002e4fd0-0

Per Thulin

COLLABORATORS

	TITLE : 002e4fd0-0	

ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Per Thulin	February 12, 2023	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

002e4fd0-0

1.1 "

```
                                GRAAL ON-LINE REFERENCE
                    ========================

                   1.01 - (c) Per Thulin 1996



~A~Very~Short~Introduction~~~~~~~~~~~~~~
        ========

~Machine~Requirements~~~~~~~~~~~~~~~~~~
        \      /

~About~this~Reference~~~~~~~~~~~~~~~~~~
         |    |

~The~Structure~of~a~GRAAL~Game~~~~~~~~~~
         |    |

~Syntax~Conventions~~~~~~~~~~~~~~~~~~~~
          \  /

~Limitations,~Ranges,~Reserved~Numbers~
           ||

~Special~Characters~in~Text~Strings~~~~
          ====


~Statements~in~the~graal.main~file~~~~~

~Statements~in~the~n.section~files~~~~~

~Statements~in~the~n.room~files~~~~~~~~

~Conditions~~~~~~~~~~~~~~~~~~~~~~~~~~~~

~Commands~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

~Trouble-shooting~~~~~~~~~~~~~~~~~~~~~~

1.2 A Very Short Introduction

A Very Short Introduction

What is GRAAL?

GRAAL is a computer language that lets you create graphic adventures in a~"classic" format using no more than a text editor and a~paint/animation~ package.

If you want to see what the result may look like, just play the Olaf 1 demo~to which this guide is attached. Throughout this online reference, the files~that make up the demo adventure are used to show working examples of how to~ construct an adventure using all the available statements and commands.

(Just make sure the graal.guide file and all Olaf 1 demo files are in the same~drawer, otherwise the links from this guide to the script files don’t work!)

NOTE: The registered version of GRAAL contains some programming~tools essential for the serious adventure creator, for example~devices to un-comment and encrypt your scripts to make it impossible to~crack the game by looking at the files.

However, the function of the freely distributable version is not limited~in~any other way - you may create as large an adventure as you wish using~only~the GRAAL program contained in the demo package, if you have the stamina~and~perseverence to do so...!

1.3 Machine Requirements

MACHINE REQUIREMENTS

To develop GRAAL games, you need the following:

* A hard disk
* 2MB RAM

The following is very much recommended:

* A machine with at least the speed of an A1200

* Fast RAM

1.4 About this Tutorial

About this Reference

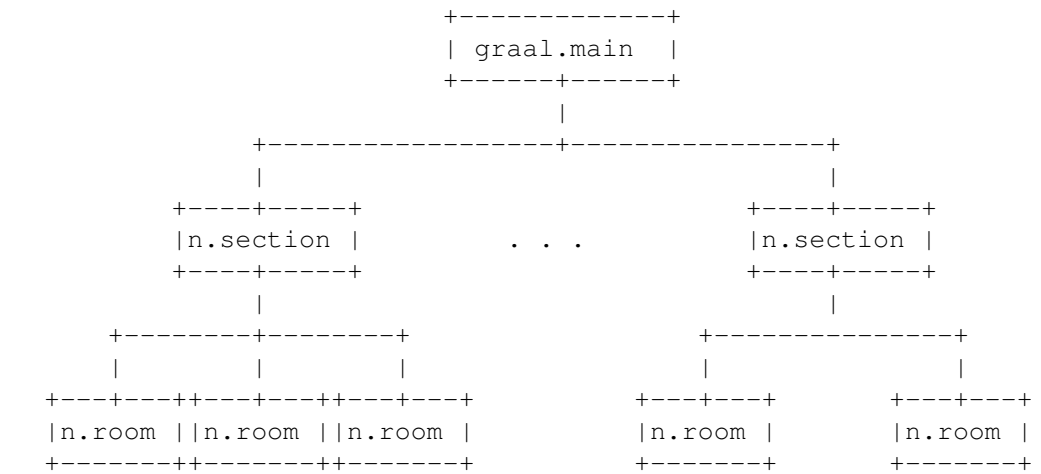
I recommend all developers to read the GRAAL Tutorial prior to emerging too deep into the art of GRAAL writing. The GRAAL Tutorial is included in the GRAAL 1.0 unregistered development package.

Although it is possible to construct an adventure with no other information than the one given in this reference, it is not recommended. That said, Amos Pro users stand a better chance than others of succeeding witout too much pain inflicted, because some Amos Pro concepts are used straight "off the shelf" in GRAAL - for example, animation sequences, hotspots, and fades.

1.5 The Structure of a GRAAL Game

GRAAL script structure

A GRAAL adventures is based on a number of script files,~related~to~each~other~in the following way:



There is always a graal.main file, describing the main~characteristics~of~the~game and of the main character (which is the one~the~player~controls~and commands).

The entire adventure is divided into locations or "rooms"~as~they~are~called~ in GRAAL. The specifics of each room is defined in a

```
                n.room
                 file

The rooms may be grouped into sections, as~shown~above. Each section has a

                n.section
                 file.

The general idea is that if a player can issue a certain~command~or~do~a~
certain thing in just one specific room, the GRAAL
code~to~handle~that~action~ should be placed in the corresponding .room
script file.~If~the~action~can~ occur anywhere in the section , the code is
placed in~the~.section~file;~and if~the action is something that can  occur
anywhere in~the~adventure,~it is~ taken~ care of in the graal.main file.

Whenever the player inputs a command, first the current
room~file~is~scanned~~for appropriate action, then the section file,
and~lastly~the~graal.main~file.~ This is why the graal.main file should
always~contain~general~"safety~nets" to~ handle most of the totally
off-the-wall~and~generally stupid~things~a player~ may try during the game!

Apart from the three script file types above, there are two other
types~with~~specific purposes:

.scene files, containing the commands making up an
animated,~~non-interactive~"cut-scene".

.ptrn files, containing animation patterns too big and complex to
fit~into~the~code of a script file.
```

1.6 Syntax Conventions

```
                 GRAAL Syntax



Script Syntax

Scripts can normally contain empty lines, comment lines, and statement
lines. (Exceptions are the .scene files, which only contain commands, and
.ptrn files, which only contain animation patterns.)

Comment lines always begin with the characters /*.

Statement lines always begin with the statement followed by a colon and one
blank space. After that comes the parameters separated by semicolons, but
without spaces in between, like this:

STATEMENT: parameter;parameter;parameter;...;parameter

In the following statements, each parameter is a condition or command:


                ACTION
                     -  Actions taken for player input
```

DACT
- Actions executed when entering a new room

LACT
- Actions taken when player chooses a dialogue line

Each condition and command then has its own "internal" syntax. Usually, parameters within a command are separated by colons (,).

Some statements and command allow you to leave parameter positions "blank" to retain a previous value or set a default value. "blank" does not mean "empty": You MUST enter a blank space in the position! For example, if you wish to leave the two middle parameters of the SHOW command empty, this is the way to do it:

SHOW 2, , ,4

(This example tells GRAAL to use image number 4 to display object 2, but let the image remain in its old place, since we left the x and y parameters blank.)

Command and Statement Notation

UPPERCASE

Type as written.

lowercase

Replace with value of specified type.

list

A list of values separated with | characters may be used. In conditions, any value in the list will make the condition TRUE. In commands, one of the alternatives in the list will be chosen at random each time the command is encountered during gameplay.

option1|option2

One of the options can be chosen.

[parameter,]

This parameter is optional.

Referring to the Contents of the Input Sentence

When the scripts are searched for commands to execute, what happens is based entirely on how the current input sentence from the player looks.

IN this reference, the first object in the current command sentence input by the player is referred to as OBJ1, and the second - if any - as OBJ2. The "command" itself is referred to as the VERB.

Referring to Objects and Images

An object number can be an ordinary number (n), a room object number (ROBJn) or a section object number (SOBJn).

An image number can be an ordinary global image (n), a room image (RBOBn) or a section image (SBOBn).

1.7 Limitations, Ranges, Reserved Numbers

GRAAL Limits, Ranges & Reserved Numbers

These are basic technical limitations to GRAAL version 1. Some of them will be removed in future versions, especially those who limit the variation of user interface layout and graphics capabilities.

SCREEN GRAPHICS

SCENE AREA: Background pictures must be lowres, 32 colours, 120 pixels high and between 320 and 640 pixels wide. (IFF picture files used for clipart must also be the same number of colours.)

COMMAND AND DIALOGUE AREAS: Pictures used must be hires, 80 pixels high and 640 pixels wide. In GRAAL version 1, the following must always be the same:

* The sizes and positions of all buttons and text boxes
* The number of verbs (9)
* The position, number and meaning of the verbs "USE" and "GIVE" (because these make use of prepositions)

BOBS AND BOB IMAGES

Allowed BOB numbers for general use: 1-59

BOB numbers permanently assigned:

60 Recommended for character BOB
61 System reserved (future use)
62 BOB mimicking mouse
63 BOB displaying dialogue text and information text in action area

Allowed BOB image numbers for general use: 11-any number

```
BOB images assigned:

  1-10 -  Reserved for system use.


ANIMATION

Animation channels allowed for general use: 3-15

Animation Channels assigned:

  1  Main character
  2  Background screen scrolling



STATEMENT AND COMMAND LIMITS

  Item                                      Limit  Alterable
  ----------------------------------------- ------ --------------
  Max no of DACT lines in room file           50    Y (graal.main)
  Max no of dialogues in a room file           6    N
  Max no of dialogue lines per dialogue       30    N
  Max no of LACT statements per dialogue      90    N
  Max no of ACTION lines in a room           120    N
  Max no of ACTION lines in a section        200    N
  Number of flags for each object              6    N
  Number of flags for each room               20    N
  Maximum number of floors in a room          12    N
  Max no of objects in current room           30    N
   (displayed simultaneously, not counting
   BOBON, STATIC:, ANIM: graphics)
```

1.8 Variables in Text Strings

```
Special text characters


The following special character strings are replaced with variable values
etc. when used in SAY, THINK, RESP, and similar commands

  \        is replaced with a line break
  #R#n#f#  will be replaced by the value held in flag f for room n
  #O#n#f#  will be replaced by the value held in flag f for object n
  #OBJ1    will be replaced by the name of OBJ1
  #OBJ2    will be replaced by the name of OBJ2
  #Won     will be replaced by determination word n for object o
```

1.9 GRAAL Commands

GRAAL Commands:

These are all the commands that can be used in the ACTION, DACT, and LACT statements, as well as in cutscene files.

General program flow control

~W(ait)~~~~~~~~~~
Make a pause

~EXIT~~~~~~~~~~~~
Stop searching for commands to execute

~REDO~~~~~~~~~~~~
Re-run current input sentence

~CUTSCENE~~~~~~~
Execute a cutscene

Dialogue control

~DSET~~~~~~~~~~~~
Start / change a dialogue

~LINE~~~~~~~~~~~~
Change dialogue line number

~EDLG~~~~~~~~~~~~
End a dialogue

Sentence control

~OBJ1~/~OBJ2~~~~
Change object number

~VERB~~~~~~~~~~~~
Change verb number

Room control

~GOTO~~~~~~~~~~~~
Go to a new room

~MARK~~~~~~~~~~~~
Mark current position

~RESUME~~~~~~~~~~
Resume marked position

~SETRF~~~~~~~~~~~

```
                Set room flag value

               ~ADDRF~~~~~~~~~~
                Add to room flag value

               ~DECRF~~~~~~~~~~
                Decrease room flag value

"Speech"

               ~SAY~~~~~~~~~~~~
                Make character speak

               ~THINK~~~~~~~~~~
                Make character think

               ~RESP~~~~~~~~~~~
                Make speaking partner respond

Object manipulation

               ~HANDLE~~~~~~~~~
                Make character handle object

               ~PICK~~~~~~~~~~~
                Make character pick up object

               ~GET~~~~~~~~~~~~
                Add object to inventory

               ~REMOVE~~~~~~~~~
                Remove object from inventory

               ~NAME~~~~~~~~~~~
                Alter the name of an object

               ~SETOF~~~~~~~~~~
                Set object flag value

               ~ADDOF~~~~~~~~~~
                Add to object flag value

               ~DECOF~~~~~~~~~~
                Decrease object flag value

Main character display

               ~CBOB~~~~~~~~~~~
                Change character image

               ~CMOVE~~~~~~~~~~
                Move character

               ~MOBJ~~~~~~~~~~~
                Move character next to object

               ~MEXIT~~~~~~~~~~
```

```
                 Move character to exit

                ~CPOS~~~~~~~~~~~
                 Change character position

                ~CHAR~~~~~~~~~~~
                 Hide / display character

Floor control

                ~FLOOR~~~~~~~~~~
                 Define floor

                ~NFLOOR~~~~~~~~~
                 Set number of floors

                ~SETFLOOR~~~~~~~
                 Change character's floor

Object display

                ~OMOVE~~~~~~~~~~
                 Move and animate object

                ~SHOW~~~~~~~~~~~
                 Show object

                ~HIDE~~~~~~~~~~~
                 Hide object

Audio control

                ~TRACK~~~~~~~~~~
                 Soundtracker module control

                ~SAMLOAD~~~~~~~~
                 Load raw or IFF sample

                ~SAM~~~~~~~~~~~~
                 Sample control

Graphics control

                ~CLPART~~~~~~~~~
                 Load a clipart picture file

                ~BOBS~~~~~~~~~~~
                 Grab BOB images from clipart picture

                ~HOTSP~~~~~~~~~~
                 Alter the hotspot of an image

                ~LIGHTS~~~~~~~~~
                 Fade scene area in or out

                ~COLOUR~~~~~~~~~
                 Change a single colour
```

```
                ~FADE~~~~~~~~~~~
                 Fade one colour to another

                ~CAMERA~~~~~~~~~
                 Pan the camera to any part of background

                ~TITLE~~~~~~~~~~
                 Display / remove a title screen

                ~TYPE~~~~~~~~~~~
                 Type text on title screen

                ~TEXT~~~~~~~~~~~
                 Display text in scene area

                ~BOBON~~~~~~~~~~
                 Show a BOB

                ~BOBOFF~~~~~~~~~
                 Remove a BOB

                ~PBOB~~~~~~~~~~~
                 Paste a BOB image

Special Cutscene commands:

                ~NOBREAK~~~~~~~~
                 Disable [Esc] in cutscene

                ~FINAL~~~~~~~~~~
                 Marks cutscene [Esc] resume point
```

1.10 GRAAL Conditions

```
                GRAAL Conditions:

These are the conditions that can be used in the
                ACTION
                ,
                DACT
                ,
                LACT
                , and

                LINE
                 statements.


                ~IFOBJ~/~IFOBJ2~~~~~
                 Test objects in the input sentence

                ~IFOF~/~IFOF2~~~~~~~
                 Test object flags
```

~IFROOM~~~~~~~~~~~~~
Test current room

~IFRF~~~~~~~~~~~~~~~
Test room flags

~IFCARR~/~IFNOTCARR~
Test if object is in inventory

~IFPICK~~~~~~~~~~~~~
Test if object can be picked up

~IFTYPE~~~~~~~~~~~~~
Test object types

1.11 animation sequences

Basics about GRAAL Animation

Most simple animation sequences used in GRAAL have the following format:

```
A n,(image,time)(image,time)(image,time)...(image,time)
```

n is a number deciding how many times the animation sequence is played - in GRAAL, it is set to 0 in most cases, which means the animation will go on "forever". Forever in this case means "until GRAAL decides to put a stop to it".

image is an image number.

time is the time the image is displayed before the next one comes on screen (in 50ths of a second on PAL machines).

Example: A 0,(RBOB1,12)(RBOB2,12)(RBOB3,12)(RBOB4,12) would play the sequence of four room BOB images over and over again. Note that the commas are not GRAAL parameter separators in this case - they are all part of the same sequence definition!

1.12 IFOBJ / IFOBJ2

IFOBJ Condition

Test an object in the current sentence

```
IFOBJ object number | list
```

This condition is TRUE if OBJ1 is equal to the object number.

```
IFOBJ2 object number | list
```

This condition is TRUE if OBJ2 is equal to the object number.

1.13 IFPICK

IFPICK Condition

Test if an object can be picked up

```
  IFPICK [object number]
```

This condition is TRUE if OBJ1 (default) or object <object number> can be picked up.

Example:

```
  IFPICK;MOBJ;HANDLE;PICK;HANDLE -1
```

Move to object and pick it up only if it is defined as "pickable"!

1.14 IFOF

IFOF Condition

Test the value of an object flag

```
  IFOF <flag>=<value | list>
```

This condition is TRUE if the flag <flag> of OBJ1 is <value>

```
  IFOF2 <flag>=<value | list>
```

This condition is TRUE if the flag <flag> of OBJ2 is <value>

The below variation lets you test the value of any flag for any object, not just OBJ1 or OBJ2 in the current sentence:

```
  IFOF <object number>,<flag>=<value | list>
```

1.15 IFROOM

IFROOM Condition

Test the current room

```
  IFROOM <room number | list>
```

This condition is true if the current room is <room number>

1.16 IFRF

IFRF Condition

Test the value of a room flag

```
  IFRF <flag>=<value | list>
```

This condition is TRUE if the flag <flag> for the current room is <value>.
The version below lets you test any flag for any room:

```
  IFRF <room number>,<flag>=<value | list>
```

1.17 IFCARR / IFNOTCARR

IFCARR Condition

Test if object is in inventory

```
  IFCARR [<object number>]
```

This condition is TRUE if the specified object is in the inventory. If no object number is specified, OBJ1 is assumed.

```
  IFNOTCARR [<object number>]
```

TRUE if the object is NOT in the inventory.

1.18 IFTYPE

IFTYPE Condition

Test if an object is of specified type(s)

```
  IFTYPE <type | list>
```

This condition is TRUE if the type character matches any of the characters defined in the object type for OBJ1. For example, in standard GRAAL notation, an object defined as DW is (D)ead and made of (W)ood. IFTYPE D would be true, as would IFTYPE S|W (checking if the object is of either stone or wood).

```
  IFTYPE2 <type | list>
```

This condition checks OBJ2 according to the same rules as described for OBJ1 above.

1.19 W(ait)

```
W Command
```

Wait nn vertical blanks.

```
  W <vbls>
```

This command creates a pause. The time is measured in vertical blanks, which occurs at the rate of 50 per second for PAL systems and 60 per second for NTSC systems. On a PAL system,

```
  W 50
```

would cause a one second pause.

The W command allows the player to end the pause before the specified time by pressing the full stop (.) or escape key.

(The escape key, when used in a cutscene, also causes a skip to the FINAL section of the cutscene.)

1.20 EXIT

```
                EXIT Command
```

Ends the execution of commands to handle the current input sentence from the player.

```
  EXIT
```

is used when all actions for a user sentence has been performed, and you do not wish to search further in the .room, .section, and graal.main files for entries that match the sentence. It is used in ACTION: and DACT: statements, and combined with EDLG to end dialogues.

See also:

```
                EDLG
                ,
                REDO
```

1.21 REDO

REDO Command

Re-run the scripts after having changed the player's input sentence.

  REDO

This command is used after having changed the current sentence contents with the OBJ1, OBJ2 and VERB commands. The whole idea is that sometimes you want exactly the same actions performed for different sentences, and using REDO is easier and less space-consuming than copying all the actions. For example, if you want the same actions taken for USE BOOK and OPEN BOOK, you can replace the verb USE (3) with the verb OPEN (4) and then start over with checking for appropriate actions. Example, assuming the book is object 1:

  ACTION: 3;IFOBJ 1;VERB 4;REDO

The checking will start over with the first ACTION: statement in the same file, but now looking for actions for OPEN BOOK rather than USE BOOK, which was what the player entered. (Not to worry, the player will never see what is going on!)

1.22 CUTSCENE

CUTSCENE Command

Loads and executes contents of a cutscene file

  CUTSCENE file name,S|F|H

Rather straight forward, this one. You only have to remember that cutscenes can only contain commands and not conditions, and also note the effect the second parameter has on the cutscene indicator (in Olaf's case, the movie camera icon) that is shown instead of the command buttons while a cutscene is being played.

S

Cutscene indicator will be shown as normal and taken away when this cutscene has finished playing.

F

The cutscene indicator will appear as normal but remain on screen when this cutscene finishes. This should be used if several cutscenes are played in sequence, or when cutscenes are "nested" (=called from inside other cutscenes).

H

The cutscene indicator will not be used at all. Use for short cutscenes and cutscenes with the NOBREAK command, if appropriate.

See also:

NOBREAK

1.23 DSET

DSET Command

Handles dialogue alternatives

```
DSET dlg[,com1,com2,...,comn]
```

Tell the dialogue dlg how to behave using a number of commands, such as:

+n	add line n to the available set of lines
-n	take away line n from the line set temporarily, can be restored by another + later on
Nn	make line n never appear again in this game, even if a DSET + appears later on.
Ss	Save the current status (the set of alternatives the player sees) before "branching" in the dialogue. s is a set of saved lines, and can be 1-3
Rs	Restore a previously saved dialogue status from set 1-3
E	Erase all currently displayed dialogue lines, equal to giving a "-" command for each line. (This is also done automatically by the S (Save) command.

If you are not already involved in the dialogue, DSET will put the dialogue control area onto the screen instead of the normal control area.

If no commands are specified, the dialogue is only refreshed. However, even this may alter the set of alternatives the player actually sees - because the availability of the alternatives also depend upon conditions set in the LINE: statements themselves, and those conditions may be changed between DSET commands.

Remember that although dialogues are specified in the room files, their numbers must be unique for the entire game.

The special command "E" takes away all current dialogue alternatives. It is mostly used in conjunction with the save/restore function when you "branch out" in a dialogue and want to present a completely new set to alternatives to the player. For example, this shows a "branching out" of dialogue 4:

```
DSET 4,S1,+12,+13,+14
```

saves the current dialogue status in set 1, clearing all old input alternatives at the same time, and replaces them with lines 12, 13 and 14.

The special command "L" allows you to alter the dialogue status without showing what you are doing in the dialogue control area. This is mainly used to restore the dialogue to its proper status just before ending the

dialogue, so that the proper alternatives will be in place when the player starts talking to the same dialogue partner the next time. For example, before we leave dialogue 4 we know that we want to go back to the way things looked before we saved the status in set 1:

```
  DSET 4,L,R1;EDLG;EXIT
```

restores the previously saved dialogue status for dialogue 4 just before the dialogue is ended, without the user being disturbed by flickering alternatives in the dialogue control area. However, the next time the player engages in this dialogue, the old alternatives will be back to choose from.

See also:
EDLG

1.24 LINE

LINE Command

Alter the line chosen in a dialogue

```
  LINE <line number>
```

This command, i conjunction with th REDO command, lets you use the same reactions (LACT: statements) for a number of different dialogue alternatives - much easier than copying all commands into a number of LACT:s.

Example: You wish the reactions to line 5 in a dialogue to be exactly the same as those for line 3. Simply specify this:

```
LACT: 5;LINE 3;REDO
```

The program now goes through the LACT:s again, now looking for those who are connected to line 3 instead of line 5 which was actually chosen.

See also:
REDO

1.25 EDLG

EDLG Command

Ends a dialogue session

```
  EDLG
```

This command ends the dialogue. The normal Control Area is put back on screen instead of the Dialogue Control Area. The last set of dialogue lines will be present as default if the dialogue is resumed later on.

Normally, you would not want to evaluate any more line action (LACT:) statements after having decided to end the dialogue. Therefore, you should normally put an EXIT command right behind the EDLG:

```
  EDLG;EXIT
```

See also:
DSET

1.26 OBJ1 / OBJ2

OBJ1 / OBJ2 Command

Alters the object number for OBJ1 or OBJ2.

```
  OBJ1 <object number>
  OBJ2 <object number>
```

These commands are used in two main ways:

a) to temporarily put another object number in the place of OBJ1 or OBJ2 in order to manipulate an object using other commands. In this case, you only need a simple OBJ1 or OBJ2 without any parameters to change the object number back to what it originally was when you are through manipulating the object you specified with <object number>. For example, imagine you are about to open a can of gasoline in a room with a lit candle. The gasolin is currently OBJ1, the object number for the candle is 20.

```
  ...OBJ1 20;MOBJ;HANDLE;SHOW 20, , ,10;SAY I put the light out
first;OBJ1...
```

would be an easy way to switch from the gasolin, operate the candle, and then switch back to working with the gasolin.

b) to alter the object handled and then use the
REDO
command to run through
all action statements again.

See also:
VERB
,
REDO

1.27 VERB

VERB Command

Alters the current verb

```
  VERB <verb number>
```

Use this to alter the verb in the current sentence. Mainly used before the

REDO
command to make one action synonym to another.

If no verb number is specified, the verb number before the last VERB <verb number> command is restored (but why you should want to do that, I don't know at this stage.)

See also:
OBJ1/OBJ2
,
REDO

1.28 ROOM

ROOM Command

Alter the current room

ROOM <room number>

A bit obsolete, this one. You can set flags for rooms other than the current using a special form of the SETRF command, so this one may soon be deleted.

Anyway, specifying ROOM without the parameter brings back the room number that was in effect before the last ROOM <room number> was called, just like OBJ1/OBJ2 can restore the previous object if used without the parameter.

1.29 MARK

MARK Command

Mark the current position of the main character

MARK

This saves the current image and position used for the main character. It is used in conjunction with GOTO and RESUME in the following situation:

First, you

MARK

a position that you want to resume later on. Then you

GOTO

one or more rooms, perhaps showing a cutscene describing events taking place elsewhere in the game world. When this scene is finished, you

RESUME

which makes the game return to the room where you commanded MARK, and to the exact same position.

Notes:

1. Only one MARK/RESUME operation can be pending at one time.

2. You should not be able to SAVE the game between a MARK and the RESUME, but since these commands are only of interest in automated sequences and cutscenes, this should not be a problem.

See also:
GOTO
,
RESUME

1.30 RESUME

RESUME Command

Resume the action at the spot saved with the MARK command

```
RESUME
```

Only one MARK/RESUME operation can be pending at one time.

See also:
GOTO
,
MARK

1.31 SAY

SAY Command

Makes the main character speak a sentence (or two).

```
SAY Any kind of text goes here...
```

This command uses the animations in the TALK_MAP statements of the graal.main file to animate the character during the length of the text display. The text display may use some
special~characters
to perform line breaks, put in variable values, etc.

Note that the SAY command can only be used if the main character is on screen, not if a
CHAR~OFF
or other command has hidden it!

See also:
THINK

1.32 GOTO

GOTO Command

Move to another room

GOTO <room number | list>,<entrance | list>

This command automatically moves to a new room - it is not needed when using exits in the normal way, but is handy in cutscenes and the like. As usual, if a list of alternatives is specified, one is choosen at random. Could be used in maze-like surroundings, perhaps?

See also:
MARK
,
RESUME

1.33 THINK

THINK Command

Displays text above the main character

THINK Any kind of text goes here...

This command behaves just like
SAY
, except it doesn't automatically animate the character. Good for "thinking" as well as using special animation sequences shown using MOVE commands instead of the standard TALK_MAP animations.

See also:
SAY

1.34 RESP

RESP Command

Make a dialogue partner respond

RESP R|S,dialogue number,sentence

R means after the character has "spoken", it will be displayed using its

default image or animation again. S means the image used just before the RESP command was called will be used again.

the dialogue number refers to the number assigned to this dialogue by the

DLG:
statement in the graal.main file.

The sentence is constructed just like sentences used in, for example, the

SAY
and
THINK
commands.

See also:
SAY
and
THINK
commands,
DLG
statement

1.35 HANDLE

HANDLE Command

Make the main character handle an object

HANDLE [-1]

HANDLE on its own uses the HANDLE_MAP animations specified in the graal.main file to make the main character "operate" OBJ1. HANDLE -1 resets the main character to what he/she looked like just before the HANDLE command took effect.

1.36 PICK

PICK Command

Pick up an object

PICK [<object number>]

Adds the specified object (or OBJ1, if no object number is specified) to the inventory and erases it from the scene area. This command is often preceded by a MOBJ and a
HANDLE
command to show on screen what's going on.

There is no DROP command that automatically replaces an object on screen. the main reason is that it isn't worth it: For every possible location the

object could be dropped, you would have to specify a place for it in the scene area.

The most comfortable way to dispose of objects is letting the main character do so automatically when they have filled their purpose, using the
REMOVE
command.

See also:
GET
,
REMOVE

1.37 GET

GET Command

Add an object to the inventory

```
GET <object number>,U|N
```

The object is added to the inventory. Use "U" if the inventory display should be updated (which is the normal procedure), "N" if the inventory should be left unaffected, for example if GET is used during a dialogue, or you make a number of consecutive GETs letting only the last one update the display.

The difference between GET and
PICK
is that GET does not take any notice of the object's previous whereabouts.

See also:
PICK
,
REMOVE

1.38 REMOVE

REMOVE Command

Removes an object from the inventory

```
REMOVE <object number>,N|U,<room>
```

Removes the object from the inventory. If "U" is specified, the inventory display is updated. The object is placed in the specified room. If the room is specified as 0, the object "disappears" forever!

Note: This command can also be used to put an object in any room except the current at any time. In this case, specify "N" to skip the inventory updating. To put an object in the current room, the

SHOW
command must always
be used.

See also:
GET
,
PICK

1.39 NAME

NAME Command

Alter the name of an object

```
NAME new name[,word1,word2,word3]
```

Very often in an adventure, an object is "transformed" - that is, one object appears while another disappears at the same time. (For example, a parcel is opened to reveal a book - the parcel is gone, the book exists.) To save memory, it makes sense to use the old object number for the new object also, since there is no risk of confusion - the two objects never appear at the same time.

The command NAME alters the name of the current OBJ1 (see the
syntax
conventions). In addition, the determination words (see the
OBJECT
statement) may be altered to suit the new object description.

See also:
OBJ1
command,
OBJECT
statement.

1.40 SETOF

SETOF Command

Assigns a value to an object flag

```
SETOF [<object number>,]flag=value
```

If no object number is specified, OBJ1 is assumed. The flag is set to the value. Quite simple, eh?

See also:
ADDOF

,
DECOF
,
IFOF

1.41 ADDOF

ADDOF Command

Adds to or subtracts from a flag value

```
  ADDOF flag[,number]
  ADDOF2 flag[,number]
```

ADDOF affects a flag for OBJ1, ADDOF2 for OBJ2. If no number is specified, 1 is added. Negative numbers may be used, thus subtracting from the flag value. DECOF is used for special "countdown" purposes.

See also:
SETOF
,
DECOF
,
IFOF

1.42 DECOF

DECOF Command

Counts down the flag value to zero

```
  DECOF flag
  DECOF2 flag
```

DECOF is used for OBJ1, DECOF2 for OBJ2. The flag value is decreased by 1 until it reaches zero, then it stays there.

See also:
SETOF
,
ADDOF
,
IFOF

1.43 SETRF

SETRF Command

Assigns a value to a room flag

```
  SETRF [<room number>,]flag=value

If no room number is specified, the current room is assumed. The flag is set
to the value.

See also:
                ADDRF
                ,
                DECRF
                ,
                IFRF
```

1.44 ADDRF

```
                ADDRF Command

Adds to or subtracts from a room flag value

  ADDRF flag[,number]

ADDRF affects a flag for the current room. The number is added to the flag
value. If the number is negative, a subtraction is performed.

See also:
                SETRF
                ,
                DECRF
                ,
                IFRF
```

1.45 DECRF

```
                DECRF Command

Counts down the room flag value to zero

  DECRF flag

DECRF decreases the value of the flag until it reaches zero, then it stays
there.

See also:
                SETRF
                ,
                ADDRF
                ,
                IFRF
```

1.46 CBOB

CBOB Command

Alter the image for the main character

```
CBOB <image number>
```

The main character changes to the specified image. The screen (hotspot) position is not altered.

See also:
CPOS
,
CMOVE
,
OMOVE

1.47 CMOVE

CMOVE Command

Moves the character to a new screen position using the default
WALK_...
animations.

```
CMOVE x,y,C|P
```

x and y are the screen (hotspot) coordinates. Use P to end the CMOVE with an appropriate PAUSE_... image, C" link "ST_PAUSE" 0} image, C to end with a

STILL_...
image. C is mainly used when another CMOVE follows immediately.

See also:
CBOB
,
CPOS
,
OMOVE

1.48 MOBJ

MOBJ Command

Move the main character next to an object

```
MOBJ [object number]
```

The main character is moved to the position indicated by the character offset parameters of the OBJECT statement or command. If no object number is given, OBJ1 is assumed.

1.49 MEXIT

MEXIT Command

Move character to exit

MEXIT

This command can only be used in an ACTION: 0;... statement, and moves the character to the exit point for the clicked exit, as specified in the corresponding
EXIT:
statement

1.50 CPOS

CPOS Command

Alter the character’s screen position

CPOS x,y

Immediately alters the main character’s screen position to x,y (without walking there like
CMOVE
.) The image is not altered:
CBOB
may be used for
that.

See also:
CBOB
,
CMOVE
,
OMOVE

1.51 CHAR

CHAR Command

Turn main character display on or off

CHAR ON|OFF

CHAR OFF means the main character is not on screen - use for cutscenes, animated intros and the like. CHAR ON restores the main character to the position before CHAR OFF.

See also:

CPOS
,
CBOB

1.52 FLOOR

FLOOR Command

(Re-)defines a floor

```
  FLOOR number,x1,y1,x2,y2,floormap1,...,floormapn
```

This command works exactly like the
FLOOR:
 statement, and allows you to
re-arrange floors for a room any way you like. You can make previously unreachable areas accessible, or quite the opposite.

You must make sure that all floormaps are valid - changing a single floor may mean you have to use FLOOR commands for other floors to just to change the floor maps. And if you alter the number of floors, you must also use the

NFLOOR
 command to set the new number of floors.

See also:
NFLOOR
 and
SETFLOOR
 commands,
FLOOR:
 statement

1.53 NFLOOR

NFLOOR command

Changes the number of floors in a room

```
  NFLOOR number
```

Only use this command when you have changes the floor structure, and number of floors, in a room with the
FLOOR
 command.

See also:
FLOOR
 and
SETFLOOR

commands.

1.54 SETFLOOR

SETFLOOR command

Informs the system about the main character's whereabouts in the floor system.

SETFLOOR floor number

Normally, GRAAL automatically keeps track of on which floor your character is currently positioned. There are, however, a few commands that may leave the system unaware about your hero's whereabouts. These are the
FLOOR
and

OMOVE
commands. If one of these commands places your character on another
floor previously, you should specify the new floor number with this command. Otherwise, strahnge things may happen when the character tries to move next.

See also:
FLOOR
and
OMOVE
commands, and the
FLOOR:
statement.

1.55 OMOVE

OMOVE Command

Move an object (or the main character) according to specified animation sequence

OMOVE object number,x,y,speed adjustment,FLIP| ,WAIT| ,animation sequence

The object's hot spot is moved to the x,y screen co-ordinates. During the movement, the
animation~sequence
specified in the last parameter is used.

The x and y positions can be set relative to the main character's current position using CX+offset and CY+offset. Example:

OMOVE 2,CX+20,CY+0,1,FLIP, ,A 0,(SBOB1,12)(SBOB2,12)(SBOB3,12)(SBOB2,12)

moves object 2 to a position 20 pixels to the right of the main character, at the normal WALK_SPEED speed, using an animation consisting of four different images.

If the speed adjustment factor is 1, the speed will be the speed set with the WALK_SPEED parameter in the graal.main file. A lower number gives faster" link "ST_WALK_SPEED" 0} parameter in the graal.main file. A lower number gives faster movement, a higher number gives slower movement.

If FLIP is specified, and movement is from left to right, the images are used as supplied, but if the movement is from right to left, all images in the animation sequence are automatically flipped first. Specifying any other value (such as a blank) means the images are always used as specified.

If WAIT is specified, the entire animation sequence is carried out before GRAAL continues with the next command. Otherwise, GRAAL will not check if the animation has been concluded until the next OMOVE command for the same object. If you put several OMOVE commands for the same object next to each other, you should specify a blank space instead of WAIT - this eliminates the brief pauses between OMOVE commands that will otherwise occur. On the other hand, if the command following an OMOVE is something like a SHOW command for the same object, always specify WAIT - otherwise the SHOW would be affecting the object before the animation sequence had a chance to finish.

OMOVE can be used to move and animate the main character using other animations sequences than the default. Just specify object number 0 to point to the main character.

If x and y are left blank, the object is animated using the animation string at its curent position. Normally, the animation is automatically stopped when the object reaches the x,y position, and the first BOB image in the animation sequence will the be used as the still image. When no new x,y position is given, the animation goes on until another image-manipulating command for the object is encountered, for example SHOW or CBOB. Example:

```
OMOVE 0, , ,1,A 0,(11,24)(12,24)
```

would animate the main character alternating between BOB images 11 and 12 indefinitely. (Well, until the BOB image for the main character is altered using some other command, anyway.)

See also:

SHOW
,
CMOVE
,
CPOS
,
CBOB
,
HIDE

1.56 SHOW

```
                SHOW Command

Show an object or exit


This is the syntax when used with ordinary objects (se further down for the
"exit" syntax):

  SHOW object number,x,y,image

The image can be a BOB image number, an animation string, or even a pattern
(PTRN) specification.

If x and y are left blank, the position of the object will not be altered,
only the image.

If image is left blank, the object is moved to the new co-ordinates
retaining the previous image.

Note: If the object was in the inventory before the SHOW, it is removed and
the inventory is updated.

Example:

  SHOW 3, , ,PTRN 1

would show object 3 in its previous position using the animation sequence
stored in the 1.ptrn file.

Another example:

  SHOW ROBJ1,30,70,

would place room object 1 at the new co-ordinates 30,70.


A special form of this command is used when making a previously hidden exit
appear again:


  SHOW EXIT,exit_number

This makes the exit re-appear if it was previously hidden with a
                HIDE
                command.

See also:
                HIDE
                ,
                OMOVE
                ,
                CPOS
                ,
                CBOB
```

,
CMOVE

1.57 HIDE

HIDE Command

Hides an object or exit

This is the syntax for normal use (the syntax for the use with exits follows further down):

HIDE object number

hides the specified object from view (that is, removes it from the current room). This may often be used in room DACT statements, using room flags to decide what objects are being shown and not in a particular situation or phase of the game.

When this command is used to hide an exit (that is, make it not only unavailable but totally absent from the scene area), the syntax is as follows:

HIDE EXIT,exit_number

Hidden exits can later be shown again using the
SHOW
command.

See also:
CHAR
,
SHOW

1.58 TRACK

TRACK Command

Handles soundtracker music modules

TRACK <file name | list>,ONCE|LOOP,FILTER|NO

If the file name is different than the last sound tracker file name used, or no tracker file is currently in memory, the file is loaded and the module starts playing. Currently, the ONCE|LOOP parameter doesn't work - the module always start again when the end is reached. Specify FILTER if you want the Amiga's low-pass audio filter to be on while the module is playing (takes away some high frequencies and hissing noises.)

```
  TRACK OFF

Stop the module playing

  TRACK ON

Resume playing a stopped module

  TRACK NO

Stop playing and erase the module from memory (thus freeing memory space).

See also:
                SAMLOAD
                ,
                SAMPLAY
```

1.59 SAMLOAD

```
                SAMLOAD Command

Loads a raw or IFF sample into memory


  SAMLOAD <filename | list>

This command loads a raw or IFF sample into memory for later use with the
SAM command.

See also:
                SAM
```

1.60 SAMPLAY

```
SAM Command

Plays a previously loaded sample

  SAM ONCE|LOOP,DEF|<frequency>

Play a sample loaded with a previous SAMLOAD command once or in a loop. DEF
will make the sample play with the default frequency. To raise or lower the
pitch, specify a frequency instead.

  SAM OFF

Stop playing a sample.

  SAM NO

Stop playing a sample and erase it from memory (thus freeing memory space).
```

```
See also: SAMLOAD
```

1.61 CLPART

```
                CLPART Command

Load a clipart IFF file


  CLPART filename

The specified picture file is loaded into memory, where it is used for
grabbing images with the BOBS command.

  CLPART OFF

Get rid off a previously loaded clipart file when it is no longer needed.

See also:
                BOBS
```

1.62 BOBS

```
                BOBS Command

Loads BOB images into the image bank


  BOBS number of images,starting image,x,y,width,height,x-offset,hotspot

The parameters for this command are exactly the same as for the
                BOBS:
                statement, except the parameters should be separated by commas (,) ↩
                    instead
of semi-colons (;). There is one slight difference in how you specify the
the starting BOB image number (which is the second parameter). This should
be specified as n, SBOBn, or RBOBn, depending on the type  of images you
intend to add / replace in the image bank.

This command must be preceeded by a CLPART command.

See also:
                CLPART
```

1.63 HOTSP

```
                HOTSP Command

Alters the hotspot of an image
```

```
  HOTSP image number,hotspot position
```

This command is used when you need to make changes to the "3D order" in which objects and images are displayed on the screen.

A hotspot position of 0 defines the default hotspot at the middle of the bottom of the image. Any other value defines another hotspot in the y direction of the image. The y direction is the important one, because it is the relative position of hotspots in the y direction that determines which image goes in front of another on the screen.

An unfortunate side-effect of altering the y hotspot is that the x hotspot position "jumps" from the middle of the image to the left edge - there is no convenient way for me to avoid this. This means that you have to redisplay the image on screen with a new SHOW, OMOVE, BOBON or other such command, and in that command adjust the x position to cancel out the effect of the hotspot having moved in the x direction as well as in the y direction.

See also:
BOBS
statement

1.64 LIGHTS

LIGHTS Command

Fade scene area out or in

```
  LIGHTS ON|OFF
```

ON makes the scene area visible. OFF fades the scene area to black. A LIGHTS ON must always be present in a DACT: statement for a room, otherwise the screen will stay black and nobody will be able to do very much!

1.65 COLOUR

COLOUR Command

Change a colour

```
  COLOUR [DLY,]<colour index>,<colour value>
```

The colour is changed to the new value. If you want to manipulate colours in DACT: statements before the
LIGHTS~ON
command has been issued, begin the command with the DLY (delay) parameter. This will cause the new colour to faded in together with the rest when the LIGHTS ON take effect.

See also:
FADE

1.66 FADE

FADE Command

Fade one colour to another

```
FADE <colour index>,<speed>,<colour value>,WAIT|NOWAIT|STACK
```

Fades the specified colour to the new colour value with a certain speed. Use the STACK parameter if several colours should be faded simultaneously - GRAAL will wait until a FADE command with WAIT or NOWAIT specified and then also fade all STACKed colours at the same time.

WAIT causes the action to be suspended during the colour fade. NOWAIT means action will continue while the colours are being faded.

See also:
COLOUR

1.67 CAMERA

CAMERA Command

Pan the camera to any part of the background picture in scene area

```
CAMERA x_focus
```

x_focus is the horizontal position GRAAL tries to put in the center of the scene area. Of course, the pan stops whenever one of the edges of the background picture comes into view.

Use this command in cutscenes and the like, when you need to move the camera away from or independently of the main character.

1.68 TITLE

TITLE Command

Show a title screen

```
TITLE filename,effect
```

The file is an ordinary iff picture file. The effect can be one of the following:

number

A previous title picture is gradually dissolved into a new one using a bit pattern that depends on the number given. Odd numbers, and prime numbers in particular, are recommended. Some numbers don't work at all!

FADE

The old picture is faded to black, then the new one is faded in.

CUT

Pictures are just swapped without any special effects. HAM screens should be handled this way.

See also:
TYPE

1.69 TYPE

TYPE Command

Type text on a title screen.

TYPE font,colour,effect,x,y,text

This command is used to type text on title background screens.

font is 1 or 2, corresponding to the
TITLEFONT:
statements in the graal.main
file.

colour is the colour number

effect is SHADOW, SHADOW2 or BORDER, surrounding the text with different kinds of shading for greater legibility. If no effect is desired, use NONE.

x,y is the printing position. x=-1 means the text will be centered.

See also:
TITLE

1.70 TEXT

TEXT command

Display text in scene area

```
  TEXT x,y,colour,text

This command uses the same font and pause lengths as the
                SAY
                ,
                THINK
                , and

                RESP
                 commands, but any text can be used and it is not connected to the ↩
                     main
character or a certain dialogue.

See also:
                SAY
                ,
                THINK
                , and
                RESP
                 commands
```

1.71 BOBON

```
                BOBON Command

Places a BOB that is not a GRAAL object on screen.


  BOBON bob number,x,y,image

If you are putting a new image on the screen, first make sure  the BOB
number is not already in use for any object in the room.

If the BOB is already placed on screen, and x and y are left empty, only the
image is changed and not the position.

If the BOB is already placed on screen, and the image number is left blank,
only the BOB position changes.

See also:
                BOBOFF
```

1.72 BOBOFF

```
                BOBOFF Command

Take away a BOB that is not an object from the screen


  BOBOFF bob number

Used to take away BOBs from display that have been put there by the BOBON
```

command.

See also:
BOBON

1.73 PBOB

PBOB command

Pastes a BOB image

```
PBOB x,y,image
```

The image is pasted into the picture without anyway of removing it
afterwards (unlike the BOBON / BOBOFF commands, which actually use a BOB to
display an image).

Use for animated dotted lines and other special effects.

1.74 NOBREAK

NOBREAK Cutscene Command

Disables [Esc] key in cutscenes

```
NOBREAK
```

This can only appear as the very first statement in a cutscene, and tells
GRAAL that the [Esc] key cannot be used to skip this cutscene.

1.75 FINAL

FINAL Cutscene Command

Indicates resume point in cutscene

```
FINAL
```

This can only be use in a cutscene. All commands below FINAL will be
executed is the rest of the cutscene was skipped with the [Esc] key.

1.76 graal.main file

graal.main Statements =DEMO=>

Your statements in the graal.main file should appear in the order indicated here. Although the order makes no difference in some cases, there are times when statements and commands depend upon previous statements to load the required resources into memory. This sequence of events is tested and it works!

("Number" below: ONE means statement occurs only once. ANY means zero to any number of times.)

Statement	Number	Description
~NAME~	one	Name of the adventure
~VERSION~	one	Version number of the adventure
~MAX_CACHE~	one	Maximum number of files in memory cache
~WALK_BUTTON~	one	Left or right button used for walking?
~VERB_TEXT~	0-10	Message when pointing to a verb
~EXIT_COL~	one	Text color of exit names
~OBJ_COL~	one	Text color of object names
~START_ROOM~	one	Adventure starting position
~MAX_ROOM~	one	Maximum room number used
~MAX_SECTION~	one	Maximum section number used
~MAX_DACT~	one	Maximum number of DACT statements per room
~MSGFONT~	one	Scene area text font and size
~COMFONT~	one	Command and dialogue area text font and size
~TITLEFONT1~	one	Titlepage text font and size (1)

```
~TITLEFONT2~
       one    Titlepage text font and size (2)

~LINE_LENGTH~
      one    Line length for SAY, RESP, etc.

~COMMAND_AREA~
     one    Name of picture with command area graphics

~DLG_AREA~
         one    Name of picture with dialogue area graphics

~RESOURCE~
         one    Name of interface resource bank

~GLOBALOBJS~
       one    Number of global objects

~SECTIONOBJS~
      one    Number of section objects

~ROOMOBJS~
         one    Number of room objects

~GLOBALBOBS~
       one    Number of global BOB images

~SECTIONBOBS~
      one    Number of section BOB images

~ROOMBOBS~
         one    Number of room BOB images


~CLPART~
           any    Name of picture containing clipart graphics

~BOBS~
             any    Grab global BOB images from clipart picture


~CHARACTER_HEIGHT~
 one    "Average" or estimated height of main character

~CHARACTER_WIDTH~
  one    "Average" or estimated width of main character

~CHARACTER_BOB~
    one    BOB number used for main character

~CHARACTER_COL~
    one    Text color of main character "speech"

~STILL_RIGHT~
      one    Main character right profile image

~STILL_LEFT~
```

```
       one    Main character left profile image

~STILL_BACK~
       one    Main character backside image

~STILL_FRONT~
      one    Main character front image

~PAUSE_RIGHT~
      one    Main character pause image having walked right

~PAUSE_LEFT~
       one    Main character pause image having walked left

~PAUSE_BACK~
       one    Main character pause image having walked away

~PAUSE_FRONT~
      one    Main character pause image having walked toward

~WALK_RIGHT~
       one    Main character animation for walking right

~WALK_LEFT~
        one    Main character animation for walking left

~WALK_AWAY~
        one    Main character animation for walking away

~WALK_TOWARD~
      one    Main character animation for walking toward

~WALK_SPEED~
       one    Main character walking speed adjustment


~TALK_MAP~
         1-8    Speech animations mapped to pause/still images

~HANDLE_MAP~
       1-8    Object manipulation animations mapped to -"-


~OBJECT~
           any    Definitions of global objects


~DLG~
              any    Definitions of dialogue partners


~ACTION~
           any    Actions taken for input relevant to entire game
```

1.77 .section files

```
                n.section Statements =DEMO=>

Follow the statement order presented here in your .section files to avoid
any unnecessary trouble.

  Statement      Number Description


                ~CLPART~
                       any    Name of picture file containing clipart

                ~SECTIONBOBS~
                  any    Grab section BOB images from clipart picture


                ~SECTIONOBJ~
                   any    Define section objects


                ~DACT~
                         any    Actions executed directly when the section file is
                      first used.


                ~ACTION~
                       any    Actions taken for player input relevant to section
```

1.78 .room files

```
                n.room Statements =DEMO=>

Please follow the order indicated here in your .room files to avoid
unnecessary errors and trouble.


  Statement    Number Description


                ~UPDATE~
                     one    Frame update rate (according to graphics load)

                ~SECTION~
                    one    Section to which room belongs

                ~BG_IFF~
                     one    Name of background picture for room


                ~START_POS~
                  any    Starting positions for main character
```

```
~FLOOR~
      1-12   Areas where the main character can "put its feet"


~EXIT~
       1-10   Exits


~CLPART~
     any    Name of picture file containing clipart

~ROOMBOBS~
   any    Grab room BOB images from clipart picture


~STATIC~
     any    Place static graphic elements on background picture

~ANIM~
       any    Place animated graphic elements on background  ↩
          picture


~ROOMOBJ~
    any    Define room objects


~DACT~
       any    Actions to be taken directly upon entering the room


~LINE~
       any    Define dialogue lines main character can choose from

~LACT~
       any    Define responses to dialogue alternatives


~ACTION~
     any    Actions to take for player input relevant to room
```

1.79 NAME

```
NAME Statement (main)

Gives the adventure name


  NAME: adventure name

It's always nice to know what you are doing, isn't it? This is shown when
the player presses "V" and also identifies saved game files.
```

1.80 VERSION

VERSION Statement (main)

Gives the adventure version

VERSION: version number

This is used to make sure saved game files are compatible with the current status of your adventure - always update this when you do ANYTHING with the adventure that affects the number of rooms, objects, sections, object definitions, or any flag usage!

1.81 MAX_CACHE

MAX_CACHE Statement (main)

Sets the maximum number of files in the memory cache

MAX_CACHE: number of files

For normal use: Set to 0 when creating a game (especially if you are using the on-line debugger to reload altered scripts).

Set to 100 once the game is ready to be played to eliminate disk swaps and make use of any extra memory you may have.

When GRAAL detects that extra memory is available, it calculates how many files it will be able to fit into RAM, thus reducing disk access during gameplay. GRAAL calculates an average of 50K per file - if this is totally wrong (and don't ask me how, you will probably never have to bother), you may have to set this to a very low number or even to zero.

1.82 WALK_BUTTON

WALK_BUTTON Statement (main)

Sets the mouse button used for walking.

WALK_BUTTON: LEFT|RIGHT

The setting determines if you can use the left or right mouse button to command the main character to walk to any spot in the room (that is, click anywhere that isn't an object or an exit).

1.83 EXIT_MESSAGE

VERB_TEXT Statement (graal.main)

Contains the message shown when using a verb.

```
  VERB_TEXT: verb_no;text
```

This is the text that appears in the sentence area when you use a command or an exit. All these texts have default values in English, but all of them can be translated into any language using this statement, and all of them (except a few) can also be changed to a completely different verb.

These are the default values:

```
 0 - Go to            (Meaning can not be changed)
 1 - Give             (Meaning can not be changed)
 2 - Pick up
 3 - Use              (Meaning can not be changed)
 4 - Open
 5 - Talk to
 6 - Push
 7 - Close
 8 - Look at
 9 - Pull 10 - preposition text for command 1, "Give" (see below)
```

And here's why you cant change the meaning of 0,1, and 3:

```
0 - This is not a command shown in the command area, but rather what
    happens when you click an exit in the scene area - thus, it must
    always have the meaning "go to" (although you can translate THAT
    into any language using this statement!)

1 - This command is always suffixed with the preposition " to ".
    This preposition text you can also change, because the it is stored in
    VERB_TEXT no. 10 for the sake of convenience - see above!

3 - This command makes use (no pun intended!) of the preposition
    defined for an object, which is what makes it possible to make objects
    interact with each other (or not).
```

Of course, some of the other commands are also hard to think of a better replacement for - how are you going to engage in conversations without a "Talk to" command, for instance? Or perhaps you are not planning to - that's also up to you!

1.84 EXIT_COL

EXIT_COL Statement (main)

Specifies color of exit names shown in scene area

```
  EXIT_COL: colour number
```

Make this a fairly bright colour - the text will be surrounded by a black outline.

1.85 OBJ_COL

OBJ_COL Statement (main)

Specifies the colour of object names displayed in the scene area

```
  OBJ_COL: colour number
```

Make this a fairly bright colour - it will be surrounded by a black outline.

1.86 START_ROOM

START_ROOM Statement (main)

Specifies the starting position for the adventure

```
  START_POS: room;entrance
```

The action will commence in this room and at this entrance - also see the .room START_POS statement.

1.87 MAX_ROOM

MAX_ROOM Statement (main)

Highest room number used in this adventure

```
   MAX_ROOM: number
```

All rooms in an adventure are numbered from 1 and upwards - try not to leave "holes" in the room sequence, since each room number, used or not, takes up valuable memory space! If the adventure is split up onto several disks, there is no way for GRAAL to automatically know how many rooms there actually is, so this statement must be updated continually as more rooms are added to the game.

Tip: If you delete a sequence of rooms in the middle of the game, re-use those vacant room numbers if you add more rooms later on - rather than increasing the highest room number.

1.88 MAX_SECTION

MAX_SECTION Statement (main)

The highest section number used in the adventure

```
  MAX_SECTION: number
```

Like MAX_ROOM, this must be manually updated with the highest section number used so far during development. Always start with section 1 and continue upwards without leaving "holes" in the numbering sequence if you can avoid it.

1.89 MAX_DACT

MAX_DACT Statement (main)

Sets the maximum number of DACT statements that can be used in a room file

```
  MAX_DACT: number
```

Don’t know why I made this customisable, really - 50 should be plenty, and no other limits of a similar nature are possible to alter thus far. Still, in future versions of GRAAL, most limits like this may be defined by the user.

1.90 MSGFONT

MSGFONT COMFONT TITLEFONT1 TITLEFONT2 Statements (main)

Defines fonts and sizes for various uses

```
  MSGFONT: name;size
  COMFONT: name;size
  TITLEFONT1: name;size
  TITLEFONT2: name;size
```

The fonts (in the proper sizes) must be available in a FONTS: drawer in your development directory. Furthermore, FIXFONTS must have been used on the drawer for all the fonts to be OK.

MSGFONT is the font used for all text displayed in the scene area.

COMFONT is the font used for the input sentence display and dialogue lines.

Do not alter these two in GRAAL version 1, since this will probably mess up line spacing (among other things). They will be of more use in GRAAL 2.

TITLEFONT1 and TITLEFONT2 are used with the TYPE command to print text on

title screens.

Note: When GRAAL starts up, the GRAAL FONTS: drawer is copied to RAM:, and FONTS: is reassigned to RAM:Fonts/. Which is a good reason for not multi-tasking too much when running a GRAAL adventure. Sorry 'bout this, but the fault lies with Amos Pro font handling (and the fact that the Easylife extension font handling had too many bugs in it!).

1.91 LINE_LENGTH

LINE_LENGTH Statement (main)

Determines the line length of displayed sentences (SAY, RESP, and other commands.)

```
  LINE_LENGTH characters
```

GRAAL does automatic line breaks in long sentences - this is the length it aims for for each line in SAY, RESP, and other similar commands. GRAAL will only break lines in between words, and does not hyphenate.

You may control line breaks manually in any sentence - just insert backslash (\ ) characters where you want line breaks to appear. This will override the setting of the LINE_LENGTH: statement.

1.92 COMMAND_AREA

COMMAND_AREA / DLG_AREA Statements (main)

Graphic files containing the graphics for the command area and dialogue area

```
  COMMAND_AREA filename
  DLG_AREA filename
```

These files contain the graphics for the command area and its replacement during dialogues, the dialogue control area. In graal 1, keep all measurements and positions of all boxes and buttons drawn in these files exactly as they are: GRAAL 2 will provide more freedom when designing the user interface, but for now you are stuck with the nine standard commands and the fonts and spacings used in Olaf 1.

If DEFAULT is specified as filename, a new file will not be loaded - the default graphics present in GRAALs memory will be used instead, which speeds up the loading time.

1.93 RESOURCE

RESOURCE Statement (main)

Name of interface resource bank

```
  RESOURCE filename
```

This must be an Amos Pro resource bank especially designed for GRAAL. It controls the graphic appearance of the disk swapping, save/load and quit dialogue boxes, among other things. Experienced Amos Pro users can also easily use the Amos resource editor to make their own banks, but this will not be explained here.

GRAAL 2 will provide several different ready-made resource banks with different looks: High-tech, Stone-age, Medeival... For now, stick with the one used in Olaf 1.

1.94 GLOBALOBJS

GLOBALOBJS / SECTIONOBJS / ROOMOBJS Statements (main)

Sets the number of objects that can be used in the game

```
  GLOBALOBJS: number
  SECTIONOBJS: number
  ROOMOBJS: number
```

Objects are all the objects that have a name within the adventure and thus can be manipulated by the user.

It would be wasteful to have the data for all objects in memory all the time, which is why they are divided into three categories:

GLOBAL OBJECTS are indeed available all the time. Everything that can be carried in the inventory over more than one section of the game, and all characters that Olaf can have conversations with must be in this category. Numbering of global objects start with 1 and proceeds upwards.

SECTION OBJECTS can only exist within one particular section of the game. Note that if a player leaves the section and re-enters it at a later date, all information in object flags and the like has been lost - all object will be re-initialised with the status and position defined in the OBJECT: stetements in the .section file. Therefore, use this with caution! To refer to a section object, use SOBJn, where n is the number of the section object.

ROOM OBJECTS are restricted to the current room only, and should preferrably be objects which can not be "seriously" manipulated by the user - usually, they are only there to add a bit of atmosphere and to act as red herrings. The torch in the bar in Olaf 1 is a perfect example of such an object. To refer to a room object, use ROBJn, where n is the number of the room object.

These statements decide how many objects of each time GRAAL will make room for. You can alter any of the values any time during the development, so no panic.

1.95 GLOBALBOBS

GLOBALBOBS / SECTIONBOBS / ROOMBOBS Statements (main)

Sets the number of BOB image bank slots available for each BOB image category

```
N_GLOBALBOBS: number
N_SECTIONBOBS: number
N_ROOMBOBS: number
```

Object images are referred to and treated according to which of the three above categories they belong:

GLOBAL BOBS are images that are always in memory for instant access anywhere in the game - for instance, the images used for the animation of the main character. Global BOB images are grabbed by the BOBS: statement in the graal.main file and referred to by their true number. Since BOB images 1-10 are reserved for system use, the ones you normally refer to in the game start with number 11.

SECTION BOBS are grabbed with the SECTIONBOBS: statement in a .section file and remain in memory as long as the player stays in the section. They are referred to using SBOBn, where n is the number of the section BOB image.

ROOM BOBS are grabbed with the ROOMBOBS: statement in a .room file and remain in memory as long as the player stays in the room. They are referred to using RBOBn, where n is the number of the room BOB image.

The numbers set in these statements may be altered at any time during development, so don't panic.

Note: If you need some "dynamic" image replacing, any kind of image may also be grabbed/replaced by the
BOBS
command, which has the same parameter as these statements.

1.96 CLPART

CLPART Statement (main, section, room)

Loads an IFF picture file containing clipart into memory

```
CLPART: filename
```

GRAAL doesn't mess around with complicated picture storage formats - all graphics used in the game are "grabbed" from ordinary IFF files. This statement selects the IFF file to be using for subsequent "grabbing" with the BOBS:, SECTIONBOBS: and ROOMBOBS: statements.

1.97 BOBS

BOBS Statement (main)

SECTIONBOBS Statement (section)

ROOMBOBS Statement (room)

Grabs BOB images into the BOB image bank

```
BOBS: number;startnumber;x1;y1;width;height;x-offset;hotspot
SECTIONBOBS: number;startnumber;x1;y1;width;height;x-offset;hotspot
ROOMBOBS: number;startnumber;x1;y1;width;height;x-offset;hotspot
```

This command can grab a single image or a row of images, provided they are aligned horisontally and equally sized and spaced. All three versions of the command have the same syntax. The only difference is the BOB image category they grab. BOBS are later referred to by their proper image number, SECTIONBOBS by SOBJn and ROOMBOBS by ROBJn.

number

The number of images to grab with this statement.

startnumber

The first image to grab will get this number. If more than one image is grabbed, the number will be assigned in increasing sequence. E.g. BOBS: 4;11;... would grab the global BOB images 11, 12, 13 and 14. ROOMBOBS 1;5;... would grab ROBJ5.

x1;y1

Imagine the clipart being cut out of the picture (previously loaded with the CLPART: statement) by placing a rectangular frame over the picture and cutting along the edges, x1;y1 is the co-ordinate in the upper left corner of the frame...

width;height

...and this is the width and the height of the frame. Everything that is cut out and is of colour 0 will be transparent when the image is used.

x-offset

If more than one image is grabbed with the statement, this number tells how many pixels to the right the "frame" should be moved before cutting out the next image.

hotspot

The hotspot decides which point of an image is actually placed at the co-ordinates of a command using the image. For example,

```
BOBON 10,30,70,SBOB3
```

is a GRAAL command placing image SBOB3 at the co-ordinates 30,70. Great, but which point of the image is actually placed at 30,70? That is decided by the hotspot. The default hotspot in graal (choosen by setting the hotspot parameter to 0) is in the middle at the bottom of the frame - which is where a character grabbed as an image usually should have its feet. Setting the hotspot parameter to another value retains the x-position of the hotspot but alters the y-value. This has to do with getting objects in 3D scenes in the correct order and is explained in more detail in the GRAAL tutorial.

1.98 CHARACTER_HEIGHT

CHARACTER_HEIGHT / CHARACTER_WIDTH Statements (main)

Gives the average size of the main character

```
CHARACTER_HEIGHT: pixels
CHARACTER_WIDTH: pixels
```

This states how big you main character normally is, and is used to calculate how the main character may move on the screen. A good example is the "alley" in the street outside the bar in Olaf 1. It shows that the system is aware of Olafs width and doesn't put him in the alley unless he fits there - click on a point too close to the walls, and Olaf walks out of the alley again.

1.99 CHARACTER_BOB

CHARACTER_BOB Statement (main)

Sets the BOB number used for the main character

```
CHARACTER_BOB: number
```

Do not alter this! (But some time in the future there may be a good reason to be able to customise it.)

1.100 CHARACTER_COL

CHARACTER_COL Statement (main)

Sets the colour to use for main character "speech"

```
  CHARACTER_COL: colour number
```

Make this a fairly bright colour, since it will be surrounded by a black outline. It should also a colour that is the same for all graphics in the adventure, because it does not look good if the main characters speech keeps shifting its colour from dialogue to dialogue.

1.101 PAUSE_RIGHT

PAUSE_RIGHT / PAUSE_LEFT / PAUSE_BACK / PAUSE_FRONT Statements (main)

Sets the images used when the character pauses in one of the four main directions

```
  PAUSE_RIGHT: image number
  PAUSE_LEFT: image number
  PAUSE_BACK: image number
  PAUSE_FRONT: image number
```

These images are used when the main character pauses waiting for player input. You may choose to use exactly the same images as for the corresponding STILL_ statements.

1.102 STILL_RIGHT

STILL_RIGHT / STILL_LEFT / STILL_BACK / STILL_FRONT Statements (main)

Sets the still images used for the main character and the four main directions.

```
  STILL_RIGHT: image number
  STILL_LEFT: image number
  STILL_BACK: image number
  STILL_FRONT: image number
```

These images will be used in automatic main character movement.

1.103 WALK_RIGHT

WALK_RIGHT / WALK_LEFT / WALK_AWAY / WALK_TOWARD Statements (main)

Defines the animation sequence used for movement in the four directions.

```
  WALK_RIGHT: animation sequence
  WALK_LEFT: animation sequence
  WALK_AWAY: animation sequence
```

```
  WALK_TOWARD: animation sequence

These four
                animation~sequences
                 are used by GRAAL for all automatic movement
of the main character.
```

1.104 WALK_SPEED

```
WALK_SPEED Statement (main)

Adjust walking speed


  WALK_SPEED: speed factor

This statement adjusts the speed of the automatic main character movement so
that the speed matches the WALK_xxxxx animation squences - the objective is
to make it look like the character actually uses his feet to walk, rather
than glide around on a slippery surface. Simply experiment with the value
until the movement (especially sideways) looks good!
```

1.105 TALK_MAP

```
                TALK_MAP Statement (main)

Defines animation sequences used for automatic main character speech" link
"GG_Animation" 0} used for automatic main character speech


  TALK_MAP: previous image;animation sequence

When a
                SAY
                 command is given, GRAAL checks which image is currently used for
the main character. (This should normally be one of the
                STILL_...
                 or

                PAUSE_...
                 images.) The image is checked against the TALK_MAP statements
(there may be up to 8 of them) and the one where the previous image matches
the main character's current image is used for the animation of the speech.
```

1.106 HANDLE_MAP

```
HANDLE_MAP Statement (main)

Defines the animation~sequences used when main character manipulates
objects" link "GG_Animation" 0} used when main character manipulates
```

objects

```
  HANDLE_MAP: previous image;anim seq low;anim seq mid;anim seq high
```

When a HANDLE command is encountered, GRAAL checks which image is currently being used for the main character, and the "handle position" for the object being manipulated. The proper animation sequence foom the HANDLE_MAP statement matching the current main character image is then used. Note that the animation sequences only show the main character reaching out for something, and that the last image in each sequence should be specified as lasting for only one frame.

1.107 OBJECT

OBJECT Statement (main)

SECTIONOBJ Statement (section)

ROOMOBJ Statement (room)

Defines an object

```
  OBJECT: number;name;start location;visible;default image;x pos;y pos;
          character x offset;character y offset;character still image;
          preposition;pickable;animation channel;unused;unused;
          handle position;types;word 1;word 2;word 3

  SECTIONOBJ: ...ditto...

  ROOMOBJ: ...ditto... same syntax for all three...
```

Note that all parameters should be on the same line in the GRAAL file - a bit difficult to show in ordinary guide format here, though.

Yes, this is the most complex statement there is, but let’s run through it one parameter at a time:

number

For global objects specified by the OBJECT statement, the object is later referred to by this very number.

Objects defined by SECTIONOBJ will be referred to as ROBJn, where n is the number.

Objects defined by ROOMOBJ will be referred to as ROBJn, where n is the number.

name

The object name shown when the cursor hits the object, and in the inventory. A backslash in the name will cause a line break in that position when it is displayed in the scene area. The

NAME
command can alter this at any time.

start location

The room number where the object is initially positioned. 0 is used for objects that are "nowhere".

visible

-1 (The Amos equivalent of "True") if the object is visible, 0 if it is hidden.
SHOW
and
HIDE
commands can alter this as you wish later on.

default image

image number, animation string or pattern definition initially used for the object

x pos;y pos

The object’s position on the screen.

character x offset;character y offset

The main character’s position relative to the object when manipulating it, looking at it, or plain walking up to it (with the
MOBJ
command).

character still image

The image used for the main character after having walked up to the object.

preposition

A preposition indicates that the object can not be used on its own, but must be combined with a second object.

pickable

-1 means the object can be picked up and added to the inventory. (0 for churches, planet systems and other things hard to carry around.)

animation channel

The animation channel used for the object. (Only if the object is animated, of course.) Make sure two animated objects in the same room don’t try to use the same channel!

unused;unused

Well, never mind. The parameters must be there, though. Put a "0" in each position.

handle position

Decides whether the object is manipulated using the LOW, MID or HIGH animation (
HANDLE
command).

types

A character string, where each character specifies some property for the object. The following are suggested, but using
IFTYPE
, you can use this feature for almost anything you like!

M = Male character
F = Female character
A = Animal
G = Group
V = Alive
D = Dead
C = Container
W = Wood
T = Metal
S = Stone
L = Liquid
E = Food ... and so on ...

word 1;word 2;word 3

When you construct sentences referring to an object, sometimes you would like to use the proper article or other word connected to the object. These parameters give you a chance to specify such words, which can the be put into your
sentences
. These can also be altered with the
NAME
command during the game.

1.108 DLG

DLG Statement (main)

Defines the dialogue partners.

DLG: number;object;speech colour;speech offset;speech animation sequence

For each dialogue that occurs in the game, a DLG statement must be present.

number

Dialogue number. Must be unique. Should start from 1 and proceed upwards

with as few gaps in the numbering sequence as possible - just like in room and section numbering, any unused numbers take up memory space!

object

The dialogue "partner" is defined by this object. All such partners must be global objects defined in the graal.main file.

speech colour

The colour used for the partner's speech

speech offset

This number determines where the partner's speech is printed. lower numbers=higher above the partner's head.

speech animation sequence

The animation sequence used with the RESP command

1.109 ACTION

ACTION Statement (main, section, room)

Contains conditions and commands checked when player inputs a sentence.

```
ACTION: verb;condition|statement;...;condition|statement
```

When the player inputs a sentence, the ACTION: statements are checked for the currently used script files, in this order:

room file, top to bottom
section file, top to bottom
graal.main file, top to bottom

When an ACTION statement with the proper verb number is found, its parameters - the conditions and commands - are checked and executed from left to right. As soon as a condition is FALSE, the rest of that ACTION statement is skipped, and GRAAL looks at the next one.

The search for further ACTION statements is stopped as soon as a valid EXIT command has been found. If a REDO statement is encountered, the process is restarted from the first ACTION statement in the file currently being processed.

1.110 DACT

DACT Statement (section, room)

Immediate actions upon entering section / room

```
  DACT: condition|command;...;condition|command
```

Immediately after a new section or room file has been loaded, all DACT statements in the file are scanned for commands that should be executed before control is returned to the player. The structure and function of DACT statements are the same as for ACTION statements, except there is no verb number as first parameter here.

1.111 UPDATE

UPDATE Statement (room)

Set screen update rate

```
  UPDATE: n
```

During background scrolls in this room, the screen will be updated every nth frame (= 50ths of a second.) This is because shifting large amount of graphics movement puts a strain on the animation system, so stepping up from the default rate of 3 may be necessary in screens with large BOBs on screen.

1.112 SECTION

SECTION Statement (room)

Defines to which section this room belongs

```
  SECTION: n
```

When you enter a new room and the section number is not the same as the one for the previous room, the approprita section file (n.section) is loaded and its contents executed.

1.113 BG_IFF

BG_IFF Statement (room)

Name of background graphics file

```
  BG_IFF: filename
```

This statement loads the gackground graphics for the room. The backdrop should be 120 pixels high, and at least 320 pixels wide.

1.114 START_POS

START_POS Statement (room)

Sets possible starting positions

```
  START_POS: number;image;x;y;L|R|M;floor
```

number

Number of entrance for this room, should range from 1 and upwards.

image

The image used for the main character when placed in the starting position.

x;y

Position of the main character

L|R|M

Decides whether the Left, Right, or Middle of the backdrop is initially shown.

floor

A floor containing the x;y point. If this is not properly set, the main character may do a strange walkabout the frist time he is commanded to move somewhere else...

1.115 FLOOR

FLOOR Statement (room)

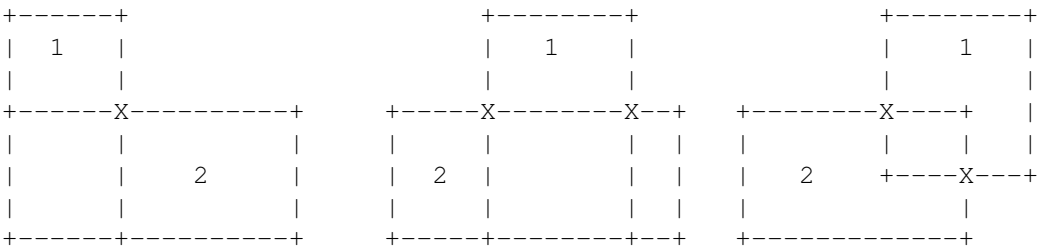
Defines the "path" where the main character can walk and how they are connected

```
  FLOOR: number;x1;y1;x2;y2;floormap;...;floormap
```

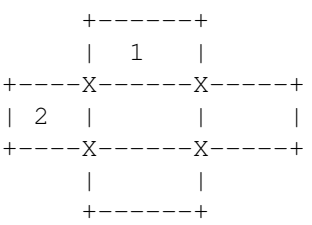
Each floor defines a rectangular area where the main character can "place its feet". Up to 12 such rectangles can be defined in a room, and they should be connected in such a way that no floor becomes an "island" without sharing any space with any other floor. In fact, floors shoull overlap as much as possible in order for the character to be able to move about.

OVERLAPPING OF FLOORS

There are some vital rules for floor overlapping. Two floors may have one or two intersection points, but not four. In the following diagrams, X marks the intersection points:



are all OK, but the following is ILLEGAL:



WALKING AROUND

The floormap parameters decide which floors the main character uses to move from one spot to another.

For each floor defined, there must be as many floormaps defined as there are floors in the room. Each floormap has the following format:

  finishfloor-nextfloor

and answers the question: "If my final destination is finishfloor, which floor should I go to from where I currently am?"

Example: For floor 2, there is a floormap

  3-4

This floormap says that to go to floor 3 from floor 2, you should go via floor 4.

Through logic follows that for each floor defined, there is always a floormap for that floor pointing to itself. For example, one of the floormaps for floor one is always

  1-1

because, if you want to get to floor 1, and you already are there, you should not go anywhere else to get there. That’s logic!

If there is more than one floormap, they are separated by a slash (/).

1.116 EXIT

```
                EXIT Statement (room)

Defines an exit from the room


  EXIT: exitno;x1;y1;x2;y2;ex;ey;description

Up to 10 exits may be defined in each room.

exitno

is from 1 to 10 and must be unique within the room.

x1;y1;x2;y2

Defines an area which the player can click to exit. x1;y1 = upper left
corner, x2;y2 = lower right corner.

ex;ey

The co-ordinate the main character will walk to when exiting.

description

Name of exit displayed in the scene area when the cursor moves over it.


When the exit is clicked, GRAAL will execute any room ACTION statements that
begin

ACTION: 0;IFOBJ exitno;...

This should usually be followed by
                MEXIT
                 and
                GOTO
                 commands, if all you want
to do is a straightforward, uncomplicated switch to the next room. However,
you may do anything you like in these ACTION statements that you can do when
taking care of "normal" player input. Just remember, the
                VERB
                 is 0, and
                OBJ1
                is the exit number.
```

1.117 STATIC

```
                STATIC Statement (room)

Display a static image that is not an object
```

```
  STATIC: bob number;image number;x;y
```

This statement is particularly useful to insert foreground objects into a scene, which you never want to manipulate in any way.

As always, make sure the bob number used isn't used for any other image displayed in this room.

See also:
ANIM

1.118 ANIM

ANIM Statement (room)

Display an animated image that is not an object

```
  ANIM: bob number;image number;anim channel;
                anim~sequence
                ;x;y
```

This statement is particularly useful for animated foreground images that you do not wish to manipulate in any way in the game.

See also:
STATIC

1.119 LINE

LINE Statement (room)

Define a dialogue alternative

```
  LINE: dialogue;line number;sentence;alternative;condition;...;condition
```

Each LINE statement defines a sentence to be shown in the dialogue control area during a dialogue. It is the
DSET
command that decides which alternatives actually appears at a certain time.

dialogue

Dialogue number (defined by the DSET statement in graal.main).

line number

A number from 1-30, must be unique within the dialogue

sentence

The sentence the main character will "speak" the first time this line is used.

alternative

The sentence the main character will "speak" if the line has been used before. This enables you to rephrase alternatives in a way that is more natural than having to repeat the first-time line. For example, in the sentence is

  Who are you?

and you would like to repeat that further on, the alternative should be something like

  Who did you say you are?

because repeating the first version would seem rather stupid.

condition;...;condition

There are two factors deciding whether a line appears in the dialogue control area or not. The first one is that a DSET command must have given it permission to appear. The second one is that all conditions specified here must be fulfilled.

1.120 LACT

LACT Statement (room)

Contains actions in response to a certain dialogue alternative

  LACT: dialogue;line;actions...

dialogue

This is the number of the dialogue.

line

This is the number of the line the player selected.

actions

These are any ordinary GRAAL conditions and commands.

LACT statements often end with a DSET;EXIT combination to refresh the dialogue status, or an EDLG;EXIT combination to end the dialogue and return to normal input mode.

See also:
LINE

```
 and
DLG
 statements, and
DSET
 and
EDLG
 commands.
```

1.121 Trouble-shooting

```
TROUBLE-SHOOTING
```

An ad-hoc creation like GRAAL is bound to have some niggles, many of which I am probably not aware - because I invented the whole thing to suit my needs and no-one else's. However, there are some common mistakes easily made, which will get you into trouble. Here's how to deal with some of them:

```
My~command~/~statement~doesn't~work~~~~~~~~~~~

My~iff~pictures~look~awful~/~crash~the~system~

GRAAL~ignores~my~rooms~~~~~~~~~~~~~~~~~~~~~~~~

>>Illegal~function~call>>~abort~~~~~~~~~~~~~~~

Mouse~cursor~does~not~register~visible~object~
-
```

1.122 My command / statement doesn't work

Trouble-shooting:

MY COMMAND / STATEMENT DOESN'T WORK

You have probably got the number of parameters and / or delimiters wrong. In most cases, GRAAL should detect this - in other cases, it doesn't.

Check the syntax with the example files and this reference. Pay particular attention to the delimiters used: Semi-colons in statements, and (usually) commas in commands. Be extra careful with those statements and commands where the last paremeter in itself may contain a number of other conditions or commands, like the LINE and FLOOR statements.

1.123 My iff pictures look awful / crash the system

Trouble-shooting

MY GRAPHICS CAUSE TROUBLE

A lot of the trouble that may arise is caused by the graphics capabilities of Amos Pro. Remember that only ECS graphics can be used, and not AGA modes.

If you use DPAINT as a paint package, you MUST make sure that stencils and fixed background modes are turned OFF before saving the graphics - otherwise, horrible things will occur when Amos encounter that information in the graphics file.

If you use a paint package with AGA capabilities, also remember that there are more and subtler colour shades available: The colours in the picture, and especially gradients, may look different when loaded into GRAAL. In DPAINT IV (at least), there is a SCALE button in the palette requester that scales all colours to "GRAAL-compatible" shades directly, so you may see what the picture will actually look like.

Keeping the palette colours in order is pretty much up to you - just remember,

* colour 0 is always transparent

* colour 1 should be white

* colour 2 should be black

1.124 GRAAL ignores my rooms

Trouble-shooting:

GRAAL IGNORES MY ROOMS

No wonder - you have probably forgot to up the
MAX_ROOMS
statement parameter
in the graal.main file!

1.125 "

Trouble-shooting:

Illegal Function Calls

Whenever GRAAL stops dead and throws up one of these messages, it means you have managed to do something my own error trapping in GRAAL hasn't been able

to detect. Some of these errors will (hopefully) be trapped within GRAAL in coming releases. In the meantime, these are some possible errors:

* You tried to
GOTO
or
EXIT
to a room that has no .room file.

* A
RESP
command pointed to a character that is actually not displayed on screen - most likely, you got the dialogue number wrong in the command. Alternatively, the
OBJECT
defining the character hasn't been made visible or was placed in the wrong room in the OBJECT statement.

* Check that all objects / graphics that you have ordered to be present in the scene have actually been loaded into the BOB image bank first using
CLPART
,
BOBS
,
ROOMBOBS
, etc. Also, accidentally grabbing an area of a clipart file that consists only of the background colour as a BOB image, and then trying to display that, is not very good at all.

* A text in a
SAY
,
RESP
or
TEXT
command, or
LINE
statement, is so long that it doesn't fit onto one line. Simple remedy: Put some line break characters (the "\" character) in the line to break it up! This makes the screen output look neater, too...

1.126 Mouse cursor does not register visible object

Trouble-shooting

Although an object is visible on screen, the mouse cursor does not pick it up.

This is probably because an object with a higher number is placed on top of another object with a lower number. When two objects are placed in the same area, it is always the one with the lowest number that gets registered as the one beneath the cursor.

In short, this is more of a planning problem than anything else. Always think about where objects may "clash" on screen and number them according to what you want to achieve. Also, remember that global objects have the lowest numbers, while section objects occupy the medium range of numbers and room objects have the highest numbers.

1.127 Index

Index of database 002e4fd0-0

Documents

" link
" link

DECRF

DSET

EDLG

EXIT

EXIT_MESSAGE

FADE

FINAL

FLOOR

GET

GOTO

graal.main file

HANDLE

HIDE

HOTSP

IFCARR / IFNOTCARR

IFOBJ / IFOBJ2

IFOF

IFPICK

IFRF

IFROOM

IFTYPE

LIGHTS

Limitations, Ranges, Reserved Numbers

LINE

LINE_LENGTH

Machine Requirements

MARK

MEXIT

VERB

W(ait)

WALK_BUTTON

ACTION

ANIM

animation sequences

BG_IFF

BOBS

CHARACTER_BOB

CHARACTER_COL

CHARACTER_HEIGHT

CLPART

COMMAND_AREA

DACT

DLG

EXIT

EXIT_COL

FLOOR

GLOBALBOBS

GLOBALOBJS

GRAAL Commands

GRAAL Conditions

GRAAL ignores my rooms

HANDLE_MAP

LACT

LINE

MAX_CACHE

MAX_DACT

MAX_ROOM

MAX_SECTION

Mouse cursor does not register visible object

MSGFONT

My command / statement doesn’t work

My iff pictures look awful / crash the system

NAME

OBJECT

OBJ_COL

PAUSE_RIGHT

RESOURCE

SECTION

START_POS

START_ROOM

STATIC

STILL_RIGHT

TALK_MAP

UPDATE

VERSION

WALK_RIGHT

WALK_SPEED
Buttons

~A~Very~Short~Introduction~~~~~~~~~~~~~~

~About~this~Reference~~~~~~~~~~~~~~~~~~

~ACTION~

~ADDOF~~~~~~~~~~

~ADDRF~~~~~~~~~~

~ANIM~

~BG_IFF~

~BOBOFF~~~~~~~~~~

~BOBON~~~~~~~~~~

~BOBS~

~BOBS~~~~~~~~~~

~CAMERA~~~~~~~~~

~CBOB~~~~~~~~~~

~CHAR~~~~~~~~~~

~CHARACTER_BOB~

~CHARACTER_COL~

~CHARACTER_HEIGHT~

~CHARACTER_WIDTH~

~CLPART~

~CLPART~

~CLPART~~~~~~~~~

~CMOVE~~~~~~~~~~

~COLOUR~~~~~~~~~

~COMFONT~

~Commands~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

~COMMAND_AREA~

~Conditions~~~~~~~~~~~~~~~~~~~~~~~~~~~

~CPOS~~~~~~~~~~

~CUTSCENE~~~~~~~

~DACT~

~DECOF~~~~~~~~~~

~DECRF~~~~~~~~~~

~DLG~

~DLG_AREA~

~DSET~~~~~~~~~~

~EDLG~~~~~~~~~~~

~EXIT~

~EXIT~~~~~~~~~~~

~EXIT_COL~

~FADE~~~~~~~~~~~

~FINAL~~~~~~~~~~

~FLOOR~

~FLOOR~~~~~~~~~~

~GET~~~~~~~~~~~

~GLOBALBOBS~

~GLOBALOBJS~

~GOTO~~~~~~~~~~

~HANDLE~~~~~~~~~

~HANDLE_MAP~

~HIDE~~~~~~~~~~

~HOTSP~~~~~~~~~~

~IFCARR~/~IFNOTCARR~

~IFOBJ~/~IFOBJ2~~~~~

~IFOF~/~IFOF2~~~~~~~

~IFPICK~~~~~~~~~~~~

~IFRF~~~~~~~~~~~~~~

~IFROOM~~~~~~~~~~~~

~IFTYPE~~~~~~~~~~~~

~LACT~

~LIGHTS~~~~~~~~~

~Limitations,~Ranges,~Reserved~Numbers~

~LINE~

~LINE~~~~~~~~~~~

~LINE_LENGTH~

~Machine~Requirements~~~~~~~~~~~~~~~~~~

~MARK~~~~~~~~~~

~MAX_CACHE~

~MAX_DACT~

~MAX_ROOM~

~MAX_SECTION~

~MEXIT~~~~~~~~~~

~MOBJ~~~~~~~~~~

~MSGFONT~

~NAME~

~NAME~~~~~~~~~~

~NFLOOR~~~~~~~~~

~NOBREAK~~~~~~~~

~OBJ1~/~OBJ2~~~~

~OBJECT~

~OBJ_COL~

~OMOVE~~~~~~~~~~

~PAUSE_BACK~

~PAUSE_FRONT~

~PAUSE_LEFT~

~PAUSE_RIGHT~

~PBOB~~~~~~~~~~

~PICK~~~~~~~~~~

~REDO~~~~~~~~~~

~REMOVE~~~~~~~~~

~RESOURCE~

~RESP~~~~~~~~~~

~RESUME~~~~~~~~~

~ROOMBOBS~

~ROOMBOBS~

~ROOMOBJ~

~ROOMOBJS~

~SAM~~~~~~~~~~~~

~SAMLOAD~~~~~~~~

~SAY~~~~~~~~~~~~

~SECTION~

~SECTIONBOBS~

~SECTIONBOBS~

~SECTIONOBJ~

~SECTIONOBJS~

~SETFLOOR~~~~~~~

~SETOF~~~~~~~~~~

~SETRF~~~~~~~~~~

~SHOW~~~~~~~~~~~

~Special~Characters~in~Text~Strings~~~~

~START_POS~

~START_ROOM~

~Statements~in~the~graal.main~file~~~~~

~Statements~in~the~n.room~files~~~~~~~~

~Statements~in~the~n.section~files~~~~~

~STATIC~

~STILL_BACK~

~STILL_FRONT~

~STILL_LEFT~

~STILL_RIGHT~

~Syntax~Conventions~~~~~~~~~~~~~~~~~~~

~TALK_MAP~

~TEXT~~~~~~~~~~~

~The~Structure~of~a~GRAAL~Game~~~~~~~~~~

~THINK~~~~~~~~~~

~TITLE~~~~~~~~~~

~TITLEFONT1~

~TITLEFONT2~

~TRACK~~~~~~~~~~

~Trouble-shooting~~~~~~~~~~~~~~~~~~~~~~

~TYPE~~~~~~~~~~~

~UPDATE~

~VERB~~~~~~~~~~~

~VERB_TEXT~

~VERSION~

~W(ait)~~~~~~~~~

~WALK_AWAY~

~WALK_BUTTON~

~WALK_LEFT~

~WALK_RIGHT~

~WALK_SPEED~

~WALK_TOWARD~
.ptrn
.scene
=DEMO=>
=DEMO=>
=DEMO=>

>>Illegal~function~call>>~abort~~~~~~~~~~~~~~~

ACTION

ADDOF

ADDRF

ANIM

anim~sequence

```
animation~sequence

animation~sequences

BOBOFF

BOBON

BOBS

BOBS

BOBS:

CBOB

CHAR

CHAR~OFF

CLPART

CLPART

CMOVE

COLOUR

CPOS

DACT

DECOF

DECRF

DLG

DLG:

DSET

EDLG

EXIT

EXIT

EXIT:

FADE

FLOOR

FLOOR:
```

```
GET

GOTO

GRAAL~ignores~my~rooms~~~~~~~~~~~~~~~~~~~~~~~~

graal.main

HANDLE

HIDE

IFOF

IFRF

IFTYPE

LACT

LACT

LIGHTS~ON

LINE

MARK

MAX_ROOMS

MEXIT

MOBJ

Mouse~cursor~does~not~register~visible~object~

My~command~/~statement~doesn't~work~~~~~~~~~~~~

My~iff~pictures~look~awful~/~crash~the~system~

n.room

n.section

NAME

NFLOOR

NOBREAK

OBJ1

OBJ1

OBJ1/OBJ2

OBJECT
```

OMOVE

PAUSE_...

PICK

REDO

REMOVE

RESP

RESUME

ROOMBOBS

SAM

SAMLOAD

SAMPLAY

SAY

sentences

SETFLOOR

SETOF

SETRF

SHOW

special~characters

STATIC

STILL_...

syntax

TEXT

THINK

TITLE

TITLEFONT:

TYPE

VERB

VERB

WALK_...