



Method

HIAB

Method No. 40

A magazine featuring the HIAB Method and its applications



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Cover picture

The Lapesa company, of Zaragoza, Spain, makes storage tanks for heating oil, propane and so on. Many of its deliveries are carried out by this specially built outfit, mounting a HIAB 260 that puts the tanks right into place, whether it's up on a roof, or on the ground, or down in an excavation.

HIAB METHOD No. 40

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New Man Takes Over



HIAB-FOCO's President
Bengt Gerger

Since the last number of METHOD appeared, the HIAB-FOCO Group has acquired a new President. His name is *Bengt Gerger*, and he was formerly a divisional manager with Ericsson, the Swedish telecommunications group.

"The contents of this number of METHOD and the earlier issues show that HIAB-FOCO stands for quality," he says. "Quality is all-important in the contexts where HIAB-FOCO's products are used. And this is true not only as regards designs, materials and production engineering – it's just as important to maintain maximum quality in our contacts with the customer and in our personnel policy, as also in our way of presenting our products and their capabilities. In this latter connection METHOD has long been one of our foremost instruments, and what I should like this 40th issue to convey is HIAB-FOCO's determination to apply all its resources at all times and in all ways to maintaining and enhancing the level of quality across the entire sweep of the Company's activities."

Forty! – Fortissimo!

After thirty-nine issues of METHOD, containing hundreds of examples to show how HIAB cranes solve handling problems, boost efficiency, save effort and money and generally make life easier, you might think it would be difficult to find anything interesting or novel with which to fill a fortieth issue. But fears of that kind have proved entirely groundless. The much-praised versatility of the HIAB Method is such that the editors had more material than ever to choose from in putting this issue together. Even though we only used a small porportion of all the available tips on often simple but always effective ways of making handling safer and more rational with HIAB cranes, METHOD contains more pages this time than ever before.

In some of the fields of application that are featured in this issue the HIAB Method as such is no novelty. On the contrary: in many cases it's been in use for so long that it's come

to be regarded as self-evident and indispensable. All the same, we maintain that what we describe here is new. Over the years, HIAB cranes and the HIAB Method have undergone such development that handling today is a far cry from what it was when the Method was first introduced. Bigger and heavier loads are now being handled by bigger and stronger cranes with a more advanced pattern of action and often with remote control and specially designed hydraulic attachments.

METHOD exists to tell the story of what HIAB can do. For that reason, the spotlight has rarely been turned on the company behind the product. In this issue, however, we've devoted some of our pages to showing the ample resources that HIAB-FOCO has at its disposal and how they are used to give customers all round the world a product whose quality, dependability and many-sided utility are without parallel.



Faster With Sea Crane

Hydrofoils can really get a move on! At 36 knots it doesn't take long to go from one port of call to another.

High-speed hydrofoils have ushered in a new stage of development in waterborne passenger traffic and are now in service in such far-flung places as the Malay Archipelago, the Great Lakes of North America and the rivers of

Russia. Faster crossings, less discomfort in bad weather and the ability to work out of small ports without costly terminal installations are among their foremost advantages.

Aliscafi SNAV is a shipping company headquartered in Messina. It operates hydrofoil passenger services between Sicily and Naples on the Italian mainland and also takes in the scattered small islands, the Liparis, off the northern coast of Sicily. The vessels it uses are just over 30 metres in length, can take 180 passengers, and have a top speed of 36 knots. During the tourist season – from June to September – the boats are on the go almost without pause, and they're always full.

With their high speed, the hydrofoils make short work of the actual sea-crossings, but even so the overall journey duration was not at first shortened as much as would have been desirable, because of the time they spent in the harbours of the many small islands at which they call on most of their runs. When the company took a closer look at what could be done to shorten port time they found that the main hold-up was in the handling of passengers' baggage.

400 Parcels

An investigation revealed that passenger baggage averaged 2.3 items per person. So a fully laden hydrofoil had well over 400 cases, bags, trunks and rucksacks on board. In every port at which the boat called, some of them had to be put ashore and a fresh load had to be shipped aboard. Most of the handling was done by the passengers themselves, with some assistance from the crew and the quayside

personnel. Aliscafi felt that there had to be a faster and more efficient way of doing it. And, as with so many other handling problems, they found the solution in the HIAB Method.

HIAB-FOCO's general agent in Italy, Hidrocom of Milan, worked out a handling system based on the HIAB SeaCrane 60, mounted on a platform right at the stern of the boat. The crane is operated with a marine-version DigiDrive remote control, while the hydraulic pump is electrically powered. There's also room on the platform for some twenty baggage containers made of strong but light fibreglass-reinforced plastic. Each container weighs about 45 kg and can take a load of up to about 450 kg. The handling system comprises sixty of them all told. They have plastic covers and straps for holding them in place on board, and a clutch of them

is on hand in every port at which the hydrofoil calls.

In the docks, the company's personnel load baggage for various destinations into separate containers. When the ship berths the SeaCrane is used to offload one or more containers of ingoing baggage, after which the outgoing containers are loaded in the right sequence for discharging at the various ports along the rest of the voyage. Once the passengers have gone ashore they reclaim their belongings from the container.

This application of the HIAB Method, which went into operation during the summer of 1986, has substantially shortened the time taken in setting ashore and taking aboard passengers, since they no longer have to bother about their baggage, which generally gets onto and off the boat faster than they do themselves.



The hydrofoil is at rest, and it's the turn of the HIAB Method to get things moving! HIAB SeaCrane 60, with DigiDrive control, handles the passengers' baggage collectively – and much faster than they could do it individually.



Tyres of this size are heavy – but the HIAB 190 is designed for heavy lifts.

Bigger Tyre – Bigger Crane

Bell Tyres, of Perth in Western Australia, supplies tyres for earth-movers and so on. Big earthmovers have big tyres. And big tyres are heavy. So the HIAB Method has been playing a self-evident and prominent part in Bell's business for many years. Until recently the firm was using a Bedford truck with a HIAB 650 fitted with a special tyre grab.

But today's earthmoving machines are often a lot bigger than they were in the days when Bell first adopted the HIAB Method. And they have bigger tyres, too. Some of them use monsters like the 3600×51. A tyre of that size weighs close on three tonnes and measures 3.2×1.05 metres! – too hefty for the old equipment to cope with. But HIAB-FOCO has been developing bigger and stronger cranes, too. Bell Tyres has now adopted the HIAB 190 as the heart of its new handling equipment.

HIAB-FOCO's general agent in Australia is 600 Machinery Australia Pty Ltd. Working through its branch in Redcliffe, Western Australia, the firm designed and delivered the new equipment, which is based on a Ford Cargo 2419 truck. The crane, a HIAB 190A with a lifting torque of 19 tonnes, is rear-mounted and has hydraulically operated support legs. The giant grab, built for tyre sizes from 1.8 up to 3.3 metres in diameter, can handle both the largest and the smallest tyres that Bell stocks for the earth-

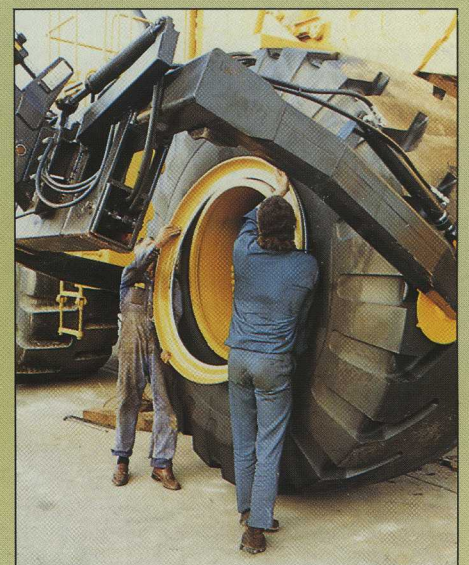
moving industry. It was designed and manufactured at 600 Machinery's facilities in Sydney.

With the new equipment the crane operator can change a big tyre in twenty minutes. This means that the down time that the job involves on a big contracting machine is shortened by anything from a third to a half.



Despite its size and strength the HIAB 190 is a handy crane that can work with ease even right in close.

This close-up brings home the impressive dimensions of both the tyre and the grab. The latter was designed by HIAB-FOCO's general agent in Australia.



Working aloft is no problem for the SAG personnel entrusted with the maintenance of power-transmission masts – nor for the HIAB 140.

HIABs On High Duty

HIAB cranes have long been part of the standard equipment at the firm of SAG in West Germany. “SAG” stands for Starkstrom-Gesellschaft. Employing several thousand people, the company specializes in designing, building and maintaining installations for energy distribution and telecommunications, and it holds a leading position as regards power-station construction, high-tension equipment and power lines, and regional and local grids. SAG also builds pipelines to carry water, gas and district heating, along with telephone line networks and television relay links and their antenna masts.

SAG has a network of well-equipped depots all over West Germany to serve as bases for prompt and efficient work on the various systems. The company was early off the mark in taking advantage of the flexibility and versatility inherent in the HIAB Method. One evidence of this is a HIAB “Elefant” mounted on a half-track vehicle – a veteran that is still giving good service more than two decades after it was commissioned.

High Demands

In those days, most of SAG’s field transportation took place over poor

roads and often enough over terrain without any roads at all. That remains true today, and it makes high demands on vehicles and cranes – all the more so because a lot of the work has to be done with the weather at its worst. When, for example, a storm has brought down pylons or trees and thereby interrupted services, the repair work can’t wait until the storm has abated. But rough weather has never kept HIAB cranes off the job.

Following the “Elefant”, several HIAB generations have been and still are active with SAG, as the pictures on this page show. In one, a HIAB

2070 fitted with the DigiDrive remote-control system is seen at its workplace, a big power station. The current generation is represented by a HIAB 140 AW with DigiDrive, pictured at work with a personnel basket in maintenance operations on a power-transmission pylon. But it only takes a few minutes to detach the basket, leaving the crane free to install transformers, load and unload cable-drums and so on. Before long, that same cable may need to be hung at the top of the grid masts – by personnel once again riding high in the HIAB-borne basket.



At this large power station, SAG has a DigiDrive-equipped HIAB 2070, a crane for heavy lifts.



Two real old stagers at SAG: a HIAB “Elefant” on a half-track.



Indispensable

Thus one and the same HIAB crane is used by SAG for a whole range of jobs, on all of which it yields sizeable savings in time, labour and money alike. And in every context HIAB handling moreover reduces the risk of accident and eliminates the injuries that used to result from heavy manual lifting.

It’s hardly surprising to find that SAG regards its HIABs as versatile, dependable, fast and trustworthy – in a word: indispensable.



It's nothing unusual for sons to follow in their fathers' footsteps. It happens in the world of HIAB too, as shown by this report on the hauliers Cera, senior and junior, of Bologna, Italy. At the same time it reviews in concentrated form the development of HIAB cranes.

The story begins 25 years ago – in October 1963 to be exact, when Armando Cera, then 31 years old, launched his trucking business and bought a FIAT 650 equipped with a HIAB 172. This crane, with its 4-tonne-metre lifting torque, was one of the first hydraulic truck loaders to come into widespread use on the world market. Seen through today's eyes it looks rather primitive and dated, but it was a durable machine, and in point of fact many HIAB 172s are still going strong.

Rapid Development

We move to the mid-1960s, and the HIAB Method is developing rapidly, most notably by the introduction of the HIAB 174. Cera's haulage business is developing too. By February 1968 he's ready to invest in a new rig, this time a Fiat 662, and naturally he fits it out with the new and revolution-

25 Years with HIAB

nary 5-tonne-metre HIAB 174, which, thanks to its parallel-offset outer boom, can be parked behind the cab by all-hydraulic means, and which has a hydraulically operated extension with a travel of no less than 1.6 metres.

This equipment fills the bill for more than eight years until, in October 1976, Armando sells it for a good price and purchases a Fiat 160 on which he mounts an 8-tonne-metre HIAB 950 AW.

Specialization

During the years that have passed, Armando Cera has come to specialize more and more in the transportation of machinery for the foodstuffs and pharmaceutical industries. Thanks to his skill and experience and notably to his well-adapted and dependable equipment he has got together a long list of customers in these sectors, so much so that by 1980 he is ready to bring his 21-year-old son Roberto into

the business. In February of the following year Roberto gets a rig of his own, a FIAT 130 carrying a HIAB 965 AW rated at 9 tonne-metres.

By June 1984, the Ceras are ready to move up another notch in lifting capacity to the 12 tonne-metres of a HIAB 1265 AW, which they mount on a Fiat 160. The firm now has some twenty regular customers and covers an average of 170 000 km a year. The family's ability to meet its customers' demands is developing under the spur of healthy competition between Autotrasporti Cera Armando and Autotrasporti Cera Roberto. The machines they move are undergoing development too; the individual loads are getting heavier – up to 7 tonnes – and dearer – with prices averaging around 55 000 dollars – and more fragile. And besides that, the crane is often used in the erection work, which makes still more insistent demands as to smooth and precise action.

Roberto into the Lead

By 1986, Roberto is no longer following in his father's footsteps. He moves into the lead in October by buying the first crane of the black generation, a HIAB 190 AWV with a lifting torque of 19 tonne-metres and an outreach of 10.3 metres, which he mounts on a Scania 92. The next year, in August, Armando overtakes him again in the size department with a HIAB 260 having 25 tonne-metres of lifting torque and a telescopic boom extension giving an outreach of no less than 16 metres. At the same time he becomes the first man in Italy to equip his truck crane with HIAB's DigiDrive electronic remote control. This time round, Armando, too, goes in for a Scania, Model 112.

Between them, in the space of 24 years, Cera father and son have bought eight cranes – all of them HIABs. The reason, they will tell you, is that HIABs have always measured up to their expectations. The high quality always fetches a good price when they sell off a crane to change up to a bigger and more up-to-date model. HIAB's reliable hydraulic system, giving gentle and precise movements, is indispensable in the handling of delicate machinery. The fact that HIABs need little in the way of servicing and repair, and that when they do, the work is always performed promptly, inexpensively and efficiently by HIAB-FOCO's fine-meshed service network in Italy, is another reason why neither Cera senior nor Cera junior would consider buying any other brand. They're also of the opinion that no other remote-control system for cranes can be compared to the HIAB DigiDrive. In line therewith, Roberto, too, is fitting a DigiDrive to his HIAB 190.

Waiting for a bigger HIAB

All the Cera cranes have been delivered by Vittorio Brusa of Bologna, since 1958 one of the most successful dealers for HIAB-FOCO's general agent in Italy, Hidrocom of Milan.

The next step in development as planned by Armando and Roberto Cera is a really powerful crane with a lifting torque in excess of 36 tonne-metres – but it must be a HIAB. Both Vittorio Brusa and Hidrocom see it as a most agreeable duty to reserve the first specimen of a HIAB crane in that size bracket for Messrs Cera as soon as HIAB-FOCO introduces it.

While waiting for the great day we can report that in December 1987 Roberto Cera drew level with his father by trading in his HIAB 190 for a HIAB 260 AWV – with a DigiDrive, of course.



Talk about a well-equipped outfit! Two drill rigs. Vacuum cleaner. Compressor. And of course a HIAB 070 – with a "wrist" to make it even more manœuvrable.

70 km of Crash Barrier a Year

The crash barriers on our motorways, which prevent vehicles from crossing the median strip or careering into the ditch should the driver lose control, are an important safety feature that goes far to explain why relatively few serious accidents occur on these highways despite intensive traffic and high speeds. Accordingly, the highway authorities in most countries consider that capital put into crash barriers is money well spent.

Norway is no exception in this context. Indeed, the Norwegians have developed a special rig which gives them more crash barrier for their money by speeding up installation. HIAB-FOCO's representative in southernmost Norway, Roland Mek. Verksted A/S of Haegeland, has collaborated with Lyngdal Mek. Verksted to build a special vehicle which has now been operating very successfully for several seasons on the Norwegian motorways.

HIAB 070 with a "Wrist"

The equipment is mounted on a four-wheel Mercedes truck. Its main component is a HIAB 070 AW fitted with a specially constructed "wrist", which lends still greater manœuvrability to the hydraulic drilling rig that the crane manipulates. There's also another hydraulic drill with hydraulic feed for driving 6" holes into rock, a hydraulically powered vacuum cleaner to collect the cuttings, and a hydraulically powered compressor that blows the cuttings out of the hole.

The compressor and the vacuum

cleaner are required for compliance with the strict industrial-safety regulations, which prescribe dust-free drilling to protect both the personnel who work with the equipment and the local environment.

The outfit also carries a hydraulic hammer for driving posts and a hydraulically powered oil cooler.

The oil supply for all the hydraulics is supplied by two 100-litre hydraulic pumps driven by the engine power-take-off. All items of hydraulic equipment have relief valves and the oil throughput is limited by a flow-control valve.

20 000 Post-holes

With this equipment the Norwegian highway people have made about 20 000 post-holes and installed about 70 km of crash barrier every season over the past few years. Besides this, the HIAB crane, with "wrist" and drill rig removed, is used as an ordinary piece-goods crane on jobs such as loading up the posts that are transported on an accompanying truck to be set up in the holes when they've been drilled.



Using a DigiDrive the operator can control the crane from a position right next to the load.

HIAB Method on Track

Running a railway isn't just a matter of moving people and goods around speedily, safely and cheaply. Much of the energies of any railway company are devoted to servicing, maintaining, modernizing and extending its fixed capital. This never-ending task occupies a large labour force along with quantities of heavy equipment, vehicles, tools and materials. It's hardly surprising, therefore, that the HIAB Method has for decades been a familiar concept around the maintenance departments of railways.

How do you carry out maintenance work on a stretch of track along which trains are travelling every ten minutes or so practically all day? There's only one answer: you have to try to get the job done at night and late in the evening and early in the morning when the traffic is less intense. But even then, what with night expresses and long-haul freights, you don't get more than a few hours at most between trains.

So the vehicles used by the maintenance gangs have to reach the worksite fast if they're going to get any useful work done before it's time to remove them just as fast to the nearest siding and leave the line free for the next train to pass. In most places it's quite a way to the nearest siding, so the effective working time between the constant interruptions is for the most part pretty short anyway.

Rail and Road

Many railways have solved this prob-

lem by using vehicles that can operate on roads as well as on rails. There are usually more than enough minor roads crossing the line, and the rail-and-road vehicles can leave the track at any one of these intersections. A further point is that they use the highway to cover most of the distance to and from the worksite, which means that all the longer moves can take place without any worries about railway timetables.

The Danish State Railways have used the Unimog 1200 as the foundation for some of these vehicles. The regular roadwheels are used to drive the vehicle on the track as well. The small steel wheels that are brought to bear against the rails are mainly there so that their flanges will keep the vehicle on the track.

HIAB 070 with Remote Control

With a HIAB 070 mounted behind the cab and equipped with remote



The suspension of the roadwheels is locked so as to firm the vehicle up when operating on the track.

A towbar turns the vehicle into a small shunting engine. The coupling is operated from the driver's cab.





A sleeper grab is one of the many hydraulic attachments that are employed with the HIAB 140 when it is mounted on a Rail Truck.

control, this vehicle can handle numerous tasks in the nature of maintenance along the line and in the marshalling yards. An important job is clearing out the ditches along the track and keeping down the grass and scrub on the embankment. This work is done with implements that are carried by the crane. Branches and twigs overhanging the line can be cut back by men riding in a personnel basket fitted with supply outlets to power hydraulic handtools. If the vehicle is fitted with a special towbar and a coupling device operated from the cab it can be coupled to ordinary railway rolling stock and used as a small shunting engine in marshalling yards. And, of course, the crane is used for loading and unloading and for other lifting jobs. Extensible support legs lend stability to the rig, which is relatively light and only 2 metres wide.

Another example of how the HIAB Method is employed on the Danish railways is provided by a HIAB 031 mounted on a freight car and used for welding work along the track. The

crane handles such things as heavy box-loads of welding equipment. The boxes, which are fitted with wheels, are placed on the rails, giving the workmen the convenience of towing their gear along with them as they make their way down the track. Gas cylinders, welding units and other equipment carried in the freight car are also handled by the HIAB.

Rail Truck

As far back as the 1960s the Finnish State Railways began to use a type of diesel-powered working vehicle that they call the Rail Truck. It is employed in track-laying and in maintenance and repair work. A HIAB crane was part of the standard equipment right from the beginning, and several hundred HIABs all told have been mounted on vehicles of this type in Finland over the years.

A HIAB 172 or 173 sufficed in the early days, but the demand for lifting capacity increased, and as the vehicles grew bigger it became possible to mount the HIAB 950 and later the

HIAB 1165 and 1265 as well. Today's Rail Trucks carry a HIAB 140.

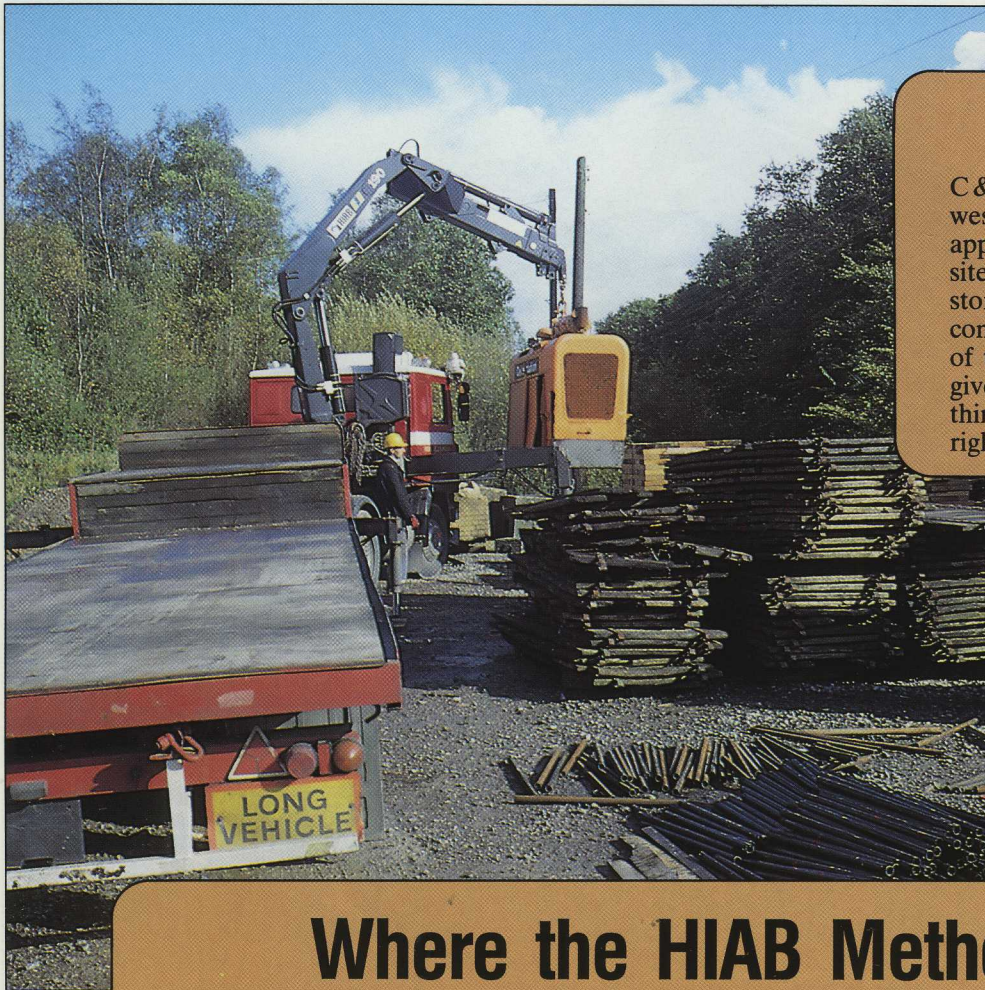
Without Support Legs

The crane is rear-mounted on the Rail Truck and is remotely controlled by a HIAB DigiDrive. The remote control can be plugged in either inside or outside the cab, so that the crane operator can stand on the platform of the vehicle or on the embankment. As mounted on the Rail Truck the HIAB 140 has no support legs, the reason being that the embankment does not offer a sufficiently firm footing. The lifting torque of the HIAB has therefore had to be limited since the Rail Truck, even though it weighs a good 27 tonnes, is too light to permit the "140's" lifting capability to be used to the full without support legs.

With four-wheel drive and a top speed of 80 kph the Rail Truck does a quick and efficient job of transporting men, material and machines out to workplaces along the track. The equipment is of course loaded by the crane, either onto the Rail Truck's platform or onto a towed freightcar. The Rail Truck is also used as an inspection vehicle, and in connection with electrification work the crane can string up cables and raise posts. Most of the HIAB 140s mounted on Rail Trucks are also rounded out with one or more hydraulic attachments such as a grab for sleepers, a gravel bucket, a brush-clearance unit, a lifting magnet, a personnel basket and so on.



The HIAB 031 handles tool-boxes, gas cylinders and other equipment used in maintenance work.



Often First

C & B Haulage, of Thatcham, 50 miles west of London, is often the first outfit to appear on building sites. C & B transports site equipment, such as workshop and storage sheds, form timber, scaffolding, compressors, generators and so on. Some of these items are very weighty, but they give no trouble to the HIAB 190. Everything is deposited on site at exactly the right spot.

Another frequent early bird is Claryfer, a crane and transport firm in Zaragoza, Spain. In 1979, two partners, Pascual Claramonte and Antonio Fernandez, bought their first HIAB, a second-hand "650". Since then the business has expanded towards heavier lifts

Where the HIAB Method is Self-evident and Indispensable

On building sites large and small all over the world, HIAB cranes are a familiar not to say self-evident and for the most part indispensable aid. With their mobility and speed and their handy, precise and gentle handling of materials they are in their element all through the building job, from the initial planning of the worksite to the

site improvements that are added when the actual building has been completed. We could devote entire issues of **METHOD** to the HIAB Method in building operations and still not cover all of its applications. For the present we'll content ourselves with a selection of current examples.

Those Who've Tried Both Favour HIAB...

When the time comes to put the roof on, the chances are that Standard Roofing Inc. will bring along the material – at any rate if the site is anywhere near Morristown, New Jersey, in the U.S. The company uses both stiff-boom and HIAB cranes for raising the material to the roof, so it's well placed to make comparisons.

Indications are that it prefers the HIABs. Surprisingly to many in the industry, it's been found that a stiff boom isn't mandatory for placing materials on the roof of three or four-storey houses. In point of fact the job gets done better, faster and more easily – and is more profitable – by the HIAB Method.

Stiff-boom proponents say that the job calls for 18–20 metres of outreach. That's true... if you insist on working with the stiff boom. But it certainly isn't true if you use a HIAB knuckleboom. As a graphic illustration of the difference, try to remove your pen from your shirt pocket without bending your arm at the elbow.



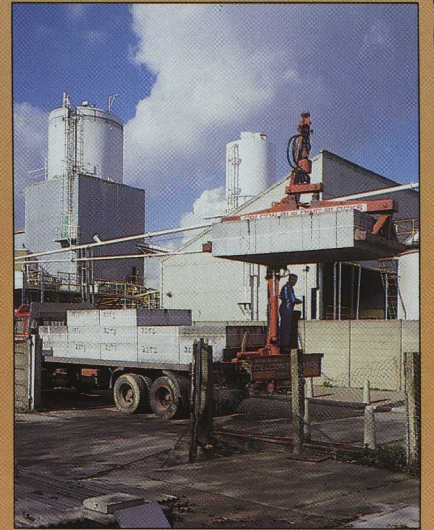
The Crane that Brings the Crane

and bigger cranes. First a HIAB 950 and then a HIAB 1165 and by 1986 it was time for a HIAB 260. The firm now has five rigs, and its assignments include transport for a company that rents out building cranes – the sort of work on which you really

can use a crane with a lifting torque of 25 tm. Even dismantled, building cranes consist of big, heavy units. The largest part, the control cab, often weighs about three tonnes, and plenty of outreach is needed to handle such a bulky structure.



That's one of the reasons why HIABs offer the most cost-effective and economical solution to the problem of handling roofing materials, which is growing ever more demanding as architects make increasing use of complex roof designs featuring projections, skylights and steep pitches.



A Sample-Card of HIAB Models

If you want to see many HIAB outfits gathered at one spot, a good place to go to is one of Celcon's four factories in England. Based in Essex, north-east of London, Celcon uses input stock that includes ash from the country's numerous coal-fired power stations to make lightweight concrete, which is then sawn into building blocks of various sizes. The annual output exceeds a million m³. On a daily basis, that makes about eighty lorry-loads to be hauled from plant to site, normally within a radius of 50–60 km. Some thirty-odd rigs are assigned to the job, and about 75% of them carry cranes. The favoured choices nowadays are the HIAB 070 and 100, but the firm's fleet could serve as a sample-card of recent HIAB models. They are fitted with rotators and grabs of Celcon's own design.





HIAB All The Way . . .

The building job's almost over. Little more than the site work remains before the tenants can move into the 456 new flats in Vallecas, on the outskirts of Madrid. The HIAB Method is in there all the way. The kerbstones for the service roads come from the Borondo concrete plant not far away. The pallets are off-loaded along the roadside, appropriately spaced so that the paving workers won't have to carry the heavy stones farther than necessary. Borondo, which also has a plant in Alicante and is planning to build another one in the Madrid area, supplies pipes, building blocks and other concrete products over the whole of Spain. Its haulage operations keep some fifty trucks busy. Many of them carry a crane, usually a HIAB 950 or 1165 on the older vehicles, while the newer ones have a HIAB 140 or – like the outfit shown here – a HIAB 190.

Heavy Forms

Concrete formwork is heavy and unwieldy. The people at Fritz Concrete Ltd., of Ontario, Canada, which has successfully specialized in handling it, will confirm that for you. They'll also confirm that the HIAB Method is the right way to overcome the difficulties. The firm bought its first HIAB as much as fourteen years ago, and since then it has bought a succession of new and bigger ones. It is currently using a HIAB 260 AW with a jib, a crane with extreme outreach which also, thanks to its high lifting torque, can cope with heavy loads even at a big radius. This HIAB is moreover fitted with a remote-control system, so that the operator can always stand where he will do the most good, i.e. where the load is. Without losing any time he can himself hook and unhook the slings with which the load is hoisted. It's also no trouble for him to load the craneless trucks that the firm uses for its formwork hauls.



The big crane lifts the boards straight up to a window in the room where they're to be used.

It's Got Everything

To begin with, the idea was merely to replace a 14-ton truck crane. The old one had done a good job handling the building materials, mainly plasterboard, that are supplied by Rigips of Switzerland. But then it struck the owners that there was potential for some ingenious refinements in the HIAB Method.

The result was one of the most advanced and well-equipped HIAB cranes ever delivered – a HIAB 190 with a double hydraulic extension augmented with a jib that has an *additional* hydraulic extension. On top of that it has a hydraulic rotator and a hydraulically operated pallet fork. All told, then, that crane has eight hydraulic functions! – and hose reels for functions 5–8. And yet it can be parked, in all its glory, behind the cab within the standard truck profile. An expensive set-up?

“Sure it's expensive – but it's worth it,” say the people at Rigips. “We get more assignments, and the entire credit goes to our new and up-to-date



delivery system. Our earlier equipment enabled us to raise the material to a window in the building. At that point the workmen had to take charge of it and lift it inside. It was a strenuous and often risky job, involving strain in awkward positions.”

This is the way it's done nowadays:

While the truck is being loaded, the driver and the firm's manager check through to see what handling equipment will be needed for the various deliveries. The buyer will have furnished them, at the time of the order, with a site plan from which they can see the floor on which the board is to be used.

A clutch of goggle-eyed spectators

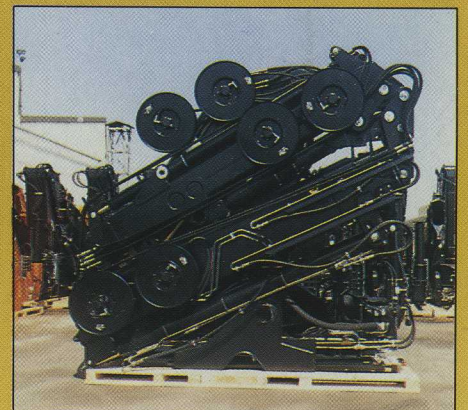
usually gathers on the building site when the driver unfolds his mighty crane and hoists a palletload of plasterboard up to a suitable window on the floor where it's to be used. And that's not all! The hydraulic fork stands the boards on edge and the rotator aligns them so that they can be inserted into the window opening using the jib extension. Over his walkie-talkie the driver receives instructions telling him exactly where to put the pallet down inside the room. A fork-lift truck takes them on from there to rooms that the crane can't reach directly. By that time, though, all the real hard work has already been done by the HIAB.

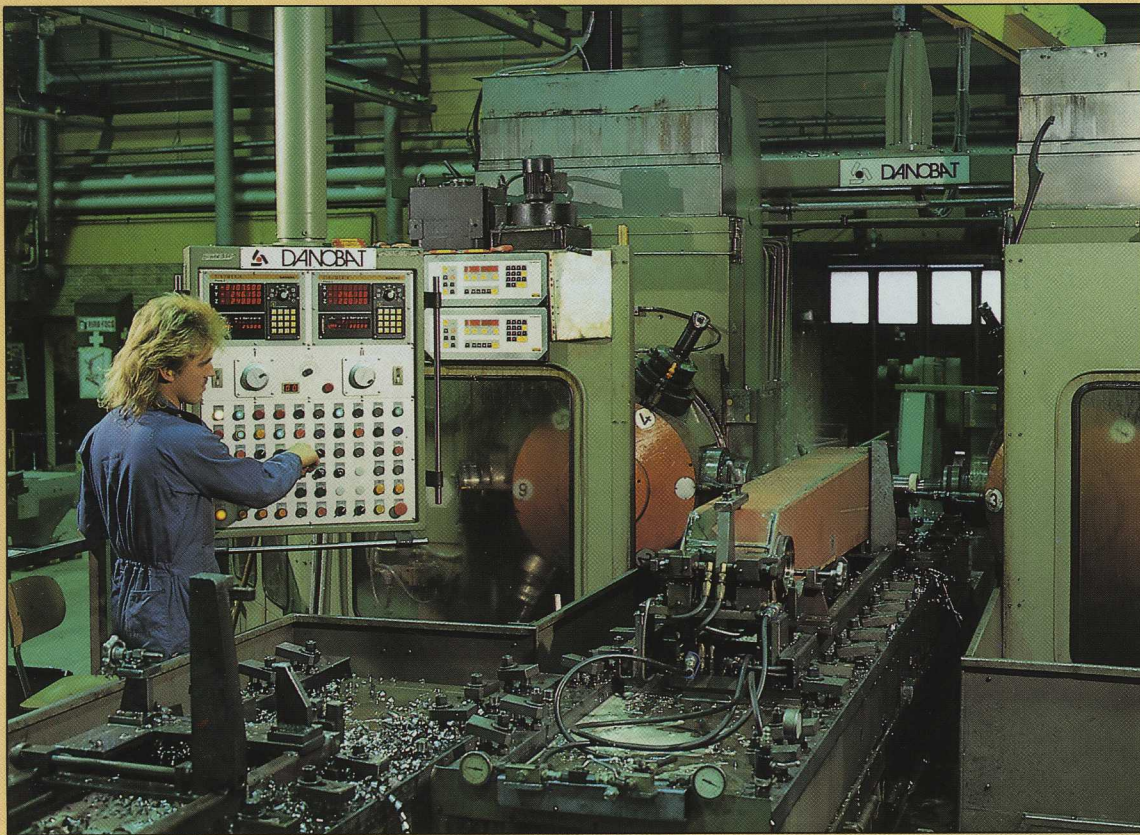


Rigips's HIAB 190 AWV is a very special crane, with no less than eight hydraulic functions and six hose-reels on functions 5–8.

The advanced combination is assembled at the factory and delivered all complete.

Despite its size and its enormous reach the crane can be folded away into the parked position within the regular truck profile.





Bodies and inner booms for the HIAB 070 and 080 are machined in the Danobat automatic milling and drilling machine.

An Impressive Develop

The Swedish town of Hudiksvall, 300 km north of Stockholm, was the birthplace of the idea whereby hydraulics are employed to exploit the engine power of trucks not merely for the actual haul but also for the operations of loading and unloading.

Inspection and testing are an important element in all phases of manufacture and assembly. The thickness of the chromium plating on this piston rod is being checked by precision measurement.



That bright idea bore fruit in the shape of the first HIAB crane, and the firm that manufactured it was christened Hydrauliska Industri AB, which was very soon shortened to HIAB. And in all essentials the development that since then has made HIABs and the HIAB Method familiar all over the world has taken place at the Company's facilities in Hudiksvall. And what an impressive development it has been!

Breakthrough in the Forest

Forestry counts for a great deal in Sweden – notably so in the area around Hudiksvall. So it was no more than natural that HIAB's development engineers should make it one of their first priorities to develop cranes to help in the heavy, time-consuming and labour-intensive job of handling lumber. The result was grapple loading by the HIAB Method, a complete system for mechanized roundwood handling from stump to mill. The new approach brought about a revolution in forestry transportation, first in Sweden and then in all other countries that had a forestry industry.

The HIAB Method's success in the forest opened the door into other areas. An intensive drive to develop

and improve the company's products raised them to a position of leadership, and since its absorption of Foco, Jonsered and other noted crane-makers HIAB-FOCO has long been predominant among the world's manufacturers of hydraulic truck cranes.

Biggest and Most Modern

From the very beginning, the bulk of HIAB-FOCO's development work and production has been carried on in Hudiksvall, where the facilities have been steadily expanded to become the world's largest and most up-to-date factory for the manufacture of hydraulic cranes. In the past ten years alone, the new additions have included a new welding bay, a new development laboratory and new central stores with facilities for reception checks. The factory premises today, including stores and warehousing, cover a combined area of about 28 000 m².

All the general cargo cranes except the two biggest are produced here, as well as Jonsered forestry cranes. HIAB 070, HIAB 140, HIAB 100 and HIAB 080 are the volume leaders. A total of just over 630 people work in the factory and at HIAB-FOCO's



An FMV 240 with a hydraulic extension on a hydrostatically driven 9-tonne truck – a high-capacity combination for small-scale professional forestry.



The FMV 290 has a slewing system featuring double hydraulic cylinders in an oil bath. Seen here is the assembly of the short-king post version.



Precision working in modern machines is essential to the high quality of FMV-cranes.

ment

Head Office, which is also located in Hudiksvall.

Automats and Robots

In the pioneering days of the 1940s, the main task involved in manufacture was the careful fashioning of components from plate steel by welders. To this day, welding remains a prominent feature of production, but most of it is now done by sophisticated automatic welders and robots. A growing proportion of the manufacturing job consists of complicated operations in highly specialized machining centres featuring high precision and very advanced automation. In the last few years alone the factory has invested in such items as a two-spindle special boring machine, a plasma cutting machine, a welding robot with joint tracking, a computer-controlled measuring machine and a machining centre with fifteen palettes for unmanned operations.

Just recently, the assembly department has also undergone alterations so as to permit a successive shift to production governed by incoming orders.

Without Parallel

Here too are resources for product

development and quality control that no other crane manufacturer can match. These are aspects of the business to which the Company has always attached great importance. The very first issue of METHOD, 23 years ago, carried an article on HIAB's "experimental shop". Seen from today's horizon the equipment and the methods that it employed look pretty primitive, but its "experiments" nevertheless resulted in thoroughly tested and technically advanced designs, effective checks on materials and a level of quality that put HIAB products far ahead of competitors.

Smallholders with Big Ideas

Besides Hudiksvall, HIAB-FOCO has another Swedish manufacturing unit at its subsidiary company Forshaga Mekaniska Verkstad, in the province of Värmland. FMW is about the same age as HIAB and took up crane manufacture in the mid-1950s. Throughout its existence it has catered primarily for farmer-foresters who, though their operations were small, were keen to have up-to-date professional equipment.

In the 1960s the firm brought out some lightweight grapple-loading equipment and began collaborating with Jonsered, which in 1975 went in as a part-owner. When Jonsered was incorporated into HIAB-FOCO in 1979, FMW also became part of the Group. The firm has its own depart-

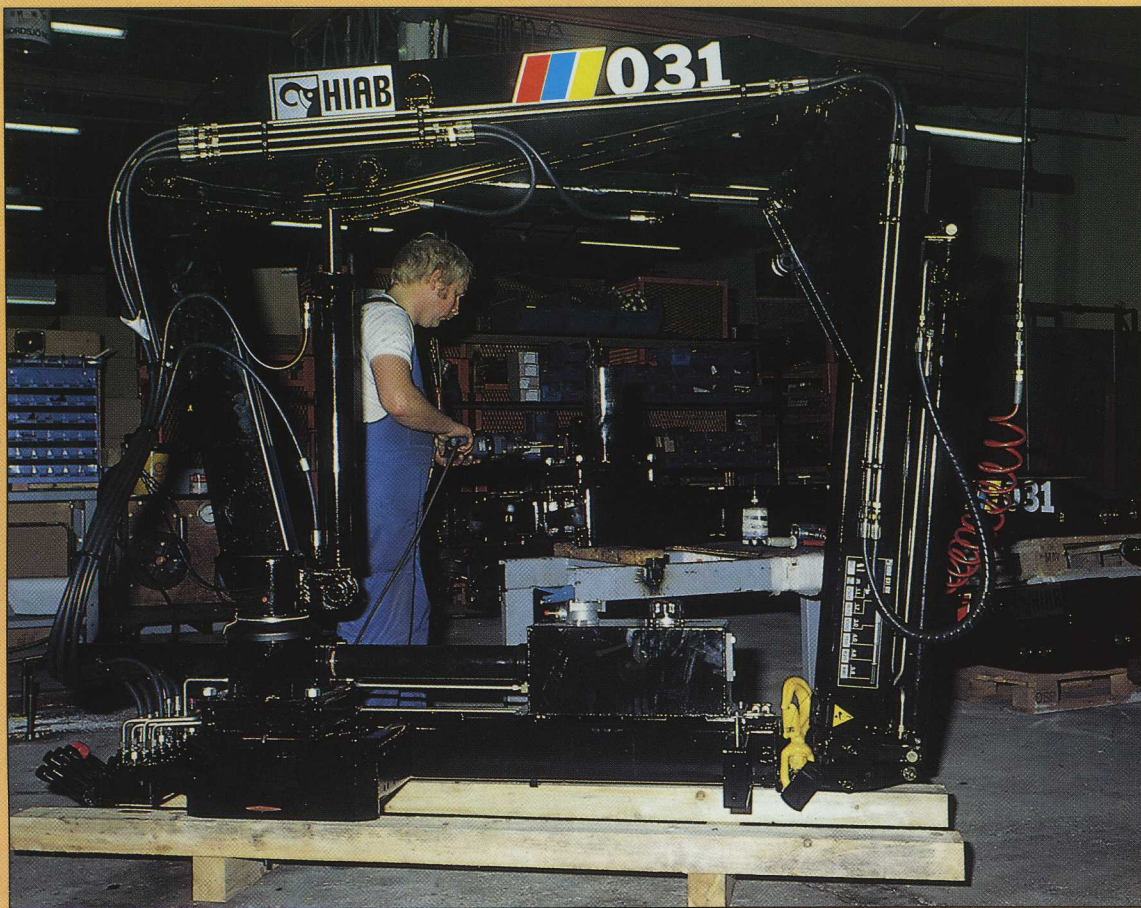
ments for designing, product development and crane testing.

On Tractor or Wagon

The current crane programme comprises five main models, from the FMW 230 with a gross lifting torque of 2.3 tm to the FMW 460 of 4.6 tm. The smallest model is mounted either on the three-point suspension of a farm tractor or on one of the forest wagons that the firm also markets. The larger models are mounted on a wagon or in some cases on the cab roof or four-point base of the tractor. Occasionally an FMW crane is mounted on a small forwarder.

The three largest models, the FMW 290, 350 and 460, constitute the new generation in the firm's crane programme. They're professional forest loaders in the capacity class next below the Jonsered. They're made in twelve different versions and features include double slewing cylinders in an oilbath, lifting torques from 2.9 to 4.6 tm, and outreaches between 5.5 and 7 metres. The FMW 290 and 350 have the hydraulic cylinders mounted on top of the crane boom, which reduces the risk of damage to the hydraulic cylinders. About 50% of FMW's crane output is exported.

As noted, FMW's forestry programme also includes forest wagons, some towed and some with their own motive power, with load areas between 1.7 and 2.6 m². Besides this the firm produces grapples, winches and other accessories.



The largest of the HIAB Light Cranes that are manufactured in Lem on the west coast of Jutland are fully developed articulated-boom cranes. This HIAB 031 is being given final adjustments before dispatch to the buyer.

The Smallest and the Biggest

The development of the HIAB Method is moving not only towards bigger cranes that can lift more and reach further; in recent years there has been noteworthy progress in the other direction as well, i.e. towards smaller and lighter cranes that extend the many advantages of the HIAB Method to the millions of small, lightweight trucks that account for a considerably larger part of transportation and handling as a whole than people generally realize.

In recent issues of METHOD there have been occasional articles on the capabilities of HIAB Light Cranes or HIAB-FOCO's small cranes. It has emerged that they do the same fine job of work as the bigger models, the only difference being that the loads and the vehicles are lighter. The time-saving, the economy of labour, and the reduction in the risk of accidents and of damage to the goods are fully on a par with what the HIAB Method

achieves in the larger classes.

Factory in Lem

HIAB Light Cranes are made by HIAB-FOCO's Danish subsidiary HIAB Export A/S, headquartered in Humlebaek outside Copenhagen. The firm was launched in 1982, and the factory in which the lightweight HIABs are made is in the little town of Lem on the west coast of Jutland. Before it was purchased by HIAB Export A/S in 1986 it formed part of Vestas A/S, noted among other things for its wind-power plants, which are highly productive here on the flat Danish countryside, swept by the North Sea winds.

All told, HIAB Export A/S employs some fifty people. The head office in Humlebaek looks after administration, export business and export service along with technical documentation. At the Lem factory, some forty employees annually turn out over 2000 lightweight HIAB cranes, with lifting torques between 0.7 and 3.0 tm. In line with HIAB-FOCO's ceaseless drive to maintain and enhance the high quality of its products, HIAB Export A/S has in

recent years developed and implemented an advanced quality-control system that embraces all the functions of the business: development and design, material purchasing, manufacture, inspection, marketing and service.

The Biggest

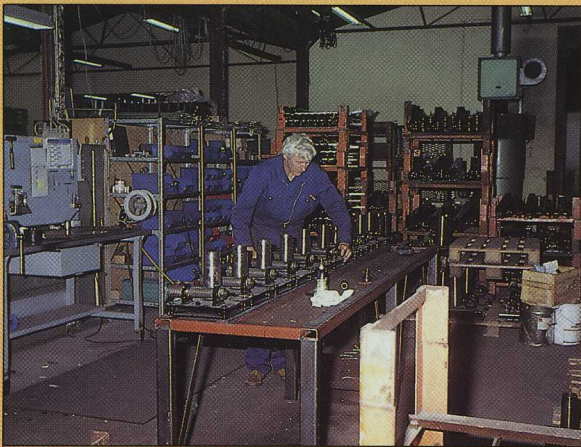
Zaragoza in Spain, 325 km north of Madrid, is where the biggest HIABs are made. The factory there belongs to HIAB-FOCO's Spanish subsidiary company HIAB-VALMAN S.A., which has its head office in Madrid. The company assumed its present form in 1977, when HIAB-FOCO merged with one of Spain's leading crane-makers, Talleres Valman S.A.

The modern factory, aggregating about 10000 m², was built in 1973. The HIAB 190, the HIAB 260 and the HIAB 200 SeaCrane are manufactured here. The plant also makes Valman cranes in eight different models. The up-to-date machine line-up includes a number of numerically controlled machine tools and a newly installed advanced welding robot which among other things performs



More than 2 000 cranes with lifting torques between 0.7 and 3 tm are made annually by HIAB EXPORT AIS in Denmark. The business is administered from the head office in Humlebaek, outside Copenhagen.

The picture below shows the assembly of a base for a HIAB 011.



the tricky interior welding job on the crane base.

The Zaragoza plant employs about 150 people, while another 70 work at the head office in Madrid and at branch offices elsewhere in Spain.

Accessories

The versatility and worldwide success of the HIAB Method are not borne up by the HIAB cranes alone. In many connections, hydraulic or mechanical attachments and accessories are just as important. A large proportion of them are designed and manufactured at HIAB-FOCO Accessories in Meppel, Holland. The plant produces grabs and buckets of various kinds, pallet forks and so on for HIAB cranes all over the world. The HIAB-Rolloader is another speciality of the Meppel plant, which is currently undergoing an extensive modernization scheme. Among other things, the design department has been given a CAD system of the very latest pattern, while new and advanced painting equipment along with welding robots and other special machines have been installed in the production departments.

Hydraulic tools and attachments are among the products of HIAB-FOCO's facility in Meppel, Holland.



Where outreach and lifting capacity would otherwise fall short, a HIAB Rolloader solves the problem. This product, too, is manufactured in Meppel.



A huge press bends the heavy-gauge plate to form the hexagonal section for the boom systems of the big cranes.



In Zaragoza, too, they devote ample resources to ensuring quality. This department checks parts as they come in from suppliers.



The final-assembly shop produces an average of five cranes a day.





Your Man in Hudiksvall

Today's HIAB cranes are advanced products, often specially equipped for peak efficiency and profitability. A machine like that simply must work. Every hour of unplanned idleness costs the user good money. The goal that HIAB-

FOCO's service organization has set itself is to prevent such things from ever happening, and to put together the resources to deal with them as quickly as possible if they ever do happen.

The part of HIAB-FOCO's servicing work that the crane-owning customers are most apt to see is the "field service" - the Company's world-embracing network of about 1500 service workshops and a fleet of service vans that can quickly get to practically any of the hundred of thousands of HIAB and Jonsers cranes that are

scattered through pretty well all the countries of the globe. These huge resources have been built up and are maintained by HIAB-FOCO's service department in Hudiksvall. There are five service inspectors, each responsible for the servicing work in "his" part of the world. Their desks are in Hudiksvall - that's true! - but they spend a very large part of their working time - meaning 75-100 days a year - out and about in the various markets.

Reporting Back

One of the most important tasks of the service inspectors is to make a reality of communication between the market service organization and the Head Office. It's their job to flush out and report any hitches that occur in service operations and to propose and implement the necessary changes. They have another duty of much the same kind as regards the cranes themselves. The reports that the service inspectors turn in concerning the functioning, performance and servic-

ing requirements of the different crane models out in the various markets constitute one of the most important sources of inspiration for the product modifications with which the Development Department is always busy.

Training and further training for all service personnel is also among the responsibilities of the service inspectors. They provide it by laying on courses in the individual markets, which they conduct in person, and by fielding instructors who themselves are trained by the inspectors at conferences which are held both centrally in Sweden and regionally in various parts of the world.

30 Tonnes a Week

Another important element in the after-sales operation is the supply of spare parts. In addition to the great volume of spares that is held in stock at workshop stores and branch warehouses in the field, the Head Office's Spare Parts Department deals with



Anders Berg, head of HIAB-FOCO's after-sales department.

HIAB-FOCO's new spares stores hold about 18 000 parts and despatches about 30 tonnes of spare parts each week.

about 30 tonnes of spares each week. Almost half of these are express orders, meaning that they concern a spare that the orderer either does not stock or is temporarily out of, and

doesn't show up so much on the outside is technical documentation.

Long Experience

The Department employs only six people, but on the other hand they're

HIAB-FOCO's after-sales organization is on hand wherever HIAB or Jonsered cranes are in action. The pictures below come from the general agent in Britain, George Cohen Machinery Ltd. They show a service workshop (left) and one of the company's service vans (right). In all the service organisation in Great Britain and Ireland has around ten workshops holding the "long list" of spare parts in stock and also some twenty-odd service engineers.



which is not available from any point closer to hand. Such orders are dealt with at once, meaning that the wanted part is despatched by air at the latest on the following day.

The Spare Parts Store employs 16 people who keep tabs on about 18 000 items occupying some 5 500 m² of floor-space. It holds a complete stock of spare parts to suit each crane model for at least ten years after it goes out of production, or for as long as the demand is there – which is generally a good many years more, for HIABs don't give up easily.

20 Years after Manufacture

Tens of thousands of units of the old HIAB 174, which was introduced in the mid-1960s and became the world's most-sold crane model, are still on the go all over the world. These cranes, which are now getting on in years considering that production was phased out in 1969, naturally need a spare part now and then, but they continue to do a good job. So the people in HIAB-FOCO's After-Sales Department reckon to keep certain vital parts for the "174" in stock for a good while yet – certainly for more than twenty years after the model went out of production.

Workshops, fitters and spares are what the crane-owner normally thinks of in connection with servicing, but they're only part of the picture at the HIAB-FOCO After-Sales Department. Another important job that

highly qualified folk with lengthy experience of HIAB-FOCO. Between them they produce all the technical software that HIAB-FOCO puts out on its products. They prepare manuals in eight languages on all crane models, service documentation in five languages, spare-part catalogues in three languages, and much else. Since the products are undergoing modifications and improvements all the time the revision of all this documentation is a never-ending process.

The Department also functions as a home-based support organization for the field-service people. It receives reports on the lessons learned in servicing work in the various markets, and these reports provide the foundation for new or revised service instructions.

Knowledge Bank

Given the long experience of its personnel, the Technical Documentation Department is also an invaluable source of information when it comes to the older products. At its disposal is an unmatched drawings archive containing complete documentation on all crane models the Company has ever made.

The spare-part function, too, receives support from this Department. This is where all new spare parts, all modifications and supersessions and all standardization measures are registered. The staff also

draft model spare-part stocks for products, for service workshops and branches, and so on.

HIAB-FOCO's Service School is another unit that comes under the Technical Documentation Department. The School trains service fitters for workshops in Sweden; it's also the venue for general and more advanced hydraulics courses, courses on forest-crane hydraulics, special courses for workshop foremen, etc., and courses for HIAB-FOCO representatives from all over the world. The numerous courses that are arranged abroad also receive support from the Department in Hudiksvall.

Inventory Control and Guarantee

The Inventory Control Department ensures that HIAB-FOCO's spare-part inventory is optimally dimensioned and constituted. The six-man staff ensure that spare parts are procured to the right amount, at the right time and in the right quality; they also make sure that delivery times are honoured and they shoulder the responsibility for stocktaking, modifications and supersessions, projections and production plans.

HIAB-FOCO's guarantee undertakings are likewise a matter for the After-Sales Department. Three people are kept busy monitoring all claims under guarantee, pinpointing any faults, and urging improvements, both in the Company's own products and in those of its suppliers.

The Customer's Spokesmen

"We see ourselves as the customer's spokesmen with the manufacturer", that's the way it's summed up by the head of the After-Sales Department *Anders Berg*, and the fact that the Service Department is represented in the Company's top management says a good deal about the importance that HIAB-FOCO attaches to that kind of liaison.

Even though our present-day products are rather complicated, our policy is that the crane-owner must be able to carry out all normal servicing for himself. The idea is that we shouldn't have to step in until something has gone wrong – but that we should then move with speed and efficiency. Our aim is to conduct after-sales work in such a way as to convince our customers that HIAB-FOCO is a supplier they can trust, that we sell cranes they can rely on, and that we offer the kind of service in which they can have confidence.

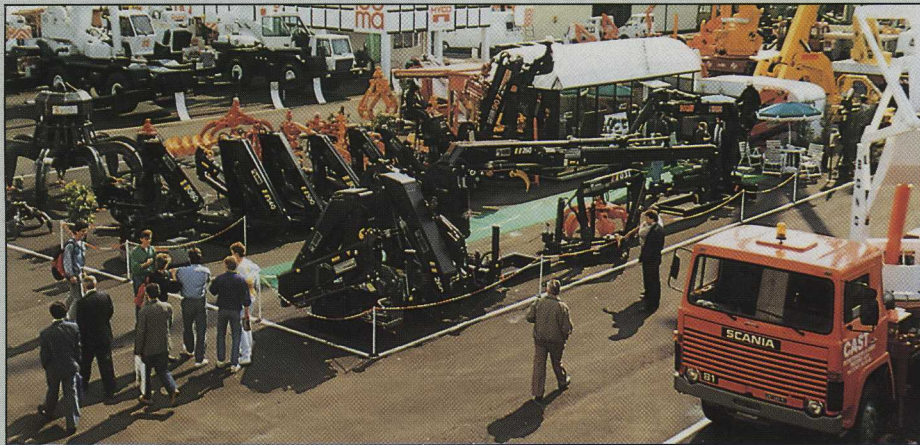
Section S



Bring on the Bulls . . . Let's Have a Party!

You can't have a real party without a bullfight – or that's what they say in many parts of Spain, including Zaragoza. So when HIAB-FOCO's Spanish subsidiary HIAB-VALMAN S.A. celebrated its tenth anniversary it was time to bring on the brave bulls. But don't run away with visions of "Blood and Sand" or "Death in the Afternoon"! – events of this kind are quite harmless, at any rate for the bulls, and usually also for the amateur matadors who

venture into the arena. The latter carry neither sword nor muleta nor any other of the bullfighter's usual trappings, whereas the bulls do have their horns – even if they're small ones. On this occasion, however, nobody got hurt, and in due course all 210 employees attended a riproaring celebration at a restaurant. Which one? "El Toro!" – where else?



The HIAB Method in Verona

One of the most important exhibitions devoted to machinery and other equipment for building and civil engineering is Samoter, of Verona – Romeo's and Juliet's home town in Italy. The last one was in the autumn of 1987, and HIAB-FOCO, through its Italian general agent Hidrocom of Milan, was on hand with a representative display of its product range from HIAB Light Cranes to the biggest piece-goods cranes, along with Jonsered's forest loaders, the HIAB SeaCrane and a selection from the firm's long list of mechanical and hydraulic accessories and attachments. If Romeo had been among the throngs of visitors he could have picked up some really fresh and dramatic ideas about how to tackle the balcony scene.

Jonsered in the GDR

HIAB-FOCO recently conducted the first symposium to be held in East Germany on modern forest transportation featuring grapple loading by the Jonsered method. Some thirty forestry experts came from all over the country to attend first a run-through of the theory at a hotel in Leipzig and then some practical demonstrations in the woods south of the city. Jonsered cranes are a familiar sight in East Germany, where a number of them have long been at work as railborne sorting cranes in sawmills. Over the past two years East Germany has taken delivery of 26 heavy Jonsereds – 15 and 25 tm.



HIAB at the IAA



Frankfurt's "Internationale Automobil-Ausstellung", the International Motor Show, has been a fixture of the transport world for so long that even METHOD has to regard itself as a newcomer by comparison. In September 1987, this the premier fair of the automotive trade opened its doors for the 52nd time, and it goes without saying that everything and everybody with any sort of standing in the transport context was represented. HIAB-FOCO's flag

was carried by its subsidiary in West Germany, which exhibited the Company's products on 700 m² of floor-space. A life-size sculpture of an elephant has for a number of years been familiar to fair-goers as the "landmark" that shows the way to the "JUMBO Meeting-point", where some fifteen people are on hand to disseminate information on HIAB's and Jonsered's cranes and on Multilift.



Well-equipped

The versatility of the HIAB Method is such that its users are to be found in a wide variety of industries. In the U.S., many of these industries have annual fairs and machine exhibitions that afford excellent opportunities for HIAB-FOCO's representatives to meet their customers and get to know their handling problems better. And of course, they seize the chance to display their products. This awesomely well-equipped demonstration trailer is used on such occasions by HIAB-FOCO's U.S. subsidiary. It boasts a HIAB 190, a HIAB 260, a HIAB 140 and a HIAB 070.

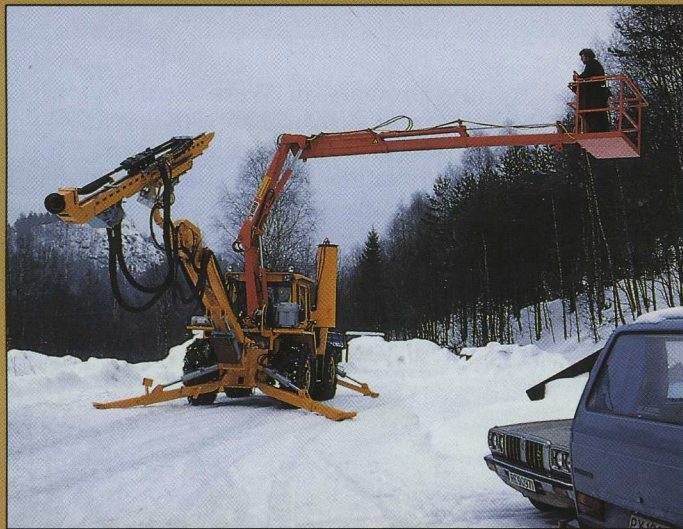
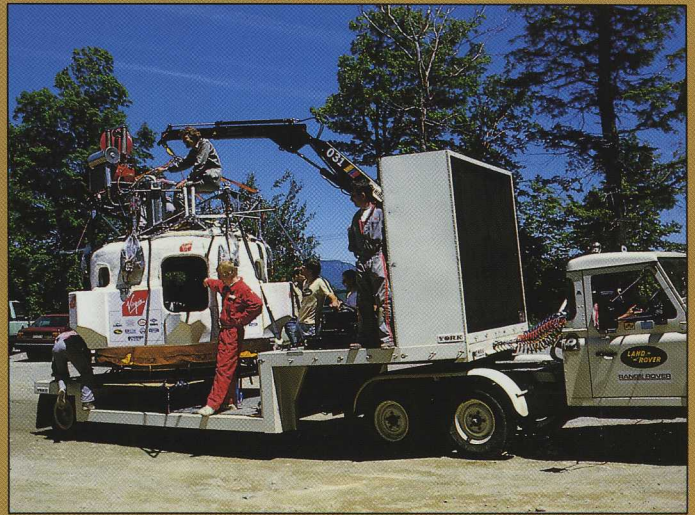
Familiar to Seafarers

Nobody knows for sure just when the HIAB Method went to sea and a HIAB crane was mounted for the first time aboard ship. But one thing's certain: it was a good long time ago – and well before the specially developed HIAB SeaCrane came off the stocks. By today, these machines are familiar to all who are concerned with marine handling, at sea or in dock, and this picture shows them making new friends at a show in Gothenburg a while back.

Method Hoists

A Lift Before Lift-Off

When the Virgin Atlantic Flyer set a world record for hot-air balloons by crossing the Atlantic from the U.S. to Ireland a HIAB 031 was an important item in the equipment. No, not on the flight itself, but very much so in the preparations. The crane, which was on loan from George Cohen Machinery Ltd, HIAB-FOCO's general agent in Britain, was first used during the early stages in England, where the balloon was made, and was then flown along with all the other equipment over to the U.S., where it took part in the work on the take-off site in Maine on the east coast.



Rational Tunneldriving

This handy and efficient tunnelling rig features an MB-TRAC 1300 mounting a rock drill and a 9-tm HIAB with a personnel basket. It's at home in Norway, where they use it in drilling operations for cuttings and tunnel headings. The personnel basket is used in "scaling", which is the operation of removing loose and dangerous pieces of rock from the tunnel roof, and in rock-bolting. The basket can reach to 11 metres above ground level.

Two Veterans

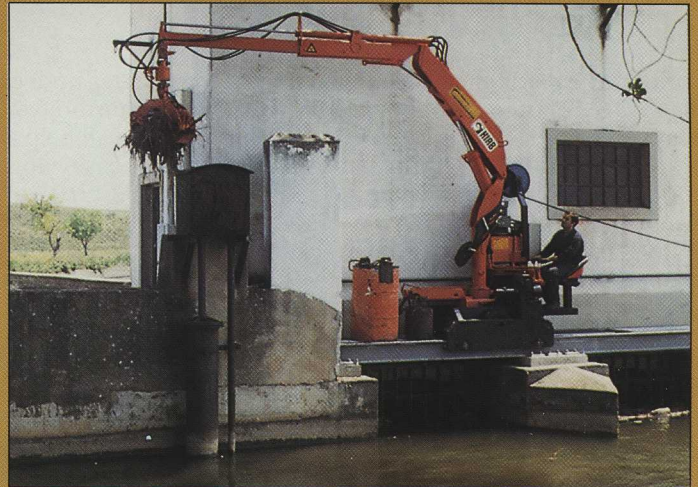
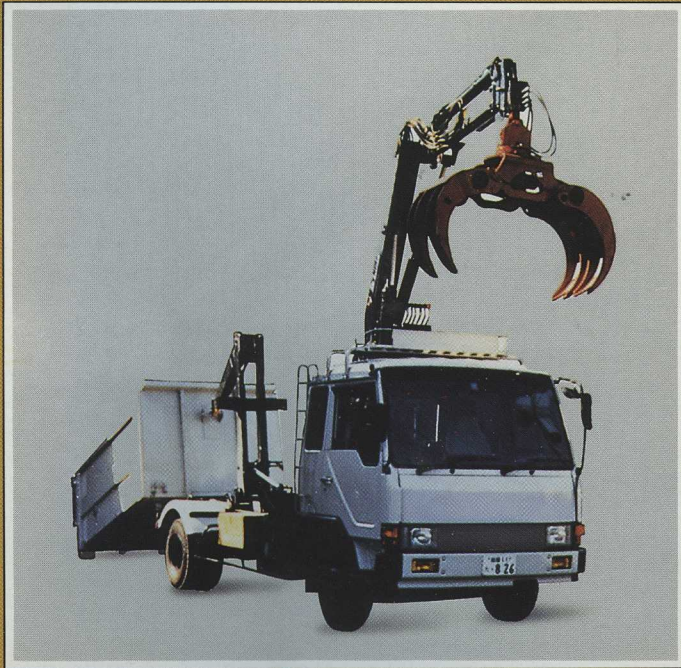
Vintage cars are a pretty exclusive hobby, but it's even more exclusive to go in for vintage trucks. And a vintage truck mounting a contemporary crane is a real rarity. Here are two for the enthusiasts. The Volvo LV 127 timber truck dates from 1947, and the crane is a HIAB 190, of which 15000 were made between 1947 and 1954. The

outfit was put on display by the Swedish Haulage Museum on the occasion of the London-to-Brighton rally for veteran trucks. The second specimen is a fine little Borgward from 1954 with a HIAB 192. It has been renovated by Mats Pontinder, who has accurately reproduced the green finish of the early HIABs.



Keeping a Clear Head Race

The strainers that keep branches, leaves, bottles and other flotsam out of the turbines of hydroelectric power stations would soon clog up completely but for regular cleaning. The HIAB Method offers the most effective means of doing the job. This Spanish arrangement uses a 6-tm Rol-loader-mounted HIAB with a hydraulic grab. The hydraulic pump has an electric drive.



East Beats Waste

A highly efficient and labour-saving handling system for industrial wastes has been developed in Japan. It consists of a HIAB 070 with a scrap grab, mounted on a 4-tonne truck which also has a Multilift exchangeable platform. The lighter wastes are dumped straight into the container. The more unwieldy stuff is deposited next to it, and is loaded by the crane and grab when the truck calls to change the container.



Dropping Topping

The quantities that are involved when damage to road topping is being repaired with hot asphalt concrete are often small. One truckload is enough for dozens of small repairs, and the workmen usually take what they need straight off the truck. But this method gets to be laborious and slow as soon as they need more than the odd shovelful. At such times, this Danish application of the HIAB Method is a winner. A HIAB 140 with a hydraulically operated bucket unloads just what's needed at each point.

"We Use 'Em Ourselves!"

T. Vorpenes & Co. A/S is one of HIAB-FOCO's district representatives on the west coast of Norway. The firm doesn't just sell HIABs - it also uses them in its own operations, which extend to the repair and servicing of contractor's and agricultural machinery. It has four mobile workshops to do its field servicing, and three of them are equipped with a HIAB 130 for handling the heavy components such as engines and gearboxes.



Nothing is permanent. Not even the concrete in our bridges is immune to the ravages of time. Sooner or later, its strength deteriorates. Thicker traffic, heavier vehicles, road salt and growing air pollution all help to hasten the process. So bridges need regular check-ups. That's easily done on the top but the underside is a good deal trickier. And the best trick in the bridge inspector's book is the HIAB Method. All the larger HIAB cranes (with a double-articulated boom system) can be fitted with a hydraulically operated boom extension, a "jib", which gives them a third articulation. So you drive your truck-borne HIAB onto the bridge and extend the boom over the railing, down the side of the bridge and in underneath it. If you've attached a personnel basket to the jib your problem's pretty well solved. All that remains is to equip the crane with DigiDrive remote control so that the inspector himself can operate the crane and make the basket take him wherever he wants to go.

