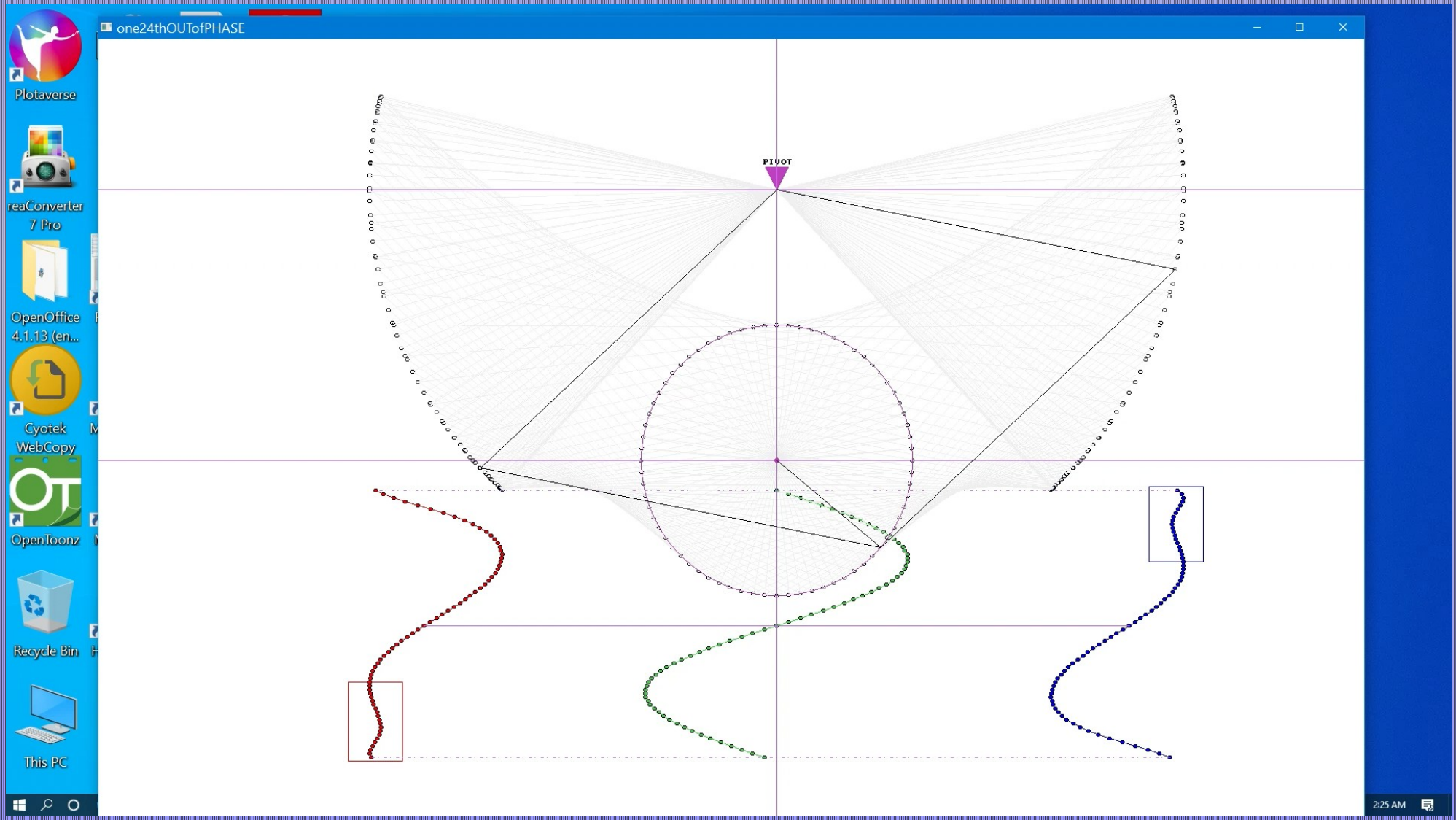
The eb_1/24-out-of-phase_*discovery*

This be the discovery below :



eb=1/24th-introduction

001 __ 01=eb_BasicIntroductionTutorial=

002 **What the eb-1/24 out of Phase is, & also**
003 **SOME of the Geometry Calculations of it.**

004 A hardwired physical, 1/24th Out of Phase
005 relationship, " recently rediscovered ",
006 real mechanical action that occur
007 between the **Ordinary Circle** and the
008 **Common Square** when the Circle acting
009 as a rotating Crank, is connected to
010 a Square, whose levers is hinged at the
011 4 corners so as to be a collapsible Square.
012 This Out of Phase = Out of Step 'jump'
013 is spotted when making a **Comparison**
014 **Between** the **Left hinge motion Track** to
015 the **Right hinge motion Track** . TO FOLLOW

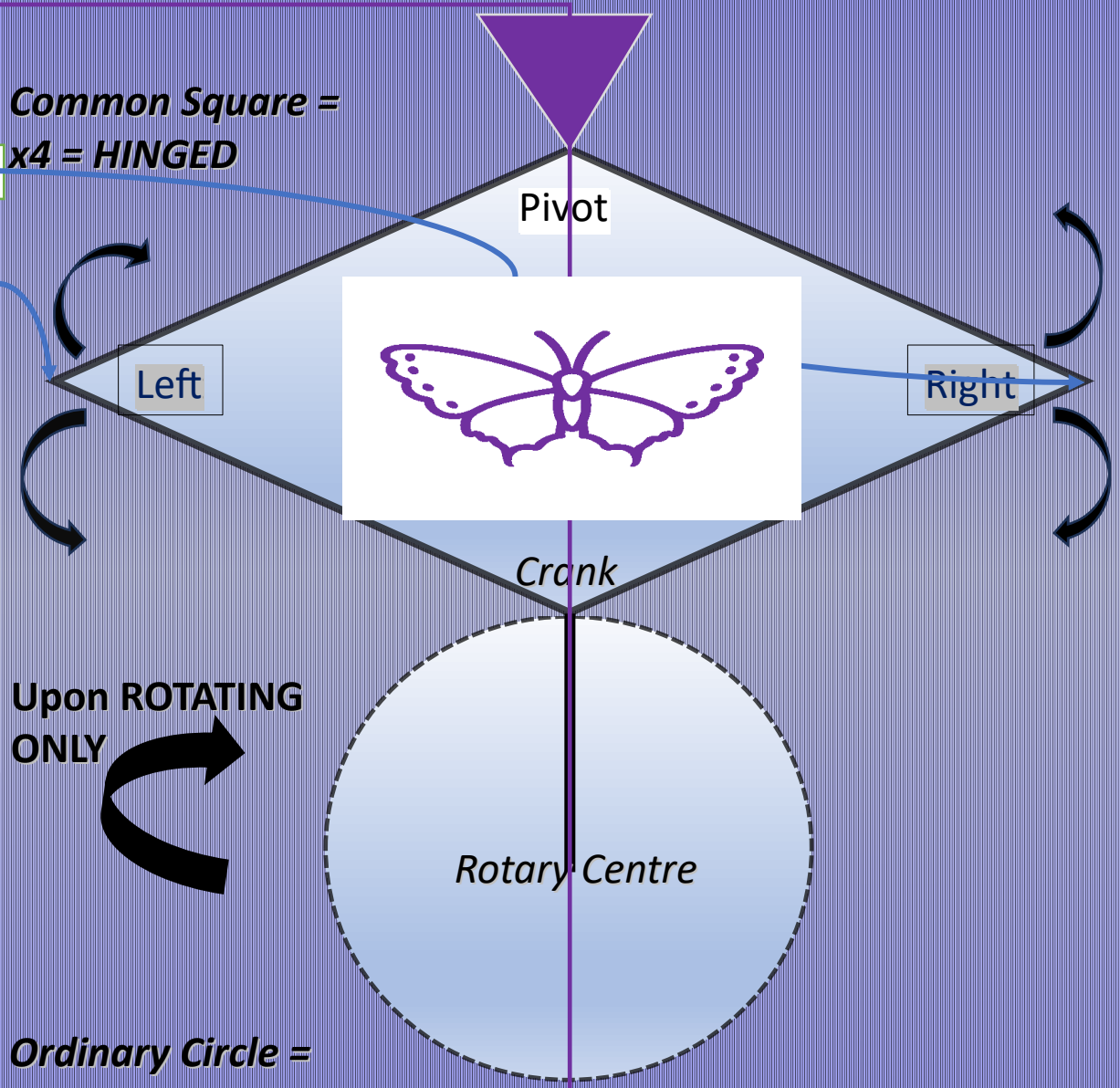
016 __ 02=eb_BasicIntroductionTutorial=

017 ***Physics of Twinesine*** *wave-form / SHAPE*
018 ***Speculations / Theories, with the eb***
019 ***Model being the Standard Universal***
020 ***PARTICLE "Pixel" defining other Objects.***

021 __ 03=eb_BasicIntroductionTutorial=

022 ***Programming modelling to use the eb-1/124 ,***
023 ***as well as exploring, the " Fine Butterly***
024 ***Fold Angle ", where Out of Phase***
Entanglement Start or Collapse Occur.

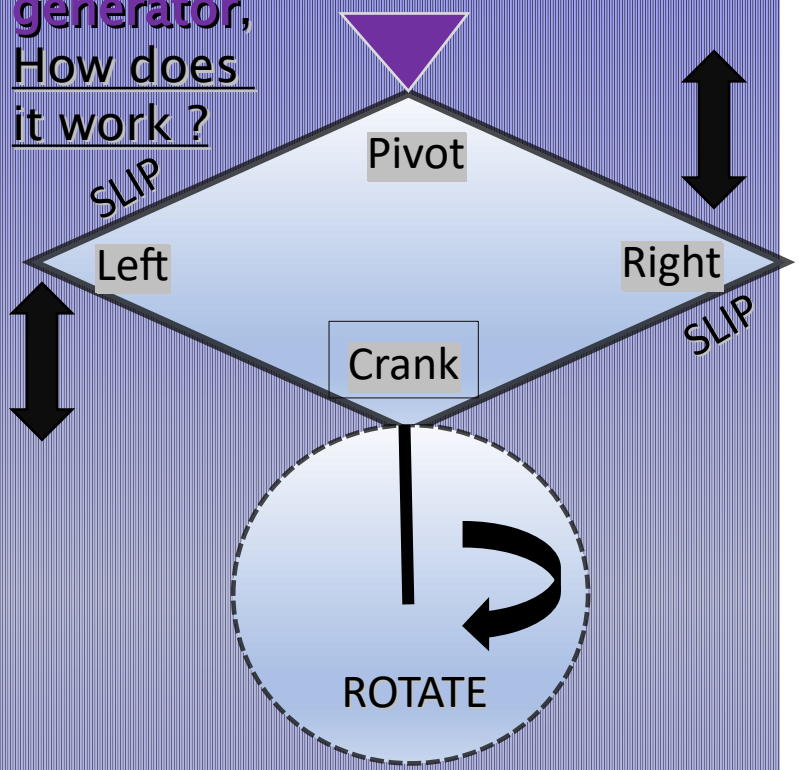
1/24th Out of Phase



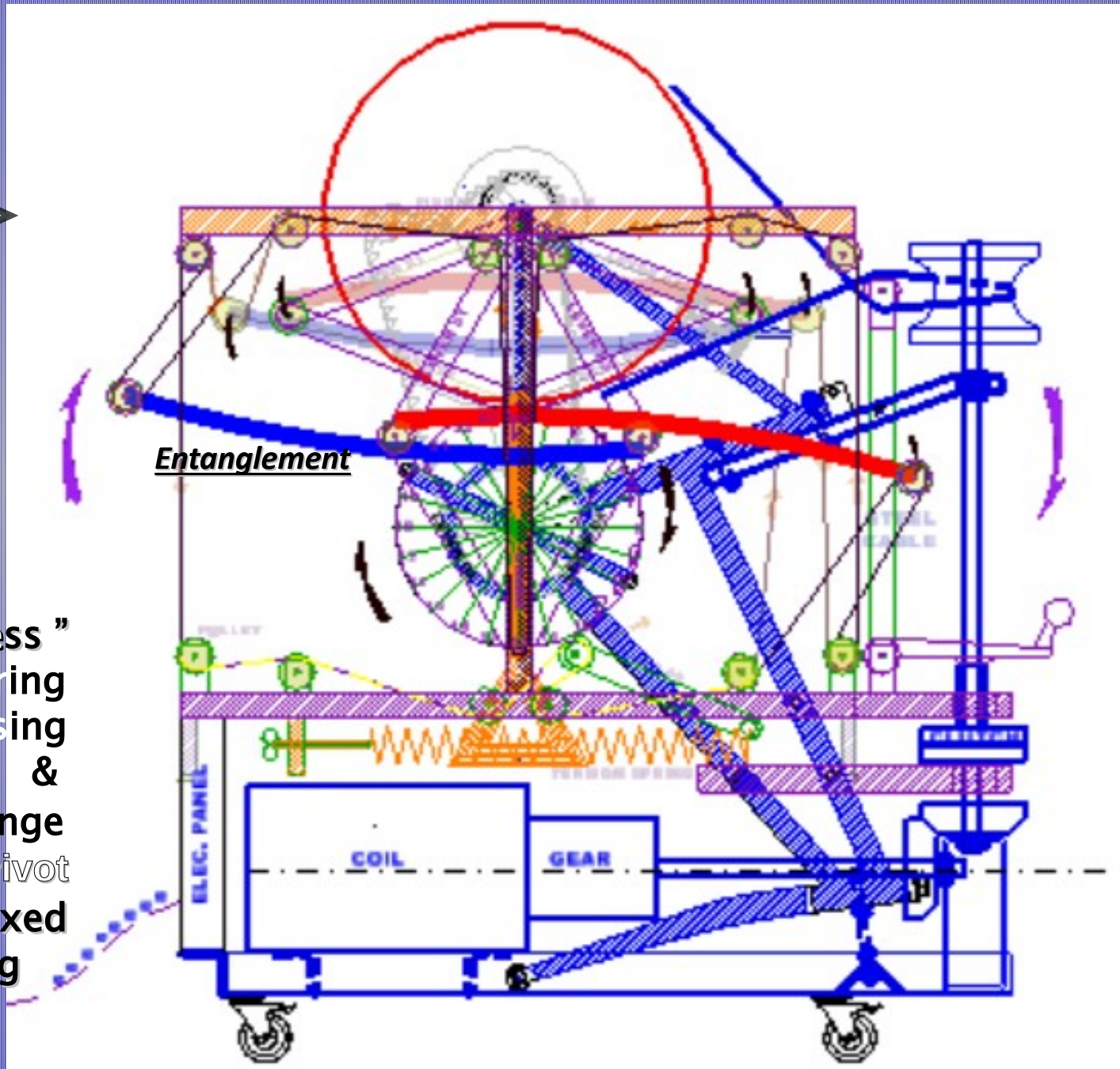
There EXIST, 3 x Phase Steps = OUT of PHASE & IN PHASE & NOW the
__3rd ? is the __1/24th OUT of PHASE" or __1/24th to get into IN PHASE
__Naturally occurring STABLE Mechanical GEOMETRIC Situation.

1/24th Out of Phase Applied as a Electricity Generator Feeding off from a Trapped Motion , Kinetic Bubble Principle.

The eb generator, How does it work ?



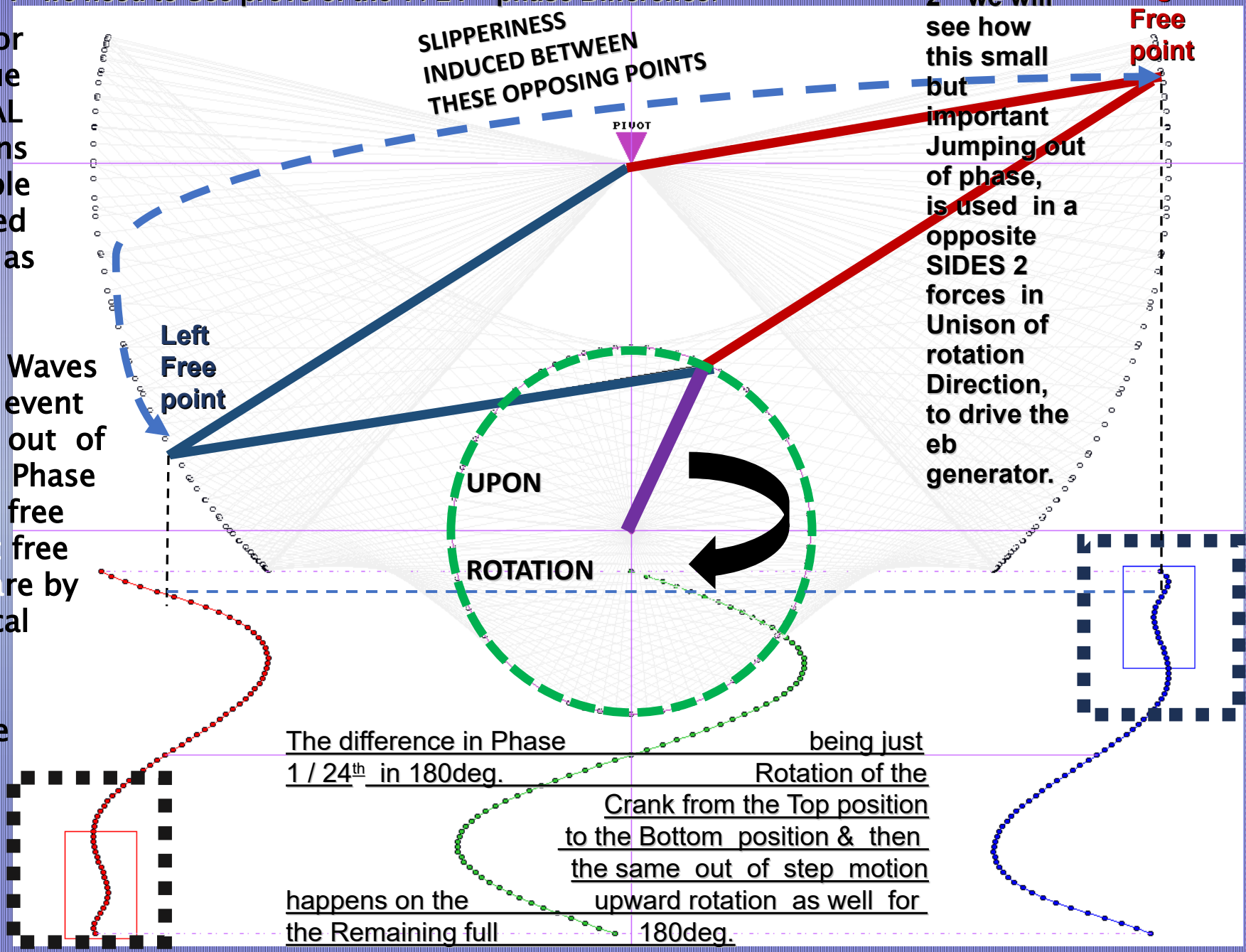
It start with a " Slipperiness " coming into existence, during motion, between the two Opposing Free ends of a Squares Left & Right with the 3rd hinge being a Stationary fixed Pivot & the opposing 4th hinge fixed to a Circle acting as a Moving Cranked Pivot.



1st we need to See prove of the 1 / 24th phase Difference.

The eb generator rotation is thus due to a MECHANICAL EVENT that happens when a collapsible Square is connected to a Crank, acting as the Circle here.

See the 2 x free Point Motion Twin Waves traced below. The event is – the Stepping out of Rhythm or out of Phase BETWEEN the Left free point & the Right free point of the Square by 1/24th. The Vertical Line through the Stationary Pivot & the Circle Centre is the Line from which the 'Twin' & 1xSine Wave RESULTANT are Plotted.



2nd we will see how this small but important Jumping out of phase, is used in a opposite SIDES 2 forces in Unison of rotation Direction, to drive the eb generator.

The difference in Phase being just 1 / 24th in 180deg. Rotation of the Crank from the Top position to the Bottom position & then the same out of step motion happens on the upward rotation as well for the Remaining full 180deg.

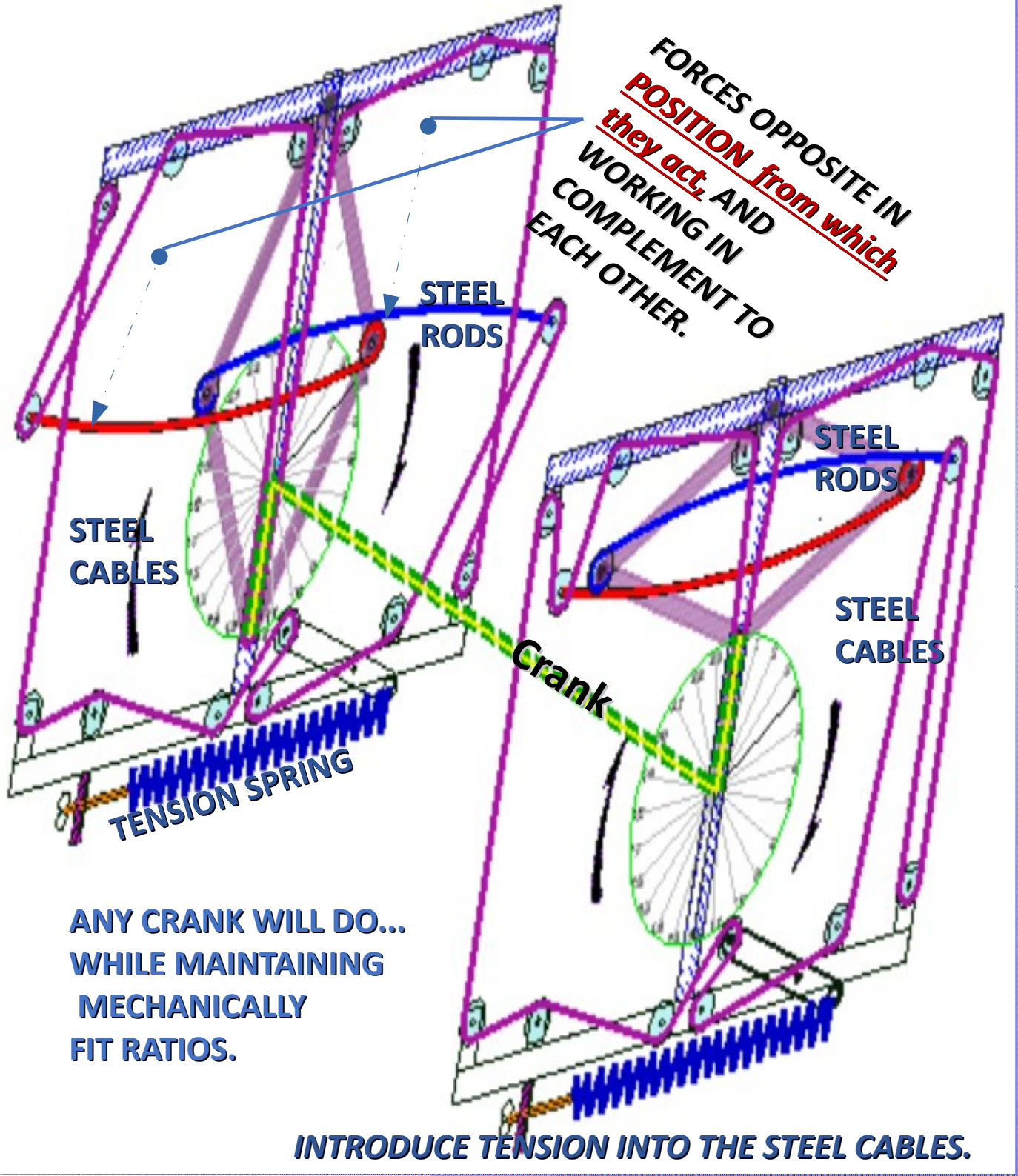
THESE 2 DRAWINGS WITH THE NEXT ONE SHOULD ENABLE YOU TO GO AND BUILD YOUR OWN EB GENERATOR RIGHT NOW. AFTER THE 3RD DRAWING IS ONLY MATHS WITH PHYSICS SPECULATIONS. THE Pythagoras MATHS ARE EASY BUT IT TURNS OUT *NASTY* AND THE PHYSICS UNFORTUNATELY REQUIRE SOME PRIOR KNOWLEDGE TO MAKE ANY SENSE WHEN YOU ATTACH THESE EB TWINWAVE / TWINESINE STUFF TO IT...

Knowledge of the 1/24th Hardwired Mechanical Slipperiness in the EB setup, then enable us to build the arrangement of Levers, Pulleys and Cables with Springs.

SPRINGS are used for the EB to be Tensioned for the input of POWER /MOTION THAT BECOME ENCASED / TRAPPED, IN THIS eb SET-UP as if it is a Trapped Power IN MOTION BUBBLE.

The_Rotary motion that NOW occur Continuously, then is DUE to the UNAVOIDABLE INBUILT MECHANICAL Slipperiness which is used then to turn a generator.

NOTE that the CURVED Steel Rods are transferring Leverage FORCE from Opposite Sides of the EB square and in the Same rotary Direction ALWAYS. THUS, NOT OPPOSING FORCES BUT RATHER FORCES FROM OPPOSING POSITIONS WORKING IN UNISON WITH EACH OTHER.



NOW FOLLOWS THE MATHS NEEDED TO UNDERSTAND THE PHYSICS SPECULATIONS LATER.

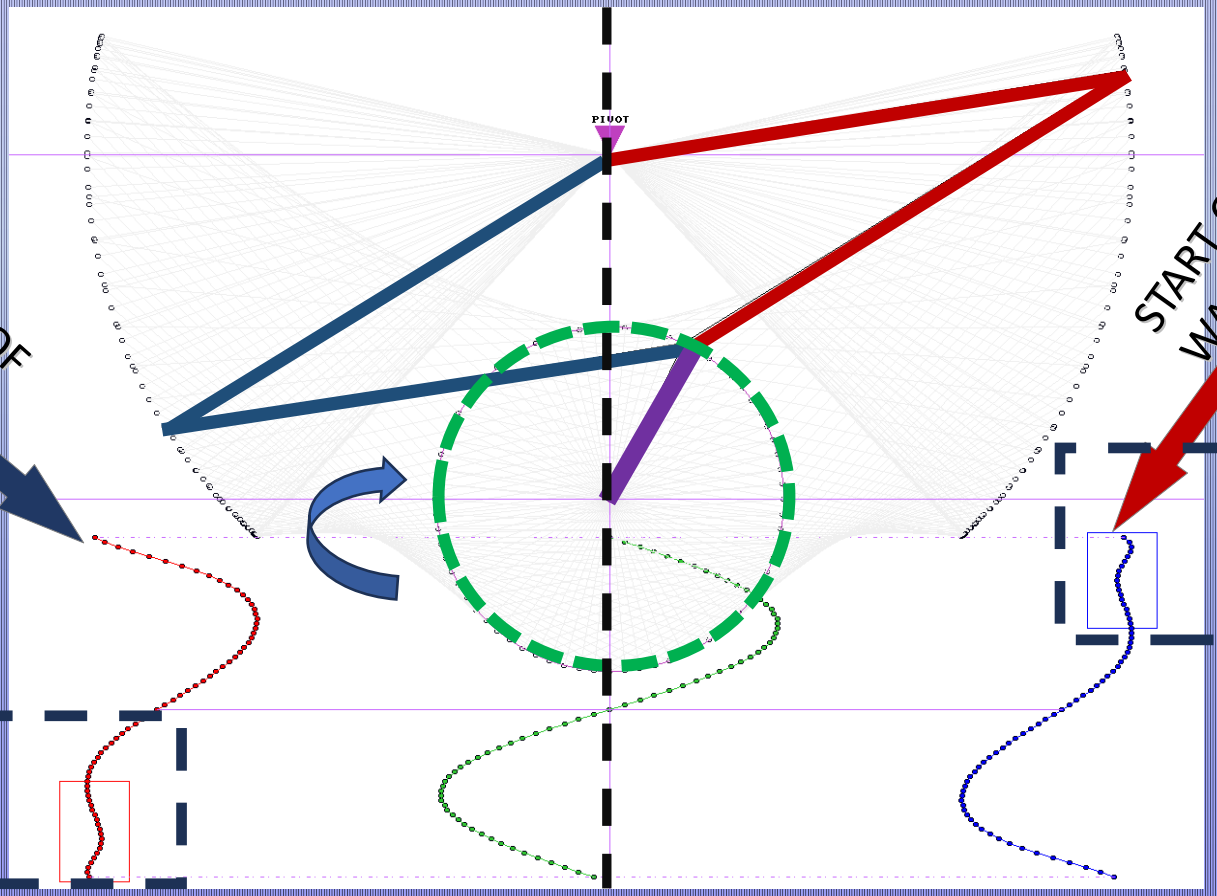
THE HEAVILY RELIED UPON Pythagoras MATHS ARE INDEED EASY, BUT THE GEOMETRY DOES TURN OUT VERY *NASTY.* THE PHYSICS ALSO DO REQUIRE SOME BROAD PRIOR KNOWLEDGE TO MAKE ANY SENSE WHEN YOU ATTACH THESE EB TWINWAVE / TWINESINE STUFF TO IT, BECAUSE IT WILL BE TOO MUCH TO EXPLAIN EVERYTHING FROM THE BEGINNING….SO BE FOREWARNED…. .

1st MATHEMATICAL thing = HOW do you KNOW or PROVE that the claimed 1/24th jump out of phase / slippery Mechanical event REALLY occur , OR HOW TO GEOMETRICALLY CALCULATE IT, SINCE THE EYE LIKELY CANNOT SPOT IT WHEN JUST LOOKING AT THE eb ARRANGEMENT IN MOTION.

1st ANSWER : how to spot the 1/24 out of phase :

THERE ARE at least TWO WAYS TO PROVE THAT THE OUT OF PHASE JUMP EXIST, ONE BEING THE 'HARD' GEOMETRIC WAY OF PLOTTING THE WAVES FROM A HAND DRAWN OR CAD CONSTRUCTION WHICH IS TEDIOUS (the Geometry below uses 360/5= 72 points to plot for each wave x3) Phew!!! Naturally a coarser step of 360/15=24 is easier AND WELL WORTH THE EFFORT EVEN IF YOU ONLY DO IT ONCE. NOW NOTE THE ATTENTION BLOCKS AT THE WAVES SIN"CE IT IS EASIER TO SPOT THE JUMP BY COMPARING THE END & START POINTS OF THE OPPOSING 2x "MIRRORED" WAVES.

Left EB Free point generate the 'Twin' Wave Projection below.



Right EB Free Point generate the 'Twin' Wave Projection below.

ATTENTION BLOCK AT END OF LEFT EB Free point WAVE

ATTENTION BLOCK ON START OF RIGHT EB Free point WAVE

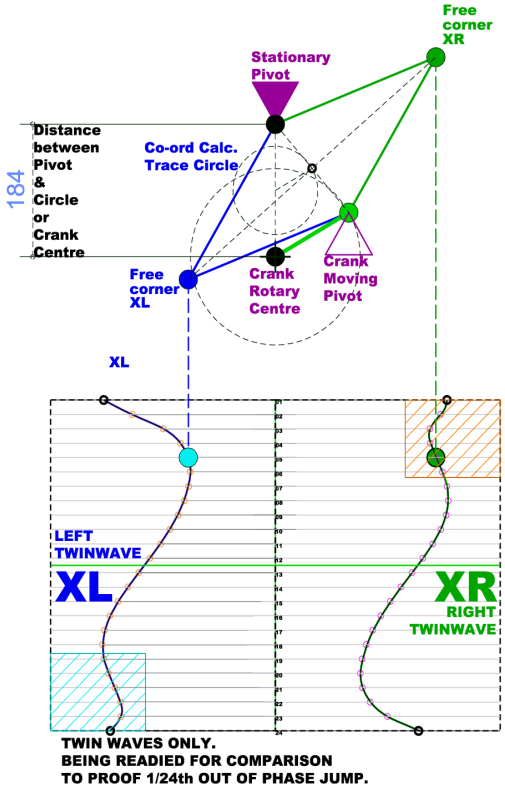
@ 1st GLANCE ONE WAVE LOOK LIKE A FLIPPED MIRROR OF THE OTHER = NOT ? TRUE...!

1st ANSWER continued :-how to spot the 1/24 out of phase.

By COMPARING the TWINWAVES GRAPHICALLY and see how they DO NOT FIT IN THEIR NATURAL STATE.

So why call them Twins if they do not exactly look alike = only when you SHIFT one Wave by 1/24th do it EXACTLY FIT ON TOP OF THE OTHER WAVE, With the reality being that they are ONLY TWINS for 23xParts *WHEN* OVERLAID for Comparison purpose.
Lets do some Flipping & Mirroring below....

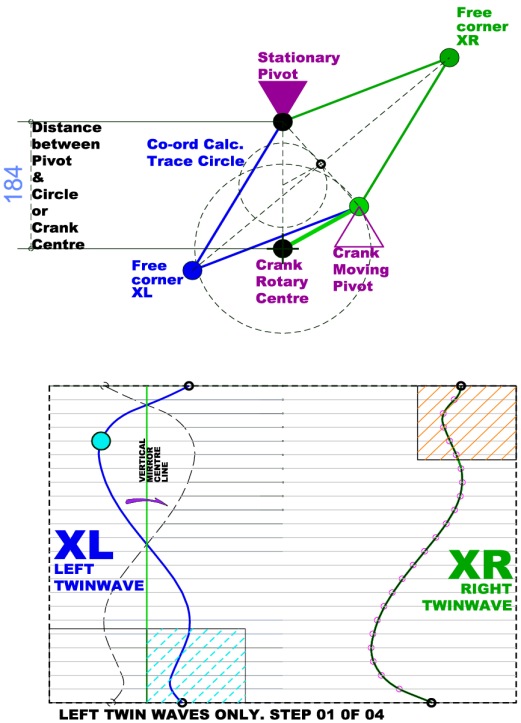
002



TWIN WAVES ONLY.
BEING READIED FOR COMPARISON
TO PROOF 1/24th OUT OF PHASE JUMP.

1/24th OUT OF STEP PROOF:-
THE DIFFERENCE IN WAVES IN THEIR NATURAL STATE

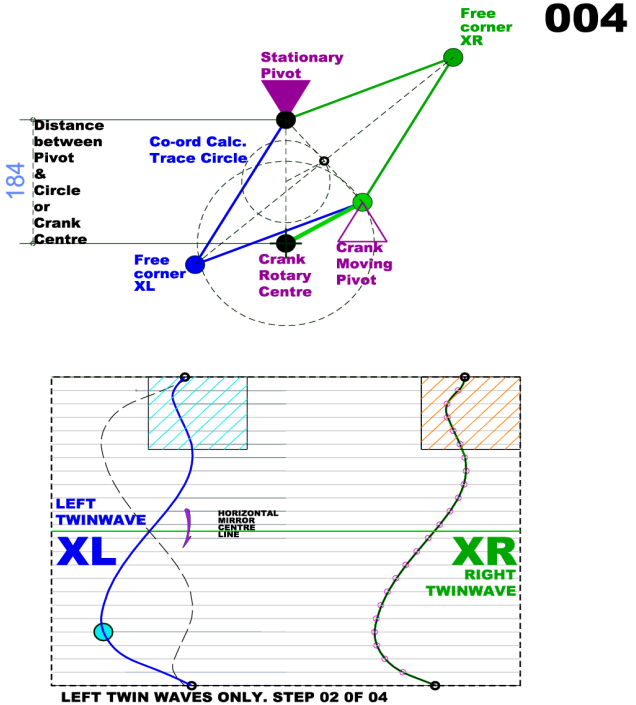
003



LEFT TWIN WAVES ONLY. STEP 01 0F 04
BEING VERTICALLY MIRRORED FOR COMPARISON
TO PROOF 1/24th OUT OF PHASE JUMP.

1/24th OUT OF STEP PROOF:-
SIMPLIFYING BY VERTICALLY FLIPPING ONE WAVE

004

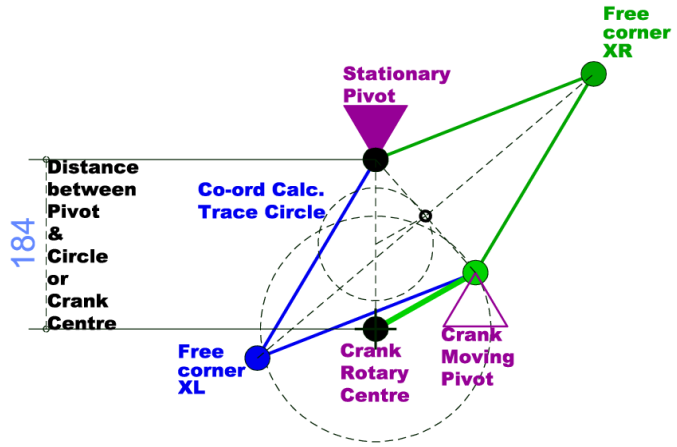


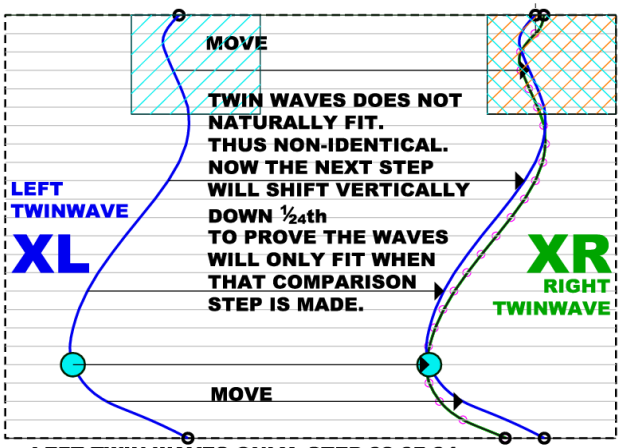
LEFT TWIN WAVES ONLY. STEP 02 0F 04
BEING HORIZONTALLY MIRRORED FOR COMPARISON
TO PROOF 1/24th OUT OF PHASE JUMP.

1/24th OUT OF STEP PROOF:-
HORIZONTALLY FLIPPING THE FLIPPED WAVE

Let's move the Flipped & Mirrored LEFT wave Over the RIGHT twin wave to see in panel005, that they do not exactly match. *NOW NOTE*: In panel006 we move the Flipped & Mirrored LEFT wave DOWN by 1/24th of the GRID and overlay again. NOW THE 23 PARTS OF THE WAVES FIT PERFECTLY OVER EACH OTHER PROVING THE OUT OF PHASE-NESS IN THEIR NATURAL STATE

005

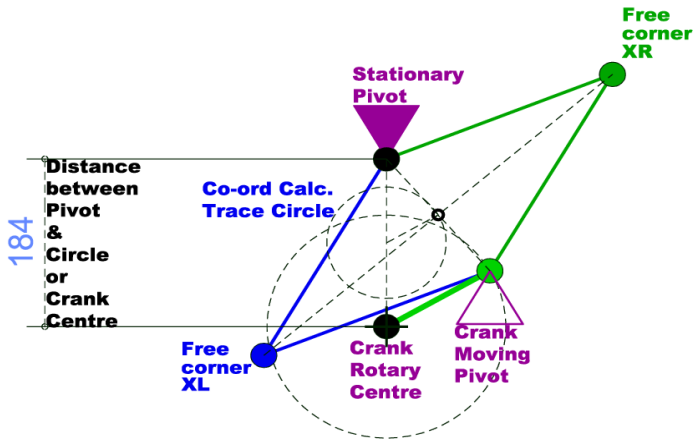


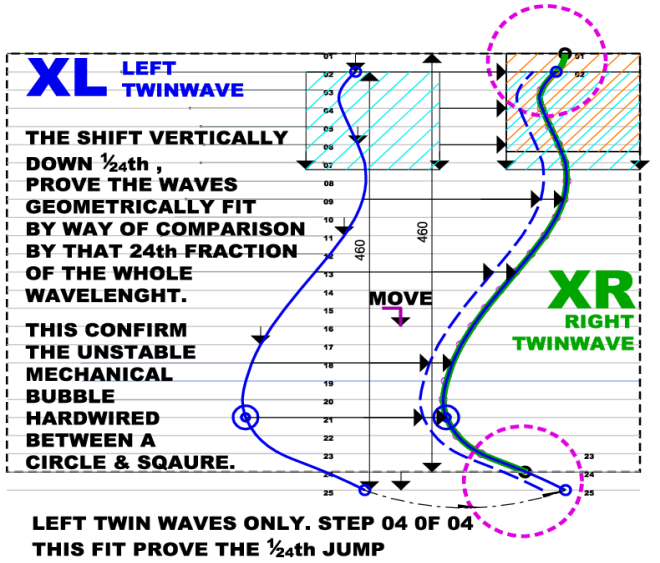


LEFT TWIN WAVES ONLY. STEP 03 0F 04
BEING HORIZONTALLY MOVED FOR COMPARISON
TO PROOF 1/24th OUT OF PHASE JUMP.

1/24th OUT OF STEP PROOF:- COMPARING THE FLIPPED WAVE TO REVEAL MISMATCH

006





LEFT TWIN WAVES ONLY. STEP 04 0F 04
THIS FIT PROVE THE 1/24th JUMP

1/24th OUT OF STEP PROOF:- FLIPPED MOVE DOWN BY 1/24th TO MATCH XR

Let's apply the HARD-WIRED SLIPPAGE below. REMEMBER THAT WE ARE NOT DOING MATH. YET...JUST GEOMETRIC COMPARISONS.

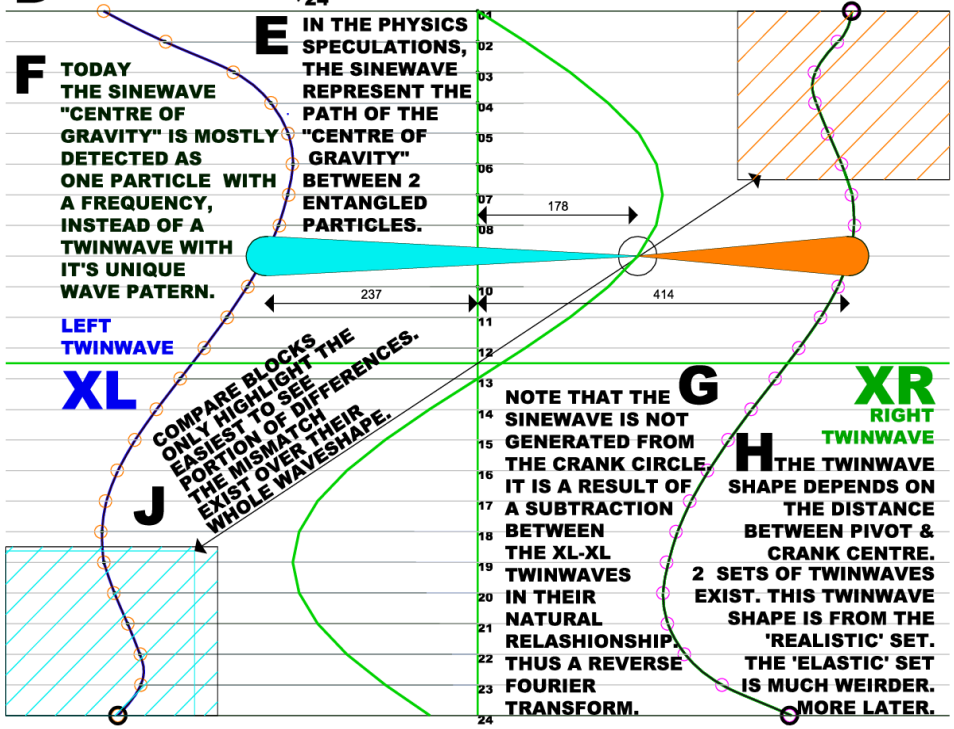
008

A THE TWIN WAVES IN THEIR NATURAL GENERATION ARE NON-IDENTICAL ACROSS THEIR WHOLE LENGTH WHEN COMPARED TO EACH OTHER WITH ONE ONLY, FLIPPED VERTICALLY AND HORIZONTALLY.

B HOWEVER WHEN ONE FLIPPED NON-IDENTICAL TWIN WAVE SHIFTS BY $\frac{1}{24}$th OF IT'S WAVELENGTH ALONG IT'S WAVE PATH , THEN AN EXACT FITTING OVER THE COMPARISON TWINWAVE, CAN BE MADE.

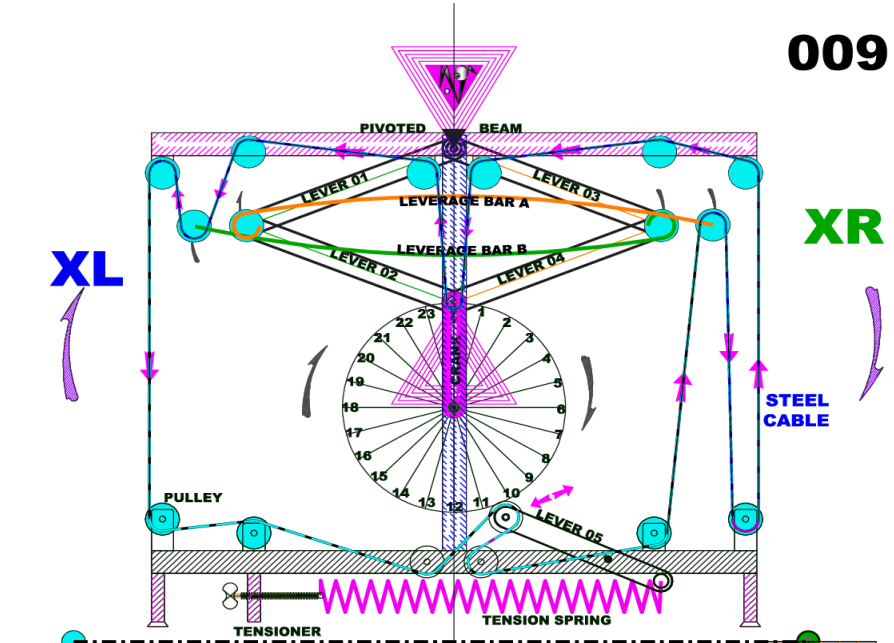
C THIS PROOF THAT A 1/24th OUT OF STEP OR OUT OF PHASE MECHANICAL NATURAL DIFFERENCE EXIST IN THIS PARTICULAR SQUARE + CIRCLE SYSTEM, THAT IS BETWEEN THE 2 FREE CORNERS OF THE SQUARE THAT "JUMPS" OUT OF BALANCE FROM EACH OTHER DURING 2 HALF'S AT THE MOMENT ROTARY MOTION IS INTRODUCED.

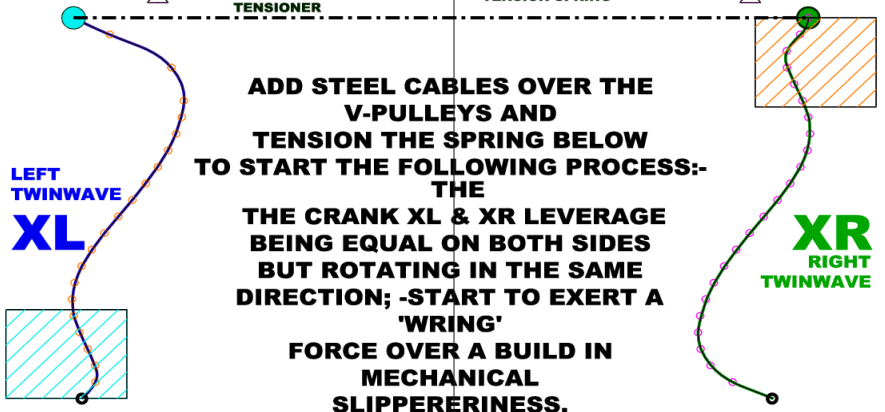
D THE EB GENERATOR MECHANICAL ARRANGEMENT IS ABOUT PRACTICAL APPLICATION OF THIS $\frac{1}{24}$th MECHANICAL HARDWIRED TRAPPED INSTABILTY.



1/24th OUT OF STEP WITH TWINWAVES ENLARGED. THE FOCUS IS NOW ON EB DRIVE.

009





ADD STEEL CABLES OVER THE V-PULLEYS AND TENSION THE SPRING BELOW TO START THE FOLLOWING PROCESS:- THE

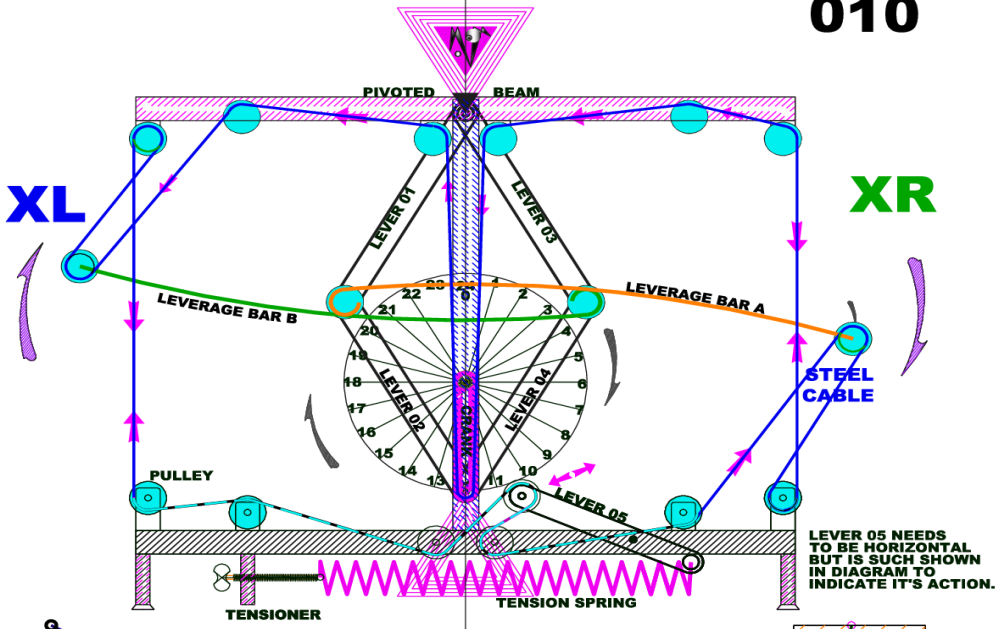
THE CRANK XL & XR LEVERAGE BEING EQUAL ON BOTH SIDES BUT ROTATING IN THE SAME DIRECTION; -START TO EXERT A 'WRING' FORCE OVER A BUILD IN MECHANICAL SLIPPERERINESS.

1/24th OUT OF STEP USE:- TOP OF CRANK POSITION.

NOW WE APROACH THE MATHEMATICS OF EB.

STILL APROACHING THE MATHEMATICS OF EB.....

010



NOW WE HAVE THE
MAXIMUM BALANCE POSITION
REFERING
TO THE CRANK XL & XR LEVERAGE

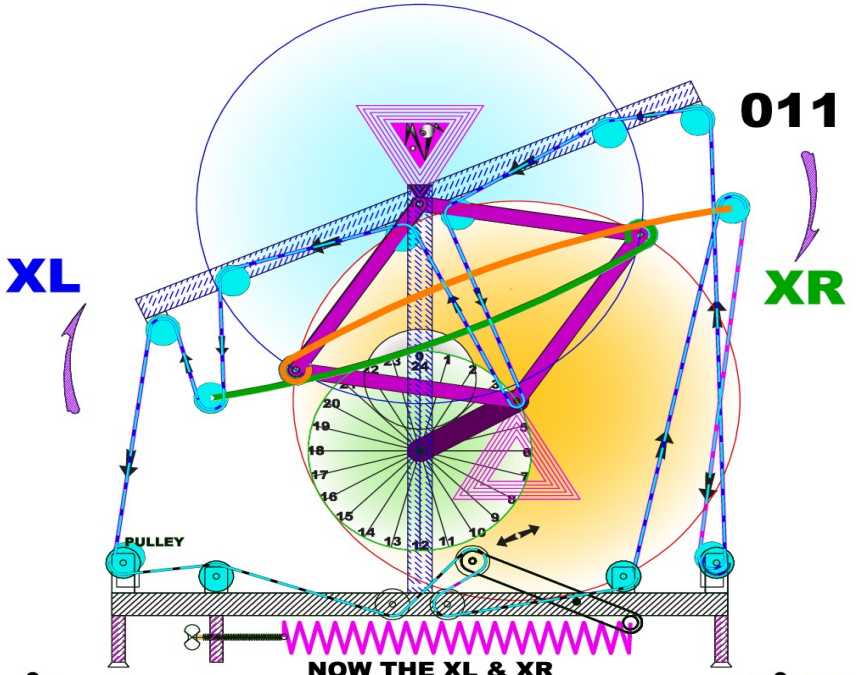
LEFT TWINWAVE
XL

BEING EQUAL ON BOTH SIDES
BUT THE ROTATIONAL SAME
DIRECTION 'WRING'
FORCES MOVEMENT IN
THE SQAURE AND
THUS THE SYSTEM MOVE AWAY
FROM SUCH BALANCE.

XR
RIGHT TWINWAVE

1/24th OUT OF STEP USE:-
BOTTOM OF CRANK

011



NOW THE XL & XR
OPERATE
IN THE SIDE ZONES

OF THE VERTICAL & THERE IS WHERE
THE BUBBLE OF IN-BUILT INSTABILITY
OCCUR, FORCING MOTION TO
CONTINUE AS THE MECHANICALLY
TRAPPED
TENSION CONTINUOUSLY
SEEK RELIEF BUT FIND NONE.

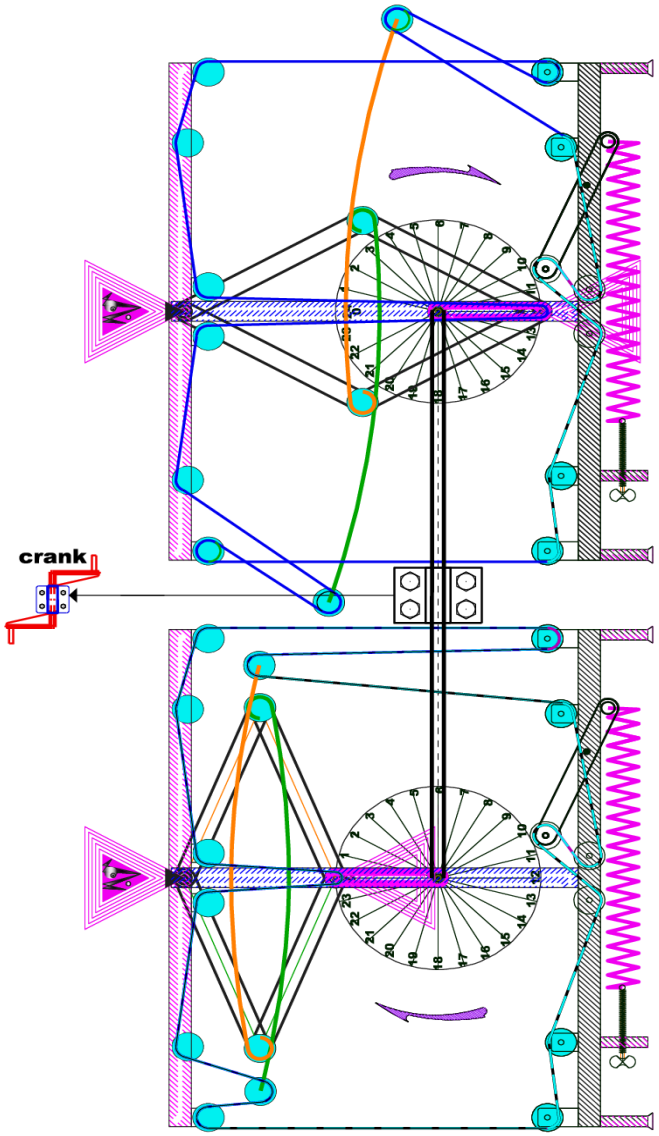
LEFT TWINWAVE
XL

XR
RIGHT TWINWAVE

THIS THEN IS A BASIC UNIT OF
THE EB GENERATOR DRIVE TRAIN
WHICH REQUIRE 2 UNITS MIN.
TO ROTATE THE CRANK 360°

1/24th OUT OF STEP USE:-
HALF OF EB DRIVE TRAIN

VERY NEAR THE MATHEMATICS OF EB NOW.....



1/24th EB FULL DRIVE TRAIN.

THIS THEN IS A MINIMUM WORKABLE UNIT OF THE EB GENERATOR DRIVE TRAIN WHICH WILL UPON SIMULTANEOUS TENSIONING DRIVE THE CRANKSHAFT THRU 360° CONTINUOUSLY SINCE THERE IS NO RELAX OR DISSIPATION OF THE 1/24th MECHANICAL BUBBLE OF HARDWIRED INSTABILITY UNTO WHICH TORQUE KEEP BEING SPRING TENSION APPLIED.

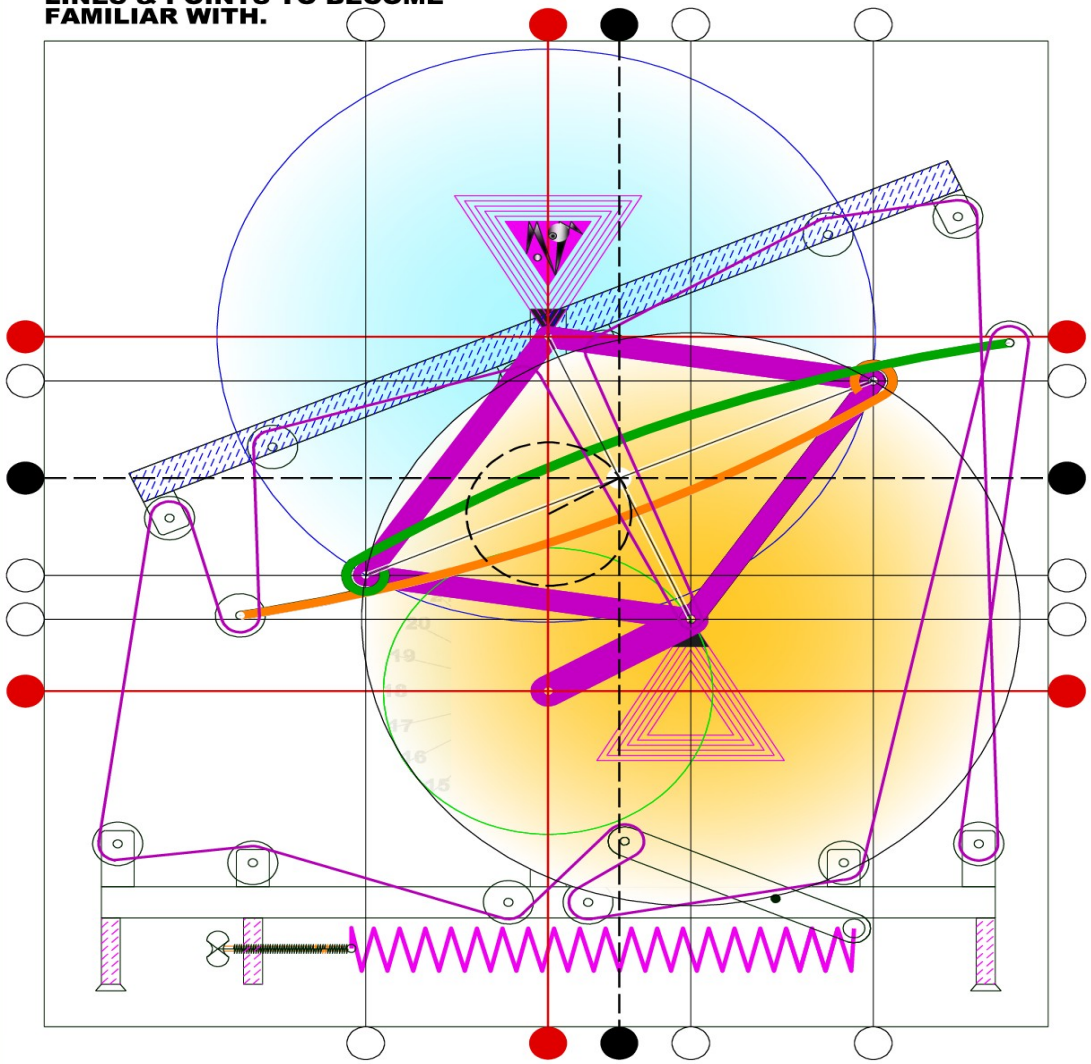
UNLESS MECHANICAL BREAKDOWN OCCUR, THERE SHOULD BE NO STOPPING OF ROTATION.

EB IS SHOWN IN DIAGRAM. THE EB CAN OPERATE VERTICAL OR HORIZONTAL SINCE IT IS NOT GRAVITY DEPENDANT.

TO FOLLOW :

BELOW IS SOME MAJOR GEOMETRY LINES & POINTS TO BECOME FAMILIAR WITH.

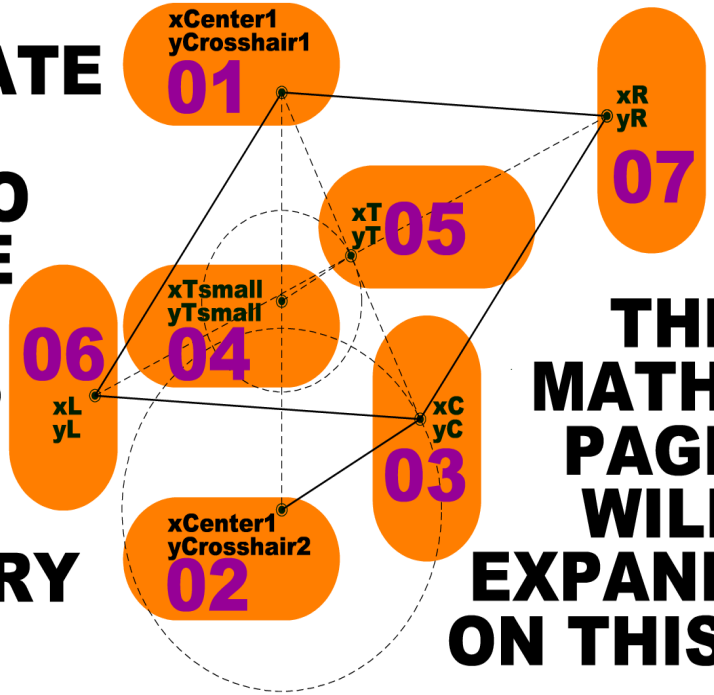
EB PRACTICAL GENERATOR 01
EB BASIC CALCULATIONS 02
EB PROGRAMMING 03
EB THEORY 04



NOW JUST BEFORE INTRODUCING SOME REAL MATHEMATICAL FORMULA'S ……LET'S DO A SOFT GEOMETRIC INTRO SUMMATION.

01 & 02 IS CHOSEN CO-ORDINATES.

CALCULATE IN 7 STEPS TO FIND THE EB CO-ORDS AT MAJOR GEOMETRY POINTS



THE MATH. PAGE WILL EXPAND ON THIS.

03, 04, 05, 06 & 07 etc IS THE CALCULATED CO-ORDINATES.

EB_MATH._01

The EB 1/24th TWIN WAVE as a Mechanical Discovery

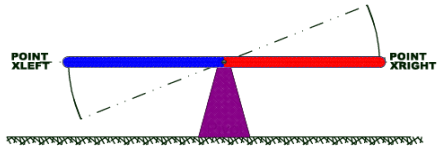
(A SeeSaw Comparison are used as a Simplified Explanation)

Please START here from POINT 01

I Started to prepare this on the 24th of January 2017 & Posted it on the 26th of January 2017. A Long lasting issue with secure access to my web site prevented any earlier posting. Gladly these security matters seems to be resolved for the moment. Thnx from m__ to my web host. Please do this Experiment if you Wish; More Later. Reposted : 17 FEB 2017

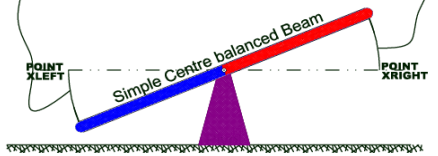
POINT 01 :

DISPLACEMENT on one side is IDENTICAL to the Displacement on the other side even though it take place in a REVERSE MIRROR fashion.



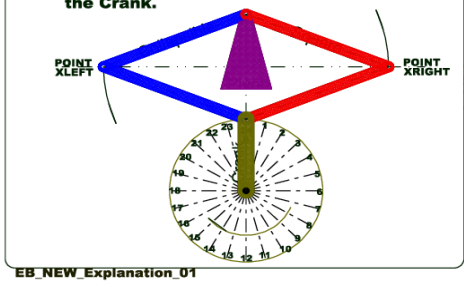
POINT 02 :

So to put it another way ;- DISPLACEMENT = distance travelled on one end, is the exact same as on the opposite end of the equal length / balanced centre pivoted seesaw.



POINT 03 :

NOW lets change the simple beam to a Collapsible Square fixed to a Crank (or Circle) and put motion on the whole system through the Crank.

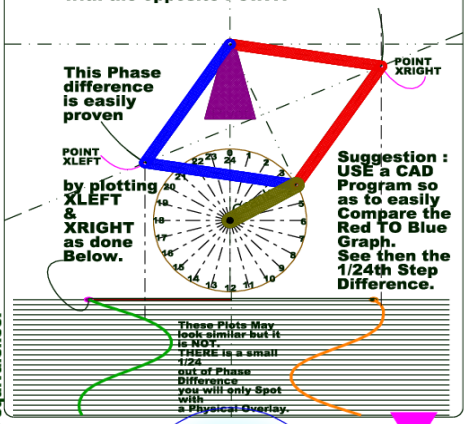


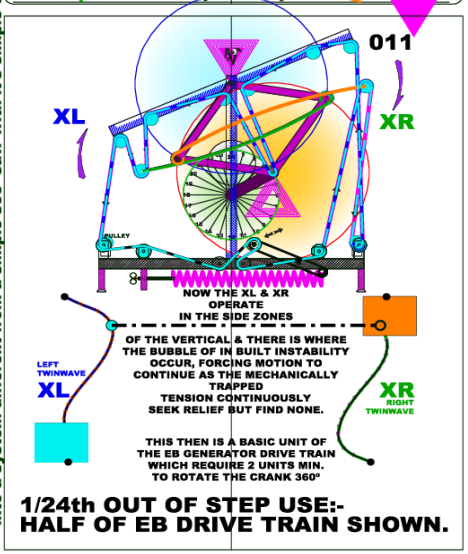
EB_NEW_Explanation_01

Thus one side is @ 1/24th More or Less LEVERAGE than the other side During each Half Cycle If EQUAL force is applied with Initial Equilibrium as a Start. It makes sense that a circle will introduce something into a system different from a simple see -saw with it's simple equivalence.

POINT 04 :
The 1/24th discovery

NOW we discover that the DISPLACEMENT on one side (XLEFT as opposed to XRIGHT) is NOT IDENTICAL to the Displacement on the other side while the rest of the Motion also take place in a Obvious REVERSE MIRROR fashion.
ONE POINT is 1/24th OUT OF PHASE or BECOME (JUMP actually) 1/24 OUT of STEP with the opposite POINT.





1/24th OUT OF STEP USE:- HALF OF EB DRIVE TRAIN SHOWN.

EB_MATH._02

0 The EB 1/24th TWIN WAVE Calculations PAGE 01

This is the EB Calculation full page.
This will be broken up into Simpler sections per page that will show how the Calculations add up to this Full page.

Reposted : 17 FEB 2017

01 BELOW : GEOMETRIC DEDUCTIONS TO GET TO THE FREE POINTS CO-ORDINATES

02 PI = 3.1415926535897932

03 Converting Degrees to Radians
angle1 = (AngCR * (PI / 180)) NB : angle1 shown as Ø

04 the a lenght of Triangle of Crank Swing
a = (CrankR * SIN(angle1))

05 b lenght of Triangle of Crank Swing
b1 = (CrankR * COS(angle1))

06 X coordinate of Crank Swing
xC(i) = xCenter1 + a

07 Y coordinate of Crank Swing
yC(i) = yCrosshair2 - b1

08 Triangle in Square Defined
b2 = yCrosshair2 - b1 - yCrosshair1

09 Side of Top Triangle
C2 = SQR(a ^ 2 + b2 ^ 2)

10 Half of Side/Top Triangle
C3 = C2/ 2

11 Opposite Angle
angle2 = (CrankR * SIN(angle1)) / C2

12 Half of Chord
W = SQR((Sqrad ^ 2) - (C3 ^ 2))

13 BELOW : CALCULATING CO-ORDINATES FOR TRACE CIRCLE :
(needed for FREE POINT Calc)

14 x Distance to trace circle centre
xTsmall = C3 * SIN(angle2)

15 y Distance to trace circle centre
yTsmall = C3 * COS(angle2)

16 x Value for Trace Circle swing
xT(i) = xCenter1 + xTsmall

17 y Value for Trace Circle swing
yT(i) = yCrosshair1 + yTsmall

18 BELOW : CALCULATING CO-ORDINATES FOR SQUARE LEVER : 2 SETS OF X & Y CO-ORDINATES

19 xL(i) = xT(i) - (W * COS(angle2))

20 yL(i) = yT(i) + (W * SIN(angle2))

21 xR(i) = xT(i) + (W * COS(angle2))

22 yR(i) = yT(i) - (W * SIN(angle2))

23 NOW TO CALCULATE PENDULUM EXTENSIONS: x & y POINTS DEPENDANT ONLY ON VARIABLES w & c3 & angle2.

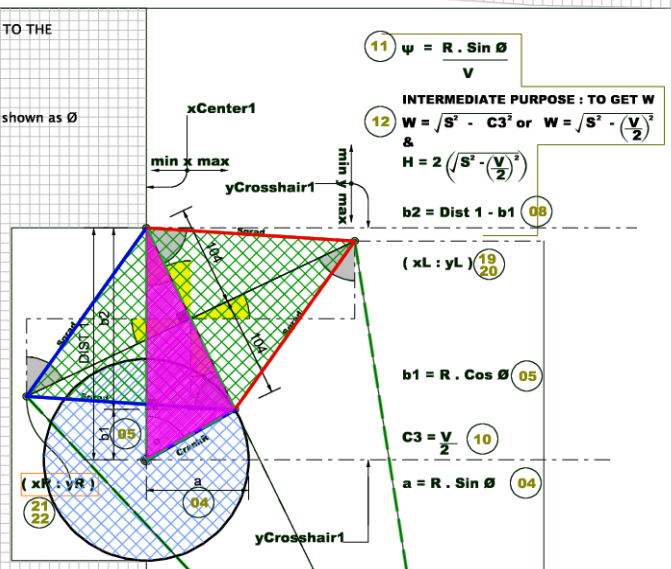
24 cbig = SQR(Rbig ^ 2 - W ^ 2)

25 aBigx = (C3 + cbig) * SIN(angle2)

26 bBigy = (C3 + cbig) * COS(angle2)

27 xE(i) = xCenter1 + aBigx

28 yE(i) = yCrosshair1 + bBigy



11 $\psi = \frac{R \cdot \sin \emptyset}{V}$

INTERMEDIATE PURPOSE : TO GET W

12 $W = \sqrt{S^2 - C3^2}$ or $W = \sqrt{S^2 - \left(\frac{V}{2}\right)^2}$
&
$H = 2\left(\sqrt{S^2 - \left(\frac{V}{2}\right)^2}\right)$

b2 = Dist 1 - b1 08

(xL : yL) 19 20

b1 = R . Cos Ø 05

C3 = V/2 10

a = R . Sin Ø 04

$V = \sqrt{(a^2 + b2^2)}$
OR
09 $V = \sqrt{(R \times \sin\emptyset)^2 + (\text{Dist 1} - (R \times \cos\emptyset))^2}$

Free Pendulum End

ULTIMATE PURPOSE : TO GET Dist 2

30 Dist 2 = $(\sqrt{Rbig^2 - W^2}) + C3$

29 ADDITIONAL CALC FOR Dist2 variable
Dist2 is the Distance between the Pivot to the EB pendulums free point.
This can be used to determine if any true curve are followed by the free point.
08 Vertical EB prove that there are no true curve followed. The Determination of Lopsidedness in the Closed Loop Or full Symmetry of this Loop this need to be made.
This is needed so that if one would use this EB Pendulum as a Mathematical analogy for the 4 acknowledged forces in Nature with the Pendulum Extension Loop as the Representation for Gravity ;- then in the case of a Lopsidedness in such a Loop ;- such Lopsidedness would Point to an inherent Directionality inbuild into Gravity thus giving rise on the Larger Scale to a Specific Direction of Motion in Space of all Things Gravitationally Linked.

30 Dist2(i) = (SQR((Rbig ^ 2) - (W ^ 2))) + C3

AND THERE IT IS..STARTING THE MUCH–ANTICIPATED……

EB_MATH._03

0 The EB 1/24th TWIN WAVE as a Mechanical Discovery

This is the EB Calculation 1st breakup page.
This will start to show with a Simpler section that will indicate how the Calculations add up to the Full page. We start with the 1st step : the ROTATION CALCULATION.

Reposted : 17 FEB 2017

00 (xZero , yZero) xMax yMax

By the way ;- this is the co-ordinate system used by the EB Twinwave Twinesine program graphics.

1st STEP

01 BELOW : GEOMETRIC DEDUCTIONS TO GET TO CRANK ROTATION'S xC : yC CO-ORDINATES.

02 PI = 3.1415926535897932

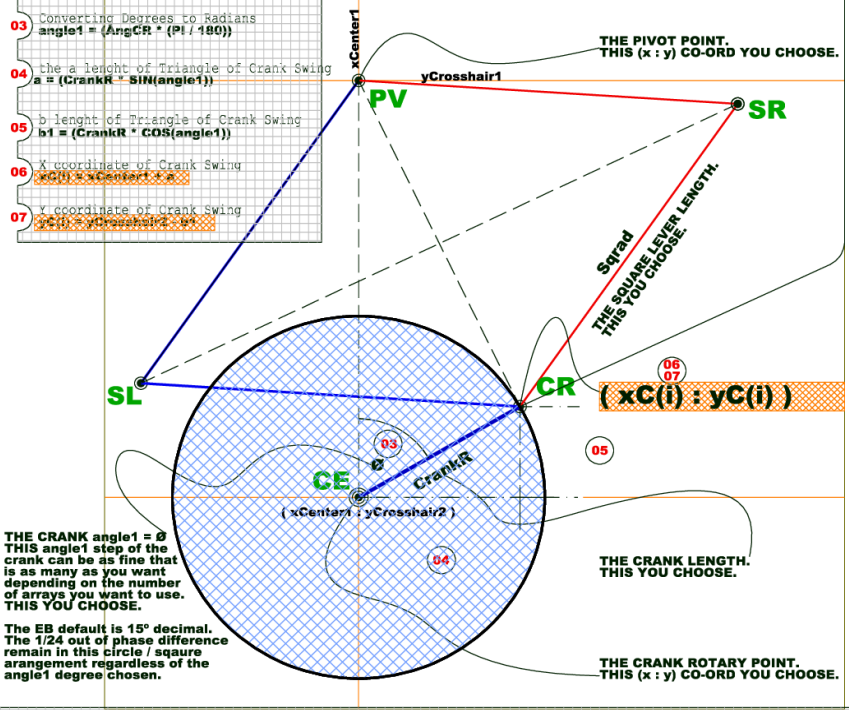
03 Converting Degrees to Radians
angle1 = (AngCR * (PI / 180))

04 the a lenght of Triangle of Crank Swing
a = (CrankR * SIN(angle1))

05 b lenght of Triangle of Crank Swing
b1 = (CrankR * COS(angle1))

06 X coordinate of Crank Swing
xC(i) = xCenter1 + a

07 Y coordinate of Crank Swing
yC(i) = yCrosshair2 - b1



This (xC(i) : yC(i)) will fill up it's pre-defined arrays;- now after reaching goal:- 06+07 ;- on to 2nd step.

0 The EB 1/24th TWIN WAVE as a Mechanical Discovery

This is the EB Calculation 2nd breakup page.

The goal here is to determine the dynamically changing angle2 or Ψ , by getting distance C2 or V.

Reposted : 17 FEB 2017

NOW THAT THE SIMPLE ROTATION ARRAY CO-ORDS FOR CRANK POINT CR - ARE FILLED IN GOAL 6 + 7, WE USE THAT ARRAY TO PROGRESS TO GOAL 8.

06 07 (xC(i) : yC(i))
(xC(1) : yC(1))
(xC(2) : yC(2))
(xC(3) : yC(3))
(xC(4) : yC(4))
(xC(...) : yC(...))
(xC(etc) : yC(etc))

b2 = yCrosshair2 - b1 - yCrosshair1

08 Triangle in Square Defined

09 C2= SQR(a ^ 2 + b2 ^ 2)
Side of Top Triangle
C3 = C2/ 2

10 Half of Side/Top Triangle [FOR LATER USE]

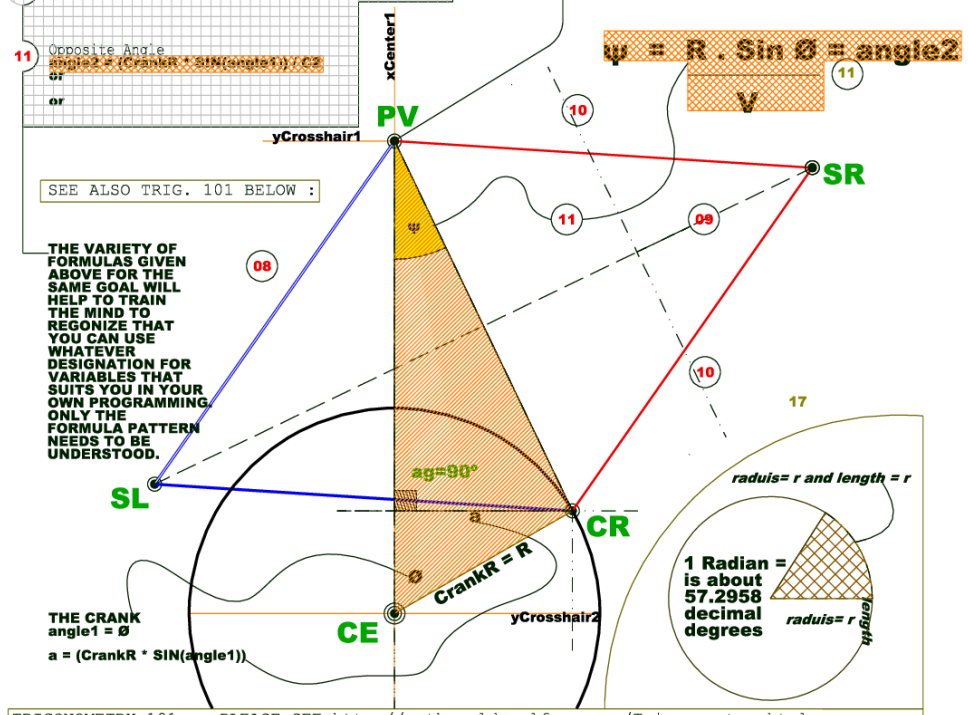
11 Opposite Angle
angle2 = (CrankR * SIN(angle1)) / C2
or
or

REMINDER : THE SPECAIL CASE OF A TRIANGLE WITH A 90° DEGREE CORNER LEND US TO MAKE USE OF THE SIMPLE RATIO (SIMPLE DIVISION) OF THE SIDE LENGHTS OF THIS TRIANGLE TO MAP TO A LIST OF DEGREES CORRESPONDING TO THE CLASICAL 360 DEGREES SYSTEM OR AS IN THIS CASE OF USE;- THE RADIAN SYSTEM.

(THE LIST IS BUILD IN AS A MATHEMATICAL FUNCTION IN YOUR COMPUTER / CALCULATOR)

SEE ALSO TRIG. 101 BELOW :

2nd STEP



SEE ALSO TRIG. 101 BELOW :

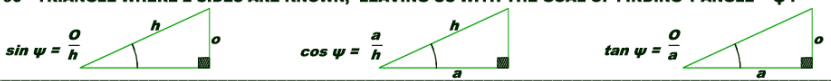
THE VARIETY OF FORMULAS GIVEN ABOVE FOR THE SAME GOAL WILL HELP TO TRAIN THE MIND TO REGONIZE THAT YOU CAN USE WHATEVER DESIGNATION FOR VARIABLES THAT SUITS YOU IN YOUR OWN PROGRAMMING. ONLY THE FORMULA PATTERN NEEDS TO BE UNDERSTOOD.

THE CRANK
angle1 = Ø
a = (CrankR * SIN(angle1))

TRIGONOMETRY 101 : PLEASE SEE http://mathworld.wolfram.com/Trigonometry.html

TRIGONOMETRY 101 : PLEASE SEE https://www.mathsisfun.com/geometry/radians.html

GOAL 11;- EMPLOY A STANDARD TRIGONOMETRY FORMULA FOR DETERMINING AN UNKNOWN ANGLE IN A 90 ° TRIANGLE WHERE 2 SIDES ARE KNOWN;- LEAVING US WITH THE GOAL OF FINDING 1 ANGLE = ψ .



This angle2 or Ψ, will fill up it's pre-defined arrays;- now after reaching goal:- 11 ;- on to 3rd step.

0 The EB 1/24th TWIN WAVE as a Mechanical Discovery

This is the EB Calculation 3nd breakup page.

The goal here is to determine the dynamically changing distance W;- to get to calculate TC point's xT:yT Co-ords.

Reposted : 17 FEB 2017

12 W = SQR((Sqrad ^ 2) - (C3 ^ 2))
Half of Chord

13 **BELOW : CALCULATING CO-ORDINATES**
(CRANK POINT Calc)
xTsmall = C3 * SIN(angle2)
x Distance to trace circ e centre

14 yTsmall = C3 * COS(angle2)
y Distance to trace circle centre

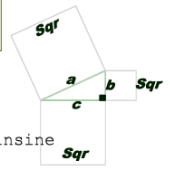
15 x Value for Trace Circle swing
xT(i) = xCenter1 + xTsmall

16 yT(i) = yCrosshair1 + yTsmall
y Value for Trace Circle swing

17 **REVEALING THE TRACE CIRCLE**

The W- Distance will be used with the xT(i) & yT(i) to get to SL & SR co-ordinate values.

REMINDER : THE TRACE CIRCLE PLACEMENT IN MOST CASES IS JUST ½ OF THE PIVOT TO CRANK CENTRE DISTANCE.

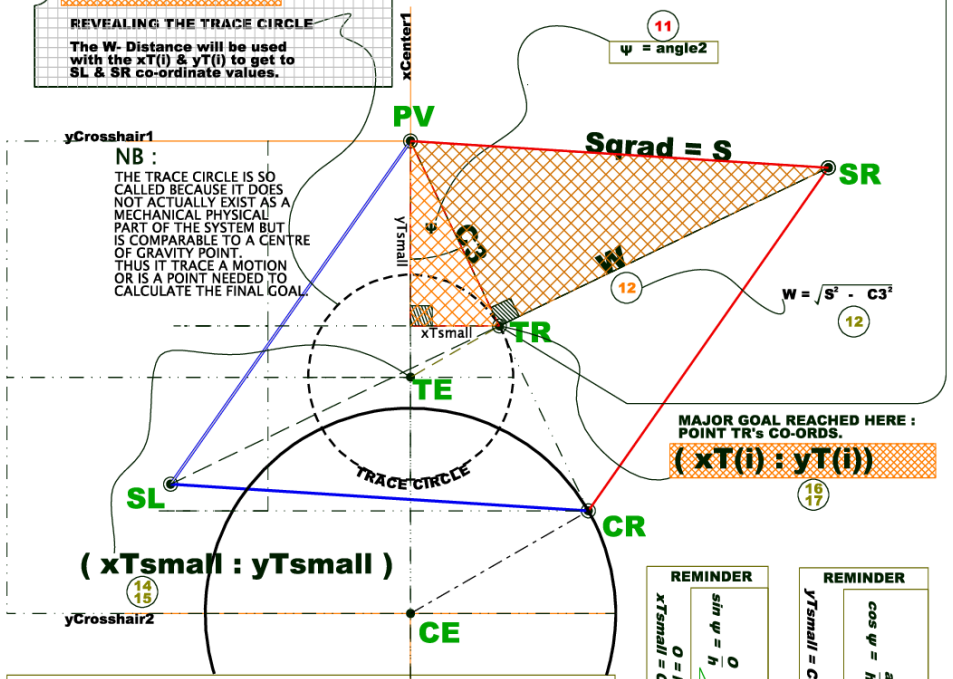


REMINDER : Note the Heavy use of the Pythagoras formula throughout the EB Twinwave Twinsine Program.

$a^2 = b^2 + c^2$

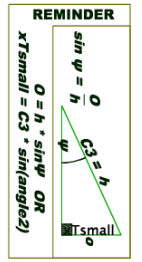
$a = \sqrt{(b^2 + c^2)}$

3rd STEP

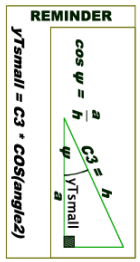


NB :
THE TRACE CIRCLE IS SO CALLED BECAUSE IT DOES NOT ACTUALLY EXIST AS A MECHANICAL PHYSICAL PART OF THE SYSTEM BUT IS COMPARABLE TO A CENTRE OF GRAVITY POINT. THUS IT TRACE A MOTION OR IS A POINT NEEDED TO CALCULATE THE FINAL GOAL.

REMINDER



REMINDER



NB : TO CALCULATE THE FINAL GOAL.

FROM THE TR = TRACE CENTRE, CENTRE POINT CO-ORDS , THE SL & SR - POINT CO-ORDS CAN BE CALCULATED ;- THAT BEING THE ULTIMATE GOAL.

THAT SL & SR - POINTS CAN THEN BE USED TO PLOT THE TWINWAVE GRAPHS, THAT WILL REVEAL THE 1/24th OUT OF PHASE / OUT OF STEP MECHANICAL HARDWIRED QUALITY OF THIS PHYSICAL SYSTEM.

The xT(i) & yT(i) will fill up it's pre-defined arrays;- now after reaching goal:- 16+17 ;- on to 4th step.

The EB 1/24th TWINWAVE as a Mechanical Discovery
This is the EB Calculation 4th breakup page.
The goal here is to use W & xT(i) : yT(i) co-ords to get to calculate a Major Goal of the SL + SR points.

Reposted : 17 FEB 2017

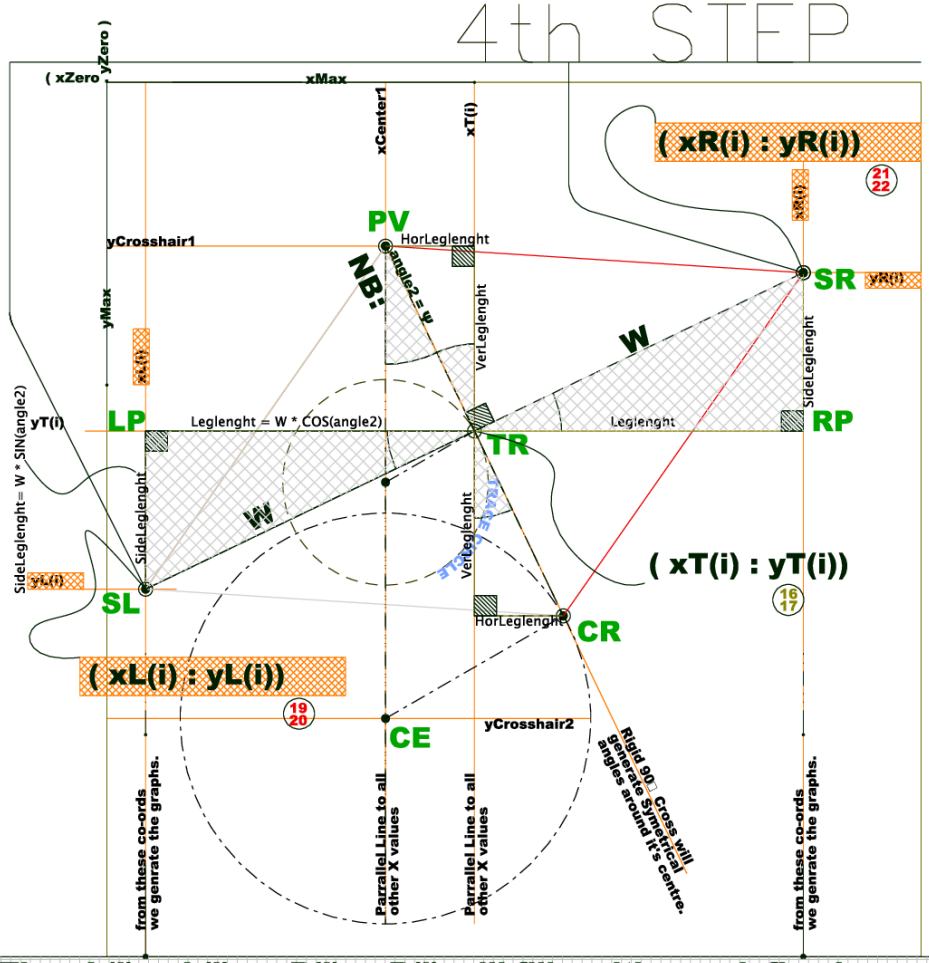
18 BELOW : CALCULATING CO-ORDINATES FOR SQUARE LEVER : 2 SETS OF X & Y CO-ORDINATES

	NB :
19 xL(i) = xT(i) – (W * COS(angle2))	Leglenght = W * COS(angle2)
20 yL(i) = yT(i) + (W * SIN(angle2))	SideLeglenght = W * SIN(angle2)
21 xR(i) = xT(i) + (W * COS(angle2))	Leglenght = W * COS(angle2)
22 yR(i) = yT(i) – (W * SIN(angle2))	SideLeglenght = W * SIN(angle2)

REMINDER : Simple Symetry will determine that certain angles will be the Same in any Geometrical construct. See how angle2 occur in 5 ways below.

This we use to make final co-ord calculations for SL + SR;- with the aid of the W- Lenght.

4th STEP



The xL(i) : yL(i) + xR(i) : yR(i) will fill up it's pre-defined arrays;- now after reaching goal:- 19 to 22;- on to 5th step.

EB_MATH._06

The EB 1/24th TWINWAVE as a Mechanical Discovery
This is the EB Calculation 5th breakup page.
The goal here is to show the 1/24th OUT OF STEP or 1/24th OUT OF PHASE DISCOVERY.

Reposted : 17 FEB 2017

NB :
These Plots May look smilar but it is NOT. THERE is a small 1/24 out of Phase Difference you will only Spot with a Physical Overlay.

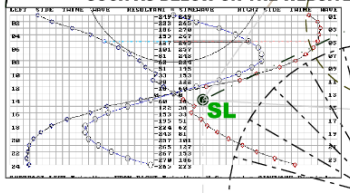
NOTE :
THE TWIN WAVE SHAPES VARY IN THEIR PATHWAYS DEPENDING ON THE DISTANCE BETWEEN PV - TO CE-. SEE MORE ABOUT THAT ON THE WEBSITE. JUNKYARDINNOVATIONS.COM

SO WHAT ! YOU MAY ASK :-

The purpose is to see HOW we can Use this 1/24th HARDWIRED IN-EQUALITY existing in this MECHANICAL System.

Also see the musings on PHYSICS theory that may be hidden in this Discovery on the website - http://junkyardinnovations.com/0000_TwineSine_StartHere.html

SEE SOME WEIRD TWINWAVE PATERNS SUCH AS BELOW ON THE WEBSITE.



5th STEP

Sugestion : USE a CAD Program so as to easily Compare the Red TO Blue Graph. See then the 1/24th Step Diference.

The SL + SR Points Co-ords need to be Graphically connected to the Grid to generate the Wave Graphs. Next :- 6th step.

EB_MATH._07

The EB 1/24th TWINWAVE as a Mechanical Discovery
This is the EB Calculation 6th breakup page.
The goal here is to show the extension point of the EB pendulum calculation.

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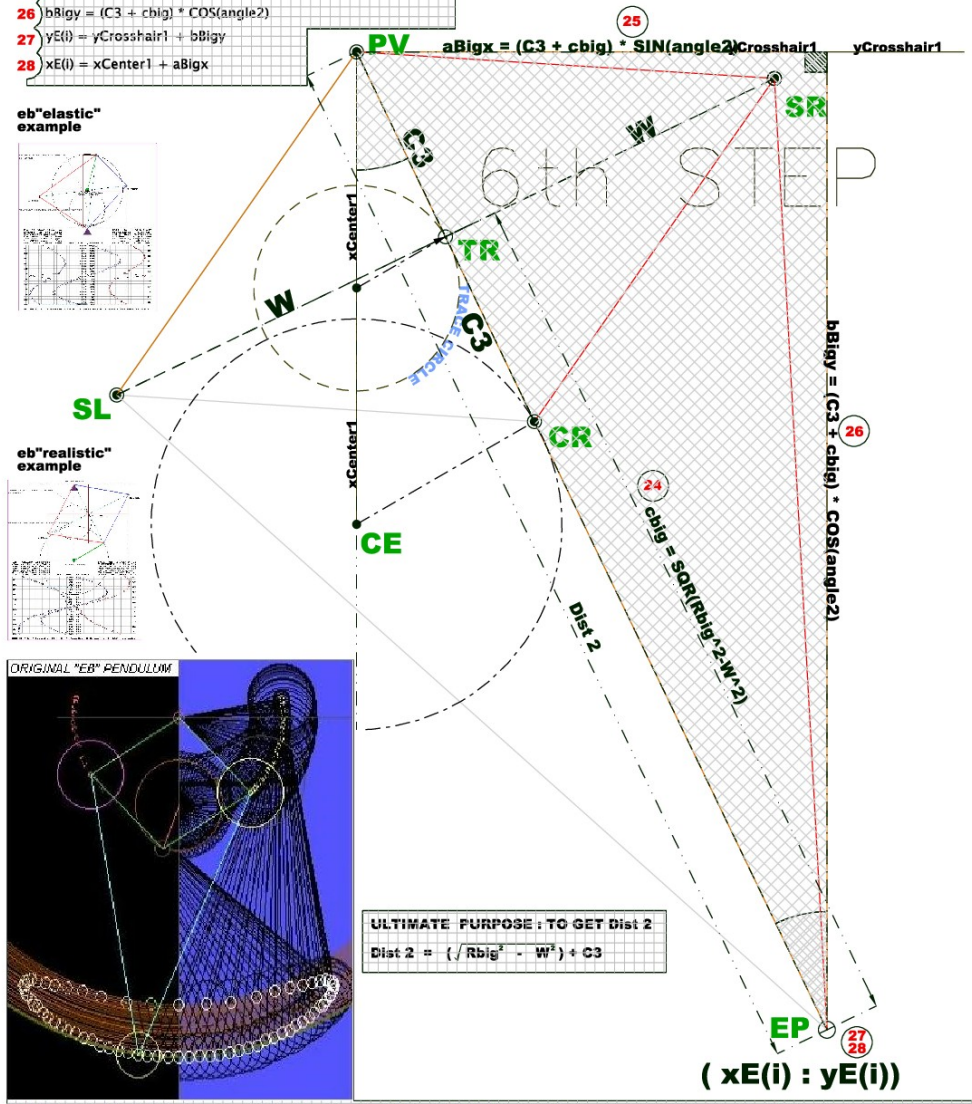
23 NOW TO CALCULATE PENDULUM EXTENSIONS: x & y POINTS DEPENDANT ONLY ON VARIABLES w & c3 & angle2.
24 cbig = SQR(Rbig ^ 2 – W ^ 2)
25 aBigx = (C3 + cbig) * SIN(angle2)
26 bBigy = (C3 + cbig) * COS(angle2)
27 yE(i) = yCrosshair1 + bBigy
28 xE(i) = xCenter1 + aBigx



Now that we got the xE + yE Co-ords we go to a Summation page on as a 7th step. That will conclude the EB formula.

EB_MATH._08

The EB 1/24th TWINWAVE as a Mechanical Discovery
This is the EB Calculation 7th breakup page.
The goal here is to show the EB formula's in a single glance as a series of Pythagoras + Trigonometry application to Triangles.

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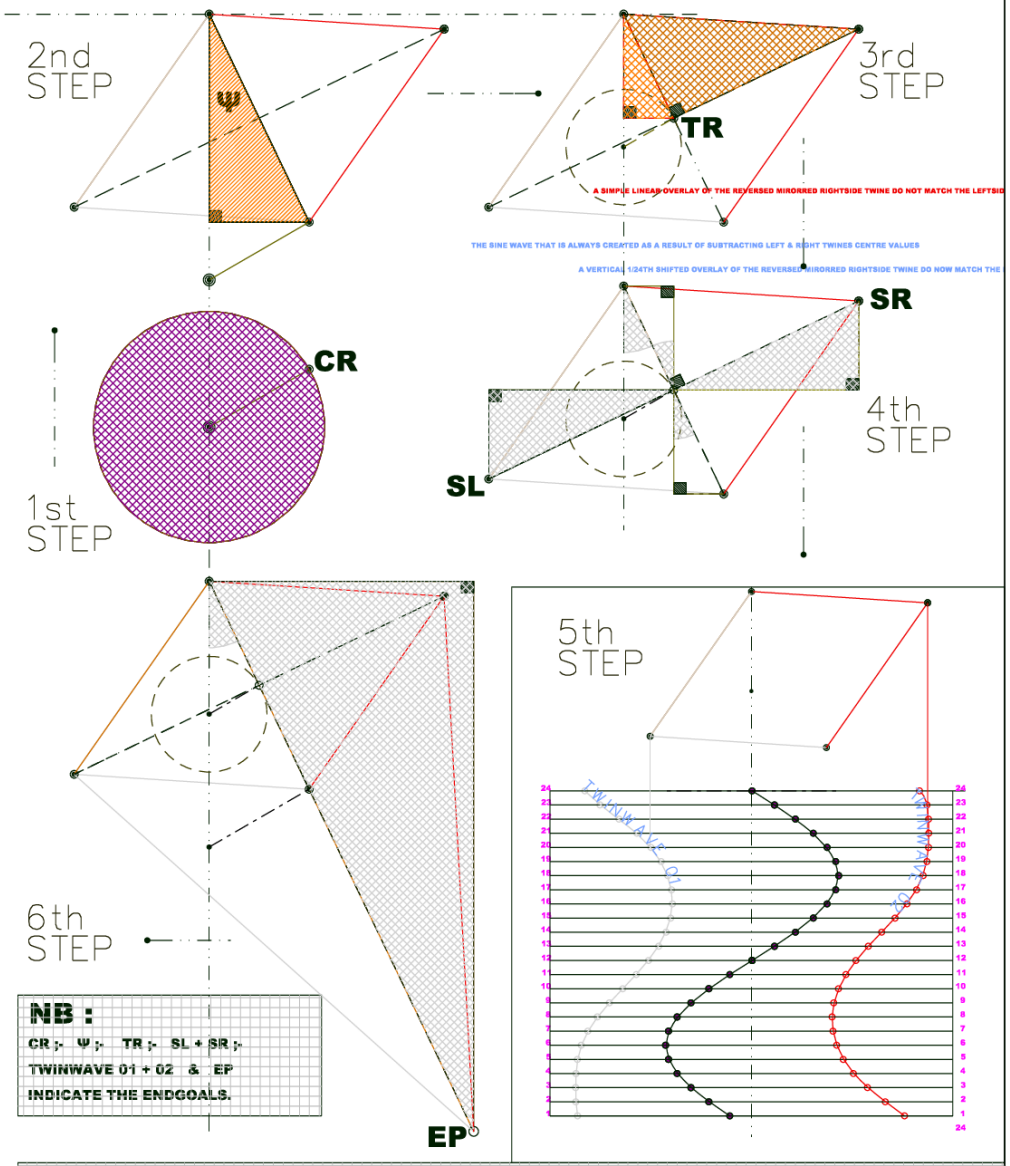
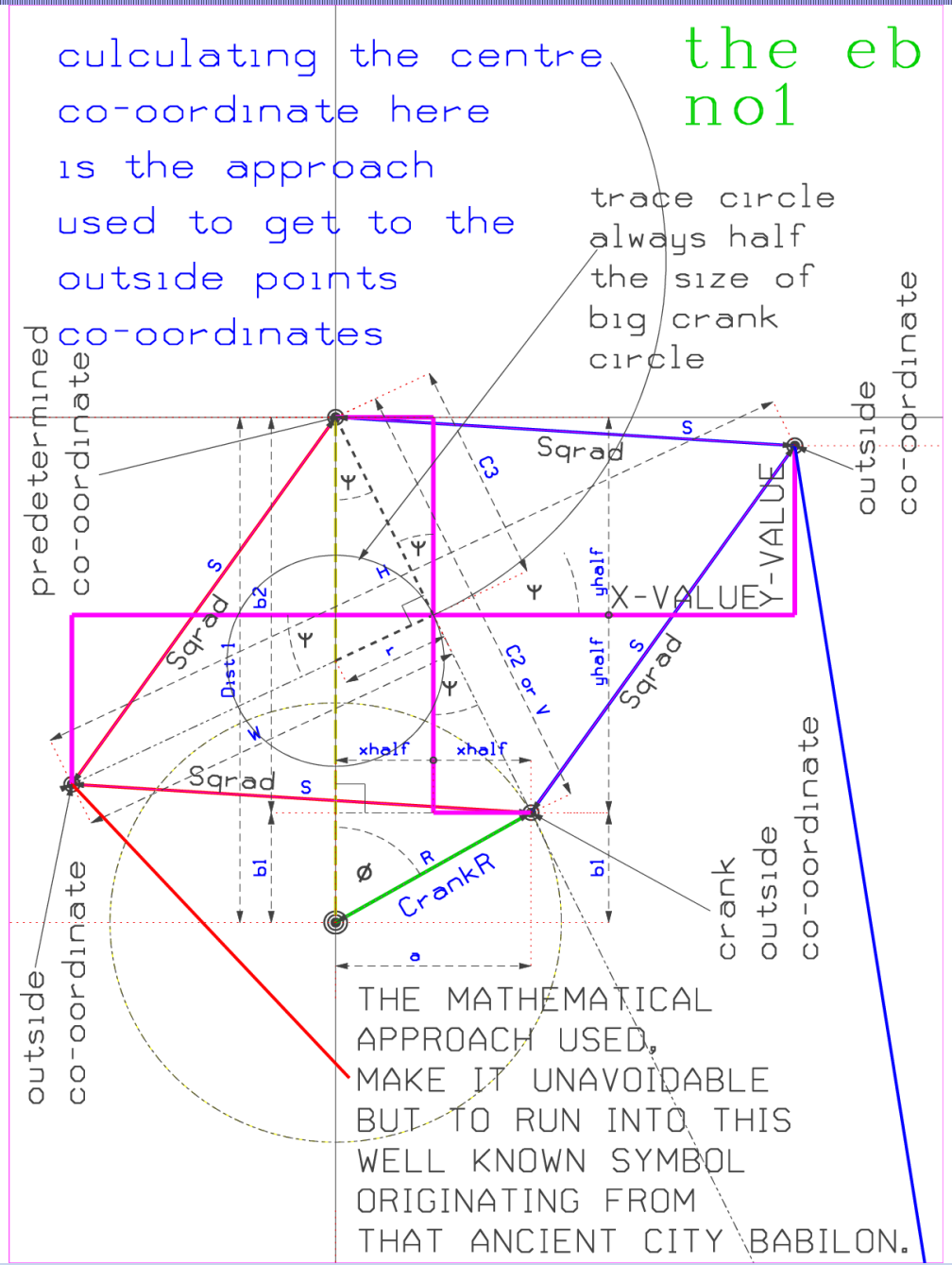


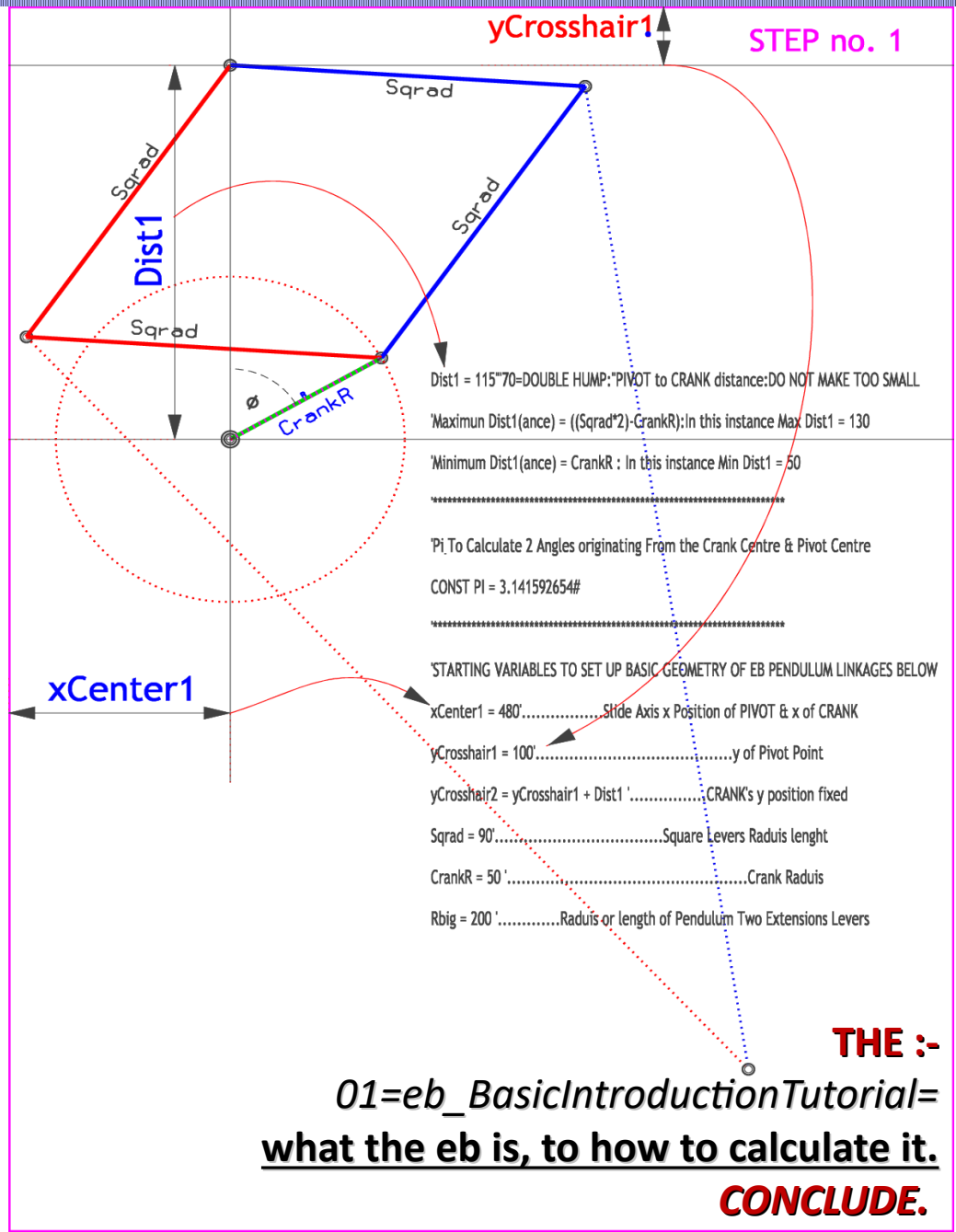
Now that we got the xE + yE Co-ords we go to a Summation page as a 7th step. This then conclude the EB formula.

EB_MATH._09

And here at last, the Maths turn NASTY.....very much so indeed.

But calm down... you only need to really deal with the below setup in your calculations / programming of the eb, as will be needed for effective use.





THE :-

01=eb_BasicIntroductionTutorial=

what the eb is, to how to calculate it.

CONCLUDE.