HER3 : HP48GX PROGRAM FOR HERRINGBONE knots

It is supposed that you own a HP48GX calculator or that an emulator is installed on your computer and that you know how to use it (if not : read BINX user tips manual to get and inkling or read the “quick start” official HP user manual (download available on my web pages : just look attentively in Publication_3 page). Reading the user’s tips of the other programs can do wonder to clarify some points about the use of the HP48 to run my programs that always follow an identical trail.

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If you are of the multitude that make confusion between
a **STANDARD HERRINGBONE** knot
and
a **STANDARD HERRINGBONE PINEAPPLE** knot
then you better stop here and go learn what are the **HUGE** differences between them.

Without doubt reading the topic on **HERRINGBONE** knots in Turkeads_24 page is your best bet before using this program intelligently and adequately.

HOW TO USE THE HER3 HP48 PROGRAM

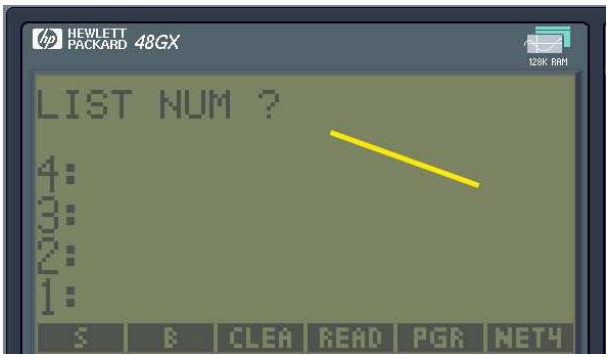
It is supposed that you have loaded the **HER3** program in either the calculator or the emulator.

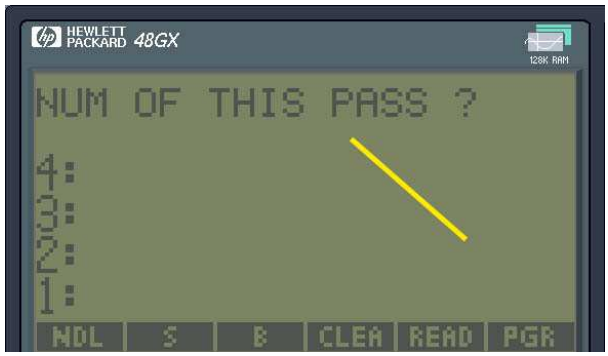
These are the buttons that you will use most

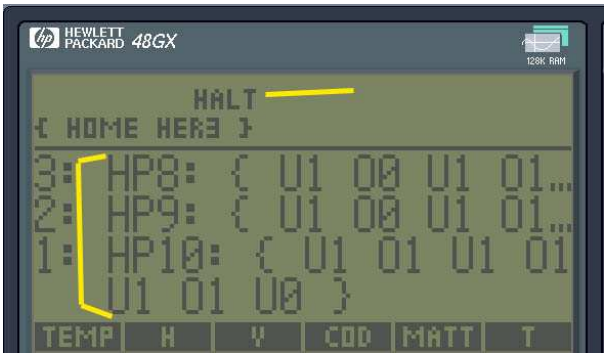
HER3 is in the {**HOME**}, open the **HER3** directory.

In the MENU list at the bottom of the screen you will find :
READ : a short reminder of what this program is about
CLEAN : the program that when run will erase ALL the variables create by a **PGR** run
Run **CLEAN** before using **PGR** for a new HERRINGBONE knot
Run **CLEAN** after you are finished with the HERRINGBONE you were studying, this will reclaim memory that would be uselessly occupied by the variables created by the running of **PGR**.
NEVER USE **CLEAN** BETWEEN **PASS**
PGR which is the program that calculate the half-period coding for each THK components in the HERRINGBONE knot.

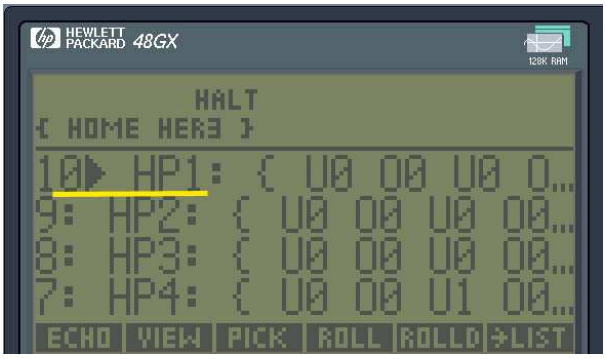
Run **PGR** : you will be ask for the LEAD and BIGHT of the THK component.
(remember :the program **HALT** and you Start it again by using **VIOLET LEFT ARROW + ON**)
Then the next thing will be the Number of the LIST, for expediency give it the same number that this **PASS** has.
There is one **PASS** for each THK component in the HERRINGBONE knot.







The results will be put in the **ACTIVE STACK** where you can explore them and note them on a paper (always verifying that no mistake are make in the copying)



Selecting one HP in particular and using **VIEW** in the **MENU** at the bottom of the screen will put this HP in full view.

You do the calculation for **PASS** after **PASS** in the HERRINGBONE knot never using **CLEAN** between **PASS**.

The results that are put on the **STACK** are also **STO**red in variables that can be accessed from the **MENU** at the bottom of the screen.
PASS1 , **PASS2**, **PASSn** contain all the HP of that **PASS** in case you need to verify something afterward if you have committed the mistake of erasing the stack.

IFF you do thing correctly you will have, well ordered, all the HP of all the **PASS** in the **STACK** at the end of your last **PASS**.
The HP48 STACK is a very powerful tool.

This is the easy “pushing the button” part but to exploit it usefully you really need to have a full grasp of the inner working of HERRINGBONE knots.
Just to wet your appetite here are some illustrations modified from SCHAAKE & TURNER.
Using 3 and half pages out of 205 (2 being modified for clarity) can b, without falsehood, said to be “FAIR QUOTE”, the more so as it is to entice persons to buy the book.

14

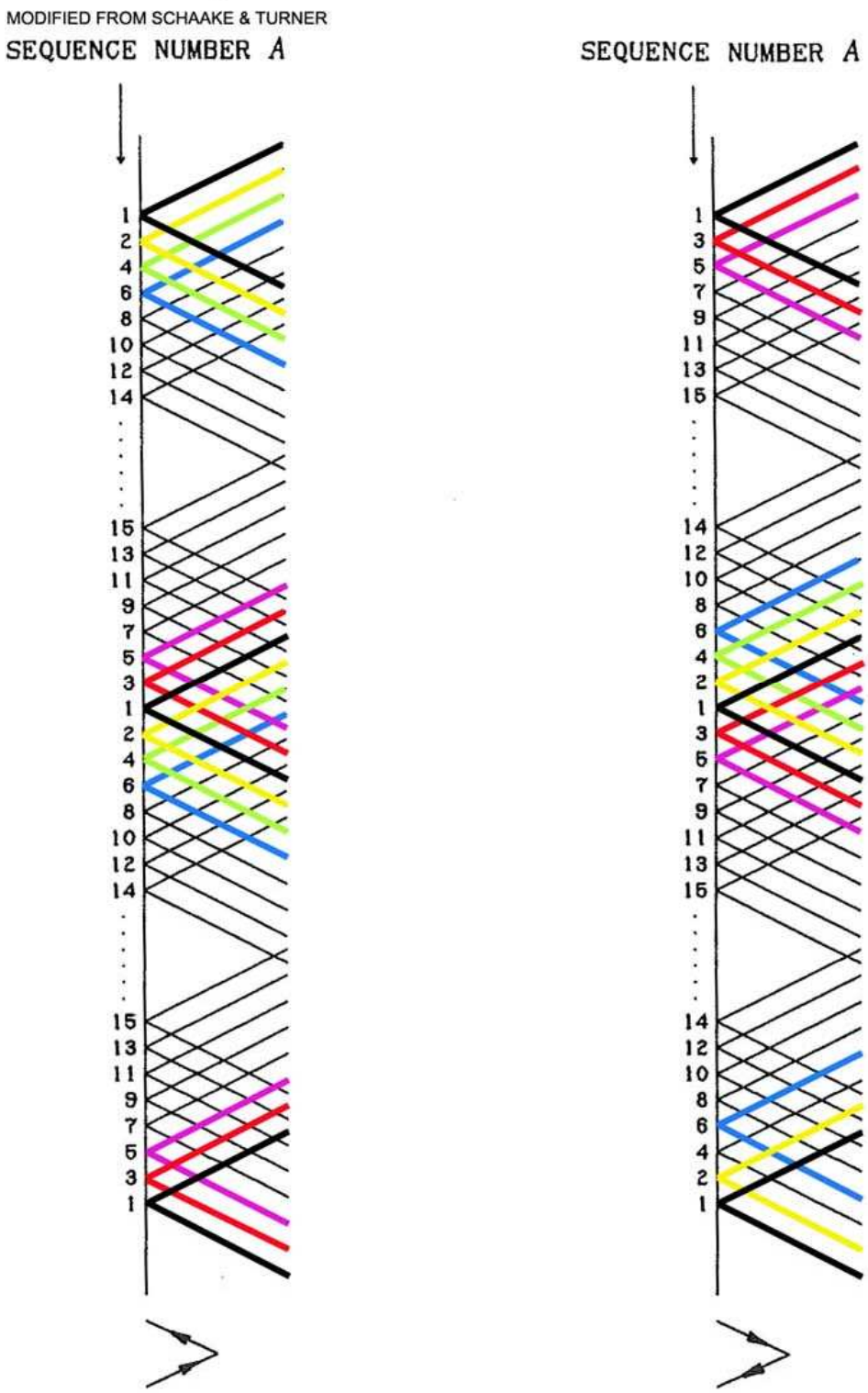


Fig. 11 — The Sequence Rule for the upwards and the downwards braiding direction.

MODIFIED from SCHAAKE & TURNER

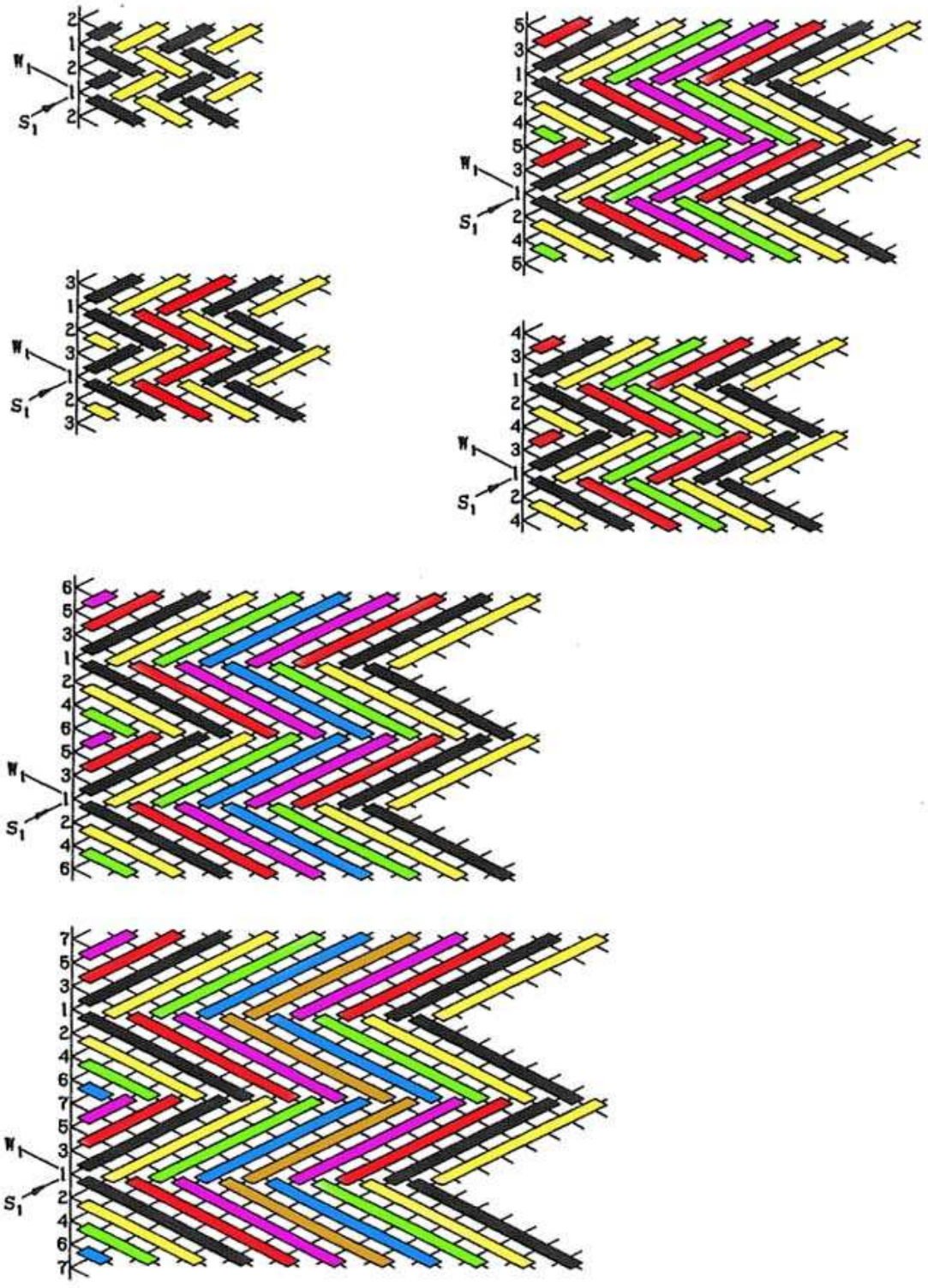


Fig. 12 — The Coding-Patterns associated with the upwards braiding direction.

17

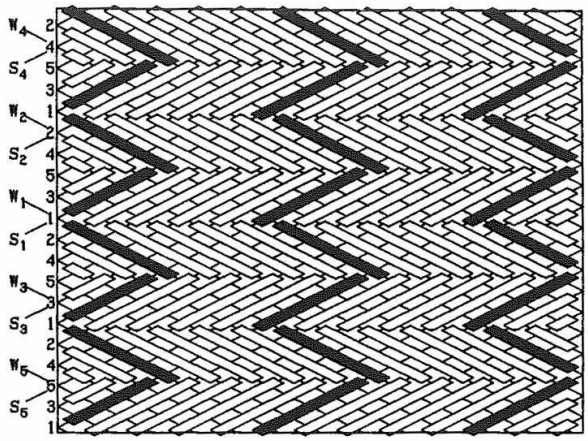


Fig. 14 — The regular positioning of the starting-points (upwards braiding method).
THERE IS ALSO AN ILLUSTRATION FOR THE DOWNWARDS BRAIDING METHOD. Just get yourself thr book on HERRINGBONE

YES !I know this is difficult to read ; deliberately done so as I do not want to Freely gives what is hard work by Schaake and Turner. Just buy the book or the CD.

19

S_o ——— p^* = odd ; b^* = such as to be coprime with p^*

Sequence Number A = *odd*

Set-number		1	2	3	⋯	p^*-2	p^*-1	
L⟶R Reference		$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	⋯ ⋯	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*
R⟶L Reference		$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	⋯ ⋯	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*
1	L⟶R	$A-1$	$A-1$	$A-1$	⋯	$A-1$	$A-1$	$A-1$
2	R⟶L							$A-1$
3	L⟶R							$A-1$
⋮	⋮							⋮
$2b^*$	R⟶L							$A-1$

JUST GET YOURSELF A COPY OF "HERRINGBONE" TO FULLY UNDERSTAND THOSE ESSENTIAL POINTS

Sequence Number A = *even*

Set-number		1	2	3	⋯	p^*-2	p^*-1
L⟶R Reference	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	$A-1$ *o*	⋯ ⋯	$A-1$ *o*	$A-1$ *u*
R⟶L Reference	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	$A-1$ *o*	⋯ ⋯	$A-1$ *o*	$A-1$ *u*
1 L⟶R	$A-1$	$A-1$	$A-1$	$A-1$	⋯	$A-1$	$A-1$
2 R⟶L	$A-1$						
3 L⟶R	$A-1$						
⋮ ⋮	⋮						
$2b^*$ R⟶L	$A-1$						

20

S_e ——— p^* = even ; b^* = such as to be coprime with p^*

Sequence Number A = *odd*

Set-number		1	2	3	⋯	p^*-2	p^*-1	
L⟶R Reference		$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	⋯ ⋯	$A-1$ *o*	$A-1$ *u*	$A-1$ *o*
R⟶L Reference		$A-1$ *o*	$A-1$ *u*	$A-1$ *o*	⋯ ⋯	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*
1	L⟶R	$A-1$	$A-1$	$A-1$	⋯	$A-1$	$A-1$	$A-1$
2	R⟶L							$A-1$
3	L⟶R							$A-1$
⋮	⋮							⋮
$2b^*$	R⟶L							$A-1$

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Sequence Number A = *even*

Set-number		1	2	3	⋯	p^*-2	p^*-1
L⟶R Reference	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	$A-1$ *o*	⋯ ⋯	$A-1$ *u*	$A-1$ *o*
R⟶L Reference	$A-1$ *o*	$A-1$ *u*	$A-1$ *o*	$A-1$ *u*	⋯ ⋯	$A-1$ *o*	$A-1$ *u*
1 L⟶R	$A-1$	$A-1$	$A-1$	$A-1$	⋯	$A-1$	$A-1$
2 R⟶L	$A-1$						
3 L⟶R	$A-1$						
⋮ ⋮	⋮						
$2b^*$ R⟶L	$A-1$						

HER3 just 'automate' these tables.