

The quest to end lost airline luggage

Delta tests the future of baggage handling

By SCOTT MAYEROWITZ
Associated Press

LINTHICUM, Md. — Victor DaRosa stands under a scorching afternoon sun, loading bags onto a jet heading to Detroit.

As each suitcase climbs up the conveyor belt into the plane, a small computer verifies that it actually belongs on that flight. If one bag didn't, a red light would flash and the belt would stop until somebody acknowledges the mistake and reroutes the luggage.

This is the future of baggage handling. Delta Air Lines is investing \$50 million to soothe one of air travel's biggest headaches: lost and delayed luggage.

Delta carried nearly 120 million checked suitcases last year, collecting \$25 in fees, each way, for most domestic bags. For that price, fliers expect their suitcase to be waiting on the carousel when they arrive. Delta already has one of the airline industry's best luggage handling records — just 1 out of every 500 bags failed to arrive on time — but hopes that by deploying a RFID, or radio-frequency identification, tracking system globally it can improve further.

If the system works, other airlines are likely to follow. Ultimately the bag tag might be replaced with permanent RFID readers in our suitcases, reducing the chances fliers in the future will start a vacation missing their swimsuit.

"It's a very smart move," says Henry Harteveltdt, founder of travel consultancy Atmosphere Research Group. "It's one that will help increase customer confidence that their bags will arrive with them."

RFID wirelessly identifies tags attached to items. The technology is widely used at warehouses to track goods but Delta's rollout is the first global use for passenger bags.

To better understand the technology, think about your local supermarket. If every grocery item had an RFID tag, cashiers wouldn't have to scan each product at checkout. Instead, the groceries would pass by a scanner and be instantly registered. Shoppers could even leave everything in their cart, having it all tallied at once.

The same principles apply to checked luggage.

Barcodes on tags

Most airlines today use barcodes on tags to identify each suitcase — each tag has its own unique 10-digit number — and make sure it is loaded onto the right plane. But reading each barcode with a handheld scanner is time consuming. Often, a bag or two aren't scanned or error messages are missed by workers focused on getting planes out on time.

Delta designed its system to stop those errors. At the airline's 84 largest airports — accounting for 85 percent of its passengers — Delta will have 1,500 special belt loaders with RFID readers built in. Those loaders — like the one DaRosa was using — stop when a bag for a different flight is accidentally placed on the belt.

"It's amazing technology," says DaRosa, a ramp supervisor who has been testing the technology at Baltimore Washington International Airport. "It's going to totally eliminate a bunch of careless little errors."

Replacing handheld scanners allows ramp workers to use both hands to lift bags, reducing injuries and speeding up the loading and unloading process. RFID also shortens the time needed to find and remove a bag from a plane at the last second. All of that means more on-time flights.

Labyrinth of conveyor belts

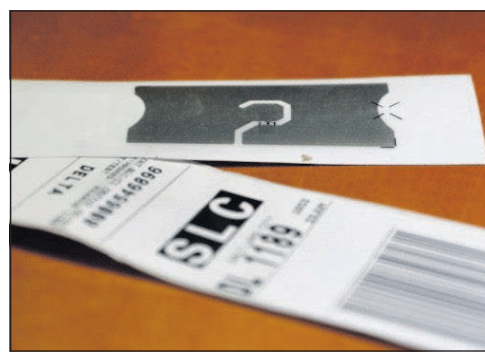
Delta is also using RFID to track bags through the labyrinth of conveyor belts below terminals. If bags fall off a belt at a particular curve or get stuck at a junction, Delta will now have enough RFID readers — about 5,200 globally — to pinpoint the trouble spot and fix it. The Atlan-



AP Photos/Patrick Semansky
Passengers prepare to check bags at a Delta Air Lines counter at Baltimore-Washington International Thurgood Marshall Airport in Linthicum, Md., in July. Delta Air Lines is rolling out new technology to better track bags throughout its system.



Delta Air Lines employee Victor Da Rosa checks a baggage scanner before unloading baggage from a flight.



The inside of a sample RFID-enabled Delta Air Lines baggage tag, at top, at Baltimore-Washington International Thurgood Marshall Airport.

ta-based airline says it plans to have the system online in 344 airports by the end of August.

The new tags look like traditional ones. But if held up to the light, passengers can see a fingernail-size chip and a credit card size antenna inlaid inside.

By the end of this year, fliers will be able to track their bags through the Delta smartphone app, getting push notifications at each step of the journey. If a bag misses its flight, passengers are also notified instantly.

That way passengers "aren't standing at a baggage carousel waiting for the last piece of luggage to come off to realize their bag isn't there," says Sandy Gordon, Delta's vice president of airport operations for the eastern U.S.

Most passengers' bags do arrive on time. But there are so hiccups, with 1 out of every 500 bags Delta carried last year failing to do so. It's a record surpassed by only Virgin America and JetBlue Airways, which both have smaller and simpler route networks. Twice as many were

delayed last year on American Airlines, according to statistics reported to the Department of Transportation.

Bags often get delayed when bad weather forces tight connections or passengers are rerouted onto new flights.

Of the 245,000 bags Delta mishandled last year, 208,000 of them arrived within three hours, according to the airline. Another 25,000 were reunited with passengers within 12 hours. The remaining 12,000 were either lost or took more than 12 hours to be delivered.

Installing RFID isn't going to solve all of Delta's baggage problems. But the airline estimates a 10-percent reduction in delayed bags. That means about 25,000 fewer bags the airline has to deliver to passengers' homes, offices or hotel rooms.

For the past five years, Australian airline Qantas has offered a permanent RFID bag tag that fliers can purchase for about \$23 and use when flying the airline domestically. Several big airports,

including those in Las Vegas, Hong Kong, Milan and Tokyo, use RFID to track bags through parts of their systems.

But Delta, the world's second largest carrier by passenger traffic, is providing the most-comprehensive tracking the industry has seen to date.

Airlines have long found RFID too pricey but the cost has dropped. McCarran International Airport in Las Vegas says it currently pays 12 cents for each RFID tag, down from 21.5 cents a decade ago. Traditional tags cost the airport 3 cents. Delta refused to say how much it's paying for RFID bag tags, except that it is less than 10 cents each.

The new tracking system won't follow every suitcase.

There are limitations.

It includes bags checked at the gate and claimed at a baggage carousel. But items like strollers or bags checked at the gate for regional jets — those picked up at the arriving gate — currently aren't tracked with RFID.

If a Delta passenger connects onto a flight with a Delta partner like Air France, the traditional barcode tag takes over for the final leg of the journey. However, an Air France passenger connecting to a Delta flight gets a RFID sticker added to the traditional tag when their luggage first enters Delta's possession.

And nothing is preventing the airline from losing your bag if any of these tags get ripped off along the way.

TV LISTINGS

Evening listings
MONDAY

MONDAY EVENING												SEPTEMBER 5	
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		Jeopardy!	Wheel of Fortune	Bachelor in Paradise (N)				Mistresses "Back to the Start" (N)		KATU News at 11	(35) Jimmy Kimmel
3	KOMO	(4) KOMO 4 News		Jeopardy!	Wheel of Fortune	Bachelor in Paradise (N)				Mistresses "Back to the Start" (N)		KOMO 4 News	(35) Jimmy Kimmel
5	KING	(5) NBC Nightly News	KING 5 News	KING 5 News	Evening	American Ninja Warrior "National Finals Week 2" (N)				Running Wild "Lindsey Vonn" (N)		KING 5 News	(35) Tonight Show
6	KOIN	(6) KOIN 6 News at 6	CBS Evening News	Extra	Ent. Tonight	Big Bang Theory	2 Broke Girls	Big Bang Theory	The Odd Couple	Scorpion "Chernobyl Intentions"		KOIN 6 News @ 11	(35) S. Colbert
7	KIRO	(7) KIRO 7 News	CBS Evening News	The Insider	Ent. Tonight	Big Bang Theory	2 Broke Girls	Big Bang Theory	The Odd Couple	Scorpion "Chernobyl Intentions"		KIRO News	(35) S. Colbert
9	KGW	(9) KGW News at 6:00 p.m.		Live at Seven	Inside Edition	American Ninja Warrior "National Finals Week 2" (N)				Running Wild "Lindsey Vonn" (N)		KGW News at 11	(35) Tonight Show
3	KRCW	(3) Seinfeld	Seinfeld	Modern Family 1/2	Modern Family 2/2	Supergirl		Supergirl "Bizarro"		KGW News at 10	(35) Two 1/2 Men	(35) King of Hill	
10	KOPB	(10) This Old House	Business (N)	PBS NewsHour		The Highwaymen Live at Nassau Coliseum		Ken Burns: The Civil War				Financial Solutions	
12	KPTV	(12) 6 O'Clock News		Family Feud	Family Feud	So You Think You Can Dance "The Next Generation: Top Four Perform" (N)				10 O'Clock News		11 O'Clock News	2 Broke Girls
13	KPDJ	(13) Mike & Molly	Mike & Molly	Big Bang Theory	Big Bang Theory	FOX 12's 8 O'Clock News on PDX-TV	FOX 12's 9 O'Clock News on PDX-TV			Law & Order: S.V.U. "Appearances"		Law & Order: S.V.U.	"Dominance"
13	KCPQ	(13) Name Game	Modern Family 1/2	Big Bang Theory	Big Bang Theory	So You Think You Can Dance "The Next Generation: Top Four Perform" (N)				Q13 News at 10		Q13 News	Modern Family 2/2
20	TBS	(20) American Dad	American Dad	Family Guy	Family Guy	Family Guy	American Dad	American Dad	Family Guy	Full Frontal		Conan	
22	KZJQ	(22) Two and a Half	Two and a Half	The Simpsons	The Simpsons	Modern Family 1/2	Modern Family 2/2			Big Bang Theory	Big Bang Theory	Friends	Friends
29	ESPN	(29) (5:00) NCAA Football	Mississippi (Ole Miss) vs. Florida State (L)			SportsCenter		SportsCenter		SportsCenter		SportsCenter	
30	ESPN2	(30) (4:00) ITF Tennis	U.S. Open (L)			ESPN Films	E:60 Pictures	Baseball Tonight (L)		MLB Baseball	Chicago Cubs at Milwaukee Brewers		
31	NICK	(31) Henry Danger	Henry Danger	Crashletes	The Thundermans	NickyRickyDicky	Game Shakers	Full House	Full House	Full House	Full House	Friends	Friends
32	DISN	(32) Liv and Maddie	K.C. Undercover	Bizaardvark	Stuck in Middle	K.C. Undercover	"Tightrope of Doom"	Girl Meets World	Friends Whenever	Stuck in Middle	Girl Meets W. 1/2	Bizaardvark	K.C. Undercover
34	FAM	(34) (5:30) *** Harry Potter and the Deathly Hallows: Part 2	(11) Emma Watson, Daniel Radcliffe.			*** Night at the Museum: Battle of the Smithsonian	(09) Amy Adams, Owen Wilson, Ben Stiller.			The 700 Club			
35	FMC	(35) (5:00) *** Mission: Impossible - Ghost Protocol				(40) Labor Day	(2013, Drama) Josh Brolin, Clark Gregg, Kate Winslet.			(55) The Call	(2013, Thriller) Halle Berry.		(50) FXM Presents
36	ROO	(36) Stalked by My Doctor	(2015, Thriller) Brianna Chomer, Deborah Zoe, Eric Roberts.			Stalked by My Doctor: The Return	(16) Claire Blackwelder, Eric Roberts.			Stalked by my Neighbor	(2015, Thriller) Kelcie Stanahan, Amy Pietz.		
38	LIFE	(38) Wicked Tuna	"Underdog Day Afternoon"	Wicked Tuna	"Not How We Operate"	Wicked Tuna	"The Karma Kid"			Live Free or Die	"To the Bone" (N)	W. Tuna	"Old Sailors and Bold Sailors"
39	FT	(39) Rizzoli & Isles	"For Richer or Poorer"	Rizzoli & Isles	"Stuffed"	Rizzoli & Isles	"Yesterday, Today, Tomorrow"			Major Crimes	"White Lies" Pt. 1 of 2 (N)	Rizzoli & Isles	"Ocean Frank"
51	TNT	(51) (5:00) *** Back to the Future III	(90) Michael J. Fox.			*** Back to the Future	(1985, Comedy) Christopher Lloyd, Lea Thompson, Michael J. Fox.			*** Back to the Future II	(89) Christopher Lloyd, Lea Thompson, Michael J. Fox.		(05) Queen of the South
52	USA	(52) Chrisley Knows	Chrisley Knows	Chrisley Knows	Chrisley Knows	WWE Monday Night Raw							
53	FOOD	(53) Kids BBQ Camp	"Cowboy Campfire"	Kids BBQ Camp	"The Big Smoke"	FN Star Kids	"Team Livestream" (N)	Cake Wars	"Garfield" (N)	Chopped	"Chocolate Competition"	Chopped	"Chocolate Challenge"
54	HGTV	(54) Fixer Upper		Fixer Upper		Tiny Luxury		HouseHunters (N)	HouseHunters (N)	House Hunters (N)	House Hunters (N)	TinyHouseHunters	TinyHouseHunters
57	FX	(57) (5:30) *** Thor: The Dark World	(13) Chris Hemsworth, Natalie Portman.			*** Captain America: The First Avenger	(2011, Action) Hugo Weaving, Hayley Atwell, Chris Evans.			*** Green Lantern	(11, Action) Blake Lively, Ryan Reynolds.		
57	CNN	(57) Unfinished Business: The Essen...	All Business: The Essential Donald Trump			Unfinished Business: The Essential Hillary Clinton						All Business: The Essential Donald Trump	
58	FNC	(58) The Kelly File	With Megyn Kelly	Hannity		The O'Reilly Factor		The Kelly File	With Megyn Kelly	Hannity		On the Record	
61	CNBC	(61) Shark Tank		Adventure Capitalists	"Ocean" (N)	Adventure Capitalists	"Lake/ Mountain"			The Profit	"Dilascia"	Paid Program	Paid Program
63	BRVA	(63) Real Housewives	"Something's Fishy"			Orange County Social	(N)	The Real Housewives	(N)	To Be Announced		The Real Housewives	
64	TCM	(64) (5:00) *** Intolerance	(1916, Drama) Mae Marsh, Fred Turner, Lillian Gish.			*** Citizen Kane	(1941, Drama) Joseph Cotten, Everett Sloane, Orson Welles.			(45) *** My Man	Godfrey (36) William Powell.		
65	SYFY	(65) Z Nation	"Zombie Baby Daddy"	Z Nation	"Down the Mississippi"	Z Nation	"The Collector"	Z Nation	"Rozwell"	Z Nation		Z Nation	"Corporate Retreat"
162	RFD	(162) American Rancher	Red Steagall	Horse Master	Inside Reining	Craig Cameron	Rural Eve. News	Rural America	"Live" "FarmHer"	American Rancher	Red Steagall	Product Showcase	