Docket: 2019-3354(IT)G

BETWEEN:

MOLD LEADERS INC.,

Appellant,

and

HIS MAJESTY THE KING,

Respondent.

Appeal heard on July 7, 2022, at Ottawa, Ontario

Before: The Honourable Justice Bruce Russell

Appearances:

Counsel for the Appellant: Jonathan Garbutt

Counsel for the Respondent: Dominique Gallant

JUDGMENT

The appeal is dismissed, with costs. The parties have 30 days from date of judgment to file any representations as to costs not exceeding 15 pages each, should the matter of costs not have been resolved between themselves.

Signed at Halifax, Nova Scotia, this 21st day of August 2023.

"B. Russell"

Russell J.

Citation: 2023 TCC 127
Date: 06112023
Docket: 2019-3354(IT)G

BETWEEN:

MOLD LEADERS INC.,

Appellant,

and

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Respondent.

AMENDED REASONS FOR JUDGMENT

Russell J.

Introduction:

[1] The appellant, Mold Leaders Inc. (ML), has appealed the reassessment of its 2016 taxation year and the assessment of its 2017 taxation year, both raised November 1, 2018 under the federal *Income Tax Act* (Act). The appealed assessment and reassessment each disallowed claims for scientific research and experimental development (SR&ED) expenditures and corresponding investment tax credits (ITCs) provided for by the Act.

[2] ML, located in Georgetown, Ontario, at all material times conducted a business of injection molding, computer numerical controlled machining and prototype injection molding for clientele including from the automotive industry. This work included research, design and development of new or improved molds.

[3] In 2016 and 2017, ML engaged in over 300 work assignments, including eight for which it filed SR&ED claims. For the 2016 taxation year, the SR&ED expenditures of $44,356 and refundable ITCs of $17,618 were claimed. For the 2017 taxation year, ML claimed SR&ED expenditures of $156,524 and refundable ITCs of $70,868.

[4] ML asserts that the Minister of National Revenue (Minister) wrongly denied the eight SR&ED claims.

I. Issue:

[5] The issue in respect of each of the eight projects is whether the SR&ED claim is valid.

II. Relevant Legislation and Jurisprudence:

[6] SR&ED is defined in subsection 248(1) of the Act as follows:

> "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:
>
> (a) basic research, namely, work undertaken for the advancement of scientific knowledge without a specific practical application in view,
>
> (b) applied research, namely, work undertaken for the advancement of scientific knowledge with a specific practical application in view, or
>
> (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,
>
> 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) is undertaken in Canada by or on behalf of the taxpayer,
>
> but does not include work with respect to
>
> (e) market research or sales promotion,
>
> (f) quality control or routine testing of materials, devices, products or processes,
>
> (g) research in the social sciences or the humanities,
>
> (h) prospecting, exploring or drilling for, or producing, minerals, petroleum or natural gas,

(i) the commercial production of a new or improved material, device or product or the commercial use of a new or improved process,

(j) style changes, or

(k) routine data collection;

[7] The leading jurisprudence as to SR&ED identification is *Northwest Hydraulic Consultants Limited v. The Queen*, 1998 CanLII 553 (TCC). In *Northwest Hydraulic*, Bowman, J. as he then was, established the following five factor test for SR&ED identification:

1. Is there a technical risk or uncertainty?

    a. implicit in the term "technical 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.

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.

[8] Recently, in *National R&D Inc. v. Her Majesty*, 2022 FCA 72 at para. 3, the Federal Court of Appeal (FCA) accepted the following summary of the above five SR&ED criteria:

1. Was there a technological risk or uncertainty which could not be removed by routine engineering or standard procedures?

2. Did the person claiming to be doing thread formulate hypothesis specifically aimed at reducing or eliminating that technological uncertainty?

3. Did the procedure adopted accord with the total discipline of the scientific method including the formulation, testing and modification of hypotheses?

4. Did the process result in a technological advancement?

5. Was a detailed record of the hypothesis tested, and results kept as the work progressed?

III. The Eight Projects:

[9] Mr. David Duong was the primary witness for the appellant, ML. He is ML's owner and president. I found him knowledgeable and credible. He testified in English - his fourth language. Following high school, he graduated from a two-year mechanical technician program at Humber College in Toronto. He there learned CAD/CAM design and CNC machining.

[10] CAD/CAM means computer-aided design and computer-aided manufacturing. CNC means computer numerical control machining. Mr. Duong worked for five years with a company that introduced him to mold making, and where he became head of the CNC machining department.

[11] He moved from there to a newly established company that grew quickly in the business of mold making. In turn, in 2002 this prompted Mr. Duong to start his own mold maker company, being the appellant, ML. ML spent much time in high-precision machining in the making of molds and related items. In the relevant years of 2016 and 2017, ML engaged in approximately 320 projects brought to it by customers. The projects were not carried on with SR&ED in mind. But, subsequently eight of these projects were claimed for SR&ED and are at issue in this appeal.

[12] Currently Mr. Duong manages ML, with seven persons including himself. He describes ML as primarily a custom designer and maker of precision injection molds. ML is not the molder; it manufactures molds for customers to use in production of their (typically plastic) items.

[13] Mr. Duong, testifying for ML, was the only witness with first-hand knowledge of the eight subject projects.

[14] In the following paragraphs, I identify the subject eight projects for which SR&ED was claimed, and provide brief excerpts of Mr. Duong's testimony.

[15] Project 1: this project commenced with a 2016 contract ML had with a customer, Dynaplas, for ML to design and make a 4-cavity mold for production of a particular valve for use in anti-lock braking systems in the automotive industry.

[16] The mold was to open and eject the part once solidified. Initially H13 steel was used for making the mold. The part was plastic but hardened with 30 percent glass, which made the plastic harder than ML was used to. The first mold made with H13 steel was not acceptable. The customer's testing of the mold revealed that it misaligned after a short period. After further work ML and Dynaplas agreed that W360 steel be used, which had a higher hardness rating than H13 steel. ML did not itself have experience with W360 steel. ML obtained the W360 steel from a European company.

[17] ML had to learn to work with W360, with which it was unfamiliar. W360 steel was harder to cut and grind, i.e. mill. Ultimately, eight versions of the mold were tested by the customer (not ML) and sent back to ML six times with comments for improvement. Ultimately, a mold was accepted.

[18] ML's counsel, in his direct examination of Mr. Duong, asked him what ML achieved "in terms of technology" through its work on this project:

> Q: But in terms of technology, what did you advance? What did you achieve, what did you advance? [underlining added]
>
> A: So we learned that the hard milling processing is like - - it's just like a science, you put too many - - so many things together then you can achieve it.
>
> Q: Okay. But at the beginning you said you had - - you know, you would be able to go and give it a shot. But how - - what did you anticipate the problems being versus what the problems were? Was it - - how relatively - - how hard was it relative to what you anticipated?
>
> A: We did not expect that we were going though [sic] these issues. It was some kind of - - something is just pulling you, that caught us off guard. But it's the way that we wanted to - - we don't want to keep doing those projects that we are not going anywhere. So we like to delegate certain jobs that we should take challenges or take a new approach to bring out our experience, so to compete in this (inaudible). So we learned in a hard way, yes, that's what - - have to say that.

> Q: You learned the hard way?
>
> A: Yeah.
>
> Q: Okay, after all this trial and error. Okay, so I'll - - [underlining added]
>
> A: I didn't lose my shirt yet.[1]

[19] In answering what was achieved, Mr. Duong did not identify a technological advance. Of note also is ML counsel's reference to the ML work as, "all this trial and error".

[20] Project 2: the second project was also with Dynaplas as a customer. The customer sought from ML the making of a mold for brackets, right and left, each five inches long with a cavity for installation of a camera at the front of a vehicle. Dynaplas provided drawings and specifications of the brackets to be molded. ML made such molds and delivered them to Dynaplas for testing by the customer. Dynaplas found that the design of the bracket parts created a problem with ejection of the freshly molded brackets from the mold. The mold was altered and sent back and forth six times for testing by Dynaplas. Ultimately, the last version was found acceptable.[2]

[21] Mr. Duong was asked by ML's lawyer:

> Q: …so I'm just going to ask you, so what did you achieve? What did you advance in this project?

[22] Mr. Duong's answer referenced further learning of ML in molding with new equipment, but not any attempted or actual technological advancement.

> A: We achieve a lot in terms of molding these types of materials for this. Also this is - - had kind of half million involved. But, like I say, we already learned the process even before our first project. We learned it, but you never really got up-to-date. What we learned before, before we moved to this new unit here, we are very limited of old equipment. And so we want - - and capacity. They weren't even able to talk about this kind of work. In my experience, I know I can do it. But who's going to give you a project, you know, $50,000, $90,000, and you have two guys with you, might not get it. By the way, you even - - don't even have a chance.

[1] Transcript, pp. 229, 230
[2] Transcript, p. 247

> Q: Alright.
>
> A: And then so we moved to this new facility, we were learning - - I went back on a strong (inaudible) machining and designing, that's throughout schooling and my career, so once I moved to this place I already knowing - - we didn't have this international - - so-called - - the American companies, we have a few of them. So we know that we have to in order to survive. We wanted to service the customers. So we're not really looking for work every day.[3]

[23] Project 3: the third project was again from Dynaplas as customer - to make a mold for injection molding of a fuel cap sensor – i.e., a housing cover, three inches in diameter, for an automotive sensor. Again, Dynaplas provided drawings and specifications. The mold that ML fabricated was sent to Dynaplast for testing at Dynaplast's facility. It was returned, with Dynaplast's comments including the need for the mold to better accommodate the flatness of the file cap sensor, to a tolerance of one one-thousandth of an inch. Because of the 30% graphite component of the plastic resin part, the part was sticky in being released from the mold, resulting in warping.

[24] ML chose to add further "gates" to the mold, allowing three sites rather than one for injection of component materials into the mold, as a way to solve the sticking and warping. This approach is called "mapping", to compensate for warping by select placement of first one than two additional gates. With added gates, several further molds were sent by ML and tested by Dynaplast (four times), with ultimately Dynaplast expressing acceptance. The number of gates (three) was acceptable because of the unique shape of the part, achieving the required flatness (non-warping).

[25] In direct examination Mr. Duong was asked:

> Q: So…eventually you were able to get it to the proper flatness, okay. And so what…did you learn, what was your advancement in this project from your perspective?
>
> A: We learned that this material also has a 30% of glass-filled that we learned that single gated it didn't work, so we did…again, I already said, we do a gated and it's coming close, but then it's still not acceptable. We learned that the reaction of how this mold is not normally what when we deal with consumer products. So there's so many types of molds out there nobody on earth…can do any kind of mold, nobody.

[3] Transcript, p. 246

> You just pick the category that you are able to do or you can explore to [sic] some other thing. You don't want to put all your eggs in one basket.[4]

[26] In cross-examination Mr. Duong was asked:

> Q: Okay. So what research did you do in order to get familiar with how to use or how to work with this high graphite content resin?
>
> A: It come [sic] (inaudible) back to the very first one that we tried on the internet search, it was - - it wasn't really helpful, but then he's just going along.[5]
>
> This - - one thing we learned that this material is so easy to flash even though it's so hard, the graphite (inaudible). When you tapped it with a hot object it sound like a piece of glass, that's what it is but it's not that easy to break like a piece of - - crack like a piece of glass, but it is easy to flash. And like (inaudible) 5/10ths, which is like - - I don't know what is it in - - like in micron, like 25 microns more or less, so that's fast.
>
> So they allow (inaudible) the parting lines where it meet, they allow us to a certain degree of acceptance. Because (inaudible) it is not so easy to flash compared to this polypropylene, so this you can have up to one thou cap for venting. What happen you have all (inaudible) need to be vented otherwise you're trying to inject the plastic inside, it's all compact with air then you wouldn't be able to fill it. So you need to vent it but then when you vent it too much it will flash.[6]
>
> …
>
> Q: And flash is when you get those lines - - when the material comes out of the mold a little bit, is that (inaudible/voices overlap) - -
>
> A: Yeah, yeah. See when you have a parting line in the mold it's not perfect - - then you (inaudible) a cap, for example, the bottom of it you're going to have a little piece hanging out.[7]

[27] Again, there is no apparent technological uncertainty as opposed to ML itself developing its knowledge including in working with high graphite content resin.

[28] Project 4: a customer, Intropac International, was having difficulty with a 16-cavity mold for injection molding of a deodorant barrel or canister, 4 inches in length. Intropac provided drawings and specifications. The mold was designed to be

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[4] Transcript, p. 266
[5] Transcript, p. 483
[6] Transcript, p. 484
[7] Transcript, p. 485

filled with deodorant product from the bottom rather than the top. Each of the 16 cavities had a steel core for coring the inside of the barrel being molded and filled with product to be cooled. The mold was sent back due to cracking of the cores' thin wall passage of cooling water, which stress led to leakage into the product. First, ML changed the type of steel to H13 steel. Also, it increased the wall thickness of the water passage by a millimetre. Ultimately, ML utilized push rods which were successful in ejecting the part from the mold without damage over time to other components.

[29] Mr. Duong in direct examination by appellant's counsel testified:

> Q: Okay. So what was your idea? What idea did you guys come up with?
>
> A: Well, I - - the (inaudible) 16 cavity, so you need 16 core [sic], I have - - over the last few years I have actually made them a whole set of cores, like (inaudible) and just go and - - two or four every year. So at the end I have to do something, so I sit down, instead of making a big hole through the core to push the part out, so I use a rod, like a push rod, it's a 7/8, I use a rod, only a half inch, like I took the pin, so I was able to do the hole in the core smaller. But at the front I had to get to some kind of like a mushroom head, I had to screw that in and then get a (inaudible) so that my pin doesn't spin, so I can lock it that way. So reduced the centre hole smaller from - - you have a 7/8th of an inch hole, I took a pin, but the bottom part you have to be (inaudible) a little bit, you don't want it to touch all the way that long. Nobody can make a whole that straight and precise. So we have to create(ph) a little bit in the front where the plastic molding, you want to tight [sic] so plastic doesn't flash through the hole....[8]

[30] Counsel asked also, "What did you see as your advancement in this one. What did you feel…that you learned from it?"

[31] Mr. Duong's answer:

> A: Well, I - - you know, (inaudible) and going back to him, and I feel so… Sorry. I feel so proud, yeah.
>
> Q: You feel so proud about the advance that you made because you solve [sic] your client's problem?
>
> A. Yeah.[9]

[8] Transcript, pp. 279, 280
[9] Transcript, pp. 287, 288.

[32] Again, there appears to be no indication of a technological advance for the world-wide mold making industry, as opposed to adding to ML's own knowledge and abilities.

[33] Project 5: Dynaplas as customer sought the making of a 2-cavity mold for plastic injection molding of a 5 inch tube, identified as an IEM port, for the auto industry. A mold was made from drawings and specifications provided by the customer. The part to be molded was made of resin mixed 40% with graphite. It had a 2 mm. slot with a 38 mm. depth. The ML mold was sent to the customer for testing and sent back to ML with comments for improvement. The problem particularly was machining tool that ML acquired for this job. ML did not have much experience with the machines and technique for doing this job, and achieving the required tolerance of 0.005 mm. in respect of the said slot.

[34] The different issues encountered included that the cutters (a tool) being used were breaking. ML learned from the internet how best to use them, in "playing with" the tool's parameters.

[35] Mr. Duong testified in direct examination in response to the following question in direct examination:

> Q: Okay. And so, the next version was that you changed the holders, as you said, and - - okay. And how did that work out?
>
> A: That will work better. Then we [sic] going to apply to the cutting parameters just to experience what's better. It doesn't work if - - you can't do a job when you're spending $1,000, $2,000 on tooling. I better just go back to the old way, put in the EDM machine, and let it burn. Usually that burn, like, six, eight hours. We put it common. We let the machine run overnight because most likely it's pretty safe but time-consuming. So you're trying to advance this, but you're not trying to overspend on your tuning cost. It's not going to work.
>
> Q: Exactly. So you've got to - -
>
> A: Yeah. This is all - - this is experimental process here.
>
> Q: Okay. And so, did you get back to work or what happened?
>
> A: Slowly step by step, we try - - we play with [underlining added] all the cutting parameters. Obviously, you know, we break quite a lot of tools, and weighing the tool, that a lot quicker than it should be, so we just - - we using the debit card and the mount window engagement. That will find the right parameter for each size of the tool, which is, you know, you have to come with two millimetre, and then you

> have to start with the 2 millimetre, that kind of thing, to get most of the stuff out, but that tool bigger.
>
> …
>
> Q: Right, Okay. And so, one question. You said "play around with" okay. What do you mean by play around with?
>
> A: That's what the term that we always use, which is, you know, we have to come up with theories, we call it. So how long - - when you cut with this rpm and feed and this amount of the part, what's the tool life. It's very important because the smaller tool that long, that will damage your length ratios.
>
> It will cost a fortune at one rpm, so easy, like a toothpick. It's so easy to snap, so you have to give it [sic] so the tool will last, but also you get a good finish. You don't want to pay for the polisher to remove all your roughness, so you're not going anywhere. So to win it, you have to come up with all these parameters.
>
> Q: Okay. So when you say "play", you're just - -
>
> A: It's all the adjustment and come up with your theories and look at all the - - not only - - we like to use this customer's - - the projects because they're, generally speaking, this customer's - - those projects are all the material, hardness and the requirement on the tolerances is important for you to do your scientific research. Now I'm doing some scientific research. Many companies do that just because, like, Ministry of Defence, National Defence, they bring - - they spending billions and billions of dollars. And other companies, you know, like LG and Samsung, they're doing the same thing.[10]

[36] Again the focus was on what ML learned as opposed to any achievement of a technological advance for the industry in general.

[37] Project 6: the sixth project was a 2017 order from Intrapac for the making of a 24-cavity mold for injection molding a backing plate intended for casing of a solid antiperspirant. The flatness of the plate presented a challenge, in the machining of the mold. The test sample of the mold, with one cavity, went several times to the customer for testing. Ultimately, the customer was satisfied. Then a 24-cavity mold was prepared.

[38] Appellant's counsel in direct examination asked Mr. Duong what had he achieved or learned from this project, as follows:

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[10] Transcript, pp. 309-313

> Q: And so, in a nutshell, what did you achieve? What did you learn from this?
>
> A: Well, this is our new concept of the part, that having a part this wide - - like, a standard, the ornament, just not this wide. It's a standard. So your part is shorter so you don't have too much issue of the strength that you can eject. So we learn [sic] that this one - - we thought that this could be done just the same way that we did the last project, but it's absolutely not the case, that they want the wider - - the package, the volume is more. So the full weight, you need to be more opening [sic]. So the smaller project, the part is obviously going to be stronger because it's not flimsy.[11]

[39] Again, there is no indication from Mr. Duong that any technological advance of industry proportions was achieved, rather than simply the advance of ML's own learning curve.

[40] Project 7: the seventh project was an order from customer Delmo Molds (another mold maker) for fabrication of a 4-cavity mold for plastic injection for the molding of a cap for a coffee bottle top with 3-inch diameter. The cap to seal the bottle includes a ring that encircles the bottle neck, thus termed a "flip top" cap or lid. ML produced a mold. After testing by the customer, the mold was returned with feedback. The cap's hinge, a thin plastic strip connecting to the encircling ring, presented difficulty at the molding stage. The comparative masses of the lid and the sealing ring result in differing rates of shrinkage at the molding stage, causing mis-alignment of the two ends linked by the thin plastic hinge.

[41] In direct examination Mr. Duong described what ML did:

> Q:…So what was the first problem that you faced?
>
> A: We're facing uncertainties, what doesn't comparing to what the – – the other hinges that we – – we always learn through in the past years, which is very common. And this one, we had to figure out what is even the hinges – – the height and the thickness for the material to fall through and the space between them, so when you close they will line up, right?
>
> …
>
> A: So, I'm trying to see – – we come up with a hypothesis, what is important here. Is it the flow or – – if you have too thick of a hinge, you know it's not going to work well. You have a hard time of pressing it. The material will flow too, but you have a hard time of closing. We have it too thin, the material, it doesn't really fall

[11] Transcript, p. 329

> down the other side. You inject it from this side and have to go over the hinge to fill the other side. [12]

[42] Mr. Duong said, "[s]o first time we try to push the lid further away, so it doesn't bind so it will close". He said they "did some modification" and ran "the second test and so so[the lid] come down further but it doesn't snap. It doesn't snap to it because of height difference."[13]

[43] The evidence in chief was indicative of further adjustments including as to length to achieve a workable solution. The project did not end with success.

[44] He was asked by ML counsel, "what did you achieve?" He answered:

> A: I'm not sure if I can say what I learned. At the end, I learned the hinge is very important with a few things, the space between them, the thickness for the flow, and the stiffness. If you have a 25,000 thick hinge, you're going to have a hard time to close it. 10,000 is so easy to fill. Like, this one probably is no more than 10,000. Ten to 12,000 max. So this is what [sic] we have seen many.[14]

[45] He acknowledged that this hinge case was, "different than the typical one." He added, "the thickness of the hinge was really the main issue".[15]

[46] None of this is suggestive of a technological advance industry wide, as opposed to a further step up ML's ladder of experience.

[47] Project 8: the eighth project was fulfillment of an order by customer Centennial Plastic for the machining of a two-cavity core plate for use in molding of a cylindrical auto part. The plate required an O-ring seal, free from flashing, with two degree mirrored pockets and a tolerance of 0.0002 inches. The core plate (or "mold shoe") is a surface for assembly of all mold components that slide in and out in making the molded part. ML previously had done work on core plates. Here, components on the mold plate had to tilt so that the newly molded part could be released from the mold.

[48] The mold material itself was SS4140 stainless steel which is very hard. The part to be molded was complicated and the core mold designed and made by ML weighed 400 pounds. The required tolerance was hard to achieve – vibration being

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[12] Transcript, p. 336
[13] Transcript, p. 338
[14] Transcript, p. 341
[15] Transcript, pp. 341, 342

an issue, although training was provided by the supplier to ML of a new 5-axis machine used for machining the core plate.

[49] Mr. Duong testified in cross-examination that the skill and knowledge of the machine operator was important in achieving tolerance. It was not simply the machine being used. As he said, "[e]verybody knows how to drive a car these days (inaudible), but it doesn't mean you can drive an F1, you know formula."[16]

[50] The mold was provided to the customer and its corrections/improvements continued into the following year.

[51] There appears to be no indication of a technological advance here either, but rather an advance in experience and knowledge for ML.

IV. Other Evidence:

[52] This completes the listing of the eight projects. Following Mr. Duong's testimony, ML called one other witness, being Mr. Amit Saini. He is a professional engineer and certified professional accountant. Also, he is president of National R&D Inc. (National R&D). He described that company as being essentially a tax firm specializing in research and development tax work. Neither he nor National R&D had any involvement with the subject projects while being worked on by ML. It was in the latter months of 2017 that National R&D approached ML to be retained. In his evidence he sought to criticize the Canada Revenue Agency (CRA) audit leading to the appealed assessment and reassessment. Respondent's counsel rightly objected to this on the basis that the conduct of a tax audit is irrelevant for purposes of determining the merits of any resultant assessment or reassessment.

[53] National R&D was retained to assist ML in claiming SR&ED. ML had not carried out any of the eight subject projects with the intention of claiming SR&ED for them. National R&D assisted ML in picking these eight projects, from a review of the over 300 projects ML had carried out during 2016 and 2017, for the filing of the herein SR&ED claims. National R&D was involved in preparing these SR&ED claims for submission to the Minister. The Minister audited these claims and denied them all. ML with National R&D assistance consequently served notices of

[16] Transcript, p. 520

objection, and thereafter commenced this appeal without waiting for the CRA's Appeals Division to address the notices of objection.

[54] I note also that as its first witness in this matter ML called an individual seeking his acceptance as an expert witness knowledgeable of the plastic injection molding industry. A *voir dire* was conducted on the first day of the hearing into whether he could be accepted as an expert. I rendered an oral decision finding that the individual did not have sufficient background in the plastic injection molding industry to be qualified as an expert in that industry. Accordingly, he was not accepted as an expert and his expert report was not admitted into evidence.

V. Analysis:

[55] The first question in deciding qualification for SR&ED tax incentives is whether the particular project involved a technological risk or uncertainty. As above noted, this Court in *Northwest Hydraulic* stated that the term "technical risk or uncertainty" referred to "a type of uncertainty that cannot be removed by routine engineering or standard procedures".

[56] The technical uncertainty pertains to the relevant industry, rather than a single participant in that industry. The uncertainty has to be with respect to advancement of knowledge of the industry (here the mold making industry) rather than with respect to knowledge of a single participant in that industry.

[57] In *Logic Data Products Inc. v. The Queen*, 2021 TCC 36, Justice Monaghan then of this Court observed (para. 69):

> Technological uncertainty does not arise simply because the Appellant does not have the requisite knowledge. The question is whether the uncertainty identified by the Appellant is an uncertainty to those knowledgeable and experienced in the relevant field.

[58] As well, in *Dave's Diesel v The Queen*, 2022 TCC 62 my colleague Justice Spiro specified that the concept of technological uncertainty is not subjective. He wrote (para. 28) that: "[i]f it were subjective, a grade school student trying to build a simple electric motor would meet the test."

[59] Here there was not evidence as to the overall industry state of knowledge in the context of any of the eight projects.

[60] It is pleaded at para. 24(kkkk) in the Respondent's Reply that the Minister assumed in raising the appealed assessment and reassessment that, "the Appellant did not identify or encounter any technological uncertainty which could not be removed by the Appellant's knowledge base". This assumption was not disproven.

[61] The above extracts from Mr. Duong's testimony for the eight projects generally reflect that ML's success or advancement as to those projects involved a trial and error type of approach, using methodology familiar to ML. This is not compatible with technological risk or uncertainty intended in a SR&ED context. The trial and error approach is a standard or routine methodology, as distinguished from a scientific approach to addressing a technological risk or uncertainty. There was no evidence presented showing that ML's work was other than reflective.

[62] The second of five SR&ED requirements is whether the SR&ED claimant formulated hypotheses specially aimed at reducing or eliminating any technological unknowns. At para. 24(mmmm) of the Reply it is pleaded that the Minister assumed that "the Appellant did not formulate or attempt to formulate a hypothesis". No hypotheses of ML were identified in evidence, thus supporting that ML proceeded on a trial and error ("let's try this") approach rather than on a scientific, theorizing basis.

[63] The third of the five SR&ED requirements is, 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? The answer here is in the negative. ML's favoured approach was to basically try the various options available, anticipating that one likely would work; i.e. the "trial and error" approach. The term in fact was used by ML's counsel regarding project 1, in the course of questioning Mr. Duong in reference to actions of ML.

[64] The fourth requirement is that the process result in a technological advance, that is to say an advancement in the general understanding. This requirement also was not met, as previously discussed, as there was no established technological risk or uncertainty in the first place.

[65] The final requirement is that a detailed record of the hypotheses, tests and results be kept, as the work progresses. This is a less rigorously enforced requirement. I would not say that the appellant has not met this requirement, although absent any hypotheses, and recognizing that the appellant itself does not carry out tests – which are a basic feature of scientific methodology.

VI. Conclusion:

[66] The appeal is dismissed, with costs. The parties have 30 days from date of judgment to file any representations as to costs not exceeding 15 pages each, should the matter of costs not have been resolved between themselves.

These Amended Reasons for Judgment are issued in substitution of the Reasons for Judgment dated August 21, 2023 in order to correct the word underscored in paragraph 1 hereof.

Signed at Halifax, Nova Scotia, this 6th day of November 2023.

"B. Russell"

Russell J.

CITATION:	2023 TCC 127
COURT FILE NO.:	2019-3354(IT)G
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