Prepared August 2019
(for the period ending June 30, 2019)

- Overall Survey Results
- Results by Industry Segment
- Results by Geographic Region
August 12, 2019

This NTMA Business Conditions Report covers the first half of 2019, a projection for the second half of 2019, and is a geographical “snapshot” of business trends and conditions in the special tooling and machining industry.

This Report, based on information from 71 NTMA member companies, indicates that overall business conditions during the 6-month period ending June 30, 2019 were Very Good to Excellent for 53% of respondents, up from 48% at the end of December 2018. Looking ahead, 48% are projecting that the next six months will bring a moderate-to-substantial increase in business conditions. The greatest optimism was expressed by members in the Greater Pacific Southwest Region (CA, NV, AZ, UT) and by those serving the Molds sector and Aerospace Machining & Fabrication sector.

Average work week per employee increased to 56.6 hours. Future work on the books decreased to 14 weeks. Average Sales Per Employee, however, came in higher at $141,923.

Top business priorities have been reordered as follows:

1. Finding Skilled Employees (#3 in December)
2. Increase Productivity (#1 in December)
3. Increase Sales (#2 in December)
4. Finding New Customers (no change)
5. Cost Reductions (no change)
6. Leadership Staffing (no change)

A special thanks to the NTMA member companies that participated in the June 2019 NTMA Business Conditions Report. We appreciate your support of this important benchmarking survey and encourage non-participating members to join the next survey in December.

Sincerely,

Doug DeRose
Interim President
Total employees as of December 31, 2018: 3,738
Total employees as of June 30, 2019: 3,883
Future Work on Books (Average): 14 weeks
Current Average Workweek per Skilled Employee (hours per week): 56.6 hours
Average Sales Per Employee: $141,923
## Priorities

<table>
<thead>
<tr>
<th>Rank</th>
<th>Finding skilled employees</th>
<th>Productivity Increases</th>
<th>Sales Increase - existing customers</th>
<th>Finding new customers</th>
<th>Cost reductions</th>
<th>Leadership staffing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank 1</td>
<td>30</td>
<td>9</td>
<td>14</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Rank 2</td>
<td>7</td>
<td>23</td>
<td>8</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>Rank 3</td>
<td>8</td>
<td>17</td>
<td>14</td>
<td>8</td>
<td>19</td>
<td>2</td>
<td>26</td>
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<tr>
<td>Rank 4</td>
<td>8</td>
<td>15</td>
<td>15</td>
<td>6</td>
<td>16</td>
<td>8</td>
<td>26</td>
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<tr>
<td>Rank 5</td>
<td>10</td>
<td>3</td>
<td>12</td>
<td>18</td>
<td>12</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Rank 6</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>13</td>
<td>10</td>
<td>34</td>
<td>26</td>
</tr>
<tr>
<td>Weighted Rank (Score)</td>
<td>1 (296)</td>
<td>2 (289)</td>
<td>3 (254)</td>
<td>4 (223)</td>
<td>5 (214)</td>
<td>6 (152)</td>
<td>68</td>
</tr>
</tbody>
</table>

### Distribution of Employees (June 2019 compared with December 2018)

- **Executive & Admin**
  - December 31, 2018: 274
  - June 30, 2019: 266
- **Engineering & Programming**
  - December 31, 2018: 201
  - June 30, 2019: 193
- **Human Resources**
  - December 31, 2018: 37
  - June 30, 2019: 34
- **Sales**
  - December 31, 2018: 83
  - June 30, 2019: 82
- **Customer Service**
  - December 31, 2018: 62
  - June 30, 2019: 61
- **Production**
  - December 31, 2018: 2,685
  - June 30, 2019: 2,692
Capacity Plans: Machines

- Add Capacity This Quarter: 24%
- Add Capacity Next Quarter: 17%
- Add Capacity 1 Year or Later: 26%
- Remain the Same: 33%
- Reduce Capacity: 0%

Capacity Plans: Buildings

- Add Capacity This Quarter: 6%
- Add Capacity Next Quarter: 3%
- Add Capacity 1 Year or Later: 12%
- Remain the Same: 79%
- Reduce Capacity: 0%

Sellable Production Capacity

- >80% - Tight: 49%
- 70% - Increasing: 32%
- 60% - Opening Up: 14%
- <50% - Need Work: 4%

Proactive Selling & Business Development Activity & Investment is:

- Increasing - More selling efforts and investment: 51%
- Low Level - Opportunistically pursuing leads: 46%
- Declining - Cutting back on selling efforts: 3%
Business Conditions by Industry Sector
Tools, Die & Fixtures  (5 responses)

Current Business Conditions

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>20%</td>
</tr>
<tr>
<td>Very Good</td>
<td>40%</td>
</tr>
<tr>
<td>Good</td>
<td>40%</td>
</tr>
<tr>
<td>Fair</td>
<td>0%</td>
</tr>
<tr>
<td>Poor</td>
<td>0%</td>
</tr>
</tbody>
</table>

Projected Business Conditions
Over the Next 6 Months

<table>
<thead>
<tr>
<th>Change</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial Increase</td>
<td>0%</td>
</tr>
<tr>
<td>Moderate Increase</td>
<td>60%</td>
</tr>
<tr>
<td>Remain the Same</td>
<td>20%</td>
</tr>
<tr>
<td>Moderate Decrease</td>
<td>20%</td>
</tr>
<tr>
<td>Substantial Decrease</td>
<td>0%</td>
</tr>
</tbody>
</table>

Molds (5 responses)

Current Business Conditions

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>0%</td>
</tr>
<tr>
<td>Very Good</td>
<td>60%</td>
</tr>
<tr>
<td>Good</td>
<td>20%</td>
</tr>
<tr>
<td>Fair</td>
<td>20%</td>
</tr>
<tr>
<td>Poor</td>
<td>0%</td>
</tr>
</tbody>
</table>

Projected Business Conditions
Over the Next 6 Months

<table>
<thead>
<tr>
<th>Change</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial Increase</td>
<td>20%</td>
</tr>
<tr>
<td>Moderate Increase</td>
<td>60%</td>
</tr>
<tr>
<td>Remain the Same</td>
<td>20%</td>
</tr>
<tr>
<td>Moderate Decrease</td>
<td>20%</td>
</tr>
<tr>
<td>Substantial Decrease</td>
<td>0%</td>
</tr>
</tbody>
</table>

Current Business Compared with 1st Quarter 2019 (by %)

<table>
<thead>
<tr>
<th>Category</th>
<th>Up</th>
<th>Same</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quoting</td>
<td>40</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Shipments</td>
<td>60</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Order Backlog</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Profit</td>
<td>80</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Employment</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Investments</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
</tbody>
</table>

Projected Business Activity
Over the Next 6 Months (by %)

<table>
<thead>
<tr>
<th>Category</th>
<th>Up</th>
<th>Same</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quoting</td>
<td>40</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Shipments</td>
<td>60</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Order Backlog</td>
<td>40</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Profit</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Employment</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Investments</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
</tbody>
</table>
**Special Machines (1 response)**

**Current Business Conditions**

- Excellent: 0%
- Very Good: 0%
- Good: 0%
- Fair: 100%
- Poor: 0%

**Projected Business Conditions Over the Next 6 Months**

- Substantial Increase: 0%
- Moderate Increase: 0%
- Remain the Same: 0%
- Moderate Decrease: 100%
- Substantial Decrease: 0%

**Projected Business Activity Over the Next 6 Months (by %)**

- Quoting: 100%
- Shipments: 0%
- Order Backlog: 0%
- Profit: 0%
- Employment: 0%
- Investments: 0%

**Current Business Conditions Compared with 1st Quarter 2019 (by %)**

- Quoting: 100%
- Shipments: 100%
- Order Backlog: 100%
- Profit: 100%
- Employment: 100%
- Investments: 100%

**Precision Machining excluding Aerospace (40 responses)**

**Current Business Conditions**

- Excellent: 15%
- Very Good: 25%
- Good: 23%
- Fair: 35%
- Poor: 3%

**Projected Business Conditions Over the Next 6 Months (by %)**

- Substantial Increase: 3%
- Moderate Increase: 35%
- Remain the Same: 40%
- Moderate Decrease: 20%
- Substantial Decrease: 3%

**Projected Business Activity Over the Next 6 Months (by %)**

- Quoting: 55%
- Shipments: 45%
- Order Backlog: 50%
- Profit: 48%
- Employment: 65%
- Investments: 65%

**Current Business Conditions Compared with 1st Quarter 2019 (by %)**

- Quoting: 38%
- Shipments: 35%
- Order Backlog: 40%
- Profit: 25%
- Employment: 38%
- Investments: 28%
BUSINESS CONDITIONS by Geographic Region

NEW ENGLAND (ME, VT, RI, NH, MA, CT) – 5 responses

Current Business Conditions
- Excellent: 0%
- Very Good: 60%
- Good: 40%
- Fair: 0%
- Poor: 0%

Current Business Conditions Compared with 1st Quarter 2019 (by %)
- Quoting: Up 80, Same 20, Down 0%
- Shipments: Up 20, Same 40, Down 40%
- Order Backlog: Up 40, Same 40, Down 0%
- Profit: Up 60, Same 0, Down 0%
- Employment: Up 100, Same 0, Down 0%
- Investments: Up 0, Same 0, Down 0%

Projected Business Conditions Over the Next 6 Months
- Substantial Increase: 0%
- Moderate Increase: 60%
- Remain the Same: 20%
- Moderate Decrease: 20%
- Substantial Decrease: 0%

Projected Business Activity Over the Next 6 Months (by %)
- Quoting: Up 40, Same 40, Down 20%
- Shipments: Up 40, Same 40, Down 20%
- Order Backlog: Up 40, Same 40, Down 0%
- Profit: Up 60, Same 0, Down 0%
- Employment: Up 60, Same 60, Down 60%
- Investments: Up 60, Same 60, Down 60%

NORTHEASTERN CENTRAL (DC, NY, PA, NJ, DE, MD, WV, VA) – 19 responses

Current Business Conditions
- Excellent: 37%
- Very Good: 26%
- Good: 16%
- Fair: 16%
- Poor: 5%

Current Business Conditions Compared with 1st Quarter 2019 (by %)
- Quoting: Up 42, Same 32, Down 26%
- Shipments: Up 53, Same 21, Down 21%
- Order Backlog: Up 42, Same 37, Down 21%
- Profit: Up 53, Same 21, Down 21%
- Employment: Up 58, Same 32, Down 11%
- Investments: Up 47, Same 47, Down 5%

Projected Business Conditions Over the Next 6 Months
- Substantial Increase: 5%
- Moderate Increase: 42%
- Remain the Same: 37%
- Moderate Decrease: 16%
- Substantial Decrease: 0%

Projected Business Activity Over the Next 6 Months
- Quoting: Up 47, Same 53, Down 0%
- Shipments: Up 58, Same 58, Down 11%
- Order Backlog: Up 32, Same 32, Down 16%
- Profit: Up 53, Same 53, Down 5%
- Employment: Up 58, Same 58, Down 5%
- Investments: Up 63, Same 63, Down 5%
### SOUTHEASTERN (FL, KY, NC, SC, TN, GA, AL MS) – 4 responses

- **Current Business Conditions**
  - Excellent: 25%  
  - Very Good: 50%  
  - Good: 25%  
  - Fair: 0%  
  - Poor: 0%

- **Current Business Conditions Compared with 1st Quarter 2019 (by %)**
  - Quoting: 75% Up, 0% Same, 25% Down
  - Shipments: 75% Up, 50% Same, 25% Down
  - Order Backlog: 25% Up, 50% Same, 25% Down
  - Profit: 50% Up, 50% Same
  - Employment: 25% Up, 25% Same, 25% Down
  - Investments: 25% Up, 25% Same, 25% Down

### NORTH CENTRAL (OH, MI, IL, IN, WI) – 19 responses

- **Current Business Conditions**
  - Excellent: 21%  
  - Very Good: 26%  
  - Good: 21%  
  - Fair: 32%  
  - Poor: 0%

- **Current Business Conditions Compared with 1st Quarter 2019 (by %)**
  - Quoting: 37% Up, 32% Same, 32% Down
  - Shipments: 47% Up, 32% Same, 21% Down
  - Order Backlog: 42% Up, 32% Same, 26% Down
  - Profit: 42% Up, 32% Same, 26% Down
  - Employment: 58% Up, 58% Same
  - Investments: 58% Up, 58% Same

- **Projected Business Conditions Over the Next 6 Months**
  - Substantial Increase: 11%  
  - Moderate Increase: 21%  
  - Remain the Same: 42%  
  - Moderate Decrease: 21%  
  - Substantial Decrease: 5%

- **Projected Business Activity Over the Next 6 Months (by %)**
  - Quoting: 63% Up, 53% Same, 16% Down
  - Shipments: 53% Up, 53% Same, 16% Down
  - Order Backlog: 53% Up, 32% Same, 16% Down
  - Profit: 42% Up, 32% Same, 26% Down
  - Employment: 58% Up, 58% Same, 11% Down
  - Investments: 58% Up, 58% Same, 21% Down
GREATER PACIFIC SOUTHWEST (CA, NV, AZ, UT) – 13 responses

**Projected Business Conditions Over the Next 6 Months**

- Excellent: 0%
- Very Good: 0%
- Good: 100%
- Fair: 0%
- Poor: 0%

Current Business Conditions Compared with 1st Quarter 2019 (by %)

- Quoting: 62%
- Shipments: 46%
- Order Backlog: 31%
- Profit: 38%
- Employment: 46%
- Investments: 31%

**Projected Business Activity Over the Next 6 Months (by %)**

- Quoting: 46%
- Shipments: 54%
- Order Backlog: 54%
- Profit: 46%
- Employment: 54%
- Investments: 69%

GREATER PACIFIC NORTHWEST (ID, WA, OR) – 2 responses

**Current Business Conditions**

- Excellent: 50%
- Very Good: 50%
- Good: 0%
- Fair: 0%
- Poor: 0%

Current Business Conditions Compared with 1st Quarter 2019 (by %)

- Quoting: 100%
- Shipments: 100%
- Order Backlog: 50%
- Profit: 100%
- Employment: 100%
- Investments: 100%

**Projected Business Conditions Over the Next 6 Months**

- Excellent: 0%
- Very Good: 0%
- Good: 100%
- Fair: 0%
- Poor: 0%

**Projected Business Activity Over the Next 6 Months (by %)**

- Quoting: 100%
- Shipments: 100%
- Order Backlog: 50%
- Profit: 100%
- Employment: 100%
- Investments: 50%
In order to achieve our business goals, our three biggest needs are:

<table>
<thead>
<tr>
<th>Need #1</th>
<th>Need #2</th>
<th>Need #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid an economic downturn</td>
<td>Additional factory space</td>
<td>Additional factory power</td>
</tr>
<tr>
<td>Finding skilled employees</td>
<td>Reducing costs</td>
<td>Improving productivity</td>
</tr>
<tr>
<td>Availability of skilled labor</td>
<td>Implementation of new equipment</td>
<td></td>
</tr>
<tr>
<td>Increased sales and better gross margins</td>
<td>Increase productivity</td>
<td>Reduced cost of health care</td>
</tr>
<tr>
<td>Finding Skilled labor and training existing people</td>
<td>Adding automation</td>
<td>Improving current processes - set up reduction</td>
</tr>
<tr>
<td>Attracting skilled labor</td>
<td>Standardizing processes</td>
<td>Formalizing training for all team members</td>
</tr>
<tr>
<td>Additional labor availability in our area</td>
<td>More foundry options - many have closed</td>
<td>Control of healthcare costs</td>
</tr>
<tr>
<td>Skilled Labor</td>
<td>Skilled Labor</td>
<td></td>
</tr>
<tr>
<td>New employees</td>
<td>New employees</td>
<td>New employees</td>
</tr>
<tr>
<td>Sales</td>
<td>Skilled labor</td>
<td>Equipment</td>
</tr>
<tr>
<td>More work</td>
<td>Skilled person</td>
<td>New customers</td>
</tr>
<tr>
<td>People</td>
<td>Equipment</td>
<td>Acquisition</td>
</tr>
<tr>
<td>Skilled labor</td>
<td>Increase machine capacity</td>
<td>Improve contract review process</td>
</tr>
<tr>
<td>Skilled employees</td>
<td>New customers</td>
<td>Overhead cost reduction</td>
</tr>
<tr>
<td>More work</td>
<td>Skilled Workers</td>
<td>Increased productivity</td>
</tr>
<tr>
<td>Employees</td>
<td>Strong leadership</td>
<td>New customers</td>
</tr>
<tr>
<td>Increased training of current machinists</td>
<td>Adding a general manager to help with logistics</td>
<td>Improve efficiency</td>
</tr>
<tr>
<td>Skilled labor</td>
<td>Less regulations</td>
<td>Less taxes</td>
</tr>
<tr>
<td>Qualified employees</td>
<td>Process refinement</td>
<td>Sales</td>
</tr>
<tr>
<td>Qualified employees</td>
<td>Qualified employees</td>
<td>Qualified employees</td>
</tr>
<tr>
<td>Enter new markets</td>
<td>Implement process improvements</td>
<td>Upgrade equipment</td>
</tr>
<tr>
<td>Skilled Labor</td>
<td>Low overhead costs, rent, medical, workman's comp</td>
<td>Capital Investment</td>
</tr>
<tr>
<td>Hiring skilled machinists</td>
<td>Improving manufacturing profit</td>
<td>Divest unprofitable business</td>
</tr>
<tr>
<td>Qualified Employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased capacity</td>
<td>New customers</td>
<td>Increased square footage</td>
</tr>
<tr>
<td>More Sale Leads New Customers</td>
<td>More In House Training on Procedures and paperwork</td>
<td>Need younger workforce to help transition Older</td>
</tr>
<tr>
<td>Finding new employees</td>
<td>Training employees</td>
<td>Updating technology</td>
</tr>
<tr>
<td>Purchasing power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiring Scheduling/Capacity Planning Staff Person</td>
<td>Implementing Lean/Six-Sigma/TOC Activities</td>
<td>Expanding and diversifying our customer base</td>
</tr>
<tr>
<td>Skilled Labor</td>
<td>Skilled Labor</td>
<td>Skilled Labor</td>
</tr>
<tr>
<td>More steady work from our customers</td>
<td>Blanket orders to help level out production</td>
<td>Reducing direct labor</td>
</tr>
<tr>
<td>finding more help</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce</td>
<td>Material cost and availability</td>
<td>Relief from regulations</td>
</tr>
<tr>
<td>Skilled labor</td>
<td>Cost reduction</td>
<td>Skilled workforce</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Increased productivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business development in new markets</td>
<td>More skilled tradesman</td>
<td>Market diversity</td>
</tr>
<tr>
<td>Skilled Employees</td>
<td>Strong Economy</td>
<td>Less Taxes and Regulations</td>
</tr>
<tr>
<td>Smooth transition of a new business purchase</td>
<td>Ongoing funding</td>
<td></td>
</tr>
<tr>
<td>Lean / efficiency</td>
<td>New employees</td>
<td>New customers</td>
</tr>
<tr>
<td>Trained employees</td>
<td>New software</td>
<td>New machinery</td>
</tr>
<tr>
<td>Increase sales</td>
<td>Get AS9001 certification</td>
<td>Increase unattended output</td>
</tr>
<tr>
<td>More Skilled Employees</td>
<td>Additional Outsourcing Vendors</td>
<td>More Billable Hours</td>
</tr>
<tr>
<td>Capital Equipment/ Credit Lines</td>
<td>QA Personnel</td>
<td>Production Personnel</td>
</tr>
<tr>
<td>Increased sales and better gross margins</td>
<td>Reduced health care cost</td>
<td>Increased production efficiency</td>
</tr>
<tr>
<td>New production runs of 50 or more units</td>
<td>New customers in varied industries</td>
<td>Greater throughput through efficiency gains</td>
</tr>
<tr>
<td>More highly qualified finish toolmakers</td>
<td>We need to grow a sales presence</td>
<td>Train</td>
</tr>
<tr>
<td>Add new customers</td>
<td>Increase efficiency</td>
<td>Add services</td>
</tr>
<tr>
<td>Qualified employees</td>
<td>Consistent cash flow</td>
<td>Improved vendor turn-around</td>
</tr>
<tr>
<td>Sales</td>
<td>Employees</td>
<td>Efficiency</td>
</tr>
<tr>
<td>New Customer Acquisition</td>
<td>Customer Retention</td>
<td>Brand Awareness</td>
</tr>
<tr>
<td>Increased sales</td>
<td>Sales person</td>
<td>Programming person</td>
</tr>
<tr>
<td>Bringing in new skilled labor</td>
<td>Growing talent internally</td>
<td>Increasing market awareness</td>
</tr>
<tr>
<td>Skilled Labor</td>
<td>Better Vendors for outsourcing</td>
<td>More Equipment</td>
</tr>
<tr>
<td>Sales</td>
<td>People</td>
<td></td>
</tr>
<tr>
<td>Skill</td>
<td>Floor space</td>
<td>Leadership</td>
</tr>
<tr>
<td>Customer diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steady sales</td>
<td>Faster production times</td>
<td>More production work, less prototypes</td>
</tr>
<tr>
<td>Skilled Employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>Financing</td>
<td>Skilled people in all facets</td>
</tr>
<tr>
<td>Skilled workforce</td>
<td>More sales</td>
<td>Training</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Capital</td>
<td>Technology</td>
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