



Pima County One-Stop

Pima County Machining Industry Interview Report Needs of Our Local Machining Community

Prepared By:

Pima County One-Stop

Employer Services Unit

2797 E. Ajo Way

Tucson, AZ 85713

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A recent regional Aerospace Defense (A&D) Forum held on April 26, 2012 examined key issues of how to grow the industry and how to keep competitive as a region. A panel of A&D experts shared their thoughts about the state-wide potential for this industry. It was noted that a shortage of journeyman level machinist in this region is a factor in companies not being able to expand. As a result of this discussion, the Pima County One-Stop Employer Services Unit conducted interviews with 21 companies within the machining industry located in Pima County. To get a regional overview we are asking Yuma, Cochise and Santa Cruz counties to conduct the same survey. Our mission was to obtain their expert views in the subject of recruiting qualified machinists to meet current production needs and to address the need for a higher skilled machinist training that is currently not offered at Pima Community College. Results of these interviews are as follows:

1. Many local organizations within the machining industry have indicated that business is increasing. Are you finding the same?

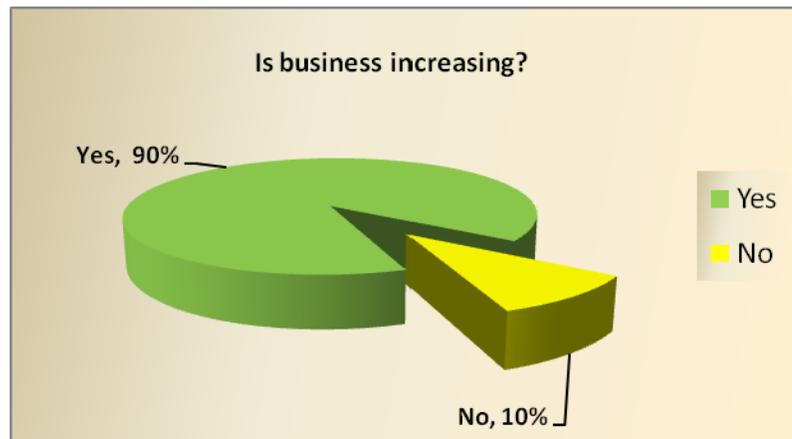


Chart summary: Business expansion typically leads to increased staffing needs. In this industry expansion will not be possible because of a lack of highly skilled machinists.

2. Is your organization currently off loading work to industry partners?

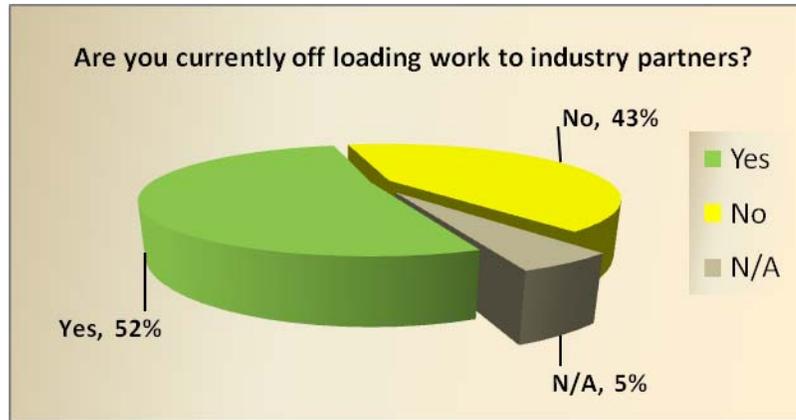
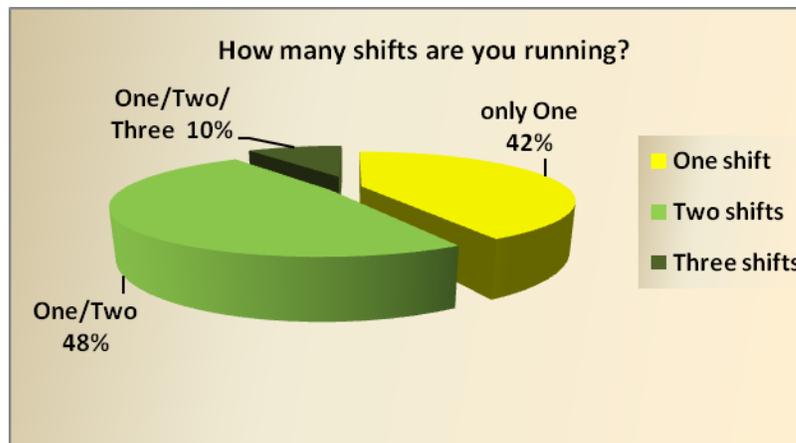
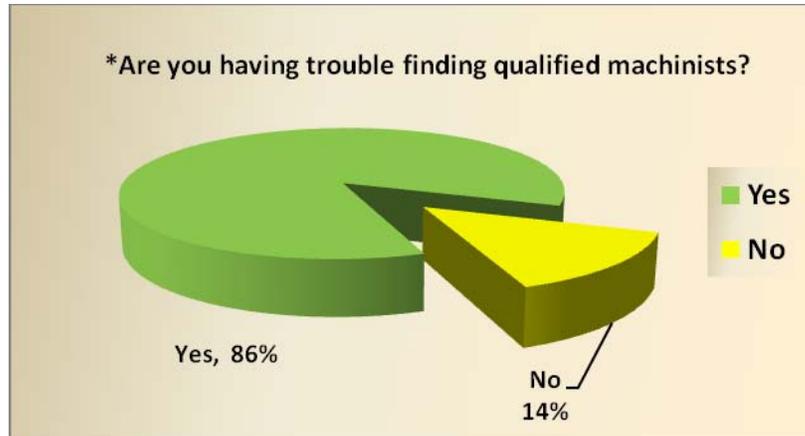


Chart summary: Better than half the companies report the need to off load work. A couple of reasons were noted by the companies. Off loading is often a result of a need for higher level or technologically advanced machinery not available at the contractors facility. Additionally labor skills may not be available resulting in the need to outsource due to production timelines.

3. How many shifts are you currently running?



4. Are you having trouble finding qualified machinist?



**The next two charts indicate the journey level skills that define “qualified” machinists.*

What type of machinists are you having trouble finding?

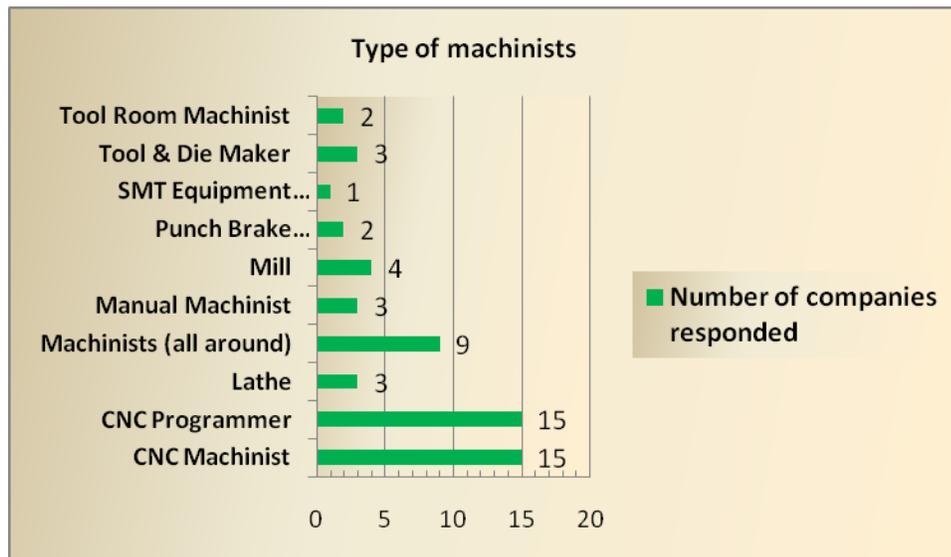


Chart summary: It's clear from this chart that several companies need more than one type of machinist.

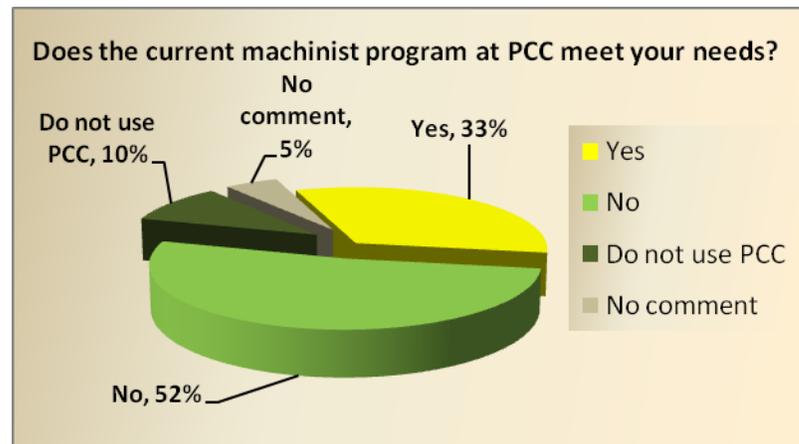
What skill level, how many years of experience do you require and what is the wage range at time of hire per each skill level?



5. What is the necessary math level for these positions?

All companies were in agreement that the math level needed for an entry level machinist is basic high-school math. This includes an understanding of algebra, geometry, trigonometry, an understanding of converting fractions to decimals; an understanding of converting metric units to US standard units, an understanding of geometrical tolerance. One company indicated the importance of understanding the process and theory of statistical methods; this skill is required at the journeyman level.

6. Does the current machinist program at Pima Community College (PCC) meet your needs?



Additional comments from surveyed employers.

- PCC meets the needs for entry level machinist that have a mind set and desire to remain in the occupation.
- PCC doesn't produce graduates that have hands on experience which is needed for employment.
- PCC graduates seem to expect experienced pay without actual machine time under their belt.
- Two employers note that PCC does meet the needs for a seasoned employee looking for continued education.
- 14% of companies interviewed suggested the need for a program similar to the National Tooling and Machining Association (NTMA) program in the Phoenix area.

7. If a program was developed to address the needs gap of the local machining industry would you support such a program and be open to discussing this further?

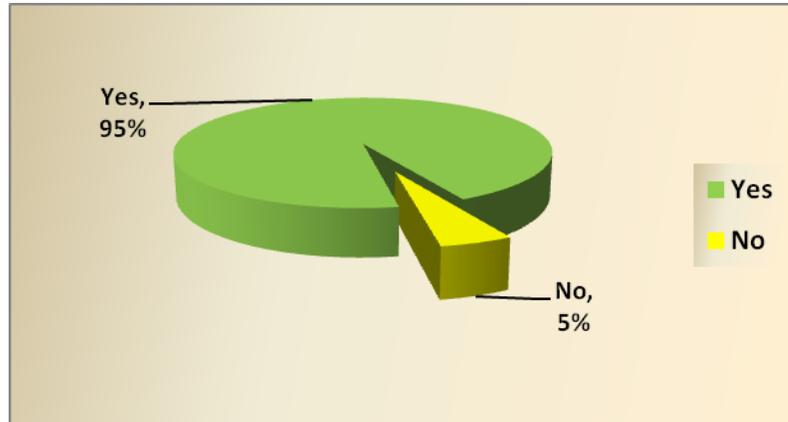


Chart summary: Different types of support could be considered: financial, training, loaning equipment, or space, hiring/recruiting from the program.

8. **Please provide your thoughts to an additional question:** Thank you for providing feedback to our recent request for information regarding local machining needs. We're compiling a complete report that will be provided to each of you when finished. Results show that a higher skilled training program that provides hands on machining experience similar to an apprenticeship program is needed. We do have one remaining question that we feel is extremely important to address. Please provide your thoughts to the following: Considering the total range including facility (bricks & mortar), equipment, curriculum etc. what is your opinion of costs that would be associated with a training/apprentice style program that would provide hands-on, higher skilled machinist needs not currently offered by Pima Community College?

During discussion one employer indicated that it is difficult to accurately project the total costs for such an endeavor. However, he gave his best subjective estimation. There are so many variables here though, like where the facility would be situated, the size of the space needed, whether the facility is rented or owned, the extent of the equipment needed to fully train competent, skilled CNC Machinists, and so many more, that it becomes very hard to identify all costs. But, to get an advanced program up and running estimated that it would take at least \$1.6 Million on hand. The equipment

is not cheap, although used machines might be available and help defray the up-front costs. To keep such a project going and considering staffing as well as facility and equipment maintenance needs, project to have about \$300 thousand available annually.

Another employer indicated that the apprenticeship program that was developed ten years ago was a partnership between PCC, UofA and the National Tooling and Machining Association (NTMA). Reference; [UA, Pima Community College, and NTMA team up to offer - UANews](#) This employer remembered the costs associated with that program as being \$30-\$40K per student. The program included 1200 Classroom hours and 2400 hours of On-the-Job Training. Also emphasized that a partnership with PCC for bricks/mortar and equipment should be considered.

In conclusion the three main questions we addressed were

- 1) Is there indeed a shortage of qualified senior level machinists in Pima County?
86% of the companies interviewed said "yes".***
- 2) Does a higher skill level machinist training program exist in Pima County to meet the needs of our local machinist industry?
The answer is clearly voiced by the employers as "no".***
- 3) Would employers be interested in helping to establish a high level machine skills training program?
95% said "yes".***