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GOMACO WORLD

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ANAB

Photos courtesy of GOMACO International Ltd. HW-080909 D10

Ashtrom International slipformed a new portion of the E60 East-West Highway with their new GOMACO GP-4000 paver and T/C-600 texture/cure machine.

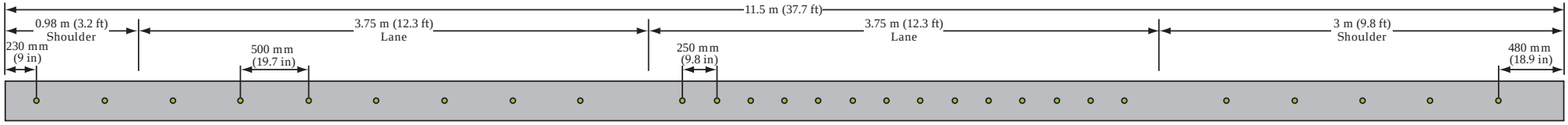
Country of Georgia Chooses Concrete for Silk Road Project

The E60 motorway has a long and fabled history, almost as long as the road itself, which stretches from Brest, France, across the countries of Germany, Austria, Hungary, Romania, Switzerland, Georgia, Azerbaijan, Turkmenistan, Tajikistan, Uzbekistan, and ending in Irkeshtam, Kyrgzstan. It follows the ancient route of the Silk Road, a 6437 kilometer (4000 mi) long trade route for transporting goods, like silk, from China to different parts of the world. The start of the Silk Road is dated back to second century BC.

It's still an important trade route today. The country of Georgia is investing heavily in their highway structure, including rebuilding the E60, or their East-West Highway across the country. Ashtrom International Ltd., based out of Israel, was responsible for rebuilding 25 kilometers (15.5 mi) of the old highway, the section connecting Igoeti to Sveneti. It would be rebuilt as a new, four-lane highway and slipforming would be introduced to the country as a way of producing quality concrete roadways more efficiently and cost effectively.

Ashtrom International purchased a new GOMACO GP-4000 slipform paver with an IDBI and a T/C-600 texture/cure machine to slipform the new east/west portion of roadway. The paving season is short in Georgia, due to winter weather, so deadlines were tight to get the equipment manufactured and shipped from Ida Grove, Iowa, USA. The fastest method of delivery was by air, so Ashtrom

A drawing illustrates the unique bar placement designed into the lanes of the new roadway.



hired a Russian Antonov cargo plane to transport their new equipment.

The GP-4000 slipformed the new roadway 11.5 meters (37.7 ft) wide and 280 millimeters (11 in) thick. The pavement profile consisted of a one meter (3.3 ft) wide outside shoulder, two 3.75 meter (12.3 ft) wide driving lanes, and a three meter (9.8 ft) wide inside shoulder. The transverse joint in the pavement was every five meters (16.4 ft) where the IDBI implanted 28 dowel bars across the width of the new road. The bars are each 25 millimeters (1 in) in diameter and 500 millimeters (19.7 in) long.

The configuration of the lanes dictated different spacings for the bar insertion. The inside lane is designated as the high-traffic lane, so extra bars were built into its design to handle the heavier load. (See drawing on page 3.) All bars were placed 140 millimeters (5.5 in) into the center of the slab's thickness.

Concrete for the project was provided by Ashtrom's on-site batch plant, which was set up in the center of the project. Twenty-five dump trucks carrying seven cubic meter (9.2 yd^3) loads kept the GP-4000 supplied with concrete. Slump averaged between 30 to 40 millimeters (1.2 to 1.6 in).

"We quickly learned that the slump of the concrete was critical," Wayne Saywell, Ashtrom's Paving Manager for the project, said. "When we first started out, the slump was too low and we really struggled. Then we increased the slump and everything went really well after that. This was Ashtrom's first major road paving project, so we expected a bit of a learning curve."

Paving production averaged between 450 to 500 meters (1476 to 1640 ft) per day. Their best paving day reached 765 meters (2510 ft) in a 10.5 hour day. Production was limited by subgrade preparation. Ashtrom's crew could pave faster than the subgrade crew could place and level the crushed stone for them to pave on.

"We had to move the paver around a lot on the project, due to areas not being ready for us," Saywell said. "The GP-4000's versatility really helped us out. We'd pave with it one day, put it in transport and track it to the next section the next day, and then paving again the following day. It was great, especially because of the tight schedule we were on."

A T/C-600 texture-cure machine followed the GP-4000 paver. It applied a carpet drag finish and sprayed a curing compound on the new roadway.

"We had very little handwork behind the paver, and most of that was on our headers and footers each day," Saywell said. "The tolerances of the road were three to five millimeters (0.12 to 0.2 in) and we had no problems staying within that the entire time we paved. The GP-4000 with IDBI is a great machine. It's very easy to operate, does a great job, and is ideal for this kind of paving."

The president of Georgia, Mikheil Saakashvili, opened the Igoeti-Sveneti section of roadway and personally drove a car on the country's newest highway. He approved of the work accomplished. Ashtrom International's work on the project was so successful, the government awarded them another 25 kilometers (15.5 mi) of the East-West Highway to pave after their first section was complete.

Ashtrom International introduced slipforming to the country of Georgia when they paved a portion of the E60 motorway with a GP-4000.

HW-080911 D6

HW-080909 D13

The IDBI on the GP-4000 inserted 28 bars into the slab every five meters (16.4 ft).

HW-080909 D17

A T/C-600 texture/cure machine followed the paver applying a white curing compound.

Photo by JoDee Hewitt SH-090817 D16

The GP-4000 is driven into the Antonov cargo plane at the airport in Lincoln, Nebraska.

Loading the Antonov 124-100 in Lincoln, Nebraska, USA –

Ruslan International, a new partnership between Antonov Airlines and Volga-Dnepr Airlines, provided the Antonov 124-100 aircraft used to transport the GP-4000 to the country of Georgia. The company has a combined fleet of 17 Antonov 124-100 aircraft. Here's just a few facts and figures associated with the aircraft and GOMACO's shipment…

Flight path: Lincoln, Nebraska, to Gander, Newfoundland, Canada, to Prestwick, South Ayrshire, England, to Bergas, Bulgaria, to Georgia.
Range with 120,000 kilograms (264,550 lbs): 4650 kilometers (2889 mi).
Maximum take-off weight: 392,000 kilograms (864,198 lbs).
Maximum payload: 120,000 kilograms (264,550 lbs).
Useable volume: 750 cubic meters (981 yd^3).
Cargo compartment dimensions: 36.5x6.4 x4.4 meters (120x21x14 ft).
GP-4000 four-track approximate shipping dimensions: 15x3x3.7 meters (49x10x12.2 ft).
GP-4000 four-track approximate shipping weight: 42,000 kilograms (92,600 lbs).
5000 series mold with auger/strike-off approximate shipping dimensions: 12.3x2.6x2.4 meters (40.3x8.5x7.9 ft).
5000 series mold with auger/strike-off approximate shipping weight: 15,803 kilograms (34,840 lbs).
Plus the IDBI, and other miscellaneous paver and accessory pieces.

36 Crane Runways in Only 33 Days at Vancouver's Deltaport

OF-051008 D2 Photo courtesy of Nathan Waite

Container ships dock and wait to be unloaded at Vancouver, British Columbia, Canada's, new Deltaport third berth. A Commander III slipformed new concrete runways for the overhead gantry cranes to operate on.

Photos by Jim Dilmig CG-070931 D3

Each of the runways was 450 meters (1476 ft) long and spaced 30 to 40 meters (98.4 to 131.2 ft) apart.

The Deltaport container terminal in Vancouver, British Columbia, Canada, recently opened a new $400 million third berth. The new berth allows a 50 percent increase in terminal capacity and an additional 20 hectares (49.4 acres) of container storage facilities.

An important part of the construction of the third berth included concrete runways for the new overhead gantry cranes to operate on. Two different profiles of runways were needed, one of them project engineers deemed slipformable. The other profile, which incorporated a drain, was to be handformed.

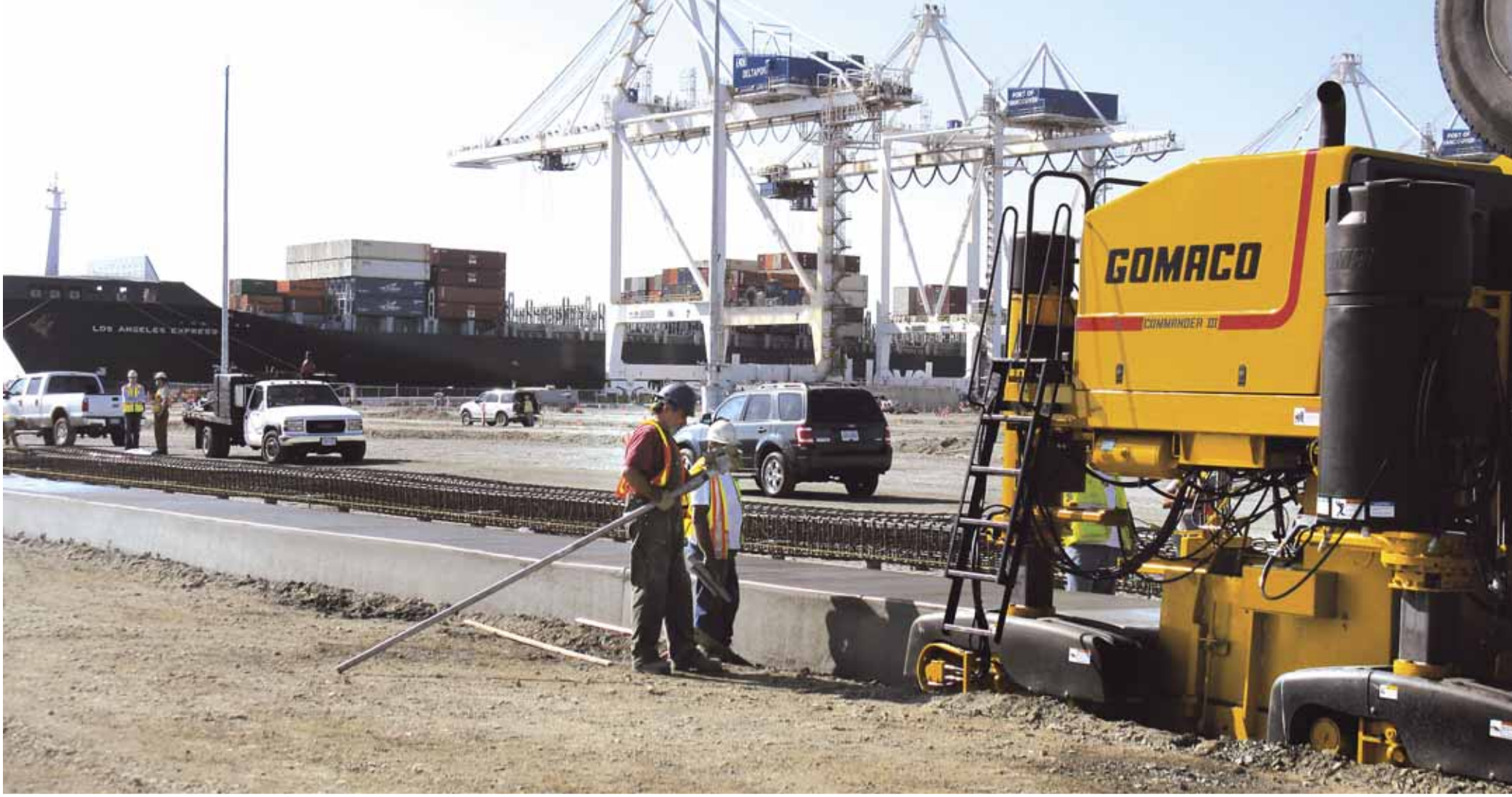
Coquitlam Ridge Constructors Ltd., located in Coquitlam, British Columbia, a contractor with structural-reinforced concrete experience, was invited to bid the runways and other structural concrete work at the port. The company had no previous slipforming experience, but owns a GOMACO C-450 cylinder finisher. They turned to their GOMACO distributor, LoneTrack Equipment Inc., for help in finding the right machine not only for this project, but also other future slipforming work.

"Most of the people in this area use GOMACO equipment, and we have a familiarity with the company, by just watching their machines on other projects in use around here," Lyle Johnson, Manager for Coquitlam Ridge, said. "Our parent company wanted to procure a machine that could slipform this project, as well as curb and gutter work after this was completed. We determined that the GOMACO Commander III was the machine we needed."

The gantry cranes have a load-bearing capacity of 1160 kilonewtons (116 ton-force) and the capacity to lift containers up to 12 meters (40 ft) long. An intricate system of steel reinforcing would have to be slipformed into the runways to provide the necessary strength and structural support. Also adding to the difficulty of the project was an owner-specified concrete mix design with a silica-fume additive that is not ideally suited for slipforming.

Vancouver's weather only allows a limited construction season and Coquitlam Ridge's work had to be accomplished first before other subcontractors could move in and complete their phases. The pressure was on and everyone was watching Coquitlam Ridge and their new Commander III to see if they could deliver in time.

The Commander III would be slipforming 18 concrete runways, approximately 450 meters (1476 ft) long and spaced 30 or 40 meters (98.4 or 131.2 ft) apart. The limited completion time frame didn't allow for Coquitlam Ridge to send any of their workers to GOMACO University for training. Instead, GOMACO sent



CG-070927 D7

The project was the first time Coquitlam Ridge had ever slipformed. After a successful training period, they started right into production with their first pour with the Commander III.

a service representative to Coquitlam Ridge to not only set up their new Commander III, but also provide training. The training was so successful, they opted out of test pours, and started right into production with their first pour. It was a success and the Coquitlam Ridge crew never looked back during the course of the project.

Originally, the project called for one runway design to be slipformed. It was a basic rectangular shape, 1.8 meters (5.9 ft) wide across the bottom and 575 millimeters (22.6 in) tall. The other runway, because it contained a drainage channel, was to be handformed. As soon as Coquitlam Ridge secured the bid, they went to work convincing project engineers the second profile was also slipformable. With all of the other subcontractors on the project waiting for them to complete their work, they knew slipforming was their fastest option.

"After we secured the job, we were able to work with the engineer and propose an alternative design that allowed us to slipform a slot in the larger runway and then put the drain system in afterwards," Johnson explained. "By making this change from handforming to slipforming, we cut our work time in half."

Coquitlam Ridge worked with GOMACO engineers to design a block-out section for the drain that could be used with their basic rectangular mold. Since the profile was also wider, a 400 millimeter (15.75 in) insert was designed to attach in the center of the mold, making the width of the second profile 2.2 meters (7.2 ft). The slot drain insert was 270 millimeters (10.6 in) wide at the top, 282 millimeters (11.1 in) deep, and had a male keyway on the right side.

"While we were in the process of designing the mold and developing

our casting proposal for the owner, we had some concern about the ability to consolidate the concrete with the large amount of reinforcing steel," Johnson said. "The GOMACO engineers were able to modify our mold and add some flares on the outside of it, which allowed us to drop our vibrators a little lower and help with consolidation. It worked really well."

The concrete mix design specified by the project owner is not ideally suited for slipforming, according to Johnson. It contained a silica-fume additive that made the concrete both hot and sticky to work with and created concerns with tearing as the concrete came out of the mold.

"We added a set stabilizer to the design so the concrete couldn't start hydrating until it reached the job site," Johnson explained. "The key to this project's success was the concrete slump and the concrete temperature."

Concrete slump averaged around 40 millimeters (1.57 in) and was supplied to the job site in mixer trucks carrying eight or 10 cubic meter (10.5 or 13.1 yd^3) loads.

"We heard that the weight of the concrete had created challenges with the steel reinforcing on a previous phase, causing it to sometimes move out of alignment," Johnson said. "To anchor the reinforcing from moving, we cast a three meter (10 ft) block at the end of the runway as a starter section. We slipformed approximately 230 lineal meters (755 ft) in a shift, so we would just drive the GOMACO machine over top of the block, start from there, and move on down the line.

"The whole process was governed by our ability to get concrete out of the trucks, and we just weren't able to put concrete in the machine fast enough," Johnson said. "Our best pour rate was over 40 cubic meters (52.3 yd^3) an hour, but we usually averaged around 25 cubic meters (32.9 yd^3) per hour."

Finishing work behind the Commander III was kept to a minimum. The new concrete runways were bullfloated and then broom finished. Joints were cut every three meters (10 ft).

The first-time slipformers with their new Commander III completed their port project successfully and ahead of schedule.

"We were pretty anxious because we had never used the machine before, and we were under a lot of pressure to get the project done quickly because of the narrow time frame with the weather up here," Johnson said. "Within a day

Two styles of runway were slipformed.

CG-070931 D9

One runway was 1.8 meters (5.9 ft) wide.

CG-070927 D18

CG-070931 D5

The Commander III's mold was modified to allow the vibrators to be dropped lower than normal to help move the concrete through the steel reinforcing.

CG-070931 D13

The two runway profiles were each slipformed over an intricate system of steel reinforcing.

or two of the first pour, we knew we were going to be all right. We did better than all right. We were able to complete all 36 runways, almost nine kilometers (5.6 mi) of paving, in 33 days.

"Originally, we were planning on four months to complete the project, but we accomplished it in under two. We basically knocked off two months from our schedule by being able to slipform all of it."

Deltaport's new third berth has increased its capacity and allows the port to now accommodate the world's largest shipping vessels. Recently the ZIM Djibouti, one of the largest container ships in operation, docked at the Deltaport terminal. The Djibouti has a cargo capacity in excess of 10,000 six meter (20 ft) shipping containers. The port's cranes, operating on their new concrete runways, were able to quickly and efficiently unload the enormous vessel.

And the new three-track Commander III? It is currently slipforming curb and gutter along Vancouver's Sunshine Coast for Coquitlam Ridge Constructors parent company, B.A. Blacktop Ltd.

CG-070929 D1

A *slot drain insert with a male keyway was added to the basic rectangular mold to create an area for drainage water to run in the new concrete crane runways.*

GOMACO Two-Track and Four-Track GHP-2800 Work Together for a Fast Completion Date

The Charlotte Douglas International Airport in Charlotte, North Carolina, was named the eighth busiest airport in the United States and the 24th busiest airport in the world by passenger traffic in 2009. As passengers from around the world flew in and out of the airport, Hi-Way Paving Inc. was slipforming a new 9000 foot (2743 m) long runway that would make the airport even more efficient and traveler friendly in 2010 and beyond.

Hi-Way Paving, based out of Hilliard, Ohio, was the prime contractor for the Phase Two package of work at Charlotte Douglas. Concrete paving work included the new 9000 foot (2743 m) long runway, two taxiways that were 4500 feet (1372 m) and 4800 feet (1463 m) long, high-speed crossovers, and four large connectors that tie into the existing runway. Approximately 242,500 cubic yards (185,406 m^3) of concrete was slipformed during Phase Two, all with Hi-Way's GOMACO paving equipment.

Hi-Way Paving brought in their GOMACO four-track GHP-2800 paver, PS-2600 placer / spreader, and T / C-600 texture / cure machine. Since they were planning on paving around the clock at the airport, they added a new two-track GHP-2800 and PS-2600. Crews could be paving with one train during the day while another crew could be setting up another train for a night pour.

Also new to Hi-Way Paving's inventory for the airport project was a stringless paving system. The placer / spreaders were controlled by GPS units, while the GOMACO pavers utilized Total Stations for greater accuracy.

In fact, the entire project was stringless, including the six-inch (152 mm) thick cement-treated base (CTB). Approximately 85,000 cubic yards (64,988 m^3) of CTB was laid on the airport forming a solid base for the new concrete.

Concrete for the project was mixed on-site with two 12 cubic yard (9.2 m^3) mobile batch plants. The concrete is an airport-approved, 650 flex mix design. Slump averaged between one to

The new PS-2600 placer/spreader provides excellent production with its increased conveyor power and optional closed-loop augers.

Photos by Mark Hankins HW-090822 D17

1.5 inches (25 to 38 mm), depending on the day's high temperature. Warmer days required a higher slump concrete.

Dump trucks carried 10 cubic yard (7.6 m^3) loads of concrete to the paving site and dumped onto the belts of the PS-2600s. Hi-Way's new PS-2600 quickly earned the crew's respect. Its larger conveyor pump and motor increased total conveyor power to 7349 pound (3334 kg) belt pull vs. 5767 pound (2616 kg) belt pull. Hi-Way also added the optional closed-loop augers which provided 83 rpm vs. 34 rpm in auger speed.

"The new placer is an excellent machine," Kevin Stephen, Job Superintendent for Hi-Way Paving, said. "We get excellent production out of it."

On Hi-Way's longer paving runs, both placer/spreaders were used in front of the four-track GHP-2800 to maximize production. The new runway is 9000 feet (2743 m) long, 150 feet (45.7 m) wide and 18 inches (457 mm) thick. The GHP-2800 slipformed it in six 25 foot (7.6 m) wide paving passes. Baskets were placed on grade every 25 feet (7.6 m) to form each panel.

A new 75 foot (22.9 m) wide parallel taxiway is situated next to the runway. The GHP-2800 slipformed it in two 25 foot (7.6 m) wide paving passes, and then slipformed the outside lanes 12.5 feet (3.8 m) wide over wire mesh reinforcing.

"From day one on this project, we used the stringless system," Stephen said. "The first day was a little scary because we had nothing to check it to. We're used to having a stringline there that we can measure from and see that everything is on line. We learned to check each day's pour prior to paving day, just to make sure we didn't have a bad grade. It helped us locate any bad spots in the CTB and that helped us avoid any bumps in the final concrete because of bad grade."

The Total Stations from the stringless system helped Hi-Way locate the electrical cans in the concrete. A total of 3400 electrical cans were paved over in the runway. Electricians needed to find them and then core them out. The Total Stations were used to mark and locate each can so the light fixtures could be attached.

The new two-track GHP-2800 spent the majority of the project slipforming the 700 feet (213 m) long high-speed crossovers. The two-track's maneuverability and fast tracking speed, up to 122 feet per minute (37.2 mpm), was beneficial for getting to and paving the shorter runs.

"The two-track is easy to get around with, get in and out of those short paving runs, and allows us to pour closer to the joints," Stephen said. "A second paving spread allowed us to have a crew getting the equipment in place and set up for the night pour while we were paving on the runway during the day. It allowed us to move from spot to spot so we didn't have any downtime at all."

Time was critical for the crossover pours. They had to be completed at night with the airport only allowing 5.5 hours of working time so the existing runway could be open again to plane traffic by 6:30 a.m.

"That was basically a project all by itself," Stephens said. "We had a night crew working constantly. They slipformed over 20,000 cubic yards

The GOMACO paving equipment was controlled with a stringless paving system using both GPS units and Total Stations.

HW-090823 D18

(15,291 m^3) of concrete, connecting the old runway to the new connectors."

Very little finishing work was required behind the GHP-2800 pavers. Finishers used a 16 foot (4.9 m) straight-edge and the T/C-600 machine applied a burlap-drag finish.

The airport required both a smoothness and an edge slump specification be met on all of the concrete pavement, including fill-in areas and short paving runs.

"The straight-edge requirement was one-eighth of an inch (3 mm) between lanes with a 16 foot (4.9 m) straight edge," Stephen explained. "The runway smoothness was measured with a two-tenths blanking band. We had to be under seven inches per mile (110 mm/km) and everything

HW-090823 D1

The Charlotte Airport's new runway is 9000 feet (2743 m) long, 150 feet (45.7 m) wide, and 18 inches (457 mm) thick.

Photo courtesy of Matt Landers HW-060914 D3

Two PS-2600 placer/spreaders were used in front of the GOMACO GHP-2800 paver to help maximize production.

was measured and counted in the final smoothness. We had areas on the runway that only measured a three, and we didn't have to do any grinding on any of our pavement."

Hi-Way's project contract required completion of their work by December 15, 2009. The airport then asked if they could open the entire project by November 1. Moving a deadline up by more than a month's time could have been disastrous for some contractors, but not Hi-Way Paving. By early August they had already finished the major paving on the airport, with only 2500 cubic yards (1911 m^3) of fill-in work left to complete.

"We are very pleased with our GOMACO equipment and just keep getting better and better with the stringless aspect of it," Stephens said. "Low-production days, working on the crossovers and such, we only averaged about 1500 cubic yards (1147 m^3). But, on the high-production days, we averaged between 3500 to 3800 cubic yards (2676 to 2905 m^3) with 5000 cubic yards (3823 m^3) our highest in a nine-hour shift. The paving went well and our GOMACO equipment worked really smooth for us."

Two PS-2600 placer/spreaders were used in front of the GOMACO paver placing concrete on grade and on top of dowel baskets and cans for housing electrical for runway lighting.

HW-090822 D15

Photos by Jason Reitz CL-040906 D15

Graham finishes one of two side-by-side bridge decks on Highway 2 near Airdrie, Alberta, Canada, with their GOMACO C-450 finisher with transitional framework.

GOMACO Bridge Deck Finisher Chosen for Calgary Bridges –

Graham Group Ltd., based out of Calgary, Alberta, Canada, started as general contractors in Moose Jaw, Saskatchewan, in 1926. Some 50 years later, the company began to build bridges, and have expanded over the years into several different areas of construction and construction management. Through all of their growth and expansion, the company has stayed true to bridge-building. When it was time to add another finisher to their inventory, the company sent an official to World of Concrete to research the latest bridge technologies and discuss their upcoming projects with the different manufacturers.

"David Impey, our Director of Engineering, went to World of Concrete to gather information, and the people in the GOMACO booth were more than pleased to help him out," Doug Kish, Concrete Specialist with Graham, said. "David was put in touch with Bob Coats, the cylinder finishers product manager at GOMACO, and we've worked hand-in-hand with him developing the exact machine for our needs."

That machine is a new GOMACO C-450 with transitional framework, capable of spanning widths up to 104 feet (31.7 m). It was put to work right away on Highway 2 near Airdrie, Alberta, just north of Calgary, on a project with side-by-side bridges. Each of the decks would be nine inches (229 mm) thick, approximately 20,000 square feet (1858 m^2) in size, and required 620 cubic yards (474 m^3) of concrete to complete.

The bridges were finished on a skew with a four inch (102 mm) crown built into the deck.

CL-040905 D18

The transitional framework is a new design option for the C-450 that provides faster assembly and weight savings compared to wider-width finishers requiring an overhead truss system. The new frame features transition sections connecting the C-450's standard 24 inch (610 mm) tall framework to the 42 inch (1067 mm) tall framework used on a C-750 finisher. The frame sections only need to be pin-connected and the cross arms bolted in place.

The overhead truss system is eliminated. The transitional framework not only provides a much quicker assembly time, but also decreases the weight of the machine considerably. It is estimated to be eight pounds per foot

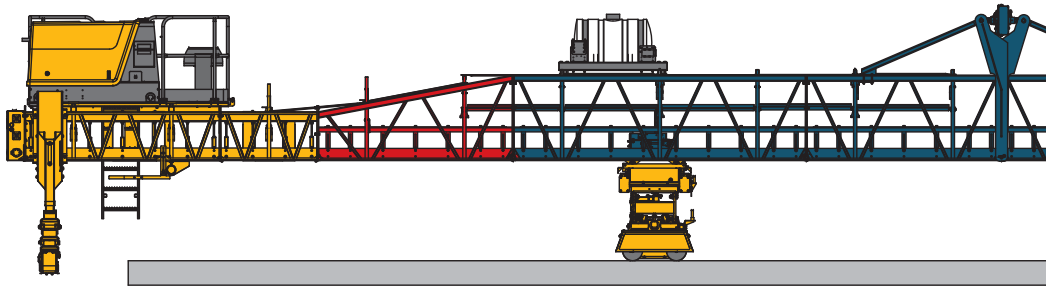
(11.9 kg / m) lighter when compared to a machine with overhead truss.

"It's a considerable weight savings," Bob Coats, Cylinder Finishers and Trimmer / Placers Product Manager at GOMACO, said. "On Graham's machine at 104 feet (31.7 m) wide, we lightened the weight of the machine by approximatley 832 pounds (377 kg)."

The transitional framework sections can also be removed and the C-450 can finish at smaller widths with its standard 24 inch (610 mm) framework. The new framework allows the versatility of two finishers in one for the narrower or wider widths. The new transitional framework can be added to new or existing C-450s.

Graham also utilized the optional third wheel assist on their C-450's standard bogies to further distribute the machine's weight while traveling on the rails. The optional, third wheel assist bogies, on each side of the finisher, consist of two single-wheel idler bogies attached to the spreader beam. It's a simple modification that can be made to any C-450 or C-750 to help spread the weight out and reduce the wheel load on the overhang brackets.

Specifications for bridge decks in Alberta require a concrete mix design with silica fume added. It creates a high-strength concrete, but is a challenge to finish because of its sticky texture. Graham equipped their C-450 with a heavy-duty, externally-vibrated, double-cylinder undercarriage with five foot (1.5 m) long cylinders. The external vibration helps deal with the stickiness of the concrete mix design and creates a better finished driving surface. The smoother driving surface will be appreciated by the drivers of the approximately 30,000 vehicles traveling across the bridges each day.

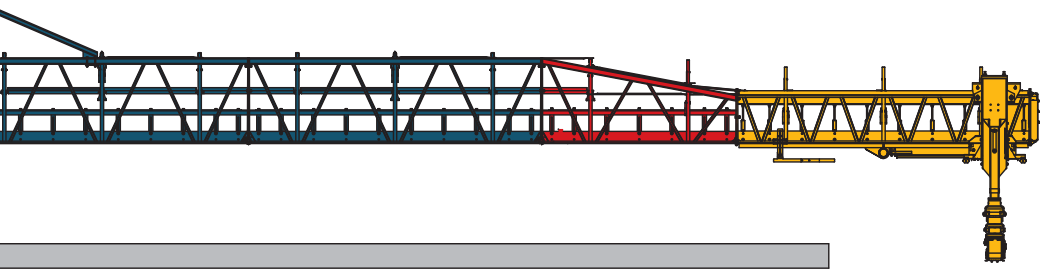


The C-450 with transitional framework– Yellow: standard 24 inch (610 mm) tall C-450 framew

Training on the company's new C-450 was both on-site from GOMACO service representatives, along with a trip to GOMACO University in Ida Grove, Iowa. The company sent 12 of their people to the week-long C-450 class at the University. Personnel attending ranged from laborers to superintendents to equipment managers.

"Everybody really benefitted from it," Kish said. "We learned what questions we need to ask, from how to order the piece of equipment to what we need for the job. We were taught how to put the finisher together for our current job and also ones in the future. Our guys are now really comfortable with the machine, what it can do, and what we need to do to set it up properly."

The C-450's transitional framework allows wider width finishing without the overhead truss system. It allows a quicker assembly time and decreases the overall weight of the machine, an estim



work and components. Red: transitional framework. Blue: 42 inch (1067 mm) tall framework.

Then, for each of the bridges, a GOMACO service representative was on hand to assist during the pours.

"They showed us some great tricks that make a big difference in the final finish," Kish said. "The biggest thing on the machine is making sure the drums are set properly. The trick for that is set the back end about 0.125 inch (3 mm) higher than the front end. It makes all the difference in the world."

Each of the decks, built with a four inch (102 mm) crown, had to be dry run with the bridge inspectors on-site to supervise and make sure the deck would get the proper amount of concrete coverage. Once the inspectors signed off, the finishing could begin.

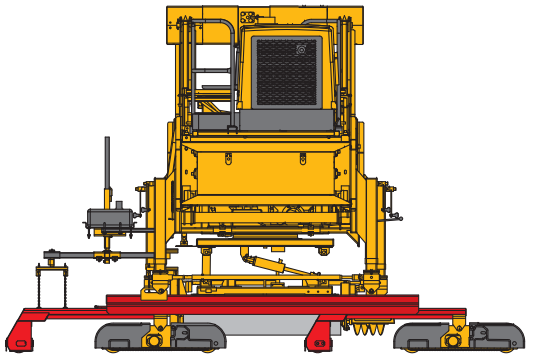
The silica-fume concrete was placed on the deck by a concrete pump. Slump was kept around three inches (76 mm) to help ensure easier placement. The C-450 was set on a skew and the bridges took two days to complete. Each daily pour lasted approximately five to six hours to complete the 10,000 square feet (929 m^2), one-half of the deck.

The newly finished deck is covered with burlap and kept wet with a spray-mist system for seven days as part of the curing process.

"The hardest aspect of any bridge deck pour is just trying to maintain the flow... keep the concrete running, the guys working, and the finisher finishing," Kish said. "The C-450 with its double drums is a big help, and makes all the difference for a smooth surface with fast production."

Graham has successfully completed the twin bridge decks on Highway 2 near Airdrie. They've moved the C-450 onto other projects that aren't as wide.

"We're putting it together now for a few more bridges, but they aren't wide enough to require the transitional framework," Kish said. "That's the nice thing about this new machine. We just leave the transition sections out and use the standard 24 inch (610 mm) framework. It works out really well."

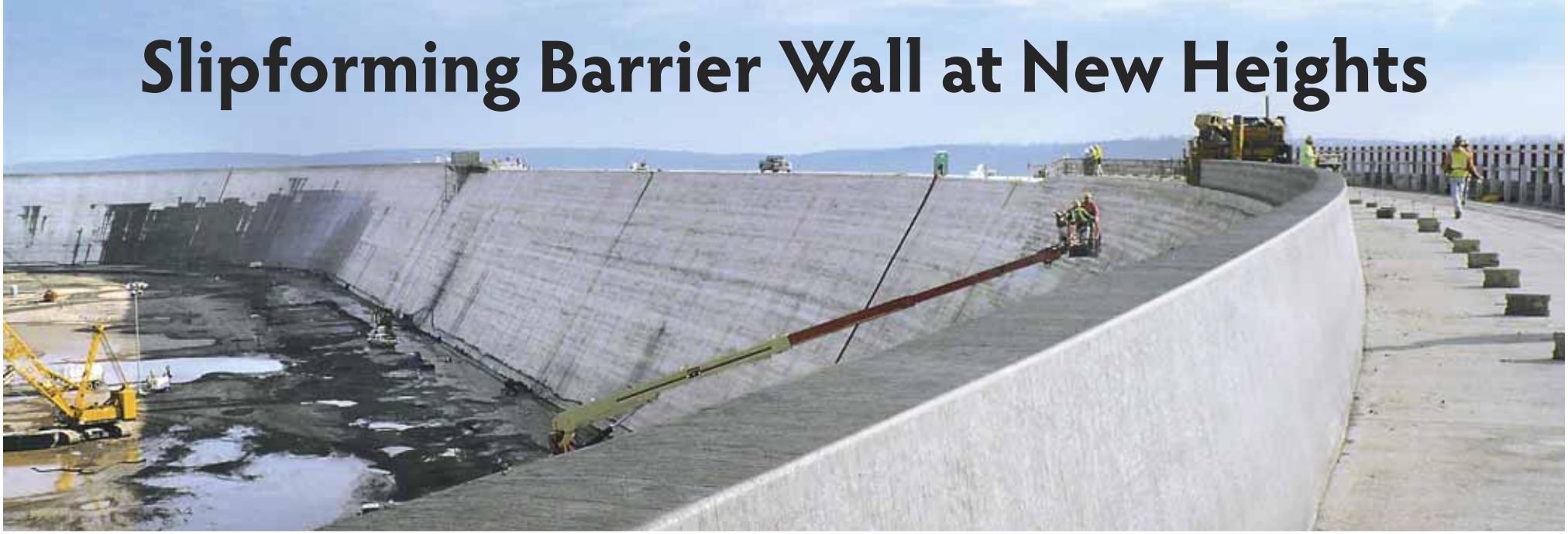


The C-450's third wheel assist package is highlighted in red.

ated eight pounds per foot (11.9 kg/m) lighter when compared to a machine with the overhead truss system.

CL-040906 D8

Slipforming Barrier Wall at New Heights



Photos courtesy of Gerdan Slipforming CG-120913 D9

Gerdan slipforms barrier wall with their Commander III 110 feet (33.5 m) above the ground and on top of the new Taum Sauk reservoir in Missouri.

The new Taum Sauk Hydroelectric Power Station near Lesterville, Missouri, started producing power again this Spring. The new upper reservoir dam was completely rebuilt from the ground up after the structure suffered a catastrophic failure in December 2005. At the very top of the ground-up rebuild, is a new concrete safety barrier around the structure to keep both vehicular and pedestrian traffic safe. Gerdan Slipforming and their GOMACO three-track Commander III were chosen to slipform the new wall.

The Taum Sauk reservoir sits atop Proffit Mountain. On the morning of December 14, 2005, a section of wall on the northwest side of the upper reservoir failed. One billion gallons (4,000,000 m^3) of water escaped the breach in twelve minutes sending a 20 foot (6.1 m) crest of water down the Black River. Amazingly, nobody was killed, but the path the water took is still a very visible scar on the side of Proffit Mountain.

Reconstruction of the upper reservoir began in late 2007. The project was awarded to Ozark Constuctors, LLC, which is a venture partnership between Fred Weber Inc., and ASI Constructors Inc., with Paul C. Rizzo Associates Inc. serving as Engineer of Record and Construction Manager.

Gerdan Slipforming, based out of Cape Girardeau, Missouri, specializes in slipforming wall on challenging projects. *GOMACO World* Volume 32, Issue 2, featured their work on the Bill Emerson Memorial Bridge. They slipformed the approach wall and parapet for the cable-stayed bridge. Their work was carried out from the bridge deck 60 feet (18.3 m) above the surface of the Mississippi River.

The top of the Taum Sauk reservoir takes the company to new heights... 110 feet (33.5 m). The extreme height had Dan Driskell, Project Manager for Gerdan Slipforming, concerned for his Commander III operator's stomach.

"I was worried about our operator looking down into the bowl of the reservoir from on top of the moving machine and getting queasy," he said. "Thankfully, that never happened while we were slipforming.

"The only time he got queasy was when we were tracking the machine up

During the peak of construction, over 1000 people were working on the new reservoir.

CG-120912 D10

CG-120912 D2

Concrete delivery for the barrier wall was a challenge. Only one ready-mix truck at a time could get to the machine, because there was not enough room for two trucks to pass on top of the reservoir.

CG-120912 D5

Gerdan's three-track Commander III slipformed approximately 5743 lineal feet (1750 m) of 42 inch (1067 mm) tall barrier wall on the project.

the ramp to get it to the top of the reservoir. He actually had to stop the Commander III, get down, and get his feet on solid ground. The ramp was very intimidating, even just walking up or down it on foot. It's very narrow and there was just barely enough room for the machine to get through."

Limited space was a challenge for the entirety of the project. With the machine in place on the top, there was no room for ready-mix trucks to pass by it for concrete delivery. Trucks also had to be carefully coordinated so they didn't meet each other on the only ramp.

"Getting the ready-mix to the machine was the most challenging aspect of the project," Driskell explained. "It was a very tight area and there was only one way in and one way out. When the trucks emptied, they had to drive all the way around the reservoir or else they had to back out. Only one truck at a time could get to the machine and careful coordination was needed so the trucks didn't run each other over at the machine or meet each other on the ramp."

Concrete was supplied by an on-site batch plant and delivered by front-discharge, ready-mix trucks. The mix design was a state of Missouri-approved concrete and slump averaged one inch (25 mm).

The 42 inch (1067 mm) tall, OSHA-approved safety barrier was slipformed over a steel cage built by Ozark Constructors. Production averaged 1172 feet (357 m) per day, even with the challenge of concrete delivery.

Finishing work behind the paver was accomplished using a work buggy. Three finishers worked from the bridge

CG-120912 D8

Vertigo was a concern on this project. Imagine being the Commander III's operator and looking down the 110 feet (33.5 m) tall walls of the Taum Sauk reservoir.

on the buggy applying a broom finish. Two inch (51 mm) deep control joints were cut into the wall every 15 feet (4.6 m) and full depth expansion joints were placed every 120 feet (36.6 m).

It took Gerdan Slipforming approximately five days to slipform the project's 5743 lineal feet (1750 m) of safety barrier with their Commander III.

"This was an amazing site for us to work at and an absolutely phenomenal job for our company," Driskell said. "The Commander III performed flawlessly in the demanding conditions. We couldn't be happier with the outcome of the project."

The $490 million rebuilding project was a success for everyone involved. Water was pumped into the rebuilt reservoir for the first time on February 27, 2010. The Federal Energy Regulatory Commission gave the final approval for "return to normal project operations" on April 1, 2010, and electricity was first generated from the new structure on April 21, 2010. It has also been recognized with an "Award of Excellence in the Constructed Project" by the U.S. Society on Dams.

Dam officials drive a maintenence vehicle on the top of the Taum Sauk reservoir, right next to Gerdan's new concrete barrier wall.

Photo courtesy of AmerenUE

Photo courtesy of AmerenUE

An aeriel view showing the newly completed reservoir, filled to capacity with 1.5 billion gallons (5.68 billion L) of water.

Placing RCC on the Largest Dam Under Construction in North America

The Taum Sauk Upper Reservoir Rebuild Project involved the construction of a modern concrete faced symmetrical Roller Compacted Concrete (RCC) dam. The approximately 2.7 million cubic yard (2 million m^3) RCC dam replaced the existing concrete lined, rock-fill dam originally built in 1963.

Ozark Constructors responsibilities included building the 6700 foot (2042 m) long, 120 foot (36.6 m) tall, and 150 foot (45.7 m) base width structure. The new dam was built in a linear fashion, first excavating the existing ryolite rock-fill dam, then repairing the base foundation, and finally placing and forming the RCC to create the upper reservoir.

Fred Weber Inc., part of the Ozark Constructors consortium, brought in their GOMACO RTP-500 rubber-tracked placer to move the RCC mix. At 35 feet (10.7 m) long, the RTP-500 has the longest placing conveyor in the industry for high-volume material placement over a long reach.

A GOMACO RTP-500 was used to move the RCC mix design from trucks into a telescoping and high reaching concrete pump.

CG-120913 D2

Slipping 24 Inch (610 mm) Radii with the GT-3400

Garcia Concrete Construction Inc., based out of Fort Wayne, Indiana, specializes in municipality work, which includes new developments, parking lots, streets, subdivision work, and a variety of other specialized applications. The company, which consists of 14 employees including the owners, is a jack-of-all-trades, willing to take on any project. Adding to their versatility are two GOMACO curb and gutter machines, a GT-3600 and a GT-3400.

The GT-3400 is new to their fleet. It was a difficult decision for the company, whether to add another GT-3600 or try the different machine.

"We spent a lot of time comparing the two machines and what each of them was capable of doing," Manuel Garcia, one of the company owners, said. "In the end, I guess we just wanted to try something different, and we're glad that we did. Our GT-3400 is easy to set up, easy to operate, turns tight radii, and is very quiet to operate."

And, it's remote controlled, a feature that the operators enjoy. It allows them the freedom to move around the machine or to operate from the GT-3400's platform.

Photos by Jason Reitz CG-050803 D17

The GT-3400's operator stands inside the stringline with the remote control to watch the machine turn a radius on a parking lot project.

The mold is lifted and sideshifted out of the way during pretrimming.

CG-050802 D8

"The remote is definitely our favorite feature," Garcia said. "My guys can operate the machine from wherever they want to run it. They can always get into position for the best view, whether we're running a long section on a city street or turning a tight radius in a parking lot."

Garcia Concrete completed a parking lot project for a large retail store with their GT-3400. They slipformed approximately 24,000 feet (7315 m) of chair back-style curb and gutter. The profile featured a six inch (152 mm) tall curb with a 24 inch (610 mm) wide gutter. The parking lot also featured lots of radius work, some of them as tight as 24 inches (610 mm).

Project specifications also required two steel reinforcing cables be fed into the mold as the curb and gutter was slipformed. Because of the requirement, the entire project had to be pretrimmed with the GT-3400.

"The trimmerhead has so much power and was able to cut through the rock subgrade without any problems," Garcia said. "When the trimming was completed, we just sideshifted it out of the way so we had room to insert the steel reinforcing cables."

The GT-3400's trimmer is the most powerful on the market today. The direct-drive trimmerhead is driven with a radial piston hydraulic motor. It has 28,684 inch-pounds (3241 N-m) of

torque at the trimmerhead to cut through the toughest of subgrades.

The GT-3400 is uniquely designed to handle the tight radii, short runs and sharp angles designed into parking lots. Its compact size allows it to get into tight areas and its extra-large capacity hopper holds more concrete to complete tight radii.

It utilizes three steer sensors to turn tight radii. One sensor is located at the tip of the front track (Sensor 1); one is located at the front of the stainless (Sensor 2); and one is located at the back of the stainless (Sensor 3). Sensor 1 and 2 control the front tracks and Sensor 3 controls the rear track for both forward and reverse steer. As the GT-3400 enters the radius, the operator switches from Sensor 1 to Sensor 2 with a toggle switch on the remote. The combination of the hopper and the charging auger enables the GT-3400 to continuously travel through a tight radius without waiting for concrete delivery.

"Our radius work turns out great," Garcia said. "We just make sure that we've pre-trimmed the subgrade low enough, so we're not having problems with any stones getting underneath the mold. The concrete slump has to be just right, as well."

Garcia Concrete uses a standard 4000 psi (27.6 MPa) crushed limestone mix design. Slump averages two inches (51 mm). Curb and gutter production averages between 6000 to 7000 feet (1829 to 2134 m) per day.

"The two-speed motors allow us to move across our projects fast," Garcia said. "It's so quiet, too. I can stand on the machine and have a telephone conversation. It's a really great machine for what we do... it's small, like us... but we're still growing."

CG-050803 D1

Two steel cables are slipformed into the curb. The GT-3400's trimmerhead is raised and sideshifted out of the way to allow for the cable to be fed into the front of the mold.


CG-050804 D1

The GT-3400 was designed for the challenging conditions created in parking lots, which can include several tight radii and short runs of curb and gutter.

CG-050803 D5

Curb and gutter production averages between 6000 to 7000 feet (1829 to 2134 m) per day on Garcia's parking lot projects in Indiana.

Paving Concrete Pavements at Heathrow's T5

by Richard Moore, Technical Associate Director, TPS

Article and photos reprinted with permission from *Concrete Technology Today* magazine.

A *GOMACO four-track GHP-2800 slipforms concrete on the new Terminal 5 (T5) at London Heathrow Airport.*

The design and construction of the aircraft pavements for the new Terminal 5 (T5) at London Heathrow Airport presented a number of significant challenges. These challenges were overcome by an integrated project team consisting of BAA (client), TPS (design consultant, part of the Carillion Group) and AMEC Civil Engineering (constructor). The integrated team worked closely in co-located offices from the very early inception of the project in 1997 until the opening day in March 2008.

The London Clay subgrade on the T5 development resulted in an equilibrium CBR of two percent across the majority of the site. The strength was far lower than the naturally occurring gravel subgrades on the existing Heathrow airfield. The low subgrade strength coupled with the extremely high aircraft traffic loads, over 50 percent of the movements being long haul aircraft, resulted in a significant pavement depth being required.

An integrated design and cost model was developed to obtain the best value pavement solution. The costs were built up using real time cost information provided by the two principal contractors and the pavement team; a long-term framework agreement between BAA and AMEC. The design and cost model allowed a large number of options to be quickly and easily evaluated including rigid pavements, flexible pavements and ground improvement options. It was found that a rigid pavement, Pavement Quality Concrete (PQC) on a cement bound base, would provide the best value solution.

Initial design calculations indicated that the PQC depth would be approximately 800 millimeters (31.5 in), well beyond the slipform paving technology at that time. The challenge was to reduce the PQC depth to below 600 millimeters (23.6 in), which is the depth at which the slab could safely be slipformed in a single layer.

The design and cost model highlighted that increasing the strength of the PQC would result in significant reductions in the pavement depth. An increase in the flexural strength of one N / mm^2 from six N / mm^2 ("F6" - the standard Pavement Team mix at that time) to seven N / mm^2 ("F7") would result in an average reduction of 80 millimeters (3.1 in). Applying this reduction to the one million square meters of T5 aircraft pavements would result in substantial cost, program and environmental benefits. Reducing the pavement depth also resulted in less London Clay fill material having to be transported from the main site.

To achieve F7 grade concrete, the design and construction teams commenced mix development in 1999. A large number of laboratory and full-scale production trials were carried out and the concrete was used in a number of airfield projects at Heathrow, Gatwick and Stansted prior to the start onsite at T5. The increased strength was obtained by reducing the water / cement ratio, resulting in a very dry concrete mix. All members of the supply chain were

involved from an early stage to ensure that a workable high strength mix could be achieved.

The production and project trials indicated that to achieve success the concrete batching and paving processes would have to be managed as one complete system. A dedicated PQC batching plant and tight control of raw materials, such as aggregate moisture content, aggregate grading, cement and PFA chemical properties, were also key to obtaining a high strength, high quality PQC.

The T5 F7 concrete had a total cementitious content of 380 kilograms per cubic meter (1096 lb / yd^3) with 30 percent PFA and contained limestone aggregate. The reduced slab thickness resulting from the use of F7 concrete and the utilization of recycled concrete in the cement bound base and pavement working platform eliminated 27,000 truck movements. Cement production CO^2 emissions were reduced by over 60,000 tons as a result of the reduced slab depth and the use of cement replacement.

The new generation of larger aircraft, such as the Airbus A380 and stretched versions of existing aircrafts, result in significantly higher edge stresses on transverse and longitudinal joints. A number of longitudinal joint failures on the existing Heathrow airfield during the design phase of T5 highlighted the importance of achieving good load transfer between adjacent concrete bays. The T5 team developed a new longitudinal joint detail, known as a "tapered key," to increase load transfer and reduce edge stresses. The tapered key joint included a foam top section to eliminate the risk of compression failures, such as those witnessed on the existing Heathrow pavements.

The new pavement was designed with a structural strength high enough to accommodate the largest aircraft, including the Airbus A380.

The tapered key joint was easier to construct than the more traditional sinusoidal or dowelled joints and is performing well in operation. BAA has since adopted the new detail on all their new longitudinal joints constructed at Heathrow.

BAA invested in a state-of-the-art slipforming paving machine (a GOMACO four-track GHP-2800) to construct the aircraft pavements. Early construction planning indicated that the phased handover of the airfield and the large number of substructures, service pits and manholes would result in a high proportion of hand-laid concrete. To improve the construction efficiency and the PQC quality, it was essential that the proportion of machine-laid concrete be increased.

The construction team was involved with the design from an early stage. It was important that both the construction planners and the paving team could influence the development of the design. Service pits and manholes were located within the concrete bay pattern to avoid clashes with the paving machine. A new method of slipform paving over the top of pit and manhole covers was also developed. The integrated design and construction team approach resulted in a 30 percent increase in the area of machine-laid concrete.

To minimize the volume of PQC required, the pavement was designed for the specific traffic forecast in each area. For example, the areas adjacent to the terminal buildings were designed for aircraft tugs only and detailed forecasts were used to design each taxiway and groups of aircraft stands. In later phases of the project, the slipform paving machine was adapted to lay variable thickness PQC on the aircraft stands. This allowed the trafficked sections of the stands, such as the centerlines, to be locally deepened and the pavement depth to be reduced elsewhere on the stand. This innovation reduced the PQC volume by 1400 cubic meters (1831 yd^3).

A number of other BAA aircraft pavement innovations were developed on T5, including the introduction of unsealed transverse and longitudinal joints and the use of friction testing technology, as opposed to the traditional sand patch test to measure surface texture.

An integrated team approach to the design and construction of the T5 aircraft pavements resulted in significant cost, program, quality and environmental benefits. Early construction team involvement allowed high strength concrete to be developed and the pavement design to be tailored so as to optimize the efficiency of the construction and improve the quality of the finished product.

CONCRETE TECHNOLOGY TODAY

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Richard Moore is a Technical Associate Director with TPS's Aviation Engineering team. He worked on Heathrow Terminal 5 and played a leading role in developing high strength (F7) pavement quality concrete and innovative design and construction methodologies. He was also responsible for the runway, taxiway and apron pavement design for Stansted G2 and is currently Design Team Leader for the new Bugesera International Airport in Rwanda. He is the TPS' focal point for developments in pavement design, a subject on which he has written papers and presented to a number of international conferences.

NEW GOMACO Innovations and Introductions in 2010

GOMACO GP-2400 Slipform Paver with Exclusive G+ Control System

HW-061034 D19

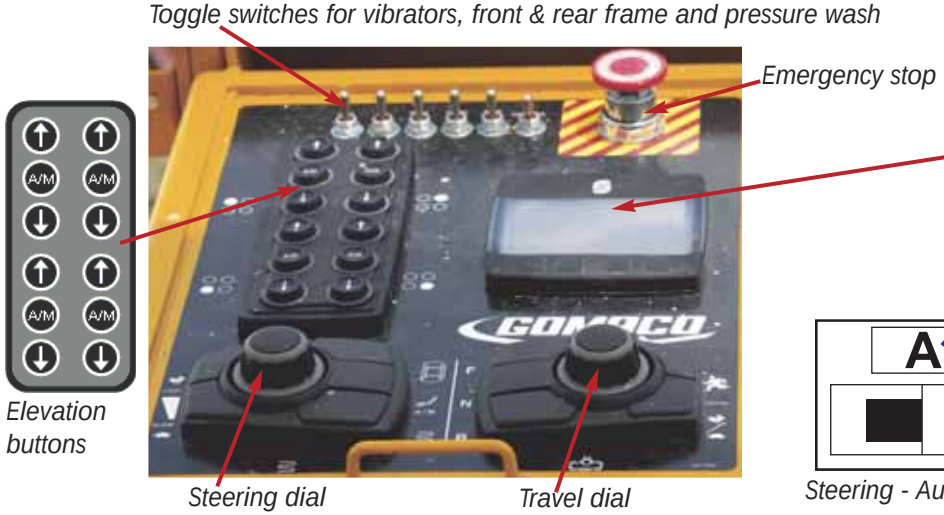
Bituminex Paving Ltd. slipforms 16 feet (5 m) wide with their new GP-2400 paver on a parking lot project in Winnipeg, Manitoba, Canada.

A customer approached GOMACO recently with a very specific request for a new paver. They operate GOMACO HW-165 pavers and are either paving or transporting the machines every day during their short paving season in Canada. When they looked at the total amount of work they had on the books, they realized a new paver would be necessary for the 2010 season. Their wish list for the new paver included: half-width paving, tight-radius capable, user-friendly, maneuverable, easy to transport, and quick to set up. The result: the two-track GP-2400 slipform paver.

The first GP-2400 was equipped with eight foot (2.4 m), series two tracks, part of the customer request for a tight-radius capable machine. It features a telescoping frame with a 3100 series open-front mold that will slipform widths from 10 feet to 16.5 feet (3 to 5 m), without a frame insert. With a frame insert, it can pave widths up to 24 feet (7.3 m). Sixteen vibrator circuits are standard on the GP-2400.

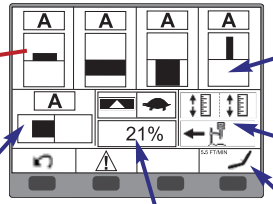
It is powered by a 174.5 hp (129.5 kW) 6.6 Turbocharged Caterpillar® diesel engine. Two-speed track motors allow a fast 105 feet per minute (32 mpm) travel speed for quick maneuverability around the job site, while the low speed is variable up to 35 feet per minute (10.7 mpm).

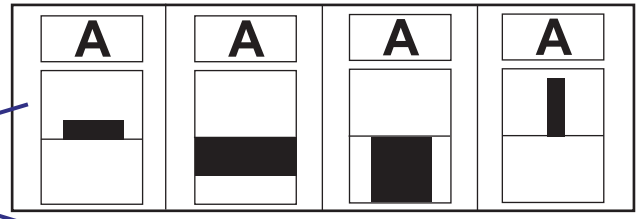
The GP-2400 features the exclusive GOMACO G+ control system with self-diagnostics for grade and steering. It is able to operate in several languages, by customer choice, and offers metric or imperial measurements. The G+ system has been designed all in-house by GOMACO's control experts. It features new and easy-to-operate hardware with steering and travel dials, while buttons are used to control steering and elevation. A screen on the control panel illustrates the various aspects of the paver.



The GP-2400's exclusive GOMACO G+ controller.

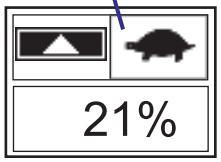
A typical "run" screen on the G+ controller.





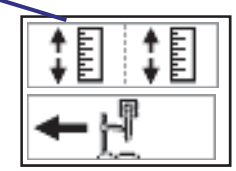
Four leg posts - Automatic

Steering - Automatic



Direction of travel, travel speed and percentage of travel

Paver travel speed & vibration on/off indicator



Left & right grade, stringline on left side of paver

GOMACO Independent IDBI Attachment for Four-Track Slipform Pavers

Almost three decades have passed since GOMACO Corporation revolutionized the concrete paving industry with the introduction of the GOMACO system for putting dowel bars into a concrete slab during the paving process. The GOMACO IDBI has been proven and accepted around the world for accuracy in bar placement location, productivity and meeting rideability specifications. GOMACO has once again created a revolution with the introduction of the independent IDBI attachment for all four-track GOMACO pavers.

The new IDBI attachment is an independent unit providing dowel bar insertion behind a paver to form the transverse joint. The IDBI attachment is a new generation bar insertion system. The attachment is powered by its own C4.4, Tier 3, diesel Caterpillar® engine with 91 hp (68 kW) @ 2300 rpm. No power or hydraulics is needed from the paver's engine. A CAN cable connects the IDBI's controls to the controller on the paver and allows the two systems to communicate. For example, when the GOMACO paver stops and starts, the tamper bar and screed on the IDBI turn on and off automatically in coordination with the paver. GOMACO engineers have designed a bar insertion concept and created an independent attachment that is self-contained and self-powered. The new design features a new IDBI tray that is stronger, more compact and makes width changes easier. New adjustable-height bar extractors allow contractors to quickly and easily change the setup for different bar sizes for insertion requirements.

The IDBI controls have all been designed in-house by GOMACO controls engineers. Its new GOMACO G+ control system features the same graphical display as the G22 controller, with easy to learn and easy to understand controls. The IDBI information is presented in full color, commands are presented in full text, and it is able to operate in several languages, by customer's choice. It offers the choice of metric or imperial measurements. The new IDBI control system also offers troubleshooting capabilities and other features that will make start up and general paving each day fast and easy.

The new independent IDBI attachment features it own outriggers to aid in attaching the unit to the paver and also for loading and unloading the unit for transporting. The outriggers can be hydraulically lowered and placed on the ground to support the full weight of the IDBI as it is attached to or detached from the paver. The outriggers on the attachment have 48 inches (1219 mm) of stroke and are also used to raise the unit so a trailer can be backed underneath for transport.

The IDBI attachment is available for all GOMACO four-track slipform pavers. Please visit, http://www.gomaco.com/Resources/idbi.html for more information.

A *four-track GHP-2800 slipforms 31 feet (9.4 m) wide with a new independent IDBI attachment on a project in Chicago, Illinois.*

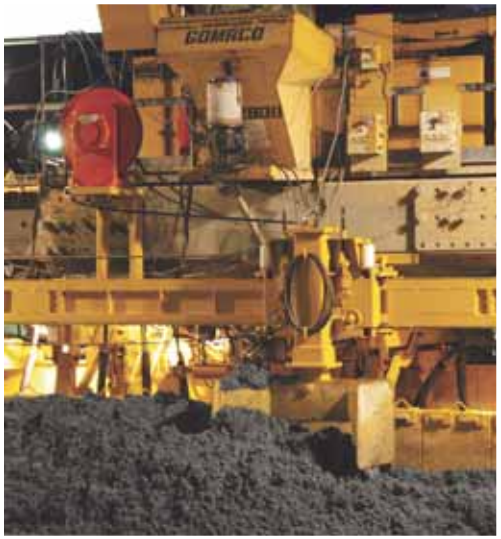
HW-090913 D2

HW-110911 D3

Ultimate rideability results are achieved with the new GOMACO 5400 series mold.

HW-110914 D17

Slipforming a new roadway with integral curb on both sides of the slab.



HW-110911 D5

A spreader plow, mounted to the T-rail, moves the concrete across the width of the paver.

HW-110913 D17

Standard paving depth is zero to 24 inches (0 to 610 mm).

GOMACO 5400 Series Paving Mold

GOMACO Corporation is proud to introduce the new 5400 series paving mold, designed with a structural integrity that is unmatched in the industry. The new series also includes a rear-loading, front-inserting 5400 series bar inserter, along with other bar placement attachments.

The mold, with a 54 inch (1372 mm) finishing length, has a new "box" design and durable 0.5 inch (13 mm) paving skin for structural integrity. It is available with a 20 inch (508 mm) auger or a spreader plow to move the material across the paving width. A newly designed strike-off is mounted to the paver's mainframe, independent of the mold. The strike-off has a modular design with a wedge-lock system for easy width changes. It has hydraulic crown adjustment with up to 10 inches (254 mm) of vertical hydraulic adjustment. The new mold also features hydraulic Vertical Hinged Sideplates (VHS), self-contained to the inside of the mold, allowing minimum track clearance.

The mold was built to be easy to assemble, with inserts that are bolted together with front and rear alignment pins. Vertically adjusting mounts on the mold allow precise leveling of the mold to the paver. A front and rear T-bar at the top of the mold adds structural integrity and is utilized for attaching paving accessories. A new vibrator mounting tube attaches to the T-bar on the mold and the vibrators can now be vertically raised or lowered to accommodate paving conditions or transporting needs.

The mold was also built to be versatile. The 5400 series mold will have optional telescoping end sections with 12 inches (305 mm) of width variation on each side. The transition adjustor is self-supported and driven with a 3.5 inch (89 mm) ACME screw for up to a six inch (152 mm) crown. Split, pressure-compensated sideplates allow a standard paving depth from zero to 24 inches (0 to 610 mm). The mold will also be available with edge slump, batter adjustment and optional tamper bar.

GOMACO 5400 Series Bar Inserter

The new 5400 series bar inserter offers ease of use with rear loading from the paver's work bridge, while the bar is inserted in front of the mold. It features a reliable and highly efficient bar loading chain system with bars traveling in a flat, straight path. The bar insertion process and timing is controlled by GOMACO's new G+ system. The new inserter mounts to the 5400 series mold's T-bar, where it can allow on-the-go crown changes while maintaining a constant bar depth. Individual depth guides on the right and left side of the bar inserter keep the bars parallel to the top of the slab during insertion. The system is able to accommodate #3 to #8 diameter bars between 20 to 40 inches (508 to 1016 mm) in length, and inserts the bars up to 7.5 inches (191 mm) deep into the concrete slab. The bar bundles are loaded into a bar box that is mounted to the paver's rear T-rail for easy access and loading of the bar magazine. The bar loading chain system and bar magazine are capable of holding up to 50 bars.

Please visit http://www.gomaco.com/Resources/5400seriesmold.html for more information about the 5400 series mold and bar inserter.

EG-100908 D15


EG-051001 D8

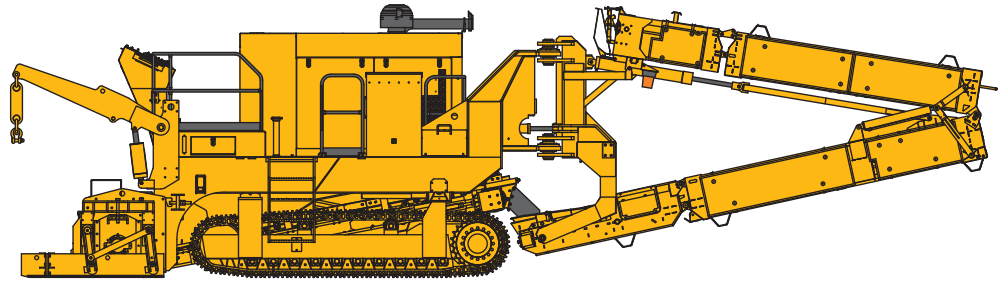

EG-051001 D3


EG-051001 D1

Contractor Request Develops into a New Canopy for the Commander III

Canadian contractor, Jean Le Clerc Excavation, approached GOMACO recently for a special request for their new Commander III... a canopy to help shield the operator from Canada's inclement weather. GOMACO engineers fulfilled the request with only a few, slight machine modifications. The operator's console was modified in order to house the necessary hydraulic and electrical components of the canopy. Support beams on either side of the console hydraulically raise or lower the support system for the canopy. The canopy itself swings manually into position over the operator's head. It has a plexiglass windshield that can be unpinned and lowered to shield the forward view of the operator.


EG-051001 D7



9500 Now Available with Optional Folding Rear Conveyor Belt

The GOMACO 9500 trimmer or placer / spreader is now available with an optional rear folding conveyor. The new innovation is the direct result of a contractor request from APAC-Tennesee Inc. The option allows the conveyor to remain attached to the 9500 during shipping. The 9500's shipping length, with the new folding rear conveyor, is just 41.8 feet (12.7 m). Shipping height is 11.5 feet (3.5 m).

During the conveyor frame redesign process, engineers rebuilt the conveyor to be stronger and more rigid with a new, truss-style framework. The switch to control the hydraulic folding operation of the conveyor can be placed at different locations on the back of the machine, which allows ultimate operator visibility and safe operation.

The belt width is still 36 inches (914 mm) and the rear conveyor maintains its 160 degree swing with hydraulic height adjustment up to 12 feet (3.7 m). It has a 34.7 feet (10.6 m) long reach during machine operation, with a conveyor belt speed of 504 feet per minute (153.6 mpm) allowing fast placing of concrete or removal of trimmed material.

GOMACO International Ltd. Expands into Larger Facility in England

GOMACO International Ltd., has expanded into a new facility in Witney, England. The larger facility and storage yard will allow the company to provide better customer service, including increased parts inventory, increased space to stock paving equipment for quicker delivery, and a new expanded shop area to service equipment.

"The new European headquarters for GOMACO International Limited will be ideal for product presentations and service schools for our customers, as well as sales and service training for our distributors," Rory Keogh, Managing Director of GOMACO International Ltd., said. "With the larger workshop and parts department, it allows us to increase growth by offering customers servicing and overhaul contracts."

GOMACO International Ltd.'s new headquarters are located at Units 14 & 15, Avenue 1, Station Lane, Witney, Oxford, OX28 4XZ, England. The phone number is +44 (0)1993 705100, and the fax is +44 (0)1993.704512. The move into the new facility took place in February.

"This new and modern facility for GOMACO International Ltd., and the additional capabilities it will allow us to provide to our customers, signifies GOMACO's commitment to the international concrete paving market," Kent Godbersen, Vice President of Worldwide Sales and Marketing, said.

SL-051001 D6

Coffman Specialties slipforms a slope for a smaller canal with their Commander III four-track and a 9500 placing concrete on a project near Phoenix, Arizona.

CG-021006 D11

First-time slipformers, ECOCSA, work on a barrier wall project with their GT-3600 in Mongomo, Equatorial Guinea.

CS-021001 D3

A temporary tent structure with heated mats on grade was set up at Russia's Vnukovo Airport so paving could continue throughout the cold temperatures of winter.

HW-061017 D4

HW-061017 D1

A GOMACO paving train is at work for Consolidated Contractors International Company (CCIC) on the New Doha International Airport in Doha, Qatar.

GOMACO around the world

SL-021002 D11

Fe Grande are at work on a large canal project in Rancaqua, Chile. They are using two GOMACO CP-650s, one for concrete finishing and one equipped with a compaction roller for the grade. The RC Conveyor on the project is used for placing both the rock for the grade and the concrete for the canal.

CG-041001 D5

WEMA slipforms a three meter (9.8 ft) wide recreational path in Aalst, Belgium. Their GT-3600 features G22 controls with both English and Dutch languages.

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A New Polymer Overlay for a Scranton, Pennsylvania, Bridge Deck

CL-041001 D9

Kriger Construction specializes in bridge projects across the state of Pennsylvania.

CL-041001 D6

The C-450 with double drums provided a smooth finish to the polymer mix design.

Photos by Ed Lampe CL-041002 D10

A GOMACO C-450 is followed by a Spanit® work bridge on a polymer concrete overlay project in Scranton, Pennsylvania.

Kriger Construction Inc., based out of Dickson City, Pennsylvania, recently completed a bridge overlay project in Scranton with their GOMACO C-450 finisher. The Pennsylvania Department of Transportation (PennDOT) required a one inch (25 mm) thick polymer concrete overlay on the existing bridge deck. The bridge, with four traffic lanes, was refinished two lanes at a time, which allowed traffic to run on the other two lanes. The GOMACO C-450 was set up at 32 feet (9.75 m) wide, with a finishing width of 24 feet (7.3 m).

The concrete was mixed on-site. The special polymer concrete mixing truck could be driven onto the deck, and placed the concrete in front of the finisher. A GOMACO Spanit® work bridge followed the C-450 giving the workers a platform for finishing work.