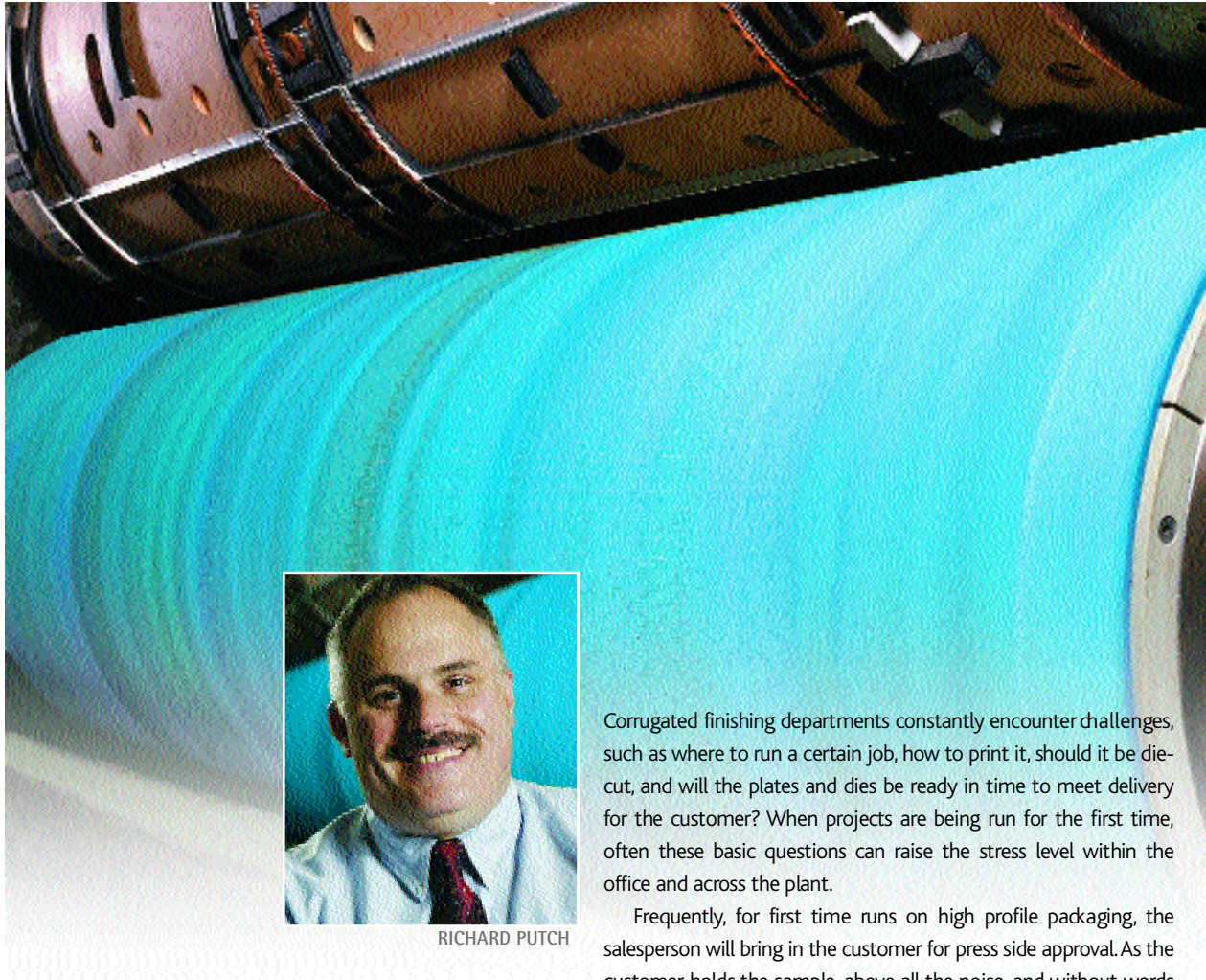


Focusing on these three key areas can lead to successful diecutting operations says Richard Putch, Dicar Inc.

Recognize, Resolve, Prevent



RICHARD PUTCH

**PREVENTION OF
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Corrugated finishing departments constantly encounter challenges, such as where to run a certain job, how to print it, should it be die-cut, and will the plates and dies be ready in time to meet delivery for the customer? When projects are being run for the first time, often these basic questions can raise the stress level within the office and across the plant.

Frequently, for first time runs on high profile packaging, the salesperson will bring in the customer for press side approval. As the customer holds the sample, above all the noise, and without words spoken, everyone can see the satisfaction when the customer's face lights up!

Time passes and then, one day, the customer files a quality complaint. For some reason the finished product does not quite look the same as it did on day one. More scrap is attached to the sheet, scores are cracked, or there is a random pattern of "flat crush" marks all over the sheet. Although all too common, these issues don't develop overnight — they develop over time and are the product of degrading die quality.

The ability to recognize tooling problems before they become issues, resolve them before they become of concern to the

customer and ultimately prevent them from happening again, are the goals and traits of successful diecutting operations.

Most Important Skill

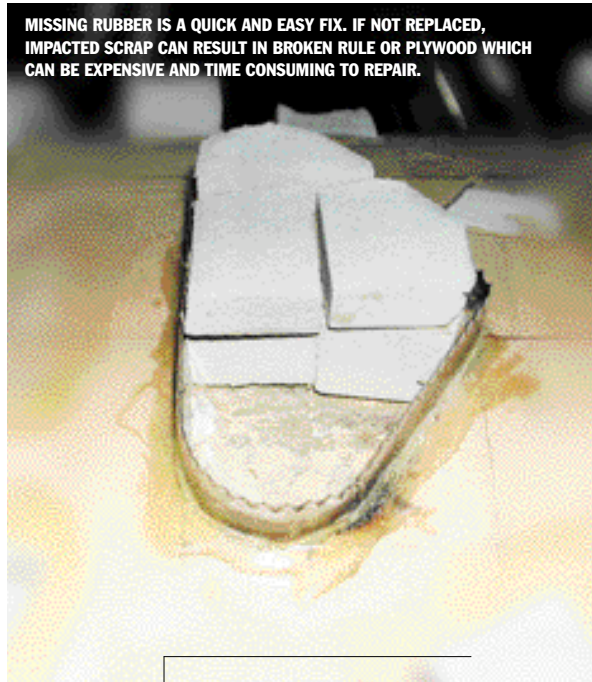
I have been a diemaker for nearly 28 years and have been fortunate to tour many converting facilities all over the world. One thing is certain, converters who discover problems before the customer informs them, possess the most important skill set — recognition. As I visit these plants, even years later, they continue to run the same items simply because they've been successful in minimizing the number of quality complaints by keeping their tooling in good condition.

Often the problems are recognized during a press run. I've witnessed the resolution to these problems handled in a few different ways. They all have their advantages and disadvantages and they all work in their particular situation. Following are four different scenarios:

■ **Only the supervisor has the authority to perform die repairs on press.**

But while the supervisor may have the skills, he could be handling other issues on the floor. Often he cannot take the necessary time to perform a quality repair. The order

MISSING RUBBER IS A QUICK AND EASY FIX. IF NOT REPLACED, IMPACTED SCRAP CAN RESULT IN BROKEN RULE OR PLYWOOD WHICH CAN BE EXPENSIVE AND TIME CONSUMING TO REPAIR.



EQUIPMENT IS MEANT TO PRODUCE PRODUCT. OPERATORS CAN'T RUN THE EQUIPMENT IF THEY'RE FIXING DIES ON THE PRESS OR WAITING FOR THE REPAIR.

can be completed, but what is the cost to the long-term condition of the die and at what risk of sacrificing product quality?

■ **Operators have the authority to make corrections on press.** But skill levels vary from shift to shift and problems can occur at any time. A wedge driven in to repair a broken knife, instead of replacing it because the operator is not comfortable replacing knives, works. However, it may result in broken plywood — a much more costly repair.

■ **An on-staff die repair person is called to press for the repair.** He is likely the most qualified for the job. He has had some training and will perform the

repair with the skill and technique necessary to keep the tool in good condition for the long haul. But the question is, can your plant afford additional "non productive" labor costs?

■ **Sending the die out to a commercial die shop before the run is completed means a second setup, transfer of stock to a holding area and possible downtime as the next order is not ready off the corrugator.** Other factors to consider are, how long the repair will delay production, and will the stock warp or be damaged while waiting?

Controlling Quality

Regardless of which resolution method your plant uses, prevention of cutting die degradation is the most efficient and profitable method of controlling diecutting quality. Effective prevention requires a maintenance plan, or guideline, to be in place so everyone is working to the same set of rules. Plant personnel should be trained in the proper use, care, some level of maintenance of cutting dies, and perhaps most importantly, they need to be able to identify the warning signs of pending failures.

With this philosophy in place you can then

WORN OR DAMAGED DIES AND ANVIL BLANKETS, OR INCORRECT RULE HEIGHT, REQUIRES EXCESSIVE NIP PRESSURE IN ORDER TO CUT THE BLANK. THIS CAN CAUSE ADDITIONAL PROBLEMS SUCH AS FLAT CRUSH AND CRACKED SCORES.



Diecutting for Results

evaluate the benefits of using an outside source, or further training and delegation of some of your own staff to perform the preventive maintenance. Each scenario has its own benefits and should be carefully weighed before making a decision. Cost, turnaround time, skill levels, repair quality and return on your investment are all items that must be considered.

A good example of this is simple preventive maintenance procedures, such as replacing loose or missing rubber and cleaning out trim from the lead edge to avoid a more costly repair. Failing to pay attention to these basics can result in broken knives or even worse, a broken die board, which can only be replaced by your cutting die supplier.

It is also helpful to view each piece of finishing equipment as its own cost center. Evaluate the jobs looking for trends in failures, quality issues and repairs. This information will be key in the early diagnosis and prevention of tooling issues and will help you in making your decision to perform the preventive maintenance in-house or to outsource it. Other important points to evaluate when deciding to do the preventive maintenance in-house include:

- Do you have someone who wants to do the job and can dedicate a portion, or all, of his time to die repair and maintenance?
- Does he have the skill level necessary, or can he obtain it through training?
- Do you have the equipment necessary, or what will be the cost to acquire and maintain the equipment?

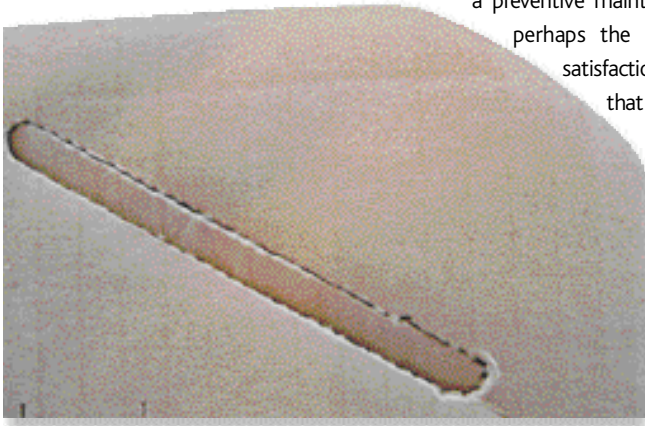
Another question many managers face is how

much of a role the operators should play in die maintenance. There is no solid answer I can give as to how much the operator should be involved in die maintenance and repair. It is a decision that can only be made after evaluating the attributes of the individual operations. Just keep in mind, equipment is meant to produce product. Operators can't run the equipment if they're fixing dies on the press or waiting for the repair. Capital equipment is expensive to purchase, maintain, and the depreciation of it is a strain to the P&L. Running it is the only way to generate revenue to offset these expenses. Each hour this equipment is idle prolongs the return on investment.

Years ago, many plants had in-house diemakers producing dies for the flatbed presses, and for some, even rotary dies. They were skilled in all phases of die construction. As lead times diminished, producing dies in-house was no longer a viable option. Many companies kept these individuals on staff to repair and maintain dies. But as many of these individuals have retired, or are becoming close to it, plants run the risk of losing this skill and knowledge. Few, if any, qualified successors have been appointed, yet equipment and supplies are available in the plant. The decision at the plant level becomes, is this still necessary? Is it a full-time position or is there another duty in the plant that also does not require a full-time position?

The number of setups per day, shut downs mid stream, throughput variation and duplication of repairs are just a few of the indicators to help guide your decision on whether you should have a preventive maintenance tooling program. But perhaps the best indicator is customer satisfaction and the repeat business that comes from this satisfaction.

THE ABILITY TO RECOGNIZE TOOLING PROBLEMS, RESOLVE THEM AND ULTIMATELY PREVENT THEM FROM HAPPENING AGAIN, ARE THE GOALS AND TRAITS OF SUCCESSFUL DIECUTTING OPERATIONS.



NO RUBBER, THE WRONG RUBBER, OR IMPROPER CONSTRUCTION CAN CAUSE THE RULE JOINT TO GAP, PREVENTING A CLEAN CUT AND CAUSING SCRAP TO REMAIN IN THE BLANK.

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