

METOD

HIAB

Metod No. 13

A magazine featuring the HIAB Method and its applications



Science fiction isn't only space adventures

Imagine an ordinary combine harvester, but a hundred times bigger! A mobile factory, in effect, that makes its way slowly across a felling tract.

The gigantic machine is propelled by a complicated system of caterpillar treads, supporting legs and other motional components that even out topical irregularities and make allowance for sloping ground.

With its enormous mobile chopper arms, extending fifty yards or more in both directions, the machine fells every tree as it moves stealthily on. Its huge jaws open to swallow whole trees. Twigs and bark are peeled off, ground up and spread out over the entire felling width. Under the harvester, scarifiers and fertilizer units prepare the soil throughout the full width and at the same time the area is replanted by a mechanical planting machine.

In the bowels of the machine, the thick logs are sawn up and the pulpwood is dealt with in the chipper, together with the sawmill waste. In different processing departments, the machine turns out a complete range of finished products such as dried sawn timber, pulp and board. These are collected and carried away by special helicopters landing on top of the machine.

The helicopters take the products direct to the paper mill, the building material stores, the furniture factory, the export terminal or to other consumers. On the return trip they bring back supplies for the machine—fuel, fertilizer, sapling plants, etc.—and also carry the machine crews in and out, as the machine must never stop working.

A forest harvester like this has so many attractive features. Transportation is no longer a problem, as only dry timber and dry pulp are carried, whereas in regular roundwood haulage we also bring along the bark and enormous quantities of water as well. There's no need for any road-making now: the helicopters handle the goods with the most efficiency.

Twigs and bark don't cause any trouble. They stay where they belong on the regrowth soil, unless we prefer to burn them up, utilizing their calor-

ific value to supply at least a little of the enormous quantities of power consumed by this veritable giant of a machine.

The waste products spilled out from the machine undoubtedly pose far less of a problem when it comes to conservation of natural environments, as they are simply spread out over a wide area instead of being concentrated in huge piles at permanent destruction stations.

Who knows, this huge forest harvester, this fantastic creation arising from a vivid imagination, may turn up in reality one of these days, although right now we no doubt laugh and shake our heads. People were sceptical in the 1880's, too, when Jules Verne wrote about the "Nautilus".

One thing, however, is perfectly clear—that the forestry sector will see some great changes in the future. In point of fact, we haven't really made all that much progress so far. It's true enough that labour-saving machines have taken the place of horses and of the muscular lumberjacks of bygone days. But fundamentally, our ideas haven't changed much.

But joking aside, are we really taking maximum advantage of the possibilities already open to us when it comes to rationalizing our everyday work in the forest? Are we prepared to look into and try out all the new technical solutions and all the new methods presented to us? Have we succeeded in shaking off that harmful conservatism that so frequently retards progress.

Have a good laugh by all means as you read this article. But behind the jestful surface there is a serious intent. We have purposefully stirred things up a bit, believing as we do that there's often a lot to be gained by trying to think without any preconceived ideas. But this is by no means easy, especially in our own line of business.

This issue of *Metod* is largely devoted to forestry. We have felt the pulse of forestry in England, in Germany and in Finland, Europe's foremost forest country. ■





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Hiab Metod No. 13

A magazine featuring the Hiab Method and its applications, published by Hydrauliska Industri AB, Hudiksvall, Sweden

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Cover

The colour picture on the cover shows one rear-mounted HIAB 177 loading two vehicles somewhere in the forests of England. See story on pp. 4-6.

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Metod No. 14

The next issue of Metod will be international with news from various countries. The spotlight will this time be on the way Hiab products are exhaustively tested and proven before they are put on the market.

90-95 tons of pulpwood a day

A HIAB 177 with high seat controls, rear-mounted on a 6-wheel Dodge, is handling between 90 and 95 tons of pulpwood a day in the Kielder Forest—the largest in England.

The unit is used primarily to collect timber from dumps scattered in the forest, carrying 12–13 tons at a time to a hard landing at the forest gate. Here it transfers the timber to 20-ton trailers, pulled by a Volvo articulated tractor unit. Once fully loaded, the trailers begin the 75 mile haul to the £6 million Thames Board Mill at Workington, Cumberland.

The firm—Hugh Thompson of Beltingham, Northumberland—works to a loading-transport schedule that makes maximum use of the Hiab's potential, using two articulated trailers. A fully loaded trailer leaves for Workington every morning, normally completing the return journey to Kielder by mid-day—by which time the Hiab-Dodge unit has loaded the second trailer. This is coupled to the Volvo, which makes an afternoon trip to Workington. The empty trailer is then loaded ready for the next morning's journey. In between times,

the loader also loads 12–13 tons of timber on a Bedford 6-wheeler, which makes the haul to Workington once a day.

It takes about 30 minutes to load the Dodge in the forest and only a little longer to transfer the load to the trailers—the logs must be stacked carefully for road travel.

Thus, three drivers transport between them around 55 tons of pulpwood a day. But the Hiab handles at least 90–95 tons a day, loading the Dodge four times, transferring the loads to the two trailers and loading the Bedford once.

Moreover, the Hiabs have kept up this pace day in, day out for three years without so much as the loss of a single day for servicing, all of which is carried out overnight.

A variant of this loading-transport system has been adopted by Robert Waugh of Annan, Dumfriesshire, who hauls both pulpwood and mill timber from forests in South West Scotland to Workington, using two HIAB 177s mounted on Albion Reivers, each paired off with another Reiver.



The next stage of the Kielder Forest load-delivery cycle. The Hiab off-loads the timber onto a waiting trailer, which is hauled by a Volvo tractor unit to the Workington board mill some 75 miles away.



Flexibility is the keynote in any timber-handling system. Here at Inverinate, one Hiab loads two vehicles.

A HIAB 177, mounted behind the cab of a Dodge, at work in the forests around Inverinate, on the West coast of Scotland. This is one of the forests that serve the Wiggins Teape pulp and paper mill at Fort Williams supplying up to 1000 tons of pulpwood a day.





A HIAB 177, rear-mounted on a 6-wheel Dodge, picks up timber from dumps in the Kielder Forest. During the working day it collects four loads, each of around 12-13 tons, taking no more than 30 minutes to complete the pick-up.



Here the unit of one of Robert Waugh's two pairs of Albion Reivers picks up mill timber after having loaded the other unit with pulpwood.



By letting two lorries operate as a pair, one of them equipped with a HIAB 177 which loads both vehicles, Robert Waugh of Annan, Dumfriesshire utilises the full capacity of the loader. Usually the pulpwood is loaded on the lorry without loader (pictures above and below) and the vehicle carries the mill timber. Loading is done in the afternoon and the 50 to 120 mile haul to Workington takes place in the morning.



In this way, each one loads two vehicles from widely scattered dumps along the forest drive ways. When the vehicle must collect both mill timber and pulpwood, the lorry is normally loaded with mill timber and the other Reiver with pulpwood, the load in both cases being around 12–13 tons. Pick-ups are usually done in the afternoon ready for the morning haul to Workington—and in this instance the journey may be anything from 50 miles to 120 miles.

The quality of the timber from Kielder Forest and other forests on the Scottish border was one of the key factors which determined Workington as the site for the Thames Board Mill. These forests are mainly planted with spruce, pine, Douglas fir and larch, all of which have excellent natural strength—and the first three have a good colour requiring only a fine lining of bleached white pulp to produce a board as white as any on the market.

The Workington factory, which came into production in December 1966, can rightly claim to be one of the most

modern and technologically advanced pulp mills in the world, using a new refiner groundwood process—originally developed for newsprint—that produces a long-fibre pulp and results in a board of considerable strength.

Workington is the second major mill to open in Great Britain in recent years—the other is the Wiggins Teape Group's £20 million pulp and paper mill at Fort William, on the banks of Scotland's Loch Ness. This one mill can handle 1,000 tons of logs a day, drawn from forests throughout the Scottish Highlands. By 1980, this daily tonnage could well be doubled.

Once again, the Hiab is playing a key role. With a trained operator is can load 14 tons of logs onto an articulated vehicle in under 30 minutes. The HIAB 177, with a 21 ft. outreach and special timber grapple, is the model mainly used by the haulage firms under contract to collect and carry timber from the forest to the mill.

The lorries work up to 11 hours a day, five or six days a week, driving deep into the forests along winding

mountain roads to pick up timber placed at regular intervals along the verge—and it is essential that the driver should be able to load his lorry without relying in any way on outside help.

As in other forests, the lorries frequently work in pairs, enabling one Hiab to load two vehicles.

The Wiggins Teape project has brought prosperity and employment to an area of Britain that, for generations, has been eroded by depopulation and which faced the prospect of becoming a derelict province, relying almost entirely on the tourist industry. It more than justifies the far-sighted policies of the Forestry Commission which, in 50 years, have made Britain a timber-producing country—although admittedly on a comparatively small scale.

But, after 400 years in which Britain's forests were steadily denuded by boat-builders, charcoal-burners, sheep-grazers and pit-owners, the forests are once again expanding—and at a rate greater than at any time in the country's history. ■

One further picture of the system adopted by Robert Waugh, the Annan firm of haulage contractors. Two vehicles—one with a HIAB 177—are normally sent into the forests, the HIAB loading both trucks with either mill timber or pulpwood, handling up to 26 tons of timber for the double load.



Forestry hauls on new roads

Ten years or so ago, when tests were first carried out in Germany with truck-mounted loaders for road transport of roundwood, no-one was prepared to prophesy about the effect they were likely to have on transport developments. The Hiab Method had, true enough, already won universal acceptance in the timber-producing countries of northern Europe, but the fundamentally different conditions prevailing in the forests of central Europe meant that the method had to provide new proof of its merits.

Nowadays, foresters and roundwood hauliers in Germany, too, are thoroughly familiar with the Hiab Method. This speedy breakthrough was achieved through the active initiative of Hiab, who stood at the head of mechanical-loading developments and has done much to rationalize roundwood haulage too. Hiab has carried out innumerable demonstrations of roundwood handling all over Germany and has really gone in for experimentation and for the development of methods suited to the particular conditions encountered in the forests of central Europe.

Mostly by road

In practice, the Hiab Method is currently employed in Germany for road haulage of softwood and broadleaf timber, mostly veneering timber. Hiab loaders are also used to make up loads for cross-country haulage, but hitherto the vast majority are employed in road transportation.

As a rule, German forest-owners and hauliers prefer the HIAB 177, which is designed specifically for roundwood handling and which in combination with the efficient, hydraulic roundwood grapple—one of the numerous useful attachments on the Hiab programme—is the ideal outfit for all timber-handling tasks.

Boom dipper

The novel features recently introduced for this loader, such as the 410° slewing angle and the hydraulic extension with automatic boom dipper, have received a warm welcome from the professionals. The boom dipper, in particular, satisfies a special need in the German forests, as it not only gives a



generously increased outreach but also improves the manoeuvrability of the boom close to the kingpost.

The boom dipper is particularly useful for loading short logs, which are still very common in Germany, though no doubt it is merely a matter of time before short-timber haulage is given up there, too. There is a very definite trend towards longer lengths—22 feet or more. This development paves the way for rational timber handling.

Felled-length timber loaded safely

Will transportation of felled-length timber be the predominant method used in the future. Well, judging from the number of loaders already being used for this purpose the answer is definitely "Yes". More and more winch equipment of the traditional kind is being replaced by rational, up-to-date loading procedures, based on the HIAB 177.

The advantages of mechanical handling, however, are not confined to sav-

ings in time and manpower when it comes to loading felled-length timber. The ever-present element of risk in winch loading is practically eliminated. The operator sits safely in his control seat at the top of the mast, way above and in no danger from the logs. And what's more, he also has an excellent view of the entire work site. In addition to the mast-top control seat, the felled-length handling equipment includes a hydraulic log grapple with rotator.

The most widely-used rig is a towing truck with a short wheel base and a two-axled semi-trailer. When the rig is driven without a load, the semi-trailer is winched up onto a platform on the back of the towing truck. With this equipment, roundwood hauliers can offer rational and economical timber transports to the wood-processing industry.

There is a noticeable increase in the number of papermills and board mills that prefer to deal with felled-length timber. Everything suggests, then, that felled-length haulage is an economical and profitable method of transport, likely to outweigh other methods as time goes on. ■





Grappling competition for Finnish log-drivers

Finland is one of the world's foremost wood-producing countries, and forests cover no less than 21.9 million hectares of the total area of 33.7 million hectares. This is equivalent to all of 65%, a higher figure than for any other European country and surpassed—albeit with a bare margin—only by Burma and Brazil. The corresponding figure for Sweden is only 50.5%. And when it comes to felling, Finland again takes the lead in Europe with 46.3 million m³f, followed by Sweden with 43.9 million m³f.

Timber transportation in Finland, however, has not made as much progress as in Sweden, one reason being the conditions of forest ownership there. More than 62% of the Finnish forests is in private hands, most of it being owned by small farmers with relatively small and poorly concentrated parcels. Such measures of rationalization and mechanization as have been achieved are largely attributable to the initiatives of forest-owning companies, but these actually own 7% of the Finnish woodlands. The prospects

for large-scale lumbering operations and rationalized transportation procedures are thus not particularly bright. Most of the off-the-road haulage is still being done with horse-drawn outfits, and in country areas spare-time work in the forest provides welcome extra income for many a farm worker.

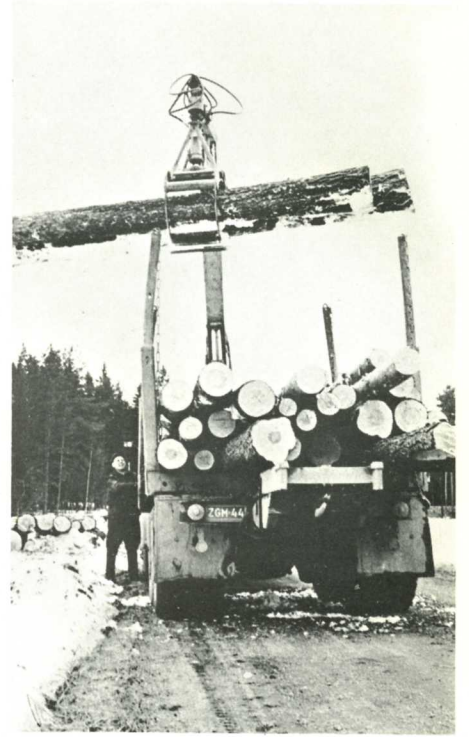
For bringing the timber in from the forest to the mill, road haulage by truck and tractor had a bigger share of the Finnish total than log-driving by the end of the 1950s. But if we also consider the total distance covered, log-driving still occupies the lead and accounts for more than 50% of the total volume of transport work.

Grapple loading is gaining ground

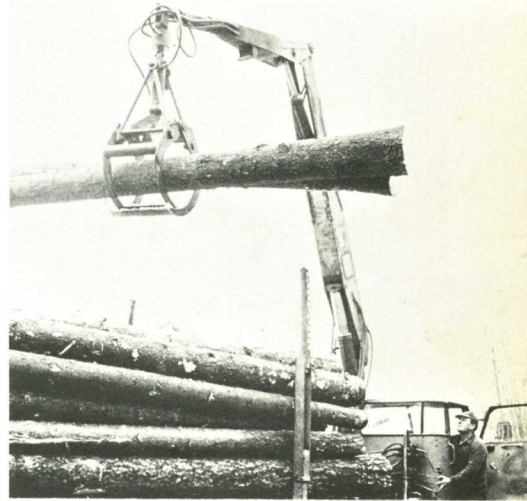
Mechanized loading is going ahead at a rapid pace right now. In 1963, 75% of all pulpwood was loaded manually,

but by 1966 this figure had dropped to 40% and by 1967 to 30%. Practically all timber has been loaded mechanically for many years. Separate loaders are used for about 60% of all the mechanical loading, largely with the aid of simple equipment such as winches, hoists, etc.

It's only during the last couple of years that grapple loading with the Hiab Method has really gained ground. One of the reasons for this lag is that off-the-road transportation and landings have not developed at the same pace as the loading methods. The predominant part played by the horse for off-the-road haulage, for instance, has led to storage of timber at the landings in low piles parallel with the road, which means that the advantages of grapple loading cannot be utilized to the full. The horses and the poorly equipped agricultural tractors are, however, gradually giving way to modern forest tractors, thus preparing the ground for rational timber handling throughout the entire transport chain. ■



Grapple loading with the Hiab Method is rapidly gaining ground in Finland as the horses and the poorly equipped agricultural tractors in the forests are replaced by modern forest tractors. The low pile of timber that can be seen in the left picture below is the result of horse transport from the forest. With a forest tractor and the Hiab Method the logs can be stacked higher—more than two metres high—and the lorry can pick up a full load without having to change position during the loading.



A new loader won't help you much before you know how to use it

It's often easy for the manufacturer of a product to lapse into "makers thinking", i.e. a kind of unawareness, or an inability to see the product from the user's angle.

We at Hiab have always been very much alive to this particular risk and have consciously attempted to avoid the pitfall by keeping closely in touch with those who use our loaders. And together with them we have been able to make quite a lot of product improvements.

Most of our Hiab Methods, too, are the result of co-operation with the men on the job.

It's only natural, then, for us to have the same approach to the problem when we introduced our new loader—the HIAB 2451. That's why we've also written a new manual, the HIAB 2451 Goods Handling Guide.

The manual also tells you what grappling tools and other attachments your Hiab loader will need to handle your particular line of goods rationally and economically. You can, in fact, carry any kind of general cargo—boxes, crates, barrels, stone, gravel, logs, poles, pallets, pipes, blocks, sacks or what you will.

P. S. Please see also page 16! ■



Kerbstone tongs
Order number 317 5537

Double scissor-linkage design means the stone is a secure grip.
Max. span 9 ft. 1200 mm
Max. lifting capacity 660 lb. (300 kg)
Weight 13 lb. (5 kg)

Barrel tongs
Order number 321 3552

Tongs open when lowered over barrel, grip on lifting.
Max. span 2 ft. 7 in. 820 mm (320 kg)
Max. lifting capacity 770 lb.
Weight 37 lb. (17 kg)

Barrel claws
Order number 322 8274

The claws are so designed that they stay in place on the barrel before the lift.
Span 18-41 in. (450-1050 mm)
Max. lifting capacity at 60° chain open angle 195 lb. (90 kg)
Weight 11 lb. (5 kg)

Box claws
Order number 322 3280

The claws are driven into the box on lifting.
Span 12-39 in. (300-1000 mm)
Max. load at 60° open angle 1320 lb. (600 kg)
Weight 13 lb. (6 kg)

Quick-action lifter

Order number 990 8211
Order number 990 6240
Order number 990 6250

The gripper claws are spring-loaded, taking hold of the goods before the lift.
For concrete well-casing sections.
For barrels.
For wooden cases.

Lifting tackle for concrete well-casing sections
Order number 990 2098

Each set of the lifting tackle consists of 2 pieces, max. length 24 ft. (7.3 m), max. span 14 ft. (4.3 m), max. weight 19 lb. (9 kg)

Sling
Order number 990 7467

Slings attached to the loader by means of the lifting tackle.
Length 9 ft. (2.7 m)
Max. lifting capacity 2200 lb. (1000 kg)

Automatic sling release
Order number 990 6769

Automatic release device for the hoist.
Max. lifting capacity 2200 lb. (1000 kg)

Multiple bag nose
Order number 990 8169

For use on more than one bag.
Max. lifting capacity 2200 lb. (1000 kg)

HIAB
HUDKVALF, SWEDEN

Time slasher



Unloading and transporting a rack to the site of a telephone exchange takes only about nine minutes with the Hiab Method and two men as compared with 45 minutes and 6-10 men with the method previously used.

Using HIAB 174 loaders mounted on Ford D.800 articulated tractor units, The Plessey Company Limited—the giant £165 million a year international electronics organisation—have cut the time taken to deliver complex and costly tele-communications units to G.P.O. phone exchanges by more than 75 per cent.

The problems of delivering these units—in the form of steel framed racks carrying intricately wired circuits—were considerable. Weighing up to 16 cwt apiece and measuring up to 10 ft. 6 ins. × 4 ft. the racks must be handled with great care, for the delicate wiring is easily damaged. The value of each rack varies from about £1,000 to as much as £25,000—and even slight damage means returning the rack to the Liverpool factory for repair and thorough testing, a laborious and ex-

pensive process.

Previously, the racks were manually off-loaded, a team of between 6 and 10 men taking on average 6 hours to clear a delivery of 10 racks. The most difficult part of the task was to lift the racks off the tail of the articulated trailer, easing them gently to the ground using a full complement of men to take the strain.

Once safely on the ground, the racks had to be wheeled anything up to 300 yards to the telephone exchange, for most of these buildings—particularly in cities—were not designed to accommodate large articulated vehicles. The vehicles, therefore, had to park as near to the exchanges as possible, without causing undue traffic congestion.

In many exchanges the racks are installed on the first storey, and in these cases they were lifted to the access



The HIAB 174 carefully hoists the wiring rack of a telephone exchange directly to the place on the first floor where the exchange is to be installed.

bays by a simple block-and-tackle.

With a Hiab, two men can off-load ten racks in about 1½ hours—and have solved most of the basic delivery problems. The Ford D.800s, drawing 26 ft. Boden trailers fitted with telescopic, expanding tilt covers, can park any reasonable distance from the exchange. The tractor unit is uncoupled and the Hiab is used as a mobile crane to off-load the racks, carry them to the exchange and, where necessary, lift them to first floor level. The entire sequence takes about 9 minutes—compared with the 45 minutes—and gang of men—required for manual off-loading. Moreover, the risk of damaging the racks is minimal.

In addition to rack-delivery duties, the Hiabs handle machinery and equipment in the Plessey works, saving the cost of a hire crane. ■

Holes in Denmark by the Hiab Method

The art of drilling holes in the ground by the Hiab Method has become something of a specialty in Denmark, where electric power producers and distributors no longer dig the holes for their grid poles and pylons. Instead, the holes are drilled with a hydraulic earth drill mounted on a Hiab loader. The loader is also used to handle the poles during loading and to raise them in the holes.

The savings in terms of time and money are enormous. Ordinarily, it takes about 3 working hours to dig a pole hole by hand, whereas when the Hiab Method is used two workers can make 25–28 holes a day. The labour cost per hole is then only 4 crowns, as compared with 24 crowns for manual digging. Even when the costs of truck and drilling equipment are added, the price with the Hiab Method is still not more than about 13 crowns per hole. Moreover, substantial savings are made when it comes to handling and raising the poles. The program includes earth drills with diameters of 300, 450 and 600 mm, all of them 2 metres long.

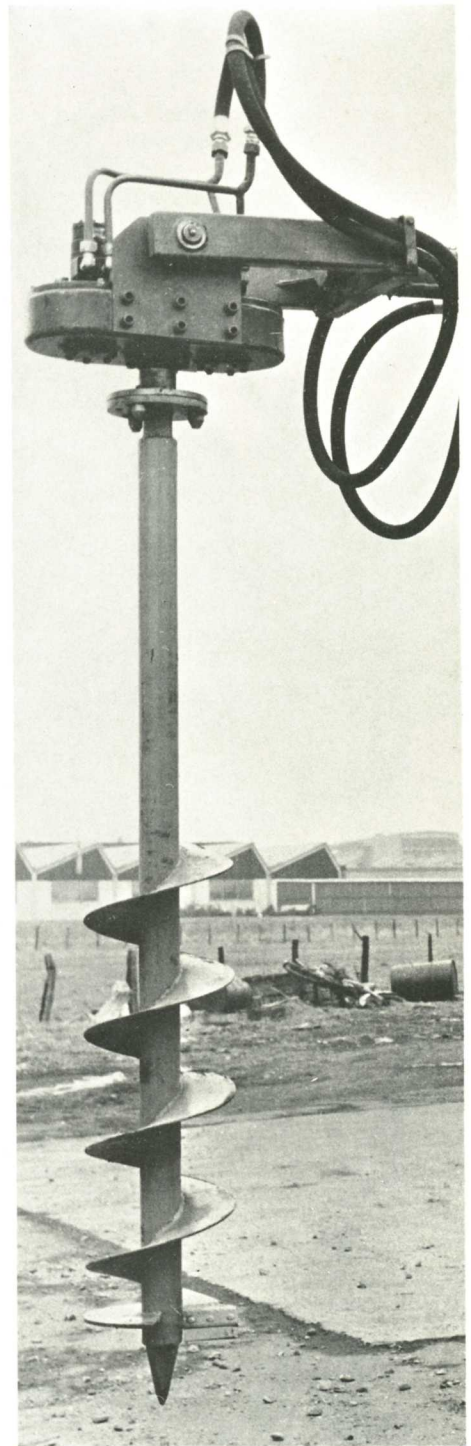
Another field in which the Hiab Method has led to substantial savings in time and money for many years is soil sampling. The Geotechnical Institute at the Copenhagen College of Science and Technology is responsible for ground examinations on building sites, and samples of soil for the purpose of these examinations are taken by the Hiab Method. Samples are taken at a

dozen or so different levels in a bore-hole 5–6 metres deep.

The hydraulic extension on the HIAB 174 makes this particular model highly suitable for this special task. It is extremely important that soil from the edges does not drop down into the hole and contaminate the samples taken at a lower level. With the aid of the extension, the boom length can be continuously adjusted, enabling the drill to be advanced exactly vertically and in the middle of the hole without tearing off any soil from the edges.

When the Hiab Method is used, sampling from a hole down to a depth of 5 metres can be completed within about an hour by three workmen. As a rule, about 25 metres can be drilled in a normal working day, including equipment moving, and when circumstances are particularly favourable it may even be possible to cope with close on 40 metres. In comparison with the earlier method of sampling with a hand drill, the same cost gives 2–3 times more samples. Moreover, very considerable time savings are made. For sampling at moderate depths—down to 6 and 7 metres—the Hiab Method has therefore completely displaced other drilling methods.

The greater drilling capacity has, however, led to another problem for the scientists working at the Institute, in that the soil samples taken by the Hiab Method arrive in such quantities and at such a pace that they find it difficult to cope with all the analytical work involved. ■



This earth drill equipment, frequently used by Danish electric power distributors, reduces the cost of making the hole for a pole or pylon to about 4 Swedish crowns compared to 24 Swedish crowns for a manually dug hole.

Soil-sampling by the Geotechnical Institute of Copenhagen is also performed by the Hiab Method. About a dozen samples from a 5-6 meter deep hole are often taken in less than an hour.





Heat out of rubbish

Dustbin after dustbin, rubbish heap after rubbish heap! Getting rid of all that rubbish and refuse is a real problem today, and with increasing public awareness of the need to conserve natural environments the problem grows in intensity and urgency. Frequently, burning is the only conceivable and always the most rational method of disposal.

It is possible, however, to get something positive even out of rubbish and refuse, if only the problem is tackled in the proper way. The Danes have proved the truth of this. Here, as in so many other fields, the proper way is to apply the Hiab Method. And the positive result is a district heating station that supplies central heating and hot water to a residential area.

A/S E. Rasmussen of Fredericia, Denmark, are specialists in rubbish-incineration plant and have recently designed a combustion furnace that supplies heat to a district heating grid via a heat exchanger. If fired ten hours a day, the furnace can cope with rubbish from about 16,000 people, and if fired continuously with that from up to about 35,000 people.

Fed by the Hiab Method

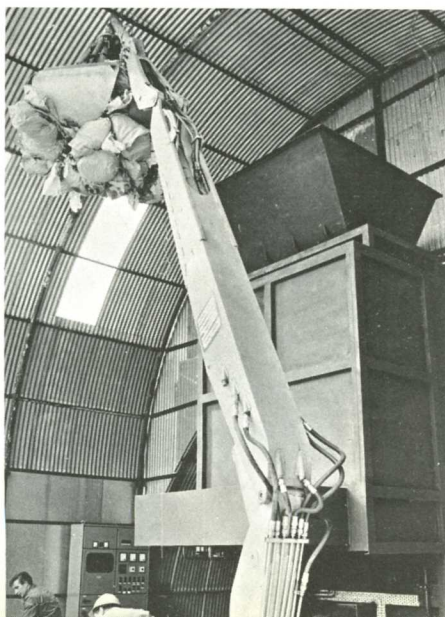
No matter whether the furnace burns continuously or not, stoking up with rubbish is the only task involving any manpower to speak of. This is where the Hiab Method comes into the picture.

The rubbish-collection trucks dump their loads into a silo that acts as a buffer store. From the silo, the rubbish is lifted with the polygrip grapple of a Hiab loader, either a 177 or a 174, to

the feed hopper at the top of the furnace. At the bottom of the hopper is a hydraulically operated, sliding gate that opens and releases more rubbish when the level of rubbish in the shaft under the hopper has fallen to a certain point. The shaft, which is always partly filled with rubbish, opens out from above into one end of the combustion chamber.

A hydraulic pusher carries the rubbish forwards in the furnace, spreading it out over the grate on which it starts to burn. Air is blown in through the grate from below. When the pusher brings fresh rubbish in, ashes and slag drop down onto a rocker grate in a final-combustion shaft. Here, more air is blown in from underneath and combustion is practically complete. The ash finally dropping down into the trolley under the rocker grate normally contains less than one per cent combustible material.

The flue gases, which upon leaving the combustion chamber have a temperature of approx. 900°C, are cooled in the heat exchanger to which they are now admitted down to about 250°C.



This cooling serves a threefold purpose: the heat supplied to the district heating grid is collected, the temperature is lowered to a level that does not damage the suction fans or the equipment for purification of the flue gases, and the volume of flue gases is cut to less than a third, enabling the fans and the purification equipment to be made smaller.

In the middle of a residential area

The flue gases are treated in a cyclone unit which achieves 95 per cent purification, which means that there is practically no ash at all in the gases coming out of the stack. The high combustion temperature and the generous air supply in the furnace make combustion so complete that soot and odours are entirely eliminated.

A rubbish-incineration station of this kind can obviously be located in the very middle of a residential area without causing inconvenience to the residents. This has been done in Fredericia, and has resulted in good transportation economy both for the rubbish and on the district heating grid. The heat provided by burning up the rubbish is sufficient for summer needs, while conventional oil firing supplies the additional heat needed during the winter months.

A disappearing pleasure

The Hiab Method is not only the cheapest but also the most rational method for dealing with rubbish in a combined incineration and heating station of this kind. The rubbish, most of which is packed in sacks or bags, drops down into the silo at a highly inconvenient and difficult determined angle. Consequently it is impossible for an ordinary conveyor belt, an elevator, or any other simple device to cope with the ride up to the feed hopper at the top of the furnace. The polygrip grapple, in contrast, is ideal for this purpose. Moreover, at those stations already in operation the personnel derive real pleasure from driving the loader. Hiab specialists, however, will soon be putting a stop to this form of enjoyment: a programme-controlled Hiab loader that automatically grabs rubbish at four different points in the silo and lifts it up to the feed hopper is already available as a prototype and the first fully automatic rubbish-incineration station has already passed the planning stage. ■

METOD HOISTS

Hiab reorganizes in Denmark

Hiab was until recently represented in Denmark by Hiab Forss Service A/S.

Hiab itself has now taken over this representation through its newly established subsidiary, A/S Hiab Hydraulik.

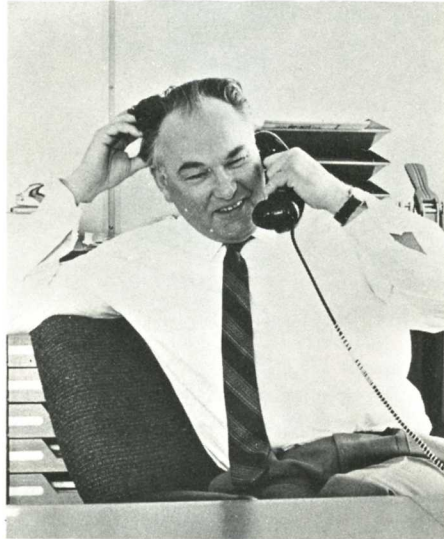
A/S Hiab Hydraulik has moved into new premises in Herlev, which incorporate an assembly shop, service and repair workshops, a complete spare-parts depot and a two-storey administration building. All in all, the Company has more than 1.250 sq. metres of floor space in Herlev.

In addition, there are six neutral, accredited Hiab dealers in Denmark, all with their own workshops and complete stocks of spare parts.

Hiab loaders now have more than a half share of the total market for truck-mounted hydraulic loaders in Denmark. They are used mainly to transport general goods, building materials, sawn timber, etc.

The General Manager of A/S Hiab Hydraulik, Mr. Trond Finskud, is optimistic about the future for Hiab loaders:

"As yet, applied hydraulics is still in its infancy and I am quite convinced that as time goes on it will be put to work in many new fields. But even in



our own particular field of interest, namely goods handling, there are still many unexplored markets for us to find and develop. The Hiab Company has long been engaged in research that goes beyond the manufacture, development and sale of loaders. Intensive work is also going on to develop complete cargo-handling systems, implying that suitable special lifting tools are designed for different kinds of goods and, together with other attachments and accessories, combined with a Hiab loader of the right size and with a suitable outreach and lifting capacity." ■



Weighty business for Hiab

The German State Railways occasionally carry very heavy and bulky goods with weights of as much as 500 tons or even more. These heavy items sometimes have to be transferred from the railway to the roadside. The equipment and aids used for this purpose are so big that they pose their own complicated handling problems. This is where the Hiab Method enters the picture. A HIAB 174, mounted on the back of a truck, handles the heavy wooden and iron beams anywhere along the railway line. A job formerly carried out only with great difficulty and requiring a substantial input of manual effort is now completed more quickly, more reliably and—perhaps the most important—without exertion and without risk of accident. ■

The 1969 Bauma Fair in Munich

The Hiab Method is used for all sorts of jobs in the building and construction sector and it was only natural for Hiab to exhibit a full range of loaders at the 1969 Bauma Fair of Building and Construction Machinery in Munich. The 122,000 visitors were given the opportunity to see how the job gets done when a HIAB 177 equipped with a winch and the special boom extension is used to erect prefabricated housing sections, or when a HIAB 173 with a hydraulic gravel grab is used to load earth and gravel. Handling of practically every kind of building material with the Hiab Method was also demonstrated. In fact, if you didn't know that the Hiab Method finds innumerable applications in other fields, such as transportation of general cargo, timber handling, etc., you'd come away convinced that Hiab loaders were typical building cranes. ■



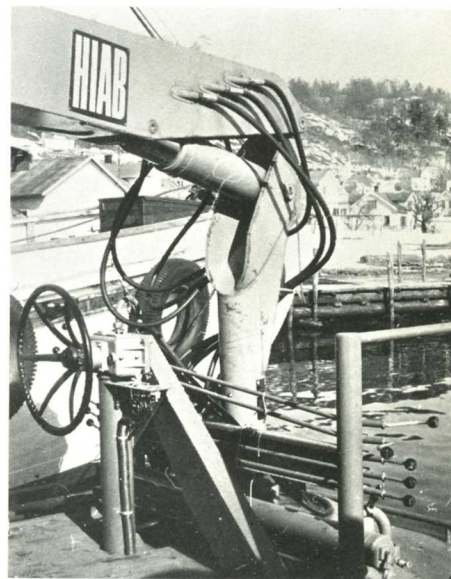
New Hiab premises in Thailand

Hiab's general representative in Thailand, Ekman & Co. Ltd., has recently moved into new and modern premises in Bangkok, with workshop facilities, offices, stores and showrooms. Our picture was taken at the opening ceremony in the presence of H.H. Prince Dhani Nivat, who performed the actual ceremony by unveiling the sign on the front. The Swedish Ambassador to Thailand, Count Axel Lewenhaupt, was another prominent guest.



Felled-length loading in Switzerland

In Switzerland, too, the Hiab Method is gaining ground in the forestry sector. This John Deere tractor married to a HIAB 174 is used to load roundwood in general and felled-length timber in particular in Kalpetran in the Canton of Wallis.



Hiab on the roof

When the new town hall was built recently in Kemi, Finland, the façade units were hoisted into position with the aid of the Hiab method. A rail-mounted HIAB 174 on the roof was fitted out with a winch and used to lift the prefabricated units into place. When the façade was well completed, the Hiab loader was taken down and is now doing a useful job on the back of a municipal truck.



Hiab comes to the rescue

At Knardalsstrands Slip och Verft in Porsgrunn, Norway, a HIAB 177 with roundwood grappler and rotator has recently been installed on a barge. This outfit will be used by the Log-Driving Association of Skienvosdraget to recover drowning and drifting logs. The Hiab Method has long been used as a rational means of rescuing runaway logs in floatways throughout northern Europe.

What's the best way to publicise a new loader?

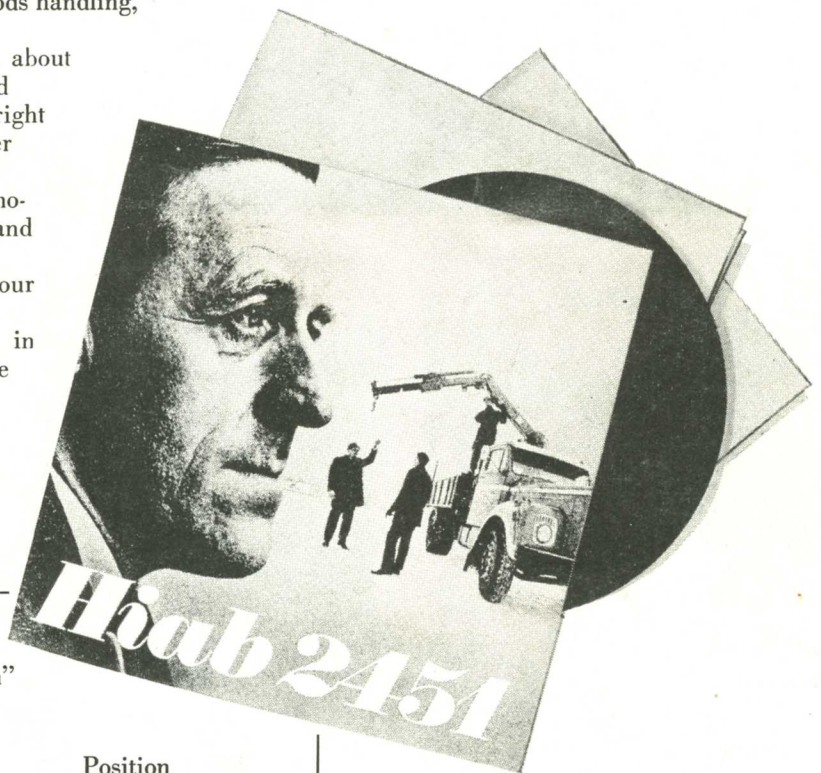
The HIAB 2451. A truly versatile loader.
Lifting capacity 1,5 ton.

We've given a lot of thought to the best way of telling you about the HIAB 2451. You see, the loader is only a part of our sales package. What we really sell is goods handling, loading technique, transport economy.

Seen from that standpoint, reeling off data about the loader in an advertisement just isn't good enough. Not until you combine it with the right grapple and the right equipment will the loader do the job in the right way.

So we decided to make our pitch on a gramophone record, with facts and arguments, pros and cons. It's the main item in the "2451 compendium", and it's backed up by a good colour brochure of the loader. The compendium also contains a detailed Goods Handling Guide in which you can look up the right way to handle any particular class of goods with the HIAB 2451.

Your compendium will come through the post. No charge.
If you like you can order it right away.



To HIAB, S-824 01 Hudiksvall, Sweden.

Please send me the "Hiab-2451 compendium"
in English German French

Name

Position

Company

Address

HIAB

S-824 01 Hudiksvall, Sweden