Improving Your Cash Position With Tax Credits For Manufacturers
Randy Crabtree, CPA
Co-Founder, Partner
(847) 274-1480
randy.crabtree@tri-merit.com

Michelle Powell
Regional Director
(773) 562-0550
Michelle.powell@tri-merit.com
Tri-Merit LLC is a professional services firm specializing in supporting CPA firms and their clients with specialty tax services including - Research and Development Tax Credits, Cost Segregation, 179D and 45L.

We are comprised of engineers, scientist, CPAs and attorneys.
Agenda

R&D Tax Credits

- History of the Credit
- Definition
- Credit Value
- COVID-19 R&D Examples
- Metal Manufacturer Example
R&D Tax Credit – History

- **Established by Congress in 1981**
  - Internal Revenue Code Section 41 Credit for increasing research activities
  - Expenses must qualify as R&D expenses as defined in section 174

- **Changes to Regulations in 2001 / 2003**
  - Discovery test eliminated
Credit Made Permanent and Retroactively Restored

- Retroactively made permanent to January 1, 2015
- Allows companies to plan for R&D expenditures with confidence that the intended tax benefit for these expenses will be there each year.
- Allows tax consultants to do proper tax planning.
The Credit can Offset AMT for an ESB Beginning January 2016

- Eligible Small Business (ESB)
  - Private Corporations, Partnerships, Sole Proprietorships
  - Average gross receipts cannot exceed $50 million for the prior three years

- In general an ESB can use the R&D credit to offset AMT.
  - Credit will be used via a FIFO method
  - Carryforwards can be used to offset both regular tax and AMT in future years
The Credit can Offset Payroll taxes for a QSB Beginning January 2016

- Qualified Small Business (QSB)
  - Corporation, Partnership, Sole Proprietorship
  - Current year gross receipts of less than $5 million
  - Basically no more than 5 years in business

- In general an QSB can make an election to use the R&D credit to offset employer portion of social security taxes.
  - The election is limited to $250k per year
  - The credit is used beginning in the first quarter that begins after the election was made on a filed tax return
Furthering Our Recovery With American Research & Development

- Expands wage expense to include employee training
- QSB definition changes from less than $5 mil and 5 years to less than $20 mil and 8 years. It would also ignore any years further back than 8 with less than $25k in revenue.
- Increases the amount that can be carried to the 941 to $1 mil
- Is effective for tax years beginning after 12/31/2019
Furthering Our Recovery With American Research & Development

▲ Increase the credit calculations percentage for companies with domestic gross receipts over 50% from 20% to as high as 25% for the regular credit and from 14% to as high as 17.5% for the ASC.

▲ Increase the credit percentage for companies that do certain collaborations from 20% to 25% for the regular credit and from 14% to 17.5% for the ASC.
R&D tax credit claims by corporations were about $12.6 billion in 2014. Up nearly 10% from 2013.

74% of the credits were claimed by businesses under $50 mil.

The percentage of credits dollars claimed by industries were:

- 59% - Manufacturing
- 17% - Information
- 10% - Professional, scientific, and technical services
- 14% - All other including:
R&D Tax Credit – 4-Part Test

4-Part Test

- **Test 1:** Permitted Purpose
- **Test 2:** Technological in Nature
- **Test 3:** Technical Uncertainty
- **Test 4:** Process of Experimentation
Test 1: Permitted Purpose

- Development activities must be for the purpose of developing a new or improved business component.
  - Defined as a Product, Process, Invention, Technique, Formula or Software

- The development of the business component must relate to a new or improved
  - Functionality, performance, quality or reliability

- Must be held for sale or used in a trade or business of taxpayer.
Test 2: Technological in Nature

- Development activities must be for the purpose of developing a new or improved business component.
  - Defined as a Product, Process, Invention, Technique, Formula or Software
- Must be based on the physical sciences such as:
  - Engineering, metallurgy, material science, chemistry, biology or computer science.
- The “soft” sciences do not qualify, examples include:
  - Humanities, management sciences or social sciences
Test 3: Technical Uncertainty

- Activities must be undertaken to discover information and eliminate technical uncertainty, such as:
  - what the optimal design should be or
  - what the best method for manufacturing is.

- One or more of the following areas of uncertainty must exist at the outset of the project:
  - Capability: IF the taxpayer can develop the business component.
  - Methodology: HOW to develop the business component.
  - Design: WHAT is the appropriate design of the business component.

- Note: Uncertainty exists even if the taxpayer knows at the outset that it can develop the business component (the capability and methodology), as long as there is uncertainty regarding the appropriate design.
A process of experimentation is defined as a process designed to evaluate one or more alternatives where the capability, method, or appropriate design of achieving a result is uncertain at the beginning of the research activities.

Examples include:
- Modeling
- Simulation
- A systematic trial and error methodology
  - i.e. developing and testing prototypes, alpha and beta software code, clinical or laboratory testing.
Credit Generally Based on Four Areas of Qualifying Expenses (QREs)

- Salaries and Wages
- Contract Research Expenses
- Supply Costs
- Rental of Computer Time
Salaries and Wages

▲ Taxable wages from Box 1 of the W2.
▲ Qualifying wages include wages that are directly attributable to the conduct of qualified research. Which includes:
  ○ Direct Supervision of qualified research:
    » First-line managers directly supervising experimentation.
  ○ Direct Support of those engaged in qualified research:
    » Examples include: a secretary typing notes from research experiments, and a maintenance worker cleaning research equipment.
  ○ Does not include indirect activities such as an employee preparing paychecks for an engineer.
Contract Research Expenses

- Contract research equals 65% of the amount paid to outside firms for qualifying research activities, examples include design or engineering services, prototype construction, and prototype testing or evaluation.

- Requirements:
  - An agreement must be entered into at the outset of the project for the conduct of qualified research on behalf of the taxpayer.
  - Taxpayer must bear the economic risk of the project (must pay for the research regardless of if the project is successful).
  - Taxpayer must retain rights to the results of the research.
Supply Expenses

- Supply expenses include materials used or consumed during the experimentation process.

- Qualified examples include:
  - Raw materials used in the construction of prototypes.
  - Consumable tooling used in the production of prototypes.

- Non-qualified examples include:
  - Equipment or tooling of a nature subject to depreciation. (exception prototype costs)
    » Based on new regs and court cases we may be able to include the cost of a prototype.
Rental of Computer Time

- Cloud computing services
  - Amazon Web Services (AWS)
  - IBM Cloud
  - Microsoft Azure
  - Oracle Cloud
  - Google Cloud
Two Calculation Options

- Regular Credit
- Simplified Credit
- Rule of thumb to estimate a credit is about 10% of qualified expenses
## R&D Tax Credit – Industry Credit Examples

<table>
<thead>
<tr>
<th>Industry</th>
<th>Annual Revenue</th>
<th>Annual Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Pumps Manufacturer</td>
<td>$35,000,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Windows and Skylights Manufacturer</td>
<td>$400,000,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Injection Molding</td>
<td>$10,000,000</td>
<td>$110,000</td>
</tr>
<tr>
<td>Metal Stamping</td>
<td>$30,000,000</td>
<td>$160,000</td>
</tr>
<tr>
<td>Precision Tool and Die</td>
<td>$10,000,000</td>
<td>$65,000</td>
</tr>
<tr>
<td>Bond Trading Platform</td>
<td>$2,000,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Custom Software for Special Needs Testing</td>
<td>$8,000,000</td>
<td>$215,000</td>
</tr>
<tr>
<td>Arcade Game Manufacturer</td>
<td>$45,000,000</td>
<td>$275,000</td>
</tr>
<tr>
<td>Integrated Roadway Engineer</td>
<td>$750,000,000</td>
<td>$1,400,000</td>
</tr>
<tr>
<td>MEP Engineering</td>
<td>$9,000,000</td>
<td>$125,000</td>
</tr>
<tr>
<td>Food Manufacturer</td>
<td>$25,000,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Craft Brewery</td>
<td>$12,000,000</td>
<td>$75,000</td>
</tr>
<tr>
<td>Software for Remote Control of MED</td>
<td>$10,000,000</td>
<td>$185,000</td>
</tr>
</tbody>
</table>
Companies retooling and innovating in response to COVID-19:

- Dyson – In 10 days designed and built an entirely new ventilator that can be manufactured quickly, efficiently and at volume.
- Retail Businesses – Programming new online stores for delivery or curbside pick up.
- Garment Manufacturers – Becoming mask manufacturers.
- Pharmaceuticals – Developing and testing vaccines, testing kits, medicines.
Companies retooling and innovating in response to COVID-19:

▲ Injection molders – Retooling to become plastic shield manufacturers.

▲ Delta Air Lines - Redeployed an internal manufacturing unit usually used to explore ways to make the airline run more efficiently to make face shields for hospital workers.

▲ Auto makers – Manufacturing ventilators on the production lines.

▲ Breweries, Distilleries, etc – Shifting gears to manufacture hand sanitizer.
R&D Tax Credit – Manufacturing

- Estimating
  - Beginning of manufacturing process development
- Component Design
  - Engineering
  - Computer modeling
- Rapid Prototyping
  - Test of initial design through the use of automated prototype machine
- Tool and Fixture Design
R&D Tax Credit – Manufacturing

- CNC Programming
- Machine Setup
  - Setup of prototype runs
- Prototyping
  - Manufacture prototype
- Quality
  - Inspection of prototype
  - Development of inspection processes
  - CMM programming
Metal Products Manufacturer
Revenue (2012 –2015)
  o  15 to 20 million per year
QREs
  o  Wages
    ▪  $863k to $1.6mil
  o  Supplies
    ▪  $100k to $731k
  o  Outside Services
    ▪  $6k to $9k

Credit Activities
  o  New product design and improvements
  o  Development of manufacturing processes
  o  Process improvements
  o  Software development
  o  Developed manufacturing equipment
  o  Design tools and fixtures
  o  Redesigned plant floor layout
R&D in the metal products manufacturing
  - Conceptual Idea
    - Beginning of new product conceptual development
    - Sketches
    - Preliminary Design
  - Design
    - Structural
    - Mechanical
    - Material science
R&D Tax Credit – Manufacturing (Example)

▲ Prototyping
  ○ 3D printing
  ○ Tools
  ○ Fixtures
  ○ Molds
  ○ Dies

  ○ Machine setup
  ○ Machine operation
  ○ Finishes
  ○ Coatings
  ○ Plating
R&D Tax Credit – Manufacturing (Example)

- **Testing**
  - Strength testing
  - Cycle testing
  - Destructive testing
  - Physical attributes

- **Quality**
  - Inspection of prototype
  - Development of inspection process
Employees Involved

- CEO
- President
- CNC Operators
- CNC Programmers
- Engineering Manager
- Design Engineers
- Machine Mechanics
- Set-up Technicians

- EDM Operators
- Process Engineer
- QC Personnel
- IT Manager
- Mold Makers
- Tool Makers
- Prototype Technician
<table>
<thead>
<tr>
<th>Tax Year</th>
<th>Revenue</th>
<th>Federal Credits</th>
<th>State Credits</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$15,231,000</td>
<td>$76,053</td>
<td>$7,982</td>
<td>$84,035</td>
</tr>
<tr>
<td>2013</td>
<td>$18,087,000</td>
<td>$186,239</td>
<td>$55,233</td>
<td>$241,472</td>
</tr>
<tr>
<td>2014</td>
<td>$19,507,000</td>
<td>$182,332</td>
<td>$42,338</td>
<td>$224,670</td>
</tr>
<tr>
<td>2015</td>
<td>$20,834,000</td>
<td>$194,821</td>
<td>$48,792</td>
<td>$243,613</td>
</tr>
</tbody>
</table>
Thank you for your time and attention.