

ALL AT SEA: DAVID GRAY, P.Eng, CLS, Ottawa

*By Katherine Gordon
—August 2010*

When David Gray attended an information session on surveying at a University information fair, he wasn't attracted to it as a potential career. Gray was in Grade 12 at the time; he was keen on maps and mathematics, but he had grand dreams of working in naval architecture, designing large-scale racing yachts. Surveying wasn't on the radar.

Forty-two years on, Gray has chalked up a lot of time at sea in the course of his job—not as a yacht designer after all, but as a hydrographic and geodetic surveying specialist who has spent most of his career engaged in maritime work. He has absolutely no regrets: it has, he says with pride, been a wonderful surveying life.

In the course of his stellar career Gray has been involved in recomputing 1,500 kilometres of the Canada–Greenland maritime boundary; provided technical assistance to the judges in the Nova Scotia–Newfoundland & Labrador offshore resource boundary tribunal and the Barbados–Trinidad & Tobago and Guyana–Suriname maritime boundary arbitrations; and was part of the Canadian team at the Canada–France boundary arbitration concerning the waters surrounding the Collectivité Territoriale de Saint-Pierre-et-Miquelon, a group of French islands close to Newfoundland.

That's just the tip of the iceberg. Gray has also provided expert evidence in dozens of court cases on fisheries violations. The outcomes of some of those cases rested entirely on what Gray had to say as a witness about the location of foreign fishing vessels inside Canada's two hundred mile Exclusive Economic Zone (EEZ), or domestic vessels outside permitted fishing areas. He has helped with Transportation Safety Board investigations, performed ship-board surveys to calibrate radio navigation systems, and

produced more than thirty-five technical and academic papers covering a wide range of issues. Gray has also won several awards over the course of his career. In 2010, he won the “Contribution to Society” category of the David Thompson National Geomatics Awards for his work in Guyana.

In a way, despite his initial dreams, Gray was meant to be a hydrographic surveyor right from the start. “In school, I was always good at mathematics,” says Gray, although he also admits: “But I was terrible at English literature!” His father, an actuary, may have had something to do with his maths skills. Gray Sr. was also in the Canadian army reserve prior to World War Two, and taught his young son to read topographic maps at a very early age. “Before I could even read Dick and Jane, I could identify types of roads and landmarks, and understood contours,” he recalls.

The family also had a summer cottage on an island in Georgian Bay, Ontario. “We had to get in the boat to go anywhere or do anything,” says Gray. “So in that way, I have always had a strong relationship with both maps and water.”

Deciding that his three-dimensional drawing skills simply weren’t good enough to go into architecture, Gray eventually decided to pursue civil engineering at university. There, unlike his first experience, he became thoroughly intrigued with the surveying option that was offered. He pursued a summer job working for an Ontario Land Surveyor and found himself up to his elbows in everything from hands-on field work to doing calculations and drafting. “It was great exposure, and I really enjoyed it,” he says. Gray was immediately hooked.

The following summer he got a job with the Geodetic Survey of Canada in southern Ontario. “By then, there was no doubt in my mind at all that this was going to be

my career,” says Gray. “So I wrote to the Dominion Geodesist and asked for a fulltime job as a survey-engineer, and I got the job.”

It was 1968 when he started work. Within three years, Gray had moved into the Canadian Hydrographic Service (CHS), where he would stay for the next thirty-four years. He brought with him new ideas and enthusiasm for trying new methods of undertaking geodetic least squares adjustments. “For example, I suggested a way to cover all of Halifax harbour in one go instead of doing it in a whole series of small adjustments, the way it had always been done before. Sure enough, it worked.”

One of the regular jobs the CHS was involved with was improving the positioning of things offshore, such as oil rigs, a task that involved complicated calculations, a challenge Gray enjoyed immensely. “I had to use incredibly difficult, complex mathematical formulae, taking into account things like the velocity of radio-waves, atmospheric conditions and the electrical properties of the soil or water.” For a self-proclaimed “desk surveyor,” Gray also managed to spend a reasonable amount of time out on the ships themselves, sharing the adventure of being out on the Great Lakes and in the North Atlantic, Arctic and Pacific Oceans.

As a witness in fisheries violations prosecutions, Gray’s expertise has made a real difference to the outcome of a number of important court cases. “One case in the mid-1980s really stood out for me. Canada was prosecuting Spanish pair-trawlers that had been fishing in our waters. I had to track their course from the radar plot taken on our patrol boat, to prove they were inside the Canadian EEZ when our officers boarded the Spanish vessel.” Gray’s testimony—that the fishing captain had taken deliberate steps to

avoid a privately known bottom obstruction that had been added to the Spanish charts — proved unequivocally that the Spanish boat was in the wrong.

His work on maritime boundaries has provided some of his most enjoyable memories. “Determining the exact location of an international boundary is extremely important from a jurisdictional perspective,” says Gray. “It affects sovereignty and rights to resources like oil and fisheries.” In Guyana, his work helped peacefully resolve a critical conflict threatening a foreign offshore oil rig which had hoped to drill in the disputed area, garnering him the well-deserved Contribution to Society Award.

Gray retired from the CHS in 2005, but remains active in maritime work. He now runs Definitive Hydrographic & Geodetic Consulting in Ottawa, continuing to provide technical advice on international boundaries at sea, geodetic position determination and computations, navigation and tides, among many other services.