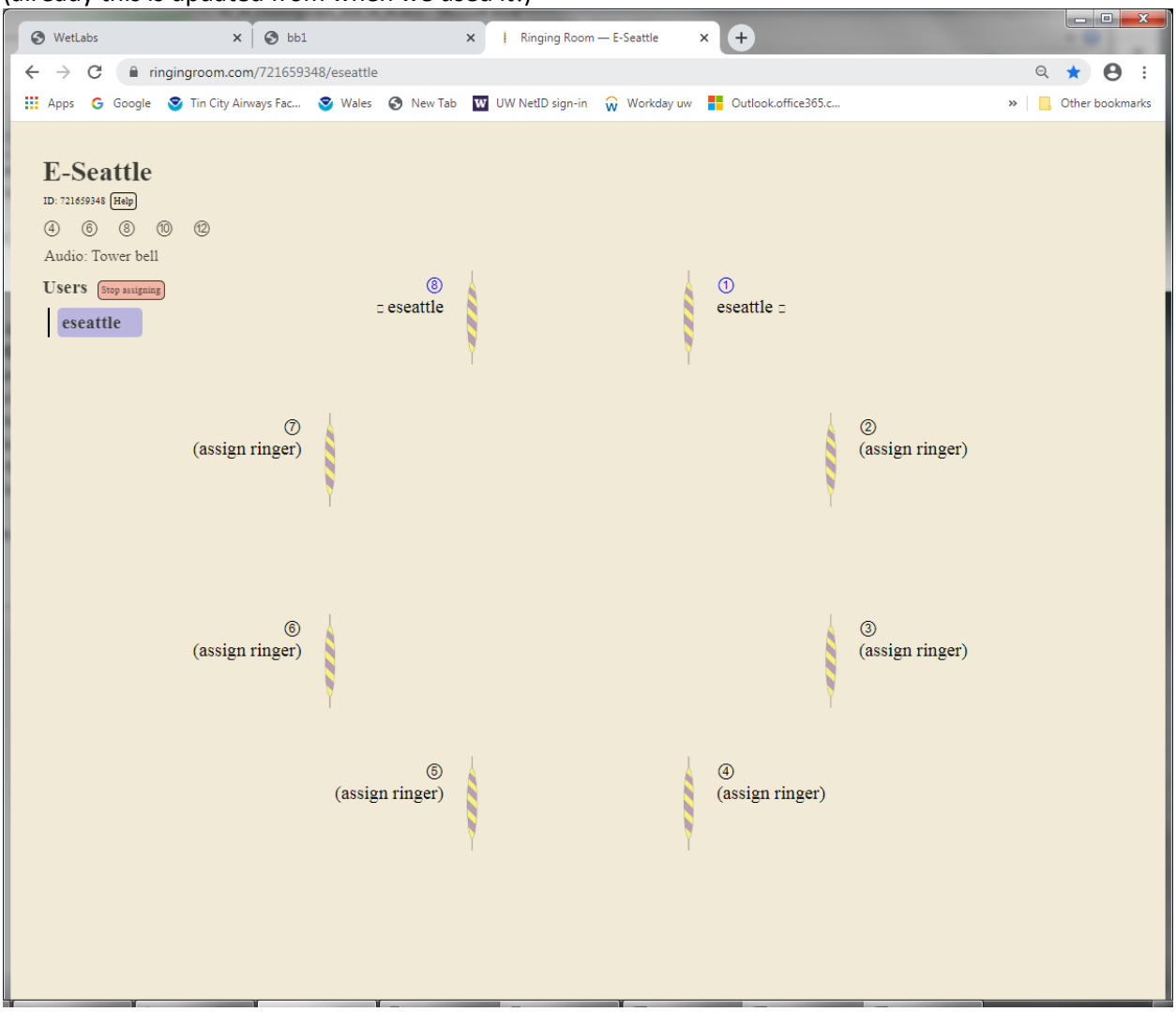
Ringing ZOOM Saturday 11th April 2020, 11am Seattle time. Coursing orders
****** SEE PATRICK'S NOTES ON THE THEORY LESSON, now attached to end of this doc.***
On call:
Rebecca, Ander, Amy, TJ, Carol, Madeline, Eve, Faith, Tristan, Anna, David O, Lizzie, Melissa, Patrick, Ted, Marilyn, + ...

Ringing Room : https://ringingroom.com/721659348/eseattle
(already this is updated from when we used it!)



We learnt that:

We can do plain hunt on this .. and almost plain bob when we consider is as handbells:

Review the handbell notes at our ringing resources
http://depts.washington.edu/uwcbells/RingingResources/Handbells/
... for hints on what to learn to ring handbells

Part2: Ander on Coursing Orders and how bobs change it.

I missed this ... so am reconstructing from the little I got when I came back.

We have the plain bob 8 coursing order as 7 5 3 2 4 6 8 ....

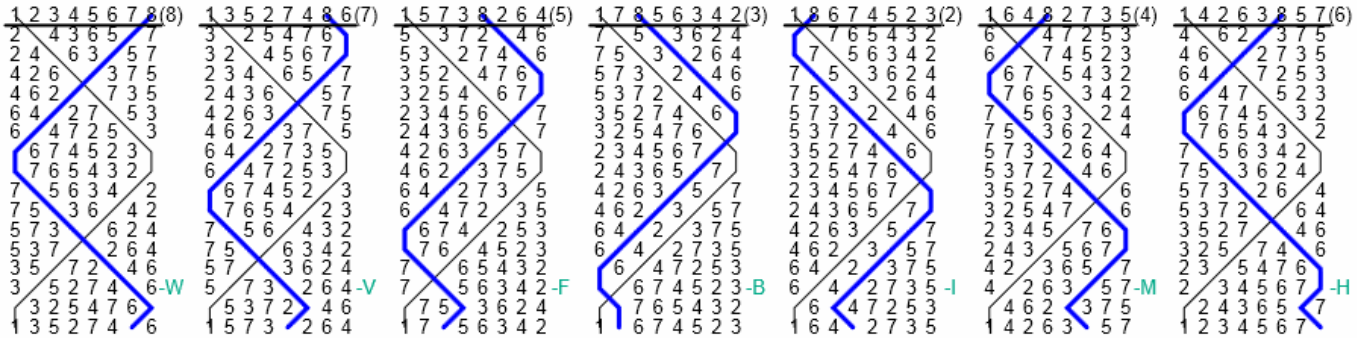
Consider the calls that always keep the tenor (78) together

(Why do you want to keep the tenors together? Tradition? Cos it sounds nicer?)

These are: WRONG, BEFORE, MIDDLE and HOME

(W,M and H are obvious .. the tenors are above 4ths in those)

(B ... the tenors cross in 2/3, so stay in the same relation - though only for a bob)



As we are keeping the tenors together, look at the coursing order with them at the end, viz:

5 3 2 4 6 8 7 ... and leave off the 8 7 as we are going to keep them together .. and thus we get

5 3 2 4 6

Now consider what happens at a bob at each of the positions.

(HOW? -Find the position in the chart above,

- consider how the bells move if the lead end was a bob, rather than a plain,

- from that new position, recompute the coursing order)

And what you find is:

A Bob at **WRONG** from: **5** 3 2 4 6

**** the first 3 are affected, and the coursing order becomes

3 2 **5** 4 6 ... i.e., the 1st bell of the 3 jumps over the other two.

Instead a Bob at **HOME** from: 5 **3** 2 4 6

**** the second 3 are affected, the coursing order becomes

5 2 4 **3** 6 ... again, the 1st bell of the 3 jumps over the other two.

Instead a Bob at **MIDDLE** from: 5 3 **2** 4 6

**** the third 3 are affected, the coursing order becomes

5 3 4 6 **2** ... again, the 1st bell of the 3 jumps over the other two.

Note it is always the bell making the bob that jumps.

Finally a Bob at **BEFORE** from: 5 3 2 4 **6** *(8 7)*

Bit trickier .. 6 will make the Bob, and jump back in the coursing order (over the 8 and 7), so you get

6 5 3 2 4 . again the bell making the bob jumps, now to the front.

SO, in summary, a BOB makes the bell making the Bob jump back two places in the Coursing order.

What about a single?

A Single at **WRONG** from: **5** 3 **2** 4 6
**** the first 3 are affected, and the coursing order becomes
2 3 **5** 4 6 ... i.e., the first swaps with the 3rd.
The bell making 4ths has jumped back two .. but the others swap also
The bell making the single (i.e., 3rds) moves FORWARD in the coursing order
And the bell making seconds (as it would have at a plain lead), remains fixed relative to the other bells not involved in the call.

Instead a Single at **HOME** from: 5 **3** 2 **4** 6
**** the second 3 are affected, the coursing order becomes
5 **4** 2 **3** 6 ... again, the 1st and 3rd bells swap

Instead a Single at **MIDDLE** from: 5 3 **2** 4 **6**
**** the third 3 are affected, the coursing order becomes
5 3 **6** 4 **2** ... again, the 1st and 3rd bells swap

Finally a Single at **BEFORE** from: 5 3 2 4 **6** *(8 **7**)*
WILL SWAP THE TENORS *to: 5 3 2 4 **7** 8 **6***

SO, in summary,
- WHEN you make the call, tells you which 3 bells will be affected
- a BOB makes the bell making the Bob jump back two places in the Coursing order.
- a SINGLE swaps two bells in the Coursing order
- the bell making 4ths jumps back,
- the bell making 3rds jumps back.

So now we can see why some touches come round.

Consider - 3 homes.

Starting CO	5 3 2 4 6
After 1st Home	5 2 4 3 6
After 2nd Home	5 4 3 2 6
After 3rd Home	5 3 2 4 6 which is back in the home course (i.e., original coursing order)

Consider - W H W H

Starting CO	5 3 2 4 6
W affects 1st 3	3 2 5 4 6
H affects 2nd 3	3 5 4 2 6
W affects 1st 3	5 4 3 2 6 .. note this lovely coursing order ..
H affects 2nd 3	5 3 2 4 6 which is back in the home course (i.e., original coursing order)

What about 3 wrongs? ... or 3 Middles? .. they will all come around also.

What about 3 befores? ... ah, now we see that won't come round, we need 5 befores to come around ... AND those 5 calls will be in consecutive leads .. (which is a bob course) ... and so we then KNOW the touch will be false ... cos to ring a bob course, you call a bob every lead from the start of the touch, not from half way through. What it also tells us is that coursing order alone cannot tell you if a touch is false .. you also need to know about the leads of the course you have rung.

How is this written out? Like this:

23456	W	B	M	H
45236	-			-
23456	-			-

The columns are the calling places (given in the order they turn up)
The dash - shows you call a bob there.
The numbers in the first column are the lead end order after you have done all the calls in that line.

We will come back to this.

So, how to call this?

- ring the tenor and call the touch as for the tenor (i.e., call yourself, for this touch, Wrong and Home, repeated once).

- ring any bell, and call the touch for yourself as Wrong Home repeated once ... this may not have such nice music

- ring any bell, work out what WHWH for the tenor means for YOU ... and then use that to ring it.
So, if you were the 7:

At the wrong, you are dodging 56 up, and the home, you are dodging 78 up.

If you were the 5:

At first wrong, you MAKE 4ths
At the first home, you run OUT
At the second wrong, you run OUT again
At the final Home, you re dodging 56 up.

FINAL note:
- as we discussed last time, the lead ends for Cambridge are the same as for Plain Bob (but in a different order) and thus, WHWH will still work for a touch for Cambridge.
- Code word is: Raven.

Seattle Ringing Zoom 4/11/20

Topic: Discussion of the coursing order in Plain Bob 8 and how it is affected by bob calls

NB: Discussion and notes require a copy of PB8 plain course with the call location marked

[Lead-end: The row immediately below the dotted or solid indicating line

There is also a "lead-head" — the row preceding the lead-end.]

Question:
Given only a lead-end, how can one deduce the coursing order?

The coursing order can be obtained by picking any bell and proceeding up the even bells and down the odd ones. If you start on an odd bell, start counting down, evens start up:

PB8 3-bell start: 1 6 4 8 2 7 3 5 ← choose 8th bell to start from:
e d f e g b a 5 3 2 4 6 8 7

Notice you can start from any bell position and get the same progression:
from 3rd bell: 4 6 8 7 5 3 2 4 6 8 7 5 ...

Notice also (for plain Bob), this coursing order does not change: It is the same at each lead-end, assuming no calls are made.

Coursing: 5 3 2 4 6 8 7!

Now, how does a Bob affect the coursing order?

If a bob is called at (V) fifths: the old Lead end: 1 5 7 3 8 2 6 4
becomes: 1 3 5 7 8 2 6 4

The new coursing order: 4 6 8 5 3 7 2 (counting from Back) [or 8 5 3 7 2 4 6 from Tenor]

Comparing Old vs. New orders, we can see:
Old: 8 7 5 3 2 4 6
New: 8 5 3 7 2 4 6

Notice only 3 bells appeared to move about. Furthermore, Bells 7, 5, & 3 have merely rotated places

O: | ⟲ | | |
N:

This holds true for all 4th place bobs: 2nd, 3rd, 4th places rotate

Consider a bob called at middle (M):

Coursing Order (from Tenor)
Old LE: 1 4 2 6 3 8 5 7 — 8 7 5 3 2 4 6
New LE: 1 6 4 2 3 8 5 7 — 8 7 5 3 4 6 2

: Hold on, The rotation is clearly there, but it appears to be different bells! that's not right, is it?

Well, we are looking at the order from the Tenor's point of view. From the fifth's place bell (the 3 here):

O: 3 2 4 6 8 5 7
N: 3 4 6 2 8 5 7, So it is the same.

This should make some intuitive sense:
at the bob, all bells dodge (i.e. get delayed) except In/out bells (they don't, so they jump ahead) and the make bell delays itself again so it drops back further relative to everyone.

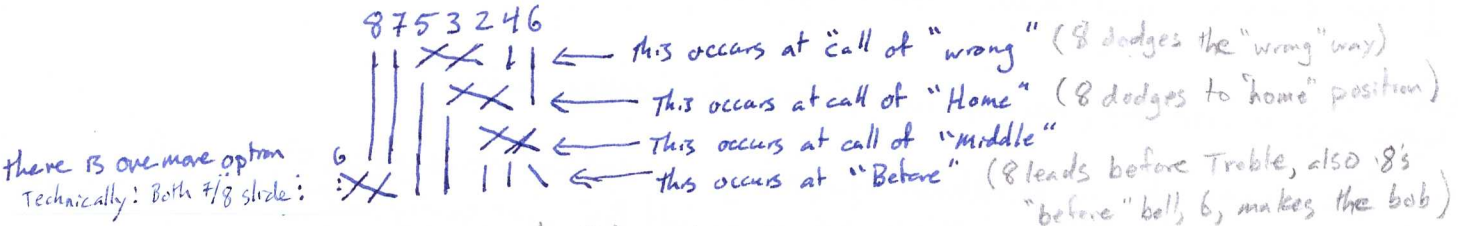
Notice also: the 2-bell makes the bob and "jumps back"
the bell making the bob always slides back

Conducting - and how to use this to advantage?

We have seen a bob only affects 3 bells of the coursing order: In/out/Make.

this can be an advantageous trick: Consider making calls so that we don't affect the last two bells' order; "keeping the tenors together".

What are the possible calls? - They are:



Another way to see the Before change:

8 7 5 3 2 4 6 (everyone else rotates)!
8 7 6 5 3 2 4

Now, If only 3 bells are affected, then if we can affect the same 3 bells 3 times, we ought to be able to rotate them to their starting point. Lets' try:

Call a touch by calling 3 Wrongs: (ignoring 7,8)

	Coursing order:
Start:	5 3 2 4 6
W	3 2 5 4 6
W	2 5 3 4 6
W	5 3 2 4 6 Done!

Note the technique also applies to 3 Home or 3 Middle Calls:

5 3 2 4 6	5 3 2 4 6
H: 5 2 4 3 6	M: 5 3 4 6 2
H: 5 4 3 2 6	M: 5 3 6 2 4
H: 5 3 2 4 6	M: 5 3 2 4 6

What would calling 3 wrongs look like as far as Lead-ends? - Well, you have to call when the tenor is at the wrong lead-end/course. (Actually just before that lead-end).

That's every 7 lead-ends

BOB(-)	Plain	Plain	Plain	Plain	Plain	Plain	(1st Wrong)
-	P	P	P	P	P	P	(2nd Wrong)
-	P	P	P	P	P	P	(3rd Wrong)

So you can just memorize and count, if nothing else!

The Before call is a special case. 3 Befores won't come round. Looking at the alternate view suggests an approach though. Instead of three rotations, we need 5:

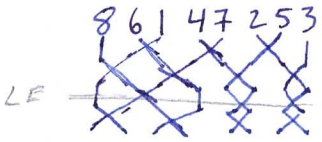
Start:	8 7 5 3 2 4 6
B	8 7 3 2 4 6 5
B	2 4 6 5 3
B	4 6 5 3 2
B	6 5 3 2 4
B	5 3 2 4 6

so it works, ... but the touch is false.

Why is a touch of 5 Befores calls necessarily false?

We have to look at how one might call a touch of 5 Befores (and how the tenor is affected):

At Before, the Tenor's before-bell makes the dodge:

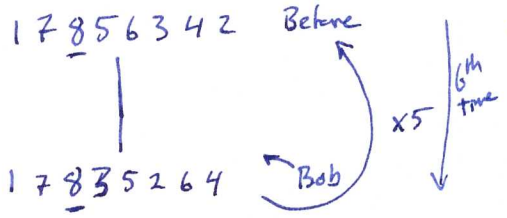


So Tenor Runs Out...

Next Work: 2nds

Except what we've done is move the tenor 1 back.

So on the next lead-end we are at Before! So call Bob,



So we call bob 5 times. But that puts us back to the start of the Before lead. and our Coursing order is 8 7 5 3 2 4 6 (Good), whats the line look like?

1 7 8 5 6 3 4 2. which means we have to repeat the before lead we did at the start (bad).

And so the touch must be false.

A more mathematical way to prove this is false:

The simplest way to call five Befores: P P P - - - - - P P P P (consult the PB8 method)

As we've stated, we can start anywhere in the calls, so ↑ is the same as:

P P P P | P P P - - - - -

Which has seven plain-leads in a row, which is a plain course of PB8 before you've even got to the bob calls. so it must have come round already. Hence it is false.

Bonus: Consider another favorite call: What if we mix a Wrong call with a Home call?

We know how the Coursing order is affected, so let's try:

Start: 8 7 5 3 2 4 6

W : | | 3 2 5 4 6

H : | | 3 5 4 2 6 ← Notice the order compared to the start? 6 has not moved, and only 5/3 and 2/4 are swapped. One more iteration ought to swap them back...

W : | | 5 4 3 2 6

H : | | 5 3 2 4 6 ←

Now how might we call this? Note that the Wrong lead occurs immediately, then the Home lead occurs at the last lead in a plain course. If we call Bob immediately, we can wait for home to come around in 6 plain leads, then just repeat that: (W) - P P P P P - (H)(W) - P P P P P - (H)

Note also there are only 5 plain leads together, so we never encounter that plain course issue (unlike the Before Touch)

Exercise for Readers:

1) how are bells affected at a Single?

2) Since any touch may be called from any bell*, how might you call one of the discussed touches from a bell other than the tenor? * ensuring that the touch does not ring false (i.e. cannot have 7 consecutive plain leads)