

RoRo port and terminal solutions

Efficiency from ship to shore



Photo: Color Line/Anders Martinsen

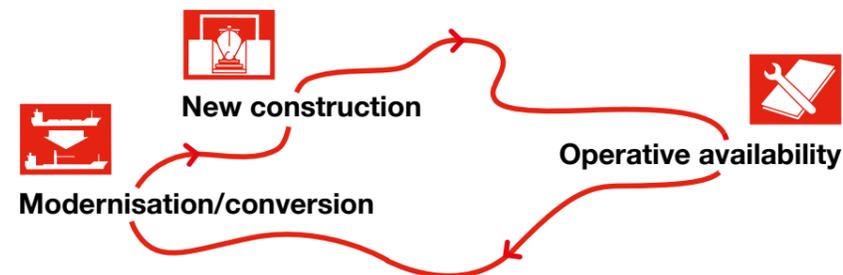
Throughout the lifetime of your RoRo system

By harmonising the essential cargo flow functions of access, stowage, care and handling, MacGregor offers integrated cargo flow solutions that optimise and enhance the functionality of your linkspan, shore ramp, passenger gangway, water taxi terminal or other RoRo port and terminal solution.

To achieve this, our specialists and technical teams work closely with port operators, shipowners and consultants on cargo flow issues. At the basic pre-project stage, we offer preliminary studies and engineering services. MacGregor RoRo systems and equipment are then supplied as an integrated solution based on cargo type, space limitations, loadings, logistic factors and environmental conditions.

MacGregor is a global company with facilities located near ports worldwide. Once a MacGregor system is in service, we endeavour to provide life-cycle support in the form of maintenance and service solutions that ensure the operative availability of the equipment.

Later in the lifetime of an installation, our capability to modernise and convert the original solution helps the operator get even more from the investment by optimising the performance to match new market needs.



we keep cargo on the move™



Photo: ShipPax Information

Efficiency from ship-to-shore

Interface between ship and shore

The success of the interface between the shore and the vessel is the key to ensuring optimum traffic flow.

MacGregor is a recognised global leader in developing linkspans and other RoRo port and terminal solutions, with a clear focus on safety. MacGregor systems and equipment have a long track record of availability, performance and reliability.

Multiple-tier loading for fast turnaround times in port

RoRo terminals globally are undergoing massive expansion and modernisation. New safety requirements have resulted in wider ferries with increased freeboards. MacGregor's RoRo systems provide the high flexibility at the quay interface which they require.

Our linkspans can be designed for multi-tier loading. Two-tier loading is becoming a necessity with large new ferries and three-tier loading systems have been built. The key to competitive door-to-

door handling is fast loading and discharging of vehicles and passengers, reducing the turnaround time in ports – a factor that has a great impact on our customers' bottom line.

Electric and hydraulic operating machinery is becoming simpler and safer with increased redundancy. We will help you choose the best machinery for your needs, all built according to highest local and international safety requirements.

• RoRo pontoon linkspans

Allow ferries to berth at quays that are otherwise unsuitable because of their size and shape and/or tidal conditions. Berths can also be created at sites without regular quay facilities.

• Shore ramps

A range of articulated shore ramps, permanent or mobile, is available to provide direct access to all RoRo decks. All designs provide smooth cargo flow arrangements that are independent of tidal variations and ship's trim.

• Water taxi terminals

Ideal for coastal shuttle services, providing smooth, safe access for foot passengers and provisions. They are built and installed in full compliance with guidelines for senior citizens and passengers with impaired mobility.

• Floating car parks

Low draught, multi-storey, moveable parking garages offer a solution to the parking problems of ports and crowded cities that have a waterfront. They can easily accommodate several hundred cars. A moveable car park can be relocated if the parking situation changes. It can be towed to a new site where land is extremely scarce or expensive.

• Passenger gangways

Gangways are built for smooth passenger access between the ship to the terminal. All comply with the rules and guidelines to suit senior citizens and passengers with impaired mobility, increasing the confidence of boarding and disembarking passengers.

Recent references

Extract from the extensive MacGregor linkspan reference list



The large hexagonal floating pontoon linkspan was a supply chain challenge. A slipway was constructed at the production site in Croatia to ensure the equipment's safe launch. It was towed across the Mediterranean, through the Suez Canal, around Sinai, to its final destination in Aqaba Ports, Jordan.



Triple berth pontoon linkspan, Aqaba Ports, Jordan

Completed 2010

Client: Aqaba Ports Corporation (APC), Jordan

Main particulars: Three 25m wide ferry berths for stern mooring;

Linkspan bridge: 15m-wide x 26m-long, accommodates three vehicle lanes and two walkway lanes

Certified: British Standard (BS), Det Norske Veritas (DNV)



Linkspan, Port of Tanger, Morocco

Completed 2010

Client: SRPTM, Morocco for Tanger Med Port Authority (TMSA)

Main particulars: two linkspans 15m-long by 18m/12m-wide

Certified: Eurocode



The linkspan is large for an articulated ramp. The seaward ramp interface is 34m wide and the ramp is 20m wide at the shoreside end. It is 30m long in order to cater for the local tidal conditions as well as most ships' thresholds.

Linkspan, Port of Rosslare, Ireland

Completed 2009

Client: BAM Contractors, Ireland (for Irish Rail).

Main particulars: Linkspan 34m/20m x 30m

Certified: British Standard (BS), Lloyd's Register (LR)



Photo: ShipPax Information

Two tier linkspan, Kristiansand and Larvik, Norway and Hirtshals, Denmark

Completed 2008

Client: Color Line Marine, Sandefjord, Norway

Main particulars: main deck ramp 14m x 25m; moveable upper deck set 11m x 23m and fixed ramp 7.5m x 60m

Building norm: Eurocode



Linkspan, Port Askaig, Scotland, United Kingdom

Completed 2007

Client: Argyle & Bute Council, Kilmory Lochgilphead, Argyll

Main particulars: bridge 18.6m x 10.5m (photo taken during installation)

Certified: Lloyd's Register (LR)



Photo: denniz@corsman.se

Mooring units, MOOREX 60T/30T, Malmö, Sweden

Completed 2007

Client: Finnlines, Helsinki, Finland

Main particulars: 60-tonne quay side MOOREX® mooring unit to secure Finnline's 218m/42,000gt RoPax ferry *Europalink*



Tailor made MacGregor linkspans for the rampless catamarans are installed in Hakodate and Aomori in Japan. The hydraulically operated linkspans allow quick operation and smooth vehicle transfer across the full breadth of the catamarans.

Linkspans for rampless catamaran, Hakodate, Japan

Completed 2007
 Client: Higashi Nihon Ferry, Japan
 Main particulars: twin linkspans 20m x 7.5m
 There is an identical twin set installed in Aomori
 Certified: Japanese Bridge Code



Linkspan, Vulcaanhaven, Rotterdam, Netherlands

Completed 2007
 Client: Norfolk Line, Netherlands
 Main particulars: three linkspans 20m x 29m
 Certified: NEN 6788. EC 98/37 Annex IV



Mobile ramps for catamarans, Spain

Completed 2005
 Client: Tramed, Spain (there are several units installed in the Mediterranean)
 Main particulars: linkspans 25m x 5.5m
 Certified: BVCE, EC 98/37



Triple berth pontoon/two bridge linkspan, Immingham, United Kingdom

Completed: 2006
 Client: DFDS Nordic Terminal, Immingham, United Kingdom
 Main particulars: pontoon 108m x 30m; two linkspan bridges 75m x 15m
 Each linkspan bridge is capable of carrying three lanes of 120 tonne trailers.
 Certified: Lloyd's Register (LR)



Linkspan FL3, Ystad, Sweden

Completed 2005
 Client: Ystad Hamn & Logistik, Ystad, Sweden
 Main particulars: Linkspan 14m x 19m
 Certified: BRO 04 with Addendum



Pontoon passenger terminal linkspan, Björkö, Sweden

Completed 2004
 Client: the Municipality of Öckerö, Björkö, Sweden
 Main particulars: pontoon 20m x 6m; bridge 15m x 3m



Floating car park garage, Gothenburg, Sweden

Completed 1991
 Client: the Municipality of Gothenburg, Sweden
 Main particulars: Mooring and access equipment. The floating car park garage, the P-Ark, can hold more than 400 cars and can be relocated to respond to changing parking requirements.
 Certified: Lloyd's Register (LR)

Keeping your operation up and running



worldwide to provide a rapid response to your needs.

Global presence — local service

We operate in approximately 50 countries and our service network consists of more than 60 service centres in major ports around the globe, all staffed by specialists.

We supply original MacGregor spare parts and repair services on a planned schedule, on demand, or on an emergency basis.

Planned maintenance

MacGregor's planned maintenance concept is supported by the solid foundation of our worldwide service network, and allows you to plan your operating budget.

On-demand service

Our service centres worldwide solve problems as they arise, helping to keep your ship up and running. We also provide a comprehensive damage assessment and repair service.

Through-life cost assessment for port and linkspan systems is becoming an essential part in evaluating different systems. Having introduced maintenance packages for onboard RoRo systems, MacGregor now offers the same advantages to port operators.

Operative availability

Our ambition is to ensure the operative availability of your cargo flow systems. MacGregor's experts are on standby

MacGregor Onboard Care (MOC) service contracts

An MOC service contract offers a modular service concept where you can choose the necessary modules to suit your individual needs in terms of operating security, budgets and comfort.

Crew training

Tailor-made theoretical and hands-on crew training in the maintenance and operation of MacGregor equipment and systems.

Modernisation

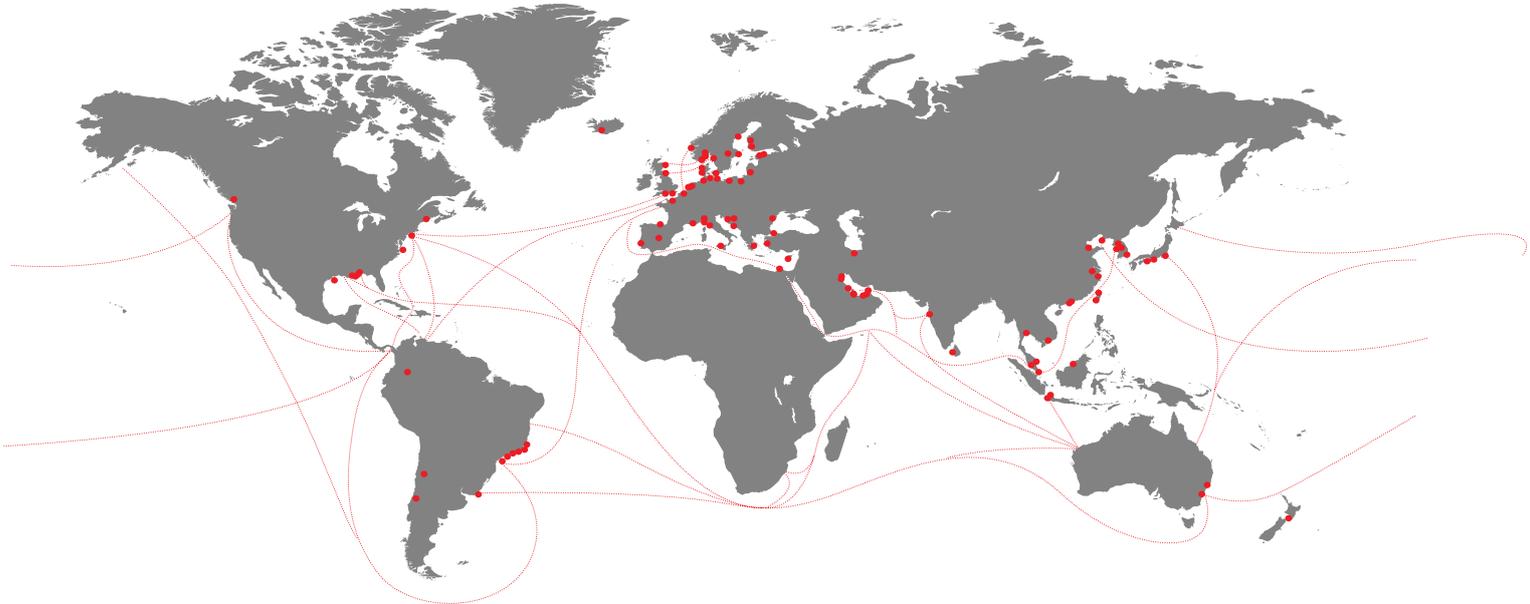
MacGregor has the expertise and the resources to upgrade ageing cargo access equipment to the latest performance standards.

Conversion

MacGregor's conversion packages adapt, enhance or change the original functionality of the system, re-designing it to meet changing market requirements.

Wherever needed, you can rely on our support.
We serve our brands globally:

- Ankerlökken Marine
- Allset
- ASCA
- Becker
- BMH
- Conver-OSR
- Grampian Hydraulics
- Flintstone
- Greer Marine
- Hamworthy
- Hatlapa
- Hydramarine
- Häggglunds
- Interschalt
- KGW
- KYB - ASCA
- KYB - Kayaba Industries / Navire Cargo Gear
- Luezhoe
- MacGregor
- MacGregor-Conver
- MacGregor-Häggglunds
- MacGregor-Kayaba
- MacGregor-Navire
- Navire Cargo Gear
- Nordströms
- Ozean Service & Reparatur
- Platform Crane Services (PCS)
- Plimsoll
- Pusnes
- Porsgrunn
- Rapp Marine
- Triplex
- Vestnorsk Hydraulikkservice (VNH)



MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands. Shipbuilders, owners and operators are able to optimise the lifetime profitability, safety, reliability and environmental sustainability of their operations by working in close cooperation with MacGregor.

MacGregor solutions and services for handling marine cargoes, vessel operations, offshore loads, crude/LNG transfer and offshore mooring are all *designed to perform with the sea*.

MacGregor is part of Cargotec (Nasdaq Helsinki: CGCBV).

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