

# THE CHIP FLYER

## Golden Horseshoe Woodturners Guild Newsletter

No. 95

February 2005

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### Program Night

### Wanted

**17 Feb** Finishes, their use and application.

Group presentation:

1. Eugen Schlaak oils;
2. Malcom Cumming lacquers; and
3. Glen Mott varnishes and hand finishes

Lew Rowlands

**Peter Midgley 905-628 0836**

A lathe banjo with the cam style locking device similar to General style. Any make will do, but I need a 1" hole for the toolrest.

I would prefer a higher tool rest position as per the Club's lathe but lower is fine.

E-Mail: [petermidgley@sympatico.ca](mailto:petermidgley@sympatico.ca).

### Hands On

**13 Jan** (Think Tank) Tool sharpening challenges many wood turners. Everybody who has been turning for a while has his or her own technique. Bring a tool you made, one with that special grind or simply come with your questions.

**10 Feb** (Demonstration) Joanne Hallman will come and show us how to make elegant wine stoppers. Bring your tools if you want to give it a try.

**10 Mar** (Think Tank) Turn a pipe, yes, the kind you smoke. This is rather unusual, but that is the "raison d'être" for the Think Tank". You can search the internet, it has lots of info on turning pipes, including shapes. We might even try them out with some good tobacco.

**14 Apr** (Demonstration) Robin Le Sage will demonstrate how to make mosquito houses. Bring your tools if you want to give it a try.

**12 May** (Think Tank) How many music instruments can you make using a lathe and a little bit of wood? Stick, maracas, musical bowl, flute, drum, Crum Horn? Bring your creation and we can try it out.

**09 Jun** (Demonstration) To inspire you for the summer, and the Think Tank in September, Kevin Gillespie will show us his technique on lidded boxes.

**8 Sep** (Think Tank) Bring your lidded boxes, big, small or round.

**13 Oct** (Demonstration) Dave Page will show us how to make one of his best crowd pleaser; a top and launcher. Another great idea for Christmas.

**10 Nov** (Think Tank) This is turning into some kind of a tradition, bring your latest Christmas ornaments ideas to inspire your compatriot.

Robin Le Sage

## President's Message

I think the -25 degree Celsius morning has frozen my brain. I know Frank has a deadline to meet for the Chip Flyer and I am having a hard time being creative this week. Forgive me if I ramble through a few topics. During Chester's presentation on dust collection last month, I could not help thinking of the time I spent in hospital almost 25 years ago. It was due the effects of inhaled dust and dirt while in the early stages of renovating the old farm house we had purchased in the mid-70's. Even then it took me another 20 years to buy a proper dust collector. It is a modest 1 HP model that allows the use of one connection at a time and cost me under \$250. I did not follow all of Chester's rules, but it gets the job done. Even better is the air helmet Santa brought me last year. If you want to learn more about the topic, there is an abundance of information available on the different woodworking forums on the internet. Wood Magazine has one forum devoted to it that you can find at

<http://dgroups.woodmagazine.com/n/pfx/forum.aspx?webtag=airfiltration>.

Wood dust is a known carcinogen, in addition to all of the lung discomfort that it causes in the short term. When you are looking for that next woodturning

toy, think of a dust collector instead of another gouge or chuck. Your life depends on it!

I have had a couple of emails and a card from Don Smith at The Forest of Bere Woodturners in the UK. Their Newsletter editor Derek Blake has sent me their December Magazine in Adobe pdf format and I am going to ask Frank to post it for a short while at his site where you download the Chip Flyer. It is in an A5 format so I haven't tried to print it out yet. They are going to include a brief note in each issue about the GHWG.

Since our Canadian dollar has strengthened, membership in the American Association of Woodturners has become much more reasonable. It looks as though we will likely be able to stop buying liability insurance as the AAW has a Group Policy that covers chapters. I will have some flyers at the next meeting or you can visit the website at

<http://www.woodturner.org/>

for more information. Check out the Chapter Challenge for the next meeting in Kansas City while you are there.

Keeps those chips flying and the dust under control.

Mike Brazeau

## Show and Tell



## [GHWG Market Place](#)

### FOR SALE—Al Murphy 905 562 3875

Rockwell/Beaver, 10" bandsaw, with 2 brand new blades (Viking), still in wrapper, Phenolic guide blocks. Several used blades (still good). 1 HP, ~9" throat, 6" depth of cut. \$200 OBO.

[amurphy8@cogeco.ca](mailto:amurphy8@cogeco.ca)

2005-02

### FOR SALE—Ken Goldspink 519-396-3787

The Dennis Stewart Hollowing System

The Set Includes the following components:

1. The Hooker Tool
2. The Armbrace
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6. The Extension Handle
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9. The Omnitool Shank
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14. Instruction Manual

When purchased new this entire set cost me close to \$600.00 Cdn. Now for sale at \$300.00 Cdn.

E-mail: [kengold@bmts.com](mailto:kengold@bmts.com)

2005-03

### FOR SALE— Wayne Heisz 905 336-5024

From the estate of Wayne Marsden

Makita portable thickness planer with stand

Model 2012

12" width x 6" thick \$ 400.00

Specs on above can be found at [toolnewz.com](http://toolnewz.com) under comparisons

Also available is a 10" Craftsman radial arm saw.

E-Mail: [wayneheisz@hotmail.com](mailto:wayneheisz@hotmail.com)

2005-02

### FOR SALE— Guy Mechan 905-336-8549

Carbatec Lathe with 1/4 HP motor 2 live centres and mandrel, 6" tool rest, drill chuck, \$300.00

Record CL-3 lathe with bowl turning attachment, mounted to workbench \$1500.00

brand new Woodcut hollowing system including straight shank, hook shank handle \$150.00

Woodturning blanks, various hardwoods such as walnut, cherry, mullberry maple etc

2005-03

The Marketplace Column is a free service for all Guild members. Woodturning, woodworking or related items are welcome for the Sale and Wanted Sections. Contact: Frank Luet at [frank.luet@sympatico.ca](mailto:frank.luet@sympatico.ca) or phone (905) 847-7339. Items appear in this column for two consecutive months, or extended by request. If you sell your item, please let us know

## [Show and Tell Some More](#)



## [The Graduate: Retold for Woodturners](#)

I own a Graduate bowl turning lathe. It was made in Heckmondwite, Yorkshire and came equipped with a 1HP 220V motor (Canadianised with a 60 hz Motor). The pulleys on the head and the motor allowed a slowest speed of 496 rpm. There is very little room in the lathe head or at the bottom near the motor for fiddling around changing pulleys- it is time consuming, frustrating and painful unless you have no joints in your fingers. Motor access is through a side panel near the bottom, top pulley access through a 6" hinged panel at the top:



Hence, the brilliant idea of fitting a variable speed motor. Because the Graduate will turn up to 19" dia over its fixed bed and any size if the opposite bed were to be removed, I decided on a larger motor. Looking around for a while, I decided to buy used equipment. I went to Systems Drives Controls in Cambridge.

I quickly eliminated DC motors because the ones I saw at 2HP would not fit inside the Graduate body. Hence AC it was. For a VFD I bought a Cutler Hammer #AFM1220D 220V single phase input with a 240V three phase outlet to match the 2HP Lafert three phase 240V motor I purchased. The 1220 provides variable speed (0-whatever you program in), reverse/forward, the capability of working from a lathe mounted control box, and all manner of programmable things such as preset speeds, adjustable acceleration/deceleration, etc., etc..

Now the fun started. The motor in the Graduate is on a hinged plate in the bottom. Only one of the motor holding bolts was visible, the second I could just touch, the other two totally inaccessible from the side panel (see photo). I had to tip this 300lb beast onto its side to gain access to the motor up through the bottom. This lathe is not square-it is a tapering oval shape without corners about 4ft high, and when you tip it onto its side, it decides the position it will come to rest at, not you. My beastly

decided to come to rest, after sliding around on some logs I had used Anchor Seal on (not a good idea- wax is slippery) on the lathe stop button, which it promptly destroyed.

I removed the motor ( the bolts were British Whitworth for which I had no wrenches, of course) to find the new motor's base did not match the lathe hinged plate at all. I had to fabricate a 1/4" thick steel plate to which I bolted the motor into threaded holes (three, the end of the tap is still in the fourth!) and then which I bolted to the lathe plate. I realized then I couldn't get to the motor terminal box to connect the motor, so took it all out again, wired a cable to the motor and put it back in.

The motor shaft was metric (24mm) as Lafert motors are made in Italy. I had to order a special pulley, smallest size available 3". That finished mechanical work.

I mounted the VFD on a nearby wall through its own disconnect box, wired up a lathe control box with a 10K potentiometer, a reversing switch and a 500rpm preset speed switch. I used the lathe's existing on/off buttons (well, a new "off" button) and safety micro switches on lids, panels etc. connected to this new control box. I ended up with nine wires in a shielded cable from the lathe to the wall, as well as the armoured power cables.

So, to date, I had started on a Saturday morning, went through Sunday and five evenings. I had thought that the Saturday would be enough!!

When I turned it on I found the VFD had a programming password that the previous owner had used and which I did not know. After four phone calls to Cutler Hammer to find out how to get past this, and having done a preliminary bit of programming on the unit, I pressed the button, and it worked!!!!

OK, I thought, it's a 19" bowl for me! I had a piece of Manitoba maple that would just do the job nicely. I mounted a 6" face plate onto the wood and just managed to lift it onto the lathe without irreparable damage to my back or other parts. The fastest possible this unbalanced piece would turn at without an enormous wobble was 100rpm. I applied the roughing chisel and the wood stopped turning! Turns out that the motor, at 100-rpm lathe head speed, was turning at 200rpm. It had no torque- I could lean on the bowl and it would stop!!

*Continued on page 5*

## [The Graduate- Retold for Woodturners-Continued](#)

*Continued from page 4*

Then, “she who must be obeyed” came down to my shop (the garage) and told me there was a vicious crackling on CHCH when my lathe was on. The neighbor also came round a few minutes later and told me the same thing. Apparently a VFD sends variable frequency signals to its load and to its source, it up its feed into the house-wires. Not knowing the real solution, I decided that the 10ft long signal wires between the VFD and the lathe were acting as an aerial and needed to be shorter. I put a call into the guy I bought the VFD and motor from but he wasn't there. Soooooo, I totally dismantled the wring/cabling, and spent a whole day moving the VFD (which requires a vibration free location) onto a wooden assembly, that I had to make, screwed it to the garage ceiling above the lathe so that the VFD is about 10” from the control box. After reconnecting the 15 cables/wires etc to the system at 5pm I turned it on again and CHCH disappeared into the static. The VFD guy called at 5.10pm and told me that a VFD would indeed do what it was doing, and I needed a Radio Frequency Filter. Next day, I drove to Cambridge, bought a RFF for \$80.00, and fitted it into the system, having to build a box around it as all its terminals are exposed to fingers etc.

Turned the lathe on, CHCH was OK. Another problem solved. However, I still wanted a lathe that would turn a big bowl with some gusto.

The original 1” –2”– 4”- 6” pulley on the old motor had a 5/8” hole and the new motor shaft a 24mm hole. I got a friend to drill out the old pulley for me. The theory is that a 1” pulley will turn the lathe shaft at 100rpm using its 6” pulley with the motor turning at 600rpm, or 30% of its rated speed instead of 200rpm, or

16% with a 3” : 6” pulley system. More revs, more power. It did not make a whole lot of difference but it certainly helped. I may try bolting the lathe to the floor or weighting the base.



*Motor Housing*

So, after this litany of originality, stupidity, guesswork and a very small bit of absolute brilliance, I have a variable speed lathe with a 2HP motor which works just fine. Was it worth it? Yes, I can turn unbalanced large pieces slowly and crank up or down easily to what I might ever need with other pieces. Total cost about \$500.00, total time about 50 hours.

I have learnt that you should try to balance large pieces as much as possible before trying to turn them no matter what lathe you have, a lot of theory about VFD's, that AC motors like to operate as near as possible to their rated speed, and that this is one hell of a hobby!!!

Pete Midgley

## [Longworth Chuck – Part 2](#)

We have just finished laying out the arcs that will be cut using a router and a router trammel. In the case of this example we have laid out 6 lines that are 60° apart. If you were going to make a 4 jaw chuck the jaws would be 90° apart.

13. Prepare the router for use. The router bit needs to be the same diameter as the carriage bolts ( 1/4” ). It will need to be long enough to cut through both the plywood and the particle board. Set it up so it will swing about the centres that we laid out in step 12. The radius of the swing is the same as that used on the compass. The slot is cut so that it just outside the inner circle and swings out to touch the outer circle, Set the radius carefully because once you have

started, you may not change it or allow it to change.

14. The direction of the swing depends on whether you want to use the chuck inboard or outboard. The basic intent is to end up with the slots arranged so that the chuck will tighten when you start cutting. This is a bit tricky because the slots for both disks are cut at the same time. The plywood disk will be reversed later on in the procedure.
15. In the case of inboard usage you have the router positioned clockwise from where the pivot is. Reverse the direction if it is to be mounted outboard. (Anti-clockwise instead of clockwise.)

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16. Now begin cutting the slots. They begin at the outer circle and finish when the router reaches the opposite side of the inner circle. Make sure you do not exceed these positions. Make sure also that the point of radius of the router is correctly located. Increase the depth of each cut slowly. Take much time and care over this stage of the chuck's construction. Its ultimate accuracy will depend on how well you do this routing. Continue cutting each slot until you come through the other side.

1. When the routing is completed, you should cut several finger holes. The purpose of these is to assist in the rotation of the chuck disks when positioning the bowl to be worked. Make four holes, about 5/8" across, near the edges in an area well away from the slots.

17. Finally drill a hole through the centred of the plywood and particle board disks and on into the wood block. Ultimately the plywood disk will be located on the particle board disk by a screw. The first drilling should be deep enough to take the length of the screw and no wider than is necessary to allow the screw to bite into it. Now use a drill bit the

exact diameter as that of the screw. It is essential to have a snug fit. Drill only through the plywood disk.

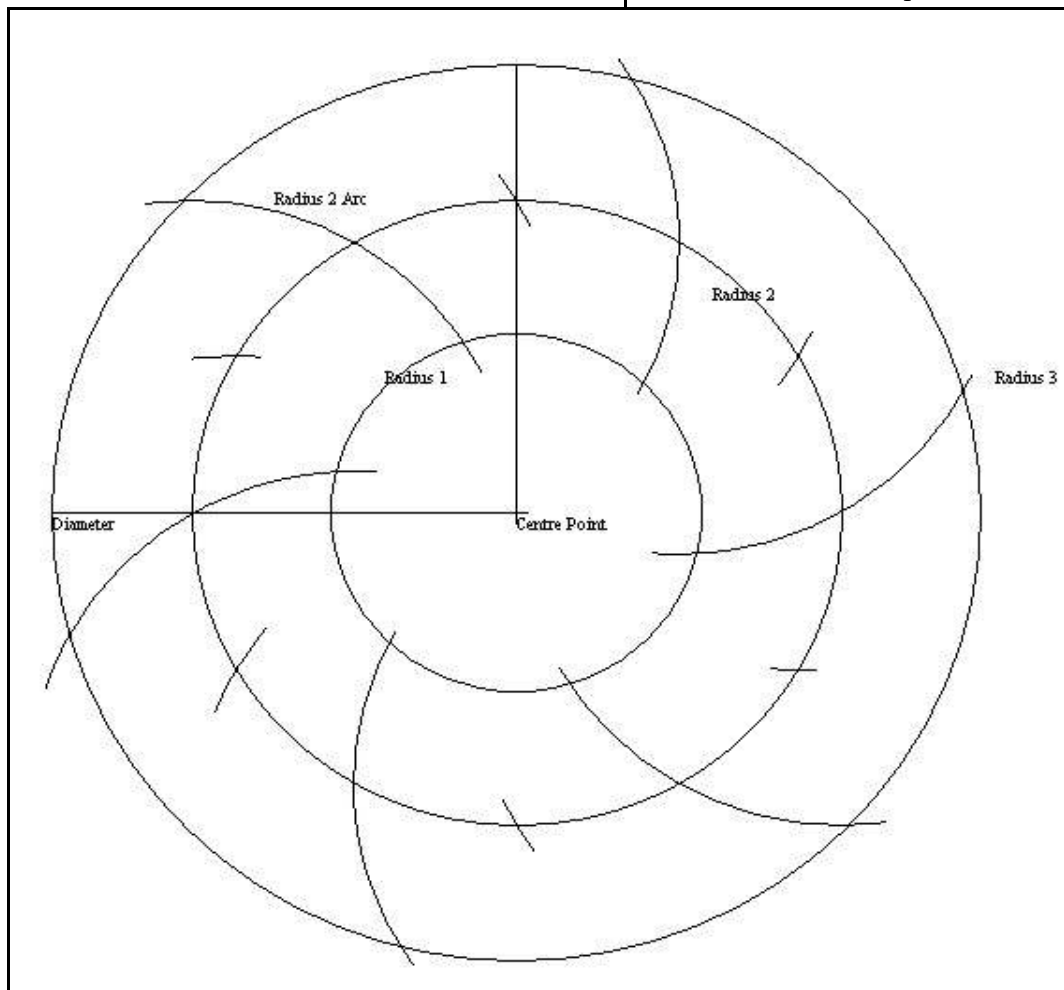
18. Remove the tacks holding the disks together. Rotate the plywood disk. If you have cut accurately, each set of slots will line up exactly with the next set. Lightly sand the slots to ensure that the carriage bolts will move easily within them.

19. Wax the surface of the particle board and the slots. Place the plywood disk back onto the particle board but reverse from what it was before. The upper surface is now against the particle board and its other side is now uppermost. With the particle board disk reversed the arc shaped groves now for an "X" with a hole where the groves meet each other. This is where the carriage bolt that holds the jaws goes through the wood. As you rotate the disks in opposite directions the hole either moves towards or away from the centre of the chuck.

20. Screw the plywood disk to the particle board disk through the centre until the screw is fully home but still allows the upper disk to move freely.

21. Assemble the jaws with the wing nuts to rear.

The chuck is now completed.



Thomas Hurst  
Frank Luet



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## Dust Collection

I attended the presentation on dust collection given by Chester VanNess. Several points about best practises came out of it.

1. Shop vacs are not dust collectors they are vacuum cleaners. They don't move the volume of air that you need. They use a high speed turbine to move the air and the air is used to cool the turbine. Dust gums up the bearings and causes it to overheat. The motors are not designed to run for hours at a time. You can also laugh at the so called horsepower ratings. A 110V 15Amp circuit puts out about 2HP of electrical energy, it is absolutely impossible to get more mechanical energy out than the electrical going in, in fact it has to be less.
2. The dust that causes the most health issues is not the big chunks or shavings, its the fine particulates. To get that out you have to have good, well maintained filters that catch sub 5 micron particles. Many retail dust collection systems come with 20 micron filters bags so you either have to get new ones or make sure they are correct to begin with. Chester had examples of 5 micron washable bags as well a 1 micron replacables. 1 micron is better but more expensive since you have higher replacement costs.
3. The system has to move enough air for the largest machine you plan to use. If you are going to use more than one at a time then you have to add the requirements together.
4. The more piping you have the more loss there is and the bigger the impeller has to be.
5. Use pipes that are the same diameter as the unadorned outlet of the impeller. If it has one of those "octopus" attachments take it off and use pipe that is the same diameter as the hole. Branches can be the same diameter as the hole on the machine's dust collection hood but should never be less than 4 inches. The typical header size for home shops is 6 inches.
6. The only place to have a "T" junction is just before the intake to the impeller of a one stage unit. It should be oriented so that the leg is facing down. It will catch large chunks before they go through the impeller. Empty it out every day so that it doesn't fill up. All other junctions are "Wyes".
7. Stove pipe or heating and ventillation pipe are designed to move air that is under pressure and are made from light guage metal. A dust collection system creates a partial vacuum which can collapse that type of pipe. Chester recommended at least 28 guage pipe.
8. A one stage unit sucks air and particles through the impeller and into a filter / catch bag setup. A two stage unit sucks air through a cyclone separator before it hits the impeller. The cyclone, when properly designed, separates 80~95% of the particles so that only fine stuff goes through the impeller and into the filters. Cyclones seemed like a very good idea to me. A garbage can with a plastic lid will take out some big stuff but it is not a cyclone.
9. If you locate the impeller outside the shop then you have to provide air to replace the air you're sucking out. This either comes from outside or via a return from wherever the impeller is. If you heat or air condition then the air return is the way to go.
10. Any runs of plastic hose should have a bare metal wire run through it and that is connected to the metal pipe. Everything should be bonded electrically and grounded. You can use an ohm meter to check this.
11. All piping should have smooth interiors. 90 degree elbows should have a large, smooth radius, HVAC elbows are generally too sharp a turn and very rough on the inside.
12. All of the above gets rid of the big stuff and some of the small stuff, you need one or more air cleaners to continuously clean the air of small stuff. Turn it on when you come into the shop and leave it running for two hours after you leave. It should be sized to do at least five complete air exchanges per hour. Take the volume of your shop, multiply it by five, divide by 60. This gives the minimum CFM for the cleaner. Make sure the CFM rating is with the filters in place. Some manufacturers inflate their numbers by giving the fan's CFM rating in free air. I/E. no filters in place. This type of thing provides valuable insight into the manufacturer's attitudes towards other areas of construction.
13. The air cleaner is made of a washable pre-filter and a disposable pleated main filter. You can knock the dust off the main filter but your not getting the stuff trapped in the weave and your poking bigger holes in it. They need to be changed when they are clogged.

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14. When you go to clean out the bags on the main system:

- a) Knock the filters to loosen any dust that is caked on;
- b) Go wait about 20 minutes for the dust to settle;
- c) Pull the plastic bag up, twist tie it and then disconnect it from the system;
- d) Remove excess air from around the new plastic bag by sucking it out with a vacuum cleaner.

The whole idea is that its silly to have a wonderful filter collect all this dangerous stuff and then get a faceful whenever you need to clean out the bag.

Finally Chester had an interesting motto.

**"Woodworking is a hobby, breathing isn't"**

Frank Luet

## Show and Tell Finis



*An Abundance of Bowls*

## Whistling Tops

For those that missed the January meeting the presentation on whistling tops given by Art Deboo was based on a chapter in a book that is in the guild's library.

"Woodturning Wizardry by David Springett"

Mike Brazeau

## Lee Valley Turner's Smock

We designed this three-quarter length smock primarily for turners. The 65/35 poly-cotton blend sheds chips well but is light and cool. It features a wrap-around neck with hook-and-loop closure, roomy full-length sleeves with elastic cuffs, waist-cinch side tabs to keep the smock away from work, and a two-way zip front closure that lets you unzip the bottom for comfort when crouched or sitting. Highly practical for all power woodworking operations, it has reinforced pencil pockets on each arm and large patch pockets on the back for calipers and a rule. Machine washable.

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## Canadian Home Workshop Show

The Canadian Home Workshop Show is coming up at the National Trade Centre – Exhibition Place on Friday, March 4 to Sunday March 6. Once again they have a Woodworkers' Showcase and Contest Area. There is no Entry Fee for Entry Forms received before Feb. 25 or there is a walk-up entry fee of \$5. Entries can be delivered on the Thursday Evening prior to the show or early on Friday morning.

Categories are:

1. Cabinetmaking;
2. Wood Carving;
3. Woodturning;
4. Intarsia;
5. Novice; and
6. Woodworker's Choice.

Complete details can be seen at  
<http://www.canadianhomeworkshop.com>

Details will also be posted at the meeting on February 17.

Mike Brazeau

## Membership Renewals Draw

I would like to congratulate all the winners of the membership renewal draw.

Anyone who was not present during the draw can pick up their gift certificate at the upcoming regular meeting.

I would also like to thank everyone who paid their membership dues in advance of the due date to enter the draw. We stand now with 190 active members with advance payment of almost 70%. This represents a huge improvement over previous years and will help to ensure the continued success of the Guild.

The successes of this program will surely lead to more such events in the upcoming years.

The due date for membership renewals is February's regular meeting (Feb. 17 2005). Thank you all for your continued support in the GHWG.

Paul Rapattoni



*GHWG Executive 2005*

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