SR Swanson Reed
Specialist R&D Tax Advisors

Engineering

Business Scenario

Hunter Engineering is a family run business that is dedicated to producing custom, environmentally friendly hunting products with the use of professional machinery.

With lead fishing sinkers banned in the United Kingdom, Canada and various U.S. states due to the environmental concerns surrounding them, Hunter Engineering instigated a project with the main business objective being to design and develop an alternate and improved copper fishing sinker.

The key areas of investigation and experimentation due to specific technical objectives for Hunter Engineering were the following:

- Because copper is a much lighter metal than lead, a copper sinker must be shaped differently to enable it to sink properly and be cast over a distance.
- Because copper erodes much easier than lead, the development of a coating was required.

After experimentation, Hunter Engineering had to determine which of its project activities qualified as R&D. Once it identified the specific activities that qualified as R&D, Hunter Engineering needed to assess whether each activity was a core or supporting R&D activity. After self-assessing, Hunter Engineering decided that development of an efficient copper sinker was indeed possible with the conduction of two core R&D activities and two supporting R&D activities.

Hunter Engineering's Core R&D Activities:

Design and development of a series of prototypes to achieve the technical objectives (design of the copper sinker).

The hypothesis for this core activity was that a lead-free, copper fishing sinker could be designed and developed to outperform existing lead fishing weights.

Hunter Engineering created a 3D model of the copper sinker in order to accurately predict the weight of the sinker and then sent it to an industry professional for recalculation. Based on the recalculations, the experts at Hunter Engineering developed the design for the sinker.

Hunter Engineering concluded that a small increase in the diameter of the fishing weight produced a significant improvement in the sinking and flying characteristics.

Trials and Analysis of data to achieve results that can be reproduced to a satisfactory standard, and to test the hypothesis (testing of various coatings and methods to apply the lubricant onto the sinker).

The hypothesis for this core activity was to investigate an optimum coating (or lubricant) that could be applied to the copper sinker to prevent it from eroding in water.

Each type of lubricant was tested on a round of fifteen sinkers over a year. Hunter Engineering tried numerous off-the-shelf products by mixing them with other types of lubricants. However, they ended up developing a binder to help the lubricant stay on the copper sinker.

Hunter Engineering did find a successful coating that had to be mixed with the binder and then sprayed on the sinker before use.

© Swanson Reed. ABN: 38 154 525 256

Commentary
Identifying Core R&D Activities

There are two types of core R&D activities:

1. Experimental activities whose outcome can not be determined in advance on the basis of current knowledge, information or experience, but can only be known by exercising a systematic progression of work that follows the principles of established science, proceeding from hypothesis to experiment, observation and evaluation, and lead to logical conclusions.
2. Experimental activities that are conducted for the purpose of creating new knowledge.

Hypothesis Defined

AusIndustry recognises a hypothesis as a statement or proposition about what result is expected if certain conditions are put in place and certain actions are carried out in an experiment. It can range from an assumption or proposition to a theory, but it must establish the experimental activity and form part of a broader systematic progression of work undertaken by the company. It must be evident that the claimed experiment has been designed to test the hypothesis.

If the outcome of an activity can be obtained without a hypothesis, then the activity will not be considered R&D.

Hunter Engineering's Supporting R&D Activities:

Background research to evaluate current knowledge gaps and determine feasibility (background research for the design of the copper sinker).

Hunter Engineering conducted the following background research:

- Review of final computer-generated calculations for potential specifications for the design of the copper sinker
- Analysis of available competitors' products and components
- Preliminary equipment and resources review with respect to capacity, performance and suitability for the project
- Consultation with key component/part/assembly suppliers to determine the factors they considered important in the design and to gain an understanding of how the design needed to be structured accordingly

These specific background research activities were directly related to the core R&D activities because they assisted in identifying the key elements of the research project, therefore qualifying as supporting R&D activities.

Ongoing analysis of customer or user feedback to improve the prototype design (feedback R&D of the copper sinkers).

These supporting R&D activities included:

- Ongoing analysis and testing to improve the efficiency and environmental safety of the project.
- Ongoing development and modification to interpret the experimental results and draw conclusions that served as starting points for the development of new hypotheses.
- Commercial analysis and functionality review.

This feedback was necessary to evaluate the performance capabilities of the new design in the field and to improve any flaws in the design, thus directly relating it to the core activities of the project.

Commentary
Identifying Supporting R&D Activities

Activities that do not form part of the core experimental activities may still be eligible as supporting R&D activities. Supporting R&D activities are directly related to an eligible core R&D activity. They must have been performed for the primary purpose of supporting a qualified R&D activity.

What records and specific documentation did ANOA keep?

TTo meet the R&D Tax Incentive requirements, Hunter Engineering had to save documents that outlined what it did in its core R&D activities, including experimental activities and documents to prove that the work took place in a systematic manner.

Unfortunately, the only documentation that Hunter Engineering saved were design drawings, leaving lots of room for improvement in the area of substantiation.

As a company claiming R&D, you always want to be 'compliance ready' – meaning if you were selected for an audit by the ATO, you could present documentation to show the progression of your R&D work. Here are some types of documentation that would be beneficial to save:

- Project records/ lab notes
- Photographs/ videos of various stages of build/ assembly/ testing
- Prototypes
- Testing protocols
- Results or records of analysis from testing/ trial runs
- Tax invoices
- Patent application number
- Literature reviews

© Swanson Reed. ABN: 38 154 525 256