LAYOUT & DESIGN ARTICLE

It’s been almost twenty years since the early pioneers of the body shop business in the USA were first inspired by their European counterparts. The news about a different world of collision repair started to spread rapidly in the early eighties, as equipment vendors and paint manufacturers from Europe arrived on these shores to sell their wares. They told stories about “state-of-the-art” shops in Germany and Holland, about hi-tech equipment that could streamline production and about huge facilities that were so clean, you could eat off of the floor. Study missions were organized and body shop owners traveled east across the Atlantic to see this marvel for themselves. They too returned with jaw dropping tales about a new world of collision repair.

There are many components that go into designing and operating a successful body shop, but it was the layout, design and appearance of those European shops that first grabbed our attention. At the time, only one or two paint manufacturers were able to offer layout and design assistance via their in-house specialists in Europe. Consequently, most shop owners who set out to emulate European shop designs were working from pictures in magazines and brochures. Those who were lucky enough to have been there, worked from their memory or photos taken during their visits across the pond. Like kids who copy the moves of their favorite soccer or basketball players, they were first inspired by what they saw before they had any real understanding about the European rules of the game. The decisions and planning that went into the original designs of the shops they were imitating were often ignored. But to those early pioneers it didn’t matter because there was one thing they knew for sure, …what they saw looked good!

Innovative shop designs are certainly not exclusive to the European market. In Japan for example, creativity in shop design is primarily driven by the limitation of space. When 30 million people cram into an area within a 30 mile radius of Tokyo’s city center, space is naturally at a premium. Here, as in some other cities around the world, square footage is a highly valued resource, which leads to an essentially different management style and a dependence on technology to get the most out of the available space. This is most evident when the level of investment in equipment is compared to the production area square footage.

In a modern US body shop with around 12,500 square feet of productive space, investments in major production equipment typically ranges from $18 to $25 per square foot. In Japan and other countries where real estate for body shops is expensive and more difficult to find, investments of two or even three times that amount are not uncommon.

One reason for this relates to the issue of vehicle movement, which in a limited amount of space is the main hurdle to overcome. Rather than moving the car to the equipment, such as a frame machine, spray booth or drying equipment, one solution is to have more of this type of equipment built into every workstation. Similarly, using equipment for moving vehicles sideways, or turntables for turning them up to 180°, are not just neat ideas, they become increasingly more essential when square footage is limited and more awkwardly shaped.
Facility designs must accommodate more than just work stalls, frame machines and spray booths. They must also fit the operating methods and management style, which in the more progressive Japanese body shop, is based on a total team approach. This means that their shop designs don’t provide for individual technicians, their massive tool boxes, or demands for a minimum of two stalls to call their own. Even though the total team approach leads to radical reductions in cycle time, it doesn’t fit today’s body shop culture in the USA. That’s not to say the traditions that currently dictate the way body shops operate might not waiver under the pressure being brought to bear by the growing interest in cycle time reduction.

The decision to add-on, rebuild, or remodel a body shop is most often driven by the need to increase production. However, that doesn’t mean that if you’re in a sluggish market with no backlog of work, you don’t need to develop your facility. To the contrary, assuming you are in this business for the long haul, there are other reasons to consider upgrading.

The first simply relates to not being left behind. Body shop owners must stay up to date and current with the technological advances in the collision repair business. ‘Retooling’ is an ongoing process and too many shops find themselves in a position of being under invested and then have to play some major catch-up just to stay competitive. Collision repair in the US is no longer a shade-tree business and you can only get by for so long with equipment that was designed to fix yesterday’s cars. Those that haven’t made ongoing investments in frame and unibody repair systems, spray booths, welding equipment, wheel alignment and computerization, may find it impossible to be a serious competitor in such a rapidly changing industry. Getting the best return on the investment in equipment requires ongoing evaluation of the shop design, which must accommodate it all. The potential of many a spray booth purchase has been reduced by shoving it in a corner with no consideration to work flow.

Another equally important reason to remodel or upgrade a body shop, other than to increase production, relates to one of the industries most serious concerns, finding and keeping good technicians. This industry is not attracting its necessary share of new recruits. One of the many reasons is the image that body shops have of being a dirty, dusty and hazardous place to work. Unless you have a hobbyist’s interest in fixing cars, the body shop business is not likely to be your career choice. That fact is not an industry problem; it is each individual body shop’s problem.

If you find yourself uttering that all too common phrase “…. you just cant find good technicians these days,” ask yourself these questions: “There are tens of thousands of good technicians in the USA, why should any of them want to work for me? What’s so special about my shop? What can I offer that’s any different from every other shop in town?” Unless you can come up with four or five things that truly differentiate your shop from the others, you may have found part of the reason why you can’t get good help.

The problem of attracting help is not limited to the USA. In the past year, Direct Line, one of the largest body shop organizations in the UK, has closed two of its six stores, the stated reason being a shortage of skilled technicians. Unlike most body shops in the USA, Direct Line is not a ‘small business’, yet they were not immune from the same problems that many smaller body shops face.
Designing and building a body shop primarily to attract the best technicians and with their health and welfare being the most important issue, is rare. Remarkably, one of the world’s best examples of this was built over twenty years ago in a shroud of controversy.

The reaction from the collision repair industry when Folksam Auto opened their first workshop in Växjö, Sweden in 1964 was to say the least, hostile. Folksam is an insurance company so you can imagine why body shop owners reacted angrily and refused to recognize the need for them to be directly involved in the industry to which they were paying millions each year. They were even less inclined to recognize that it was their duty as an insurance company owned by its policyholders, to acquire an insight into the collision repair process. In 1978 Folksam opened a new 55,000 square foot facility that even by today’s standards was truly state-of-the-art. Even policyholders wondered what business it was of an insurance company to be in the body shop business. Weren’t they being unnecessarily extravagant with the policyholder’s money?

That was not difficult for the folks at Folksam to answer. The new Växjö repair facility was required to cover its own costs and show a return on invested money. Yet it was not making money from the body shop business that was the driving force. Apart from acquiring a better understanding of the collision repair process, the importance of the working environment to the people working in the repair industry was paramount to them.

So when the new Folksam facility was planned it was the people who would be working there that was high on the list of design criteria. They represented a fund of knowledge, experience and skill that was totally unique. They knew how to do the job and as such, the business depended on them. Even though some of the most prominent constructional engineers and design consultants in the country were engaged at different planning stages, the most important suggestions came from their own people. After all, the combined experience of their employees at the time was over 600 years!

During the design of Folksam Auto they recognized the impossible working positions, accident hazards, drafts, noise and exhaust fumes that technicians traditionally had to endure. Each repair task was systematically examined and improvements made to reduce or eliminate the stress on the technician.

The workflow design started at an automatic car wash. Only a technician can truly appreciate the benefits of working on a clean car, particularly underneath. A robotic car wash that automatically sensed the length and width of the car, directed high pressure jets of water where they are most needed, under the fenders, quarter panels and frame of the vehicle.

The next stage was damage assessment. Here the critical decisions about the repair process were made, parts ordered and the job schedule planned. Cars were given a check-up with the ‘Autosense’, a computer that produced a written report about engine faults and indicated the order in which repairs were to be performed.
A study was made of different workstation designs and the industrial-physiological load of a body man was monitored to see which design would work best. The long-term cost of muscle power was recognized as far more expensive than mechanical power.

Consequently, the heaviest work was designed to be done by machines wherever possible. Lifts in every work stall raised the car to a convenient working height. The right tools were always close at hand in small mobile tool cabinets. Snaking hoses and cables on the workshop floors are hazardous, so all utilities including electric power; welding equipment, compressed air and vacuum connections were provided overhead and automatically retract when not in use. Welding fumes are neither pleasant nor healthy to breathe, so in each workstation, a large nozzle that can extend over the vehicle to the repair area, extracted fumes during the welding process.

All workstations in the Folksam paint department were equipped with scissor lifts controlled by a miniature radio transmitter. Technicians could raise or lower the vehicle without having to leave the workstation or put aside the tool they were using. Workstations were also equipped with articulated overhead arms with vacuum hoses for controlling sanding dust. A turntable between the spray booths substantially reduced the space and effort needed to turn the cars around.

Daylight was considered a variable, whereas working illumination needed to be of constant intensity and free from glare. But even though engineers calculated as much heat is lost through 10 square feet of window as through 100 square feet of wall, Folksam management still thought that technicians should enjoy the same privilege as white-collar workers who often have workstations with a view. Therefore, every workstation out in the shop had a window with tinted glass to cut down glaring sunlight. Below the windows, walls were constructed with a hollow brick that has a sound-absorbing effect. For the same reason, moveable partitions filled with sound-absorbing material were provided and moved into position whenever a noisy procedure was being performed. The layout was such that no technicians were more than 100 feet from a restroom where showers were also provided so they could clean up at the end of the working day.

There were many other unique features in the layout and design of the Folksam Auto. The point is, here was a facility designed and built over twenty years ago that put the technicians first. Productivity and profitability came as a result of putting technicians first. Loyal, reliable, hard working employees came as a result of putting the technicians first. Producing quality work and maintaining a high level of customer service came as a result of putting the technicians first. They made a long-term investment in their employees that would pay dividends in the years to come. Indeed, Folksam Auto thrives to this day and continues to be a source of inspiration and innovation in shop design.

While there is still much to be learned about the importance of body shop layout and design, there should be no doubt that America’s pioneering heritage and entrepreneurial reputation, has brought them from behind, to be among the leaders in the world of
collision repair. The transformation that began two decades ago has seen many body shops immerse from their dirty, dusty, back street locations.

Today’s modern collision repair center now stands tall with its head up, flaunting facilities that look more like corporate world headquarters or banks. Thousands of successful shops have ‘grown’ not just in physical size and appearance, but in the quality of the businesses they operate.

While travel will always broaden the mind, you certainly don’t have to search the globe anymore to look for inspiration. Today’s body shop owners will find shops in just about any major metropolitan area of the country that will become their role models and stimulate ideas, as did the European shops for those early pioneers. The only thing missing is the expensive travel costs, jet lag and language barriers. But here, as in any every other country of the world, the collision repairer is still facing challenges that above all, will test their willingness and ability to change the way things have traditionally been done. The USA accommodates tens of thousands of body shops within a land mass that could consume every country in Europe with room to spare, so to say we still have a long way to go, would be an understatement.

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In the process of planning Folksam, a thorough study was made of different work operations. This included comparing the pulse rate (the industrial-physiological load) of a body man at a conventional workstation, compared with the newly designed one.