

# Take<sup>the</sup> plunge

See the best of the Caribbean's hidden depths from a live-aboard dive boat

BY *Dr Brad Bowins*

Imagine yourself aboard a beautiful boat cruising the Caribbean. Relaxing on the top deck, you watch the water rush by as the island ahead grows larger. By the time the boat slows, you feel like you can almost reach out and touch

that stunning limestone sand beach or tree-covered slope. Suddenly a bell rings signalling that it's time for the next dive.

That's right: this is no massive cruise liner; it's not even a sail boat. You're on a live-aboard dive boat, or what Europeans call a safari boat. Operating in the premier scuba locations throughout the world, these craft allow divers to explore the depths intensively for a week or 10 days, and to truly get away from it all.

On live-aboard trips, time underwater is what it's all about. On most days there are usually three or four dives during the day and one dive at night. Land-based operations rarely offer more than two dives and, even

if they do, the effort of lugging equipment on and off a boat is simply too exhausting for many divers.

Given the ease of diving from a live-aboard dive boat and the option of five dives per day, you can imagine that there is little time for anything but diving, eating and a very deep night's sleep before starting all over again.

Days start early with a friendly wake-up call and breakfast, dominated by talk of what might be seen on the dives to come. The air is charged with excitement, and perhaps a little nervous anticipation, as divers don their gear and ready their cameras. Dives generally start from the mother ship and in some cases off much smaller tenders. The first dive of the day is

frequently the deepest. The prevailing, although not necessarily accurate, belief is that you're less likely to get the dreaded bends if you progress from deeper to shallower dives throughout the day.

Having enjoyed 16 live-aboard dive trips, six in the Caribbean, I can testify to the incredible value and break from it all provided by these excursions. Divers often report having more unique and stimulating experiences during a week away on one of these excursions than they have throughout an entire year back home.

## GET YOUR KITTS

My first Caribbean live-aboard trip was on the Caribbean Explorer starting from St. Maarten. Our first destination was Saba, an incredibly unique island jutting out of the Caribbean Sea as the tip of a submerged volcano. The island is so steep that, in the early 1900s, Dutch engineers decided that no road could be built on the island.

A local resident wasn't deterred: he took a correspondence course in civil engineering and constructed "The Road That Could Not Be Built." With its twists, turns and sheer drops this road is not for the faint of heart.

From the town of Windwardside, I hiked up the well-laid trail to the top of Mt. Scenery where giant ferns and swirling mist gave the impression that a Jurassic creature was around every bend. When the mist cleared, the island's vertical profile was obvious, and I had a clear appreciation for the massive volcano lying below.

## GLOBAL WARNING

Having been a diver since I was a teenager, I've had an opportunity to witness the impact of climate change in the oceans first hand.

Nowhere is this very real phenomenon more apparent than in the Bahamas and other Caribbean reefs. Here, the massive overgrowth of algae has decimated the hard corals, and to a lesser extent, the soft as well.

Powered by sunlight, algae can easily outgrow corals and other filter feeders — particularly given the warming ocean temperatures and the added nitrogen from fertilizers and untreated sewage which is pouring into the seas.

As if this ecosystem wasn't fragile enough, there has also been a widespread decimation of algae-eating sea urchins due to disease, and overfishing has thinned the population of herbivores such as parrotfish and surgeonfish (named for their lancet-like side spines). As a result, the algae reigns supreme.

This change has occurred over a few short years. It's a wakeup call for all those who doubt the impact of climate change.

Underwater Saba is equally impressive, with dramatic pinnacles such as Eye of the Needle and Diamond Rock rising from the depths. These formations tend to have abundant marine life fuelled by strong currents which bring nutrients from deeper waters. Filter feeders such as hard and soft corals, sponges



Healthy coral in Belize supports a vast network of underwater life. RIGHT: A Christmas-tree worm grows on coral in Saba.



Brad Bowins is a psychiatrist working in a private practice and at the University of Toronto Health Service. He began scuba diving when he was 15 and has completed over 1000 dives, most devoted to underwater photography. In addition to his Caribbean trips, he has explored the undersea riches of the Maldives, Egypt, the South Pacific and Southeast Asia.





There can be up to five day dives and two night dives from a live-aboard — day tours can't compete with that. BELOW: A hawksbill turtle explores the reef searching for jellyfish.



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and feather stars coat the pinnacles, while schools of smaller fish such as the vibrant blue-and-brown chromis hug the reef and barracudas circle waiting for an opportunity to strike. The most impressive residents, however, were the hawksbill and green sea turtles soaring like gliders in flight looking for their favourite food — jellyfish.

Since 1987, Saba has protected its reefs by establishing a marine park. The results are apparent at sites close to shore where large stands of elkhorn coral are fashioned into complex shapes and giant sea fans bend with the current. Good-sized angelfish including the stunning Queen species with a dazzling two-toned blue ring above the eyes, and parrotfish such as the multi-coloured stoplight species are also found in abundance.

Of all the odd-ball fish to be found in the world's oceans, one of the oddest is the Flying Gurnard, having evolved the unique behavior of walking on pectoral (side) fins! Imagine lying on the floor and walking with your arms. Saba is one of the best places anywhere to see them.

Departing Saba we headed to St. Kitt's to explore its flat profile reefs and wrecks. Off Brimstone Hill Fort, one of the largest and best preserved forts in the Caribbean, Paradise Reef revealed a large coral-

## GO OVERBOARD

Live-aboard dive boats truly are an efficient and affordable way to take in prime Caribbean dive sites. You'll save on the cost and hassle of airfare between islands. Pricing depends on the destination, quality of the boat and time of year. Solo travellers will be happy to hear that there is no single supplement.

In the Caribbean, hurricane season peaks in August and September and discounts can often be found, but the risk of poor weather makes the savings questionable. Winter frequently brings more wind and rougher seas. The full moon is associated with greater tidal changes and often produces more active seas.

The following are the major live-aboard operations in the Caribbean.

**Aggressor Fleet** (tel: 800-348-2628 / 985-385-2628; [www.aggressor.com](http://www.aggressor.com)) runs trips to the Bay Islands, Belize, the Cayman Islands, Turks and Caicos.

**Aqua Cat Cruises** (tel: 888-327-9600 / 954-734-7115; [www.aquacatcruises.com](http://www.aquacatcruises.com)) runs trips to the Bahamas.

**Explorer Ventures** (tel: 800-322-3577 / 903-887-8521; [www.exploreventures.com](http://www.exploreventures.com)) runs trips to the Bahamas, St. Maarten, Saba, St. Eustatius, St. Christopher and Turks and Caicos.

**Peter Hughes Diving** (tel: 800-932-6237 / 305-669-9391; [www.peterhughes.com](http://www.peterhughes.com)) runs trips to Belize, the Grenadines and Tobago.

*The Bahamas still have abundant shark populations — the country is aware that sharks are worth much more alive as an attraction for divers than dead for sharkfin soup*

encrusted anchor that was centuries old. Flamingo tongue snails with their multiple orange spots ringed by a dark border were easy to spot on the many sea fans. These beautiful creatures make ideal subjects for macro photography. St. Kitts also has wrecks that have grown into artificial reefs, literally coated with filter feeders much like the pinnacles of Saba.

### BETTER BELIZE IT

I experienced a completely different adventure much further south off the Central American country of Belize, which has the second-longest barrier reef in the world. I set out from Belize City aboard the Belize Aggressor, which was joined by several other live-aboard dive boats.

While diving is reasonably good on the barrier reef itself, the truly awesome diving occurs further out where only live-aboards dare go. Several cays pro-

sive stalactites literally dwarfing divers. Adding to the eerie nature of the cave was the colder water and absence of tropical fish.

Some live-aboard trips in the Caribbean offer the experience of a shark-feed. Certain places such as the Bahamas still have abundant shark populations, largely because the respectful country is aware that sharks are worth much more alive as an attraction to divers than dead for sharkfin soup.

Departing from Nassau aboard the Aqua Cat, we toured the Exumas, a vast string of coral islands. At one site — Amberjack Reef — the crew secured frozen bait for the local blacktip and Caribbean reef sharks. In no time at all, perhaps 30 sharks were around us vying for a free meal and completely ignoring the divers.

I positioned myself to take pictures of these magnificent fish cruising around with the sun behind them.

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vide diving unsurpassed in the Caribbean, such as at Lighthouse Reef where massive black grouper and other large reef fish are abundant. Here walls decorated in marine life plunge from just below the surface into the depths. I repeatedly had the sensation of flying as I passed over the edge.

By far the best-known dive site in Belize is the Blue Hole, made famous by Jacques Cousteau. Not so well known is how his crew dynamited a section at the top to allow passage of their large research vessel! A definite no-no nowadays, but generally accepted back then. An above-water cave during the last Ice Age, the roof collapsed when flooded by rising sea water, leaving a large hole with the top section approximately three metres under the surface and the bottom at 120 metres.

Heading over the lip, I quickly swam down to photograph my fellow divers as they descended with flashlights on. The cave sloped back revealing mas-

With the adrenaline level high and two cameras on the go, it was a very active and exciting hour. As the sun dipped low on the horizon, we ascended, accompanied by a couple of sharks who were perhaps thinking that there might be more handouts available.

Despite the obvious damage to the reefs that was evident in the Bahamas, where a massive overgrowth of algae has decimated the hard corals, I enjoyed my time on the Aqua Cat. I also found that various creatures such as mollusks, stingrays and sponge-eating angelfish seemed to be doing well. The most interesting resident was the solitary lionfish we spotted thousands of kilometres away from where it would normally be found. It had apparently escaped from the massive aquarium at the Atlantis Resort on Paradise Island while it was still in the larval phase.

It seemed to be doing fine and didn't mind posing for pictures — probably a regular affair given its

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side-effects of  $\beta_2$ -agonist therapy, such as tremor and palpitations. These tend to be mild and disappear within a few days of treatment.

Adverse reactions that have been associated with budesonide or formoterol are given below:

| Frequency   | System Organ Class (SOC) disorders                | Reaction  |
|---|---|---|
| <b>Common</b><br>1% to 10%<br>(>1/100, <1/10)       | Cardiac disorders:                                | Palpitations  |
|   | Infections and infestations:                      | Candida infections in the oropharynx  |
|   | Nervous system disorders:                         | Headache, tremor  |
|   | Respiratory, thoracic, and mediastinal disorders: | Mild irritation in the throat, coughing, hoarseness   |
| <b>Uncommon</b><br>0.1% to 1%<br>(>1/1,000, <1/100) | Cardiac disorders:                                | Tachycardia   |
|   | Gastrointestinal disorders:                       | Nausea  |
|   | Musculoskeletal and connective tissue disorders:  | Muscle cramps   |
|   | Nervous system disorders:                         | Dizziness   |
|   | Psychiatric disorders:                            | Agitation, restlessness, nervousness, sleep disturbances  |
|   | Cardiac disorders:                                | Cardiac arrhythmias (e.g., atrial fibrillation, supraventricular tachycardia, extrasystoles)                        |
|   | Immune system disorders:                          | Immediate and delayed hypersensitivity reactions (e.g., dermatitis, exanthema, urticaria, pruritus, and angioedema) |
|   | Respiratory, thoracic, and mediastinal disorders: | Bronchospasm  |
|   | Skin and subcutaneous tissue disorders:           | Skin bruising   |
| <b>Very rare</b><br><0.01%<br>(<1/10,000)           | Cardiac disorders:                                | Angina pectoris   |
|   | Endocrine disorders:                              | Signs or symptoms of systemic glucocorticosteroid effects (e.g., hypofunction of the adrenal gland)                 |
|   | Metabolism and nutrition:                         | Hyperglycemia   |
|   | Psychiatric disorders:                            | Depression, behaviour disturbances  |

**OVERDOSAGE**

There are no data available from clinical trials on overdose with Symbicort® (budesonide/formoterol fumarate dihydrate). An overdose of formoterol would likely lead to effects that are typical for  $\beta_2$ -adrenergic agonists: tremor, headache, palpitations, and tachycardia. Hypotension, metabolic acidosis, hypokalemia, and hyperglycemia may also occur. Supportive and symptomatic treatment may be indicated. A metered dose of 120 µg formoterol administered during three hours in patients with acute bronchial obstruction raised no safety concerns. Acute overdose with budesonide, even in excessive doses, is not expected to be a clinical problem. When used chronically in excessive doses, systemic glucocorticosteroid effects, such as hypercorticism and adrenal suppression, may appear.

**DOSAGE AND ADMINISTRATION**

**Dosing Considerations**

**It is crucial to inform patients to have a medication for rescue use (e.g., Symbicort® [budesonide/formoterol fumarate dihydrate], formoterol, terbutaline, or salbutamol) available at all times to relieve acute asthmatic symptoms. If the patient's medication for rescue becomes less effective medical attention should be sought.**

The patient should be made aware that for optimum benefit, Symbicort® should be taken regularly, even when they are asymptomatic. Rescue inhalations only need to be taken to relieve acute asthma symptoms (see WARNINGS AND PRECAUTIONS).

A reassessment of asthma therapy should be considered in patients using an increasing number of rescue inhalations for symptom relief without achieving improved asthma control.

Symbicort® therapy should not be initiated to treat a severe asthma exacerbation.

**Recommended Dose and Dosage Adjustment**

When starting a patient on Symbicort®, the dose should first be selected so that effective symptom control is obtained. Subsequently, the dose should be adjusted to the lowest dose at which symptom control is maintained. The dosage of Symbicort® should be individualized according to disease severity. Patients should be regularly reassessed so that the dosage of Symbicort® they are receiving remains optimal.

Clinically equivalent doses of Symbicort® and Pulmicort® plus Oxeze® Turbuhaler® are defined as follows:

| Symbicort® Turbuhaler®      | Pulmicort® Turbuhaler® plus Oxeze® Turbuhaler®   |
|-----------------------------|--|
| Symbicort® 100 Turbuhaler®: | Pulmicort® Turbuhaler®: (100 µg budesonide per metered dose) plus Oxeze® Turbuhaler®: (6 µg formoterol per metered dose) |
| Symbicort® 200 Turbuhaler®: | Pulmicort® Turbuhaler®: (200 µg budesonide per metered dose) plus Oxeze® Turbuhaler®: (6 µg formoterol per metered dose) |

There are two strategies for the treatment of asthma with Symbicort®:

**A. Symbicort® Maintenance Therapy (SMT)**

With Symbicort® maintenance therapy, patients use Symbicort® Turbuhaler® as a daily maintenance dose and a separate fast-acting inhaled bronchodilator (e.g., formoterol, terbutaline, or salbutamol) for symptom relief. Patients should be advised to have a fast-acting bronchodilator available at all times.

*Adults and adolescents (12 years and older):*

1-2 inhalations Symbicort® 100 Turbuhaler® once or twice daily. The maximum recommended daily maintenance dose is 4 inhalations.

or

1-2 inhalations Symbicort® 200 Turbuhaler® once or twice daily. The maximum recommended daily maintenance dose is 4 inhalations.

In adults and adolescents the recommended starting dose is one or two inhalations of Symbicort® 200 Turbuhaler® twice daily.

During periods of worsening of asthma, the dose may temporarily be increased up to a maximum of 4 inhalations of Symbicort® 100 Turbuhaler® or Symbicort® 200 Turbuhaler® twice daily.

**Missed Dose**

If a dose of Symbicort® is missed, it should be taken as soon as possible; the patient should then resume their regular schedule. A double dose of Symbicort® should not be taken to make up for doses that are missed.

**B. Symbicort® Maintenance And Reliever Therapy (Symbicort® SMART™)**

Patients use Symbicort® Turbuhaler® both as a daily maintenance dose plus additional inhalations as needed for rapid symptom relief and a timely increase in controller therapy for improved asthma control. Patients should be advised to always have Symbicort® Turbuhaler® available for rescue use. A persistent increase in the use of Symbicort® as needed indicates a deterioration of asthma control, and the patient's condition should be re-evaluated.

*Adults and adolescents (12 years and older):*

1-2 inhalations Symbicort® 100 Turbuhaler® twice daily or 2 inhalations once daily. Additional doses can be used as needed to provide rapid symptom relief and improved asthma control as follows. Patients should take 1 additional inhalation as needed in response to symptoms. If symptoms persist after a few minutes, an additional inhalation should be taken. Not more than 6 inhalations should be taken on any single occasion. The maximum recommended total daily dose is 8 inhalations.

or

1-2 inhalations Symbicort® 200 Turbuhaler® twice daily or 2 inhalations once daily. Additional doses can be used as needed to provide rapid symptom relief and improved asthma control as follows. Patients should take 1 additional inhalation as needed in response to symptoms. If symptoms persist after a few minutes, an additional inhalation should be taken. Not more than 6 inhalations should be taken on any single occasion. The maximum recommended total daily dose is 8 inhalations.

**Symbicort® Maintenance And Reliever Therapy and Symbicort® Maintenance Therapy**

Symbicort® is not currently recommended for children younger than 12 years of age due to the limited clinical data in this age group.

There are no special dosage requirements for elderly patients.

There are no data available for the use of Symbicort® in patients with hepatic or renal impairment. As budesonide and formoterol are primarily eliminated via hepatic metabolism an increased exposure can be expected in patients with severe liver cirrhosis.

**NOTE:** Symbicort® is for oral inhalation only. The medication from Symbicort® is delivered to the lungs as the patient inhales and, therefore, it is important to instruct the patient to breathe in forcefully and deeply through the mouthpiece. The patient may not taste or feel any medication when using Symbicort® due to the small amount of drug dispensed.

**STORAGE AND STABILITY**

Symbicort® Turbuhaler® (budesonide/formoterol fumarate dihydrate) should be stored at room temperature between 15°C and 30°C with the cover tightened.

**SPECIAL HANDLING INSTRUCTIONS**

Symbicort® Turbuhaler® (budesonide/formoterol fumarate dihydrate) cannot be refilled and should be discarded when finished.

**DOSAGE FORMS, COMPOSITION, AND PACKAGING**

Symbicort® Turbuhaler® (budesonide/formoterol fumarate dihydrate) is a dry powder inhalation device that contains 6 µg of formoterol fumarate dihydrate, and 100 or 200 µg of budesonide per inhalation. Symbicort® Turbuhaler® also contains lactose which acts as a "carrier". The amount added does not normally cause problems in lactose-intolerant people.

Symbicort® Turbuhaler® is supplied in two strengths: Symbicort® 100 Turbuhaler® (100/6 µg budesonide/formoterol fumarate dihydrate per dose) and Symbicort® 200 Turbuhaler® (200/6 µg budesonide/formoterol fumarate dihydrate per dose).

Symbicort® 100 Turbuhaler® and Symbicort® 200 Turbuhaler® are available in 60 or 120 dose pack sizes.

Full Product Monograph available upon request.

AstraZeneca Canada Inc., Mississauga, Ontario L4Y 1M4  
[www.astrazeneca.ca](http://www.astrazeneca.ca)

**Reference:**

1. FitzGerald JM, Sears MR, Boulet L-P, *et al.* Adjustable maintenance dosing with budesonide/formoterol reduces asthma exacerbations compared with traditional fixed dosing: A five-month multicentre Canadian study. *Can Respir J.* 2003;10:427-434.



Symbicort®, Turbuhaler®, Pulmicort®, Oxeze®, and the AstraZeneca logo are trade-marks of the AstraZeneca group of companies.



**Take the plunge**

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uniqueness. I recently read that this uninvited ambassador to the Caribbean Sea had been returned to his tank. Oh well, at least it had more than 15 minutes of fame.

**GRENADINES LAUNCHER**

My most recent live-aboard trip was to the Grenadines, a chain of Caribbean islands extending from Grenada in the south to St. Vincent in the north. The Wind Dancer (part of the Peter Hughes fleet) runs trips part of the year from Grenada.

These islands may be better known to sailors, but they offer varied diving opportunities. I noted that many reefs, and certainly those closer to the large island of Grenada, were dead or dying due to algae over-growth. I took the time to educate the staff and other divers regarding this widespread problem. Coral reefs are hidden to the vast majority of people and I believe divers are the ones who can raise awareness of their plight.

Fortunately, some of the reefs in the Grenadines are still healthy and I was very impressed by immense gardens of soft corals, particularly near Bequia. The lengths of the bushy soft coral, sea whips and sea rods were incredible, frequently with branches over three metres in length! Swimming through these gardens was a very surreal experience as the velvety soft branches swaying with the surge brushed by me.

Another surreal sight was the elusive seahorse, which is able to alter its colour to perfectly blend in with the surroundings. On one memorable dive I discovered a golden coloured seahorse swaying with the sponge it was attached to. The excitement of such a find — not to mention the photo opportunity — adds enormous spice to any dive.

Discovering what lies beneath the seas, whether it be seahorses, sharks or even algae related to climate change, is a very special and inspirational experience that has motivated me to keep taking the plunge time and time again. **R**