

ADVANCED ADHESIVES REPORT

Your Corrugating Newsletter from HarperLove

UNITED SINGLEFACER; OPTIMIZING ADHESIVE APPLICATION

By Joe Giovanni



condition to properly seal the edge to hold a solid pattern. This brass dam must be loosened and pushed against the roll regularly to compensate for wear. The picture below illustrates a properly set brass dam and wiper.

The brass blocks located on the top of the glue pan are equally important. These brass blocks ensure the glue pan moves smoothly and evenly during paper width changes. The blocks attach to a lip and keep the pan sections square during travel. If these blocks are worn, they will cause the pan sections to bind as well as allow contact with the glue roll. This will cause premature wear on the glue pan and the roll.

The United singlefacer is a good, durable and strong running machine. To deliver top performance, it does require that its glue system be frequently checked and cleaned. This will ensure proper starch flow and a sharp glue dam line. The United system does not use a typical glue pan such as found in an MHI or a BHS, which hold several gallons of adhesive. The United singlefacer contains a minimal amount of adhesive in a pan that contacts the glue roll. It is closer in design to a chambered doctor blade in a flexographic printer than to the usual large volume glue pan. The condition of the area where the glue pans meet the glue roll is critical to ensure proper application to the medium.

The glue pan brass hardware and plastic wipers must be in good



UNITED SINGLEFACER; OPTIMIZING ADHESIVE APPLICATION *(continued)*

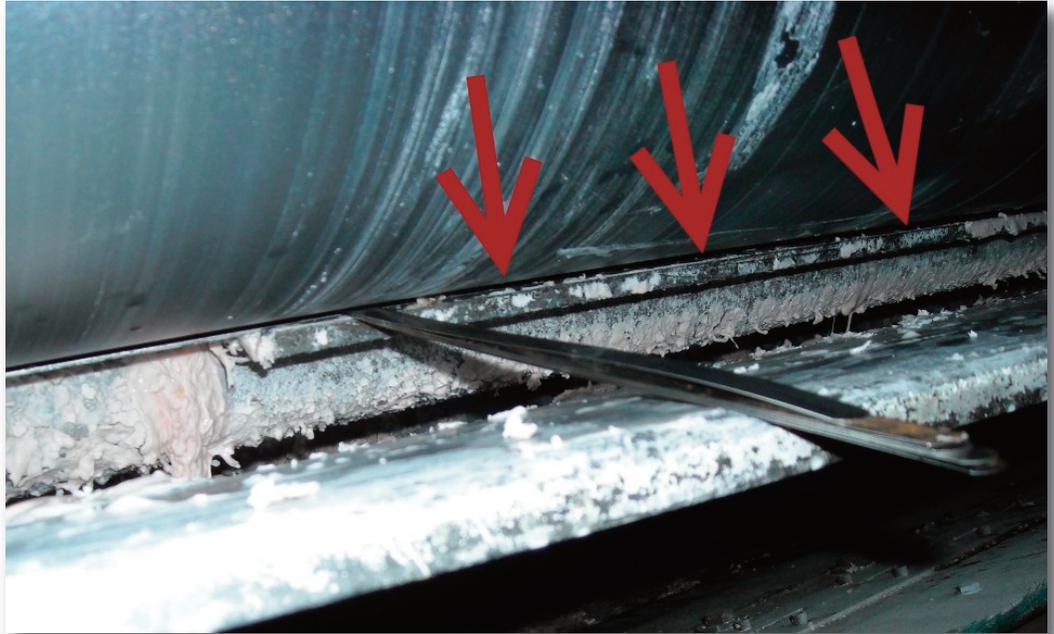
The gap between the stationary pan and the glue pan must also be set correctly to ensure a proper adhesive level is maintained in the glue pan. This gap should also be checked weekly when the machine is clean. Generally plants are conducting these gap checks before a startup or during scheduled preventive maintenance. If the gap needs to be adjusted, bear in mind that the entire bar/glue system moves as one unit. The bar unit adjustments are cam actuated and are located in the pressure chamber on both the drive and operator sides. This gap must be re-adjusted after a new glue roll has been installed.

United recommends the glue roll to pan gap be set at 0.060". From our observations in the field, 0.060" may be too tight. As dried starch starts to build up on the glue pan support and the bar that the pans slide on, the debris causes the glue pans to push up against the glue roll and can cause premature wear on the glue pans. Since most

plants can only clean the machine when production time allows, a .085"-0.090" glue gap is better suited for facilities with continued production. This will minimize premature glue pan wear. Additionally, if the pan contacts the glue roll, it will wipe adhesive from the roll thereby reducing the

film thickness. This will cause uneven adhesive application and bonding problems.

With careful attention to maintenance and cleaning, the United single-facer will deliver top performance. These tips should help keep it running productively.



INNOVATIONS

MULTIBOND EDGE III

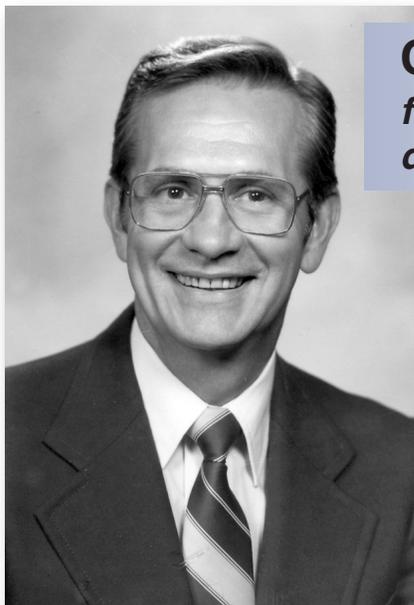
Multibond Edge III is the next generation of our proven Multibond line. It is formulated to address bonding issues with heavy weight papers and multiwall board, with specific attention to edge delamination. Enables faster speeds on multiwall and reduces delamination.

LIQUIBOR

With increased concerns about the health and safety risks associated with exposure to borax dust and handling bags, HarperLove has developed a liquid borax product. Easy substitution of powdered borax makes your starch kitchen truly automatic.

NOBOR LIQUID

NoBor delivers the advantages of LiquiBor but without any boron. Eliminates boron from the plant and from the plant effluent.



CLINT BELL - *former VP of Operations - dies at age 87*

Clinton C. Bell, 87, of Charlotte, NC, died August 4, 2015. Clint was born March 9, 1928, to Cecil Collins and Charles Bell, and grew up in Cincinnati. He held degrees in Business Administration and Law. Mr. Bell worked 54 years in the paper industry and held senior management positions in major paper companies in the United States and Canada. His business career was interrupted for three years of military service in

Korea where he served as an artillery officer. During combat in Korea, he was awarded the Bronze Star and the Purple Heart. Mr. Bell was married to the late Betty Winkle Bell for 47 years upon her death in July 2001. He is survived by his three children, Janice and Michael of Cincinnati, OH, and James who resides in Norwalk, CT.

Clint served as the Vice-president of operations at HarperLove from 1980 to 1990. He received the TAPPI Corrugated Division Leadership Award in 1991. His industry knowledge was beneficial at a time when HarperLove was growing and establishing itself as a leader in the industry.

BILL KAHN RETIRING . . .



Bill Kahn has announced his retirement after 22 years as Vice President and General Manager of HarperLove. Bill joined HarperLove in 1993. This position capped a successful 50-year career in the corrugating industry.

Mr. Kahn commented, "I have been very fortunate to have worked for only 3 companies in my

career. Two of these were paper companies that have changed names many times; neither of those companies exist anymore. I am also fortunate that I have never been fired or demoted and have worked for and with a lot of great people over the years. I have survived fires, boiler explosions, wildcat strikes, and a shooting. I'm a stronger person for the experience."

Bill began his career in 1965 with Hoerner Waldorf (Container Division) in St. Louis, Missouri. With this company he rose from an hourly production worker to an industrial engineer.

In 1977, Mr. Kahn moved to Westvaco Corporation as a staff engineer in New York, New York. During his 16 years with

this company, he also served as production manager, manager of engineering, and, ultimately, as manufacturing and technical service manager.

Bill is proud of his involvement with TAPPI since 1978. He has been a member of many committees, and served as chairman of the Corrugated Division in 1997. In 2005, he received the TAPPI Leadership and Service Award for the Corrugated Division.

Bill concluded, "August 23, 2015 marks 22 wonderful years at HLA for me. It has been a great place to work and I have enjoyed the talents and efforts of a lot of fantastic people. I can truly say that I loved my time here!"

Mr. Kahn earned his B. S. in Engineering at Southern Illinois University, in Edwardsville, Illinois. He was on the Dean's List 3 years.

He served with the U. S. Army in Vietnam as an infantry sergeant.

He will be sorely missed at HarperLove. All of his friends, co-workers and colleagues wish Bill and Patti the very best in the years to come....time with family that includes five wonderful grandchildren.



HarperLove Announces...

ALAN CLARK AS NEW CEO



HarperLove, the leading provider of corrugating adhesives and additives to the packaging industry, is pleased to introduce Alan Clark as the CEO. Clark succeeds Bill Kahn, who retired after 22 years with the company. Clark comes to HarperLove following an 18-year career with International Paper in a progression of management positions in the packaging and distribution businesses. Prior to International Paper, Clark was a Senior Engagement Manager for the international consultancy, McKinsey & Company, working in their Dallas, Houston and Atlanta offices. He earned his Bachelor of Science degree in Electrical Engineering from North Carolina State University, where he was the valedictorian, and his Master's degree in Business Administration from Harvard University. Will Henderson, Principal at Graycliff Partners commented, "Alan brings a great combination of industry expertise and outside perspectives that will greatly benefit HarperLove. We are pleased to have him on board and writing the next chapter of HarperLove's

growth and industry leadership." Clark said, "HarperLove has a long history of innovation, technical leadership and unparalleled service to the corrugating industry. I am honored to have the opportunity to lead this talented and highly-capable organization."

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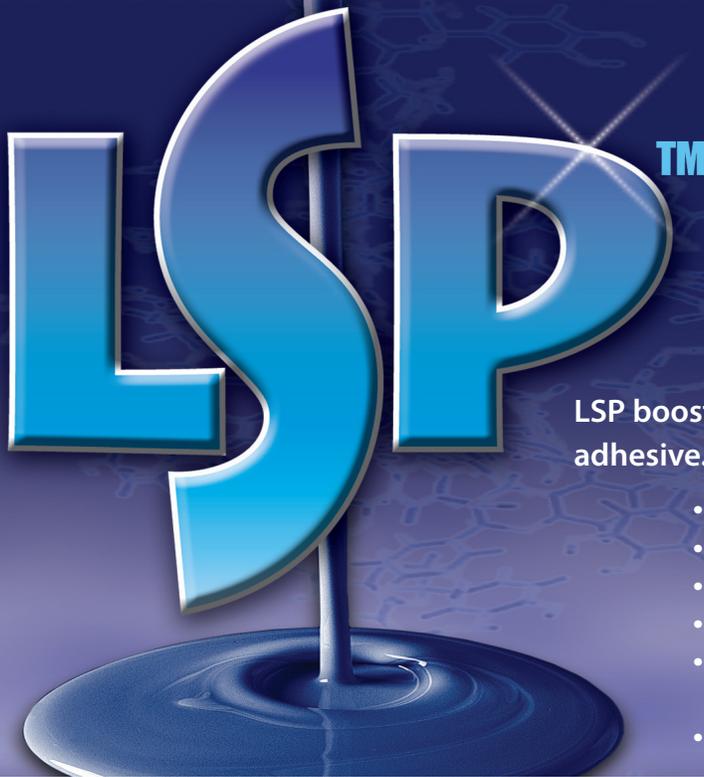
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LOW-SOLIDS POLYMER PERFORMANCE ENHANCER



*Put your corrugator
on a low-starch diet
without sacrificing
adhesive performance*

LSP boosts productivity and quality with a lower-solids adhesive. You use less starch and reduce adhesive cost.

- Higher corrugator speeds
- Improves bond quality
- Improves water holdout
- Helps reduce score-cracking in dry weather
- Batch cost neutral: more than pays for itself through reduced starch cost
- Lower BTUs to gelatinize

For detailed technical information, contact your HarperLove representative or call us at 704-588-1350