



# Method

HIAB

Method No. 37

A magazine featuring the HIAB Method and its applications





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**Cover picture:**

With its great lifting capacity and long reach, the fast new HIAB 1280 is well suited for handling heavy building material. This one is equipped with a hydraulic clamp for building blocks.



**HIAB METHOD No. 37**

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## Method No. 37

Pretty well as trades and industries these days are bringing in the HIAB Method and HIAB loaders to help with heavy lifts and awkward handling jobs, and agriculture is no exception. In earlier issues of METHOD we have at times shown HIABs making light of the work on farms, out in the fields, in stables and cowsheds and barns. In this issue we've collected some additional examples of agricultural jobs, relatively difficult to mechanise, which people have succeeded in simplifying and rationalising by the HIAB Method.

In HIAB-FOCO's Development Department they're constantly at work improving HIAB cranes and refining the HIAB Method. The latest fruits of these labours are four new crane models, which are presented in this number. They represent a wide variety of size and capacity classes. The HIAB 130 is a small loader that can nevertheless do a big job and manage heavy lifts on a light truck. The HIAB 445 is a loader in the medium class; the body is offset to one side on the vehicle, making it extra-efficient and giving it extra reach. It's powerful enough to be used with hydraulic tools, yet not too heavy to be mounted on a relatively light truck. The HIAB 865 is a big,

strong loader for hard work and heavy lifts. The fourth and last of the newcomers, the HIAB 1280, is a real giant with tremendous lifting capacity and a full 8 metres of standard outreach. A special "double-acting" hydraulic extension renders the crane extra-flexible and fast-working.

The versatility of the HIAB Method doesn't rest on the loaders alone. In many contexts, the right attachment or tool is essential if the Method is to give of its best. On some of the pages in this number we're showing a few of these many accessories, which can often add most strikingly to the usefulness of the crane.

Much of what we write in METHOD deals with drastic rationalisation measures and sweeping economies. Even so, it's seldom we get the chance to report on any application of the HIAB Method which has yielded such spectacular gains as the one at Sawyer Gas in Florida. One truck with a HIAB loader is now getting through a good deal more work than the firm used to do with five trucks. We regard this account as encapsulating the entire HIAB Method. Accordingly, we've made it the lead story in this issue; it begins on the opposite page.



The firm used to have five trucks and ten men on tank installations. With the HIAB Method one truck now does the same amount of work, and more.

Liquid propane gas is a common source of energy in many parts of the U.S. In north-eastern Florida, Sawyer Gas of Jacksonville delivers propane to about 30,000 customers with the aid of 150 employees and a fleet of 135 vehicles. In a business of that size there is of course plenty of scope for rationalisation and for making use of modern technology. And that's just what Sawyer has done.



# “That Crane is our Best Investment Ever”

One problem in the business is that the firm often has to transport and deliver small quantities amounting to only a fraction of the customer's tank volume. Sawyer solved it by installing a computer which forecasts just when each individual customer needs his tank refilled.

“Now that we have it,” says Don Lovett, the firm's vice president-manager, “we no longer have to deliver minimum amounts of gas. We now average more than 65% of the customer's tank volume per refill. That way, we've increased our number of customers per truck ratio, and that's an efficient means of getting costs down and profitability up.

## Installation Problems

This success in rationalising gas deliveries inspired Don Lovett to look into the possibilities of similar rationalisation in the delivery and installation of gas tanks. This part of the business used to be handled by five trucks with rigid-boom cranes and chain falls. Each truck required two men.

“The trucks were awkward to load and unload,” says Don. “They could

take only two or three of our 450-litre tanks, and handling our 1,900-litre and 2,800-litre tanks was a nightmare. And if there was any obstacle near the drop site, like a fence or overhead telephone wires, it was worse still. It meant the truck couldn't get close enough to spot the tank. All the men could do was to offload the tank and then come all the way back for skids, or somehow manoeuvre the tank to the proper location. You can imagine what this did to our schedules . . . and our costs.”

Lovett smiles as he says, “Now it's a whole new ball game. Since last year, when we bought a new 2-ton Ford flat-bed truck and equipped it with a HIAB 650, you'd hardly know it was the same job. That crane is the best investment we ever made.”

## One Replaces Five

The new truck, with its HIAB crane, has completely replaced the five vehicles that used to be deployed on this work, and the costs of delivering and installing tanks has fallen by at least 80%. The company saves \$800 a year just on the registration and licensing fees

for the four trucks that it no longer uses. And instead of ten men, it can now manage with two. The five trucks it used to have handled about 15-20 installations a week. With the HIAB Method it now averages around 40 in the same time.

“I feel quite comfortable scheduling as many as eight installations a day,” says Don Lovett, who has been in the business for 23 years. “And the savings we're enjoying are all to the credit of the HIAB crane. The truck is just a truck, but the HIAB crane is something else. It's fast, and it's super-maneuvrable. It handles our tanks — even the 2,800-litre models — with a minimum of fuss and bother. And if there's an obstacle like a fence near the drop site the HIAB crane simply lifts the tank up and over to spot it exactly where it should be. That's one of the reasons why we're getting two or three times more work done with fewer men and vehicles.

“The HIAB crane will pay for itself in less than a year. If anything happened to it we'd replace it at once so that we could continue to provide our customers with the same good service they're getting now.”



# The HIAB Method in

Agriculture consists largely of jobs that in times past used to call for vast amounts of human and animal muscle-power. Today, farming in developed countries is a highly mechanised business that is carried on with a minimum of human labour. All the big jobs, such as cultivating the soil, sowing, harvesting, milking, feeding and so on, are now mechanised to the hilt in most contexts. The tractor, the combine harvester and the milking-machine are self-evident equipment on virtually every farm, and they're backed up by a range of special machines and advanced implements.

Despite all this mechanisations, farming still involves many heavy, time-consuming or otherwise awkward tasks which, with the small labour forces of today, are even more of a problem than they used to be in the days when there were plenty of strong arms to call on. So it's only natural that increasing numbers and kinds of farmers have discovered and exploited the highly versatile arms of HIAB cranes.

At Yew Tree Farm they load 16 tons of beet with ease in 15-20 minutes, using a HIAB 650 on a Ford tractor.



## An Up-Beet Success for HIAB

Sugar-beet used to be regarded as one of the most labour-intensive crops, with crowds of day-labourers out on the fields weeding, earthing up and harvesting. Today, all beet-growing on anything like a large scale is fully mechanised. It may be that there are some who miss the extra money they made during the beet season, but nobody misses the backaches that used to plague the beet-workers.

The last job the beet-grower has to handle is the loading of the crop for the haul to the sugar-mill. One of the common aids is a tractor with a front-end loader or a loading machine with a suitable shovel. But they carry certain disadvantages. It's difficult to prevent the shovel from picking up quite a lot of soil and gravel, and with the high-sided vehicles that are mostly used it's hard to distribute the load evenly over

the truck deck unless you've got a loader that can lift very high. Another point is that the loader has to shuttle back and forth between the pile of beet and the transport vehicle, which often churns up the loading site into a quagmire.

### 16 Tons in 15 Minutes

All these drawbacks are things of the past for the beet-grower or haulier who goes in for the HIAB Method. One of these is R. Colk, of Yew Tree Farm, Rack Heath, Norwich, England. He uses a HIAB 650 rear-mounted on a Ford tractor. The crane is equipped

A HIAB 650 with top-seat controls and a one-ton beet grab, mounted on an ERF trailer-tractor, serves as a loader and keeps five trucks constantly busy during the fifteen weeks or so that the beet season lasts. All told, it loads up 17,000-18,000 tons in that time at a considerably lower cost than the loaders that the growers used to rent. And the outfit can quickly be redeployed from one loading site to another.





# Agriculture

with a half-ton hydraulic root grab. He's loaded some 15,000 tons of sugar-beet with it. Its capacity is such that he can get 16 tons onto a truck in 15-20 minutes. The reach, capacity and manoeuvrability of the HIAB decided his choice of loading equipment.

Since the tractor-mounted crane only moves a few yards once or twice during the loading job it doesn't cut up the ground.

"A loading-machine would churn up a lot of ground, especially in wet conditions," says Mr. Colk, "and that's something no farmer cares for. And the loader we used to have scooped up a lot of unwanted earth onto the lorry, which cut down the payload. When we're loading with the root grab the earth stays behind where it's supposed to be."

## HIAB Copes With The Slopes

On the Japanese island of Hokkaido the climate is suitable for sugar-beet, which has become a popular crop among local farmers who used to grow rice. And on Hokkaido just as elsewhere the beet-growers are more and more coming to prefer the HIAB Method over the fore-end loader when the time comes to deliver their beet to the sugar mill. The Furano Field, a centre of beet-farming, is rather hilly territory, and it's difficult for a fore-end loader to work on an incline. For the vehicle with the HIAB crane, however, the gradient is no problem, since it remains stationary during the actual loading operation.

Some thirty HIABs, of the 650, 670, 900 and 1300 models, are currently employed in the handling of sugar-beet on Hokkaido. They are normally used as separate loaders serving four or five 10-ton dump trucks. They're equipped with hydraulic beet grabs taking 800-1,000 kg at a time.



Sugar-cane growers on Okinawa make big time-savings by loading their crop with the HIAB Method. In many cases the job can be done right there in the field.

## HIAB Canes the Competition

Okinawa, far to the south of the main islands of Japan, has a tropical climate and extensive sugar-cane plantations. The crop is harvested during about forty hectic days in February and March. The grower deposits the canes in piles of 350-400 kg beside a road, where they are collected by a haulage company operating ten-ton trucks. The loading is done with a separate vehicle mounting a wire-rope crane, which is owned by the sugar-mill. The job requires three men, one at the controls of the crane, one on the ground to hook up the bundles of cane, and one on the truck platform to unhook them. Since there aren't usually more than about five or six bundles at any one point the truck has to visit three or four places before it is fully loaded, which takes

between forty minutes and an hour.

Labour is costly and scarce on Okinawa just like everywhere else, which has made rationalisation a matter of urgency. HIAB-FOCO's Japanese subsidiary, working together with Toyo Carrier Machinery, has just come up with an approach that means big savings as regards both time and labour. Instead of the wire-rope crane it uses a HIAB 650 with a hydraulic grab and top-seat controls, rear-mounted on an NCD 35 four-wheel-drive chassis. Thus equipped, the operator can handle the entire loading operating by himself in much less time. And the four-wheel drive permits him to pick up a load direct from the field in many cases, which saves the grower the trouble of hauling the sugar-cane to the roadside.



Hokkaido, one of the Japanese islands, is another place where they load beet by the HIAB Method. In this undulating terrain it's an advantage to have a vehicle that stands still during loading.

With the hydraulic grab, the crane operator can do the loading job unaided, while the driver of the transport truck takes a short break.





# The HIAB Method in Agriculture

A HIAB 225 with a special boom extension is an invaluable aid when the tractor cab is to be lifted off for service.



## Service and Deliveries

The plentiful machinery that is used by the modern farmer naturally calls for servicing — and there's another field that involves heavy and otherwise awkward lifts. One of the many firms that have brought in the assistance of the HIAB Method is Tester Brothers of Edenbridge, which sells and services Ford tractors in Kent, England. The firm has recently equipped one of its service trucks with a HIAB 225 that has a special boom extension. The crane's main job is lifting tractor cabs.

"The HIAB crane is invaluable,"

says Kenneth Clark. "We do most of our repair work out on the farms, and when you can lift off a cab weighing more than 600 kg in just a few moments it saves an enormous amount of time. We used to have to do the job by muscle-power, and it was a long business for a numerous crew."

Even though the HIAB 225 weighs less than 200 kg it can lift 1,600 kg.

Another line of business in which they've made big gains in time and labour with the help of the HIAB Method is the supply of agricultural

machinery. Practically every delivery run in this sector involves a large, heavy and awkward unit. If you're going to off-load a big harrow or roller without mechanical aids, everybody on the farm has to pitch in — sometimes with reinforcements from the neighbouring farm too. Even so, the truck is kept standing there for quite a while before the delivery is completed. But if there's a HIAB on the truck the driver can handle the off-loading job unaided and be on his way again after a few minutes.

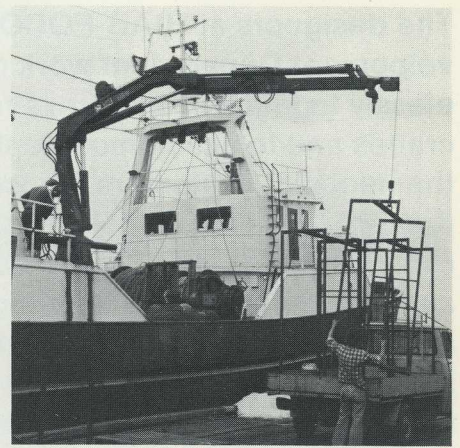


Many agricultural implements, such as this disc-harrow, pack a lot of weight, but if you've got a big six-wheeler mounting a HIAB 1870 with four support legs, as in the picture on the left, then you're more than a match for even the heaviest piece of equipment.

But even smaller HIAB cranes can easily lift pretty big machines, like this hay-turner, being handled by a HIAB 125 with support legs, mounted on a Mercedes Benz 307 D lightweight truck.







The catch is iced at sea in plastic crates, which are then stacked in the frames being shipped here by the loader.

With its great reach the HIAB 1165 commands much of the stern along with both sides of the vessel.

# Faster Landing of Catches

"We wanted to find a way of landing our catch faster when we reached port, and we tried a number of approaches before settling on the HIAB Method. It gave us at the same time a crane that we can use for loading equipment and supplies and for any amount of lifting jobs in port and at sea."

The speaker is Steve Carey, chief engineer of the Fisheries Division of Wrightson-NMA, which is a subsidiary of New Zealand's largest business enterprise, the Challenge Corporation. The vessel he's referring to is the stern-trawler "Otago Challenge", with Dun-

edin on the east coast of South Island as its home port.

The catch is packed and iced in 25-kg plastic crates while still at sea. In port, 15 crates are stacked in a special frame which is unloaded direct from the hold onto the quay. The crane, a HIAB 1165 fitted with a winch, hoists the frame out of the hold. A special guide prevents the load from swinging.

The crane is mounted amidships on the starboard side, from which point it commands the greater part of the stern and both sides of the ship. So besides the actual loading and unloading it comes in very useful for handling fish-

ing tackle and ancillaries, moving deck equipment around, lifting off hatches and a great many other tasks besides. To give the operator a better view of the load down in the hold or whenever his line of sight would otherwise be obscured the loader has been fitted with remote control.

"The HIAB Method makes us independent in all ports," says Mr. Carey. "We can promptly put to sea again whenever we like. And nowadays it's no trouble to do a lot of lifts that used to involve very hard work and quite a bit of bother. It's a solution that suits us just fine."

# HIAB Method Conquers Dutch Army

HIAB-FOCO recently signed a contract with the Dutch Army under which it will supply six hundred HIAB 965s. Deliveries of the loaders, which are to be mounted on army trucks, have already begun. HIAB-FOCO's facility in Meppel, Holland, is handling the mounting job.

The loaders are equipped with top-seat controls and with a rotator. The majority are sited behind the cab but some of them are on Roll-Loader mountings. Their main use will be in handling palletised goods, but they will have other tasks besides, for which they are being equipped with various kinds of lifting attachments. Expectations are that materials handling in the Dutch Army will be considerably improved by the new loader-trucks.

Like this one, the majority of the six hundred HIAB 965s currently being delivered to the Dutch Army are mounted behind the cab.





The designers at HIAB-FOCO's Development Department work ceaselessly to improve the firm's range of cranes and to accommodate them to the needs of customers. These pages present four new models that have recently been introduced. They cover almost the entire capacity range — from a small loader weighing less than 200 kg to a monster with a 12-tonne lifting capacity and a standard outreach of close on 11 metres.



# New HIAB Quartet Runs

## HIAB 445

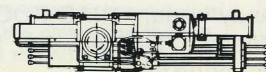
### The Municipal Loader

The HIAB could be dubbed the ideal municipal loader. It's not too heavy for light trucks, but it's strong enough even for relatively heavy lifts, besides which it's every bit as versatile as a crane for streets and parks departments should be. With two spare valve functions it can be augmented with a range of hydraulic attachments, and double-acting boom cylinders make it really effective in digging with a hydraulic bucket.

The HIAB 445 is available with two boom systems: the HIAB 445 A with a single hydraulic extension and a standard outreach of 4.5 metres and the HIAB 445 AW with a double hydraulic extension giving a standard outreach of 6.4 metres. With a manual extension the outreach can be increased to 7.6 metres respectively. A range of support-leg alternatives, with spans between 2.1 and 4.3 metres, provide stability sufficient for all needs.

Despite its impressive performance the standard version of the loader weighs no more than 750 kg inclusive of support legs. Since the body is laterally offset the C.G. in the parked position comes low down on the centreline of the truck. The lateral offset also means that the reach can be used to greater effect.

The offset siting of the loader enables its outreach to be employed more effectively.

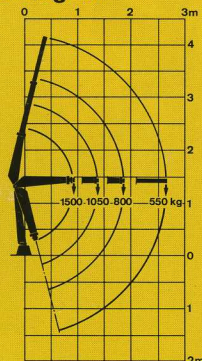


## HIAB 130

### Small Crane for Big Jobs

The baby of the newcomers, the HIAB 130, has manual hydraulics in its simplest version, but it can easily be augmented with an electrically powered hydraulic pump. The electro-hydraulic version can be further supplemented with a hydraulic extension and hydraulic slewing. In all versions the crane has a lifting torque of 1.5 tm and a maximum outreach of 2.7 metres. With the HIAB 130, even small, light-weight trucks can be equipped with handling equipment to fit them for big tasks. Its low weight and its siting on the edge of the platform also minimise its encroachment on the payload and load space of the truck.

Load diagram



#### Technical data HIAB 130

Lifting capacity	15 kNm (1.5 ton)
Outreach	2.7 m
Lifting capacity/ reach	max load
0.95 m	1.500 kg
1.4 m	1.050 kg
2.7 m	550 kg
Height when folded	1.35 m
Weight	
A-version	160 kg
B-version	185 kg

#### Technical data HIAB 445

Lifting capacity	445 A	445 AW	44 kNm (4.5 ton)
Hydraulic reach, standard	4.5 m	6.5 m	
Hydraulic extension boom	1.0 m	2.5 m	
Outreach, manual extension	7.6 m	8.0 m	
Lifting height above installation level	6.3 m	8.1 m	
Outreach/lifting capacity	1.7 m/2.500 kg	1.7 m/2.400 kg	
	2.1 m/2.050 kg	2.1 m/2.000 kg	
	3.5 m/1.300 kg	3.8 m/1.120 kg	
	4.4 m/1.010 kg	4.9 m/860 kg	
	6.1 m/630 kg	6.2 m/670 kg	
	7.6 m/400 kg	8.0 m/400 kg	
Height in transport position	1.875 mm	1.875 mm	
Width in transport position	2.150 mm	2.150 mm	
Weight, without support legs	690 kg	765 kg	



### Technical data HIAB 1280

Lifting capacity	109 kNm (11 ton)
Hydraulic outreach, standard	10.76 m
Travel of extension boom	5.36 m
Lifting height above installation level	8.7 m
Outreach/lifting capacity	4.7 m/2.500 kg
	5.3 m/2.250 kg
	7.3 m/1.600 kg
	10.5 m/1.060 kg
Height in folded position	2.325 mm
Weight with top seat, without support legs	1.910 kg



# the Gamut of Capacity



## HIAB 1280

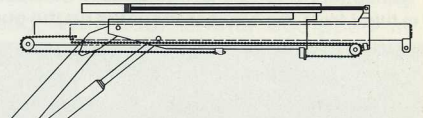
### The Big News Item

The big news item, in all senses, is the HIAB 1280. With a lifting torque of 11.7 tm and a standard outreach of close on 11 metres there's hardly a load it can't lift and hardly a spot it can't reach. But all the same: the biggest news of them all is the long and fast hydraulic extension.

When the double-acting extension cylinder causes the first boom extension to move out, a second, interior extension is moved out of the first one by means of a roller chain. The chain passes over a roller in the outermost end of the first extension; its ends are fixed, one to the first part of the outer boom and the other at the rear end of the inner boom extension. The merit of this design is that the inner boom extension moves twice as fast and twice as far as the piston of the extension cylinder and the first boom extension. Another roller chain, which runs over a roller at the rear end of the first boom extension, provides a corresponding action when the boom extensions are being retracted again.

The boom extensions are a good deal longer than the fixed part of the outer boom, and to enable them to be completely retracted the said fixed part is angled so that the extensions travel to one side of the inner boom. The

A roller chain transmits and doubles the movement of the inner extension to the outer one.



running of the hoses to hydraulic attachments, which is always a problem with long extensions, has found a very elegant solution on the HIAB 1280. The hoses are passed over a roller at the rear end of the fixed extension boom in roughly the same way as the roller chain; in this way they are kept taut at all times and are protected inside the extension booms practically throughout their length.

The HIAB 1280 also has a two-circuit hydraulic system, enabling several hydraulic functions to operate simultaneously at full speed — something which does much for the speed of the loader. The good view which the operator enjoys over his work area is also very important to a fast job of loading. For this reason, the HIAB 1280 has been equipped with top-seat controls in which all six hydraulic functions are managed by two levers — with two functions on each — and two pedals. Even so, the HIAB 1280, with its impressive performance, weighs no more than 1910 kg without support legs.



## HIAB 865

### Strong and durable

Really high capacity for fast loading and unloading is offered by the HIAB 865, while at the same time its lifting torque of 7.5 tm makes it an ideal crane for large hydraulic attachments such as grapples, buckets, etc. The boom system on the HIAB 865 is composed of box girders, giving a very strong and rugged construction with low weight and protection for the hydraulic lines. The HIAB 865 also has two boom systems, the "AH" with a reach of 5 metres and the "A" with 6.4 metres as its standard reach. With manual extensions these figures can be increased to 8.8 and 10.3 metres respectively. Less support legs, the loader weighs 1130 kg with the "AH" boom and 1185 kg with the "A" boom. There are two support-leg alternatives, with spans of 3.5 and 4.5 metres.

### Technical data HIAB 865

Lifting capacity	7.5 kNm (7.5 ton)	
	865 AH	865 A
Hydraulic reach, standard	5.0 m	6.4 m
Travel of extension boom	1.1 m	1.8 m
Outreach manual extension boom	8.8 m	10.3 m
Lifting height above installation level	7.3 m	8.7 m
Outreach/lifting capacity	1.8 m/4.050 kg	1.8 m/3.950 kg
	2.5 m/3.000 kg	2.5 m/2.900 kg
	3.8 m/2.050 kg	4.6 m/1.650 kg
	4.9 m/1.600 kg	4.3 m/1.200 kg
	7.1 m/1.000 kg	8.5 m/850 kg
	8.8 m/560 kg	10.3 m/560 kg
Height in folded position	2.200 mm	2.200 mm
Width in folded position	2.400 mm	2.400 mm
Weight, without support legs	1.130 kg	1.185 kg





The many low bridges over the canal enforced the use of small vehicles and light equipment.

In the gloriously sunny Provence, in the south of France, potable water is a scarce, much sought-after item that is often carried over long distances to the bigger towns. Marseille, for instance, gets its drinking water through a canal that was built more than 120 years ago as a branch of the Canal de Provence.

## The HIAB M

The old drinking-water canal was a very well-built installation for its day and age, but the years have taken their toll, and it's been clear for some time now that major repairs are called for. It's clear, too, that these repairs will involve problems that will be difficult to solve.

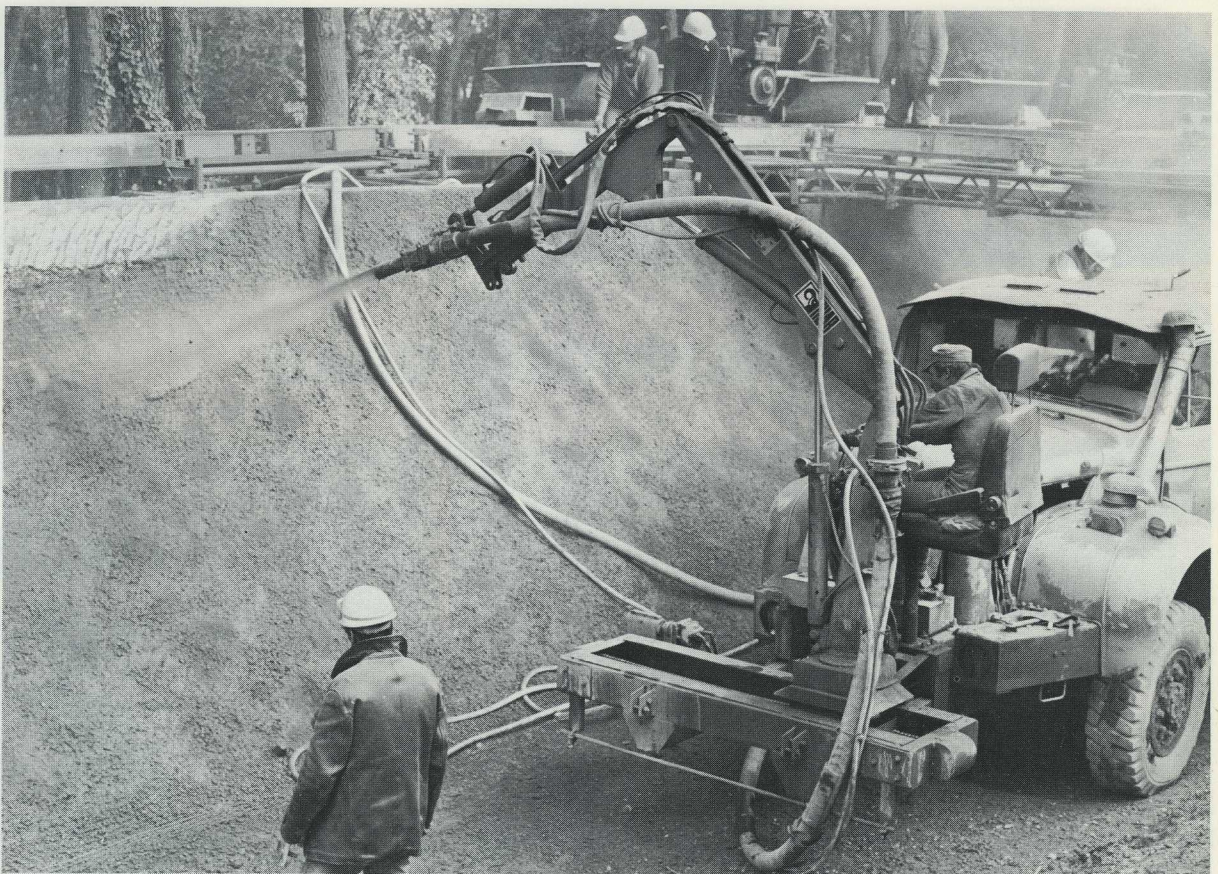
### A Tight Schedule

Out of consideration for Marseille's water supply a prolonged shut-off was out of the question. 72 hours of dryness was the most that could be allowed. The engineers therefore decided to do the job in stages, each comprising about 1,500 metres of the canal. Even so, it meant a tight schedule for the jobs that had to be done. First the workers had to break up the old facing and cart it away, then they had to put down metal netting as reinforcement for the new coating of concrete 12 cm thick that is being sprayed onto the bottom and sides of the canal. Finally, the concrete must be given time to set before the water is turned on again. A further point is that the canal is crossed by many bridges, with a maximum headroom not exceeding 2.6 metres. The use of heavy, bulky, high-capacity equipment was therefore ruled out. The engineers accordingly had to evolve new methods and specially designed equipment in order to discharge their task.

The concrete for the gunite units is transported on the monorail track visible in the background and is filled from the bin rear-mounted on the guniting vehicle.

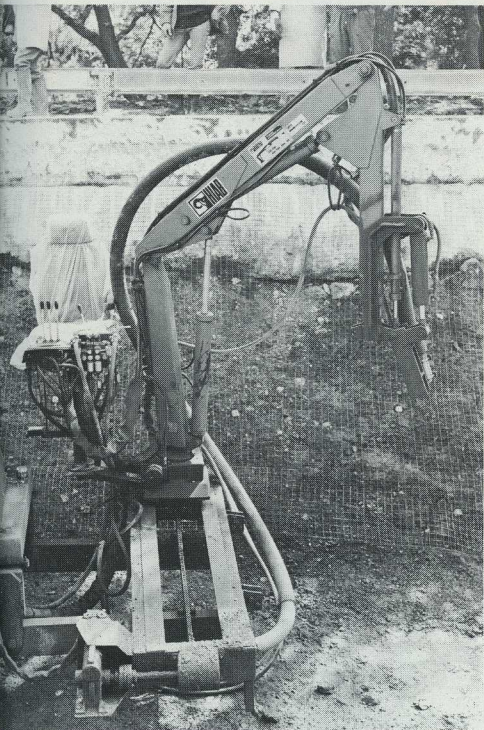






The crane driver operates the gunite nozzle from his comfortable seat.

## Method Saves the Drinking Water



The crane has lateral movement along a short rail. A hydraulic motor provides the power, acting through a chain transmission.

The assignment to carry out the renovation of the canal went to the firm of Gardiol, headquartered at Peipin in south-west France. Gardiol has long experience of gunite work and its personnel have mastered the technique. In the initial stage they employed a method in which the nozzle of the concrete gun was manoeuvred manually by two men. It transpired, however, that the pair could not work for more than about 30 minutes at a time on account of the physical exertion involved.

### The HIAB Method

Some other solution had to be found. So Gardiol got into touch with HIAB-FOCO's dealer in Aix-en-Provence, who developed suitable equipment and a working technique based on the HIAB Method.

In view of the limited headroom under the bridges over the canal the engineers chose the HIAB 250, a relatively small crane, but one with sufficient performance despite its low weight and small dimensions. The crane is front-mounted on a Berliet Gazelle truck. In order to be able to reach both walls of the 11-metre-wide canal the crane is free to move laterally along a short rail. This travel is carried out by means of a chain transmission powered by a hydraulic motor.

The gunite nozzle itself is mounted on a special holder at the tip of the outer boom of the crane. An extra hydraulic cylinder provides vertical control over the holder. A seat for the operator is also provided at the base of the crane. With this equipment, one man can operate the gunite nozzle hour after hour without tiring. Thanks to the HIAB Method, the repair crew is now able to spray on a new coating at the rate of about 12 metres an hour — which is three times the former working speed. With four outfits equipped in this way, working round the clock, the men are now able to get through the job in the very short time that they have at their disposal.

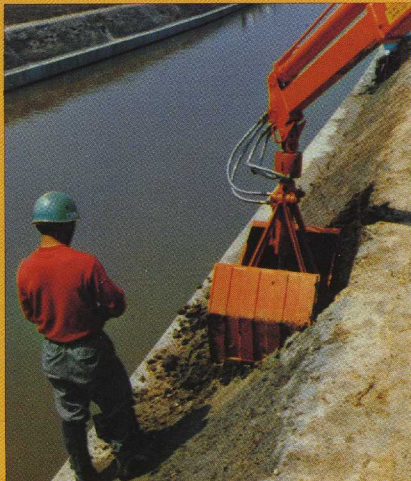
The supply of concrete and other material movements along the stretch of canal under repair is handled in part by trolleys running along a monorail track that loops around the workplace.

Similar equipment, based on the HIAB Method, is used in many different places for such jobs as reinforcing mine drifts, tunnel repairs, strengthening rock walls and so on. In many cases where larger cranes are employed, use is made of a new HIAB ancillary, a so-called "wrist", for the alignment of the gunite nozzle. The wrist is an extra articulation that is mounted on the outer boom and is operated hydraulically in both the vertical and the horizontal planes.



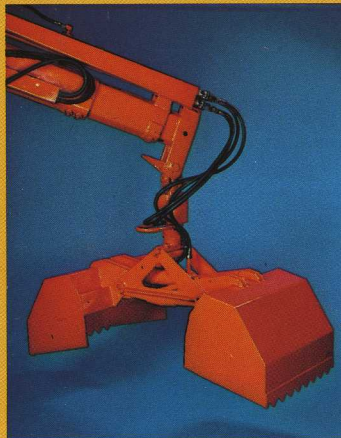
# More Jobs, Bigger Earnings with HIAB Accessories

## DIG

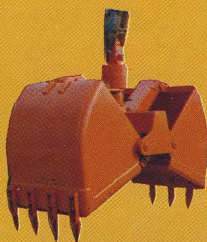
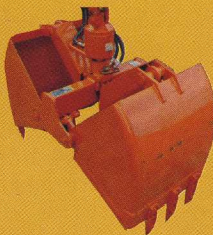


In many respects, a HIAB crane with a hydraulic bucket can do the same job as an excavator, but without costing anything like as much. The HIAB also has the advantage that it can be shifted easily and quickly between workplaces.

A light 200-litre bucket makes an effective combination with, for example, a HIAB 445 or a HIAB 650.



The big 350-litre bucket bites with a force of over two tonnes, making it effective on hard material as well.



The digging capability can be substantially increased by fitting special teeth.

## GRAB

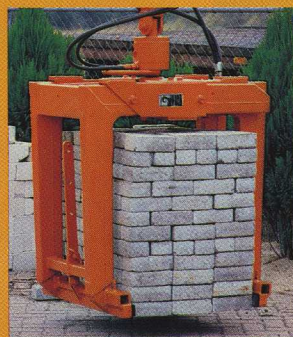


Every tine of the scrap grab acts independently of the others, enabling it to handle a variety of materials with ease.

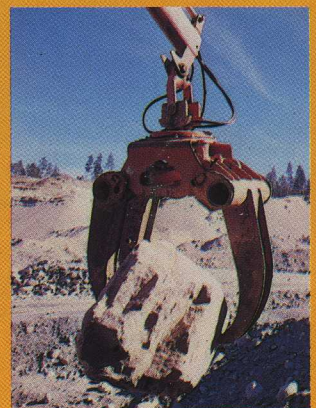
The HIAB all-round grab suits such things as poles, logs, steel tubes or — as we see here — concrete pipes.



Concrete-block clamps come in various sizes. This one can be adjusted for parcels of various heights and widths.



The three-tined stone grapple takes a good firm hold on heavy boulders, e.g. at rock crushers.





There's a lot more to the HIAB Method than just lifting things. Adding a few simple accessories to the HIAB loader greatly widens its field of application, and with the hydraulically powered special tools that are available for a range of dif-

ferent applications the possibilities become almost unlimited. What we've found room for on this spread merely scratches the surfaces on the great range of tools and lifting accessories available for use with HIAB cranes.

## WIND



The winch is a very versatile accessory that greatly increases the utility of the crane.

## DRILL



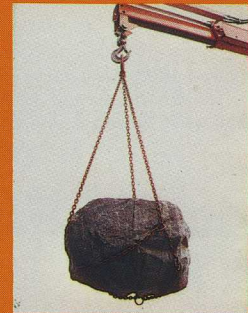
The earth auger, a very effective implement, will easily and speedily make holes for posts, plinths, flagpoles and so on.

## COUPLE



With a culvert hook it's no trouble to handle heavy, unwieldy concrete well-casing sections.

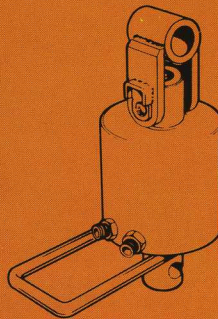
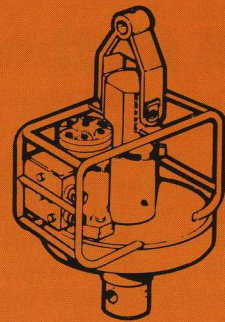
The stone harness is a simple but effective way to overcome the resistance of stubborn boulders.



Box claws will handle fragile cases with ease and safety.

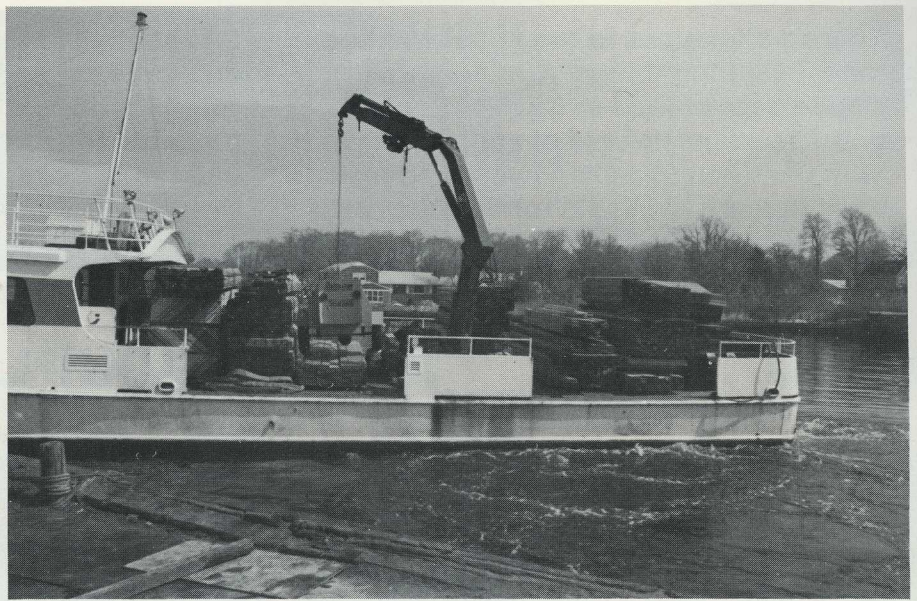
## TURN

A rotator is an important adjunct to most hydraulic tools, giving the necessary control over the tool and load. Two types are available for use with HIABs.





With a full cargo of building material and other heavy equipment the ferry berths at a quay on Fire Island . . .



. . . and unloading gets going in next to no time. Thanks to their crane the crew can manage even large parcels of timber and other heavy goods.

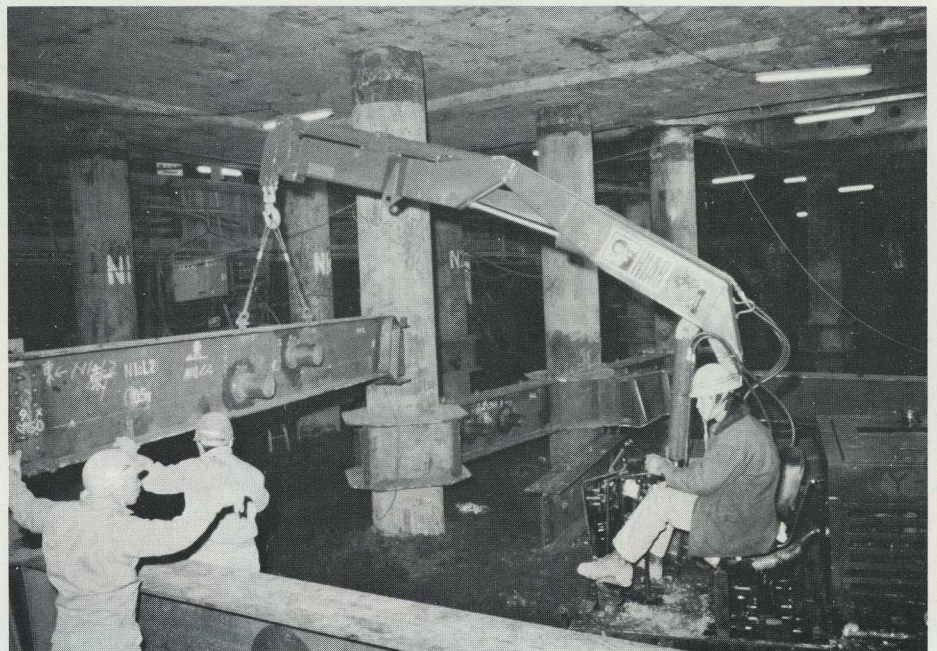
## Goods for Fire Island Unloaded by HIAB 1165



Immediately east of New York, the final Atlantic outposts of the United States consist of a series of stretched-out strips of land south of Long Island. One of these is Fire Island, barely a kilometre across at its broadest point but perhaps forty or fifty times longer. It is separated from Long Island by the waters of Great South Bay, across which all types of building materials and other supplies are transported to various locations by Fire Island Ferries. The little quays and jetties on the island naturally have no cranes or other equipment for goods handling, but with the aid of a HIAB 1165 the small crew of the ferry makes a quick job of loading and unloading large parcels of timber, concrete-mixers and other heavy goods.

## HIAB Method Makes Deep Impression in Japan

In Japan, as in many other densely populated areas, they have to use their living space to the utmost. And if they can't build up, they just have to go down. So they're now burrowing out an extra flat beneath buildings that are already standing. This involves reinforcing the piles on which the houses rest, and that can be a tricky business in these confined quarters where there's no room to deploy lifting equipment in the form of the building cranes and excavators that are used on ordinary construction sites. But here, just as in so many other worrisome situations, the HIAB Method provides the answer. A HIAB crane — in this case a 950 — mounted on a low, tracked chassis can work without difficulty in the cramped headroom and make its way between the closely spaced piles. The method has proved so effective that it is now regarded as standard on jobs of this kind in Japan.





The HIAB loader holds the hydraulic percussion hammer as it rapidly drives home the angle iron.

Wooden telegraph and power poles are attacked sooner or later by rot, no matter how well they're impregnated. Before things get to the point at which there's a risk of a pole snapping off it has to be replaced, and this never-ending process of pole changing along the lines is one of the biggest items of expense for electrical utilities and telephone companies. Apart from that, it involves irritating interruptions in service to subscribers.



## New Strength for an Old Pole

A lot of money could therefore be saved if the life of the poles could be substantially lengthened. A solution to the problem has been developed by Dynapac. It's based on the HIAB Method, and is calculated to extend the life of the poles by from ten to twenty years.

The rot attacks take various forms, depending on how the posts have been impregnated. Unimpregnated poles, or poles impregnated with salt solutions, suffer their first rot attacks at

and below the surface of the ground. The rot sets in at the surface, and then progresses in towards the heartwood. On creosoted poles, by contrast, rot attacks may appear anywhere, although they usually begin in the interior, poorly impregnated sapwood or in the heartwood. Salt-impregnated poles, especially, are well worth trying to preserve, since the rot-damaged zone is usually only a small part, perhaps 5%, of the whole post, while the remaining 95% shows no appreciable

damage. This is for the most part possible with the HIAB Method — and possible, moreover, at moderate cost and without suspending service.

The principle is that the lowermost, rot-damaged part of the pole is reinforced with 2.5-metre lengths of special galvanised angle iron, which are driven half way down into the ground right next to the post. This job is done using a hydraulically powered percussion hammer designed by Dynapac. Weighing 60 kg, the hammer is handled by a HIAB mounted on a vehicle that should preferably have an off-road capability. Also part of the equipment is a special guide for the angle iron. The guide is strapped to the pole and ensures that the iron is driven true. Once the pieces of iron are in place they are secured to the pole with wood screws. Two, three or four of these iron reinforcements are used, depending on the original diameter of the pole.

Thanks to the HIAB Method it seldom takes more than twenty minutes to reinforce a pole — and often a good deal less. The expense of the operation is only about a third of what it would cost to replace the pole — and the power or telephone lines remain in service throughout.



Depending on the pole thickness, the repairmen emplace two, three or four pieces of angle iron. The whole job takes a bare twenty minutes — after which the pole lasts for another ten or twenty years.



# Section S



## Popular Crane

It's no exaggeration to say that the HIAB 650 is the world's most popular crane. Some time ago, the number manufactured and sold passed the 100,000 mark — a milestone celebrated by HIAB-FOCO dealers in many parts of the world. This was the festive setting in Britain. The jubilee loader holds forth a basket from which Ernst Wertheim of George Cohen Machinery Ltd, representing HIAB-FOCO, serves champagne to Kenneth A. Sankey of the North-West Water Authority, which had bought the machine. The popularity of the crane can hardly have suffered from this maiden lift, remotely controlled with a HIAB EMPROC by Frank Brierly without spilling a drop.



## Popular Courses

No less than 87 people, all connected in one way or another with HIAB loaders, turned up when Hyscot Hydraulics arranged a course on safety in crane operation at Lanark in Scotland. It was the fifth time round, and on all occasions the firm has had the pleasure of welcoming a very large number of participants. (Below)

The picture on the right shows salespeople and servicemen attending a course in Costa Rica.



## New Premises in Singapore

HIAB-FOCO's representative in Singapore, George Cohen Far East, has recently completed its new facility there on a 38,000 m<sup>2</sup> site. It consists of three buildings which include 3,580 m<sup>2</sup> of warehousing space and offices of 2x875 m<sup>2</sup>. The picture was taken at the end of 1981, and in June the firm moved in. Naturally, much of the building material was delivered by the HIAB Method. This HIAB 965 with its pallet fork played its part.

## And in Melbourne

HIAB-FOCO's representative in Australia, 600 Machinery Australia Pty. Ltd, has recently begun running its business in Victoria from the fine new facility shown below. The complex stands on a 9,700-m<sup>2</sup> site in Knoxfield, near Melbourne. Below is an interior view of the showroom, storage and workshop areas, with the inaugural festivities in progress.





# Section S



## HIAB-FOCO shows the World the HIAB Method

At technical exhibitions and fairs throughout the world, HIAB-FOCO is on hand to present its products. The picture above comes from a fishery exhibition at Nantes in France, while the one on the right is from a fair in Bulawayo, Zimbabwe. The vehicle on the right is a mobile exhibition used by HIAB-FOCO's dealer in Brisbane, Australia. The picture immediately below is from a machinery exhibition in Lima, Peru, while beneath it Flemming Hall from HIAB-FOCO's Danish subsidiary company is telling Karl Hjortnæs, Denmark's Ministry of Fisheries, about the HIAB 1870. The picture at bottom right, finally, comes from an exhibition in Basel, Switzerland.





The greatly lengthened crane boom raises the foam gun more than 20 metres above the water surface and affords unrivalled possibilities of aiming the foam jet.



Holland, with its great harbours and numerous waterways, makes more use than other countries of waterborne firefighting. One of the latest additions to its arsenal is an up-to-date, well-equipped ship that can't be put down as simply a floating fire engine. A fire-fighting cruiser would be more like it.

## The HIAB Way of Firefighting

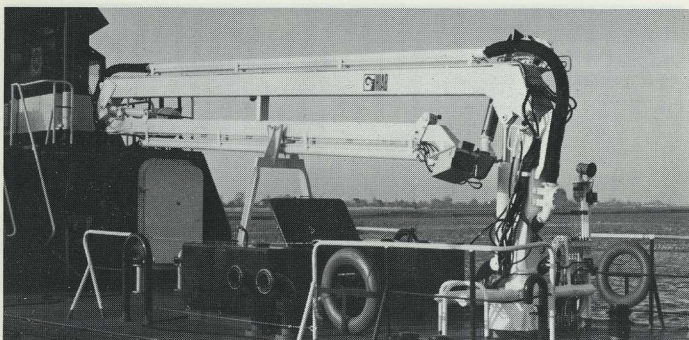
With a length of 26.5 metres and a beam of 6 metres she has a top speed of 30 k.p.h. — rather more than 16 knots. She is powered by three Deutz engines each of 526 kW. Her pump equipment, rated at 420 kW, can deliver 3,000 litres of water foam a minute at a pressure of 15 bars. The foam is sprayed from three foam guns with a range of 60-75 metres.

One of the foam guns is extra-mobile and handy by virtue of being mounted on a modified HIAB crane. This mach-

ine, which stands on the stern deck of the ship, is a HIAB LT robot, a HIAB 1165 whose boom system has been lengthened to give it a reach of no less than 20.5 metres above the water surfaces. The mobility and reach of the crane give quite outstanding possibilities of directing the jet onto the fire. The operator can choose whether to work the crane with ordinary levers on the stern deck or to control it remotely by HIAB EMPROC from the wheelhouse, out of reach of heat and smoke.

A remotely controlled TV camera next to the nozzle at the tip of the crane boom gives an optimum view of the path of the jet and of its effect on the fire.

The foam for the crane-borne nozzle is carried through 10-cm stainless steel pipes along the booms of the crane and through 10-cm high-pressure hoses past the joints. The pressure drop in the foam line is only 0.25 MPa.



A close-up of the crane in the parked position on the stern deck of the ship. The crane is operated either from the stern deck or with the aid of a HIAB EMPROC from the wheelhouse.

The fire-fighting cruiser at full speed. Three powerful Deutz engines can propel it at more than 16 knots.





# Method Hoists

## How to Make a HIAB 1165 Look Small



This giant bucket excavator tears away 100,000 m<sup>3</sup> a day in a brown-coal quarry at Eschweiler in West Germany, not far from the Dutch border. A HIAB 1165 equipped with a winch was recently installed in the midst of this vast complex of braces and struts, girders, steel wire ropes and rows of rivets, which goes slowly crawling through the surrealistic wasteland of the opencast mine like some hugely enlarged insect. The job of the crane is to handle the spare parts, drums of lube oil and other supplies needed by the gigantic bug as it gnaws away day and night at the lignite seam. These lifts used to be done by a mobile crane that was leased as required. But it was an expensive business, and it wasn't always certain that the mobile crane would be available when it was needed. The HIAB Method has provided a cheaper solution and a piece of handling equipment that is ready to hand at any time.

### High Above Düsseldorf

When they were building the recently completed TV tower in Düsseldorf, West Germany, a HIAB 650 was an indispensable aid. The tower is 234 metres high in all; premises at the 180-metre level are occupied by the German Post Office and a couple of restaurants. When the glazing was being done there the HIAB crane, on a semi-stationary rail mounting, served to handle the glazed frames that form the exterior wall. Equipped with a hydraulic winch, the crane was likewise used for a number of other erection jobs on the tower.



## Small but Efficient HIAB Outfits in Peru . . . . . in Japan



Part of the business of Aljop Industrial SA, of Callao, Peru, comprises deliveries of equipment to the mining industry. For some time now it has been handling them by the HIAB Method. The combination of a HIAB 225 on a lightweight Nissan chassis is so efficient that the firm has bought two similar outfits.

(Right) Another efficient combination on a Nissan chassis, this time a fork lift truck mounting a HIAB 345 with a winch. The fork of the truck is run into the frame beneath the loader base and the hydraulics of the loader are hooked up by means of quick-fit couplings





