



# Method

Method No. 28

A magazine featuring the HIAB Method and its applications





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#### Cover

The trawler "Makkaur" is undergoing an overhaul at Starkodders Mekaniska Verkstad at Kristiansund in Norway, and has been fitted with a HIAB 950. This picture shows a trial lift of 1700 kg - which is being done not to prove the strength of the loader (that's guaranteed) but to make sure that the mounting can take it.

#### HIAB METHOD No. 28

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## HIAB Afloat

The forest of cranes raking the sky with their spindly latticework jibs over the docks in a large port is a clear indication that shipping is just as much a matter of lifting and loading as it is of hauling the goods across the seas. And - just as in the case of overland transport - it is at the ends of the voyage, when the ship is at its berth, that we nowadays find the most plentiful scope for further rationalisation and mechanisation, whereby to cut costs or at any rate to put a brake on cost increases.

This applies not least of all to the kind of shipments carried by the smaller vessels over relatively short distances and involving comparatively small volumes of freight. Such ships often call at small ports, with sub-standard equipment, where loading and unloading are slow and costly operations. This disadvantage is often offset, however, by the fact that the docks are near the final destination of the goods.

Marine transportation of this type provides an example of the many areas in which the HIAB Method can serve at sea. Another instance is fishing. In order to get their catch ashore without delay, fishing vessels are obliged to make for a port that is close to their fishing grounds. Now that modern vessels are seeking out waters ever

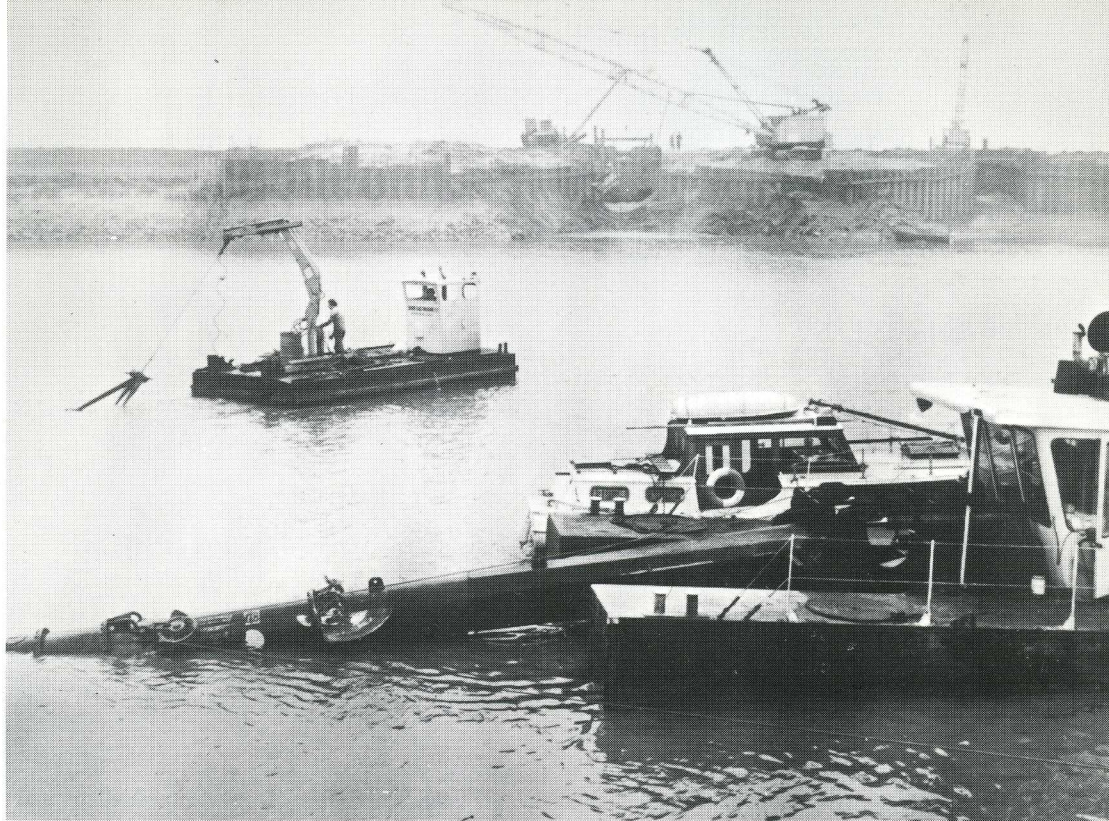
farther from their home port they will find themselves discharging in an increasing number of strange harbours varying widely in their facilities for handling catches. But the skipper who has a HIAB on board knows that he can always land his catch in optimum fashion without having to wait for his turn to use the dock crane.

Besides this, there are a variety of vessels that are more or less specifically built for some particular kind of transportation or handling. Aboard such ships, the scope for rationalising and mechanising by means of the HIAB Method is usually very considerable.

It would be easy to reel off many more fields in which work at sea can be made easier, simpler and more efficient by the HIAB Method. And it would be just as easy to fill several issues of "Method" with examples of how this is already being done at various places all round the world. But we're going to content ourselves with devoting some of the pages in this number to the "HIAB Afloat" theme. For readers wishing to know more about the jobs done by seaborne HIABs there's a brochure with that very title: HIAB Afloat. Your HIAB Man has it.



One of "Bullfrog's" main tasks is to move the anchors that hold the suction dredger "Otary" in place.



## "We Couldn't Manage Without Our HIAB . . ."

"The HIAB is a remarkable tool. It greatly eases our job, in fact without it we would be unable to cope with the handling of the dredger anchors," says Mr. van-Kooten of Seven Seas Dredging Ltd., a British subsidiary of Dredging International N.V., one of the world's leading companies in its field.

One of the tasks undertaken by Seven Seas Dredging is the forming of pipeline trenches in the seabed, and it has been busily involved in the hectic preparations for bringing the North Sea oil riches ashore. The "Otary", a cutter suction dredger, has recently excavated a trench about 500 m long for the landward end of the crude-oil pipeline from the Ekofisk field. This line finishes on Teesside, and about 400,000 m<sup>3</sup> of alluvial and boulder clay had to be dredged up and removed in order to form the pipeline trench.

The "Otary", part of a fleet of light but very powerful and effective suction dredgers, had previously tackled such jobs as excavating trenches for gas pipes across the bed of the Ouse Estuary, further south on the North Sea coast. She is currently at work on a deepwater intake for a nuclear power station at Hartlepool, north of the Tees.

"Otary" is assisted by "Bullfrog", a robust workboat with a HIAB 550 mounted in her bows. The main task of the HIAB is to handle the stabilising anchors that hold "Otary" and the

large-bore floating discharge lines in place on the job. Each time the dredger is to be moved more than a few metres the anchors have to be repositioned. The anchors must therefore be lifted many times during a day's dredging. Each of them weighs about 200 kg and is marked by a buoy. Thanks to the great manoeuvrability of the loader it's

easy to replace the anchor exactly in the right position.

The HIAB is also employed in maintenance work on the discharge line and in loading 200-litre fuel barrels and other supplies aboard the "Otary".

The oil pump of the HIAB is run from a power take-off on the "Bullfrog's" Volvo-Penta engine. ■ 1



Handling the "Otary's" equipment is another assignment providing plenty of scope for the HIAB, seen here lifting one of the cutters that churn up material from the bottom so that it can be sucked in by the dredger.



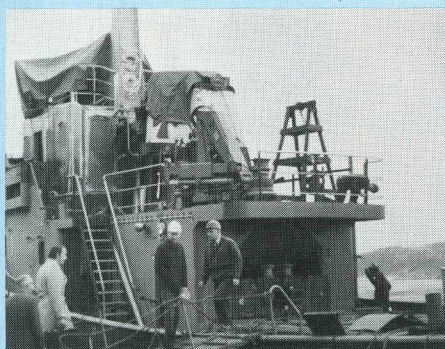


# Engines in Hongkong

Servicing the diesel engines that power the myriad vessels plying the waters around Hongkong is a large-scale business, and as reported in earlier issues of "Method" its practitioners

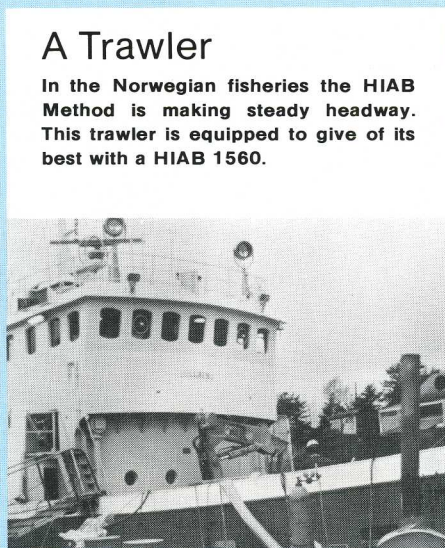
have discovered the advantages of the HIAB Method. Just recently another new loader, a HIAB 950, was mounted on one of the barges used for the purpose.

## HIAB Aboard Norwegian Craft . . .



### A Tug

Tugs have plenty of use for handling aids. This one, lying in a fitting-out berth at a Norwegian yard, fills the bill with a HIAB 950.



### A Trawler

In the Norwegian fisheries the HIAB Method is making steady headway. This trawler is equipped to give of its best with a HIAB 1560.



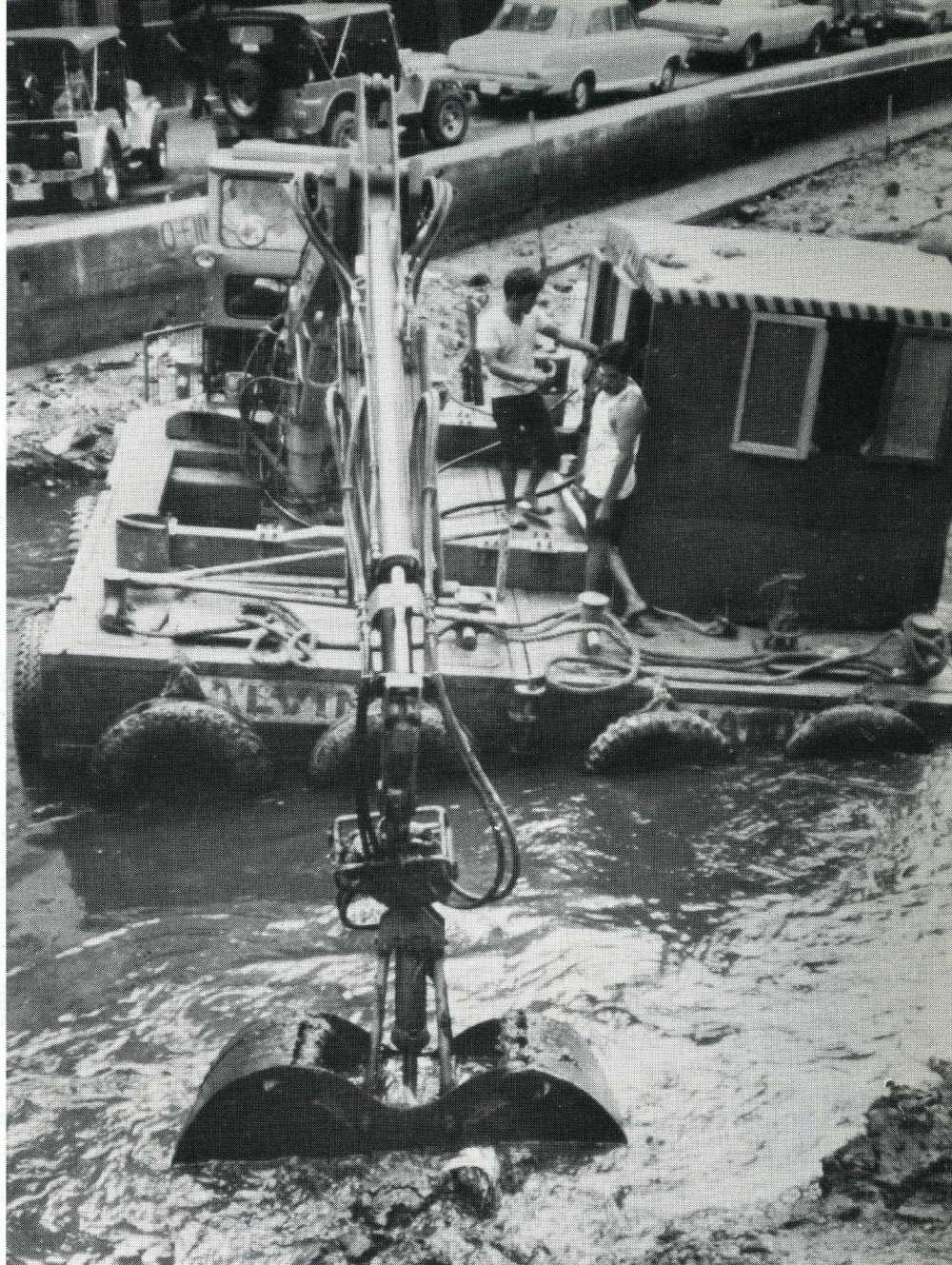
### A Ferry

Not everything that comes aboard a ferry has wheels to roll on, but at least they don't have to drag it onto this ferry - thanks to their HIAB 177.



# Dredging in Manila

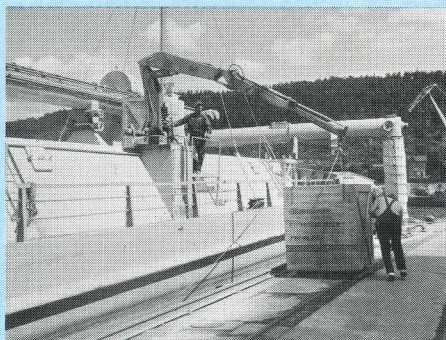
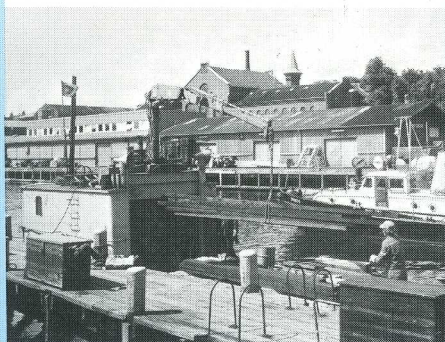
Dredging by the HIAB Method is a technique that has long been in use at many places in the world and is a good alternative for work in moderate depths. In an earlier issue of "Method" we showed a simple and inexpensive "dredger" for the canals of the Thai countryside, and now the same idea has been taken up at Manila, in the Philippines. This rather more advanced equipment is owned by S&S Cranes and Construction Co. and consists of two connected pontoons. One of them carries a work-shed and engine equipment: the other carries a HIAB 970 with rotator and clamshell bucket plus a comfortable cab made by Ekman & Co., the HIAB representative in the area. The loader is mounted on the bottom of the pontoon so as to lower the C.G. and reduce rolling - though the craft still bobs a good deal! ■ 2



## ... in Ever-growing Variety

### A Barge

Maintenance of the wharf walings in the port of Oslo is one of the jobs done from this barge. Timber, tools and other necessities are handled by a HIAB 550, which also takes part in the work itself.



### A Skerry-boat

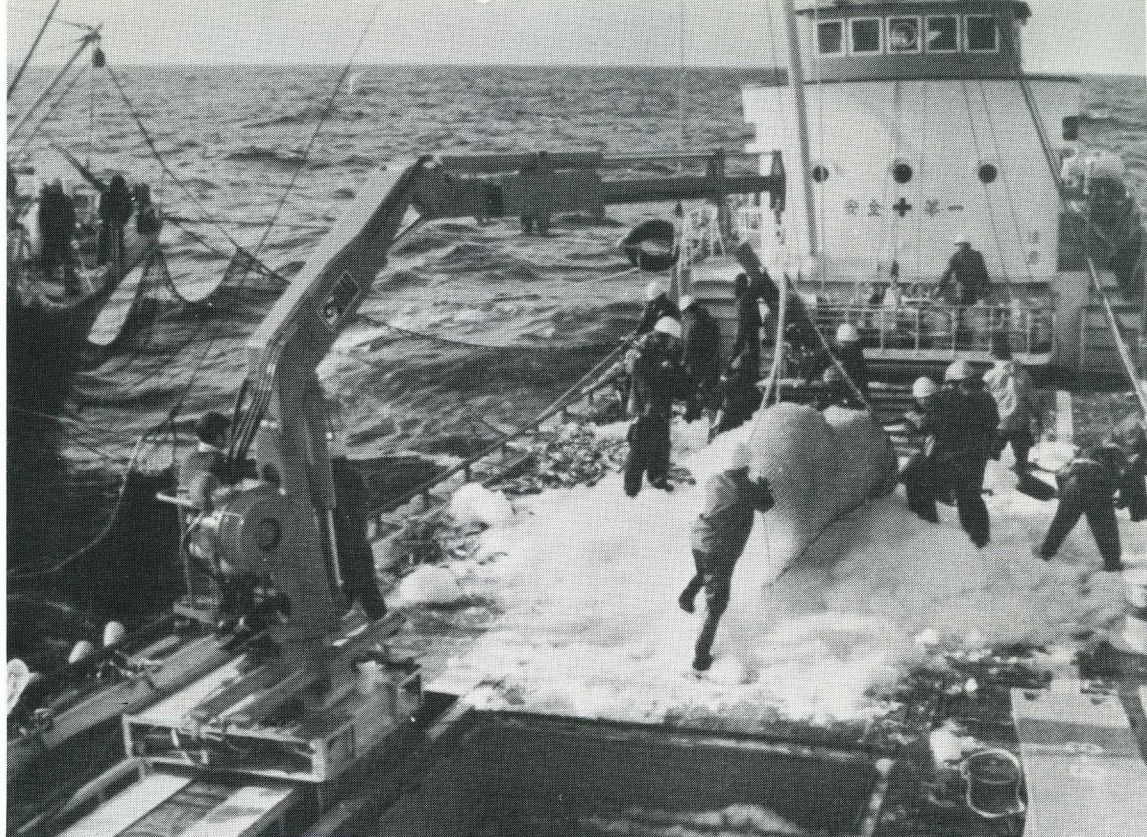
The jetties at which this skerry-boat calls seldom have any cranes, but with a HIAB 245 on its foredeck it can still load and unload with ease.



### A Cement Boat

This cement boat shuttles back and forth across the Oslo Fjord for Norcem. Everything but the cement itself is loaded and unloaded by two HIAB 550s. One of them is visible in this picture.





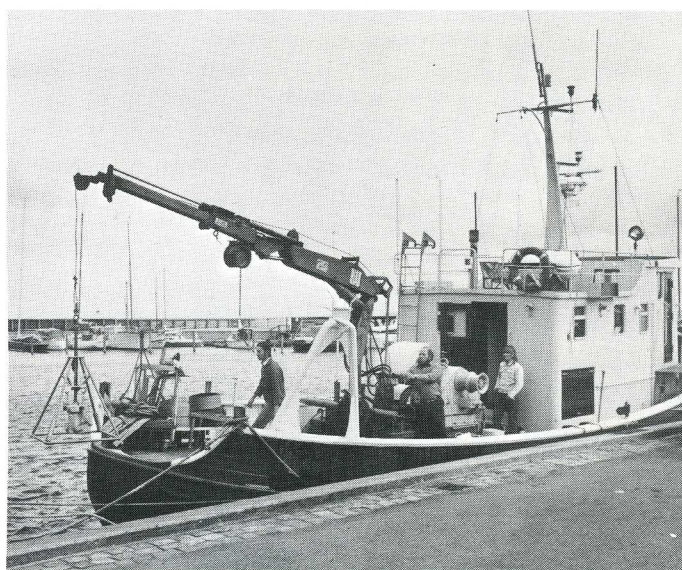
## Fishing in Japan

In recent years the HIAB Method has scored a rapid breakthrough in the Japanese fishing industry, which plays a very important part in feeding the island nation. This fishing-vessel, for instance, uses a HIAB 950 to handle the ice that refrigerates the fish in its hold and to land the catch after it berths in port. The machine is Rol-loader-mounted so that it can travel back and forth along one edge of the ship's hold. The specially designed ring net that is used in unloading is opened at the bottom by means of a rope running to the operator's position by way of a guide on the ring-net boom. ■ 3



## Research in the Kattegatt

The Marinebiologisk Institut of Helsingør, Denmark, has adopted the HIAB Method for its fieldwork in the Sound and the Kattegatt. Its research vessel "Ofelia" mounts a HIAB 550 which is used for handling trawls, water-sampling apparatus and other equipment on board and for loading and unloading scientific tackle and other supplies when the ship is in port.





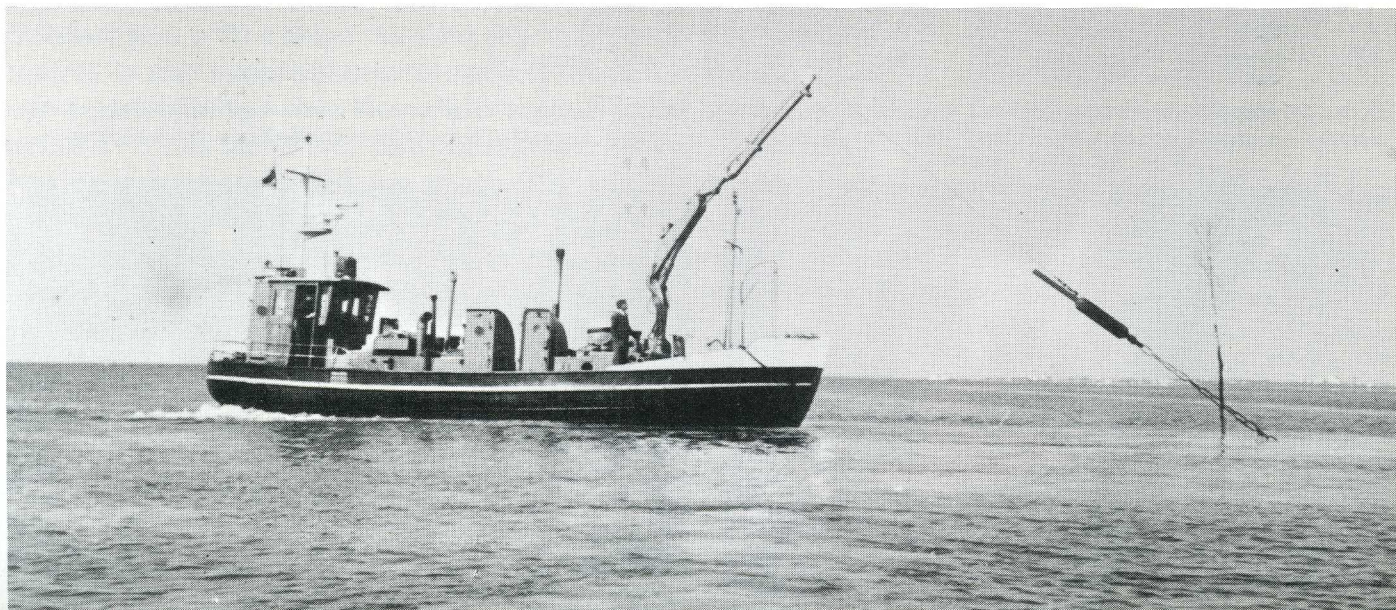


## Servicing Shipping

One place in which HIABs have quickly come into wide use is aboard the many vessels large and small that provide service in one form or another to the rest of the shipping family. Port authorities, customs units, sea-rescue services and the people responsible for lighthouses and sea-marks are daily faced with handling problems of the most varied kinds. Very often, the only thing they have in common is that they can be solved promptly and efficiently by the HIAB Method. In earlier issues of "Method", tasks of this kind have been plentifully exemplified: the navigation lights along Swedish coastal shipping lanes, canal maintenance in Canada, harbour clearance in California - to mention just a few. On this and the next page we show some examples of how the HIAB Method services shipping in the North Sea ports of Germany.

Thanks to its HIAB 1560 the "Eversand" can manage even the heavy buoys in the approach channel to Bremerhaven.

The "Tonnenleger" handles lighter sea-marks outside the East Frisian Islands with a HIAB 550.







## Servicing Shipping

Bremerhaven's modern fire-float, the "Weser", has a winch-equipped HIAB 550 mounted on its rear deck, and uses it for a variety of jobs. For example, the HIAB goes into action when it's time to deploy the submersible electric pumps and aeration units that are part of the ship's equipment. It also handles the "Weser's" rubber dinghy, and the big "Yokohama" fen-

der. Another of the loader's jobs is to ship provisions and other supplies from the quay,

The diminutive "Tonnenleger", which maintains the navigation marks in the sea-lanes of the East Frisian Islands, also has a winch-equipped HIAB 550 on board. It is used both for the handling of buoys and other sea-marks and for loading and unloading

The fire-float "Weser" has a HIAB 550 with a winch mounted on its quarter-deck. One of its jobs is launching the rubber dinghy which the ship carries.

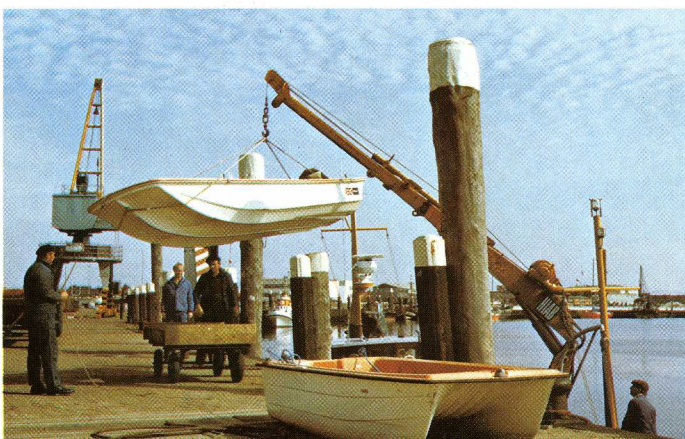
equipment in port on the island of Norderney.

Similar tasks are performed by the "Eversand", which is stationed in Bremerhaven, but since it handles heavier buoys and marks it carries a HIAB 1560, with a winch, mounted on the foredeck. ■ 4

The "Weser" alongside in Bremerhaven. The HIAB that forms part of the equipment aboard a modern fire-float is here being used to lift a large "Yokohama" fender.



The HIAB loader is almost all that's visible of the sea-mark tender "Tonnenleger" as it hoists the ship's boat aboard in the harbour of Norderney.







Slag and pieces of the old lining are scooped out of the electrolytic cell by the HIAB. The use of an elongated bucket keeps the hydraulic hoses well clear of the hot slag.

## HIAB at Norsk Hydro

Norsk Hydro, which was started at the beginning of the century to process atmospheric nitrogen into fertiliser using Norway's ample supplies of hydroelectricity, has grown in the interval into Norway's largest enterprise, conducting operations at numerous places both within and beyond Norway's borders and with a large number of products on its programme, mainly in the electrochemical sector, though in recent years - and particularly since Norway's North Sea oil began to flow ashore - it has gone into petrochemicals as well. Standing beside a fjord some 100 km south-west of Oslo are the Porsgrunn plants, which make up the company's largest facility and - with their 5,000 or so employees - Norway's largest workplace as well. This vast complex, which every second consumes 8,000 litres of water, as much as a city of 1.5 million inhabitants, produces three-quarters of Norsk Hydro's total output of finished goods.

At this huge industrial undertaking, as in so many others, the HIAB Method forms a small but important cog in the machinery.

The main product at Porsgrunn is fertiliser, but the works also produce a series of other items, among them magnesium. And the magnesium plant is no mean outfit either - in fact it's the largest in the Western world. From a bath of molten magnesium chloride it produces pure magnesium by electrolysis. At regular intervals the bath has to be emptied so that the brick lining on the walls and bottom of the electrolytic cell can be changed.

When the bath is drawn off it leaves a slag in the cell, and this used to be a problem. The only way to remove it was to wait until next day for it to cool. By that time it had also solidified, and could only be shifted with the aid of air-powered chisels. This was a laborious, time-



## HIAB at Norsk Hydro

consuming and noisy job. It was a full day's work for two men to clean out a cell in readiness for relining.

It was obvious that there were big savings to be made in both time and labour if some means could be devised of removing the slag while it was still hot and fluid. The solution was found in the HIAB Method. After the bath has been drawn off from a cell a tractor carrying a HIAB 245 moves into position. The loader is furnished with a hydraulic bucket and a rotator, and this combination is capable of scooping out the slag and the greater part of the old cell lining within 30-45 minutes. Once the cell has cooled, all that remains is to take out the rest of the old lining and some traces of slag in the corners - and work on the new lining can commence.

The gain made possible by the HIAB Method is that a job which used to take two men a whole day can now be polished off in a fraction of the time. And no

Engineer Odd Larsen of Norsk Hydro (right) talks with "Method's" reporter on the part played by the HIAB Method in the company's magnesium production.



time is lost waiting for the cell to cool down; the slag can be tackled on the same day as the bath is drawn off. Thus the relined cell can be put back into production more quickly. Despite the high temperature, no problems have been encountered with the hydraulic hoses to the bucket.

"This was little more than a try-out when it began, but the results have convinced us that we've found the right

method," says Odd Larsen, the engineer who introduced the HIAB Method into the magnesium plant at Porsgrunn. "We're now working on a further development which aims at stripping off the whole of the old lining and completely removing all remains of slag in one sweep. For this purpose we envisage an air-powered chisel that would be lowered into the cell and manipulated by means of a HIAB loader." ■ 5

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## HIAB Method Paid for Itself in Three Months

The firm of Guillot, in the suburb of Gentilly south of Paris deals predominantly with tombstones; its operations also include the groundwork at the site of the grave that is required before the tombstone can go into place. Until the undertaking adopted the HIAB Method all the groundwork, which is mostly digging, had to be done by hand, and all stones had to be lifted off the lorry and put into place by muscle-power. Since these blocks of stone weigh around 400 kg for the most part it was a slow and heavy business that also carried a considerable risk of accident. Not infrequently, five strong men were required to do the job.

Another problem was that the pathways between the graves in some churchyards, especially in Paris, are very narrow and cramped. This made it difficult to get through with the machines and tackle that could have eased the work. The firm needed an aid that would be capable of handling both the digging and the heavy lifts and also of working in confined spaces.

For Guillot there was obviously only one answer: the HIAB Method. Considering the lack of elbow-room and the relatively small loads involved the firm

chose a small lorry and the smallest HIAB — "245" with a 180-litre clam-shell bucket. Thus equipped, the driver can handle on his own the work that used to require five men. Even so, the job gets done a good deal faster and the accident hazards have been entirely eliminated.

The manifest gains brought about by the HIAB Method in this instance leave us no reason to doubt Guillot's statement that the entire equipment - lorry and loader - paid for itself in three months. ■ 6







## 60 Wrecks an Hour with the HIAB 970

One of the negative sides of motoring, and a real problem in all heavily motorised countries, is that it generates scrap. However, methods have been developed which encourage the hope that the growing mountains of junk cars in the scrapyards can be converted into sources of valuable raw material. A point in common to several of these solutions is that they're based on the HIAB Method.

In France, they've had a lot of success with an outfit built by the HIAB-FOCO distributor in Tours in collaboration with the West German firm of Lindemann, Düsseldorf. Mounted on a semitrailer, the rig makes the rounds of the small scrapyards and collection points for junk cars; by compacting the wrecks it reduces their volume so that they can more easily be transported to a central fragmentation plant. It is calculated that the transportation costs, one of the key problems in this context, have thereby been cut to one-third.

The mobile press itself has two stout press plates, one on each side, so designed that as they swing down they fit into each other and compress the wreck

from above and from the sides into a flat compact. The press plates are driven hydraulically by a very powerful pump unit. The scrap cars and the resulting compacts are lifted into and out of the press by a HIAB 970 with a low-head-room grapple and a rotator. The loader is driven by a separate hydraulic pump unit. Both the press and the loader are controlled from a cab at one end of the semitrailer. Four support legs hold the outfit steady while it is at work.

The press deals with one and in some cases two cars at a time, and thanks to the HIAB loader the outfit has a very high capacity. Under favourable conditions it can compact 60-65 wrecks an hour; the average in normal circumstances would be around 50. This means that at a big collection point the outfit can get through 400-500 cars in a working day.

The HIAB 970 is outstandingly well suited for this kind of work. It has a long reach and a big lifting moment and the well-guarded hydraulic lines are a major advantage since it often requires a mighty heave to extract one scrap car

from a big pile of them. The long inner boom and the rapid movements of the outer boom also help to give the outfit a big capacity and high profitability. ■ 7

**In less than one minute a junk car is reduced to a compact oblong wad. The material is lifted into and out of the press by a HIAB 970.**





# Taking Fresh Hold in Australia

## 50% Greater Capacity

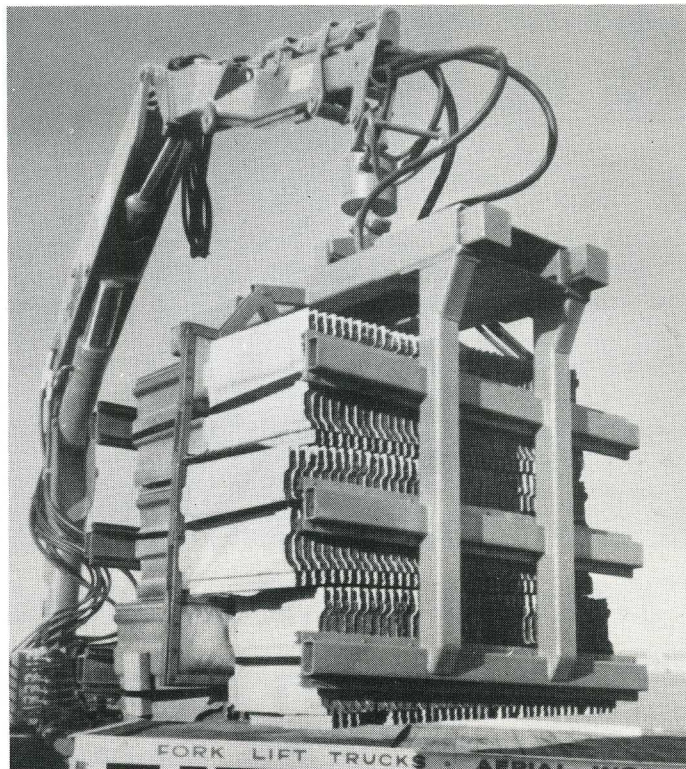
The handling of roof tiles is a headache for the manufacturers. Loading them takes a long time and causes a lot of breakages - unloading them on site even more so. The difficulties are just as great in Australia as elsewhere in the world, but HIAB-FOCO's distributor there, 600 Machinery Australia Pty. Ltd., has recently brought out a solution to the problem, whereby tiles can be handled as speedily and safely as any other freight you can think of. The solution is of course based on the HIAB Method.

The equipment consists of a HIAB 550 with a rotator and a special grab. The grab spans the width of two tiles end to end, and the central part, between the packs, is provided with pneumatic bags which press against the packs when the grab closes so that each tile is held gently but firmly.

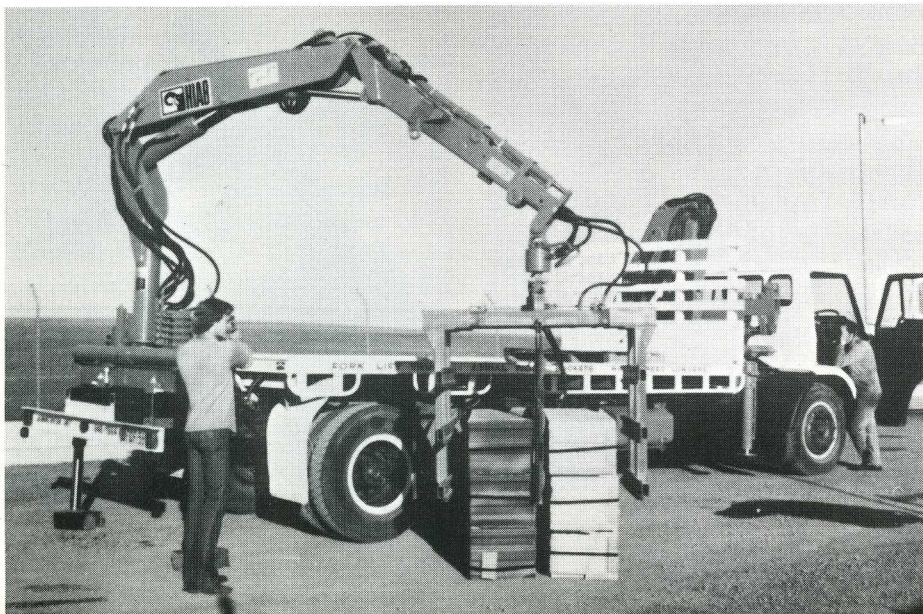
The grab takes six or eight packs of tiles depending on type. Thus with eight packs each of 36 tiles it takes 288 tiles in a single lift. That's more than a ton, and working at that rate the driver can offload an eight-ton consignment in about 20 minutes - unaided.

The pneumatic bags between the packs of tiles prevent damage to the fragile tiles while at the same time ensuring that they are firmly held by the grab.

If the same job were to be done by hand it would take two men about 80 minutes. Normally the grab works with a pressure of about 0.3 kg/cm<sup>2</sup> in the pneumatic bags, but for extra-fragile tiles the pressure can be lowered. With only 0.1 kg in the bags the grab can even handle "green" - unbaked - tiles, which are very prone to breakage.



The designers at 600 Machinery consider that it would also be possible to make a substantially larger grab. One can quite well envisage a 6-metre grab operating in the same way, though it would of course call for a loader with a higher lifting moment. That would obviously make handling times still shorter, but even the equipment described here saves so much time that a transport rig which used to manage two trips a day over normal distances can now get in an extra trip. That puts capacity up by 50%; at the same time, damage during offloading has been practically eliminated. What is more, the HIAB can easily place the tiles exactly at the point of use, on the roof or on scaffolding - a great advantage for the customer. ■ 8



The HIAB Method not only gives a substantial increase in capacity but also cuts the customer's costs by enabling the tiles to be placed exactly at the point of use.



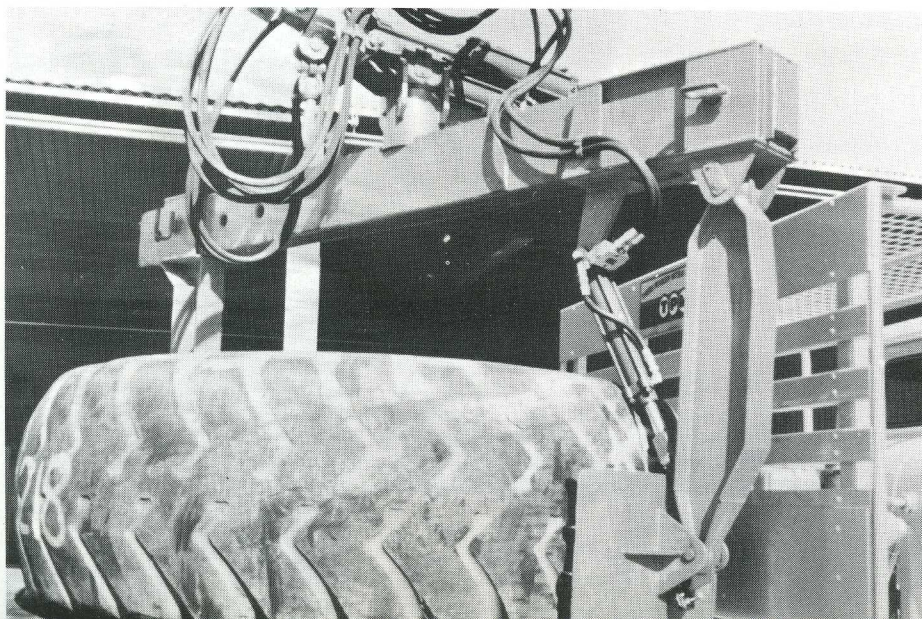
The spectacular results achieved in many cases by the HIAB Method are not due to the HIAB loader alone. In numerous method solutions the decisive role is played by the combination of a HIAB loader with a more or less specially designed attachment. And HIAB designers, both at the Development Department in Hudiksvall and at subsidiary companies and general distributors all round the world, are constantly at work evolving new and efficient tackle. Here are two examples from Australia.

Thanks to the grab and the smooth manoeuvrability of the HIAB, tyres can be handled to precise limits and without strain.



## Down Time Down

This picture shows the patent-protected design of the grab. An even larger tyre grab is undergoing development.



The Bridgestone Tyre Company provides tyre service for the huge 120-ton Euclid trucks working at an opencast coalmine in Queensland, Australia. These trucks discharge their loads onto a conveyor belt running along an 18-km stretch of road. In the past, when a tyre was to be changed on one of the trucks, it was handled by a fork-lift truck in the workshop at one end of the road. This meant that the truck had to be off the job for a relatively long

time - and the heavy tyres still had to be manhandled to some extent.

In collaboration with the HIAB distributor in Australia, 600 Machinery Australia Pty. Ltd., a more convenient and efficient technique was worked out employing the HIAB Method. One of the tyre firm's trucks was fitted with a HIAB 950 and a special grab, which can precision-handle truck tyres on their rims, even though they weigh anything up to 1400 kg. Taking two tyres on its deck, the truck can go out any point along the road, performing the replacement in a matter of minutes. Down time has thus been cut radically, while at the same time all manhandling of the weighty tyres has been eliminated since the patent-protected grab can manoeuvre to fine limits in replacing a tyre. 600 Machinery also installed a compressor on the Bridgestone truck so that correct pressure can be maintained in the tyres.

The outfit described here can handle tyres up to 2.7 metres in diameter, but work is in progress on a more powerful grab which, together with a HIAB 1560, will be able to deal with tyres up to 4 metres. ■ 9



# Method Hoists



## SOS Oslo

In this Unimog 416 the Oslo Fire Brigade has acquired a compact and manoeuvrable rescue truck that can move quickly through city traffic and at the same time

packs some really hefty muscle. It carries a HIAB 950 with a winch and four support legs. In addition it has a front-mounted five-ton winch. ■ 10



## Copenhagen Copes

At Copenhagen's facility for incinerating refuse they have a special bunker for "big stuff" - discarded furniture, builder's waste and so on that won't go into

a refuse chute or dustbin. The crusher that processes this rubbish is fed by a HIAB 950 with a grab, mounted on an old truck chassis. ■ 11



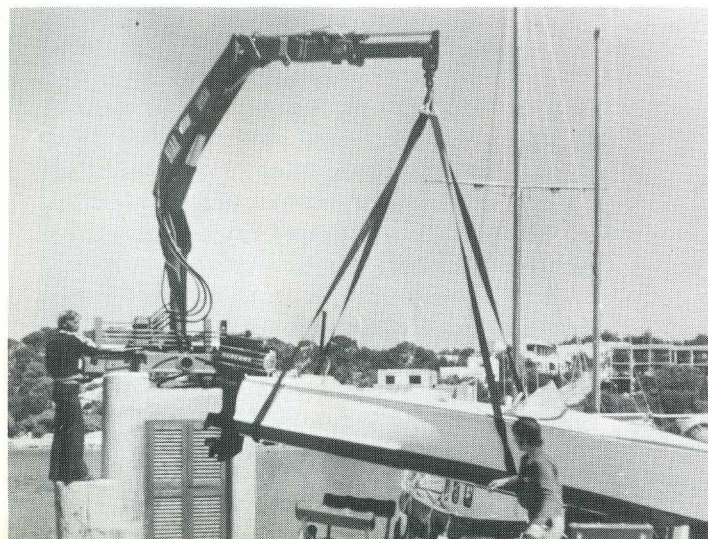
## Sold on HIAB

This picture of the fleet operated by H.V. Schou A/S, of Odense, Denmark, leaves no doubt about their commitment to the HIAB Method!

## Better Service in the Marina

At the Cala d'Or Marina on Mallorca, a HIAB 550 forms a very valuable item in the service equipment. Besides serving to launch and land all boats within its lifting capacity it's an unbeatable aid in stepping and striking the masts of sailboats, installing and removing

engines and so on. Thanks to the simplification and time-saving which the HIAB Method has brought about in these tasks the marina has been able to increase its capacity considerably while at the same time giving boat-owners faster and cheaper service.



## Grapple Loading in Natal

Grapple loading by the HIAB Method, which was introduced in Sweden a quarter-century ago, is now the recognised technique for rational roundwood handling pretty well all over the world. This outfit belongs to Singisi Forest Products, of Singisi, Natal, a firm that was started as recently as 1974 to exploit the considerable timber resources in the region.





# Section S



## The Guest of Honour

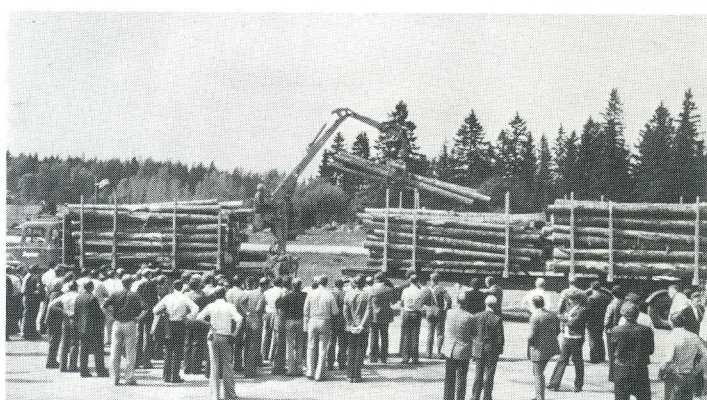
In the last issue of "Method" we reported on French HIAB's new facility in Trappes, outside Paris. Here are some pictures from the opening ceremony. In the one on the left the guest of honour is making his entrance at the party, while on the right he's trying out the products. A guest that truly needs no introduction.



## Tractors to Poland

So far we haven't had many examples of how the Poles are applying the HIAB Method, but there's reason to hope they'll be more common as time goes on. These tractors with their newly

mounted HIAB 550s are drawn up to have their picture taken in Hudiksvall before shipment to Poland, and we look forward to being able to report on their doings there in due course.



## Foresters from Finland

The HIAB Method for the grapple loading of roundwood is constantly being developed, so that there's always something new to show, even to those who already know

and use the technique. This time it's forestry people from Finland who are seeing what a HIAB 670 can do at a demonstration outside Uppsala.

## Should Go in New Zealand

HIAB-FOCO is represented in New Zealand by Steel Brothers of Christchurch, a firm with long experience in the transport business. It began nearly a hundred years ago making horse-drawn carriages. Recently, Steel Brothers moved its plant and head office to a newly built facility with a floor-space of 4,650 m<sup>2</sup> on a site

which, with its 40,000 m<sup>2</sup>, should provide plenty of room for further expansion. The HIAB Method is constantly gaining new adherents in New Zealand just as elsewhere in the world, and the personnel strength at the Christchurch establishment is rapidly approaching the 100 mark.

## Good Show in Saudi-Arabia

The first Trade and Industry Fair in Saudi-Arabia was recently held in Jiddah on the Red Sea coast, outside Mecca, and HIAB-FOCO was of course there. Its display

included a HIAB 550 that aroused great interest among the 200,000 visitors to the Fair - so great in fact that by closing day even the display specimen was sold.







Among the ships in the port of Oslo the "Pollux" scarcely impresses by its size. It's a mere 12 metres overall, with a net displacement of 16 tons. Even so, it's one of the most useful vessels around. First and foremost it's a light and fast tug, but it can also break ice more than 10 cm thick and it acts as a supply tender to other service craft in the port. Among other things it can carry 10,000 litres of fuel in fixed tanks. A HIAB 550 behind the cabin gives this already versatile vessel still greater serviceability, capacity and effectiveness. ■ 12

