The following event occurred June 28, 2014 at 1620 hours on an attempted rowing trip in a Herreshoff rowboat (alias “Swift Dory”) from Dangar Island to Brooklyn on the Hawkesbury River near Sydney. The wind strength was measured by the weather bureau.

Bad Timing

About a hundred miles from the east coast of Australia, lies the Great Dividing Range from which the eastern running streams flow into the Hawkesbury River to the sea. Close to the ocean, the estuary broadens out and forms bays and inlets, many of which have sandy beaches. The river contains several islands one of which is Dangar.

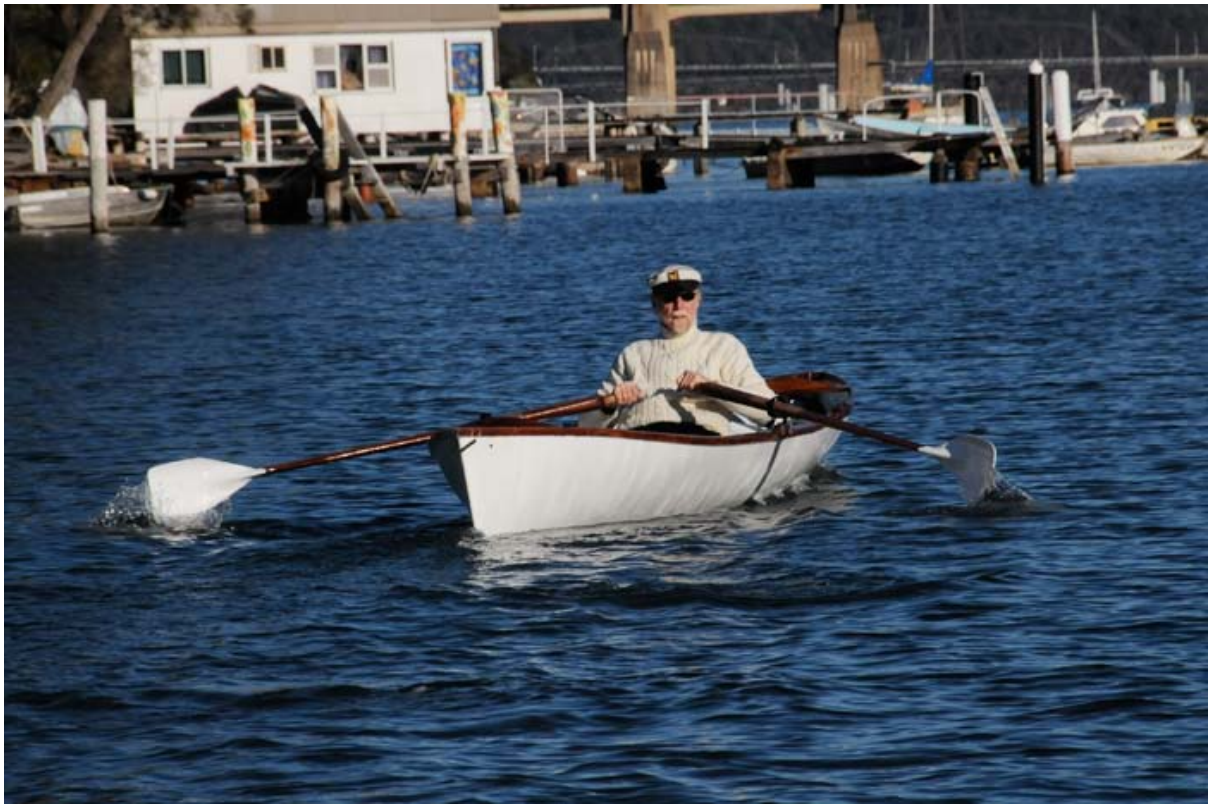
Dangar Island, North side.

Dangar Island sits about 10 miles from the mouth of the Hawkesbury, and was used as a base by the Brooklyn Bridge Building Company, to build a rail bridge across the river, hence, the town opposite is named Brooklyn. It is mainly a sandstone island, that rises two hundred feet in the center, and is inhabited by a couple of hundred people. The island splits the broad reaches of the river so that it flows to either side, and, from the island one can look across the river to vertical sandstone cliffs. This is, after all, a drowned river valley formed in the time of Gondwanaland. It is possible, in places, to climb these cliffs and find rocky overhangs, on the plateau above, which reveal the rock carvings and middens of the Aborigines who lived here for thousands of years. Pools of clear water live in the streams that flow to the edge of the cliffs, and cascade waterfalls to the river below at times of heavy rain. I lived on the Island, and it was here that I began making the Swift dory as a commuter vessel. I have many friends on the island, and often row to visit them. In more than ten years of commuting to the island, I never had an experience like the one described below.

It was mid winter, and light was failing as it came time to finish my visit. I was to row from the Island to Brooklyn, from where I would car top my rowboat home. The wind was blowing about 20 knots in a cloudless sky, and promised to make it an interesting row. Jane protested:

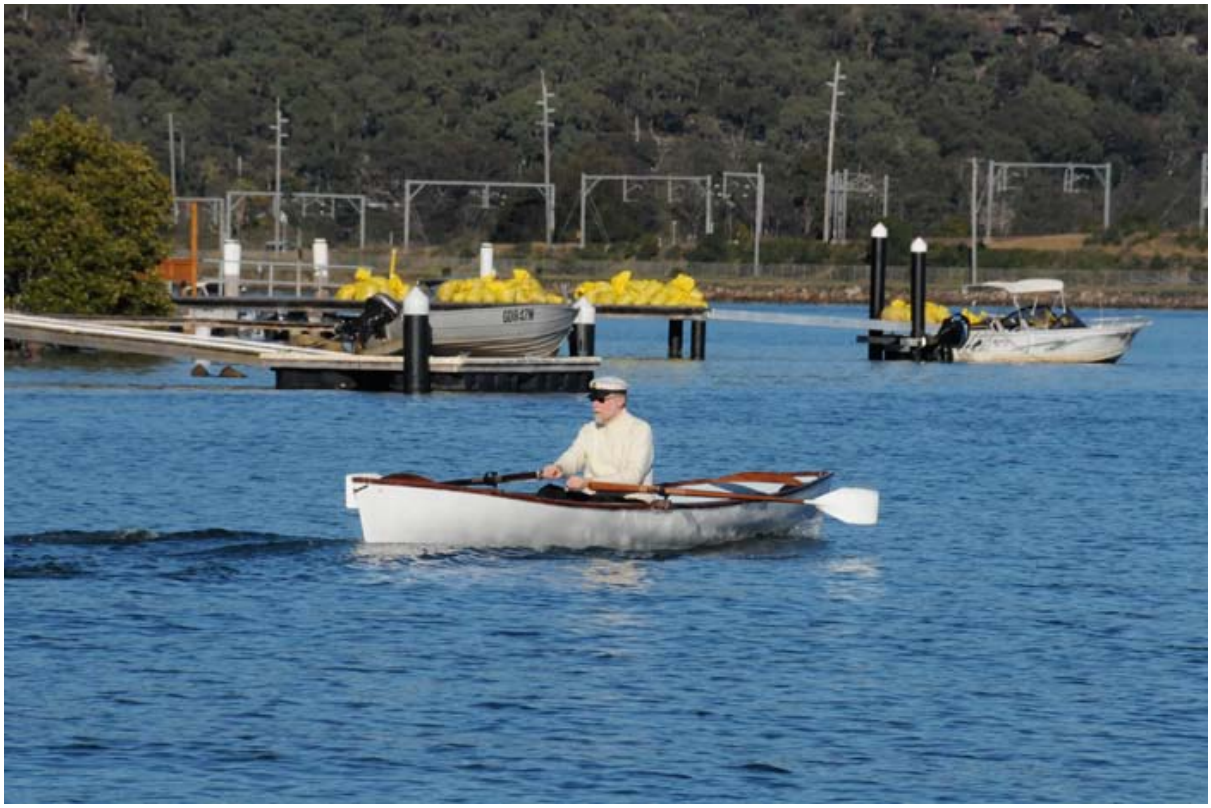
“Isn’t the wind a little strong?”

“No,” I boasted as I bade farewell to Ed and Jane, “real men don’t worry about a bit of wind.”



Heading for the corner in milder conditions.

A few minutes into the row the wind began to pick up, so that I was just making enough headway to round the northwest corner of the island. I comforted myself that once round the corner, the westerly would be on the beam, and, there would be some lee protection from Long island 300 metres to the west of Dangar. That scheme was in jeopardy when the wind increased to more than 40 knots. It seized control of the bow and blew it from its westerly course to the northwest. Waves were rising, whitecaps appeared everywhere, and willy-waws danced across the water on the other side of the river, where I was now headed. I was experiencing what the Beaufort scale describes as a "strong gale". Not only was I not making headway, I was heading in a wrong and dangerous direction. Boy! Was I ever giving that new cedar oar a workout? But it was to no avail; I couldn't pull the boat back on course. The only sensible option was to reverse course and seek to run around the lee of the island. I might be able to row, in the more sheltered water to Brooklyn along the south side of the island. This turn will be a test, thought I, but after shifting my weight somewhat to the windward, this was achieved with some wallowing, and no great drama.



The unattainable north west corner, Long island causeway in the right background.

Immediately after the turn, to my utter astonishment, the boat took off as if it were sliding downhill. It was going at such high speed, it was leaving a clean wake, and appeared to be planing. Now I had to worry about colliding with any of the moored boats in my path. Attempting to control its direction involved either pulling hard on one side or digging the oar in on the other. However my oar speed could not match the boat speed on one side and I was reluctant at that speed to dig the oar in on the other. Temporarily the gods were in charge of my destiny. The unexpected turn of events caused me to re-evaluate my plans. It seemed wise to seek shelter in an alcove of the Island, so this became plan C.

With careful braking on the starboard oar, the boat was induced to turn its beam to the westerly wind, and head south for the beach. At this stage the boat was tossing in the turbulent water, and the lee rowlock sprung out of its socket. To lose the oar at this stage would be a disaster. With no control I could be washed onto the rocks of the ineptly named Wobby beach, about a mile down wind. I seized both oar handles with one hand to free the other, and was able with difficulty, to insert the rowlock pin into the lee socket. Finally I was able to row across the wind and onto the beach. Ed, a seasoned salt, watching the drama from the house had seen me disappear from view at high speed. He ran down and along the path to the beach to give me a hand. He estimated I had been doing 7 knots (8mph) before the wind. In spite of these shenanigans the boat did not take any water, and none of my gear got wet.

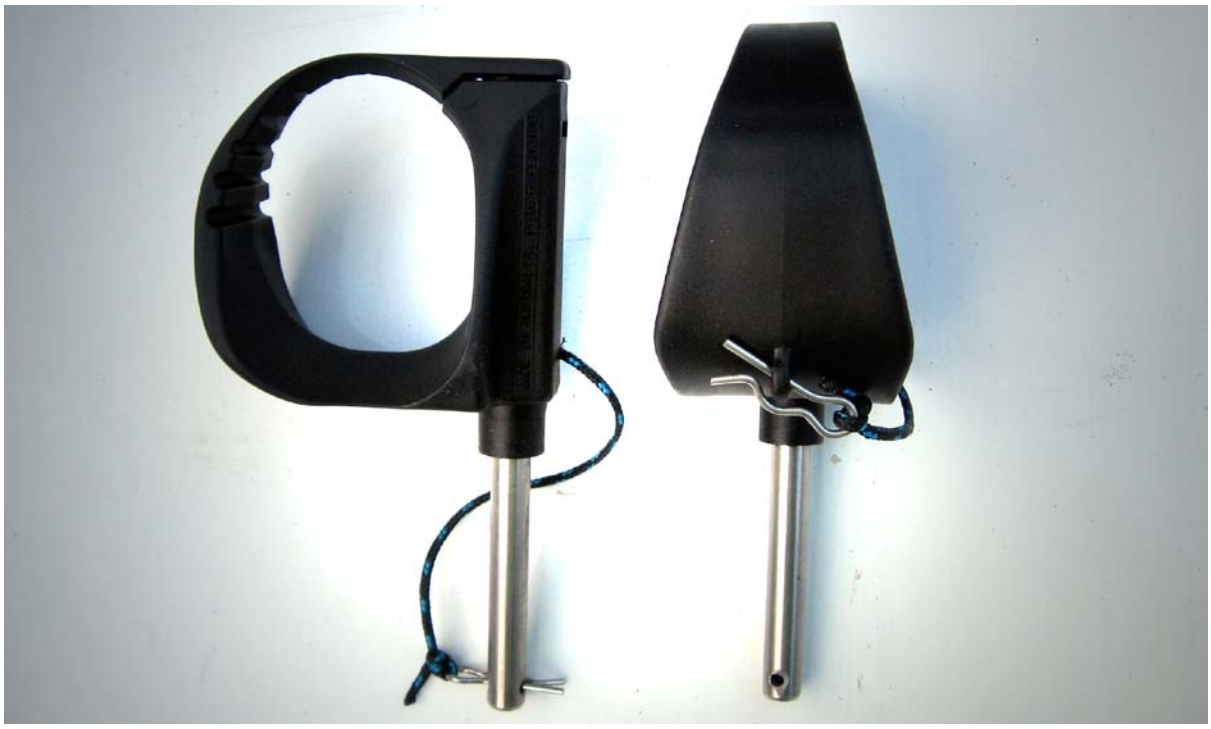
No worries, thought I, just get the ferry home. So Ed and I stored the boat above the anticipated tide. I thanked him, and headed for the ferry wharf, but, when it arrived, it plunged and tossed, and was blown around so much that the driver called out that he would return later. So it was, clever fellow that I am, I arrived late for the next trip and had to wait in the cold blustery conditions an extra 40 minutes, chatting to a charming lady who had made the same mistake.

Next day I returned and had a pleasant row against 16 knot winds, and a 2 knot tide to Parsley bay from where I car topped the dory home. A nice bag of fresh seafood kept my wife happy, and, my life had been enriched by this little adventure.

Comments: I have had the opportunity to observe the behaviour of the boat in extreme conditions and can make the following conclusions:

1. I should have consulted the weather forecast, and left earlier or not at all. The benign weather and cloudless sky during the day had deceived me.

2. Rowlocks should have a retaining pinhole for beginners, who are inclined to lift the oars out of the rowlocks, and for experienced rowers in rough conditions. Losing an oar in some conditions could be fatal. All Gaco rowlocks are to have this feature from now on.



Retaining pin deployed and stowed. Without such a system the pins will be lost or unavailable when needed.

3. The boat stood up well to the beam winds and sea. The shallow draft and a small fin in place of a keel allows the hull to move sideways and absorb the force of the strong winds.

4. The boat has 220lbs (100kg.) of buoyancy. It will float upright and can be bailed out in a swamped condition. This is reassuring and reduces a dangerous temptation to panic.

5. A second observer observed that downwind, the boat was travelling at 7-8 knots, but it felt like more to me. Since nobody has been able to row the boat at anything like this speed, we can assume that it would be impossible to row against a 40knot wind. The kinetic energy of the wind is proportional to the velocity squared ($KE = \frac{1}{2} mv^2$). But there are twice the number of wind particles at this higher speed, so the wind force is the cube of the velocity. Thus we can see that **a 40knot wind is 2.4 times as strong as a 30knot wind**. I estimate that a 30knot wind would be about the maximum that could be rowed against.

6. In gales we have the following options.
    a. If the boat is blowing in the desired direction towards a lee and there are no obstacles draw the oars in till the blades are against the rowlocks and throw weight aft and low onto the knees while holding onto the gunwales, or sit in the bottom of the boat aft of the thwart. The boat should lift its bow and blow downwind towards the objective.
    b. If obstacles are present get the boat beam on to the wind and manoeuvre around them.
    c. Try to manoeuvre into the lee of land or an inlet and get ashore.
    d. If being blown out to sea row into the lee of the harbour or river entrance, then make contact with emergency services. Always carry a well-charged mobile phone. If being carried out to sea deploy a drogue, which might be a bailing bucket with a strong handle. I have discovered a three-gallon "Gorilla bucket" which is designed to carry heavy materials like rocks and mortar (plumbers use this type). I have tested it and it is quite effective. It should have grab handles on either side attached to a longish loop of rope. Dinghy drogues are readily available for about $30 at most sea chandlers. In threatening conditions this should be rigged and ready to go.

"If you can hold your head while those around you are losing theirs, then you will be a man my son."
(Poem "If" by Kipling.)

A good way to "be a man" is to be mentally and physically prepared for as many eventualities as possible.

Canoe Incident: An incident occurred at the mouth of the Hawkesbury River involving two canoes manned by fit canoeists. It appeared that a strong outgoing tide along with a head wind, made it difficult for them to re-enter the river. One canoeist managed after some difficulty to make it around Barrenjoey headland to safety. However a second canoeist fell out of his canoe and could not re-enter. Emergency services were contacted by mobile phone but were not available. He was in the process of being swept out to sea when a returning fisherman found him. He was rescued but the canoe was lost.

In such a situation there are several options:

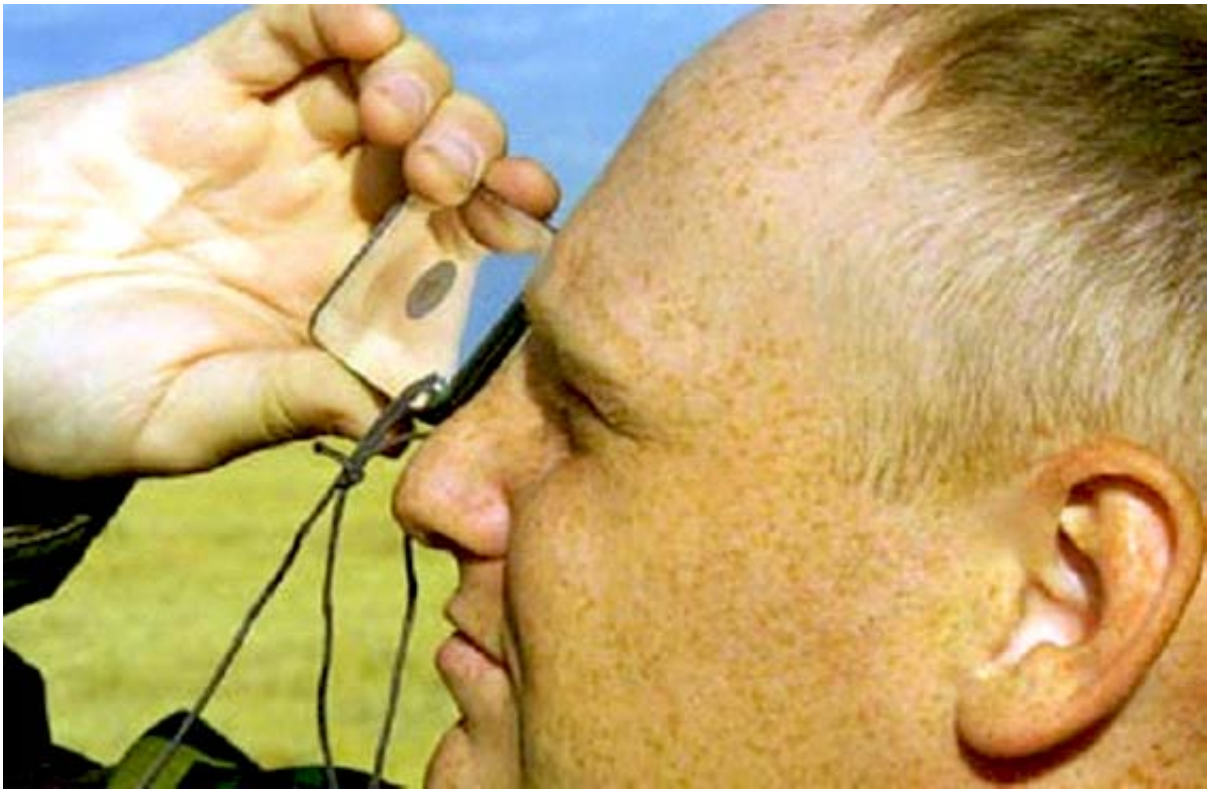
1. If the outgoing current is strong then paddle or row as close to the shore as safety allows. The current will be weaker there, because of friction with the shore. There may even be a counter current.
2. Before exhaustion sets in and accidents occur try plan B. Allow the current to carry you to the river or harbor mouth and paddle or row around the headland out of the current and wind and maintain position there. Land or call for rescue on your mobile phone.
3. If being carried out to sea do everything to slow the boat down. Canoes and rowing boats quickly become invisible at sea and become rather like flotsam or whitecaps. A dinghy drogue would be very handy for this purpose.

A searcher 3metres high will see the top of your head at 10 miles (15 km.) but as this is too small to see you will be out of sight at 6 miles (10 km.) or thereabouts. But even then your craft may be too small to discern. At nighttime a torch can be directed at a searching craft with a better chance of visibility. If an offshore gale blows for some days under these circumstances, you may be more than 100 km. offshore before it stops. It may be the reason why some people mysteriously disappear. A very good reason to study the weather forecast before placing yourself in jeopardy.

Always have with you:

1. A fully charged mobile phone. Turn off when not in use.
2. Two working LED torches for night signaling.
3. A cigarette lighter in case you are stranded somewhere.
4. A couple of litres of water.
5. A dinghy drogue.
6. A bailing device.
7. A lifejacket.
8. A signal mirror, for daytime recognition. Available at boat chandlers. It has a hole in the middle through which you can aim at a rescuer. It can allegedly even contact over flying aircraft.

“No wonder that the U.S. Air Force's official survival handbook describes the signal mirror as "probably the most underrated signaling device found in the survival kit." But you need some expertise in using a signal mirror to make it work for you in an emergency.” (How stuff works)



A marine uses a signal mirror during training exercises.
Source: United States Marine Corps (http://adventure.howstuffworks.com/survival/gear/use-signal-mirror.htm)