

- oned
- **S**tandtogether
- **E**lectronic
- Reconers

Orbewrit

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Reichstandortsgemeinschaft – Rsg Reichsforschungsgemeinschaft für Rechenwissenschaft und -lehre – Rfg-r British Forseec Fellowship for Recon- and Telllore Norræn Rannsóknar Samfélag © 1989-2020

Left under the Mean Need Leave.

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	0	19 19
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# **Infare**

The OSER is a layout for standtogethers which has as end to eath the reconing and trade of onputs. An OSER standtogether is made up of a **main hold**, one or more **reconing onelings** and naught or more **linced onelings**.

In the OSER, reconings and trades are bewrit through **broocs**. When a brooc is run, three steps happen:

- · grasp;
- · underbreac; and
- · framing.

# Grasp

In a grasp, an *onput* is overdragged between a oneling and the main hold.

# **Underbreacing**

In an underbreacing, a oneling maces a reconing oneling run a new brooc.

# **Framing**

In framing, a reconing oneling runs a brooc.

Part I

Grasp

# **Main Hold**

The main hold is made of cells.

# **Telllingstrings**

The cells hold **telllingstrings**. In a tellingstring, the telllings are tallied from 1 and are worth either 0 or 1. A string which is made of n tellings is called an n-string.

Each cell in the main hold holds an only 8-string. To hold a string which is longer than an 8-string, it is cut into 8-strings and the 8-strings are held in following cells.

# 8-String



# 16-String

1		8 9	)	16
	1		2	

# 32-String

1 8	9 16	17 24	25 32
1	2	3	4

# 64-String

1 8	9 16	17 24	25 32	33 40	41 48	49 56	57 64
1	2	3	4	5	6	7	8

# 128-String

1	8	9 16	17 24	25 32	33 40	41 48	49 56	57 64
	1	2	3	4	5	6	7	8
65	72	73 80	81 88	89 96	97 104	1105 112	113 120	121 128
	9	10	11	12	13	14	15	16

# 256-String

1	8	9 16	17 24	25 32	33 40	41 48	49 56	57 64
	1	2	3	4	5	6	7	8
65	72	73 80	81 88	89 96	97 104	1105 112	113 120	121 128
	9	10	11	12	13	14	15	16
129	136	137 144	1145 152	2153 160	161 168	3169 176	184	185 192
	17	18	19	20	21	22	23	24
193	200	201 208	209 216	3217 224	1225 232	2233 240	1241 248	249 256
	25	26	27	28	29	30	31	32

# **Onwrits**

Each cell is marced out by a whole tale called an **onwrit**. A telllingstring which is bigger than an 8-string is marced out by the onwrit of its first 8-string.

Each onwrit is a true onwrit or a craft onwrit.

#### **True Onwrit**

A true onwrit marcs out an only cell in the main hold. The first cell is marced by 0, and following onwrits marc out following cells.

# **Craft Onwrit**

A craft onwrit has a few shapes.

# 1st Ring Shape

1 7	8 16	17 25	26 34	35 43	3 44 52	2 53 64
R	5-T	4-T	3-T	2-T	1-T	0

R Root Tale

5-T 5th Ring Cey Tale

4-T 4th Ring Cey Tale

3-T 3rd Ring Cey Tale

2-T 2nd Ring Cey Tale

1-T 1st Ring Cey Tale

O Offset

# 2nd Ring Shape

1	7	8 16	17 25		35 43	44	64
	R	5-T	4-T	3-T	2-T	0	

R Root Tale

5-T 5th Ring Cey Tale

4-T 4th Ring Cey Tale

3-T 3rd Ring Cey Tale

2-T 2nd Ring Cey Tale

O Offset

# CUTUP 1. MAIN HOLD

# **3rd Ring Shape**

1 7	8 16	3 17 25	26 34	35	64
R	5-T	4-T	3-T	0	

- R Root Tale
- 5-T 5th Ring Cey Tale
- 4-T 4th Ring Cey Tale
- 3-T 3rd Ring Cey Tale
  - O Offset

# 4th Ring Shape



- R Root Tale
- 5-T 5th Ring Cey Tale
- 4-T 4th Ring Cey Tale
  - O Offset

# 5th Ring Shape



- R Root Tale
- 5-T 5th Ring Cey Tale
  - O Offset

# 6th Ring Shape



- R Root Tale
- O Offset

# **Onelings**

A oneling grasps the main hold when a telllingstring is overdragged between this oneling and marced out cells.

- 1. The oneling puts out the true onwrit which marcs out the string's first cell in the main hold.
- 2. The telllingstring is overdragged between the oneling and the marced out cells in the main hold.

# **True Onwrit**

When a telllingstring which is in the main hold is marced, all of its 8-strings are also marced out.

# **Overdrag**

The grasp is either a **read** or a **write**, hingging on the overdrag's way.

#### Read

The grasp is a read when the string is sent from the oneling to the main hold.

# Write

The grasp is a write when the string is sent from the main hold to the oneling.

# **Grasp Timelayout**

For every oneling and for every main hold cell, a read from the cell by the oneling will overdrag the worth overdragged by the last write to that same cell by that same oneling.

# **Craft Onwrit**

A craft onwrit is overset into a true onwrit.

#### Frame Field

The **frame field** holds the onputs for oversetting.

#### Root field

A root field holds 6th ring frame bewrits, 6th ring frame ceys or 5th ring frame field bewrits.

# **CUTUP 2. ONELINGS** 6th Ring Frame Bewrit 57 58 59 60 61 62 63 64 Τ T Frame teacher E Wended S Swapped W Write leave R Read leave F Frame leave 6th Ring Frame Cey 59 60 61 62 63 64 Τ T Gate teacher W Write leave R Read leave F Frame leave 5th Ring Frame Field Bewrit Т 000010000000 T Field teacher 6th Ring Frame Gate A 6th ring frame gate is taught to by a 6th ring frame cey. Т T Frame teacher E Wended S Swapped 5th Ring Frame Field A 5th ring field holds 5th ring frame bewrits, 5th ring frame ceys or 4th ring frame field bewrits. 5th ring frame bewrit

Т 

- T Frame teacher
- E Wended
- S Swapped
- W Write leave
- R Read leave
- F Frame leave

# 5th Ring Frame Cey 59 60 61 62 63 64 Τ T Gate teacher W Write leave R Read leave F Frame leave 4th Ring Frame Field Bewrit 000010000000 Τ T Field teacher 5th Ring Frame Gate A 5th ring frame gate is taught to by a 5th ring frame cey. Т T Frame teacher E Wended S Swapped 4th Ring Frame Field A 4th ring field holds 4th ring frame bewrits, 4th ring frame ceys or 3rd ring frame field bewrits. 4th Ring Frame Bewrit Т T Frame teacher E Wended S Swapped W Write leave R Read leave F Frame leave 4th Ring Frame Cey 59 60 61 62 63 64 Т

T Gate teacher
W Write leave
R Read leave
F Frame leave

## 3rd Ring Frame Field Bewrit

1 52	53 64
Т	00001000000

T Field teacher

#### 4th Ring Frame Gate

A 4th ring frame gate is taught to by a 4th ring frame cey.

- T Frame teacher
- E Wended
- S Swapped

# 3rd Ring Frame Field

A 3rd ring field holds 3rd ring frame bewrits, 3rd ring frame ceys or 2nd ring frame field bewrits.

# 3rd Ring Frame Bewrit

- T Frame teacher
- E Wended
- S Swapped
- W Write leave
- R Read leave
- F Frame leave

#### 3rd Ring Frame Cey

T 59 60 61 62 63 64

- T Gate teacher
- W Write leave
- R Read leave
- F Frame leave

# 2nd Ring Frame Field Bewrit

T 52 53 64

T Field teacher

# 3rd Ring Frame Gate

A 3rd ring frame gate is taught to by a 3rd ring frame cey.

T 000000000000000001 ES 00000

- T Frame teacher
- E Wended

S Swapped

# 2nd Ring Frame Field

A 2nd ring frame field holds 2nd ring frame bewrits, 2nd ring frame ceys or 1st ring frame field bewrits.

# 2nd Ring Frame Bewrit



- T Frame teacher
- E Wended
- S Swapped
- W Write leave
- R Read leave
- F Frame leave

# 2nd Ring Frame Cey

T 59 60 61 62 63 64

- T Gate teacher
- W Write leave
- R Read leave
- F Frame leave

# 1st Ring Frame Field Bewrit

T 00001000000

T Field teacher

# 2nd Ring Frame Gate

A 2nd ring frame gate is taught to by a 2nd ring frame cey.

T 00000000001 ES 00000

- T Frame teacher
- E Wended
- S Swapped

# 1st Ring Frame Field

A 1st ring frame field holds 1st ring frame bewrits or 1st ring frame ceys.

# 1st Ring Frame Bewrit

T 00000ES1MRF0

- T Frame teacher
- E Wended
- S Swapped

- W Write leave
- R Read leave
- F Frame leave

## 1st Ring Frame Cey

1 59 60 61 62 63 64 T

- T Gate teacher
- W Write leave
- R Read leave
- F Frame leave

## 1st Ring Frame Gate

A 1st ring frame gate is taught to by a 1st ring frame cey.



- T Frame teacher
- E Wended
- S Swapped

# Runup

The oversetting runs in two steps.

#### Frame Field Walc

The frame field walc gives either a frame cey or a frame bewrit from a craft onwrit.

- 1. The oneling reads from the root field the dragin which the root tale marcs.
- 2. If the dragin has none of the forbewritten shapes, then the fall **ZEE** happens.

Otherwise, if the dragin is either a 5th ring frame cey or a 5th ring frame bewrit, then the oneling undertaces the 5th ring frame grasp with the dragin.

Otherwise, the oneling reads from the 4th ring frame field the dragin which the 4th ring tale marcs.

3. If the dragin has none of the forbewritten shapes, then the fall **ZEE** happens.

Otherwise, if the dragin is either a 4th ring frame cey or a 4th ring frame bewrit, then the oneling undertaces the 4th ring frame grasp with the dragin.

Otherwise, the oneling reads from the 3rd ring frame field the dragin which the 3rd ring tale marcs.

4. If the dragin has none of the forbewritten shapes, then the fall **ZEE** happens.

Otherwise, if the dragin is either a 3rd ring frame cey or a 3rd ring frame bewrit, then the oneling undertaces the 3rd ring frame grasp with the dragin.

Otherwise, the oneling reads from the 2nd ring frame field the dragin which the 2nd ring tale marcs.

5. If the dragin has none of the forbewritten shapes, then the fall **ZEE** happens.

Otherwise, if the dragin is either a 2nd ring frame cey or a 2nd ring frame bewrit, then the oneling undertaces the 2nd ring frame grasp with the dragin.

Otherwise, the oneling reads from the 1st ring frame field the dragin which the 1st ring tale marcs.

6. If the dragin has none of the forbewritten shapes, then the fall **ZEE** happens.

Otherwise, the oneling undertaces the 1st ring frame grasp with the dragin.

#### nth Ring Frame Grasp

The *n*th ring frame grasp gives a true onwrit which is needed in step 1 of the main hold grasp from an *n*th ring frame cey or an *n*th ring frame bewrit.

1. If the dragin does not allow the grasp, then the fall **ZZE** happens.

The dragin allows the grasp if one and only one of the following is met.

- The grasp is a write and the W-tellling is 1.
- The grasp is a read and the R-tellling is 1.
- The grasp is a read of a bid (as bewritten in step (1) of the Bid Loop) and the F-tellling is 1.
- The grasp is a read of a root field bewrit (as bewritten with bid BRS Brooc Swich) and all 3 telllings are 0.
- 2. If the dragin is a cey, then the oneling reads the gate to which the cey's gate teacher teaches.
- 3. If the S-tellling is 1, then the fall **ZSW** happens.
- 4. If the grasp is a write, then the oneling sets the E-tellling to 1.
- 5. The oneling gives the offset to the frame teacher to give the true onwrit.

# Part II Underbreacing

# **Onbuilds**

In an underbreacing, onputs are traded between onelings.

# Sinc

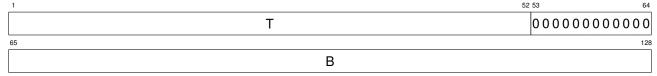
A sinc is a linced oneling.

# Gate

An undebreacing gate is a cell in the main hold which is bound to a sinc.

# **Dragin**

An underbreacing dragin holds a craft onwrit to an onput and a teacher to the root field with which the onwrit must be overset.



- T Root field teacher
- B Onput craft onwrit

# Well

A well is a oneling which starts an underbreacing.

# Runup

An underbreacing happens when the well writes an underbreacing dragin to the underbreacing gate of the sinc. The sinc must note the craft onwrit of the dragin.

Part III

**Framing** 

# **Drive**

In the OSER, reconing onelings follow a fast drive.

# **Bid Loop**

A reconing oneling follows the bid loop.

- 1. The oneling reads a bid.
- 2. If the bid is not cnown, then the fall **AEA** happens.
- 3. The oneling frames all grasps which must happen before the bid.
- 4. The oneling frames the bid.
- 5. The oneling frames all grasps which must happen after the bid.
- 6. The oneling starts again at (1).

# **Falls**

When a fall happens, the oneling runs a trap.

A trap is a sunder brooc which gets the oneling's stand at the time of the fall as input.

# **Reconing Onelings**

In the OSER, the reconing onelings are built to a bespocen layout.

# **Near Hold**

The reconing onelings have a **near hold** which does not hingg on the main hold.

# 0-15 - Onputs

1	64
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

# **BT – Bid Teacher**

T 63 64

- T Teacher
- S Stand
  - 0 Running
  - 1 Stopped

# SD - Stand Dragin

1	52 53	3 61 62 63 64
R	C	00000000 H 0
65		128
	ВТ	

R Root Field Teacher

H Hingg

BT Bid Teacher

# **Onputs**

An onput can be either a fast bystrice tale or a floating bystrice tale.

# **Fast Bystrice Tales**

Let  $Z_U(S, M)$  be the tale bewritten by a telllingstring S with lowest might M in an unsigned meaning.

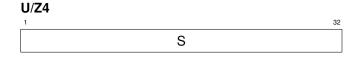
$$Z_U(S, M) = 2^M \sum_{i=1}^{|S|} 2^{|S|-i} S_i$$

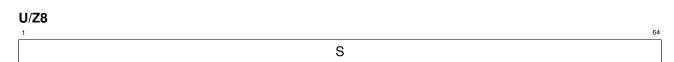
Let  $Z_Z(S, M)$  be the tale bewritten by a telllingstring S with lowest might M in a signed meaning.

$$Z_Z(S, M) = 2^M \left( -2^{|S|-1} S_1 + \sum_{i=2}^{|S|} 2^{|S|-i} S_i \right)$$







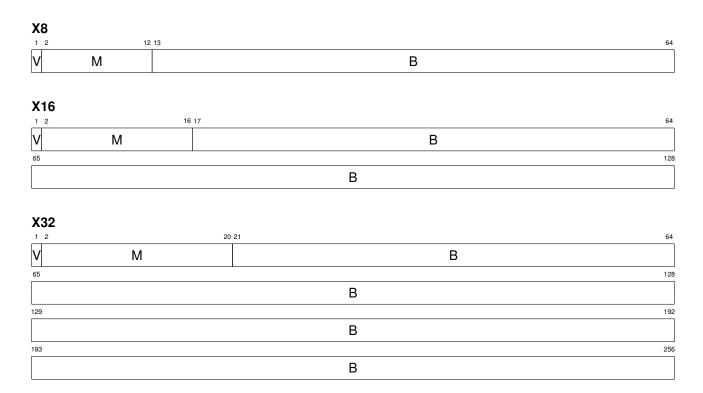


# Floating Bystrice Tales

Let X(V, M, B) be the tale bewritten by a sign tellling V, a might telllingstring M and a cut telllingstring B.

$$X(V, M, B) = (-1)^{V} 2^{Z_{U}(M,0) - 2^{|M|-1}} Z_{U}(B, -1 - |B|)$$





# **Bids**

A bid bewrites a wend in the brooc's stand. Each bid has **shapes**.

# **Steer Bid**

A steer bid wends the run of the brooc when its hingg is fulfilled. Each tellling of the bid fall marcs a worth of the SD-hingg, and the bid hingg is fulfilled if the SD-hingg has the worth whose tellling in the bid's hingg is 1.

A steer bid has three shapes.

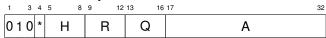
# **Fast Shape**



In this shape:

- the sinc is the near hold cell R;
- the well is W.

#### Main Hold Shape



In this shape:

- the sinc is the near hold cell R;
- the well is the main hold cell which is marced by the tally of A and the near hold cell Q.

# **Near Hold Shape**

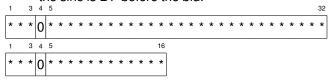


In this shape, the sinc and well are the near hold cells R and Q.

#### SCI - Scip

After this bid:

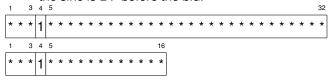
- BT is the tale of BT and the well;
- the sinc is BT before the bid.



## JMP - Jump

After this bid:

- BT is the well;
- the sinc is BT before the bid.



# Stir Bid

A stir bid bewrites a stirring of onputs between the main hold and the near hold.

#### STR - Stir

After this bid, the sinc is set to the well.

This bid has four shapes.

# **Fast Shape**

1 8	9 12	13 32
00110000	Z	W

In this shape:

- the sinc is the near hold cell Z;
- the well is W.

## Main Hold Shape

1 8	9	12 13	16 17 18 20	21	32
01110000	Z	Q	ÄG	Α	

In this shape:

- the sinc is the near hold cell Z;
- if the Ä-tellling is 0, then the well is the main hold cell which the tale of A and the near hold cell Q marcs; otherwise:
  - the well is the main hold cell which the near hold cell Q marcs;
  - A is given to the near hold cell Q after the bid.

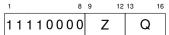


In this shape:

• if the Ä-tellling is 0, then the sinc is the main hold cell which the tale of A and the near hold cell Z marcs; otherwise:

- A is given to the near hold cell Z before the bid;
- the sinc is the main hold cell which the near hold cell Z marcs;
- the well is the near hold cell Q.

#### **Near Hold Shape**



In this shape, the sinc and well are the near hold cells Z and Q.

# **USS - Unsplit Stir**

This bid's run hingges on its shape.

This bid has two shapes.

1 8	9 12	13 16 17	18 20	21 32
01110001	Z	Q	G	A

In this shape:

- the sinc is the near hold cell Z;
- the well is the main hold cell which the tale of A and the near hold cell Q marcs.

	8	9	12 1	3 16	17	18 20	21	3.
101	10001	Z		Q	0	G	Α	

In this shape:

- the sinc is the main hold cell which the tale of A and the near hold cell Z marcs;
- the well is the near hold cell Q.

Sunderly, this bid will not run if a write to the sinc has happened after the last **USS** thereto.

#### **BRS - Brooc Swich**

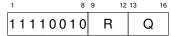
This bid's run hingges on its shape.

This bid has two shapes.

1	8	9	12	13	16 17	7 32
0111001	0	F	}	Q		Α

In this shape:

- SD is put in a main hold ord whose onwrit is in the near hold cell R;
- a new stand dragin is loaded from the main hold cell whose onwrit is the togive of A and the near hold cell Q.



In this shape:

- SD is put in a main hold ord whose onwrit is in the near hold cell R;
- a new stand dragin is loaded from the main hold cell whose onwrit is in the near hold cell Q.

# **Tellling bid**

A tellling bid bewrites a reconing over lone telllings.

Each tellling bid has four shapes.

#### **Fast Shape**

1		4	5			8	9	12	2 13	32
0 (	1	0	*	*	*	*		Z	W	

In this shape:

- the sinc is the near hold cell Z;
- the well is W.

## Main Hold Shape

1	4	5			8	9	12	13	16	17	18	20	21		32
0	110	*	*	*	*		Z		Q	Ä		G		Α	

In this shape:

- the sinc is the near hold cell Z;
- if the Ä-tellling is 0, then the well is the main hold cell which the tale of A and the near hold cell Q marcs; otherwise:
  - the well is the main hold cell which the near hold cell Q marcs;
  - A is given to the near hold cell Q after the bid.

1	4	5			8	9		2 13		16 17	18	20	21		32
1	010	*	*	*	*		Z		Q	Ä		G		Α	

In this shape:

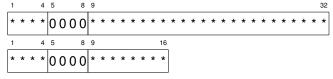
- if the Ä-tellling is 0, then the sinc is the main hold cell which the tale of A and the near hold cell Z marcs; otherwise:
  - A is given to the near hold cell Z before the bid;
  - the sinc is the main hold cell which the near hold cell Z marcs;
- the well is the near hold cell Q.

#### **Near Hold Shape**

In this shape, the sinc and well are the near hold cells Z and Q.

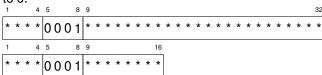
# LSH - Left Shift

After this bid, the sinc is shifted to the left by the tally of telllings given by the well.



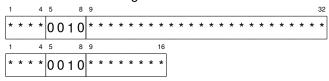
#### RNS - Right Naught Shift

After this bid, the sinc is shifted to the right by the tally of telllings given by the well. The leftmost telllings are set to 0.



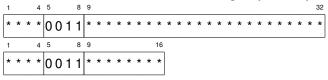
## RFS - Right Sign Shift

After this bid, the sinc is shifted to the right by the tally of telllings given by the well. The leftmost telllings are set to the sinc's first tellling before the bid.



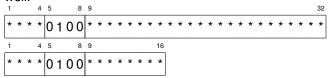
#### THR - Thraw

After this bid, the sinc is thrawn to the right by the tally of tellings given by the well.



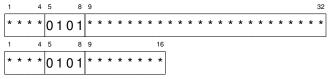
#### AND - Throughcut

After this bid, each of the sinc's telllings will be set to the throughout of the matching telllings of the sinc and the well.



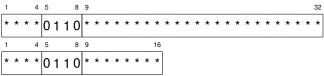
#### **OR - Foronening**

After this bid, each of the sinc's telllings will be set to the foronening of the matching telllings of the sinc and the well.



## NOT - Not

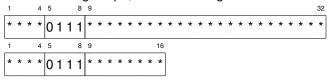
After this bid, each of the sinc's telllings will be set to the swapped worth of the matching telllings of the well.



#### SSW - Sign Swap

After this bid, the sinc will be set to the wrixle of the well.

In the standing shape, the well is naught-filled.



#### **Recon Bid**

A recon bid bewrites a reconing.

All recon bids recon over fast bystrice tales.

Each recon bid has four shapes.

#### **Fast Shape**



In this shape:

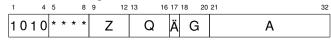
- the sinc is the near hold cell Z;
- the well is W.

## Main Hold Shape

1		4	5			8	9	12	13		16 17	18 2	20 2	1	32
0 1	1	0	*	*	*	*		Z		Q	Ä	G		Α	

In this shape:

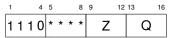
- the sinc is the near hold cell Z;
- if the Ä-tellling is 0, then the well is the main hold cell which the tale of A and the near hold cell Q marcs; otherwise:
  - the well is the main hold cell which the near hold cell Q marcs;
  - A is given to the near hold cell Q after the bid.



In this shape:

- if the Ä-tellling is 0, then the sinc is the main hold cell which the tale of A and the near hold cell Z marcs; otherwise:
  - A is given to the near hold cell Z before the bid;
  - the sinc is the main hold cell which the near hold cell Z marcs;
- the well is the near hold cell Q.

#### **Near Hold Shape**

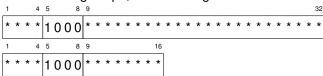


In this shape, the sinc and well are the near hold cells Z and Q.

# **GIV** – Togive

After this bid, the well is given to the sinc.

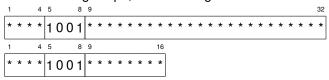
In the standing shape, the well is sign-filled.



# TAC - Undershed

After this bid, the well is tacen from the sinc.

In the standing shape, the well is sign-filled.



# FLD - Forfolding

After this bid, the well is folded by the sinc.

In the standing shape, the well is sign-filled.



# **CUT - Fordeal**

After this bid, the well is cut by the sinc.

In the standing shape, the well is sign-filled.

