



Wreck Trips to  
**BIKINI ATOLL**

## ABOUT OPERATION CROSSROADS

### The Critical Experiment

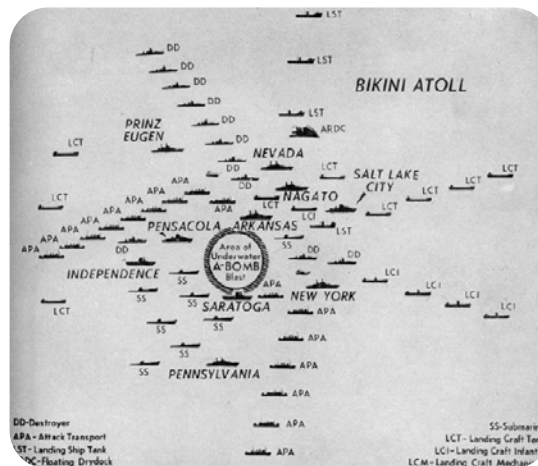
After WWI ended in the early 1900s, and following a mandate from the League of Nations, the Japanese took over the administration of the Marshall Islands. This then resulted in an intensifying of the military presence in the islands, in anticipation of WWII. Bikini, Truk Lagoon, and other low-lying, peaceful coral atolls became strategic points of interest. Life for the Bikini Islanders wasn't peaceful anymore as the Japanese began building watchtowers to keep an eye out for an American invasion. Bikini Atoll became a key outpost for the Japanese headquarters in the Marshalls.

In February 1944, American forces took Kwajalein and the Marshall Islands by force. The Japanese control over the Marshalls was lost. There were five Japanese soldiers left on Bikini. Instead of allowing themselves to be captured, they blew themselves up with a grenade while hiding out in a foxhole.

Post WWII, in December 1945, then US President Harry Truman, informed the US Army and Navy that the testing of nuclear weapons would be undertaken "to determine the effect of atomic bombs on American warships." Unluckily for Bikini, its location and isolation from sea and air routes meant it was chosen as a nuclear testing point, these tests came to be named Operation Crossroads.

Commodore Wyatt, then military governor of the Marshall Islands, went to Bikini in February 1946. After church on a Sunday, he gathered the native Bikini Islanders and asked them to leave their home so the US could begin testing bombs. He stated it was for "the good of mankind and to end all world wars." King Juda, the Bikini monarch, was understandably confused but entered into discussions with his people. They decided to leave: "We will go believing that everything is in the hands of God."

While the islanders were preparing for their enforced exodus. The US testing program advanced swiftly. 242 naval ships, 156 aircraft, 25,000 radiation recording tools, and 5,400 animals arrived. The latter were to serve as test subjects. More than 42,000 US personnel played a part in the testing program.



## ABOUT OPERATION CROSSROADS



The Crossroads tests were the first of other nuclear tests in the Marshalls. They were also the first to be announced in public beforehand and were observed by a large audience, including press from around the world, who were invited to the event. Operation Crossroads was led by a joint Army and Navy Task Force One, headed up by Vice Admiral William H. P. Blandy, not the Manhattan Project, which had developed nuclear weapons in WWII. 95 target ships were placed in Bikini's lagoon. They were hit with two rounds of Fat Man plutonium implosion weapons, the same type of nuclear bomb that was dropped on Nagasaki. Each implosion yielded 23 kilotons of TNT.

95 vessels — the equivalent of the sixth-largest navy in the world — were caught in the crossfire of the Able and Baker bombs, both of which were about the size of the nuclear bombs dropped on Nagasaki and Hiroshima. Among those sunken ships were four US battleships, two aircraft carriers, two cruisers, eleven destroyers, eight submarines, numerous amphibious and auxiliary vessels, plus three surrendered German and Japanese warships.

These vessels had been bunkered and were filled with ammunition. Some even carried sheep and other animals acting as stand-in soldiers. The ships were completely war-ready and more than half of the world's supply of camera equipment was supplied to record the event.

The two atomic bomb blasts, Able and Baker were both about the size of the nuclear bomb dropped on Nagasaki. The first blast, Able, was dropped from a B-29 and detonated at an altitude of 158m/518ft at 9 am on 1 July 1946.

Designed to replicate the Hiroshima bomb over water, it did not go as planned as the bomb missed the USS Nevada battleship, its target. It did, however, sink the USS Gilham, USS Carlisle, USS Anderson, USS Lamson, and IJN Sakawa.



## ABOUT OPERATION CROSSROADS

Baker, a bomb of the same yield was used for the second test, it was detonated at 27m/88ft underwater beneath LSM-60 on 25 July 1946. No part of LSM-60 has been identified since, it is presumed to be vaporized. Other vessels sunk by this test were USS Arkansas, USS Pilotfish, USS Saratoga, YO-160, HIJMS Nagato, USS Skipjack, USS Apogon, and ARDC-13 dry-dock.

A Defense Nuclear Agency report detailing the weather briefing the day prior to the blasts states there would be "no significant fallout ... for the populated Marshalls." The 6 pm briefing was contradictory though: "the predicted winds were less favorable; nevertheless, the decision to shoot was reaffirmed, but with another review of the winds scheduled for midnight." It was known that high winds were "headed for Rongelap to the east." Furthermore, "it was recognized that both Bikini and Eneman islands would probably be contaminated."

The decision to go forward with the testing, knowing full well that the winds were blowing toward inhabited islands, was, in essence, a decision to contaminate the northern Marshalls. And to irradiate the people who were living there.

Radioactive contamination in the lagoon, after the Baker test, proved more problematic than expected. Prinz Eugen, a German heavy cruiser, sank in December, just five months after the tests. The high radioactivity levels meant that repairs to the leaking hull couldn't be completed. Nine surviving ships were decontaminated and then sold as scrap. Other vessels, where decontamination wasn't successful, were sunk near Kwajalein.

Bikini Lagoon became the graveyard for some of the most significant naval ships in war history. The dangers of the radioactivity and the remoteness of the area led to an extremely limited exploration of this scuba diving site for many years. Now, from the misery and destruction wrought by the nuclear tests, Bikini Atoll has risen as the world's preeminent wreck diving site.



Photo by Jesper Kjeller



Bikini Atoll or “coconut place” is one of the most remote diving destinations on the planet. Bikini is located just north of the equator in the Pacific Ocean, halfway between Australia and Hawaii, approximately 850km/530mi northwest of Majuro Island. Bikini consists of 23 islands, of which two were habitable. It is part of the Marshall Islands, which is made up of 29 atolls and five islands.

Bikini Atoll is a basic place with very poor infrastructure (even compared to other locations around Micronesia such as Truk Lagoon) which makes operating an expedition about as tough as it can get. But, as you will soon find out, diving the nuclear ghost fleet more than makes up for the logistical hassles we might have to endure to get there.

The following guide should help answer some of the many questions that you undoubtedly have about diving in Bikini Atoll.



Photo by Jesper Kjeller

### Diving conditions and environmental factors

Diving conditions in Bikini are excellent, it offers relatively easy diving and Bikini is ideal to visit all year round in terms of environmental conditions. The water is warm and consistent 28-29°C/82-85°F whether you are at 6m/20ft or 60m/200ft, and there are no major thermoclines. While the water is warm enough to dive in shorts and a t-shirt, we recommend a full-length 3 to 5mm wetsuit or a drysuit with light undergarments. Also, bring gloves and a hood for protection, especially if you are planning on penetrating the wrecks. There is sharp metal everywhere and you want to avoid tetanus, infections, or burns from oil, or even worse, aviation fuel. At times, there are occasional blooms of jelly fish, some of which sting.

Tidal patterns within the lagoon can be complex but the tidal range is generally small and any currents encountered on the majority of wrecks are minimal and hardly noticeable. As you are diving inside the lagoon, visibility does vary, but it's usually excellent at around 30m/98ft clear.

Bikini Atoll is a deep and technical diving location, with big challenging wrecks and advanced penetrations. The wrecks are in the Normoxic Trimix range. In contrast to Truk Lagoon, where there is shallower dives, the wrecks in Bikini are usually at the deeper end of the spectrum. It is a minimum prerequisite that you are a OC or CCR Normoxic Trimix diver so that you can fully enjoy these spectacular wrecks.

There is no monsoon or wet and dry seasons as such. Northeast trade winds blow from January and start to fade away after May when the doldrums take over. From July to November Bikini comes under the influence of the Inter-Tropical Convergence Zone (ITCZ) when moist southerly winds and short tropical disturbances are most frequent.

The daytime air temperature is normally between 28-31°C/82-88°F all year round. Rain is normal on most days but it normally falls in short sharp showers with hot sunshine in between.

On Bikini and, and the rest of the Marshalls, crops such as coconuts, pandanus, papaya, banana, grow. A rich forest teeming with plant species covers the islands, too. All the fruits and vegetables used aboard Pacific Master are imported.

Animal life throughout the Marshalls include hermit crabs, coconut crabs, lizards, and birds. Chickens, pigs, and ducks are reared for food and domestic pets such as cats and dogs are also present.



Photo by Jesper Kjølter

### The Dirty Dozen Expeditions

The captain and I have carefully handpicked the most interesting wrecks in Bikini, with depths ranging from 21m/68ft to 57m/187ft. During the expedition, we will anchor at around one wreck per day. Pacific Master will do two long dives during the course of the day and the boat does not move at night unless there is an emergency.

In this FAQ sheet, I have included a preliminary wreck itinerary which is subject to change. If the group feels one dive on a wreck is enough, and we have weather and organizational logistics on our side, we may visit another wreck during the day. The captain and I will try our best to make this happen upon request. I do not expect this to happen often however, especially not on the Saratoga.

If you have a special request for a wreck, please let me know so I can liaise with the captain and see if it is logistically possible. As the trip nears, we will have a group for the expedition on Facebook where we will periodically discuss preparation and plans. This is a great way to share information among the participants pre-expedition and for everyone to get to know each other.

A short third dive can be arranged per day if desired, but because we're diving in a remote place like Bikini, safety is absolutely paramount. Doing two long technical dives in a day, for multiple days in a row, will give your tissues a run for their money. However, if you want to shorten your runtimes on the shallower wrecks and aim for more dives, and if it works in terms of safety, the captain and I may be OK with that. Please inform us of your intentions in advance.

Detailed dive briefings are given for each of the dive sites and teams will form for different missions; CCR group, OC Group, engine room group and so on.

Pacific Master will offer guided and unguided dives during this trip on the wrecks that have a permanent mooring. The dive guides in Bikini are just that, guides and not instructors or technical diving gurus.

You are responsible for your own safety and dive planning at all times. There are lots of opportunities to penetrate the wrecks. Some of these penetrations are relatively easy and straightforward, others are quite advanced. Dive guides on Bikini do not run lines on any guided dive. If you want to run your own lines into the wreck then this is, of course, possible but not on a guided dive. The captain and I will explain the best course of action on each wreck for penetration.

Solo diving is permitted on the outside of the wrecks only.

### Equipment considerations

There are **no** dive shops in Bikini Atoll for the purchase of diving equipment, spares for rebreathers, or OC equipment. Pacific Master will have some basic diving equipment on board for hire, but with different configurations on board, it's crucial that you bring as many spares as possible so you do not miss any dives. If you service your equipment before coming to Bikini, please use it a couple times before traveling to ensure there are no problems. Bring plenty of torches, the bigger the better. You will **not** regret it in the engine rooms!

### Tanks

The following DIN cylinders are available on Pacific Master:

- » Aluminum 12L/80 cu ft Twinsets
- » Sidemount Sets
- » 3L/23 cu ft Rebreather Cylinders
- » 6-12L/40-80 cu ft Bailout Cylinders

There are **no** M26 valves or adapters onboard, you must bring your own.

Bring your own slings for deco/bailout!

Please specify the configurations you will dive in when you book.

### Gases

- » Oxygen is US\$0.07 per liter
- » Helium is US\$0.22 per liter

All Nitrox mixes from 32-100% will be available.

O<sub>2</sub> is provided at a minimum 90% purity from our Oxygen generator.

As there is no means to bank gasses in Bikini Atoll, **all gasses supplied will be charged for**, even if they are not used. CCR divers can arrange shared cost, team bailout gasses at the beginning of the expedition. After a brief discussion on the first evening, we can fill some standardized gasses which everybody agrees will work for the entire trip.

OC divers can plan their gas cost by looking at the wreck list and assuming there are two dives on one wreck each day. I think it's fair for OC divers to budget for around US\$300 in oxygen charges, given you'll be topping up 50% and oxygen every day. But remember, it's all based on your planning and consumption.

### Sofnolime

Molecular Sofnolime 1-2.5mm is available and is sold in 4.5kg/9.9lb containers at US\$65 each.

### Scooters

Two Dive-X Piranha and two Bonex scooters are available on Pacific Master and can be reserved for US\$50 per dive.



Photo by Jesper Kjeller

### Proposed travel schedule

- » **Day 1** – Flight lands in Kwajalein (KWA), transport via ferry to Ebeye Island, embark Pacific Master. Depending on flight arrivals, you may have time for equipment setup and a weight check where we are anchored. Pacific Master departs for Bikini.
- » **Day 2** – Boat travel to Bikini, boat briefing, paperwork, safety procedures, emergency procedures, equipment setup.
- » **Day 2 until the day before disembarking** – Diving in Bikini.
- » **Day before disembarking** – Departure to Ebeye Island. Settle remaining bills.
- » **Last Day** – Disembark Pacific Master. Transport from Ebeye Island to Kwajalein. The last dive must be completed 24 hours or more before your flight.

### Typical day

This will be the schedule for a typical day of diving:

- » 07:30 – Coffee!
- » 08:00 – Breakfast
- » 08:30 – Briefing/Dive 1
- » 12:00 – Lunch
- » 14:00 – Briefing/Dive 2
- » 16:00 – Snacks
- » 19:00 – Dinner
- » 20:00 – Team Debriefing

### How much will all this cost me?

Please contact us at [info@thedirtydozen.org](mailto:info@thedirtydozen.org) for detailed dates and pricing.

The package supplied includes premium cabin accommodation, transfers, full board meals, and a set of rebreather/doubles cylinder rental and two bailout/deco cylinders. This trip has been designed to avoid any unnecessary surprises in the end. The only things we cannot bill you for in advance are on-board running costs like Helium, O<sub>2</sub>, and internet. Please budget for this! Marine park fees (US\$500 - \$550) are payable before the trip or on board. Usually, flights from Europe to Bikini start at around US\$1500.

### How do I secure my spot?

The Dirty Dozen Expeditions has scheduled trips three years in advance, please contact us for available trip dates. Due to limited spaces, **a 40% deposit is required to secure your spot and is non-refundable. The remaining 60% has to be paid six months prior to departure at the latest.** You can pay via wire transfer or credit card but please be advised that there is a 3% administrative fee. Master Liveboards and The Dirty Dozen Expeditions can help you find a comprehensive travel and cancellation insurance for your peace of mind. and cancellation insurance for your peace of mind.

### *What is included in your trip?*

The team at The Dirty Dozen Expeditions makes avoiding big surprise bills at the end of a trip high on our list of priorities. Therefore, we include as much as possible so you can budget accordingly. We are available at any time to discuss the budget for consumables depending on your configuration.

#### On a Dirty Dozen trip in Bikini Atoll the following is included:

- » Accommodation during the cruise
- » All meals
- » Fresh coffee from our espresso machine, fruit juice and soft drinks
- » CCR, twinset or sidemount cylinder rental
- » 2 x bailout/OC deco cylinders
- » Two dives per day
- » Transfers between the airport and M/V Pacific Master on the day of embarkation
- » Transfer between M/V Pacific Master and Airport on the day of disembarkation

#### Additional costs:

- » Marine and port fees: US\$500, subject to change
- » O<sub>2</sub>, helium, and Sofnolime
- » Flights (from around US\$2000)

#### Onboard extras:

- » UW scooter rental
- » Alcoholic drinks
- » Crew tips
- » Satellite internet



### Essentials

Local electricity is 110-volt supplied through American two-pin and three-pin sockets. Onboard, we have mainly 110-volt power points supplied through US/European sockets. We also have a number of 220-volt sockets at the camera tables in the dining area. Pacific Master can provide a limited number of UK and Australian plug adapters but recommends that guests bring their own. Pacific Master has an onboard KVH satellite internet system providing the fastest internet access in the Marshall Islands — talk about luxury on an expedition!

Prices for the internet are:

- » 200MB package: US\$70 (US\$60 if you pre-book)
- » 500MB package: US\$175 (US\$150 if you pre-book)
- » 1GB package: US\$300 (only available if you pre-book)

Cash is king in Bikini, bring plenty of US dollars as the banks here rarely work. Bigger hotels will accept credit card payments and Pacific Master does as well.

The time zone in Bikini is GMT +12, Bikini does not observe daylight savings.

### Language and religion

The official languages are English and Marshallese. The population is of mixed religion: 51.5% percent United Church of Christ, 24.2% Assemblies of God, and 8% Mormon. There is a small community of Muslims on Majuro.

### Health

In the Marshall Islands, medical care is very basic with the “best” medical facility in Majuro. Any form of treatment other than what is very basic requires evacuation. Ensure you bring any medication you need as there is a strong possibility that it will not be available locally. Normal precautions should be taken with food and it is advisable to drink bottled water only.

No vaccinations are required before entering the Marshall Islands, however, we recommend consulting with your doctor for updated information prior to departure. If you are traveling from a Yellow Fever area, proof of immunization might be required. It's recommended that tetanus immunizations are also up to date before traveling to Bikini.

Bikini is a malaria-free zone and mosquitoes are not a problem on the boat. But they can be annoying on shore, so consider bringing insect repellent. The Chikungunya, Dengue and Zika viruses have all been reported in the Marshalls, and are spread by mosquitoes.

The radioactive radiation divers are exposed to on the shipwrecks is negligible since water acts as an excellent insulator. Divers are safe, as long as they do not try to grab souvenirs from the wrecks. Pilfering is forbidden and very hazardous.



Photo by Jesper Kjæller

*“In 2018 I had the pleasure of exploring the wrecks of Bikini Atoll together with Aron Arngrímsson. These dives count among the best I have ever done.”*

*Richard Lundgren  
Co-Founder of Global Underwater Explorers*



### Diving emergencies

The Marshall Islands is an extremely remote diving destination without hyperbaric facilities. The nearest hyperbaric chamber is in either Hawaii or Australia. For follow-up recompression treatment, emergency air evacuation to one of the aforementioned countries is required. With this in mind, it is mandatory that our guests purchase dive and liveboard-specific insurance according to their level of certification. This insurance needs to cover air evacuation and the appropriate depths you plan to dive to. We strongly urge that all guests dive well within recognized limits and follow our advice.

### Emergency equipment

Each Master Liveboards vessel is equipped with modern safety features such as automated life rafts, EPIRB, satellite communication, and emergency pumps.

### First aid

Master Liveboards' vessels are equipped with fully stocked medical first aid kits for treating minor injuries and ailments as well as for assisting trained medical professionals in remote locations. Each yacht has a full complement of medical-grade oxygen which can be administered to divers through DAN kits or unit-specific attachments. You will also find an Automated External Defibrillator (AED) on board. AEDs have been proven to greatly increase survival rates in the eventuality of cardiac fibrillation. Our dive teams are all qualified emergency responders. Should you feel unwell at any point during your cruise, please seek the advice of your cruise director who will be able to assist you.

### Visa and travel

For most visitors, a free 30-day tourist visa is granted on arrival in Kwajalein, this can be extended for up to 90 days. US citizens can stay for one year. Passports should be valid for 120 days after the departure date and guests must have booked onward travel from the Marshall Islands before they arrive. There is a departure tax of US\$20, payable in cash, when leaving Kwajalein. It is important that you have the necessary arrangements sorted out before you travel. The sole option for getting to Kwajalein is via Hawaii on United Airlines' island hopper. As Hawaii is a US state, the ESTA regulations apply. Getting to Guam and onward is possible via Manila, Hong Kong, Tokyo or Incheon, Korea.

### Airline to use from Guam or Hawaii

United Airlines – [www.united.com](http://www.united.com)

Flying United Airlines via Guam is not a choice, it's the only airline that goes from Guam or Honolulu to Kwajalein. Guam and Kwajalein are US territories. You will need permission to enter the US either by Visa or ESTA (Electronic System for Travel Authorization).

### Advice on international flights

It is recommended that you book your international flight to and from Kwajalein Airport (KWA), which is served by United Airlines three times per week from Honolulu, Hawaii (HNL) and takes around 7 hours.

The HNL - MAJ - KWA flight leaves on Monday, Wednesday, Friday, so generally, you will have to leave the day before that (Sunday, Tuesday, Thursday) from Los Angeles (LAX) or San Francisco (SFO) to make the connection.

Ideally, you will arrive in Honolulu one day prior to your flight to Kwajalein, as this flight departs early in the morning. Keep in mind that you will be crossing the date line when traveling to Kwajalein Atoll. There is also a flight from Guam arriving at Kwajalein, however, the itinerary for our trip is scheduled around the Honolulu flight.

### Baggage allowance

This is a tricky one. United Airlines will allow two, 22kg bags checked in on your flight from Guam onward to Kwajalein, which is great for you. You have to make sure your operator to Guam does the same to receive the benefit the whole way, and not be slapped with additional baggage fees. What I usually do is to have 25kg in my hand luggage and around 50kg in checked luggage, at my own risk. It has worked so far, but you have to be careful. Keeping CCR heads and regulators in an FCC-approved cabin pelican case has worked wonders for me, and takes the pressure off checked weight allowances. Otherwise, you can just pay for an extra bag/s.

### For those that are booking their flights to Bikini Atoll from the US

Check out the award miles needed to your destination from United (usually not more than 70K return) and the offers from Chase right now with 75,000 miles free upon registration. Effectively, by paying your trip with their card or using earned award miles on [united.com](http://united.com) can get you a US\$1500-\$2500 return flight as low as US\$22 in taxes. Contact us for more information at [info@thedirtydozen.org](mailto:info@thedirtydozen.org).





Photo by Jesper Kjeller

### Arriving at Kwajalein Airport

As Kwajalein is a US Army base, arrival and check-in at the airport can be lengthy, bags are likely to be searched and a representative from Master Liveboards cannot meet you due to the high security clearances required. It is of the utmost importance that you stress to the government officials when you land that you want to identify your luggage immediately, before the plane takes off, so it is not forgotten and left on the plane. This has happened before. Once you have completed formalities at the airport, a shuttle bus will take you to the Kwajalein ferry terminal where you will board a free Army ferry for Ebeye Island. Once you arrive at Ebeye, you will be met by our staff who will assist you in transferring to our boat, Pacific Master, which will be anchored a short distance away from the ferry dock.

The distance from Kwajalein to Bikini is 406 km/215 NM, of which 120 km/65 NM are in the sheltered waters in the lee of Kwajalein Atoll. 280 km/150 NM of the journey is in open seas from the northerly point of Kwajalein Atoll to Bikini Atoll. On average, the trip takes 25 to 30 hours depending on the weather.

### Optional Hawaii/Marshall Islands package

If you would like to extend the luxurious feeling and pamper yourself a little extra, Master Liveboards can offer you the following package:

Organization of your transfers to and from the airport in both Hawaii and on Kwajalein, as well as to and from Pacific Master. A booking in the hotel of your choice in Honolulu for the two nights before and after your flight to the Marshall Islands. Please mention this package when you book if you're interested.

### Advised minimum dive level & insurance

Master Liveboards strongly recommends that all guests carry full travel and cancellation insurance as we cannot be held liable for delays which occur during the cruise, nor any delays or cancellations of the flights, accommodation, tours, and transfers organized. Master Liveboards work in partnership with DiveAssure and can offer you a selection of competitively priced dive and travel insurance policies, including short-term and multiple-trip policies. We recommend the comprehensive insurance plan Dive & Travel Plus, which has been specifically developed for diving liveboard holidays. This insurance covers your trip expenses in the event of missing your liveboard departure due to (flight) delays. Moreover, it provides coverage for lost diving days, if, for any reason, the boat is required to abort the cruise. For instance, due to a guest injury, mechanical breakdown of the ship, air supply failure, inclement weather conditions, etc.

The minimum training requirement for this cruise is Normoxic Trimix open circuit and closed circuit.

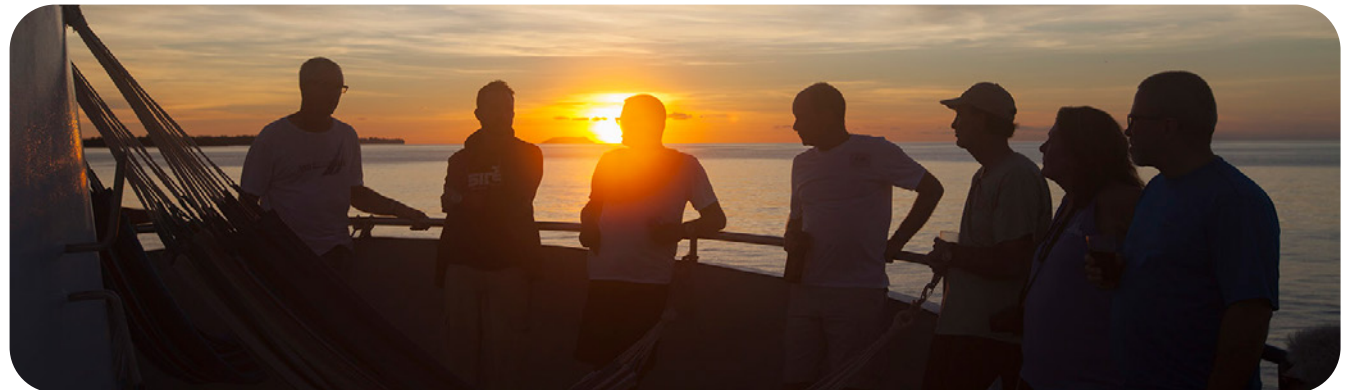


### The yacht

This custom-designed liveaboard was built with divers in mind to bring you the very best diving holiday experience possible in Bikini Atoll. Previously, sailing the Solomon Islands as Taka conducting high-level wreck exploration dives like the USS Atlanta, this steel-hulled vessel boasts an experienced boat crew, dive team, gas blenders, and chefs to ensure the highest standards of service.

M/V Pacific Master features 9 cabins allowing comfortable accommodation for up to 16 guests. These are categorized into five en-suite premium double/twin cabins, two standard single cabins and two standard twin cabins with shared bathroom facilities.

An incredibly spacious lounge and dining area is located on the main deck of the boat providing plenty of air-conditioned space to unwind and enjoy the phenomenal onboard cuisine after an exciting day of diving. This deck also boasts a dedicated camera area for our photographer guests as well as an expansive dive deck area which leads perfectly to the dive platform from which much of the diving will be done. Each station has plenty of space and storage for your technical diving kit. This space also provides individual toilets, fresh water showers, and rinse tanks for your equipment.



### Guest facilities

- » 9 twin-bed/double/single-bed A/C and en suite cabins for 16 guests
- » Spacious indoor dining area with a camera station, complete with numerous charging points and storage facilities
- » The dive deck provides individual set up stations, under-bench storage, and a camera table. Large entry platform to the rear and staff deckhands
- » Booster to fill O2 to 200 bar
- » Oxygen generator
- » Upper level indoor lounge and bar with a plasma screen for planning expedition dives
- » Plenty of space to set up rebreathers and fill scrubbers
- » Big rinsing tubs
- » Shaded outdoor relaxation area with lounge chairs
- » Sundeck and captain's Y-bridge
- » One dive tender for doing exploratory wrecks
- » Brand new, customized expedition tec diving facilities

## LIFE ON BOARD M/V PACIFIC MASTER

### Food and drink

All Master Liveboards yachts offer a choice of international and local cuisine, served buffet style in the indoor, air-conditioned dining area. We cater to special dietary requirements. Please inform our reservations team prior to your trip to ensure we have plenty of dishes to suit your needs. A range of carbonated soft drinks, fruit juices, black, green, and herbal teas are available, as well as instant and freshly brewed coffee. A selection of fresh fruit is always on hand, as well as some tasty treats in case you feel peckish in between meal times. You may also select beer, wine, or spirits from the cocktail bar for an additional fee.



### Clothing and footwear

It is recommended that our guests bring casual and comfortable clothes. Think swimwear, shorts, and t-shirts. A sweater is advised for cooler nights, particularly after multiple dives.

We request that guests respect others by wearing clothing at all meal times. Most guests prefer to walk barefoot on board our vessel, however, island visits may require sturdy sandals or cross-trainers.

### Smoking

Smoking on board is permitted in designated outdoor areas.

### Payments on board

#### Marine and port fees

The dive permit for Bikini costs US\$500 (subject to change).

#### Optional extras

All prices on board are quoted in US dollars. We are able to accept payment by credit card (Mastercard or Visa) for which there is a 3% surcharge. Guests are advised to bring from US\$500-\$1000 for any optional extras.

### Tipping

Tipping is a matter of personal choice. Should you feel that your crew has made your holiday extra special, then they will certainly appreciate a tip. Please be advised that the boat can only accept cash tips.

An envelope will be provided for your convenience by the cruise director and gratuities are divided equally between all the crew, including the captain and the dive guides. The recommended tip amount is US\$200 per diver.



Please note that the wreck list is subject to change at any time, for any reason deemed appropriate by the captain and/or Aron.

## USS Prinz Eugen

The Prinz Eugen was named after an 18th century Austrian general, Prince Eugene of Savoy. This Admiral Hipper-class cruiser served as part of the Nazi Kriegsmarine during World War II. Construction of the ship began in April 1936 and, after the war broke out, Prinz Eugen entered German service in August 1940.

Together with the Bismarck, Prinz Eugen took part in Operation Rheinübung in May 1941. The Battle of the Denmark Strait saw this pair of ships attempt to break out into the North Atlantic Ocean. In the process, they damaged the HMS Prince of Wales and destroyed the battle cruiser, HMS Hood. Prinz Eugen then detached from the Bismarck to disrupt the Allied merchant ships and routes. Unfortunately, the operation was curtailed because of engine problems.

After undergoing necessary repairs in occupied France, Prinz Eugen was part of Operation Cerberus. This was a daring maneuver making a quick return to Germany, via the English Channel, during daylight hours. February 1942 saw the heavy cruiser deploy to Norway. But her time there was short-lived. Shortly after arriving, Prinz Eugen received severe damage after being hit by a torpedo fired by Trident, a British submarine. She again returned to Germany for urgent repairs to her stern.

During May 1945, when Germany collapsed, the ship was turned over to Britain's Royal Navy. Eventually, Prinz Eugen was given to the US Navy who kept her as a war trophy. Prinz Eugen was assigned to Operation Crossroads and took part in the Bikini Atoll tests. She survived the atomic blasts and was taken to Kwajalein Atoll, finally capsizing in December 1946. There the Prinz Eugen remains, still partially visible above the surface of the water.



Min Depth 0m/0ft  
Max Depth 35m/115ft  
Length 212m/696ft

## USS Saratoga

The USS Saratoga was one of the first US aircraft carriers commissioned during 1927. After entering service in 1928, she spent her whole career with the Pacific Fleet. This 39,000 ton vessel had a huge fuel capacity. She could carry 132,264 gallons of gasoline, 63,200 barrels of oil and 249 barrels of diesel. The Japanese claimed to have sunk Saratoga on a number of occasions during World War II. She sustained damage but was repaired, and in July 1946, took part in Operation Crossroads.

Having survived the first nuclear blast, Saratoga was not so lucky during Test Baker, the second blast. Ammunition and fuel loads were at 67 percent and 10 percent capacity respectively. The explosion forced the vessel to lift out of the water, knocking everything off the flight deck and destroying her funnel.

The Baker blast created waves that washed over the Saratoga. Eight hours later, as he watched the aircraft carrier sink below the water, Hanson W. Baldwin, a correspondent for the New York Times, wrote "There were many who had served her in the observing fleet and they fought with her through the long hot hours as the sun mounted. Outside the reef ... the observing ships cruised, while the Sara slowly died. There were scores who wanted to save her-and perhaps she might have been saved, had there been a crew aboard. But she died a lonely death, with no man upon the decks once teaming with life".

USS Saratoga now rests 50m/167ft below the water in the lagoon at Bikini. The bridge is accessible at 12m/40ft with the deck at 25m/82ft. The bombs and Helldivers are all on display with their controls and dials.



Min Depth 21m/69ft  
Max Depth 51m/167ft  
Length 268m/879ft

## HIJMS Nagato

The flagship Nagato was a treasure of the Japanese Navy. As Admiral Isoroku Yamamoto's pride and joy, this floating fortress took part in Japan's attack on Pearl Harbor during World War II. Masanori Ito, the Japanese historian, wrote "When World War II began, the Japanese Navy — the third most powerful in the world — included some of the mightiest ships in naval history and was a force worthy of the pride and trust of the Japanese people. Then, in less than four years, this great war machine fell from glory to oblivion. Of ten battleships riding in Hiroshima Bay in December of 1941, nine were sunk. The lone survivor, the Nagato, died at Bikini as a target in an atomic bomb test."

HIJMS Nagato rests at a depth of 51.8m/170ft. This 32,720 ton vessel lies upside down and makes for an amazing dive site. The ship's bridge is easily accessible and you can enter the place where Admiral Yamamoto launched his attack on Pearl Harbor. The Nagato's four huge screws give her the appearance of Stonehenge below the ocean.

## IJN Sakawa

The Japanese light cruiser Sakawa launched in April 1944 after being built at Sasebo Naval Dockyard. She had a small number of armaments with approximately 70 guns, 8 torpedo tubes, 16 depth charges, 2 floatplanes, and a catapult. The guns were actually re-commissioned secondary weapons taken from earlier battleships.

IJN Sakawa was the only ship of its class to survive World War II. The Sakawa's short-lived career meant she never left Japanese waters until after the war. In August 1945, she was surrendered to the US Navy and used to repatriate Japanese troops. After being transferred to Bikini Atoll for Operation Crossroads, Sakawa was sunk by the first nuclear blast, Able. She now rests in an upright position on the sandy bottom.



Min Depth 28m/92ft  
Max Depth 54m/177ft  
Length 215m/705ft



Min Depth 49m/161ft  
Max Depth 53m/174ft  
Length 162m/531ft

## USS Arkansas

USS Arkansas was a 29,000-ton US battleship with a fuel capacity of 4,000 gallons of gasoline, 37,779 barrels of oil, and 119 barrels of diesel. Launched in January 1911, she saw many presidential commissions during her career.

In October 1912, she partook in the Presidential Naval Review on the Hudson River. President William H. Taft was taken to the Panama Canal Zone to inspect the unfinished canal. In April 1914, Arkansas helped with the occupation of Veracruz, Mexico. December 1918 saw the ship form part of the fleet escorting President Woodrow Wilson to France.

During World War II, USS Arkansas protected naval convoys on their journey across the Atlantic. She stayed in Europe providing assistance at Omaha Beach during the Normandy invasion in Southern France, and the bombardment of Cherbourg. She then took part in further action at Okinawa and Iwo Jima in the Pacific. Having survived through both world wars and being awarded four battle stars for her service, the USS Arkansas met her end at Bikini Atoll. Test Baker sunk the battleship during Operation Crossroads. She now lies almost upside down in the lagoon.

## USS Anderson DD-411

USS Anderson was a destroyer that acted as a screen for aircraft carriers during World War II. She was constantly on the front line of battle and served in the Solomons, Tarawa, Midway, Guadalcanal and the Coral Sea. The Anderson was side-by-side with the Yorktown and Lexington aircraft carriers when the Japanese sunk them in battle. She was also present when the USS Hornet and USS Wasp went down. In 1943, the Anderson was at Wotje Atoll in the Marshall Islands, when she was hit by a six inch shell. The captain and five of his officers were killed and 18 other men were wounded.

Her services earned the Anderson ten battle stars during the war. Her fuel capacity included 168 barrels of diesel and 2929 barrels of oil. When she was sunk by the atomic blast of Test Able, she was at 95 percent capacity. The destroyer now lies in Bikini's lagoon resting on her side.



Min Depth 36m/118ft  
Max Depth 57m/187ft  
Length 171m/561ft



Min Depth 45m/148ft  
Max Depth 52m/171ft  
Length 105m/344ft



## USS Lamson DD-367

USS Lamson was an American destroyer which earned five battle stars during World War II. Before war broke out, she took part in the search for the female aviator Amelia Earhart in the Gilbert and Marshall Islands in 1937. In December 1941, the Lamson was deployed on the unsuccessful search that was launched to find the Japanese Task Force responsible for the bombing of Pearl Harbor. She served out the rest of the war on campaigns throughout the Pacific.

At Bikini Atoll, USS Lamson was at 50 percent capacity with 105 barrels of diesel and 1,800 barrels of oil when Test Able ripped through her hull sinking her. Her damaged and horribly twisted hull remain testament to the tremendous power of a nuclear blast.

## USS Apogon

The American submarine, USS Apogon was awarded five battle stars for her service during World War II. Her normal fuel capacity was 54,000 gallons of oil with 116,000 gallons in reserve.

In her career, she made eight war patrols, the first of which was in November 1943, out of Pearl Harbor. During these patrols, the Apogon sunk three Japanese vessels. She later patrolled the waters from Majuro to Midway. She also took part in Operation Galvanic to seize Tarawa and the Gilbert Islands.

Towards the end of World War II, USS Apogon joined a group of vessels known as the "Mickey Finns". Working off of Formosa, the group managed to sink 41,000 tons worth of Japanese vessels.

The Baker nuclear blast eventually sunk the Apogon. She now lies at the bottom of the lagoon at Bikini Atoll. Sitting perfectly upright, she looks ready to make for the high seas.



Min Depth 36m/118ft  
Max Depth 51m/167ft  
Length 103m/338ft



Min Depth 44m/144ft  
Max Depth 50m/164ft  
Length 95m/312ft

## USS Pilotfish

The submarine USS Pilotfish made five patrols during World War II. Her patrols of the Northern Marianas, East China Sea, Bonin Islands and the southeast Japanese coast earned her five battle stars.

USS Pilotfish's normal fuel capacity was 54,000 gallons. For Operation Crossroads she was at 95 percent capacity. Test Baker left the submarine half-buried on her side in the sand at Bikini. She was featured in the Emmy nominated production "Forbidden Paradise", part of the ABC's World of Discovery series.

## USS Carlisle

USS Carlisle was named for a county in Kentucky. This merchant craft had a fuel capacity of 375 barrels of diesel and 9,695 barrels of oil. Launched in July 1944, her career was short. She made short passages around the South Pacific islands and voyages between the west coast of Hawaii and Japan.

During Operation Crossroads, Carlisle's fuel capacity was at 95 percent. Sunk by Able, she was split wide open, making the ship a magnificent penetration dive. Sitting upright on the sandy bottom, the USS Carlisle is guarded by an impressive school of skip jacks. Most of the time, there is also a shark who sits on the ship.



Min Depth 49m/161ft  
Max Depth 53m/174ft  
Length 95m/312ft



Min Depth 41m/135ft  
Max Depth 52m/171ft  
Length 129m/423ft

# THE PERSON BEHIND THE DIRTY DOZEN EXPEDITIONS



Photo by Jesper Kjeller



Photo by Jesper Kjeller



## Aron Arngrimsson

Aron started diving in 2005 in an attempt to break away from the rat race. Since then, he has never looked back. His passion for technical diving has taken him to some of the best diving locations in the world, and on some fantastic expeditions. He has written articles for dive publications and training organizations, developed products with Fourth Element, Hollis, and Ocean Reef, and has regularly helped organizations developing training outlines. Aron has filmed documentaries and commercials along with hosting numerous TV and film productions including National Geographic's One Strange Rock, Dive Odyssey, and Monty Halls on Channel 5.

One of the co-founders of Team Blue Immersion, one of the most renowned technical diving facilities in the world, Aron operated the business with Jonas Samuelsson and Erik Brown from 2010 to 2016. During these years he taught up to Advanced Trimix, CCR, Gas Blending, full face masks and support diving in the technical diving mecca of the world, Dahab. He was also responsible for in-water safety on CCR, OC, and freediving dives up to 200m deep.

Since selling his business, Aron has been traveling the world on expeditions with world-renowned divers exploring caves, mines, and wrecks and little-known dive treasures. The Dirty Dozen Expeditions is the result of Aron's deep love for diving and his wish for you to see these hidden wonders.

We hope you found this FAQ sheet useful, if you have any other questions or comments, please contact us on [info@thedirtydozen.org](mailto:info@thedirtydozen.org) or catch Aron on Facebook Messenger.