E-VIEW

The Journal of The British Columbia Technology Education Association

January 2017

In this edition…….

Welcome to 2017!!

Fraser Heights Secondary School community gives back a little with its 14th annual Toy Build for the Surrey Christmas Bureau.

Missed the conference back in October? Check out the BCTEA Website under Conference 2016 - District Reps Meeting for ALL PowerPoints and notes for the District Reps Meeting, Future Direction Meeting and the AGM.

President's Report

Where have all the Shop teachers gone?

Shop class is in a pickle. We have shops vacant of students due to the lack of teachers trained to teach, or wanting to teach, in the shop and I do not see a solution on the horizon. I just heard that we train roughly 3000 teachers per year for 900 jobs annually, and only 20ish are Tech Ed teachers. Talk about a shortage of skilled labor. I am going to share a bit about what I am seeing presently, and what I predict will most likely unfold, and that is a continued decrease in the number of students that get to take a shop class.

This is not about whether kids are signing up for shop class. It is evident that anywhere there is a shop teacher that enjoys what they are teaching and builds relationships with kids, the shops are fully subscribed. What I am talking about is what happens when that teacher retires? Or goes off on a leave? What is left behind are districts trying to use the same hiring practices for academic teachers, which are in an overabundance, by just posting a job at the last minute and expecting to find a suitable shop teacher ready and waiting to be hired. Following are what I am observing and what I see as a challenge and needs to be addressed.

Presently there is only one Technology Education teacher training institution in the province that trains 22 Tech Ed teachers per year. (There is not much interest in becoming a Technology Education teacher so even just one class is often a challenge to find people, let alone a second cohort). It is difficult to predict just how many shop teachers will be needed on a yearly basis, but in some districts they are relying on retired shop teachers to fill many positions or TOC. This would be an indication there is a shortage. Not every trained teacher is going to survive in the shop, so we must plan for a certain amount of occupation change for the people that leave the profession. This is just a common occurrence in any occupation, but we need to account for it.

Does anyone remember the accelerated program? A trade person only had to take 2 years off work to go to university, and then they were back making money. During the discussion around the Red Seal recognition most of us thought that it would bring something like the accelerated program back. Not even close. Through discussions with BCIT, this does not seem to be an option.

Typically when getting close to a retirement date, teachers usually put their notifications in with only less than a month notice. This can occur at any time, and is not quite as tough to fill a spot if there is a summer to find someone, but very challenging to find a replacement mid-year. This now turns into a reaction mode for districts scrambling to find someone within short notice. Often there is not someone locally who is suitable for the position and people have considerations and need time to plan moving to a new location. If we want our programs to continue to be successful we need to be more of team players, and spend some time working on succession planning for our jobs. This is something that I think we, as teachers, can work on by working through the BCTEA and letting people know that your job is potentially coming up in the near future. Having some planning time would go a long way in filling many positions. Up North I know that they are generally looking to other provinces to attract shop teachers to their regions.

The consequence of not having a qualified Tech Ed teacher available to teach in a school shop is a sad prospect in my view. The only other option is to allow non-Tech Ed trained teachers, or tradesman under letter of permission. All of the options bring fear of the "slippery slope" by allowing non-qualified people in to teach in the shop. Each of us has a different opinion and perspective on this, so I am not sure how likely that we could come to some agreement on proceeding as an organization around this. This same type of issue is why the Red Seal certification will not work. A clear understanding of the end goal is important to keep in focus. If you presently see underutilized shops, or shops that do not have a teacher in them, we may see a lot more as it becomes more and more difficult to replace shop teachers.

Ideally, if you wish to do some succession planning by passing on the torch, the BCTEA could help connect new teachers or teachers that want a move, together. The BCTEA Facebook page is a great venue for this, as it is only seen by shop teachers. With the new court ruling there may be even more demand for qualified shop teachers. We should all be recruiting young people to consider becoming a Tech Ed teacher!!

New/Returning Executive Member

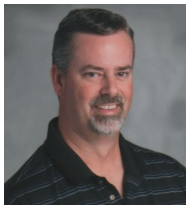
Randy Grey
President

The position of president was up for election at the AGM during the October 2016 conference in Kelowna. Randy let his name stand for another 2 year term as president of the BCTEA which went uncontested and he returns by acclamation.

Randy will continue to work hard promoting Technology education for the BCTEA membership and help direct us through the next couple of years as we move into new curriculum, new grade levels and a changing landscape with ADST and Trades training.

Welcome back Randy!!

Steve Claassen
Communications: EVIEW Editor & Webmaster



The position of Communications was up for election at the AGM during the October 2016 conference in Kelowna. Steve let his name stand for another 2 year term for the position of Communications for the BCTEA and he returns by acclamation.

Steve will continue to work hard keeping the membership informed through various communications (Facebook, Eview magazine, BCTEA website and the listserve) and work at keeping an up to date and accurate database of all Tech Ed teachers in the province.

Welcome back Steve!!

Eric Banks
Member At Large - Marketing Member Liason

My name is Eric Bankes, I have become the newly elected Marketing Executive for the BCTEA. I work in the Surrey School District as the Department Head of ADST- Technology Education at Tamanawis Secondary School. I am a large supporter of the new curriculum and believe it showcases the best of teched practices.

My teaching areas have focused towards Coding for Manufacturing, Woodworking and Robotics where I have been introducing the design thinking process and the new curriculum. I have been heavily involved in assisting Zale Darnel to introduce ADST to elementary grades with tools for schools and makerdays. I have also been involved in introducing makerspaces to secondary teachers across our district. I am currently focussed on the construction of a Teched style makerspace at Tamanawis Secondary where elementary school classes will be welcome to come learn about teched and use some of our hand tools. I am also recently beginning an initiative to revamp our assessment practices.

I look forward to taking the seat of Marketing Executive and continue the BCTEA's relationship with our suppliers and expand our supplier base. As well as support our members in the transition to the new curriculum.

PSA Superconference Sessions and Workshops

The PSA Superconference will bring together 26 Provincial Specialist Associations at the Vancouver Conference Centre for a two-day professional development event on October 20-21, 2017. The BCTEA will be apart of this Superconference and will not be holding a regular conference until the Fall of 2018.

Interested in being a part of the program?

- Topics should address or integrate multiple areas/broad areas of interest.
- Session times will be 75 minutes.
- Audiences will range between 40-150 people.

What would I receive as a presenter per session presented?

- Free registration at an amazing professional development event!
- Up to a $100 contribution toward expenses.

How do I demonstrate my interest in being a presenter?

- Sessions must be sponsored by participating PSAs. Please contact one of the participating PSAs (list on back) for more information.
- Presenters will be notified about session acceptance after March 1, 2017.

Have an Idea?

Contact the BCTEA Executive: info@bctea.org

Should a SawStop be in Every School?
A Middle School and Secondary School Perspective

By: Steve Cecchi & Paul Klein

Steve Cecchi (SD #33 Chilliwack) - I have been teaching Grade 9 middle-schoolers how to use a table saw for over 20 years. Of all the machines and techniques that I introduce to these young builders, none are more intimidating for them than the table saw while at the same time, demanding of them a thorough and in-depth understanding of how the saw works. Over the years, I have strived to inform students as to the very basics of table saw operation, ripping and cross-cutting, how each type of cut is made, proper set up etc and the required safety devices available on table saws that keep operators safe: splitter (riving knife), kick-back guard, blade guard, cross-cut sleds, and push sticks. I take this approach with the hopes that if my students eventually encounter table saw work in other settings, particularly work sites or in their home garages, they will hopefully remember those safety devices that are meant to keep them safe.

Being middle school students, and table saw users for the first time (usually), I check each student's set up and supervise every cut made, allowing me to gauge a student's understanding of what he/she is about to do, watch their technique (hand placement, body position, etc) intervene if I have to, and then provide immediate feedback following their cut.

For years, I have taught on standard school issued cabinet-style table saws. Four years ago, I decided it was time to upgrade to the new Saw Stop technology and outfit our shop with 2 new table saws. All of our 5 district middle schools now use this technology. I have found the Saw Stop to be a very good table saw. Plenty of power (I have the 5 Hp version) that easily handles the basic cuts that students make on their projects. Easily adjustable uni-fence with positive lock that stays solidly locked in place. Smooth operating height and blade tilt wheels with large, easy to use lock-knobs. A large, paddle style power switch that can be kicked off by the operator if problems are encountered mid-cut (a great safety feature!). And excellent guarding, including blade guard, riving knife and kickback fingers.

It's a great saw, and when you consider its safety feature (the Saw Stop technology), it becomes an exceptional saw. The piece of mind that it provides for me while I teach new users is immeasurable.

When I first started using the saw with students I debated whether or not to explain to them how the technology worked. My thinking was that I didn't want students to approach the table saw

Should a SawStop be in Every School?
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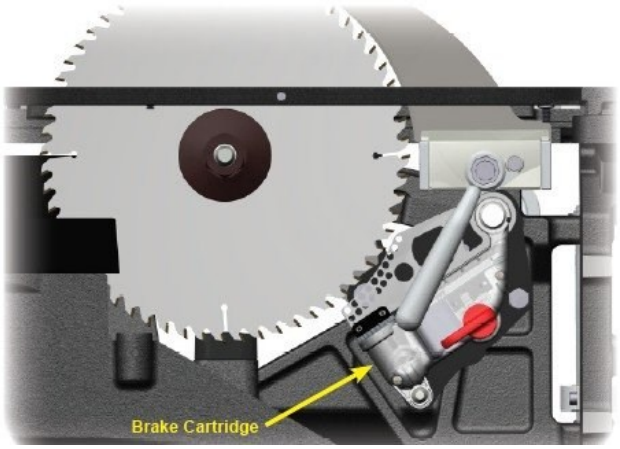
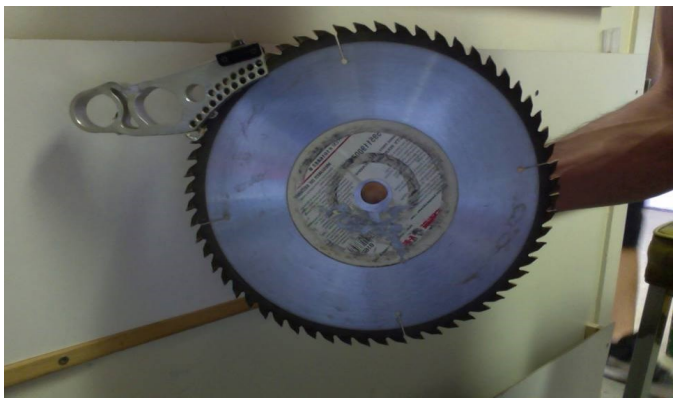
and think that it's impossible for them to get hurt. I still try to impart to them the importance of knowing how a table saw works, the safe was to make cuts and the guarding that should be present on a table saw, because, as I said earlier, when students leave my shop, the next table saw they use may not have Saw Stop technology.



Now, I teach students how Saw Stop actually works and I show them some video of our saw actually being deployed by a Saw Stop rep. They think it's pretty cool. Four years on, I have not had a deployment of the Saw Stop. In my previous 20 years I never had a student injured while using a table saw. The only difference now, is I'm a little less stressed out when a new user fires up that machine for the first time!

Paul Klein (SD#72 Campbell River) - I remember first seeing the Sawstop technology demonstrated at a BCTEA conference quite a few years ago. One of the salespeople from KMS ran a hot dog along a mitre gauge very quickly into the blade. The blade stopped immediately and hardly left a scratch! Apparently, when the blade senses hot dog (or flesh) it discharges a spring, allowing a sacrificial cartridge to be munched in the rotating saw blade and stops it within 1/3 of a revolution!

Teaching in a crowded high school wood shop with students of all abilities and needs can leave one feeling a little nervous when the table saw starts up. Over the years we haven't had too many mishaps—there have been a few kickbacks (one breaking a student's belt buckle) and just last year we had an international student catch their fingers in the blade as it was winding down. We were crosscutting a 12" X 12" laminated panel (using the Excalibur crosscut fence) for the bottom of a serving tray. I demonstrated how to properly hold the wood and slide the fence system with the other hand. The panel was cut just fine, but as the saw slowed down, they felt the need to clear their offcuts away from the blade. As this happened it seemed like time stood still. I asked if she just put her fingers in the blade—"yes" she said, "but it didn't even hurt." I asked her to let me have a look and as she removed her other hand from holding the cut I could see that she had indeed caught her fingers in the saw. We fetched some clean rags, I shut the shop power off and walked her down to the first aid



attendant. She ended up needing about 6 stitches but was very fortunate the cuts were not deeper. I had been requesting that our three cabinet-making saws be upgraded to Sawstops for a few years, but it wasn't until after this mishap that it finally happened. Our district was able to secure funding for 3 out of 8 saws last year. I chose to have the new saw replace our main "ripping" saw

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in the middle of the shop. We ordered the industrial 3 phase saw with the 5 hp motor, 52" fence and optional sliding crosscut fence. The difference in quality from our previous Delta Unisaw is incredible. The fence is dead accurate and easy to set, the on/off button is large and easy to reach, the dust extraction is much more efficient and the best feature of all—not the sawstop cartridge ready to spring into action if an accident happens—but the riving knife! It's so much safer and easier to use than our previous "splitter". As students performed various procedures (non-through cuts or thin cuts) each class, I'd always have to remove and re-install the splitter for them. Now the riving knife stays put, sitting right behind the blade and just below its surface. This small change has decreased risk levels big time!

There were some reservations in our district that students may want to try setting the cartridge off to see if it really works or just farting around. There have been no attempts and students still have a healthy fear when using the machine.

If you haven't had a chance to check out this technology, I encourage you to look at the promotional videos online. I feel that if we as educators, responsible for student safety, know this technology is out there we should be vying to have it installed in our work spaces, not only to keep students safe, but to keep us safe!

Now over 315 Members

Facebook Page Update

The BCTEA Facebook page has hit 315 MEMBERS!!!. You can "JOIN" the group if you are a Tech Ed teacher in a BC school. Only members of the group can POST and see other posts from members. Please "JOIN" the group @

https://www.facebook.com/groups/bctea

Fraser Heights Secondary Toy Build

By: Martin Lim

This past December, we held our 14th Annual Toy Build for the Surrey Christmas Bureau. It all started way back in 2002, when we built 10 rocking sea planes. This year, 2016, we built 48 rocking toys, 16 of each, a plane, a dinosaur, and new this year, a moose. Over the years, we have built over 400 units. The Toy Build, done afterschool in our school shops, is one way the Fraser Hts Sec. community gives back a little to the city. Volunteers: staff, students, parents, and other community members - cut, paint and help assemble the toys, over a two week period. All materials and supplies are donated as well. For the shop teachers at Fraser Heights Secondary, it's very long days… but well worth it. Totally exhausted, all of us feel that once the final touch ups are completed and the Toys are loaded into our District 5 ton truck for delivery to the Christmas Bureau, we know that we have helped to make Christmas morning special for a little one.

This year, the Province Newspaper did a story for their Empty Stocking Fund.

http://theprovince.com/news/local-news/handmade-wooden-ride-em-toys-bring-christmas-joy-to-surrey-kids

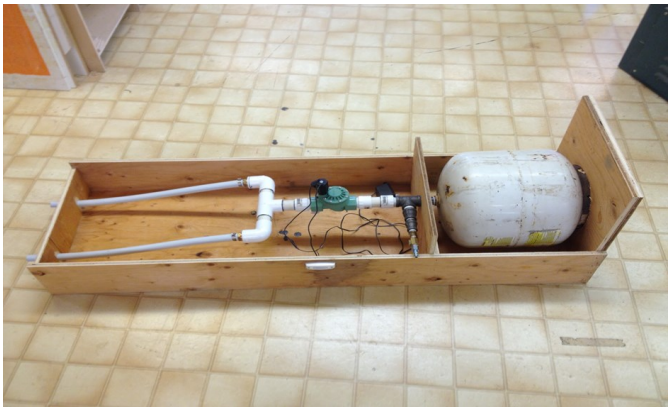
If anyone would like more info or has questions/comments, please give us a call or send a note.

Wishing you All the Best for 2017

Martin, Chris, Andy and Sharissa

Compressed Air Drag Car Blaster

By: Glen Friesen



Here is a basic how-to build for a compressed air blaster. I got the idea from a BCTEA conference workshop a few years ago. That one used a welded air tank, I only have a woodshop and do not have access to a welder so a welded tank was out. After a little research I found that 20lb propane tanks can be adapted quite easily. I had an expired one sitting at home so that is the route I went. Total cost was about $50, so less than one class worth of CO2.

So here we go:

1. Find an expired propane tank, your standard 20lb BBQ tank works perfectly.
2. Ensure the tank is fully drained, I let mine burn out on the BBQ, it's a good excuse for a steak or two.
3. Remove the valve from the tank, large pipe wrench gets the job done quick. It will smell like propane for a long time, don't worry about it. I rinsed mine with water several times and it still smells like propane the first few times I fire it every year.
4. Collect your parts at your favorite hardware store. The propane tank uses standard ¾" tapered pipe threads so it is pretty easy. Main thing to get is your sprinkler valve, I went with a 1" to maximize air flow. I pieced everything together in the store to make sure it would work together.

5. I used a 2" length of pipe from the tank to a Tee.

6. The straight flow through the Tee goes to your sprinkler valve. I used a 1" valve so needed a ¾ x 1 male adaptor in PVC. Then a short chunk of PVC and your 1" threaded adaptor for the valve.

Compressed Air Drag Car Blaster

7. The air is supplied through the first Tee. Collect the adaptors and spacers to work down to a ball valve and a male air line connector to fit your air supply. The Valve is not really necessary but I like to have it there.

8. The valve runs on 24v so you need to find a power supply, I found an old one sitting in the shop. Any low voltage switch will work to open the valve. I used a doorbell button as it was cheap and easy to mount to my plywood frame.

9. Build a basic plywood frame to hold it all together.

10. Height is easily adjusted with a block of wood and a spring clamp.

11. Height is easily adjusted with a block of wood and a spring clamp.

A few notes on this system:

1. It is very adaptable, swap out a few parts and you could launch rockets with it.

2. I change my racing format every year. All out speed is fun but when you have cars crossing the finish line upside down the quality of their build does not seem so important.

3. Because you are not limited to a set number of launches like CO2 you can try different things. This year we kept dropping the air pressure at the regulator and looked for the lowest pressure to still cross the finish line. Winner was about 25PSI, I need a better regulator as it is hard to control the pressure at that level with the old screw type regulator.

4. Depending on how long your track is (I run corner to corner in a small gym, think elementry school size) you can adjust your air pressure. I find about 80psi a good race. We have had to use a slow motion camera (Iphone) and video review to determine winners.

Compressed Air Drag Car Blaster

5. It does not take a large compressor to run but it helps. I used my portable Makita from home last year as the gym was booked and I had to run a hallway that my airline from the shop would not reach.
6. Holes in the cars need to be drilled a bit bigger, ⅞" diameter. 2" depth is fine but deeper will go faster.
7. I run basic CO2 car rules from online, get as picky as you like.
8. You could run two valves and let the kids drag race but then you are relying on reaction time and can't really assign a mark based on how well they do. With the even start of one valve it is pretty easy to see who did a better job with their build quality.
9. Wear hearing protection, this thing is loud when it launches.

Parts list:

Expired 20lb propane tank
2" long ¾" pipe
¾" threaded pipe Tee
¾" x 1" PVC male adaptor
Length of 1" PVC pipe, you only need a foot or so.
2 @ 1" male PVC adaptors
1" sprinkler valve, threaded female
1" PVC Tee
2 @ 90° 1" PVC elbows
2 @ 1" to ¾" PEX adaptors
Length of ¾" PEX and clamps
1" long ¾" pipe spacer
¾" to ½" pipe adaptor
1" long ½" pipe spacer
½" to ⅜" pipe adaptor
⅜" to ¼" brass adaptor
¼" ball valve
¼" male to male
¼" male air chuck
Scrap plywood for the base

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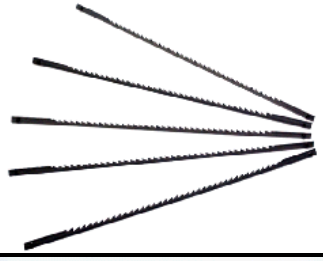

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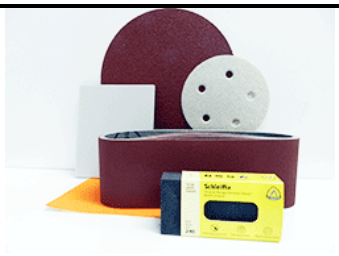

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