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August 2015 / Structure, Standards, and the Science of Averting Human Error

# COLLISION REPAIR NEWS

## Structure, Standards, and the Science of Averting Human Error

Properly constructed processes, checks and balances make it easier for all of us to deliver our best work

by Aaron Marshall

An increasingly common sight in collision repair shops is overhead signage marking the location of activities such as blueprinting, heavy repair, prep, prime, etc. Makes sense. What doesn't make much sense is to require techs to drag their work to these different locations to perform these various activities on their assigned cars. In repair models where the technician "owns" the bulk of the repair, this clumsy reality exists. But in a connected, cellular repair model, techs working in each of these cells do not move—the car does. The techs do not own specific jobs, they own a "step" in the process, characterized by specific tasks, performed to a specific standard, handed off to the downstream process in a specific condition.

Work delivered by each of these steps downstream must look the same regardless of whom we assigned to perform the tasks in each cell. Work must follow a standard, and meet a target condition when passed, so the downstream operation is not burdened with redoing any prior work (admin as well as production).

Structure is really important but it's often missing. The natural variability of fixing crashed cars makes it easy to think standardizing is not possible, but that's not true. You can create work cells (specific portions of the process, done in specific areas) that build upon each other as work progresses downstream, as long as a few work "leveling" activities exist to reduce the widest swings in variability up front (repair planning, parts verification, heavy work build down).

The primary "structure imposing" activity typically assigned to shops (by "lean" consultants), is typically "5S"—putting everything in its place, labeling, tape on the floor, etc. I always thought this was sort of useless since, in the absence of a sensible, connected process, laid out to flow work in one direction, it seemed to me just getting organized and making labels for where stuff goes was doomed to fail without a bunch of policing from the manager.

I raised this question once, to a super smart guy that I have come to know, that sets up manufacturing processes for huge operations of greater scale, but every bit as much complexity as collision repair. He said "you're right, labeling where stuff goes in a conventional workshop, and enforcing the discipline to adhere, even if the tool's location is sub-optimal, is not as sensible as creating a whole process first, which then makes clear where the stuff goes, but, if you cannot sustain the discipline just to keep tidy and return things to where they belong, you need not go any further down the path."

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> "Properly constructed, concise checklists make it easier for all of us to deliver our best work."
> —Aaron Marshall, manager, Marshall Auto Body

Once the work team has learned the value of working to a specific standard in each operation, that team becomes very flexible. All you have to do is change the standard, train it, practice it, and your system is working a new way. If people are not conditioned to following a standard, you can make all the changes you want, deployment will be marginal if at all, and the lack of appreciable change in outcomes will be proof.

Our work is complex and variable. There is excellent research in the field of checklists. They are used to help us catch or remember right activity, in the right order, when the pressure of the task, or the complexity, (or both) are too much for relying on memory and experience alone.

There are two kinds of checklists: "do-check" and "read-do." If you are troubleshooting, "read-do" lists work very well in cases where the order of activities matter. In the collision repair process, "do-check" works better. We do the work, and before passing downstream, we check a list of critical items to make sure they were done (correctly of course). Checklists should be created thoughtfully, with critical items that really matter. Six to 12 for any process step is enough.

Checklists are very helpful in properly following the myriad of insurer requirements when preparing a DRP estimate upload, or final bill. Checklists save errors from leaving repair planning and finding their way into production where they can stop repairs. Checklists are critical in areas like the structural/mechanical department where much of the work touches safety components. (Here, a co-worker should run through the check items rather than the person who performed the task originally). Reassembly is a natural place to run a checklist, ensuring everything we touched throughout the repair works. Quality control at the end is more effective and efficient when it has a clear, concise list of checks to verify everything we touched also looks good.

In surgery, aviation, and other critical operative environments, two people run the checklist. Our work is every bit as complicated, but much less structured. Properly constructed, concise checklists make it easier for all of us to deliver our best work. In a connected process, where one department depends upon another for error-free work, standards for how the work is done, training to ensure how to follow it is understood, and checklists to catch critical oversights, are effective tools to improve quality and speed for both the internal and external customer.

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