progressive engineering

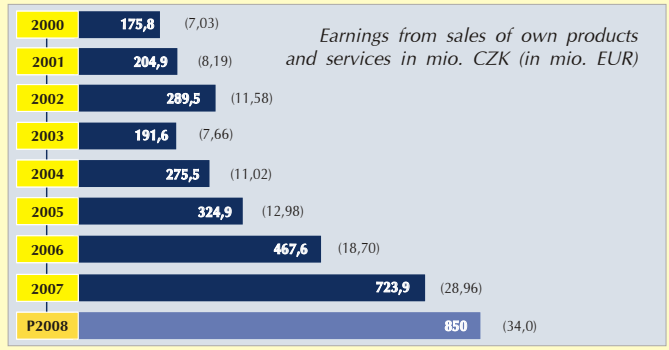
TECHNICAL NEWSLETTER

INFORMATIONAL BULLETIN No. 11/05-2008

In 2007 our earnings reached record-breaking level

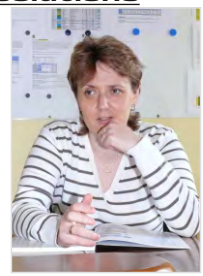
Consistent orientation on customers, together with trade boom on primary markets, contributed to the best economic results in the company history. We succeeded **to increase our earnings realized from sales of own products and services by 55 %** *(see chart)* as compared with the previous year whereas the number of the employees in the same period grew by 9 % only and total earnings before taxes broke the level of 68,9 mio. CZK. On the date of 31. 12. 2007 we filled our job-order manufacturing capacities for 2008 amounting to 965,2 mio. CZK. The greatest project for the year 2008 is reconstruction of the paper machine and delivery of the stock preparation line intended for production of testliner, fluting and plasterboards for Russia. Its total scope exceeds 20 mio. EUR, which is the greatest contract in the company history. However, we do not want to hold these reached economic results for satisfying but for motivation to further efforts and progress. For this year our primary attention should be directed to improvement of internal processes within the sphere of organization, management and planning. The aim is further growth of labour productivity. Accordingly, we launched plans for a very important investment which is the purchase of new software for planning processes. Another goal is to upgrade qualification of the staff since more than 40 % of our employees are in the company less than 5 years. As compared with the year 2007 the budget for education has been increased by 300 %. Employees gain latest information from the papermaking branch and improve their knowledge of foreign languages and management principles. Our primary goal is to convert competences of the management staff into our competitive advantages. In the sphere of services we are going to change our system of DCS and M&R supplies. To this step we were inspired by some of our customers. In addition to that, the share of automation in the price of supply grows and brings more considerable impacts on product qualities and production costs. It is the reason why we established a team of specialists who shall be focused on improvement of customer relationship and communication with subcontractors. This team will project solutions complying with customer needs, including software processing. By this new system we will support cooperation with the partners, you are accustomated to, and it should even help offer more affordable prices in our supplies.

Another good news, probably the best one, is scheduled price reduction of some our products. Increased labour productivity and commencement of cooperation with new subcontractors will enable some price cuts particularly on our type products. We expect that this price reduction will bring further growth of earnings. New price lists shall be available in May 2008.



- David Dostál, General Manager -

Satisfied customer appreciate good prices and top-grade technical solutions



Every year customers evaluate the company performance through a questionnaire showing their level of satisfaction with qualities of offered machinery and technological solutions within the frame of scheduled installations. In the last year the customers considerably appreciated company quality in the sphere of technical progress resulting especially from total volume of realized innovations and in addition to that also company ability to launch quite new prototype solutions within a relatively short time. Excellent classification was gained also in the sphere of technical assistance offered for commissioning of technological lines, consultancies focused on guarantee tests and qualities of servicing within the frame of contractual maintenance and training of attendants. In this year we will do our best even to improve this classification by our customers.

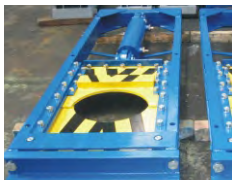
Into our priority becomes **price attraction and a good position in tenders and competitive biddings.** We wish to have such a reputation that the customers will accept our company as a very interesting business partner who is able to offer not only an affordable price but also top-grade technical assistance and after-sale services. Currently, sales prices are considerably influenced by permanently growing strength of the Czech currency. The company PAPCEL, as a nearly solely exporter, becomes handicapped with this fact to a certain extent. Permanently growing Czech economy puts considerable pressure on manufacturers exporting their products and forces them to seek reserves inside themselves to be able to keep up with this keen competition reigning on foreign markets. Our company was under pressure of these trends also in the last year. It was the reason the company took some steps focused on optimization of internal processes, e.g. in production, purchasing (cooperation, seeking of new subcontractors) or in sales.

The growing strength of the Czech currency brings also permanent pressure on sales prices growth. On the other hand, any rise of prices is always very negatively accepted by the customers. In the effort to avoid this effect, in 2007 we changed structure of the costing model whereby a part of running expenses connected with the phase of product designing has been transferred into direct labour costs. In this way the lower-level orders, as for designing, such as sales of type machinery or sales of type spare parts, are not loaded by high running costs which brings reduction of their sales prices.

Permanent stress is put also on standard solutions of type machines in the form of requirements on their further optimization of manufacturing processes as to labour intensity and material consumption. In this year the sales of standard solutions should be supported also **by preferential purchases through Internet.** In the first quarter 2008 we opened new company websites with a so-called shopping zone which enables direct purchases by means of a virtual shopping basket. The customers have a chance to submit their inquiries or purchase orders directly to their sales manager in the electronic way. This way of purchasing will be connected with special discounts or other benefit. We do hope that our customers will appreciate all the above-mentioned steps taken by marketing and sales department.

www.papcel.cz

- Martina Pavlíková, Marketing Manager -



MARKETING AND SALES DIRECTOR: Ivo Loska: loska@papcel.cz; phone 00420 585 152 193

Primary goals of technical development in 2008

For this year we have prepared a list of essential innovations of existing machinery and technical development of quite new solutions both for the stock preparation line and the paper machine. In the sphere of paper-making machines our assortment should be completed with machinery providing operating widths up to 5000 mm and speeds up to 600 m/min.

Newly we are projecting these groups:

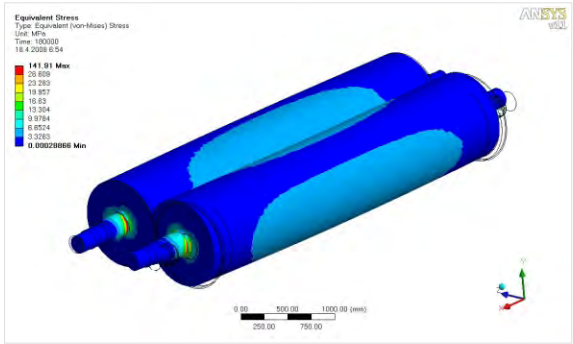
- complete top wire part of cantilever type for production of duplex;
- closed pressure headbox for bottom layer, incl. automatic control system and regulation of cross profile;
- fully automatic hydraulic reel with max. winding diameter of 2300 mm and with loader and magazine of empty reel spools;
- rewinder with two carrying rolls intended for max. winding diameter of 2050 mm, with cutting section designed for tangential cuts, unwinder with generator brake and max. unwinding diameter of 2300 mm.

As for stock preparation our primary attention will be especially directed to reduction of energy intensiveness of particular machines and enhancement of their capacity.

Our development shall be focused on:

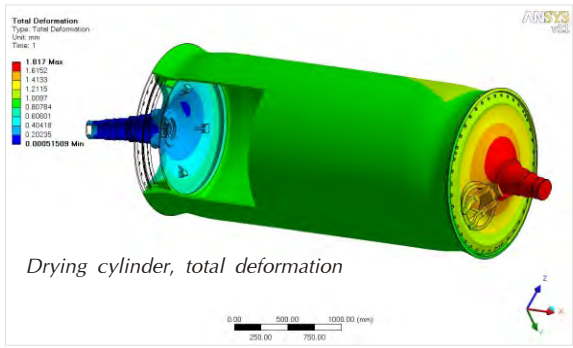
- pressure screens STU - completion of this family with type size 451 for working position as a knotter installed before PM inlet part;
- development and manufacture of new continuous rejects separator CRS for second stage of coarse screening which should replace existing washing separators VSV, and the modified type CRS which should replace periodically running pressure screen STU-081-L in fine screening stage;
- fractionation thickener FROK - it is modification of dewatering machine OK - here the stock should be not only thickened but also fractionated;
- for machines OBN-10 and PSN-30, -31 we prepare new technical solution bringing their increased capacities, which brings also increased capacity of the entire pulping stage in unified lines;
- family of low-consistency pulpers should be completed with new size LCV-6,5;
- essential innovations in terms of material intensiveness, higher level of material qualities and implementation of gained experiences into new solutions of refiners D-10-D and thickeners OK-500 and OK-4000/08.

While developing new products and designing innovations we utilize new software ANSYS Professional NLS.



Size press rolls in contact - course of equivalent stress

It is the FEM system used for control and optimization of calculations for paper-making machines and stock preparation machinery.



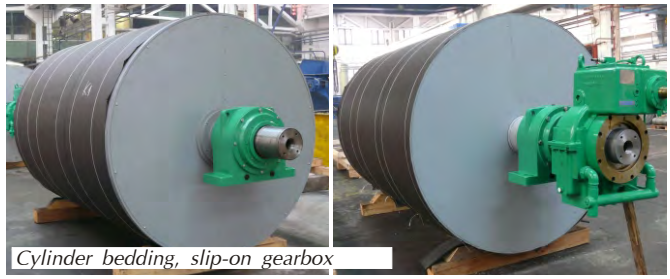
Drying cylinder, total deformation

This program enables solutions of structural problems, both linear and non-linear, and also thermal conditions. Thanks to this software we are able to pre-specify static and dynamic properties of machines and their subgroups. It is very important for reliability in service and work safety at their utilization in the paper industry.

- Ladislav Řehák, Technical Manager -

New type of beddings for drying and cooling cylinders

For rolls beddings we standardly use special axially floating bearings, type CARB, by SKF. The toroidal bearing CARB is a quite new type of radial bearing with line contact. Its unique design connects tipping ability of a barrel-shaped roller bearing with ability of a standard roller bearing to absorb axial shaft shifting. In addition to that, its cross section is comparable only with a needle bearing. These bearings are designed solely for utilization as axially floating bearings. They open new technical chances since they reduce area requirements, weights and manufacturing costs. The CARB bearings enable quite unique design solutions of smaller beddings with lower weights with the same or even with higher qualities. Beddings with these bearings are simpler especially in the case of long shafts being exposed to thermal changes.



Cylinder bedding, slip-on gearbox

New technical solution of the rewinder carrying roll

Due to permanently increasing requirements laid on higher machine speeds and on higher winding diameters we changed design conception of carrying rolls.

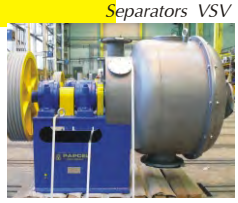
The existing design with two roll ends was replaced by forged roll pins with faces bolted to the carrying roll body. It brings increased body sturdiness and reduced labour consumption of this roll type.

- Jiří Socha, Manager of PM Design Dpt. -

SALES MANAGERS: CENTRAL EUROPE: Ivan Hejtmánek: hejtmanek@papcel.cz; phone 00420 585 152 289


Raggers SN


Separators VDT


Separators VSV


Pressure headboxes


Hydraulic headboxes


Opened water boxes

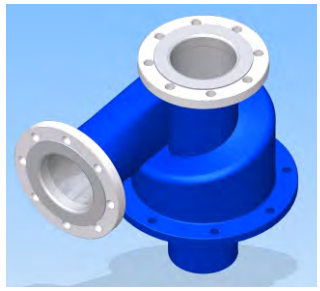
EASTERN EUROPE: Andrej Lakomý: lakomy@papcel.cz; phone 00420 585 152 113

News from stock preparation designing
New spiral types of centrifugal cleaners

In the course of the last year our Technical Board decided upon innovation of closed and opened cleaners, types VO, VU, VS and HL that, as from the year 2008, are to be offered under new type designation SVO, SVU SVS and SHL.

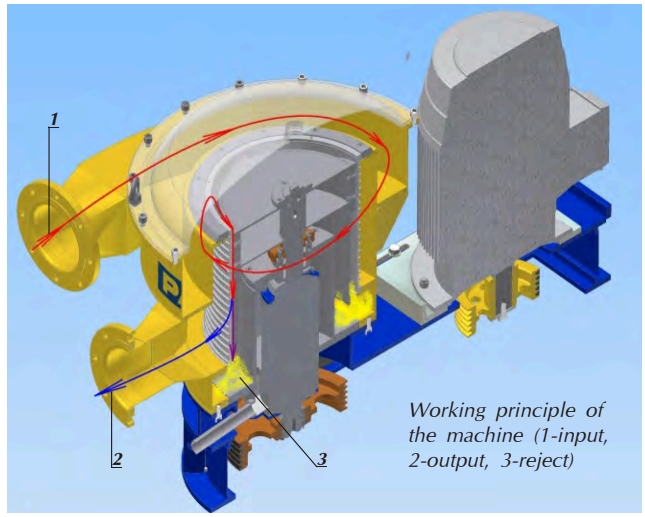
Within the progress of this innovation our primary attention was being directed to **new shapes of inlet parts** and to changes of materials to be used for working parts. Through 3D-projecting and tests our designers changed the shape of the cleaner inlet part (head) from its previous cylindrical form to a spiral form (resulting in new designation of these machines with the letter „S" at the beginning).

The stock flow going through the cleaner was directed in another way by a useful change of the inlet head geometry. Rather calmer stock streaming and optimization of the machine design brought a progressive growth of capacity (cleaner throughput) at keeping its efficiency but at reduced pressure losses. Thanks to the changes involved the concerned capacities of particular type sizes could grow by 30 - 50 %.


New type of spiral inlet part


Details of spiral inlet parts, station of cleaners SVO-25 intended for Egyptian customer

Generally, these machines belong to a family of centrifugal cleaners working with a free whirl and removal of sorted impurities into a collecting box or manifold. They are reliable while separating coarse (SVS), medium-size (SHL) and also very fine impurities (SVO, SVU). These cleaners can run either independently or in multistage working station arranged according to actual on-site operating conditions. As main advantages we can hereby name **very low energy intensiveness presented by a very low pressure loss**, **high resis-tance against fouling**, **high efficiency of sorting** and unified modular de-sign. More information and technical details about all our offered cleaners types you can find on our website.



Working principle of the machine (1-input, 2-output, 3-reject)

- Jan Richter, Stock Preparation Designing Dpt. -
- Martina Pavlíková, Marketing Manager -

New rotors and sorting screens for pressure screens STU

With changed geometry of working elements and rotor drums we reached higher hydrodynamic efficiency of processes running inside the machine. Without increased input power of its driving motor its new optimized shape brings increased capacity. The pressure screens STU are predominating products in our manufacturing assortment. With their parameters they belong to **the most reliable products** of this family worldwide reaching guaranteed technological parameters without problems. Besides its capacity this machine is characterized especially by **high screening efficiency, minimum lost of fibres in discharged rejects** and low demands on installation, operation and maintenance.


Rotor EHD, LD, HD

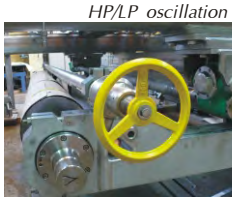

STU-081-L with its cover for efficient stock venting intended for fine screening of light impurities; STU-201; rotor installation

The screens STU are designed particularly for installations in waste paper processing lines as a primary screening stage with bored sorting screens or with slotted sorting screens in final fine screening stages for removal of finest granules, plastic foils and stickies. They are used also for stock distribution according to lengths of fibres (fractionation). With its multi-vaned and hydraulically balanced rotor the pressure screen is installed as protecting equipment before the PM inlet part in order to run here as a knotter homogenizing the stock and screening unpulped particles. The STU can be successfully used also in pulp mills for final screening of bleached or unbleached pulp. They separate small knots, bark pieces and non-fibrous components. In ground wood processing lines they can be used for final fine screening. Past three years the screens STU belong to the best selling products within the scope of PAPCEL stock preparation machinery.

OTHER COUNTRIES: Hanuš Majer: majer@papcel.cz; phone 00420 585 152 130


Dewatering elements


Doctors


HP/LP oscillation


Stretching devices


Regulators


Size presses

SALES OF SPARE PARTS: Jan Cholinský: cholinsky@papcel.cz - **SERVICE:** Pavel Grossmann: grossmann@papcel.cz

Double-disc refiners 2DR3x

The stock goes through these machines in a way called "twin flow", i.e. through a radially arranged inlet branch into the working chamber where its flow is divided into two streams. One stream goes through the refining zone and the other one through rotor holes in the rear refining zone. Having passed these refining zones both streams join together and leave the machine casing through a radially arranged outlet branch. Conceptual solution is based on one fixed and one movable stator part (with forced motion) and on a floating rotor with its discs on both sides.

Rotor part: a working box, with one fixed stator and with its inlet part, is attached to a machine stand. The refiner main shaft is bedded in a roller bearing in the front stand part and in two tapered roller bearings on the clutch side. The own rotor is provided with holes for axial streaming of the stock to be processed. Axial shifting of the rotor on the main shaft is based on movable splined coupling. The rotor is dynamically balanced. All refining segments are bolted to their stator and rotor plates.

Stator part: in the casing, which is pivoted and attached to the working box, there is a shifting stator adapted to generating of refining pressures. The working box is coupled with a gearbox through its element, in which there is a trapezoidal screw. While going in the nut the screw generates axial motion of the shifting stator bringing all refining elements into engagement. The rotary screw motion comes out of the gearbox powered by a flanged electric motor. The refiner main shaft is provided with a special shaft seal and packed by means of a sealing ring SpiralTrac by f. CHESTERTON with packing cord. This ring continuously supports withdrawal of solid particles, improves circulation and supports an effective change of the working medium in the stuffing box. It can run also without rinsing water.

Advantages of this refiner in comparison with single-disc one: lower space requirements, lower weight (material costs savings), power consumption savings (while testing a floating rotor intended for chemical pulp these savings were ranging 8 %), savings of spare parts costs.

New technical solution with a floating rotor has been proven in a second-hand double-disc refiner PAPCEL, type 2D32-KK, installed at Mondi Packaging in Štětí, Czech Republic. Currently, the machine still runs in accordance with paper mill needs.
From the beginning of 2008 were sold ten pcs of this refiner type.

- Josef Nemerád, Stock Preparation Designing Dpt. -

New conception of conveying systems

In 2008 company introduces a new integrated family of conveyers that should alternatively be completed with diverse additional equipment, such as mechanisms for wire cutting; bale turners for inspection of impurities content; elevators; turntables; metal detectors etc. Primary benefits of this new conveyers solution consist especially in prospective reduction of running costs in connection with attendance of these machines. Due to their automation current requirements for attendance, maintenance, logistics and handling can be minimized.

Conveyers are generally intended for conveying of waste paper, bales of chemical pulp or bags with chemicals to pulpers, for removal of rejects from separators, conveying of dry broke to pulpers or for paper reels handling. Waste paper can be loaded as loose material or in bales. Chemical pulp can be also conveyed in bales with or without packing. According to the given conveyer type loaded materials can be conveyed being supported by idler support structure (with or without conveying belt), by means of chain conveying system (with or without conveying belt) or special chains. In case of an inclined conveying system loaded materials can be fixed against contingent slipping on the given carrier. Conveying systems consist of one or more conveyers of an entire conveying line.

At the end of the year 2007 we shipped **a chemical pulp conveyer with its bales turner** to Russia. Since bales come to the paper mill in so-called units (3 to 4 bales above each other), it is necessary to unwire these bales and to check up their actual content of impurities that may be found in bottom parts of bales and that may foul the stock in the pulper. On this account we use a bales turner with a roller-type line.

Early in 2008 we finished realization of **a dry broke conveyer with a waste reels splitter**, too. This conveying system was supplied also for the customer from Russia.

- Petr Fryčák, General Designing Dpt. -

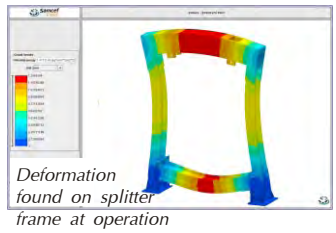
CELPAP MACHINERY, s.r.o., Praha: Miroslav Dostál: mdostal@comp.cz; Jaroslav Slabý: slaby@papcel-um.cz

New conception of waste reels splitters

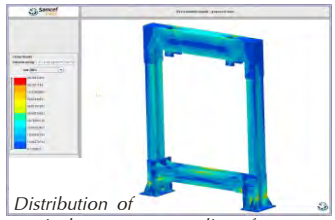
Based on increased demands of paper mills focused on automation of their plants some types of offered waste reels splitters have been completed with a new control system bringing reduction of requirements being laid on attendance and maintenance of this equipment. The waste reels splitters, type SOR, are presently offered in several type sizes. The biggest machine of this family provides splitting of waste reels with diameters up to 1 500 mm, lengths up to 2 300 mm and at splitting forces up to 80 tons. This new splitter consists of a robust frame with its side guides. These prismatic guides direct splitting forces and absorb lateral forces. The own splitting force is induced by two hydraulic cylinders with linear sensing of actual cylinder positions. Any deflection of the blade body is automatically registered through the control system and linear sensors and it can be regulated by means of proportional valves.

Illustrative photo from the splitter tests in two-nave hall

Waste reels splitter can be installed separately, or before a loading conveyer, or as an internal part of the proposed conveying system. Due to its design modifications the customer may choose between various alternative accessories items, such as automatic blade lubrication system, weighing equipment, visualization of machine functions, connections to the master control system etc.



Deformation found on splitter frame at operation



Distribution of equivalent stress on splitter frame (at operation)

For the first time this newly designed splitter SOR was supplied to a Russian customer in 2008 *(page 4)*. In this case the splitter was supplied as an internal part of the conveying system consisting of a dry broke conveyer with special steel plates and a lifting mechanism for supporting of steel plates at splitting. The conveying system with its integrated waste reels splitter can be controlled by means of controls and a touch screen terminal installed on the machine control board.

This new splitting equipment is intended for splitting of whole paper reel not only into two halves but also, by means of conveyer motion reversation, into more smaller parts that are to be consequently conveyed into a pulper. The control board transmits any information necessary for the pulper, such as actual weight of broke and particular parts, moisture, percentage of particular compounds contained, etc., to the master control system. It is also possible to control the splitter separately through the conveyer control system.

- Petr Fryčák, General Designing Dpt. -

News from sales

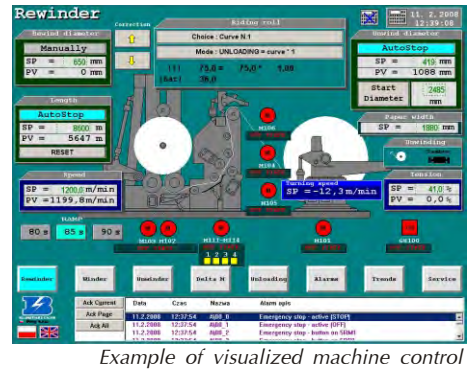
Delivery of rewinder for PM 1, Model Thurpapier, Switzerland

Before the end of the last year we were addressed by the paper mill Thurpapier, Weinfelden with an inquiry for a new PM 1 rewinder. This paper mill is an integral part of the Model AG Weinfelden Holding being an important producer of solid and corrugated cardboards. This holding comprises 13 plants in six European countries, is staffed with 2800 employees and reaches its annual consolidated turnover amounting to 371 mio. EUR.

Delivery, installation and commissioning are scheduled by the end of the year 2008. The rewinder shall be installed in a newly erected annexed part of the PM 1 building. It shall be completed with a stand for one reserve empty reel spool. Rewound paper reels shall be weighted and conveyed into the PM basement and from here taken by means of special automated trucks to the shipping department.

Similar type EG 2200 installed in Poland

This new rewinder is intended for processing of wool boards from PM 1 and in some cases also testliner from PM 2. *Parameters:* Unwiding width: 2 600 mm; reel spool diameter: 2 200 mm; winding diameter: 1 500 mm.



Example of visualized machine control

Cutting section: tangential section with 4 blade units. Operating speed: 2 000 m/min; design speed: 2 200 m/min. Existing rewinder was purchased from the customer by the way of a counter-value.

- Antonín Tomis, Sales Manager -

Commissioning of stock preparation line in paper mill in Ussuriysk

In March this year we successfully put the processing line for fine and coarse screening into operation in the paper mill Primsnabkombinat, Ussuriysk, close to Vladivostok. It is the first more important contract realized in such a distant region of the Russian Federation. Its importance is based especially on the fact that this line provides the highest capacity in Russia amounting to 350 tpd and processing raw materials of lowest qualities. To reach the required capacity we had to use parallel connections of the most powerful deflaking and was-

hing separators (2x VDT-40 and 2x VSV-30). This conception of a presently classical line required new approach to programming of the control system. In close co-operation with the control system supplier we succeeded and reached excellent results. In particular,

the visualization system is very good and the way of control is very simple, comfortable and feasible for attendants. Thanks to these features the entire line seems to be a very useful reference in this territory.

- Jaromír Bučík, Project Manager -

PUM changes its name to CELPAP Machinery, s.r.o.

The company PAPCEL Litovel is focused both on production and supplies of new machines and on reconstructions and overhauls of existing machinery. An important part of orders concerns also SH equipment. Recently, the company realized some large-scale projects connected also with installation of SH machinery. These projects usually comprised complete investment units being in connection with repurchase, overhauling, commissioning and training of attendants. The supplied PM 2 for production of multilayer boards and erection of a tissue paper machine for Kazakhstan belong to our most important projects. The customers appreciate our offers for repurchase of older equipment, which should be replaced by a new machine from the PAPCEL manufacturing assortment. Until May 2008 all inquiries for SH equipment were processed in cooperation with the company PAPCEL Used Machinery in Prague, in which the company PAPCEL, Litovel owned 50 % of stocks. In connection with an entry of a financial investor into the Litovel company we decided to sell this share. This sales resulted also in a change of the PUM company name to **CELPAP Machinery, s.r.o.** By this step the company PAPCEL, Litovel is more opened for cooperation with other distributors of SH equipment or even directly with its owners. The company does not leave the given market segment of second-hand equipment but, on the contrary, it is keen on further extending of its business.

- David Dostál, General Manager -

PAPCEL control systems

In the previous period purchases of field M&R instrumentation were mostly provided by different supply houses. In 2007 we decided to purchase these instruments directly at their manufacturers with an aim to reduce total costs connected with our supplies. In this connection we arranged bidding and consequently chose suppliers of unified M&R instrumentation. Further to this step for this year we wish to focus also on the sphere of hardware for control systems to be purchased directly and on their self-help programming within the frame of our company. Based on our experiences accordingly we assume continuous implementation and standardization of software blocks for the automatic units S7 of type machines installed in realized lines. The proposed conception of control systems should bring savings of financial means and better technical support for our customers.

- Aleš Pernica, Offers Dpt. Manager -

Organizational changes in the company

Ivo Loska
Marketing and Sales Manager

Ladislav Řehák
Technical Manager

Filip Wrnata
Manager for Production and Logistics

Hanuš Majer
Regional Sales Manager (international markets)

In October 2007 some organizational changes in the top management and in the middle sales managing posts came into force. In March 2008 a new director for production and logistics came into office. Within the frame of organizational changes the marketing and sales departments incorporated in one body as well as the sections of customer services and paper technology, normally being engaged in compilation of offers. The above-mentioned changes contributed to improved internal communication within the frame of preparation of technical conceptions in the given offers. Mr. Ivo Loska, recently in the post of Technical Manager, took up the office of Marketing and Sales Manager and Mr. Ladislav Řehák came into office of Technical Manager with renewed competences also for engineering services. In the sales department there are new posts established: so-called regional Sales Managers. International markets shall be newly managed by Mr. Hanuš Majer. His group shall manage sales in Turkey, Romania, Near East countries, Africa, Latin America and Asia. In March 2008 Mr. Filip Wrnata took up the office of Manager for Production and Logistics who manages planning processes, optimization of inventories, material flows and storekeeping. Together with the Lean Manager he participates in implementation of the lean and six sigma principles (limitation of wasting and reduction of running costs). All the organizational changes are focused on improvement of final communication with customers and optimization of offers, i.e. prompt services on professional level for affordable prices thanks to internal optimizing processes.

With deep regret we accepted a sad notice saying that on 12th January 2008 Mr. Jaroslav Dostál died early. Mr. Jaroslav Dostál dedicated his whole professional life to the paper industry where he held positions in top management (Olšanské Papírny paper mill, Vratimov and Biocel Paskov pulp mills). He was always taken for an authority not only in inland but also abroad. In 1991 his long professional experience helped him to establish an own firm, the company ICEC. Since 1998 he held the position of Supervisory Board Chairman at the company PAPCEL, a.s. In memory of all his colleagues and friends he will be forever remaining as a strong visionary person, a systematic manager and above all, an excellent professional.

- Martina Pavlíková, Marketing Manager -