

# Blasting Off!

Three aerospace job shops weigh in on why being everything to everyone may not be the best approach for growth

By Tim Pennington

Be careful what you wish for...job shops that try to be all things to all their customers just might get their wish, but at the expense of efficiencies and profits.

As businesses in the finishing industry look to harbor maximum productivity by exploring a mix of traditional small-run jobs and potential mass production opportunities, experts say they more than likely will create inefficiencies and friction amongst employees if they are not careful.

They might also lose profits, too.

**Are You Still a Job Shop?** (See Quiz at the end of this article)

"Applying mass production environment solutions to a 'job shop' type environment will ultimately erode profit maximization." So says a report by Sal Mistry and Francisco Iborra from TMG-IMC North America, a Texas-based industrial management consultant.

"Both models can be successful and highly lucrative, if properly aligned," Mistry and Iborra say.

The consultants have produced a 35-question survey for finishing industry managers and owners to review to determine if they are aligning themselves to be a job shop or a mass production facility, or both.

Trying to maintain production lines for both—and remain profitable—can be a tricky and delicate maneuver, says Phillip Brockman, director of business developments for Techmetals Inc. in Dayton, OH.

With new projects coming onboard in both prototype work and high-volume production, Techmetals has grown to more than 120,000ft<sup>2</sup>, including expansions of 6,700 ft<sup>2</sup> in 2006, more than 25,000 ft<sup>2</sup> in 2007, and more than 16,500 ft<sup>2</sup> in 2009.

"We take an extremely hard look at every project we get involved with, and then we have to sit down and qualify ourselves for the job or disqualify ourselves, just like a customer can do with us," Brockman says. "And we're comfortable walking away, especially if it doesn't fit into our core competencies."

## Core Competency is Key

Techmetals has been involved in the aerospace industry for several decades, and is now part of the Ares rocket program with NASA, their next generation of launch vehicles that will return humans to the moon and later possibly take them to Mars and other destinations.

Part of getting more aerospace work for Techmetals—which also works in the automotive, aviation, nuclear, hydraulics, plastics, printing, pulp, paper, tool, mold and steel industries—meant getting a Nadcap accreditation again this year after not pursuing it for several years. The National Aerospace and Defense Contractors Accreditation Program is a global cooperative standards-setting program for aerospace engineering, defense and related industries.

Aerospace companies that receive the end products created by the Nadcap program include GE Aircraft Engines, Pratt & Whitney, The Boeing Co., Rolls Royce, Cessna Aircraft Co., Airbus SAS, EADS, Honeywell, Bell Helicopter Textron, Northrop Grumman and Raytheon Aircraft, among others.

"Our customers were asking us to get back involved with Nadcap, and it opens us up to some more possibilities down the road," Brockman says.

## Job Shop vs. Mass Production

But as the experts warn, there are some hidden dangers to trying to be all things to all customers.

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"It's all about the work culture, and there is a tremendous difference in culture between a job shop and mass production environment," says Matthew Kirchner, CEO of American Finishing Resources, a Wisconsin-based coating removal company and a regular columnist for Products Finishing.

"Everything is different across the board: the approach to the work, the scheduling of the work, the type of people you have, the type of flexibility you need, there's definitely a huge difference that manager need to be aware of to be successful," he says.

Kirchner says the biggest mistake he's seen owners make is the failure to recognize the huge variations in volume, in lead time and in quality expectations that going from a job shop project to mass production can entail. That's where the friction and inefficiencies begin to show up.

"Where it comes up is not looking at all the efficiency opportunities that might become available when you start mass productions," he says. "Once you homogenize that line and turn it over to a specific part, you need to look for efficiencies."

Kirchner says that, in a job shop, flexibility is key because things revolve around how quickly employees can go from one part to the next. But when a company is running consistent parts, then there are various types of creative ways to gain efficiencies.

"If you still have people in the job shop mentality, then the challenge becomes to move into more of a sophisticated fine-tuned production environment and then you have the luxury of how to optimize the process for a particular part," he says.

### **Small Shop Flexibility**

Techmetals' Brockman says his firm is continuously training its employees and managers on ways to look for efficiencies and to be flexible enough to work in any environment, four-off or production. He even has all his employees read and study author Stephen Covey's "7 Habits of Highly Effective People."

"Our systems are all the same for all projects, otherwise you can't have two different quality programs in your company and be successful," he says. "We hold everything to the highest standard. And it's tough, too, because the mass production jobs we do are usually the ones that big shops can't do. Either their fall-out rate is too high, or they just can't figure it out. Sometimes it just isn't their core competencies, but we've had success with them."

TMG-IMC's Mistry and Iborra say they have seen one common theme when talking with finishing industry owners who have failed when trying to turn their job shop into a full-scale production facility.

"Each had systems, people and processes in place that worked well when the facility was a job shop," they say. "But because an organization's departments are intertwined, companies foolhardily attempt to 'lean' a function or department such as purchasing or inventory only to find the rest of the operation will not cope or align themselves with the change. The outcome is an erosion of profit maximization."

### **A Hands-On Approach**

That rings true for Anoplate's Milt Stevenson Jr., who operates a 104,000ft<sup>2</sup> facility in Syracuse, NY, and who makes it a practice to get all his departments in line when new projects—especially larger scale productions—come on board.

Anoplate offers metal finishing services such as plating of copper, nickel, chromium, zinc, silver, gold, cadmium and tin, various types of anodizing of light metals, conversion coatings such as passivating and phosphating, dry film lubrication, small lot painting, and vacuum impregnation.

"In order to do those different scopes of projects, it takes a great 'hands-on' approach to get the project through the departments and out to the line," Stevenson says. "For lack of a better word, it really is using brainpower to muscle the project through at the highest possible quality."

Anoplate's business is about one-third in the aerospace industry, and it has been growing. His company has been targeting strategic opportunities and industries that are less susceptible to being sent off-shore.

"Each project is different, and each one presents different challenges and a different approach," Stevenson says. "If you lead one project smoothly and think it will happen again without being focused, then you're probably just looking at disaster."

And like his counterpart Brockman at Techmetal, Stevenson knows when to 'just say no.'

### **Knowing When to Say No**

"Trying to be all things to all people—which we used to do back in the '60s and '70s and probably well into the '80s—is just not the model of success in today's world," he says.

Stevenson has been known to call other shops to do work which he feels will give his customer a better product at the end of the day.

"I think nothing of picking up the phone and calling any number of people who might be better qualified than ourselves to do things that really aren't in our core competencies," he says. "We do a little bit of a lot of different finishes, but if we come across someone who we feel is really in the mode for an 'artist' or an expert in hard chrome or other finishes, we have those people ready to recommend. Precious metal is a great example, because we are not huge in it. We do gold, silver and rhodium, but we are by no means an expert. But we want the customer to be very happy, so we turn to others."

### 3 Questions to Ask

That falls in line with what AFR's Kirchner preaches in his conversations with other finishing industry owners and manager, either in personal conversations, his columns in Products Finishing, or at the numerous keynote addresses he is often asked to deliver at shows.

"I tell them to look at it the same way (author) Patrick Lencioni does, which is to ask three questions: Where is the organization going; why does the organization exist; and what attitudes, beliefs and behaviors are absolutely necessary to get you there," Kirchner says.

"If you look at attitudes, beliefs and behaviors, one of the things you look at is people and you'll find there are some who thrive on a little bit of chaos, that are comfortable with the need to be flexible, they are comfortable being able to switch really quickly without having a lot of notice and lead time," he says. "But someone who succeeds in that environment may be drastically different from someone who succeeds in a mass production environment, where the workload is much more predictive and the quality and failure mode is much more predicable. So you need to certainly find the right people."

The No. 2 area Kirchner advises to be cognizant of is systems.

"If you have a standardized quality system like ISO and others, then you can use that as the umbrella to analyze your processes to make sure they are designed around the repeatability of that specific part," he says. "You may have different expectation than that of the customer. Often when a company outsources to a job shop, they realize they have limitations on the terms of controls that can be placed on the processing of a specific part, whereas you can have a lot more options available to you when you are running parts in a mass production environment."

Techmetal's Brockman says his firm is already adopting those quality standards, and are now constantly looking for ways to improve efficiencies even more.

"We've put in certain systems already that allow us to consolidate areas where we have certain redundancies," he says. "It's just looking for better efficiencies all around. Every Monday we sit down and see what are possible new opportunities and projects we want to go after and which ones we don't. Talking with everyone helps us get buy-in from everyone across the board. That's what makes us so successful."

## QUIZ: ARE YOU STILL A JOB SHOP?

The following are 35 questions developed by Sal Mistry and Francisco Aguilera Iborra of TMG Industrial Management Consultants to assess whether your organization is truly a 'job shop' or a mass production environment.

### 1. Sales

a) Is your sales cycle shorter than three months?	Yes	No
b) Does your sales department "close deals" without the need of intensive interaction with other departments, especially engineering?	Yes	No
c) Is a majority of your employed sales staff's salary derived through commissions?	Yes	No
d) Does your sales staff have and use a catalog with pre-priced products?	Yes	No
e) Does your sales staff sell off product data sheets?	Yes	No

### 2. Program/Project/Product Management

a) Do you have more Product Managers than Project/Program Managers?	Yes	No
b) Is there a handover from engineering to Product Management after which no major engineering activities are required	Yes	No
c) Can you sell the same product with marginal or no changes?	Yes	No

### 3. Engineering

a) Is the ratio of engineering cost to total cost 5% or less?	Yes	No
b) Are your Engineers primarily developing new products (not for projects)?	Yes	No
c) Can your operation begin work without constant engineering updates?	Yes	No

### 4. Planning

a) Does your planner usually meet the previously planned output goal?	Yes	No
b) Do your planners use an ERP or an enterprise planning system without any help of spread sheets or MS Project?	Yes	No
c) Does your planner infrequently have non-customer related get on the same page' meetings?	Yes	No
d) Can your planner rely on historical sales data to forecast future plans?	Yes	No
e) Does your planner instill a 'frozen' planning period into the production plan?	Yes	No

#### 5. Purchasing

a) Has your purchasing organization identified and proposed a plan of action to delineate between commodity versus strategic purchases?	Yes	No
b) Can your purchasing manager begin work without the constant input of engineering updates/drawings and resources?	Yes	No
c) Can your purchasing managers name the core components of your product?	Yes	No
d) Does your purchasing team have or offer supplier partnership incentives and awards?	Yes	No
e) Can you verify cost savings per purchasing manager within a margin of +/- 3% for the same components over a three year period?	Yes	No

#### 6. Quality

a) Can your quality manager begin work without the input of engineering resources?	Yes	No
b) Do you have a high level of quality without a 100% quality check on components and finished goods?	Yes	No

#### 7. Inventory

a) Do you end the year without significant 'write-downs' for leftover inventory?	Yes	No
b) Do you mainly use standardized storage bins in your warehouse / storage area?	Yes	No
c) Since your last layout reconfiguration (including contents and bins), has your inventory department been able to keep their area organized and properly catalogued?	Yes	No

#### 8. Assembly

a) Do your assembly workers perform quality checks based on predefined and documented quality procedures?	Yes	No
b) Is your assembly worker able to 'spot' quality issues based on experience in assembling certain repeatable components?	Yes	No
c) Are a large majority of your assembly workers considered specialists of certain assembly work (rather than all-a-rounder able to execute very different assembly work)?	Yes	No
d) Does your assembly worker get all of their instructions exclusively from standard work descriptions?	Yes	No

#### 9. Logistics

a) Do you have 'frame contracts' with large parcel shippers that can rely on your shipment estimates?	Yes	No
b) Do you buy only one or few type/size(s) of packaging materials?	Yes	No
c) Does your logistics team begin work able to 'spot' quality issues based on experience in of processing repeatable products?	Yes	No

#### 10. Service

a) Do you have a person solely tasked with customer service?	Yes	No
b) Does the customer service person train by using your product catalog?	Yes	No

According to Mistry and Iborra, if you replied "yes" to a majority of the questions, you are most likely in a mass production environment. If, however, a majority of your answers are "no", then you may be in a job-shop type of business. Applying mass production environment solutions to a 'job shop' type environment will ultimately erode profit maximization. Both models can be successful and highly lucrative, if properly aligned.