



Meet some Europeans!



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Polyols? Absolutely!



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Hang on tight!

It sometimes feels like a roller coaster ride, doesn't it? I'm referring to the world economy, and the global crisis level in general. In my last column half a year ago, I talked about the recession we were all facing back in those gloomy autumn days.

We were facing a recession, and indeed a recession did hit (in some countries more than others). But hang on tight, there are certain signs that we may be in for another change. This time, however, some of the signs are for the better. I know we're all hoping that the trough of the recession is already behind us, that business will continue to pick up, and that things will go on getting better for a very long time. It may be too early for excessive optimism yet, but...

In spite of the cycles, we're not talking about a circle, but a three-dimensional spiral. We go around, but don't ever come back to the exact same place. Change may be predictable, but it's permanent.

When we were facing the recession, it was urgent for all of us to focus on streamlining our operations, making the most of our methanol and maximizing plant safety. Is this over now? Of course not. These are simply the skills we fine-tuned (or should have) during a slower season – skills which will be necessary both short- and long-term.

Now, if indeed the world economy is starting to pick up speed again, we are (or should be) preparing ourselves to ride the wave. Some of you will be looking to increase the volume of your operations, others will be aiming to branch out.

No matter what your plans, hopes and ambitions for the future, as long as you say the magic word – formaldehyde – Perstorp Formox is prepared to assist you in any way we can to realize them.



Claes D. Lundström
President
Perstorp Formox

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Refreshing news

Participants from five continents. Week-long serious, focused discussions. Are we talking about an worldwide peace conference? A global political summit meeting? A gathering of the international association of philatelists? No, no, and no again. This is about a special week of refresher training for Perstorp Formox licensees!

When Perstorp Formox supplies a formaldehyde plant to one of its customers (there are close to 90 worldwide), operator training is included in the scope of supply. But the plants themselves are built to last for decades, so there is a constant need to train new personnel. Even some "old" staff members need a refresher now and then, to update their knowledge, get some new input and exchange experiences. The point is to assure maximum plant and catalyst performance and safety.

That's why we invited our licensees (see the last issue of *informally speaking*) to a full week of training – an Extended Refresher Training Course – at our headquarters in Perstorp, Sweden, during the last week of February.

Long-term approach

"Our approach is based on the fact that we never leave a customer in the lurch," says **Olle Johnsson**, who had overall responsibility for the training week. "We believe in long-term customer relations, because a formaldehyde plant is a pretty long-term deal. A few percentage points in operating efficiency quickly translate into big money, and we've got the expertise and commitment to help our customers maintain top-level efficiency year after year."

The "classroom" was one of the large rooms in Stensmölle – a gracious old building that was originally the home of the Wendts, the founding family of the Perstorp



The classroom was in the old founder's mansion.

Group. Classroom theory was complemented by practical reality in the form of visits to Perstorp Formox's own nearby HCHO plants.

Comprehensive program

The program not only reviewed Perstorp Formox plant technology in general, but reviewed differences in the individual plants represented by those in attendance. Operating parameters were reviewed, then followed up with a plant visit. HTF, BFW and steam system studies were followed by another look at the real world. Sound, safe practices were outlined and emphasized. Critical start-up and shut-down procedures were practiced. Catalyst operation and optimization were studied. Even maintenance and storage were covered.

"We had an excellent team, from every department within Perstorp Formox," adds Olle. "People from our process group, catalyst specialists, engineering, and our own plant operators. They all contributed."

So was it all work and no play? Not

entirely. A little evening recreation and relaxation goes a long way to promoting the digestion of an intensive load of information!

Let the "students" speak!

Yours truly, the editor of *informally speaking*, could probably go on and on extolling the virtues of this training program. Who needs it? Better to let the "students" speak for themselves! Here's a sampling of their assessments of the training week – in their own words!

- "Fantastic hospitality, great technical support, and a very good working relationship! I've been in the business for a year, and it was the ideal time for me to fine-tune my skills and apply my new knowledge. I'm impressed with your continuous outlook for new challenges and opportunities!"
Petros (Australia)
- "A very good refresher and reminder. And I learned a lot that was new! It's also interesting to meet others and see how they deal with their problems."
Francis (Canada)
- "Very interesting. I solved a lot of problems in my plants – and direct contact is easier than the phone!"
Joaquín (Chile)



Photos: Gert Höglström



The trainees had lots of information to absorb – and it wasn't only about absorbers!

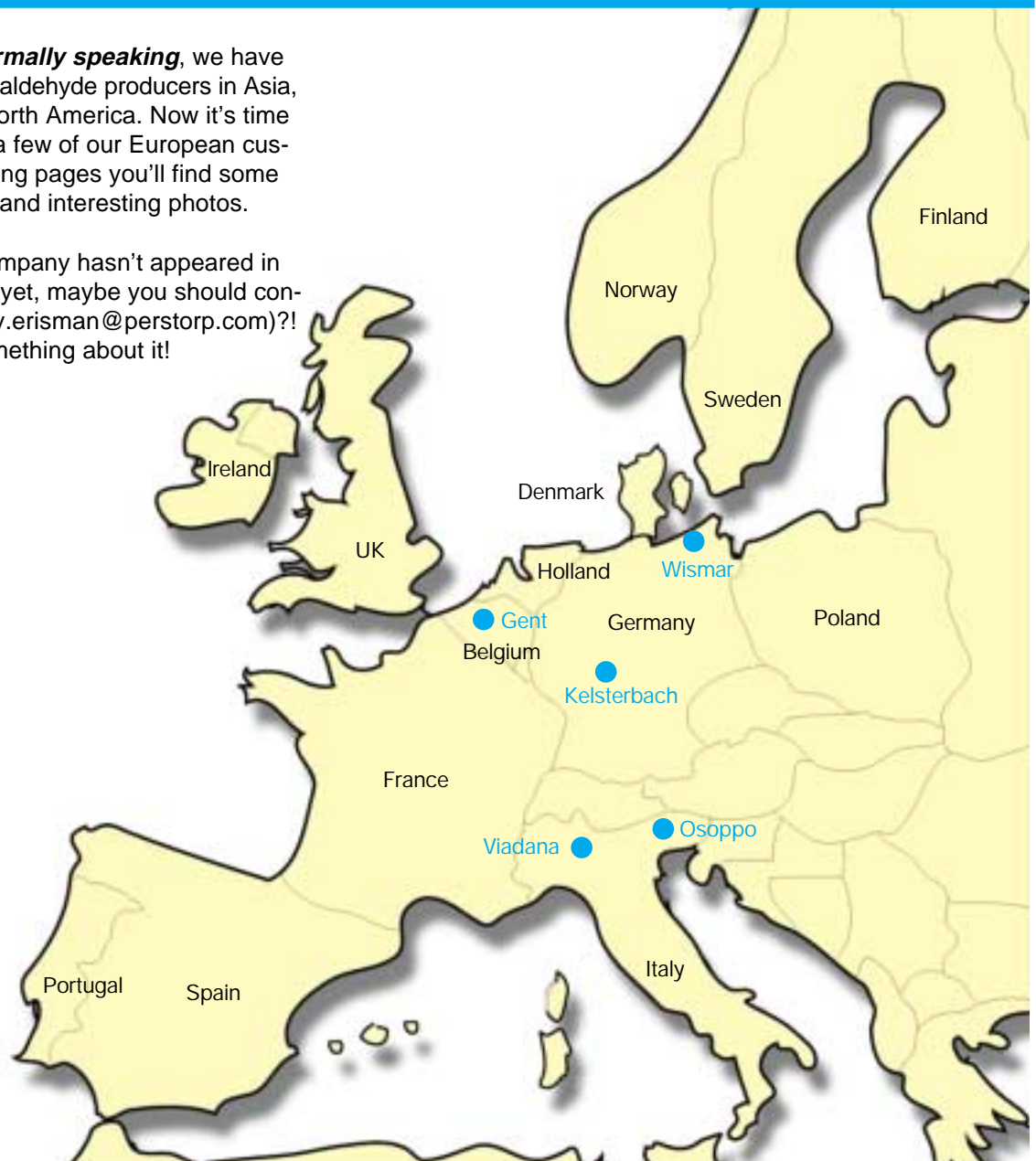
- “I’ve learned a lot of things that will help me in my job – it was very interesting. You’ve got a cold climate in Sweden – but warm people!”
Patricia (Chile)
- “A really good combination of theory and practice. The pace of learning was just right for me.”
René (Germany)
- “It was really well prepared, with a chance to discuss with different departments of Perstorp Formox and get an overview. It’s also very useful to have the opportunity to discuss with other plant managers, supervisors and operators to gain insight into different situations that arise in a plant.”
Carlos (Germany)
- “Very useful! It was a good way for me to learn the *best* way to run a plant. I got good answers to my questions and good ideas to go back with.”
Keith (UK)
- “The week could have been more compressed, but I did indeed learn something.”
K.V. (Holland)
- “We knew most of the stuff already, but there were many new specific details. It was very worthwhile.”
G.V. (Holland)
- “The whole week was excellent. I learned a lot and enjoyed meeting people from many different countries!”
Peter (Malaysia)
- “A nice week – I’ve learned some things that will help to solve some problems, and a lot of things I want to try in our plant. It was my first time in Sweden – and it’s very cold!”
Iftikhar (Pakistan)
- “It was exciting to see the latest technology first-hand, and to exchange experiences with the others. A fabulous week – I’ve learned so incredibly much!”
Urban (Sweden)

In other words, if you missed it, you apparently missed a lot. But your chance may come again....

Feature: A look at Europe

In past issues of *informally speaking*, we have looked at various formaldehyde producers in Asia, South America and North America. Now it’s time (high time!) to talk to a few of our European customers. On the following pages you’ll find some facts, brief interviews and interesting photos.

By the way, if your company hasn’t appeared in *informally speaking* yet, maybe you should contact the editor (stanley.erisman@perstorp.com)?! Maybe we can do something about it!



Ticona – Kelsterbach, Germany



Photo: Gert Högestrom

Dr Jürgen Lingnau

A few facts about Ticona

- Ticona GmbH is the engineering plastics (polyacetals) business of Celanese AG, and was originally (early 1960s) founded as a 50/50 JV between former US-based Celanese and former Hoechst AG.
- Production facilities are located in Europe (Germany and UK) and the USA, while Asia is covered by Ticona's non-consolidated affiliate, Polyplastics Co. Ltd., Japan.
- Ticona has two HCHO plants from Perstorp Formox, built in 1972 and 1996.
- Ticona sells customer-specific polyacetals in pellet form.
- The downstream products of Ticona's polyacetals comprise thousands of products, e.g. automotive parts, electrical and electronic parts, medical products etc.



Photos courtesy of Ticona.

Some of Ticona's downstream products.

Dr Jürgen Lingnau, European Monomer & BL Polyacetal Manager, tells what's happening:

“Around half of our customers are OEMs for the automotive industry, since high-grade engineering plastics are replacing metal more and more thanks to high strength, low weight and corrosion resistance. The electrical and electronics industries are also given end-users of engineering plastics and account for as much as 30% of our customers' downstream business.

“In spite of the general global business

downturn late last year, we ourselves have seen only a little slowdown and over the years have maintained above-average growth. Some areas, especially automotive, remain surprisingly positive. So we're optimistic for the next couple of years and do not envisage major changes in our expectations!

“We've built up a positive relationship with Perstorp Formox that has grown over the years, both in terms of personal cooperation and friendliness, as well as on the technical side. Your R&D approach is feedback-driven from internal and external customers, since we

see it as important that you screen various parameters in trials and in your own production under harsh, full-scale conditions before you go to the market. Plus you're aware of the long-term effects through practice.

“The fact that you recycle catalyst is very important to us, as is the loading profile advice we get. We also appreciate your keeping in touch and the regular visits by your process engineers. It's never ‘Oh, no, not him again!’ – you're visitors we always like to see.”

ACM Wood Chemicals – Wismar, Germany



The formaldehyde plant in Wismar

A few facts about ACM Wood Chemicals

- ACM Wood Chemicals trades internationally and has production facilities in Greece, Germany, Belgium, Canada, South Africa, and Australia.
- The downstream products are a variety of board materials (for which the company produces resins, not the board itself).
- ACM Wood Chemicals tailors binder systems to customers' needs and can supply resin, technology or plants to manufacture resin.
- Perstorp Formox has supported ACM Wood Chemicals by supplying plants in Belgium, South Africa and Germany (Wismar).



Photo: Gert Högestrom

Carlos Concha

Carlos Concha, Assistant Plant Manager, describes the Wismar plant:

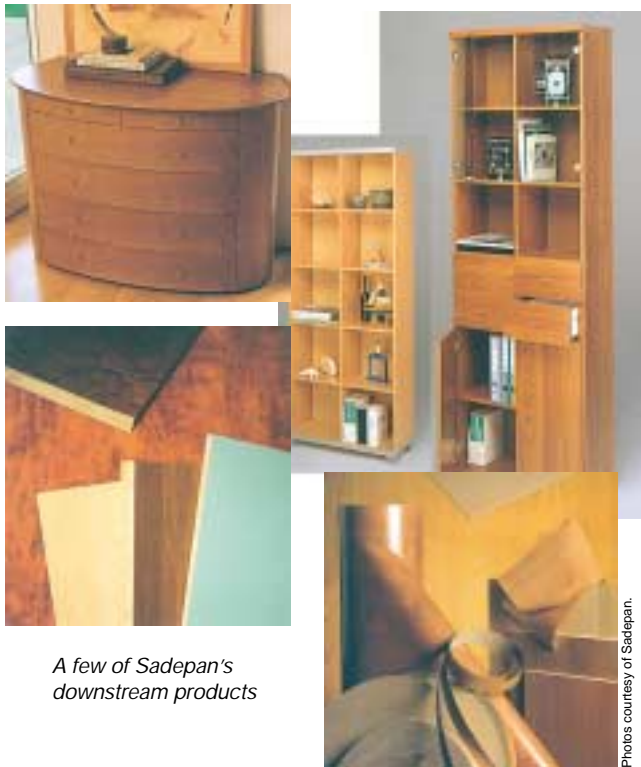
“Our big formaldehyde and resin facility went on stream in early 2001 on Egger's site in Wismar [Egger is ACM Wood Chemicals' customer and a leading European board producer], primarily for the purpose of supplying resin to Egger Wismar. ACM Wood Chemicals represents excellent technology for board producers, backed by long experience in resin production.

“Perstorp Formox supplied our plant here – as well as several others for the ACM Wood Chemicals Group (Belgium and South Africa) – and things have been running smoothly. My personal experience with Perstorp Formox goes back a number of years [Carlos was also interviewed as a representative of GP-Masisa – now GP Resinas – in Chile for the spring/summer issue of *inform-*

ally speaking], so I'm not surprised. I can always count on your people for solid, professional service – and a very friendly relationship too!

“One new experience for me here at the Wismar plant was your catalyst re-loading service. I must say I'm really impressed with the speed and accuracy. We're very satisfied!”

Sadepan Chimica – Viadana, Italy



A few of Sadepan's downstream products

A few facts about Sadepan Chimica

- The company belongs to Gruppo Mauro Saviola, founded in 1963, and whose eponymous founder retains a significant share.
- The group produces formaldehyde and resins (via Sadepan Chimica) as well as particleboard (1.5 million m³/yr), MDF and “kit” furniture for do-it-yourself assembly, and designs and develops board surfaces.
- Other group products include high-grade fertilizer (used by golf clubs!) and UF fire retardants.
- One of Europe's major producers, the total HCHO production amounts to 420,000 tons at 2 locations in Italy.
- A huge new 2-line facility is now under construction in Belgium, with capacity for 240,000 tons of resin. Scheduled to go on stream in August 2003.



Dr Alain Durocher

Dr. Alain Durocher, Regional Managing Director, comments on his company's approach:

“Our company has a very strong recycling policy. In fact, we feel that particleboard is and should be essentially a recycling process for wood. We have placed something like 2,300 containers throughout Italy to collect old furniture etc. to save the forests and get our raw material. Utilizing the ‘urban forest’ is the only ecological way. And to think that in some countries, people

actually pay tremendous money to get rid of our valuable raw material! We try to utilize all waste products. We even utilize the pulp of chestnuts after tannin extraction – it's an excellent raw material for MDF!”

“We now produce 100% E1 grade, but we're going in the direction of ‘blue angel’ grade – with even lower emission levels [less than 0.05 ppm Chamber].

“I'd also like to announce the construction of our new plant in Belgium via *informally speaking*. We're obviously very ex-

cited about this modern facility and what it will mean for our business. Today we're shipping 120,000 tons of resin to Belgium from Italy, so this will save a great deal in logistical and raw materials costs, while increasing our supply capability in this region.

“We've been buying catalysts from Perstorp Formox since 1986 and are very happy with the service and technical support we get from your people. And of course we're pleased with the catalyst performance – the consistent high quality and good running times.”



Mr. Saviola strives to save the trees – and use “urban forest” instead.



One of Sadepan's plants – note the wood depot (far left): it's all recycled!

Dynea NV – Gent Belgium



Dynea's resins are used in a wide variety of board products.

A few facts about Dynea NV

- Dynea NV, originally a Dyno plant, produces adhesives for wood and industrial applications.
- The Dynea Group is the result of the merger between Dyno and Neste Chemicals. Dynea Europe has 22 different sites.
- Dynea NV serves Benelux, northern France and Germany.
- The company's products include panel board resins, wood & specialty resins and industrial resins.
- Dynea NV is planning to more than double its resin capacity – from 130,000 to 260,000 tons.



Magnus Schreiber

Magnus Schreiber, General Manager, outlines the focus of his company's business:

“Most of the panel board resins we produce go to particleboard and MDF, but OSB is really our biggest growth segment. Actually we make resin for another small board product here in Belgium: flax board, a by-product of Belgian linen production, but this product is only marginal.

“We supply board manufacturers, we don't produce board ourselves. And our customers use a large portion of recycled wood, mainly domestic – from Belgium. As a member of the only truly global company in adhesives, we have a big advantage. The group has over 50 production sites in 25 countries, representing a lot of experience covering a very broad range of applications that we can pass along to our customers.

“I'd like to mention an interesting example. The world's reportedly longest wooden bridge – the Tynset bridge in Norway – is a 3-span, 130 m construction of glulam beams produced with a

phenol-resorcinol resin from Dynea. Wooden bridges may sound old-fashioned, but this one is really high-tech, and opens the door to lots of interesting construction alternatives.

“We've been using catalyst from Perstorp Formox in our formaldehyde plant and have been fully satisfied. You're very professional people, with good availability, response and support. We're also really pleased with the reloading service, which saves quite a lot of time and gives very even loading, and thus better performance.”



Photos courtesy of Dynea.

The Tynset wooden bridge – built with resorcinol resin from Dynea

Fantoni – Osoppo, Italy



The Fantoni facility has a beautiful location at the foot of the mountains in Northern Italy.

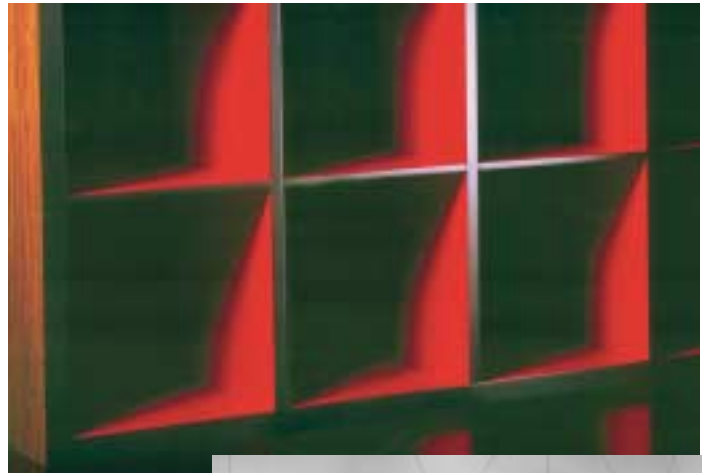
A few facts about Fantoni

- Fantoni traces its history back to the late 19th century, starting as makers of fine furniture.
- The company began producing particleboard and the early 1970s, and in 1979 pioneered in European production of MDF.
- Fantoni's activities also include resins for paper impregnation and a division for office furniture – including product design.
- Fantoni's HCHO plant was supplied by Perstorp Formox in 1991.
- Last year Fantoni launched a continuous process for production of medium-thickness (8-40 mm) particleboard.



Dr Leandro Zuliani

Design plays a key role in Fantoni's culture.



Photos courtesy of Fantoni.

Dr Leandro Zuliani, Production Director, discusses the things that drive his company:

“We don't only produce raw material, but also furniture, so we see how our products are actually used and are thus in a position to anticipate solutions and propose new types of utilization.

“We also have a proud tradition of craftsmanship, stemming from our fine furniture origins, and also for our active and constant cooperation with famous designers. The designers aren't only for our furniture products. We're probably one of the few companies in our field to have architect-designed production plants!

“Another area that is an important part of our company philosophy is anticipating and understanding as early as possible what our customers will need in the future. You could say that our desire to keep a step ahead, combined with our attention to good design, are the driving forces in our business – always seeking the very best and most advanced solution.

“We've maintained a good level of cooperation with Perstorp Formox over the past 10-12 years, even if we had a few problems in connection with some installations at the plant. We had some open debates with you, but the problems were solved 110%! Since then, whenever we've had any difficulties with performance, Perstorp Formox has responded – and comes to our site when needed.”



After nearly 40 years with the company, Max Henning has decided to step down – mostly – in order to devote his time to other interests. Max has not only played a key role in the development of Perstorp Formox as the world's leading supplier

Max

of formaldehyde technology and support. He has also been a “bridge-builder” of rare proportions, not only building business, but friendships across all kinds of borders, friendships that in many cases have lasted for decades. More than this: Max Henning has served as a mentor to most of the people who today comprise the Perstorp Formox team: always an ear, always an anecdote, always good, sound advice on everything from operation to human relationships.

It has been my privilege to know and work with Max for nearly 25 years, first helping him to improve the English in his correspondence and

reports, finally as his “editorial partner” in launching the publication you are now reading. Through it all, Max has patiently clarified the world of formaldehyde for me, making the fundamental principles clear without going over my head in technicalities. This is Max: he talks to everyone, everywhere, on their own level, because doing so is his level.

I know that I speak for both customers and colleagues when I say that we're going to miss “Mr Formox”. But let's hear what Max has to say about it all...

Stan Erisman



When did you join Perstorp?

I came to Skånska Ättikfabriken AB [as the company was called way back when] in April 1964 and started as assistant production manager for the Perstorp Formox plants (two plants, six reactors). I was also asked to be in charge of the pilot plant for catalyst development. In order to allow me to “get warm quickly”, my former employer – Bofors – agreed to a two-week leave, during my period of notice, so I could meet with



my predecessor. This was a kind gesture by Bofors, as I also had to complete 40 days of training of my military skills during the same short period of notice. My wife Görel joined the company in January 1965 and as we both had grown up by the coast, we decided not to stay for more than a few years in order to save some money....

Wherever there's a Perstorp Formox plant, Max has probably been there – many times.

What was it like at Perstorp back then?

Production managers at that time probably had much more diversified jobs, especially during the summer periods, when even the youngest could have responsibility, not only for their “own” plant(s) but also have

to act as a stand-in for others. I remember that I even had to drive the factory locomotive in order to find a train-car and to fill it with formaldehyde for delivery. This could happen a few times a year. I had been given brief instructions in advance, but had paid little attention, because it wasn't supposed to really happen. To my surprise, we managed to do this “odd” job and probably even managed to achieve some customer satisfaction!

The period from 1960 to the mid 70's was characterized by a tremendous expansion in all areas of the company – which changed its name to Perstorp AB in the late 60s. Things were happening at Perstorp Formox too. Every year saw the development of a new reactor system or the installation of a new plant. This was a fantastic period, with many people involved, too many to be mentioned individually. But I do want to mention two of my best friends, Arne Andersson and Kenneth Ausfelt, who made significant contributions. Both Arne and Kenneth have recently passed away, I am very sad to say.

How did you get involved in licensing plants?

Two of my colleagues back then, Bertil Hedberg and Georges Dahlgren, sold the first plants to Spain, Chile, England and Israel in 1965/66. Our technical experts were Alf Hasselquist, Dieter Schmidt and Erik Kristensson. When the plants were under construction, training of the operating personnel of the clients had to be done here in Sweden. As this was a natural part of my job, I was asked to handle it. I made a lot of new friends and still maintain contact with a number of my first “trainees”.

In 1970/71 another “swarm” of plants

were sold and the start-up assistance to our customers became a bottleneck. Who knows how to start a plant? The production manager!

I therefore had the pleasure of starting plants in Germany, Malaysia, Austria, Brazil, Venezuela, Finland etc. What made these events truly memorable for me were the opportunities of finding some new, local friends, some of whom I still meet occasionally.

In 1975 I was asked if I would like to take over as salesman for our plant technology. And as I had great confidence in the product, I readily accepted. Apart from a few years with Perstorp Regeno [the former name of the Perstorp unit that provides engineering services] between 1977-82, I have had basically the same job ever since.



Max in the dashing days of his youth, i.e. his early years at Perstorp Formox.

From 1965 to 1992 we were selling “just the technology”, which means basic engineering, training, start-up help and the right for the customer to use our technology. Since 1992, Perstorp Formox has also been supplying the detailed engineering for the plants and delivering all parts as a “complete package” to the client. This approach has led to a sharp increase in plants sales. As a consequence, the number of employees has gone up 4-5 times and we are now more than 80 persons, just dealing with formaldehyde and catalysts.



Max & Bob negotiate.

For me, it has been a special pleasure to share this time with Bob Crichton, who has pointed out different ways to make the “high-volume” sales of formaldehyde plants more efficient.

We have together experienced periods of 14 working days in a row, for instance in China, basically working around the clock, in order to obtain a project. And we have also had romantic candlelight dinners by the canals in Venice – each of us wishing that the other were someone else!



Max has overseen the signing of many contracts.

How is it possible to stay so long in Perstorp and in the same job?
Well, my wife and I have actually moved 5 times within the village. As far as the job is concerned, there is always variation, since it involves development, production, engineering, marketing, advertising and very many legal issues. In all disciplines I have had the pleasure of meeting lots of interesting people!

Sales is an art, based on a special kind of human psychology. You read a lot about subjects like “win-win deals”, “how to do business in China” etc, but it’s things like common sense, honesty and respect for your counterpart (and yourself) that make the difference in the long run – as long as you keep your promises!

The challenge of selling gives great pleasure if you are successful. This pleasure – and meeting so many people from different parts of the world – has made my job “the best in Perstorp”!

What will you be doing now?

Though globe-trotting like I have done might seem a luxurious job, it has also been hard. Traveling about 100 days a year for more than 30 years wears the body. I must also say that without all the help and understanding I’ve received from my wife, it wouldn’t have been possible for me to have gone on for such a long time.



Max knows how to snorkel - and how to keep his head above water!

Now that I have retired, I will just stay on to complete a few ongoing projects. Mikael Ekblad has taken over my job and Olle Johnsson will assist him. Bob Crichton is also supporting the business as usual. As I will be spending more time on the golf course and traveling (old habits are hard to break!), I would like to take this opportunity to ask everyone to contact Mikael, Olle and Bob regarding any formaldehyde-related questions.

Projects & Start-ups

The eternal question: What’s new since the last issue of *informally speaking*? Here’s an update on Perstorp Formox’s ongoing and completed projects, as well as revamps. As always, we only mention customers by name or publish specific information about their plants if we have their explicit approval to do so. Consequently, some of the information you find here will be specific, other information will be less so....

New plants on stream

- One new plant in South-East Asia was started up in February, another in June. Both are involved in production for the board industry.
- A plant in China successfully completed a performance test in March.

Ongoing projects

- Construction of the plant for **Qafco** in Qatar is scheduled to commence in August. Special consideration has to be taken to the fact that surfaces exposed to direct sunlight can reach temperatures in excess of 80°C!

- On the other meteorological extreme we have the new plant for **Metafrax** in Russia, where winter temperatures can plunge to nearly -50°C! Summer doesn’t arrive until June and may be gone again by August.
- Construction is expected to begin this autumn on a new plant in South America.
- A new plant in China is scheduled for start-up in November.

Revamps

- The pressurization of a plant in Europe was successfully completed in March.
- A plant in Asia will go on stream with pressurization at around the time of printing of this edition of *informally speaking*.
- A new ECS facility has been installed at a plant in North America.
- The ECS ordered by Nantong in China is scheduled for commissioning in September.

Polyhydric alcohols – polyols

by Bob Crichton

It was once suggested to me that polyhydric alcohols, or “polyols” as they are more commonly known, were simply Absolut [vodka] with a lot of water. This was wishful thinking on the part of someone who had consumed too much of the former and not enough of the latter. But what are these chemicals and how is formaldehyde involved?

Well, they do have something in common with Absolut; both are manufactured in Sweden and both contain hydroxyl (OH) groups. Polyols, however, have multiple OH groups. More than two to be precise, as alcohols with two hydroxyl groups are referred to as glycols or diols – though we shall not make that distinction here.

Why they should interest us is that an important group of polyester polyols use formaldehyde in the manufacturing process. These polyols are produced by the reaction between formaldehyde and a higher aldehyde – such as acetaldehyde, propionaldehyde or iso- and n-butyraldehyde.

Aldehyde	Polyol produced	Common name
Acetaldehyde	Pentaerythritol	Penta
Propionaldehyde	Triethylolethane	TME
n-Butyraldehyde	Trimethylolpropane	TMP
Iso-Butyraldehyde	Neopentylglycol	Neo or NPG



Actually there is another commercially available polyol that uses formaldehyde – this is formed by the hydroxymethylation of acetone in a base catalysed reaction with formaldehyde. Its chemical name is anhydroenneheptitol – which probably explains why very few people have ever heard of it!

Polyols have a variety of uses; they are, for example, used in the manufacture of polyurethanes – the subject of an earlier article. With some notable exceptions, however, the main use is as coating intermediates.

Polyol development was originally in response to the need for safer explosives; substituting penta for glycerol yielded pentaerythritol tetranitrate (PETN) – a safer alternative to nitroglycerine. And to this day, PETN is used in detonators and blasting caps and accounts for some 3 to 5% of penta consumption.

Over 50% of penta is used for alkyd resins. These resins, originally developed in 1920, are used in protective coatings. As in the case of PETN, the penta substituted for glycerol. Alkyds – and the resultant paints – produced from penta have improved properties. These days, however, paints are much more complex; the need for low VOC levels and even better performance has resulted in a plethora of formulations and coating techniques. Thankfully, many of these use one of the other formaldehyde-derived polyols.

Another important and fast-growing use of polyols is in synthetic lubricants. Originally developed for use in jet engines, these products were soon being used in high performance engines and are increasingly being specified by the wider motor industry. This sector is growing fast – at around 9% per year and has provided a welcome boost to polyol demand.

Polyol capacity in the world is approaching one million tons, consuming over 2 million tons of formaldehyde (37% basis). Growth rates are modest and generally below GDP growth levels, with the notable exception of Neo (around 2 times GDP).



Polyols in Perstorp

Perstorp's association with polyols goes back to 1940 when the company funded a study at the University of Lund. This was directed at penta, which, like many chemicals, is relatively easy to produce but difficult to produce well. In fact, it was not until 1950 that quality reached Perstorp standards and production could commence in earnest.

The team then directed their attention to TMP and the first plant started production in 1955. Perstorp's well-earned reputation for quality allowed production to be expanded to include Neo, again a Perstorp process, and specialty polyols. The operation is now global with production facilities in the USA, Germany, Italy, Belgium and India, as well as the original plants in Sweden

Corrections

There were a couple of errors in the last (autumn/winter 2001) issue of *informally speaking* for which your editor wishes to apologize. Although these errors were corrected immediately in the pdf-versions available for downloading from our website, they may have escaped your attention, so here they are:

- In the section on page 4 about “Plant incidents & preventive measures”, the following wording is correct:

“In this particular incident, the methanol safety valve – which provides the primary security – failed to close, so even with the control valve closed, there was fuel for the subsequent fire.”

The underlined word “close” mistakenly read “open”. Please note this correction!

- In the article on our reloading service on page 8, the person listed as Billy Oakley is in fact **Billy Edwards** and he is the Billy you see in the picture. The president of Wright Corporation is **Bill Oakley**, whose picture did not appear in that issue. My apologies to both gentlemen for mixing up their names!



The methanol outlook

Few topics are as important to the hearts, minds and wallets of formaldehyde producers as the price and supply of the most important raw material. In issues of *informally speaking* that include coverage of one of our formaldehyde seminars, there is always a report on the latest methanol trends. This issue has no such seminar report, however. So **Ben Iosefa** of Methanex in New Zealand, and twice a guest speaker at Perstorp Formox seminars in Asia, kindly agreed to contribute a methanol market update to this issue. Here's his analysis:

In general, 2001 was a year of softening prices in the methanol industry, driven by a combination of weak demand and unusually high methanol production rates in the Middle East. We estimate that demand for 2001 was off by approximately 5% compared to typical annual growth rates of 4-5%. As a result, pricing fell from levels of more than \$200 per tonne in the first half of the year to levels closer to \$100 per tonne by year-end.

This year began much the same as 2001 ended – with very low pricing. However, methanol production problems and a general strengthening in methanol demand have tightened up the market considerably. The market tightness began in Asia due to several unplanned outages. As a result, Asian pricing firmed considerably, which attracted unusual product flows from Europe and the Americas into Asia. These product flows,

coupled with strengthening demand and additional outages in Europe and the Americas, have led to more significant price increases recently.

The US has led the market, with spot prices increasing to levels in excess of US\$200/MT, followed closely by increasing prices in Europe, where spot prices have reached over 200 Euro/MT. Given the differentials that exist between Asia and the US, De-Witt reports that it is only a matter of time before prices in Asia come into line with US and European prices. This is due to cargoes now being preferentially shipped to the US market. Recently, we have seen evidence of the arbitrage window closing, with domestic prices in China having reached levels of \$180/MT.

Markets throughout the world are currently tight. The general perspective in the industry seems to be that this situation will



Ben Iosefa, Methanex

be maintained for at least the next few months. A return to more normal supply is necessary to replenish low inventories and to accommodate the expected demand growth as the economic recovery takes hold. Longer term, we do not expect that there will be any significant additions to methanol production capacity for the next 18 months. The combination of strong demand and expectations of no new supply suggest continued firm pricing in the market.

[Subject to change. Ben's report was submitted in mid May 2002.]

Support line

Among the standard features of the new formaldehyde plants that Perstorp Formox is supplying to customers worldwide is a new generation of control systems. These systems give extra support to our clients by allowing certain trouble-shooting and configuration tasks to be performed on-line – via phone modem!



Virtual trouble-shooter

What this means, in effect, is that if and when a customer operating a Perstorp Formox plant equipped with the new control system chooses, he can open a secure window to utilize Perstorp Formox as a "virtual trouble-shooter", with real-time monitoring of key operating data from a remote location, e.g. from our headquarters in Sweden. There are also possibilities to help with the configuration and make changes in the graphics.

"We see this as a step forward in our mission to provide trouble-free operation," says **Olle Johansson** of Perstorp Formox. "For those who want this kind of support, we can be right there, to issue timely warnings, to suggest necessary adjustments and to help keep things running at optimum efficiency and profitability. It's almost like sitting across the desk from a customer who hands us something and says, 'What do you make of this?'"

Already tested

This function is already up and running at plants such as the Oxinova project in Venezuela (started last year). We also know

that other formaldehyde producers are utilizing this possibility to support the performance of formaldehyde plants located in sites different from their main site. **Eli Vilorio**, Production & Maintenance Manager at Oxinova, thinks the system is great: "It takes a lot of the anxiety out of our operation, because we know we can get qualified support from Perstorp Formox in a very short time. So we really do get a good night's sleep! Everything we've seen of how this kind of control system works so far means that we would hardly consider buying another plant without it!"

The right level

"We've put a lot of effort into assuring the highest level of security," notes Olle, "so that the customer is always in full control of who gets to see their data. In other words, it's always the customer's decision about what level of service and support they want us to provide."

Please contact Perstorp Formox for further details.

Faces & places

As always, there have been a few changes in our team since the last issue of *informally speaking*:

- **Ola Nilsson**, formerly one of our process operators, has been promoted to production supervisor.
- **Henrik Aplander** has taken over as Production Manager at our site in Dordrecht, Holland, replacing **Anna Wemby**, who has taken another position in the Perstorp Group.

And we're feeling the effects of a minor "baby boom" at Perstorp Formox:

- **Marie Grönborg** had her second child and will be away for the time being.
- **Maria Yngvesson** has also just had her second child and will be on maternity leave.
- **Anna Ljungkvist** will be ending her maternal leave – but is leaving us for a teaching job at the Perstorp High School. All the best, Anna!
- **Gert Ternström** has left us for a few months of paternity leave, after which he will be starting a new position at Alfa Laval, and we wish him the best of luck!
- But babies aren't keeping everyone away: **Eva Lindgren** has rejoined us after her maternity leave and is a welcome reinforcement on our Process team.



Good morning, how's your yield today!

According to calculations from CanTox Inc. in 1988, the human body produces 51.4g of formaldehyde every day as part of the natural metabolic process. Assuming a world population of 6 billion, then we humans produce 300 million tons of formaldehyde (37% basis) every year – or around 10 times the installed plant capacity!!

supplied by Bob Crichton

Next seminars

2002 is the year with no seminars. Consequently, the "news" remains the same as reported in the last issue of *informally speaking*. Here's a summary:

- The next **Formaldehyde Europe** will be held in Helsingborg and Perstorp, Sweden in May 2003.
- The next **Formaldehyde Americas** will be held in the Miami area in October 2003.
- The next **Formaldehyde Asia** will be held in April 2004, somewhere in South East Asia, at a location to be decided.

Check our website under "News", "Seminars" from time to time. And of course read *informally speaking*!

Also note that the geographical names of our seminars indicate where they are held. They are now all open to every Perstorp Formox customer worldwide!

Visit our new website

The Perstorp Formox website is getting a new face – and some new material. In fact, the entire section on our budding Environmental Catalysts business will be entirely new for you. It may, in fact, be so new that you'll have received this issue of *informally speaking* before the new site is published on the Internet. Be sure to check back!

Why have a new site and a new look? Because new techniques have made it possible to create a site that is faster and easier to navigate. So we're taking this opportunity to update a lot of material and make the whole thing easier and more pleasant to read as well.

Our ambition is to update the material more frequently, and to gradually replace and update many of the pictures and other images. We also have a Customer Center in the pipeline – one that will give each of our customers password-protected access to specific information that is relevant for them.

If you have any questions or comments, please contact the editor of *informally speaking*! Your input is valuable!

By the way, you'll find our site at any of these addresses:

- www.formaldehyde.com
- www.HCHO.com
- www.perstorpformox.com
- www.perstorp.com/formox



Questions or comments about *informally speaking*?
E-mail the editor!

informally speaking

aims to provide **information** about **formaldehyde** in an **informal** forum and is published twice annually by Perstorp Formox for its customers and contacts in the formaldehyde business. The information included herein is part of our customer service and in no way entails or implies any undertakings, legal responsibilities or liabilities.

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