every yacht's security solution. It provides information

about what's going on in the far/near physical environment of the yacht, as well as onboard.

For example, consider a yacht cruising down a well-traveled coastline at night in moderate seas and poor visibility. If the area has been well charted the information contained on the charts will allow the captain to avoid known natural dangers such as reefs, outcrops of land and shoals. A chart (either paper or electronic), however, will not allow the captain to avoid manmade or random dangers such as a partially submerged shipping container or another vessel on a collision or intercepting course.

To avoid those dangers, the captain must first know the danger is there.

Current technology is available to provide the information, and a lot more. Early warning notification of upcoming underwater obstacles or even approaching divers should the yacht be at anchor or dockside, allows the captain or owner to take appropriate action. Advanced systems will even notify you if a person goes overboard and will provide a real time video feed to designated stations aboard the yacht or to land based screens anywhere in the world you choose.

The same technology can be programmed to report system failures aboard the yacht as they occur and even produce occupancy reports (both authorized and non-authorized) delivered through the convenience of your cell telephone wherever in the world you have service.

While the Situational Awareness & Control System (SACS) keeps you informed about the yacht's physical environment, a proper Access Control System (ACS) will provide you with the necessary information about who is onboard, was onboard, or is attempting to come onboard: whether authorized or not. It will also allow you to view any portion of your yacht, from your master stateroom or from the other side of the world.

Access to any or all compartments can be monitored. Controlled audio and/or video records can be captured and stored from any observable area, whether your crew was aboard or not. Not only will this provide real-time information for your security, it may well provide legal protection should a problem arise.

You can sleep peacefully in your stateroom in total security. No one can enter unless you authorize them.

You can have all the above with no adverse effect on the aesthetics of your yacht. The security systems will be transparent, not only for aesthetic reasons, but because the best security is invisible. A criminal can't defeat what can't be seen, and there is nothing more intimidating than the unknown!

Now, let's rethink the status quo of a typical yacht security solution versus how a modern plan using advanced technologies integrated into a security solution might work.

Until now, realizing that owners and their guests could potentially be in harm's way while aboard their yachts, armed crew members and/or supplementary armed body guards provided protection from man-made threats. This type of security has proven problematic at best for a number of reasons, not the least of which are:

What happens if the armed crew, or security detail, isn't onboard, or becomes incapacitated?

Who will protect you from the crew if they, or their associates, become the source of the problem (the threat)?

Safety plans that depend upon confrontation ignore the fact that typically no one wins a fight. There are only varying degrees of loss. Time, not force, is the critical factor to insure a safe outcome. Time eventually neutralizes most threats, while force raises the stakes, typically increasing the danger.

The problem, both ashore and especially on the high seas, is to provide those being protected with enough time for the threat to subside or assistance to arrive.

Fortunately, systems have finally been developed that provide both isolation and control that when combined, will allow an owner or crew to generate the time and/or tactical response necessary to neutralize the threat.

Current technology and techniques such as "hardening (ballistic grade walls, ceiling and floor liners, doors and windows)" and "mantraps" along with remotely controlled and deployed offensive tactical systems replace the function of an armed crew with a much higher degree of reliability, while placing the owner in complete control of adverse situations and avoiding the confrontation typical when a body guard has to, well...guard your body.

In short, crews don't have to be armed at all times, if ever.

That brings us to the next related point. With modern technology owners and their guests don't have to be put in harm's way in the first place.

Personal & Vessel Protection from Man-made Threats

Think of safety like layers of an onion, with the Owner, guests and crew protected in the center. As criminals advance they encounter resistance on multiple, ever increasing levels. From the moment intruders enter an established perimeter; systems identify, record, and then discourage any encroachment. For more potent threats, hardened yachts make it difficult, if not impossible to board and/or penetrate. The next level of protection incorporates Safe Cores, the ultimate components in neutralizing even the most formidable threat. Safe Cores typically encompass broad living areas, allowing the Owner,

guests and crew to move freely in their natural environment, safe from the threat with the Owner in complete control of the situation. These Cores are architecturally invisible yet impenetrable, providing protection from both natural and manmade threats.

The Initial: Detection Layer

As the threat approaches it triggers a response, which provides detection, documentation and deterrence.

This layer typically encompasses a 100 feet to ten mile perimeter around the yacht. Systems see approaching vessels and/or navigational hazards and weather anomalies. As the event is being detected it is simultaneously being documented and relayed to the Captain and crew, and the Owner if he desires; globally if the Owner is not on the vessel.

In the case of an approaching vessel it is notified and instructed to alter its course. Depending upon the response, appropriate action can be taken by the protected yacht to discourage any further approach.

The Second: Approach Layer

If a vessel enters the mid/pre-boarding perimeter of 100 feet the threat becomes imminent.

While the approaching vessel continues to be documented, notified and instructed to alter its course, the security system shifts from detection to tactical.

Recent technological advancements in all levels of tactical response provide the protected yacht the ability to respond appropriately to the level of threat being presented.

The Third: Boarding Layer

If the Owner chooses not to respond to the threat in advance, or even a guest becoming a threat, the danger becomes critical.

At that moment the Owner, guests and crew can, and must, be isolated in their Safe Cores. Typically these Cores are ballistically fortified staterooms with Command Center features capable of providing long and near-range communications, surveillance and appropriate tactical responses.

The Fourth: Final Layer

In the unlikely event the intruders, after being notified of the dangerous position in which they have placed themselves, choose not

to immediately leave the yacht, the Owner can take the appropriate action to neutralize the threat from the safety and comfort of the Master Stateroom. One solution is the MANTRAP in which intruders can be contained and controlled until help arrives or the yacht makes its way to the authorities. Other, more aggressive solutions are available.

The keys to security are Control and Isolation. Whether the situation is as serious as an approaching unauthorized boat in a remote location or a partially submerged cargo container, or simply a crew member's unauthorized late-night guest, procedures must be in place, ahead of time, to detect, document and deal with the unwanted act...while keeping those being protected isolated from its potential consequences.

To have control one must first have the knowledge and the technology in place to follow-through. Aside from the very few Owners who brush-up on the latest trends in generator maintenance and 3D sonar imaging before retiring at night, this responsibility rests squarely on the security plan provided to you by your Security Consultant...who won't be there when you need help most.

Let me say it again, "*When you are on your yacht, you are on your own!*" And the only hope for success lies in effective pre-planning.

Convenience

When technology is properly integrated and applied it can greatly enhance the level of comfort and convenience to our lives. Technology is typically the area in which the WOW factor resides. With such high-tech wizardries as advanced access control, global surveillance and communications, and property management, your imagination is the only limit when it comes to pushing the technology envelope and the conveniences it will afford.

Access Control

Recent advances in biometric and iris scan technologies make it possible to document the coming-and-going of both authorized and unauthorized personnel. With time and date stamped photographic and biometric evidence stored in retrievable devices, the days of he-said-she-said and false accounting are a thing of the past.

Owners can now make informed decisions, control access to their assets (yachts, homes, planes, etc.) and look-in on them and their staff remotely at any time from any place around the world.

Surveillance

The importance of documentation and situational awareness for the Owner cannot be overstated. Whether it is for an Owner's need to make an informed decision or to defend against a legal attack, audio/video records are an Owner's single most important safeguard.

Understanding that the legal process that follows an event can be more damaging and costly to the Owner than the event itself, the need for high definition documentation is no longer a luxury but an absolute necessity.

In addition, an extensive surveillance system provides visual access to the entire yacht for the Owner, whether it is from the Master Stateroom or the other side of the globe.

Communication and Property Management

Information from the access control and surveillance systems provides the Owner real-time notification of an unauthorized event. The advantage of reacting to an event while it is occurring can greatly minimize, if not completely avoid, damage and/or consequences.

Imagine the difference in being able to phone into your Captain to inform him that there is an unwanted visitor being detained in a MANTRAP until the proper authorities arrive rather than hearing days later of the damage that person created.

Transparency

Worth repeating, for security to be effective it must be invisible. One can't defeat what can't be seen ...and there is nothing more intimidating than the unknown.

In addition to the tactical advantages of invisible security, it becomes a necessity in today's highly stylized interiors. In response to the discerning requirements of today's clients, integrators must master the art of embedding highly developed surveillance, communication and tactical systems into the most sophisticated interiors with little or no sign of their existence.

Remember

- When you are on your yacht, you are on your own!
- You are responsible for your safety and security.

- An effective security system requires intelligent integration of diverse yet synergistic technologies and procedures.

A well thought out comprehensive security strategy offers yacht Owners the ultimate possession...Peace of Mind.

Examples of What a Proper Security Solution Can Do for You

Not every threat to the people, yacht or property is at the same level of severity. Some threats put the lives of everyone on board at risk. Others may endanger a single person, the yacht or your personal property.

The following are three real life examples at various levels of severity that proper security solutions should have, and would have, prevented.

Example 1 – Situational Awareness and Avoiding Underwater Dangers

Twenty years ago an experienced Captain was piloting his vessel from the Chesapeake Bay into the mouth of the Potomac River en route to Washington, D.C. The morning was clear and crisp. As a result of a late winter thaw, heavy rains and an outbound tidal flow, the current flowing out into the bay was exceptionally brisk. Combined with the yacht's forward motion, the differential exceeded 30 knots.

The yacht entered the Potomac in the center of the channel with plenty of charted depth, which was confirmed via depth sounder.

With no warning there was a massive impact followed by the unmistakable sound of a submerged object scraping down the length of the hull. The Captain immediately pulled the throttles back, but it was too late. The aft end of the yacht heaved upward then settled back down to its waterline. A telephone pole shot into the air just aft of the yacht.

The hull was holed and both shafts and props were mangled.

Today, incidents like this which threaten the integrity of the yacht and safety of those aboard are preventable. Forward scanning three dimensional single ping sonar will provide the Captain with an image of the bottom and any underwater obstacles in the yacht's path up to 1400 feet away, and within 60 to 90 degrees of the current course. The submerged telephone pole rushing toward the yacht would have been observed up to a quarter mile away, and easily avoided.

Example 2 - Access Control and Hardening

A megayacht was docked at a popular U.S. East Coast marina. The owner, his family and guests retired for the evening. Despite deck sensors, a crewman on watch and a basic surveillance system, sometime during the night the daughter of one of the guests was assaulted at gun point in her stateroom by an intruder, who later escaped unnoticed by anyone but the victim.

The incident was preventable.

A state of the art security system would have advised the watch keeper (and any other designated individual) that an unauthorized person had boarded the yacht. It would have denied the intruder access to the living areas and contained him until the authorities arrived.

To prevent similar future incidents, the owner retrofitted the yacht so that accessing the interior requires positive biometric recognition, all staterooms were hardened to prevent break-ins by intruders and man traps were installed to contain anyone who made the attempt.

Example 3 – Background Checks and Permanent Surveillance Video

Shortly after purchase by a new owner, a megayacht spent three weeks in a shipyard for routine scheduled maintenance. Local tradesmen were employed to complete cleaning, repair and restoration tasks. The inherited crew focused on provisioning; the inherited Captain focused on supervising the tradesmen.

When the work was complete and the yacht prepared to leave the yard it was discovered that 1) various expensive paintings, sculptures and audio gear were missing; 2) the quantity of prime meats delivered to the yacht was twice the capacity of the freezers (which were less than half full upon sailing) and 3) the paid receipts greatly exceeded the original written quotes for the work performed.

The losses were preventable.

Upon investigation it was discovered that 1) the yacht's video surveillance and recording system was inoperable until repaired just prior to the end of the project; 2) the Owner had no personnel files or background checks on either the Captain or crew.

If you consider the fact that not only will the Captain and crew be operating the owner's multi-million dollar investment and responsible for the safekeeping of valuable personal items, but they will also be living in your floating home with you and your family when you're aboard, a thorough and extensive background check should be mandatory.

Surveillance video with redundant storage available only to the Owner will serve a threefold purpose. Just as a police officer parked on the side of the highway will tend to discourage speeding, the crew's knowledge that their actions are being recorded in public and the owner's private areas of the yacht will discourage inappropriate behavior even if a dishonest person slips by the security check.

Secondly, if losses are discovered, the video records can be examined to determine who is responsible. Lastly, in today's litigious environment a fully factual video record of virtually all activities on the yacht is a sensible precaution.

Remember, your security and your yacht's are a result of preplanning, not reaction to an unfortunate event.

About the Author: Al V. Corbi

Al V. Corbi is the Founder and President of SAFE, Strategically Armored & Fortified Environments, which created the science of modern day ballistic resistant security for residences, corporate headquarters and superyachts. Along with his high-end residential and marine clients, for 40 years Mr. Corbi has also designed secure installations for the U.S. Justice Department, various other U.S. agencies and Governments worldwide.

Corbi designs fully integrated strategic systems that incorporate detection, documentation, deterrence, defensive and offensive options. With his systems clients can protect themselves from natural and man made threats in Safe Cores and, if the situation warrants it, they can take offensive action to neutralize the threat. Unlike traditional security arrangements which depend on third parties, Mr. Corbi's systems place his clients in full control.

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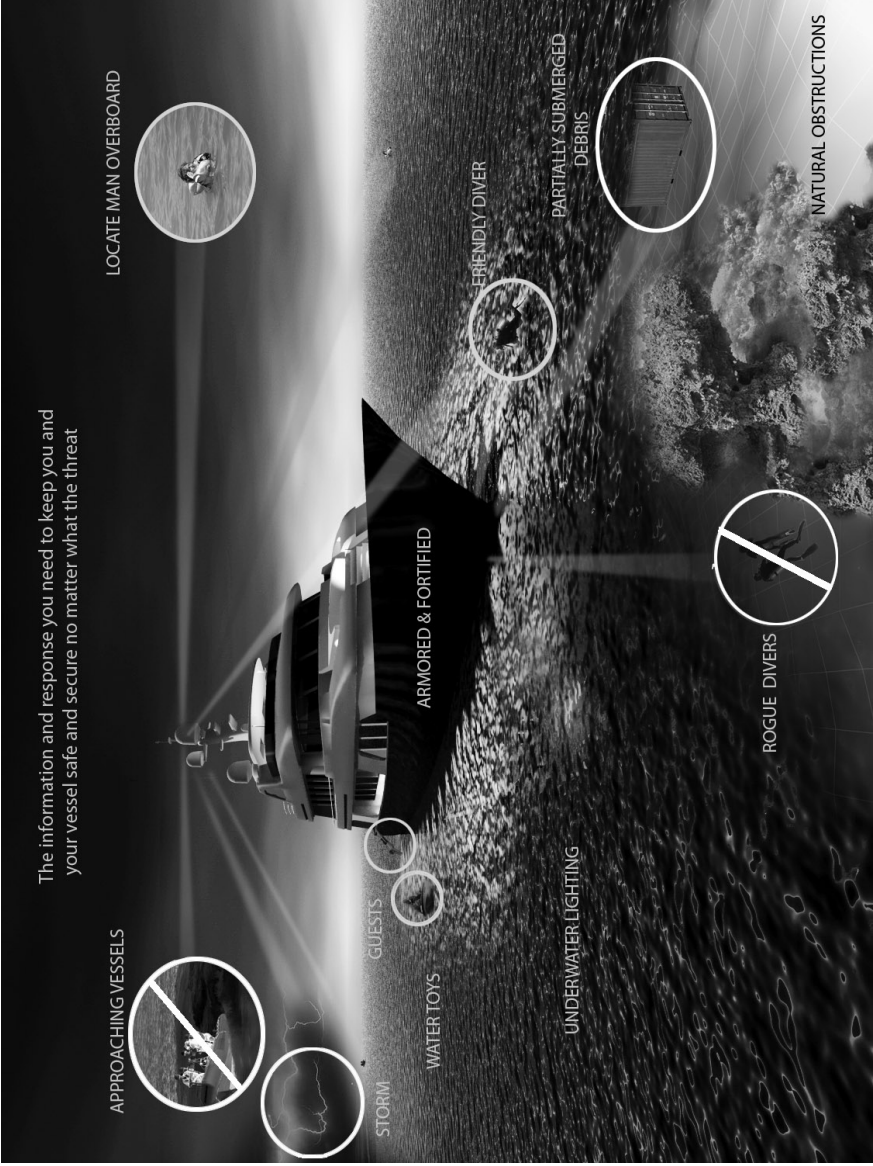
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Situation Awareness & Control are the critical ingredients when formulating a response to man-made or natural threats.

**"Where there is a sea, there
are pirates." - Greek proverb**

**"Wouldst thou' - so the
helmsman answered,
Learn the secret of the sea?
Only those who brave
its dangers
Comprehend its mystery!"**

- Henry Wadsworth Longfellow