

Lab creates paper options for plastic packaging

Paper a more renewable resource

By CASSANDRA PROFITA
Oregon Public Broadcasting



Cassandra Profita/Oregon Public Broadcasting
BillerudKorsnäs designers use a shaking machine to test the protective power of the paper packaging they create.

Packaging designer Ryan Gaither believes in the power of cardboard.

He's laid down a massive sheet of it — as big as a king-size bed — at the Swedish-owned BillerudKorsnäs design lab in Portland.

He flips the switch on a machine that zips around the cardboard, stabbing and cutting it with a robotic knife.

"Basically anything we create — any design we're looking to validate — we cut out with this machine," he said. "This lets us know if we're on the right track or on a fool's errand."

When it's done, he folds the resulting cut-out into a three-dimensional shape that fits perfectly around the edge of a laptop. It's designed to replace the plastic foam end caps companies use to ship computers.

Gaither says inventions like this are helping the company build a growing customer list.

"I think now people are more concerned about the impact plastics are having on the environment," he said. "Paper packaging is a much more renewable resource. It biodegrades."

A growing number of campaigns to ban plastic waste are putting pressure on companies to find alternatives — not just for straws, but for all kinds of plastic packaging.

Years ago, the Swedish paper company BillerudKorsnäs acquired a Portland packaging company called Paccess. Their office in southwest Portland is now a lab where engineers redesign packaging

and test out paper products they can sell into a budding market for plastic replacements.

Their customers are now using cardboard in place of clear plastic packaging for camping gear. They're using paper bags instead of plastic ones for food like pasta. The company is even working on a paper soda bottle.

Moonshot

Tor Lundqvist, head of the Americas division of BillerudKorsnäs, calls this paper bottle initiative a "fly to the moon kind of thing."

The company prides itself on its sustainably managed forests. And it has a secret process for making super-strong paper products.

"We can use these products in solutions where they can actually push out plastic for plastic bags, for instance, or plastic trays and even plastic

boxes," Lundqvist said.

Any time you replace plastic with paper, he said, it does more than reduce plastic pollution. It also helps with climate change because plastic is made from fossil fuels while the trees used to make paper actually absorb heat-trapping carbon dioxide from the atmosphere.

But making a beverage bottle out of paper is pushing the company to go even further in its mission to challenge conventional packaging.

"Our CEO wanted us to do something really difficult with our raw material that people thought was not possible to do," said Lundqvist. "It's going very well. It looks like we are going to have a product on the market in the near future."

A promotional video on the project shows the process the company is going through to create the paper bottle and test its durability with the Danish

packaging company ecoXpac.

The problem with paper

Critics say paper packaging isn't always as sustainable as it looks. The real challenge for BillerudKorsnäs, they say, will be making sure the company's paper bottle is easily recyclable or biodegradable.

Conrad MacKerron, who works for As You Sow — a nonprofit that is teaming up with investors and pushing big manufacturers to change their plastic packaging — has heard about the BillerudKorsnäs paper bottle project, and he says he doubts the company can create a leak-proof bottle purely out of paper.

"The devil's in the details," he said. "Paper cups — in general we think of them as recyclable, but because of the thin plastic lining a lot of paper mills cannot process them. So they reject the cups, and they go to landfills."

According to BillerudKorsnäs, the first version of its paper bottle will be released in 2019 and it will have a plastic barrier inside. However, the company is also planning to release two more versions over

the next five years. The second version will have a bio-based barrier inside, the company says, and a third version will be biodegradable.

MacKerron said a lot of big companies have finally started taking the problem of plastic pollution seriously within the last year.

"I think most companies were hoping this concern about plastic pollution would blow over," he said. "That tune has changed because people are so appalled and offended at how bits of plastic are now just everywhere."

Scientists say the world is sending 8 million tons of plastic into the oceans every year, and it never really goes away. It's killing fish, seabirds and turtles, and it's even showing up in food and drinking water.

"I think the sense that it's become pervasive is what can turn the tide and come up with perhaps radical solutions that were not thinkable three, four, five years ago," MacKerron said.

This fall, thousands of volunteers in the Pacific Northwest and across the world picked up trash and tallied up the plas-

tic they found. The groups that organized the cleanup are now calling on the top manufacturers of that plastic to replace their packaging.

Can the paper match the plastic?

Meanwhile, BillerudKorsnäs is seeing 25 percent revenue growth year after year.

At the company's lab in Portland, designers slide the laptop with paper end caps into a box and test it to see if the paper can match the protective power of plastic.

First, they place it onto a mechanical arm that drops it from 3 feet off the ground. Then, they strap it into a shaking machine that mimics the bumps on a delivery truck. Finally, a third machine squeezes it between two metal arms.

During each test, designers measure the impact to the laptop, and so far it looks like the paper is holding up. There are no dents in the box and no damage to the laptop inside. That could one day mean more customers for the company, and more laptops getting shipped in plastic-free packaging.

Clatsop Post 12
Ham Steak Dinner
with Macaroni & Cheese, and Salad
Friday Nov. 2ND
4 pm until gone
\$8.00
6PM "Karaoke Dave"
ASTORIA AMERICAN LEGION
Clatsop Post 12
1152 Exchange Street
325-5771

Friends and Family
Come Celebrate
John Kalander's Birthday
Saturday November 3rd • 1-3 PM
Suomi Hall
244 W. Marine Dr., Astoria

WANTED
Alder and Maple Saw Logs & Standing Timber
Northwest Hardwoods • Longview, WA
Contact: John Anderson • 360-269-2500

JOAN HERMAN FOR ASTORIA CITY COUNCIL WARD 3



LET'S CHAT
Friday November 2nd @ Street 14 Cafe
1410 Commercial 2-3pm
PRESERVING SCENIC ASTORIA
WORKING FOR AFFORDABLE HOUSING
ADVOCATING ON BEHALF OF LOCALLY-OWNED BUSINESSES

VALUES VISION VITALITY

◆Joan for City Council, PO Box 946, Astoria 97103 ◆joan4ward3@gmail.com ◆

COMMERCIAL STREET
ANTIQUES & COLLECTIBLES
Retirement Sale!
50% off inventory in Nov & Dec
Including:
•Antiques & Collectibles •Furniture •Tools
•Glassware •Books & Magazines
•Glass Display Cabinets priced separately
"Come Find A Present From The Past In Historic Downtown Astoria"
959 Commercial St, Astoria, OR • 503-325-4388

THE DAILY ASTORIAN TV SCHEDULE

Evening listings THURSDAY

THURSDAY EVENING		NOVEMBER 1											
A	L	6 PM	6:30	7 PM	7:30	8 PM	8:30	9 PM	9:30	10 PM	10:30	11 PM	11:30
2	KATU	(2) KATU News at 6 (N)		Jeopardy! (N)	Wheel Fortune (N)	Grey's Anatomy (N)		Station 19 "Do a Little Harm..." (N)		With Murder "We Can Find Him" (N)		News (N)	(3:5) Jimmy Kimmel
3	KOMO	(4) KOMO 4 News (N)		Wheel Fortune (N)	Jeopardy! (N)	Grey's Anatomy (N)		Station 19 "Do a Little Harm..." (N)		With Murder "We Can Find Him" (N)		KOMO 4 News (N)	(3:5) Jimmy Kimmel
4	KING	(5) NBC News (N)	KING 5 News (N)	KING 5 News (N)	Evening	Superstore (N)	GoodPlace (N)	Will & Grace (N)	I Feel Bad (N)	Law & Order: S.V.U. "Caretaker" (N)		KING 5 News (N)	(3:5) Tonight Show
5	KOIN	(6) KOIN Local 6 (N)	Evening News (N)	Extra	Ent. Tonight (N)	The Big Bang (N)	Young Sheldon (N)	Mom (N)	Murphy Brown (N)	S.W.A.T. "Never Again" (N)		News (N)	(3:5) Colbert
6	KIRO	(7) KIRO 7 News (N)	Evening News (N)	KIRO 7 News (N)	Ent. Tonight (N)	The Big Bang (N)	Young Sheldon (N)	Mom (N)	Murphy Brown (N)	S.W.A.T. "Never Again" (N)		KIRO 7 News (N)	(3:5) Colbert
7	KGW	(8) KGW News at 6:00 p.m. (N)		Tonight Cassidy	Inside Edition	Superstore (N)	GoodPlace (N)	Will & Grace (N)	I Feel Bad (N)	Law & Order: S.V.U. "Caretaker" (N)		News (N)	(3:5) Tonight Show
8	KRCW	(3) Modern Family	Modern Family	The Goldbergs	The Goldbergs	Supernatural "Mint Condition" (N)		Legacies (N)		News (N)	Friends	Two and a Half	Two and a Half
9	KOPB	(10) Destination Craft	Business (N)	PBS NewsHour (N)		Art Beat (N)	Oregon Guide (N)	Midsomer M.	(50) Midsomer Murders "The Glitch" (3:5) Masterpiece Theatre		Prime Suspect: Tension		
10	KPTV	(12) (5:20) NFL Football Oakland Raiders at San Francisco 49ers Site: Levi's Stadium -- Santa Clara, Calif. (L)		8:00 News (N)		Family Feud	Family Feud	10 O'Clock News (N)		News (N)	Page Six TV		
11	KPDZ	(12) (5:20) NFL Football Oakland Raiders at San Francisco 49ers Site: Levi's Stadium -- Santa Clara, Calif. (L)		8:00 News (N)		Prime News (N)		Big Bang Theory	Family Guy	American Dad!	The Game		
12	KCPQ	(13) (5:20) NFL Football Oakland Raiders at San Francisco 49ers Site: Levi's Stadium -- Santa Clara, Calif. (L)		Gameday (N)		Big Bang Theory	Big Bang Theory	Q13 NEWS AT 10 (N)		News (N)	The Simpsons		
13	TBS	(20) Family Guy	Family Guy	Seinfeld	Seinfeld	Seinfeld	Gameday (N)	Big Bang Theory	Big Bang Theory	Big Bang Theory	Big Bang Theory	Conan	
14	KZJO	(22) Black-ish	Black-ish	Mom	Modern Family	Mom	Modern Family	Q13 News at 9 (N)		Big Bang Theory	Big Bang Theory	Two and a Half	Two and a Half
15	ESPN	(29) (4:30) NCAA Football Temple at Central Florida (L)		SportsCenter The day's news in the world of sports. (N)		SportsCenter With Scott Van Pelt (N)		SportsCenter (N)		SportsCenter (N)		Two and a Half	Two and a Half
16	ESPN2	(30) MLS Soccer (L)		Drone Racing League (N)		Drone Racing League (N)		Marty & McGee (N)		Around the Horn	Interruption		
17	NICK	(31) The Loud House	The Loud House	The Loud House	The Loud House	iCarly	SpongeBob	The SpongeBob Movie: Sponge Out of Water (15) Antonio Banderas.		(55) Bunk'd	Bunk'd	Raven's Home	Raven's Home
18	DISN	(32) Raven's Home	Raven's Home	Zapped (2014, Fantasy) Chanelle Peloso, Zendaya.		(45) Under the Sea	(55) Raven's Home	(25) Stuck Middle		(55) Bunk'd	Bunk'd	Raven's Home	Raven's Home
19	FAM	(34) (5:00) Christmas With the Kranks		(10) *** The Nightmare Before Christmas Chris Sarandon.		(50) **** Inside Out (2015, Animated) Amy Poehler, Bill Hader, Kaitlyn Dias.		(55) No One Would Tell (18) Matreya Scarrowner, Callan Potter, Shannen Doherty.		(55) PD Cam	(35) PD Cam	The 700 Club	
20	FNC	(35) (4:50) Lucy (14)	(40) ** Lucy (2014, Action) Morgan Freeman, Analeigh Tipton, Scarlett Johansson.			The Perfect Guy (2015, Thriller) Morris Chestnut, Michael Ealy, Sanaa Lathan.		(25) The Perfect Guy (15) Morris Chestnut, Sanaa Lathan.		(55) PD Cam	(35) PD Cam	NBA Basketball Milwaukee vs Boston	
21	LIFE	(36) Grey's Anatomy "Beautiful Dreamer"	Grey's Anatomy "Judgment Day"			*** Sleeping With the Enemy (91) Patrick Bergin, Kevin Anderson, Julia Roberts.		(55) PD Cam		(55) PD Cam	(35) PD Cam	NBA Basketball Milwaukee vs Boston	
22	ROOT	(38) NCAA Field Hockey ACC Tournament		NCAA Field Hockey ACC Tournament Women's Quarter-final		*** Escape Plan (2013, Action) Arnold Schwarzenegger, Jim Caviezel, Sylvester Stallone.		*** The Rock (1996, Action) Nicolas Cage, Sean Connery.					
23	F51	(39) (4:30) To Be Announced		Walk-off Stories		Speak for Yourself		TMZ Sports (N)	Skip and Shannon: Undisputed Opinions on the biggest sports topics of the day.		Set Apart		
24	SPIKE	(43) Mom	Mom	Friends	Friends	Friends	Friends	*** Hancock (2008, Action) Charlize Theron, Jason Bateman, Will Smith.			Green Lantern		
25	COM	(44) (1:15) The Office	(5:00) The Office	Friends	Friends	Friends	Friends	The Office	The Office	The Office	The Office	The Daily Show	Jim Jefferies Show
26	HIST	(45) Pawn Stars	Pawn Stars	Mountain Men "Double Jeopardy"		Mountain Men "The Gauntlet"		Mountain Men "Hell or High Water" (N)		(05) SwampMan "Treasure Huntin'" (N)		(05) Mountain Men "Double Jeopardy"	
27	A&E	(46) (5:00) Live PD		Live PD Live access inside the country's busiest police forces. (L)		Live PD Live access inside the country's busiest police forces. (L)		PD Cam (SP) (N)		PD Cam (N)		(05) PD Cam	(35) PD Cam
28	TLC	(47) 90 Day Fiancé "Young and Restless"	To Be Announced	The Little Couple "Yellow Eggs!"		The Little Couple "Time to Leave!"						Little C. "It's a Big Family Road Trip"	
29	DISC	(48) Bush People "Head Above Water"	Alaskan Bush People "Call to Duty"	Alaskan Bush People "Rogue Bear" (N)		To Be Announced		Bush "Where There's Smoke There's Fire"				Bush People "A New Beginning"	
30	NGEO	(49) Hotels "Mashpi Lodge, Ecuador"	San Diego (N)	Wild Spaces		Life Below Zero "Predator vs. Prey"		Life Below Zero "Survival School" (N)		Life Below Zero "Failure to Launch"		Life Below Zero "The Great Unknown"	
31	TNT	(50) (5:00) NBA Basketball Milwaukee Bucks at Boston Celtics (L)		NBA Basketball New Orleans Pelicans at Portland Trail Blazers Site: Moda Center -- Portland, Ore. (L)		Inside the NBA						NBA Basketball Milwaukee vs Boston	
32	AMC	(51) (5:30) ** Under Siege (1992, Action) Tommy Lee Jones, Gary Busey, Steven Seagal.		*** Escape Plan (2013, Action) Arnold Schwarzenegger, Jim Caviezel, Sylvester Stallone.		*** The Rock (1996, Action) Nicolas Cage, Sean Connery.							
33	USA	(52) NCIS "Being Bad"	NCIS "Privileged Information"	NCIS "High Tide"		NCIS "Dark Secrets"		NCIS "Family Ties"		NCIS "Family Ties"		The Purge "I Will Participate"	
34	FOOD	(53) Beat Bobby Flay	Beat Bobby Flay	Chopped "Hot Stuff"		Chopped "Tacos And Tequila"		Beat Bobby Flay		Beat Bobby Flay		Beat Bobby Flay	Beat Bobby Flay
35	HGTV	(54) Flip or Flop	Flip or Flop	Flip or Flop		Flip or Flop		Flip or Flop		Flip or Flop		Flip or Flop	Flip or Flop
36	FX	(56) (5:30) Deadpool (2016, Action) Morena Baccarin, T.J. Miller, Ryan Reynolds.		*** Daddy's Home (2015, Comedy) Mark Wahlberg, Linda Cardellini, Will Ferrell.		*** Daddy's Home (2015, Comedy) Mark Wahlberg, Linda Cardellini, Will Ferrell.		*** Daddy's Home (2015, Comedy) Mark Wahlberg, Linda Cardellini, Will Ferrell.		*** Daddy's Home (2015, Comedy) Mark Wahlberg, Linda Cardellini, Will Ferrell.		*** Daddy's Home (2015, Comedy) Mark Wahlberg, Linda Cardellini, Will Ferrell.	
37	CNN	(57) Cuomo Prime Time		CNN Tonight With Don Lemon		CNN Tonight With Don Lemon		Anderson Cooper 360		Cuomo Prime Time		CNN Tonight With Don Lemon	
38	FNC	(58) Hannity		The Ingraham Angle		Fox News @ Night		Tucker Carlson Tonight		Hannity		The Ingraham Angle	
39	NCBC	(61) Shark Tank		Beyond the Tank		Shark Tank		Shark Tank		Beyond the Tank		Paid Program	Paid Program
40	BRAV	(63) Shaws "Sex, Lies and iPhone Videos"		Shaws of Sunset "The Prenup Hiccup"		Shaws of Sunset "Vida Knows Best"		Shaws of Sunset "Bless This Mess" (N)		Shaws of Sunset "Bless This Mess"		Watch What (N)	Shaws of Sunset
41	TCM	(64) (1:15) Where Are My Children? (16) Tyrone Power.		(45) Short Films		(45) The Call of the Cumberlands (1916)		(49-17 (1917, Western) Joseph Girard.				(15) Her Defiance	Movie
42	SYFY	(65) Movie		*** Planet of the Apes (2001, Sci-Fi) Tim Roth, Helena Bonham Carter, Mark Wahlberg.		*** Colombiana (2011, Action) Michael Vartan, Callum Blue, Zoe Saldana.		*** Colombiana (2011, Action) Michael Vartan, Callum Blue, Zoe Saldana.		*** Colombiana (2011, Action) Michael Vartan, Callum Blue, Zoe Saldana.		Skyfall (2012, Action) Daniel Craig.	
43	RFD	(62) SF Machinery (N)	Small Town	Rural America "Live" (N)		Steve Lantvit	Rural Eve. News	Grown	GA Farm Monitor	SF Machinery	Small Town	Time Life Library	