

LIVE

EDUCATIONAL SEMINAR

MISTAKE PROOFING
YOUR PROCESS



1

SEMINAR SPEAKER



LEAH WORLEY

VP Operational Services

IWCO DIRECT

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IWCO DIRECT

Mistake Proofing



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IWCO DIRECT

We're an end-to-end direct marketing solution



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SCOPE AND SCALE

IWCO Direct's production platform supports client campaigns of **1 to 60,000,000+ packages monthly**

5+ Billion
Annual
Capacity

Direct mail
AND
integrated direct
marketing

15	Commercial and forms presses	250,000,000	monthly
16	Digital variable color presses	250,000,000	monthly
48	Continuous laser printers	275,000,000	monthly
6	Continuous inkjet printers	200,000,000	monthly
8	4-color read/write inkjet envelope printers	60,000,000	monthly
12	Envelope converters	350,000,000	monthly
191	Inserters	450,000,000	monthly
68	Continuous-form bindery lines	770,000,000	monthly
12	Delivery-point bar code sorters	250,000,000	monthly
36	Promotional/Membership card personalization units	130,000,000	monthly

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POTENTIAL FOR ERROR



300,000,000+
total packages
monthly



Potential Quality Issues

JobInstructions	Data	Material	PrintQuality	Content	Process
Confusing	IncorrectData	Barcode	ColorIssue	IncorrectContent	Double Insert
Conflicting	MissingData	ComponentIssue	Corduroy	IncorrectPlacement	
Incorrect	CorruptData	Cut/Fold	Jetouts	MissingContent	
MissingInstruction		Damage	Mark/Ink		
		GlueIssue	Mismatched print		
		Perforation	Missing		
		Wrinkles	Other		
			Position		
			Smearing		

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Leah Worley, VP, Operations Services:

Estimating
Planning
Product Engineering
Operations Training
Quality Assurance

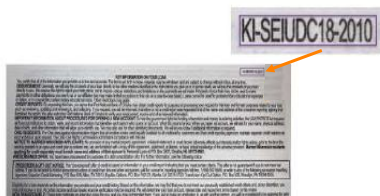
- | | |
|-----------------------|------------------------|
| 1. Elimination | 4. Facilitation |
| 2. Prevention | 5. Detection |
| 3. Replacement | 6. Mitigation |

EXAMPLE 1: INCORRECT INSERT



Very similar component codes

Rely on human to read and match codes and bring the correct form to the machine for inserting



Most of the content is the same, but some key differences

KI-NEADC15-2010			KI-SEIUDC18-2010		
APR	72 Months		APR	72 Months	
	Monthly Payment	Finance Charge		Monthly Payment	Finance Charge
6.99% Fixed	\$165.68	\$1,219	10.99% Fixed	\$165.68	\$1,808
8.99% Fixed	\$188.07	\$2,275	12.99% Fixed	\$188.25	\$2,730
12.99% Fixed	\$200.69	\$4,450	14.99% Fixed	\$211.43	\$5,221
15.99% Fixed	\$216.91	\$5,814	16.99% Fixed	\$233.71	\$6,807

FIRST ATTEMPT

Problem:

Difference between component codes are difficult for employees to quickly discern increasing the risk of error

Solution:

Request that client change component code

SECOND ATTEMPT

Problem:

Difference between component codes are difficult for employees to quickly discern

Solution:

Suggest that client add a machine readable code as a verification for the human readable component code

Not new technology, just never applied to this client/job before

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SECOND ATTEMPT

Solution:

Add a 2D barcode to the forms – cameras can verify correct form is inserted and diverts any mismatches



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LESSONS LEARNED

Go as far upstream as possible to mistake proof

Involve the Client

Leverage existing solutions in new ways

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EXAMPLE 2: DOUBLE INSERT



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DOUBLE INSERT – 2 DETECTION METHODS

1. If more than one piece is pulled from the hopper at one time, piece diverts.



2. If the machine fails to divert the thickness caliper will stop the mail piece, operator removes the pieces and restarts machine



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STILL HAD A DOUBLE INSERT!

Assumption:
Operator failed to remove item after thickness detector stopped machine

“Solution”: Retrain



**Operator Training
Manual**

Inserting
Revision 05.0
INTERNAL

Mistake Blaming is not Mistake Proofing

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ALSO...

Discovered that the amount of material in the hopper influenced the likelihood of a double being pulled.



Set the minimum height of the low level detectors at 4 inches instead of 2

This adds a layer of prevention to the detection methods

Make it easy to tell where to set it by adding red line

This Facilitates correct setting

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AND ANOTHER THING...

Red trays for diverted pieces instead of standard white trays



Make it easier for operators to identify and process diverted pieces correctly
Facilitation often doesn't cost a thing

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LESSONS LEARNED

Mistake Blaming is not Mistake Proofing

Sometimes machines aren't perfect – build better validation routines

Add layers of detection

Add prevention to detection

Keep looking for ways to make it easier for employees

Low tech solutions can be effective