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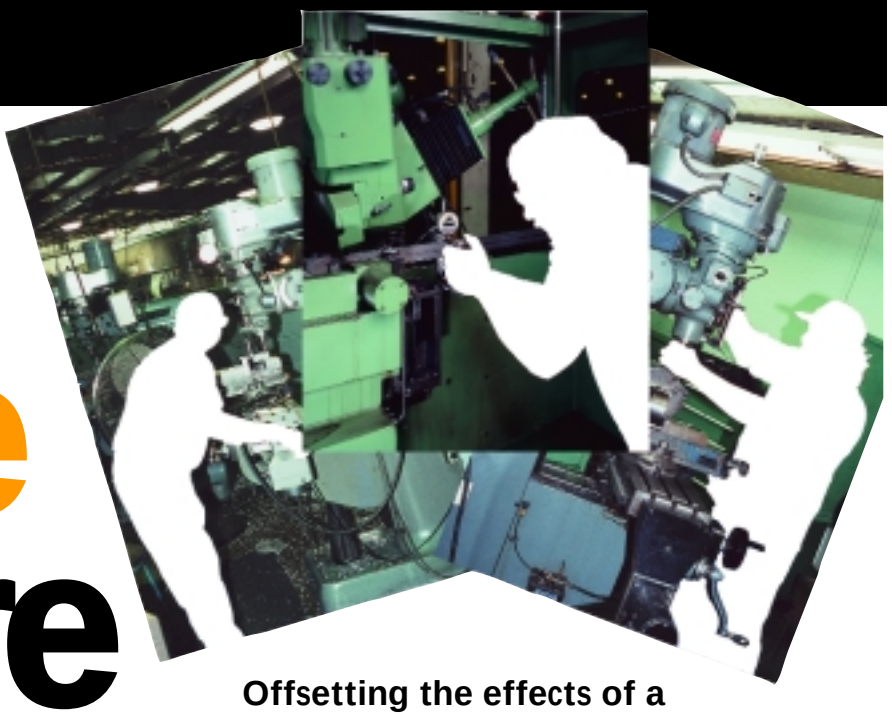
Out of the Picture



Offsetting the effects of a downsized toolroom staff.

If the manufacturing downturn has left you with a downsized toolroom staff, don't despair. A leaner staff certainly presents challenges, but they can be overcome with innovation and flexibility.

The obvious solution is to outsource some of your toolmaking. It's a road well traveled, and one marked with numerous potholes and detours. Late deliveries, cost overruns, low-quality parts and other errors are outsourcing's potential byproducts. But properly managed, outsourced toolmaking can be a plus—even in profitable times.

The company I work for routinely outsourced both the designing and building of tooling during the 1980s. Even a fully staffed, two-shift toolroom could not meet the annual 2- or 3-model-year updates of our heavy-equipment products. Although there were delays, the outsourcing made it possible to meet the company's production goals.

Drawbacks can be minimized if you're prepared. Look at your actual tooling needs and categorize them according to level of precision, complexity and size. Visit numerous toolmaking shops and evaluate their strengths, equipment and limitations. Afterwards, categorize them. Some shops excel at basic jigs and templates, while others specialize in precision tooling or complex fixturing.

Next, review the designs and develop standards and performance specifications. And, work with your purchasing department to establish enforceable and realistic guidelines and penalties for late deliveries and error charge-backs. Obtain at least three quotes for each tool and approve purchase orders, exceptions and changes. It's OK to field the technical questions, but let purchasing take care of the rest.

Building a good rapport with suppliers will help you acquire the quality tooling you need on time and, often, at a lower price than if it were built in-house.

At a lower price? you ask. Most shops quote an hourly rate from $45 to $50. This compares to in-house hourly wages of $25 to $30 for senior toolmakers. But, depending on your accounting structure, overhead and benefits can equal up to 100 percent of a senior man's base wage. So you would probably pay about the same rate. The real savings would result from the fewer man-hours required for outsourced labor.

Don't be surprised if an efficient vendor can produce your tooling cheaper and 10 to 20 percent faster than you can. Incentives, lower overhead costs and more efficient equipment at a vendor's shop can prove superior to your traditional processes.

Try it. Track an in-house build for actual costs and then get an outside quote. In these competitive times, outsourcing can beat the cost of in-house toolmaking by 5 to 15 percent. Purchasing and inventory costs are reduced as the ordering, stocking and storing of materials and tool components become the vendor's responsibility.

Maximizing Assets, Designs

Perhaps the most underused assets in a toolroom are the production operators and their equipment—the primary toolmaking ingredients. Take full advantage of their time, if there aren't any departmental, scheduling or labor-agreement conflicts.

For example, large and often-costly fixture components can be produced inexpensively in-house. However, this can mean revising designs, overtime setup work for toolmakers and temporarily upgrading operators to toolroom machinists.

Remember, if a machine's not making chips it's not making money. Idle machines can be used to make basic fixture features, such as socking holes in base plates. For vendors that don't

have the equipment required for creating some of these basic fixture features, negotiate a price for supplying them with this service to expedite tooling production.

Forecasts about production levels are often wonderfully optimistic, but question them and, if they're unrealistic, scale down the tooling requirements. A quick meeting with production to look at the bottom line—without second guessing—can easily reduce immediate tooling requirements.

Monitor production, scrap and reject reports, and be prepared to modify the tooling if there's a change in production volume or part-quality requirements. And don't overbuild tools or "overtool" a job. Provide just enough tooling to meet the required part quality on schedule.

Over time, you probably have come to appreciate well-crafted tooling, dusted surfaces, painted weldments and finely knurled thumbscrews. While these features are impressive, if they don't improve performance or longevity, eliminate them. Begin with the design. Keep only the essential elements for locating and clamping parts. Machine only where necessary and use adjustable stops and as many off-the-shelf components as possible. In addition, use cold-rolled stock instead of ground stock, and avoid bolted and doweled components—premachine and weld them instead.

Cutting these types of corners usually has little impact on the final product, but there are some operations that require precision tooling. The trick is recognizing what can be fixtured inexpensively and what can't. Turning out "bargain tooling" may annoy old-school toolmakers, but it saves toolroom time and translates into keeping more work in-house and, possibly, saving jobs.

During peak-production times, though, a company may need to employ temporary workers if it wants to keep the work in-house. A temp-help agency supplies technical assistance and you pay only the agency fee—no overhead or benefits. If you tell an agency exactly what you need and for how long and give it a week to recruit people, you'll have your machinists. But be sure to check their references.

It's true that the temps will need supervision and help with some setups, but they may surprise you with their expertise. And if a temp doesn't work out, a call to the agency solves the problem.

'Bone Yard' Digging

Using modular fixturing kits is another way to relieve toolroom workload. While there are many kits on the market that a sharp crib attendant can assemble to produce fixturing, setup time can be a killer. Primarily, a kit is for prototype work, short runs and sporadic production schedules.

A fixturing kit can represent a substantial investment for a large assortment of workholding components of limited use. Most incorporate clever grid bases, angle plates and even CNC tombstones. Building the fixturing around master parts and using sketches and photos of previous setups, or even special modules, as guides can reduce the time it takes to assemble fixtures.

Here's another suggestion for those seeking ways to reduce their toolroom workload: Dig around the "bone yard" where your company stores obsolete tooling. A quick tour with a tape measure may yield usable bases, angle plates and other components. Previous-generation tooling can often be altered to accommodate new parts. In addition, offering your unused components to a vendor sometimes keeps the pricing down.

If you are part of a multiplant corporation and haven't consolidated your tooling services, now might be the time. It is unlikely that every site has a big project under way concurrently or that different schedules can't be adjusted for varying workloads. Exchanging work, possibly even personnel, keeps the work "in the family" and allows better control of production-schedule due dates and material costs.

Personnel Issues

Any changes in how a toolroom operates is bound to raise concerns among personnel. If you outsourse some major toolmaking projects, think about the in-house toolmakers. They won't be happy with downsizing and being relegated to tool maintenance and repair. After all, they've got their pride. You must help them refocus their pride and skill on keeping the company efficient and competitive.

These craftsmen should be included in process and tooling planning sessions. They can be teamed with QC and setup personnel to inspect and validate incoming supplier tools. Cross train and enroll them in technical classes to enable your smaller tool staff to meet the company's evolving needs.

Again, innovation and flexibility are the keys. Explore the options that will work with your goals, products, company culture and structure. You'll find that there are alternatives, possibly even beneficial ones, to producing all of your tooling in-house.

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