

METHOD

HIAB

METHOD No. 21

A magazine featuring the HIAB Method and its applications



Front-page News

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A magazine featuring the Hiab Method and its applications, published by HIAB-FOCO AB, Hudiksvall, Sweden.

Publisher: *Sten Lagerman*.
Editors: *A. Adlers*
L. Rosengren

HIAB-FOCO AB, Department of
Communication
S-824 01 Hudiksvall.
Tel. 151 00 (area code 0650)

Cover

Mounting a HIAB 1560 on the bow of a sand scow in one of Stockholm's harbour basins.

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This issue of "Method" contains a couple of pictures of a new HIAB loader, the HIAB 670, that has not previously been featured in the magazine. The new loader was introduced some time ago, mainly in Scandinavia, and there may have been some surprise over the fact that "Method" has not done a full-scale lead story on it. Surely a new loader model ought to be front-page news for HIAB's own magazine?

That's the way it may seem, but our view in the "Method" editorial office is that the HIAB 670 after all isn't a big item of news for "Method". Not that the loader in itself is less deserving of a presentation than any of the other HIAB models. Far from it: the reason why it still hasn't received more attention in "Method" is to be found in the objective the magazine has set itself: to feature the HIAB Method and its applications, and in line therewith we don't think the HIAB 670 should get more space in this issue than it has.

The Method's The Thing

We have several reasons for taking this view. In most applications of the HIAB Method which we feature as examples, the loader model is of subordinate interest. In principle, the method would function with any loaders made by HIAB-FOCO as long as the job comes within the scope of the loader's performance, which is primarily a matter of lifting moment. The point that "Method" stresses is the way a given problem is solved - the "how" of it rather than the "what with". But a new loader model in itself can hardly be said to represent a new solution to any handling problem. In principle it's just one more option added to those we already have.

The HIAB 670 has been designed and built from the bottom up as a "production loader", intended for offroad and highway hauls in forestry and for other types of continuous operation, such as the handling of scrap and bricks.

From The Bottom Up

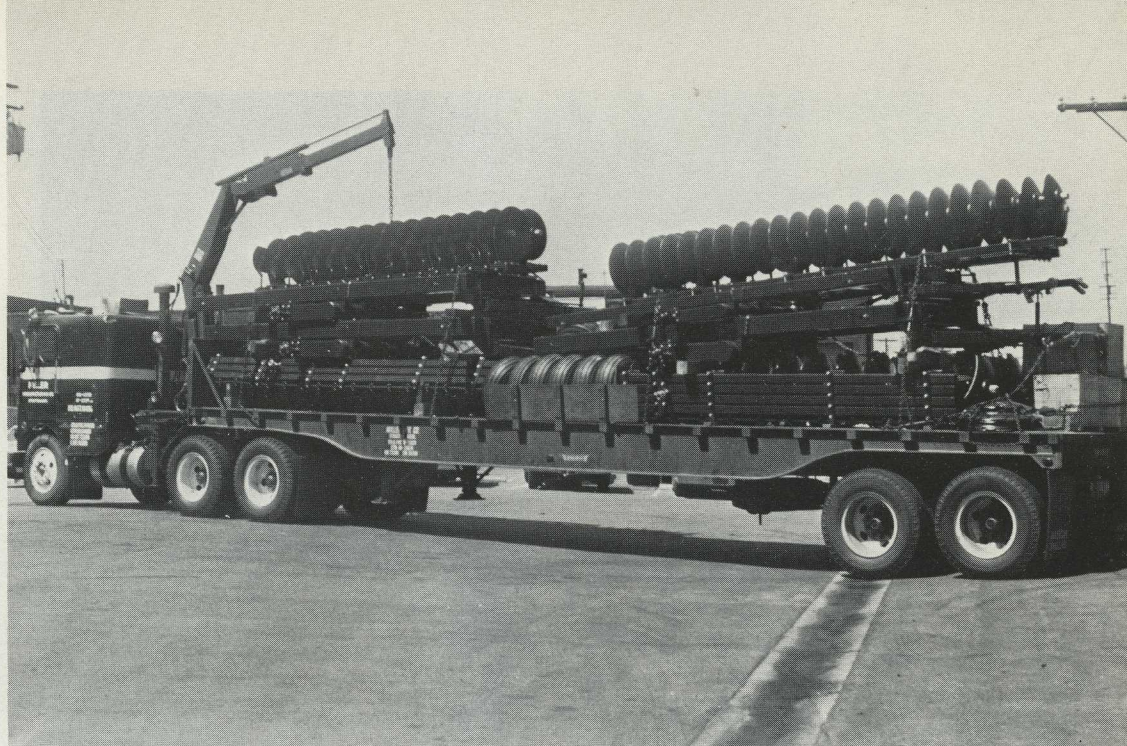
Nevertheless, we're going to mention some details from the genesis of the new loader, chiefly because they illustrate the way in which HIAB-FOCO's designers work. Once the decision to develop a new forestry loader had been taken, they went in for a large-scale stu-

dy of how forestry loaders are used and what demands and stresses are imposed upon them. And they did this even though it was HIAB-FOCO that developed and introduced grapple loading in forestry, so that it ought to know more about it than anyone else. As a further guarantee that past experience and preconceived ideas would not affect the findings, the task of doing the study was farmed out to the Royal Institute of Technology in Stockholm. The investigators' report, which occupies fifty centimetres of shelf space in HIAB-FOCO's development department, comprises hundreds of interviews with professional operators of forestry cranes along with well-documented records on thoroughgoing examination of the loaders they use, whether made by HIAB-FOCO or by others. All damage and repair work was photographed; set-ups, loads, oil pressures and so on were subjected to exhaustive study and measurement. And with that material to go on, it was time for the designers to start work.

Destructive Testing

Once the new loader was built, the engineers wanted to find out how far it measured up to the design specifications laid down for it. So they devised an entirely new test programme. We can't describe that programme in detail here; suffice it to say that in a matter of days the HIAB testbenches subject the loader to as much wear and tear as it would experience in several years of forestry work.

To get an idea of how the HIAB 670 would shape up alongside its rivals in the forest, the same test was applied to other leading loader models - of competing brands as well as HIAB's own. Records were kept as to how long each loader held out on the testbench before needing its first repair, then its second, and its third and so on. Not one of the loaders lasted more than a week or so before it was adjudged to be worn beyond repair. The fact that the HIAB 670 lasted longest by far is not remarkable in itself, since it was the most up-to-date design and since the safety margins engineered into it were, as far as could be assessed, a good deal wider than those of its rivals.



The HIAB 950 proved to be what was needed to boost handling capacity quickly while at the same time keeping costs down.

The Right Loader For Heavy Machinery

In August 1972, HIAB's distributor for the Western U.S., the Stanco Manufacturing Co., was called in to solve a handling problem for the Miller Manufacturing Co. of Stratton, Nebraska, a maker of heavy and bulky equipment for agricultural machines. Not only was the demand for the firm's products growing, but the individual items were tending to become larger as well. The rising volume of handling was becoming a problem, and now the firm was looking for a way to increase its handling capacity and yet to keep its costs down.

The HIAB Method was no new thing to Miller Manufacturing, which had bought its first HIAB loader some years earlier. Knowing what a HIAB could do, the firm now took its troubles to Stanco. And again the HIAB experts promptly came up with an answer. Within a week the thing was settled. A HIAB 950 proved to have the necessary capacity for handling the goods, both within Miller's works and during the operations of delivering and assembling them for customers lacking their own lifting equipment — and that means most of the

farmers and cultivators in the area.

Since the big HIAB was delivered it has brought about a substantial reduction in both the money and the time that Miller has to spend on handling operations.

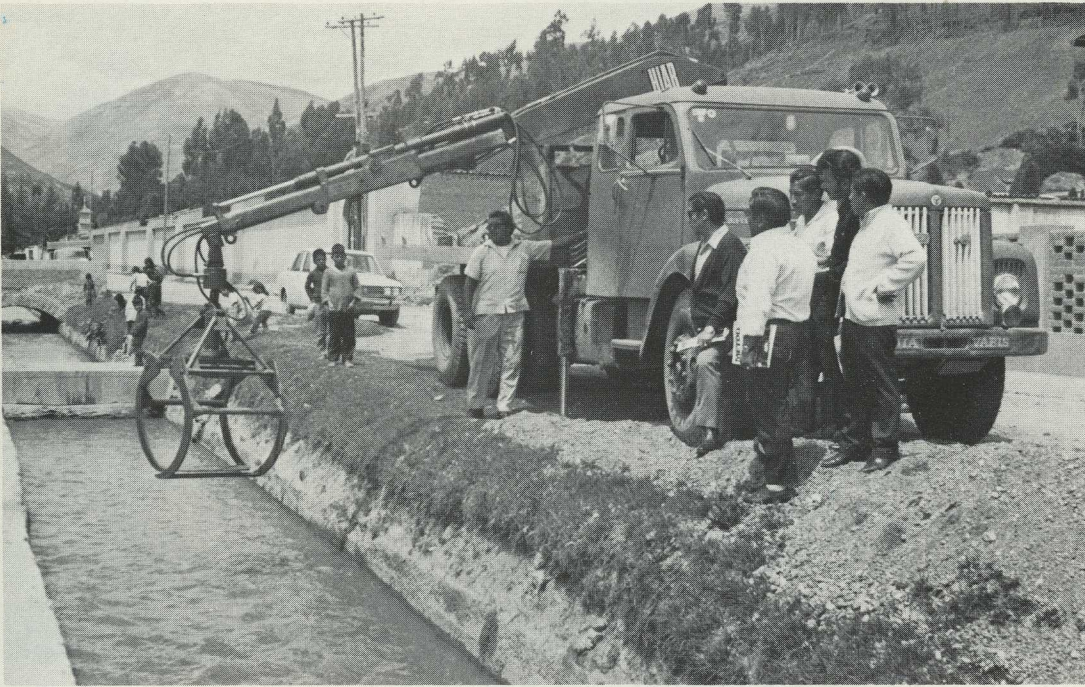
"These days we can draw up pretty accurate delivery schedules," says a Miller spokesman, "since loading and unloading now takes only a few minutes, whereas it used to take as many hours." ■ 1

Loader Loads Loaders

In Germany, every mobile crane and truck-borne loader must pass an annual inspection by qualified experts. Such expertise is to be found at TÜV Rheinland, or to give it its full name Technische Überwachungsverein — the technical inspection society for the Rhineland. At its centre for transportation and mining in Koblenz, the society has established a special department for crane inspection. The equipment includes a set of loading weights, and between the test lifts these weights are handled by a HIAB 550 on a stationary mounting. This installation, which has been in service since the spring of 1971, was warmly hailed by the relevant trade associations, whose members can now get the prescribed inspection carried out quickly and smoothly. ■ 2



All vehicle-borne cranes in West Germany have to pass an annual inspection, and in the natural course of things the weights used for testing them are handled by the HIAB Method.



Here's the problem. When the spring thaw swells the streams down the slopes of the Andes the water carries down sand and silt which sediment out when the rate of flow slackens through the Tarma canal, so this stretch has to be regularly cleaned out to prevent flooding.

Problems in Peru

If one of the main selling arguments for your product is that it offers rational solutions to problems, then you can't afford to be found wanting in rational solutions for those irritating little problems that fate sometimes tries to trip you up with. For example, if you've spoken brilliantly in favour of a loader with certain special equipment before a delegation headed by the mayor himself, and if you've done it so well that it results in an order for immediate delivery, then it's no use losing your cool and heading for the hills when you discover that you haven't got the equipment in stock. Such ideas never occurred to our distributor in Lima, Peru, when he found he had no clamshell bucket for a HIAB 550 that was to be delivered on the dot. Instead, he made a temporary bucket which worked fine until the standard item arrived from Sweden.

It all began with a telephone call from the Concejo Provincial – the borough administration – in the town of Tarma. They wanted a demonstration of a HIAB loader as soon as possible, in fact the very next day, when the mayor and other important local luminaries were going to be on hand. The immediate reason was that the town was having trouble with a canalised river that flows through it. At the time of the

spring spate the water rises and the usual results are widespread flooding. But the torrents of water which the river carries down from the mountains are not the sole cause of the trouble. A contributory problem was that quantities of sediment accumulated on the bed of the canal, which was soon thoroughly choked up.

Our man explained that the whole difficulty could easily be dealt with by a HIAB loader equipped with a clamshell bucket. He promised to put on a practical demonstration in Tarma the following day.

Out Of Stock

The only trouble was that the firm didn't happen to have any clamshell bucket in stock, and none of HIAB's customers was able to spare the loan of its equipment that particular day. But the loader could still be demonstrated, and with a bit of imagination it might be possible to use a log grapple as a stand-in for the clamshell bucket.

The HIAB expedition set off on a route that took it over the world's most elevated highway, at the breath-taking altitude of 4,800 metres above sea-level – a ten-hour trip to Tarma, which is "only" 3,200 metres up. As usual, the oxygen apparatus

was taken along in the truck – beyond any doubt a sensible precaution.

The HIAB Show

The town fathers, the mayor at their head, arrived in good time for the demonstration and were given some "Method" magazines and other relevant HIAB information as a starter. In due course, a HIAB 550 with a five-metre standard boom was set up at a strategic point on the canal bank. Our man explained the setback over the bucket, and then sent the boom snaking across the canal. It reached the other side with something to spare and dipped its attachment with equal ease to the bed of the canal. The mayor and his colleagues were given a clear idea of how dredging with the real unit was carried out. The demonstration was going like a breeze, and scored a real success when the operator lifted three trunks and poles with the grapple of the loader. And the delight of the spectators knew no bounds when the grapple was replaced in next to no time by a sling, which neatly hoisted a telephone pole and slipped it into a hole in the ground. It so happens that the telephone system in Tarma is undergoing enlargement this year, and the authorities at once saw that this method



Here's the solution. A HIAB 550 with a clamshell bucket - an emergency substitute made from a round-wood grapple. It held the fort in fine style until a regular bucket arrived. An urgent order promptly dealt with!

The fact that the loader can also be used for loading, unloading and raising poles is an important plus in Tarma, which is engaged in expanding its telephone system.

would enable them to make worthwhile savings. The Concejo Provincial put the question of buying a loader on the agenda for its next meeting.

A Rush Order

Only a few days later the mayor of Tarma was on the line to HIAB's distributor. The loader purchase had been sanctioned. A HIAB 550 with a clamshell bucket was just what Tarma needed. But they needed it fast - the floodwaters were already beginning to rise. The truck on which the loader was to be mounted, a Dodge D-500, was on hand the very next day. All that was lacking was the bucket.

But the solution to this customer's problem could not wait. So the HIAB people made a temporary substitute by welding sheet steel onto the timber grapple. And this stopgap turned in a surprisingly good performance when tested - both outside the HIAB work shop and on site. All told, it was a really smart outfit that rolled off towards Tarma to put an end once and for all to the town council's longstanding headache. And it was a resourceful strategem by our distributor in Peru to keep the customer happy while waiting for the real bucket to arrive from Sweden.



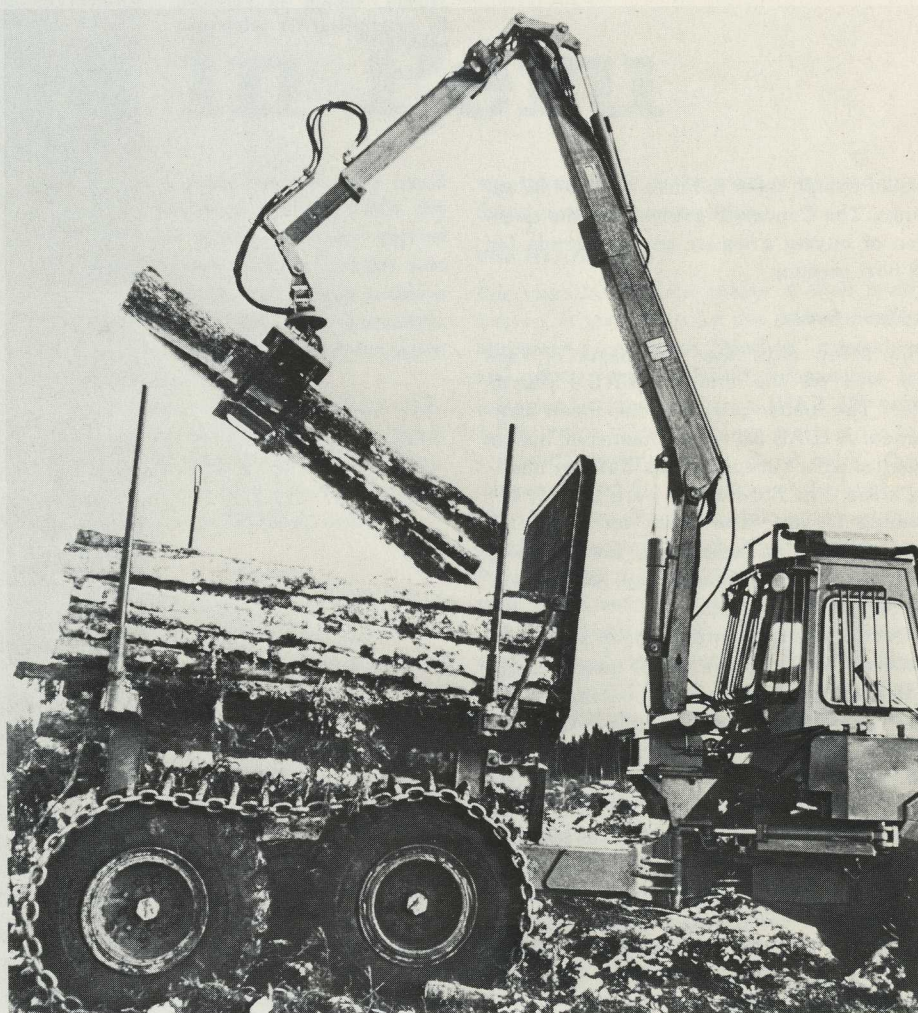
HIAB 670 - A Slogger of a Logger

With the trend in forestry moving towards larger cutting areas and timber concentrations, loggers are demanding more and more from their loading equipment – both for off-road service and for the main haul. To meet the need, HIAB-FOCO has now brought out a new forestry crane, the HIAB 670 which was developed along lines that were in many ways unique, topped off by novel methods of testing. It's no exaggeration to say that its performance in point of both capacity and durability, is in a class by itself. As the type designation indicates, the new loader has a lifting moment of 6-ton-metres and a standard outreach of 7 metres. And it was designed from the word "go" as a "production loader" – engineered to stand up to the stresses and strains involved in the almost continuous loading that goes on in forestry and also in other sectors, such as the scrap and brick trades. In comparative fatigue tests the HIAB 670 has comfortably outdistanced all its rivals in every respect. HIAB-FOCO's designers have done what they set out to do.

Fitted with HIAB's new low-headroom roundwood grapple, the machine will easily average more than one cubic metre per lift. That means it's no trouble for an experienced operator to load up five piles of pulpwood totalling more than 60 cu. metres in less than 30 minutes, including changeover times. That capacity ought to cover the needs of both today and tomorrow. ■ 3



The brand-newest equipment for the grapple loading of roundwood: the HIAB 670 with the new, low-headroom, grapple, rear-mounted and platform-controlled.



Roundwood in Bulgaria

Some seventy mobile loaders of this type are at work in Bulgarian forestry. The loader is composed of a Russian farm tractor, the Delaruss, fitted with a HIAB 560 and with folding Bulgarian-made support legs that give it adequate stability for loading. The use of dual rear wheels gives a sturdy tractor with good offroad capability. The highway haul is usually handled by Russian trucks of the Zil and GAS brands, with payloads of six and four tons respectively.



Large-sized timber is common in the Bulgarian forests, but the HIAB 560 has the necessary lifting moment. Sturdy support legs lend good stability to the tractor used as a mobile loader.

Norwegian Trial With 22-metre Logs



Forestry in Norway differs quite a lot from the usual pattern found elsewhere, by reason of the terrain and the ownership structure. In many parts of the country it wouldn't be practicable to mechanise operations along the same lines as those followed in Sweden for example. It just doesn't pay to deploy big machines to handle the small quantities harvested at each spot. But by concentrating jobs such as close-trimming and bucking to a central point the use of more machinery can be made feasible. This necessitates the movement of felled lengths along the roads, and that isn't an easy matter either, since the road system in many parts wasn't designed for long vehicles. These two outfits have been used for trial hauls with stem lengths up to 22 metres. Both of them, of course, are loaded by the HIAB Method, using a HIAB 177 mounted behind the cab and equipped with support legs, top-seat controls, roundwood grapple and rotator. ■ 4



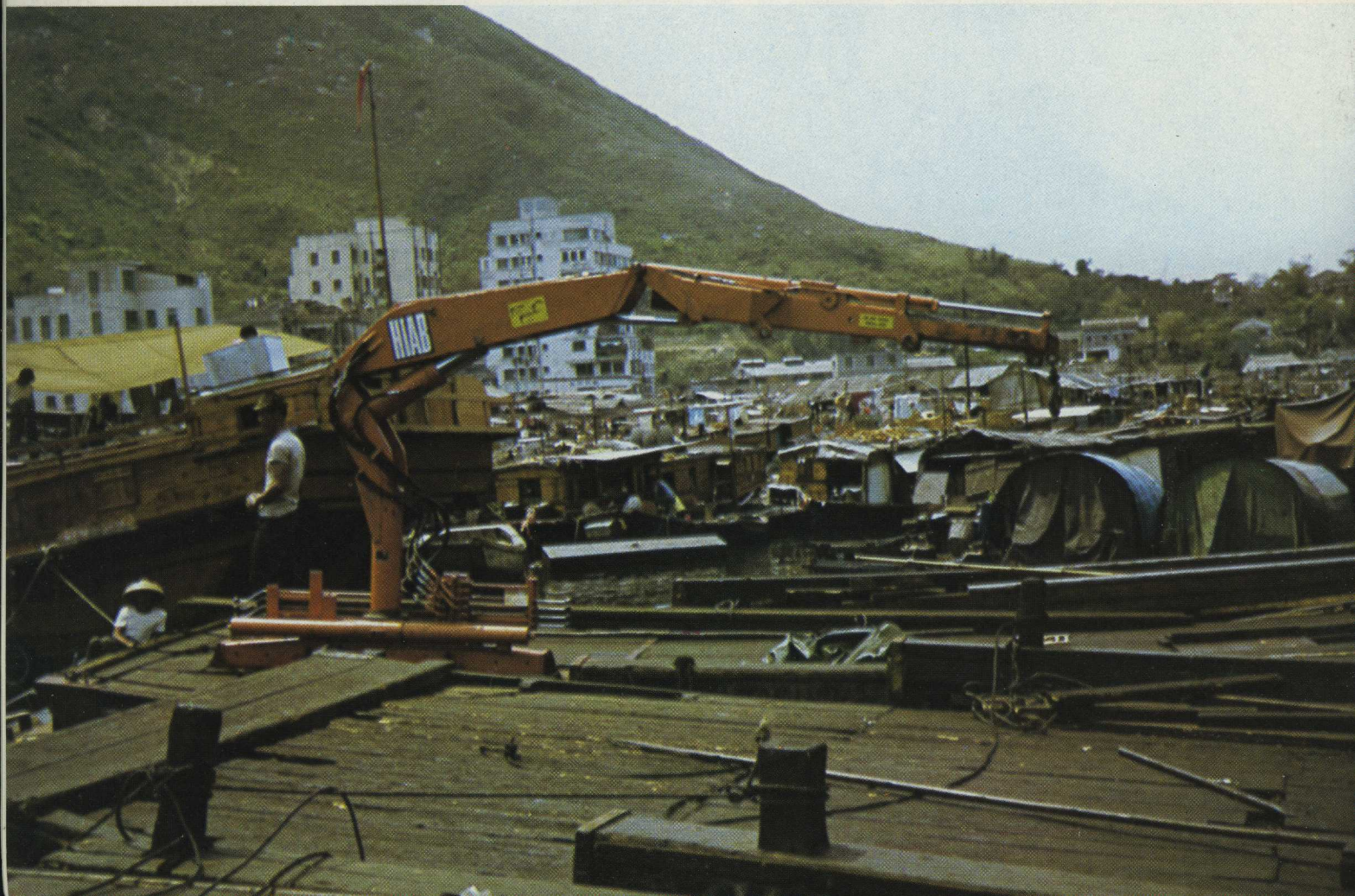
With a HIAB 177, loading the 22-metre stems is less of a problem than transporting them along the frequently narrow and winding roads through the forests of Norway.

HIAB 550 for Gas Pipes

The municipal authorities of Hanover, West Germany, have bought themselves a number of trucks mounting HIAB 550s for handling gas pipes. The choice was decided by the very low weight of the loader in relation to its lifting capacity. The same type of loader is also used by other municipalities for various jobs in road and street maintenance. Industrial firefighting services, too, use the loader to tackle a multiplicity of handling tasks. ■ 5



Mounted aboard a junk in the teeming harbour of Hongkong is a HIAB 550. The loader and the junk are used by a firm which installs and services diesel engines in the many vessels of various kinds that crowd the waters around the town.



Small Truck, Big Loader

A Unimog with a rear-mounted HIAB loader has long been used in West Germany as a highly mobile and versatile piece of equipment, suitable particularly for erection jobs of various kinds. With the powerful new HIAB 950 mounted on the Unimog 416 the combin-

ation has acquired a still better performance and can be assigned to many new tasks that were once literally out of its reach. The Unimog, equipped with a special frame to take the loader and with support legs having an extra-long extension, weighs a

total of 6 tons. This gives it sufficient stability to permit the use of the loader throughout its slewing angle - 410° - even with its boom extended to 12 metres. At full extension the loader can then reach no less than 13 metres over ground level and can lift 250 kg.

■ 6



Four long extensible support legs give the lightweight truck the stability for heavy lifts.

A bucket of mortar is hoisted with ease to an even higher level. With its extra boom extension the loader can reach 13 metres above ground level.



A pallet-load of building blocks is hooked up to the loader, and an instant later . . .

A little while later the agile and effective crane outfit goes into action at a completely new location. This time it's handling tubular scaffolding for concrete formwork. A bundle of tubes



. . . . it's on the third floor, just where the builders want it.

. . . . is hiked up onto the half-finished viaduct in a few seconds - and one man handles the whole job.



The equipment gets a checkup before delivery. All functions can be controlled both from the basket and from the ground.

Tunnelling With The 970

Tunnelling poses a lot of problems for which many more or less successful solutions have been devised. Yngve Kullenbergs Byggnads AB, of Gothenburg, makes use of the HIAB Method to simplify the work of drilling and charging blastholes above the tunnel floor. The equipment consists of a HIAB 970 rear-mounted on a truck chassis. The loader raises a personnel basket with enough room for two men and their tools, etc. For all the functions of the loader there are dual controls, one

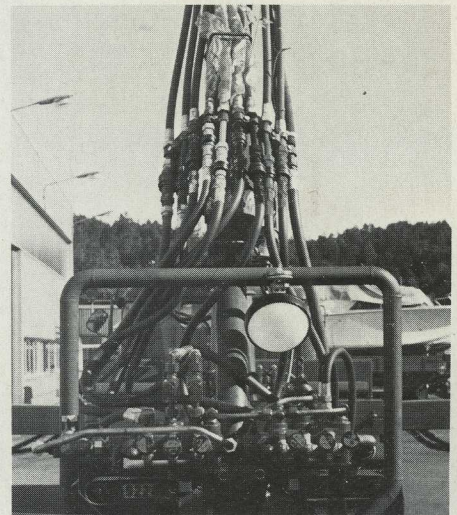
set at the base of the loader and one up in the basket. The controls in the basket operate through a flow divider which serves to reduce the speed of all loader movements to half the normal. This is important, especially with a loader that has such power and such a long boom as the HIAB 970. There are other refinements, too: the basket can be rotated to bring it into the most convenient position for the workmen, and once they've got it where they want it they can stop the truck engine by pres-

sing a button up in the basket. When they want to move it they can start it again in the same way. This provides a simple means of avoiding needless idling when the loader is not in use. ■ 7

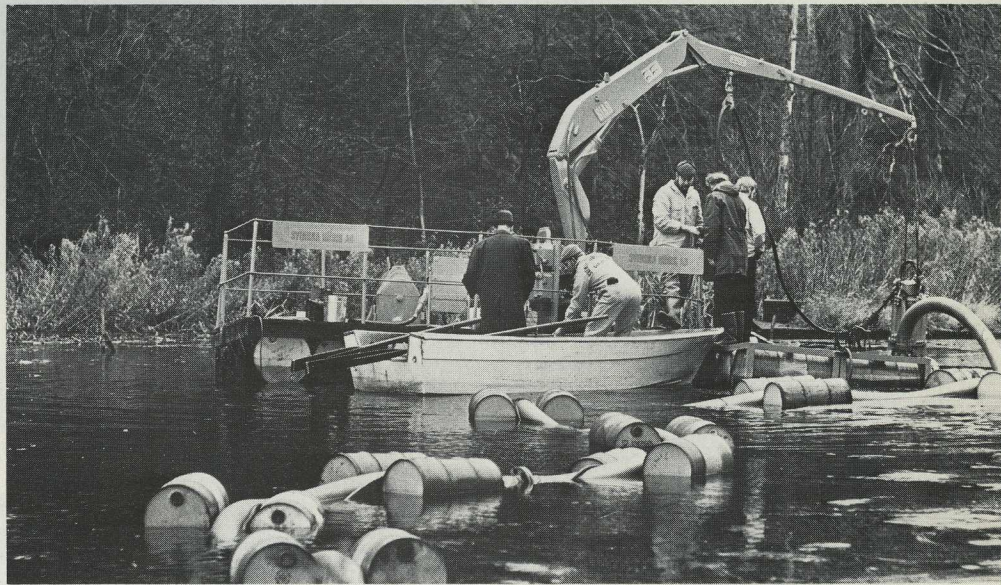


To give both the workmen in the basket the best possible position the platform is rotatable.

The set of controls up in the basket includes buttons for stopping and starting the truck engine.



Cleaner Ways With Waterways



A novel method of cleaning up lakes and watercourses that are becoming choked up with sediment, either by natural processes or through pollutants, has been developed by Svenska Hüdig AB. The method is based on a submersible suction dredging pump and a HIAB loader, and the principle is simple. The loader has been mounted on a raft which can be moved about the surface of the lake with the aid of the anchor or by means of cables running to the land. The

pump is lowered by the loader down to the sediment on the bottom, where it can sweep over a wide zone in the direction of movement of the raft. The pump has a capacity of 8,000 litres per min. and sucks up sludge, foliage, pebbles and other detritus. The water bearing the impurities is carried away through the large-bore discharge pipe – 15–25 cm in diameter – to a suitable collection

point. The equipment has a very high capacity and the costs of removing a layer of sediment 50–150 cm thick is calculated as about Skr 2:50 per sq. metre if the lake is not unusually deep. A further point is that the whole outfit is easily transportable from one lake to the next. The equipment is electrically powered, either from the mains or from a mobile generator. ■ 8

“Hiab Does The Donkey Work”

When the port authorities in Long Beach were instructed by the state of California to clean up the harbours and watercourses and get rid of all the floating and halfsunken logs, poles and other discards, they began by running a thorough analysis of the scope and character of the work. It soon emerged that they were facing a handling problem of formidable dimensions. So they got into touch with HIAB-FOCO.

In due course a HIAB 245 was mounted

on one of the port authority's vessels. A 245 was chosen because this model is light in weight yet can deliver the lifting moment that was regarded as being necessary for the job. The loader was sited on the starboard side of the flatbottomed shallow-draught boat, where optimum use can be made of its reach and working coverage.

The job is done by two men, one who manoeuvres the boat close to the object being recovered and one who hoists it into

a bin on board with the aid of the loader and a set of timber tongs. For raising sunken objects a basket is carried on the bows of the vessel and lowered to the bottom where it collects loose trash.

“The loader does all the real donkey work,” says the operator. “Since we got our Hiab we've been able to deal with twice the area in half the time.” ■ 9

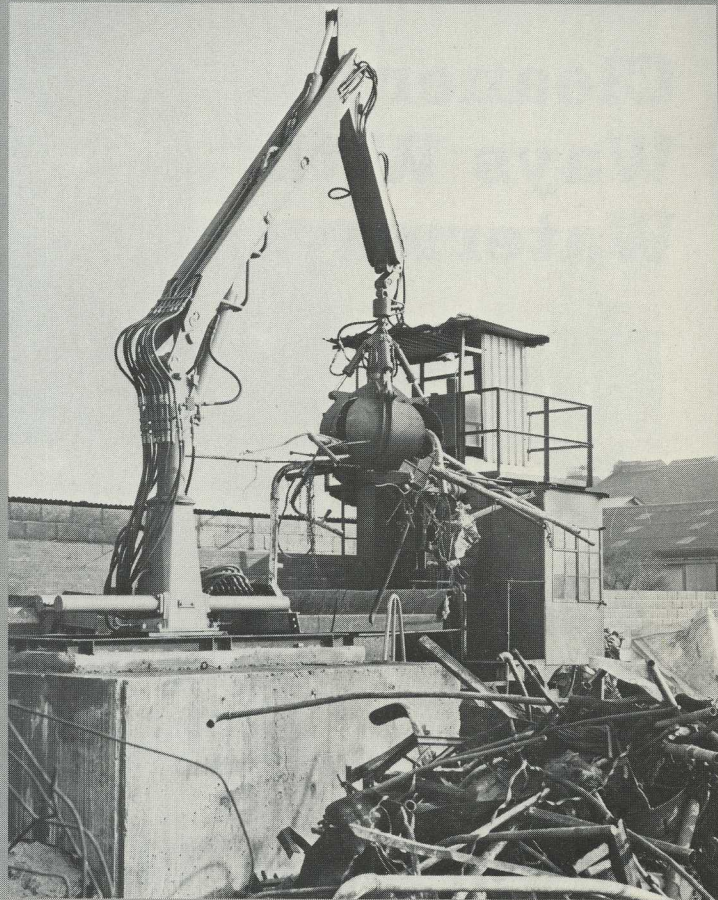


HIAB 970 Boosts Prof

The recycling of metals is on the increase all over the world, particularly in the industrial countries, where it has the double advantage that it not only reduces the depletion of raw-material reserves but also eases the drawbacks in the form of pollution and high waste-disposal outlays that follow from the rapidly growing usage of metals. It has also touched off an expansion of the scrap trade, and the growing volumes of scrap being handled have brought to a head the need to rationalise and mechanise the business.

This is a sector in which the HIAB Method has long played an important role on all sides. The HIAB loaders on scrap merchants' vehicles facilitate collection, loading and unloading and eliminate the accident risks, which are otherwise relatively high. Stationary HIABs perform the same function in the scrapyards in the work of sorting, feeding scrap presses, loading processed scrap for dispatch, and so on.

The HIAB 970 has recently been coming into wide use in the scrap trade, particularly for stationary jobs. The pictures on this page show three HIAB 970s on stationary mountings at three different scrapyards in England, where the metal-scrap trade has now attained an annual turnover of £800 million. The big lifting moment and reach of the loader are two important factors in this kind of work. The illustrations also bring out the wide scope for varying the layout at the control point and the siting of the controls. ■ 10



The Bishop's Last Journey



In the city of Lund, workers engaged on pipelaying in Cloister Street happened upon the ruins of the 13th-century Greyfriars Abbey from which the street derives its name. A closer examination revealed that the street and the pipe trench ran straight through what was once the abbey church, and there, in a small brick chamber, was a casket containing the mortal remains of Archbishop Jakob Erlandson. He died on the island of Rügen in 1274 while returning from a visit to Rome, and only his bones were brought over to Lund. That explains why the remains of so great a man were interred in so small a sepulchre. The whole chamber is only some 80 cm long. But Cloister Street is not a fit resting-place for an archbishop, even when he's already been there for nearly 700 years, so the city's official antiquary decided to move the whole tomb, casket and bones and all, to the Cultural Museum of Lund. To avoid damage to the ancient brick walls the transfer had to be carried out with the greatest care, so the job was naturally tackled by the HIAB Method. A wooden case was built round the chamber and reinforced with an iron frame, whereupon a HIAB 550 lifted the whole thing onto a truck deck – covered with thick layers of foam rubber to be on the safe side – on which the Archbishop made his last journey.

its In Scrap Handling



Hiab Takes Panes

Some years ago, a company in Northern California discovered that the HIAB Method was one of the best ways of handling glass, window panes and other very fragile goods, since all HIAB loaders work with great gentleness and precision. Since then, a large number of firms working with window glass have got themselves HIAB loaders, mostly HIAB 550s and HIAB 950s.

The Downey Glass Company of Los Angeles is one of them. This company owns a number of HIAB loaders and has designed special outfits to get the utmost benefit from the HIAB Method. At one time, all large panes of glass and crates of flat glass were moved either by fork-lift trucks or by a crane with a rigid boom – a cumbersome and time-consuming business either way. Nowadays, the HIAB Method is used for all glass handling and the truck driver can manage without helpers. This has resulted in faster handling and in more deliveries per truck per day, with the average delivery taking notably less working time – all thanks to the HIAB 550. ■ 11



Method Hoists



Off The Beaten Track

Tracks and other spare parts for heavy contracting machinery are for the most part weighty and unwieldy, and to save time repairs are often done on site where the machines are working. There's seldom any crane or other handling equipment at such places, but with a HIAB 950 on the service track even the heftiest items can be handled with no trouble, both during loading in the stores depot of the service shop and during assembly in the field.

Off-road Work With Gas Pipelines

A special outfit for transporting and laying out gas line pipes is the result of a co-operative effort by HIAB-FOCO's and VOLVO BM's agents in Belgium. The chassis is a VOLVO BM DR 860

dumper, minus its dumper body, which has been hooked up to a two-wheel trailer mounting a HIAB 950 with support legs. The articulated steering of the dumper and its large-diameter wheels

make it easy for the outfit to carry heavy loads around off road, and the powerful loader can handle the weighty pipe sections with ease and dispatch. ■ 12

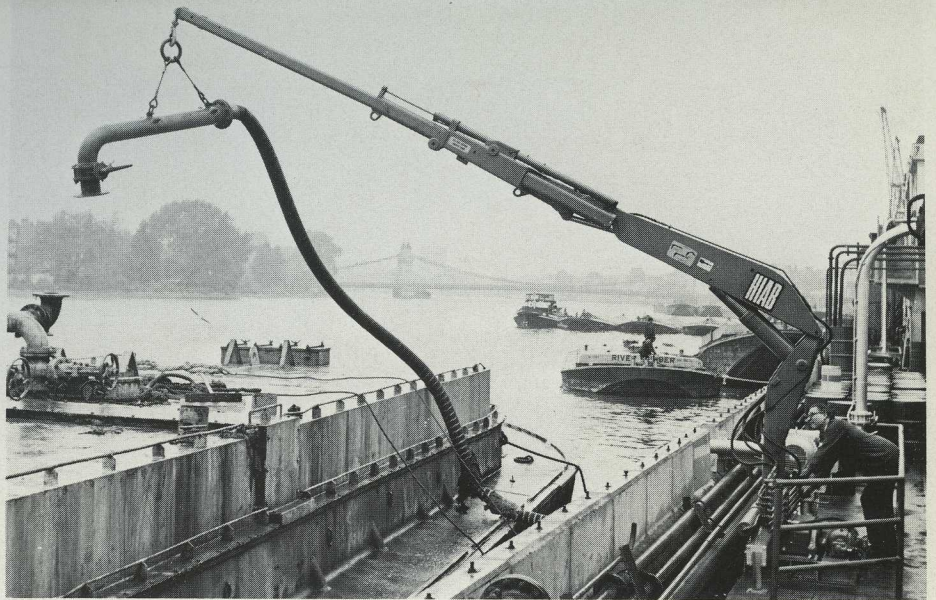


For Locks And Quays

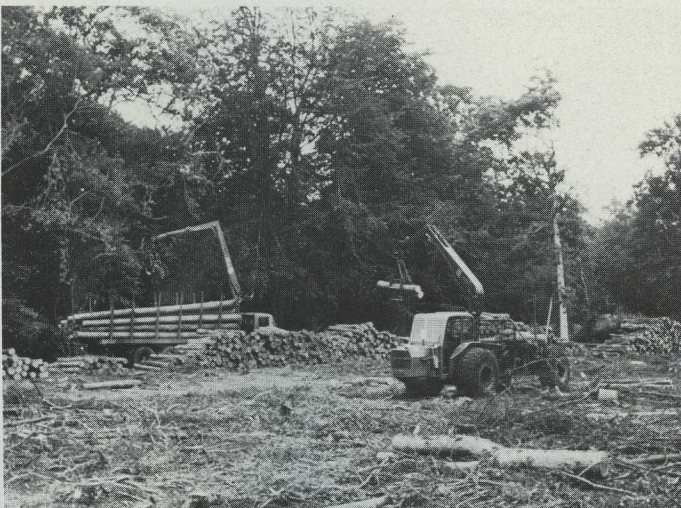
In docks and on wharves there are numerous lifting and other handling tasks that can't be managed by the regular dockside cranes. But a HIAB can often solve such problems. This HIAB 550 is handling a large-bore hose, using an extra boom extension that gives it an outreach of over 8 metres. ■ 13

Well-equipped Service Truck

Commonwealth Edison is a power and telephone utility in the U.S., which has acquired this specially built service truck. One specification was that the vehicle was to have a large but flexible and easily operated all-round crane for the many difficult lifts it would have to tackle, sometimes in loading and unloading fragile equipment, sometimes in service and installation work at transformer stations and out on the lines. The choice fell on a HIAB 950, partly because it is compact and makes minimum inroads on load space, partly for the sake of its versatility and ability to manage even very tricky lifts with precision and safety. The loader has more than matched up to the requirements and has already paid for itself several times over through savings in the form of lighter and faster work. Commonwealth Edison has therefore ordered several more units of the same type. ■ 14



Swedish Inspiration For Welshmen



John Hamilton and Bill Kirkpatrick are two busy roundwood hauliers from Newton in Wales, and they've just completed a tour of the Swedish forests to see whether they could snap up any

ideas for use on their home grounds. And it turned out that they could. John now has a lorry with a payload of nearly 15 tons, equipped with a HIAB 560 and Exte load bolsters. Bill bought a

Ford-Brunett forwarder in Sweden and does a fine job with it in the Welsh woods.



They're real hefty logs – but there's a real hefty loader to handle them, too. The HIAB 1560 wasn't designed as a forestry loader but its 15-ton-metre lifting moment comes in very handy on this particular job. The massive trunks grew in a French forest, where this outfit works.

