BREAK BULK

BY KEITH NORBURY

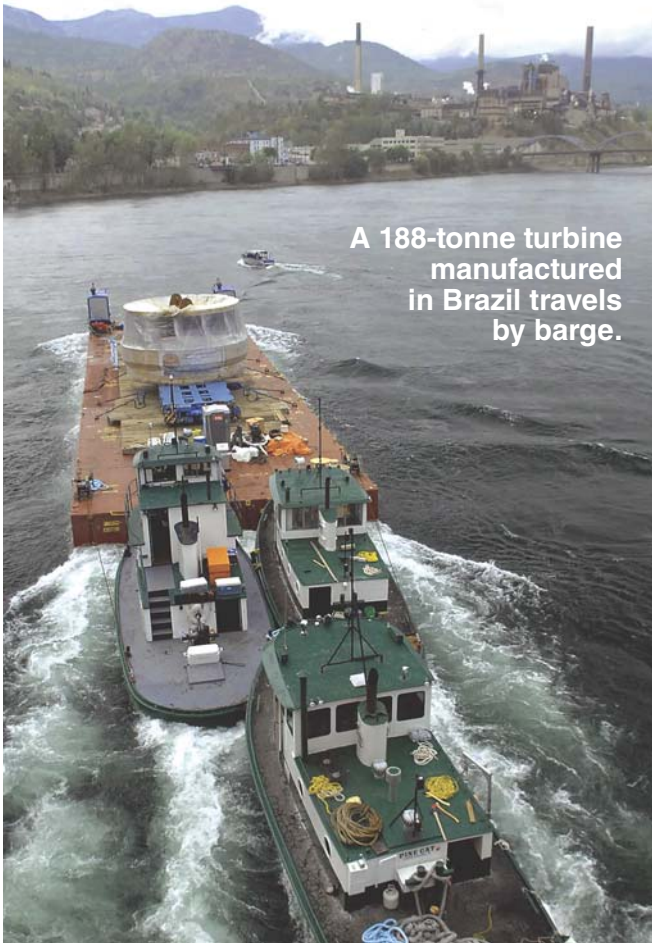
Project cargo specialists expect the unexpected

About four years ago, Graeme Gibbons had to hire an engineering firm, at a cost of $300,000, to survey 28 bridges between Kamloops and Revelstoke to ensure that they could carry the weight of a 92-tonne generator. The survey found one bridge that required $80,000 in repairs to bring it up to snuff, which Mr. Gibbons said was actually a stroke of luck.

"You could spend $300,000 and there's a bridge that at the end of the day is just a show stopper," said Mr. Gibbons, Vice-President of Guy Tombs Inc., a Montreal-based freight forwarder and ship broker. Such are the challenges of those who make their living figuring how to move massive pieces of project cargo – like transformers, wind turbines, and oil-field equipment – from their points of manufacture to their final destinations. Typically, these pieces, which can weigh hundreds of tonnes or more, are manufactured in Asia or Europe, and must then cross an ocean, and eventually wend their way to remote Canadian locales where what roads and bridges exist often cannot handle the weight.

"It's the most work for sure," said Dan Cleary, President of Sea Projects Alliance Inc., a Montreal-based logistics company. "You can book 150,000 tonnes of coal on a ship and it is basically a phone call, an email, a small charter party document, and a bank transfer. And the rest is pretty simplistic."

In contrast, booking a project cargo shipment often involves weeks of work just trying to secure road permits, establishing rail clearances, and determining if the dock can handle the weight of the cargo.



A 188-tonne turbine manufactured in Brazil travels by barge.

A 188-tonne turbine is so massive that three tugs are needed to push it along the Columbia River near Trail.

Photos: BC Hydro

"And sometimes the ship has to be modified, especially in the case of tower sections for windmills," Mr. Cleary said.

In total tonnage, project cargo makes up a tiny fraction of the cargo that flows through Canadian ports. Bulk and containers account for the majority. Canadian ports don't even keep separate statistics for project cargo, but lump it in with breakbulk. At Port Metro Vancouver, the country's busiest gateway, breakbulk accounted for 13 per cent of cargo tonnage in 2011. Most of that was logs, pulp, paper, and forest products. Only a fraction of breakbulk was machinery, vehicle parts, or construction and materials that might or might not be project cargo.

"Tonnage for project cargo is sometimes misleading because we can do an entire windmill farm and it represents 6,000 tonnes," said Jenna MacDonald, Director of Marketing for Belledune Port Authority in New Brunswick. "It's a little different than 6,000 tonnes of wood pellets; that's not a whole lot of wood pellets. But 6,000 tonnes of wind turbines is a whole lot of wind turbines."

The awkward shape of such massive items can be just as problematic as their immense weight. A big windmill part might appear to fit in the hold of a ship, for example, until it turns out that it a section of protruding pipe makes the fit impossible. Such a seemingly small thing can jeopardize a project, Mr. Cleary said.

"You might have to bring in a second ship," he said. "So the budget has all of a sudden gone up by another million dollars."

It is the potential for such snafus that makes site visits so crucial when bidding on, planning, and overseeing a project cargo venture, Mr. Gibbons noted. He flew to Fort St. John in mid-April, for example, to check on the delivery of massive parts for the refurbishing of generating units near Hudson's Hope, B.C.

"The first one is always a learning curve of some sort," said Mr. Gibbons, who doubts he will attend the remaining four installations.

If all goes well, he will get a chance to oversee movement of equipment to a proposed hydroelectric generating station at Muskrat Falls in Labrador. The $6.2-billion megaproject has come under fire from environmentalists and a Quebec Innu group that is fighting the project in federal Court. And Newfoundland and Labrador Premier Kathy Dunderdale said recently that debate on approval of the project would be delayed until the fall. Should the project overcome those hurdles, many other obstacles will face the company that wins the contract to move equipment to the remote site.

"What we know is the road from the ocean where we would discharge the cargo is about 60 kilometres long and has not been really tested for this kind of cargo," Mr. Gib-

bons said. "So we would do sort of a dry run along that route and see what kind of obstacles we might face — small bridges or whatever the case may be."

Sometimes, though, a job is more straightforward. For example, his company is overseeing the shipment of a reclaimer from China to Prince Rupert's Ridley Island coal terminal. The reclaimer will likely only travel about a quarter mile once it's ashore.

"But when you've got a 500-tonne piece and you've got a bit of a grade on any of the roads, it's something you have to face. You don't want to find that out after the fact," Mr. Gibbons said.

That $24-million piece of equipment is scheduled to arrive in November, said Michelle Bryant, Corporate Affairs Manager of Ridley Terminals Inc.

It is easier said than done. The reclaimer will be shipped in about 18 sections that fit together like Lego pieces, Mr. Gibbons said. Production issues delayed shipment, which means arriving during potentially rough seas. He has been told "you never want to do this in a month that ends in ER."

"My experience with these types of things is that nobody really starts crying wolf until they get the bill and they find out that the ship had to sit there for five days because it was too dangerous to discharge the cargo or whatever," said Mr. Gibbons, who estimated the total freight bill for this project will run around $2 million to $2.5 million. Such a contract includes ocean shipping, craning, barging, trucking, and clauses covering everything from the weather to assurances that roads are passable.


caption

Photo: Derek Wasyliszyn

Bill Wehnert, Vice-President of Sales and Marketing at Fraser Surrey Docks, near Vancouver, said project cargo is usually defined as being out of gauge, or OOG. Or it can be over-dimensional, which means it can't fit into a 40-foot container flat rack, which refers to floor of the container with the container itself removed or replaced by a frame.

"You can put cargo in there as long as the cargo fits within the dimensions of the standard container," Mr. Wehnert explained.

Another limitation on project cargo is that it can be too big to move easily on land. That is one reason why Squamish Terminals Ltd., on Howe Sound, 32 nautical miles from Vancouver, does not handle much project cargo business. Not by rail anyway.

Ron Anderson, President and CEO of Squamish Terminals, said the port has shipped out such items as railcars to Australia. However, the Canadian National Railways line that services the port has to wend through some tricky terrain.

"When we start to talk about some of the larger pieces of equipment like a windmill tower for instance, the tunnels and curvatures going North and South from us have some impact on that," Mr. Anderson said. "I'm not going to say that they're restrictive but they do have some dimensional issues."

On the other hand, recent widening of the Sea to Sky Highway in advance of the 2010 Olympic Games in Vancouver has made it much easier to move large items in and out of Squamish. The route

Photo to add

thing, they are heavy. "So, to move a 200-tonne piece inland is quite a challenge. And transformers also tend to be very high. There's no way to knock them down," Mr. Cleary said.

Then again, for a mill or a ship loader moving from one port to another, over water only, "The sky's almost the limit as to the size of the pieces you can move," Mr. Cleary said.

A couple of years ago, Mr. Cleary's company was involved in moving a ship loader from China to Port of Quebec. The ship loader weighed over 1,000 tonnes and was about the size of a small office building. Despite its size, moving it was fairly simple. Ship loaders, which are typically manufactured in Shanghai and assembled at the port, are slid onto a ship, slid off at the destination, "and then plugged into the power source right on the pier."

Relatively easy jobs like that, however, are not the norm when it comes to project cargo. That's why those who specialize in moving these pieces are content to focus on a few of these big projects at a time.

"If you can get a couple of big pieces of machinery every year and then some smaller projects scattered in, just the odd transformer or whatever, that's how we all making a living," Mr. Cleary said.

connects with the Trans-Canada Highway and the rest of the Vancouver region's highway network.

"It's fantastic for us," Mr. Anderson said. "It's very easy to get here by truck."

By truck or by rail, moving project cargo can be such a massive undertaking that Mr. Cleary said he is happy if his company of about six people handles two or three major projects a year.

"The biggest problem with projects is they're usually planned two, three years ahead of time and often funding just falls through at the last minute due to the economy or the company being bought by somebody else who doesn't think the project should go ahead for whatever reason." Mr. Cleary said. "So, often you're left holding two or three years worth of work and getting no remuneration."

It's all part of the game, he said. It is also why many freight forwarders have dispensed with their project cargo divisions and now ship that work out to specialists like his company, he said.

"Technically, we're what you call a project broker," Mr. Cleary said. "We tend to interface mostly with the forwarding community that may no longer have project divisions."

Oftentimes, project cargo movements begin with dismantling a project into smaller pieces. This is particularly the case with pulp mills.

"But still some of these pieces are pretty big," Mr. Cleary said. A pulp mill dryer, for example, can measure 20 metres long, five metres wide and five metres high – "just at the very limit of being able to be transported by rail or by truck anywhere."

Transformers, while smaller, pose their own set of problems, especially when transported inland. For one