



RAIL • TUNNEL

Slipform Solutions with the world leader
in Concrete Slipform Paving Equipment

SLABTRACK, TUNNEL PAVING, CONCRETE RAIL PLINTHS, GUIDED BUS PAVEMENT, & ANTI-DETRAILMENT UPSTANDS.



HOW DO YOU...

1. Improve overall quality of finished product ?
2. Improve consolidation of the concrete ?
3. Increase daily lineal production 6-7 times beyond traditional paving methods?
4. Improve jobsite safety by reduction of paving crew ?
5. Say goodbye to formwork: setting, cleaning, moving, re-setting static forms ?

In short, how do you improve your competitive edge ?

SLIPFORM IT with the World's Leading Supplier of Concrete Paving Equipment for Rail Applications.



Contractors and **GOMACO** have a strong relationship in "Global Partnering" with **GOMACO** working as equipment consultants for unique projects in concrete applications ranging from curb/gutter, barrier, roadway, airport, canal and rail. This broad and deep range of experience in the very specialized field of slipform paving over the span of 40 years makes **GOMACO** the partner of preference when it comes to the often complex aspects of determining suitable slipform solutions for rail & tunnel related applications.

Indeed, **GOMACO** has contributed solutions for companies all over the world that have allowed for an improved finished product, reduction of labor and increased production speeds – in short, making our end-users more competitive and more profitable.

Whether you have limited clearance pavements, strict tolerances for high speed rail slabs or plinths, anti-derailment barriers or simply a tight deadline with no margin for delays... you can rely on **GOMACO** quality, experience and support to see you through the project.



HIGH-SPEED SLABTRACK PAVEMENTS



Revolutionary High-Speed Slabtrack

Design by Balfour Beatty Rail in the U.K. allows for slipforming of the entire profile in a single pass.

Millimeter tolerances were achieved on one of the first Shinkansen projects slabformed in Japan in 1993. Although project owners were initially hesitant to allow a formless solution, slipforming fast became the accepted method throughout the country with almost all concrete slabtracks being constructed with slipform pavers today.

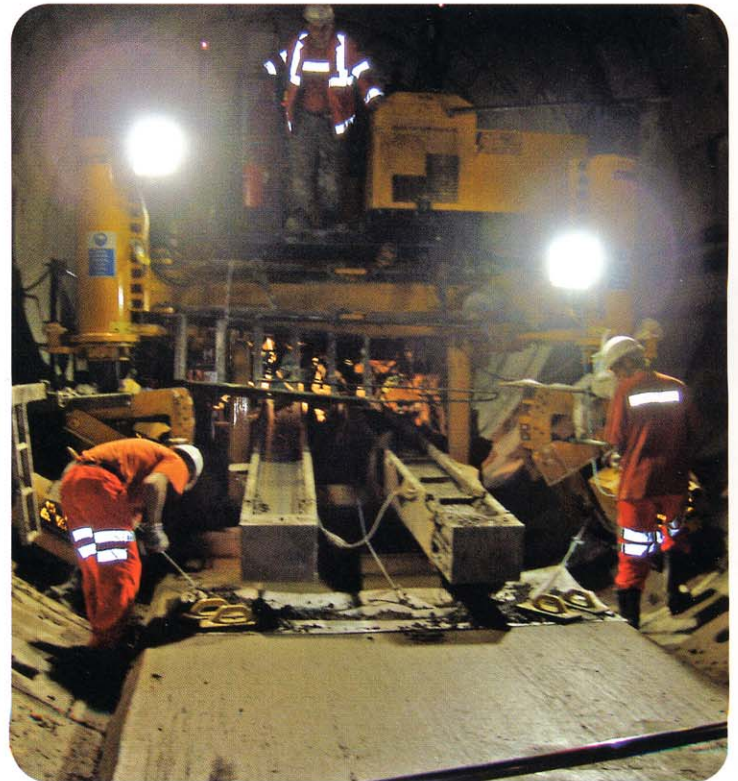


HIGH-SPEED SLABTRACK PAVEMENTS



GT-3600

A GT-3600 slipforming slabtrack with rail in place in France.

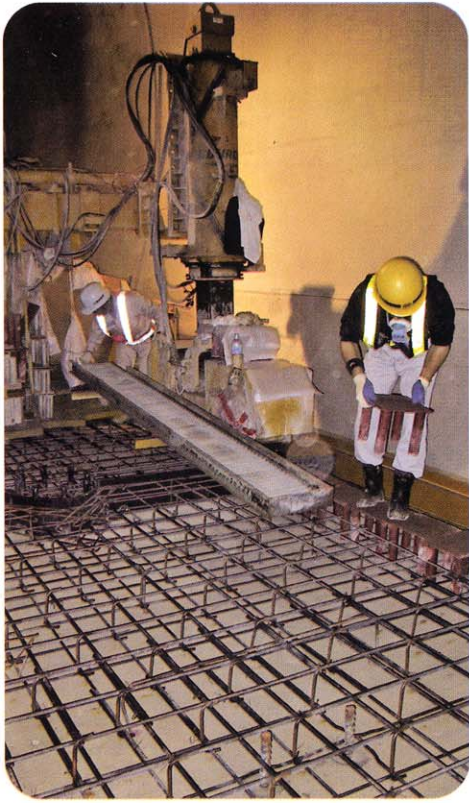


Commander III

A four-track Commander III in Switzerland.



HIGH-SPEED SLABTRACK PAVEMENTS

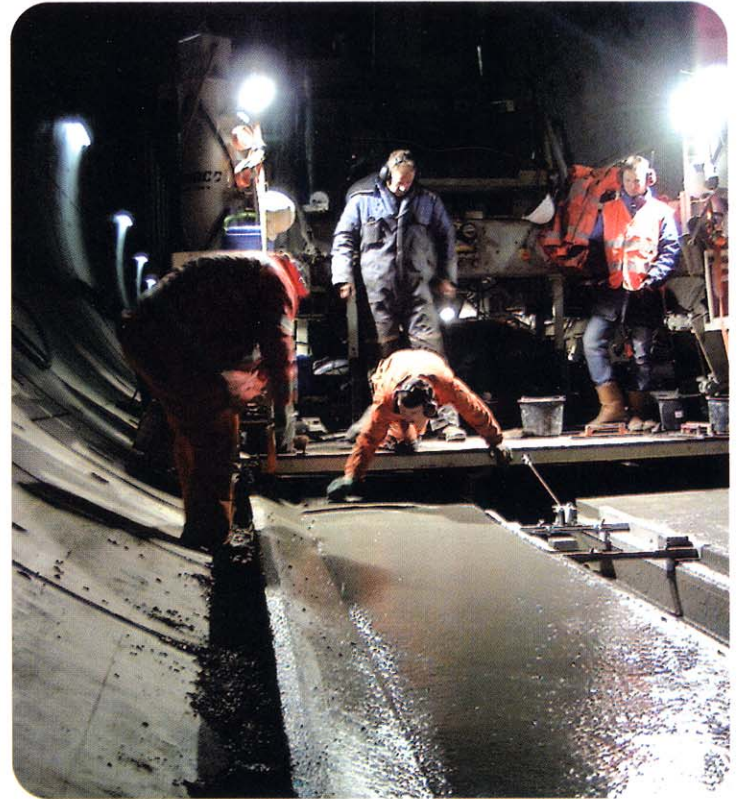


With this contractor's ingenuity and the specially designed **GOMACO** frame system, "zero-clearance" paving was achieved over continuous steel reinforcement.



Commander III

This Commander III in Japan, equipped with an offset conveyor, speeds up concrete charging for paving over continuous steel reinforcement.



Commander III

Special molds can be built to meet specific job requirements such as this Commander III project in Holland.

URBAN SLABTRACK APPLICATIONS



Commander III

Urban light-rail slabtrack in the U.S. with integral rails paved with this Commander III three-track unit.



Commander III

Guided bus slabtrack in the U.K. with a Commander III four-track configuration.



TRACK PAD & PLINTH SLIPFORMING



Commander II

The Commander II was chosen by this contractor in Canada for the dual track pads to be slipformed simultaneously in a single pass.



Commander III

A three-track Commander III was used for Bangkok's BTS dual plinths to be paved integrally.

OTHER SLIPFORMED RAIL APPLICATIONS



Anti-Derailment Barrier
in Hong Kong.

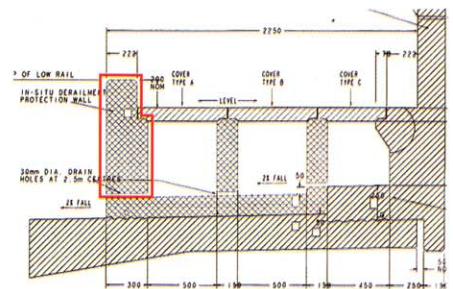


Drainage
in Japan.

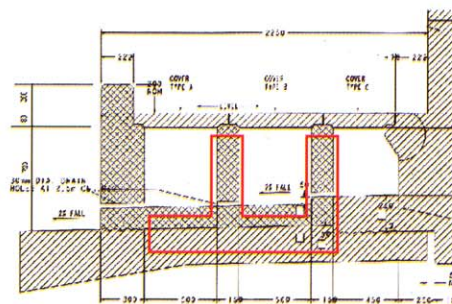
Cable Trough
in Austria.



Anti-Derailment Upstand
on Taiwan's high-speed rail.



Cable Duct
on Taiwan's high-speed rail.



CONTROL SYSTEMS FOR THE 21ST CENTURY



G21 Proprietary Operating System

A key feature for any slipform paving solution on a rail or tunnel project is the paver's control system.

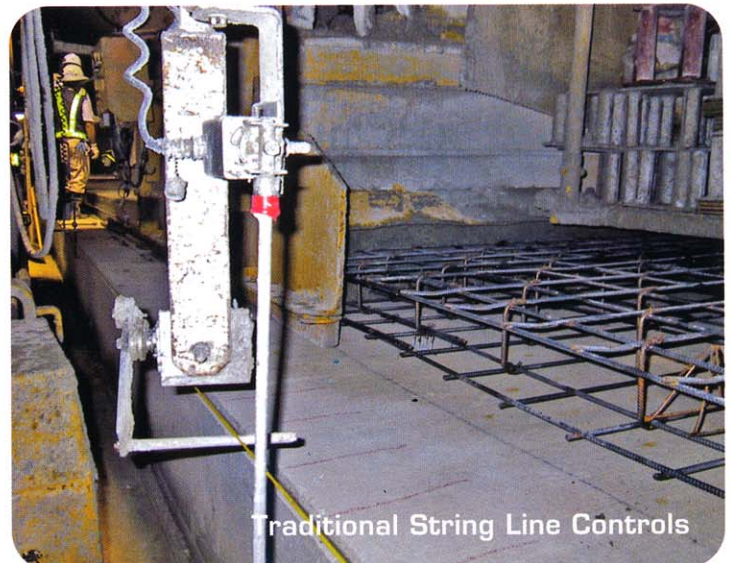
GOMACO's award-winning G21 proprietary operating system takes the previous Network Controller features and expanded on them to offer a state-of-the-art system that will give **GOMACO** contractors an edge in the marketplace.

G21 Features include:

- Improved self-diagnostics
- Operator friendly five position "Smart Steer"
- Red LED display for high visibility in low-light conditions
- Push button steering set-up and trainable track steering with GOMACO "Smart Cylinders"
- True network architecture to enhance expandability to communicate with external computers
- Laptop computer systems can be connected for software updates & data monitoring
- There is more room for future expansion than any CAN controller on the market for machine control
- Interfaces with stringless technology / 3-D control systems and laser technology



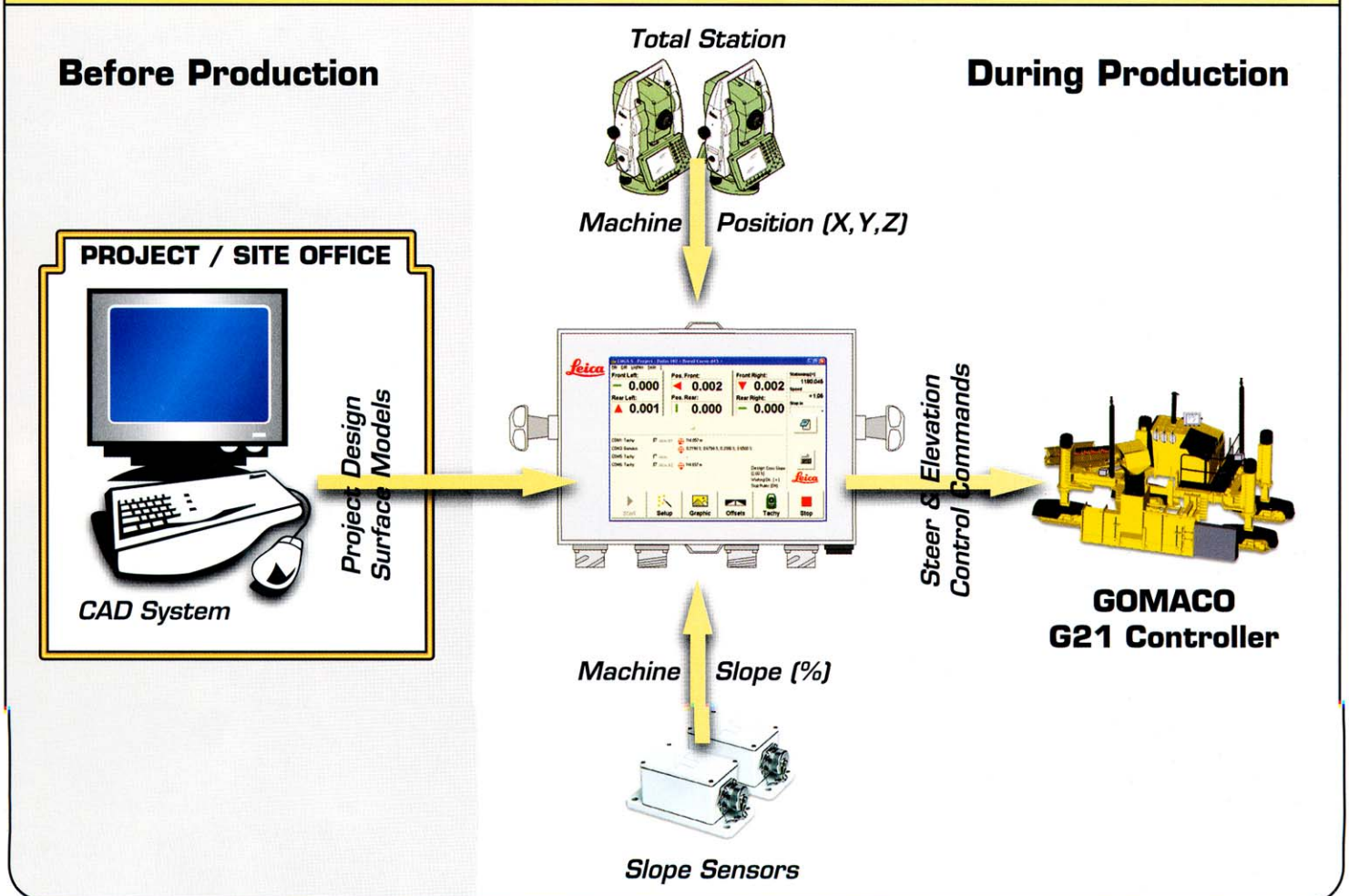
State of the art 3-D Control System



Traditional String Line Controls

G21 CONTROL SYSTEM

Leica 3D Stringless Control System for Concrete Pavers & Trimmers



The **GOMACO G21 control system** allows easy adaptability to state-of-the-art 3D "Stringless" control systems. Leica's unique 3D Stringless system controls the machine alignment and elevation directly from project survey data, thus saving time, improving jobsite logistics and improving accuracy of finished product. This technology is especially suitable for tunnel paving where setting and anchoring stringline posts can be difficult and sometimes impossible due to lack of space during the paving operation.

The process starts with a survey of the project site. The information gathered by the survey is used to create the project design model and create a 3-D 'model' of

the project. Total stations are then set up on the job site using reference points set by the surveyors. Measurements to the reference points bring the total stations into the 3-D picture of the job site.

A **Leica 3-D system computer** is mounted to the GOMACO equipment and is connected to the CAN bus of the G21 Controller on the paver. The 3-D model is uploaded into the Leica computer. At this point, the total stations are in the 3-D picture of the job and the computer has been loaded with the site information. All that's left to do is bring the machine into the picture. To do this, measurements are taken with the total stations at prisms mounted onto the machine.

The total stations, via radio link, send signals or coordinates back and forth to the Command Center mounted on the machine. The information is constantly updated throughout the process. As the machine moves, the total stations track it and send radio signals back to the computer at a rate of up to eight times per second. In milliseconds, the computer takes the real-time coordinate data and compares it to the design plan coordinate data. The Leica computer transmits steer and elevation "corrections" via the CAN-Bus to the **GOMACO G21 Controller**, which then controls the paver's steer and elevation to within approximately $\pm 3\text{mm}$ for elevation, and $\pm 10\text{mm}$ for steer.

CTRL Project: United Kingdom

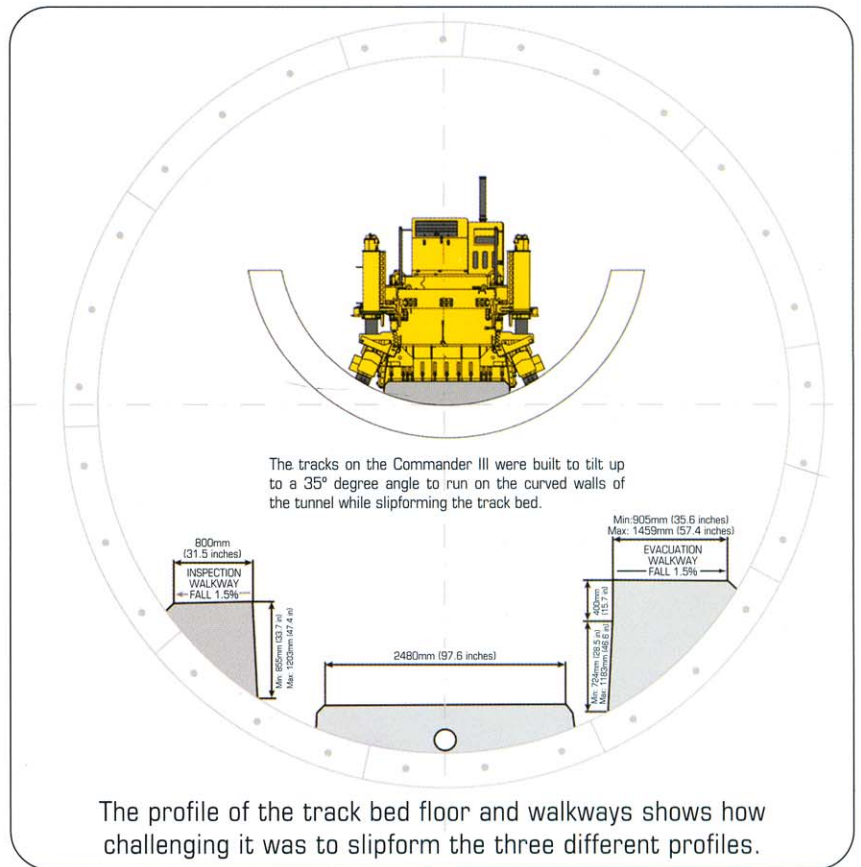


In the experience of the construction of London's Channel Tunnel Rail Link Project, on Contract 220, production of concrete walkways and slabtrack using slipform paving was 3 times faster and required 4 times less labour compared with planning it the traditional way.

'It was estimated that with the slipform paving at C220 we saved at least £3m and 2 months of programme time. Most importantly we were able to recover programme time and hand over the works ahead of schedule. Using traditional methods this would have been impossible to achieve.'

Mr. Bill Brundan
Tunnel Agent

Nishimatsu Cementation Skanska JV

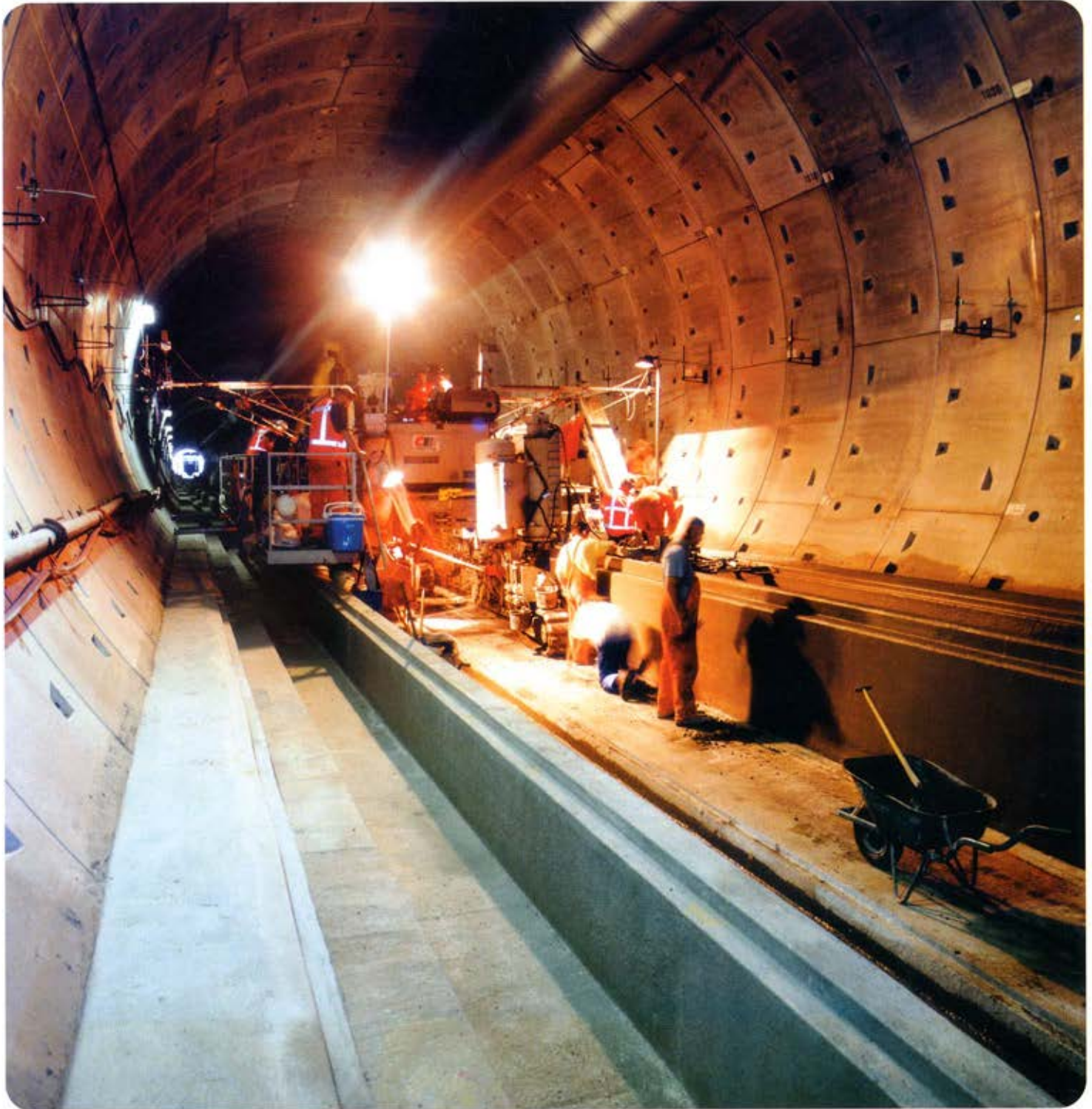


The profile of the track bed floor and walkways shows how challenging it was to slipform the three different profiles.



COMMANDER III

A GOMACO Commander III paving walkway in the Netherlands.



Manufactured under one or more of the following U.S. or foreign patents: 5,190,397; 5,209,602; 5,924,817; 5,941,659; 6,099,204; 6,450,048; 2,211,331; 2,069,516; 7,044,680; 7,284,472; 7,517,171; 7,845,878; 7,850,395; and patents pending.

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GOMACO International Ltd. is located in Witney, England.

GOMACO has a worldwide distributor network for sales and service.



GOMACO Corporation's Quality Management System Is ISO 9001:2008 Certified By The American Systems Registrar.

Quality Policy: We Shall Meet Or Exceed Our Customers' Expectations.

