

Two (2) More Seminars:

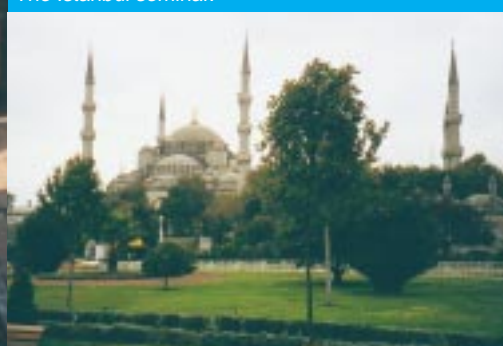
## New Orleans & Istanbul



The New Orleans seminar.



The Istanbul seminar.



The famous "Blue Mosque" in Istanbul.

Old Bourbon Street in New Orleans.

### Y2K - final reminder

Soft- and hardware suppliers point out that it makes sense to make back-up copies. Even more so if you make them as late as possible in 1999! Then hope you won't need them!

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### Stepping up the pace

*Citius, altius, fortius* ("faster, higher, stronger") is the motto of the Olympic Games, but in a small way it could also apply to recent developments in the formaldehyde business in general and Perstorp Formox in particular.

The recovery of Asia's economy is now clearly underway, to the delight and relief of all of us. Our faith in the underlying strengths of the economies in question remained unshaken throughout, but we certainly don't mind seeing our faith converted into fact.

Perstorp Formox has experienced a noticeable increase in new plant orders, which is obviously good for our business, but is perhaps also a signal of the favourable economic climate in general; it suggests a rise in building construction, development of the chemicals market etc. Maybe some day the financial analysts will want to use our order books as a market barometer?!

We're also seeing greater interest in the seminars we sponsor, both in terms of the number of seminars and especially in the active participation it has been our pleasure to witness. Is there a reason for it? We believe it could indicate a greater awareness on the part of formaldehyde producers everywhere of the importance of plant performance, plant safety and environmental safety. At the end of the day, all of these factors are key contributors to sound business practice.

At Perstorp Formox, we've been gradually building up our staff to match the growing list of customers worldwide. We've recently doubled our catalyst plant and are working to boost the level of service in every respect.

Our R&D in environmental catalysts is now beginning to pay off, as new products targeting other types of emissions are starting to reach the market.

Finally, Perstorp Formox is playing an increasingly central role in the Perstorp Group, "the core of Perstorp's core business", as we are fond of reminding our parent company. The Group's increasing focus on formaldehyde-based chemistry is further evidence in support of the claim we've always made: We're here to stay!

**Claes D. Lundström**  
General Manager  
Perstorp Formox

# Formaldehyde Producers' Seminar for the Americas - New Orleans, September 29-30, 1999

**"The Perstorp Formox Formaldehyde Producers' Seminar for the Americas" - the name alone demands to be taken seriously! And with its heavy emphasis on operational and environmental safety, there were some pretty serious matters on the agenda.**

**Four South American and two North American nations were represented, along with several European producers and, of course, a team from Perstorp Formox in Sweden.**

**The general consensus of participants seemed to be that the two days were intense, productive, enlightening and fun. Seriously!**

## DAY ONE

Starting off the day with a breakfast buffet in the conference room, the participants needed no formal introduction to each other (as might be expected of the readers of *informally speaking!*). Many had met before, so it was often a question of getting updated and reacquainted.

**Claes Lundström** (Perstorp Formox's General Manager) led off the presentations with an update on the Perstorp Group, which has been sharpening its focus on its core businesses, namely selected areas of chemistry. In this restructuring process, Perstorp Formox plays an increasingly central role.

## MeOH update

Claes was followed by **Frank Galioto** (Methanex), who covered what's happening on the methanol market, where HCHO is still the biggest (34-35%) single application.

"There are 4 million tons of new capacity coming on stream this autumn," he says, "and the effect is not yet known." Demand in the US and Europe is strong, and demand in Asia is increasing.

Frank also took up MTBE, a major - and controversial - MeOH application that is being targeted for banning in certain markets. Proposed legislation in California, for example, calls for a complete phase-out by the end of 2002. "This is a political hot potato," Frank comments, "since MTBE is difficult to replace and there are no clear answers. A broader ban could, of course, have a significant effect on the overall MeOH market."



Frank Galioto.

In the medium term, the over-supply as new plants start up could lower prices. This, however, could wipe out certain producers, thus raising prices again. "In the long run, nobody really gains much from lower methanol prices," Frank concludes, "but from price and supply stability!"

## HCHO update

Moving along in familiar sequence from MeOH to HCHO, **Bob Crichton** gave the meeting an update on the formaldehyde market, where the current annual global consumption stands at 19 million metric tons.

Of this, the board industry accounts for the biggest single share, 44%. "Panel is taking an increasing share of the total, stable wood-based market," notes Bob, "as high timber prices drive board consumption up." Moreover, the growth of continuous processing requires higher solids, and thus more HCHO, "so everyone ought to be optimistic about the board industry."

Bob pointed out 3 key panel market stimulators: the furniture industry (where panel offers superior dimensional stability over natural wood), housing (e.g. in the form of laminate flooring) and - hurricanes! "An awful lot of windows get boarded up," claims Bob, "and then there's a significant rebuilding volume."

Regarding HCHO applications in chemicals, the second biggest area, Bob foresees stable growth through 2002 at least. Polyols (such as NPG, Penta and TMP) are again, via coatings, a significant growth market, as are acetals. MDI has seen astronomical growth in the last five years, but Bob was somewhat doubtful that this pace would continue. Overall, however, Bob predicts continued fairly healthy growth (3% PA) beyond the millennium rollover. "And new formaldehyde plants are being built - and will continue to be built," asserts Bob, citing activities in the US, Europe, South America and China.

## Futureware? Not for long!

Next up was **Dean Trotter** (Neste), who briefed the meeting on the status of an exciting new computer-based training program. Designed specifically for operators of



Dean Trotter.

metal-oxide-based formaldehyde plants, the program is the result of a joint effort on the part of a number of interested parties.

"There's always been one big problem with training," Dean observes: "How do we know that the operator has really learned what he's supposed to?" The new program will not only feature a knowledge check at the end of each section, there will also be a final "mastery test".

The new multimedia program has been a long time in the making [see *informally speaking*, autumn/winter 1997], but it promises to be worth the wait. According to Dean, the features will include:

- password protection for each user (several trainees can thus use the same program)
- approx. 48 hours of training time for a novice operator to complete the program
- possibility to repeat whenever necessary (e.g. for refresher training).

In addition, the software will reportedly be possible to customize for different languages, specific plants and broader maintenance routines.

"All of us who've been working on this project are convinced that it represents an important breakthrough in plant safety and performance," says Dean.

What remains is the administration. As this project involves several companies, it has not yet been decided who will handle distribution, how much it will cost etc. Hopefully, this information will be available by the next issue of *informally speaking!*

## Process Safety Management (PSM)

Actually, the new training program is based on PSM, the topic of **Alan Rodger**. PSM is a comprehensive system of procedures and measures for "the proactive identification and rectification of potentially hazardous factors" in the operation of industrial plants. PSM was developed by OSHA (the American Occupational Safety & Health Administration). In the USA, it applies to any plant producing more than 1000 pounds (450 kg) of HCHO, i.e. it includes all plants.

In outlining the scope of PSM, Alan noted that OSHA requires a written plan, compliance with recognized standards, sys-

tematic identification of hazards, and revalidation every five years. Moreover, it requires the participation of all operating personnel - not just the plant engineers! Operators must understand the *consequences* of deviation, for instance, and know how to rectify.

Another feature of PSM is "Management of Change" - procedures for adapting to new circumstances (e.g. new products, technology, equipment), as well as informing and training employees accordingly. "One of the hardest parts," observes Alan, "is convincing people that this is necessary." Alan added that people had better learn to live with the controls, because "it's not going to get any easier, that's for sure!"

## Management of Change - in action!

The morning concluded with a lively discussion, followed by a practical exercise in the Management of Change: the scheduled outdoor lunch had reached no further than mid-salad when a sudden storm drove every-



Grab your plate and run - Management of Change in action!

one back to the conference room, plates in hand. But in the end, everyone got their des(ser)ts!

## Problem-solving workshop?

Since one of the most important reasons for the seminar was to exchange experiences on safety-related issues, the afternoon session commenced with a series of problem presentations and open discussions.

**Ray Bourne** (Georgia-Pacific) was first, reporting an incident due to probable heat cracking and fire damage in a reactor, possibly the result of the high rate of operation.

His presentation was well-documented with photos - including a "mystery material" that had formed along the reactor tubes.

**Jim Barker** (Borden) didn't settle for showing photo images; he brought along an entire section of a burnt vaporizer for everyone to examine!



Alan Rodger.



Jim Barker.

**Dave Swart** (Wright Chemicals) dealt with some tube failure problems they had experienced, what they've done to investigate, theories about why it happened and what steps they've taken.

**Birgitta Marke** (Perstorp Formox) described an incident in a 2-reactor plant, in which an unexpected pressure surge occurred, and how this problem was solved.

**Scott Antes** (DuPont) offered a brilliant suggestion: Why not use *informally speaking* as a forum for learning from each other and avoiding costly and/or dangerous situations? [Editor's note: Why not indeed! Contributions will be reviewed for publication!]

## Flammable mixtures

Ray Bourne returned to the podium to present a study of flammable mixtures in the process, e.g. methanol in nitrogen and oxygen, based in part on Mashuga's "flammability triangle". He also told about a sophisticated yet simple testing device G-P had developed for determining the flammability of various mixtures. According to the model, one might expect many more fires than actually occur.

"This is because the gas velocity blows them out," Ray points out. "There are many variables out there that are not found in the literature, so theory doesn't always match what we see in our systems."



Ray Bourne.

## Up to size

How big should a rupture disk be? Birgitta Marke presented formulas for the theoretical sizing. Once again, because theory and reality don't always match, "we always add a safety margin to assure that rupture disks will burst well below the design pressure," notes Birgitta. For those who had never seen an actual rupture disk bursting, Birgitta showed a video that Perstorp Formox had made some years ago, in which the various safety shutdown systems had been intentionally by-passed in order to record the event on film.

## How tough is 14001?

On paper, ISO 14001, the environmental safety version of the quality management systems, appears to be a daunting task. But, as Claes Lundström pointed out, it's not that bad. "If you've already done ISO 9000, there's not that much extra work to go for ISO 14001, since they're built on the same principles." Claes gave an account of what Perstorp Formox went through to achieve certification, also noting that the management required to achieve certification ultimately means better plant operation, thereby making the efforts well worthwhile.



In the last issue of *informally speaking*, we had a very poor photo of **Scott Antes**. But anyone who makes a suggestion like Scott's deserves better, so here it is!

# New Orleans, continued

## 40 years in operation

In the final presentation of *Day One*, **Max Henning** (Perstorp Formox) reviewed what has happened during the four decades since the start-up of Perstorp Formox's first plant using the oxide process: huge increases in yield and capacity, major decreases in costs and emissions, to mention a few.



Max Henning by the Mississippi.

Alert readers of *informally speaking* may have noticed that Perstorp Formox also celebrated the 40th anniversary of the process last year, so what's going on? "The original project began in late 1958," explains Max, "but the first plant using the revolutionary new oxide process didn't go on stream until August, 1959. Instead of choosing one or the other, we decided to celebrate both!"

Consequently, the dinner that evening for all participants and accompanying spouses was styled as a 40th Anniversary Dinner.

## DAY TWO

### HTF maintenance

Bright and early the next morning, **Paul Forrest** (Solutia, backed by **Nancy Wall**) gave a comprehensive outline of "heat transfer fluid management". [Editor's note: HTF (heat transfer fluid) is the generic name, corresponding to such trademarks as "Dowtherm" and "Therminol", the latter being Solutia's brand.]

Paul noted that the main leak sources are valve packings and pump seals. "Never re-use leaked fluid", he cautions, "as it easily becomes contaminated!"

It is also important to keep your HTF dry, i.e. free from water. Store drums indoors if possible. If you do get any water in your HTF storage tanks, it's easy to sparge out with



Paul Forrest.

nitrogen, according to Paul.

"Hot HTF is the largest single safety and health concern in a formaldehyde plant," Paul says, "so prevent all contact with fluid: use common sense, use safety goggles and face shields!" HTF is also dangerous on inhalation, but since its characteristic odour can be detected down to parts per billion, as soon as you smell it, use breathing protection!

Other safety tips from Paul:

- Maintain surfaces below 60°C/140°F to avoid burns.
- Clean up spills immediately - HTF can be very slippery! First use an absorbent, then get the rest with a water-based detergent.
- Use extra caution if an HTF mist should ever form - a thick vapour cloud can be highly explosive!

To back up this last warning (and perhaps to outdo Birgitta's video the previous day), Paul showed a video about some test explosions Solutia had conducted with vapour clouds in an enclosed space. The resulting fireballs were sobering. Fortunately, such clouds do not occur at HCHO plants!

### Apples and Pears

The final presentation of the seminar was by **Olle Johnsson** (Perstorp Formox). Olle analyzed the differences between two common approaches to HCHO plant operation. Some companies run flat out for as long as possible (e.g. 35 tons of HCHO per kg of catalyst) before reloading catalyst, while others switch loads when the yield starts to drop (around 20 tons). "So is one approach right and the other wrong?" he asks.

Both can be right, but there are some differences. Olle used an economic model to analyze the direct variable production costs (DVC). [Editor's note: This model is now available for downloading from our homepage ([www.perstorp.com/formox](http://www.perstorp.com/formox)).] As it turns out, the DVC for both approaches are nearly identical. But there are other factors to consider:

- Product specifications - Can you sell your product?
- Plant capacity - Can you supply your customers?

- Seasonal demand variations - Can you take advantage?
- Trouble-free operation - How much is it worth? And how much does downtime really cost?

Olle's conclusion: If you've been going for 35 tons, and have not experienced late-run problems, keep up the good work! If you have experienced problems, think about reloading at 20! Conversely, if you've been reloading at 20, but a delayed reloading would be more convenient, go for it - but understand the risks!

### Closing time

Participation during the seminar was exceptionally active this time, not only in the conference room but outside as well, in informal discussions. There seemed to be a genuine willingness to share and solve problems relating to safe operation.

It was therefore agreed to continue the tradition of holding these seminars every two years - but perhaps at a new venue next time. One suggestion was Key Biscayne, Florida, which would cut several hours off the travel time for those coming from Latin America, without adding any time for most US participants. Expect to read more about it in *informally speaking*! ■



Olle Johnsson.



There were fruitful discussions at the seminar....

## A whole lot of training going on!

Since the last issue of *informally speaking*, Perstorp Formox has held several training sessions for licensees. One was in connection with the seminar in New Orleans. Several others were in Sweden for clients with new plant start-ups, including DuPont and Polyplastics.



Several licensees stayed an extra day in New Orleans for an intensive one-day refresher training session.



In June, DuPont sent a group to Sweden from the new plant in Dordrecht.



The Polyplastics group from Malaysia spent a week in Sweden in July.

## One-Day Seminar in Istanbul, October 21, 1999

A large and increasing number of formaldehyde producers in Turkey, where the "salt" process is prevalent, have been turning to Perstorp Formox for their catalyst supply. At the same time, there has been a growing interest in meeting to exchange experiences, find out more, and generally become better acquainted. In response to this, Perstorp Formox proposed a "mini-seminar" for customers from Turkey and other countries nearby.

When **Olle Johnsson**, together with our representative in Turkey, **Hasan Gökman** of Soditaş, began planning the seminar, nobody could have foreseen the huge and tragic earthquake that would strike the country in August. In spite of this, there was a strong desire on the part of our Turkish customers to proceed as planned. In the end there were nearly 30 participants from five countries for a very full, very rewarding day. In fact, there wasn't much "mini" about it!



Gunnar Solem.

The day began with a brief presentation of the Perstorp Group and Perstorp Formox today by **Stan Erisman**, the editor of this newsletter. He was followed by our men in Istanbul, **Yusuf Bahar** and **Hasan Gökman**, both of whom work for Soditaş, the company that represents Perstorp Formox (among others) in Turkey. Yusuf and Hasan outlined the role of Soditaş, which also offers a variety of tank farm services to Turkish chemical producers.

### Big plans for Methanex

Next up was **Gunnar Solem** (Methanex), whose presentation of the current methanol market situation obviously had much in common with the one held by his colleague less than four weeks earlier in New Orleans (see page 2). Gunnar noted several factors that can impact this market:

- Asian demand is recovering strongly
- High-cost methanol plants are being streamlined or closed down
- New plants are under construction.

Gunnar added that Methanex is planning a new plant using "compact reformer" technology, which enables larger plants, with capacities of 1-2 million metric tons!



Hasan & Yusuf represent Perstorp Formox in Turkey.

### Why bother about the environment?

Stan Erisman returned to try to provide some answers to this question (see box), also noting

#### Here's why!

- + You can be ready for tougher laws
- + You can get good control of your operations
- + Your plant will be safer
- + Some clean-ups actually make money
- + You get better publicity

= It makes good sense!

the possible competitive advantages of having a well documented environmental performance record, e.g. via ISO 14001.

### The market, catalysts & plant operation

Leading off with a formaldehyde market update based on Bob Crichton's findings (see page 2),

## Asia Update

According to our sources, Asian markets where Perstorp Formox customers are located are continuing to bounce back. In the last issue of *informally speaking*, it was noted that "Thailand has also stopped its slide and will show positive growth for 1999." Now the official figure places growth at 4%. Malaysia expects similar growth.



Indonesia's long political crisis shows signs of being resolved, and this is matched by signs of financial recovery as well. Many Singaporean businessmen are said to be eager to invest in Indonesia once they get government assurances on stability.

All Perstorp Formox are reportedly doing well and some have begun to expand, notes our man in Singapore, **Edy Sudasta**. ■

# Istanbul, continued



During the course of the seminar, there were occasional reminders of the prevalence of mobile phones nowadays. But is it really possible to conduct an entire seminar by phone?

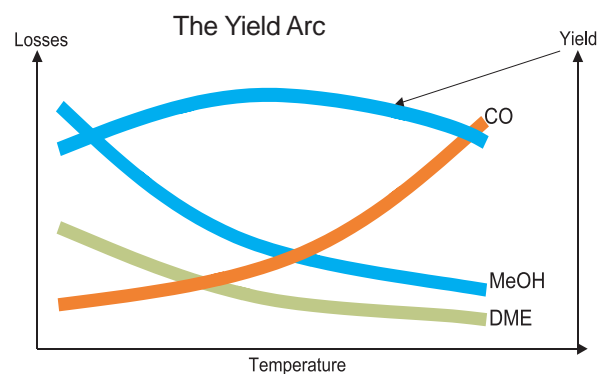
**Mikael Ekblad** moved along to the topic of finding the right catalyst activity and the right loading plan for each formaldehyde plant. Michael then turned to the question of yield: what operating parameters to focus on (e.g. see the graph below), how they affect performance, how to measure, monitor and control these parameters in order to achieve the best operating economy.

ling procedures to prevent the formation of paraformaldehyde and formic acid. Carl, by the way, is now Perstorp Formox's principal contact person for the Turkish market.

## ECS & Reloading

**Olle Johansson's** presentations included the Emission Control System, which can be retrofitted on existing plants. With the ECS, producers who need steam in their downstream production can actually end up making a profit while helping the environment!

Olle also gave a step-by-step description of reloading procedures, emphasizing the need for accuracy and careful planning. He also showed a short film about Perstorp Formox's unloading tool and loading machine in action.



The optimum operating temperature is when the yield arc (dark blue curve) is at its highest, and correspondingly, when the sum of the MeOH, DME and CO losses is at its lowest.

**"We've come a long way!"**

## The role of maintenance

Following the lunch break, **Carl Lindqvist** outlined the importance of maintenance, particularly the preventive variety, in assuring trouble-free operation. "The bad maintenance effects of polluted water and methanol appear on three levels," claims Carl, "but the bottom line is always the same: inadequate maintenance always costs more in the end!" Carl recommended comprehensive, well-planned and well-documented procedures as a way of saving money. He also described various storage and hand-

In the final presentation of the seminar, Michael returned to the podium to trace the development of the Perstorp Formox process from 1959 to the present. "We've come a long way," he says, "and we're constantly adding to the list of improvements." As Michael's list grew longer, the eyes of the participants got wider and wider....



Stan, Carl and Mikael at the Bosphorus.

## Blow-down valve recommendation

Most boiler feed water (BFW) contains impurities that lead to the precipitation of salts that accumulate in the bottom of the condenser (E-2). Consequently, they must be removed by blowing down with water, a procedure done at least four times daily at Perstorp Formox's own plants in Sweden.

There has been a problem, however, in getting the valves to open wide enough and quickly enough to really blow away the salts. That problem has now been solved. A **globe valve with a quick-release lever** does the trick.

Perstorp Formox has recently installed this type of valve at its plants in Sweden and has seen immediate results. "The conductivity of the BFW in the condenser has improved considerably," says a satisfied Production Manager, **Yngve Carlsson**. "This valve may cost more [approx. US\$ 1200], but it's worth every penny!"



The new valve constitutes a substantial improvement in assuring smooth plant performance that it will become standard equipment on all new Perstorp Formox plants. For existing plants, the valve is easy to retrofit during a shutdown. An automatic version is also available, but this model costs 2-3 times more than the manual version. Please contact Perstorp Formox for further details.

## Projects & Start-Ups

Perstorp Formox has signed orders for five new formaldehyde plants, three in Europe and two in Asia:

- A 180,000 tpa plant for **Euroresinas** in Portugal, a member of the Sonae Group, the world's largest board producer.
- A 60,000 tpa plant for **Woodchem Europe** in Hautrage, Belgium. Downstream applications: panels for furniture and construction, as well as pesticides.
- A 90,000 tpa facility for **ACM Wood Chemicals** in Wismar, Germany. Downstream products: deliveries to Egger, a leading European panel manufacturer.
- **Intan Wijaya**, a leading Indonesian manufacturer of resins for board and hexamine, has ordered a 60,000 tpa plant. An excellent signal of an upturn in the Indonesian economy?!

- A 70,000 tpa plant for **Nantong**, near Shanghai, China, for downstream conversion to pyridine.

In the last issue of *informally speaking* we mentioned "3 new plants in Europe" (names withheld by request) that were planned or under construction. Of these, one is now in operation and the other two are expected to go on stream in early 2000.

Two other updates:

- The plant for **DuPont** in Dordrecht, Holland (see photo) is to be starting at the time of printing this newsletter.
- The **Polyplastics** plant in Malaysia is in the final stages of construction and will be starting up soon.

[Note! All capacities refer to 37% HCHO]



The final touches on the huge (over 250,000 tpa) new plant for DuPont.

**Perstorp Formox is continually making efforts to further improve the level of service to its catalyst customers. Paul Walter, our Application Specialist for formaldehyde catalysts tells about a new step.**

## Spent Catalyst Tells a Story



Paul Walter.

What better source of information about what actually went on inside the reactor tubes than spent catalyst? It was exposed to high temperatures, methanol and other (maybe even unwanted) chemical substances. Perstorp Formox has always had analysis of spent catalysts on the agenda as a powerful trouble-shooting tool, but now we're starting to perform analyses systematically. New procedures for checking, characterization, reporting, and feedback are being introduced, and full implementation is expected during the first half of 2000.

Since this feedback ultimately benefits the catalyst customer most, it is in the customer's own best interests to facilitate analysis by following these

simple procedures in connection with unloading the reactor:

- Load the spent catalyst material from different reactors in separate drums and indicate the reactor number on the label. This makes it easier to identify the location of possible operational abnormalities.



A sample of spent catalyst from our technical photo file.

- Perform your own initial check on the spent catalyst. If something clearly deviates from the normal, make a note to your sales representative. In such cases, it may be appropriate to take catalyst samples from individual tubes and load heights according to a sampling plan.

On arrival of the spent catalyst in Perstorp, Sweden, Perstorp Formox performs further characterization of samples that are found to be abnormal. These further tests may include the following:

- Visual and microscopic examination, and comparison with samples in the Perstorp Formox spent catalyst photo file.
- FTIR (Fourier Transform Infrared Spectroscopy), which gives overall information on the sample composition.
- Chemical analysis, to search for inorganic or organic contaminants.
- Pilot plant activity tests.

The results from the sample analyses form the basis for operational recommendations or, in the case of severe abnormalities, might give an early warning on emerging equipment breakdown. Whatever the outcome, the catalyst user gets important feedback to help assure smooth plant operation with optimal economy and capacity.

## Faces & Places

Perstorp Formox has employed two new process engineers since the last issue of *informally speaking*:

- **Fredrik Rietz**
- **Theo Papadopoulos**

Both report to the Process Department Manager, **Birgitta Marke**. The Process Department gets further reinforcement with the return of **Eva Lindgren** (whom many of our readers will remember as Eva Kaiste), now back from maternity leave.

**Anna Ljungqvist** has not only changed her name (from Helmersson), but is working together with **Chris Kahn** to serve the North American market until additional resources are available.

Other changes:

- **Lucia Bengtsson**, development assistant at the Catalyst Production Department, has a new name (formerly Larsson).
- **Gunnar Blomkvist** is the new Environmental Catalysts Manager, supported by **Henrik Blom** (head of VOC Abatement) and **Ola Augustsson** (head of Catalyst Development).
- **Mikael Ekblad** is now the Market Manager for HCHO Catalysts and Plants, in cooperation with Licence Manager **Max Henning**. Mikael is supported by **Edy Sudasta** (Asia), **Chris Kahn** (the Americas), **Olle Johnsson** (Europe and ROW) and their respective teams. Olle is also responsible for coordination of technical service worldwide. ■



Fredrik Rietz



Theo Papadopoulos



Eva Lindgren



Anna Ljungqvist



### Seasons Greetings!

This year, Perstorp Formox is not sending any Christmas or Holiday cards. Instead we are donating the money allotted for that purpose to a relief fund for earthquake victims in Turkey. We are therefore using this forum to wish all of our customers, suppliers and other contacts, i.e. all readers of *informally speaking*, a wonderful holiday season and a particularly prosperous start of a brand new millennium!



## Next Seminar(s)

Every three years a special seminar is held in Helsingborg, Sweden, for Perstorp Formox licencees only. The last one was held in May '97. The next is currently scheduled for Helsingborg on 24-25 May 2000. Licencees from all over the world are invited to attend. The restriction is for the purpose of enabling participants to discuss information that is covered by the licence agreements.

The next "open" seminar will be held in Asia at a venue and time that

will be announced in the spring/summer issue of *informally speaking*. You can also check our website ([www.perstorp.com/formox](http://www.perstorp.com/formox)) under "News, News Bulletins, Next seminar".

Note that Perstorp Formox does not rule out the possibility of other "mini-seminars" of the type held in Istanbul (see pages 5-6 in this issue). You are welcome to express your interest via

**formox@perstorp.com**

### *informally speaking*

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