Docket: 2016-4880(IT)G

BETWEEN:

KAM-PRESS METAL PRODUCTS LTD.,

Appellant,

and

HER MAJESTY THE QUEEN,

Respondent.

Appeal heard on October 8, 2019, at Toronto, Ontario

Before: The Honourable Justice John R. Owen

Appearances:

Counsel for the Appellant:	John D. Buote
Counsel for the Respondent:	Devon E. Peavoy

JUDGMENT

Upon hearing the evidence and submissions of counsel for the Appellant and counsel for the Respondent;

In accordance with the attached Reasons for Judgment, the appeals from the reassessments made under the *Income Tax Act* for the 2009 and 2010 taxation years, the notices of which are dated May 15, 2012 and September 23, 2013, are dismissed, with costs awarded to the Respondent in accordance with the Tariff.

Signed at Ottawa, Canada, this 30th day of October 2019.

"J.R. Owen"

Owen J.

Citation: 2019 TCC 246
Date: 20191030
Docket: 2016-4880(IT)G

BETWEEN:

KAM-PRESS METAL PRODUCTS LTD.,

Appellant,

and

HER MAJESTY THE QUEEN,

Respondent.

REASONS FOR JUDGMENT

Owen J.

I. Introduction

[1] These are appeals by Kam-Press Metal Products Ltd. (the "Appellant") of the reassessment of its 2009 and 2010 taxation years by notices dated May 15, 2012 and September 23, 2013 respectively (the "Reassessments"). The Reassessments disallowed the Appellant's claims for scientific research and experimental development ("SR&ED") expenditures and investment tax credits as follows:

Disallowed Amounts	2009	2010
Current SR&ED Expenses	$191,358	$250,852
Prescribed Proxy Amount	$123,159	$153,694
Qualified SR&ED Expenses	$270,327	$347,707
Investment Tax Credits	$94,614	$121,697

[2] At the commencement of the hearing, the Appellant discontinued its appeal of the disallowance of SR&ED expenditures and investment tax credits for all projects described in its Notice of Appeal other than the project titled Large Volume Acrylic Memorial Niche Complex Development. In the Respondent's Reply, this project is identified as four separate projects: the Large Volume Acrylic Memorial Niche Complex Development, the Memorial Niche Corner Cover Development, the Acrylic Memorial Niche Assembly Process Development and the Memorial Niche LED Lighting Development. The Appellant stated that the four projects described in the Reply are all part of the Large Volume Acrylic Memorial Niche Complex Development project described in the Notice of Appeal.

[3] The amounts in issue in respect of the Large Volume Acrylic Memorial Niche Complex Development project (the "Project") are as follows:

Disallowed Amounts	2009	2010
Current SR&ED Expenses	$91,039	$250,852
Prescribed Proxy Amount	$58,449	$153,694
Qualified SR&ED Expenses	$128,485	$347,707
Investment Tax Credits	$44,970	$121,697

II. The Facts

[4] Three witnesses testified for the Appellant: Mr. Michael Bobee ("MB"), the founder and the president and general manager of the Appellant; Mr. Chad Bobee ("CB"), the sales and engineering manager of the Appellant and the son of MB; and Mr. Michael Witen, an independent SR&ED consultant to the Appellant prior to and during the taxation years in issue.

[5] MB provided a brief overview of the history and business of the Appellant. The Appellant was established in 1973 by MB and has carried on the business of custom manufacturing since its inception. The Appellant works primarily with metal but occasionally works with other materials as the need arises. One product custom-manufactured by the Appellant is referred to as a memorial niche, which is

used to display funeral urns. The memorial niches custom-manufactured by the Appellant are typically made of metal with a glass front.

[6] Prior to the commencement of the Project, the Appellant was approached by a distributor of its custom-manufactured products who wanted to discuss the manufacture of a memorial niche for a church in Alberta. The architect for the church envisioned a memorial niche with a complex design involving both curved and straight sections that would give the effect that the urns were floating in space. The latter aesthetic required the memorial niche to be as transparent as possible with lighting that supported the desired effect.

[7] The goal of the Project was to develop a memorial niche that satisfied the architect's design and aesthetic requirements. CB managed the Project. CB has a college diploma in business and has been an employee of the Appellant for 30 years.

[8] CB's testimony focussed on the work undertaken by the Appellant in furtherance of the Project. In the course of his testimony, CB adopted the summary contained in Exhibit A-7 as an accurate description of the work undertaken by the Appellant. That summary, prepared by Mr. Witen, was based on interviews with the Appellant's employees. CB described Exhibit A-2 as a collection of diagrams and pictures that provide a visual representation of the memorial niche and its execution.

[9] The Appellant considered three possible designs. The first design used the traditional materials of metal and glass to construct the memorial niche columns. This design proved too difficult and costly to manufacture.

[10] The second design replaced the metal with tempered glass. This design resulted in a memorial niche column that was heavy and expensive and the components of which would be difficult to ship without breakage and to assemble without weakening the structural integrity of the niche.

[11] The third and final design envisioned a memorial niche constructed of acrylic. The Appellant reviewed various samples of acrylic and concluded that it needed to use high-grade high-strength extruded acrylic. The Appellant acquired the acrylic from a third-party manufacturer of acrylic.

[12] The Appellant encountered several issues in finalizing the design of the acrylic memorial niche complex.

[13] One issue was the creation of columns of niches that could be combined into the desired arc of columns. The Appellant used 3D computer-aided design software to model the columns. The result of the modelling was then tested using a mock-up built on the factory floor. An important aspect of the design was that the tolerances had to be tight so that the niche columns would line up properly when combined in an arc.

[14] A second issue was the design of a base for the columns that would support the columns while replicating the arc of the columns. Again, the Appellant used 3D computer-aided design software to identify configurations for the base. The first design was discarded because of its cost. The second design was adopted and several base plates were manufactured and tested using different means to connect the base plates. The Appellant encountered issues securing the niche column into the baseplate, which it overcame by designing a custom mount attached to the baseplate.

[15] A third issue was the design and manufacture of a traditional extruded and anodized aluminum front beam system for the niche columns. The beams had to interconnect and provide a housing for parts such as the LED light valance. The Appellant encountered issues with regard to such things as the correct position of mounting holes in the acrylic, the manner of cutting horizontal top beams for arced columns so that they could be joined, and the means of securing corner joint and T-joint rosette cover plates. The Appellant was able to resolve these issues by trying different spacing for the mounting holes, using a straight cut for all horizontal top beams and trying different means of securing the cover plates.

[16] A fourth issue was the reflectivity of the acrylic panels used in the columns. The Appellant tried different sanding techniques to dull the surface of the acrylic. After that failed to achieve the desired result, the Appellant purchased pre-finished panels that addressed the issue.

[17] A fifth issue was the design of a jig to hold the acrylic pieces together during assembly of the columns. After considering and rejecting a two-jig system (one for arced columns and one for non-arced columns), the Appellant designed and constructed a single versatile jig for all columns. The jig was designed to be very robust so that there would be no shifting or flexing during the gluing process and so that the appropriate pressure would be applied to the joints during the gluing process. The Appellant tested different configurations and structural components before achieving the desired level of rigidity and pressure.

[18] A sixth issue was the cutting of the acrylic sheets and the gluing together of the acrylic shapes in a way that was structurally sound and satisfied the aesthetic requirements of the architect (i.e., maximum transparency). Initial trials using laser-cut acrylic shapes proved unsuccessful because the cut surfaces were not flat, so the Appellant moved to machine-cut acrylic shapes instead. The Appellant encountered difficulty gluing the shapes together in a structurally sound way while maintaining the desired aesthetic. After attempting solutions such as routed grooves in the backplate to allow for proper seating and gluing of the shelves and dividers for assembly with the outer acrylic column pieces, the Appellant determined that it could not solve the assembly issues and outsourced the assembly of the columns to an acrylic item manufacturing company.

[19] In addition to the foregoing, the Appellant encountered issues with the mounting of the LED lighting in the niche columns. The mounting was complicated by the heat generated by the LEDs, the need for a certain level of illumination and the need for even diffusion of the light to avoid hot spots and cold spots. The Appellant attempted to address these issues by varying the design of the valance holding the tubes of LEDs, changing the materials used to construct the valance, decreasing the voltage to the LEDs, sandblasting the plastic tube surrounding the LEDs and adding a thin-gauge stainless steel diffuser. None of these attempted solutions solved the lighting issues satisfactorily. The Appellant then identified a different LED lighting system which eliminated the power consumption and heat issues. The Appellant designed and constructed an extruded channel-style mounting system with a diffuser cover placed in front of the LEDs.

[20] The individuals identified as involved in the execution of the Project were long-time employees of the Appellant who had experience in such matters as welding, operating the various machines used by the Appellant (such as fabricating machines, CNC (computer numerical control) bending machines and cutting machines), estimating costs for products manufactured by the Appellant and using 3D computer-aided design software. In addition, other employees played a supervisory or management role.

III. Analysis

[21] There is no material dispute as to the facts. The issue is whether the work undertaken by the Appellant in furtherance of the Project qualifies as SR&ED under the definition in subsection 248(1) of the *Income Tax Act* (the "ITA"). The Appellant says the work qualifies and the Respondent says it does not.

[22] Subsection 248(1) of the ITA states, in part:

> "scientific research and experimental development" means systematic investigation or search that is carried out in a field of science or technology by means of experiment or analysis and that is
>
> . . .
>
> (c) experimental development, namely, work undertaken for the purpose of achieving technological advancement for the purpose of creating new, or improving existing, materials, devices, products or processes, including incremental improvements thereto,
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> and, in applying this definition in respect of a taxpayer, includes
>
> (d) work undertaken by or on behalf of the taxpayer with respect to engineering, design, operations research, mathematical analysis, computer programming, data collection, testing or psychological research, where the work is commensurate with the needs, and directly in support, of work described in paragraph (a), (b), or (c) that is undertaken in Canada by or on behalf of the taxpayer,
>
> but does not include work with respect to
>
> . . .
>
> (i) the commercial production of a new or improved material, device or product or the commercial use of a new or improved process,
>
> . . .

[23] In *Northwest Hydraulic Consultants Ltd. v. The Queen*, 98 DTC 1839 at paragraph 16, [1998] 3 C.T.C. 2520 (TCC) ("*Northwest Hydraulic*"), Judge Bowman (as he then was) described the following approach to determining if an activity is SR&ED:

> 1. Is there a technological risk or uncertainty?
>
> (a) Implicit in the term "technological risk or uncertainty" in this context is the requirement that it be a type of uncertainty that cannot be removed by routine engineering or standard procedures. I am not talking about the fact that whenever a problem is identified there may be some doubt concerning the way in which it will be solved. If the resolution of the problem is reasonably predictable using standard procedure or routine engineering there is no technological uncertainty as used in this context.

(b) What is "routine engineering"? It is this question, (as well as that relating to technological advancement) that appears to have divided the experts more than any other. Briefly it describes techniques, procedures and data that are generally accessible to competent professionals in the field.

2. Did the person claiming to be doing SRED formulate hypotheses specifically aimed at reducing or eliminating that technological uncertainty? This involves a five stage process:

    (a) the observation of the subject matter of the problem;

    (b) the formulation of a clear objective;

    (c) the identification and articulation of the technological uncertainty;

    (d) the formulation of an hypothesis or hypotheses designed to reduce or eliminate the uncertainty;

    (e) the methodical and systematic testing of the hypotheses.

It is important to recognize that although a technological uncertainty must be identified at the outset an integral part of SRED is the identification of new technological uncertainties as the research progresses and the use of the scientific method, including intuition, creativity and sometimes genius in uncovering, recognizing and resolving the new uncertainties.

3. Did the procedures adopted accord with established and objective principles of scientific method, characterized by trained and systematic observation, measurement and experiment, and the formulation, testing and modification of hypotheses?

    (a) It is important to recognize that although the above methodology describes the essential aspects of SRED, intuitive creativity and even genius may play a crucial role in the process for the purposes of the definition of SRED. These elements must however operate within the total discipline of the scientific method.

    (b) What may appear routine and obvious after the event may not have been before the work was undertaken. What distinguishes routine activity from the methods required by the definition of SRED in section 2900 of the Regulations is not solely the adherence to systematic routines, but the adoption of the entire scientific method described above, with a view to removing a technological uncertainty through the formulation and testing of innovative and untested hypotheses.

4. Did the process result in a technological advance, that is to say an advancement in the general understanding?

    (a) By general I mean something that is known to, or, at all events, available to persons knowledgeable in the field. I am not referring to a piece of knowledge that may be known to someone somewhere. The scientific community is large, and publishes in many languages. A technological advance in Canada does not cease to be one merely because there is a theoretical possibility that a researcher in, say, China, may have made the same advance but his or her work is not generally known.

    (b) The rejection after testing of an hypothesis is nonetheless an advance in that it eliminates one hitherto untested hypothesis. Much scientific research involves doing just that. The fact that the initial objective is not achieved invalidates neither the hypothesis formed nor the methods used. On the contrary it is possible that the very failure reinforces the measure of the technological uncertainty.

5. Although the *Income Tax Act* and the Regulations do not say so explicitly, it seems self-evident that a detailed record of the hypotheses, tests and results be kept, and that it be kept as the work progresses.[1]

[24] Neither party presented an expert witness. In my view, the evidence of an expert witness is not necessarily required to resolve the question of whether an activity is SR&ED. In *RIS-Christie*, Robertson J.A. observed at paragraph 12:

> What constitutes scientific research for the purposes of the Act is either a question of law or a question of mixed law and fact to be determined by the Tax Court of Canada, not expert witnesses, as is too frequently assumed by counsel for both taxpayers and the Minister. An expert may assist the court in evaluating technical evidence and seek to persuade it that the research objective did not or could not lead to a technological advancement. But, at the end of the day, the expert's role is limited to providing the court with a set of prescription glasses through which technical information may be viewed before being analyzed and weighed by the trial judge. Undoubtedly, each opposing expert witness will attempt to ensure that its focal specifications are adopted by the court. However, it is the prerogative of the trial judge to prefer one prescription over another.[2]

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[1] The criteria identified by Judge Bowman were approved by the Federal Court of Appeal in *RIS-Christie Ltd. v. The Queen*, 235 N.R. 258 ("*RIS-Christie*"), as confirmed by that court in *C.W. Agencies Inc. v. The Queen*, 2001 FCA 393 at paragraph 17 ("*C.W. Agencies*").

[2] See, also, my comments regarding expert evidence in *Exxonmobil Canada Ltd. v. The Queen*, 2019 TCC 108 at paragraphs 62 and 63.

[25] In this case, I do not require the technical assistance of an expert witness to conclude that the activities of the Appellant in furtherance of the Project are not SR&ED. The Appellant was faced with several technical difficulties in the design and construction of the acrylic memorial niche columns, some of which it was able to solve through computer-aided design exercises and trial and error.

[26] The resolution of those issues that were resolved involved the application of standard procedures or routine engineering such as variations in the design of components, in the approaches to the assembly of components and in the materials used to construct components. In my view, the Appellant did not resolve or attempt to resolve any technological uncertainty.

[27] The issues identified and addressed by the Appellant were routine technical issues associated with the design and construction of an existing product using different materials. As stated by Judge Bowman in *Northwest Hydraulic*, the fact that there may have been some doubt as to the way in which the technical issues would be resolved does not amount to the existence of technological uncertainty.

[28] The Appellant attempted, but was not able, to resolve the problem of how to assemble the niche columns and it subcontracted that work to an acrylic item manufacturing company. In the absence of evidence to the contrary, I can only infer from this that that company had the experience and expertise to perform the required assembly, which suggests to me that the issues faced by the Appellant in designing and constructing the acrylic memorial niches resulted from a lack of experience and expertise in working with acrylic and not from any technological uncertainty associated with the design and construction of the memorial niches.

[29] I also find that the approach of the Appellant to resolving the issues raised by the Project was one of trial and error. Adopting the words of Judge Bowman, I conclude that the Appellant has not demonstrated that the procedures adopted for the Project accord with established and objective principles of scientific method, characterized by trained and systematic observation, measurement and experiment, and the formulation, testing and modification of hypotheses. This is reflected in the fact that there is a complete absence of documentation save for the after-the-fact summaries prepared by the Appellant's SR&ED consultant.

[30] For the foregoing reasons, the appeals are dismissed, with costs to the Respondent in accordance with the Tariff.

Signed at Ottawa, Canada, this 30th day of October 2019.

"J.R. Owen"

Owen J.

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