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APIC JOURNAL

published by ASIAN PACKAGING INFORMATION CENTRE,
sponsored by the WORLD PACKAGING ORGANISATION, ASIAN PACKAGING FEDERATION
and INTERNATIONAL DEVELOPMENT RESEARCH CENTRE, OTTAWA.

1975 Vol. 1 No. 1

005047

MR. K. S. LO

From the WPO President

The Asian Packaging Information Centre has been established by the World Packaging Organisation (with generous financial support provided by the International Development Research Centre and the Hong Kong Packaging Council), for the purpose of assisting Packaging Institutes in the developing countries of Asia.

The APIC Journal will publish regularly, abstracts from the world's principal packaging journals. It will provide information on packaging experiences in developing countries which will be helpful to others who are at a similar stage of development. It will improve the flow of information on packaging among them.

WPO is pleased to provide this additional service to the countries of Asia and looks forward to a rapid rise in packaging services and capabilities in the region as a result.

Message from Mr. Lang Wong

Mr. Lang Wong, Administrator, TECHNONET ASIA project, in a congratulatory message to APIC Journal, says:

Packaging plays a very important role in this day and age, whether in commerce and industry or in our daily lives. Packaging serves many functions. It enables products to be contained, facilities handling and transport. It minimises damage and spoilage and makes a product safe to use. It enhances consumer appeal and saleability.

The current world-wide economic crisis has, among other things, focused attention on packaging. Existing packaging practices may need to be changed in the light of rising costs of packaging materials and transport.

Therefore, the APIC Journal, of which this is the inaugural issue, comes out at a most opportune time. Industry is in urgent need of information so as to meet the challenges of the present crisis. The World Packaging Organisation, the Asian Packaging Federation, the Hong Kong Packaging Council and the Federation of Hong Kong Industries should be congratulated for this very fine effort. It is sincerely hoped that the Journal will create awareness of need for proper packaging and prompt industries in countries in the Asian region to make use of the excellent services of the APIC.

Finally, may I, on behalf of the International Development Research Centre, wish APIC every sucess.

MR. LANG WONG

MR. K. C. FUNG

From the APF President

As President of the Asian Packaging Federation it is my very great pleasure to express the appreciation of the Federation to WPO, the IDRC and the Hong Kong Packaging Council for making this "APIC Journal" possible.

APIC will be abstracting regularly from some 80 journals and these abstracts will be published in concise, easy to read form.

A new network of information is thus established and through it we shall be able to keep abreast with all new published developments in the field of packaging.

APF can take pride in being the first Continental Federation to have such a service. I hope we will all benefit from it.

MATERIALS

THERE'S A LOT YOU CAN DO ABOUT MATERIALS AND THE ENERGY CRISIS!

In times of materials shortage and the energy crisis, there is a lot the material and planning manager can do. First, you are in a position to have a say. Second, you can reduce demand for materials. Develop a more accurate inventory system and make corrections in your orders before the vendor wastes his capacity producing the wrong materials which you end up storing. Other things you can do are to substitute packaging materials or combine them, tighten control over flow, bring in automation and reduce scrap generation.

Ways to reduce energy requirements include – automating warehouses to eliminate the need to heat, light and air-condition them for human comfort; increasing productivity to eliminate a shift or Saturday overtime and thereby reduce heating and lighting requirements; and installing waste-heat recovery systems that heat working areas with heat otherwise lost from stocks or incinerators.

(Modern Material Handling, December 1974)

SUPPLY STATUS REPORT No. 4: LDPE

In the US, no new low density polyethylene capacity additions will be made until late 1975 or 1976. A zero sales growth is predicted for 1975. The article points out the severe shortage of ethylene as the key limitation to growth. Markets that would be hurt most from this LDPE crunch are those that depend on low price PE or those having no critical performance requirements (like some toys and low-end houseware).

(Modern Plastics International, August 1974)

Also available are:

Supply Status Report No. 1: PVC (MPI, May 1974)

Supply Status Report No. 2: Styrenics (MPI, Jun 1974)

Supply Status Report No. 3: HDPE (MPI, Jul 1974)

Supply Status Report No. 5: Polypropylene (MPI, Sep 1974)

MATERIALS - - - WHERE WILL THE FINGER POINT NEXT?

Citing PVC as an example where migrants and additives have potential hazards on health, the article draws the attention of packagers, converters and suppliers to the need to study the product-package interactions of basic packaging materials for food, drug and cosmetics. No definite migrant level has as yet been set by the Food & Drug Administration (FDA), but production of PVC liquor bottles has been suspended in the US. **(Modern Packaging, August 1974)**

PE UPDATED - - CANADIAN STYLE

To achieve the low moisture vapour and oxygen barrier properties needed for food packaging, Cellophane, Polyester, Polyamide and Polypropylene have been PVDC coated. PE, the cheapest packaging film now available, has long been neglected in this respect until recently when it was marketed as a PVDC-coated PE. The film is available in widths up to 44 inches and gauges from .0015 and up.

Various laminated structures are offered –

1. PE/PVDC-coated PE - - intended for use in those packaging applications that require strong weld-type seals, good impact resistance; gas barrier and MV barrier along with the soft hand of PE. It finds application in the packaging of sausages and cheese spread.

2. Nylon/PVDC-coated PE - - used for vacuum packaging of processed meat, cheese and coffee.

3. PVDC-coated PE/Nylon/PVDC–coated PE - - the material meets the most demanding requirements of liquid packaging and is best suited for packaging edible oil, flavour extracts and syrups, sauces etc.

(Paper Film and Foil Converter, Dec. 1974)

LAWS/RULINGS.

The Food and Drug Administration tested the weight of dry food packages. The result showed an average overfilling of 4% of its declared net weight. A second study gave the same result.

(Modern Packaging, March 1974)

PAPER & PAPERBOARD SUPPLY

The article is a digest discussing the supply situation of solid bleached sulphate, recycled or cylinder box board, and unbleached kraft folding carton grades. The demand and outlook for new additions to the capacity during the next three years are forecast, expressing the author's opinion on why new board machines and new board mills are just not coming on stream in light of the current capacity situation and the continuing expansion in paperboard demand.

(Paper, Film & Foil Converter, June 1974)

THE STOCKPILE BATTLE

The US Government is seeking approval for the disposal of 100,000 tons of tin on the world market. This stockpile has been kept by the US Government for strategic and economic reasons.

Looking at the supply and demand position of the last decade, it is seen that serious shortfalls in supplies have been met from this "mine" of the US.

At present, the first priority in meeting tin requirement is the encouragement of greater tin production. The disposal by the US of such tin stock would not only upset the price structure but would aggravate the supply-demand balance in the future.

(Tin International, November 1974)

PLASTICS/METALS: CAN THEY BE UNITED?

The article outlines the advantages of adhesive bonding and discusses some important factors for consideration in bonding plastics and metals, which includes joint design, substrate preparation and type of adhesive. Also the advantages and disadvantages of modified acrylics, epoxies, polyurethanes and contact adhesives are discussed. Especially valuable are tables of performance data for the above adhesives used to bond various combinations of substractes.

(Adhesive Age, Oct. 1974)

MATERIALS (cont.)

POLYESTER STRAPPING COMBINES VIRTUES OF STEEL AND PLASTICS

Added to the wealth of steel and plastic strappings is a polyester strap first marketed by Lawtons. Available in the ½ in. by 20 gauge size, with a price of £3 per 1,000 ft., the strap incorporates both the rigidity of steel and the ability to recover from tension of polypropylene. The polyester strap is claimed to have a low elongation factor of 3% and is superior to other non-metallic straps in the securing of heavy loads to pallets.

(Packaging News, October 1974)

PLAYING THE NUMBERS

Pricewise, the cheapest polymer-coated cellophane now costs from 30% to 50% more than some acceptable substitutes. The author sees substitution of polymer-coated cellophane in some areas of lamination: uncoated OPP replaces cellophane in a cello/aluminium foil/PE laminate and in a cello/PE combination, uncoated polyester or plain nylon Is used instead. In the snacks field, polymer-coated OPP/OPP has replaced the traditional cello/OPP combination. A comparison is given on prices. **(Paper, Film & Foil Converter, November 1974)**

HOW TO SELECT A SUBSTRATE CLEANING SOLVENT

This research article tries to remove mystery from contaminants by introducing the solubility parameter technology and explains how solvents of known solubility parameter and polarity values can be used to characterise contaminants for removal. The use of the technique of evaporative rate analysis gives numerical indication on decontamination by various solvents. Then solvent blends can be established with no "blind" guess. Lastly the Swell and Turbid Indexes are mentioned to characterize contaminants and plastics' sensitivity to solvent. Many graph tables about solvents and their properties are provided.

(Adhesive Age, Dec. 1974)

MODERN ADHESIVES AID QUEST FOR IMPROVED PERFORMANCE

Whilst in the past, natural glues have dominated a high proportion of the adhesives used in packaging, pressure sensitive adhesives are making penetrations. They offer speed of application, cleanliness and convenience. The greatest advantage, however, is derived from the use of stock on the reel which enables high quality multicolour labels to be produced in a reel to reel operation where printing die-cutting and waste stripping are done during one process.

Another area of interest is the hot-melt application to packaging. At present, EVA resin is widely used and meets most of the requirements of the packaging industry. Besides labelling and carton sealing, hot melt is finding increasing use in coating and laminating. Machinery for application, however, requires improvement.

What of solvent-based and emulsion-based adhesives? It is observed that as countries strengthen their environmental controls, solvent-based adhesives will be losing ground to emulsion-based adhesives as the latter does not create an emission problem.

(Packaging Review, December, 1974)

CUSTOM-MADE XPS FITTINGS GIVE ALL-ROUND BENEFITS.

This article describes expanded polystyrene fittings for cushioning of packages. Special standardised corner and centre pieces have many application possibilities.

This cushioning material already has been proven to save in costs, damage and time.

(Packaging News, September 1973)

LOAD–BEARING THERMOPLASTICS ARTICLES

The high costs of materials, of machinery, and of labour used to produce the majority of goods today, have brought about almost universal recognition of the importance of design, to ensure that the most efficient usage is made of those materials and production methods. This article is a consideration of information necessary for the design of load-bearing thermoplastics articles. Specially discussed are the designing for robustness as in chair, for strength to avoid ductile and brittle failure as in pipe and tank, for stiffness to avoid deformation as in pallet and foam, and the designing for compressibility to avoid buckling as in crates. Lastly some aspects of the design of pressurized containers are mentioned to illustrate many of the principles of design analysis outlined above.

(Plastics Today)

P-S ADHESIVE FILM – SUBJECTED TO ACCELERATED AGEING TESTS

An experiment report on the adhesive properties and release characteristics of pressure-sensitive adhesive coatings exposed to 5 accelerated environments over a 40-week period. The adhesives includes uncatalysed silicone, chemically crosslinked two-component silicone, peroxide-cured silicone and uv-cured urethane.

(Adhesive Age Sept. 1974)

TESTS INDICATE BIO-DEGRADABILITY OF CELLULOSE FILM.

British Cellophane Limited in UK. has conducted a series of tests, designed to establish the bio-degradability of cellulose film "Cellophane". The three types of film tended to break down and disappear in three months. This article gives a description of the test results.

(Australian Packaging, February 1973)

SPRAY-ON, PEEL-OFF FILM

Staticontrol Engineering Ltd. introduces a new liquid film called Brefix, which is sprayed or brushed on article items, and can easily be peeled-off later when needed. It is designed to protect and preserve such items as spare parts, accessories, machinery, furniture and carpets. It can also be used for masking and insulating purposes. Two types are available for indoor or outdoor applications.

(Packaging News, Dec. 1974)

MACHINERY

F/F/S MACHINES ADVANCES TO FLAT-BOTTOM BAGS, CARTONS

After 43 years, flat pouches are now 'standing up'. Speeds of machines in excess of 300 packages per minute permit more significant savings over the cost of prefabs. This article describes the considerations behind such a new machine design. The horizontal machine is chosen rather than the vertical as it allows simultaneous processing of time consuming steps at multiple stations thereby attaining higher speed. Process components are divided into (a) tube forming, (b) bottom forming and closing of the pouch by internal and external formers and transfer of pouch into transport cups for (c) filling and closing. There is a possibility that cartons, which for many years have been processed from blanks, can be changed to web-feeding by carrying the above machine concept a step further.

(Modern Packaging, September 1974)

AUTOMATIC COUNTER-BUNDLE-EJECTOR ENABLES HIGHER FOLDER-GLUER SPEEDS

The inability of the feed and delivery equipment to perform at a high speed is often the limiting factor to the high-performance converting machines.

An automatic Counter-Bundle-Ejector manufactured by CoMac Corrugated Box Machinery Division of Vanguard Machinery Corp. has increased the speed of the conventional folder-gluer in operation.

As the unit is trouble-free and fast, a man that formerly is stationed at the takeoff end is eliminated. Increased operating speed of the folder-gluer also enable an increase in square footage per hour. In addition, the accurate counter that is incorporated with the unit eliminates the need of hand counting.

(Paperboard Packaging, December 1974)

PACKAGING MACHINERY SELECTION

What do you look for when you are trying to install a packaging machine? This article describes the principal elements involved with a comprehensive check list for choosing equipment. Visits to companies using equipment is extremely valuable particularly to get the views of the operators and engineers on the machine performance.

(Australian Packaging, October 1974)

FOAM-IN-CASE SYSTEM SAVES USERS MONEY ALL AROUND

Instapak system introduces a ultra-lightweight, polyurethane foam cushioning that is a gun-injected foam in the initial form of liquid mixed from two chemicals. It has many advantages over other cushioning materials like rubberised hair, expanded polystyrene chips, mouldings and other fitments, in terms of storage space convenience, and versatility. The whole system is rented at £95/m. and many companies like IBM, ICL, GCR, etc. are using it at present. Photo shows the appearance of the foam-in-case.

(Packaging News Nov. 1974)

NEW TECHNOLOGY

STRETCH FILM – A NEW APPROACH TO A PALLET WRAPPING

Superior to shrink-wrap system in set up, the stretch-wrap needs no heat treatment and can save up to 30% of package film. The stretch film differs from the shrink film in three major ways. It usually comes in 1-mil thickness; it recovers some of the stretch to keep a tight grip on the load even when shrinking of load occurs in transit and it is self-sealing - - - that is, once the pallet is wrapped, the loose ends press themselves against the film and stick to it. The article gives illustrations of the wrapping methods.

(Canadian Packaging, June 1974)

LAMINATING– A GROWING OPPORTUNITY FOR THE CORRUGATED BOXMAKER

This article in the form of an interview discusses the lamination of litho labels on corrugated board: its advantages over direct flexo-printing on board, its relative costs compared to printing plates, important criteria in selecting a supplier for printed materials to be laminated, the laminating process, types of laminating equipments available, and its prospect in development.

(Boxboard Containers)

QUALITY CONTROL - - - A COMPLETE PROGRAMME

With the assumption that, in your company, no Quality Control programme whatsoever exists, this article describes the steps needed to set up a complete Quality Control programme. The structure of the QC departemnt, the sampling plans and inspection procedures are given in detail. The programme, developed and used by the Aerosol Research Company for the control of aerosol valve production, is not at all restricted to the aerosol industry. The programme allows you to use as much or as little as you feel.

(Aerosol Age, Sept/Oct/Nov 1974)

A SYSTEMS APPROACH TO PACKAGING DESIGN

The author describes how shape can be the key to successful container design. The package must protect its content, it must store easily, and it must in itself be economical. Where these requirements are in conflict, the different factors must be evaluated and the best compromise chosen. The necessary procedures are described in this article. Basic steps in design methods are mentioned as a guide to help to design a useful package.

(Australian Packaging, Jan. June 1973)

NEW TECHNOLOGY(cont.)

CONTAINERISATION OF CARGO AND ITS EFFECTS ON THE CONTROL OF STORED PRODUCTS INSECT PESTS IN INTERNATIONAL TRADE

Though the increased speed of containerisation over conventional shipping services reduces the time during which infestation can develop during transit, the door to door concept could result in an increase in the risks of light infestations on cargoes being carried to and introduced into premises in the importing containers. Container design should be such that areas which are difficult to clean should be avoided. A more positive way, however, is to fumigate the container after loading. The usual gases employed are methyl bromide or phosphine.

Whichever gas is used, containers that have been treated and shipped without airing should carry a warning label indicating the methods of loading. Experience has shown that if the treated container has been shipped for 21 days, no significant concentration of fumigant can be detected and may therefore be unloaded immediately the doors are opened. If the voyage takes less than 21 days, appropriate venting of the container is needed before unloading.

(Tropical Stored Products Information, No. 27, 1974)

SMELL CAN SELL

Norprint labels that give off the desired tobacco smell when rubbed is used for marketing a new pipe tobacco. The labels are printed by a conventional process and then coated by Norprint with millions of fragrant microcapsules. The capsules remain unbroken until scratched or rubbed, and then only a few at a time are fractured. This means that the scent or perfume can be released on many different occasions, each time the label is rubbed.

Another company, Speedwork, has developed a process in which the microencapsulation coating and printing are done together.

Fragrance labels find applications on greeting cards, books, stationery, direct mailshots and as perfume testers.

(Packaging, November 1974)

PRE-PACKAGING OF VEGETABLES

The paper is an exhaustive critical review of the available world literature (140 references) published during the past 25 years on the pre-packaging and packaging of about 40 vegetables. After briefly discussing the economic importance of vegetables vis-a-vis the advantages of their pre-packaging, the author has highlighted the important developments made in the field, notably the effect of pre-packaging on quality and shelf-life of vegetables, the microbiological aspects, fungicidal wrapping, resistance to insect penetration, gases/volatiles permeability durability of packages/containers and wastage during transit, etc. In the conclusion, future research needs have been brought out, including the areas of research awaiting the attention of the packaging technologists. Also some suggestions have been made regarding the development of indigenous packaging machinery and the scope for further popularization of pre-packaging of perishables.

From "Packaging India"
Vol. 6, No. 4, July-Sept. 1974
Vol. 7, No. 1, Oct-Dec. 1974

HANDLING and DISTRIBUTION

WHAT OPERATORS MUST LEARN - - - TO USE HOISTS SAFELY

The last of four articles on the safety use of overhead hoists. The ANST B30.16 which can be obtained from the Hoist Manufacturers Institute (HMI) is referred to as the safety standard. This article describes the DO'S AND DON'TS when operating hand chain as well as powered hoists.

(Modern Materials Handling, November 1974)

CRATE TURNING AND WASHING

Bottle crates collect dirt and rubbish when they return to the factory. Before re-use, crates have to go through two cleaning stages - - - into a crate turner to empty debris and to a crate washer to remove dirt. This article deals at length with the machines and components involved, with excellent illustrations.

(International Bottler & Packer, Oct. 1974)

SECURING UNITISED LOADS

The article discusses the two major methods of pelletising transit loads—strapping and shrink—wrapping. It reviews the advantages and limitations of various types of strapping materials such as steel, polypropylene, nylon, rayon and polyester, and compares with shrink—wrapping in terms of cost, need, and convenience. Cautions in application, different techniques and machinery for both methods are also discussed.

(SHD)

DAMAGE PREVENTION IN TRANSPORT AND HANDLING.

The author explains how labelling can influence the damage during transport. The visual appearance of the product and/or the product's name itself encourages the manual handlers to treat some packs more gently than others. Different tests to confirm this statement, were carried out with positive result.

(Australian Packaging, May 1973).

SPECIAL PACKS

OIL IN CARTON

Flag carton, made of either cartonboard or corrugated fibreboard with a film or laminated film liner, is claimed to be the first liquid-and granule-proof carton that can be both manufactured and filled at high speed far in excess of those achieved by pouch f/f/s machine. Oil packaging is now the major application, but many other uses are foreseen, including milk and a range of granular products.

(Packaging News, Dec. 1974)

SPECIAL PACK PROTECTS MISSILE COMPONENTS.

Special polyester foam and corrugated board are used for cushioning and packaging of precision – engineered parts. The packages are tape-sealed to complete full protection of the pack.

(Packaging News, October 1973).

PACKAGING EDUCATION COURSE

By special arrangement with the Packaging Association of Canada, its comprehensive educational course is being made available to developing countries at a perferential rate.

Course Content

The course is divided into two parts each containing ten lectures. Each lecture is professionally recorded from a carefully prepared script. Total tape time is approximately 20 hours and the total number of 35mm coloured slides exceeds 2100. In addition, lecturers' notes for explanation during class and notes for participants are included.

The following is a list of the subject titles:

Part I
1. How to Plan a Package
2. Adhesives
3. Paper & Paperboard
4. Packaging Films
5. Corrugated
6. Printing Processes
7. Set Up & Folding Cartons
8. Glass Containers & Closures
9. Paper Bags
10. Foils

Part II
1. Aerosols
2. Tubes, Metal & Plastics
3. Paper Containers
4. Packaging Machinery
5. Industrial Packaging
6. Metal Containers
7. Foam
8. Plastics
9. Tapes
10. Graphics & Communications

Suggested Method For Conducting the Course

Participants should be supplied with lecture notes, while a trainer does the explanation. Each session should feature an expert on the subject under study, from the packaging industry. His role is to answer questions and recount his practical experience. Discussions among participants should always be encouraged and it has been found particularly useful if participants in a wide range of jobs and company backgrounds are grouped so that they can discuss, question and argue among themselves and — learn. This means that participation is during the lecture, not at the end.

How to Purchase This Course

Financial assistance from the International Development Research Centre, Ottawa, Canada, enables WPO/APIC to make this course available to bona fide institutions in developing countries at the rate of US$1,200 per set (plus shipping charges).

For further information, please contact:

The Secretary-General,
World Packaging Organisation,
Eldex Industrial Building,
12th Floor, Unit A,
21, Ma Tau Wei Road,
Hunghom, Kowloon,
Hong Kong.

Purchase price applicable in developed countries is $5,000.

PACKAGING JOURNALS' LIBRARY

The Asian Packaging Information Centre (APIC) is assisting the Industrial Service Institute, Thailand in setting up a packaging journals' library. The library will comprise 12 periodicals dealing with various packaging materials, containers, package engineering and handling.

The establishment of journals' libraries in developing countries is one of APIC's activities. Countries which have participated in the Workshop on Packaging Technology Information Needs held in Hong Kong in November, 1973, are eligible for consideration of this assistance. Requests should be forwarded to the World Packaging Organisation

PMMI DIRECTORY AVAILABLE

The 285-page "1975 PMMI Packaging Machinery Directory" is available for a US$2 postage and handling charge from the Packaging Machinery Manufacturers Institute, 2000 K Street, N.W., Washington, D.C. 20006.

The PMMI Directory includes a complete listing of member companies, addresses, personnel and representatives, and products.

The "Classified Index of Packaging Machinery" is organized by machinery function for easy reference and a "Trade Name" listing section will also help packagers locate suppliers of specific machinery.

Information Service - - or "Bingo" - - cards are included to expedite packager inquiries and the responses from PMMI member companies.

THE DATA BANK

The Data Bank is run by the Asian Packaging Federation on behalf of the World Packaging Organisation through the Asian Packaging Information Centre. Financial support is provided by the International Development Research Centre of Canada.

It has been set up for the purpose of collecting worldwide information relative to Packaging, Packaging Machinery, Packaging Equipment, Packaging Materials and Packaging Consultants. This information is collated, catalogued, stored and disseminated as required.

It provides a computerised service in the English language of packaging information abstracted from a wide range of Packaging journals and data on Packaging machinery, their suppliers and types. It also offers a matching bureau listing Packaging consultants capable of solving specific Packaging problems to which enquirers are recommended.

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1975 Vol. 1 No. 2

U. N. SEMINAR IN H. K. ON PACKAGING

A Regional Seminar on Packaging for Export will be held in Hong Kong from 27th August to 5th September, 1975, to be jointly organised by the Hong Kong authorities, ITC Geneva and TPC ESCAP Bangkok.

The project follows a suggestion from the Packaging Centre in Hong Kong. Delegates from all Asian countries will be attending.

Lectures will be given by an international group of packaging experts. They are:

Mr. C. Hillenius, Director, Dutch Research and Development Section, Dutch Packaging Research Institute;
Dr. W.P. Fornerod, Deputy Director, Dutch Research and Development Section, Dutch Packaging Research Institute;
Mr. L. Swart, Netherlands Packaging Design Consultant;
Mr. E. Lilius, Packaging and Design Consultant, Sweden;
Mr. J. Selin, ITC Packaging Adviser.

The objectives of the seminar are to provide participants with the latest information on the following subjects:

1. Importance of improved export packaging for international markets.
2. Basic principles of package design both from a technical and from a promotional point of view.
3. Adaption of export packaging to target market needs.
4. In depth analysis of promotional package designs used presently for selected commodities, primarily processed food products, ready-made garments, handicraft, etc.
5. Institutional or other measures for better export packaging design.

The following programme has been prepared:

a. Packaging in developing countries.
b. Packaging for transport, materials methods, pre-shipment testing, standards, etc.
c. Consumer packages, materials, methods, machinery, testing, standards, etc.
d. General principles of export package

Seminar participants (40) will be senior personnel with responsibilities for export of processed food products in public or private sector enterprises, representatives of national packaging institutions or national export promotion agencies.

The cost of participation, including travel, accommodation and allowances at UN rates, will be borne from project funds.

PAC COURSE PURCHASE BY INSTALMENTS

The special arrangement, through which the Packaging Association of Canada's comprehensive educational course is being made available to developing countires at a preferential rate, has now been further expanded by offering the course on an instalment basis.

The new offer, in effect, means that the whole course may be purchased in sections over an extended period, thus easing the strain on the financial viability of prospective purchasers.

However, as an inducement for an outright purchase of the full course, three PIRA visual aids are offered without extra cost.

The course is divided into two parts, each containing ten lectures. Each lecture is professionally recorded from a carefully prepared script. Total tape time is approximately 20 hours and the total number of 35mm coloured slides exceeds 2,100. In addition, lecturers' notes for explanation during class and notes for participants are included.

Financial assistance from the International Development Research Centre, Ottawa, Canada, enables WPO/APIC to make this course available to bona fide institutions in developing countries at the rate of US$1,200 per set (plus shipping charges).

The following is a list of the subject titles:

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4. Packaging Machinery
5. Industrial Packaging
6. Metal Containers
7. Foam
8. Plastics
9. Tapes
10. Graphics and Communications

Purchase price applicable in developed countries is US$5,000.

For further information, please contact: The Secretary-General,
World Packaging Organisation,
Eldex Industrial Building,
12th floor, Unit A,
21 Ma Tau Wei Road,
Hunghom, Kowloon,
Hong Kong.

45 Charles St E.
TORONTO M4Y 1S2
9-186-4 929-3194

INTERNATIONAL CONFERENCE 1977

The British Institute of Packaging announces that it is to organise an International Conference in 1977 with the theme, "Worldwide Developments in Packaging Machinery, Materials and Management."

The Conference will take place at the Birmingham Metropole Hotel Complex which forms part of the new National Exhibition Centre in the heart of England.

The Conference dates are 10th-12th March, 1977, immediately prior to the opening of PAKEX '77 which takes place at the Centre in the period 14th-18th March, 1977.

Further details of this important Institute of Packaging International Conference will be published later.

PACKAGING MONOGRAPHS

Several highly informative books on packaging – published under the auspices of the British Institute of Packaging – are available from their English publishers. The books form part of two new series of packaging educational material, one dealing with the fundamentals of packaging and edited by Frank Paine; and a second series of packaging applications, edited by John Briston.

Books so far published in the two series (with the sterling price in each case, excluding postage and packing) include:

	Price
Packaging and the Law	£ 2.20
The Packaging of Chemicals	£ 3.20
Packaging Evaluation	£ 2.50
The Packaging of Cosmetics and Toiletries	£ 2.50
Packaging and Climatic Protection	£ 2.90
The Packaging of Pharmaceuticals	£ 3.90

It is expected that other titles, dealing with Adhesives in Packaging and The Packaging of Foodstuffs (two volumes) will be published later this year or early in 1976.

Copies of these factual, illustrated, books are available from Newnes-Butterworth Ltd., Borough Green, Sevenoaks, Kent TN5 8PH, England.

ALUMINIUM IN PACKAGING by R.J. Sinia (Hfl. 40 or US$17.50).

Nowadays aluminium is considered as one of the best solutions for packaging problems for a great variety of products. Aluminium has a wide range of advantages above many other materials, in processing, in solidity, in hygienic and environmental respect and economically.

This survey tells you what aluminium — the magic lightweight metal — really is and how it can be used in the packaging field. The latest developments as well are carefully taken into account, making it clear that aluminium offers many possibilities, hitherto unthought of, as a packaging material. It shows the ways how an optimal aluminium pack can be designed.

"Aluminium in Packaging" may be considered a "checklist" for all those who think of aluminium in any form whatsoever as a possible solution for a packaging problem; for all those who want to re-design a pack; who want to know more about its properties, prices, printing and converting possibilities. In short, a condensed packaging handbook about aluminium in all its forms. The book comprises 139 pages and is illustrated.

(Stamex B.V., Hilversum, Holland).

Change of Format

The first issue of the APIC Journal has received favourable comment in all areas to which it has been circulated and it will continue its aim as a current awareness bulletin to improve and enlarge upon its contents.

The editors have decided, therefore, with the current issue, to change the format by the inclusion of other items apart from abstracts.

The APIC Journal will, in future, carry articles on the following:

(1) notes on basic technology assembled from textbooks and handbooks;
(2) general reading on recent developments in technology;
(3) abstracts of relevant articles from current journals.

Readers are invited to submit suggestions on any topics related to the above that they would like to see in the Journal.

HANDBOOK OF PACKAGE ENGINEERING

(Joseph F. Hanlon), 544 pages, 185 illustrations, US$18.50.

There's never been an aid for the hard-pressed packaging engineer like this before — one that provides in a single place precise directions for the most effective handling of just about any packaging problem likely to arise.

Whether you are looking for more reliable information to go by when it comes to selecting materials or ready-to-use trouble-shooting procedures for the production line.....whether it's a matter of ensuring a proper fit between bottle and cap or of approaching management for funds to purchase equipment.....this first-of-its-kind Handbook should serve your needs on the job as no other work of its kind in print. It is a true work reference — completely objective, totally reliable — ideal for the packaging novice and veteran alike. It supplies fair appraisals of all the most-used materials (advantages and disadvantages). It sets down tentative cost figures so you can make the most intelligent economical selections from several alternatives. It gives easy-to-understand explanations of the physical and chemical properties of materials so you grasp the how as well as the why behind any particular application. It provides long-needed trade standards for use on the job — in nomenclature, sizes, tolerances, etc — for smoother communication between engineering, purchasing, manufacturing and inspection departments. It clearly explains the processes used for converting certain materials into finished pieces, along with specific tips for maximising functional characteristics while minimising costs. And much more. Above all, the wealth of information covering every major function and responsibility you hold as a packaging engineer is reliable. Safe to say, whether you want to select the most suitable cushioning material or determine how thick it should be..... whether it's to cut the waste of money in coatings and laminations or simply check up on plastic collapsible tubes.... ....you're sure to find the answers here.

MATERIALS

1.1 ADHESIVES – PAST, PRESENT, AND FUTURE

The article deals with the semi-scientific technique of technological forecasting that helps to know the true situation in a period of rapid change in society. It examines the changing patterns of adhesives through the 50s, 60s, and 70s, and introduces with many tables the use of morphological analysis to "handicap" various adhesive systems by external factors for the next decade. Indications on the future of the adhesives industry through the study are summarised:

- The adhesives industry is one of growth;
- It is a changing industry both in markets and technology, but the changes should occur over a sufficient length of time to permit the astute manager to improve his company's position.
- The future will be exacerbated by diversity — as substrates, adhesives, and systems proliferate and compete.
- Conservation of materials and energy will couple with consumerism forces to yield a higher quality of life.
- A dynamic situation offers opportunities for added profit to the alert businessman.

(Adhesives Age, Jan. 1975. 4p.)

1.2 CELLOPHANE: VALUE ADDED MATERIALS BOOST PERFORM–ANCE

Cellophane is more important to food packagers than it ever was.

The housewife, faced with paying more every day, would naturally expect a better product, fresh and appealing. Cellophane can do all these.

Some think that food processors, in an effort to cut costs, are backing off from flexible packaging.

Actually, film packaging today generally makes up a smaller percentage of the final package selling price than it did in early 1973.

For example: Early in 1973, a baker paid about $1.05 a lb for printed K 250-207 cello of Du Pont to wrap cakes. The cakes retailed for about 12 cents, so the film costs 3 per cent of the final value. In the autumn of 1974, the same wrap cost about $1.90 a lb and the cakes retailed for 25 cents. So the wrap was down to 2.5 per cent of the retail pack.

With selling and distribution costs representing 40 per cent of the total value, it is wiser to improve the shelf life of the product than to deliver it more frequently.

(Paper, Film and Foil Converter, March 1975. 3p.)

1.3 PROGRESS IN INNER PACK-AGING – FOAM PLASTICS

The article is Chapter 1 of Part IV of the New Art of Corrugated Container Production. It reviews the plastics commonly used for inner packaging, the products, and the methods of fabrication. Expanded polyethelene, polystyrene and polyurethane are described, and their processing such as die-cutting, cavity cutting and convolute cutting are illustrated with photographs. Finally its use for flotation is described with Hewlett-Packard's "Post Pak" as an example.

(Paperboard Packaging, April, 1975. 5p.)

1.4 "PERFECT PERFORMANCE" FROM NO-SOLVENT LAMINATING

Based on a new, all solids polyurethane-based adhesive, lamination does not require any solvent or vehicle to facilitate its application. A whole range of cellulose/polyolefin/polyester and polyamide films can be laminated and are claimed to have excellent bond strength.

The system is outstanding in that it does away with the need for a drying tunnel saving up to 50 per cent of the space usually occupied by a laminating machine. In addition, there are none of the pollution problems associated with drying solvents and the energy normally used in the heating/drying process is saved.

The machine has a five-roller coating head, of which some are heated and the adhesive is applied at a temperature of 100°C.

The new adhesive makes possible low coating weights (1.2 gsm to 1.7 gsm) and a laminating speed of 150-200 m. a minute on film/film lamination and up to 300 m. a minute on paper/foil lamination.

Lamination of the appropriate films are quite suitable for boil-in-bag applications.

(Packaging News, February 1975, 1p.)

1.5 CHAMBERLAIN PLASTICS GROWTH IN THE METALLISATION FIELD

The vacuum metallising process on film or paper is briefly described. The demand for it is increasing at an accelerating rate for usage in decoration. and packaging fields. Its applications are discussed with many examples: special paper and coating to produce a brilliant metallic finish on beer bottle label, coated paper bags, metallised polyester film laminated to PVC (called Metalon) for decorating and labelling, metallised PVC for use in vacuum forming especially in the manufacture of chocolate box liners and also for varied relief pattern decorative wall tiles, metallised cellulose film mostly used in packaging.

(Converter, February 1975. 2p.)

MACHINERY

2.1 PLASTIC BAG MAKING PROB-LEMS REDUCED

To achieve accurate bag measurement and good web tension control in the making of bags, the Packaging Industries Inc. of America has adopted new concepts in the design of their ma–chinery.

An accurate bag length control of within plus or minus 0.004–in. is achieved by the following method: An extension shaft on the two-phase servo drive motor has a disc attached which is etched with a series of fine radial lines. An encapsulated unit containing a photocell monitors the number of lines passing and their rate. Using a notched belt that drives the nip rollers, a closed loop electronic circuit compares this with the digital setting on the main panel. By predetermining the number of lines that are to pass the photocell, the length of the bag is fixed.

The conventional method of eliminating creases and folds in extruded film, and to keep perfect linearity of the film being fed through is to introduce controlled tensioning over a series of feed and dancer rollers. However, this consumes considerable amount of energy in stopping and starting rollers.

By the introduction of a vacuum tensioning system, the above disadvantage is eliminated. A film stock is looped into a box, and by maintaining a vacuum on the inside of the film, a U shape is formed of unexpected rigidity and as this loop dips further into the box, a sensor is operated indicating there is enough material in the system to advance the next bag.

(Packaging, February 1975. 1p.)

2.2 TIN PRINTING BOX MAKING CANNING/PACKING

The production of some new D&I can making machinery is introduced. SDL-1 manufactured by Standum Inc. claims to be the first integrated D&I can-making system that incorporates 2 cup makers, can beading system, can tester, conveying and handling equipment, palletiser and a programmable line control system. A typical Bliss D&I system comprises one cupping press, 4 ironers, and between 2 to 4 trimmers, and is capable of producing 800 cans per minute. Van Vlaanderen's D&I equipments include a can decorator, coater and a second generation UV curing oven.

(Tin International, Feb. 1975. 2p.)

NEW TECHNOLOGY

3.1 FOLDING CARTON CONVERTERS HAIL MAGNETIC PLATE BACKING

In a certain factory, cartons have been printed from sticky rubber plates for a number of years in a flexographic process. The plates were susceptible to distortion due to stretching and out-of register printing is a common result.

Then they shifted to the using of brass-backed plates. But these presented problems too: they had to be held down with tension bands which could damage the 180-line anilox rolls if they become loose or kinked. Set up and adjustment of the bands was also time-consuming.

Finally, a means of mounting a flexographic plate using magnetic force alone - without clips, bands or adhesives is offered by the 3M Co. The magnetic plate backing consists of a flexible rubber magnet laminated to steel foil. A normal charge of uncured plate gum rubber is added to the backing, using standard moulding presses, times and temperatures to mould magnet printing plates. Plates moulded with the magnetic backing are held to steel cylinders with a vertical force of 2 psi and can be operated at press speeds in excess of 1200 fpm.

Magnetic printing plates can be butted more together as no clips or bands are needed to hold them down which in certain jobs results in a board saving of 3-4 per cent. Make-ready and adjustment time is reduced by one-third.

(Paper, Film and Foil Converter, March 1975.2p.)

3.2 TECHNICAL INNOVATIONS IN AEROSOLS

The conventional packaging of aerosols where the product and propellent are enclosed together in a single container imposed limitations on the products that can be dispensed.

Product and propellent must be compatible and the product be of low viscosity.

To overcome these limitations two innovations are introduced:

The barrier pack where product is packed in a specialised plastic bag in the can. The propellent is filled between the bag and can and exerts pressure on the bag to dispense the product.

The seal-tip valves avoid the clogging of products in the valve and provides a tip-seal which guarantees a sterile seal.

The author describes these two innovations in detail with illustrations. Combining these two innovations, pharmaceutical gels, syrups, viscous food as well as toothpaste that hitherto has not been successfully dispensed by aerosols are now possible. It is even envisaged that innoculations can be made through the lungs by the use of aerosols rather than the needle in the arm.

(Australian Packaging, March 1975. 3p.)

3.3 DUAL-CHAMBER VACUUM-PACKAGING OF BEEF

A new development, sequential chamber-vacuum packaging, is accelerating the pace of the beef-marketing revolution.

With conventional nozzle vacuumizing system, the beef is first loaded into a plastic bag. The bag is then clamped around the neck of the nozzle and suction is applied. The external air pressure immediately pushes the bag against the surface of the product being packaged, creating heavy wrinkles, as well as trapping small-volume pockets of air between the film and the products. Though the bag is later closed tightly with an aluminium-alloy clip, the package still contains lots of air.

The dual-chamber vacuum system offsets the above disadvantages. The sequence of operations are as follows:

A. The bagged subprimal cut is placed in the large chamber of the machine with the neck of the bag draped in a positioning guide and extended into the smaller chamber.
B. A vacuum is drawn in the larger chamber, causing the bag to balloon around the meat cut.
C. While this vacuum is held, air is evacuated both from the smaller chamber and from inside the bag.
D. Evacuation continues in the smaller chamber until the vacuum level is lower than in the large chamber, causing the bag to collapse firmly against the meat. The bag is then automatically clipped while still in vacuumized chamber.

The new system can handle 10 packages per min. with meat cuts weighing as much as 60 lbs.; a tremendous increase compared to the 2½ to 3 pieces per min. per man using the conventional method.

The Asian Packaging Information Centre
Eldex Industrial Building, 12th Floor, Unit A,
21 Ma Tau Wei Road,
Kowloon,
HONG KONG

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Packaging of cheese and products other than fresh-red meat is being considered for use in this new system.

(Modern Packaging, March 1975. 4p.)

3.4 STRETCHWRAP UNITS USE LESS FILM

Compared with shrinkwrapping, the savings derived from stretchwrapping a product can be as much as 40 per cent. Round or Square packs can be stretch-wrapped individually or in collated groups by the automatic or semi-automatic range of Pester Stretch-wrapping machines now available in the UK.

A particularly interesting feature of the machine lies in the fact that they use stock unoriented polyethylene and not stretch film.

The self-measuring principle which allows for only the right amount of film to be used and thus prevents wastage is of particular importance where items of different sizes are random fed.

In Germany, where the machines originated, they are being used to wrap roller towels of various diameters fed at random. It is envisaged that the machines will find applications in the industries of bakery and linen supplies. Products handled can be from 20mm to 350mm long, 50mm to 400mm wide and 10mm to 150mm high.

(Packaging News, February 1975. 1p.)

HANDLING DISTRIBUTION and STORAGE

4.1 ELECTROMAGNET ON AN ELECTRIC ?

Is this possible? Electromagnetic attachments have always been associated with IC-engined trucks; now an electric has proved able to cope from its own battery.

The idea of using an electromagnet stemmed from the laborious task of loading pig iron ingots and scrap in the stock yard into stillagees for transport to the electric furnaces.

The unit consists of a Hyster electric E50 standard lift truck of 5,000 lb. capacity powered with an Exide THF 15 battery of 36 cells.

Experiments showed that for lifts between 500 to 600 lb, the unit can perform 50 magnetic lifts in 1.66 hours providing sufficient heats for two shift foundry working plus a battery capacity for 128 non-magnet lifts providing normal use of truck for 5.77 hours.

(Storage Handling Distribution, March 1975. 1p.)

4.2 TIMBER FOUR-WAY ENTRY PALLETS MAINTAINS GROWTH

Will wooden pallets be replaced by metal and plastic ones? What will be the development trends of pallets? What are the costs of maintaining a pallet pool? All these questions are answered in an article by Bruce Whitehall who looked into the situation in the UK.

It is observed that standard wooden pallets of the 1000x1200 mm four-way entry type which at present constitutes 55–65% of the pallets in circulation will become more widely adopted. It goes to such an extent that a pallet pool where pallets can be rented and circulated is to be in operation soon.

The market for the "one trip" or "expendable" wooden pallets – i.e. pallets made to the lowest possible timber specification consistent with load capacity – has been found to remain static in recent years.

On the other hand, the demand for aluminium pallets and injection moulded plastic pallets keep developing steadily. Use is no longer confined solely to industries such as food and pharmaceuticals where high standards of hygiene are a necessity. Light weight, easy cleaning, close manufacturing tolerances and high strength made aluminium a contender for various closed circuit handling jobs. With injection moulded plastic pallets, freedom form splinters and smooth load bearing surfaces offer possibilities in various activities.

(Packaging Review, April 1975. 3p.)

4.3 RESOLVING THE RETORT POUCH RUCKUS

The standard retort pouch consists of a lamination of ½ mil polyester as the food contact film, 0.0035 mil aluminium foil for moisture and gas barrier and 3 mil polyolefin for pouch strength. All pouches are heat sealed and nominal size is 5x7 in. Retort pouches are shelf stable and keeps its contents for a minimum of 6 months at 37° C and 2 years at 21° C. Having introduced what retort pouches are, the author treats in depth the investment needed for setting up a pouch packaging line. All such costs as machinery, labour, packaging material, distribution, energy consumption are given in figures.

Comparison of distribution costs for a frozen package vs. that of a retort pouch reveals an economic advantage of the latter – US5.9¢ compared with 9.8¢ of the former.

Between canning and retort pouch packaging, it was found that the cost of packaging a thousand is US$55.45 for the latter compared with $57.88 for the can.

Tables showing the cost comparisons are given.

(Paper, Film and Foil Converter, March, 1975. 3p.)

4.4 THE ART OF STUFFING AND STRIPPING

The most time-consuming and expensive segment within the container transport chain is getting the cargo in and out of the box. However, at many locations, the containers are still loaded and unloaded by "human" conveyor belts. Mr. Gibney in this article points out that stuffing and stripping could save much time and money by incorporating with the right tools, know-how and operator. Many examples in employing fork-lift trucks and various accessory equipments for stowing loads in containers are discussed with photographic illustrations.

(Containerisation International, March, 1975. 2p.)

4.5 NEW OPERATING GUIDELINES FOR REDUCING PALLET DAMAGE

How to locate damaging practices done to pallets throughout a handling system and how to rate them to find out their relative importance? This article lists 17 factors which can result

in enough damage to be readily measured. They fall into four categories: equipment use, conditions of the facility, practices of the operators and the operating policies established by the management.

Typical among these 17 factors are: How many fork-lift trucks are equipped with side shifters? How often are clamp platens used on pallets? What are dock conditions and width?Are truck forks level during pallet entry? Do operators push pallets with truck forks? Does the company allow manual handling of pallets?

Basis for rating the probable effects are listed in a table. Detailed explanation of the damages done to the pallets by the 17 malpractices and ways to avoid them are given.

(Modern Material Handling, March 1975. 4p.)

4.6 "DO YOU KNOW HOW TO SHIP LOADS OVERSEAS WITHOUT DAM AGE?'

The article outlines the points for consideration in planning packaging for overseas: a comprehensive profile of specific facts on which to base the packaging; acquiring books, pamphlets, papers, studies, reports and other writings that detail the conditions of overseas packaging and movement from such places as the World Trade Institute, the Libraries of Battelle, the World Bank; understanding the people and conditions in the places ,where the packages go, like the movement patterns of ships, port's handling methods, port conditions..... What all this comes down to is that the packaging specifications must reflect the findings of the profile and the other studies and on-the-spot investigation. Many photographs.

(Package Engineering April 1975. 3p.)

4.7 STUDIES OF SAFE STORAGE OF SEED PADDY

A useful reference for developing countries – Rai & Croal of the Central Agricultural Station, Mon Repos, Guyana (S. America) carried out studies on how seed paddy should be stored.

Several observations were made:

A. Under the naturally ventilated bond conditions of storage of paddy in jute bags, reasonably dried paddy (11.13 to 15.8 per cent moisture content(m.c.)) comes to m.c. of 13.5 to 14.5 per cent in the equitable coastal climate of Guyana, characterized by 70-90° F. temperature and more than 60 per cent R.H. and that paddy stored in plastic bags 400-600 gauge did not change in m.c.

B. Under the above humid conditions in Guyana, paddy stored in jute bags starts losing its viability after 3 or 5 months. Experiments revealed that paddy dried to 11.3 per cent m.c. and stored in 600 gauge plastic bag retained its viability up to 15 months. The viability of paddy seeds is measured by calculating the percentage of seeds germinated in 72 hours, out of 3 batches of 100 seeds each.

C. Preliminary studies revealed that dry weight was significantly more for paddy stored at higher m.c. and in thicker plastic bag.

(Bulletin of Grain Technology, March 1973. 4p. (Ref. DBL TC 063).)

SPECIAL PACKS

5.1 STORY OF THE "MEROLITE"

First in the use of a flexible film for the packaging of carbonated drinks and beers is the Merolite pouch of ICI.

The Merolite pouch is supplied as a pre-sealed, seamless pouch made from biaxially-oriented polyethlyene terephthlate film, coated on the outside with a vinylidene chloride copolymer barrier resin. When filled the pouch is wrapped in a strong paper sleeve. On both sides of one end there are pouring holes sealed with polyester tape.

The method of filling is unconventional. The filling cycle begins with the extraction of one flat pouch from a cartridge of 900. Carbon dioxide is first injected through the filling hole of the pouch to inflate it until it becomes rigid. A metered quantity of carbonated product at a temperature of 3° C is pumped into the pack. The flow is reversed momentarily to clear the residue product in the filling tube before the pack is moved away ensuring a clean dry surface for sealing. The filled pack then takes up a piece of sealing tape which is heat sealed in position. It is subsequently wrapped with two complete turns of paper for rigidity.

ICI supplies the complete filling system which consists of six filling heads (each processing 6 pouches per minute) and one wrapping unit with associating conveyors and control console.

(Plastics Today, Dec., 1974. 5p.)

5.2 PROPELLANT-LESS SYSTEM USES HYDRAULIC PRESSURE

The Eco-Pure Dispensing System developed by Kain's Research & Development Co. is described as an "hydraulic pressure system" that needs no propellant but uses a plastic liner which appears to be pre-stressed. Pressures available for dispensing vary from 20 psi to 100 psi, or more, depending on application. It can dispense creams, lotions and viscous products with a low pressure liner, and insecticides, deodorants, hair sprays, disinfectants and other fine sprays with a high pressure liner. It costs less, eliminates present crimping specifications, and precludes the need for internal coatings and valve gaskets. However, the spray is wet since there is no propellant to disperse the droplets.

(Aerosol Age, February 1975. 1p.)

TESTING AND ANALYSIS

6.1 THE PERFORMANCE OF A CONTINUOUS 100% INTERNAL BOTTLE PRESSURE TESTER

This report describes Yamamura Glass Co.'s internal bottle pressure testers (QBR, QBD and QBE in particular that perform continuous 100% check on returnable bottles. It is claimed that breakage rate at filling line has sharply declined by 60-90% and breakage at market by 70-90%. Reliability of the experimental results has been verified by fracture analysis of the broken bottles. Many of the test results are discussed and listed in tables.

(Int. Bottler & Packer, Feb., 1975. 7p.)

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Second Inter-Regional Seminar For Co-operation In Packaging Among Developing Countries Planned

With a view to fostering, inculcating and promoting co-operation among the developing countries on the subject of Packaging, the United Nations Industrial Development Organisation UNIDO is organising a 10-day seminar in Seoul, South Korea, in November.

The Korea Design and Packaging Centre has been designated by the Government of the Republic of Korea as the host institution for organising the seminar on its behalf. It is hoped that the participating delegates will, by mutual discussions and exchange of ideas, not only be able to effect greater progress in the packaging industry in their respective countries and thereby promote their national industries in general, but also further strengthen mutual co-operation among themselves, as well as to suggest concrete scope and forms of industrial co-operation.

The seminar will open with a keynote address on the Role of Industrial Co-operation in Packaging in planning the Industrial Development of the developing countries (paper by UNIDO). Each participant is expected to present a paper on the possibilities and needs of the country in this field. Discussions will then follow. Visits to selected industries and institutions will be arranged as part of the programme.

The objective of the seminar is transfer of technology among the developing countries in the field of packaging in which the following subjects will be covered:

1. Exchange of information on development trends (in each country) and organisation of the packaging industry;
2. The best developed technologies which each country could offer for co-operation with other countries;
3. Relationship between available raw materials and development of new technologies in packaging;
4. Packaging centres as a basic element for development of industrialisation of a country;
5. Implementation of conclusions and recommendations of the Bombay Seminar –– practical results;
6. The problem of co-operation between the developing and developed countries;
7. Organisational form of co-operation between developing countries;
8. Co-ordination of information systems in national, regional and international organisations;
9. National, regional and international training programmes;
10. Programme and place, timing, for the Third Inter-regional Seminar.

The Korea Design and Packaging Centre will present a comprehensive paper at the seminar covering the following subject groups:

a. Packaging Material Groups –– packaging (paper and cardboard); glass; tinplate; plastics; package printing.
b. Ancillary Materials –– industrial design in packaging; adhesives; cushioning materials; printing inks.
c. Packaging Systems –– complex standardisation; packaging machinery; systems as a complex; transportation means (packaging).
d. Packaging Education.
e. Packaging Information System between developing countries in the field of co-operation.
f. Technical Consultancy –– Testing, Research and Development.
g. Integrated Quality Control as a factor of development.

Sixteen fellowships will be awarded to nominees from selected developing countries in Africa, Asia, the Far East and Latin America.

This seminar is open to male or female candidates in accordance with General Assembly Resolutions 3010 (XXVII) designating 1975 International Women's Year and 3342 (XXIX) calling for the full integration of women in the development process.

EDUCATION IN PACKAGING

Here is a partial list of institutes that offer courses in packaging:

- Food Protection and Toxicology Center, University of California at Davis, California, USA.
- School of Packaging, Michigan State University, Michigan, USA.
- School of Industry & Technology, University of Wisconsin/Stout, Wisconsin, USA.
- Pratt Institute, Brooklyn, N.Y., USA.
- Department of Packaging Science, Rochester Institute of Technology, N.Y., USA.
- The Packaging Institute/USA, Inc., New York, N.Y., USA.
- The Institute of Packaging, Stanmore, UK.

STUDY REPORTS

Two study reports have been prepared by APIC, one on "Use of Laminates to Protect Pre-cooked Foods", and the other on "Protecting Transportation of Electronic Equipment". The digests of contents are given below, while the detailed study reports are under the process of printing and will be available at a nominal price upon request. Anyone interested is welcome to write to APIC for more information.

USE OF LAMINATES TO PROTECT PRE-COOKED FOODS

Laminates used in automation for protection of pre-cooked food are increasingly gaining favour in packaging that provides a reasonable shelf life. Traditionally, tinplate is used, such as for luncheon meat and dry milk powder. Glass, to a large extent, is also employed. Both offer good protection to packaged food, thus ensuring a shelf life of one or two years.

However, it has been shown that packaging cost could be reduced 50 percent or more if flexible laminates were used as opposed to metal or glass.

Though not as perfect a barrier as sheet metal or glass, laminates have a better sales appeal on supermarket stands by having excellent transparency and better printability. By suitably combining different materials, laminates having the desired moisture vapour resistance, gas barrier, light barrier, strength, sealability and machinability properties can be obtained. Paper (cellophane), aluminium foil and plastics form the usual candidates for laminates.

On the aspect of automation, form-fill-seal machines are the main feature in use. The properties of the laminates themselves pose a barrier to higher speed. Better efficiency, however, is obtained by innovations in the product feed pattern. For instance, a fruit juice packaging plant boosts speed by in-pouch mixing of water and syrup concentrate rather than the traditional pre-mixing in large tanks.

Trends and supply indicate that LDPE is predominantly used among plastic films for lamination due to its good barrier properties and economy; PP, with similar properties to cellophane, replaces the latter in film thickness less than 3 mil; PVC appears to be dropping slowly from favour; plastics are in short supply; cellophane is expected to hold its ground; and aluminium foil provides a perfect barrier against moisture, gas and light.

The high standard of modern production and conserving, the refined systems of packaging and presentation, as well as the sophisticated marketing of the retail food industry, are factors which contribute considerably to the ever increasing popularity of ready-to-serve food. The experts in this particular field expect that, in the years to come, the industry will offer even more pre-cooked foods and ingredients than are now available. This will bring a tremendous demand on packaging materials, posing new challenges, and laminates will enjoy even bigger growth. It is generally expected that the present shortage of foil and plastics would be eased by the end of 1975, when production capacity catches up with demand.

PROTECTING TRANSPORTATION OF ELECTRONIC EQUIPMENT

Protecting delicate electronic equipment in corrugated containers during transportation always poses a tough cushioning and packaging challenge. The package must protect the product against the various static and dynamic stresses which may be encountered on its journey.

The main hazards to electronics during transportation are shocks and vibrations. For most electronic equipment, the damage acceleration is in the range of 25-80 g. G-forces encountered during actual transportation are generally not severe, ranging from 1-2 g. at change of speed, up to 18 g. as a result of sudden stops, or the shunting of railway wagons.

Vibrations typically encountered during transportation are:

1-200 hertz —— road vehicles
2-100 hertz —— railway wagons
300-3000 hertz —— propeller driven planes
10-100 hertz —— ships (near engine or propeller shaft)

An added possibility is that of resonance developing at certain critical frequencies. If the vibrations set up by the conveyance are in phase with the natural frequency of the packaged product, harmonic vibrations are propagated in the product and these amplified vibrations can inflict considerable damage on a fragile electronic product.

Package testing must thus be among the series of programmes for a new form of package to evaluate its capability in protecting the content.

Numerous tests have been carried out, inter alia, to determine the ability of a container to withstand impact stress, such as through rough handling or repeated shocks, and to determine the ability of a container or interior packing, or both, to provide protection to the contents, when subjected to impact stresses. Tests to investigate compression effects (deformation, collapse, failure), and to measure the ability of a package to withstand a distribution system that includes a compression hazard, have also been made.

Not all testing advocates favour standardised procedures. Most concede the value of getting comparable results. Many find the standards too tough; others think the standards are not tough enough.

Tests carried out by large manufacturers show a trend that containers will be tested with an awareness of the dynamics of the actual transportation system. Increasingly more attention is concentrated on the dynamics of physical distribution, and the empirical approach outside the laboratory will complement the standard tests in the laboratory.

For very delicate items such as electronic equipment, complete packaging is necessary to ensure full protection during transportation. There may be a trend in using electronic

vans or air-cushioned vehicles, but they are not a solution to packaging damage.

Accurate pre-shipment testing seems to be the more progressive direction for solution. Many packagers feel that packages that pass rigorous pre-tests have a right to more sympathetic claims settlement from the carriers if damage should occur.

All signs point to the fact that pre-shipment container testing can reduce shipping losses. Its continuing demand is assured. More than ever before, packaging engineers are designing packaging to better accommodate the distribution environment of the package. Knowing dynamics of distribution will play an important role in pre-shipment container testing.

NOTES ON BASIC TECHNICAL KNOWLEDGE OF CORRUGATED FIBREBOARD

Corrugated fibreboards are made by combining the "corrugated medium" with surface "liners" or facing material with adhesives. It has practically replaced wood as a shipping case material because it is light, strong, and inexpensive. The tough liners held in firm relation to one another by the corrugating medium result in a rigid structure with good resistance to bending, crushing and column-type loads. It is generally used with the flutes of the medium running vertically as the box is stacked. The flutes and liners together provide a strong column with excellent resistance to bending. The crush resistance of the board provides good protection against impact.

Liner:

Natural kraft is most commonly used. The others include bleached kraft, test, kraft lined test, wet strength kraft, and waxed kraft.

Thickness		Weight	
in	mm	lb/1000sq. ft.	g/sq.m.
0.009	0.225	26	126
0.012	0.300	33	160
0.014	0.350	38	186
0.016	0.400	42	206
0.018	0.450	47	231
0.024	0.600	69	337
0.030	0.750	90	440

Medium:

The basis of corrugated board is the fluted or corrugated sheet called corrugated medium. Generally it is from semi-chemical pulp —— low tear resistance but high stiffness, and is nearly always 0.009 in. thick and weighs 26lb/1000 ft^2. The individual corrugations of the corrugated medium are flutes. Flutes are measured by height and the number of flutes per foot. The four standard flutes in general use are A, B, C, and E (F).

Type of Flute	Corrugations per foot	ht. of medium in.	combined board thickness in.	approx. medium draw*	flat crush value lb/in^2
A	35–37	0.185	7/32	1.55	32–35
B	50–52	0.097	5/32	1.40	40–44
C	41–43	0.138	11/64	1.49	50–54
E	93–96	0.050	1/16	1.23	81–86

*Ratio of ft. of medium to ft. of liner. In general, if liner weights are constant, A flute will provide greater stacking strength than C and C flute greater stacking strength than B. The difference in stacking strength is related directly to the amount of medium used. B flute has greater resistance to flat crush than C flute or A flute since it has the greatest number of flutes per inch. This is important when the contents must be protected from impact damage. E flute has very high crush resistance and is used mainly for items such as display containers.

Adhesives;

The raw materials for adhesives must contain high percentage of starch. There are many, e.g. corn starch, tapioca, wheat flour, and potato. Corn starch is the best choice but too expensive. Usually the mixing of corn starch with tapioca provides good-quality adhesive at reduced cost.

Construction of corrugated boards:

'Unlined corrugated board' in sheets or rolls for use as protective wrapping material or padding.

'Single-faced corrugated board' in rolls, sleeves circles or other shapes used for a specific purpose as padding or wrapping material.

'Single wall or double-faced corrugated board' (A,B,C,E) is used most commonly for box manufacture.

'Double wall board' (AB, BB, BC) are for heavy duty jobs.

'Triple wall board' (AAB, CCB) are for exceptionally heavy duty jobs.

(Most of the above materials are based on the PAC Education Course.)

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MATERIALS

1.6 Evaluating Packaging — in its Entirety

The article looks at the success rates of the four main sectors of the packaging industry: plastics, glass, metals, paper and board. It is forecast that the consumption of the above mentioned packaging materials will grow. The use of aluminium and tin-free steel and other packaging methods may eventually replace tinplate altogether.

(International Bottler & Packer, June 1975. 6p.)

1.7 Plastics Today Are Indispensable

The article reviews the historical development of plastics since 1959, and points out that the world cannot now do without these immensely versatile materials. Part of the article discusses the use of plastics in packaging: HMW HDPE drums, PP containers, plastic films (polypropylene, polyester). The processing developments in plastics moulding and extrusion are also discussed. Many colourful photographs.

(Plastics Today, No. 50, May 1975. 10p.)

1.8 Plastics containers for the food industry

This is a review on the plastics ultilized in the market for the food industry. Not only the materials are mentioned, the manufacturing methods for different sorts of containers and plastics for different statutory requirements are also discussed and compared. Some detailed explanations are also given on individual plastic for special uses.

(Packaging, May 1975. 2 p.)

1.9 Down with Monomer in PVC for Packaging

At least four PVC are commercially available that have 1 ppm or less residual VCM: Pantasote's Kohinor series, Ethyl Corp.'s PVC bottle compounds 8237 and 9252, Robintech's Rocor IKC 2086-100 (LM), and Hooker Ruco's Rucoblend compounds. Intense R&D show that to rid PVC of unreacted VCM can be done at no more than 10 to 15% added in manufacturing cost.

(Modern Plastics International, May 1975. 1p.)

1.10 Institute to Produce Rubber Wood Pallets

The Malaysia Rubber Research Institute plans to produce rubber wood pallets for flooring, building and packaging purposes. Experiments have shown that rubber wood is comparable in strength with cut-off timber. Treated rubber wood does not rupture suddenly, is resistant to wood borer attack, and does not split when nailed. About 40,000 tons of rubber wood chips are exported annually mainly to Japan for the manufacture of paper bags, corrugated paper boxes and rayon.

(Natural Rubber News, Feb. 1975. 1p)

1.11 Flexibles Materials for a tougher economy

Despite tighter R&D Budgets, suppliers of Flexible packaging materials continue to storm in new products showing their effort on solving specific packaging problems. Developments mentioned in this report cover a wide range and some drastic achievements are given in the following:

1. PVC film with no detectable VCM.
2. Microthin cellophane coated on barrier plastics or foils.
3. Stretchable polyolefin film containing neither chlorinated polymer or placticizer.
4. A printable and stretchable PVC.
5. A specially coated lamination for medicals that guarantees patient protection from dirty surgical devices.

(Modern Packaging, June 1975. 4p.)

1.12 Non-foil laminate doing well in coffee test

Test results revealed that a paper-based laminate that does not contain foil can be used for vacuum packaging coffee. Hence it turns out to be cheaper than conventional laminates. Its composition is basically paper/suryln/nylon/suryln and is now being marketed in Europe.

(Packaging News, June 1975. 1p.)

MACHINERY

2.3 Modern Automatic Strappers a Big Boon to Carton Industry

This article highlights some of the ways such as high speeds, reliability and versatility, in which strapping machines are aiding the carton industry. Non-metallic strappings and machines are used for securing packs of flatted cartons to keep pace with the output of the folder gluer.

(Converter, June 1975. 1p.)

2.4 West German machine bags garments automatic

A new West German machine automatic bags garments in PE film at a rate of 250/hour. It handles suits, dresses, rainwear and trousers by tubular polyethylene film over the goods.

(Australian Packaging, May 1975. 1p.)

2.5 Cutting giveaway from pounds to ounces

A electronic weighing-filling equipment used for gravel, sand and mortar mixers can overcome your nightmare of continual overs and unders in product weighing. The system consists of two weigh scales resting on a pivot, a hopper, and a linear variable differential-type (LVDT) load cell for electronical control. Such a load cell is capable of fast reaction to applied weight and hence reduces the lag time where their predecessors could not.

(Modern Packaging, June 1975. 4p.)

2.6 Recent Developments in Capping and De-Capping

The article reviews with photographs the latest development in capping and de-capping machineries: horizontal rotary cap unscrambler to handle large diameter caps, combined filler and crowner, filling/capping arrangements, de-capping machines, cap sorting devices.

(International Bottler & Packer, June 1975. 6p.)

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2.7 Die-cutting

With the development in printing and paper manufacturing, and in keeping with other trends in the corrugated container industry, changes in Die-cutting practices and equipments have come into being. The block die and jigger die are the two universally applied methods for the corrugated industry. In this article, the rulers or cutters used, the form of the die employed and the ejection materials applied for these two cutting methods are discussed and illustrated.

(Paperboard Packaging, May 1975. 4p.)

NEW TECHNOLOGY

3.5 Thin-Walled Containers in Polypropylene

PP thin-wall containers can now be thermoformed by the "Solid Phase Pressure Forming" Process developed and patented by Shell Chemicals. Its physical and thermal properties suitable for packaging usage, especially for food, are compared with HIPS, ABS, and PVC.

(Packaging, May 1975. 2p.)

3.6 Tin Printing, Box Making, Canning/Packing

The first commercial production in Europe of drawn-and-redrawn tinplate can for food packaging is introduced by Metal Box. The new process permits the use of thicker gauge tinplate for the initial drawing stage than drawn-and-ironed can. The machine and process stages of the D&R can are shown.

(Tin International, June 1975. 1p.)

3.7 More Lustre in Polyester Film

A continuous process impregnates dye into polyester film that has several performance/appearance advantages over conventional coating or batch-colouring methods. The process is also tested successfully on acetate and polycarbonate film. Mylar-D polyester film by DuPont is super crystal clear, useful in micrographics, encapsulation of ID cards.

(Modern Plastics International, May 1975. 1p.)

3.8 Time to Take a Second Look at Foam-in-Place Packaging

Change in technology and equipment availability make foam-in-place a good bet for damage-susceptible products. Application methods are discussed with aid of drawings: 'cocktail shaker' technique for low-volume production, hand-held gun dispensing system, froth-foam system, and in-line pre-moulding for high production speed.

(Modern Materials Handling, June 1975. 3p.)

3.9 Self-Adhesion — The First Breakthrough

Self-adhesive labels in roll applied by manual or mechanical means make possible fast and accurate labelling. Its various printing methods and adhesive formulations are discussed. Price-marking in the retail trade is the largest user and some of the label applicators are introduced.

(Packaging News, Special Report, March 1975. 2p.)

HANDLING, DISTRIBUTION and STORAGE

4.8 Goods Outward — Where Profits Can Be Eaten Away

Many problems in the goods outward bays are still unrecognised by users, although solutions are available to cut costs dramatically. The article primarily describes with photographs the latest equipments installed in loading bays: dock levellers (counterweighed, spring counter-balanced, electro-hydraulically operated, traversing, and vehicle-operated), elevating docks, scissor lifts, ramps, extendable conveyors, dock shelters, and others.

(Storage Handling Distribution, June 1975. 7p.)

4.9 Linings Mean Saving

The article suggests a cheap way in moving powders and granules in bulk through the use of PE lining in an open top or standard dry freight container. A new mobile pneumatic container emptying machine is also introduced to solve the discharging problem.

(Containerisation International, April 1975. 1p.)

4.10 Packaging for ready-to-wear clothes

A special crease-proof packaging system by Overseas Container Limited (OCL) has succeeded in eliminating creases formed during transitting and hence enables shippers to skip the costly and time consuming pressing before sailing. While garments are conventionally packed in hanging wardrobe cartons, they innovate the system by containizing the garments. By this new system, packers will not only believe they have solved the pressing problems, but also obtain a maximum loading space.

(Australian Packaging, May 1975. 1p.)

4.11 Product Coding: Can we learn from America

UPC and SPNS are briefly explained, and the UPC printing problems experienced in the USA are discussed. The author forecasts that the UK is no more than 5 or 6 years away from a fully-operational SPNS system throughout Europe, building upon US experience and compatible with the US equipment already coming into use.

(Packaging News, Special Report, March 1975. 1p.)

SPECIAL PACKS

5.3 How display packaging sells those non-advertised cosmetics

Many cosmetics depend as much on advertising as they do on packaging. But still there is such an enormous market for cosmetics sold in mass outlets that do not rely on advertising. In this case, packaging and display does it all. So it comes up with a design for vacuum-form high-impact polystyrene trays. No doubt, we can see the customer would like to experiment with cosmetics before purchasing. The concept of "Touch, Feel, Smell" by the buyers seems very valid for such a market and with such materials.

(Packaging Engineering, June 1975. 2p.)

5.4 PCA Introduces One-Piece Partition

"Autocell" one-piece folding partition, developed by Packaging Corporation of America to ship bagged apples, consists of a single die-cut and scored corrugated sheet which folds to form cells in multiples of three. It provides greater stacking strength than conventional multi-piece slotted partitions, does not have a tendency to spring open when banded and shipped flat, and cannot fall apart.

(Boxboard Containers, June 1975. 1p.)

5.5 Morning Treat Coffee Bags

What about selling coffee in bags as tea does? The article tells how the Morning Treat Co. came to the marketing of their coffee bags. The idea to bag coffee came from a survey which disclosed that one-fourth to one half of traditionally brewed coffee was wasted because the number of cups actually consumed is far below that which was prepared.

However, coffee unlike tea, is not a simple inert, chemical substance. It is sensitive to oxygen and undergoes catalytic degradation easily if its chemical equilibrium is upset. Besides, the traditional tea bag made from cellulose and natural fibres would not be suitable for use. The fibres soak up coffee oil and cause catalytic spoiling. Oils also impregnate tea bag paper and impede the flow of water required for proper brewing speed. The answer to the problem: Crane & Co. produced the patented, non-woven, polyester, inert heat sealable, filter fabric, bag paper. Stock for the overwrap pouch is flexible gas tight, foil/paper laminate supplied by American Bag & Paper Co. Mylar tape strip fastening tag to bag came from 3M. A double gas flushing process using carbon dioxide or nitrogen is used for the packaging process — once when coffee has been filled into the filter paper, and again as coffee bags are being sealed in protective foil pouches. The cost is 5 cents per cup of coffee compared with the 2½ cents of regular coffee. Lack of waste and convenience, however, offset this price differential.

(Pneumatic Packaging, Feb. 1975. 4p.)

TESTING AND ANALYSIS

6.2 Standards in packaging

As stated by the SAA (Standard Association of Australia) Standards serve two purposes;

1. To co-ordinate the technical condition of supply and demand for commodities.
2. To effect variety in sizes and ratings, so that distributors of goods may be simplified and rationalized.

So, standard testing methods for packaging materials and packages were issued by the SAA and information on the standard of the fibreboard containers were discussed.

(Australian Packaging, May 1975. 2p.)

6.3 Vinyl Chloride — Comprehensive Guide to Analytical Methods

The first comprehensive guide to analytical methods recommended for measuring the levels of vinyl chloride in air, and residual vinyl chloride in polymers, has been published by the Chemical Industries Association's Vinyl Chloride Committee of the UK. The 110-page book, entitled "The Determination of Vinyl Chloride" — a plant manual, contains 10 analytical methods and 17 diagrams covering the control of personal exposure, works atmospheres, external atmospheres, liquid effluents and polymeric products using both the infra-red and gas chromatographic techniques. Copy is available at £20 for non-members.

(Packaging Review, April 1975. 1p.)

6.4 Testing Methods for Mechanical Spray Pumps

Three main areas must be considered when establishing testing procedures for mechanical spray pumps: laboratory testing (choosing of test media, the actuator, priming, rate of delivery, spray pattern, integrity), incoming quality assurance inspection, and in-process quality assurance testing.

(Aerosol Age, May 1975. 4p.)

6.5 Carboxy Hemoglobin Studies Show Methylene Chloride Safe

The article is a detailed report of an experiment to determine if methylene chloride vapours from aerosol products could be metabolized by the human body to form hazardous concentrations of carbon monoxide in the blood. From elevation of carboxy hemoglobin levels in individuals under normal use patterns, the test results show that methylene chloride does not present a health hazard.

(Aerosol Age, May 1975. 6p.)

PACKAGING IN GENERAL

7.1 Industrial Packaging is Sophisticated too

Industrial packaging protects contents against physical and environmental hazards, such as water, moisture, vapour, heat, cold, dust, dirt, rust and corrosion. Many solutions are suggested: Fibreen laminates, Moistop, lining and liner, vapour phase corrosion inhibitors, Rustop, ... etc. The technique of combination of dissimilar materials for better and lower cost packaging is said to set the trend.

(Converter, June 1975. 3p.)

7.2 Trend in vegetable packaging in the U.S.A.

Though pre-store packaging has been highly recommended in the past, advancement has not gone as far and as rapidly as predicted. Trials and improvements were carried out by growers and shippers, but with so many factors governing and due to the fast innovation of the market, changes may arrive rapidly or never inch because of shortages or high prices of packaging materials.

(Australian Packaging, May 1975. 1p.)

7.3 Packaging for Hospitals

Some up-to-date methods for sterilizing medical packages are described: autoclaving (steam sterilization), gamma irradiation, and ethylene oxide sterilization. Also specified are the materials, shapes of packs, and types of sealing and openings needed to ensure complete sterility.

(Australian Packaging, June 1975. 1p.)

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SUCCESSFUL 4TH WPO CONGRESS IN MANILA

The 4th World Packaging Congress held in Manila, The Philippines, from 3rd to 7th November was a huge success with more than 400 packaging people from five continents gathering for the event.

A total of 14 Papers were presented by world authorities during the five-day period under the theme "Packaging in a Changing Economy."

Participants were able at simultaneous sessions to make a choice of listening to a subject from either a consumer, a manufacturer or a user's point of view. After presentation of the Papers, participants engaged in discussions on topics of specific interest to themselves.

Five senior Government officials, four of them of Cabinet rank, addressed the participants, demonstrating very effectively the close collaboration in the Philippines of the public and private sectors in the subject of packaging.

President Ferdinand E. Marcos himself took a keen interest in the objectives of the Congress, first by proclaiming the first week of November (to be observed annually hereafter) as "Packaging Development Week," and providing the final address of the Congress.

Apart from plenary sessions attended by participants, generous hospitality was offered by the Packaging Institute of the Philippines with banquets and other entertainment held almost every evening after the business of the day had concluded.

Commemorating the outstanding achievements of the Packaging Institute of the Philippines in the organisation of the 4th World Packaging Congress, Mr. K.S. Lo, WPO President, presented a Silver Bowl, suitably inscribed, to Mr. A.V. Bonoan, PIP President.

Extending lavish praise to PIP, Mr. Lo said the Congress in Manila was the most minutely and magnificently planned of all WPO Congresses. He suggested that the work of the PIP was a model which all Congress organisers would study but few would be able to emulate.

He congratulated Mr. Bonoan, his Committee and supporters on the excellence of what he termed a "perfect congress."

The Proceedings of the Congress are already published. Copies may be purchased from:

The Packaging Institute of the Philippines, Commercial Center,
P. O. Box 1058,
Makati, Rizal D-708,
Republic of the Philippines.

The Proceedings contain the full texts of all Papers. The majority of the Papers present practical solutions to packaging problems. A few of the Papers take a look into the future and anticipate likely trends in the field of packaging.

Included in the Congress events was the presentation of 14 "Worldstars" awarded during judging of the 1975 competition held in London in May.

The winning packs were placed on public display for a month and drew an estimated attendance of 100,000 people.

At the Administrative Council meeting of WPO, also held during the Congress, it was agreed that the Secretariat would be transferred from Hong Kong to PI/USA with effect from 1st January, 1976, with Mr. Paul Reuman as Secretary-General.

With Mr. K.S. Lo not standing for re-election, Mr. R.W. Coughlin, First Vice-President, was nominated as WPO's new President.

Elected as First Vice-President was Mr. Hernan Cortes, President of ULADE. Mr. K.C. Fung, President of APF, was elected Second Vice-President.

The Administrative Council meeting of APF was also held during the Congress. It was confirmed that the Secretariat would be transferred from Japan to the Philippines, with effect from 1st January, 1976. The new Secretary-General is Mr. Arthur Cuadrante.

At the meeting, Sri Lanka was admitted as a new member of APF.

PLAN OF ACTION DRAWN UP AT SEOUL SEMINAR

Fifteen representatives from 13 developing nations and regions in Asia, Africa, Central America and the Caribbean attended the 2nd Inter-regional Seminar on Packaging in Developing Countries in Seoul, South Korea from 10th–15th November.

The representatives came from India,

Indonesia, Iran, Hong Kong, Singapore, Thailand, Sri Lanka, South Korea, Morocco, Egypt, Mexico, Jamaica and the International Developing Centre for Arab States (IDCAS).

South Korea provided 150 delegates, an indication of the increasing interest and enthusiasm of local manufacturers in packaging.

The Seminar was a follow-up of the first Seminar held in Bombay in 1974. It was sponsored by UNIDO and the Government of the Republic of Korea and hosted by the Korea Design and Packaging Center.

A major Plan of Action drawn up at the Seminar included the following points:

- That national packaging committees be formed in developing countries to co-ordinate the activities between producers and users of packaging materials, keeping in view the requirements of home and export markets and especially hygiene in the matter of food;
- That developing countries should on an urgent basis assess the extent of losses of food and manufactured products occurring during the various stages of handling, storage, transport and marketing;
- That each participant at the Seminar investigate the problem of investment in the packaging industry according to his country's development programmes and implement such of these as are urgently required through national or bilaterial co-operation, or through the assistance of UNIDO, if required;
- That future seminars should lay emphasis on specific subjects relating to packaging, such as cost reduction, quality control, export packaging, and transfer of packaging technology and know-how.
- That the delegate from Sri Lanka try to seek his government's approval to host the 3rd Inter-regional Seminar at the end of 1976.

A complete report of the proceedings at the 2nd Inter-regional Semjnar may be obtained either from UNIDO, Vienna, Austria, or the Korea Design and Packaging Center, 128 Yunkun-dong, Chongru-ku, Seoul, Republic of Korea.

Notes on Basic Technical Knowledge of Plastics Films

In packaging, the most commonly used plastics films —— polyethylene, polypropylene, polyvinyl chloride and polystyrene —— are thermoplastics; i.e. they melt and flow as the temperature increases and solidify when cooled. They can be printed, cut into wrap, or sealed into bags, pouches, envelopes, etc.

Considering the usage of plastics films in packaging, their properties must be studied. Generally, properties of plastic films are classified under four general headings: physical strength, chemical resistance, permanence, and convertability.

As far as physical properties are concerned, we have to consider the Tensile Strength, Elongation, Impact Strength, Tear Strength, Stiffness, Heat Seal Strength, and Heat Seal Range.

Under chemical properties are listed those properties of packaging films that contribute primarily to the product protection characteristics of the final package. These include water vapour permeability, gas permeability, grease and oil resistance. Permanence is primarily the effect of environment changes on the film's physical shape of film properties, their maximum use temperature, and dimensional stability. Convertability of films plays an important role when considering the suitable packaging process. That includes machine performance, printability and sealability.

POLYETHYLENE

Polyethylene film is manufactured in three general types: low density, medium density and high density. The low density material is characterized by high strength and high flexibility. Medium density is stiffer but brittle. High density film is more stiff and just beginning to be applied in flexible packaging.

Low density polyethylene is by far the major plastics in use in the world. The versatility and the low price of this film have given it a dominant position in the packaging industry, with annual production exceeding 1.2 billion pounds, 60% of the total production of plastics films. Excellent moistureproofness, good strength, chemical inertness and good clarity make it an ideal material for packaging for food product such as baked foods, candy, dried vegetables, and frozen food and non-food products such as textiles, paper, laundry, shipping bag liners, etc. They are widely used in bag forms where high impact and tear strength are required. Medium density PE is usually used for overwrapping application where low strength is not a serious limitation but where increased film stiffness is a definite requirement for good machinability. For the high density films, recent trend is to utilize this material in packaging baked goods, such as biscuits, sandwiches, and bread, etc., where grease resistance is needed. It replaces paper as shopping bags when water and grease proofing are called for.

POLYPROPYLENE

Polypropylene, because of its excellent optical and moistureproof qualities, has found a great and up-growing market as a packaging film for bakery products, particularly for bread and buns. Other end uses include wraps for paper goods, textiles and hospital products. The primary shortcoming of polypropylene as an unsupported structure are poor low-temperature durability and fairly narrow heat sealing range

POLYVINYL CHLORIDE

PVC films display marked changes in properties depending on the type and amount of plasticisers added. End uses are governed by the type of plasticizer used, ranging from automatic wrapping of textiles and paper products at low plasticizer levels to hand wrapping of fresh meat at high plasticizer levels. Due to its excellent chemical resistance to grease, oils and sugar, food items packaged in PVC

include sandwiches, cheese, luncheon and smoked meats, poultry, hams and produce.

POLYSTYRENE

Polystyrene is a "breathing" film and can be used on items that require a high permeability. Its wrapping applications include lettuce, tomatoes and fresh fruit. Polystyrene is also used quite extensively as a window in cartons as a substitute for the more expensive cellulose acetate in many cases. Limitations of this material include low tear strength and poor sealing characteristics. High moisture and gas transmission make it unsuitable for wrapping baked goods.

(Most of the above materials are based on the PAC Education Course.)

BOOK REVIEWS

Packaging Specifications, Purchasing and Quality Control

by Edmund A. Leonard, Packaging Development Manager, General Foods Corporation, U.S.A.

Professional stature depends on day-to-day capability in managing procedures and the infinite details of packaging specifications, purchasing and quality control. Communications holds these three functions together.... and that's what this book is all about.

Today it is critically important to communicate effectively. Words, numbers, pictures....these are the tools you use and Edmund Leonard's book demonstrates by principle and example how to use them effectively.

Put this book to work as a road map to chart your course through the involved steps of determining what packages you want....communicating your needs to suppliers lucidly....and maintaining control over the quality and uniformity of supplies and services as ordered. Capitalize on its dollars-and-cents know-how. Use it as a handbook for repeating packaging success and continuously sharpening up your packaging skills.

In a preface, Mr. Leonard states that the emphasis in his book on specifications and quality control is aimed toward simple and understandable principles, with specific examples to show how they may be applied. The technical depth on quality control is intended to be sufficient for manufacturing application by non-mathematics specialists. The bibliography includes references to more technical works.

TABLE — PROPERTIES OF PLASTICS FILMS

	Polyethylene (PE)		Polyvinyl Chloride (PVC)	Polypropylene (PP) (Unoriented)	Polystyrene (PS)
	Low Density	Medium Density			
A. Physical					
1. Tensile	Low	Low	Low-Medium	Low	Medium
2. Elongation	High	High	Medium	High	Low
3. Impact	High	Low	High	Low	Low
4. Tear	High	Low	Variable	Low-High	Low
5. Optical	Fair-Good	Fair-Good	Good	Good	Excellent
B. Chemical					
1. Moisture permeability	Low	Low	High	Low	High
2. Gas permeability	High	High	Medium-High	High	High
3. Chemical resistance					
a/. Grease	Poor	Fair	Excellent	Fair	Good
b/. Oils	Poor	Fair	Excellent	Fair	Good
c/. Sugars	Good	Good	Excellent	Fair	Good
C. Permanence					
1. Stability	Good	Good	Good	Good	Good
2. Temperature Range	−50°C–85°C	−50°C–90°C	0°C–90°C	−20°C–110°C	0°C–80°C
D. Convertability					
1. Machine Performance	Fair–Good	Good	Poor	Fair	Fair
2. Printability	Fair	Good	Fair	Good	Good
3. Sealability					
a/. Heat	Excellent	Excellent	Poor–Fair	Good	Poor
b/. Adhesives	Fair	Fair	Good	Fair	Good
Est. Comparative Cost (Taking LDPE as 1)	1	1–1.5	1.6–2.2	2–2.5	2.5

MATERIALS

1.13 VEGETABLE OIL PACKAGER SWITCHES TO NITRILE IN FACE OF VCM DOUBTS

Worrying about the migration of VCM into fats and oils from a PVC package, a vegetable oil packager has switched to Nitrile resin months before the proposed FDA restriction on the use of PVC on food. By doing their own tests, the company has tried everything to get out of PVC and at last found this new safe bottle. After all these efforts, it has been granted FDA approval for the use of this material for salad oils.

(Food & Drug Packaging, Sept. 1975. 1p.)

1.14 KARTOTHENE – IT CAN BE HANDLED LIKE BOARD AND IS THERMOFORMABLE

Kartothene — new sheet material which can be printed, cut, creased and folded in the way as conventional folding box material — is anticipated as the competitor of paperboard. It can withstand deep freeze conditions and be used in a micro-wave oven. It is sterilizable in steam or other chemical means, and possesses excellent oil and crush resistance. The material is a special Talc-filled propylene-ethylene copolymer. Thermoformable, it is recommended for packaging ice-cream, edible fats, frozen food, cosmetics, horticulture, etc. 4 photos.

(Packaging, June 1975. 2p.)

1.15 EEA COPOLYMERS EXTEND PERFORMANCE RANGE OF HOT MELT ADHESIVES

Recent work has showed that ethylene-ethy acrylate (EEA) can provide an extended range of service temperature. While EVA system has superior adhesion and flexibility but lower melting point and lower resistance to creep than LDPE, the EEA system is the compromise. Due to its chemical structure, it broadens the use temperature range of conventional hot melts. The long range trend is away from solvent-base adhesives toward low pollution and low flammability systems.

(Adhesives Age, August 1975. 4p.)

1.16 SUPERIOR CELLOPHANE COATINGS MEET THE CHALLENGE OF PLASTIC

Due to the insolubility of PVDC in water, dispersion coating which was conventionally applied on cellophane films has been undertaken with hindrance in the process and sacrifices in properties. But an evolutional coating method envisaged has eliminated problems in sealing and the unstability of the dispersion. Briphane, a very high barrier material traded cheaper than the dispersion coated films, is manufactured by direct polymerization of the aqueous dispersion and has excellent performance in packaging of snack food, etc.

(Australian Packaging, July 1975. 3p.)

MACHINERY

2.8 BISCUIT WRAPPING LINES SHOW THEIR PACE

This article is a case study report on wrapping of cheese biscuits which were once easily damaged on the packaging line. By using a modified form/fill/seal machine, the biscuits are divided automatically into slugs by the length measurement system and conveyed to the wrapper. One special feature about the machine is that this unit possesses a three-inch gap between each measuring slug that may prevent any damages caused. 1 photo.

(Packaging Review, August 1975. 1p.)

2.9 PORTABLE SACK SEALER BUILDS SAVINGS ON 'HOT AIR'

A light-weighted, low cost and portable continuous sack and bag sealing machine has been recently introduced. It is claimed to work with reliability up to 25 feet per minute. The absence of stainless steel heating bands represented a big advantage over the conventional sealers with the reduction in maintenance costs and downtime. During the sealing, the bag's mouth would pass through two hot air capsules and then between serrated steel wheels that chill and solidify the welds made. The mechanism of this sealer is simple and requires no trained operators. 3 photos.

(Packaging News, August 1975. 1p.)

NEW TECHNOLOGY

3.10 IMPROVING BLOWN FILM PRODUCTIVITY

By improving the internal bubble coolers as the improvement in the heat-exchange technology, blown film production can be upped by 30 to 60%. Cooling rate has long been the limiting factor on blown films. So, by lifting the limitation of the cooling rate, impetus is given to the development of other system components such as a longer screw, new automatic screen changers, and digital controls which all promise higher plateaus of tubular film output. The system operates by injecting chilled air at bubble's bottom, and then venting warm air at the top.

(Modern Plastics International, August 1975. 2p.)

3.11 NEW ADHESIVE PROMOTION TECHNIQUE FOR EXTRUSION COATING BY CORONA DISCHARGE

To obtain good adhesion in extrusion coatings, the Corona Discharge Technique was developed. A recent development to cope with this technique was an easy-operating installation of an ozone curtain in the extrusion nip. Success has been reported that the technique could result in significant improvement in bond strengths to most of the substrates.

(Converter, Aug/Sept. 1975. 2p.)

3.12 FILM LINED CARTONS MADE AND PACKED ON CONTINUOUS WEB

A Finnish cartoning system by mounting carton blanks directly on an extruded low-density polyethylene film can accomplish a continuous form/fill/seal operation for liquid and powdered types of products at a rate of 300 packages per minute.

Because the plastic film is on the inner surface of the carton blanks, the board material would never come in contact with the contents and this encourages the use of low-quality carton board, probably the recycled materials. Cartons produced by this new tech-

nique will have flexible "liners" hermetically sealed and it could form a part of an aseptic packaging system if the machine is suitably modified. 2 photos.

(Packaging News, August 1975. 2p.)

3.13 FROM RESIN TO BAG IN ONE EASY STEP AT U.S.I.

Heavy duty sacks for agricultural and chemicals, packs and pouches for medicals and food products can now be manufactured by an in-line co-extrusion, printing and bag making machine. Being lower in cost than laminate and of better quality than paper, a growing demand for co-extrusion plastic heavy duty sacks is foreseen. Additionally, new technical advancement in the siftproof corner valve and by using heat-sealing technique to form a gusseted sack instead of the conventional square bottom sacks have further initiated the use of this material. 1 table of available co-extruded film, their properties and end uses. 3 photos.

(Paper, Film and Foil Converter, July 1975. 2p.)

3.14 FIRST LASER CUTTER IN CARTON PLANT SPEEDS DELIVERY

Packaging Corporation of America has developed a 500—Watt laser die maker to produce folding-carton cutting. They find the laser cutter make dies that meet most rigorous specifications with tolerance up to 0.001 in. Packaging Corporation believes that this laser die maker provides a vital link between the high speed production of folding cartons and the high speed forming and filling of cartons in customers' plants. It handles intricate cutting operations at speeds up to 15 in. per min. — a fraction of the time it would take to do the work by hand. 5 photos.

(Boxboard Containers, August 1975. 2p.)

3.15 A-Z OF THE TINPLATE CAN

This article is the first part of a general survey of the manufacturing of tinplate cans. Though the intricate details of the can-making operation were not discussed, a broad outline of the processes involved was explained. The calculation of blanks, the blanking machine and commonly used blanking methods were the main items described and emphasis was made on the production of shallow-drawn two-piece cans.

(Tin International, September 1975. 2p.)

HANDLING, DISTRIBUTION and STORAGE

4.12 A SUITABLE CASE FOR TREATMENT

Having handled over 6,000 tons of apples from Australia to U.K. last year, Louis Reece group discovered that the containization of this crop has meant easier handling and an improvement in the condition of the fruit when it reaches the U.K. By using bins instead of cartons, a greater payload is achieved, and the products are kept in insulated freight containers at a constant low temperature throughout the transit. By utilising this method, the handling became less subject to pilferage than manhandled cartons.

(Containerisation International, June 1975. 1p.)

4.13 PORTABLE STORE FOR HIGH VALUE COMPONENTS

A new development to prevent thefts from unattended factory compounds is a range of high security transportable buildings for the storage of valuable or dangerous materials. It is constructed from heavy gauge galvanised steel and claimed to defeat all attempts of forced entry. It is weatherproof, fireproof and can be positioned by cranes. 1 photograph.

(Storage Handling Distribution, August 1975. 1p.)

4.14 NEW LOOK AT RECYCLING

An economically viable method of collecting cullet (broken glass) from customers has enabled a Scottish factory to bring in a new look in the re-using of waste glass with very low capital cost. A container manufactured by using five returnable wooden pallets used for delivering bottles to customers was used to collect the cullet. A cardboard layer was stapled to the board for protecting pallets. The advantages of this scheme are that the pallets have to return to the factory ultimately, and are eventually returned by the same lorry that brings them to the customers. Meanwhile, the company has already set up two local council collection schemes and invites the public to take their bottles for disposal.

(Int. Bottler & Packer, August 1975. 1p.)

4.15 HOW GOOD HANDLING BOOSTS WAREHOUSE EFFICIENCY

A closely-integrated handling system at GM's Harrison Radiator Division is described in this article. Three basic considerations are outlined: first, the ability to maximize the amount of materials handled per move; second, the extent of mechanization; and third, the method of control. Of course, one can hardly compare the volume of goods handled by this company, but it shows a system full of cost-cutting ideas. The author points out how they are handling their products efficiently with familiar equipments such as towline carts, and conveyor loops. 13 photos.

(Modern Materials Handling, Sept. 1975. 6p.)

SPECIAL PACKS

5.6 CUTTING YOUR COSTS IN THE CHANGING MARKETS

Six case studies on various packaging experience concerning cost cutting and material saving are discussed in this article. Designers are trying to redesign packs with smaller paper area but with larger functional value or a better shelf-exposition. Packagers reap higher sales, better on-shelf exposure and most of all — cost cuttings.

(Modern Packaging, Sept. 1975. 4p.)

5.7 TECHNOLOGY MOVES FIBRE DRUMS TO NEW MARKETING OPPORTUNITIES

Fibre drums, after surviving for so many years, have turned into another generation with advances in associated technology especially in drums sub-components, such as aluminium, steel

or polyethylene laminated between plies to gain stacking or sidewall strength or blocking the transmission of gases. Examples of fibre drums that would stand outside in all kinds of weather by using a waterproof adhesive, and development of an adhesive resistant to petroleum products have shown new potentials for this kind of package.

(Paperboard Packaging, August 1975. 2p.)

TESTING AND ANALYSIS

6.6 NEW PACKAGING GUIDELINES REVEALED IN DISTRIBUTION TEST

A new testing method by tracing the time history curve of different trailor suspensions to investigate the real distribution environment for packages shipped by motor freight is discussed. A plot of acceleration vs. time is sketched, showing the vibrational frequency of a trailor driven over a pre-scheduled 30 miles of roads or highways. Analysis is made on four systems, namely, air ride, steel leaf, coil spring and air-bag. Their capacity for absorbing shocks are checked and it is found that truck vibrations generally fall into two regions and it is recommended that the frequency regions above 20 Hz are quite suitable for fitting package resonances. The details of the simulated testing environment for truck transporting are given in this article. 3 graphs.

(Package Engineering, August 1975. 3p.)

6.7 TESTING PLASTICS FILMS DISINTEGRATION IN OPEN DUMP

A testing on twenty-eight types of plastics films which were disintegrated in a simulated septic tank environment was demonstrated recently. Results included time of disintegration and soil burial behaviour of each film. It was found that the septic tank test was relevant only to uncoated films and required modification to the testing condition for evaluating the behaviour of coated films. 2 tables of test results.

(Australian Packaging, July 1975. 3p.)

6.8 HOW WESTINGHOUSE 'SEES' THAT HOOKS AND FORKS ARE SAFE

An easy-to-use technique to check crane hooks and forks for cracks and flaws is reported. By magnetizing the area to be inspected and then spraying on some red or grey ferro-magnetic powder, cracks or flaws would be revealed by the way the particles cluster along the area. It is claimed that magnetic particles inspection would even show small internal cracks which would not show up by conventional methods.

(Modern Materials Handling, Sept., 1975. 2p.)

6.9 CALCULATIONS FOR FORMULATIONS WITH SOLUBLE GASES

By using simply the Ostwald Coefficient, one can predict several important properties of a proposed aerosol product without conducting any actual test. By a simple equation, one may tell whether the product can be practically and economically packaged as an aerosol with a soluble gas propellant. Furthermore, it seems very convenient to know the amount of propellant required to pressurize the product to the desired pressure, and the variation of pressure with temperature for several possible com binations of variables before actual testing a product.

(Aerosol Age, September 1975. 7p.)

PACKAGING IN GENERAL

7.4 PLASTICS, FOOD AND THE LAW

A description on rules and regulations concerning packaging of food with plastics is given. The migration problem of package constituents and additives concerning the new rules are brought under consideration. Three appendices are attached to this article:

1. A format for the application for the use of food additive.
2. Summary of recommendation on ingredients of plastics for food contact use.
3. A UK food company's biological safety clearance of packaging materials for food products.

(Australian Packaging, September 1975 8p.)

7.5 A GUIDELINE TO INTERPRETATION OF PACKAGING AND LABELLING REGULATION

This article is the third part in a series dealing with the Consumer Packaging and Labelling Act and the amended Food and Drug Act as they relate to packaging. Regulations concerning declaration of number of servings, the pictorial representation of foods on labels and the labelling of alcoholic beverages are discussed. Generally speaking, it is necessary to have clear information on the packages and legal action will be taken against deceptive presentations either by pictures or photos.

(Canadian Packaging, Sept. 1975. 2p.)

7.6 CANS STILL LEAD AS INJURY SOURCE

According to the announcement of the U.S. Consumer Product Safety Commission, cans remain the most frequent cause of injury resulting from packaging materials in the United States. The rate of injury was 3.09 per 100,000 population in 1974. Glass packaging materials have accounted for the second most, 2.33 per 100,000 injured by glass bottles and jars, 0.39 per 100,000 injured by glass containers for malted beverages, and 0.91 per 100,000 injured by glass soft drink bottles. Paper, cardboard objects and wrapping products are associated with fewer injuries. The fewest but generally the most severe injuries are hooked up with pressurized and aerosol containers.

(Food & Drug Packaging, September 1975. 1p.)

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36210 MOVING HEAVY LOADS IS EASIER THAN IT APPEARS.

Rolls of paper weighing up to 6,000 lbs. can be moved in-plant easily with the adoption of a new handling system, the Aero-Pallet. The omni-directional air film pallet, with four doughnut-shaped air bearings mounted beneath, is air-pressure controlled. The handling unit enables space saving, less labour and easy operation.
(Canadian Packaging, 11/76, 29:11, pp.40–41.)

36244 PALLETS FOR THE BOTTLING AND PACKAGING INDUSTRIES.

Palletising of goods for the bottling and canning industries always posts a top priority in material handling. This paper presents a solution on how the expensive and difficult pallet repairing cost can be cut down. Some effective equipments for pallet handling and repairing and many types of revolutionary pallet which could help to reduce damage and handling costs are discussed.
(Int. B & P, 9/76, 50/9, pp.54–57.)

SPECIAL PACKS

34231 PLASTIC FOOD CONTAINER INTRODUCED.

A shatter-proof plastic can with a metal Tuf-seal end is introduced by the American Can Co. for packaging a variety of foods and liquids. The can is made by the injection blow-moulding system using an oxygen-barrier, acrylonitrile plastic. The economic factors and operation advantages for using the new design are discussed.
(Good Packaging, 10/76, 37:10, p.19.)

36046 JUG IS FIRST RIGID PLASTICS CONTAINER FOR BEER IN THE UK.

The first plastic jug for carbonated beer has appeared in the UK take home beer market. Before the jug was made the brewers had considered many factors. the weight of polymer, the cost, the design, the construction, the material and the closure mechanism.
(Packaging Review, 11/76, 96:11, p.97.)

36269 BOX/LABEL COMBO SELLS HARDWARE.

Creative Packaging Co. have designed an unusual package for Philstone Nail Corp for packaging their 28-product line nails. The design, patented Rack Pack, is an injection moulded PS box with a self-adhesive label closure. The system, offering many advantages to the manufacturers and customers, is said to have an excellent marketing potential.
(Packaging Digest, 11/76, 13:11, p.47.)

TESTING AND ANALYSIS

35923 NON-DESTRUCTIVE TESTING OF PLASTIC BOTTLES.

Aiming at developing standards for both manufacturers and users, a non-destructive testing of plastic bottles called Dynamic Com-Pression Test(DCT) has been formulated. Based on the geometrical flexibility, the new method is likely to provide a medium which can be utilized for design and in production behind the blow moulding machine. The details of the test, the stress-strain factors measurement, the type of possible container failures, the mathematical concept and the equipment operation are discussed in the article.
(Modern Packaging, 11/76, 49:11, pp.27–29.)

36012 PERMEATION TESTING SYSTEM.

Richard R. Leader Ltd, UK, has introduced a new multi-channel precision testing system for accurate non-destructable permeation measurement of water vapour through films. The system features a 6-channel potentiometric recorder and is capable of testing several samples at the same time.
(Packaging, 11/76, 57:560, p.40.)

36095 EVALUATING THEIR PERFORMANCE BY LABORATORY TESTS.

A new and inexpensive diagnostic method for testing oriented containers has been illustrated. Its utility and implications are explained by using a case study of an oriented Barex 210 nitrile bottle. Data, graphs and equations are presented for discussion.
(Modern Packaging, 10/76, 49:10, pp.53, 54, 57–60, 62.)

36202 QUALITY CONTROL COUNTS IN PACKAGING SUPPLIER AWARD.

The paper points out the importance of quality packaging and the loss due to packaging defects. The quality control operations in pharmaceutical industry are explained. Comments are made on the Acceptable Quality Level (AQL).
(Aust Packaging, 11/76, 24:11, pp.44–45.)

36038 PRESERVATION WITHOUT TAINT: PREVENTION, NOT CURE, IS THE ANSWER.

The author investigates into the causes of food tainting. The two-way protection of packaging and the taint problems associated with different packaging materials such as glass, metal, cans, plastics, paper and board, and aluminium foil are discussed.
(Packaging Review, 11/76, 96:11, pp.91, 93, 94.)

37093 VACUUM/PRESSURE CHECKER FOR CANS

Three systems – portable, automatic case and automatic line – for vacuum or pressure inspection of filled cans and jars are marketed under the name TapTone. An electro-magnetic pulse is transmitted to the cans and a tonal "ping" is produced which alters in pitch when a change in vacuum or pressure is detected, to be sensed by ear or by electronic discriminators.
(Food Pro. Ind., 12/76, 45:541, p.52.)

PACKAGING IN GENERAL

36178 THE FUTURE OUTLOOK FOR PACKAGING.

The social concern about ecology, pollution and material migration is expressed. Statistics on the consumption of packaging materials in Australian packaging market are interpreted. An analysis goes into the impact of packaging on resource utilization, laws and regulations, and its intrinsic value is presented.
(Aust Packaging, 11/76, 24:11, pp.22–24.)

36186 DEVELOPMENT OF PACKAGING SYSTEMS.

The article indicates the development of packaging systems and stresses the need for a scientific approach to the assessment of packaging system. The packaging interface and management involvment are discussed.
(Aust Packaging, 11/76, 24:11, pp.25–27.)

36194 CURRENT R & D IN PACKAGING.

Some highlights are given to the objectives of modern food packaging in aspects of protection, preservation and communication. Attention is particularly emphasised on the migration factors of packaging, its mechanism and the interplay of polymer, solvent and additive. Some results on the study of migration experiments are briefed.
(Aust Packaging, 11/76, 24:11, pp.32–34.)

36251 THE GROWTH OF PLASTIC PACKAGING.

The author discusses the factors holding back the growth of plastic packaging. They are the government regulations, the high cost of some good barrier resins and the modification of existing equipments for new use. The consistant and flexible supply of plastic resins are viewed from the stand-points of producers and users. The development of new equipments, the industrial market demand and the trends in in-plant package manufacturing are briefed.
(Packaging Digest, 11/76, 13:11, pp.27, 30, 35.)

LAWS AND REGULATIONS

36145 COMPLETE STUDY PREDATES PROPOSAL TO UPDATE US CARRIER RULES FOR CORRUGATED CONTAINERS.

A summary of the proposed revision of UFC Rule 41 and NMFC Item 222 is tabulated. The definitions of Mullen Levels, the selection of Mullen Test Levels, the progression of Linerboard Standard Weights and the Certified Combined Board Grades are discussed and illustrated.
(Paperboard Packaging, 10/76, 61:10, pp.62–65.)

36160 NEW RULES FOR LABELLING.

Effective on September 1, 1977, all still light wines sold in the U.K. must be labelled, described and advertised according to detailed EEC regulations. The coverage of the new regulations(nos. 2133, 1168, 1608) and the extent of the enforcement are briefed in the article.
(Int. B & P, 11/76, 50:11, p.49.)

37077 TOO MUCH LEGISLATION? – WHAT THE FOOD INDUSTRY THINKS

The heads of some of the larger food companies and of trade associations in the U.K. were asked to comment on the growing volume of legislation affecting the industry. It is pertinent that none expressed disagreement with the suggestion that there is an excess of legislation.
(Food Pro. Ind., 12/76, 45:541, pp.15, 16, 18, 20, 22, 59.)

37085 A GUIDE TO PACKAGING REGULATIONS

The key roles of the US Department of Agriculture (USDA) and Food & Drug Administration (FDA) in food processing and packaging regulations are reviewed. The different standpoints between FDA and USDA regulation on packaging colourants and packaging compliance procedure are discussed.
(Tin Int., 12/76, 49:12, p.441.)

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36152 NEW TOOLING CONCEPT BLOWS WITH STANDARD INJECTION MACHINES.

A new mould tooling system which combines parison injection and blowing stations in the same tool is introduced. The system, capable of shifting back and forth between injection and blowing stations, enables efficient and easy operation. The machine tolerances, special features and the operation process are explained and illustrated with pictures.
(MPI, 10/76, 6:10, pp.64–65.)

NEW TECHNOLOGY

36061 EXTRUDED STRUCTURAL FOAM: SOMETHING SPECIAL.

Technological advances have enabled plastics in many instances to move into the commodity wood market. Extruded structural materials have found applications in building, furnishing, packaging and other fields. Three of the latest techniques in plastic development are discussed in the article. They are the free-expansion system, the Celuka process and the sheet systems.
(MPI, 11/76, 6:11, pp.18–20.)

36087 ONE STEP TO REINFORCED FILM.

Strengthened polyolefin film can be produced by a one-step system involving co-extrusion of blown film and criss-cross reinforcing strips. The techniques and manufacturing parameters for the extruding system are introduced.
(MPI, 11/76, 6:11, pp.23–24.)

36111 LINEAR CORRUGATING CONCEPT.

A revolutionary, feasible and practical corrugating concept which has corrugations made parallel to the direction of travel of the web is introduced. A detailed analysis based on performance, material availability, cost of machinery, technical factors and return on investment is conducted. The advantages and disadvantages between conventional corrugator and linear corrugator are compared.
(Paperboard Packaging 10/76, 61:10, pp.20, 21, 24, 26, 28, 30, 32.)

36129 APPLICATION TO CORRUGATED SEEN WITH NEWLY PATENTED SINGLE-IMPRESSION, MULTI-COLOUR SCREEN PRINTING.

The techniques for printing electronic circuit boards have been adapted to the printing industry as Screen printing. The new printing process enables short-run high visibility, multi-colour printing on all substrates. The concept, the printing process, the fixed position operation and the continuous automatic operation are described in the article.
(Paperboard Packaging, 10/76, 61:10, pp.34, 46, 38.)

36137 PHOTOPOLYMER PLATES HERE, LASER ENGRAVING COMING.

The development of photopolymer plates is considered to be a great technological advance in flexographic printing industry. The processing techniques, its advantages and disadvantages compared with moulded rubber printing plates are outlayed. The next forward step in developing electronic laser plate-engraving is evaluated together with other mechanical methods. The water-based inks and curable flexo inks are also mentioned.
(Paperboard Packaging, 10/76, 61:10, pp.46–49.)

36228 MODERN LAMINATING TECHNIQUES.

This article introduces the latest manufacturing methods in laminating. Other interests are focussed on various common films used in lamination and the basic variants of the PE extrusion processes. The basic requirements of adhesives during laminating process are listed.
(Canadian Packaging, 11/76, 29:11, pp.43–45.)

HANDLING, DISTRIBUTION AND STORAGE

35634 BULK SHIPPING OF PEANUT.

The U.S. peanut industry has discarded the century old burlap bag packing with a more sanitary and efficient way – the corrugated Peanut Pak. The container enables easy and efficient filling, warehousing, transport, quick and clean dumping by end-user. The simple design of the unit is constructed of 3 pieces: the body, tray top and slip sheet. Each box holds peanuts up to 2,000 lb. compared with 125 lb. by the burlap bag. An analysis of the feedbacks from different parties after the introduction of the new box is outlayed.
(Modern Packaging, 11/76, 49:11, pp.21, 22, 40, 44.)

35972 CAGE PALLETS – A REVIEW OF U.K. PRACTICE.

A new system, the cage pallet, which combines the storage and point-of-sale functions has been adopted by the UK supermarkets and hypermarkets for a few years. In the article, the author gives a detailed analysis of the advantages and disadvantages of the system both from the retailer's and manufacturer's points of view. The future development of cage pallet in relation to the adoption of Universal Product Code is also discussed.
(Packaging, 11/76, 57:560, pp. 14 17.)

MATERIALS

35915 FOOD: THE NEW MARKET FOR PLASTICS.

The usage of plastic bottles for foods and beverages is shooting up following the advance in stretch-blow moulding and co-extruded multi-layer techniques. Containers with high-barrier, lightweight, non-breakable properties challenge all the good qualities of glass and metal units. In the article, the author produces some test-marketing experiences on many plastic bottles. A chart with the estimates of growth for blow-moulding resins up to 1985 plus a table with information of compatible resins and filling methods on various food products are listed.
(Modern Packaging, 11/76, 49:11, pp.16–19, 42.)

36020 PLASTICS' BRIGHTEST STAR CONTINUES TO SHINE STRONGLY.

The production and development of PP as a packaging material are discussed. Statistics on application of PP to different packaging industries are outlined. Particular attention was given to the latest developments of Solid Phase Pressure Forming (SPPF) process, Kartothene (60% PP, 40% Talc), Ecolo F(P/E copolymer) and elastic PP film.
(Packaging Review, 11/76, 96:11, pp.59, 61, 62, 64, 67.)

36053 NOW, CUT STABILIZER COSTS WITH ORGANOTINS.

New types of organotins combining low cost with low toxicity and good stabilizing performance are now ready to replace barium/cadmium/zinc and the high cost conventional organotins in the PVC industry. Three new types of such compounds: the new tertiary combinations of strontium, zinc and tin, ester tins and Lauryl tins are discussed in the article.
(MPE, 11/76, 6:11, pp.16–17.)

36079 NEW NYLONS ARE EASY TO PROCESS BY BLOW MOULDING.

A new plastic modifier Nylon-6 has been introduced together with two other materials: the chemically modified material – Sniamid ADS 50cc and the nylon/acrylic copolymer-Beetle ACI. The applications of the [illegible] materials, the chemical pro[illegible] and the marketing conditions are briefed.
(MPI, 11/76, 6:11, pp.16–17.)

36236 ADHESIVE EASES LABEL WOES.

Lincoln Foods [illegible] reveals their hard experience about labelling cans and bottles and the way they traced it down on to the adhesive. Their problems were finally solved by using Upaco's resin-dextrin adhesive. Some information on choosing adhesives and labelling machines are introduced.
(F & D Packaging, 11/76, 35:10, pp.3, 19.)

MACHINERY

35824 KEEPING PRICES FRESH.

Reymond Baking Co. CT. reveals their experience how they shifted from the costly pressure-sensitive label and pre-printed bagging to in-line overprinting for the baking product lines. The new system provides clear, instant dry price and date marks at a cost 40% lower than any comparable methods. It was claimed that a $15,000 per year savings was effected by the Company.
(Modern Packaging, 11/76, 49:11, p.24.)

35931 NEW VERSATILE WRAP-AROUND CAN LABELLING MACHINE.

A new versatile wraparound can labelling machine capable of working up to 500 containers per minute is introduced. Equipped with a spiral wire belt, the application of overlap adhesive is efficient and accurate. The unit ca[illegible] handle cans ranging from 50 mm to 160 mm in diameter and label from 172 mm by 40 mm to 51[illegible] mm by 230 mm in size.
(Packaging, 11/76, 57:560, p.11.)

35998 IMPROVING EFFICIENCY IN THE FILLING OF 2-PIECE CAPSULES.

The problems associated with fil[illegible] ing and closing of 2-piece hard gelatine capsules have been solved after the introduction of 4 models of high efficiency GKF filling machines by Hofliger and Kar[illegible] The range, ca[illegible]e of handlin[illegible] from 330 capsules per minute t[illegible] 2540 capsules per minute, features machine efficiency change-over and automatic quality contro[illegible] devices.
(Packaging, 11/76, 57:560, p.26.)

36004 MARKI[illegible]G AND LABELLING HI-CONE M[illegible]TI-PACKS.

The introduction [illegible]ew markin[illegible] and labelling [illegible]nes for multi[illegible] packs has en[illegible]d its potentia[illegible] as a sales pr[illegible]ion medium The series 250 is d[illegible]d for col[illegible] embossing on th[illegible] Cone we[illegible] before it is fed t[illegible]e applicato[illegible] machine. The He[illegible] 23 System i[illegible] capable of blowi[illegible]ressure-sen[illegible] sitive promotiona[illegible]els on t[illegible] Hi-Cone multip[illegible]caving th[illegible] production line a[illegible]rate of up t[illegible] 1,000 packs per m[illegible]ute.
(Packaging, 11/76, 57:560, p.32.)

36103 THE CLEAN MACHINE PULSAMATIC II.

Triangle Packaging Machinery Co introduces its new form/fill/sea[illegible] Pulsamatic II machine which i[illegible] said to have a swift, steady and clean operation. The unit features dust-proof electronic cabinet cable-styled electrical and pneumatic lines, all integrated solid state circuitry, self-monitoring and instant adjustments.
(Modern Packaging, 10/76, 49:10 p.91.)

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into rigid or semi-rigid containers. (Pneumatic Scale Corporation)

Pneumaflow jr. filler for filling liquids into glass, metal or plastic containers at speeds up to 50 per minute. (Pneumatic Scale Corporation)

Filamatic filler utilize one or more positive displacement pumps to draw from a floor or bench level reservoir liquid of preset volume thru the outlet tubing into the container.
(National Instrument Co. Inc.)

F/f/s/ and cartoner

Automatic side seal, form fill and seal packaging equipment makes its own bag, with infeed system designed to suit the product to be packaged to maintain maximum speeds and efficiency of operation. (Action Packaging Automation Inc.)

Flowpak continuous-motion horizontal wrapping machine forms the popular pillow pouch pack, horizontally fills in products and seals. (Rose Forgrove Ltd.)

Tetra Brik aseptic system for packing of long life products in packages made from plastic coated paper/foil combinations from rolls in a continuous process. (Tetra Pak Far East Ltd.)

Semi- and fully automatic box forming machine prefolds carton and wraps fancy papers of any type around box. (Wahnschaff Corp.)

Intermittent motion vertical cartoner erects the cartons and closes/glues the bottom flaps. The product is then loaded manually or automatically and the top flaps are closed/glued. (Rose Forgrove Ltd.)

Wrapper

Biscuit wrapping machine where each slug of biscuits is carried to the cut wrapper and pushed through, the longitudinal seal is formed and the pack passes through end folding and heat stations. (Rose Forgrove Ltd.)

Overwrapping machine overwraps cartons and full-depth trays in heat sealing cellulose or polypropylene films. (Rose Forgrove Ltd.)

Sealer

Portable as well as stationary heavy duty bag closing (sewing) equipment for plain sewn or tape sewn open mouth bags made of paper, textile or poly. (Fischbein International Inc.)

Hot melt adhesive application system that melts, stores and applies hot melt adhesives, designed for typical top and bottom case sealing operations. (Nordson Corp.)

Labeller and printer

Semi-automatic labelling machine that applies labels on cartons, bottles, jars, vials, ampoules, etc. (Newman Labelling Machines Ltd.)
Semi-automatic pressure sensitive labeller that "stamps" a label automatically on a carton, bottle, can, bag or any other reasonably small container fed by operator. (Avery Label Systems)

Versa Printer imprints on cartons, boxes, tags and labels using changeable rubber type and rubber stamp ink in various colours. (Fredricks MARKING PRODUCTS CO.)

Other machineries

Series 1200 skin packaging and blister forming machine needs only one operator. (Quality Vacuum Forming Machine Co. Inc.)

Blow moulding machine for the production of hollow plastic articles like bottles, jery cans, technical articles, drums, etc. (BEKUM Maschinen-Export GmbH & Co.)

Semi-automatic two-head air cleaning new glassware at speeds ranging from 20 to 50 containers per minute. (Pneumatic Scale Corporation)

Metal Detector is for non-destructively detecting, warning and sorting out the metal regardless of iron or non-iron, during the transporting process. (Densok Measuring Instrument Works, Ltd.)

Pinhole inspector is for non-destructively detecting, warning and sorting out the pinholes of hermetically sealed ampoules and vials due to cracking or incomplete welding, during the transporting process. (Densok Measuring Instrument Works, Ltd.)

Insta-Foam Froth Pak Kit dispenses self-contained, polyurethane foam for foam-in-place packaging. (Insta-Foam International Inc.)

There are increasing demands by developing countries for packaging machinery to meet their requirements. APIC operates a Data Bank to supply answers to these questions.

For further information on packaging machinery, please tick the relevant boxes in the form below, fill in your name and address and post.

Asian Packaging Information Centre
21A Ma Tau Wei Road, 12/F.
Kowloon, HONG KONG.

☐ Filler
☐ F/f/s and cartoner
☐ Wrapper
☐ Sealer
☐ Labeller and printer
☐ Others .....

Name: ..... Position: .....
Company Name: .....
Address: .....
.....
Business: .....

PACKAGING MACHINERY

A great variety of packaging equipment is available, ranging from simple manually operated units to complicated, high speed, integrated machines with sophisticated controls, for every type of product: dry, solids, liquids, pastes and mixtures. They may be classified in two broad categories — filling equipment; packag forming and handling equipment.

FILLING EQUIPMENT:

Filling equipment types have been designed for a great variety of solid, liquid and gaseous products with various characteristics.

Liquid products: For viscous liquids, pastes and certain food products, the volumetric principle is the only practical method where there are two basic methods — piston or metering. For thin liquids (6,000 centipoises or less) of which the value of the product is not too high and a full appearance is important, a constant level filler will provide a faster and more economical system. The simplest liquid filler is the gravity type, in which the supply tank is above the container and a vent tube is put into the container at the proper height to carry off the excess when the liquid level reaches that point. Vacuum type seals with its filling head against the mouth of container and draw a vacuum that provides the force to bring the liquid from the storage tank and the excess will be siphoned off through the vacuum tube. For faster fills, pressure in the filler bowl may be applied.

Dry products: The major problem in filling dry products is the variation in density. An 'auger filler' will normally give an accuracy of +2%, a 'net weigher' is accurate to 1/10 percent or less, and 'gross weigher' will hold to + 2/10 percent. However volumetric filling of dry products by means of an auger, or with a rotating plate that has openings of the proper size, operates much faster, requires the least expensive equipment and is the least complicated. Some products require an exact number of discrete pieces in the package. There are four ways commonly used to count products — electric eye counting, perforated disc, chutes or channels, orientation devices.

PACKAGE FORMING AND HANDLING EQUIPMENT:

Most packages are fabricated to some degree in the plants of suppliers, but there are certain operations which must be accomplished in the users' plants.

Bag form-fill seal machines: If the product is free-flowing, either dry or liquid, the vertical form-fill-seal machine is usually the best choice. For products that are in chunks or slices, the horizontal style of equipment is usually preferred.

Bag selecting-filling-sealing: It is the most practical method in some circumstances when the sales volume or speed of operation does not warrant automatic equipment.

Carton form-fill-seal machines: The modern high speed fully automatic carton former-sealer often known as a packager provides for all operations on one continuous motion machine.

Case opening-packing-sealing: There are actually four stages in this operation: opening the case, sealing the bottom, loading the case and sealing the top.

Overwrapping: Reasonably tight wraps are obtained with these machines if the product has consistent demensions. Extra tight wraps are obtained by using heat shrinkable film on a conventional wrapper with modifications as required and passing the package or bundle through a shrink tunnel under controlled conditions.

Labelling: Automatic labellers are divided into two types — those which apply glue to the container, then apply the label, and those which apply the glue to the label, and then apply the label. The container material, its curve, taper and general shape as well as the label material, size, shape, arrangements and glue requirements must be carefully examined in conjunction with these machines before a decision can be made.

Heat sealing: This method is used in packaging primarily for producing or closing wraps, bags, pouches, cartons, tubes, blister packs, thin wall containers, kits and various components. It is a fast, efficient and economical method of joining together the surfaces of thermoplastic materials as well as materials such as paper, paperboard, foil and laminations that have been coated with a heat-sealable material such as wax, hot melts and polyethylene. Many types of heat sealing equipment available today have been designed for specific applications.

PACKAGING MACHINERY SUPPLIERS

Here are some of packaging machineries available to developing countries.

Filler

Vac-Pack powder filler for dust free filling of non-free flowing drug, cosmetic or food powders

NOVELTIES FOR SWISSPACK '77

The next international packaging exhibition in Basle will be held as Swisspack '77 in the halls of the Swiss Industries Fair from May 24 to 27, 1977. Originally planned for one week earlier, the exhibition committee has now set it for this new date at the request of many exhibitors.

Swisspack '77 gives Swiss and foreign manufacturers, trading companies and service organisations from the whole field of packaging the opportunity of offering their products and services to a specialist clientele from Switzerland and foreign countries, to introduce new ideas, to transmit information and to demonstrate their ability to adapt.

Various special displays, technical meetings and accompanying events will inform about topical questions and future trends.

Swisspack '77 will show the preparation and processing of the various raw materials such as aluminium, sheet metal, glass, wood, cardboard, plastics and paper, as well as packaging machines and apparatus. Furthermore, a complete production and packaging line will be constructed at Swisspack '77. This "line," which will really produce and pack in front of everyone, clearly demonstrates all the working processes: from the raw material to the product and from the product to its packaging in the carrier-bag. In addition — in this age of environment-consciousness — even the non-polluting destruction of this carrier-bag will be demonstrated.

Another special display is devoted to the extremely important economic significance of the packaging industry. In an impressive presentation the visitor will be reminded that the packaging industry plays a much greater role in production, and thus in safe-guarding jobs, than is generally realised.

The packaging specialists have also had a good idea for marking new products. All exhibitors will have the opportunity of bringing their new products and improvements into prominence by means of a clearly visible cube. A large cube in the entrance hall to Swisspack '77 will draw visitors' attention to this campaign

BOOK REVIEW

CHEMISTRY OF FOOD PACKAGING (a Symposium sponsored by the Division of Agricultural and Food Chemistry of the American Chemical Society), published by American Chemical Society, 110 pages, Price US$9.75.

With increasingly sophisticated technology, researchers have modified traditional food containers and introduced new packaging materials to keep pace with the rapid changes in food production and processing. Packages for food are now often multi-component layers of films and coatings which must be compatible with food contained, must protect the product during processing shipment, and storage, and must also have consumer appeal.

Many aspects of food packaging technology are discussed in nine chapters including: trends in food container design; glass containers; tinplate containers for irradiation-processed foods; the compatibility of aluminium for food packaging; high nitrile copolymers, polyethylene containers; flexible packaging and food product compatibility; flexible packaging for thermally sterilized foods; and future needs in food packaging.

Mr. Charles M. Swalm, Editor of the Symposium, writes in a Preface: "As society develops and technology increases, researchers are modifying old, accepted foods, and introducing new products into the modern diet. Their years of constant research have brought us from the colonial ways of 'eat off the vine' to the present use of pre-processed modified and synthetic foods.

"Food packaging has similarly undergone radical changes. As the place of production grows farther from the urban centres where most of the food is consumed, the demands on food containers are greatly increased. Society used to be content to deal with natural food packaging, but now food must be shipped over long distances and stored for undetermined time periods and under often uncertain conditions.

"The technologies of glass, tin, and aluminium containers are being improved, and the field of polymer containers is rapidly expanding. Now a food container may be rigid or flexible and may be made up of many combinations of films, layers and coatings. It must be compatible with the food contained, must protect the product during processing, shipment and storage, and must also satisfy marketing requirements for consumer acceptance."

This is a most useful book for all engaged in the food packaging industry

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"PAKEX '77" IN BIRMINGHAM WILL BE THE LARGEST EVER HELD

"PAKEX '77" — the International Packaging Exhibition — which is expected to be the largest-ever display of packaging machinery, materials and ancillary equipment staged in the United Kingdom, will be held in the new National Exhibition Centre in Birmingham from March 14–18.

The Exhibition, 14th in the current series which began with a national show in Manchester in 1949, is now recognised throughout the world as one of the leading events of its type. Organised by Industrial and Trade Fairs Ltd., and sponsored by the Institute of Packaging, "PAKEX '77" is expected to feature presentations by more than 400 companies from the United Kingdom and overseas in surroundings rivalling the most up-to-date exhibition facilities in the world.

"PAKEX '77" will encompass some 700 product classifications covering the latest developments in every aspect of packaging and packaging technology from production to point of sale. Displays will include boxes, wrappings and containers of all types; raw and processed packaging materials; weighing, filling and sealing machinery; printing, labelling, bottling, tying, bundling and sorting systems and a wide variety of other machines, tools and ancillary equipment for packaging. Mechanical exhibits on display will feature machinery for specialised handling requirements such as conveying, crating, folding, forming, loading, strapping, stitching and testing.

The entire display is planned to occupy four of the halls at the new exhibition complex, with some 25,000 square metres of stand space available.

"PAKEX," last held at Olympia, London, in 1974, drew an attendance of over 31,000 visitors, including 7,000 from overseas. This year's exhibition is expected to attract well in excess of 30,000 people associated with marketing and distribution of all types of products.

APF BOARD REVIEWS FUTURE PROGRAM

Plans for packaging development programmes were discussed by chiefs of member institutes at the Asian Packaging Federation's Board of Administration meeting in Manila on January 27 and 28.

Detailed discussions centred on projects that would affect member countries. These included the packaging teachers' training programme, research and development project and technical/managerial exchange programme for Asia.

Other activities receiving attention were the 4th APF Congress to be held in Seoul, Korea, early in October. The Hong Kong delegates announced plans for a study tour of packaging industries in Japan next September, and said it was hoped a representative body of manufacturers would participate. It was intended to make the tour in conjunction with attendance at the APF Congress in Seoul.

Above picture, taken at the APF Board meeting in Manila, shows (left to right) Mr. A.V. Bonoan, APF President; Mr. K.C. Fung, Chairman of the Hong Kong Packaging Council; Mr. Cecil S.O. Chan, Director, Packaging Centre, Federation of Hong Kong Industries; Professor R.K. Chowdhary, Director, Indian Institute of Packaging; Dr. Djakkrit Puranasamriddhi, Director, Thailand Industrial Service Intitute; and Mr. Yo Kusuda, Secretary, Japan Packaging Institute.

substituting material will almost certainly be plastics because of the future legislation and ecological limiting factors. Discussed are some factors favouring the increased use of plastics in packaging such as energy, ecology, packaging materials cost and shipping cost. The roadblocks for plastics would be the packaging cost and availability of machinery.
(Food & Drug Packaging, 7/76, 35:1, p.8.)

LAWS AND REGULATIONS

8.1 REVIEW OF SOFT DRINKS REGULATIONS

Some recommendations are made on part II of the Report on Soft Drinks published by the Food Standards Committee of England concerning the definition, composition and labelling of soft drinks.

The definition of "soft drink" should includes powder mixes and flavoured syrups but excludes products intended to be frozen. Sales in unclosed drinking containers from vending machines should be brought within the scope of the Regulations. Appropriate designation and dilute instruction should be made informative and accurate on soft drinks. Minimum level of added sugars should no longer be prescribed but the existing maximum levels of saccharin should not be chnaged. Some misleading phrases or descriptions should be prohibited for the fruit-based products described as "drinks".
(Int. Bottler & Packer, 7/76, 50:7, p.22.)

8.2 COSMETIC CHEMISTS FOCUS ON REGULATIONS IN D.C.

Over 450 cosmetic chemists attended the Regulatory Conference in Washington, D.C. on June 10–12. 76, the purpose of which was to explain the regulations and government actions to protect consumers.

In deciding on the regulatory action, many factors have been considered such as scientific meaning and social meaning of scientific date, the extent of government regulation – its effects and costs in individual liberties and expenses.

The long term effects of some common products are also considered. It is pointed out that manufacturers must bear the responsibility for the safety of cosmetics. Apparently, the route to achieve this is either FDA getting more authority to develop wise policy or getting manufacturers self-regulated. Commissioner Dole of the Federal Trade Commission (FTC) commented on deceptive and misleading cosmetic advertising.

Heinz of FDA commented on the two Acts, the Food, Drug and Cosmetic Act and the Fair Packaging Labelling Act.
(Aerosol Age, 8/76, 21:8, pp.19–21.)

8.3 FOOD CONTACT PLASTICS: POLICY LEAD ON EEC LEGISLATION FROM BPF

The annual gross value of food contact plastics exported to EEC by the UK represents a significant market to be covered by possible EEC legislation. The BPF published only the "Plastics for Food Contact Applications: A Code of Practice For Safety in Use".

Last year the Biological Safety Commission (BSC) commissioned a survey of the legislative situation in all the major EEC countries on packaging. The work is published as "European legislation on plastics in contact with food" The report provides an analysis of the legislative trends and pressures in EEC countries, and the programmes and policies of the BPF with the intention of providing a realistic consultation mechanism

It is projected, in the future, only those companies which are able to anticipate the EEC legislation will take full advantages of the commercial opportunities
(Packaging Review, 9/76, 96:9, p.36.)

8.4 FDA RULING ON RETORT POUCHES

The US Food and Drug Administration (FDA), having considered many petitions and experimental data from major US companies about the retort pouch packaging system, announced that they are completely satisfied with the safety status of the various polyolefin films used as the food contact surface, but they have insufficient toxicological data on the extracted components of the laminating adhesives to give complete safety clearance for unrestricted use of retort pouches.

FDA are calling for 90-day feeding studies on two animal species using the exact extractives. In the interim FDA are prepared to restrict the use of retort pouches on certain foods only.
(Packaging, 8/76, 47:557, p.4.)

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ing. Empty containers can nest while full ones stack neatly and efficiently. The rectangular body provides more information to the consumers from the shelf. The colour and design are eye-appealing.

Comments about the design made by the Creative Partners are: it should demonstrate that the product is natural, it should make clear the product's application that it is meant to be spread on bread, it should be appetising on appeal and unique. The outstanding design of the pack is the integrated combination of artwork and photography.

(Canadian Packaging, 8/76, 29:8, pp.28–29.)

5.30 MOULDED PLASTICS CAN

American Can has introduced an injection blow-molding transparent barrier-plastic container that fills at 190 deg. F on regular can lines and accepts the aluminum or steel cap of all-metal can. The apple juice of Musselman Fruit Products Div. is used for market testing of the new container. The material, Cycopac 920, is a nitrile barrier resin approved by FDA for hot-filled bottles. The key advantage of this can is its high strength even thin-walled sections. The can is said to cost less per unit than glass and slightly more than metal. Evaluations are being made on packaging of tomato juice, sauces, pickles and relishes.

(Modern Plastics, 6/76, 6:6, pp. 24, 26.)

TESTING AND ANALYSIS

6.16 DRYING ON COATING, LAMINATING AND GRAVURE PRINTING MACHINES (2 PARTS)

The physics of a complete drying process about the coating and printing of wet materials such as paper, aluminium foil and plastic films is illustrated in terms of mass and heat transfer values. Important factors for speedy drying such as good temperature, intensive air exchange and a good supply of air with a low solvent content are considered. A comparison of the advantages and disadvantages of the old and new techniques in printing is also briefed. The second part describes the computer simulated mathematical model of the drying process on coating, laminating and gravure printing. The theoretical and practical results acquired are used to optimise the design of dryers for Polytyoe's lacquering, coating, laminating and gravure printing machines. The calculation of the drying process is also useful to the development of new coating, lacquers and inks. Graphs, tables and photos.

(Converter 5/76, 13:5, pp.16–18, 20, 22, 24, 26.)

6.17 INSECT RESISTANCE OF COMPOSITE CANS

Insect-resistant packages have come to be needed in today's world food shortages, rising costs to consumers, increasingly stringent sanitation regulations, and consumer rejection of infested foods. A research has been studied on the insect resistance of spiral-wound cans made of various combinations of heavy kraft paper, aluminium foil, polymer films, and glassine paper. It is found after the experiment that the composite cans show excellent protection from insect infestation and can be used for packing relatively expensive foods such as spices, health foods and "natural" cereals. The cost of such cans is between the price of all-metal cans and flexible film pouches.

(Modern Packaging, 8/76, 49:8, p.35.)

PACKAGING IN GENERAL

7.15 GETTING INTO THE DISPLAY-MAKING BUSINESS

This is the first part of a series on display of corrugated board. The author discusses an evolutionary concept of display work for corrugated box business with emphasis on synergic forces of selling, production, scheduling, quality control and knowledge of costing. Important points for a display and some of the common mistakes found in display-making are pointed out. Constructive advices are also suggested.

(Paperboard Packaging, 7/76, 61: 7, pp. 42,44,46,47)

7.16 IT'S MORE THAN JUST PAPER

Since the severe paper shortage in 1974 hit the developing countries hard, paper supplies have improved slightly. It is estimated that by 1979 the gap between supply and demand for paper would be about 5 million tons. Developing countries need to shake off their dependence upon developed countries for paper supplies. In order to prevent the 1974 crisis from recurring years ahead, they must start developing their own small but efficient mills and establish among themselves trade pacts to enable them to take advantage of the economies of specialization.

(CERES, 5–6/76, No. 51, p.5.)

7.17 PACKAGING IN THE YEAR 2,000

Looking into the year 2,000 AD, the assessing priorities for thermoplastics will be much easier and demand will be much more, and more varieties of it. Economy and functionality will top the list and least aesthetics for packaging. Some traditional forms of packaging in use will disappear and some will shrink or stabilize. The

4.28 PLANNING AND MANAGEMENT IN WAREHOUSING

The author highlights areas where cost savings can be made in warehousing design under the following outlines: land, buildings, equipment, labour, handling, areas of greatest cost saving potential and how to implement cost saving policies.

Under each heading, the author suggests the important areas one has to look into if the cost saving goal is to be complimented.

(Australian Packaging, 7/76, 24:7, pp.35, 37.)

4.29 THE MODERN WAY TO AN EFFICIENT WAREHOUSE: METHODS AND EQUIPMENT

The author offers some influencing factors and equipment knowledge for efficient operation in warehousing. The systems introduced include pallet racking, lifting equipment, horizontal movement, order picker, and pallet care. Before choosing the types, one must consider the costs of land, building, handling equipment, and labour. Suggestions are given after evaluating and analyzing the advantages and disadvantages of each type of equipment. Some safety precautions and common hazards for certain systems are also briefed.

(Packaging Review, 9/76, 96:9, pp.21, 23, 24, 27.)

SPECIAL PACKS

5.25 SWITCH TO THERMOFORMED INSERTS CUTS INVENTORIES, SLASHES DAMAGE.

Oneida Silversmiths of N.Y. has adopted a single insert thermoformed polyethylene packaging which can fit for 20 product configurations. The new package has the advantages of reducing inventories of packaging components supplies, cutting product damage during transit and the corrugated board to 200-pound test. The silverware items are wrapped in tranish-resistant tissue and then in a bag made of a lamination of PE/nylon/PE before they are put into the thermoformed cavities. The nylon provides sulphur barrier for the silverware and PE permits the heat sealing.

(Package Engineering, 8/76, 21:8, p.41.)

5.26 INNOVATIVE WIRE PACKAGING THROUGH AUTOMATION

Southwire has made a few innovations in packaging its building wire products. The packagings are concentrated into five main areas: cartons, coils, reels, spools and pallets.

All the coiling heads are standardized, permitting a series of standard carton design for the entire product line. For its coil packaging material, a high abrasion resistant polyethylene film replaces the water-proof paper: and a polyethylene strap replaces the steel wire. In reel packaging, the company finds a better way – a hole is drilled through the reel flange for inserting the loose end of the wire into it. In spool packaging, a small metal spool is used for packaging fine wire products and a plywood spool is used for non-metallic cable. Spools are then palletized and shrink-wrapped. The shrink film packing method allows more efficient lading, faster customer service, less damage, and is cheaper and more practical than strapping methods previously used.

(Modern Packaging, 8/76, 49:8, pp.19–20.)

5.27 GLASROCK ANNOUNCES SQUEEZE DISPENSER L INE

Glasrock Products, Inc. has introduced three dispensing systems for foams, sprays and powders. The principle for the dispensers is a combination of low pressure and suction. A collapsible plastic bag filled with air suspends in a squeezable bottle or tube. When the container is squeezed, the bag is collapsed, forcing the air to mix with the liquid or powder. According to the market studies of the Company, there are many products which would be more useful or attractive in foam form rather than aerosol form. On the other hand, the Company's atomizer spray has a finer performance than the conventional pump-type containers.

(Aerosol Age, 7/76, 21:7, p.20.)

5.28 MAKING IT EASIER FOR THE CONSUMER TO READ IS THE IDEA BEHIND NEW GAME/TOY PACKAGING

Easily identifiable product information like the new concept of Age Symbol is an important key for successful toy packaging. The package is designed with awareness of the game's or toy's suitability for children of different ages. People usually associate "games" for older children and need two or more players; and "toys" for younger children and can be played with along. But the research shows that "games" are often played by very young children and often played alone. Therefore the name "Game/Toy" is created and products of these have been welcomed.

(Canadian Packaging, 8/76, 29:8, p.25.)

5.29 A DESIGNER'S DREAM: A UNIQUE PRODUCT

Mac Feeter has adopted a new packaging container, designed by Creative Partners, for its three favours honey butter. The container is a thin drawn plastic liner and a leak-proof snap-on lid. The new container has several advantages. The paperboard surface permits a high quality print

are reviewed.
(Aerosol Age, 6/76, 21:6, pp.30–31.)

3.25 TEST RUN WITH PHOTOPOLYMER PLATEMAKING SYSTEM.

The Uniroyal has introduced its photopolymer elastomeric platemaking system, Flex-Light, which allows the user to go directly from negative to plate. The plates are made by placing a negative in contact with the plate material and exposing to ultra-violet light. The plate is then separated from the negative, washed out and dried. According to Uniroyal, the system is better in holding a sharp line and producing good clarity in the fine type. Tonal values from 10% to 90% can be produced with screens as fine as 150 lines, and 5% to 90% on 120 line screens.
(Canadian Packaging, 8/76, 29:8, p.13.)

3.26 THE PERMANENT LABELLINE OF GLASS CONTAINERS

Other than fire-on permanent patterns or wordings on to the glass containers, glassware can be simply colour sprayed or screen printed. Glass containers decorated in such sophisticated permanent ways, originally, for high value products only, are now making their way on to the reuse bottles. A new glass colouring technique, the Feeder colour system being used by the Rockware Glass Ltd., greatly simplifies the colouring system. The blown opal glass has been accepted for wide use by the perfumery industry recently.
(Labels and Labelling, Pack. News Spec. Report, 7/76, p.47.)

3.27 ROLLER ADVANCES UPGRADE PRODUCTION TECHNIQUES

The development of seamless flexographic design and pattern printing rollers and roller formulations are introduced. The relative advantages and the mechanical processes of different types of rollers ceramic-coated anilox rolls, hyprophilic rollers, gravure press impression rollers and embossing rollers, are discussed. The technical parts and problems encountered are also outlined.
(Paper, Film and Foil Converter, 8/76, 50:8, pp.43–45.)

3.28 PS FOAM RECYCLING SCALES DOWN

Two new batch processes for recycling PS foams in small shops or factories are discussed. In one process, the foam material is densified under heat and vacuum; in the other, the foam is dissolved. The heat and vacuum approach is simplier to construct and operate than the solvent-based densification process that involves more complex equipment but offers wider possibilities for varying properties of the final product. it is said that the cost of additional material to the recycling is less than the cost of dumping.
(Modern Plastics, 7/76, 6:7, p.17.)

HANDLING, DISTRIBUTION AND STORAGE

4.26 DISTRIBUTION CODE UPDATED: SPECIFICATIONS MADE IT OFFICIAL

Following the adopting of UPC in many supermarkets, another standard code, the Distribution Code, has made its appearance through the Distribution Code, Inc. The Distribution Code(DC) is intended to provide a standard machine readable symbol for shipping containers in high volume industries. For the most aprt, these symbols have been used by manufacturers for internal functions relating to inventory control, sortation, and material management. Of the new symbol's 11 encoded digits, the first 6 refer to the code system and to the manufacturer, the last 5 digits refer to product and case count. As it was formulated, the Distribution Symbol can be read both by fixed-position scanners and hand-held wands.
In response, box suppliers have refused to print a symbol with element smaller than 0.035 in. Other negative reactions are concerns if flexography and letterpress printing on a corrugated substrate can provide the consistency required by scanning equipment.
(Material Handling Engineering, 8/76, 31:8, pp.54–56.)

4.27 MANAGE HANDLING COSTS TO SURVIVE

Due to the slackening improvement rate in productivity, industrialists have to look into areas traditionally regarded as overheads for potential cost savings. By studying and rationalizing with systems approach, it is often possible to eliminate movements or handling operations entirely. The scope for saving depends on the present efficiency and set up of the existing organization. Because the overall approach covers many departments it is essential to have a senior skilled person responsible for the planning, operation of handling, distribution system and periodic evaluation and examination of new methods and systems.
Looking into the future of distribution systems, the author believes there is a trend towards market demand and customer service, highly complex and sophisticated in design and construction, yet simple in their operation and low profit margin.
(Australian Packaging, 7/76, 24:7, pp.28–30.)

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other reel-fed machines. After forming, the product is top web sealed and separated by cutting knives. A 5% film saving is achieved due to the decreased edge trim loss. The machines requires no tool for die changes and are good for packing meat, sausage, bacon, fish, cheese, cake, coffee etc., as well as pharmaceutical and technical articles.
(Australian Packaging, 8/76, 24:8, p.49.)

2.21 ICE CREAM WRAPPED AT MORE THAN BOILING POINT

Iwema Pack of Sweden has introduced its Iwema system for speedy shrink wrapping perishable products such as ice-cream or margarine without harmful effect. During the wrapping process, the plastic film is heated to 240 deg C while a cooling fan ensures that 10 sec. later it leaves the shrink tunnel at no more than 40 to 50 deg C. One of the main features of the machine is the single bar hot-cut welding system replacing the teflon type tape and hot cutting wires.
(Australian Packaging, 8/76, 24:8, p.49.)

2.22 MODULE FOR FOLDER-GLUER PRODUCES LOCK-BOTTOM CORRUGATED BOXES

A Sercolok unit for manufacturing two-point-glued crash-lock-bottom boxes has made its appearance in the European market. The machine is capable of doing the inward folding of the bottom flaps of a box blank in a single operation. Maximum blank width of the machine is 2,000 mm. and maximum bottom flap height is 1100 mm. Other sizes of the Sercolok are also available. Installation of the Sercolok, in-line on a folder-gluer, does not interfere with normal box production. Suction feeding of the unit is optional. Serco guarantees a mechanical top speed of 8,000 blanks per hour if it is not limited by the take off at the delivery end of the folder-gluer.
(Boxboard Containers, 6/76, 83:11, pp.28–29.)

2.23 CASE PACKING AN OPPORTUNITY FOR MAJOR COST REDUCTION

Automation of the case packing function in many industries is one potential area for cost saving. The whole range of case packing machinery can generally be classified under 3 types. The vertical case packers drop the product into standard corrugated cases and then the cases are forwarded to the wrapping machine. This method is good for packing bottles and cans automatically. The horizontal case packers fill the corrugated case by pushing the products horizontally into the case. Continuous motion case packers are good for very high speed bottle and can packing but the cost of this type of equipment is also high. In this article the author offers some tips and experienced in selection between semi-automatic and automatic equipment. Also, the reliability of the automatic packers, production orientation and handling, and special case packer designs are discussed.
(Canadian Packaging, 9/76, 29:9, pp.22–26.)

2.24 HOT MELT OFFERS PACKAGERS MORE OPTIONS ON EQUIPMENTS

For a long time adhesives and equipments were inextricably tied together. With the introduction of melter/feeder unit, machines can accept adhesives in many forms. Improved heat controls has today provided a more economical and entirely satisfactory solution for less critical deposition requirements and lower speeds. Systems with hot melts from 7 to 27 pounds per hour are avilable.
(Good Packaging, 7/76, 37:7, pp. 30–31.)

NEW TECHNOLOGY

3.23 FRENCH DEVELOPMENT IN ASEPTIC PACKAGING WITH PLASTICS

Sour milk is a thing of the past, when Sidel and Serac of France developed the use of extruded blow-moulded plastics bottles for the milk filling system. The packaging operations of moulding, filling and closing are carried out in an enclosed uncontaminated atmosphere by a constant laminar flow of sterile air. The unit operates at a rate of 1200 to 1500 litres per hour. Bottle weight can range between 25 to 30 gm. and the shape of the bottle can be square, round or multi-sided. The neck section, however, is square and is capped with a thin laminate of aluminium and polyethylene.
(Australian Packaging, 7/76, 24:7, p.51.)

3.24 ALUMINUM AEROSOL–A REVIEW

Aluminum aerosol containers are produced today in either one or two piece forms. The most popular type is the one-piece unit. Aluminum has a few unique, practical and marketing advantages that its counterpart tin-plate can not compete with: higher bursting strength; wrap-around lithography on the seamless body, permitting better degree of lithography unmatched by the tin-plate; rust-proof external; the ability to be treated with wide variety of special decorative treatments. Containers of fluid capacity range from 10 oz. to 1/4 oz. are available. In the article, the author introduces the technique and manufacturing processes of producing aluminum cans. The filling and finishing methods such as silk screening and thermage transfer

MATERIALS

1.33 ALTERNATIVE SYSTEMS AND THE CONTRACT FILLER

Because of possible government restriction or prohibition in the use of flurocarbon in aerosol, new development has been put in hand to find propellents which are ecologically safe and economically marketable. It has been estimated that of all aerosols currently in the market, 50% contain hydrocarbon propellants while 40% are flurocarbon propelled primarily with FC–11 and 12, the other 10% are pressurized with variety of other materials such as carbon dioxide, nitrous oxide and nitrogen.

Carbon dioxide appears to be an ideal propellent except for a few shortcomings. Hydrocarbon, with many favourable properties, would be a good substitute should it not be flammable. Thus considerable interest is switched back to other members of the flurocarbon family like FC–142b, FC–152a and FC–22, and halocarbons with hydrogen or hydroxyl groups. However the new flurocarbons will be 2 or 10 times more expensive than the current FC–11 and FC–12.

(Aerosol Age, 8/76, 21:8, pp.16–18.)

1.34 HERCULES RESIN DESIGNED TO MEET PHARMACOPEIA RULE

Hercules has developed a new grade of polypropylene resin, profax 6331N Amber, a homopolymer resin that conforms to FDA pharmaceutical package standard that falls due in April, 1977. The new resin has good contact and see-through clarity. Vials made from it can be closed tightly.

(Package Engineering, 8/76, 21:8, p.17.)

1.35 NITRILES: MOVING PAST THE POP BOTTLE.

Borg-Warner Chemicals has developed a new nitrile polymer, Cycopac 920 which is santioned for use in all food packaging except alcohol. The new polymer has slightly lowering barrier properties, higher impact strength and distortion temperature. Its chemical resistance to most foods and non-polar solvents permits a wide variety of products to be packaged in clear, tinted or opaque bottles. Current applications of the material are in popcorn oil, salad, barbeque sauce, peanut butter, cologne and insecticides. The price of this polymer is somewhat higher than food grade PVC but less expansive than PET. However, it does not require a PVDC coating, as do PVC and polyesters. This product is available in pellet form for clear sheet and bottles in many standard colours.

(Package Engineering, 8/76, 21:8, p.38.)

1.36 HOT MELT AND WET GLUE – THE FACTS

In choosing a proper sealing system for the corrugated shipping containers, a number of factors have to be considered. Equipments for cold glue are usually grouped into 3 types: wheels, extrusion and air-spray system. For hot melt, operation is almost universally applied by extrusion guns.

Wet glues have difficulty in bonding wax surface and are more susceptible to environmental changes. Hot melt is unaffacted by most irregular surface condition. It forms an adhesive bond when cooled. Wet glue takes considerable time for drying. From the point of economy, wet glue costs less but wastes more material during cleanup operations and needs good housekeeping. According to a survey, most users favour the hot melt or wet glue air-spray method where operating conditions are favourable.

(Canadian Packaging, 8/76, 29:8, pp. 36–38.)

1.37 RE-EXAMINING UNIT PROPERTY COST OF PACKAGING MATERIALS

The concept of unit property cost would easily be misapplied if its limitations and specific applications are not thoroughly understood. In the selection of packaging materials cost per pound or cost per unit area are the units often used for cost comparison. In some cases where a package must exhibit some specific property, the above mentioned two units are useless in making the optimum material selection. The most helpful unit under these circumstances is the cost per unit property comparison. However, there are difficulties: the conversion of one unit to another does not necessarily correspond to the reality of package performance; it is also a wrong assumption that a common denominator can be established realistically Furthermore, modern packages are composed of sophisticated multilayer materials. The properties of individual layers are not necessarily additive.

(Paper, Film and Foil Converter, 8/76, 50:8, pp. 50, 52.)

MACHINERY

2.20 VACUUM PACKAGING LINE ELIMINATES IN-FEED PROBLEMS

Lindgren Holdings Pty Ltd. has introduced their models VT100L and VT50 automatic vacuum packaging machines. The units utilize two webs of laminated film. The bottom web is held in a positive position by patented clamps which eliminate a lot of in-feed problems experienced by

PACKAGING OF BEVERAGES

The packaging industry is advancing to an era where it becomes quite difficult and sometimes more expensive to get real innovations in packaging technology or package design as compared to the pioneer stage.

However, in the packaging of beverages, which has covered a very wide range of packaging materials and package designs, development is likely to continue perpetually. During the passing years, many innovations have been seen entering the market with unpredictable success to suit the various consumer preferences.

For instance, in can processing the drawn and ironed can-making technique allows canners to use cheaper two-piece cans without hindering their production speed, in plastic manufacturing the stretch-blow moulding technique has encouraged packagers to try plastic bottles for soft drinks or fruit juices. The combination of improved technology and materials has enforced the packaging of beverages to evlove prospectively and continuously.

This recent report prepared by APIC discusses in detail the returnable and non-returnable containers (also known as disposable or one-way containers). Developments in packaging regarding these containers are reviewed and brings out new packages which have come on the market and how to cope with them.

Various types of packages are dealt with in great detail in this report. It notes that the market is shared by different materials — paper has its place in the milk; glass in the beer; metal cans in the carbonated drinks and beer; and plastics in the non-carbonated drinks and coming up into the pressurised beverage market. Each type of materials have their own innovation and improvement in production and in design. It is also anticipated that the competition will continue and new designs and materials will be brought into the market. It is not improbable, the report hints, that one day beer in a paper carton may be seen on the market.

However, at the same time, rationalization and standardization seem to be a world trend. They are desirable if they lead to greater efficiency in packaging, manufacturing and distribution, and thus to lowering costs and prices. Many countries still using imperial units and measures are actively engaged in metrication schemes

The environmental problem is still the focal point in modern packaging, especially in the packaging of beverages. The ring-pull problem and the non-returnable bottle bill are both posing tremendous pressure on beverage manufacturers. The innovations of non-detachable tabs from Coca-Cola and the Pop-top from Comalco demonstrate efforts in solving part of the problems. The recyclable cans are also being used by canners, trying to solve the problems as their social responsibility.

Returnable and non-returnable containers will continue their controversy and competition. Conceptually the returnable is ideal from the ecological point of view because, if a container can be re-used, litter can obviously be reduced. But, if the problem is observed from the economic and convenient point of view, it is sometimes not very convincing because, with a returnable container, the cost is higher as more efforts are spent in collecting, sorting and washing the bottles. Recycling is another approach to solving the problem. Recycling projects are being carried out in many of the U.S. and European companies, yet a good returning and collecting system has not been widely established and that is the main hindrance.

If the problem can be solved, the report notes, it may be said that the recyclable one-way container will be the last survivor in this game of keen competition.

This is the fourth in a series of Study Reports published by APIC. Previous Study Reports dealt with the following subjects:

1. Use of laminates for pre-cooked foods.
2. Testing of transport packages for electronic equipment.
3. Cushioning materials.

These Study Reports are available from APIC at US$10.00 per copy.

BOOK REVIEW

GUIDE TO THE METRIC UNIFORM PACKAGING LEGISLATION

(compiled by the Weights and Measures Office of the NSW Ministry of Consumer Affairs, Australia.)

This is an useful guide aimed at providing packers and all who are associated with the packaging industry with information concerning those aspects of weights and measures legislation which relate to pre-packaged goods.

In a preface, Mr. F.M. Hewitt, Minister for Consumer Affairs, NSW, writes: "This publication provides a valuable reference to the official requirements of the uniform packaging laws under the metric system.

"It represents in a concise form the important aspects of packaging laws applying in all Australian States and Territories, and certain interpretations by the Standing Committee on Packaging. It is designed as a standard guide for manufacturers, wholesalers, retailers and all others involved in packaging.

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1976 VOL. 2 NO.4

FOOD PROCESSING INDUSTRY HOLDS BIGGEST TRADE SHOW

The International Exposition for Food Processors (IEFP) is being presented from February 13–16, 1977, in the spacious Superdome, New Orleans, Louisiana, U.S.A. It is the largest annual trade show in the Food Processing Industry and serves as an information and education medium for food processors and their suppliers, the sponsors of the IEFP.

The thousands of Industry members who attend represent every area of the Food Processing Industry, as well as certain non-food interests that also pack their products in glass, metal, plastic and fibre containers. The Exposition, established in 1885, serves as the Industry's meeting ground, marketplace and focal point for the introduction of new technology and equipment designed to meet processors' future production needs.

Visitors to the Exposition will see under one roof more than 250 separate displays of the equipment, machinery, supplies and services used to satisfy the world's food production requirements

The entire Exposition is sponsored by the member firms of the Food Processing Machinery and Supplies Association (FPM & SA) All exhibitors hold membership in the Association which serves as an international business and communications link between food processors and suppliers

Exhibitors use the four day IEFP to display and to demonstrate their products. To present this Exposition, FPM & SA is using the 166,000 square feet exhibit area of the Superdome, which is an increase of nearly 25 per cent above the exhibit space used for the record-breaking 1976 National Exposition For Food Processors (NEFP) in San Francisco.

HONG KONG EXHIBITION OF LATEST PACKAGING EQUIPMENT

PACK '76, an exhibition displaying the latest in modern equipment, materials and technologies relating to packaging was held in Hong Kong between 15th and 20th December and attracted considerable interest.

The exhibition was jointly organised by the Hong Kong Productivity Centre and the Federation of Hong Kong Industries (on behalf of the Hong Kong Packaging Council).

The following were the exhibitors and the products displayed:

Hong King Trading Company – screen printing machine.

Modern Printing Equipment Ltd –– Heidelberg auto cylinder cutter/creaser, Polar guillotine, Van Dam containers and lids printing machine, Jagenberg packaging machines, Chambon carton manufacturing machines, Finester carton window patch applying and lining machine, Bellmer auto box gluing machine.

The Eastern Haberdashery Centre and Development Co Ltd Bano'k packing and labelling machine label printing machine

United Overseas Enterprises Ltd –– Auto P.P. strapping machines No. 7 and No. 7-OLL.

East Asiatic Co. Ltd –– Vacuum packaging machine, cellophane wrapping machine, power filling machine.

Sehoi Calender Co. Ltd –– Paper calendering processing

Hong Kong Packaging Equipment –– Wrapping machine, vacuum packaging machine, packer, caster etc, packing materials (films and bags, etc).

Unipak Hong Kong Ltd –– Phoenix tom tying machine, Phoenix carton strapping machine, Protectapak foam-in-place packaging system.

Cranetube Company –– Aluminium collapsible tubes, aluminium aerosol cans, bottle capsules, conical collapsible tubes pierced and solid aluminium slugs, childguard safety plastic closures.

T.Y. Chu & Co. Glass bottles plastic bottles, aluminium foils, aluminium tubes and wrapping papers

TMH Packaging Machinery Specialists All aspects of packaging

(cont'd Pg. 9)

An extension of this idea is using a curve-creased carton with a printed exterior surface resembling bamboo. The curve-crease construction in itself suggests the curves and roundness of bamboo. The paperboard is laminated with foil on the inside. The product is a moist bean cake needing the protection of the foil.

This package illustrates the trend in Japan to saving as much material as possible. In this case, by eliminating the folding carton. In production this package now leads itself to speedier assembly.

Pouched products are very popular in Japan today. Japanese packagers are increasingly using both retort and non-retort pouches for fresh and processed foods for better hygiene and preservation. Also prompting this important trend has been the recent severe shortage of paper packaging products.

If and when the retort pouch becomes a major commercial package in the USA, USA packagers will no doubt turn quickly to Japan for case history experiences. In Japan, it is estimated that there are 1,500,000 retort pouches processed every day.

IV RUSSIA (EASTERN EUROPE IN GENERAL)

The Soviet Union is moving with increased aggressiveness to bring its packaging up to the levels of sophistication and variety needed to serve the growing needs of its large and far-flung populations.

USSR officials acknowledge very large and urgent requirements for packaging lines for all kinds of products especially in the food category.

Food processing and packaging installations are high on their list of priorities. The five-year plan which ends in 1975 calls for a $13 billion investment in the food processing industries, including food packaging. In the next plan, this amount is expected to be increased.

Best estimates are that of the foods which are processed, 65 per cent are packed in glass vs. 35 per cent in cans. Can lines as well as rigid and flexible plastics packaging capabilities are being acquired. Glass lines are undergoing revamping and replacement to increase speeds and improve control.

The increased emphasis on higher speeds and vastly greater volume is based on several factors: The need to increase productivity, which now is low due to out-dated equipment and shortages, the planned expansion of self-service retailing; the increased production of agricultural commodities which must be preserved and broadly distributed.

Unlike most other countries where packaging is also less developed, the USSR is a very large country that needs and wants high-volume capacities and automation.

V. WESTERN EUROPE IN GENERAL

Europe, always fertile ground for new packaging ideas, commands even more attention today. Differences in market, equipment, material and distribution channels traditionally send European packaging into new, innovative areas. Many of these ideas can be adapted to the USA.

Aseptic packaging, filling a sterilized product and container in a sterile atmosphere, also beckons the interest of European packagers. Whereas in the USA most aseptic packaging is with metal cans, Europe opts for plastic thermoformed containers. Equipment is available in Europe to vacuum form containers from a web of material passing through the sterilization area, (rays of peroxide and hydrogen). Machines of this type are now used in the dairy industry and very recently for packaging of soup in France.

Europe has long been the scene of much activity in form-fill-seal operactions with a large amount of equipment on the market. The most discernible new trend in this area is broadening the range of package types, such as pouches that are made into square bottom bags. Other new looks are seen in the linking up with other machines to count, carton, and overwrap.

Tantalizing to some Europeans is "in-mold" filling of plastic bottles. One popular blow mold-fill process was developed by a German firm, Rommelag. Also on the market in Europe is a new French process for manufacturing and filling plastic aerosol containers in one step. In this method, the valve is introduced into the mold, propellant and product are filled before the mold opens. "Plasterol" is the name of this French system which uses any type of plastic resin, according to the equipment producer, Sidel.

Decorate in Mold?

A big improvement on that process, although not yet commercial, would be decorating in the mold as well. Right now, there are two processes getting attention. One of them, from Germany (Etimex) and the other from England (Letraset) have piqued the interest of many Europeans. For decorating thermoformed containers, a new French process from Homelt is being introduced soon. In this process, coated printed labels are put into the thermoforming mold before the sheet is vacuum formed.

A very significant trend in Europe, although not new to the USA, is the interest in one-way glass bottles. Evidence everywhere points to weights becoming lighter and lighter with special surface treatments and improved regularity of thickness. In fact, Europe only recently has taken a strong look at plastic coated and ribboned bottles. The first user of this bottle in Europe is Coca-Cola in France for large, 48-ounce bottles.

Our main problem today is the distribution of food products. To accomplish this goal we are in urgent need of effective packaging.

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THE WORLD PACKAGING SCENE (cont. pg.4)

of the marketing process, important in national markets and an absolute prerequisite for exports.

Moreover, the field of competition is rapidly expanding. Better transportation in most countries is consolidating nationwide rather than single city markets, while regional integration and the new emphasis on exports of manufactured goods are motivating more companies to try their luck abroad. But many quickly find that breakage or spoilage – not just of the product but of the package itself – can sour a promising export venture. Exporting also means exposure to the highly sophisticated packaging technique in use in developed countries.

The value of packaging material production last year in Mexico, for example, was close to USA $250 million: 1.6 billion glass bottles, worth US$65 million; 1.1 billion metal cans worth USA $53 million; 255,000 tons of corrugated containers worth USA $73 million; 63,000 tons of folding cartons USA $42 million; and an important, though indeterminate amount for plastics in any of a dozen forms, wax-paper cartons, composite fiber drums and other materials. (Nor does this take into account the millions of dollars spent on industrial packaging).

New laminated packages for coffee are now being introduced into Brazil's marketplace allowing longer shelf life – as much as 30 days. Brazilians prefer a powdered coffee, previously sold in paper packages, with an average shelf life of around 10 days.

The need for increased shelf life was brought about not only by consumer needs but also because after filling shelf time was eaten up by distribution and transportation functions. With longer shelf spans more attention was directed to the package as a marketing vehicle. Along with longer shelf life has also come some spectacular new graphics. The packages are not necessarily based upon any new technological advance unknown to the USA but the new thrust in package design more closely fits the changing sophistication of the Brazilian consumer.

Also matching this theme is a new package design for a cracker/biscuit package from Piraque, makers of fruit-flavoured wafers. By changing its package design, the company's product now stands out from the competition. Most packages of this product appear in transparent cellophane or the product is simply drawn on the package. In this case, the fruit itself is featured, exciting the appetite of the consumer for the fruit.

Another underdeveloped area is fresh fruits and vegetables. A Mexican housewife would not believe the beauty of fruits grown in the country – for export to the USA. Produce for the local market, while colorful for tourist photos of open-air markets, suffers terrible abuse from shipping in bulk truckloads, old wooden crates, and burlap bags. And, again, the situation in countries to the south is usually as bad or worse.

The introduction of plastic bottles to Latin America should not lag far behind and this could be a major development. In Venezuela last year producers turned out nearly 200 million cases of soft drinks and beer, more than 95 per cent of which were sold in glass bottles. Brazilian beer output exceeds 1 billion litres and soft drink production is twice as large — again with almost all production sold in bottles. Cans in these markets are winning acceptance but are still more expensive than glass. If the raw material is priced within range, plastic bottles could be more dangerous competition.

Despite such figures, however, the packaging industry in Latin America – even in the more advanced countries – is woefully inadequate and underdeveloped, as shown by the high level of imports of equipment. Only 30 percent of the food consumed in Brazil reaches the customer in packaged form. At the same time, the sales growth of the country's supermarkets has been increasing at an astonishing rate of 25 per cent a year. Of all the countries in the region, only Argentina produces more than half its own needs for packaging machinery and even in Argentina there is a growing demand for more sophisticated equipment.

To keep pace with competition, both at home and abroad, manufacturers are investing heavily in new packaging machinery, with a very strong trend toward the use of plastics and plastic films. Perhaps more than 80 per cent of this machinery is being imported with suppliers but the packaging industry of Latin America is also growing much more rapidly than the manufacturing sector as a whole, particularly in Brazil and Mexico.

The Brazilian packaging market this year should hit $1.2 billion and approach $1.8 billion in five years. The figure pales somewhat compared to the USA's consumption of packaging materials but the point is that Brazil's packaging needs are growing rapidly. In particular, as can be noted by examples accompanying these comments, flexible packaging growth has been astounding. Some producers report sales gains up to 100 per cent.

Complain of Poor Quality

Most packaging materials are available locally in Brazil but some users complain of poor quality, especially in the instance of cellophane and foil.

There is plenty of attention being concentrated on both technical advancement and marketing sophistication.

It shouldn't come as too much of a surprise to discover that one of the chief packaging innovations in Brazil is a coffee package. Brazil may be the only country in the world that drinks more coffee than the USA.

III JAPAN (ASIA IN GENERAL)

For pure beauty, Japanese packaging is seldom surpassed. The Japanese packager is skilled at keeping a trained aesthetic eye open while never losing sight of the cost picture.

It has been suggested that Japan is a microcosm of the USA in the future. Densely populated, materials scarce and expensive, and yet marketing and packaging to an increasingly sophisticated and affluent consumer.

One of the important trends being seen in Japan today is the use of plastics and other materials to imitate traditional materials. Plastic-coated paperboard that closely resembles wood is a good example.

One new package with features of both a folding carton and a set up paper box presents an exterior of plastic-coated board resembling wood. Inside, a foil laminated partition provides dividers for four items of product, a relatively expensive candy.

The impetus behind this substitution was wood's high cost. This is just one example of how cost-conscious Japanese packagers are handling the expensive gift area.

THE STATUS OF PACKAGING IN ASIA (cont. pg. 5)

Consequently, Japan and Australia lead in the field. Only in Japan is the training of packaging consultants institutionalised.

In the developing countries, the Governments have generally assumed responsibility for the setting up of the services needed to ensure the development of a strong packaging industry – that is, the establishment of national research and testing laboratories, the training of consultants, the setting of standards, etc. The Governments of India and Korea have, apparently, done most in this regard.

The United Nations agencies have played an important role throughout the region and particularly in Hong Kong, India, Indonesia, Korea, Singapore and Thailand.

Packaging Machinery

Full or semi-automation is a feature of 80% of the packaging industry in Japan; there is also fairly full automation in Australia. In the other countries, the packaging machinery used ranges from hand operated to semi-automatic, to fully automatic machines. Food packaging machinery seems to be the category most in demand, which, in view of the fact that most developing countries are principally agricultural and tropical, is to be expected. A number of countries in the region are exporters of packaging machinery – Japan, Australia, Hong Kong, Korea, Taiwan, although the latter three appear to be net importers.

Packaging Education and Training

Packaging education would seem to be most well developed in Australia where four year courses at Technical Institutes are provided. In Japan, short courses are available in a number of tertiary level institutions. Packaging courses within the Industrial Design Departments are taught in 7 colleges and institutes in Taiwan and in the Hong Kong Polytechnic. Hong Kong also has an interesting four-year part-time modular course conducted jointly by the Hong Kong Polytechnic and the Hong Kong Packaging Council.

Packaging training is being carried out in varying degrees in most countries. India, in particular, has well established, intensive training programmes and in that country over 2,000 incustrial personnel have received training in the last 9 years. The Japan Packaging Institute has conducted 11 Packaging Consultant Training Courses and from this 844 packaging consultants are eligible to be members of the JPI Packaging Consultants Club.

The figures given in the Reports indicate that in all the programmes offered, whether they be in formal education or as training courses, the enrolments are high.

Sizes of Packaging Enterprises

A fairly common situation prevails in the developing countries in that the packaging industry is dominated by a very few, expatriate-influenced firms. The comment is made in more than one report that while these firms are able to obtain satisfactory levels and volume of technical know-how from the overseas parent company, there is a reluctance by them to pass on and share their knowledge and expertise with the local industrialists.

On the other hand, the rest of the picture indicates that there are many small unsophisticated enterprises, and the possibility of managements in these small establishments being unable to absorb new concepts and technology cannot be overlooked.

Packaging Problems

Two main problems emerge from the Reports. The first and most basic one which affect all of the countries surveyed (with the exception of Japan and Australia) is the lack of technical know-how and trained personnel. This problem is obviously tied to the absence of educational facilities, though some countries are trying to fill the gap by the provision of short training programmes. The lack of technical know-how also inhibits the development of the use of indigenous raw materials or the selection of alternative materials, and has its influence as well on the level of productivity of both human and material resources.

The second crucial and fairly universal problem among the reporting countries is the very high cost of imported raw materials particularly plastic resins and metals. This is retarding the development of the industry to some degree, especially in those countries which are heavily dependent on export markets.

Other specific-country problems include the general ignorance among manufacturers and distributors of the importance of packaging, the lack of technical information and associated services; the small size of the domestic market and the effects of the same on the size of production runs and, therefore, on final costs. Here, perhaps, a few parenthetical notes might be permitted. The Asian Packaging Federation, under whose auspices, this Congress is being conducted, recognising this particular problem, has established the Asian Packaging Information Centre which was set up with an initial grant provided by the International Development Research Centre of Canada. This Information Centre, known as APIC, is now becoming operational and will serve all of the countries of the Asian region. It is building up a data bank on all published information on packaging for the purpose of providing from the wealth of information available, guidelines for solving specific questions. It can also provide information on packaging machinery and machinery manufacturers as well as on packaging consultants. APIC is located in Hong Kong.

Other specific country problems coming to the fore in particular in Japan and Australia are the environmental and social problems connected with packaging.

The 12 Reports cover some 300 pages of print. They provide a wealth of material about the countries themselves, as well as the social and economic conditions prevailing in them. They indicate for instance that on average, half the population of the region is under the age of 20; that the educational level is rising rapidly. The expectations of the people, socially as well as economically, will it must be assumed, rise accordingly. Thus packaging will become increasingly a part of their environment. A broad canvas has been painted and the place of packaging in the total picture is shown. These Reports provide the most comprehensive study undertaken so far on "The Status of Packaging in Asia" They merit detailed consideration.

(cont'd Pg. 6)

What type of design and information should be included on the pack?

The introduction of new legal requirements concerning the packaging of food and other products and the serious proposals of the European Commission for the labelling, presentation and promotion of food products should be carefully studied. Whilst at first these might seem to be a threat in the long term they may well be good for all concerned.

THE SOCIAL CONSIDERATIONS

The paper outlined the role of packaging in any community by following the growth and expansion within developed countries and its interaction with all aspects of community life. It underlined the critical nature of the service that it provided for modern living and the impact of new technologies and new packaging techniques as they occurred or are promoted.

Its effect on the methods of distribution, transport, wholesaling and retailing were discussed. Its part in community life after purchase was also outlined.

The effect of the resources that are employed and the effect on community living, with particular reference to waste and waste management, were discussed.

The comparison with the growth of packaging in such countries, with the probable course that will be followed in Asia, were highlighted with probable pitfalls and opportunities given some prominence.

The development of social involvement and social conscience relating to resource management, waste management and package selection versus cost of imported and local materials was also outlined

Standardisation of packages and packaging approach as well as legislation were treated, with emphasis being given to self control and self regulation.

Measures already being adopted in highly developed countries were then outlined and information given concerning the development of such organisations and attitudes

THE RIGHT PACK FOR THE RIGHT PRODUCT

1. The World-Wide Oil Crisis in 1973 led to the need for nations-wide saving campaign of resources to eliminate the trend of consumption, and as a consequence the people in the packaging industry has a growing interest to concentrate saving of packaging materials and developing the packaging technique through the improvement of packaging.

2. Although the optimum packaging has been explained by various definitions, in a general way, the optimum packaging in the industrial packaging is expected to considerably reduce commodity price by means of saving the physical distribution cost, and whether the over-packaging or under packaging when it happened at this time, the cause is returned to unskilled experience of packaging. However, the over-packaging in the commercial packaging usually places emphasis on the promotion of selling to make a profit for one's own enterprise.

3. The optimum packaging is to eliminate both over-packaging and under-packaging, and fulfill the following factors.

a. Saving of packaging materials
b. Curtailment of packaging expenses
c. Adoption of appropriate measure to dispose scrapped materials of packaging.
d. The original function of packaging (Specialities of protection, promotion of marketing, convenience)

4. Especially, in the commercial packaging, it must be avoided to employ high degree of over-packaging to stimulate unlimited sales promotion. It is therefore, necessary to establish the adequate line as the optimum standard for commercial packaging in order to prevent wasting of packaging materials and provide a protection to the consumers. In conclusion, the optimum packaging can be contributing a great deal of saving of resources.

5. We have now established the optimum standard of commercial packaging early 1974, and have attempted the optimum packaging campaign with the cooperation of both manufacturers and consumers under the leader-ship of concerned authorities during the last two years, and as a result of successful campaign, the Korean packaging industry has made a great deal of improvement. Therefore I wish to take this opportunity to introduce our results to all participants of APF Congress, and I do hope this can be served as your reference.

Comprehensive Survey of

PACKAGING STATUS IN ASIA

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EDUCATING & TRAINING PACKAGING PERSONNEL

Packaging as an instrument of economic and industrial development
- Status of Packaging and the need for human resource development
- Training needs defined and demand for training
- Types of training programmes
- Training strategies in the form of programix, Programme content and curriculum development
- Incompany, Intercompany, Industry wise, orientation on the job, off the job training
- Evaluation of training output
- Interface between industry and training organisation
- Marketing of training programmes
- Future trends and prospects for training and education.

BALANCING NEEDS IN SELECTING MACHINERY

1. Points that must be considered in selecting machinery:
- know what are the exact needs,
- consult engineers from reliable packaging machine manufacturers,
- understand the high efficient operation of the machine,
- know what is an easy job and what is difficult for the machinery.

2. Present situation in Japan
- payability of investment for saving labour
- lining up of the machines according to the processes
- major difficulties and problems experienced in forming such an automatic line.

3. Interest in simple automation
- semi-automatic packaging machinery for diversity of products
- merits and demerits

4. Conclusion
The explanation may have been made in a kind of passive attitude influenced by the recent economical circumstances, but, surely there are quite a few organizations constantly planning operator-free machines.

PACKAGING MATERIALS — NEW AND OLD

1. New Developments in the Last Few Years in the Philippines on Bottles, Cans, Cartons, Plastics, etc.
2. New Packaging Materials in the Philippines
   a. Status and growth rate of pulp and paper
   b. Status and growth rate of glass
   c. Status and growth rate of plastics
   d. Status and growth rate of metal, tin plates, aluminum foil, collapsible tubes.
3. Changes in consumer product packaging.
   a. Motivating factors, i.e. packaging costs, availability of materials, regulation and consumer needs.
   b. Economic factors of cost and availability are dominant forces, consumer need is nearly as significant.
4. Food Packaging — Alternative Methods.
   a. Plastics vs. tins in margarines (PP, ABS, HDPE)
   b. Plastics vs. tins in ice cream (HDPE)
   c. Plastics for snacks
5. Pharmaceutical Products
   a. New plastic films
   b. New construction
6. Changes in Agricultural Products Packaging
   PP woven bags vs. jute bags

CONCLUSION:
The relevance of finding the economically suitable packaging materials for basic commodities in the developing countries as part of the government's attempt to lower commodity cost and lower inflation.

LAWS AND REGULATIONS AFFECTING EXPORT PACKAGING

The implications on international trade of national and international standards, laws and regulations regarding packaging were reviewed with specific emphasis on problems facing exporters in developing countries

Within this context Mr. Selin concentrated on regulations regarding fair trade practices, deceptive packaging, mandatory and voluntary consumer information, environmental protection and other present and future regulatory measures which will be difficult for developing countries exporters to comply with. In reality many of these requirements might be termed "invisible trade barriers", especially when the technical and commercial resources of exporters in the third world are considered from a practical point of view. The complexity of these regulations, the variations from one country to another and the constant changes and additions made aggravate the situation and make it very difficult for individual exporters and export promotion agencies to keep themselves informed about the current position in order to design their export packaging in compliance with the requirements. The lack of an up-to-date international information system in this context might lead to serious consequences such as rejection of export deliveries, non-acceptance of the trade and a damaged image among final consumers. Mr. Selin also endeavoured to forecast likely developments in the future and provided the participants of the Congress with a list of sources in OECD countries where information on existing standards, laws and regulations are obtainable.

THE RIGHT PACK FOR THE RIGHT MARKET

With the wide range of products available today there are major differences from the marketing point of view in the type of pack required. For example food product bought every day must have a package with immediate appeal, whereas a camera or typewriter bought infrequently requires a serious quality pack.

Markets differ by country and region. The right pack for a particular product in one country may well be useless in another country only a few miles away, therefore it is necessary not to look for just one right pack, but to study the customers country as well

In deciding how best to market a product in your own country and in another, it is essential to answer these questions:

In what kind of shop will the products be sold?

To what kind of customer?

How will the product reach the shop?

Are the packages in the right size for the customer?

THE STATUS OF PACKAGING IN ASIA

Twelve national packaging institutes or Governmental agencies in the Asian region collaborated in the survey conducted earlier this year on "The Status of Packaging in Asia". These were:

Australia	Hong Kong
India	Indonesia
Japan	Korea
Malaysia	New Zealand
Philippines	Singapore
Taiwan	Thailand

The fact that only about a third of the total number of countries in the region had sufficient packaging sophistication to be able to participate in the survey, tells the story, in a most compelling way, of the "Status of Packaging in Asia".

These twelve territories have an overall population of nearly 1,000 m. varying from 2.2 million in Singapore to almost 600 million in India. The levels of packaging development in the region are equally wide ranging. They extend from the ultrasophisticated development of Japan to territories which can, at best, be described as being in the "cradle" stage.

Likewise, the problems experienced in the region are diverse and at extreme ends of the development scale, or, to draw a simile from the description given by one institute of the climatic variations in its country from sub-zero temperatures to 50°C.

The Reports were produced as a result of a standard questionnaire submitted to each of the participating bodies. Not all of them were able to answer every question so the information is not by any means completed. It would, for instance, have been useful to be able to relate packaging to per capita GDP and so obtain a fairly accurate indicator of the relative importance of packaging in the national economies. But this has not proved possible. It is evident, however, that all countries, without exception, are placing great emphasis on exporting. The role of packaging must, of necessity, therefore, grow in importance.

Use of Materials

The nearest to a common basis for comparison that can be found from a study of the Reports, is the national per capita expenditure on packaging materials and, even then, in only six of the twelve countries surveyed.

Heading the list is Australia with per capita expenditure of US$150, followed by

Japan . . . . US$90
Hong Kong. . . US$28
Taiwan . . . . . US$20
Korea . . . . . US$11.8
Thailand. . . . . US$ 0.2

In absolute terms, however, Japan leads by far with a total figure of US$10,000,000,000 followed by

Australia. . . . . US$2,000,000,000
Korea . . . . . US$ 400,000,000
Taiwan . . . . . US$ 324,000,000
Hong Kong. . . US$ 120,000,000
Thailand. . . . . US$ 8,800,000

The figures given, making a total for six of approximately US$13 Billion are of the year 1974 and include both imported and locally produced materials.

Of the materials used, the overall average of the six countries indicates that the most important material is paper and board, absorbing 43.5% of total expenditure, then metal 18%, plastics 17.5%, glass 5.5% and the balance of 15.5% on a miscellany of other materials.

The value of exports of these six communities in the same year was

Japan . . . . . US$55,536 m.
Australia. . . . . US$ 9,200 m.
Taiwan . . . . . US$ 5,639 m.
Hong Kong. . . US$ 4,556 m.
Korea . . . . . US$ 3,724 m.
Thailand. . . . . US$ 2,516 m.

It would not be proper to compare value of exports with overall expenditure on packaging materials, since the value of material devoted to bulk commodity exports compared with retail unit packs varies so greatly, and much packaging will, in some cases be used for the domestic market. The export figures do, however, show the importance attached by these countries to export earnings.

In examining the situation with regard to packaging materials used in the 12 participating countries, only in two is there almost self-sufficiency in the supply of current requirements – in Australia and India. But again, an opposite extreme exists in the region. Japan and Hong Kong are almost entirely dependent on imported materials. While Singapore finds itself in the same position as Hong Kong and Japan in heavy dependence on imported raw materials it is, at the same time, an exporter of processed packaging materials.

In the other seven countries there is a mix between use of imported and indigenous materials. A number of countries which have large agricultural sectors are devoting considerable attention to the use of baggasse, bamboo, rice straw and jute as a material, particularly in the production of pulp for paper-making and for string. Some countries have other natural materials such as crude oil and rubber which can be developed.

Packaging Services

From the reports it would appear that there is a distinct relativity between level of packaging sophistication and the availability of packaging research and testing laboratories. In Japan and Australia comprehensive services of this kind are available followed next by India and Korea. These services are accompanied by extensive packaging standards. In Korea, for instance there are 55 standards. These four countries also have far reaching packaging laws and regulations. In Hong Kong and Singapore, laboratories for testing and research are fairly well established and are being expanded. Packaging laws and regulations in these territories are not yet as comprehensive as in Japan, Australia, India, Korea.

In other countries, recognition of the need for laboratory facilities is apparent and steps are being taken in some to provide the same. Take the Philippines for instance. The Packaging Institute there has taken the initiative to raise a considerable sum of money, as an initial fund, for the setting up of a Packaging Research Centre.

The availability of packaging consultancy services, again, seems to be tied to the quality and size of the research and testing laboratory facilities.

(to be cont'd on Pg. 8)

THE WORLD PACKAGING SCENE

I. INTRODUCTION

It's fairly common to refer to that great bulk of nations and peoples in the underdeveloped lands as the "Third World". Indeed, compared to the industrialized nations, it really is.

Its Packaging quality, too, is a far cry from what packagers in Europe are accustomed to. Still, it is increasingly clear that packaging consumption figures and quality are going to grow substantially during the next 10 years in the underdeveloped countries.

Future supplies of food for the industrialized nations will come from the fertile soils of subtropical and tropical climates, where agricultural productivity can still be multiplied. This means a sharp increase in the consumption of packaging materials and machinery.

Observers can expect major, and possibly very rapid, changes in the traditional packaging methods for a number of large volume, staple products such as tea, coffee, tobacco leaves, and natural rubber. The rate of implementation of large and ambitious projects to increase agricultural productivity will be an influencing factor in the packaging growth.

Investments in local production facilities for packaging materials will no doubt accelerate, especially in the plastics sector, where initial capital requirements are lower than for most other packaging materials. Still, many developing countries, such as Afghanistan, and Nepal, will have to depend on imported packaging materials for a long time to come. Many nations will have to rely on imports during the initial construction phase of their packaging industries: a case in point would be Sri Lanka, if it were suddenly decided to switch from the traditional packaging of tea in tea chests to the use of corrugated boxes or multi-wall paper sacks.

In the industrialized countries, on the other hand, some industries – in particular the pulp and paper mills – will sooner or later have to go to the Third World to secure their future supplies of natural, fibrous raw materials. In this context, it may be necessary to allocate funds for technology and research with a view to developing new materials indigenous to certain developing countries. For instance, bagasse, bamboo, rice or straw, could be used in the pulp and paper industry. The need to transfer packaging technology to the Third World through individual efforts or through international aid programmes will increase substantially, until a minimum saturation point and a multiplier effect have been reached.

If one looks closely enough, there are many incentives for manufacturers in industrialized countries to share their packaging expertise with the developing countries – quite apart from the consideration that improved packaging would prevent food spoilage in countries where hunger is a priority problem. Industrialists who are sometimes critical of the quality, quantity, and methods of implementation of foreign aid programmes are too often reluctant to contribute their own experience. A more open-minded approach will be needed if the standards of performance regarded as critical of successful aid programmes to a Third World are to be achieved.

II. LATIN AMERICA

The growth of supermarket chains and department stores throughout Latin America, combined with the steady expansion and modernization of the manufacturing sector as a whole, is spurring a revolution in the consumer packaging industry. Aerosol cans, shampoo in non-breakable plastic bottles, automotive lubricants in PVC containers, candy in polypropylene film bags, soft drinks in easy-open cans, home appliances in shock-resistant polystyrene cases and hundreds of other innovations which 10 years ago had the look of imported luxuries, are now being produced in major countries.

PACKAGING: No longer a luxury

At the same time, the old idea that packaging was some kind of North American luxury that added too much of a cost burden for Latin American buyers has been rapidly dying. Packaging is correctly seen as a crucial aspect

(to be cont'd on Pg. 9)

PACKAGING CONSULTANTS

Here is a list of packaging consultants whose services are available to developing countries:

Mr. Stephen M. Barker, Manager of Marketing Development, Continental Can Co., U.S.A.

Consultants and researchers in
a. management of packaging
b. package marketing
c. package evaluation

Founder of Packaging Strategy Associates, a consultancy organisation. Lecturer and contributor of articles covering a wide field in packaging.

Frank W. Green Co./Point O'View Inc., U.S.A.

Management consultants and professional industrial engineers and specialists in search and training programmes in all phases of packaging and distribution.

Area of specialisation includes concepts, systems, contribution to profitability, productivity, international transportation, air cargo, pilferage, unitizing, palletizing, containerization, marketing, distribution packaging, research and training

Contributors of numerous articles to technical publications.

Mr. George Gero, packaging and physical distribution consultant, U.S.A.

Specialising in consumer package design and development; distribution systems; protection; semi-bulk packaging and distribution; testing; mechanisation and cost reduction.

He is the author of many articles on packaging and distribution.

Mr. Leslie Josiah Buck, packaging engineer, Australia.

Specialising in organising and conducting packaging education programmes and seminars; packaging materials and geometry, including cottage industry package development; and total packaging systems concepts, including feasibility studies, export package development and military package development. He has contributed numerous articles on packaging subjects to trade journals.

India

5 Quality Printing Press of Bombay for its PVC laminated corrugated case for transistor radio The award is made for the technical features in the use of board as an external carrying case in place of traditional leather which is a scarce and expensive material

6. Avadhood Industries of Bombay for its reinforced corrugated boards. The solution presented by the reinforcing of low grade paper with glass, cotton, rayon or nylon fibre is excellent, particularly where good quality paper is an expensive and scarce raw material.

Japan

7. Dai Nippon Printing Co. Ltd., and Dai-Ichi Seiyaku Co., Ltd., both of Tokyo, for their new flexible packaging material called Silica film. This material is a technical innovation for high moisture-proof packaging, such as vitamin compounds, hormone drugs, etc. It is a film type packaging material with a dessicant (Silica-gel micro powder) containing laminated film.

8. Tokyo Shibaura Electric Co. of Kanegawa for its package for circular fluorescent tubes. The judges were impressed by the total design of this package, its structural economy, in the use of materials, consumer appeal and graphics.

Korea.

9. Mr. Hyuan Ko of Kwanchu City for his packaging of indigenous drugs. The judges were very impressed by this Asian approach to packaging design, and the traditional aesthetic appeal is admirably developed for the market for which it is intended (the domestic market).

Philippines

10. Wood Pattern Inc. of Pasig for its wood box for choker necklaces. Local materials are used to create attractive results in a gift product which has the fee of quality

CERTIFICATE OF MERIT

India

Oriental Containers Ltd. of Bombay for its pilfer-proof "lidseal" can. It is a saving of material and makes the product pilfer proof

Japan

Albion Cosmetic Co of Tokyo for the Albion glass polyester perfume bottle a noteworthy technical development

Kamicon Kyogo Co Ltd. of Nagoya for its packaging case for ventilation fan. The ingenious combination of honeycomb and corrugated board overcomes the environmental problems created by foam plastics.

Package Boutique Jack & Betty for the very attractive range of gift boxes -- simple but very appealing.

Korea

Korea Design & Packaging Centre for its consumer package for ginseng which makes use of an important local material Pawlonia wood

The Panel of Judges comprised the following

Mr Johan Selin (ITC, Geneva) Chairman
Prof. R.K. Chowdhary (IIP, India)
Mr. Jack Ings (NPA, Australia)
Mrs. Orassa Jirapinyo (TISI, Thailand)
Mr. Kim Jong Whan (KDPC, Korea)
Mr. L. de Marcaida, (Philippines)
Mr. H. Nakai (Japan)
Mr. H. Steiner (HKPC, Hong Kong)
Mr. D.D.H.S. Wickremeratne (SLIP, Sri Lanka)

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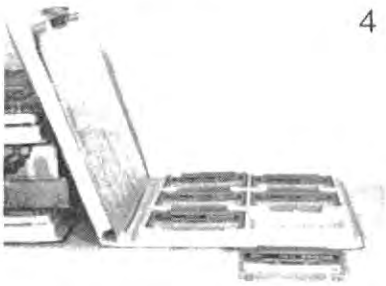

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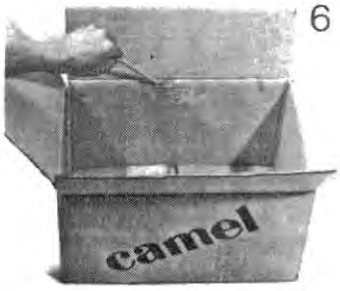

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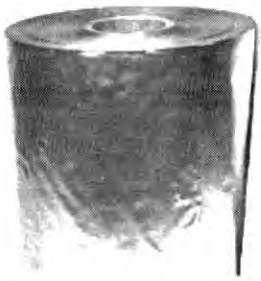

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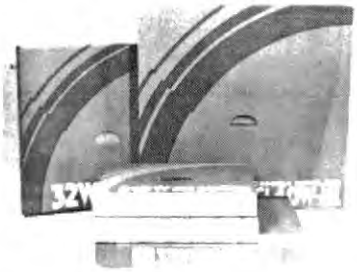

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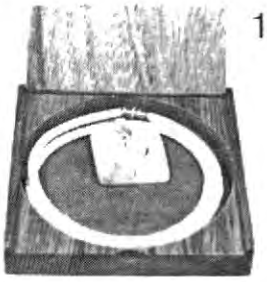

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pitfalls involved and said that if care and attention was paid much money could be saved and headaches avoided.

Paper 5 – "Packaging Materials – New and Old." Mr. Fernando Z. Vicente (Marketing Manager, Mabuhay Vinyl Corporation, Philippines) touched on the materials traditionally used for packaging, in particular paper and board, and explained the uses to which newer materials could be put. He showed numerous slides to emphasise the points he made.

Paper 6 – "Laws and Regulations Affecting Export Packaging." Mr. John Selin (Adviser on Export Packaging, International Trade Centre, Geneva) spelled out the complexity of the jungle of laws, regulations and standards affecting export packaging. These regulations added to the difficulties of developing countries in promoting their exports, he pointed out, but unless they were understood and complied with, there was little hope for improving export earnings.

Paper 7 – "The Right Pack for the Market." Mr. John Briggs (Deputy Chairman, Norcros Ltd, England) discussed the marketing aspects of packaging. He said there was no single "right pack" –– that the right pack for one market might be totally unsuited for another. He posed three questions every packaging officer should ask himself (1) "In what kind of shop will my products be sold?" (2) "To what kind of customers?" (3) "How will my products get to the shops?" The correct answers to these questions would help to produce the "right pack for the market," he said.

Paper 8 – "The Right Pack for the Product." Mr. Kim Hee Duk (President, Korea Design & Packaging Center) presented a case study on how a developing country had been able to ensure the right pack for the product.

Paper 9 – "The Social Considerations." Mr. Jack Ings (General Manager, Pacific Can Ltd, Melbourne, Australia) spoke at length on the growing voice of the community in relation to packaging and sounded the warning that to ignore these views would result in the industry being subjected to massive legislation.

'ASIASTAR' '76

The 1976 "Asiastar" competition, sponsored by the Asian Packaging Federation and held in Hong Kong in conjunction with the 3rd Asian Packaging Congress, attracted a total of 35 entries from six countries.

Judging, by a Panel of nine Judges, took place on 30th August and the presentation of Awards was held on 1st September at the conclusion of the APF Congress. Each entry was carefully examined separately by the Jury.

Ten "Asiastars" were awarded –– two to Australia, two to Hong Kong, two to Inida, two to Japan, and one each to Korea and the Philippines. In addition to the "Asiastars," the Judges felt that a number of other entries warranted recognition and awarded five Certificates of Merit –– one to India, three to Japan and one to Korea.

The Judges were very greatly impressed by the high standard of packaging that was submitted to them for consideration. Those who had participated in previous "Asiastar" judging noted the very great improvement in the quality and innovation that had developed in the intervening period. They were of the opinion that many of the packages were of world standard and noted that one of the most encouraging signs in the region was the increasing attention being given to solving domestic problems with domestic solutions while at the same time showing a noticeable improvement in the standard of export packaging.

The following "ASIASTAR" Awards were made:

Australia

1. The Comalco Can Company of Yennora, N.S.W. for its can top known as "Pop Top" which is used for beverages such as soft drinks and beer. This can top is a technical innovation and an improvement on the pull-ring concept. Great consideration has been given in the design of this top to environmental factors and consumer convenience.

2. S. Wynn and Co. Pty. Ltd. of Nunawading, Victoria, for its Samuel Port bottle. The award is made for the image of good quality of the wine itself. The presentation is enhanced by the use of authentic sealing wax in place of the usual capsule.

Hong Kong

3. Sam Fong Cosmetic Co. Ltd. for its Fanbo Elegance Skin Care and Make-Up Collection. The judges were impressed by the elegant styling of this series of cosmetic packages and the strong family appeal it presented.

4. Wiseman Plastic Product Company for its PVC cassette album. The usefulness of this cassette album will be obvious to all who have had the problem of trying to sort out cassette tapes. In addition to its convenience in carrying and storage, the protection of the cassettes is commendable.

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1976 VOL.2 NO.3

ASIA'S PACKAGING NEEDS STRESSED IN DETAILED ANALYSIS AT CONGRESS

The need for more information, consultancy services, testing and development, and education were among the main conclusions drawn from the Papers presented and discussions on them at the **3rd Asian Packaging Congress** held in Hong Kong on 31st August–1st September, 1976.

More than 120 participants, half of them from overseas, took part in the two-day Congress at which nine Speakers, including international experts on packaging, delivered Papers covering a wide range of subjects dealing with the use of materials, selection of machinery, education, environmental considerations, marketing and the complexities of laws and regulations affecting export packaging.

The Congress opened at the Hongkong Hilton but due to the lack of air-conditioning following a plant breakdown, the venue was changed for the second day to the Convention Centre.

The President of the Asian Packaging Federation, Mr. K.C. Fung (who is also Chairman of the Hong Kong Packaging Council, organisers and hosts to the Congress), welcomed all participants and expressed his especial pleasure at the presence of Mr. R.W. Coughlin, current President of the World Packaging Organisation (WPO), Mr. K.S. Lo, immediate Past President (WPO), and Mr. John Briggs, Founder President (WPO).

The Congress was officially opened by Mr. D.H. Jordan, Director of the Commerce and Industry Department, Hong Kong, who expressed the hope that the Congress would stimulate more local manufacturers to think again about packaging, an important subject for Hong Kong which was so heavily dependant upon export trade. He said that though the standards of packaging in Hong Kong had improved there was still much to learn from others.

Mr. Robert Coughlin presents his Paper following the formal opening of the Congress. Other Speakers and officials are seen on the dais.

A brief review of the Papers presented was given by Mr. Fung in his speech bringing the Congress to a close. He drew the following sketches:

Paper 1 – "The World Packaging Scene." Mr. R.W. Coughlin (U.S.A.) dealt with some of the new developments in packaging around the world, ranging from North America, Latin America, Europe, including the Eastern European countries, to the newly affluent Middle East right across the land mass to the Asian region. His references to food packaging were of particular interest.

Paper 2 "The Status of Packaging in Asia." Mrs. Susan Yuen (Hong Kong) presented the results of a comprehensive survey conducted in the region and pin-pointed two main common problems (1) a great shortage of technical know-how and technicians and (2) the high cost of raw materials.

(Mr. Fung took the opportunity to announce that the APF Board, in conjunction with the Economic and Social Commission for Asia and the Pacific were taking steps to set up a regional Packaging Teachers' Training Programme. This should result in due course, he said, in the setting up of national teaching programmes and the production of a steady flow of packaging technicians.)

Paper 3 – "Educating and Training of Packaging Personnel." Prof. R.K. Chowdhary (Director, Indian Institute of Packaging) made the keen observation that one may be misled to conclude that the desired level of knowledge required for packaging was already available in institutions of learning. He said the myth of this misconception was exploded by the fact that the existing nature and standards of education currently obtaining did not expose the students to the various characteristics and attributes needed for packaging.

Paper 4 "Balancing Needs in Selecting Machinery." Mr. Hidekazu Nakai (Managing Director, Rengo Packaging Systems Co. Ltd, Japan) gave some very useful "do's" and "don'ts" in making decisions when buying packaging machinery. He warned of the many

to be cont'd on Pg. 2)

TESTING AND ANALYSIS

6.13 A NEW TECHNIQUE FOR DETERMINATION OF FLUTING RUNNABILITY CHARACTERISTICS

High and low defects in corrugated board adversely affected the strength, the stiffness, printability and the general appearance of the board. In this article, a new laboratory method is introduced for the evaluation of fluting runnability. The ability to maintain a perfect profile after passage through the corrugator is one of the main factors determining the runnability of flutings. The applications of this new technique and the influence of some parameters which are relevant to runnability is studied.

(Paperboard Packaging, March 1976. 4p.)

6.14 HOW SHIPPING CONTAINER SURFACES RESIST SLIDING WITHIN UNIT LOADS

To-day's distribution systems use unit load as much as possible. Due to the environment of the load, the containers within a unit load can cause a displacement of one container over another. The size of the displacement depends on the characteristics of the surfaces of the containers, the intensity imposed acceleration from the environment, the stacking pattern on the pallet, and the deformation of the containers. In this article, an extensive study on the surface properties of three types of containerboards were carried out and the testing results were also described. 6 Tables. 2 Figures.

(Package Engineering, Dec., 1975. 3p.)

6.15 TESTS SCRUTINIZE HEAT SEAL BEHAVIOUR'INTEGRITY, PROBLEMS

This article concludes coverage of presentations at the NFPA's recent Heat Seal Symposium in Atlanta. It shows that seals are subjected to tests in a "total package" context, from machine to end-use; retort pouch seals are analyzed for basic fusion, burst, tensile and wrinkling behaviour, and advantages of gradient seal testing are enumerated.

(PFF Converter, April 1976. 3p.)

PACKAGING IN GENERAL

7.11 OVERPACKAGING TARGET OF BILL

The extra flap, wrapping or box which makes a product stand out in the crowd could soon be illegal in the United States. Claiming that excessive packaging reduces natural resources, adds to solid waste problems, increases the cost of the products and often deceives the customers, the law will ban oversized packages unless it is necessary to protect the sanitary quality of the product or to prevent pilferage.

(F & D Packaging, March 1976, 34:4. 1p.)

7.12 COSMETICS FIRMS LOOK AT WAYS TO CONTAIN COSTS

Ways to contain costs in the packaging of toiletry, cosmetics and perfumery are examined, such as increased modernisation of production processes, standardization of weights, measures and sizes of containers, less use of skillet and fitment insertions. In view of the various questions in aerosols, it is suggested that all manufacturers of spray equipment carry out research into producing an attractive, reliable and inexpensive pump spray. 4 photographs of newly developed packages.

(Packaging Review, March 1976. 2p.)

7.13 PHARMACEUTICAL AEROSOLS AND THE OZONE CONTROVERSY: PROPELLANT ALTERNATIVES

The use of mechanical devices and aerosol for dispensing pharmaceuticals is discussed. In face of the ozone problem with the possible banning on the use of propellants 12, 11 and 114, propellants such as octafluorocyclobutane (C318) may find a use and its expensive cost may become secondary.

(Aerosol Age, March 1976. 2p.)

7.14 ORDER FAT, OIL SOURCE LABELLING

The FDA has taken another step towards requiring full ingredient disclosure on foods by ordering manufacturers and packers to identify on the product label the source of fats and oils. Fats and oils will now have to be identified by source such as cotton seed oil or beef fat rather than the presently allowed animal, vegetables or shortening designations.

Details on this regulation are discussed and illustrated in this article.

(F & D Packaging, Feb. 1976, 34:3. 3 p.)

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Asian Packaging Information Centre,
Eldex Industrial Building, 12th floor,
21A, Ma Tau Wei Road,
Hunghom, Kowloon.
Hong Kong.

SPECIAL PACKS

5.17 LABEL SECURES VIAL TO CARD

Mark Allen Co Kontrol Dental Floss is marketed in a vial sealed to a card with acetate labelling. It eliminates 2 sets of costs: the material that would be involved in a blister or stretch package, and the operations and labour involved in forming the blister or pocket, orienting the basic package and conveying the vial to the card packaging from printing equipment. 1 photograph of the package.

(F & D Packaging, April 1976. 2p.)

5.18 STRETCH-FILM WRAPS HOLD TIGHTNESS DURING LONG DISTANCE SHIPMENTS

By using 20 Weldotron Stretch-film wrapping, Tyson Food Inc., an integrated chicken producer has managed to increase its production rate by nearly a hundred percent. Before switching to stretch film, the company used shrink film wrappers but the trouble the company found was the film tending to lose tightness over long distance shipment.
4 photos.

(Package Engineering, March 1976. 2p.)

5.19 NEW CARTON UPS SHELF LIFE

A food product company wanted to protect the quality of its frozen egg roll products, as the wax carton in use did not provide a long enough shelf-life. The company then took up a PE-lined carton with a proprietary heat-seal unit and a reduction in moisture/vapour loss extended the shelf life. The carton is coated both externally and internally and this prevents scuffing and scratching of the printed surfaces. 1 photo.

(F & D Packaging, Feb.1976, 34: 3. 2p.)

5.20 BLOOMING USE FOR CO-EXTRUSION ON FILM

A co-extruded plastic bag can keep plants fresh for longer periods of time when the plant is stored in the bag for transporting and where there is a considerable amount of fluctuation in temperature. Young seedling trees are lifted, bundled and placed bare-rooted in the bag and the end of the bag is twisted and closed with a wire tie. The advantages of this new package over the conventional packaging materials include a continuous exchange of gases as well as integrity provided by the high barrier films. Tests also indicated the package is also suited for the packaging of food like apples, potatoes and asparagus. Over the years, a great many tests have been carried out and results showed an acceptance of the unique "Plant Fresh" material as a viable product for a wide variety of applications in the Canadian market.

(Canadian Packaging, March 1976. 2p.)

5.21 STRETCHING PAPER ENSURES SAFE TRAVEL OF GLASSWARE

Following a move from using expanded polystyrene to stretchable corrugated kraft paper, a glassware manufacturer in Ireland is making major savings in packaging costs by increasing load capacity in freighting. By using the kraft to wrap glasses individually and then packing them inside a corrugated carton which is subsequently loaded into a double-wall outer shipping container the company saves 20 percent on previous packing cost for a four glass consignment.

(Packaging News, March 1976. 1p.)

5.22 SELF-ERECTING CARTONS IN BOARD PE COATED BOTH SIDES

Boxfoldia Ltd. can now supply a range of self-erecting cartons produced from board coated on both sides with polyethylene. The new range of cartons should prove to be of considerable interest to packers of meat, fish, confectioneries and frozen foods. They combine the moisture and grease resistance qualities and the superior gloss of the polyethylene coatings with the convenience of a pack that can be erected quickly without the need for special equipment.

(Packaging, March 1976. 2p.)

5.23 SEALER CARRY TOUR OFFER

A new range of industrial Tipper Clippers for sealing sacks and large bags with metal clips is introduced by Ben Langen (U.K.). The unit is portable and used mostly by food processors to clip and seal a variety of products packed in natural plastics, fibrous and cellulose casings. These will include units with special vacuum nozzle attachments for closing vacuum-bagged meat-cuts and other foods.

(Packaging News, March 1976. 1p.)

5.24 SPECIAL CONTAINER SOLVES UNIQUE PROBLEM

A special tailor-made container solved the problem of transporting assembled space shuttle wings to Los Angeles where the existing cross country rail or truck was impossible. The container was made up with nylon-reinforced plastics and they are made into halves with foams encapsulated in the containers. 1 photo.

(Canadian Packaging, March 1976. 1p.)

« cont. next page »

system is illustrated in both diagram and photograph.

(Modern Plastics Int., March 1976. 2p.)

3.21 WHY MORE AND MORE PEOPLE ARE GOING TO STRETCH WRAP

Recent developments in stretch-wrap equipment and materials have changed the economics of protecting unitized loads. The trend involves both the rotational and web-wrap systems. Innovations in rotational-wrap systems are machines that apply extra layers of film to the top and bottom of the loads for greater stability by spiral-wrapping or multi-roll set-ups. The latest dual-roll web-wrap systems have down-played the pusher-plate technique of tensioning the film with bars. The advantages of PE and PVC stretch films are discussed. Six photos of machines.

(MMH, March 1976. 4p.)

3.22 HEXAGONAL GASKET VALVE SYSTEM FOR FAST FILLING OF COMPRESSED GAS

Precision Valve Corporation, USA, have developed a valve which claimed to solve the problems of marketers packaging aerosols with soluble gases, whether the equipment used is gasser shakers, saturators, under-the-cap or pressure fillers. This Hexagonal gasket valve features a new line of components, including low delivery housings, micro-capillary dip tubes and buttons with improved mechanical breakup inserts. The valve allows fast carbon dioxide filling of more difficult products, and if under-cap filling must be used, the components offer improved spray performance through actuators, stems and micro-capillary dip tubes.

(Australian Packaging, March 1976 1p.)

HANDLING, DISTRIBUTION and STORAGE

4.21 FREIGHT CONTAINERIZATION, PALLETIZATION AND THEIR INTER–RELATIONSHIP WITH PACKAGING

This article discusses the advantages and problems in international standardization of freight containers, pallets and their relationship with package sizes. The container/pallet and pallet/package compatability questions are discussed with the aid of photographs and charts on the dimensions of containers, pallets and packages. Many useful hints are listed on the constructional features of wooden pallets.

(SABS-Bulletin 5, No. 5, January 1976. 9p.)

4.22 LOW COST WAY TO SECURE PALLET LOADS – USE ANTI-SLIP AGENTS

The types of treatment in reducing the sliding action of fibreboard containers for pallet loads are reviewed. The use of break-away adhesives is discussed with photo-loads are reviewed. The use of break-away adhesives is discussed with photographs illustrating the applicator and palletised load.

(Canadian Packaging, Feb. 1976. 2p.)

4.23 IN-PROCESS MATERIAL HANDLING

The flow of materials through manufacturing is the physical manifestation of cash flow through the business and in-process material handling is a major area of cost reduction in manufacturing. Its major elements and guidelines are listed. A checklist is also provided that includes the common denominator handling unit and balancing work stations. The equipment to implement material flow and the high rise S/R systems in manufacturing are discussed. One picture of typical containers used in in-plant systems.

(MHE, March 1976. 5p.)

4.24 SURVEYS INDICATE THAT POLYPROPYLENE STRAPPING WILL REPLACE STEEL, IS CHEAPER, EASIER TO USE

Cost and performance data in a survey in corrugated industry show polypropylene strapping as the best primary non-metal unitizing material. Its advantages are discussed and some guidelines are given. Supply will remain good and steel strapping is only good for long hauls and heavy loads.

(Paperboard Packaging, April 1976. 4p.)

4.25 STRAPPING SYSTEM A STEP IN PLANT'S MOVE TWOARD MECHANIZATION

Stone Container Corp., a corrugated board converter in the U.S., faced problems as their production increased. The company then decided to implement their handling facility by using a sophisticated handling and unitising equipment to handle their growing volume efficiently. Toward this, the company employed a fully automatic conveyor to deliver their products in the factory and an efficient strapping unitiser to make a good package by using a low-cost copolymer strapping material.

Boxboard Containers, March 1976. 3p.)

MATERIALS cont'd

1.32 NEW HORIZONS FOR 'PROPAFILM'

The article reviews briefly the development of 'Propafilm' in packaging (the 'O', 'C' AND 'M' grades) and their properties and limitations. Its principal applications are discussed: packaging potato crisps and snack foods, biscuits, sugar confectionery, tobacco products, laminates. Then the article looks at the changing patterns of demand and markets and at how ICI's new arrangements will function. 3 figures compare the water vapour transmission of propafilm with cellulose film.

(Plastics Today 52, Dec. 1975. 4p.)

MACHINERY

2.13 AUTOMATIC PAPER SACK LINE FOR RICE

Rice is packed in Japan in open-mouth paper crossbottom sacks. In consideration of the products to be packaged and the necessary handling of the package, the package is designed to have a straight cut-off at the filling end and the bottom is of the stepped type. These sacks have so far been manufactured in the conventional method in two separate operations. Such time-consuming work can now be eliminated with this high-speed machinery using a three plies waterproof kraft paper.

(Packaging, March 1976. 1p.)

2.14 VACUUM FORMER DRAWS LARGE SHAPES FASTER

A new vacuum forming machine claims to provide flexibility and speed of operation to form large and deep shape plastic containers. Features of this new machine include a double independent vacuum system and all usual vacuum formable materials are applicable on the range.

(Packaging News, March 1976. 1p.)

2.15 GLUER'S QUICK SETUP TIME HELPS PLANT REDUCE BACKLOG

Carton Trade Services in Canada installed a straight-line untimed gluer, a Compagnoni-Silvestrin CS-90 by Ex-Cell-O. The most important feature is its unusually fast changeover time compared with right-angle machine. Six photographs illustrate the glueing process.

(Boxboard Containers, Jan. 1976. 3p.)

2.16 SKIN-PACK FOR ENGINE PARTS

In order to isolate and secure each delicate component and ensure that the kit of parts arrives at its destination intact, Stuart Turner Ltd. of U.K. has now installed an automatic skin-packing machine for their steam engine kits. With this Trans-Seal machine, a web of heavy duty copolymer film is first heated until soft and finally bonded to their base card. The company now find that one man can skin-package up to three times as many model steam engines in a day as could be packed by the old method. 1 photo.

(Packaging, March 1976. 1p.)

2.17 CREATIVE PACKAGING: TIN BOXES AND PVC CONTAINERS

Wilkie and Paul Ltd. of Edinburgh is visited to study its production of PVC film by calendering following extrusion and thermoforming operation of PVC sheets. 2 photos of packages and 2 on machinery.

(Tin & Its Uses, 1976, No. 107. 2p.)

2.18 FROM MANUAL TO AUTOMATIC ASSEMBLY

In Denmark, a candle manufacturer packed their candles in cardboard boxes. All the boxes used for the different types of candles used to be erected by hand, but the company has now installed a package line in which the boxes are automatically erected and sealed. This line includes an automatic filling device, and the candles are packaged much faster than before.

(Scandinavian Pack., 1975. 1p.)

2.19 HEAT SEALS BY ULTRASONIC FRICTION

In ultrasonic sealing, intense vibratory energy is transformed into friction energy, producing a weld. For packaging applications, two ultrasonic sealing techniques are generally employed; one is the "plunge" method, the other the "continuous" method. In this article, the use of ultrasonic technique is discussed and it is pointed out that this technique is gaining growth and acceptance in the industry. A US machine by Branson is introduced.

(PFF Converter, March 1976. 2p.)

NEW TECHNOLOGY

3.20 WHAT'S EXCITING ABOUT STRETCH-BLOW? IT ADDS MUSCLE TO BEVERAGE BOTTLES.

32- to 64-oz. bottles can be produced today by stretch-blowing at less cost from plastics than from glass, with the added advantages of improved safety, weight savings during distribution and takehome. Two systems are offered to bottlers: high speed more than 10,000 bottlers/hr. and moderate speed around 4,000 bottles/hr. with versatility and modularity. The distinctive tpT machinery

MATERIALS

1.24 WHAT'S HAPPENING IN FLEXIBLE PACKAGING CONVERTING

From the view point of suppliers of converters, the flexible packaging converting industry is always in a healthy condition and will continue the next few years with solid and modest growth. Market demands show prospects for the continued growth of high clarity packaging resins and metallised films. In other areas, the developments in laminating adhesives are moving to meet the requirement of new high-demand flexible packaging structures, and that indicates the demand for extrusion coating resins and co-extrusion systems show good promise of continued growth.

(PFF Converter, March 1976. 1p.)

1.25 IN FILMS FOR PACKAGING, THE FUTURE BELONGS TO COMPOSITE STRUCTURE

With new innovations in co-extrusion and lamination technology, packagers are allowed to use specialty film in order to fulfil their requisites. In this article, specialty films produced by lamination like the polyester laminates and coextruded films like the Cryovac, Saranex and Cadillac are introduced. It forecasts a growth of using these films in food packaging. 5 photos.

(Modern Plastics Int., March 1976. 3p.)

1.26 A REAPPRAISAL OF THE FUTURE

The packaging industry facing declining consumption, the risk of raw materials shortages, intervention to protect the environment and legislation is discussed in the article. A brief account is given of the future prospects of the four largest categories of packaging: glass containers, plastics, metal containers, paper and cardboard packaging. 3 colourful photographs of packages.

(Scandinavian Packaging, 1975. 4p.)

1.27 A FEW POINTS TO WATCH IN PROCESSING HDPE FILM

HDPE is made from resins ranging in density from 0.941 to 0.965 g/c.c. with a melting index between 0.4 – 0.8 dg./min. Because of the ease of orientation, the film can be made with high unbalanced properties, and if too much reduction of the melt thickness is caused by high windup speeds, the properties across the direction can be poor and such problem can be avoided by proper processing of the resin. Some points to watch for in processing this resin is discussed in this article, including the blow-up ratio and melting temperature.

(Canadian Packaging, March 1976. 1p.)

1.28 NEW FOOD GRADE CO-POLYESTER ENTERS BLISTER PACK SCENE

Kodar A-150, a copolyester developed by Eastman Chemical Products for blister packs, makes possible an unoriented sheet combining strength and clarity, and lending itself to a rapid thermoforming cycle. A table is given of its properties.

(Package Engineering, Jan. 1976. 1p.)

1.29 HDPE FILM – A STRONG CONTENDER FOR PAPER PACKAGING MARKETS

Due to its water-proofness, gloss and the ability to be colourfully printed the HDPE is penetrating deeply into the markets of papers. Also, the film is a good barrier to moisture and more resistant to oils and fat so this material is extensively used for bags; carrier bags, check-stand bags, and even packaging of butter and margarine. Discussed in this article is the status of the use of this packaging material in Canada and a forecast of its growth in the coming years.

(Canadian Packaging, March 1976. 2p.)

1.30 NEW PLASTICS MATERIALS FOR PACKAGING FILMS

The packaging industry is always looking for new materials with improved properties at the same cost or with similar properties at lower cost. The properties of some of the more recent film forming materials are examined in this article. Materials described include ionomer, polycarbonate, polyimide, polyurethane, Parylene and Barex. Special properties of these materials and their applications are discussed and illustrated.

(Packaging Review, March 1976. 3p.)

1.31 CELLO WRAP GUARANTEES FRESH SNACKS

Cellophane wrappers are helping Handy Pax Inc. keep its P'Nut Cheese crackers fresh. Four cracker sandwiches are packed in V58 polymer cellophane from the Olin Corp. Release coating on one side helps provide a moisture barrier. The overwrap not only provides added protection to the flavour but also enhances the appeal of each package throughout the distribution and display cycle.

(F & D Packaging, March 1976, 34:6. 1p.)

"acquaint the reader with the elements of packaging costs to the extent that he shall be able to manipulate cost estimates in the most common packaging media; glass, metal, paper and paperboard, plastic, and flexible laminations."

A secondary purpose, he explains, is to provide a perspective on packaging which goes beyond the strict consideration of materials and operations. Design is discussed because there is a cost for including it, and there is a cost for not including it in any package under development. Promotional packaging, in another chapter, explains the consumer-oriented incentives which packaging can contribute, and how to analyse the costs of packaging used in this way. A short discussion on contract packaging rounds out the picture, both because it is a widely used service and has some unique aspects of interest to the packager.

PACKAGING MACHINERY SUPPLIER

Here is a partial list of packaging machineries available to developing countries.

Semi-automatic labelling machine that applies labels on cartons, bottles, jars, vials, ampoules, etc. (Newman Labelling Machines Ltd., England.)

Biscuit wrapping machines where each slug of biscuits is carried to the cut wrapper and pushed through, the longitudinal seal is formed and the pack passes through end folding and heat stations.
(Rose Forgrove Ltd., England)

Intermittent motion vertical cartoner. The cartons are extracted for the hand loaded magazine, erected and the bottom flaps closed/glued. The product is then loaded manually or automatically into the carton and the top flaps are closed/glued.
(Rose Forgrove Ltd., England)

Overwrapping machine that overwraps cartons and full-depth trays in heat sealing cellulose or polypropylene films at the rate of 25-50 packs per minute.
(Rose Forgrove Ltd., England)

Flowpak continuous-motion horizontal wrapping machine that forms the popular pillow pouch pack, horizontally fills in products and seals.
(Rose Forgrove Ltd., England)

Semi-automatic pressure sensitive labeller that "stamps" a label automatically on a carton, bottle, can, bag or any other reasonably small container fed by operator.
(Avery Label Systems, U.S.A.)

Vac-Pack powder filler for dust free filling of non-free flowing drug, cosmetic or food powders into rigid or semi-rigid containers, from one ounce to five pounds.
(Pneumatic Scale Corporation, U.S.A.)

Pneumaflow jr. filler for filling liquids into glass, metal or plastic containers in sizes ranging from less than one ounce to one gallon at speeds up to 50 per minute.
(Pneumatic Scale Corporation, U.S.A.)

Semi-automatic two-head air cleaner for air cleaning new glassware at speeds ranging from 20 to 50 containers per minute.
(Pneumatic Scale Corporation, U.S.A.)

Hot melt adhesive application system that melts, stores and applies hot melt adhesives, designed for typical top and bottom case sealing operations.
(Nordson Corp., U.S.A.)

Blow moulding machine – single, double and large size station – for the production of hollow plastic articles like bottles, jerry cans, technical articles, drums, etc.
(BEKUM Maschinen-Export GmbH & Co., W-Germany)

3RD APF CONGRESS
IN HONG KONG

ASIA IN THE WORLD OF PACKAGING

SUBJECTS

THE WORLD PACKAGING SCENE
THE STATUS OF PACKAGING IN ASIA
EDUCATING & TRAINING PACKAGING PERSONNEL
BALANCING NEEDS IN SELECTING MACHINERY
PACKAGING MATERIALS – NEW AND OLD
THE RIGHT PACK FOR THE PRODUCT
THE RIGHT PACK FOR THE MARKET
THE SOCIAL CONSIDERATIONS
LAWS AND REGULATIONS AFFECTING EXPORT PACKAGING

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31 AUGUST – 1 SEPTEMBER 1976

REGISTRATION HONG KONG PACKAGING COUNCIL
Eldex Industrial Building, 12/F, Unit A, 21 Ma Tau Wei Road, Kowloon, Hong Kong. Cable Address "FEDINDUSTRY"

BASIC NOTES ON THE USE OF ALUMINIUM FOILS IN PACKAGING

Aluminium is one of the earth's most common elements, exceeded only by oxygen and silicon. It is clean and sterile after annealing. Foil is not a nutrient for micro organisms, is non-toxic and is safe to use in contact with most foods, drugs and cosmetics. It has no intrinsic taste or odour. Gauges heavier than 0.001 inches have zero permeability. Coating or laminating with other materials blocks the pinholes in gauges. It is impervious to light and most types of grease and oil at either high or low temperatures. Foil reflects up to 95% radiant heat, acting as an insulator when used on the outside of a package or in conjunction with an air space on the inside of the package. On the other hand, foil has high thermal conductivity which permits it to be heated and cooled rapidly.

Foil will not heat seal by itself, but requires the use of heat seal coatings or films, which are readily applied. Foil has fairly low tear strength and is attacked by alkalies and certain strong acids. This is remedied by combining foil with other materials such as paper, paperboard, plastic films, coatings, etc.

Unsupported plain foil is now commonly found in the home for household, freezer, and broiler purposes. Commercially, it is used as a wrapper material for hard candy, yeast, chocolate, as a florist wrap, and milk bottle closures.

Another market is for all-foil containers in which foil in the heavier gauge is used for frozen fruit, meat, chicken, and tuna pies, as well as, prepared and cooked foods of all descriptions. In one single foil container, food can be frozen, stored, shipped, sold, heated and served on the table.

GLUE LAMINATION

This is the bonding of foil to paper by means of an aqueous glue.

This type of combination is found in labels, overwraps, insulation, can liners, and a variety of other end uses where we want a simple combination of foil and paper.

WAX LAMINATION

This is another simple combination, usually of foil to paper, but wax, being one-hundred percent solid, has no solvent or moisture to drive off, commonly found in cigarette liners, confectionery wrappers, sugar coated cereal liners, and printed foil carton overwraps.

POLYETHYLENE LAMINATING

This has become increasingly important in the packaging industry. The polyethylene adds strength, improve moisture barrier properties, and helps block some of the pinholes which are found in thin foils. Polyethylene laminations are commonly found in use for dehydrated foods such as soups, instant mashed potatoes, seasonings and spices, iced tea pouches, and a constantly increasing variety of moisture sensitive food products.

THERMOPLASTIC LAMINATIONS

Thermoplastic laminations combine foil to paper usually by means of a vinyl type adhesive for increased protection. This type of lamination is often used for margarine wraps, but it is also common where two impervious surfaces such as foil and film must be joined.

ASPHALT LAMINATING

This is used occasionally, but mainly for insulation purposes and for the manufacture of wrapping materials.

PAPERBOARD LAMINATION

Aluminium foil combined with paperboard finds increasing uses for brown-and-serve trays, gift boxes, foil-fibre drums, picnic plates and others. Fibre cans such as the quart oil can employ a foil winding. In addition to motor oil, and citrus concentrates, foil-fibre cans will likely make strides in the packaging of coffee, candies, nuts, paint — even beer and soft drinks.

(The above material is extracted from the PAC Packaging Education Course, which is available from the Asian Packaging Information Centre.)

Introduction to the Economics of Packaging

by Edmund A. Leonard, B.A., M.A., Vice-President, Educational Activities, The Packaging Institute, Inc., U.S.A.

Almost everything made or grown by man is packed for distribution. Since the distribution of goods follows economic laws, and since packaging is part of goods and products, it follows that packaging must serve an essentially economic function. To put it more simply, the most important thing about packaging is that it is part of product and distribution costs, and this being the case, the packaging professional must be able to think about packages in terms of economics.

In a preface, Mr. Leonard states that the purpose of this book is to

« cont. next page »

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TOKYO PACK'S BID TO MAKE EXHIBITION BEST YET HELD

Tokyo Pack '76 will be held in the Japanese capital from 3rd to 8th September this year and plans are well advanced to make this sixth biennial international packaging fair the biggest and best yet held.

Chicago Exposition to combine best of 2 traditional shows

The world's most important showcase of packaging and packaging related converting technology, equipment and materials opens on 25th October, 1976, in Chicago's beautiful and internationally convenient McCormick Place exhibition hall.

The 1976 International Packaging Exposition and Assembly combines the best of the two traditional packaging shows held in the United States – the PMMI "Pack Expo" show and the AMA National Packaging Exposition.

The combined effort this year will produce a more complete packaging and converting show with more equipment, materials and seminars than ever before concentrated exclusively on the interests and needs of all packagers working with every food, beverage, pharmaceutical, consumer and industrial product produced today anywhere in the world.

An estimated 450 exhibitors will occupy over 100,000 square metres of space in the huge McCormick Place exhibition hall to display over 2,000 packaging and packaging-related converting machines in operation during the show plus the full range of packaging materials available today.

Visitors are encouraged to use the International Business Center where U.S. Department of Commerce multi-lingual trade specialists will assist visitors in locating machinery and materials for specific needs and in identifying and contacting exhibiting firms seeking agents, distributors, joint ventures, licensees and other business arrangements.

The theme, "Good Packaging to Harmonize Milieu and Science", has been chosen by the organisers, the Japan Packaging Institute and the Japan Packaging Machinery Manufacturers' Association.

Venue of the exhibition will be the Tokyo International Trade Fair grounds at Harumi where a 35,280 square-foot site has been reserved to accommodate more than 1,700 booths in five exhibition halls.

Classification of exhibits is as follows:

Class 1: Packaging materials.
Class 2: Packaging and packaging machinery.
Class 3: Packaging converting machinery.
Class 4: Food machinery.
Class 5: Overseas exhibits.
Class 6: Relevant machinery.
Class 7: P-D machinery.

3rd Asian Packaging Congress

Strong delegations from Thailand, the Philippines, Singapore and Malaysia are expected to attend the 3rd Asian Packaging Congress in Hong Kong. Many registrations from overseas and local participants have already been received.

The Congress, organised and hosted by the Hong Kong Packaging Council, will be held at the Hongkong Hilton on 31st August – 1st September, 1976.

Eight international packaging experts will join one Hong Kong Speaker in presenting a total of 9 papers covering a wide field in the industry.

Objectives of the Congress include an in-depth examination of the status of packaging in Asia, study of the direction in which the industry is likely to develop in the region, and identifying major problems facing the industry today.

plus a layer pad that would be appropriate for tea-sets also. Previous idea for packaging these items is mainly on the protection point of view but this new package goes for the simplification of packaging process and the cost reduction of packaging materials.

(Packaging News, Jan. 1976. 2p.)

TESTING AND ANALYSIS

6.10 EFFECT OF REPEATED RECYCLING OF FIBER ON CORRUGATED CONTAINER STRENGTH

Tests have been done to study the effect of repeated recyling of fibre on corrugated container strength. Recycling generally lowers the strength properties of linerboard and corrugated containers. These reduction can be overcome to a larger extent with refining but with a possible decrease in production rate conclusions showed that the greatest loss in strength properties occured with the first cycle and this loss is attributed to the presence of NSSC fibres in the liner board. Losses between subsequent recycles were less. Test datas are also discussed and interpreted in this article.

Paperboard Packaging, Dec. 1975. 3p.)

6.11 ATOMIZATION OF LIQUIDS WITH MECHANICAL BREAKUP ACTUATORS

Mechanical atomization devices are discussed. The factors affecting spray characteristics of a centrifugal actuator are listed. Three situations are considered in discussing these factors: Ideal frictionless liquid, real liquid, and real liquid with a soluble gas. Finally, factors in mechanical break up actuator selection are discussed.

(Aerosol Age, Dec. 1975. 5p.)

6.12 PACKAGING BAKED GOODS

In this article the barrier properties of the various materials used to package baked goods are described. The goods can be classified by the 'Equilibrium Humidity' (EH) . Solutions of specific problems are also given.

(Australian Packaging, Dec. 1975 2p.)

PACKAGING IN GENERAL

7.7 CORRUGATED TREND IS UP

From 1974 to 75, the corrugated industry has experienced the sharpest year-to-year volume drop in 32 years. But, in the second and third quarter, evidence has showed some real strength in recovery. When shipments were declining, the price trend was moving up. Containerboard output per week in the first quarter of this year remained low, dropping below the prior quarter. Then in the second quarter and the third quarter production showed successive increase up to the 1974 level. Consumption in the first quarter of 1974 was also high, but at the first quarter of 1975 a 20% falling was recorded. Usage rate gained sharply in the second and third quarter and everything is continuing to get better and it is anticipated that the economic recovery will proceed to show greater improvements.

(Boxboard Containers, Dec. 1975. 2p.)

7.8 PASSING OFF

When one trader represents his foods, or his services, as those of another, he commits the "tort" commonly known as "passing off". The commonest forms of passing off are imitating the get-up or appearance of the plaintiff's goods. Examples are given in this article and the most important thing is that the name the defendant used actually connotes goods manufactured by him. Concerning adoption, it is shown a person who adopts a name for business purpose and acquires it by reputation over a period is entitled to trade under this name and cannot be restrained from doing so. Regulations of using a name similar to some other company's so as to produce a false presentation that the goods is that company's are discussed.

(Int. Bottler & Packer, Dec. 1975. 3p.)

7.9 TAKE-HOME BEER PACKS – CLASS CLAIMS TOTAL-COST BENEFITS

The GMF commissioned PE management consultants to make a survey into the total costs involved in beer packaging for the "take home" market. It is pointed out that the average difference in cost between bottling and canning 10 oz. beer is in the region of 0.5p per unit. A summary on the potential role of glass containers in the packaged beer market is given. Two tables are shown to compare the material costs and in-brewery costs. One photo of wide-mouth beer bottles with convenience closures.

(Packaging, Nov.–Dec. 1975. 2p.)

7.10 DATE CODING – WHAT DO THE PEOPLE WANT?

The Australian consumer groups and health bodies have recommended to their government that open date marking of packaged foodstuffs be adopted in order to protect the consumer against the possibilities of purchasing stale or decaying food. For packagers it seems not troublesome and would need only to improve their speed and flexibility.

(Australian Packaging, Nov. 1975. 2p.)

4.20 PUTTING THE CAGE THEORY INTO PRACTICE

Key markets have been running trials with the newly-mooted cages that hold the goods for retail display as well as transit and storage. This article looks at some of the problems in handling and stacking. 2 photos.

(SHD, Dec. 1975. 2p.)

SPECIAL PACKS

5.8 ECONOMIC PRESSURES BRING TEMPORARY HALT TO RETORT POUCH GROWTH

This article describes the history and development of retortable pouches. Its advantages and disadvantages compared with tin cans are discussed in detail. Two photographs of filling machines.

(Packaging Review , Nov. 1975. 4p.)

5.9 PACKS MAKE SURE COFFEE'S FRESH WHEN BREWED

An upgraded atmospheric packaging boosts shelf-life of the coffee packs to 60 days from the previous 28 days. CFS has arrived at four packs: the fractional pouches, the Urn type bags, the Vending type pouches, the Pak-O-Matic filter coffee bag. The company did not exclude the staying of oxygen in the package but the packs are designed to keep outside oxygen out – keep it from circulating through the coffee. The material employed are mainly laminate of saran and paper.

(Food & Drug Packaging, Dec. 1975. 2p.)

5.10 STANDARD NATIONAL LOAF IN POLYETHYLENE BAGS

The 2 factors that the price differential between wax paper and polyethylene film becomes negligible and that bagging with poly- bags is faster than wrapping with waxed paper have made RHM's Mother's Pride loaves packed in printed PE bags.

The operation of a bread bagging machine is described. 4 photographs of the bags. 1 table of general specifications on bag making machine.

(Packaging, Nov.–Dec. 1975. 2p.)

5.11 NON-DETACHABLE CAN OPENER AT PULL-TAB'S PROBLEM

In order to minimize the volume of litter from discarded easy-opening can rings, Coca-cola has test marketed their new non-detachable opener. The stay-on is claimed not to be opened by any accidents during shipment or storage. The operation methods of this stay-on tab is described.

(Food & Drug Packaging, Dec. 1975. 3p.)

5.12 BOLD PACKAGING CARVES A NEW NICHE FOR X-ACTO

When X-Acto, a very famous cutting tool manufacturer, is criticised about having no 'sell' in its packaging, the Company starts to redesign their packages and they finally come up with a thermoformed PVC tray and a thermoformed PS tray fitting. Guidelines for designing the new package are listed. 4 photos.

(Packaging Engineering, Feb. 1976. 2p.)

5.13 PACK-HANDLING OF APPLES FROM TREE TO CONSUMER

The packaging of apples and the transportation to the consumers are outlined in this article. Introduced here is an increased mechanization and a packing oriented machine. Material used is polystyrene and results show it to be far superior to polybag or cell packs.

(Australian Packaging, Dec 1975. 1p.)

5.14 ALTERNATES TO AEROSOLS REQUIRE CRITICAL CHOICES

Systems for replacing fluorocarbon aerosols are discussed: non-sprays (roll-on applicators, push up stick applicators. . . .), sprays (spray pumps, substitute propellants such as nitrogen, nitrous oxide, carbon dioxide), barrier concept pressure dispenser, hydraulic compressor spray system, elastic bag pressure dispenser. . . .). Also listed are the evaluation factors in spray system. main problems with plastic squeeze bottles, and cost comparison of replacement systems.

(Packaging Engineering, Nov. 1975. 4p.)

5.15 HIGH BARRIER PLASTICS TECHNOLOGY HAS INCREASED APPLICATION

The uses in packaging of two types of plastics are discussed: polyester of polyethylene terephthalate type and acrylonitrile based materials. Examples: thermoformed PVdC coated PVC bottle, Merolite (PVdC coated polyester), DuPont's Dalar bottle, Hoechst's injection-blow moulded bottle for men's after-shave, Coke's acrylonitrile 'LOPAC' bottle, House of L'Avant's LPT nitrile aerosol. Specially mentioned are the Plastona can (with sculptured base and aluminium top) and the Ce-Pak system (outer shell of polystyrene, middle layer of PP, inner skin of Barex Acrylonitrile resin).

(Packaging Review, Nov. 1975. 3p.)

5.16 CORRUGATED OFFER COST-SAVING IDEA FOR PACKAGING POTTERY

One-piece corrugated trays that can halve costs and storage by simplifying the packaging of pottery are the latest innovations from the Ellesmere Port Plant of Bowater Container Ltd. The pack-

convert paper tubes to various predetermined shapes, e.g. eliptic, hexagonal, circular.

(Packaging News, Dec. 1975. 1p.)

2.12 MOBILE SHRINK WRAPPER FOR ALL TYPES OF PALLETS

Shown in photograph is the Rotojet mobile shrink-wrapper developed in W. Germany for high production shrink wrapping of pallet loads of goods in various parts of a factory. In operation it is simply wheeled around the pallet and the shrink time for a standard pallet is approximately 40 seconds.

(Australian Packaging, Feb. 1976. 1p.)

NEW TECHNOLOGY

3.16 STRETCH WRAPPING COMING ON STRONG AS ENERGY CRUNCH UP SHRINK COSTS

Stretch wrapping, the heatless technique for unitising loads of goods in the tight shroud of film has been growing very fast in the U.S. for bundling and unit packaging of goods. The reason that has made stretch wrapping so amazing is the film savings that resulted. Though stretch film costs more per pound but the net saving when the film is applied to the pallet load ranges from 15–55% depending on the configurations of the loads.

(Foods & Drug Packaging, Dec. 1975. 2p.)

3.17 WAX SATURATOR TURNS BOARD INTO COMPETITOR TO WOOD AND PLASTICS

A new wax saturated machine turned corrugated fibre board into a keen competitor to plastics and wood by a waterfall saturation technique so that both the liners and the flutes are saturated with wax and not just coating as the conventional machine. The greatest advantage of this kind of board is that the stacking and structure strength of the board is immensely increased. In addition, the board can withstand extreme moisture conditions and hence eminently suitable for bulk packs.

(Packaging News, Feb. 1976. 1p.)

3.18 METALLISING WITH 'MILINEX'

The developments that have taken place in techniques entitles applications of metal coatings to thin flexible substrate and in the uses made of such materials. It is due to some advance in plastics films, like polyester — 'Milinex'. The basic manufacturing process is described in this article and uses also tailored.

(Plastics Today, Oct. 1975. 4p.)

3.19 PP GETS SET FOR WIDER THERMOFORMING MARKETS: HOT-FILL, COOK-IN

The new thermoforming technique — "solid-phase pressure forming" — forms PP under controlled conditions at 150 to 155°C, well below its crystalline melting point. Applications: Margarine tubs, hot-filling, cook-in. Advantages: Prices are 17 and 25% below PVC and impact PS, lower specific gravity. Limitations: forming rates are lower for PP.

(MPI. Oct. 1975. 1p.)

HANDLING, DISTRIBUTION and STORAGE

4.16 SOMETHING NEW IN MANUAL ORDER PICKING

Giant Eagle Market Inc. use wheeled cars on fixed tracks, instead of the costly automated system and the time consuming pallet racks stacking system, to carry pallet loads of produce to a series of pick stations, and doubles productivity with less picking errors.

(Modern Material Handling, Oct. 1975. 2p.)

4.17 MECHANISATION OF HANDLING AND DISTRIBUTION OF CARTON MILK

The article describes Tetra Pak's "Hydrauto twin pallet system", a flexible method of loading and unloading Tetratainer — wheeled containers from covered delivery trucks. This automatic mechanical handling system, in conjunction with the Tetrainer-trolley system of packaging, transporting and displaying goods, makes a fast, efficient and unbroken milk supply line. 3 photographs clearly illustrate this new system.

(Packaging, Nov.–Dec. 1975. 1p.)

4.18 WIREBOUND PALLET BOXES SIMPLIFY SMALL PARTS OPERATION

Huffman Mfg. Co. switched from corrugated boxes to wirebound pallet boxes for inter- and in-plant processing and storage of metal bicycle parts. Storage space was reduced by 60%, inventory receiving time was cut by 80% and much cost was saved. The differences between these 2 kinds of pallet boxes are compared.

(MHE, Nov. 1975, 1p.)

4.19 SYMBOL SELECTED FOR DISTRIBUTION CODE, FOR CORRUGATED PRINTING MARKING DEVICES

A standardised machine-readable symbol called the Distribution Symbol, has been selected for the use on shipping containers, cases and cartons in the USA. The objective is to increase efficiency and lower costs within the channels of distribution. The code is compatible with the Universal Product Code; the symbol is not. Selection of the symbol was made by the Distribution Research and Education Foundation (DREF), a unit of the National Association of Wholesaler-Distributors, also the current administrator of the UPC.

(Paperboard Packaging, Jan. 1976, 4p.)

MATERIALS

1.17 FLEXIBLE PACKAGING ADHESIVES

This article reviews 5 general types of adhesives used in flexible packaging: cols aqueous adhesives (casein, sodium silicate, natural rubber latex, synthetic polyvinyl), hot melts. The techniques used in lamination are also discussed: dry bonding, wet bonding, thermal lamination (steam, water-nip), wax or hot melt laminating. 2 photographs of lamination and 1 of roto-flow dryer.

1.18 PIN DOWN YOUR STRAPPING NEEDS, THEN PICK THE STRAP

Strapping materials and strapping methods are introduced in this article. Steel polyester, nylon, polypropylene and copolymer strappings are described and compared. A table is shown to guide correct selection of strapping materials based on considering dimensional stability, surface hardness, etc.

(Packaging Engineering, Feb. 1976. 2p.)

1.19 NEW HORIZONS FOR 'PROPAFILM'

This article reviews briefly the development of 'Propafilm' in packaging (the 'O', 'C', and 'M' grades) and their properties and limitations. Its principal applications are discussed: packaging potato crisps and snack foods, biscuits, sugar confectionery, tobacco products, laminates. Then the article looks at the changing patterns of demand and markets and at how ICI's new arrangements will function. Three figures compare the water vapour transmission of Propafilm with cellulose film.

(Plastics Today 52, Dec. 1975. 4p.)

1.20 'ALTERNATIVE' LIQUEFIED GAS PROPELLANTS

The use of hydrocarbons as liquefied propellant for aerosol to replace fluorocarbon is discussed. Tables are given on specifications, formulation, vapour pressure, typical filled aerosols, and price structure.

(Aerosol Age, Dec. 1975, 6p.)

1.21 FDA READY TO RE-EXAMINE PLASTIC MIGRATION IN FOODS

A recent seminar sponsored by U.S. Packaging Institute imposed opinion on plastic migration to foods. Against the FDA proposal of banning of carcinoginic plastic materials in packaging, speakers advocate an establishment of a practical zero as the doses thus resulting would stay within the tolerance in a lifetime. Furthermore, a speaker stated that FDA's regulations are not proprietary that different companies might produce similar materials with different migration profile. Other disputes on FDA were also imparted during the seminar.

(Food & Drug Packaging, Dec. 1975. 2p.)

1.22 LUBRICATION – THIS ISSUE – ALIMINIUM CAN MANUFACTURE

The process of aluminium can manufacture is discussed in this article. The lubrication system of cupping, drawing, ironing etc. are introduced. Soluble oils and emulsions are commonly used as lubricants, but proper emulsion control is an essential procedure in reducing manufacturing difficulties and obtaining maximum life of the tools and the emulsion.

(Texaco Incorporation 4–6, 1975. No. 61. 20p.)

1.23 CHEMICAL COMPATIBILITY KEYS SWITCH TO ACRYLONITRILE BOTTLE

Conwood Corp. have a new package for their roach and ant killers instead of the conventional glass bottles. Gearing up with Borg-Warner Chemicals' acrylonitrile-based resin, Cycopac, the company have achieved low freight costs and minimum breakage. Before reaching this material, PP and PVC had been tested and finally they found Cycopac offers best chemical compatibility and protection from the effect of sunlight.

(Food & Drug Packaging, Jan. 1976. 1p.)

MACHINERY

2.10 METAL DECORATING . . . FROM START TO FINISH

New developments in can-making and can-processing machineries are described in this article: a side-seam soldering machine, an automatic double ending flanging and seaming machine, and an automatic lid placing and clinging machine. Special features regarding these machines are also discussed and illustrated. These machines are mainly manufactured in Europe.

(Tin International, Oct. 1975. 1p

2.11 TUBES COME IN MANY SHAPES AND SAVE ON BOARD

Carton board converters can make material savings of up to 50 percent in some instances by installing a newly launched solid board tube-making machine. It is claimed that it is designed to replace the spiral wound tube-making machine with stations that

(cont. next page)

APIC OFFERS PACKAGING SERVICES

he Asian Packaging Information entre (APIC) in Hong Kong has en especially set up to make ilable information and, where ssible, technical assistance, for e purpose of providing knowl-ge of and solving packaging oblems.

PIC has been established by the orld Packaging Organisation with e help of financial assistance ovided by the International velopment Research Centre, of nada.

large number of journals on ckaging and related subjects is anned regularly by APIC which fers a list of articles monthly, th digests of contents, to all o wish to be kept up-to-date in ir particular field.

BJECTS

e Subjects include:

e of corrugated board in packaging;
getables and fruit packaging;
rink wrapping;
retch wrapping;
ister packaging;
in packaging;
ckaging of cereals;
e a aluminium foil in packaging
e of plastic films in packaging;
e of strapping in packaging;
nning;
e of laminates in food packaging;
ass containers;
shioning materials;
aling machines;
aling and filling machines;
belling machines;
apping machines;
rm/fill/seal machines:

e service charge per subject, luding airmail postage, is $50.00 per annum.

her services offered, apart om the monthly up-dating of blications on specific packaging bjects, are:

a. Search of articles, books and publications relating to a specific subject in packaging. A service charge of US$5.00 is made for this.

b. Guidance in solving packaging problems. A minimum fee US$10.00 is charged for this service.

Besides the APIC Journal, three study reports on specific packaging developments have been published on the following subjects.

1. Use of laminates for Pre-cooked Foods
2. Testing of Transport Packages for Electronic Equipment
3. Cushioning Materials

These reports are available from APIC at US$10.00 per copy.

BOOK REVIEWS

SHRINK AND STRETCH FILM

Manual published by the Swedish Packaging Federation, 56 pages, Swedish Kroner 51.

This manual has been prepared by a group of experts, including both manufacturers of raw materials, films and machines and packaging managers from industry and commerce. It is directed towards buyers and those responsible for packaging and distribution in all branches.

The manual relates only to shrink film based on LDPE and copolymer combinations, since these materials are responsible for about 90 per cent of the total sales of packaging film. It deals mainly with retail packages and with packages wrapped into pallet loads or similar units.

Included in the manual is information on

- Materials and their properties
- film properties — data — tolerances
- machinery requirements
- detailed descriptions of different test method
- check-lists relating to choice of equipment

This manual is an indispensable aid for those who use or plan to use shrink film or stretch film in their production and for buyers who need to be able to define and specify film properties.

It can be ordered from the Swedish Packaging Federation, Box 9038, 102 71 Stockholm 9.

PROMOTING PACKAGING FOR EXPORTERS.
VOLUME III: DIRECTORY AND BIBLIOGRAPHY.

Published by International Trade Centre UNCTAD/GATT.

This annotated bibliography is divided into 19 sections, each with a brief introductory note. Since many of the publications listed are difficult to classify under a single subject heading, cross-references have been made wherever possible. This bibliography is not intended to be exhaustive; the many facets of packaging touched upon in this handbook are dealt with in too vast a number of publications in a variety of languages. Instead, the items listed are intended to be representative of what is currently available in English, French and Spanish. Wherever possible, reference to other bibliographies and lists of publications have been included to aid the reader to find a particular item. The preponderance of English-language material in the bibliography reflects the important role of packaging institutions and manufacturers of packaging materials and containers located in the English-speaking industrialised countries.

3. Non-resilient Materials

These refer to materials whose dimension and stiffness are reduced below the limits specified for resilient materials after an impact. As with the resilient materials their density can be controlled and their performance predicted. e.g. rigid polystyrene foam, expanded polystyrene, expanded polyethylene, paperboard.

4. Load spreader

Load spreaders are generally rigid and permit little movement of the cargo relative to its container. They perform their protective function largely by distribution of dynamic forces over the greatest possible area. In some cases shock attenuation may be obtained as a result of external deformation of the load spreading materials at the point of impact. e.g. bonded fibre, corrugated fibre board, rubberized fibre .....

Assessing appropriate cushioning materials

For each type of cushioning material the plot of the fragility factor vs. static stress is given. The term static stress is defined by W/A where W is the weight of the product and A the area to be supported by the cushioning material. So, for a given product with known fragility factor, the static stress W/A is calculated and by referring to diagram 1, we immediately discriminate the kind of cushioning material that is appropriate for that particular product. See Fig. 1, for a known G and W/A value, suitable materials are sorted out. However the above procedure just gives us a rough idea of what to use. For a more accurate design, the creep properties of the cushion, the abrasion of the cushion on the item, the damping effect of shocks, and the effect of humidity and temperature on the materials should also be considered.

The above article deals with just the basic technical knowledge in cushioning.

Recent development in this field is discussed in more details in our recent prepared Study Report "Cushioning Materials". This is the third in the series of Study Reports published by APIC. The other two are on the topics of (1) Laminate for Pre-cooked Foods; (2) Testing of Transport Packages for Electronic Equipment. These 3 reports are available at US$10.00 per copy.

More Study Reports are planned for future issues. Suggestions are always welcome.

Fig. 1

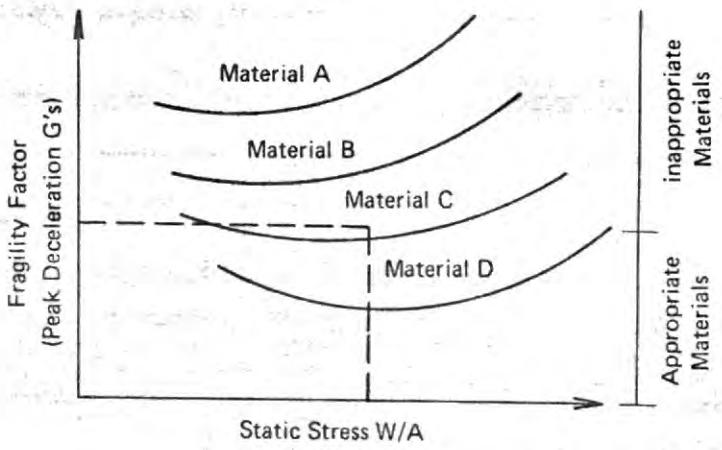

Table I Product fragility considerations

Degree of fragility	Object	G's
1 Extremely fragile	Missile guidance systems, precision aligned test instruments, electronic tubes.	15–25
2 Very fragile	Mechanically shock mounted instruments, electronic equipment and certain power tubes.	25–40
3 Fragile	Aircraft accessories, electric typewriters, cash registers, electric office equipment, electronic devices.	40–60
4 Moderately fragile	TV receivers, certain aircraft accessories, certain instruments, certian receiving tubes	60–80
5 Moderately rugged	Laundry equipment, refrigerators, large and small appliances, certain electronic devices.	80–115
6 Rugged	Machinery castings.	115–150
7 Very rugged	Armored cable, certain plumbing supplies, pipe, castings.	150 and up

Table II

Gross Weight in Lbs.	Type of Handling	Drop Height in Inches
0–20	1 man throwing	42
21–50	1 man carrying	36
51–250	2 men carrying	30
251–500	Light equipment handling	24
501–1000	Light equipment handling	18
1001–up	Heavy equipment handling	12

of its fitness for entry must be obtained from the APF member institute.

All entries must have been manufactured in the country submitting such entry.

There are three classifications for entries to "Asiastar":

1. Transport Containers. Such containers must be for the transportation of a product or for the containing of a number of consumer packs to be transported and distributed. Containers must not exceed 50 cu. ft. (1.46 cu.m.)
2. Consumer Containers. Such containers are for the containing and sale of consumer products.
3. Packaging Materials and Adjuncts.

The Panel of Judges will be composed of authorities on technical, visual and commercial aspects of packaging, selected from recognised experts in their field.

Merits of cushioning to eliminate damage

The purpose of cushioning is to eliminate or minimize damage to packaged goods arising from impacts or shocks.

A factor called the fragility factor (or G-factor) is commonly used to denote the strength of the product to withstand impacts. Table 1 shows the degree of fragility of some products. For fragile items cushioning materials can be ultilised to protect them during transit.

The environment of handling is another indispensible factor to be considered in planning a cushion. If a product is light and small in size, it would probably be thrown by a man or suffer even more rugged tumbling during transportation. But, if the product is heavy and bulky, you could ensure that it would never be lifted any higher than 12–18 in. and would certainly be handled by a fork lift. See table II

Bearing in mind the products to be packaged and the type of environment the package is going to endure, we may commence to investigate the characteristics of cushioning materials. Generally speaking, a cushion provides protection through two mechanisms:

a. By spreading the loads or impacts so that the force per unit area on any part of the item in contact with the cushion is reduced.

b. By compression during impact, absorbing most of the impact energy and reducing the maximum force.

There are materials that work on one or combination of the above mentioned mechanisms.

Cushioning materials are generally classified into four categories:

1. Space fillers

As the name implies these materials are used to fill the space between a product and its container. They are flexible and permit various shapes of cargo to be packed. However, in practice neither weight nor volume is specified and hence performance is not readily predictable. e.g. shredded paper, saw-dust, wood-wool, paddy-straw, plastics beads, pelaspan-pac, foam-in-place.

2. Resilient Materials

These generally refer to materials that restore their original shapes after an impact or have very limited loss in the thickness after any kind of shock. These materials have definite shape, weight and volume. So, their performance are practically predictable and reproducible. e.g. moulded poly urethane, polyurethane foam expanded rubber latex rubber air bubble sheet

4-year course in packaging education

Beginning in March this year, the Hong Kong Packaging Council and the Hong Kong Polytechnic are jointly introducing a four-year evening course in packaging education leading to a Diploma in Packaging Studies (DPS).

The course has been formulated to meet the rising demand for packaging expertise by local manufacturers. It is aimed at in-service factory staff, shipping, packaging and production control personnel as well as designers who wish to have a formal education in packaging.

Classes are separated into two categories:

1. Basic Study Modules offered by the Polytechnic, comprising studies in Natural Science, Engineering, Design and Management.
2. Packaging Study Modules offered by the Packaging Council comprising studies on the theoretical and practical aspects of packaging.

Students should, on the successful completion of their studies, be able to solve technological problems related to packaging, specify standards for purchasing packaging materials and assess the suitability of machinery, control the quality of packages manufactured and to develop new packages.

The programme is built on the modular system, with candidates qualifying for the Diploma after satisfactory completion of 21 Study Modules (comprising 330 course hours) offered by the Packaging Council and 15 Basic Study Modules (comprising 315 course hours) offered by the Polytechnic. Each of the Modules will qualify upon satisfactory completion for a Certificate. A total of 36 Certificates, except where exemptions are granted, will entitle the student to the Diploma

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and INTERNATIONAL DEVELOPMENT RESEARCH CENTRE, OTTAWA.

1976 VOL.2 NO.1

3rd ASIAN CONGRESS WILL BOOST STATUS OF PACKAGING

The Hong Kong Packaging Council has accepted an invitation to organise and host the 3rd Asian Packaging Congress on behalf of the Asian Packaging Federation.

The Hongkong Hilton Hotel has been chosen as the venue for the 3RD Asian Packaging Congress, which will be held on 31st August and 1st September, 1976, under the theme, "Asia in the World of Packaging."

The dates are particularly opportune as they fall just prior to the opening of Tokyopack '76, and will enable delegates travelling from all parts of Asia to the Japanese packaging exhibition to stop over in Hong Kong to participate in the Congress.

A total of nine highly interesting and informative Papers will be presented during the two-day Congress. Speakers will be international authorities as well as Asian experts who will give participants an overall picture of the present status of packaging in Asia, the directions in which the packaging industry in the region is likely to develop and to examine some of the problems facing the industry today.

Titles of the Papers to be presented and the Speakers are:

1. "The World Packaging Scene"— Mr. R. W. Coughlin, President, WPO.
2. "Status of Packaging in Asia" — a Hong Kong nominee.
3. "Educating and Training Packaging Personnel" — Prof. R.K. Chowdhary, Director, IIP, India.
4. "Balancing Needs in Selecting Machinery" — Mr. H. Nakai, Managing Director, Rengo Packaging Systems Co., Ltd., Japan.
5. "Packaging Materials — New and Old" — Mr. Joventito B. Jongko.
6. "Laws and Regulations Affecting Export Packaging" — Mr. Johan Selin, Export Packaging Advisor, ITC UNCTAD/GATT, Geneva.
7. "The Right Pack for the product" — Mr. Sun-Whan Chang, President, KDPC, Korea.
8. "The Right Pack for the Market" — Mr. John Briggs, Managing Director, Norcros Ltd., England.
9. "The Social Considerations" — Mr. Jack Ings, General Manager, Pacific Can Ltd., Australia.

Each participant at the Congress will be charged a registration fee of US$50. Accommodation for overseas visitors will be at the Hongkong Hilton Hotel.

"Asiastar '76" entries due in by 31st July

The Asian regional packaging competition, "Asiastar '76," will be held in Hong Kong in August, hosted by the Hong Kong Packaging Council on behalf of the Asian Packaging Federation.

Competition rules and entry forms are being distributed to all member institutions of APF. Deadline for entries is 31st July, 1976.

"Asiastar '76" will be held in conjunction with the 3rd Asian Packaging Congress in Hong Kong — 31st August and 1st September, 1976.

Packages will be judged for their all round fitness, the purpose for which they have been designed and special features which make them worthy of the accolade for Packaging in Asia.

Success in securing an "Asiastar" Award qualifies the recipient, upon settlement of the appropriate fee, to participate in "Worldstar" judging.

Judging of entries will take place on 30th August and winners will receive their Awards on 1st September.

"Asiastar" is open to packages from all APF member countries which have won an Award in the national competition of the member country.

In case no national competition has been held, a recommendation

(cont. next page)

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1977 Vol. 3 No.2

CANADA'S BIG SHOW WILL BE PAC-EX 77

The major event for packagers in Canada is undoubtedly PAC-EX, the exhibition sponsored by the Packaging Association of Canada.

The 18th exhibition, PAC-EX 77, will be held from 17th to 19th October in the Industry Building at Exhibition Place, Toronto.

PAC-EX serves as a marketing forum for manufacturers and suppliers of packaging materials, machinery, services, handling and point-of-purchase packaging displays.

First held in 1952, PAC-EX continued as an annual event until 1962 when it was decided the exhibition should become biennial.

The show now takes up some 150,000 square feet of display space and attracts more than 15,000 visitors. It is the industry's prime showcase for new ideas, methods, materials and machinery.

With more space available (all on one level), the 1977 Big Show will deal extensively with such subjects as metric conversion, government regulations, environmental considerations, retail requirements and new distribution and packaging handling techniques.

As of April, PAC officials reported that all space had technically been sold out, but they have been able to find more space, including room for a special British Pavilion that will utilise 4,000 square feet. Officials are confident that this year's show will set new records once again for the number of visitors as well as show attendance.

In the 1975 show, 327 companies participated with a 92 per cent renewal ratio from the previous PAC-EX. Paid attendance was 8,429. A total of 15,772 attended during the three days.

The Packaging Association of Canada is this year sponsoring five packaging competitions, and entries and winners will be displayed at PAC-EX 77. The competitions will cover Folding and Set-Up Paper Boxes, Flexible Packaging, Rigid and Semi-Rigid Containers (glass, metals, plastics, fibre), Corrugated and Industrial Containers and Transit Packs.

SEOUL CONGRESS TO DISCUSS MANAGEMENT OF RESOURCES

Preparations are well in hand to ensure the success of the 4th Asian Packaging Congress which, this year, will be held in Seoul, the Korean capital, from 4th to 8th October.

Delegates will meet in the conference hall of the Korea Design and Packaging Center under the chairmanship of Mr. Hee Duk Kim, President of the Center.

The theme selected for the Congress is "Management of Resources Through Better Packaging." Attention will be focussed on this important subject, and delegates will consider appropriate guidelines to upgrade the status of packaging in developing countries.

The Congress is held annually by the Asian Packaging Federation in different member countries and hosted by the national packaging institute of the country in which it is held. The aim is primarily to foster co-operation and the exchange of technological knowledge on packaging among the countries in the region.

In the organisers' view, this would not only result in understanding of the packaging problems of the countries in the area but also in upgrading their packaging status which is vital for their economic development.

At the present time, the progress of packaging in developing countries is impeded due to fast depleting natural resources as well as rising cost of packaging materials, and further aggravated by the steep rise in the price of crude oil. This is a situation which calls for urgent attention from all concerned.

Speakers who will be presenting Papers will cover various aspects of the theme for the Congress, including:

(cont. pg. 2)

— Outline of available natural resources (of the country concerned) and extent of utilization for packaging.

— Import of raw materials for manufacturing packaging materials and packages and efforts made towards import substitution through local sources.

— Efforts to minimise cost of packaging and success achieved so far, through improved product development, better package designs, automation, better transport, handling storage marking and adoption of modern marketing systems.

— Standards and laws regulating the appropriate use of packaging materials for various products so as to minimise wastage.

— Recycling of used packaging materials and containers for various products.

— Disposal problems of packaging wastes, and remedial solutions to minimise environmental pollution.

— Modern packaging systems and adoption of containerization.

— Measures to bring about package consciousness among all concerned, not only to upgrade the status of packaging, but also to eliminate wastage.

In conjunction with the Congress, the Korea Design and Packaging Center are holding an Industrial Design Exhibition at which the best packaging from member institutes of APF will be on display, including award winning entries in national, regional and world packaging competitions.

The 18th Administrative Board Meeting of APF will also be held on 4th October, prior to the formal opening of the Congress.

Apart from two full days set aside for the presentation of Papers and discussion, delegates will be taken on an observation tour of the Ulsan Industrial Complex, a show-piece of industry in Korea, and also tour Kyungju (the Cultural Center).

KDPC invites intending participants to the Congress to make early registrations (US$50 per delegate) to ensure booking of accommodation.

Full information may be obtained from Mr. H.D. Kim, President, Korea Design and Packaging Center, 128 Yunkun-dong, Chongro-ku, Seoul, Korea.

HONGKONG PACKAGING DIRECTORY

The Hong Kong Packaging Council, a member institute of the Asian Packaging Federation, will be publishing a Packaging Directory later this year, and work on its compilation is well under way.

The Directory will contain full information on Hong Kong packaging manufacturers, packaging machinery and materials suppliers, packaging agencies, packaging and converting services, printers, designers and advertisers, warehouses, shippers and other companies involved in the vast range of activities concerned with packaging.

It is being compiled for easy reference by the Hong Kong business community and industry, but will also be a valuable reference to overseas business men.

Applications for the Directory are now being received. Advertisers are also welcome.

Enquiries may be addressed to the Hong Kong Packaging Council, Eldex Industrial Building, 21A Ma Tau Wei Road, 12th floor, Hunghom, Kowloon, Hong Kong.

FOOD PROCESSING SHOW IN JAKARTA

Jakarta, the Indonesian capital, will be the scene of an Agricultural and Food Processing and Packaging Equipment exhibition from 1st to 5th August.

The exhibition has been planned because the Indonesian Government is giving priority attention to agriculture, with such goals as reduced food imports and increased export earnings from agricultural and processing operations, combined with implementation of a second five-year plan allocating US$27 billion for these purposes.

Packaging Study Tour of Japan

The Hong Kong Packaging Council is organising a study tour of packaging plants in Japan in conjunction with its delegation's participation in the 4th Asian Packaging Congress in Seoul.

Hong Kong packaging manufacturers are invited to join the tour, which will leave for Japan on 25th September. Based in Tokyo, participants will spend five days touring plants engaged in various facets of package manufacture, products packaging, packaging design, and the manufacturing and usages of electrical appliances and packaging machinery.

Two days will be left free before the group flies to Seoul on 3rd October. They will attend the APF Congress from 4th to 8th October before returning to Hong Kong.

The main objective of the visit to packaging companies and plants in Japan is to learn from their experience, to study the use and application of the latest machinery, techniques and materials, and to establish contacts.

FOOD PACKAGING SEMINAR FOR DEVELOPING COUNTRIES

"The Candid Persuaders", a Seminar on packing and packaging, held from March 18 till April 2, 1977, was one of a series of international activities organised by the Centre for the Promotion of Imports from Developing Countries (CBI).

The purpose of organizing such a seminar, particularly for the Asian and African developing countries, was to introduce the participants to the European Marketing conditions and export packaging requirements, with the idea that it will help the developing countries to improve the packaging of their export commodities and make their products more competitive in the international markets.

Fifty-five representatives from 16 Afro-Asian countries: Bangladesh, Hong Kong, India, Indonesia, Iran, Kenya, Korea, Malaysia, Nigeria, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Turkey and Ghana, had attended the seminar which was hosted on board a Rhine steamer moving through the Netherlands.

During the whole seminar, field trips were arranged to visit the following organizations and institutions: Pakex '77 in Birmingham, European Container Terminal (ECT), Institute TNO for Packaging Research, MAKRO, Thomassen & Drijver-Verblifa N.V., Honig Group, United Glass Works, Unilever N.V., Breda Packaging Machinery, Campina Milk, and Skol Beer.

The excursions provided valuable opportunities for the participants to see the Dutch distribution channels, port facilities, marketing practice, packaging techniques and consumer preference. The visit to Pakex '77 was particularly an impressive experience for most of the participants. It is an excellent place to see varieties of packaging materials on display and packaging machinery in actual operation, with experts explaining the details and answering questions.

Other than the field trips, a series of lectures and discussions were conducted around the theme "Packing and Packaging". Topics included transport packaging, retail packing, physical distribution system, product and market, packaging technology and machinery, environmental considerations, laws and regulations, and others. Panel instructors were experts from CBI, TNO and local business executives. Some case studies, an interesting part of the seminar, were presented by joining participants from different countries in groups.

The overall seminar was well organized and prepared. The hosts of the institutes visited showed great friendliness in receiving the group.

According to the CBI director W.J. Rijpma, this was the second time they organized such a seminar. The first one was done for the South American countries in 1976. The third one will be prepared for the French speaking African countries in 1978.

PACKAGING MACHINERY SUPPLIERS

Here are some packaging machineries available to developing countries.

FILLER

Kalishmatic Fillers ranging from semi-automatic fillers to fully automatic lines for filling liquids, lotions, creams, shampoos, chemicals, pastes and many others. Very economical for high quality machines designed especially for the developing countries where reliable simple machinery is very necessary. (H.G. Kalish Co. Ltd.)

CARTONER

Econoseal E-system is an automatic machine for low cost, low speed, compact horizontal cartoning of product for electing, closing and sealing boxes of either folding boxboard or corrugated material. Available with cold glue or hot melt glue seal closures to operate with end-loaded style cartons. (Econocorp Inc.)

Econoseal T-system is a completely automatic system for forming, conveying, closing and sealing top-loaded cartons with three flap glue seal closer.
(Econocorp Inc.)

WRAPPER

Horizontal and vertical wrapping machine on which wrapping material is formed from a roll stock into a pouch and packages single or multiple products, supplied manually or automatically.
(Domain Kabushiki Kaisha)

Manual and automatic shrink packaging machine for sleeve wrapping various products such as jars, cans, bottles, cartons with or without tray by plastic film, and then the wrapped products are forwarded to shrink tunnel where the plastic film is shrunk snugly around the product.
(Domain Kabushiki Kaisha)

SEALER

Econoseal is a simple, low cost, carton sealer available for sealing

boxes of one, two or three flap construction made of either folding boxboard or corrugated material. Units available in either cold glue, hot melt glue or hot air sealing. (Econocorp Inc.)

Portable and semi-automatic continuous band sealers bag tops of plastics, laminates and many other heat sealable materials.
(Domain Kabushiki Kaisha)

LABELLER AND PRINTER

Hot stamping machine to press the stamping foil and foil cutting machine to cut the hot stamping foil. Various kinds of hot stamping foils such as pigment foil, wooden grain foil, etc.
(Murata Kimpaku Co., Ltd.)

Roll-fed labelling machine uses roll-stock labels, cuts square on die-cut labels, applies hot-melt adhesive to label and applies to round, square or oral containers, glass, metal or plastic at speeds of 40 to 500 per minute, saving 10 to 30% less cost than stack labels.
(B & H Manufacturing)

Semi-automatic pressure-sensitive label dispenser that dispenses labels to an operator who then may take the label and apply to some available product. The dispenser will automatically put a new label in the same position the label was removed from.
(The Joseph Manufacturing Co.)

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CALENDAR OF SELECTED EXHIBITIONS AND CONFERENCES RELATED TO PACKAGING AND FOODSTUFFS

The most important food fairs have been included in this list since they often include smaller sections on food packaging materials and machinery. Most packaging exhibitions include integrated conferences on current packaging problems and developments. These have generally been omitted from this list.

5–12 June	IFFA – International Meat Trade Fair	Frankfurt/Fed. Rep. of Germany
14–18 June	SAVROPAK – Packaging, general	Belgrade/Yugoslavia
19–21 July	Western Packaging Exposition	Anaheim California/USA
9–16 September	INTERBRAU – International Exhibition of Brewery and Beverage Machinery	Munich/Fed. Rep. of Germany
10–15 September	ANUGA – International Fine Foods and Provisions Exhibition	Cologne/Fed. Rep. of Germany
15–23 September	INTERPLAS '77 – Plastics and rubber, general including packaging	Birmingham/UK
20–23 September	Seventh International Congress and Exhibition of Aerosols	Brussels/Belgium
20–24 September	Fifth International Technical Fair "Packaging Materials & Machines"	Helsinki/Finland
3–9 October	IPACK-IMA '77 – Packaging general	Milano/Italy
3–9 October	ITAS '77 – Food Exhibition	Milano/Italy
4–8 October	The 4th Asian Packaging Congress – "Management of Resources Through Better Packaging"	Seoul /Korea
5–9 October	International Exhibition of Mechanical Handling, Storage Distribution	Padua/Italy
10–13 October	GRAPH-EXPO '77 – Printing industries	Chicago/USA
16–23 October	TAROPAK & POLIGRAFIA – Packaging, Printing, Storage and Handling	Poznau/Poland
17–19 October	PAC-EX '77 – Canadian National Packaging Exposition	Toronto/Canada
28 October – 4 November	International Agriculture, Water and Food Fair	Teheran/Iran
15–18 November	FIE-FOODPACK '77 – Food and packaging	London/UK

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MATERIALS

37978 THE FUTURE OF ADHESIVE USE IN PACKAGING AND PACKAGING MATERIALS

The use of adhesive in packaging and its future development in 5 product categories: flexible packaging, corrugated and paperboard products, composite cans, fiber tubes and cores, metal cans, labels and tapes are discussed. The anticipated legislations, ecological impacts and the marketing shares are briefed.

(Adhesive Age, 1/77, 20:1, pp. 35–38.)

38182 NEW LINE OF ADHESIVES

Chemtrol Adhesives Inc. have introduced 3 acrylic pressure-sensitive adhesives for various applications by roll label converters. The P-300 is geared for pharmaceuticals and cosmetics packages, the P-325 is for general uses and the CT-380 is for freezer uses.

(PFF Converter, 2/77, 57:2, p.26)

38497 PROTECTION FOR PROCESSED CEREALS

The use of insect-resistant-treated (IRT) multiwall bags has been seen growing as a result of more stringent hygiene standards set against the contamination of food products and the prevailed food shortage problem.

Several IRT paper bags, with PE coatings and pasted-open-mouth closures wece tested and examined after 5 months of storage. The results were briefed in the article.

(M. Packaging, 2/77, 50:2, pp. 37–38.)

38869 TIN VERSUS CORROSION

A book review on Tin Versus Corrosion was introduced. The book, covering a full description on the corrosive resistant properties of tin and its alloys, is divided into 4 sections: tin and tin-rich alloys, tin and tin alloy coatings, tinplate, specification and test methods. The handbook is particularly useful to tin can manufacturers, tin-can food processors and laboratory testing personnel.)

(Tin Uses, 1977, No. 111, p.17.)

38927 POLYSTYRENE FOAM: THE JOBS IT DOES BEST.

Polystyrene foam has found wide acceptance as a productive material, to immobilize, isolate, insulate or cushion industrial products. In this article, the studies on properties of the polystyrene foam, its best applications, the economical advantages of using it on packaging, important factors in designing PS packages and some safety problems in molding process are presented.

(MMH, 32:2, pp. 62–67.)

MACHINERY

38844 PRINTING CANS BY FLEXOGRAPHY

Metal Box have developed an unit flexographic printing machine, Chromax, for printing two-piece metal cans, plastic cups and extruded aluminium aerosols. Featuring a six-station decorator with facility for applying each ink or coating separately in sequence and wet-on-dry, the system is capable of operating at speeds between 150–200 cpm. The functions and characteristics of the unit are briefed in the article.

(Tin Int., 2/77, 50:2, pp. 49–50.)

39016 PRINTER-SLOTTER DEVELOPMENTS

The printer slotter developments, from highly sophisticated numerically controlled machines to the current trends in stereo mounting systems, are reviewed. The various features of the printer slotter from Langston Masson, Simon Container, Universal and Gandossi & Fossati are discussed. The economical factors, operation efficiency and downtime control are considered.

(IPBI, 3/77, 20:3, pp. 28, 30, 32–39.)

NEW TECHNOLOGY

38141 WEB-FED GRAVURE: ADVANCES INCREASE ITS ADVANTAGES IN CARTON

The technological advancements in web-fed gravure printing of folding cartons within the last 2 years were summarized. The major innovation in achieving the high quality register control within the tolerance of ± 0.004 in. by using electric eyes, tension control system and other devices was introduced. A cost analysis and comparison of the economical advantages in sheet-fed offset versus wed-fed gravure were presented.

(Boxboard Containers, 1/77, 84:6, pp. 31–36.)

38158 WARP STUDY INVOLVED A VARIETY OF INSTRUMENTS

A survey on the functions and significances of some special equipment not usually found around the average corrugator was introduced. Items such as moisture gauges, temperature indicators and controllers, tension measuring devices, relative humidity and adhesive thickness gauges were illustrated and their effectiveness were studied.

(Boxboard Containers, 1/77, 84:6, pp. 39–43.)

38208 FILMS PRESERVE PRINT
The printing techniques of manufacturing protective and decorative laminations are introduced by the author. Several methods of application equipment, the properties and costs of a wide range of adhesives and the selection of the proper combination of adhesive film and ink are discussed.
(Aerosol Age, 2/77, 22:2, pp.28–30.)

38893 AN UPDATE ON SYSTEMS AND ECONOMICS OF COEXTRUSION
Two papers, one deals with the basic design elements of blown film coextrusion systems, the other examines economic consideration of coextruded combinations versus laminations, are presented for the converter industry. The article lists an adhesive guide for blown film and coextrusion, and discusses the parameters for choosing the adhesive for various laminate materials in lamination.
(PFF Converter, 2/77, 57:2, pp. 57–59, 62.)

38901 SOLVENTLESS RELEASE SYSTEM REDUCES ENERGY CONSUMPTION.
Adhesives Research, US, has announced their introduction of the first in the world, a 100% solventless silicone system, a combination of two solventless coatings, the Syl-Off 7044 and Q2-7069 from Dow Corning Corp. for coating release liners. The integrities and economical values of the system are evaluated.
(PFF Converter, 2/77, 57:2, pp. 65–66.)

39024 HOW PREHEATER VARIABLES AFFECT ITS ABILITY TO REMOVE MOISTURE FROM LINERBOARD.
Warped board at the delivery end of the corrugator is always a problem for the corrugated converter. To overcome the unbalanced moisture in the corrugated structure, a number of factors in considering the effectiveness of preheaters and their operation principles are studied. The effects of preheater speed, tension, direction and friction in moisture removal are illustrated.
(Boxboard Containers, 3/77, 84:8, pp. 27–30.)

HANDLING, DISTRIBUTION AND STORAGE

37846 ALUMINIUM PALLET
Extrados Co. Ltd. of Canada have manufactured an all-aluminium pallet formed by 2 extrusions. The recyclable, rust and rot resistant, and temperature proof pallet has built-in locking devices to eliminate the fasteners. The pallet is available in 2 or 4-way entry and double or single-deck configurations.
(Canadian Packaging, 1/77, 30:1, p.45)

38919 ACCURACY – A GREAT NEW WAY TO JUSTIFY A SYSTEM.
Accuracy opens the new levels of error-reduction inherent in today's handling system. Defining errors found in a storage-retrieval system as "functional" and "informational", the author gave an expert's view on the causes of error, error measurement, detection, and costs.
(MMH, 2/77, 32:2, pp. 40–44.)

39032 PACKAGING FOR DISTRIBUTION
A comprehensive study was presented on packaging for distribution. The first part reviewed the designing of corrugated transport containers, basic principles of package protection and the introduction to the Computer Assisted Packaging Engineering (Cape) program. The second part dealt with the laboratory testing of package while the third part discussed the case for modular packaging.
(Canadian Pack., 3/77, 30:3, pp. 19–29.)

SPECIAL PACKS

30106 IT'S LOVELY FOR LIBBY JUICES
A 32-oz. custom-moulded fruit juice decanter, designed by Owens Illinois, has been introduced by Libby for their 6 natural fruit juices. The new design enhances the natural colour of the juice glowing through the clear glass. The pack features a steel 58 mm. twist-off vacuum-lug cap and a tamperproof and sanitary shoulder label.
(Pack. Digest, 3/77, 14:3, p.15.)

30114 PE FOAM TOUGHENS ARMOR FOR 2-LITER 7 UP BOTTLE.
Owens-Illinois have come up with another light-weight 2-litre bottle with a preprinted foam label for cushioning and graphic design. Called Poly-Shield, it differs from the previous plasti-Shield by using the PE rather than PS for shielding.
(Pack. Digest, 3/77, 14:3, p.32.)

30122 NEW CONTENDERS IN CLOSURES
Three new plastic closures for bottled liquids offering protection, function and convenience have been launched in the US market. The trio comprises: the tamper-proof-Dripless, a 2-piece style with inner diaphragm; the Prestige, a one-piece style for carbonated and non-carbonated; and the Ring Cap, a one-piece style for carbonated and non-carbonated. The economical advantages and performances of the 3 closures are evaluated.
(Pack. Digest, 3/77, 14:3, pp.41 – 43.)

39073 NEW FRUIT CARTON CUTS PACKAGING COSTS 40%
Forenade Well of Sweden have developed a new corrugated carton for fruits, which is claimed to reduce packaging costs and labour requirements substantially. The carton is made up of 3 pre-fabricated components: a section of one-layer corrugated cardboard and 2 box-ends made of 2-layer board. Loaded cartons can be stacked up to 9 high.
(Canadian Packaging, 3/77, 30:3, p.15.)

39099 PREMIUM PACKAGING
Gillette faced a problem of keeping a pen and a hair spray can together when they wanted to sell their Adorn hair spray with a pen as a premium. The attachment was finally solved with a heat-shrunk PVC band which allowed the basic package graphic to show through. Only minor production line adjustments were required to do the packing.
(Pack. Digest, 3/77, 14:3, p.8.)

39065 C/R CLOSURE FOR COMPOSITE CANS
Weatherchem Corp. have announced a new child resistant closure for composite cans for use with dry products. The 2-piece closure consists of a skirted base and a snap-on cap which can be opened only by prying with a coin or other flat tool. The closure design has complied with all effectiveness provisions of the US Federal Poison Prevention packaging standards.
(Canadian Packaging, 3/77, 30:3, p.13.)

TESTING AND ANALYSIS

39040 VOLUME CONTENT, X-RAY METHOD.
The BAMA test method for volumetric labeling of aerosol cans is introduced as more and more switch is seen from net weight to volumetric in aerosol industry. The method involves the use of X-ray installations and facilities for film radiography. Details of the principle and procedure are discussed in the article.
(Aerosol Age, 3/77, 22:3, pp. pp.24, 25, 45.)

39081 SHRINK-FILM TESTING, A SIMPLIFIED LABORATORY METHOD
A quick and easy method for testing shrink film requirements before and after shrinking is introduced to Packagers. The system consists of some simple devices and arrangements. In the article, the testing procedure and tables listing the free shrinkage versus temperature, and a comparison of the properties of film before and after shrinking are given.
(Mod. Packaging, 3/77, 50:3, pp.37–38.)

LAWS AND REGULATIONS

37895 CANNERS TAKE A WEIGHT AND SEE ATTITUDE
Taking the initiative in the drained-weight labelling issue, the National Canners Assn. has moved ahead of the FDA proposal. However there is still controversy about the meaning of drained-weight between NCA and FDA. A typical label proposed by NCA was printed in the article.
(M.Packaging, 1/77, 50:1, p.14.)

38257 OZONE/FLUOROCARBON CONTROVERSY
The Fisheries & Environment Minister of Canada announced on Dec.15, 1976 that the government would move to phase out the use of flurocarbons 11 and 12 in aerosol. The act starts with reducing the non-essential use which will reach full elimination by 1978. The need to redefine the non-essential use and any up-coming labelling regulations are being investigated.
(Canadian Packaging, 2/77, 30:2, p.26.)

38281 NEW CODE FOR MILK BOTTLE CAPS.
A new regulation will be enforced on the UK milk industry by July 5, 1977. The rule states that all milk bottles will have to bear different colour code cap and lettering for sterilized and ultra heat treated milk.
(Int. B&P, 2/77, 51:2, p.12.)

38455 FDA TO REVIEW FOOD ADDITIVES
FDA has announced that it will periodically test all food additives on the market and is expected to make a review on packaging related additives including the colour additives by the mid-1980. One of the additives being investigated is the acrylonitrile.
(M.Pack., 2/77, 50:2, p.10.)

38851 A GUIDE TO PACKAGING REGULATIONS
The US legislation in packaging is quite a complex picture to have full understanding. Because of the great variance in products, geography and industrial productivity of each state, the laws relative to packaging and food vary considerably on a state-wide basis. This article listed some national and state requirements and the addresses of the enforcement officials where packaging information can be obtained.
(Tin Int., 2/77, 50:2, pp.66–67.)

38885 FOOD NEWS
The recent EEC directive have compiled new regulations on foodstuffs. Informations about the level of erucic acid in edible oils and fats, and in foods containing added oils and fats; the deletion of 5 food colours: E105/yellow, E121/orchil, E130/blue, E152/black, and E181/umber; and the proposed fruit juices regulations are outlined.
(Fd. Pro.I., 2/77, 46:453, p.11.)

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FOUR-DAY FIE-FOODPACK EXHIBITION IN LONDON

The 10th International Exhibition for the Food and Allied Industries takes place at the National Hall, Olympia, from November 15-18, 1977 The event has especial significance as it marks a decade of exhibition service for food manufacturers in well over 40 countries.

The biennial series has achieved success through its lively presentation of important developments in processing and packaging. New products introduced by FIE-Foodpack exhibitors have set trends in food production and packaging that are, in Europe certainly, unique.

The majority of previous exhibitors in the series chose London for the 10th event on the grounds that the food industry interests were better served in the capital itself.

The Food Industries Exhibition covers in depth all aspects of food manufacture, handling and distribution, including canned, frozen, chilled and dried foods, bakery goods and confectionery, meat, poultry and other fresh foods, milk products and soft drinks.

Exhibits include ingredients and flavourings, process plant and machinery, filling and packaging equipment and machinery, labels and labelling systems, specialised mechanical handling equipment, and other products used by food manufacturers, packers and distributors.

Every food manufacturing company in Britain sends high-level executives to the Food Industries Exhibition. So, too, do the leading manufacturers in many other countries.

The audience is a decision-making one: chief and other engineers, production and factory managers, development chemists and food technologists, packaging managers, designers and consultants, brand managers, plant bakers, plant managers, quality controllers, packing station managers, depot and cold store managers, distribution, meat and produce department managers and company directors responsible for relevant disciplines.

Attendance, by invitation, exceeds 20,000 visitors. Tickets are free, from the organisers or from exhibitors.

Conferences are run in conjunction with the exhibition. The subject matter is chosen in consultation with the food industry and its suppliers. Sessions are arranged daily to cover different aspects of food manufacture. There were over 800 delegates in 1975.

According to the organisers, BPS Exhibitions Ltd, London: "Everyone concerned with food manufacturing is constantly looking for ways not only to step up output, but to achieve economies without reducing the quality of their products. With this in mind, never has the choice of plant, equipment and materials offered by exhibiting firms been so extensive "

A huge variety of packs and packaging materials will be seen at FIE-Foodpack and will include lightweight cartons, trays and films for all types of products

« Cont on p 2»

LATIN AMERICAN CONGRESS

Following the success of the first Latin American Packing and Packaging Congress in Mexico City last year, the sponsors will be holding the second annual Congress from September 19-23 at the Sheraton Hotel in Buenos Aires.

Organised by the Instituto Argentino del Envase (Argentine Packing Institute), the Congreso Latinoamericano de Envase y Embalaje will convene under the auspices of the Union Latinamericana del Embalaje (ULADE, the Latin American Packaging Union), a member of the World Packaging Organisation and sponsor of the first Congress.

Representatives of various Latin American packaging organisations will attend. Subjects to be covered at Congress sessions include paper, paperboard, cartonboard, corrugated, glass, cellophane, tinplate, plastics, adhesives, inks, aluminium and wood.

Congress headquarters is at the Argentine Packing Institute in Buenos Aires. Dr Enrique Schcolnik is President.

«cont. p.1»

"The trend towards more lightweight materials is becoming increasingly significant," said a spokesman. "In this way, food manufacturers are cutting down on material usage as well as saving on handling and freight costs."

Widely represented will be vacuum packaging and overwrapping machines, as well as many different types of cartoners for erecting, filling and sealing – ranging from small table top models to fully automatic systems. Stretch film wrapping, a low cost method of producing a tough, protective skin-tight wrapping for individual packs or pallet loads, will be prominently featured.

The exhibition also breaks new ground with various other systems of coding, labelling and pricing including the latest developments in weighing. According to the spokesman: "The demand for closer control of excess pack weight, or 'giveaway,' has led to more precise methods of filling and weighing. The savings on 'giveaway' could be quite substantial."

Both the exhibition and conference will focus on significant trends and developments affecting manufacturing, marketing and retailing. One of the more controversial topics for discussion will be Universal Product Coding, which is expected to be in full operation by the end of the '70s.

IPACK-IMA WILL AGAIN BE SHOW PLACE

At least 16 countries will be represented by exhibitors at the Italian International Exhibition – IPACK-IMA 1977 – to be held in Milan from October 3 to 9.

The exhibition will present a complete survey of the Italian and foreign production in packing and packaging, mechanical handling, and food-processing industrial machinery.

Exhibitors who have already booked space come from Austria, Belgium, Canada, Czechoslovakia, Denmark, France, Germany, Great Britain, Holland, Italy, Japan, Spain, Sweden, Switzerland, the United States and Yugoslavia.

Twenty per cent of the exhibitors are taking part in IPACK-IMA for the first time, demonstrating the widespread and rapid expansion now going on in the food-processing machinery sector, and that of packing and packaging production.

According to the organisers, the exhibition will be a show place for innovations in the technical field in line with current technological developments, and will confirm the dedication to progress and continual improvement which for the past 20 years has been the hallmark of those branches of engineering activity that IPACK-IMA so adequately expresses.

Technical fair in Helsinki

The Helsinki International Technical Fair 1977 will pin-point "Packaging and Material Handling" as its theme for the September 20-24 exposition.

Covered will be the whole field of packaging – containers, packaging materials and machines, as well as various materials-handling product groups, say the sponsors, the Finnish Association of Technical Traders.

The Finnish Packaging Association has, meanwhile, released the latest available figures of the use and production of packaging materials in Finland.

Basic Notes on

Silica is used as the basic ingredient along with about 10% sodium compounds (carbonate, bicarbonate or nitrate) as fusion media. Silica-sodium glass is soluble in water and is known as "water glass", therefore, calcium compounds are added to make the glass insoluble in water. This is known as soda-lime-silica glass and is the type used for most types of commercial jars and bottles. Usually, small quantities of conditioning agents are added oxidizing agents, decolourizing agents, colouring or opacifying agents.

PROPERTIES OF GLASS

Glass is inert in contact with most chemicals and, except for light penetration, the contents of glass containers are not affected by environmental conditions. The cost of glass is comparatively low but, usually, transportation costs are higher than competitive materials.

BOTTLE MAKING

Bottles are formed by blowing molten glass against the sides of a mould in the blow-and-blow or press-and-blow systems. The outer surface of the bottle comes into contact with the mould and takes the grain of the mould surface. This results in a comparatively high coefficient of friction and causes scratching or bruising of the surface when they rub together, particularly on high speed packaging lines. A number of coating and chemical or physical treatments may be applied to the outside of glass containers for special decorative or protective purposes. A combination of two coatings are commonly used. Metallic compounds usually tin or titanium tetrachloride - are applied at the hot end of the lehr

GLASS CONTAINERS & CLOSURES

and baked on during the annealing process. Subsequently, stearate coating to reduce the coefficient of friction. The metallic coating is more or less permanent but the stearate coating washes off readily. Labelling is not a problem with these coatings.

TYPES OF BOTTLES AND CONTENTS

There are general design principles pertaining to glass containers depending on the type of contents. These principles are based on considerations such as handling, filling, shelf stocking, customer appeal and dispensing.

Tablets

Usually, tablets are packaged in stock bottles, either round or rectangular. Since different shapes and sizes of tablets form different fill patterns, there are varying fill heights in the container; this is influenced, also, by variations in the inside volume of the bottle. Automatic cottoners place a premeasured wad of cotton in the void above the tablets; this presents a problem of tablet breakage when fill heights vary excessively.

Extremely flat or angular bottles are not well suited to holding tablets; round, square or oval containers are preferable.

Semi-Solids

Semi-solids, such as peanut butter, should be packed in squat wide mouth jars for several reasons:

- air must be displaced from the jar during filling; usually bottom up filling is used.
- the product is dispensed by using a knife or spoon; therefore, the jar should not be deeper than about three-quarters the length of the average teaspoon.
- it is difficult to remove product from corners; this suggests that round or oval containers should be used.

Viscous Liquids

When dispensed by spoon, viscous liquids should be packaged in squat round containers. A bottle with a gradually tapered neck must be used when the product is poured out of the container (e.g. ketchup). Viscous products tend to run down the outside of the finish and the neck of a bottle when pouring is stopped. Therefore, provision should be made to allow wiping off the finish, neck and label by designing a neck and shoulder that provides temporary storage space for the drip.

Free Flowing Liquids

This is the largest volume type of product; the limitations on bottle design are reduced to a minimum.

Volatile Liquids

Volatile liquids would include rubbing alcohol, carbon tetrachloride, lighter fluid and nail polish remover. A good closure is necessary. Usually pharmaceutical type bottles are used.

Gaseous Liquids

This category includes carbonated beverages such as soft drinks and beer. The bottle must withstand the gas pressure and be well capped. Usually, round bottles with sloped shoulders are used.

Granular Materials

Granular or crystalline materials (e.g. bath salts) are free flowing but quite often these products are hygroscopic and will tend to cake on exposure to a humid atmosphere. Usually, wide mouth bottles with effective closures are used.

Flours

This would include powdered products such as instant coffee and some spices. Usually, these products vary in density but are filled to a declared net weight; this results in variations in fill height and stippling. The neck of the container should be considered. Container design will vary also with the method of dispensing.

CLOSURES

The primary function of closures is effective sealing to provide packages which are air-tight, leak-proof and free from contamination.

Screw Caps

Screw caps are applied by engaging the threads on the caps and the matched threads on the container finish and twisting with sufficient torque to make an effective seal between the liner or gasket in the cap and top of the container; it is important that the container top be perfectly flat. Screw caps are used to the greatest extent in the 18mm to 38mm range. The term "CT" caps (continuous thread) is used for screw caps.

Lug Caps

Lug caps have lugs instead of threads; the container has interrupted threads rather than continuous threads. The closure is applied by placing the cap on the container with the lugs between the interrupted threads and twisting the cap so that the lugs fit under the threads. Lug caps require only a ¼ turn to secure the closure compared to 1¼ to 1½ turns required for CT closures. In addition, the appearance is improved and it is possible to print on the side-wall of the closure. Lug caps are used mostly in the 40mm to 89mm range but

(to be cont. on Pg. 4)

(Cont. p.3)

some smaller diameter caps are used. (e.g. the 28mm cap used for ketchup bottles.)

Friction Fit Caps

Friction fit caps have neither threads nor lugs. A resilient gasket is fitted inside the closure shell, this gasket has a slightly smaller inside diameter than the outside diameter of the container. The seal may be made on the top surface of the container or on the outside edge of the container finish.

Roll-On Caps

Roll-on caps are made of aluminium which is sufficiently ductile to be rolled into the container finish threads on the packaging line. The caps, without threads, are placed on the container finish and special chucks on the capping machine roll the metal snugly around the finish threads.

Pilfer-Proof Cap

The pilfer-proof cap is a variation of the aluminum roll-on closure. The bottom portion of the skirt is perforated and locked under a special neck ring on the container finish. The perforations are broken when the cap is removed and the locking ring stays on the neck of the container.

Crowns

Crowns are the crimped-on closures used to seal beer and carbonated beverage bottles. The actual seal is made between the bottle finish and the crown liner.

Plastic Closures are classified in two groups – thermosetting and thermoplastic.

The cheapest thermosetting resin is **phenol formaldehyde** which produces black and dark colours.

The **amino formaldehydes – urea and melamine** – provide a range of brighter, more translucent shades.

Usually, fillers, such as wood flour or alpha cellulose, are used with thermosetting resins to decrease costs. They act as a binder and develop special physical characteristics; the degree of translucence or opacity is dependent on the type and amount of filler. Dyes or pigments are used as colouring materials.

Thermosets are hard and rigid but they do not have the resistance to torque or impact that is a feature of the thermoplastics.

Thermoplastic closures are made from resins such as polystyrene, polyethylene, or polypropylene. The variable cost of producing thermoplastic closures is less than the cost of producing thermosets, but the cost of tooling moulds is considerably higher.

KLINE GUIDE TO THE PACKAGING INDUSTRY 1977, published by C. H. Kline & Co., 330 Passaic Avenue, Fairfield, New Jersey, 07006, U.S.A. (Price: US$ 56.00).

The 1977 edition of the Kline Guide to the Packaging Industry is a comprehensive and informative work of special interest to packaging industries in developing countries who wish to expand their export markets, particularly in the U.S.A. A sub-section, "Packaging Laws and Regulations," will be of inestimable value to packagers in some doubt as to what items are acceptable for importation in the U.S.A.

In a foreword, the editor, Mr. James A. Rauch, says: "The scope of this Guide includes such primary packaging products as containers and flexible packaging and secondary products such as components and other miscellaneous packaging materials. In addition, household and institutional disposable, containerization and packaging machinery are also discussed but their value is not included in the current and future projections of the packaging industry. The Guide provides four basis references to the reader:

1. A summary of economics of the industry, including trends and future outlook of shipments, profitability, expenditures, pricing and raw materials.
2. A comprehensive analysis of six product groups and 21 primary and secondary products, giving basic description of the products, production and value of shipments, end uses, sales by major producer, price trends, raw material requirements, and sources of information.
3. An analytical directory of 435 major companies with sales of over US$5 million and their estimated sales by product or product line.
4. A critical review of the more specialised information available from industry organisations, publications and the technical and statistical literature.

"Our objective is to provide an accurate and thorough review of the industry ..... The wealth of information in the Guide provides a high ratio of value to cost that is unique among business publications. Managers may thus wish to place the Guide at all levels and functional areas within their organisations."

The Guide comprises 11 sections under the following major headings The Business of Packaging; Paperboard and Molded Pulp Packaging; Metal Containers; Glass Containers; Plastic Containers; Flexible Packaging; Wood Packaging; Miscellaneous Packing Products; Equipment and Systems; The 435 Leading Packaging Companies; Industry Organisations and Information Sources.

MATERIALS

42606 INDUSTRIAL PACKAGING MORE PROTECTION FOR LESS

Corrugated for industrial packaging is increasingly to pick up the market as the cost of protecting, storing and shipping industrial products continues to mount. Improvements in corrugated industry are growing and the limit is sky-high. Recent new box making techniques are focused on selective lamination, knock-down designs and an up-graded medium rather than the outer liner. Details of the development in these respects are discussed in the article.

(Modern Packaging, 5/77, 50:5 pp. 19-22, 24.)

43059 WHAT'S NEW IN FLEXIBLE PACKAGING

The evolution of material and technology in flexible packaging is studied. Factors related to the development such as retailing activities, more stringent packaging regulations, vacuum metallizing, co-extrusion, photopolymer printing plates, thermoforming flexibles and retort pouches are discussed.

(Aust. Pack., 5/77, 25:5, pp.55–57.)

43083 TIN PRINTING, BOX MAKING, CANNING AND PACKING

A survey is done on the development of two-piece tinplate cans, the draw-and-iron can and the draw and redraw can, for both drinks and food industries. The cost advantages of the all-steel 2-piece can over the all aluminium 2-piece can are briefed. Statistics on the material supplies, consumptions on different markets are discussed. Reviews are given on the can-making in Canada, US and UK, can reclamation, anti-can legislation and trade courses.

(Tin Int., 5/77, 50:5, pp.177, 180 182, 184).

43174 NEW TRENDS AND DEVELOPMENTS IN PACKAGING

A study is done into the future new dimensions of corrugated industry. The supply and demand of corrugated for packaging is surveyed with respect to the economic fluctuation and intra-company discipline. Materials posting threats to the corrugated industry are compared and evaluated.

(Paperboard Packaging, 5/77, 62: 5, pp. 108B, D, F, H.)

43182 STEEL CONTAINER OUTLOOK GOOD

The outlook for steel containers in the next 3 years is discussed. The 3 latest techniques in steel can industry, the 2-piece draw-and-iron (D & I) can, the 2-piece draw/redraw (DRD) can, and the 3-piece tin-free-steel (TFS) can are introduced. The reasons favouring steel over aluminium together with the welding, cementing and soldering techniques are accounted and compared.

(F & D Pack., 4/77, 36:8, pp. 72, 73.)

43190 PACKAGING MATERIALS

An up-to-date assessment of prices, delivery, long-term views on adhesives, films, foils, glass, laminations, plastics, paperboard and boxboard, metals and ink is presented. Useful tables that can assist packagers in selecting the right material with the right functions are listed. Future developments of the materials are mentioned.

(CANAD PACK., 4/77, 30:4, PP. 17-31.)

MACHINERY

38976 PNEUMATIC HEAD-LACKING SYSTEM REDUCES TRIPLEX SETUP TIME.

The State Container Corp. of US have recently installed an innovative pneumatic gang locking device on the triplex of its S & S corrugator. The new system enables the company to reach a more competitive position by increasing operator efficiency and improving plant productivity. Schematic drawings of the slitter-scorer system are shown in the article.

(Boxboard Containers, 2/77, 84: 7, pp. 35–37.)

43240 DETERGENTS AND BOTTLE CLEANING DEVELOPMENTS

Seeing the increasing possibility in the proportion of returnable bottles, bottle cleaning system is considered to be the heart of a beverage line. This article introduces many latest developments in bottle washing equipment and detergents required. More than 10 washing systems, their specific functions, options, and washer details are discussed. Various types and effects of detergent are evaluated with respect to different systems.

(Int. B&P, 4/77, 49:4, pp. 36, 38, 40, 42, 44, 47, 48, 50.)

43265 HEAT RECAPTURED TO SAVE ENERGY IN LAMINATING

RJR Archer has developed an energy saving programme, the Collecto-Therm heat pipe system, for its massive laminating machines. The system is a sprawling, 60 ft. long device, integrated directly with air intake and exhaust conduits. Hot air coming out of the laminator is transferred to dry the paper it processes and then recaptured for re-cycle. Schematic diagram of the system is shown and the efficiency of it is said to be 72% up.

(PFF Converters, 4/77, 51:4, pp 62, 64, 66.)

43273 TUBULAR WATER-BATH PROCESSES: MÅYBE YOUR WAY TO CAST PP FILM.

Tubular water-bath systems with

medium-output capabilities are being introduced in Europe for production of highly transparent unoriented films. The systems have the molten material extruded downward from a circular die, precooled by air stream, and then cooled by a water bath. Various models with their special features are discussed in the text.
(MPI, 4/77, 7:4, pp. 18–19.)

NEW TECHNOLOGY

38992 NEW PROCESS AT KNOTTINGLEY MAKES BOTTLES LIGHTER AND FASTER

Rockware have entered into co-operation with Heye Glas of Germany to move ahead in narrow neck, lightweight bottle manufacturing. The Heye narrow-neck press and blow (NNPB) process, involves rigid control of bottle production which gives an uniform glass distribution enabling glass weight to be reduced and yet improving the bottle strength and appearance. The NNPB manufacturing process is discussed and compared with the conventional bottle-making process.
(Rockpack, 1977, no.2, pp.6–7.)

43091 BASIC COLOUR MIXING SYSTEMS FOR FLEXO AND GRAVURE INKS

An analysis into the problems of storing and mixing of inks faced by the printer is introduced. The basic colour inks and the installation of a tank system for storage, blending mixing and dispensing of inks are discussed. Some technical factors for ink agitation and standardization of storage system are briefed.
(Converter, 5/77, 14:5, pp.13, 14.)

43117 LOCATION OF WATER SPRAYS IS CRUCIAL IN CONTROLLING WARP IN CORRUGATED BOARD.

An indepth study was conducted for controlling warp in corrugated board. Findings on the effect of preheater, water spray trials, water on double-face liner, the moisture addition methods, the advantages and disadvantages of single-face-web are discussed and tabulated.
(Boxboard Containers, 5/77, 84: 10, pp. 31–33.)

43257 CO-EXTRUSION-BLOW MOULDING FOR GAS TANKS AND INDUSTRIAL PARTS

An innovative intermittent co-extrusion-blow moulding technique, using independent concentric accumulators and annular piston rams, is introduced for producing multilayer containers in sizes from 5 qt./50 g. Diagrams and graphics illustrating the mechanical structure of the co-extrusion head and data interpretation on performance are listed. Gas tanks blow-moulded by such technique are diagnosed.
(MPI, 3/77, 7:3, pp. 15–17.)

43281 THE ECONOMICS OF THE NEW TECHNOLOGIES

Three emerging plastic moulding technologies that offer operational economies with equal or better product performance are detailed in this series. The scrapless forming, vented-screw injection moulding and stretch-blow moulding, their operation principles, technical improvements, economic savings and applications are discussed.
(MPI, 5/77, 7:4, pp. 53–62.)

HANDLING, DISTRIBUTION AND STORAGE

43166 MODULARIZATION STUDIED AS MEANS TO SOLVE WASTE FROM DIVERSIFICATION OF SECONDARY PACKAGING.

A study is conducted on the packaging modularization, damage, proliferation of sizes, metrication, sanitation and mechanization. Discussions go into the highly non-standardized shipping containers and their impacts on the packaging economics, a range of materials handling problems associated with bad packaging, obstacles to automation and mechanization of warehousing, and the likely remedies confronting with manufacturers.
(Paperboard Packaging, 5/77, 62: 5, pp. 86, 88, 90.)

43216 WHY THE URGENCY FOR BETTER ANALYSIS, TODAY

Techniques of analysis that best solve the increasingly complex problems encountered in materials handling today are covered by outstanding professors. Six trends, economic and technical, are creating a new pressure for more precise measurement of systems-planning factors. Four types of techniques: simulation, waiting-line analysis, routing analysis and locating analysis are discussed in the text.
(MMH, 4/77, 32:4, pp. 50–55.)

SPECIAL PACKS

38984 MULTI-PACKAGING

With the integrities of shopping convenience, easy handling, product protection and promotion, the multi-packaging system is seen widely adopted for cans and bottles by the beer and beverage industries. Members of the system: Hi-cone, shrinkfilm, Cluster-pak, Jak-et-pak, Karri-pak, Clip-type are evaluated. The possibility of applying multi-pack to the wide-mouth jar is discussed.
(Rockpack, 1977, No.2, pp.5,12.)

41897 1977 FOLDING CARTON COMPETITION

59 out of 387 entries were granted awards in the 1977 annual folding carton competition sponsored by the Paperboard Packaging Council

in Washington D.C The judges were impressed by the way the cartons communicated to customers, their ease of setup and ease of carton loading. 18 classifications included bakery goods, beverages, confections, cosmetics and toiletries, foods, hardware, paper products etc. Pictures of the winning items and their citations are listed in the article.
(Boxboard Containers, 4/77, 84:9, pp. 61–76.)

42663 RIGID BOX COMPETITION OF SEVERAL CLASSES

80 Awards were granted during the annual package competition of the US National Paper Box Asso. The author gave a review about the design, quality and structrual attributes of the awarded entries. The coordination between package designer and converter with respect to the improvement of package development was discussed. Pictures of the 80 winning awards were shown in the article.
(Paperboard Packaging, 5/77, 62:5, pp. 20–22, 24, 26, 28, 30, 33, 36.)

43158 REPLACING A TRADITION

Bayer has introduced a new slide-type 2-piece plastic box to replace its traditional tin box. The child-safety container, made of impact-grade polystyrene and offset printed with instant-dry UV-ink, has a built-in locking feature which does not permit the box to slide open unless the sides of lid are squeezed. The development of the package at, the Glenbrook Laboratory, the packaging operations and the quality control aspects are discussed.
(Modern Packaging, 5/77, 50:5, pp. 25–28.)

TESTING AND ANALYSIS

43042 PERMEABILITY OF FOOD PACKAGING MATERIALS

This is a paper presented at the April meeting of the Australian Institute of Packaging. It reviews the theory of gas and vapour permeability data. Factors affecting permeation such as the effect of pressure, temperature, mixed penetrants, coating and laminating are discussed. The measurement of permeability and food packaging requirements are briefed.
(Aust. Pack., 5/77, 25:5, pp. 51 – 54.)

LAWS AND REGULATIONS

43067 FDA MOVES TO RESTRICT PCBS

FDA has taken action to restrict the amount of potentially carcinogenic polychlorinated biphenyls (PBCs) in food products and in packaging. The proposed new levels cover products like milk, dairy, poultry, eggs, fish and shellfish. The biggest problem that remains to be settled is the fresh water fish.
(F&D Pack., 5/77, 36:9, pp.1,8.)

43141 ITS THE SAME THE WHOLE WORLD OVER

A brief review on the packaging regulations the world over is given. The American metric measures, the calling for standardization throughout Europe, the emerging Swedish and German packaging regulations, the implications of new weight limit for shippers and retail packages, the FDA additives move and the new legislation hearings in California, Minesota and Massachusetts are briefed.
(Modern Packaging, 5/77 50:5, pp. 9, 10.)

43232 SPRAY PAINT MAKERS TO ADOPT VOLUNTARY STANDARDS.

The spray paint industry is going to take initiatives in developing 2 standards on spray paint in reponse to requests by the US Consumer Product Safety Commission (CPSC). The proposed standards cover the functional operation of the container and the labelling practice Details of the recommended proposal are tabulated and discussed in the article.
(Aerosol Age, 4/77, 22:4, pp.19–22.)

43299 FDA APPROVES RETORTABLE POUCHES

At long last, FDA and USDA give the go-ahead signal to the retort pouch lines. First out are the Continental's Pantry Pack and Reynolds' Flex-Can with structure of polyester/foil/modified polypropylene. Economic savings, marketing conditions and packaging operations of the pouch are illustrated and discussed in the article.
(Modern Packaging, 6/77, 50:6, pp. 22–23.)

PACKAGING IN GENERAL

43018 PACKAGING

The development of packaging industry post-war is reviewed. New technology in packaging materials processing and manufacturing are surveyed. Factors influencing modern development, modern marketing strategies, conditions for material selection, and statistics on growth of material consumption are discussed.
(Aust. Pack., 5/77, 25:5, pp. 31–35.)

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4TH ASIAN PACKAGING CONGRESS

The 4th Asian Packaging Congress, organized by the Korea Design and Packaging Center on behalf of the Asian Packaging Federation, took place at the World Trade Center of Seoul from October 4 to 8, 1977.

58 representatives from 9 countries: Australia, Hong Kong, India, Indonesia, Japan, the Philippines, Sri Lanka, the Netherlands and the U.S.A. attended the Congress.

In the welcome speech of the inaugural ceremony, Mr. Heeduk Kim, President of the Korea Design and Packaging Center, stressed on the international economic co-operation among Asian developing countries. "We have come to realise that these forums are not merely aimed at improving our Packaging status but significantly influence the economic prosperity of the countries in the region. These developments are of mutual concern for the benefit of mankind."

A total of 7 papers were presented by the delegates around the Congress theme, "Management of Resources Through Better Packaging." The Papers from Australia, Japan and Korea contributed quite an in-depth view on the subjects explored.

Paper I. "Management of Resources Through Better Packaging — Corrugated Shippers Can Be The Key", by Mr. P.G. Wright, Australia.

Paper II. "Management of Resources Through Better Packaging", by Mr K C Fung, Hong Kong.

Paper III. "On Generating Packaging Consciousness", by Mr. M. Ct. Pethachi, India.

Paper IV. "Promotion of Right Packaging — Its Present Situation and Problems in Japan", by Mr. K. Fukuoka, Japan.

Paper V. "Unit Load System as a Means For The Rationalization of Packaging", by Mr. H. Kim, Korea.

Paper VI. "Management of Resources Through Better Packaging", by Mr. A.V. Bonoan, the Philippines.

Paper VII. "The Packaging Sector and its Development", by Mr. D.D.H.S. Wickremeratne, Sri Lanka.

Three guest speakers were also invited to give lectures on similar topics.

Lecture I. "Packaging Development Causing Decreasing Waste in Use — Packaging Alternatives For Wine", by Dr. W.P. Fornerod, the Netherlands.

Lecture II. "Production of Corrugated Board and Research Work in order to Improve its Quality", by Mr. Sture Ostlund, Sweden.

Lecture III. "Cost Reduction and Material Savings by the Systematization of Packaging and Physical Distribution", by Mr. Y. Mito, Japan.

After the Congress, participants were taken on tours to Samhwa Printing Co. Ltd. and Pacific Chemical Industrial Co. Ltd., where they noted the rapid development in South Korea's packaging industry.

The next 5th Asian Packaging Congress will be held in Manila in September, 1978, where the Packaging Institute of the Philippines will act as hosts.

2ND LATINAMERICAN PACKAGING CONGRESS

The Second Packaging Congress took place in Buenos Aires (Argentina) during the week from Sept. 19 to 23, sponsored by ULADE (Latin American Packaging Union) and organized by the Argentine Packaging Institute.

Over 400 delegates attended the Congress, which included seminars and discussion meetings on subjects such as paper, cardboard, corrugated board, cellophane, aluminium, adhesives, inks, wood, plastics and packaging machinery, as well as on glass and tin plate.

Local and foreign specialised firms showed their production of various types of packaging, while in the different stands visitors were offered samples and information on latest developments.

The ULADE Congress was attended by delegations of member countries — Argentina, Bolivia, Brazil, Uruguay, Chile, Colombia, Venezuela and Mexico.

ULADE's next Meeting will take place in Santiago (Chile), in Sept. 1978.

NEW HORIZONS FOR FOOD PROCESSORS FEB. 12-15, McCORMICK PLACE, CHICAGO

Food processors, faced with an expanding horizon of problems, regulations and opportunities, will gather in Chicago next February to seek solutions covering virtually every aspect of the seed-to-shelf industry.

The four-day gathering is expected to attract 12,000 members of the industry, according to the sponsors of the event, the National Canners Association (NCA) and the Food Processing Machinery and Supplies Association (FPM&SA). The two associations are combining their resources to address the wide range of food processor interests. NCA will conduct conferences and general sessions and FPM&SA will operate the world's largest annual display of food processing equipment and supplies. All of the meetings and the displays will be in McCormick Place, making this the largest U.S. food processing gathering in the United States.

Topics of the NCA sessions reflect concerns of the entire food processing industry: food regulations and consumer issues; coping with the new national energy plan; the effects of the fishery management legislation on U.S. fish processors; the influence of government on the availability of food and its quality, price and safety; environmental controls and waste management treatment; the expanding role of aseptic canning; new technology in food processing and packaging systems; and how the industry can respond to Carter Administration policies on food supply and the national nutritional programme.

In the adjacent 6-acre exibition hall, the members of the FPM&SA will be demonstrating the newest techniques, and equipment and supplies to help processors meet the challenges of rising operation costs and increasing regulatory pressures. The International Exposition for Food Processors (IEFP), attracts an international gathering of food processors, with 50 foreign countries represented, many processors attending under the auspices of the U.S. Department of Commerce's Foreign Buyer Programme and through special international travel arrangements. The size and scope of the 1978 IEFP will surpass all others in the association's 92-year history.

PACKDIARY FOR 1978

Jan. 15-17 Pulp and Paper Industry World Conference and Exposition, Georgia World Congress Centre, Atlanta, GA, USA.

Jan. 23-27 International Conference and Exhibition on Jewish Culinary Art, Jersalem Convention Centre, Israel.

Jan. 24-26 Converting Machinery/Materials Exposition and Conference, Civic Centre, Philadelphia, PA, USA.

Jan. 24-26 Powder Europa '78, Rhein-Main-Halle, Wiesbaden, Germany.

Feb. 12-15 International Exposition for Food Processors, McCormick Place, Chicago, IL, USA.

Feb. 15-22 Salima, East Europe's major food fair, Brno, Czechoslovakia.

Mar. 3-12 GRAPHISPACK - 78 International Printing, Packaging, Conditoning and Bottling Industries Exhibition, Barcelona, Spain.

Mar. 7-10 Powtech '78, fifth international powder technology and bulk solid exhibition, Basle, Switzerland.

Apr. 10-14 NATPRINT '78, National Printing Machinery Exhibition, National Exhibition Centre, Birmingham, England.

Apr. 12-15 Euro Pack-IFL-Packaging Exhibition, Wels, Austria.

Apr. 18-21 SHD '78, second storage, handling and distribution exhibition, National Hall, Olympia, London.

Apr. 24-29 "Tomorrow's print markets", world printers' congress, Singapore.

Apr. 24-30 FOODMASH 77 - International Exhibition of Equipment for the Food Industry, Birmingham, U.K.

May 29-Jun 1 15th FEFCO Congress Estoril, Portugal.

Jun 8-14 INTERPACK 78, International Packaging Exhibition and Display of Confectionery Machinery, Fair Grounds, Duesseldorf, West Germany.

Oct. 30-Nov. 3 PACK EXPO, International Packaging Week, McCormick Place, Chicago, IL, USA.

Nov. 13-18 Salon de l'Emballage–General Packaging Exhibition Paris, France.

PACK EXPO 78 OFF TO RECORD START

PACK EXPO 78 International Packaging Week is off to a record start The huge packaging show and all the related events are scheduled October 30 through November 3, 1978 in Chicago's McCormick Place.

The PMMI Show Committee, charged with the planning and management of the PACK EXPO show, met during packaging week this year to review plans and early progress and quickly concluded that the major problem facing the committee was how to handle expected demand not just for the 1978 show, but for those scheduled in 1980 and beyond.

As in the past, an extensive seminar program, planned by the International Packaging Week Council, will be held concurrently with the show. Special attractions include a Plant Tour of leading U.S. manufacturers in the heavily industrialized Chicago area and a World Packaging Congress sponsored by the World Packaging Organisation.

PACK EXPO 78 International Packaging Week is sponsored by the American Management Associations, Packaging Education Foundation, Packaging Institute USA, Packaging Machinery Manufacturers Institute, and Society of Packaging and Handling Engineers.

CHINA PACKING & PACKAGING BUYER'S GUIDE (Price: US $10·00 Including postage) 500 Pages

Taking a progressive step to fill the information gap among the packaging industries and other related industries in Taiwan, the China Industrial Design and Packaging Centre has spent a year's time collecting information from more than two thousand companies and assembled into a directory – "China Packing and Packaging Buyers' Guide".

The Guide Book is divided into 4 main sections:

The first section, listed by categories, includes information about packaging materials, packaging machineries, suppliers of packaging materials and equipments, package design and printing service, blister and skin packing, packers and forwarders, materials handling equipment and packaging related agencies.

The second section is an alphabetical order of listed companies and their activities.

The third section is a study report on the packaging machinery and materials industries in Taiwan.

The fourth section is a glossary of some general used packaging terms and their descriptions.

The Buyers' Guide provides useful information to local business organizations as well as those oversea companies dealing in trades with Taiwan. The book is available from the China Industrial Design and Packaging Center, 3rd floor, 69 Nanking East Road, Section 2, Taipei, Taiwan.

ICHCA CALL FOR PAPERS FOR '79 MEETING

The 14th Conference of ICHCA (International Cargo Handling Coordination Association) will take place in Helsinki from May 26 to Jun 1 1979 under the theme 'From Raw Material To Finished Product'. Mr. R.P. Holubowicz, the Chairman of the Council and Executive Board of the Association, stated that conference delegates will be stimulated by the approach of ICHCA Finland to the way in which the Conference was being organized. Delegates would be spending about a day and a half of the Conference in technical visits, where they would have the opportunity of seeing at first hand various aspects of Finnish industry related to Cargo Handling. Specialised papers related to the visits will be presented during the course of these tours as a means of giving more "life" to the technical papers presented and more substance to the technical visits.

The remainder of the time would be taken up by discussing international subjects related to the theme at the Finlandia Conference Hall in Helsinki. At the same time, the Chairman issued a call for papers, from members of ICHCA and others, covering the handling and movement of general cargo, bulk solids, liquids and specialised cargo by land, sea and air.

Improved thermo-mechanical pulp in Sweden

An improved thermo-mechanical pulp process has been developed by Uddeholm, a recent US$110 million investment in Skoghall, Western Sweden

(to be cont on P.4)

(Cont. P.3)

The new process is said to utilize nearly 100% of the raw material, compared with 45-50% in the case of chemical pulp. Stefan Kronvall, marketing director of Uddeholm's Board Division described the background, "Uddeholm started to investigate the technical and market opportunities for the forest products in 1970. Attention was concentrated on further processing of the main raw material – the forests. Research was then done to find a better way of utilizing the resources, since the future supply of woods will be limited."

Right now, Uddeholm owns 350,000 hectares of productive forest land. The paperboard produced is mainly intended for packaging. About 90% of the annual production of 110,000 tonnes by Uddeholm are to be sold for export.

INTERPACK '78 GERMANY

INTERPACK '78, June 8-14, 1978 in Dusseldorf, Germany will be a big trade fair for packaging machinery, packaging material and confectionery machinery from all over the world. Over 1,100 noted exhibitors from 22 countries will show their latest level of developments. Most of the machinery and materials will be the improved, automated, rationalized or developed throughout the world since 1975.

The last 1975 INTERPACK trade fair attracted 111,000 specialist visitors who chose the fair for information, discussions and business transactions. 30% of the visitors were international from 92 countries.

Dusseldorf, Capital of North Rhine-Westfalia, is the land that realizes a third of the gross national product of the Federal Republic of Germany. It is an important economic centre in Europe. Entertainment of many varieties include shopping for international demands, hotels for every budget, cultural centres and big amusement parks.

Names of appointed agents for INTERPACK '78 are available from APIC.

ABSTRACTS

MATERIALS

44149 CASES FOR THE DRINKS TRADE

The use of corrugated fibreboard for packaging drinks, wine and liquor is studied. Some problems in liquor transit, the cushioning properties of corrugated, the cost compared to other packaging materials and its adaptability are presented. Various types and styles of cases and cartons, case making operations and marketing conditions are mentioned.

(Int. Bot & Pack, 7/77, 51:7, PP. 54, 56, 58, 60, 62, 64, 65.)

44164 COST CUTTING IN THE PACKING OF SPIRITS

A new concept of integrated corrugated packaging which will enable the distilling industry to fully automate its cartoning and case loading operations is introduced. The simplified pack leading to the material and labour savings is discussed. The automatic case loading, modular system, and factors in choosing machines are illustrated.

(Packaging, 7/77, 48:568, PP. 13-14.)

43935 THE EGG: A SPECIAL PRODUCT THAT REQUIRES SPECIALIZED PACKAGING

This article sets out to give an appreciation of the packaging materials and systems employed in the egg industry. The development of primary and secondary materials for egg packing is briefed. A new concept in egg tray construction, with maximum cushioning protective effect, is illustrated and compared to the old systems.

(Pack Rev, 7/77, 97:7, PP. 73-74, 76, 79, 91, 83, 84.)

44594 INFRARED INK DRYING SYSTEM

A new infrared drying system, called INOR, has been successfully introduced to the carton printers throughout Europe. The INOR is a system of short-wave infrared radiation heating with quartz lamps plus the specially formulated inks. The inks are 25% more expensive that convention inks but cheaper than UV inks. Substantial savings can be achieved from less labour, faster speeds, less waste and reduced use of spray power.

(BOXBD Cont, 6/77, 84:11, PP. 44-46.)

44727 CARTONBOARD STIFFNESS AND ITS EFFECT ON TOTAL PACKAGING COST

Paperboard stiffness, when consistant, is the most important single property other than the grammage and thickness, when comparing performance of boards throughout conversion and the overall cost of cartons. This paper presents a study on the common problems in cartonboard converting, the stiffness evaluation guidelines, the influence of raw materials on board stiffness and comparisons of a selection of internationally known carton samples.

(Packaging, 6/77, 48:567, PP. 11-12. 14 16, 18, 22.)

44834 TWO SUPPLIERS IN SPOTLIGHT, OTHERS WAITING IN WINGS

Two retort pouch material suppliers and some new competitors are introduced with respect to the construction, performance, and type of adhesive used. The latest material development in polybutylene as heat-sealing adhesive, problems with top seal-contamination, and potential markets in health care packaging for retort pouch are discussed.
(F & D Pack, 8/77, 37:4, PP. 10, 12.)

45971 NEW STARCH SYSTEM HELPS CORRUGATOR RUN FASTER

Ultrafast, a new starch adhesive capable of allowing corrugators to run at higher speeds from 25-100%, far beyond the safety limit for unmodified pearl starch, has been developed by the Corn Products. This article outlines the development stages, the composition, the performance and the special properties of the adhesive. Special reports are made on the costing and production analyses with tabulated data.
(Box BD Cont, 9/77, 85:2, PP. 50-52.)

45583 CONVERTER APPLIED BARRIER COATINGS

The 3 most common coating materials including paraffin waxes, PE and ethylene copolymers, and PVDC for flexible packaging materials are discussed. The air-knife and reverse gravure coating techniques are briefed. The choice of surface printing and their effects on heat sealing, migration possibility and barrier properties are introduced together with the 14 functional testings required for flexible packaging material.
(Converter, 9/77, 14:9, PP. 20, 22-24, 26, 27.)

MACHINERY

44545 GUIDELINES FOR BUYING AND SELLING PACKAGING MACHINERY

Fundamental guidelines for buying and selling new or used packaging machinery in terms of price estimating, terms of sale, presentation way, dealer handling, product liabilities and cost in consideration are discussed. Some common misunderstandings between the selling and buying parties during such kind of deal are explained.
(Canad Pack, 6/77, 30:6, PP. 22-23.)

44552 LASER BEAM USED TO "MARK" WIDE VARIETY OF PACKAGES

A brand-new package marking concept, Laser Mark, is introduced for on-line, non-contact, inkless and non-erasable marks on a wide variety of packages in the food, beverage, meat, dairy, confectionery, cosmetics and pharmaceutical industries. The "mark" printed by laser beam is produced by changing the surface nature of the packaging material with a powerful infrared energy. Gases consumed are a mixture of helium, nitrogen and carbon dioxide. The system is not applicable on bare metals.
(Canad Pack, 6/77, 30:6, PP. 24-25.)

44586 INPLANT AUTOMATIC STRIPPING CAN BE FASTER AND CHEAPER

An automatic stripping machine is introduced to carton printers for inplant platemaking. The advantages and cost savings of inhouse stripping are discussed together with the Great Lakes' experience in packaging and printing. The operation procedures of the Royal Zenith Autostripper and the simple technique involved are detailed.
(BOXBD Cont, 6/77, 84:11, PP. 31-34.)

44743 ELECTRONCI COUNTER SOLVES TEABAG PACKAGING PROBLEM

The exact count of tea bags in a carton is always a headache problem and a serious worry to the packager In an endeavour to overcome the difficulty, Skan-A-Matic specialists have introduced a photoelectric control system which uses 3 reflective optical devices, each scanning one of the 3 rows of teabags in each carton. Performance and control monitoring of the system are briefed in the articles.
(Pack Rev, 7/77, 97:7 PP. 47.)

44842 WHERE DO YOU GET THE EQUIPMENT YOU'LL NEED

Soon after the approval of retort pouches by the US Authorities for food packaging, a new generation of machineries are supplied for this purpose. Equipments for pouch forming, filling, vacuumizing and sealing from Japan, USA, Canada and Europe are introduced. Their operation performances, costs and special features are discussed.
(F & D Pack, 8/77, 37:4, PP. 15, 24-26.)

45674 COPING WITH THE COST SQUEEZE IN CALENDERING

To meet the challenge of rise in energy costs and resin prices, machinery manufacturers are offering new options in material processing and calender-feeding equipment that consolidate processing steps and improve gauge control at the calender stack. Several new mixer/extruders that perform the function of traditional mixers and eliminate the need for surge and ribbon mills are introduced. New methods of controlling sheet or film thickness variations as a route to lower manufacturing costs are discussed.
(MPI, 9/77, 7:9, PP. 60-62)

NEW TECHNOLOGY

44628 MOISTURE RESISTANCE AND CRUSH CHARACTERISTICS IMPROVED BY VACUUM IMPREGNATION WITH RESIN

A French process, Mecalix, indicates great improvements in edge crush of corrugated board up to 91% when treated with petrochemical resin. The process involves vacuum impregnation in which the corrugated blanks are inserted in the treatment vat completely finished. The entire operation takes about 30 min. with up to 98% of the solvent recovered. The operation procedures and test results are listed in the article.

(PBD Pack, 6/77, 62:6, PP. 92-93.)

44636 A NEW GENERATION OF DIE CUTTERS

A European die cutter system, in spite of the high integration of production processes, obtains impressively high production speeds and outputs for the carton and corrugated industries. Details of the integration processes such as cutting and creasing, sheet transport system, register system, sheet travel, function and operation of the machine are discussed.

(Converter, 6/77, 14:6, PP. 23-26.)

4465 TINPLATE TECHNOLOGY AND SOLDERING TECHNOLOGY

The latest tinplate technology and soldering technology are revealed in these 2 articles. Topics discussed include the tinplate process research, lacquer adhesion and cohesion on tinplate, lacquers containing tin power, mechanical properties of solders and joints, solderability test methods, oxidation of molten solder alloys and intermetallic compound growth. Data graphs and tables are listed and briefed.

(Int. Tin Ann. Rep. 76, PP. 8, 9. 12, 13.)

44735 PRECISION UNVEILS HY DROCARBON-WATER BASED AQUASOL SYSTEM

There will soon be an end to the fluorocarbon controversy after the invention of Aquasol, a new valve design, by Robert Abplanalp. The Aquasol system overcomes the flammability of hydrocarbons, eliminates the threat of ozone concern, and matches the per formance of fluorocarbon. Projections of the system into the pharmaceuticals, paints, hair sprays and others are studied. Press opinions, economics and technical comparisons are reviewed in the article.

(Aerosol Age, 7/77, 22:7, PP. 18-22.)

44768 REVERSE GRAVURE COATING

Reverse gravure coating, the latest alternative coating to challenge the air knife method, has been tested under practice-like conditions and has proved to be an innovation having promising advantages. Comparisons of the new system with air knife coater in areas of aqueous polymer dispersion applications, controlling variables, improvement realized and drying mechanism differences are briefed.

(PFF Conv, 8/77, 51:8, PP. 41-43.)

44784 NEW TECHNIQUES TAKE HOLD IN MACHINERY

Three advance processes that could reshape the future of plastics in packaging are reviewed. They are the molding with rotation (a bottle-forming technique for achieving multi-axial orientation, scrapless forming and higher-speed equipment for producing retor table processed-food pouches. Details of the 3 processes are illustrated with diagrams in the article.

(MPI, 8/77, 7:8, PP. 58-60.)

45724 HOW DO YOU HEAT SEAL HEAVY FILMS

Heat sealing problems with heavy gauge films are studied and some preventive methods are suggested. Various factors affecting the performance such as time and temperature, pressure and tension, positions of temperature controllers and thermocouples are examined. Maintenance work of different parts are mentioned in the article.

(PFF Conv, 9/77, 51:8, PP. 49-50)

HANDLING, DISTRIBUTION AND STORAGE

44560 MAKING THE CASE FOR UNITIZING WITHOUT PALLETS

The practical values of slip-sheet, a palletless unitizing technique employed by the European, are re-evaluated. The system has lately been adopted by the US shippers in distributing the Florida produces across the Atlantic to Europe. The handling operations, economical advantages of the system are discussed; the various sizes and kinds of slip-sheet produced are illustrated.

(SHD, 6/77, 21:3, PP. 34-36, 56.)

44677 PLAN FOR STUDY OF DISTRIBUTION SYMBOLOGY

Following the wide acceptance of Universal Product Code (UPC) in the US, interest has centered on another shipping container symbology – the Distribution Code (DC) This article reveals the pro and con on the DC expressed by many best-heads from different walks of life on areas such as film making, plate making, printing, roller imprinting, ink making scan ner manufacturing and corrugated industry.

(PBD Pack, 7/77, 62:7, PP. 28 30, 32, 34.)

44701 PACKAGING FOR MOVE MENT

An in-depth research paper was

made on the general awareness of packaging as a vital link in physical distribution. The role of packaging in relation to labour costs, the entire systems of mass production, marketing and distribution are introduced. New concepts and developments in handling and storage operations, and future projections are studied.
(Aust Pack, 7/77, 25:7, PP. 21-24.)

44792 ROUTING ANALYSIS FINDING THE BEST FLOW PATH

Routing analysis, a technique which can help determine optimum flow paths in most materials handling system, is studied and illustrated with a few cases. Basic symbols of routing anaylsis, 4 typical problems one can solve with routing analysis techniques and computer programs developed for systems as large as a million nodes and arcs are discussed.
(MMH, 8/77, 32:8, PP. 40-45.)

TESTING AND ANALYSIS

44578 AUTOMATING THE FILM-BLOCKING TEST METHOD

A film-blocking test of undesirable adhesion between 2 layers of film, is introduced for film manufacturers, converters and packagers. Two methods—one manual and the other automatic, are illustrated with circuit diagram and picture. The equipments required, circuit operation procedures and the blocking characteristic concerns are briefed.
(Mod Pack, 6/77, 50:6, PP. 33-35.)

44610 SOME UNRESOLVED ISSUES IN BOX SPECIFICATION PRACTICE

Some unresolved issues in Corrugated Box Specification Practice are discussed, covering some less familiar ground, and in areas of commercial rather than purely technical significance. The liner board stiffness, IATA specifications, compression tubes with anomalies, Resolution No. 222 of the U.N. Economic Commission for Europe for fresh or refrigerated fruit and vegetables, and some U.S. Versions of "performance" specifications are studied.
(PBD Pack, 6/77, 62:6, PP. 72, 74, 76, 78.)

45526 OFF-FLAVORS FROM PACKAGING MATERIALS

The expanding use of plastic materials for food packaging has posed problems of off-flavors as a result from interaction between food and package or migration of minute components through the package. Other causes of off-flavor from direct and indirect additives are briefed. Analysis of off-flavor described include the gas chromatography, organoleptic, extraction and a few case studies. In concluding, the author favours the organoleptic tests as more reliable.
(Mod Pack, 4/77, 50:4, PP. 45-48, 65.)

LAWS AND REGULATIONS

44537 THE LAW TAKES NO NOTICES OF TRIFLES

Jerome H. Heckman, the general counsel for the Society of the Plastics Industry, expressed his opinion on the Delaney Clause and the basic food laws, during an interview with the Food & Drug Packaging Editor. Content of discussion includes the food additive interpretation, packaging material migration standard and some controversial cases in carcinogenic crisis.
(F & D Pack, 6/77, 36:11, PP. 36, 44, 46, 48.)

44669 PROSPECTS FOR EUROPEAN REGULATION OF PLASTICS IN FOOD-CONTACT APPLICATIONS

Guilding principles and reasoning behind new rules of plastics in contact with food from individual EEC countries are discussed. Basic principles of the rules and standards on plastic materials, the positive list of substances to be used in the manufacture of plastic materials and articles, maximum specific migration levels, rules for monitoring specific and overall migration, and labelling requirements are studied.
(MPI, 6/77, 7:6, PP. 15, 16.)

44685 HAZARDOUS WARNING REGULATIONS

A general study is made on the transport regulations for packagers and shippers engaging in either the transporting of hazardous materials, or the preparation of packaging for such materials. Topics of discussion include delegation of responsibility, specifications for shipping containers, marking specifications, labels identity, ink colour specifications, standards called "ultra-stringment" by Fibre Board Association and the structure of the Federal Codes.
(PBD Pack, 7/77, 62:6, PP. 35, 38, 40, 42, 44.)

44750 RESTRICTIVE PACKAGING LEGISLATION

A general survey of current world position on waste and litter control is presented. Restrictive legislations on packaging from the US, Scandinavian countries, European countries and Australia are considered. Comments are also made on community attitudes, self-regulation, open-dating, marking, labelling packaging standardization, and ISO recommendations.
(Aus Pack, 8/77, 25:8, PP. 23-25.)

44826 ISSUES NEW PACK REGS FOR MUSHROOMS, BEANS

Two new rules, governing the mushrooms and beans packed in enamel-lined metal cans or in glass jars with fully enamel-lined closures, were issued recently by FDA. Another ruling finalized setting a maximum liquid content level for vacuum-packed beans to 25% of the net weight to be effective on July 1, 1979.
(F & D Pack, 8/77, 37:4, P. 3.)

45534 EEC LEGISLATION AND PLASTICS PACKAGING

The EEC legislation related to plastics packaging is briefly introduced. The official reference, date of publication, status and subject content are tabulated with short briefings on some of the controversial topics. Opinion on the draft plastics directive are presented especially in the field of food safety and food packaging.
(Pack News Sp. Rep. 9/77, PP. 9-10.)

PACKAGING IN GENERAL

44602 STATUS OF PACKAGING IN THE THIRD WORLD

An in-depth survey into the present scope of the packaging status in the third world is dicussed. A number of background facts, conditions, restraints and problems are pointed out. The use of indigenous packaging materials, local papermill industry, packaging machinery production and technical information sources are briefed.
(PBD Pack, 6/77, 62:6, PP. 56-58, 60, 62.)

44644 THE CURRENT WASTE PAPER SITUATION

The tendency for increased quantities of test liner to be used in the corrugated industry reflects the fact that some of the larger packaging companies prefer to use liners made in their own mills rather than imported grades. The waste paper collection, the growth of waste based papers, the economical and ecological pressures being pursued now and in the future, and the current situation in a few European countries are fully examined in this article.
(PBD Ind. 6/77, 20:6, PP. 27-30, 32, 36, 38, 40.)

44693 TECHNICAL TRENDS IN THE FOLDING CARTON INDUSTRY

A study is made on the recent significant development taking place in carton manufacturing. Reviews are conducted on the major processes of carton converting with comments on technical and equipment operations, designs, and forecasts. The existing potential and some external influences to the folding carton industry are also briefed.
(PBD Pack, 7/77, 62:7, PP. 48, 50, 52, 54, 55.)

44719 STANDARDIZATION OF PALLET SIZE

In its effort to establish pallet standards for fitness and simplified production, distribution and replacement interchangeability, the Standards Association of Australia has been trying hard to rationalize the pallet standards for use in domestic industries as well as oversea sectors. The Australian 46 in. by 46 in. pallet and other ISO standard sizes are evaluated with respects to the standards of freight containers and handling equipments. Testing requirements on the qulaity and durability of pallets are also briefed.
(Aust Pack, 7/77, 25:7, PP. 25-26.)

44776 DANISH SEMINAR LOOKS AT THE PACKAGING AND DISTRIBUTION OF FISH

A review is made on the handling, packaging and distribution of chilled and frozen fish after the Danish seminar, entitled "Fish distribution in the future". Contents include the briefing of 3 common forms of fish prepacking, risk of food poisoning, the latest potential solution of distributing fresh fish developed by a newly formed company, and special features of the Fish-on-Line system.
(Pack Rev, 8/77, 97:8, PP. 31, 33, 35.)

44800 WHEN TO CHANGE YOUR PACKAGE AND WHEN NOT TO

A general study on the packaging concept as a communicator in marketing and management is introduced. The author briefs the important points in changing the packaging and reasons for doing so. Some packaging problems facing the production people and marketing people, and the possible solutions are discussed. Some precautions in packaging design are also outlined.
(Canad Pack, 8/77, 30:8, PP. 23-25.)

45906 A GUIDE TO PRINTING FOR DRUG MANUFACTURERS

The article "A Guide to Printing for Drug Manufacturers" appeared in the US Drug & Cosmetic Industry magazine, July 1976 is reproduced. The article gives a full description on the recommended guidelines and summaries the considerations on the printing for drugs, from graduation marks and contents to drug strengths and batch codes. Some major printing/marking methods, typical applications advantages and suppliers are tabulated, and the FDA requirements are briefed.
(Aust Pack, 9/77, 25:9, PP. 37-39)

AKS82

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NEWS FROM WPO

The Administrative Council of the World Packaging Organisation (WPO) met on October 28, 1977, in New York City, in conjunction with the U.S. International Packaging Week meetings there.

In attendance were Juan Careagas from Mexico, representing ULADE; Lyn Jamison from Canada, Richard Deane and Arthur Harckham from the U.S., representing NAPF. Ten other "interested parties" from organizations, including The Packaging Institute, U.S.A., attended.

President Robert Coughlin called the meeting to order and Secretary General Paul Reuman made a roll call. Primary topics of the meeting included discussion and approval of a WPO programme of work, matters relating to the on-going administration of WPO, and a by-laws change to facilitate individual memberships.

World Packaging Congress. – The next World Packaging Congress will be held from October 30 to November 3, 1978, in the U.S. in conjunction with Pack Expo International Packaging Week, in McCormick Place, Chicago, Illinois. Specific information on those WPO sessions (topic, content, and speakers) has been published to enable early decisions to be made so that international representatives can be contacted early in 1978 and plan to attend the Congress. It was also suggested that a group be appointed to begin contacting people to solicit names and topics. This action will be handled by WPO staff and others responsible for the overall programming during the 1978 International Packaging Week in the U.S.

WPO Consultation Role Proposed. – A presentation by Johan Selin, senior packaging advisor with the United Nations in Geneva, proposed a worldwide, inter-regional consultation for autumn, 1978. to aid developing countries in such areas of packaging concern as:

(1) coordination of technical assistance programmes;
(2) coordination of international, regional, and national regulations and laws affecting packaging and labelling;
(3) standardization;
(4) statistics;
(5) improved packaging for utilization of food resources.

The consultation programme would bring representatives from 10 developing countries to participate in a training session, one week prior to the consultation. The consultation would involve these experts and others from governments and associations worldwide, discussing the above 5 points through position papers prepared in advance of the consultation.

Its goals would be to assist and advise governmental organizations, making them aware of packaging in long-range planning and its potential role in eliminating the cited problems. A maximum of 100 attendees was projected by Mr. Selin.

The 10 developing countries to be invited include: India, Sri Lanka, Trinidad, South Korea, Cuba, Mexico, Egypt, Roland, Philippines and Colombia.

The Government of Finland has offered to finance the project if the consultation is held in Helsinki.

WPO Directory – A WPO Directory will be compiled for internal use. William Simms, editor of "Modern Packaging Encyclopedia," offered his services to collect data and formulate a Directory.

It was suggested that this basic directory should contain the name of a permanent contact for each listed organization and be updated each year. The directory will be sold at a cost recovering rate when it is completed.

Members of the Council and related organizations are welcome to submit names of contacts and addresses to Mr. William Simms at the WPO New York Offices.

Ongoing Education Programme. – Mr. Harcham suggested during the meeting that an ongoing education programme be initiated and added to the Work Programme. Several suggestions were made:

1. Formal training session at accredited packaging school, training representatives from developing countries who would then teach in their own countries.
2. Survey developing countries to determine their packaging requirements, needs and resources, to better advise them.

3. Packaging courses be translated on tape in foreign languages and made available to developing countries.

4. Information Centre. Mr. Careagas outlined a programme being established in Mexico City: a Packaging Information Centre, giving information, service and technical assistance to Latin American countries. ULADE voted to support the centre at its last meeting, and a 4-year grant of US$1 million has been obtained from UNDP, managed through UNIDO. The grant includes 110 man-month experts during four years, and equipment support. Mr Careagas expressed interest in expanding the programme through WPO as an International Information Centre.

The education programme will be considered by the Packaging Institute/U.S.A.'s International Affairs Committee on Education.

1978 World Star Packaging Competition

The 1978 World Star Award competition will be held during the World Packaging Congress in conjunction with the Pack Expo 78 in Chicago. World Star Awards will be chosen from "Star" winners from North America, Asian and Latin American competitions.

In the last World Star competition, held in London in May 1975, a total of 14 "Stars" were awarded: 1 to Australia, 1 to Finland, 1 to Germany, 2 to Hong Kong, 2 to Netherlands, 1 to Norway, 1 to Philippines, 2 to Switzerland, 1 to Thailand, 1 to U.K. 1 to the U.S.

Judging criteria were emphasised on many aspects of packaging such as innovation, creativity, graphics, technological development, suitability for intended market, etc. giving developing countries the opportunity to compete on a more equal basis with developed countries.

An individual award for a packager was proposed during the last WPO preparation meeting. Mr. Jamison suggested that several regions or federations submit the name or names of people to be considered for such an individual award. He also noted the difficulty in selecting one person for the award, and suggested that several "outstanding contributions" awards could be made.

An Awards Committee headed by LeRoy Doar was appointed to study and recommend procedures both for the World Star and individual awards.

Asian Packaging Federation members should pay attention to the application procedures and deadline of this big event.

PRODUCT CODING IS GOING TRANSATLANTIC

UPC reading symbol

EAN reading symbol

Following the successful introduction of the UPC (Universal Product Code) coding system in the U.S., the European supporters of automatic cash register systems have followed the suit closely. The European Article Number (EAN), a similar version of the UPC, has been introduced to the UK market and continental Europe for product package coding early this year. Unfortunately, the EAN and UPC, from a technical standpoint, are not machine compatible. That means the American packs destined for European markets will have to carry the EAN Code and the European exports to the U.S. must bear the UPC symbol.

The EAN and UPC systems are similar but differ in the number of digits. The EAN system consists of a 13-digit code while the UPC consists of 12 digits.

The 13-digit EAN number is made up of:

- 2 digits represent the country origin; these are called "Flags"
- 10 digits represent the national article number: the first 5 for the manufacturer and the second 5 for the product;
- 1 digit represents the check digit

The 12-digit UPC number is made up of:

- 6 digits manufacturer's code number
- 5 digits product code number
- 1 check digit

The U.S. has developed many of this type of code for automatic identification of packages at manufacturing, wholesale, and retail levels of distribution. The other 2 most common symbologies are the Distribution Code (DC) and the National Drug/National Health Related Items Code.

The heart of the identification system for EAN, UPC or any other such systems, is a symbol printed on packs or labels which can be

read by computer. Terminals with scanning device are located at the checkout of each supermarket, serving as data input and collection stations for the further processing of the stored information in a central computer. The coded pack is passed over a scanning equipment which reads and interprets the information with the stored data in the central computer. The terminal then prints a slip, showing the weight, name and price of the product, discounts etc. which will be given to the consumer. The computer also has a memory system to re-call odd-priced items such as 3 for 1 dollar, without having the 3 items scanned in a role at the check-out counter.

Big savings in using such code systems are on labour and time. A large number of packs will no longer have to be individually priced manually. Data on inventory, inventory ordering point and all those tedious accounting work are as easily available as snapping the fingers. Having adopted the code system, it doesn't mean the supermarket can forget about showing consumers the prices of the items consumers are paying for. Most of the consumer protection agencies in the world require supermarkets to display the price of the item on a shelf card located at an obvious and appropriate location. In case of a price change, the supermarket personnel immediately updates the information on the change in the central computer. However, he forgets to correct the price on the shelf card. A regulation has been imposed by some authorities, should a price argument arise, that the consumer will pay the price, whichever is the lower, the shelf card price or the computer printout price.

The considerable investment to operate a computer coding system effectively can only be justified if substantial savings can be realized in the distribution process as a whole. This process involves manufacturer of the product and package, supermarket sector and the consumers. Each incurs certain benefits and costs which are not necessarily equitably distributed.

As far as the manufacturer is concerned, he may incur increased printing costs, leading to a higher pack price, owing to the need for additional personnel for quality control on the printing machines, the purchase of control and measuring apparatus, increased waste, a possible reduction in production speed and the costs for master films. In addition, it may be necessary to enlarge the printing surface, which then utilises more material.

Therefore, the introduction of the new coding system can involve the manufacturer in substantial initial and in some cases, continuing additional costs. The more important it is, under these circumstances, to ensure that the printed symbols fall within specified tolerances, as printing errors or inaccuracies preventing the automatic scanning of the codes could lead to rejection of goods already delivered, with serious consequences. Reputable packaging convertors will have developed foolproof systems to safeguard customer interests, but close co-operation among all interested parties involved is essential, particularly at the outset, if technical difficulties are to be avoided and costs kept to a minimum.

Who will benefit the most from the introduction of the computer coding system remains to be seen. What seems clear is that in the overall supermarket distribution process the total benefits outweigh the total costs involved. The intangible side benefits of dynamic information on sales to control operations, replenish stocks and reduce inventory are perhaps even greater than the direct savings themselves.

PACKAGE REGULATION ENFORCED

Acrylonitrile Banned

The US Food & Drug Administration has made a final decision to ban the use of acrylonitrile (AN) for manufacturing beverage containers, such as Monsanto's Cycle-Safe bottles and Borg-Warner's Cycopac.

The ruling, affirmed by Administrative law Judge Daniel Davidson, puts the fate of the copolymer back in the hands of the U.S. Appeals Court.

Monsanto, Borg-Warner and Vistron, manufacturers of acrylonitrile, have announced plans to discontinue their packaging resins.

This final action prohibiting use of AN in beverage containers takes effect 90 days after the ruling is published in the Federal Register, unless the packaging industry convinces the District Court to intervene.

Approval of Hydrocarbon Rubber

Meanwhile, the FDA has approved the use of hydrocarbon rubber, in packaging materials. The first is Du Pont's Nordel, for which it is amending the Code of Federal Regulations to permit the addition of hydrocarbon rubber to polyolefins in certain food contact applications, including many dairy beverage and baked products but excluding most products containing free oil or fats. This amendment allows the use of Nordel to modify PP and PE in blends up to a maximum level of 25% by weight.

Type Size Labelling Modified

The US food labelling regulation has been modified to permit the use of 1/32 inch type on individual serving size packages.

This variance will be permitted

if the food is for food service use, not intended for retail sale, and there is insufficient space on the package to print the information as required by existing regulations. It is expected to be principally applicable to condiments.

Effective date of the amendment was September 13, 1977.

Baked Goods Labelling

The FDA, under heavy industry and congressional pressure, finally agreed to permit a 6-month postponement of its comprehensive new labelling regulations for baked goods to July 1, 1978, rather than January 1. The change covers full-ingredient labelling, fats and oils labelling and recision of certain FDA trade correspondence, which had been used to handle exceptions to the old regulations.

CPSC Issues Lead in Paint Regs

The US Consumer Product Safety Commission has published its final lead-in-paint regulations for the 1976 amendments to the Lead Based Paint Poisoning Prevention Act. Published September 1, 1977 in the Federal Register, the regulations name as banned hazardous products paint and similar surface-coating materials for consumer use containing lead in excess of 0.06%, as well as certain painted toys and furniture articles. The new regs become effective February 28, 1978 and apply to all products made after that date. The old limit was 0.5%.

Austrailian Standard for Food Contact Plastics

Two parts of a new standard for the use of plastics for food contact, AS2070.1 Polyethylene and AS2070.2 PVC, have been published by the Standards Association of Australia. They are the beginning of a series being published under the title: Plastics materials intended for food contact use.

The two new parts specify the requirements of PE and PVC materials as granules or powder to be used in the manufacture of items intended for food contact. They specify the composition of the materials and the amounts of additives permitted. The PVC standard specifies the maximum level of VCM permissible in the material – a level based on the latest NH & MRC recommendations.

The Association advises manufacturers that the standards must be used in combination to ensure foodstuffs are not contaminated by any harmful substances. The new standards are available at 80, Arthur Street, North Sydney 2060, Australia.

EEC Regulation for Food Contact Applications for Plastics

May 1978 is expected to be an important date in European packaging history. In that month it is anticipated that there will be one law in the European Economic Community concerning plastics packaging materials and items that may come in contact with food products.

Pierre J Louis, director of the French Packaging Institute, writing in the Institute's European Packaging Digest, said the new law should become mandatory that month in each European country involved. Meanwhile, however, the Council of Europe must decide among three specific proposals concerning maximum authorised migration; these are: (1) 60 milligrams by litre of simulator testing liquid or per kilo or litre of food product, or 10 milligrams per square decimetre of packaging material. (2) For containers up to 250 millilitres capacity, 10 milligrams per square decimetre; for greater capacities, 60 milligrams per litre of simulator testing liquid or per kilo or litre of food product, or (3) 60 milligrams per day and per person.

This complicated calculation is based on the average food intake of each European. Here is the formula: Global migration = 0.4 X migration in water + 0.04 X migration in acid testing simulators + 0.22 X migration in greasy simulators + 0.22 X migration in alcoholic simulators.

A decision is expected this year, Mr. Louis says, but "there is little chance that the third proposal will be adopted. The new single European food packaging regulation is very important, not only for the food manufacturers but for all companies that want to sell food into Europe."

HK PACKAGING DIRECTORY PUBLISHED

The first volume of the Hong Kong Packaging Directory, compiled by the Design and Packaging Centre, Federation of Hong Kong Industries, has been published.

Vol. 1 has enjoyed a wide circulation among both local and overseas companies.

The decision to publish a packaging directory arose from the numerous enquiries received by the Design and Packaging Centre over the past years for information on various aspects of packaging. Advertising people have viewed the package as an economical system for promoting the product. Local manufacturers have understood the importance of packaging and are eagerly looking for the right type of packaging for their products to enable them to remain competitive in world markets. Overseas businessmen, attracted by the rapid expansion of the packaging market in Asia, are looking for reliable local agents to introduce to this market their highly sophisticated modern equipment, materials and technology related to packaging.

This proved the need for a comprehensive packaging directory to

help enquirers locate sources of suppliers, manufacturers or services. The Directory has thus been compiled to list full information on packaging manufacturers, packaging machinery and materials suppliers, packaging agencies, packaging and converting services, printers, designers and advertisers, warehouses, shippers and all others involved in the vast range of activities concerned with packaging, from design to manufacture and distribution.

The Directory may be obtained at US$7 per copy. Cheques should be made payable to "Federation of Hong Kong Industries", 21 Matauwei Road, Eldex Industrial Building, 12/floor, Hunghom, Hong Kong.

Interpack'78 Germany

The 8th International Fair for Packaging Machinery, Packaging Materials and Confectionery Machinery will be held again in Dusseldorf this summer. It will be one of the biggest trade fairs for packaging and packaging related industries ever held. Over 1,100 noted exhibitors from 21 countries have booked stands to show their latest level of developments. Most of the machinery and materials will be the improved, automated type, rationalized or developed throughout the world since the last Interpack '75. This trade fair has long been considered by managers and technical people all over the world as a place for new ideas, new machinery and materials and, most important of all, for better technological impovements.

Interested parties from Asian regions are urged to contact their local agent as soon as possible, so that group fares for lodging, travelling and transportation can be arranged, saving time and money for every participant. The appointed representatives are listed below:

Australia
Newport Overseas Agencies,
11th Floor ADC Building,
189 Kent Street,
Sydney 2001,

China, Peoples' Republic of
Dahlmann & Co. Ltd.
P.O. Box 1972,
Hong Kong.

Hong Kong, Macau
Fred Kew & Co. Ltd.
903 Prince's Building,
Hong Kong

India
Indo-German-Chamber of Commerce,
P.O. Box 11092,
Veer Bariman Road,
Churchgate,
Vulcan Insurance Bldg.,
Bombay, 400020.

30 A/B Jawaharlal Nehru Road,
P.O. Box 2504, Calcutta,
700001.

86-FG Himalaya House,
23 Kasturba Gandhi Marg,
G.P.O. Box 252,
New Delhi, 110001.

"Maithri" 19, Cathedral Road,
P.O. Box 4905,
Madras 600086.

Indonesia
Rinto Alwi,
Jalan Jendral Ahmad Yani 14,
P.O. Box 23,
Bogor.

Israel
Meco Ltd,
Joseph Arkin,
P.O. Box 162276,
45 Chen Boulevard,
Tel-Aviv.

Iran
Iranian-German Chamber of Industry and Commerce,
Daftar Machine Bldg.,
4th Floor,
Abassabad Ave/Roosevelt Ave
P.O. Box 41/1846,
14155 Tehran.

Korea, Republic of
Fred Kew & Co. Ltd,
903 Prince's Building,
Hong Kong

Korea, Democratic People's Republic of
Dahlmann & Co. Ltd,
P.O. Box 1972,
Hong Kong.

New Zealand
Newport Overseas Agencies,
11th Floor, ADC Building,
189 Kent Street,
Sydney 2001.

Japan
Zai-Nichi Doitsu Shoko Kaigisho,
Akasaka Tokyu Bldg, 10/F,
14-3, 2-chome,
Nagata-cho,
Chiyoda-ku,
C.P.O. Box 588,
Tokyo 100-91.

Philippines
G. Magnus Manufacturers' and Fairs Representative,
P.O. Box 2075,
Room 201, Madrigal Bldg.,
Escolta 286
Manila.

Thailand
German-Thai Chamber of Commerce,
699 Silom Road,
P.O. Box 1728,
Bangkok.

Tokyo Pack '78 Sept. 16 - 20

The 7th Biennial Tokyo International Packaging Exhibition will open its doors for domestic and overseas visitors at the Harumi International Trade Fair Grounds this Autumn. The Exhibition, with more than 2,100 booths, will include the latest technology in packaging materials, packaging machinery, food machinery, handling and conveying machinery, and related machinery. Overseas exhibitors will come from USA, UK, Italy, Netherlands, Switzerland, Sweden, W. Germany, Canada, Denmark, Austria, Norway, France, etc. This exhibition is highly recommended for Asian manufacturers, packaging personnel, managers and package designers who want to update their packaging knowledge and technology, and don't want to travel far.

The show is sponsored by Japan Packaging Institute (JPI) and the Japan Packaging Machinery Manufacturers Association (JPMMA) and is expected to be one of the biggest in the series, outperforming the record of the last Tokyo Pack '76 with 342 exhibitors and over 114,200 visitors.

For detailed information: Tokyo Pack '78 Office, c/o JPI, Honshu Building, 12-8, 5 Ginza, Chuo-ku, Tokyo 104.

HONG KONG GOING BIG INTO CONTAINER MANUFACTURING

Hong Kong, one of the busiest ports in the world, is making rapid progress in the industry of container manufacturing. International Containers Ltd. (ICL), located in Tsing Yi Island, is a joint venture between Chiap Hua Manufactory Company Ltd. and Comalco which is a leading aluminium producer in Australia.

The containers produced are made in accordance with international standards, such as ISO, on measurements and handling methods. Despite their various shapes and sizes, these ICL containers strictly conform to their dimensions and materials requirements.

The many different containers produced include the 20-footers, the 40-footers, the dry cargo containers, the reefer containers, the open side and top containers, the bulk containers and the flat racks.

The dry cargo containers – used for all types of goods – is the one mainly built in Hong Kong, says Mr. Ian S. Lees, sales manager of ICL. Since its establishment in 1971, ICL's business has grown rapidly with the in-flow of orders. In 1977, the Company achieved a turnover in excess of $50 million, making over 8,000 containers, with 20-footers accounting for 80%. In 1974, 5,100 containers were produced.

With the exception of Japan, a producer of 94,000 containers in 1976, ICL is still the only manufacturer of note in Asia. The containers produced are fully accepted by the container fraternity as being comparable with products from Japan, Europe or the U.S.

Buyers prefer Hong Kong made containers because most of them can make use of the containers to load scheduled goods right after the containers are made. Other advantages are the reasonable cost and the minimum road transport charge for each made containers.

ICL has 600 workers, consisting of store labourers, paint sprayers, carpenters for plywood lining and decal workers. Women are also employed in the decal section to stick plastic markers on to the containers.

The world container population is estimated at 1.5 million and more than half of this number passes through Hong Kong every year. The life of a container, says Mr. Lees, if it is refurbished, is 10-12 years for a steel container and 12-15 years for an aluminium one. The reason why aluminium containers have a longer life is that they are free from rust.

Among ICL's many big customers are the Orient Overseas Container Line, Associated Container Transportation (ACT), Uniflex and Container Transport International.

ASIAN PACKAGING INFORMATION CENTRE
Eldex Industrial Building, 12th Floor,
21A Ma Tau Wei Road,
Hunghom, Kowloon,
Hong Kong.

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PRE-SLINGING & STRAPPING OF CARGO

Published by International Cargo Handling Coordination Association (ICHCA) 42 pages. Price: £9.50.

The second part of the report looks at an alternative to pre-slinging, the use of strapping as a means for lifting cargo.

The report does not make any general recommendation for or against the use of pre-slinging or strapping. Instead, the potential gains and possible pitfalls are described, and the accumulated experience of ICHCA members is given as guidance.

Copies of the report are available from ICHCA Central Office, Abford House, 15 Wilton Road, London SW1V 1LX, England.

Pre-slinging is the process whereby a sling is placed around a cargo unit at the point of origin, and remains in place on the unit for most or all of its subsequent journey, whether by road, rail, air or sea, with the purpose of reducing the time spent in cargo handling.

It is a relatively simple, low-cost method of unitising a variety of cargoes. In addition to being probably the best method of unitising several commodities, pre-slinging is a possible alternative to break-bulk and the more sophisticated unitisation methods for a wide range of other commodities. Consequently many transport operators and shippers who have hitherto only used break-bulk cargo handling methods make their first move towards unitisation by pre-slinging.

Although a great deal of user experience has been gained over the years with pre-slinging, up to now there has been no real attempt to disseminate this information or to provide unbiased information and guidance on it. This report by ICHCA's Technical Advisory Sub-Committee (TASC) has now been published to fill the gap.

This report is intended primarily as a guide to pre-slinging for those who have up to now not been greatly involved with the problems of handling unitised cargo. It should also prove useful to those who already have experience in the field. The report concentrates on flat synthetic fibre slings, which are the main sling type in use for pre-slinging purposes. Safety and regulatory aspects have been given particular emphasis.

OVENABLE PAPERBOARD LAUNCHED

The latest packaging innovation should be counted as the 'ovenable paperboard trays' developed by a few big American paperboard converters.

The containers are primarily formed from solid bleached sulphate board that has been extrusion-coated with a heat-resistant polyester coating. The trays formed, can be baked-in at temperatures up to 400 degree F., with the heat-sealed polyester film lid intact.

The major reason for developing this new pack is economics. It offers cheaper material costs than its main rival, the aluminium foil/board trays in a long run. It adds convenience to the consumer by enabling him to heat the baked goods in microwave ovens. From the point of aesthetic, the paperboard trays can be colourfully designed and printed. Furthermore, the coated paperboard is more oven-efficient than aluminium foil containers because of its non-reflective property which is a major deficiency encountered by the metal trays in micro-wave oven cooking.

The tray design has a shape compatible with the unique needs of microwave cooking: rounded edges and a slightly raised centre. It also enables food industry or food service processing operations to remain virtually the same, eliminating the need for extra equipment and at the same time, providing the added benefits of the dual-oven capability.

In recent years, microwave ovens have penetrated in both the commercial and institutional food service, for reasons of rising labour costs, faster service, desire for greater menu variety and increasing use of portion-packed frozen foods.

Plastic'78 Show

May 8-12
TORONTO, CANADA

New plastics materials and applications of interest to the packaging industry will be displayed, in the "packaging" section of the Plastics Parade, at the Plastics Show to be held at the Coliseum Complex, Exhibition Place, Toronto.

The Plastics Parade is a special Show containing information about new plastics products, materials and ideas for end users of plastics in all industries. Special directory panels for each end-use industry will display brief descriptions of new products and materials and will be accompanied by many graphic displays of actual products.

In addition to the Plastics Parade feature, visitors will see the displays of over 200 exhibitors who will be showing what is billed as "new generation" machinery and equipment for Plastics processing, as well as new resins, materials and services.

Materials

41418 IN SEARCH OF THE IDEAL LAMINATING ADHESIVE

A close look is taken at the future of industrial and flexible packaging laminating adhesives. The examination reflects the recently-imposed social and economic concerns of the adhesives and converting industries, as well as for new products and product improvement. Areas of investigation include process and performance properties, the low molecular weight polyether and polyester-urethanes supplied a single-component system. Various factors affecting solvent-born adhesives, the solvent-free 100% reactive systems and the ideal laminating adhesive are illustrated.
(PFF Con, 11'77, 51:11, PP. 71-75.)

46862 PHOTOPOLYMER RELIEF PRINTING PLATES

A review is conducted on the selection of photopolymer relief printing plates for packaging printing applications. The few successfully adapted printing plates such as acrylic, methacrylic and cinnamic acid esters, polyamides, polyurethanes, and polyvinyl alcohol are introduced. The 2 types of photopolymer plate-making resins and 3 of the most common flexographic relief plates — the Cyrel, Flex-light and Flexomer, are discussed and their advantages comp ents.
(Pkg Pt & Dt, 10/77, 24 : 10, PP. 27, 35.)

48116 OVENABLE PAPERBOARD IS HOT

Developments in polyester extrusion coating, tray forming, denesting and sealing converging, with economic and market factors have made ovenable paperboard an exciting new food packaging option. The containers, formed from solid bleached sulphate board and extrusion-coated with a heat-resistant polyester coating, allow food products to be thawed, cooked, baked or warmed in either microwave or conventional ovens at temperature up to 450 deg. F. Market testings, container capacity, forms developed, packaging speed sought and the US suppliers are detailed.
(Pack Dig, 11/77, 14:11, PP. 42-46.)

49213 OVENABLE PAPERBOARD, GETTING HOTTER ALL THE TIME

An overview of ovenable board and tray developments with market prospects is presented by the president of Peerless Machinery & Tool Corp. The production process of the trays and a comparison study with aluminium trays in function and costs are briefed. Specific applications of the material and its commercial suppliers are listed. The secret of making the molded pulp tray ovenable is unveiled.
(F & D Pack, 11/77, 37:9, PP. 20, 24-26, 28.)

46565 MASSIVE CORRUGATED IN LAMINATED CONSTRUCTION OPENS NEW MARKETS TO PACKAGING TECHNOLOGY

A super-jumbo corrugated, "Master-Flute", has been added to the series A,B,C,E and K flutes. The Master-Flute has a height of 3/4 in. with a pitch of 1 1/16 in. and with a radius of 3/16 in. It has been applied to packaging applications which defy other methods of protection except at exhorbitant cost. Used as "medium", it can be wrapped around products such as cable, flexible metal piping to keep it rigid during transport as well as to protect it. The test performance, industrial uses and manufacturing process are discussed in the text.
(PBD Pack, 10/77, 62:10, PP. 26, 28, 32.)

47910 XMAS GIFT PACKS SERVE DUAL USE

Faberge has introduced a range of high-quality jewel box, attache cases, and make-up boxes to hold their various perfumes, talcs and lotions. The individual component units of all the packs are produced of various grades of board, covered on boxwrapping machines with printed paper wraps. Special attention is emphasised on the after-use of the gift packs. Interior fitments comprise vacuum-formed polystyrene grids and board platforms covered with a high-quality rayon satin material.
(Pack News, 10/77, Cs, 1, 2.)

48025 BIG, BRIGHT FUTURE FOR COMPOSITE CANS

Today's technology provides a degree of integrity that makes the composite can the package of choice in many applications. New developments in the next few years are projected including the replacing of metal ends with paper, plastics or composite materials, more functional abilities to hold pressure as well as vacuum, inviting aerosols into the can market, accepting hot foods, oils and fats, and even bakery items. Other improvements in can body, can ends, gas barrier requirements, openability and reclosability are discussed.
(F & D Pack, 10/77, 37:7, PP. 63, 65.)

48033 ADHESIVE SELECTION

A large number of adhesive problems faced by packagers can be traced to the fact of lack of thought in selection of appropriate bonding agent. This article intends to introduce the principle factors,

namely: substrates, equipment, plant environment, service conditions of the finished package and governmental regulations, involved in the sophisticated choice. The various adhesive systems are summarized in a selection chart and an adhesive trouble shooting guide.
(Pack Eng, 10/77, 22:10, PP. 56-59.)

50047 EXTRUSION COATING MATERIALS AFTER 1977

Extrusion coating appears to be one of the brightest spots in the packaging industry from both short- and long-range viewpoints, claimed by the writer. Traditionally, LDPE has taken about 70% of the share in plastic coating because of its barrier and performance characteristics. The other proportion is shared among EVA, HDPE, PP, nylon and ionomers. Data of the total market for each of the materials used in combinations with paper, foil, board and other substrates are accounted and a broad acceptance of the coated materials to the third world is expected.
(PFF Con, 11/77, 51:11, PP. 124, 127.)

50039 HOT MELTS: A BRIGHT HORIZON

The proliferation of hot melt adhesives and coatings in recent years are surveyed with respects to new resins developed for compounding and major supplies of raw materials. Breakthrough technology involving multifunctional monomers and oligometers which could be cured by UV or electron beam radiation are illustrated. Product growth projections are evaluated and estimated at the pace of 15 to 25%.
(PFF Con, 11/77, 51:11, PP. 63-67.)

50013 PLASTICS IN FOOD PROCESSING

Various plastic materials involved in food packaging and processing are studied. Tanks and vessels fabricated of polypropylene and glass fibre reinforced polyester resin (GRP), unplasticized PVC and their best properties for use within the food and drink industries are introduced. Rotational moulded and blow mouded containers, belting, pallets, piping and conveyors employed in food processing are briefed.
(Food Pro. Ind. 10/77, 46:551, PP. 27, 30, 32, 34, 36.)

NEW TECHNOLOGY

46870 CERAMIC & ANILOX ROLLS: A STATUS REPORT BY A PANEL OF EXPERTS

The respective values of engraved anilox and ceramic ink transfer rolls to the flexographic industry are reviewed. Its advantages in comparison with those of chrome anilox, and its latest changes and developments made recently, are introduced. A panel of experts from suppliers and manufacturers of ink transfer rollers are interviewed. Their opinions on the status of engraved chrome and ceramic rolls are summaried into a report.
(Pkg Prt & Dit, 10/77, 24:10, PP. 36-38, 40.)

50070 BLOW MOULDINGS HAVE DEVELOPMENT POTENTIAL IN MARKET

The prospects in blow mouldings for materials and processes complementing one another, and the technological developments in production concerning with achieving the maximum benefit, at the right price, from each material's properties, are examined. The 3 major blow moulding techniques injection, extrusion and stretch are evaluated. Market potential growths for blow moulded containers made of HDPE, PVC, PP and PET are estimated.
(Pack Rev, 11/77, 97:11, PP. 73, 75, 76, 78.)

50096 RECYCLING: MIXED SCRAP ENTERS THE STREAM

The 2 basic approaches in recycling, the direct reprocessing of mixed waste materials and the separation of mixed wastes into their constituent parts, are introduced. Two direct reprocessing systems of mixed plastics waste, Reverzer developed by Mitsubishi Petrochemical Co, and Remaker developed by Kleindient & Co., are illustrated. Two other systems, the ONO and Kamas, for separating all plastics from mixed municipal refuse and their performances are briefed.
(MPI, 11/77, 7:11, PP. 10-13)

40360 RETORT POUCH PACKAGING CONTINUES TO DEVELOP

Reynolds have set up a food processing centre in the US for food and packaging research. The centre offers a controlled environment, for work under the customer's direct supervision with maximum control and privacy. Included in the kitchen is a complete retort pouch processing system consisting of a preformed pouch filling machine and a retort for thermal processing of foods. The performance of the system is evaluated in the article.
(Canad Pack, 11/77, 30:11, PP. 24-25.)

40352 PRINTING ON FOIL: SOME OF THE TRICKS FOR SUCCESS

Several key elements in foil printing that printers must acknowledge and understand are

reviewed. The first important point is the design itself which is quite different from that for printing on paper or film. Other elements include the types and characteristics of inks, proper choice of foil laminated stock, a clean and dry foil surface, surface treatment, coatings after printing and some common practices. The equipment used for printing on paper, film and foil stocks is clarified.
(Canad Pack, 11/77, 30:11, PP. 20-21.)

46573 WAX TREATMENT EXPANDS MARKET FOR CORRUGATED

Use of wax-treated corrugated boxes has shown steady growth over the past 10 years. In 1976, 8% of the 27 billion boxes manufactured in the US were wax-treated. The greatest markets for wax treated corrugated are the fresh produce, seafood and poultry. The 3 categories of wax: microcrystalline, crystalline, fully refined and crystalline; and the 3 treatment methods: saturation, partial impregnation and curtain costing, are discussed in the text.
(PBD Pack, 10/77, 62:10, PP. 50, 52, 54.)

46482 IN FILMS, SEALING THE "UNSEALABLE"

Improvements in ultrasonic sealers have enabled the sealing of hard-to-handle unsupported and composite flexible structures offering higher speeds, fewer rejects and improved seal integrity. New research at the equipment-supply level that promises to eliminate the problems associated with balanced oriented polypropylene and polyester films are introduced. Savings and performance advantages are accounted.
(MPI, 10/77, 7:10, PP. 62-63.)

MACHINERY

46896 VERTICAL FORM-FILL SEAL MACHINERY

The principle of vertical form-fill-seal packaging machine and its development are introduced. The differences between continuous and impulse sealing systems, special purpose sealing, voltage variations, operating range and output, output performance, essential accessories, auxiliary equipment, machine location and operating environment of the system are detailed and illustrated with diagrams. Various factors related to the selection of a proper machine are considered.
(Aust Pack, 10/77, 25:10, PP. 41-44.)

47993 JOHNSTON OPTO-ELECTRONIC IDENTIFICATION OF PACKAGING

Erwin Sick GmbH has developed a 100% inspection system, Model CL Code Reader, for packaging operations and has been proven over the last decade in European pharmaceutical industry. The system goes beyond the common-sense inspection of the package and product. It is a bar-code reader, with advanced optical and electronic systems, that conforms to the stringent GMP requirements. The main features of the unit, its operation procedures, packaging and converting applications are discussed in the text.
(F & D Pack, 10/77, 37:8, PP. 26, 47.)

50062 FIE- FOODPACK PREVIEW

A preview was presented on the latest food production techniques at the 10th International Exhibition for Food and Allied Industries (FIE – Foodpack), staged at Olympia, London in November 1977. The range of new and improved plant and machinery on show covered most food manufacturing, packaging and handling operations and included a significant large range of instrumentation and electronic control systems. Details of some of the exhibits are briefed in the article.
(Pack Rev, 11/77, 97:11, PP. 29, 31, 32, 35, 36, 41, 43, 44.)

50005 CHECKWEIGHING – A THINKING MACHINE

Checkweigher has become a common equipment in the modern packaging function. The basic principles of checkweighers: static weighing and continuous moving weighing, are introduced. The characteristics of weighing in the pharmaceutical and frozen foods industries are discussed. The checkweighing function as an integral part of a grading or classifying system, and the developments in processing design, and operational requirements are presented.
(Packaging, 10/77, 48:571, PP. 13-16, 18-20.)

HANDLING, DISTRIBUTION & STORAGE

50112 MODULAR DRAWER SYSTEMS: HIGH-DENSITY STORAGE FOR SMALL ITEMS

The modular drawer storage concept, an extension of desk drawer, is introduced for high density storage of large quantity, variety and non-bulk items. Three reasons that make the concept acceptable to people are accounted. The relative advantages of modular drawer, storage drawer and shelving are compared. The rule for estimation of the number of drawers needed, layout flexibility, handling efficiency, inventory con-

trol and labour savings are outlined.
(MMH, 11/77, 32:11, PP. 84-89.)

50104 HOW A REAL PRO PLANS EQUIPMENT ACQUISITION

Mr. Ken Strohman, the man in charge of materials handling at Deere & Company's Harvester Works, expresses his experience in equipment acquisition planning. His overall 5-year plan approach to acquisition with a budget created each year for the coming year is explained. In the capital expenditure area, items are budgeted under 3 categories: new and revised product, capacity expansion and modernization. Each of the 3 categories is briefed together with case illustrations of the rebuild-or-replace and the overhaul-or-replace decision making. The areas of priority, costs and possible cost consequences in budgeting is commented.
(MMH, 11/77, 32:11, PP. 68-72.)

47902 FRUIT AND VEGETABLE DISTRIBUTION

A study is investigated into the possibilities of reducing rising cost of distribution of fruit and vegetables and at the same time maintain fruit quality. The unit load system is envisaged as an effective way for the future. Charts of the system on fruit preparation on the farm, transport requirements, packaging, market or terminal distribution layout and handling, and retail shop design are briefed. Rationalization of crate size, pallet size and tote boxes are listed. It is believed that such a rationalized system can be applied equally well to egg marketing, meat, fish, dairy products and even groceries, millinery and hardware lines.
(Aust Pack, 10/77, 25:10, PP. 77-79.)

48041 THE CODE IS WHAT MAKES THE SYMBOL USEFUL; INFORMATION IS THE KEY TO A CODING SYSTEM

The existing concepts of Universal Product Code (UPC), Distribution Code (DC), and Distribution Symbol (DS) devised for bar coding and scanning are discussed with respects to the encodation of information. Three facts handicapping the development and the benefits of the coding concept are identified. The purpose of industrial classification and coding, the apparent advantages to manufacturers, the design and advertising perspects, the value of code utilization in the administration and production areas are illustrated.
(PBD Pack, 10/77, 62:10, PP. 68, 70, 72.)

50054 STUDY GROUP EXAMINES TECHNICAL ASPECTS OF DISTRIBUTION SYMBOL

The Distribution Symbology (DS) is investigated in order to develop a realistic and feasible symbology for shipping containers. Problems concerning with print contrast, line width growth and printing techniques are briefed. The recommended comprehensive testing program and details of the inplant testing done by Scott Paper are discussed. The pros and cons about the Ladder Code and Picket Fence Code are interpreted.
(PBD Pack, 11/77, 62:11, PP. 58, 60, 62, 64.)

LAWS AND REGULATIONS

50120 STRANGULATION THROUGH LEGISLATION IS CONCERN OF BUSINESS

The impact of laws and regulations on food industries is expressed by Mr. R. Lillquist, president and chief executive officer of the National Flexible Packaging Association. The pros and cons of those government regulations on retortable pouch, solvent-based inks, emissions and energy consumption are presented. It is claimed that government and business can work together with mutual trust and reciprocal respect. The only winner at all times is said to be the consumer.
(Good Pack, 11/77, 38:11, P. 14.)

49221 FDA ASKS WINE, LIQUOR LABELS WARNING OF BIRTH DEFECT RISK

The commisioner of US FDA has proposed to require warning labels on liquor and wine containers, warning pregnant women who drink these products should know they can cause serious birth defects in babies. The definition of 'drinks', the possible birth defects and warning labels against certain drugs are briefed in the article.
(F & D Pack, 11/77, 37:10, PP. 1, 17.)

46888 DECEPTIVE PACKAGING LEGISLATION

Taking the first step in controlling the main areas of deceptive packaging, the Australian government has imposed new legislation effective in New South Wales on April 22. The draft proposals outlined the maximum amount of freespace to be permitted in packages, the maximum volume of cavity and bottom recesses, the volume and height of caps for containers, the control of wall thickness and the maximum size of a flexible pouch, bag or sachet for an article.
(Aust Pack, 10/77, 25:10, P. 35.)

47969 FOOD PACKAGING'S FUTURE AUTOMATION, REGULATION

The effects of advanced food warehousing system and develop-

ments in materials on the future of food packaging are discussed in a seminar titled "The Changing Rules of Food Packaging in Minnesota." Main points developed include the impact of retailers' automate warehousing and distribution methods, an assessment of UPC, the governmental pressure on solid waste control, and inroads by plastic materials into food packaging with cost and functional advantages opening the way for polycarbonate, polyester and laminated flexible containers.
(F & D Pack, 10/77, 37:8, PP. 1, 11, 12, 39.)

47977 FDA ALLOWING SEPARATE LISTS

FDA has issued a final order allowing direct mail cosmetic manufacturers to list ingredients either in a catalogue from which customer select the products or in the literature accompanying the package. However, the manufacturers are still allowed to list ingredients on the package if this method is more feasible and/or economical.
(F & D Pack, 10/77, 37:8, P. 4.)

48009 CPSC STAFF ASKS RE-EVALUATION OF AGENCY'S PPPA ACTIVITIES

packaging may be less effective against accidental poisonings than hoped, the US Consumer Product Safety Commission (CPSC) is going to re-evaluate its activities under the Poison Prevention Packaging Act (PPPA). The full commission has planned a long-range program of 2 stages. The first stage calls for improving the accident information unpon which PPPA regulatory decisions are based. The second stage will bring new products under the PPPA and readjusting requirements for products already covered. A summary of the report is briefed and opinion expressed by various agencies are presented.
(F & D Pack, 10/77, 37:7, PP. 4, 29, 30.)

48017 PACKAGING REGULATIONS AND PRINTING INKS

The US FDA regulations affecting printing ink or coatings in contact with food are discussed and some confusions about the Title 21-code of Federal Regulations are explained. Sections concerning with substances migrating into food from the packaging material itself, or from coatings are briefed and the materials are listed. A comparison of the old and new numbering systems, for the subjects most often referred to in printing or coating food packages, is tabulated.
(F & D Pack, 10/77, 37:7, PP. 32, 55.)

49254 EEC'S PROGRAM TO PROTECT THE CONSUMER

The structure and practice of the Common Market legislation are introduced with briefings on five consumer rights. The 5 most important drafting Directives: Food labeling, misleading advertising, consumer credit, unit pricing of foodstuff, and product liability are discussed. The aerosol controversy, the responsibilities of the manufacturers, and the proposed yardsticks used to measure products safety are outlined.
(Aer Age, 11/77, 22:11, PP. 20-25.)

PACKAGING IN GENERAL

48066 EFFECTS OF RADIATION CURING ON FOLDING CARTON PRODUCTION

The benefits of instant drying capabilities of UV curing to the folding carton industry are disscussed. Regulatons for pigment and vehicles for food containers, and the formulators of inks and coatings for substrates are briefed. The impact of UV on sheet-fed carton making from a production viewpoint, the marketing advantages, gravure printing and lithographic printing in the manufacture of folding cartons are introduced. Data on consumption by type of boxboard, UV ink sales and end uses of UV folding cartons are tabulated.
(PBD Pack, 10/77, 62:10, PP. 108, 110, 112, 113.)

48058 FUTURE PACKAGING TO BALANCE TECHNOLOGY AND ECOLOGICAL AWARENESS

In considering the future of package developments, 2 extreme scenarios: the sophisticated package and the humanistic package, have been formulated and their implications are described. The form of package in the near future with respects to the environmental factors, health problems, energy and material savings is predicted. Under the topic of material savings: the recycling, wash coating, and fillers in plastics are briefed.
(PBD Pack, 10/77, 62:10, PP. 82, 84.)

44818 HOW THE PACKAGE CAN HELP PROMOTE THE PRODUCT IN THE MARKET PLACE

The demands and limitations on consumer package as a merchandizing tool to marketing management are discussed. The versatility and effectiveness of the pressure sensitive labels are explained with some ingenious uses for reference. The latest technical developments in on-line automatic label printer and its production capabilities are introduced.
(Canad Pack, 8/77, 30:8, PP 26-28.)

ARCSE12

APIC JOURNAL

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1978 VOL 4 NO 2 and INTERNATIONAL DEVELOPMENT RESEARCH CENTRE, OTTAWA

5th Asian Packaging Congress in Manila

The 5th Asian Packaging Congress will be held in Manila, Philippines, from September 25 to 28 this year, and preparations are well in hand to make this one of the most successful of all the congresses held so far.

Organised by the Packaging Institute of the Philippines, all sessions will take place in the Luzon Room of the Philippine Plaza Hotel. The selected theme for the Congress is "Packaging: Innovation and Trends."

All nine member countries of the Asian Packaging Federation have been invited to send delegations, and speakers from six of the countries will present Papers.

Topics to be dealt with in-depth by speakers and the countries presenting the Papers are as follows:

September 26:

"Developing exports through packaging innovation" (Korea)

"Current trends in the use of indigenous packaging materials" (India)

September 27:

"Recycling trends in developing countries" (Australia)

"Packaging innovation for consumers' benefits" (Philippines)

September 28:

"Innovative packaging for improved technology" (Hong Kong)

"Latest technical developments and future trends in packaging" (Japan)

The first day of the Congress, September 25, will be taken up with registration of delegates and the judging of the AsiaStar' competition, which is being held in conjunction with the Congress.

Delegates will be accommodated in the Philippine Plaza Hotel. All will have the opportunity to take part in general discussion following the presentation of each Paper.

ENTRIES INVITED FOR "ASIASTAR" COMPETITION

The biennial "AsiaStar" competition will this year be held in Manila, Philippines, on September 25 in conjunction with the 5th Asian Packaging Congress.

"AsiaStar" Awards have been instituted by the Asian Packaging Federation (APF) and are aimed at stimulating interest in improving packaging standards in the Asian region.

Packages will be judged for their all-round fitness, the purpose for which they have been designed and special features which may make them worthy of the accolade for packaging in Asia.

Success in securing an "AsiaStar" Award qualifies the recipient to participate at the "WorldStar" competition in Chicago, November this year.

"AsiaStar' is open to packages from all APF member countries which have won an award in a national competition of the member country If no national competition has been held, a recommendation of the package's fitness for entry must be obtained from the APF member institute

All entries must have been manufactured in the country submitting such entry

There are three classifications for entries to "AsiaStar:"

1. Transport Containers. Such containers must be for the transportation of a product or the containing of a number of consumer packs to be transported and distributed. Containers must not exceed 50 cubic feet (1.46 cubic metres).
2. Consumer containers. Such containers are for the containing and sale of consumer products.
3. Packing materials and adjuncts.

An entry fee of US$50 must be paid for each entry submitted. All entries must be in the hands of the Packaging Institute of the Philippines by August 30.

The Panel of Judges will be composed of authorities on technical, visual and commercial aspects of packaging, selected from recognised experts in their field.

In the last Asiastar '76, held in Hong Kong, 10 packages won Star Awards and 5 packages won Certificates of Merit, chosen from 35 entries from 6 countries.

The Award winners were:

AUSTRALIA:

1 The Comalco Can Company of Vennora. N.S.W., for its can top known as "Pop-Top"
2 S. Wynn and Co Pty Ltd. of Nunawading, Victoria, for the 'Samuel" Port bottle

HONG KONG

1 Sam Fong Cosmetic Co Ltd for its 'Fanbo Elegance Skin Care and Make Up collection.
2 Wiseman Plastic Product Company for its PVC cassette

album.

INDIA

1. Avadhood Industries of Bombay for its reinforced corrugated boards.
2. Quality Printing Press of Bombay for its PVC laminated corrugated case for transistor radio.

JAPAN

1. Dai Nippon Printing Co. Ltd. and Dai-Ichi Seiyaku Co. Ltd., both of Tokyo, for their new flexible packaging material called Silica film.
2. Tokyo Shibaura Electric Co. of Kanegawa for its package for circular fluorescent tubes.

KOREA

Mr. Hyuan Ko of Kwanchu City for his packaging of indigenous drugs.

PHILIPPINES

Wood Pattern Inc of Pasig for its wood box for choker neck laces

The Certificate winners were

INDIA

Oriental Containers Ltd., Bombay, for its pilfer-proof "lidseal" can.

JAPAN

1. Albion Cosmetic Co., Tokyo, for the Albion glass polyester perfume bottle.
2. Kamicon Kyogo Co., Ltd., Nagoya, for its packing case for ventilation fan.
3. Packaging Boutique Jack and Betty, Tokyo, for the very attractive range of gift boxes

KOREA

The Korea Design and Packaging Center for its consumer package for ginseng.

The Judges for the AsiaStar were greatly impressed by the high standard and the improvement in the quality and innovation of packaging. Many of the packages are of world standard, but perhaps one of the most encouraging signs in the region is the increasing attention being given to solving domestic problems with domestic solutions while at the same time showing a noticeable improvement in the standard of export packaging.

World Packaging Congress '78

The 1978 World Packaging Congress scheduled for October 30 through November 3 in conjunction with the Pack Expo '78 International Packaging week in the United States is already shaping up for the final stage of preparation.

In the last planning session of the International Packaging Week Council, staffed with representatives of the sponsoring organizations – WPO plus the American Management Associations, Packaging Institute/USA, Packaging Machinery Manufacturers Institute, and Society of Packaging and Handling Engineers the WPO Congress programme was outlined by major topic area.

To be included in the final selection of topics are some 20 seminar topics:

- new developments in containers (metal, glass and plastic),
- packaging for distribution,
- new developments in plastics,
- coordination vendor packaging and material handling of reusable containers,
- machinery economics
- inline container handling and packaging from inventory to warehouse,
- pharmaceutical and medical sterile packaging,
- international regulation and standards for international packaging design,
- high-heat and microwave food packaging,
- options and alternatives in packaging materials,
- machinery trends etc..

International and US packaging experts will be invited to participate in the various sessions as speakers

Specific international interest items will include the World Star Awards programme, a highlight report by participants in the proposed Inter-regional Consultation to be held in Helsinki under United Nations and WPO guidance, special Chicago-area plant tours of U.S. manufacturing and packaging facilities, and the packaging machinery and materials exhibit itself.

For more information, contact PMMI, 2000 K Street Northwest, Washington, DC. 20006, U.S.A.

The Pack Expo is predicted to attract 35,000 packagers at home and overseas to Chicago. Interested parties are urged to advance register to save time at McCormick Place. There is a 25% discount from the at-the-door registration price of $10 for advance registrations. Forms are available from PMMI or APIC

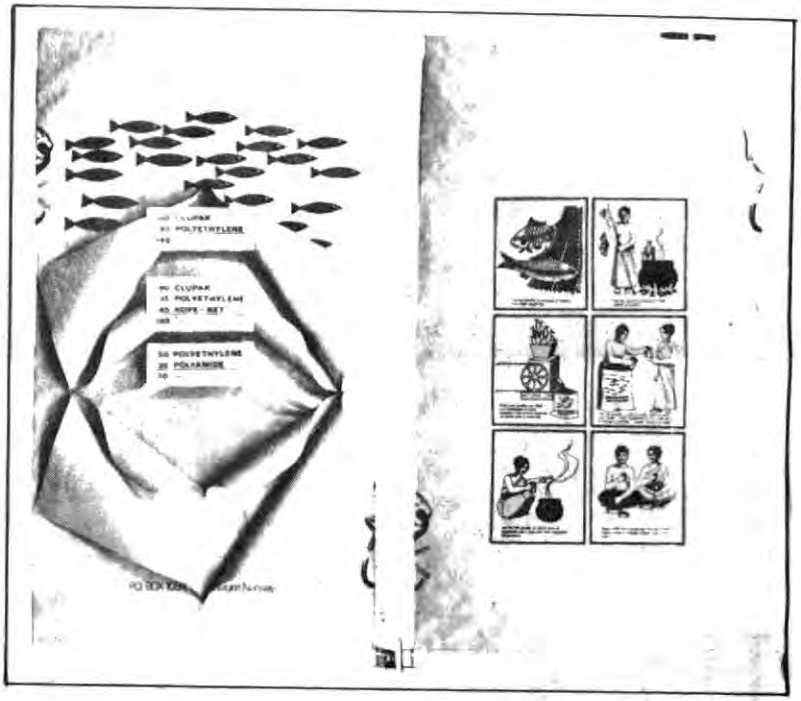
Fishmeal for Human Nutrition

The Norwegian fishmeal industry has developed a protein-rich fishmeal to be supplied to some of the world's poorest countries by the United Nations Food and Agriculture Organization. Because of the lack of a suitable package for the fishmeal, the programme has been delayed until recently.

The task of design and manufacturing for such a package was given to Paperituote, one of the biggest European paper and plastics converters in Finland. The package requirements were outlined by the Research Centre of the Norwegian Fishmeal Industry:

- the sacks should be very durable, since transportation, would involve many reloadings and the sacks would be thrown by hand from one transport vehicle to another.
- they should be moisture proof, because interim storage would be outdoors, e.g. on the quay.
- they should provide an oxygen barrier so that the fat in the fishmeal would not turn rancid.
- they should be aroma proof, so as not to attract rodents and insects during interim storage.

After a painstaking research, the Paperituote comes up with a sewn open double sack which can be heatsealed, meeting all the prescribed requirements. The basic construction of the sack consists of clupak, polyethylene, high density PE and polyamide in a laminate.



The actual sack is shown in the accompanying illustration.

In construction of the sack, the illiteracy of the undernourished people who would be using this protein-rich fishmeal was considered. It is therefore necessary to show by means of simple drawings how the users should use the fishmeal. These illustrated instructions were printed in 5 colours and the surface was given a PE-coating to protect the illustrations from moisture damage.

A valuable improvement of the sack is the reinforced ply which can be heatsealed by a unique method to provide a side seam as strong as the material itself.

The whole development process, with the close cooperation between the user and manufacturer, took exactly a year.

Australian Training Course

A special international training course financed by the Australian Government and administered by the Standards Association of Australia will be held in Sydney beginning 5 September, 1978.

The 12-week course, which will include visits to Canberra, Melbourne, and other centres, is designed for persons fluent in English who are attached to existing or "embryonic" standards organizations.

The Australian Government will pay return fares and will provide an allowance for trainees while they are in Australia.

Application forms and further details may be obtained from SAA, 80 Arthur Street, North Sydney, N.S.W., Australia.

APIC Revises Abstract Service

The Asian Packaging Information Centre (APIC), established in 1974, continues to strengthen its service in assisting the promotion of packaging knowledge, technology and development among the Asian countries. All packaging information in APIC is digested, coded and stored in a Data Bank to provide the

following services:

1. Monthly up-dating service,
2. Search of articles, books and publications relating to a specific subject in packaging,
3. Packaging machinery and materials information,
4. Guidance in solving packaging problems.

One of the services being used the most by packagers is the monthly up-dating service on packaging development. A large number of journals and publications on packaging and related subjects are scanned regularly by APIC staff. Abstracts of the articles are prepared in a list and sent to subscribers monthly.

Subscribers to this service include universities, research centres, private business organizations, libraries and packaging related industries; from countries as far as Thailand, Philippines, Australia, Singapore, India and Hong Kong.

This abstract service enables managers, executives, researchers, technical personnel, and information officers to keep up-to-date the latest development in their particular field of packaging, saving precious time in going through all packaging journals and the expensive costs of setting up such a journal library. Others see the service as a valuable source of packaging information.

Subscribers have selected from one to all the 17 specific subjects which have been revised as follows:

- use of corrugated board in packaging,
- vegetables and fruits packaging,
- shrink and stretch wrapping,
- blister and skin packaging,
- use of aluminium foil in packaging,
- use of plastic films in packaging,
- use of strapping in packaging,
- use of laminates in food packaging,
- glass containers,
- cushioning materials,
- sealing and wrapping machines,
- scaling and filling machines,
- labelling and coding machines,
- form/fill/seal machines,
- plastic bottle developments,
- closures and dispensing devices,
- package printing and developments.

Service charge for each of the above subjects, including airmail postage, is US$50 per annum.

For more information, please write to the address on the subscription form.

Hanging Garment Cuts Distribution Costs

One of the key elements in successful marketing of ready-to-wear fashion or garments to overseas market is the speedly and efficient transportation of the products to the customers. The average life of a fashion garment is about 2 to 3 months. If it has not been sold by then, it is usually marked down, reducing the retailer's profit.

"With the growing ready-to-wear garment industry in Hong Kong and the tough competition from neighbouring countries, speedy and cost-saving garment transportation is becoming a vital marketing strategy," says Mr. Dick van Lowijde, the area manager of Hansen Far East, a specialized firm in hanging garment transportation.

"Hong Kong manufacturers should make use of the sophisticated containerization, handling facilities and the modern transportation system already developed," he adds.

Garment-on-hanger is not a new movement. It can be dated back to the previous century in Europe and the United States, where garments were moved on hangers from manufacturers' place to retailers'. In Hong Kong, it was not until the last few years that hanging garment systems became somewhat more popular, especially to Europe. The United States line only joined this system later, but it is expected that hanging garment shipments to the U.S. will ultimately go up to a higher percentage of the garment shipments than to Europe, according to Mr van Lowijde.

"The Hansen team collects garments from a factory and loads them into a special hanging garment truck, from which they are delivered into our warehouses. There, we load up specially adapted hanging garment containers, which are to be delivered straight to the airport or dock side," Mr. van Lowijde explains.

If garments or fashions are distributed in such a way, the following 6 economical advantages can be realized both to the manufacturers and the retailers:

1. saving in re-pressing costs at the retailers'.
2. saving in packing and unpacking labour both for the manufacturers and the retailer,
3. saving in packing materials for manufacturer,
4. obtaining a quicker way from factory to retail outlet,
5. eliminating wastage costs at destination,
6. ensuring faster turnover of capital because goods are sold

more speedily in this way than in the conventional way

As to the garment loading itself, one can choose one of the two popular systems available in Hong Kong.

1 Bar system – this system in fact is a copy of the trucks equipped in Europe and the U.S.A. with bars accomodating various sizes of garments. This is a high quality transportation system.
2. String system – this system has the garments hung on strings from the very top to the very bottom of a container This system provides a somewhat higher density than the earlier mentioned bar system. Depending on the retail quality requirements, one should not forget that this system is more liable to creasing during transport.

Over the past few years, the items that have been most successful for the hanging garment transportation method include blouses, dresses, skirts, slacks, jackets, raincoats, ordinary coats, leather wear, silkwear and velvetwear

Following the closing of the last Hong Kong Ready-to-Wear Festival, Mr. van Lowijde predicted that hanging garment traffic could grow 50% to more than 4,000 container loads to the US, Canada and Europe in 1978. "This will amount to a growth to 5% of total Hong Kong garment exports to the US and Canadian markets and to 10% of the European," Mr. van Lowijde concluded.

EPIC PUBLISHES INTERPACK INFO. PACKAGES

The European Packaging Information Coordinators (EPIC), is a newly established independent packaging consultancy organization which provides information and communication services to packagers. The organization is joined by people specialized in the packaging field, who have broad and deep knowledge about the European packaging production and market. It offers packaging consultancy and information service to the European manufacturers as well as packagers from other parts of the world. The services they offer include information, facts and views regarding technical and marketing activities, trends, materials and machinery development, etc. The staff of EPIC will extract extensive and essential information from many European languages: German, English, French, Dutch, Italian, Spanish and Scandinavian.

A recent big project of EPIC is an intensive survey and compilation on the latest development in packaging machinery and materials. The report of the survey will be published in two different information packages:

I. NEWS REPORT – a study report, with objective criticism from EPIC, covers most of the latest products, machines and technology currently found in the European packaging market. This Report, recommended for overseas packaging companies, is said to be the most detailed and valuable News Report from Interpack that one can get. The Report is available from EPIC at a cost of US$300 including airmail postage, and will be mailed to buyers in a fortnight after the closing of Interpack.

II. INTERPACK REPORT – this Report covers various fields of packaging with detailed information in specific areas, names and addresses of all exhibitors at Interpack, data sheets, pamphlets, product specification, professional evaluation from EPIC and a follow-up service by EPIC, etc.

Special topics in the Report, just to name a few, include:

- metal packages,
- plastic films,
- blister, skin and other card packages,
- paper and board packages,
- corrugated fibreboard packages,
- shipping containers (drums, crates etc.),
- shrink and stretch film systems,
- labelling, marking and printing system,
- storage and handling systems, etc.

Price of this Report is US$1,300 and it will be posted within a month after the Exhibition. The Interpack Report is a limited publication which will be distributed on a first come first serve basis.

For more information: Mr. Eric Widoff, Gen. Manager, EPIC, O. Bernadottesgatan, S-216 17 Malmo, Sweden.

APIC JOURNAL

Food Processing and Packaging Directory 1977

– "The Good Taste Guide." Published by IPC Consumer Industries Press Ltd, 40 Bowling Green Lane, London, EC1R ONE. Price: £12.00 inclusive.

Those who are familiar with this directory will, on opening this new edition (the 16th) be aware of changes in presentation, the preface to the volume states. The whole of the text has been re-set and the information laid out in a more compact form.

The Summary of British and Overseas Food Standards and Regulations has again been revised and edited by a member of the Information Department of the British Food Manufacturing Industries Research Association.

The contents of this compact edition include the following titles: Food research organisations; trade associations, etc; education (university and polytechnic courses in food science); food processors; processed foods (classified); commodities (classified); suppliers of commodities, names and addresses; blending and grinding service; plant, equipment and packaging machinery (classified); suppliers of plant, equipment and packaging machinery, names and address; suppliers of reconditioned and used plant and equipment; packaging materials (classified); suppliers of packaging materials, names and addresses; packaging designers and consultants; hygiene (classified); hygiene, names and addresses; trade and brand names; summary of British and overseas food standards and regulations; tables of official permitted colours; consultants; index of consultants.

The directory is a valuable aid to all who are engaged in food processing and packaging.

The Transportation & Handling of Meat and Meat Products

Published by International Cargo Handling Co-ordination Association (ICHCA). 52 pages. Price: £25.00.

This is the first report of an international study group convened to consider the transportation and handling of meat and meat products.

A foreword to the report states that the transport chain for perishable cargo is becoming more important, the more the economic situation is pleading for specialized production areas as apart from consumption centres.

In the past much interest has been devoted to the definition of optimal transport conditions. Less attention has been paid to the aspects of necessary handling, which do not necessarily further the optimal conditioning of the cargo.

In this report a major part is dealing with this link in the chain, trying to signal the problems and pointing to possible solutions. These solutions have to be found for the individual situation. Therefore the general principles have still to be translated into everyday practice of handling by the operation managers. It is hoped that this report will be of value in the hands of these men.

Besides some statistical information on the meat trade, which may become history before it is printed in this fast changing world, the main portion of this report, composed from readily available information on equipment and handling procedures by practical people and scientists, tries to describe the actual situation in the transport chain for meat in cold chains of different character, and to show ways for improvement where necessary.

Copies of the report may be obtained from ICHCA, Abford House, 15 Wilton Road, London, SW1V 1LX, England.

ICHCA PROVIDES A NEW SERVICE

The International Carge Handling Coordination Association (ICHCA) has started new service, the Cargo Handling Abstracts Service, making the cargo handling information accessible to members on a world-wide basis.

The ICHCA plans to publish 3 issues in 1978. Then the abstract service will be provided quarterly. Both the content and the format of the publication will be improved with each edition.

In each issue, there are about 30 to 40 abstracts relating directly to cargo handling under 6 categories:

- equipment,
- labour (including safety and health),
- developments,
- handling methods,
- terminals
  general

For more information: ICHCA, Abford House, 15 Wilton Road, London SW1V 1LX.

Materials

50914 DENSE SPECIALTY PAPERS-ALIVE AND VERY WELL

Dense papers, which have high resistance to air and grease, are defined and their characteristics stated. The manufacturing methods of greaseproof, glassine, supercalendered and machine calendered papers are illustrated. The variety of uses of these papers on food packaging and the latest developments both in improving paper qualities and in the manufacturing process are briefed.
(PFF Conv, 12/77, 51:12, PP. 43-46.)

50492 A FOOD FUTURE DOWN THE TUBES

The uses of collapsible tubes for food and toothpaste markets are investigated. The present tube applications in the US and some European countries are discussed. The latest technical development in tube materials and future market projections are briefed.
(Mod Pack, 11/77, 50:11, PP. 46-48.)

50484 FOOD GRADE PVC STILL IN LIMBO

The PVC controversy and its historical packaging development are reviewed with respect to the regulations imposed by the Food and Drug Administration. The forms of PVC food packaging acceptable by FDA are listed and the reasons are explained. The 4 polymerization methods used to produce food-grade PVC and methods developed to remove the residual monomer are introduced. Data on consumption of PVC for various purposes are tabulated.
(Mod Pack, 11/77, 50:11, PP. 29-31.)

50468 NEW PET FOR BOTTLE, SHEET USES

The tough, clear, high-barrier thermoplastic PETG copolyester from Eastman Chemical, for blow-molding non-beverage bottles and extruding sheet and film for rigid and semi-rigid containers, are introduced. The economical advantages, functional properties and applications are discussed. Several reasons against wider use of PET in molded applications are stated. Future development of the PETG is predicted.
(Mod Pack, 11/77, 50:11, PP. 9, 10.)

50393 POLYCARBONATE: HAS ITS TIME COME

The marketing possibilities of polycarbonate which was once considered to be too costly for packaging purposes, are re-evaluated. The physical and chemical properties of polycarbonate products are accounted and compared with nylon, LDPE and polyester. Applications of the material in medical-device package, food, and several factors affecting its consumption are briefed.
(Mod Pack, 10/77, 50:10, PP. 39-41.)

51334 STRING REINFORCING WITH ADHESIVE SPEEDS COORS CARRIER PACKAGING

A new paperboard wrapper for 6-pack of cans from Coors reinforced with "String King" on both exposed edges, has caught the notice of the industry. The reinforcement is a hot melt coated synthetic strand manufactured by Fuller, giving wet strength, durability and tear resistance to paper board and corrugated containers. Performance of the new design and its economic benefits are discussed.
(PBD Pack, 1/78, 63:1, PP. 80, 82.)

51375 NEW KLIK-TOP CAN ENDS CONVENTIONAL PAINT CAN PROBLEMS

A new challenge has been made on the conventional paint design by the Klip-Top Can Ltd. It is a flip-open, snap-shut paint can that remains air-tight after repeated openings The laboratory-conducted vacuum, pressure, shaking, shipping and drop tests on the container are said to be satisfactory. Besides saving material costs, the new can can be used on conventional can-making, filling, and sealing equipment.
(Good Pack, 1/78, 39:1, P. 21.)

52142 COMPOSITE CANS

The dominant use of composite cans for refrigerated dough products and certain snack foods are explained with respects to the barrier properties, internal pressure resistance and other performances. The 2 types of composite winding methods: the spiral and convulute, together with their manufacturing processes are illustrated. The use of different body wall materials such as thermoplastic, foil, fibre and others are evaluated. Technological progress in body wall construction and closure development are briefed.
(Pack Eng. 2/78, 23:2, PP. 31-4.)

NEW TECHNOLOGY

50146 ELECTRON BEAM PROCESSING

The latest development in package printing and the coating of various packaging materials by electron beam processing is introduced. The basic nature of the process, the energy source and the curing process are discussed. The comparative economics of electron curing with those of the oven curing and ultraviolet curing are briefed. It is said that electron curing, because of its energy and pollutionless advantages will find increasing application, particularly in line retrofitting.
(Canad Pack, 11/77, 30:11, PP. 17-19.)

50229 ANATOMY OF A LABELLING CHALLENGE

The Wyeth Laboratories expressed their experience in replacing the preprinted syringes with a system.

applying transparent polyester labels to blank syringes, which is said to be both foolproof and more easily inventoried. The unit dose close injection system, Tubex, is a glass syringe containing a premeasured amount of drug. Details of the labelling operation and the problems encountered were introduced.
(F&D Pack, 9/77, 37:6, PP. 16, 17, 29, 32.)

51524 HIGHER SPEEDS FOR PP THERMOFORMING
A new generation of thermoformer capable of controlling heating of PP sheet, higher-speed and lower-temperature thermoforming is introduced, for packages such as margarine tubs juice containers and portion packs. The machine construction and processing procedures of the system are schematically illustrated. The latest innovation in solid-phase pressure forming (SPPF) process and the new resins developed to match the processing technology are briefed.
(MPI, 1/78, 8:1, PP. 38-41.)

51862 ASHESIVE TECHNOLOGY: STATUS REPORT
The recent substantial changes of corrugated industry in production methods and materials are briefed. The 2 trends among corrugated manufacturers: the upgrading of the quality of the board at the corrugator by coating, printing, laminating and re-inforcing, and the effort to improve productivity, are explored. The types of adhesives currently in use, selection factors, the latest introduced filament re-inforced String King and the solutions to some common problems are outlined.
(Box BD Cont, 2/78, 85:7, PP. 27-29.)

52167 TRAY PACK
The latest attraction in food packaging other than retort pouch should be the development of the "tray pack" which represents a totally new and outstanding concept. The tray pack, available both in tin-free steel and tinplate, has a volume equal to that of a No.10 conventional can. The manufacturing process of the tray, comparison of relative economical costs with conventional can and the consummer feedbacks about the tray are assessed.
(Pack Eng, 2/78, 23:2, PP. 44-6.)

MACHINERY

51227 FILLING LIQUID AND SEMI-LIQUID PRODUCTS
The 3 major methods: volumetric, constant level, or gravimetric filling, for liquid and semi-liquid products are reviewed. Selection of filling techniques and machiny in consideration with product characteristics are studied. The mechanisms of each filling method and the precautions are illustrated.
(Pack Dev & Sys, 1/78, 82:1, PP. 15-18.)

51441 CHECKING VACUUM LEVELS OF CANS
Can Handling Developments Ltd. has marketed a can vacuum level detector, Vac-trac, for checking processing faults such as incorrect head space or falling product temperatures. The unit is claimed to be both accurate, easily installed and measures lid deflection which is directly proportional to vacuum level. With speeds up to 1000 cans/min. without any physical contact with the cans, the machine ejects any bad cans on the line.
(Food Pro. Ind. 1/78, 47:554, P. 45.)

51649 UPDATING AND MODIFYING YOUR CORRUGATOR
The latest development in corrugator is assessed through the current market situation, capacity, range of new products and machines from Europe's leading machinery manufacturers. Investment and new capacity for corrugated industry is forcasted. The quality and quantity improvements in corrugated manufacturing process are discussed.
(Int PED Ind. 1/78, 21:1, 21 pages.)

52134 SPECIALLY DESIGNED LAMINATOR FOR SOLVENTLESS ADHESIVES
The solventless adhesive laminator developed by Engineering Works Polytype of Switzerland is introduced. The 3 commercial available solventless adhesives from Herberts, Holden and Henkel, their formulation, properties and performances in laminating process are compared. The 6 main elements of the Polylaminator: unwind for coated web, unwind for laminated web, coating unit, laminating unit, cooling roll/draw roll unit and rewind, are illustrated and detailed.
(PFF Conv, 2/78, 52:2, PP. 53-7.)

52233 MACHINE PEELS TOMATOES GENTLY
Savi Antonio of Parma of Italy has developed a fully automatic, mechanical peeler for tomatoes or other juice fruits. By mechanizing the manual operation, considerable savings can be achieved through faster handling of the perishable product. The mechanical operations, machine specifications and a layout of the complete peeling line are presented.
(Food Eng, 2/78, 3:1, P. 45.)

HANDLING, DISTRIBUTION & STORAGE

52738 CONVEYORS PROVE MORE ECONOMIC FOR CARTONS AND PALLETS
IBM (UK) expressed their experience in transfer of incoming goods from delivery bays, through inspection and into store by 2 separate, automatic conveyor systems, one for cartons, the other for pallet loads. The system is said to be more efficient and more economical than previous methods, and will permit handling

capacities to be expanded. Operations of the system are outlined.
(SHD, 2/78, 21:11, PP. 36-9.)

52720 ARE 'SYSTEMS' THE ONLY WAY TO IMPROVE SMALL PARTS STORAGE

Finding space is not the only problem that has to be tackled when considering small parts storage, one has to consider the 'total system' to be able to apply effectively much of the equipment designed for use with this type of store. This article introduces various types of small parts storage equipment to meet differing needs of various companies. Pictures of the equipments are illustrated.
(SHD, 1/78, 21:8, PP. 62-5, 67-8, 71-2.)

52712 SIMPLIFIED WAREHOUSE COST SYNTHESISING

The need to simulate costs of operating all sorts of potential warehouses to handle various product mixes are investigated in 3 main sections: the factors which affect warehouse costs, the effect of product mix on throughput costs, and how warehousing costs vary for different sizes of warehouse assuming the same product mix and stock turn. Data found in the survey are diagrammed and examined.
(SHD, 1/78, 21:8, PP. 50-1, 54-5.)

52704 NEW IDEAS ON TIGHTENING UP THE CONTROL OF PALLETS

An intensive survey on "pallet usage and wastage" was done in the U.K. and the results of main findings and recommendation were reported. Findings pin-point out the sharing of responsibility among all parties, the damage rate of UK pallet population, number of standardized pallet in use, problems of repair and inspection of pallets, pallet control in the retail distribution and the types of pallet usage.
(SHD, 1/78, 21:8, PP. 34-76.)

52688 DO YOU REALLY NEED THAT ONCE-A-YEAR STOCK ADUIT

Problems associated with stock audit are explored as a vital management information and high level of resources expended on determining the information. The prime requirements for stock audits and the variable stock counting methods are evaluated.
(SHD, 12/77, 21:9, PP. 42-3.)

52670 AIR-OPERATED TRACK SYSTEM FOR AIR FREIGHTING

Operating on compressed air, the Hytrack system an inflatable roller track developed by Hydraroll Ltd., for speeding palletized loads on to vehicles is now achieving good market penetration into the air freight market. The operation mechanism and construction of the system are illustrated and detailed.
(SHD, 12/77, 21:9, P.39.)

52639 FOOD MATERIALS HANDLING: A SYSTEMS INTEGRATING FORCE

A remarkable transformation has been seen in food materials handling in the industry through all phases of manufacturing: the supplies/plant movement, ingredients/process operation, process/product interface, packaging/shipping flow, containerizing/marketing requirements. The "food system", its interdependent elements and the concept of feedback are diagrammed and explained. Case histories from 5 famous food products organizations are introduced.
(Food Eng. Int. 2/78, 3:2, PP. 37-41.)

52647 PACKAGE HANDLING – THE INTEGRATED APPROACH

The smooth and efficient handling, collating and transporting of products and packages between various packaging and production operations is an esstential part of modern industrial practice A custom designed system at Rock ware Glass Ltd. is discussed with respects to equipment selection, project management, machinery installation and commissioning. The obsolete approach in the interests of efficiency and reliability, the planning of accumulation facilities and accumulator facility are briefed.
(Packaging, 1/78, 44:574, PP. 15, 17, 18, 20.)

50211 HOW BUICK GETS 33% LONGER BATTERY LIFE

Buick Motors has found a unique way to extend the life expectancy of fork truck batteries from 6 years to over 8 years. The secret-periodic testing and cell replacement is unveiled and the technical requirements and testing procedures are detailed in the article.
(MMH, 9/77, 32:9, PP. 71-73.)

50203 LOCATION ANALYSIS – MORE THAN JUST PLANT LAYOUT

A technical paper on location analysis is presented. The 2 usual forms of location problems: locating a point within an area or locating areas within a larger area are pinpointed. Under the umbrella of layout, a wide spectrum of materials handling problems which can be solved with location analysis techniques, namely assigning storage locations, finding the best location, costing the safety hazards in a system and many others, are outlined.
(MMH, 9/77, 32:9 PP. 64-70.)

Testing & Analysis

52696 INSTRUCTATION IN FOOD PROCESSING

Process control instrumentation in the food industries is classified into 3 categories: the measurement and/or control of temperature and level, the determination of acidity or alkalinity, and the

monitoring of liquid or gaseours components, effluents and environments. The measurement methods and the fundamental principles of such processes are discussed together with explanation on the available instrumentation.
(Food Pro. Ind. 1/78, 47:554, PP.30, 32, 34.)

62662 A PROPOSED ALTERNATIVE TO NSTA'S NEW VELOCITY TEST PROCEDURE
Work leading up to the publication by NSTA of a new final velocity standard for incline impact tests is reviewed. The authors explain their development of a simple, inexpensive, and easily portable timing system to measure accurately the velocity immediately prior to impact. Their device complies with ASTMD-880 and TAPPI T-801. The difference in opinion on measurement of impact velocity and the calibration schedule with NSTA is discussed.
(Package Dev & Sys, 1/78, 8:1, PP.26-8)

52654 LIGHTFASTNESS TESTING: AN EVALUATION OF METHODOLOGY
A recommendation for revision of the 1954 Standard Method "Tentative Method for Testing Packaging Materials for Fastness to Light by Use of the Fade-Ometer" is discussed. Believing that it is time for a change in the method of testing for lightfastness of packaging material, it evaluates available instrumantation with respect to the needs of the packaging industry and offers specific recommendations for establishing up-to date practices with evaluation methods directed toward performance criteria rather than material specification. (Package Dev & Sys, 1/78, 8:1, PP. 19-22.)

50617 CONTINUOUSLY RUNNING CORRUGATOR PASSES STIFF PERFORMANCE TESTS.
The performance test standards of Swedish Development Group for Corrugated Board (SUW) are introduced. The goals of the research work done by the SUW group are summarized. The quality guarantees required by Munks jo AB and accepted by Simon are tabulated. The testing results of the Europe's first continuously running instantchange corrugator are discussed.
(BOXBD Cont. 12/77, 85:5, PP. 48-51.)

50369 CALCULATING POUCH VOLUMES
A study is presented to provide better information for designing flexible pouches such as the calculations involving areas, thickness and volumetric capacities, to achieve the simplest package forms with the least amount of material. Three theoretical approaches: the maximum fill square pouch, the actual area and volume, and direct measurement, are introduced. The pouch volume and thickness relationship is briefed and illustrated. A FORTRAN routine calculations is also listed.
(Mod Pack, 8/77, 50:8, PP. 38-40)

50088 THE CHEMICAL DETERMINATION OF QUALITY
The chemical tests for the quality of paper or board with considerations on the fibres, types of loading, kinds of sizing, stability of the resin size, presence of chlorides, lignin and other compounds are studied. A table giving details of fibres, their construction and colour reaction with Herzberg's reagent is presented. Checmial assessments on ash, PH value, starch, resin sizing, gelatine and casein are described.
(Converter, 11/77, 14:11, PP. 22-24)

51433 ANON. ELECTRONIC EVALUATION OF VEGETABLE QUALITY.
Some typical tests to ensure the uniformity of food products on market are introduced by the Campden Food Preservation Research Asso. Instruments developed by Instron Ltd. on testing of the effect on texture of blanching peas at different temperatures before freezing and texture test on skinned fruit, potatoes etc. are discussed. Testing procedures are briefed.
(Food Pro. Ind. 1/78, 47:554, PP. 27,28.)

PACKAGING IN GENERAL

50310 FIVE DECADES OF CHANGE
The historical developments of packaging materials and technology from 1927 to 1977 are reviewed. New products growth in foods, drugs and cosmetics areas are briefed. Developments in the next 50 years in adhesives, bottles, films, plastics, paper and paperboard, metal cans and flexible packaging are predicted and the possible problems to be encountered are outlined.
(Mod Pack, 7/88, 50:7, PP. 24, 25, 28, 29, 31.)

50328 THE CHALLENGE OF MEAT
The lastest development in fresh-red-meat packaging are introduced. Systems developed to extend shelf life of fresh meat by 3 well-known companies, high-barrier packaging. laminates, thermoformed trays, and the performances are explained. It's said that Standard Packaging's system can achieve a fresh-meat shelf-life of more than 4 weeks.
(Mod Pack, 8/77, 50:8, PP. 15-19, 44.)

50195 CONSUMER RESEARCH AND PACKAGING
The methodology of consumer research in all stages of packaging development is investigated. Six key phases of packaging research are summarized and tabulated. Discussions on selecting the type of research, assessing the alternatives, image that a package communicates, packaging design and product compatibility are

presented
(Canad Pack 9/77 30:9 PP 30 34)

50187 SPECIAL REPORT ON CHEMICALS AND ADDITIVES
A technical report has been studied on the latest developments on colorants, property modifiers, flame retardants, heat stabilizers, plasticizers, organic peroxides, additive lubricants UV stabilizers and blowing agents. The possible tightening web of U.S. laws on these materials and their adaptation to the new demands from major markets are discussed. Marketing data on the consumption of these materials are tabulated and explained.
(MPI, 9/77, 7:9, PP. 40-57.)

50179 OREGON: THE BIGGEST TEST MARKET EVER
A special report on acceptability of aerosols was surveyed on 9 chain stores in Oregon following the ban on chlorofluorocarbon propellants, March 1, 1977. The survey attempted to (1) place in perspective the market share of antiperspirant aerosols in relation to roll-ons, sticks and pumps, and to (2) obtain the same information regarding the 2 leading forms of hair spray, i.e. aerosols and pumps. The result showed that aerosols are still the most welcome form of package for antiperspirants and hair sprays.
(Aerosole Age, 9/77, 22:9, PP. 25-29.)

50161 GOODBYE TO CR PROTOCOL TESTING
The Consumer Product Safety Commission (CPSC) Chairman spoke in a recent packaging seminar on child resistant packaging. The safety standards, physical investigation in the home and the 4 substances CPSC intending to get into acetominophen, over-the-counter antihistamines, household cleaning and maintenance products containing petroleum distillates and ammonia, are discussed. He also proposed that packages are not child resistant unless it is tested with children and the updating of first-aid instruction in the labelling of packages containing toxic substances is necessary. The future CR cap is also briefed.
(Pack Dig, 11/77, 14:11, PP 64-66.)

50385 SUPERMARKETS: WHEN YOUR PRODUCT DOESN'T FIT
The relationship between product packaging and supermarket is investigated with respects to the entire advertising / marketing / selling mix. Point of views from the supermarket retailer and consumers are considered. Standards, specifications required, some mishandlings by supermarket personnel and complaints from customers are discussed. Data from marketing research on consumer reaction and cost analysis are listed.
(Mod Pack, 10/77, 50:10, PP. 26-31.)

50021 THE HOUSEWIFE'S DILEMMA
Some common mistakes in consumer product packaging design are unveiled from the housewife's viewpoint. Packages used for illustration include a jumbo-size washing detergent pack, dish-washing liquid container, jars of pickled cucumbers, peanut butter jar, cereal packet, shampoo bottle, sharp-edged plastic egg tray and many others. The user's convenience in functional design is pin-pointed.
(Pack News, 11/77, CS 20.)

41426 FLEXIBLE PACKAGING, THE PROGRESS AND THE PROMISE
Rapid growth in flexible packaging is anticipated because of sophisticated packaging innovations created in anticipation of both market place wants and regulatory needs. With 16 basic laminating materials available and 100 possible material combinations, flexible packaging is the most versatile segment of the packaging industry. The potential and estimated savings of retortable pouches as compared with conventional cans are listed. The growth area in food for microwave ovens are briefed.
(PFF, Con, 11/77, 51 11, PP 71-71-75.)

46854 ODOR PROBLEMS AND HOW TO SOLVE THEM
The odor problems in packaging materials are investigated with respects to paper and paperboard, plastic films, aluminum foil, and adhesives inks. The causes of such odors and the basic characteristics of each substrate are discussed. The odor removal techniques applicable to manufacturing process, printing process and material selection are detailed in the text.
(Pkg Pt & Dt, 10/77, 24:10, PP. 19, 20, 29.)

47951 THE TIDE TURNS FOR TEA
Cadbury Typhoo Ltd., a leading English tea company, reviews its experience in the packaging of tea-bags. The retail competition between tea and coffee is briefed. The processing of tea in consideration to its quality and favour, and the tea-bagging operations with respects to the machinery used and the polypropylene tea-bag paper used are discussed.
(Merc Vision, 3/77, 22, PP. 12-15.)

48082 UPHEAVAL IN BEVERAGE PACKAGING
The views on beer and beverage packaging with respects to legislation, energy shortages, shifting consumer tastes and new technologies are presented by 3 well known consultants. Discussions are given on 2-piece steel cans, glass, all-plastic containers, new labeling techniques and the solution to litter, energy and material conservation. The future

consumptions of the materials and possible US government actions are predicted.
(Pack Dig, 11/77, 14:11, PP. 21, 24, 25, 29-31.)

41434 CUSHIONING SYSTEMS GIVE AMPLE EXPORT PROTECTION

The improvement of internal protection for export packaging is reported with respects to the introduction of new container and cushioning materials. Views expressed by equipment manufacturers and export packers on what is available for the potential exporter and whether the latest and traditional techniques are being used are accounted. The export requirements, overseas opportunities, important areas of material and energy conservation, some special advices and package designs are illustrated.
(SHD, 11/77, 21:8, PP. 73, 75, 78, 80, 83, 87, 88, 91, 92.)

52001 THE ROLE OF FLEXIBLE PACKAGING IN THE PHARMACEUTICAL INDUSTRY

Following the developments of plastics and their combinations with other materials in providing strides in the pharmaceutical field, flexible packaging is playing an increasing important role in this industry. The advantages of unit dose packaging, the 2 different types of unit dose pharmaceutical packaging – strip and blister, are discussed and illustrated.
(Canad Pack, 2/78, 31:2, PP. 27-9.)

50336 HEAVY PACKAGING FOR LIGHT CIGARETTE

Promotion strategies of cigarettes before and after the TV ban on cigarette advertising are compared and accounted. New methods and changes the industry adopted to communicate with consumers other than TV commercials are presented. The importance of package design and the dollar amount spent on it are evaluated
(Mod Pack, 8/77 50:8, PP. 20-22.)

51086 FEDS PLACING HIGH PRIORITY ON PACK REGULATORY ACTIVITY

The perspective in Washington's packaging policies particularly in the food packaging area is discussed. FDA and USDA new found interest in labeling requirements, additives, quality guarantees, migration problems, the CPSC's child-proof packaging, environmental and energy factors are presented.
(F&D Pack, 1/78, 38:2, PP. 1, 14, 15.)

51250 CHECKWEIGHER PERFORMANCE

The principles of checkweighing are asserted in order to overcome the problems of overweight and underweight packages. Steps needed to set up a quality control program are detailed. The distribution of package weights, standard deviation and factors in establishing a target weight are briefed and illustrated.
(Pack Eng, 1/78, 23:1, PP. 34-37.)

51615 1977: DISAPPOINTMENT GIVES WAY TO CAUTIOUS OPTIMISM

A detailed survey has been done for packaging materials growth in 1976 and 1977 in the UK market. Materials surveyed include films, foil, glass, board, aerosols, wooden containers and others. Data of the survey are tabulated and explained. Forcasts for 1978 are said to be cautiously optimistic with growth rates of around 5% for most materials.
(Pack Rev, 1/78, 98:1, 12 pages.)

51870 HOW TO SELECT STEEL AND PLASTIC STRAPPING

The 9 applications for steel and plastic strapping in industrial packaging – unitizing, closure bundling, palletizing, skidding, baling, securement, reinforcement and carloading, together with the type of strapping that works best for each are introduced. The selection of basic strapping material, the sealing methods, the strap finishes, and the spectrum of tools and machines from which to pick the right level of mechanization are discussed
(MMH, 2/78, 33:2, PP. 61-75.)

52852 ATTACK ON PACKAGING SPREADS TO CALIFORNIA

A new California Bill is proposed to restrict manufacturers of packages or containers to meet minimum standards, to maximize resource and energy conservation while minimizing adverse environmental impact and increased economic costs to the people. The Bill is said to be resembling in principle the Minesota legislation, except for the restrictions being put on the packager in Minesota rather than the package manufacturer. Content of the Bill is briefed.
(PFF Conv, 12/77, 51:12, PP. 52-4, 56.)

52837 PACKAGING IN AUSTRALIA

This paper, presented at the annual meeting of the Australian Institute of Packaging, reviewed the Australian packaging experience since 1945 with particular reference to the paradoxes of the systems. Evaluations were conducted on the various historical, economical and social influences which have moulded the packaging industry to the shape it is today. Projections for the future were briefed.
(Aust Pack, 12/77, 26:1, PP. 13-18.)

52829 PACKAGING OF CHEMICALS

Photo Corp. of Indiana expressed their experience on contract packaging of chemicals such as detergents and drug shampoos in high density polyethylene, polypropylene, PVC or polycarbonate bottles. The packaging operations of filling, capping, labeling and casing the range of products in their modernized plant are briefed.
(Pack Eng, 12/77, 22:12, PP. 44-5.)

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