BIG BOARD/ SMALL KITE VS. BIG KITE/ SMALL BOARD

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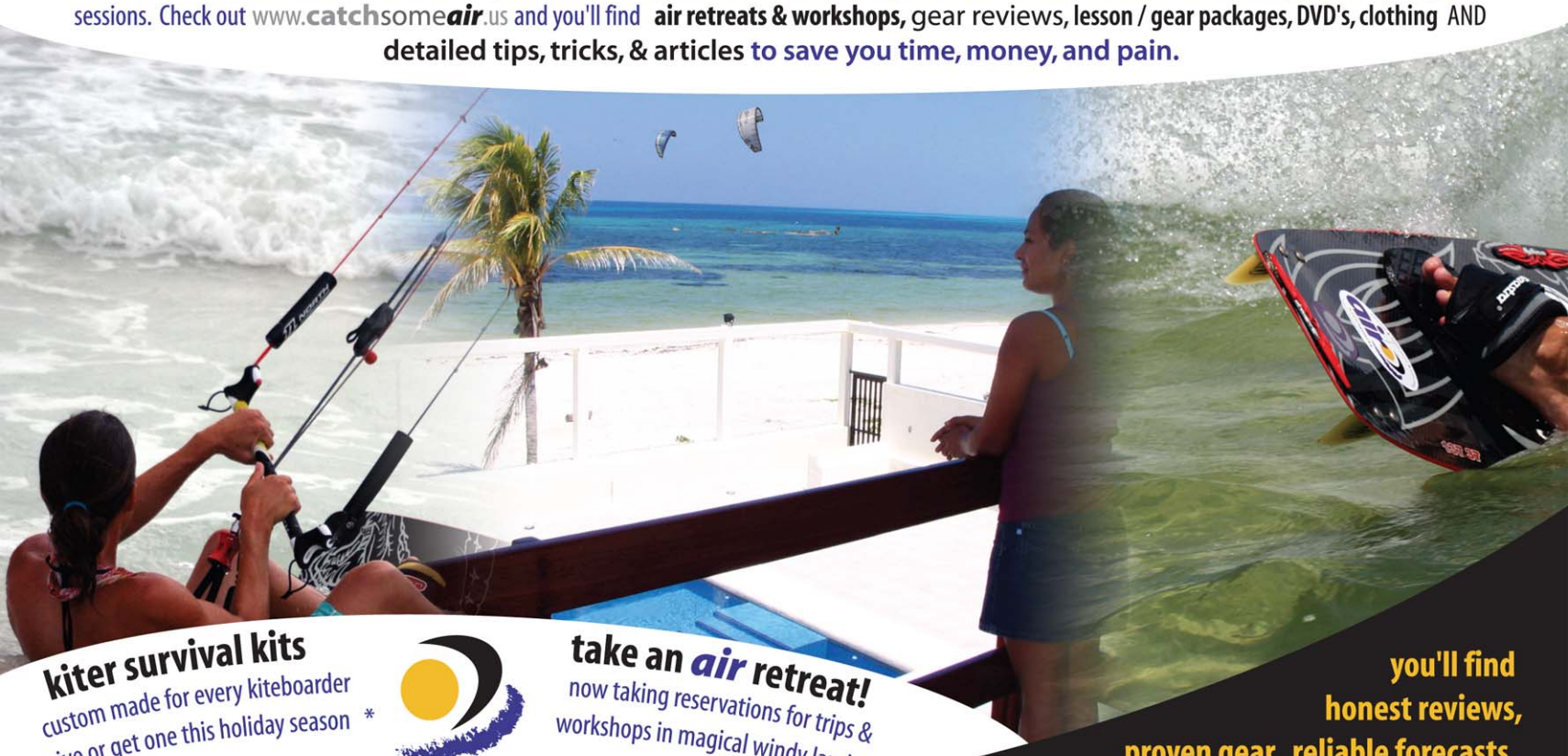

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current conditions. You can work on efficiency and balance skills that will transfer into all aspects of your kiteboarding. Finally, smaller kites are typically easier to relaunch, even in light winds.

DISADVANTAGES: Having to generate power with a smaller kite can be strenuous when the wind is on the light side, because you have to keep the kite in constant motion. The large board may not feel as maneuverable as a shorter freestyle board because of its added size and volume. If you choose to ride a surfboard without foot straps you may find that you do a lot more falling than usual since you don't have the locked-in feeling foot straps offer. If you choose to ride with foot straps you will have to learn how to nail your jibes with a combination of fancy footwork and optimum board balance.

The Dirty Dozen

THE POWER OF KITE PHYSICS **BY ADAM VON INS**

You've just arrived at your launch. Winds are up and it's time to pick a kite. There's way more to choosing kite size than knowing wind speed - in fact, there are 12 major factors that affect how much power your kite delivers. Understanding this basic kite physics might just help boost your next session.

PILOT

1. BODY WEIGHT

More weight means more towing force is needed. Most kite designs are based on a 175-pound male rider. Here's a safe rule to follow: For every 25 pounds of weight difference, increase or decrease the kite by one size. For example, suppose a 175-pound kiter would ride a 12m in the manufacturer's recommended wind range. A 150-pound rider might be better on a 10m in that range, while a 200-pound rider could probably use a 14m.

2. EXPERIENCE LEVEL

Experienced riders can usually handle more kite than beginners of similar size. More power equals bigger moves and bigger risks.

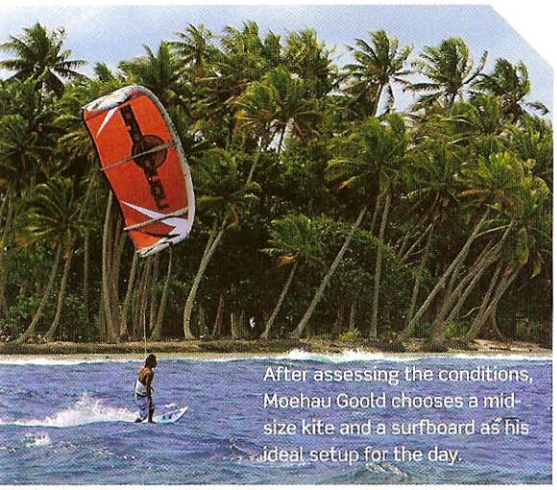
3. RIDING STYLE

Kiters who constantly load and edge upwind need bigger kites to stay powered. A hips-forward board stance keeps the board flatter on the water, requiring much less kite.

WIND

4. AIR DENSITY

We all know hot air expands. When molecules spread out in warm, humid Caribbean-type breezes, winds have less pressure. Hot air offers the kite about



After assessing the conditions, Moehau Goold chooses a mid-size kite and a surfboard as his ideal setup for the day.

25 percent less power than cooler northern winds. If you normally ride a 12m in the tundra, you'll likely want to move up a kite size in the tropics.

5. WIND SPEED

As wind speeds double, available power increases by 400 percent! For example, a 20 mph wind has four times more power than a 10 mph wind. For the best ride, follow this general rule: Move down a kite size with every 4 mph wind increase.

6. GUST FACTOR

A gusty day demands smaller kites. Size the kite according to the top gust speed. With gusts more than 6 mph, you may want to go down a size.

7. APPARENT WIND

It takes less force to keep a body in motion than to get it moving. Several things can trick the kite into thinking there's more wind than is actually available: riding pace, water current, kite speed, etc. You can safely ride a smaller kite if you know how to work these dynamics.

WATER

8. CURRENT

An opposing current pushes you back into the wind, increasing wind pressure. Currents flowing with winds greatly decrease available power. Normally, currents of 3 mph in either direction require a kite size change.

9. SURFACE TOPOGRAPHY

Like ski slope moguls, rough chop makes it difficult to maintain a controlled edge. A flatter water surface allows constant fin and edge contact. The more control you have, the more power you can handle. If chop is 18 inches or more, riding a kite size smaller may be easier.

10. SALINITY

A warm, salty lagoon produces more buoyancy than a cool freshwater lake. The more natural float you have, the less power you need to plane. With the same air density, you can ride a smaller kite in the ocean than on an inland pond.

GEAR

11. KITE DESIGN

Did you know that angle of attack is stronger in determining kite pull than aspect ratio or profile? Understanding the kite's design is critical in selecting size. For example, flat kites have less attack angle, producing less drag and needing more wind for lift. This is why they can depower and handle gusts so well. C-shaped kites have a greater attack angle, which in turn produces more drag, providing low-end pull.

12. BOARD DESIGN

Surface area, stiffness, float, fins and shape all play huge roles in managing kite power. The bigger, thicker, harder, deeper and flatter the board, the less friction produced. Decrease any of these characteristics and you'll need more kite to levitate across the water.

Adam Von Ins is the founder of Air in Mount Pleasant, South Carolina, which offers a full-service shop, lessons and kite retreats. catchsomeair.us

TRACY KRAFT