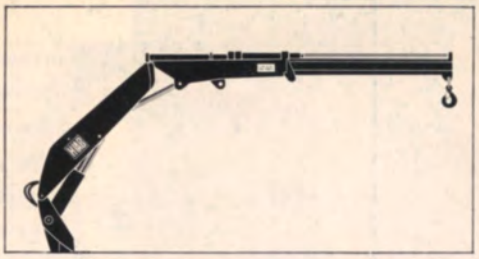
HIAB METHOD



No. 4

HIAB on site

Much of the work on a building site is taken up with the handling of building materials. So the transportation, hoisting, loading and unloading of the large quantities of material and equipment needed on a development account for a very large proportion of the total building cost. And the process of rationalisation which has transferred the actual production of the various components from the building site to the factory, where ever larger units are being turned out by highly mechanised working methods, has stepped up still further the demands made on the transport apparatus, that has the job of getting the factory-made units out to the site.

Another consequence of factory production is that the personnel on the site, instead of working with bricks, sand, cement and timber, are now expected to handle prefabricated sections weighing from 300 up to 800 kg or more. This obviously imposes fresh demands on the tackle used for the movement and erection of the material.

Against this background it's no surprise to find that the HIAB Method is being used in numerous building contexts and that there, just as in the work of dealing with roundwood and piece goods, it's shown itself to be an effective way of countering the rising costs of handling. Much of the space in this issue of Method is devoted to various examples showing how the HIAB Method has been adapted to meet the demands imposed by the building industry.

Since handling by the HIAB Method in many of these connections has been developed in parallel with factory prefabrication it's difficult to make a direct comparison with other means of handling. In many cases the HIAB Method is quite simply an essential for the use of prefabricated units, and all along the line it brings about considerable economies in time and effort and makes handling and transportation notably cheaper and simpler.

New Deputy Managing Director

As part of the co-ordination of the operations at HIAB in Hudiksvall with those of AB Tranåsverken in Tranås, Gustav Åström has been appointed Deputy Managing Director of HIAB, with immediate responsibility for the technical organisation and production. Gustav Åström, 47, a qualified engineer, is also Managing Director of AB Tranåsverken. He came to the firm from Sundsvalls Verkstäder in Örebro, where he had been local manager since 1959. Before that he was head of the production office at Centrala Flygverkstäderna in Malmslätt.

Publicity

Åke Naumann, 34, is the new publicity manager at HIAB. After studying commercial subjects and advertising in Sweden and England, followed by practical experience in Mexico and other countries, he joined the export department of Scania-Vabis in 1956 and was appointed advertising manager in 1959.

Contact with the Motor Trade

Folke Westergren, 46, has joined HIAB Service i Stockholm AB. A trained engineer, he will be primarily responsible for maintaining contact with the motor trade in Stockholm and the surrounding counties. Folke Westergren worked for many years with Robert Bosch AB, most recently as informational contact man with special emphasis on government departments and the oil companies.

A modern truck is very often a complicated and highly specialised piece of machinery, specifically adapted for a certain type of haulage or a certain class of goods. This means that its serviceability and capacity are not decided solely by its chassis design and engine power. The bodywork and ancillaries of various kinds are frequently just as essential to the transport economy of the truck as its fuel consumption and payload. The saving brought about by the advantageous operating economy of the modern truck loses much of its point if its transportation performance is held down by needlessly long turn-round times caused by inefficient methods of loading and unloading or by load-carrying arrangements that prevent full use being made of the capacity of the truck.

In the spacious assembly shop at Tranåsverken they can work on some twenty vehicles at once. This one is having a tipper with two cylinders fitted.

The Managing Director of Tranåsverken and Deputy Managing Director of HIAB is Gustav Åström, photographed here outside Tranåsverken's characteristic entrance.

AB Tranåsverken:

Tippers are Tops

Since the adaptation of a truck chassis to a given transportation task for the most part calls for special equipment, there have been difficulties in fitting this stage of the building of a truck into the standardised serial production of the truck factories. For this reason, firms that specialise in the manufacture and mounting of truck equipment are a necessary adjunct to the truck factories. HIAB is one such firm, Tranåsverken is another.

The development and production of a diesel engine, a gearbox or a truck chassis requires substantial resources in respect of both capacity and capital. Building a truck deck and designing and manufacturing hydraulic equipment may be simpler propositions, but all the same the call for resources of various kinds is on the increase here too. As far as chassis and engine manufacture is concerned, the forces of development have therefore moved in the direction of stabilisation and concentration to large firms and long manufacturing runs, while on the

Tranåsverken has put a lot of its resources into the development of its products. Bo Hedlund and Bengt Johansson are two of the eight people who work in the design department.

The pressure-rolling of the cylinder surfaces is a job that has a decisive influence on the quality of the products. This is Gösta Forss, checking the tolerances and surface fineness of a newly rolled cylinder.

equipment side relatively small firms have been able to maintain a stake in manufacture. In Sweden today we have only two truckmaking companies, with a comparatively small number of standard models, whereas there are numerous manufacturers of ancillary items that are pretty much the same.

Greater Resources

This fragmentation of resources on the equipment side has frequently put obstacles in the way of standardisation and efficient development work and has made things awkward for marketing and mounting, to the detriment of the whole transportation business.

But now that Investment AB Promotion has taken over HIAB and Tranåsverken, both firms have benefited from a substantial increase in their resources for enlarged production and intensified development work, while at the same time the foundations have been laid for a very worthwhile coordination of operations at two of the leading companies in the industry.

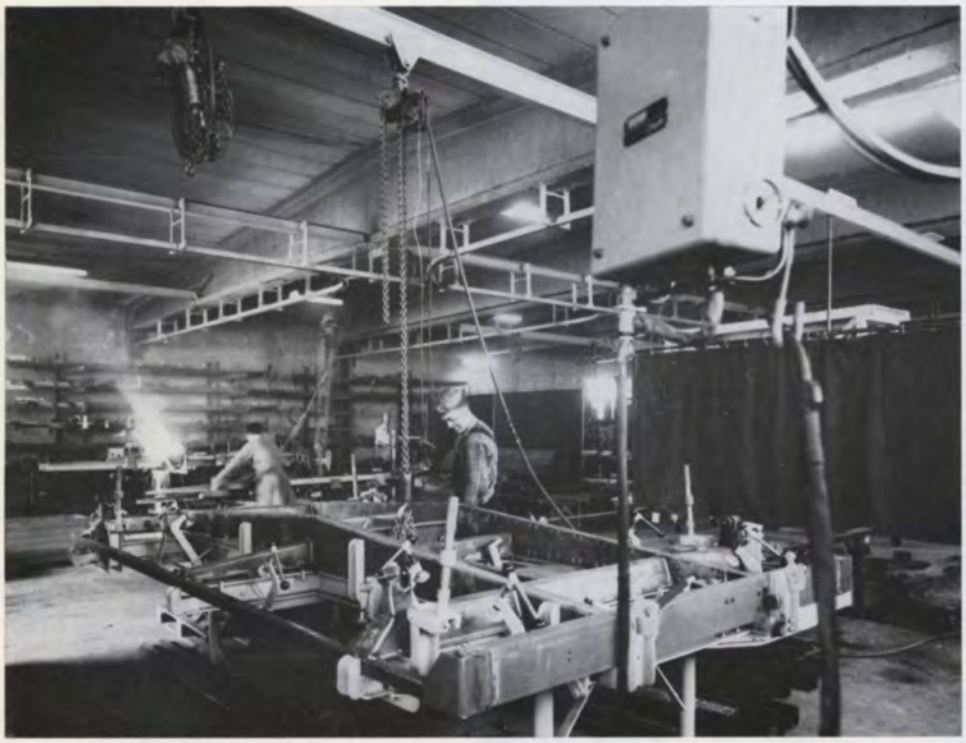
AB Tranåsverken, which went into business twenty years ago, employed some thirty men at that time. Since then the company has grown so that it now has some 250 employees and premises extending to some 10,000 sq. metres. Just as at HIAB, hydraulic engineering provides the basis of the company's activities. Its output comprises hydraulic tipping gear, tipper and dumper decks, bogie lifts, lift-dumpers and other hydraulic items. Its turnover in recent years has run at around 10-11 million Swedish crowns, but in 1966 a considerable increase in turnover is expected. About 25% of the firm's production is exported.

A Quality Product

When Investment AB Promotion took over the company, Gustav Åström stepped in as Managing Director. Recently, he also became Deputy Managing Director of HIAB. He sees several reasons for taking an optimistic view of the future:

"The reason why we felt able to go in for expanded production and why we count on increased sales is that we have a very good product. Take the cylinders in our tipper gears for example—their sliding surfaces are pressure-rolled and chromium-plated to give them an outstanding degree of smoothness and hardness. We have a patent-protected cylinder guide. It is based on a ring made of Teflon—a plastic with remarkable properties—which is fitted into the cylinders.

Thanks to the fact that we press many of the shapes used in our tipper design we can get the strength and rigidity we want without having to make things oversize, so we can build a tipper frame that's



The deck frames are welded in jigs, guaranteeing close tolerances and fast mounting. And the factory also makes its own frame sections, ensuring the right strength and stability without overdimensioning. Sören Fälth is here lifting a finished frame out of the jig.

Major modifications often have to be carried out on chassis. This frame is being cut short so that it can be fitted with an auxiliary frame before the tipper deck is mounted.

sturdier than many of the competing models without making it any heavier.

Success with the Lift-dumpers

One product of ours that we've got great faith in is the lift-dumper. So far it's accounted for a fairly small proportion of our output numerically speaking, but its versatility has brought this extremely efficient item of equipment into increased use. The figures show that we sold more lift-dumpers in the early months of 1966 than we used to sell during a whole year. Taking our cue from that we've gone in for a substantially increased production of this item.

Valuable Collaboration

Our collaboration with HIAB on the marketing and mounting side will also be a point of major significance to our customers. All HIAB service workshops will carry our products in stock and will be able to do complete mounting jobs. Since our products used for the most part to be mounted here at Tranåsverken our sales showed a noticeable concentration to certain parts of southern and central Sweden. Now that they're readily available all over the country we expect to see them used on a considerably greater scale.

The link between Tranåsverken and HIAB also entails a big advantage for the truck buyer here in Sweden. For one thing he doesn't have to go so far as before to get his truck fitted with our tipper deck. And for another thing—which is perhaps the most important point—he can have a complete superstructure comprising crane, tipper and deck carried out at one and the same place. This cuts out what used to be the fairly frequent necessity of sending a truck on a round of several workshops for the mounting of various superstructure items. The whole job can be done either at one of HIAB's workshops or here at Tranåsverken" concludes Mr. Åström.

The chromium-plating of the cylinder surfaces is another quality factor of great importance for the wear resistance and functioning.

Gerald Edlund heads the Tranåsverken sales department, and since exports have assumed increasing importance in recent years the world map in the background is very appropriate.

The production manager is Birger Olsson, photographed here among the machines of the production department.

Hans Wikström's demonstrations of the HIAB Forest Elephant may well have been the chief attraction at the Moscow Fair. Towards the end of the exhibition his overall was studded with decorations from impressed and enthusiastic visitors.

Among the exalted personages who took a keen interest in the HIAB outfit were the deputy minister of forestry Mr. Feregeyev, here seen thanking Wikström for his demonstration. In the background is Mr. Roos, technical head of the research institute of the forestry ministry.

HIAB-show at the Moscow fair

You wouldn't be guilty of any exaggeration if you said that a detachable HIAB 177 Forest Elephant for roundwood handling was the biggest attraction at the agricultural and forestry fair in Moscow last spring. Every time Hans Wikström from Vagnhärad started the engine of the truck and climbed up onto the crane pedestal the open space around the outfit and the lanes between the adjacent pavilions quickly filled up with expectant fair visitors. And nobody was disappointed. Because Wikström really can handle roundwood with a Forest Elephant.

His demonstrations were more like a circus act than anything else. The Russian forestry experts had never seen anyone playing with stout logs like that. And Hans Wikström missed no opportunity to show what the Elephant could do. Almost every hour during the 14 days the exhibition lasted he loaded or unloaded his parcel of timber. Quickly and methodically, without overdoing his crane movements. And as a tailpiece to his demonstration he would place a log just outside the reach of the crane and then, by swinging the grab and extending the reach of the crane with perfect timing, he would catch hold of the nearest end of the log and pull it into his normal radius of action. He pulled down further applause by using his grab with the utmost elegance to pick up an empty cigarette packet or matchbox or some other piece of litter which a careless visitor had tossed away.

After almost every demonstration, representatives of one or another organisation or association in the field of russian forestry or agriculture would come forward and decorate Hans Wikström with their lapel badge. Towards the end of the fair the array of medals on his white HIAB overall was enough to outshine the most exotic admiral's uniform.

HIAB too, came in for its share of the golden rain. Its equipment was awarded one of the exhibition's rare gold medals with a diploma for first-class design, construction and function. Among the exalted personages who honoured the outfit with long and appreciative study were the Russian minister of forestry Feregeyev and the technical head of the research institute of the forestry ministry, who bore the Swedish-sounding name of Roos. When the fair closed down HIAB received a clear indication that the crane had made an impression on the Russian forestry experts—the outfit wasn't allowed to leave the fair ground until HIAB had agreed to leave the detachable Forest Elephant behind for closer study.

The show outfit, which is owned by Åke Sterner, Södertälje, was driven to Moscow by Sterner and Wikström. HIAB Managing Director Hans Bostedt and his fellow-director Eric Sundin took part in the opening ceremony, and during the exhibition forester Folke Eriksson of the Swedish Cellulose Company in Sundsvall provided an information service on Swedish roundwood handling by the HIAB Method. For the last few days of the fair HIAB's export manager Hans Lundgren was also on hand. On the homeward run Hans Wikström drove the somewhat battle-scarred outfit on his own, and after a quick job of fitting a new crane at HIAB's place in Stockholm it went straight on to the Elmia fair in Jönköping in the south of Sweden for more demonstrations.

Right: When not in use the Hiab Hi-Tilt is arranged in the collapsed position over the truck cab and engine hood with the front end resting on a fork-shaped "horse".

Below: With the Hiab Hi-Tilt the truck driver can unload the whole consignment, on his own and without effort, and put it into the building in less than half the time it used to take for a team of four men. Notice the hydraulic cylinder of the grab tackle. It enables the Hi-Tilt to function both as a lift fork and as a grab.

"HI-TILT" does the work of four men in barely half the time

The spring of 1966 the HIAB Method has scored a great success in American housebuilding, in which plasterboards of various kinds are used on more than half of all interior walls. The large quantities of plasterboards on building sites, with their relatively high weight and bulk, used to present a handling problem. They're supplied in lengths between 2.4 and 4.5 metres and are usually 120 cm wide. It normally takes a team of four men to unload a truckload of plasterboard and carry it inside within a reasonable time. Manufacturers, carriers and builders have long been aware of the problem and the costs it entails but nothing was done about it until HIAB's subsidiary in the United States, Hiab Hydraulics Inc. of Wilmington, Delaware, decided that it could very well be a job for the HIAB Method.

Hiab Hydraulics engineers carried out time and costing studies, investigated conditions on the building sites, and then went into a huddle over their drawing-boards. The fruit of their labours was the Hiab Hi-Tilt, an apparatus specially designed for handling plaster board, plywood, wallboard and similar materials.

The Hiab Hi-Tilt is based on a HIAB 177 Speedloader with a hydraulic rotator and a special loading tackle that could be briefly characterised as a hydraulically operated combination of a lift fork and a grab. With this appliance a bundle of plasterboards lying on the truck deck can first be raised on end and then lifted bodily through an opening on the first or second floor of the building under construction. With the Hiab Hi-Tilt, one man can unload a truck full of wallboard and put it down inside the building in less than half the time it used to take for a team of four men. In one lift the Hiab Hi-Tilt can handle 30 plasterboards measuring 1.2×3.6 m (3′10″×11′10″).

The Hiab Hi-Tilt was introduced in the eastern U.S. at the beginning of January 1966, and by May the sales of Hi-Tilt had already outdistanced those of all other HIAB methods. In the densely populated north-eastern regions of the U.S. practically all wallboards are delivered straight from the maker by truck. In the southern and south-western parts, where the population is sparser, wallboard is mostly sent by rail and transferred to trucks for the last leg to the site. In these cases the Hiab Hi-Tilt registers an even greater saving of time, since it also serves to transfer the load from rail freight car to road truck.

HIAB No. 60.000 off the line

The vigorous increase in HIAB's production resources enabled the firm to turn out its 60,000th HIAB crane—a 174—in August, 1966. The production capacity is now between 30 to 40 loaders per day and a further increase will follow when the present rationalisation work in the factory has been carried through.

Finishing touches in the new painting departement

In the expansion of the assembly shop, space was also provided for a new, ultra-modern painting department. It has two long spray boxes. Priming is done in one, while the topcoat is put on in the other. That means that all HIAB loaders are now delivered with a complete surface finish in the familiar HIAB colour, orange-red. Fidel de Pablos and Sven Nilsson are putting the bottom pallet on this newly finished crane.

The expansion of HIAB in Hudiksvall is going ahead with impressive speed. Most of the extensions which were mentioned in the first issue of Method have now been completed. On this page we present some pictures illustrating the new resources and the increase in production which they have yielded.

New experimental shop

In connection with the extension work on the plateworking shop the development department was given a new experimental shop covering 720 sq. metres (7850 sq.ft.) The department employs a staff of nine, with three engineers. Lars Ulfeldt and Ingemar Nilsson are pictured here.

Factory-made building units are one of the most important factors in the development of industrialised building in Sweden. Siporex, for instance, is made at six different factories in Sweden, and the annual production is reckoned in millions of square metres. And even though the factories are scattered all over the country from Dalby right down in the south of Sweden to Skelleftehamn way up north, large volumes of Siporex still have to be moved over considerable distances from the factories out to the building sites. And to make sure that its products get there on time —often on the very morning of the day when they are to be erected—in exactly the right quantities, dimensions and tolerances, Siporex runs a well-oiled transportation apparatus using its own and hired trucks, with the HIAB Method being used for loading and above all for unloading.

Millions of square metres of Siporex units handled by the HIAB-method

To study the workings of production and distribution, Method paid a visit to the Siporex factory in Södertälje and to some of the sites. At the factory sand from Brandalssund, cement from Stora Vika, blast-furnace slag from Oxelösund and a few other chemical ingredients are converted to a high-grade building material possessing excellent strength and dimensional stability along with outstanding insulating properties, which is also remarkably easy to work.

The Thirties Had Their Methods, Too

The production of Siporex is based on a Swedish invention dating back to the beginning of 1930s, yet it can still be described as a relatively young business. It wasn't until after the war that production began on a major scale, and since 1953 the output curve has been soaring steeply.

The gist of the Siporex process is that the silicate raw material, chiefly sand, is ground to a very fine powder, which is mixed with water and a binder—cement, lime or both—plus slag and certain other chemicals. One of the more important ingredients is finely divided aluminium. The finished mix is a thin paste which is poured into large moulds in which the reinforcement of the units is already in position. Almost all sizes are reinforced, and the welding and rust-proofing of the reinforcing steel makes up a substantial part of the production process.

The moulds are 50 cm (1′7″) deep—a change to 60 cm is now in progress to fit in with the new building standards—and they are filled only half way up. While the cement and lime are reacting with the water the aluminium powder in the mix functions as a kind of "leaven", evolving hydrogen gas which gives the finished material its finely porous structure. The material "rises" and fills the mould to the brim. When the "fermentation" is over, but while the material is still relatively soft, the sides of the mould are stripped away and the faces of the casting are milled flat, after which the casting is divided by cutting wires into the units and blocks of various sizes.

The sides of the mould are then replaced, and the moulds are stacked in threes and placed in large autoclaves in which the steam pressure is raised slowly and in accordance with a carefully fixed timetable to 10 atmospheres. When curing is complete the steam pressure is lowered again—slowly so as to avoid setting up stresses in the material. All that remains then is milling to the exact size, the cutting of tongues and grooves, the bevelling of edges and other similar machining of the various units—and they are ready for dispatch to the building sites or to stock.

HIAB does the Loading and Unloading

Almost all distribution from stock is effected by road, and the loading in the yards is done mostly be electric hoists, though fork-lift trucks also play their part. But fork-lift loading has the disadvantage that the units can be lifted only in single complete batches, whereas the individual loads going onto the trucks often consist of a large number of different units, with only a few of each particular size. On the occasions when a hoist can't be used for loading the next best thing is therefore generally a truck-mounted crane equipped with a grab specially designed for the purpose and taking one unit at a time. A large part of the storage space at the Södertälje factory is in a newly purchased area which has no overhead hoist equipment. So practically all loading there is done by HIAB cranes.

In unloading, the truck crane is virtually essential for efficient handling. Many building sites are not equipped with cranes, and even where they are the cranes are often tied up on erection work or other tasks so that in practice nearly all unloading is dependent on the truck-borne crane. Siporex's own transportation vehicles are all equipped with HIAB cranes and grabs for Siporex units.

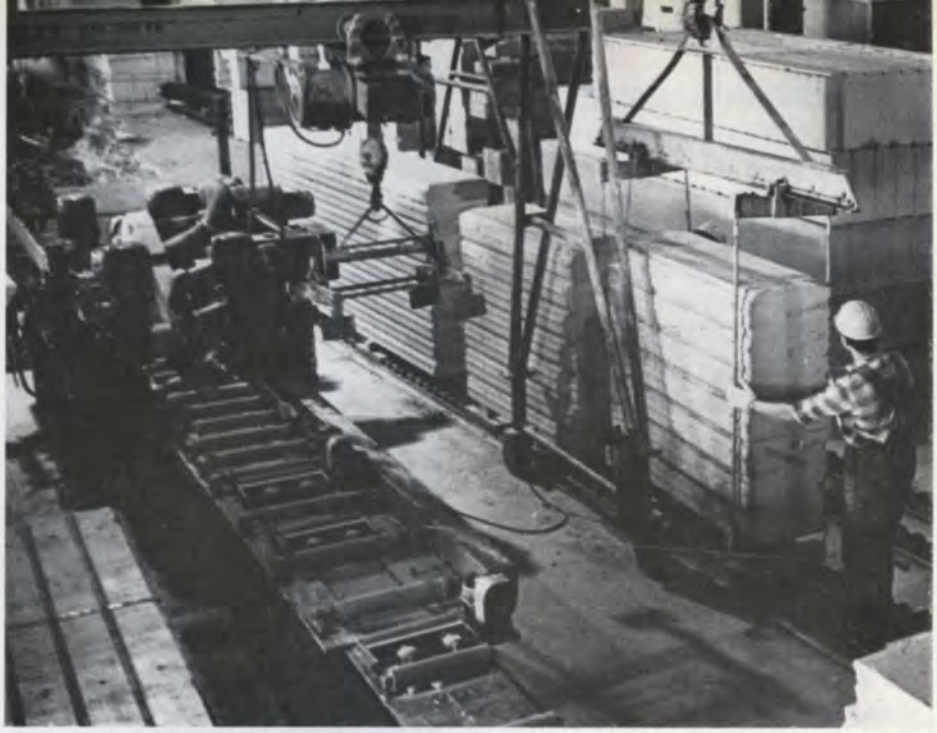
Many Advantages

With a HIAB Speedloader mounted at the rear of the tractor truck and the driver seated on the crane pedestal, an outfit consisting of a tractor truck and a two-axled trailer can be unloaded in about 1½ hours, without any driver's mate. The method has many advantages. The rented building crane can be used for jobs on the construction work itself, and the turn-round time of the truck is shortened, since it doesn't have to wait until the crane is available. On house-building sites and other small building jobs the truck driver can also put floor slabs and wall units straight into their final position, so that no special erection crane or other erection tackle is needed.

In Sweden, three out of four industrial buildings are constructed of Siporex, and Siporex in one form or another is used in the bulk of residential building work. So the HIAB Method plays an important part in the rationalisation of building and is a valuable aid in the fight to hold down rising costs.

Siporex International

Outside Sweden, too, and in the development territories just as much as in highly industrialised countries, the trend is towards increased usage of prefabricated building units. Siporex is being made at the firm's own factories in Hamburg, Brussels, Paris and Mexico and under licence in another 15 countries. The foreign operations are handled by Internationella Siporex AB, which provides foreign licensee manufacturers with technical assistance and works out manufacturing methods and formulae adapted to the raw materials which the licensee has available.



After curing, the still hot Siporex units emerge from the autoclaves on rails, and are being lifted over to a milling machine, which trims them to exact dimensions and gives them the rebates, lounges and grooves that will be needed in erection.

The central Siporex laboratory, which is attached to the Södertälje factory, makes a start by analysing various samples of raw materials from the licensee. After the analyses, some test cubes are made from the raw material under consideration, and if they turn out well larger quantities of raw material are brought home to Södertälje. Whole shiploads are involved by this time, and continuous pilot production is started up in a complete manufacturing plant on the 1:10 scale. During this stage the final adjustments are made to the formula, after which it's time to start fitting up a factory for the licensee.

As a rule, Siporex only supplies a minor proportion of the factory equipment, but just recently it received an order for an entire plant, complete with all ancillaries, to be delivered to China.

An important feature of the technical advice with which Internationella Siporex provides its foreign licensees is rational handling of materials by the HIAB Method. Particularly in the highly industrialised countries of Europe, the saving of time and labour brought about by the HIAB Method is of very great importance. But even in territories, where the labour supply is no problem, there's every need to speed up loading and unloading so as to increase the effective capacity of what trucks there are.

In many countries the supply of labour is seldom a problem, so that unloading a truck is often a wholly manual operation, as in this picture from Mexico. But truck time is always costly, so that the HIAB Method is beginning to gain a footing even there.

Speciality:

MODEL-BUILDING

13-year-old Stefan Andersson of Trollhättan is a versatile young man with modelbuilding as his speciality. At least, it's one of his specialities—among other things he's a keen photographer as well.

One day, there came a letter from Stefan to Method. He told us about his great interest in modelbuilding, and he also sent along some pictures of the miniature masterpieces he turns out—all to the 1:25 scale.

Stefan has been building models ever since he was 10, and over the last year he's taken a special interest in cranes. All told, he now has 14 trucks, four of which have HIAB cranes. There's a 177 Forest Elephant with a detachable mounting (pictured here) two 173

Above: Master modeller Stefan with a Scania-Vabis LBS 7642 S mounting a HIAB 177 Forest Speedloader.

Below: Truck cabs and cranes are most fun to build, thinks Stefan. Here is a Scania-Vabis LT 7638 S with a HIAB 173 Speedloader.

Speedloaders and a 193 wire-rope crane.

Now on the drawing-board is the new 174, a nice pastime for the summer holidays between trips to the beach.

The models are entirely built of cardboard except for the hydraulic cylinders. Stefan says he makes these from steel tubes cased with paper.

The 177, which we think is a genuine little masterpiece, took Stefan about 10 hours to make. We're now looking keenly forward to the unveiling of the 174!

This is the prize piece in Stefan's production—a detachable 177 Forest Elephant

With a 10-ton lift packed in its crane the new rescue truck has no trouble with this personnel carrier, despite the dead weight of its armour plate.

Rescue giants led to an outsize order

The first of a series of 15-ton rescue trucks ordered by the Royal Swedish Army Materiel Administration was delivered in June from the HIAB-Alingsås works. The entire rescue equipment is hydraulically powered and was designed at HIAB in Hudiksvall to the Materiel Administration's specifications. The engineer in charge of the development work, which took five years, was Hans Eriksson. In 1962 two prototypes were supplied, and in subsequent development work they went through an intensive test programme of which the latest phase was in Arvidsjaur during the coldest spell of the recent severe winter.

The rescue truck is built on a Scania-Vabis chassis of model L A 82 and is intended for rescuing heavy vehicles. The entire rescue equipment, the main items of which are the crane, the winch and the support legs, is mounted on a rotating platform. It can be operated either from a control point up on the platform or from the ground at a control point at the rear of the platform. The winch has a pulling capacity of fifteen tons and the crane can lift 10 tons. For towing rescued vehicles there is a towing trolley which is carried suspended beneath the crane jib and is dimensioned to take a load of 5 tons.

Delivery of the series will continue through the autumn of 1966 and the job of fitting out these rescue vehicles is occupying about 20 % of the capacity of the Alingsås works. About 80 % of the equipment consists of new designs developed at HIAB in Hudiksvall, while the rest is made up of semi-manufactures and standard parts. The hydraulic pressure for the rescue equipment comes from an oil pump driven by a Bolinder-Munktell engine. The winch is made by Hägglund & Söner, Örnsköldsvik. The rescue equipment for the whole series is estimated to cost about 10 million crowns, which means that this order, which HIAB secured against very tough competition from other companies, is one of the largest in its history.

Moving the armoured personnel carrier to the workshop is a job for the towing trolley.

Sweden goes in for vocational training in a big way, and it has been carried on in various fields in this contry for more than 40 years. But as far as commercial traffic is concerned it is only in recent years that such training has found its feet. The kick-off was in Jönköping five years ago when the Road Transport Employers' Association, together with the Jönköping County Vocational School, made a start with 3 1/2-week courses for drivers. The courses have now grown to 14 weeks and there are schools in Örebro, Hälsingborg, Jönköping and Vännäs. Gothenburg is soon to have one and other towns are coming along close behind.

Driver training - A matter

"The training of truck drivers is not solely a matter of road safety—there are weighty economic considerations behind it as well," says Sten Bergqvist of the Road Transport Employers' Association. "In the 1940s a 4-ton truck was regarded as a big one; today we can cheerfully multiply 4 by 8. The trend is towards more and above all towards bigger outfits. We are in possession today of vehicles that are so large and technically advanced that we cannot utilise the maximum payload, chiefly because the systems of roads and bridges is lagging behind. It goes without saying that the demands made on drivers are growing, too. Take a turner, for a example, as a comparison. If he isn't up to his job he can hurt himself or damage the lathe or the workpiece. The truck driver is responsible not only for his costly outfit but also for a valuable load. And besides himself he can do harm to third persons. Another point is that a road outfit worth something like 130,000 crowns costs 0.27 crowns for every minute that it stands idle. It simply *must not happen* that it spends time in the workshop as a result of neglect or plain ignorance.

Road Transport Vocational Council

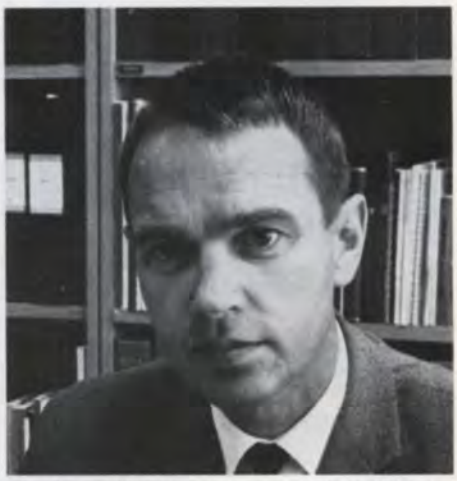
These are matters of common interest to the Swedish Road Transport Employers' Association and the Swedish Transport Workers' Union, which are opposite numbers on the labour market. They have accordingly set up a joint agency called the Road Transport Vocational Council. Besides dealing with training matters the council has a working party which concerns itself with the prevention of accidents to personnel and with road safety. Safety aids on the job are among the things the council is working for. Mr. Bergqvist stresses the facts that co-operation within the council has been exemplary. Since the matter of training was not put on a firm footing until 1963 there has naturally been a certain amount of leeway to make up. In this connection the council has made use of the available scope for collaboration with the vocational school system. There have also been retraining courses in co-operation with the National Swedish Labour Market Board.

When the council began its training activities the courses lasted for twelve weeks; they now run for fourteen weeks. It is very probable that the coming report of the Road Driver Study Committee will give further impetus to this form of training. At present, a professional driving licence is required only in commercial traffic, whatever the size of the vehicle. If the committee's proposals goes through it means that the "B" licence, equivalent to the present professional driving licence, will be required in the case of all vehicles above 3½ tons and for buses.

Admission

The courses are advertised in the daily papers, and conditions of entry are that the applicant has a driving licence, is in good health, and can show a certificate of aptitude. He must also pass a 45-minute driving test. Incidentally Mr. Bergqvist wants to make several additions to this test. Twelve trainees are admitted to each course. As a rule there are at least 20 applicants, so that a certain measure of selectivity can be applied.

The courses are divided into three stages, a vocational school section, an entrepreneur section and an examination section. The trainees begin by spending seven weeks at the school, where they go through the theoretical tests and are given their basic driving training on the practice track. "Without the practice track we wouldn't have a chance of achieving the results we're hoping for," says Bergqvist. The trainees are drilled in such things as turning round at a fork, manoeuvring into a parking bay and backing up with a trailer. Great importance is attached to trailer work, and backing up with a two-axled trailer is an important feature in the examination.



Sten Bergqvist advocates systematic training for truck-drivers.

Right, above: Electric demonstration panels are an important tool in theory instruction.

Professional instructor Olle Olsson demonstrating the brake system for Gullmar Karlsson.

Description of The Ideal Driver

The man we are looking for is a professional who has a knowledge of engineering and is well acquainted with goods and goods handling. He must also be a

The HIAB crane enters the picture. This type of practical instruction occupies a major proportion of the training schedule.

An excercise in bay parking is in progress on the practice track. Note the marking posts. The trainee at the wheel wears a crash melmet—compulsory while he's at work.

# of economy and safety

pioneer in traffic and must help to advance road safety. There are three "technical" points we expect of each of our drivers:

1. He must be able to tell when the vehicle has suffered damage of such a kind that it cannot be moved for road-safety reasons, e.g. a brake defect.

2. He must know when the fault is of such a kind that using the vehicle would compound the damage, e.g. when the oil-pressure warning light is on.

3. The driver should be able to deal with minor faults and adjustments himself. As part of his training he learns, for instance, simple means by which he can get clear if his vehicle becomes firmly stuck.

After seven weeks at the school the trainees are assigned to various trucking firms for another five weeks. The idea is to give the trainee experience along with a chance to use in practice what he has learnt at the school. He takes with him a trainee's card, and it's important to see that contact between the school and the trucking firm is maintained.

Finally an examination section comes which may take one or two weeks. So that the school will never have to stand empty, except for the summer break, a new course is admitted as soon as the old one has got through its seven-week stage and has dispersed to the truckers.

What does it all cost?

The trainee pays no course fees, and receives a training grant of 175.— Swedish crowns a month. If he's undergoing retraining he also gets a retraining grant. Each school is equipped with material costing something like half a million crowns. On top of this there are running costs and instructor's pay. One trainee costs about 1,200.— crowns per course. Expensive?

"Some people say that this is expensive training," says Bergqvist, "but like all other training it's a good investment.

From the National Board of Education we get a grant at present covering 90 % of the costs, plus a contribution from the municipal or county authorities. Various manufacturers, among them HIAB, have taken a very positive attitude towards this form of training that has been of great help, particularly when it comes to giving our instructors a helping hand," says Bergqvist.

Model School in Örebro

At the school in Örebro we met professional instructors Olle Olsson and Helge Walensjö. A third man, Gunnar Karlsson, makes up the strength. Olle Olsson stresses that three instructors for a group of twelve are necessary if effective training is to be given.

This school is very well equipped. Just lately, for example, it's acquired a master radio station to go with the two-way radio sets that are fitted to each of its five trucks. They can be reached within a 50-kilometre radius.

The classroom features among other things a complete set of brake equipment with its own compressor, enabling the trainees to follow at close quarters the relationship between cause and effect.

The trainees are well looked-after in point of accommodation. They're quarted in the school hostel in single or double rooms, and the charge, including three meals a day, is 175.— crowns a month. If anyone can't get into the hostel, he or she can have a room at the County Council's modern hotel for the same price.

Did you notice we said "she"? About ten girls have gone through the course in Örebro, and since then one of them has been driving a 14-metre outfit loaded with reinforcing bars on long-distance hauls. But most of the girls go on to take the bus course, which lasts another three weeks.

"One advantage for the people who've taken these courses," says Olle Olsson, "is that they qualify at once for the age supplement of 25 crowns a week which is provided for in the transport union's new collective contract. Otherwise they'd have to serve for two years before getting it."

Method Hoists

NEXT STOP MONACO

Here's the 1½-ton Vasa cannon being gently loaded onto the deck of a truck by the HIAB crane, with a squad of experts hovering anxiously around. The piece was being lent to Monaco, where it served as the starting gun for the Swedish Week in the middle of June. Also timed to coincide with the events in Monaco was a special Vasa Exhibition, which seems to have made a hit with Princess Grace. The cannon is said to have given a good account of itself during its tour—and having the Vasa gun to launch festive occasions with a bang is now the "in" thing.

The "Joe-Boy" has scored a great success in Canada.

JOE-BOY

In Canada they've designed a compact and manoeuvrable and extremely serviceable mobile crane from a HIAB 173 and a small truck with a 100-h.p. Ford engine. This outfit, christened the "Joe-Boy", has been a runaway success in industrial depots and stores and for lifts and materialhandling jobs of various kinds. It's naturally been arranged for one-man crewing—the operator drives the truck and works the crane from the same place. Hydraulic locking of the springing plus hydraulic steering and a differential lock at extra equipment are other refinements on the "Joe-Boy".

The prefabricated building was first put on display at the MILA Exhibition in 1964, where it attracted well-deserved attention. This picture shows a roof truss being mounted in the steel anchorages.

There's one barn every day

At least, that's what they say in Alfa-Laval's agricultural department, where they've been having a great success with an entirely prefabricated type of barn. In one day, three men and a HIAB crane can put up a barn with a floor-space of 300 sq. metres.

The wall units are of aluminium on the outside. The inside can also be of aluminium, but you can alternatively have it lined with tongued-and-grooved pressure-impregnated timber or with plastic-treated plywood.

The wall joints are 4 metres apart and the finished building has an interior width of 14.10 metres. The wall units can be had with a door, doorway, window, etc., or completely blank. The really neat touch is that if you like you can at a later date change the wall units or shift them round.

Both the wall units and the roof trusses are erected in special steel anchorages. One of the great advantages of this design is the cantilever roof trusses.

The foundation must have been concreted by the time the units arrive. Alfa-Laval is ready to supply drawings, with due allowance for any special ground conditions.

In the erection work, Alfa-Laval co-operates with the Skåne Association of Forest-Owners, whose crane-equipped trucks and operators do the job.

"Without a suitable crane, projects of this type would be practically impossible," says Mr. Danielsson of Alfa-Laval's agricultural department. "Getting the roof trusses into position would be particularly awkward, and you'd have to use scaffolding as soon as you got above a moderate height. As it is, the crane just lifts everything into position—in some cases the crane truck has been driven around in the building to make erection an inside job, one gable being saved until last so as to provide a way in and out."

Timber handling in England

The reputation of the British for conservatism is greatly exaggerated. At all events they're not so conservative but that they quickly realised the advantages of the HIAB Method, not least of all in building work. This picture appeared with an article in the Timber Trades Journal last spring, dealing with the great savings in time and labour that could be achieved by using the HIAB Method for loading and unloading building timber. This no doubt rings a bell among transport planners at sawmills and timberyards in Sweden and in many other countries.

Prefabulous efficiency

This picture shows prefabricated wooden houses being loaded at the firm of Gullringshus AB, one of Sweden's largest and most reputable firms in the business. Two trucks are being loaded at the same time. The front truck is loaded with a rear-mounted HIAB 177. One man operates the crane from the pedestal, assisted by a mate who fixes the slings on the bundles of material and positions the load on the truck deck. The other outfit is being loaded with an electric hoist mounted on an overhead travelling carriage. It can lift considerably larger bundles of material than the HIAB crane, but if you take a closer look you'll see that there are four men engaged on the loading of that truck. One is up on the deck, stowing the load, one is standing at the far right operating the crane, there's another man in front of the crane operator, and behind the bundle being lifted you can see the legs of a fourth. The last two are idle for the moment, but their job is to make up and sling the large bundles being lifted by the hoist.

So this picture is evidence that the HIAB Method is effective even at loading places where permanent crane equipment is available. And naturally the HIAB crane is invaluable for rounding off the efficiency of handling which the modern prefab maker must have to match the efficiency of his production.

The HIAB Method has rationalised the handling of prefabricated wooden houses at AB Gullringshus.

A new way to handle concrete pipes

Concrete pipes used to be hand-loaded one by one, a laborious job that called for men with plenty of time and plenty of muscle. But there's been a radical change at Huddinge Cementgjuteri outside Stockholm now that they've succeeded in solving their loading problem by means of the HIAB Method. There are two methods to choose from.

You can carry out the lift using a HIAB Speedloader 174 with the concrete pipes carried in special pallets.

Alternatively you can lift the concrete pipes in bundles of eight. The cluster is held together with special clamping appliances.

Unloading is also much easier now. The concrete pipes can be put straight into position, e.g. in a trench, thanks to the long hydraulic extension of the new Speedloader 174. Another point that makes the work still simpler is that the loader will lift all round the compass.

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THE COVER PICTURE

on the front of this issue, like the greater part of the contents, features the application of the HIAB Method in building. It shows how the driver of one of the Siporex delivery trucks, which all have one-man crewing and are equipped with HIAB cranes, copes with the unloading of Siporex units at a building site.

MOUNTED IN THE SAME WORKSHOP

Tranåsverken is one of the biggest makers of truck tippers and decks in Sweden. Now that it has joined forces with HIAB a truck chassis can be completely fitted out with crane, tipper and deck at any of HIAB's workshops scattered throughout Sweden.

This truck, just about to leave the HIAB service workshop in Stockholm, is having a pre-delivery test on its new 174 and its new Tranås tipper.