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# professional protection magazine

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in the interest of Industrial Safety in Australia.

Number 4, 1987

## SMELTER ASTHMA - How serious is it?

A large scale inquiry into the causes and prevention of pot-room asthma is underway in Victoria.

The inquiry was instigated by the Federated Ironworker's Association, after nine confirmed cases of pot-room asthma had been reported in a single year at the Portland smelters.

Although this type of asthma has been recognised in Australia for at least 35 years, no exact cause is known. The disease occurs in the hot pot-rooms of the smelter, where aluminium is siphoned off and cast into ingots at temperatures reaching 1000°C.

The inquiry will be performed by an independent consultant company, and will involve testing and examination of Victoria's two smelters, Portland and Point Henry. The main points of interest will be:

- Examination of the pot-room atmosphere: what contaminants are present? In what concentrations? What is their individual and combined toxicity?
- Study of work procedures in the pot-room. Temperatures, work load, strenuous tasks, movements through the room, etc.
- Personal breathing protection: what options are available? What devices will

give adequate protection without causing discomfort or over-protection?

- Benefits and drawbacks of various breathing devices. Comfort, wearability, protection factors, cost efficiency, user acceptance.
- The Federated Ironworker's Association would ideally like to gather decision makers and health experts from the six aluminium smelters around the country for joint discussions. Once the results of the inquiry have been published, such discussions could lead to a national inquiry into pot-room asthma.

(Source: Nick Trompf)



# Canadian Action

## CANADIAN SMELTER TAKES STEPS TO ELIMINATE RESPIRATORY HAZARDS

The Alcan aluminium smelter at Kitimat, British Columbia, has done everything in their power to devise a comprehensive protection programme for its workers.

Major air contaminants were determined to be dust from polycyclic aromatic hydrocarbons, fluorides (dust and gas), welding fumes, sulphur dioxide and asbestos. The greatest acute health hazard was chlorine, used extensively in casting and water purification.

Initially disposable masks were used. However, the decision to supply face fit rubber cartridge masks to workers was made for economic reasons, as well as for a higher protection factor. It was established that the elimination of 350,000 disposable masks per year would pay off the rubber mask investment quite rapidly.

Extensive testing has been undertaken, as has comprehensive training programmes in the use and maintenance of masks.

Beard growth has been a main concern at the smelter: there are several Sikh workers with long beards, and the pot-room workers in general prefer not to shave during the 6-day shifts, because a beard apparently alleviates a common mild rash from heat, perspiration and dust. Yet, the British Columbian Worker's Compensation Board regulates that:

"Workers required to use a respirator shall be clean shaven where the respirator seals with the face."

The fit test programme ensures that all workers are familiar with the equipment, know how to fit and maintain it, and that every individual is conclusively proven to be able to achieve the adequate protection factor.

The tests at the Alcan plant are conducted with quantitative measuring techniques.

The implementation of this programme also involves a

thorough follow-up and record keeping scheme. The results of the evaluation are not yet available — however, it is expected that Alcan's safety programme will have important beneficial effects on the health and well-being of pot-room workers at the smelter.

(Source: Dr A. S. Reid & Maurice P. Fernandes, Alcan Smelters & Chemicals Ltd, Kitimat, British Columbia, Canada.)

## OCCUPATIONAL ASTHMA

Asthma can be a very serious chronic disease. Severe asthmatic attacks may be life threatening and require urgent medical attention. Yet,

Acacia gum  
Acrylic fibres  
Alicyclic amines  
Aliphatic aldehydes  
Aliphatic amines  
Alkyl phosphates  
Ampicillin  
Anthraquinone  
Azo dyes  
Carbamates  
Castor oil  
Chlorine  
Chlorthion  
Chromium  
Cobalt  
Cotton  
DDVP  
Diazinon  
Diazomethane  
Diethanolamine  
Diethylene diamine  
Diethylene triamine  
Epoxy resins  
Ethylhexylamine  
Exotic woods  
Flax  
Flour  
Formaldehyde  
Grain dust  
Green coffee  
Ground nuts  
Gum arabic  
Hemp  
Henna  
Hexamethylene tetramine  
Industrial perfumes  
Insecticides  
Isocyanates  
Lead  
Liquorice

## - COMMON CAUSES

the disease can be triggered by a vast number of substances, both chemicals and dusts occurring naturally at home or at work.

Mercury diphenyl  
Mercury (organic compounds)  
Metampicillin  
Mould  
Nickel  
Nitric oxide  
Oats  
Oil cake  
Oleandomycin  
p-dichlorobenzene  
p-phenyldiamine  
Papain  
Penicillin  
Persulphates  
Pesticides  
Phenyl-formaldehyde resin  
Phenylglycine  
Phenylhydrazine  
Phosphoramines  
Phthalic acid  
Piperazine  
Platinum salts  
Polyamines  
Polymers  
Pyrethrum  
Quinine  
Sericin  
Silk  
Soya  
Textiles  
Triethylene diamine  
Triethylene tetramine  
Trimellitic anhydrides  
Trypsin  
Urea-formaldehyde resin  
Vanillin  
Welding fumes  
Wool

(Source: ILO Encyclopaedia of Occupational Health and Safety, Geneva.)

# 22nd ICOHHS

## 22ND INTERNATIONAL CONGRESS ON OCCUPATIONAL HEALTH AND SAFETY

The 22nd ICOHHS was a resounding success for everyone involved. Sydney's opulent Inter-Continental Hotel was teeming with safety people from all over the world — some attending the many seminars, others keeping up to date with new developments in safety equipment, yet others to promote their products and services.

Video recorders were humming, demonstrations were in full swing, and the James Cook ballrooms were brightly decorated with posters, banners, display cases and slide shows.

For Sundstrom Safety (Australia), the event was an important one for two reasons:

Firstly, it was the first time that two distinguished visitors from Sundstrom Safety in Sweden had come to visit Australia. Bror Ulvede and Jan-Olof Rahm had come from the cool Scandinavian autumn to a sunny Sydney. Sundstrom Safety (Australia) had arranged three weeks of action all over Eastern Australia, spanning from coal mine excursions in Victoria and seminars in NSW to a visit to Mt Isa Mines in Queensland.

The second reason was the launch of Sundstrom's brand new mobile testing equipment, invented and constructed by Bror Ulvede, and extensively used in Sweden.

The quantitative testing system was shown and used for the first time in Australia at the 22nd ICOHHS. Judging by the interest shown, the test unit will

become an integral part of Sundstrom's system — for the benefit of all users of breathing protection.

The testing system comprises a tent, an exercise bike, an oil mist generator with a regulator, and a laser detection unit — the heart of the system — hooked up to a graph plotter.

How does it work? The tent provides a controlled environment for the test: By regulating the oil mist inflow, we can determine the concentration of contaminant surrounding the test person. The person wears a mask (any mask) with a probe inserted through its wall. The probe takes air from within the mask to the extremely sensitive detector. This enables us to measure the concentration of contaminant inside the mask. The difference between the concentration outside the mask and the concentration inside the mask gives us the total leakage and, consequently, the protection factor of the breathing equipment.

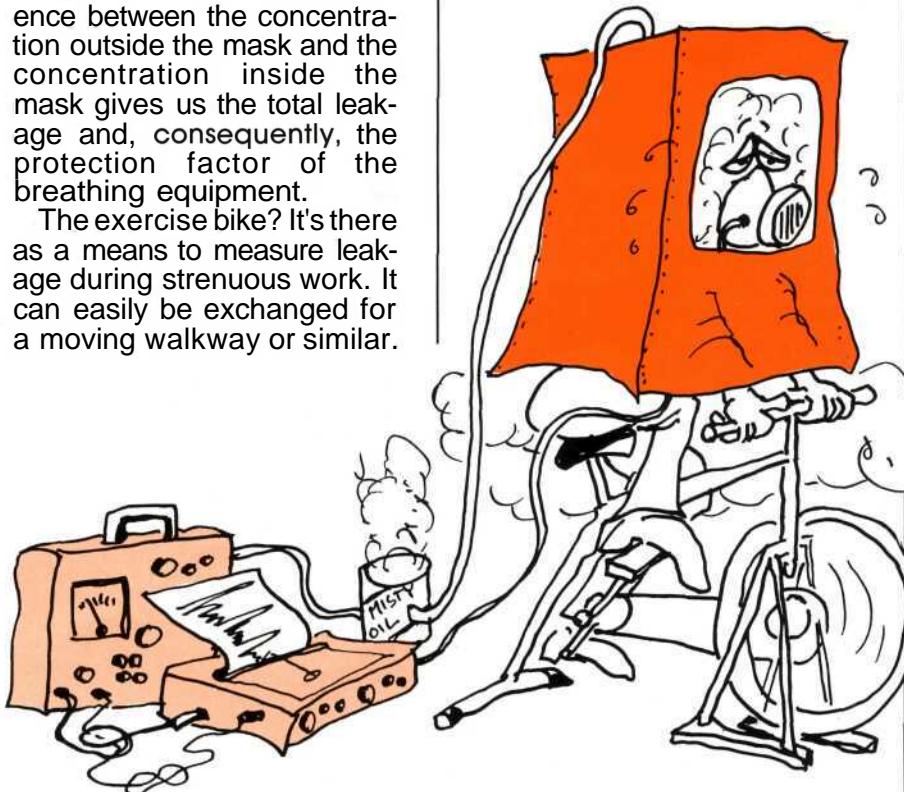
The exercise bike? It's there as a means to measure leakage during strenuous work. It can easily be exchanged for a moving walkway or similar.

All particle masks, including disposable types, may be tested in the system with extremely accurate results.

The most common uses for the testing system include:

- Determining the protection factor of a mask
- Determining the total leakage in a mask
- Showing the unfavourable effects of beard growth on mask efficiency
- Making sure a worker knows how to fit the mask correctly
- Making sure the mask really gives the required protection.

The system is fully portable, and Sundstrom Safety will take it around to various industries for practical demonstrations.



# Safety

## TRAINING

Sundstrom Safety's new course in personal breathing protection has now been completed.

The programme has generated great interest from a number of industries, and is already in use in several locations.

The training course comprises a number of booklets and leaflets for distribution to participants, several visual and textual teacher's aids, and a complete audio-visual programme.

General breathing protection, maintenance, fitting, cleaning and usage are covered. Equipment-specific material includes information on half masks, filters, full masks and compressed air equipment. All parts are independent, which means that training personnel may select modules that are relevant to their own industry, compile their own audio-visual, and distribute user-specific handout material.

The result is a training course which presents the essential information in a memorable, powerful, comprehensible way without giving any irrelevant or superfluous information.



## USER MATERIAL

Course material includes a general booklet and four equipment-specific pamphlets. The general guide gives information common to all areas of breathing protection (the importance of protection, various hazards, how your health may be affected by different substances etc.). The specific pamphlets cover half masks, filters, full masks and compressed air respectively.

Humour has been used extensively as a means of conveying the key points in a memorable way. The text is easy to understand, even for workers with English as a second language.



## AUDIO-VISUAL

The audio-visual presentation covers all aspects of use and maintenance. The programme is in modular form, and may be compiled to suit the user.

A large type manuscript accompanies the slides.

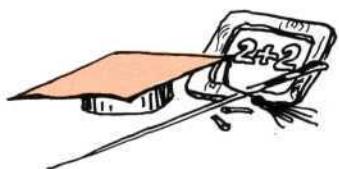
Some weeks after a comprehensive training session, the AV could be used on its own as a brief refresher course.



## TEACHING AIDS

The programme contains several teaching aids. A special teacher's manual explains how to prepare a training session, and how to run it. Key points and essential discussion matters are presented in point form.

Part of the manual comprises large size diagrams and visuals. These visuals may be used in several ways: the teacher may copy them onto acetate to make overheads, photocopy them for distribution to the participants, or, in the case of small table discussions, simply hold the visual in front of the group.



## KNOWLEDGE TESTS

Five multiple-choice questionnaires are used to ensure that the main points in each area have been learnt. (The teacher's manual contains a key for quick correction.)

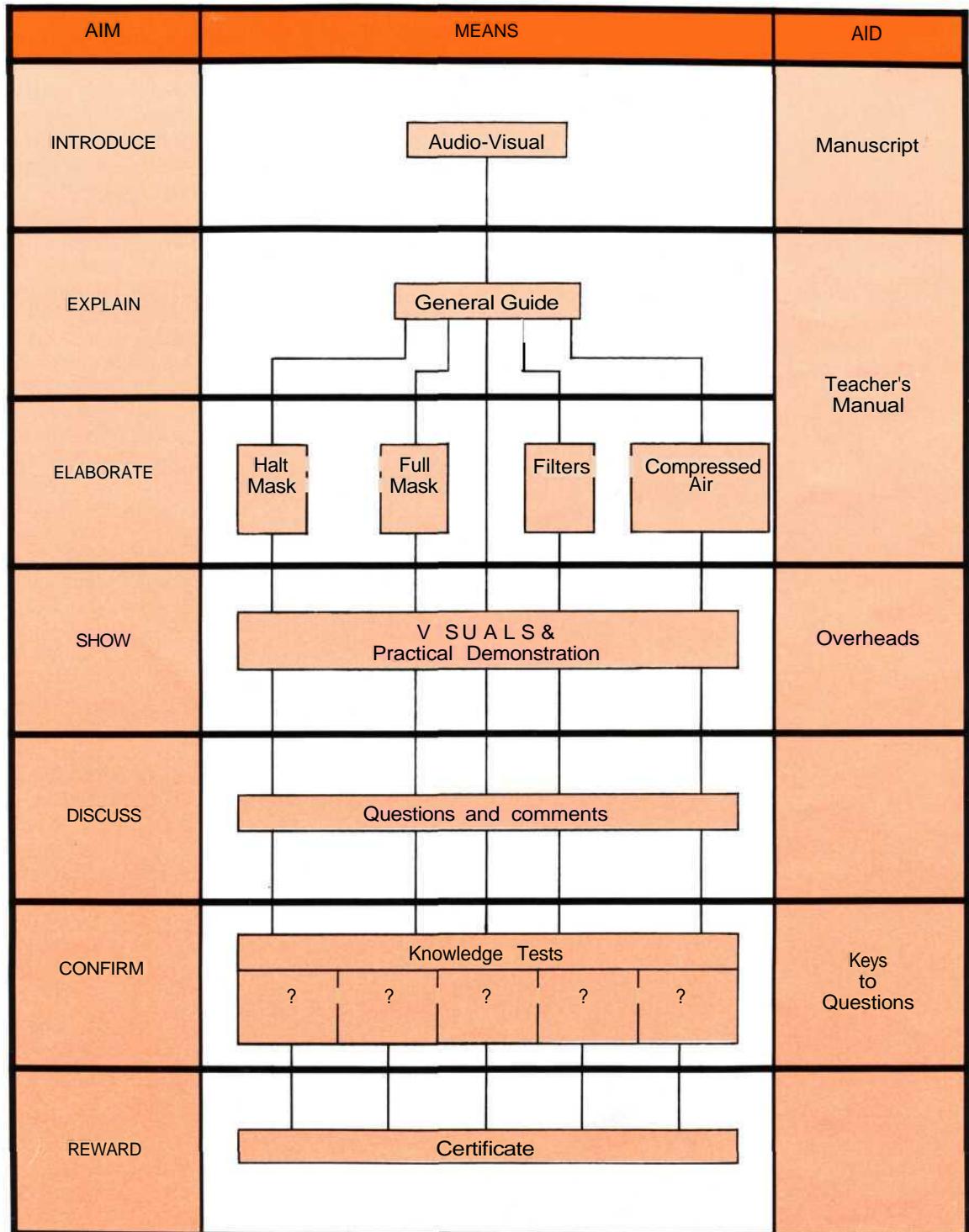
Each successful participant is rewarded with a colourful certificate signed by the teacher.



The programme kit is available in various quantities to suit big and small industries. Contact Sundstrom Safety (Australia) for more information.

# Training

## HOW THE PROGRAMME WORKS:



# Holiday Safety

## HOLIDAY SAFETY

### ON THE BEACH:

- Wear a hat
- Use a sun screen
- Secure your beach umbrella
- Before you let the kids hop into the water: check for bluebottles and other nasties
- Swim between the flags or in the enclosure
- Don't fall asleep in the sun
- If you get burnt:
  - Apply cool wet compresses
  - Sit or lie in a cool, shady place
  - Get plenty of rest
  - Drink lots of fluids
  - Don't rub skin or break blisters
  - Apply soothing skin creme



### GOING ON A TRIP:

- Give your car a thorough check before taking off
- Make sure your first aid kit is available and intact
- A typical kit contains:
  - Scissors
  - Antiseptic cream
  - Dettol or other disinfectant
  - Band-aids
  - Heavy sterile plaster
  - D Gauze
  - D Cotton wool
  - Assorted bandages
  - Stingose or vinegar
  - Eye bath
  - Aspirin
  - Disposable cups
  - Wet towels
  - Thermometer
  - Torch



### THROWING ANOTHER PRAWN ON THE BARBIE

- Never pour meths or fire-starter on embers or fire
- Keep the kids well away from the fire
- Never use treated pine wood, impregnated or painted wood
- Watch the sparks — wear an apron
- Ask fire brigade about fire restrictions (many cities have recorded daily fire information — check your phone book)
- Make sure no glowing embers are left after you've finished
- If using gas or electric BBQ: turn off and disconnect supply



### GENERAL HINTS AT HOME AND AWAY

- Tell your neighbours where you're going and how to contact you
- When bushwalking, let people know when and where to expect you
- Read up on first aid and how to deal with snake bites and insect stings.
- Before the kids start roaming through the house, lock your medicine cabinet and put lawnmower petrol, methylated spirits, matches, pesticides and weedkillers out of the way

# PPM in 1988

## THE FUTURE OF PPM: THERE'S GOOD NEWS . . .

There is no doubt that PPM has been a great success since its inception last year.

Many people have expressed their appreciation of an easy-to-read, light-hearted newsletter that deals with the most common (and most overlooked) hazards in the Australian industry.

Numerous readers use the magazine as an opportunity to present common hazards in a non-technical, sensible way to employees.

Others nick the cartoons and articles and use them in their own newsletters. . . yet others use the same cartoons and articles with our whole-hearted blessings. (We don't mind if you use the material, but we do appreciate a call and chat first. . .)

There have been complaints, too. Some readers find PPM unnecessarily alarmist. We feel, however, that the only cause for alarm is if workers aren't adequately protected against a dangerous chemical.

## THERE'S EVEN BETTER NEWS. . .

Our international resources have improved immensely since the outset. In the game of Chemical Safety, you really have to be on the ball: there are thousands of research projects into industrial safety, each publishing its results in numerous publications around the globe. Keeping up with new information is hard work.

PPM is now linked up with some 170 databases, providing access to information from all around the world. The data may comprise new discoveries in AIDS research from Denmark, the most recent cancer tests in Rome, information on the disposal of radioactive materials from Japan, the hazards of using cooking oils in Asian kitchens, or chemical data sheets from the United States.

In addition, we are subscribing to a number of European publications on industrial safety and chemical hazards in the workplace.

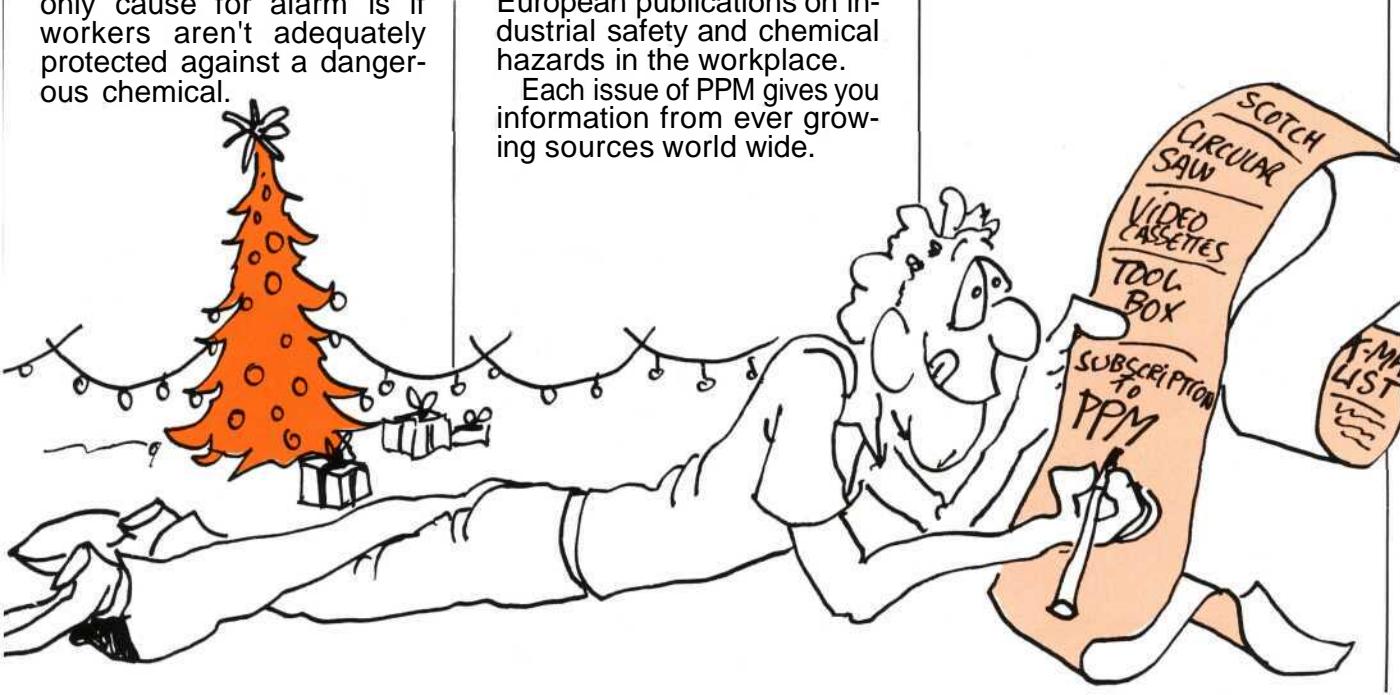
Each issue of PPM gives you information from ever growing sources world wide.

## . . . AND THEN THERE'S BAD NEWS

All this costs money. Lots of it. However, rather than making PPM a commercial publication, carrying advertisements and promotions from various companies, we'd like you to contribute a small amount towards the publishing of the magazine. Something like \$16 a year. That's about the cost of a haircut. We think it's quite reasonable, seeing that for the price of one single haircut, you get four issues of PPM.

Besides, you can have up to 10 copies of each issue for the same price.

Please give us an idea whether you like the suggestion. We would appreciate any comments you might have on PPM, and tell us how we could make it even better.



# Please Tick

## Will you become a subscriber to PPM for \$16 a year?

- I think \$16 per year is a reasonable sum to pay for PPM. I enclose a cheque, so stick my name on your subscription list right away!
- I feel \$16 is a bit steep, but I'll pay anyway. Here's a cheque, with reservations. Put my name on your list before I change my mind.
- I firmly believe that a publication like PPM should be free of charge. I don't care how many thousands of dollars it costs Sundstrom Safety to publish it, I still think it should arrive on my desk for nothing. I do NOT enclose a cheque. If I have to pay for it, then forget it. I'd rather give the money to my hairdresser.
- I'm not going to fill in this coupon. Take my silence as a negative response, and stop sending your stupid magazine to me. There's no cheque, no nothing — I'm not even sending in the coupon.
- I wouldn't pay a single cent for such trash. I never want to see the publication in my mailbox again. Get lost.

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P.O. Box W110, Warringah Mall, NSW 2100.

Name: .....

Title: .....

Company: .....

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City: ..... State: ..... P'code: .....

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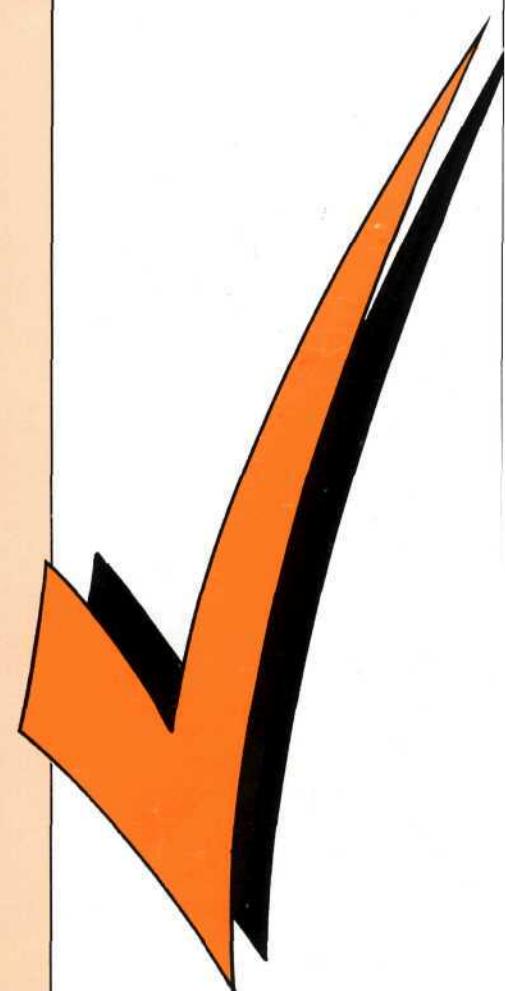
How many copies of each issue would you like?

D Just one will do fine, thanks.

I would like ..... copies. (No more than 10, please.)

I've got the following comments and ideas for future issues of PPM:

.....  
.....  
.....  
.....



**sundström**  
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